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Addendum
Round 3 Groundwater Data
RCRA Facility Investigation
for
Sites 2, 3, 4,7, 8, 9, and Paint Branch

Naval Surface Warfare Center White Oak
Silver Spring, Maryland

Engineering Field Activity Chesapeake
Naval Facilities Engineering Command

Contract Number N62472-90-D-1298
Contract Task Order 0298

December 1999

TETRA TECH NUS, INC.

Section: 12.05
Site 20903-5640 (White Oak)
Doc. #: 0002

ADDENDUM
ROUND 3 GROUNDWATER DATA
RCRA FACILITY INVESTIGATION
FOR
SITES 2, 3, 4, 7, 8, 9, AND PAINT BRANCH

NAVAL SURFACE WARFARE CENTER
WHITE OAK
SILVER SPRING, MARYLAND

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Engineering Field Activity Chesapeake
Environmental Branch Code 18
Naval Facilities Engineering Command
Washington Navy Yard, Building 212
Washington, D.C. 20374-2121

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SECTION A

COMPARISON OF ROUND 1 AND ROUND 3 GROUNDWATER RESULTS

COMPARISON OF ROUND 1 AND ROUND 3 GROUNDWATER RESULTS NSWC WHITE OAK SILVER SPRING, MARYLAND

This addendum presents the comparison of analytical results between Round 1 groundwater samples collected in January/February 1999 and Round 3 samples collected in July/August 1999. As summarized on Tables 1 through 6 the maximum concentrations of detected compounds from the two data sets were compared for each site. Highlighted analytes exceeded Region III Risk Based Concentrations (RBCs) for tap water in Round 3 but did not exceed Region III RBCs in Round 1. Additionally, maximum concentrations that exceeded the Region III RBCs for tap water are bolded.

SITE 2 – APPLE ORCHARD LANDFILL

At Site 2, four organic compounds were detected in the groundwater samples collected during Round 3 that were not detected during Round 1. The new organic compounds detected are the volatiles, 1,1,1-trichloroethane and 1,1-dichloroethane, and the SVOCs 4-bromophenyl phenyl ether and diethyl phthalate. None of the new organic compounds detected exceeded the screening criteria. Bis(2-ethylhexyl)phthalate was the only organic compound that did not exceed the RBC value in Round 1, but did exceed the RBC value in Round 3. However, BEHP only exceeded the RBC value in 1 of 11 samples, and therefore was not considered to be significant. Furthermore, BEHP is typically regarded as a laboratory contaminant. Two compounds, 1,2-dichloropropane and benzene, that previously were found at concentrations exceeding RBC screening values, were not detected in the Round 3 samples (Figure 1). Additionally, eight organic compounds that were detected in Round 1 were not detected in Round 3. In general, detected concentrations of organic compounds tended to decrease in Round 3 (Table 1).

Metal concentrations generally tended to increase slightly from those detected in Round 1 (Table 1). Cadmium (a new detection), thallium (a new detection), and vanadium (a new exceedance) were detected at concentrations exceeding their Region III RBCs for tap water. However, cadmium was not detected in filtered samples, thallium was detected as a blank contaminant, and vanadium was not significantly greater than background (based on the Wilcoxon Rank Sum Test). Therefore, these metals would not be considered significant at this time.

SITE 3 – PISTOL RANGE LANDFILL

1,2,4-Trichlorobenzene and 2,4,6-trinitrotoluene were the only additional organic compounds detected in the groundwater samples collected in Round 3. Although six organic compounds detected in the Round 1 samples were not detected in Round 3 samples, detected concentrations of organic compounds were slightly greater in Round 3 (Table 2).

Of the metals in Round 3, antimony and thallium were new detections. Their maximum concentrations also exceeded the Region III RBC for tap water (Figure 2). Copper and nickel were new exceedances, while beryllium was not detected (Table 2). Antimony, copper, and nickel were not significantly different than background based on screening using the Wilcoxon Rank Sum Test. Thallium was detected as a laboratory contaminant. Therefore, these metals are not considered to be significant contaminants. Round 3 metal concentrations generally increased from Round 1 detections.

SITE 4 – CHEMICAL BURIAL AREA

At Site 4, four additional organic compounds were detected in the groundwater samples collected in Round 3. The newly detected organic compounds were 1,4-dichlorobenzene, bromomethane, carbon disulfide, and the explosive 2-amino-4,6-dinitrotoluene (Table 3). 1,4-Dichlorobenzene and 2-amino-4,6-dinitrotoluene exceeded the Region III RBC for tap water. Bis(2-ethylhexyl)phthalate was detected at a maximum concentration exceeding its screening criterion in Round 3 but did not exceed its criterion in Round 1. However, 1,4-dichlorobenzene, BEHP, and 2-amino-4,6-dinitrotoluene only exceeded criteria in 1 or 2 of the 21 samples Therefore, the presence of all three compounds was not regarded as being significant. Furthermore, BEHP is a common laboratory contaminant.

Metals decreased in concentration between Round 1 and Round 3 samples (Table 3). Antimony and cadmium exceeded RBC screening values in Round 1 but were not detected in Round 3. There were no new exceedances in the Round 3 metal samples (Figure 3).

SITE 7 – ORDNANCE BURN AREA

At Site 7, VOC, SVOC, and pesticides/PCB concentrations and frequencies of detection decreased during Round 3. Twenty of twenty-eight analytes detected in Round 1 either

decreased in concentration or were not detected in Round 3 samples. Six compounds that exceeded the RBCs in Round 1 were not detected in Round 3. Bromodichloromethene was the only new VOC detected in Round 3 that exceeded its screening criterion (Table 4). Bromodichloromethene only exceeded the RBC screening value in 1 of 9 samples, and therefore was not considered to be significant.

Explosive compounds increased in concentration in Round 3 samples. HMX was a new exceedance in Round 3. Although HMX was detected in 5 of 9 samples, it only exceeded the RBC screening criterion in 1 sample. Therefore, HMX was not considered to be significant.

In general, metal concentrations showed no significant differences. Copper and vanadium were newly detected during Round 3. However, arsenic and thallium, both exceeding the RBC value in Round 1, were not detected in the Round 3 samples (Table 4).

SITE 8 – ABANDONED CHEMICAL DISPOSAL PIT

At Site 8, volatile organic compound concentrations decreased during Round 3. Only two of the five compounds detected during Round 1 were detected during Round 3. The phthalates increased in concentration between Round 1 and Round 3 (Table 5). Bis(2-ethylhexyl)phthalate was a new exceedance in Round 3. However, BEHP only exceeded the RBC screening value in 1 of 7 samples, and therefore was not considered to be significant. Furthermore, BEHP is a common laboratory contaminant.

Metal concentrations tended to increase in Round 3. Beryllium was detected as a new exceedance in Round 3 (Table 5). However, it was not considered to be significant because it only exceeded the RBC screening value in 1 of 7 samples, and as a result of screening (using the Wilcoxon Rank Sum Test) was not shown to be significantly greater than background.

SITE 9 – INDUSTRIAL WASTEWATER DISPOSAL AREA 300

At Site 9, five new organic compounds were detected in Round 3. However, one pesticide, seven PCBs, three VOCs, and two explosives that were detected in Round 1 were not detected in Round 3 samples (Table 6). 1,2-Dichloroethane and chloromethane were new detections and new exceedances in Round 3. Bis(2-ethylhexyl)phthalate was a new exceedance in Round 3. 1,2-Dichloroethane only exceeded the RBC screening value in 3 of 30 samples, while

chloromethane had a UCL value well below the RBC screening value. Additionally, BEHP was a blank contaminant. Therefore, these three organic compounds were not considered to be significant contaminants.

Thallium was a new detection and exceedance in Round 3 (Table 6). However, thallium was detected as a laboratory contaminant and therefore is not considered to be a significant contaminant. A majority of inorganic concentrations decreased between Round 1 and Round 3.

Overall, no organic or inorganic compounds were retained as risk drivers in Round 3 (Figure 3).

SECTION B

COMPARISON OF ROUND 1 AND ROUND 3 DATA

TABLE 1
COMPARISON OF 1ST AND 3RD ROUND DATA
SITE 2
NSWC WHITE OAK
SILVER SPRINGS, MARYLAND

PARAMETER	FIRST ROUND MAXIMUM	THIRD ROUND MAXIMUM	CHANGE (+/-)	REGION III RBC FOR TAP WATER
VOLATILES				
1,1,1-Trichloroethane	ND	0.21	+	54
1,1-Dichloroethane	ND	0.23	+	80
1,2-Dichloropropane	**1.4**	ND	-	0.16
Acetone	3.6	ND	-	61
Benzene	**1**	ND	-	0.36
Chlorobenzene	1	ND	-	11
Chloroform	**0.96**	**1.2**	+	0.15
Chloromethane	0.29	ND	-	2.1
Methylene Chloride	1.9	ND	-	4.1
Trichloroethene	**35**	**35**	NC	1.6
cis-1,2-dichloroethene	**7.1**	2.8	-	6.1
SEMIVOLATILES				
4-Bromophenyl phenyl ether	ND	2.3	+	NA
Bis(2-Ethylhexyl)phthalate	2.1	**48**	+	4.8
Diethyl phthalate	ND	1.8	+	2900
Di-n-butyl phthalate	25	ND	-	370
EXPLOSIVES				
2,6 Dinitrotoluene	0.26	ND	-	3.7
HMX	8.6	12	+	180
RDX	**0.87**	**0.86**	-	0.61
INORGANICS				
Aluminum	**24700**	**52500**	+	3700
Arsenic	**15.2**	**10**	-	0.045
Barium	**730**	**858**	+	260
Beryllium	7	ND	-	7.3
Cadmium	ND	**12.3**	+	3.7
Calcium	205000	156000	-	NA
Chromium	**39.1**	**51.5**	+	11
Cobalt	132	93.5	-	220
Copper	59	87.7	+	150
Cyanide	ND	1.9	+	73
Iron	**41800**	**80100**	+	1100
Lead	**20.2**	**21.7**	+	15
Magnesium	130000	88600	-	NA
Manganese	**24700**	**18200**	-	73
Mercury	**2.4**	**1.8**	-	1.1[(a)]
Nickel	**206**	**155**	-	73
Potassium	34400	26500	-	NA
Silver	ND	3.8	+	18
Sodium	4720000	3400000	-	NA
Thallium	ND	**12.3**	+	0.26
Vanadium	25.7	**54.5**	+	26
Zinc	411	300	-	1100

(a) - Value shown for Mercury is based on Mercuric Chloride.
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

NOTES:
ND - Non Detect
NC - No Change
NA - Not Applicable

Bolded first and third round maximums exceed Region III RBCs
Bolded parameters exceeded the Region III RBC in the first round only
Bolded and highlighted parameters exceeded the Region III RBC in the third round only

TABLE 2
COMPARISON OF 1ST AND 3RD ROUND DATA
SITE 3
NSWC WHITE OAK
SILVER SPRINGS, MARYLAND

PARAMETER	FIRST ROUND MAXIMUM	THIRD ROUND MAXIMUM	CHANGE (+/-)	REGION III RBC FOR TAP WATER
VOLATILES				
1,2,4-Trichlorobenzene	ND	3.9	+	19
1,3-Dichlorobenzene	**1.1**	**1.4**	+	0.16
1,4-Dichlorobenzene	**2.6**	ND	-	0.47
Acetone	3.1	ND	-	61
Benzene	**1.8**	ND	-	0.36
Chlorobenzene	**29**	**48**	+	11
Chloroform	**0.96**	ND	-	0.15
Tetrachloroethene	0.62	0.36	-	1.1
Trans-1,2-dichloroethene	5.3	5.4	+	12
Trichloroethene	**21**	**24**	+	1.6
Vinyl Chloride	**3.3**	**4.3**	+	0.019
cis-1,2-dichloroethene	**35**	**41**	+	6.1
SEMIVOLATILES				
Di-n-butyl phthalate	5.5	ND	-	370
EXPLOSIVES				
2,4,6-Trinitrotoluene	ND	0.23	+	2.2
2,4 Dinitrotoluene	0.23	ND	-	3.7
HMX	0.75	1	+	180
RDX	**0.81**	**1**	+	0.61
INORGANICS				
Aluminum	**39700**	**70400**	+	3700
Antimony	ND	**1.9**	+	
Arsenic	**7.3**	**11.9**	+	0.045
Barium	**688**	**328**	-	260
Beryllium	6.2	ND	-	7.3
Calcium	41700	26000	-	NA
Chromium	**37.4**	**108**	+	11
Cobalt	37.4	79.1	+	220
Copper	115	**169**	+	150
Iron	**91500**	**105000**	+	1100
Lead	**32.2**	**49.3**	+	15
Magnesium	21100	18900	-	NA
Manganese	**3460**	**4730**	+	73
Mercury	0.39	0.27	-	1.1[(a)]
Nickel	55.4	**106**	+	73
Potassium	9700	20700	+	NA
Silver	ND	5.5	+	18
Sodium	30500	37500	+	NA
Thallium	ND	**3.9**	+	0.26
Vanadium	**83.3**	**141**	+	26
Zinc	226	278	+	1100

(a) - Value shown for Mercury is based on Mercuric Chloride.
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NOTES:
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NA - Not Applicable

Bolded first and third round maximums exceed Region III RBCs
Bolded parameters exceeded the Region III RBC in the first round only
Bolded and highlighted parameters exceeded the Region III RBC in the third round only

TABLE 3
COMPARISON OF 1ST AND 3RD ROUND DATA
SITE 4
NSWC WHITE OAK
SILVER SPRINGS, MARYLAND

PARAMETER	FIRST ROUND MAXIMUM	THIRD ROUND MAXIMUM	CHANGE (+/-)	REGION III RBC FOR TAP WATER
VOLATILES				
1,1,1-Trichloroethane	0.32	ND	-	54
1,1,2,2-Tetrachloroethane	**330**	**340**	+	0.053
1,1,2-Trichloroethane	**0.73**	**5.5**	+	0.19
1,1-Dichloroethane	1.3	0.62	-	80
1,2-Dichloroethane	**0.63**	**1.5**	+	0.12
1,4-Dichlorobenzene	ND	**0.49**	+	0.47
Benzene	**1.2**	0.15	-	0.36
Bromomethane	ND	0.11	+	0.85
Carbon disulfide	ND	0.65	+	100
Chlorobenzene	**54**	**39**	-	11
Chloroethane	0.74	0.62	-	3.6
Chloroform	**0.86**	**2.4**	+	0.15
Tetrachloroethene	**1.9**	**5.4**	+	1.1
Trans-1,2-dichloroethene	3.1	8.4	+	12
Trichloroethene	**8500**	**1400**	-	1.6
Vinyl Chloride	**66**	**59**	-	0.019
Xylenes (total)	1.6	ND	-	1200
cis-1,2-dichloroethene	**8500**	**380**	-	6.1
SEMIVOLATILES				
2-Methylnaphthalene	2	ND	-	12
Acenaphthene	1.1	ND	-	37
Bis(2-Ethylhexyl)phthalate	2.1	**44**	-	4.8
Naphthalene	**1.2**	ND	-	0.65
Phenol	1.5	ND	-	2200
EXPLOSIVES				
2-Amino-4,6-dinitrotoluene	ND	**0.31**	+	0.22
4-Amino-2,6-dinitrotoluene	**0.8**	ND	-	0.22
HMX	2	2	NC	180
RDX	**2.6**	**1.1**	-	0.61
INORGANICS				
Aluminum	**223000**	**25300**	-	3700
Antimony	**3**	ND	-	1.5
Arsenic	**110**	**18.8**	-	0.045
Barium	**554**	210	-	260
Beryllium	4.7	ND	-	7.3
Cadmium	**7.3**	ND	-	3.7
Calcium	119000	86900	-	NA
Chromium	**1260**	**672**	-	11
Cobalt	102	119	+	220
Copper	**265**	**219**	-	150
Iron	**329000**	**126000**	-	1100
Lead	**146**	**23.5**	-	15
Magnesium	23200	21300	-	NA
Manganese	**15100**	**6170**	-	73
Mercury	**7.2**	**6.9**	-	1.1[a]
Nickel	**591**	**486**	-	73
Potassium	12500	13100	+	NA
Selenium	**75**	**70.5**	-	18
Silver	ND	8.1	+	18
Sodium	152000	204000	+	NA
Vanadium	**707**	**151**	-	26
Zinc	830	102	-	1100
MISCELLANEOUS PARAMETER				
Perchlorate	12.4	10	-	18[b]

(a) - Value shown for Mercury is based on Mercuric Chloride.
(b) - Health Based Action Level (Calif. Dept. of Health Services Jan. 99)
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

NOTES:
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Bolded first and third round maximums exceed Region III RBCs
Bolded parameters exceeded the Region III RBC in the first round only
Bolded and highlighted parameters exceeded the Region III RBC in the third round only

TABLE 4
COMPARISON OF 1ST, 2ND, AND 3RD ROUND DATA
SITE 7
NSWC WHITE OAK
SILVER SPRINGS, MARYLAND

PARAMETER	FIRST ROUND MAXIMUM	THIRD ROUND MAXIMUM	CHANGE (+/-)	REGION III RBC FOR TAP WATER
VOLATILES				
1,1,1-Trichloroethane	1.2	ND	-	54
1,1,2,2-Tetrachloroethane	**77**	**27**	-	0.053
1,1,2-Trichloroethane	**1.3**	ND	-	0.19
1,1-Dichloroethane	0.41	ND	-	80
1,1-Dichloroethene	**0.15**	ND	-	0.044
1,2-Dichloroethane	**1.8**	ND	-	0.12
1,3-Dichlorobenzene	**0.35**	ND	-	0.16
1,4-Dichlorobenzene	0.26	ND	-	0.47
Bromodichloromethene	ND	**0.44**	+	0.17
Chlorobenzene	0.42	4.2	+	11
Chloroform	**1.8**	**20**	+	0.15
Tetrachloroethene	0.63	ND	-	1.1
Toluene	0.41	ND	-	75
Trans-1,2-dichloroethene	0.46	ND	-	12
Trichloroethene	**370**	**710**	+	1.6
Vinyl Chloride	**1.6**	ND	-	0.019
Xylenes (total)	0.49	ND	-	1200
cis-1,2-dichloroethene	**43**	**44**	+	6.1
SEMIVOLATILES				
2,4-Dinitrotoluene	ND	1.3	+	7.3
2,6-Dinitrotoluene	ND	2	+	3.7
2-Methylnaphthalene	2	ND	-	12
Acenaphthene	1.1	ND	-	37
Bis(2-Ethylhexyl)phthalate	2.1	ND	-	4.8
Naphthalene	**1.2**	ND	-	0.65
Phenol	1.5	ND	-	2200
PESTICIDES/PCBs				
Alpha-Chlordane	0.052	0.042	-	0.19
Gamma-Chlrodane	ND	0.049	+	0.19
Gamma-BHC (Lindane)	0.058	ND	-	0.19
EXPLOSIVES				
1,3,5-Trinitrobenzene	2.3	ND	-	110
2,4,6-Trinitrotoluene	**210**	**300**	+	2.2
2-Amino-4,6-dinitrotoluene	**62**	**94**	+	0.22
4-Amino-2,6-dinitrotoluene	**110**	**150**	+	0.22
HMX	140	**190**	+	180
RDX	**510**	**590**	+	0.61
INORGANICS				
Aluminum	1010	1990	+	3700
Arsenic	**2.8**	ND	-	0.045
Barium	63.6	72.3	+	260
Calcium	16400	15000	-	NA
Chromium	**59**	**31.9**	-	11
Cobalt	25	10	-	220
Copper	ND	8.5	+	150
Iron	**3780**	**9070**	+	1100
Lead	3.1	2.8	-	15
Magnesium	11400	11300	-	NA
Manganese	**139**	**137**	-	73
Mercury	**5.5**	**7.2**	+	1.1[a]
Nickel	**153**	21.3	-	73
Potassium	1500	2100	+	NA
Selenium	4.9	ND	-	18
Sodium	15800	15400	-	NA
Thallium	**5.6**	ND	-	0.26
Vanadium	ND	18.2	+	26
Zinc	22.2	34.1	+	1100
MISCELLANEOUS PARAMETER				
Perchlorates	**28.4**	16	-	18[b]

(a) - Value shown for Mercury is based on Mercuric Chloride.
(b) - Health Based Action Level (Calif. Dept. of Health Services Jan. 99)
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

NOTES:
ND - Non Detect
NA - Not Applicable

Bolded first and third round maximums exceed Region III RBCs
Bolded parameters exceeded the Region III RBC in the first round only
Bolded and highlighted parameters exceeded the Region III RBC in the third round only

TABLE 5
COMPARISON OF 1ST AND 3RD ROUND DATA
SITE 8
NSWC WHITE OAK
SILVER SPRINGS, MARYLAND

PARAMETER	FIRST ROUND MAXIMUM	THIRD ROUND MAXIMUM	CHANGE (+/-)	REGION III RBC FOR TAP WATER
VOLATILES				
1,1,2-Trichloroethane	**1.7**	**1.3**	-	0.19
Chloroform	**7.2**	**15**	+	0.15
Toluene	0.65	ND	-	75
Vinyl Chloride	**0.92**	ND	-	0.019
Xylenes (total)	1	ND	-	1200
SEMIVOLATILES				
Bis(2-Ethylhexyl)phthalate	1.8	**51**	+	4.8
Diethyl phthalate	1.6	4.9	+	2900
Dimethyl phthalate	ND	1.6	+	37000
INORGANICS				
Aluminum	**16800**	**72500**	+	3700
Arsenic	**5.3**	**17.4**	+	0.045
Barium	**563**	**674**	+	260
Beryllium	7	**11.9**	+	7.3
Cadmium	**13.5**	3.1	-	3.7
Calcium	25600	14800	-	NA
Chromium	**211**	**756**	+	11
Cobalt	57.2	69.4	+	220
Copper	93.1	119	+	150
Iron	**44700**	**120000**	+	1100
Lead	**22.8**	**30.8**	+	15
Magnesium	14300	26700	+	NA
Manganese	**2430**	**2060**	-	73
Mercury	0.28	0.19	-	1.1[a]
Nickel	**179**	**573**	+	73
Potassium	12500	27200	+	NA
Silver	ND	3.5	+	18
Sodium	7960	8950	+	NA
Thallium	**4**	**9.6**	+	0.26
Vanadium	**40**	**166**	+	26
Zinc	178	358	+	1100

(a) - Value shown for Mercury is based on Mercuric Chloride.

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NOTES:
ND - Non Detect
NA - Not Applicable

Bolded first and third round maximums exceed Region III RBCs
Bolded parameters exceeded the Region III RBC in the first round only
Bolded and highlighted parameters exceeded the Region III RBC in the third round only

TABLE 6
COMPARISON OF 1ST AND 3RD ROUND DATA
SITE 9
NSWC WHITE OAK
SILVER SPRINGS, MARYLAND

PARAMETER	FIRST ROUND MAXIMUM	THIRD ROUND MAXIMUM	CHANGE (+/-)	REGION III RBC FOR TAP WATER
VOLATILES				
1,1,1-Trichloroethane	0.34	0.44	+	54
1,1,2,2-Tetrachloroethane	**3.3**	ND	-	0.053
1,2-Dicloroethane	ND	**0.49**	+	0.12
2-Butanone	ND	6.8	+	190
Acetone	12	36	+	61
Benzene	0.19	0.26	+	0.36
Bromodichloromethane	**0.92**	**0.36**	-	0.17
Bromomethane	0.24	ND	-	0.85
Carbon Tetrachloride	**0.58**	**0.87**	+	0.16
Chlorobenzene	ND	0.23	+	11
Chloroform	**22**	**8.4**	-	0.15
Chloromethane	ND	**2.7**	+	2.1
Ethylbenzene	0.11	ND	-	130
Tetrachloroethene	**5**	**4.7**	-	1.1
Toluene	0.47	0.41	-	75
Trichloroethene	**45**	**27**	-	1.6
Xylenes, total	ND	0.43	+	1200
cis-1,2-dichloroethene	4.9	3.6	-	6.1
SEMIVOLATILES				
Bis(2-Ethylhexyl)phthalate	3	**120**	+	4.8
Di-n-butyl phthalate	1.4	1.2	-	370
PESTICIDES/PCBs				
4,4'-DDT	0.0049	ND	-	0.2
Alpha-Chlordane	**0.31**	**0.34**	+	0.19
Aroclor-1016	**1**	ND	-	0.96
Aroclor-1221	**1**	ND	-	0.033
Aroclor-1232	**1**	ND	-	0.033
Aroclor-1242	**1**	ND	-	0.033
Aroclor-1248	**1**	ND	-	0.033
Aroclor-1254	**1**	ND	-	0.033
Aroclor-1260	**1**	ND	-	0.033
Gamma-Chlordane	**0.26**	**0.28**	+	0.19
Heptachlor Epoxide	**0.013**	**0.039**	+	0.0074
EXPLOSIVES				
2,4,6-Trinitrotoluene	0.47	ND	-	2.2
2,6 Dinitrotoluene	0.3	0.32	+	3.7
2-Amino-4,6-dinitrotoluene	**0.41**	ND	-	0.22
HMX	10	13	+	180
RDX	**130**	**160**	+	0.61
INORGANICS				
Aluminum	**108000**	**19900**	-	3700
Antimony	**2**	ND	-	1.5
Arsenic	**25**	**17.8**	-	0.045
Barium	**369**	151	-	260
Beryllium	**8.3**	0.17	-	7.3
Cadmium	**26.9**	**6.7**	-	3.7
Calcium	62200	23900	-	NA
Chromium	**193**	**106**	-	11
Cobalt	87.5	62	-	220
Copper	129	79.6	-	150
Iron	**136000**	**95200**	-	1100
Lead	**58.7**	**35.7**	-	15
Magnesium	14000	13700	-	NA
Manganese	**1930**	**1280**	-	73
Mercury	**12**	**8.2**	-	1.1[a]
Nickel	**85.8**	71.7	-	73
Potassium	11800	11000	-	NA
Selenium	**24.8**	**23.2**	-	18
Silver	ND	2.4	+	18
Sodium	47800	49200	+	NA
Thallium	ND	**4.9**	+	0.26
Vanadium	**209**	**150**	-	26
Zinc	627	801	+	1100
MISCELLANEOUS PARAMETER				
Perchlorates	**79**	**240**	+	18[b]

(a) - Value shown for Mercury is based on Mercuric Chloride.
(b) - Health Based Action Level (Calif. Dept. of Health Services Jan. 99)
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

NOTES:
ND - Non Detect
NA - Not Applicable

Bolded first and third round maximums exceed Region III RBCs
Bolded parameters exceeded the Region III RBC in the first round only
Bolded and highlighted parameters exceeded the Region III RBC in the third round only

SECTION C

STATISTICAL SUMMARIES OF CHEMICALS DETECTED IN GROUNDWATER

SITE 2
NWSC WHITE OAK
SILVER SPRING, MARYLAND
STATISTICAL SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER
ROUND 3 DATA - JULY 1999

CAS #	PARAMETER	FREQUENCY OF DETECTION	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	MINIMUM DETECTION	MAXIMUM DETECTION	MINIMUM QUALIFIER	MAXIMUM QUALIFIER	RANGE OF POSITIVE DETECTIONS	RANGE OF NON-DETECTS	LOCATION OF MAXIMUM CONCENTRATION	AVERAGE OF POSITIVE DETECTIONS	AVERAGE OF ALL SAMPLES	FEDERAL MCL	REGION III RBC FOR TAP WATER	TAP WATER RBC BASIS
VOLATILES (µg/L)																
71-55-6	1,1,1-Trichloroethane	1/11	1	3	0.21	0.21	J	J	0.21	1 - 3	2GW1000003	0.21	0.564545	200	54	N
75-34-3	1,1-Dichloroethane	1/11	1	3	0.23	0.23	J	J	0.23	1 - 3	2GW1010003	0.23	0.566364	N/A	80	N
67-66-3	Chloroform	5/11	1	3	0.18	1.2	J		0.18 - 1.2	1 - 3	2GW1000003	0.484	0.583636	80	0.15	C
79-01-6	Trichloroethene	9/11	1	1	0.86	35	J		0.86 - 35	1	2GW320003	7.556667	6.273636	5	1.6	C
156-59-2	cis-1,2-dichloroethene	8/11	1	1	0.23	2.8	J		0.23 - 2.8	1	2GW1020003	0.92875	0.811818	70	6.1	N
SEMIVOLATILES (µg/L)																
101-55-3	4-Bromophenyl Phenyl Ether	2/11	5	5	1.4	2.3	J	J	1.4 - 2.3	5	2GW320003	1.85	2.381818	N/A	N/A	
117-81-7	Bis(2-Ethylhexyl)phthalate	1/11	1.2	8.7	43	43	J	J	43	1.2 - 8.7	2GW1020003-D	22.5	4.359091	6	4.8	C
84-66-2	Diethyl Phthalate	1/11	5	5	1.8	1.8	J	J	1.8	5	2GW1050003	1.8	2.436364	N/A	2900	N
EXPLOSIVES (µg/L)																
2691-41-0	Hmx	2/11	0.5	0.5	0.68	12			0.68 - 12	0.5	2GW450003	6.34	1.357273	N/A	180	N
121-82-4	Rdx	1/11	0.5	1	0.86	0.86			0.86	0.5 - 1	2GW1030003	0.86	0.328182	N/A	0.61	C
INORGANICS (µg/L)																
7429-90-5	Aluminum	9/11	73.6	239	362	52500			362 - 52500	73.6 - 239	2GW310003	8548.111111	7008.163636	50-200	3700	N
7440-38-2	Arsenic	7/11	1.1	1.1	1.4	10			1.4 - 10	1.1	2GW320003	4.171429	2.848864	50	0.045	C
7440-39-3	Barium	11/11	0	0	23.4	858			23.4 - 858	0	2GW1000003	246.390909	246.390909	2000	260	N
7440-43-9	Cadmium	1/11	3	3	12.3	12.3	L	L	12.3	3	2GW320003	12.3	2.481818	5	3.7	N
7440-70-2	Calcium	11/11	0	0	2100	156000			2100 - 156000	0	2GW1000003	56120	56120	N/A	N/A	
7440-47-3	Chromium	8/11	2.4	2.4	3.1	51.5			3.1 - 51.5	2.4	2GW310003	11.5125	8.7	100	11	N
7440-48-4	Cobalt	7/11	3.8	3.8	3.9	93.5			3.9 - 93.5	3.8	2GW320003	27.307143	18.068182	N/A	220	N
7440-50-8	Copper	8/11	1.4	7.6	10.4	87.7			10.4 - 87.7	1.4 - 7.6	2GW310003	27.1	16.052273	1300	150	N
57-12-5	Cyanide	1/11	1.4	1.4	1.9	1.9			1.9	1.4	2GW450003	1.9	0.809091	200	73	N
7439-89-6	Iron	11/11	0	0	130	80100			130 - 80100	0	2GW310003	12078.81818	12078.81818	300	1100	N
7439-92-1	Lead	4/11	1	1	1.8	21.7	K		1.8 - 21.7	1	2GW310003	9	3.590909	15	15	
7439-95-4	Magnesium	11/11	0	0	1100	88600			1100 - 88600	0	2GW320003	27062.72727	27062.72727	N/A	N/A	
7439-96-5	Manganese	11/11	0	0	139	18200			139 - 18200	0	2GW320003	2508.909091	2508.909091	50	73	N
7439-97-6	Mercury	4/11	0.1	0.1	0.11	1.8			0.11 - 1.8	0.1	2GW320003	0.6025	0.250909	2	1.1 (a)	N
7440-02-0	Nickel	8/11	8.8	8.8	10.8	155			10.8 - 155	8.8	2GW320003	59	44.109091	100	73	N
7440-09-7	Potassium	11/11	0	0	1880	26500			1880 - 26500	0	2GW320003	8757.727273	8757.727273	N/A	N/A	
7440-22-4	Silver	4/11	2.2	2.2	2.3	3.8		K	2.3 - 3.8	2.2	2GW320003	2.975	1.781818	100	18	N
7440-23-5	Sodium	11/11	0	0	3990	3400000			3990 - 3400000	0	2GW320003	425280.9091	425280.9091	N/A	N/A	
7440-28-0	Thallium	10/11	3.7	3.7	3.9	12.3		L	3.9 - 12.3	3.7	2GW320003	6.23	5.831818	2	0.26	N
7440-62-2	Vanadium	2/11	2.4	2.4	15.4	54.5			15.4 - 54.5	2.4	2GW310003	34.95	7.336364	N/A	26	N
7440-66-6	Zinc	11/11	0	0	5	300			5 - 300	0	2GW320003	72.222727	72.222727	5000	1100	N

*True minimum and maximum concentrations are shown using both duplicate samples. However, the average of the duplicates is used in calculating the averages and tabulating the frequency of detection.

(a) - Value shown for Mercury is based on Mercuric Chloride.
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

Associated Samples:
2GW1000003
2GW1010003
2GW1020003
2GW1020003-AVG
2GW1020003-D
2GW1030003
2GW1040003
2GW1050003
2GW300003
2GW310003
2GW320003
2GW450003
2GW760003

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
STATISTICAL SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER
ROUND 3 DATA - JULY 1999

CAS #	PARAMETER	REQUENCY OF DETECTION	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	MINIMUM DETECTION	MAXIMUM DETECTION	MINIMUM QUALIFIER	MAXIMUM QUALIFIER	RANGE OF POSITIVE DETECTIONS	RANGE OF NON-DETECTS	LOCATION OF MAXIMUM CONCENTRATION	AVERAGE OF POSITIVE DETECTIONS	AVERAGE OF ALL SAMPLES	FEDERAL MCL	REGION III RBC FOR TAP WATER	TAP WATER RBC BASIS
VOLATILES (µg/L)																
120-82-1	1,2,4-Trichlorobenzene	1/10	1	5	3.9	3.9			3.9	1 - 5	3GW190003	3.9	1.04	70	19	N
541-73-1	1,3-Dichlorobenzene	1/10	1	5	1.4	1.4	J	J	1.4	1 - 5	3GW190003	1.4	0.79	N/A	0.55	N
108-90-7	Chlorobenzene	2/10	0.21	5	0.38	48	J		0.38 - 48	0.21 - 5	3GW190003	24.19	5.3985	100	11	N
127-18-4	Tetrachloroethene	1/10	1	5	0.36	0.36	J	J	0.36	1 - 5	3GW1070003	0.36	0.786	5	1.1	C
156-60-5	Trans-1,2-dichloroethene	3/10	1	5	0.24	5.4	J		0.24 - 5.4	1 - 5	3GW190003	2.02	1.156	100	12	N
79-01-6	Trichloroethene	7/10	1	1	0.32	24	J		0.32 - 24	1	3GW1020003	4.87	3.559	5	1.6	C
75-01-4	Vinyl Chloride	4/10	1	1	0.39	4.3	J		0.39 - 4.3	1	3GW190003	1.8725	1.049	2	0.019	C
156-59-2	cis-1,2-dichloroethene	8/10	1	1	0.26	41	J		0.26 - 41	1	3GW1020003	10.455	8.464	70	6.1	N
EXPLOSIVES (µg/L)																
118-96-7	2,4,6-Trinitrotoluene	2/10	0.2	0.34	0.21	0.23			0.21 - 0.23	0.2 - 0.34	3GW170003-D	0.1875	0.1245	N/A	2.2	C
2691-41-0	Hmx	1/10	0.5	0.86	1	1			1	0.5 - 0.86	3GW1070003	1	0.343	N/A	180	N
121-82-4	Rdx	1/10	0.5	0.86	1	1			1	0.5 - 0.86	3GW1070003	1	0.343	N/A	0.61	C
INORGANICS (µg/L)																
7429-90-5	Aluminum	6/10	29.4	221	103	70400			103 - 70400	29.4 - 221	3GW1070003	15883.16667	9549.78	50-200	3700	N
7440-36-0	Antimony	1/10	1.7	1.7	1.9	1.9			1.9	1.7	3GW470003	1.9	0.955	6	1.5	N
7440-38-2	Arsenic	3/10	1.1	1.1	1.2	11.9			1.2 - 11.9	1.1	3GW1070003	5.433333	2.015	50	0.045	C
7440-39-3	Barium	10/10	0	0	39	328			39 - 328	0	3GW1070003	135.665	135.665	2000	260	N
7440-70-2	Calcium	10/10	0	0	4680	26000			4680 - 26000	0	3GW170003-D	16505	16505	N/A	N/A	
7440-47-3	Chromium	7/10	2.4	2.4	3.2	108	K		3.2 - 108	2.4	3GW1070003	33.1	23.53	100	11	N
7440-48-4	Cobalt	8/10	3.8	3.8	4.8	79.1			4.8 - 79.1	3.8	3GW1070003	22.30625	18.225	N/A	220	N
7440-50-8	Copper	6/10	1.4	5.5	3.1	169			3.1 - 169	1.4 - 5.5	3GW1070003	38.466667	23.6575	1300	150	N
57-12-5	Cyanide	1/10	1.4	1.4	1.7	1.7			1.7	1.4	3GW1040003	1.7	0.8	200	73	N
7439-89-6	Iron	10/10	0	0	445	105000			445 - 105000	0	3GW1070003	22151.7	22151.7	300	1100	N
7439-92-1	Lead	3/10	1	1	5.6	49.3	K		5.6 - 49.3	1	3GW1070003	20.533333	6.51	15	15	
7439-95-4	Magnesium	10/10	0	0	3190	18900			3190 - 18900	0	3GW170003-D	10415	10415	N/A	N/A	
7439-96-5	Manganese	10/10	0	0	87.7	4730			87.7 - 4730	0	3GW1070003	1149.11	1149.11	50	73	N
7439-97-6	Mercury	2/10	0.1	0.1	0.13	0.27			0.13 - 0.27	0.1	3GW1070003	0.2	0.08	2	1.1(a)	N
7440-02-0	Nickel	7/10	8.8	8.8	9.2	106			9.2 - 106	8.8	3GW1070003	41.242857	30.19	100	73	N
7440-09-7	Potassium	10/10	0	0	1630	20700			1630 - 20700	0	3GW1070003	5553	5553	N/A	N/A	
7782-49-2	Selenium	1/10	2.7	2.7	5.8	5.8	K	K	5.8	2.7	3GW1070003	5.8	1.795	50	18	N
7440-22-4	Silver	1/10	2.2	2.2	5.5	5.5	K	K	5.5	2.2	3GW1070003	5.5	1.54	100	18	N
7440-23-5	Sodium	10/10	0	0	9250	37500	K		9250 - 37500	0	3GW770003	19195	19195	N/A	N/A	
7440-28-0	Thallium	2/10	3.7	5.5	3.8	3.9		L	3.8 - 3.9	3.7 - 5.5	3GW1070003	3.85	2.44	2	0.26	N
7440-62-2	Vanadium	4/10	2.4	2.4	2.4	141			2.4 - 141	2.4	3GW1070003	46.2	19.2	N/A	26	N
7440-66-6	Zinc	10/10	0	0	2.1	278			2.1 - 278	0	3GW1070003	50.785	50.785	5000	1100	N

*True minimum and maximum concentrations are shown using both duplicate samples. However, the average of the duplicates is used in calculating the averages and tabulating the frequency of detection.

(a) - Value shown for Mercury is based on Mercuric Chloride.
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

Associated Samples:
3GW1020003
3GW1040003
3GW1070003
3GW170003
3GW170003-AVG
3GW170003-D
3GW180003
3GW190003
3GW470003
3GW770003
3GW78D0003
3GW78S0003

SITE 4
NSWC WHITE WOAK
SILVER SPRING, MARYLAND
STATISTICAL SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

CAS #	PARAMETER	FREQUENCY OF DETECTION	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	MINIMUM DETECTION	MAXIMUM DETECTION	MINIMUM QUALIFIER	MAXIMUM QUALIFIER	RANGE OF POSITIVE DETECTIONS	RANGE OF NON-DETECTS	LOCATION OF MAXIMUM CONCENTRATION	AVERAGE OF POSITIVE DETECTIONS	AVERAGE OF ALL SAMPLES	FEDERAL MCL	REGION III RBC FOR TAP WATER	TAP WATER RBC BASIS
VOLATILES (µg/L)																
79-34-5	1,1,2,2-Tetrachloroethane	9/21	1	10	1.4	340	J		1.4 - 340	1 - 10	4GW1050003-D	78.32222	33.87619	N/A	0.053	C
79-00-5	1,1,2-Trichloroethane	3/21	1	200	0.15	5.5	J		0.15 - 5.5	1 - 200	4GW1090003	2.036667	8.076667	5	0.19	C
75-34-3	1,1-Dichloroethane	4/21	1	200	0.22	0.62	J	J	0.22 - 0.62	1 - 200	4GW49D0003	0.3625	7.95	N/A	80	N
107-06-2	1,2-Dichloroethane	1/21	1	200	1.5	1.5			1.5	1 - 200	4GW1100003	1.5	8.040476	5	0.12	C
106-46-7	1,4-Dichlorobenzene	1/21	1	200	0.49	0.49	J	J	0.49	1 - 200	4GW480003	0.49	7.975714	75	0.47	C
71-43-2	Benzene	1/21	0.99	200	0.15	0.15	J	J	0.15	0.99 - 200	4GW1100003	0.15	7.935476	5	0.36	C
74-83-9	Bromomethane	1/21	1	200	0.11	0.11	J	J	0.11	1 - 200	4GW120003	0.11	7.957619	N/A	0.85	N
75-15-0	Carbon Disulfide	1/21	1	200	0.65	0.65	J	J	0.65	1 - 200	4GW1100003	0.65	7.983333	N/A	100	N
108-90-7	Chlorobenzene	2/21	0.2	100	6.3	39		J	6.3 - 39	0.2 - 100	4GW1050003-D	21.15	5.125476	100	11	N
75-00-3	Chloroethane	1/21	1	200	0.62	0.62	J	J	0.62	1 - 200	4GW1000003	0.62	7.981905	N/A	3.6	C
67-66-3	Chloroform	7/21	1	200	0.25	2.4	J		0.25 - 2.4	1 - 200	4GW820003	0.904286	7.896667	80	0.15	C
127-18-4	Tetrachloroethene	6/21	1	200	0.93	5.4	J		0.93 - 5.4	1 - 200	4GW1100003	2.441667	8.221429	5	1.1	C
156-60-5	Trans-1,2-dichloroethene	2/21	1	200	0.28	8.4	J		0.28 - 8.4	1 - 200	4GW1090003	4.34	8.246667	100	12	N
79-01-6	Trichloroethene	14/21	1	1	0.74	1400	J		0.74 - 1400	1	4GW1050003-D	198.382143	132.421429	5	1.6	C
75-01-4	Vinyl Chloride	2/21	1	100	5	59		J	5 - 59	1 - 100	4GW1050003-D	29	5.928571	2	0.019	C
156-59-2	cis-1,2-dichloroethene	11/21	1	2	0.23	380	J		0.23 - 380	1 - 2	4GW1050003-D	49.203636	26.035238	70	6.1	N
SEMIVOLATILES (µg/L)																
117-81-7	Bis(2-Ethylhexyl)phthalate	2/21	1	8.4	31	44			31 - 44	1 - 8.4	4GW1100003	37.5	5.411905	6	4.8	C
EXPLOSIVES (µg/L)																
35572-78-2	2-Amino-4,6-dinitrotoluene	2/21	0.2	0.4	0.23	0.31			0.23 - 0.31	0.2 - 0.4	4GW81D0003-D	0.265	0.120476	N/A	0.22	N
2691-41-0	Hmx	3/21	0.5	1	1.3	2			1.3 - 2	0.5 - 1	4GW81D0003	1.766667	0.478571	N/A	180	N
121-82-4	Rdx	4/21	0.5	1	0.78	1.1			0.78 - 1.1	0.5 - 1	4GW81D0003-D	0.91	0.387619	N/A	0.61	C
INORGANICS (µg/L)																
7429-90-5	Aluminum	16/21	29.4	128	48.8	25300			48.8 - 25300	29.4 - 128	4GW1000003	3897.3625	2979.670238	50-200	5700	N
7440-38-2	Arsenic	12/21	1.1	1.1	1.1	18.8			1.1 - 18.8	1.1	4GW520003	4.454167	2.780952	50	0.045	C
7440-39-3	Barium	21/21	0	0	33.1	210			33.1 - 210	0	4GW1080003	79.140476	79.140476	2000	260	N
7440-70-2	Calcium	21/21	2900	2900	2790	86900			2790 - 86900	2900	4GW480003	21082.61905	21082.61905	N/A	N/A	
7440-47-3	Chromium	15/21	2.4	2.7	2.9	672	K		2.9 - 672	2.4 - 2.7	4GW520003	73.723333	53.005952	100	11	N
7440-48-4	Cobalt	11/21	3.8	19.6	4.9	119			4.9 - 119	3.8 - 19.6	4GW520003	35.681818	21.203571	N/A	220	N
7440-50-8	Copper	19/21	1.4	1.4	3.1	219			3.1 - 219	1.4	4GW520003	23.144737	21.007143	1300	150	N
7439-89-6	Iron	20/21	9.2	9.2	102	126000			102 - 126000	9.2	4GW520003	18405.925	17529.67143	300	1100	N
7439-92-1	Lead	3/21	1	8.3	4.3	23.5	L		4.3 - 23.5	1 - 8.3	4GW520003	12.733333	2.897619	15	15	
7439-95-4	Magnesium	21/21	0	0	3290	21300			3290 - 21300	0	4GW1050003-D	11628.80952	11628.80952	N/A	N/A	
7439-96-5	Manganese	21/21	0	0	21.5	6170			21.5 - 6170	0	4GW1100003	900.404762	900.404762	50	73	N
7439-97-6	Mercury	12/21	0.1	0.34	0.16	6.9	L		0.16 - 6.9	0.1 - 0.34	4GW520003	3.021667	1.756667	2	0.1 (a)	N
7440-02-0	Nickel	13/21	8.8	42.2	9.2	486			9.2 - 486	8.8 - 42.2	4GW520003	65.042308	42.735714	100	73	N
7440-09-7	Potassium	16/21	1740	2590	2140	13100			2140 - 13100	1740 - 2590	4GW1100003	4035.78125	3335	N/A	N/A	
7782-49-2	Selenium	8/21	2.7	3.4	2.9	70.5	K	K	2.9 - 70.5	2.7 - 3.4	4GW520003	14.89375	6.542857	50	18	N
7440-22-4	Silver	1/21	2.2	13.6	8.1	8.1			8.1	2.2 - 13.6	4GW520003	8.1	2.190476	100	18	N
7440-23-5	Sodium	21/21	0	0	3140	204000			3140 - 204000	0	4GW1100003	25448.57143	25448.57143	N/A	N/A	
7440-62-2	Vanadium	6/21	2.4	14.2	5.4	151			5.4 - 151	2.4 - 14.2	4GW520003	46.25	15.209524	N/A	26	N
7440-66-6	Zinc	10/21	7.4	26.4	6.6	102			6.6 - 102	7.4 - 26.4	4GW820003	32.05	19.283333	5000	1100	N
MISCELLANEOUS PARAMETERS (mg/L)																
	Perchlorates	1/21	4	20	10	10			10	4 - 20	4GW800003	10	2.952381	N/A	N/A	

*True minimum and maximum concentrations are shown using both duplicate samples. However, the average of the duplicates is used in calculating the averages and tabulating the frequency of detection.

(a) - Value shown for Mercury is based on Mercuric Chloride.
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

Associated Samples:

4GW1000003	4GW130003	4GW81D0003-AVG
4GW1040003	4GW150003	4GW81D0003-D
4GW1050003	4GW480003	4GW81S0003
4GW1050003-AVG	4GW49D0003	4GW820003
4GW1050003-D	4GW500003	4GW890003
4GW1060003	4GW520003	4GW890003-AVG
4GW1070003	4GW790003	4GW890003-D
4GW1080003	4GW800003	
4GW1090003	4GW800003-AVG	
4GW1100003	4GW800003-D	
4GW120003	4GW81D0003	

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER
ROUND 3 DATA - JULY 1999

CAS #	PARAMETER	REQUENCY OF DETECTION	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	MINIMUM DETECTION	MAXIMUM DETECTION	MINIMUM QUALIFIER	MAXIMUM QUALIFIER	RANGE OF POSITIVE DETECTIONS	RANGE OF NON-DETECTS	LOCATION OF MAXIMUM CONCENTRATION	AVERAGE OF POSITIVE DETECTIONS	AVERAGE OF ALL SAMPLES	FEDERAL MCL	REGION III RBC FOR TAP WATER	TAP WATER RBC BASIS
VOLATILES (µg/L)																
79-34-5	1,1,2,2-Tetrachloroethane	2/9	1	100	18	27			18 - 27	1 - 100	7GW410003	22	10.777778	N/A	0.053	C
75-27-4	Bromodichloromethane	1/9	1	100	0.44	0.44	J	J	0.44	1 - 100	7GW1030003	0.44	7.548889	80	0.17	C
108-90-7	Chlorobenzene	1/9	1	100	4.2	4.2	J	J	4.2	1 - 100	7GW410003-D	4.2	6.911111	100	11	N
67-66-3	Chloroform	6/9	10	100	0.16	20	J		0.16 - 20	10 - 100	7GW1030003	3.761667	9.73	80	0.15	C
79-01-6	Trichloroethene	4/9	1	1	0.42	710	J		0.42 - 710	1	7GW430003	246.355	109.768889	5	1.6	C
156-59-2	cis-1,2-dichloroethene	3/9	1	1	12	44		J	12 - 44	1	7GW430003	25.666667	8.888889	70	6.1	N
SEMIVOLATILES (µg/L)																
121-14-2	2,4-Dinitrotoluene	1/9	5	5	1.3	1.3	J	J	1.3	5	7GW1040003	1.3	2.366667	N/A	7.3	N
606-20-2	2,6-Dinitrotoluene	1/9	5	5	2	2	J	J	2	5	7GW080003-D	2	2.444444	N/A	3.7	N
PESTICIDES/PCBs (µg/L)																
5103-71-9	Alpha-Chlordane	2/9	0.05	0.05	0.041	0.042	J	J	0.041 - 0.042	0.05	7GW1050003	0.0415	0.028667	2	0.19	C
5103-74-2	Gamma-Chlordane	2/9	0.05	0.05	0.047	0.049	J	J	0.047 - 0.049	0.05	7GW1010003	0.048	0.030111	2	0.19	C
EXPLOSIVES (µg/L)																
118-96-7	2,4,6-Trinitrotoluene	4/9	0.2	0.2	4	300			4 - 300	0.2	7GW1040003	133.275	59.288889	N/A	2.2	C
35572-78-2	2-Amino-4,6-dinitrotoluene	5/9	0.2	0.2	0.26	94			0.26 - 94	0.2	7GW1040003	32.552	18.128889	N/A	0.22	N
19406-51-0	4-Amino-2,6-dinitrotoluene	5/9	0.2	0.2	0.28	150			0.28 - 150	0.2	7GW1040003	50.996	28.375556	N/A	N/A	
2691-41-0	Hmx	5/9	0.5	0.5	2	190			2 - 190	0.5	7GW1040003	73.08	40.711111	N/A	180	N
121-82-4	Rdx	5/9	0.5	0.5	3.5	590			3.5 - 590	0.5	7GW1040003	226.78	126.1	N/A	0.61	C
INORGANICS (µg/L)																
7429-90-5	Aluminum	9/9	0	0	67.5	1990			67.5 - 1990	0	7GW1020003	385.15	385.15	50-200	3700	N
7440-39-3	Barium	9/9	0	0	18.5	72.3			18.5 - 72.3	0	7GW420003	48.65	48.65	2000	260	N
7440-70-2	Calcium	9/9	0	0	3470	15000			3470 - 15000	0	7GW410003-D	7720.555556	7720.555556	N/A	N/A	
7440-47-3	Chromium	8/9	2.4	2.4	4.7	31.9			4.7 - 31.9	2.4	7GW080003-D	13	11.688889	100	11	N
7440-48-4	Cobalt	3/9	3.8	3.8	4	10			4 - 10	3.8	7GW430003	6.516667	3.438889	N/A	220	N
7440-50-8	Copper	9/9	0	0	2.8	8.5			2.8 - 8.5	0	7GW080003-D	5.772222	5.772222	1300	150	N
7439-89-6	Iron	9/9	0	0	115	9070	J	J	115 - 9070	0	7GW1020003	1609.666667	1609.666667	300	1100	N
7439-92-1	Lead	3/9	1	1	1	2.8			1 - 2.8	1	7GW1020003	1.883333	0.961111	15	15	
7439-95-4	Magnesium	9/9	0	0	2550	11300			2550 - 11300	0	7GW420003	6686.666667	6686.666667	N/A	N/A	
7439-96-5	Manganese	9/9	0	0	12.4	137			12.4 - 137	0	7GW420003	61.505556	61.505556	50	73	N
7439-97-6	Mercury	6/9	0.1	0.1	0.1	7.2	K		0.1 - 7.2	0.1	7GW420003	1.679167	1.136111	2	1.1 (a)	N
7440-02-0	Nickel	3/9	8.8	8.8	10	21.3			10 - 21.3	8.8	7GW080003-D	14.2	7.666667	100	73	N
7440-09-7	Potassium	9/9	0	0	1130	2100			1130 - 2100	0	7GW430003	1662.222222	1662.222222	N/A	N/A	
7440-23-5	Sodium	9/9	0	0	2960	15400			2960 - 15400	0	7GW430003	8535	8535	N/A	N/A	
7440-62-2	Vanadium	2/9	2.4	2.4	2.6	18.2			2.6 - 18.2	2.4	7GW1020003	10.4	3.244444	N/A	26	N
7440-66-6	Zinc	8/9	10.2	10.2	11.6	34.1			11.6 - 34.1	10.2	7GW1050003	20.85625	19.105556	5000	1100	N
MISCELLANEOUS PARAMETERS (µg/L)																
	Perchlorates	4/9	4	8	8	16			8 - 16	4 - 8	7GW080003-D	10.85	6.044444	N/A	N/A	

*True minimum and maximum concentrations are shown using both duplicate samples. However, the average of the duplicates is used in calculating the averages and tabulating the frequency of detection.

(a) - Value shown for Mercury is based on Mercuric Chloride.
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

Associated Samples:
7GW080003
7GW080003-AVG
7GW080003-D
7GW1010003
7GW1020003
7GW1030003
7GW1040003
7GW1050003
7GW410003
7GW410003-AVG
7GW410003-D
7GW420003
7GW430003

SITE 8
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER
ROUND 3 DATA - JULY 1999

CAS #	PARAMETER	FREQUENCY OF DETECTION	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	MINIMUM DETECTION	MAXIMUM DETECTION	MINIMUM QUALIFIER	MAXIMUM QUALIFIER	RANGE OF POSITIVE DETECTIONS	RANGE OF NON-DETECTS	LOCATION OF MAXIMUM CONCENTRATION	AVERAGE OF POSITIVE DETECTIONS	AVERAGE OF ALL SAMPLES	FEDERAL MCL	REGION III RBC FOR TAP WATER	TAP WATER RBC BASIS
VOLATILES (µg/L)																
79-00-5	1,1,2-Trichloroethane	1/7	1	1	1.3	1.3			1.3	1	8GW360003	1.3	0.614286	5	0.19	C
67-66-3	Chloroform	7/7	0	0	0.74	15	J		0.74 - 15	0	8GW350003	4.712857	4.712857	80	0.15	C
SEMIVOLATILES (µg/L)																
117-81-7	Bis(2-Ethylhexyl)phthalate	1/7	1.5	3.9	51	51			51	1.5 - 3.9	8GWB10003	51	8.607143	6	4.8	C
84-66-2	Diethyl Phthalate	2/7	5	5	1.1	4.9	J	J	1.1 - 4.9	5	8GWB30003	3	2.642857	N/A	2900	N
131-11-3	Dimethyl Phthalate	1/7	5	5	1.6	1.6	J	J	1.6	5	8GWB30003	1.6	2.371429	N/A	37000	N
INORGANICS (µg/L)																
7429-90-5	Aluminum	7/7	0	0	576	72500			576 - 72500	0	8GW350003	13875.14286	13875.14286	50-200	3700	N
7440-38-2	Arsenic	1/7	1.1	4.6	17.4	17.4			17.4	1.1 - 4.6	8GW350003	17.4	3.271429	50	0.045	C
7440-39-3	Barium	7/7	0	0	22.6	674			22.6 - 674	0	8GW350003	153.714286	153.714286	2000	260	N
7440-41-7	Beryllium	2/7	0.11	0.5	2.2	11.9			2.2 - 11.9	0.11 - 0.5	8GW350003	7.05	2.106429	4	7.3	N
7440-43-9	Cadmium	1/7	3	3	3.1	3.1	K	K	3.1	3	8GW360003	3.1	1.728571	5	3.7	N
7440-70-2	Calcium	7/7	0	0	1950	14800			1950 - 14800	0	8GW350003	6542.857143	6542.857143	N/A	N/A	
7440-47-3	Chromium	5/7	2.4	2.4	8.5	756			8.5 - 756	2.4	8GW360003	192.32	137.714286	100	11	N
7440-48-4	Cobalt	4/7	3.8	3.8	8.2	69.4			8.2 - 69.4	3.8	8GW350003	34.325	20.428571	N/A	220	N
7440-50-8	Copper	7/7	0	0	4.6	119			4.6 - 119	0	8GW350003	30.028571	30.028571	1300	150	N
7439-89-6	Iron	7/7	0	0	1310	120000	J	J	1310 - 120000	0	8GW350003	25775.71429	25775.71429	300	1100	N
7439-92-1	Lead	5/7	1	1	1.2	30.8			1.2 - 30.8	1	8GW350003	8.74	6.385714	15	15	
7439-95-4	Magnesium	7/7	0	0	1660	26700			1660 - 26700	0	8GW350003	7430	7430	N/A	N/A	
7439-96-5	Manganese	7/7	0	0	37.4	2060			37.4 - 2060	0	8GW350003	702.771429	702.771429	50	73	N
7439-97-6	Mercury	1/7	0.1	0.1	0.19	0.19	K	K	0.19	0.1	8GW360003	0.19	0.07	2	1.1 (a)	N
7440-02-0	Nickel	5/7	8.8	8.8	10.2	573			10.2 - 573	8.8	8GW360003	157.3	113.614286	100	73	N
7440-09-7	Potassium	7/7	0	0	1550	27200			1550 - 27200	0	8GW350003	8340	8340	N/A	N/A	
7440-22-4	Silver	2/7	2.2	2.2	2.5	3.5	J	K	2.5 - 3.5	2.2	8GW360003	3	1.642857	100	18	N
7440-23-5	Sodium	7/7	0	0	2930	8950			2930 - 8950	0	8GWB30003	6437.142857	6437.142857	N/A	N/A	
7440-28-0	Thallium	3/7	3.7	3.7	4.4	9.6		L	4.4 - 9.6	3.7	8GW350003	6.133333	3.685714	2	0.26	N
7440-62-2	Vanadium	3/7	2.4	2.4	4.7	166			4.7 - 166	2.4	8GW350003	68.933333	30.228571	N/A	26	N
7440-66-6	Zinc	7/7	0	0	18	358			18 - 358	0	8GW350003	91.8	91.8	5000	1100	N

*True minimum and maximum concentrations are shown using both duplicate samples. However, the average of the duplicates is used in calculating the averages and tabulating the frequency of detection.

(a) - Value shown for Mercury is based on Mercuric Chloride.
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

Associated Samples:
8GW330003
8GW340003
8GW350003
8GW360003
8GW530003
8GWB10003
8GWB30003

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
STATISTICAL SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER
ROUND 3 DATA - AUGUST 1999

CAS #	PARAMETER	FREQUENCY OF DETECTION	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	MINIMUM DETECTION	MAXIMUM DETECTION	MINIMUM QUALIFIER	MAXIMUM QUALIFIER	RANGE OF POSITIVE DETECTIONS	RANGE OF NON-DETECTS	LOCATION OF MAXIMUM CONCENTRATION	AVERAGE OF POSITIVE DETECTIONS	AVERAGE OF ALL SAMPLES	FEDERAL MCL	REGION III RBC FOR TAP WATER	TAP WATER RBC BASIS
VOLATILES (µg/L)																
71-55-6	1,1,1-Trichloroethane	1/30	1	2	0.44	0.44	J	J	0.44	1 - 2	9GW440003	0.44	0.514667	200	54	N
107-06-2	1,2-Dichloroethane	3/30	1	2	0.32	0.49	J	J	0.32 - 0.49	1 - 2	9GW020003	0.383333	0.505	5	0.12	C
78-93-3	2-Butanone	7/7	0	0	2.8	6.8	L	L	2.8 - 6.8	0	9GW1050003	4.7	4.7	N/A	190	N
67-84-1	Acetone	1/20	0.86	5.3	36	36	L	L	36	0.86 - 5.3	9GWC140003	36	2.99775	N/A	61	N
71-43-2	Benzene	1/30	1	2	0.26	0.26	J	J	0.26	1 - 2	9GWC140003	0.26	0.508667	5	0.36	C
75-27-4	Bromodichloromethane	2/30	1	2	0.21	0.36	J	J	0.21 - 0.36	1 - 2	9GWC50003	0.285	0.502333	80	0.17	C
56-23-5	Carbon Tetrachloride	4/30	1	2	0.17	0.87	J	J	0.17 - 0.87	1 - 2	9GW020003	0.5125	0.518333	5	0.16	C
108-90-7	Chlorobenzene	6/30	1	2	0.16	0.23	J	J	0.16 - 0.23	1 - 2	9GW020003	0.181667	0.453	100	11	N
67-66-3	Chloroform	22/30	1	1	0.17	8.4	J		0.17 - 8.4	1	9GW440003	2.276818	1.803	80	0.15	C
74-87-3	Chloromethane	8/30	1	1	0.56	2.7	J		0.56 - 2.7	1	9GW070003	0.9575	0.622	N/A	2.1	C
127-18-4	Tetrachloroethene	6/30	1	2	0.18	4.7	J		0.18 - 4.7	1 - 2	9GW020003	1.22	0.660667	5	1.1	C
108-88-3	Toluene	1/30	1	2	0.41	0.41	J	J	0.41	1 - 2	9GWC140003	0.41	0.513667	1000	75	N
79-01-6	Trichloroethene	17/30	1	1	0.18	27	J	J	0.18 - 27	1	9GW57D0003	6.007353	3.620833	5	1.6	C
1330-20-7	Xylenes, Total	1/30	1	2	0.43	0.43	J	J	0.43	1 - 2	9GWC140003	0.43	0.514333	10000	1200	N
156-59-2	cis-1,2-dichloroethene	8/30	1	1	0.3	3.6	J		0.3 - 3.6	1	9GW57D0003	1.386875	0.7365	70	6.1	N
SEMIVOLATILES (µg/L)																
117-81-7	Bis(2-Ethylhexyl)phthalate	8/29	1.2	27	2.1	120	J		2.1 - 120	1.2 - 27	9GW590003	29.2375	10.390517	6	4.8	C
84-74-2	Di-n-butyl phthalate	1/29	5	5	1.2	1.2	J	J	1.2	5	9GW050003	1.2	2.455172	N/A	370	N
PESTICIDES/PCBs (µg/L)																
5103-71-9	Alpha-Chlordane	5/29	0.05	0.05	0.03	0.34	J	J	0.03 - 0.34	0.05	9GW010003	0.1148	0.040483	2	0.10	C
5103-74-2	Gamma-Chlordane	3/29	0.05	0.05	0.038	0.28	J		0.038 - 0.28	0.05	9GW010003	0.122667	0.035103	2	0.10	C
1024-57-3	Heptachlor Epoxide	3/29	0.05	0.05	0.035	0.039	J	J	0.035 - 0.039	0.05	9GW010003	0.037333	0.026276	0.2	0.0074	C
EXPLOSIVES (µg/L)																
606-20-2	2,6-Dinitrotoluene	2/29	0.2	4	0.26	0.32		J	0.26 - 0.32	0.2 - 4	9GW550003	0.29	0.192414	N/A	3.7	N
2691-41-0	Hmx	13/29	0.5	0.5	0.71	13			0.71 - 13	0.5	9GW0580003	3.631538	1.765862	N/A	180	N
121-82-4	Rdx	15/29	0.5	0.5	0.63	160			0.63 - 160	0.5	9GW010003	15.636	8.208276	N/A	0.61	C
INORGANICS (µg/L)																
7429-90-5	Aluminum	28/30	34.6	60	33.7	19900			33.7 - 19900	34.6 - 60	9GW070003	3694.875	3450.126667	50-200	3700	N
7440-38-2	Arsenic	12/30	1.1	1.8	1.1	17.8			1.1 - 17.8	1.1 - 1.8	9GW070003	5.85	2.691667	50	0.045	C
7440-39-3	Barium	29/30	17	17	20.2	151			20.2 - 151	17	9GW070003	64.153448	62.298333	2000	260	N
7440-41-7	Beryllium	1/30	0.1	1.3	0.17	0.17			0.17	0.1 - 1.3	9GW1060003	0.17	0.167083	4	7.3	N
7440-43-9	Cadmium	2/30	3	3	3.1	6.7		L	3.1 - 6.7	3	9GW440003	4.9	1.726667	5	3.7	N
7440-70-2	Calcium	28/30	878	3140	1650	23900			1650 - 23900	878 - 3140	9GW1000003	7047.678571	6644.8	N/A	N/A	
7440-47-3	Chromium	23/30	2.4	2.4	2.8	106	K		2.8 - 106	2.4	9GW0580003	32.523913	25.215	100	11	N
7440-48-4	Cobalt	17/30	3.8	20	5.1	62			5.1 - 62	3.8 - 20	9GW1020003	23.288235	15.06	N/A	220	N
7440-50-8	Copper	21/30	1.4	8	1.4	79.6			1.4 - 79.6	1.4 - 8	9GW0580003	19.85	14.5025	1300	150	N
7439-89-6	Iron	29/30	9.2	9.2	62	95200			62 - 95200	9.2	9GW0580003	14288.11724	13812	300	1100	N
7439-92-1	Lead	13/30	1	1	1	35.7			1 - 35.7	1	9GW0580003	10.123077	4.67	15	15	
7439-95-4	Magnesium	30/30	0	0	949	13700			949 - 13700	0	9GW1000003	4927.633333	4927.633333	N/A	N/A	
7439-96-5	Manganese	30/30	0	0	12.4	1280			12.4 - 1280	0	9GW1100003	286.116667	286.116667	50	73	N
7439-97-6	Mercury	9/30	0.1	0.1	0.1	8.2			0.1 - 8.2	0.1	9GW0580003	1.422222	0.461667	2	1.1 (a)	N
7440-02-0	Nickel	16/30	8.8	44.7	9.1	71.7	K		9.1 - 71.7	8.8 - 44.7	9GW050003	23.426563	15.714167	100	73	N
7440-09-7	Potassium	21/30	1240	2430	1180	11000			1180 - 11000	1240 - 2430	9GWC140003	4243.333333	3253	N/A	N/A	
7782-49-2	Selenium	3/30	2.7	8	5.4	23.2			5.4 - 23.2	2.7 - 8	9GW070003	12.566667	2.625	50	18	N
7440-22-4	Silver	1/30	2.2	12.5	2.4	2.4	K	K	2.4	2.2 - 12.5	9GW590003	2.4	1.523333	100	18	N
7440-23-5	Sodium	30/30	0	0	4530	49200			4530 - 49200	0	9GW440003	15740.5	15740.5	N/A	N/A	
7440-28-0	Thallium	1/30	3.7	8.9	4.9	4.9			4.9	3.7 - 8.9	9GWBLDG3670003	4.9	2.4925	2	0.26	N
7440-62-2	Vanadium	15/30	2.4	8.5	3.4	150			3.4 - 150	2.4 - 8.5	9GW070003	38.748333	20.174167	N/A	26	N
7440-66-6	Zinc	17/30	5.8	25.1	10.4	801	J		10.4 - 801	5.8 - 25.1	9GWBLDG3670003	82.905882	50.138333	5000	1100	N

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
STATISTICAL SUMMARY OF CHEMICALS DETECTED IN GROUNDWATER
ROUND 3 DATA - AUGUST 1999

CAS #	PARAMETER	FREQUENCY OF DETECTION	MINIMUM NON-DETECT	MAXIMUM NON-DETECT	MINIMUM DETECTION	MAXIMUM DETECTION	MINIMUM QUALIFIER	MAXIMUM QUALIFIER	RANGE OF POSITIVE DETECTIONS	RANGE OF NON-DETECTS	LOCATION OF MAXIMUM CONCENTRATION	AVERAGE OF POSITIVE DETECTIONS	AVERAGE OF ALL SAMPLES	FEDERAL MCL	REGION III RBC FOR TAP WATER	TAP WATER RBC BASIS
MISCELLANEOUS PARAMETERS (µg/L)																
	Perchlorates	9/30	4	4	4	240			4 - 240	4	9GW010003	37.866667	12.76	N/A	N/A	

*True minimum and maximum concentrations are shown using both duplicate samples. However, the average of the duplicates is used in calculating the averages and tabulating the frequency of detection.

(a) - Value shown for Mercury is based on Mercuric Chloride.
All Region III Tap Water RBC values have been divided by a factor of 10 for non-carcinogenic compunds.

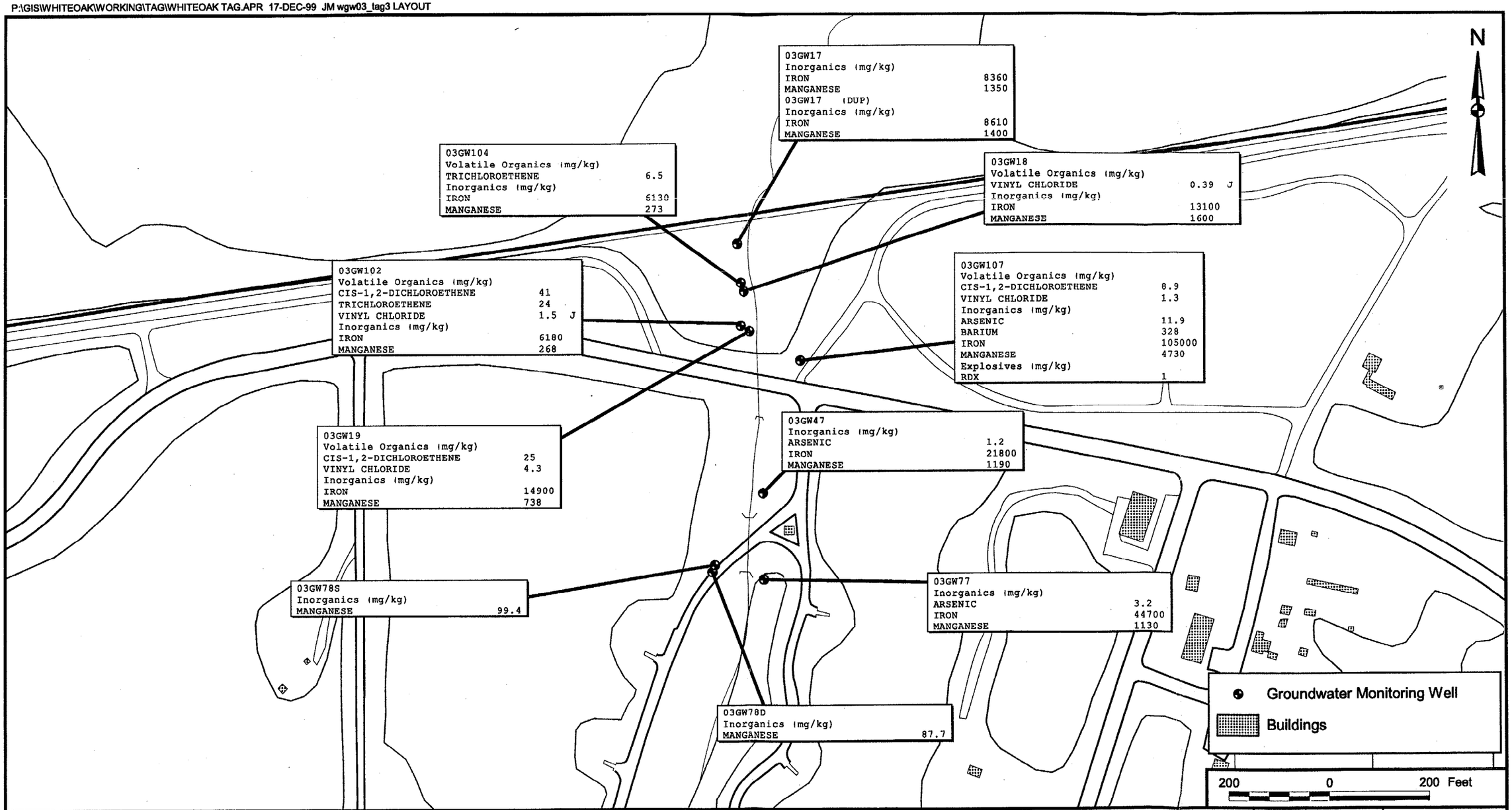
Associated Samples:

9GW010003	9GW1000003	9GW550003
9GW020003	9GW1010003	9GW57D0003
9GW020003-AVG	9GW1020003	9GW57S0003
9GW020003-D	9GW1030003	9GW590003
9GW030003	9GW1040003	9GW740003
9GW040003	9GW1050003	9GW750003
9GW050003	9GW1060003	9GW830003
9GW0580003	9GW1070003	9GWBLDG3670003
9GW060003	9GW1080003	9GWC140003
9GW060003-AVG	9GW1090003	9GWC50003
9GW060003-D	9GW1100003	9GWC60003
9GW070003	9GW440003	

SECTION D

SUMMARY OF EXCEEDANCES OF REGION 3 RBCs FOR CRITICAL CONSTITUENTS IN GROUNDWATER

P:\GIS\WHITEOAK\WORKING\TAG\WHITEOAK TAG.APR 17-DEC-99 JM wgw03_tag3 LAYOUT



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

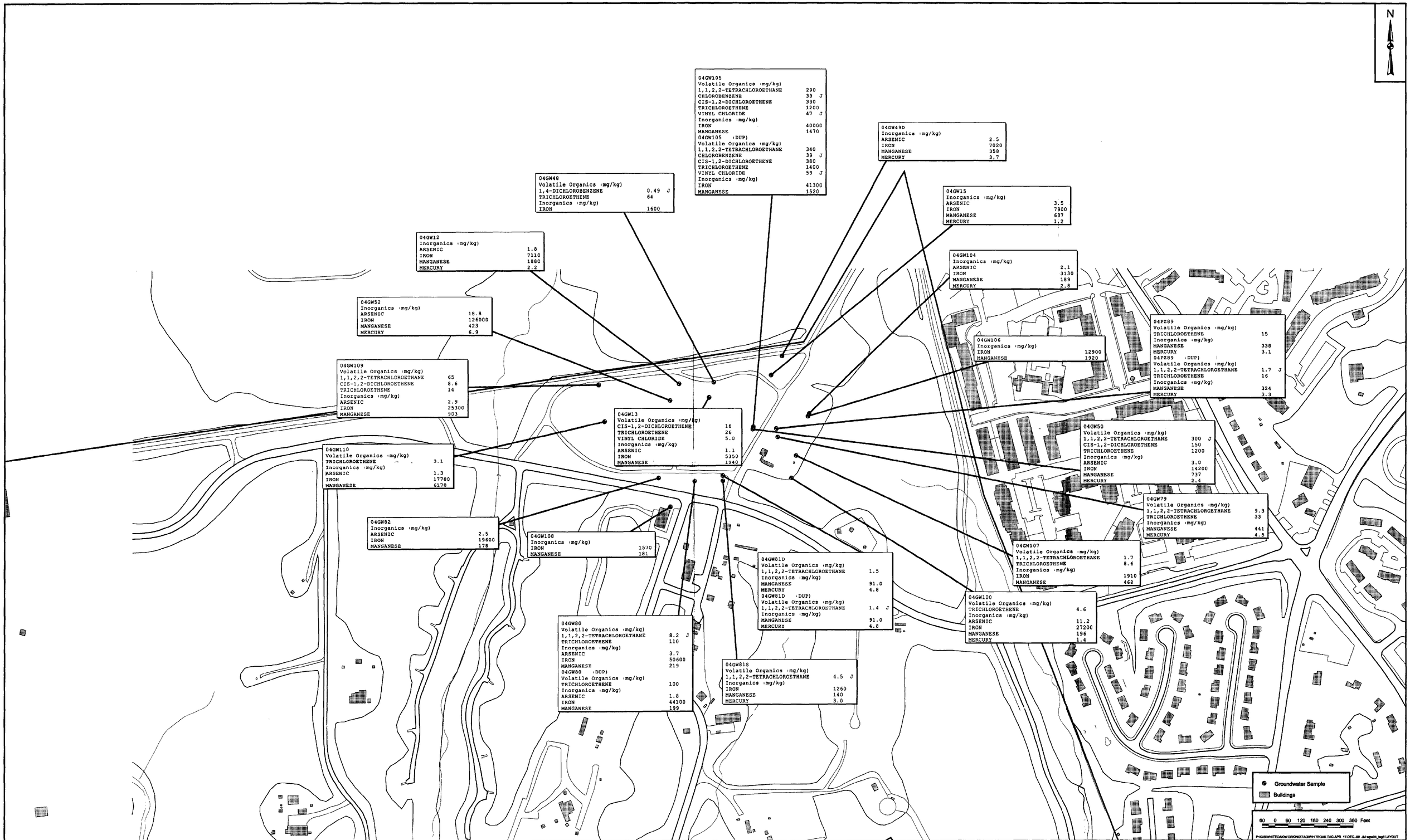
DRAWN BY JM	DATE 12/17/99
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.

SUMMARY OF EXCEEDANCES OF REGION 3 RBCs
FOR CRITICAL CONSTITUENTS IN GROUND WATER
SITE 3
PISTOL RANGE LANDFILL
NSWC WHITE OAK
SILVER SPRING, MARYLAND
ROUND 3 DATA - AUGUST 1999

CONTRACT NUMBER	OWNER NUMBER
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV 0

00405E012



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	NO.	RELEASED FOR	BY	DATE

DRAWN BY JM	DATE 12/17/99
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	

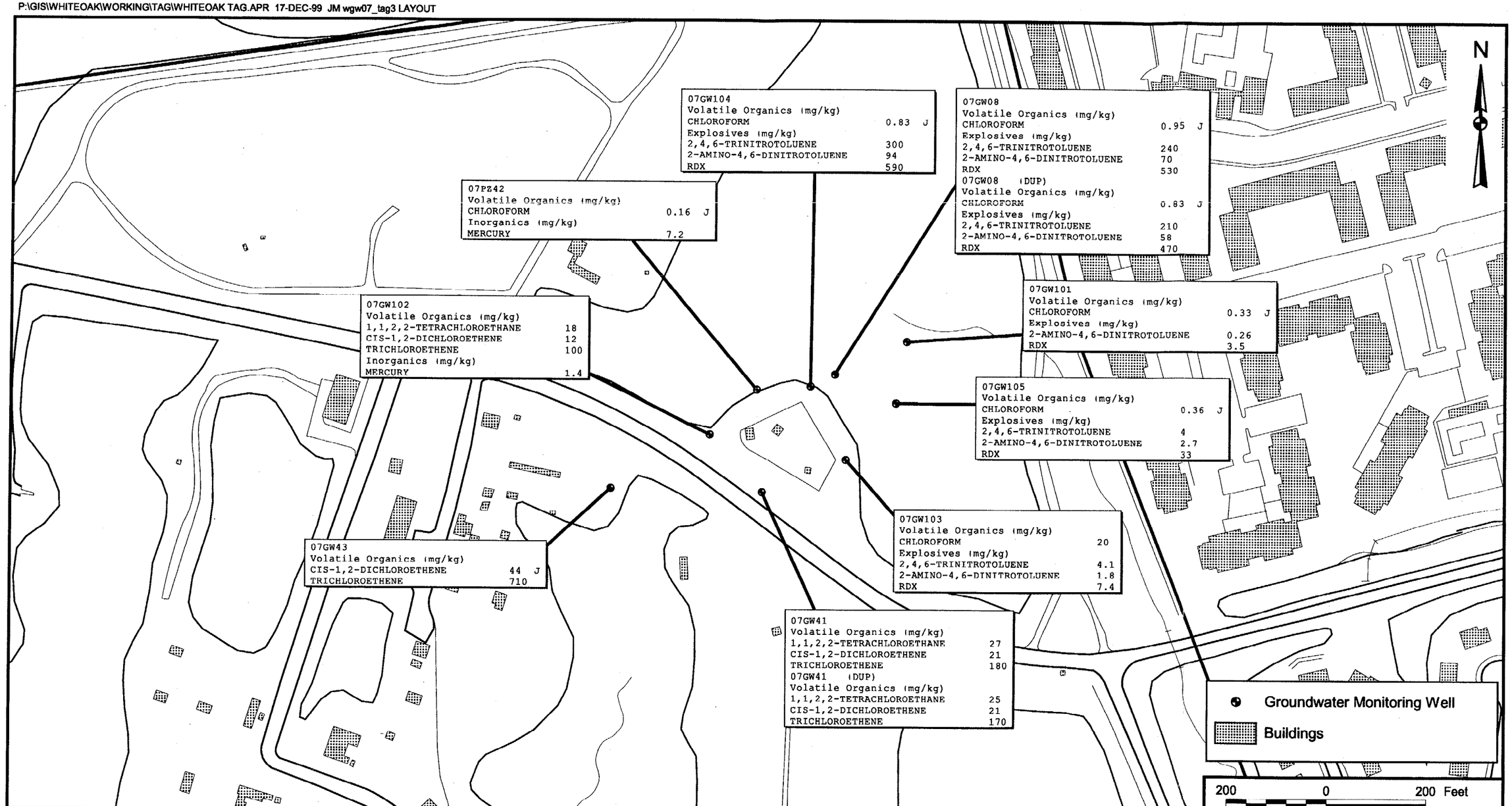
Tetra Tech NUS, Inc.

SUMMARY OF EXCEEDANCES OF REGION 3 RBCs FOR CRITICAL CONSTITUENTS IN GROUND WATER
SITE 4
CHEMICAL BURIAL AREA
NSWC WHITE OAK
SILVER SPRING, MARYLAND
ROUND 3 DATA AUGUST 1999

CONTRACT NO. 7687	OWNER NO.
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3	REV. 0

00405E02X

P:\GIS\WHITEOAK\WORKING\TAG\WHITEOAK TAG.APR 17-DEC-99 JM wgw07_tag3 LAYOUT



DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY JM	DATE 12/17/99
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	

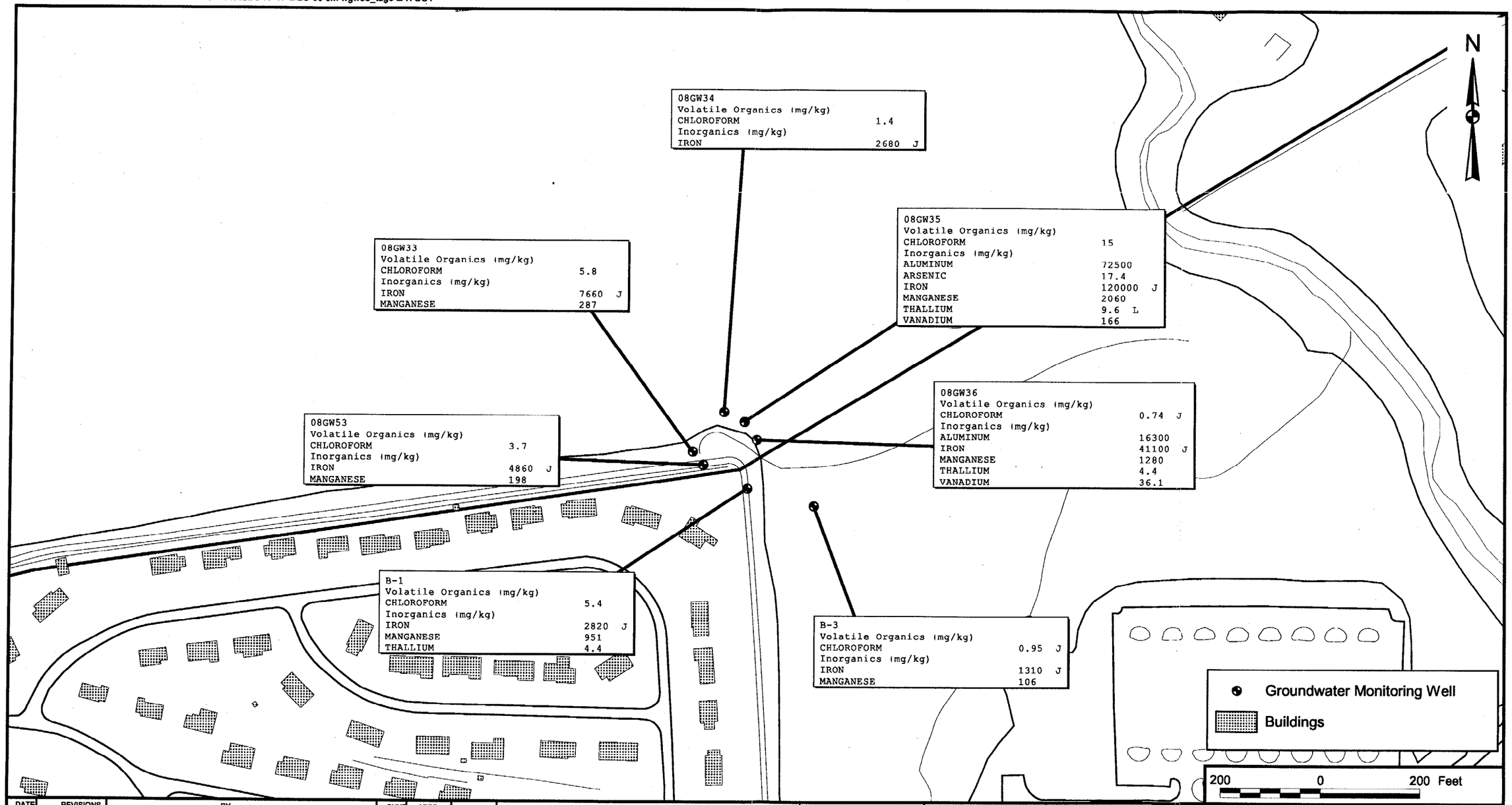
Tetra Tech NUS, Inc.

SUMMARY OF EXCEEDANCES OF REGION 3 RBCs
FOR CRITICAL CONSTITUENTS IN GROUND WATER
SITE 7
ORDNANCE BURN AREA
NSWC WHITE OAK
SILVER SPRING, MARYLAND
ROUND 3 DATA - AUGUST 1999

CONTRACT NUMBER	OWNER NUMBER
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 4	REV 0

00405EB32

P:\GIS\WHITEOAK\WORKING\TAG\WHITEOAK TAG.APR 17-DEC-99 JM wgw08_tag3 LAYOUT



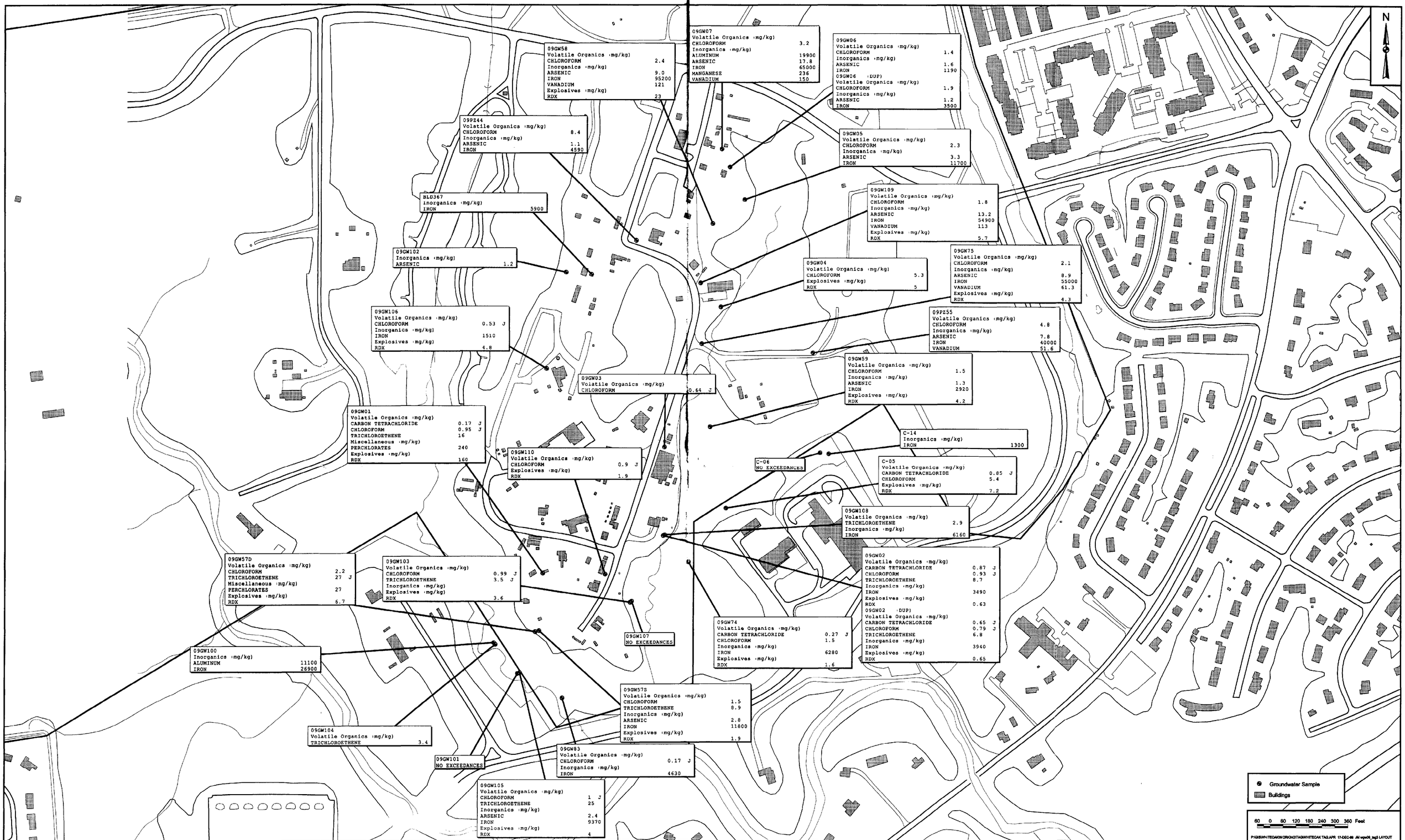
DATE	REVISIONS	BY	CHKD	APPD		REFERENCES

DRAWN BY JM	DATE 12/17/99
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	

Tetra Tech NUS, Inc.

SUMMARY OF EXCEEDANCES OF REGION 3 RBCs
FOR CRITICAL CONSTITUENTS IN GROUND WATER
SITE 8
ABANDONED CHEMICAL DISPOSAL PIT
NSWC WHITE OAK
SILVER SPRING, MARYLAND
ROUND 3 DATA - AUGUST 1999

CONTRACT NUMBER	OWNER NUMBER
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 5	REV 0



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	NO.	RELEASED FOR	BY	DATE

DRAWN BY	DATE
JM	12/17/99
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE	
AS NOTED	

Tetra Tech NUS, Inc.

SUMMARY OF EXCEEDANCES OF REGION 3 RBCs
FOR CRITICAL CONSTITUENTS IN SEDIMENT
SITE 9
INDUSTRIAL WASTEWATER DISPOSAL AREA 300
NSWC WHITE OAK
SILVER SPRING, MARYLAND
ROUND 3 DATA - AUGUST1999

CONTRACT NO.	OWNER NO.
7687	—
APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—
DRAWING NO.	REV.
FIGURE 6	0

CC405E04X

SECTION E

ANALYTICAL DATA: POSITIVE DETECTIONS

SITE 2

GROUNDWATER DATA
JULY/AUGUST 1999

POSITIVE DETECTIONS

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW1000003	2GW1010003	2GW1020003	2GW1020003-D	2GW1030003	2GW1040003	2GW1050003
LOCATION:	02SB100/2GW100	02SB101/2GW101	02GW102	02GW102	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/26/99	07/22/99	07/22/99	07/21/99	07/22/99	07/21/99
ASSOCIATED DUPLICATE:			2GW1020003-D	2GW1020003			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)							
1,1,1-TRICHLOROETHANE	0.21 J	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	0.23 J	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	1.2	0.61 J	1 U	1 U	0.18 J	1 U	1 U
CIS-1,2-DICHLOROETHENE	0.33 J	0.36 J	2.8	2.8	1 U	2.1	0.25 J
TRICHLOROETHENE	3.9	2.5	6.7	6.4	0.86 J	1.3	1.3
SEMIVOLATILES (µg/L)							
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	1.4 J	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	2.7 B	5 B	4 B	43 J	1.2 B	3.8 B	4.4 B
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	1.8 J
EXPLOSIVES (µg/L)							
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.68
RDX	0.5 U	0.5 U	0.5 U	0.5 U	0.86	0.5 U	0.5 U
INORGANICS (µg/L)							
ALUMINUM	362	373	75.6 B	73.6 B	2690	1320	1930
ARSENIC	1.1 U	1.1 U	1.4	1.1 U	1.7	2.4	1.1 U
BARIUM	858	306	436	445	66.4	302	139
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL
CALCIUM	156000	40300	53600	57000	19100	68100	15100
CHROMIUM	4.9 K	5.0	2.4 U	2.4 U	5.0	2.4 U	3.1
COBALT	8.1 K	3.8 U	4.8	3.9	3.8 U	3.8 U	8.2
COPPER	12.3	4.9 U	1.4 U	1.7 B	7.6 B	7.2 B	13.8
CYANIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
IRON	791	1120	11000	11400	5320	3760	4090
LEAD	1.0 UL	1.0 U	1.0 U	1.0 U	1.8 K	1.0 U	1.0 U
MAGNESIUM	54400	23600	21200	21800	7590	19900	9200
MANGANESE	525	607	1130	1180	298	413	311
MERCURY	0.11	0.21	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
NICKEL	23.9 L	85.7	8.8 U	8.8 U	10.8	8.8 U	59.0
POTASSIUM	11100	5470	6870	6800	7380	6930	5470
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.3
SODIUM	514000	72200	17600	17600	34400	30700	30400
THALLIUM	8.6 L	4.2	3.9	4.5	4.5	5.3	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	**2GW1000003**	**2GW1010003**	**2GW1020003**	**2GW1020003-D**	**2GW1030003**	**2GW1040003**	**2GW1050003**
LOCATION:	**02SB100/2GW100**	**02SB101/2GW101**	**02GW102**	**02GW102**	**02GW103**	**02GW104**	**02GW105**
SAMPLE DATE:	**07/21/99**	**07/26/99**	**07/22/99**	**07/22/99**	**07/21/99**	**07/22/99**	**07/21/99**
ASSOCIATED DUPLICATE:			**2GW1020003-D**	**2GW1020003**			
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
ZINC	70.9	58.1	5.0	5.3	22.3	49.3	34.1
MISCELLANEOUS PARAMETERS (µg/L)							
PERCHLORATES	50 U	16 U	8 U	8 U	8 U	8 U	8 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW300003	2GW310003	2GW320003	2GW450003	2GW760003
LOCATION:	02GW30	02GW31	02GW32	02GW45	02GW76
SAMPLE DATE:	07/22/99	07/21/99	07/26/99	07/21/99	07/20/99
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)					
1,1,1-TRICHLOROETHANE	1 U	1 U	3 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	1 U	3 U	1 U	1 U
CHLOROFORM	0.23 J	1 U	3 U	0.2 J	1 U
CIS-1,2-DICHLOROETHENE	0.43 J	1 U	0.93 J	0.23 J	1 U
TRICHLOROETHENE	14	1 U	35	2.6 J	1 U
SEMIVOLATILES (µg/L)					
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	2.3 J	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	8 B	4.1 B	6.8 B	8.7 B	6.2 B
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U
EXPLOSIVES (µg/L)					
HMX	0.5 U	0.5 U	0.5 U	12	0.5 U
RDX	0.5 U	0.5 U	0.5 U	1 U	0.5 U
INORGANICS (µg/L)					
ALUMINUM	239 B	52500	7710	9460	588
ARSENIC	1.4	9.4	10.0	2.4	1.9
BARIUM	52.0	222	182	119	23.4
CADMIUM	3.0 UL	3.0 UL	12.3 L	3.0 UL	3.0 UL
CALCIUM	67300	5620	145000	43400	2100
CHROMIUM	3.5	51.5	2.4 U	13.2	5.9
COBALT	9.0	48.2	93.5	19.8	3.8 U
COPPER	6.7 B	87.7	16.2	22.2	10.4
CYANIDE	1.4 U	1.4 U	1.4 U	1.9	1.4 U
IRON	500	80100	130	25400	456
LEAD	1.0 U	21.7	7.3	5.2 K	1.0 U
MAGNESIUM	37000	12700	88600	22100	1100
MANGANESE	3360	1580	18200	1010	139
MERCURY	0.10 U	0.29	1.8	0.10 U	0.10 U
NICKEL	36.4	74.1	155	27.1	8.8 U
POTASSIUM	8180	10200	26500	6390	1880
SILVER	2.2 U	3.3	3.8 K	2.2 U	2.5
SODIUM	267000	3990	3400000	241000	66800
THALLIUM	5.7	5.8	12.3 L	6.1	5.6
VANADIUM	2.4 U	54.5	2.4 U	15.4	2.4 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	**2GW300003**	**2GW310003**	**2GW320003**	**2GW450003**	**2GW760003**
LOCATION:	**02GW30**	**02GW31**	**02GW32**	**02GW45**	**02GW76**
SAMPLE DATE:	**07/22/99**	**07/21/99**	**07/26/99**	**07/21/99**	**07/20/99**
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
ZINC	18.8	172	300	49.6	14.2
MISCELLANEOUS PARAMETERS (µg/L)					
PERCHLORATES	32 U	4 U	200 U	20 U	8 U

SITE 2

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

POSITIVE DETECTIONS

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	2GW310003-F	2GW450003-F	2GW760003-F	2GW1010003-F	2GW1030003-F	2GW1040003-F	2GW1050003-F
LOCATION:	02GW31	02GW45	02GW76	02SB101/2GW101	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/21/99	07/20/99	07/26/99	07/21/99	07/22/99	07/21/99
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)							
ANTIMONY	1.7 U	1.7 U	1.7 U	2.1	1.7 U	1.7 U	1.7 U
BARIUM	19.4	61.6	24.3	312	25.4	282	105
CALCIUM	3490	42600	2070	39300	19100	59100	14200
COBALT	3.8 U	8.4	3.8 U	5.4	3.8 U	3.8 U	6.6
IRON	25.3 B	116 B	84.5 B	21.2 B	85.6 B	561	241
MAGNESIUM	2400	21300	1120	24300	7340	19900	8470
MANGANESE	17.2	908	143	549	163	352	289
MERCURY	0.10 U	0.10 U	0.10 U	0.13	0.10 U	0.1 U	0.10 U
NICKEL	8.8 U	8.8 U	8.8 U	82.9	8.8 U	8.8 U	55.9
POTASSIUM	1210	5310	2230	6030	6900	7510	4840
SODIUM	3450	264000	75400	79100	38800	34300	31300
THALLIUM	3.7 U	5.5	3.7 U	4.3	3.7 U	3.7 U	3.7 U
ZINC	4.4	9.5	9.7	51.5	8.3	17.1	41.6

SITE 3

GROUNDWATER DATA
JULY/AUGUST 1999

POSITIVE DETECTIONS

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW170003	3GW170003-D	3GW180003	3GW190003	3GW470003	3GW770003	3GW78D0003	3GW78S0003
LOCATION:	03GW17	03GW17	03GW18	03GW19	03GW47	03GW77	03GW78D	03GW78S
SAMPLE DATE:	07/27/99	07/27/99	07/27/99	07/30/99	07/26/99	07/26/99	07/28/99	07/27/99
ASSOCIATED DUPLICATE:	3GW170003-D	3GW170003						
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U	3.9	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U	1 U	1 U	1.4 J	1 U	1 U	1 U	1 U
CHLOROBENZENE	1 U	1 U	0.38 J	48	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	0.28 J	0.26 J	2.9	25	0.57 J	1.5	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	0.24 J	5.4	1 U	1 U	1 U	1 U
TRICHLOROETHENE	1 U	1 UJ	0.81 J	1.1 J	0.48 J	0.32 J	1 U	1 U
VINYL CHLORIDE	1 U	1 U	0.39 J	4.3	1 U	1 U	1 U	1 U
EXPLOSIVES (µg/L)								
2,4,6-TRINITROTOLUENE	0.2 U	0.23	0.2 U	0.2 U	0.34 U	0.2 U	0.21	0.2 U
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.86 U	0.5 U	0.5 U	0.5 U
RDX	0.5 U	0.5 U	0.5 U	0.5 U	0.86 U	0.5 U	0.5 U	0.5 U
INORGANICS (µg/L)								
ALUMINUM	90.6 B	145 B	912	103	9040	14100	29.4 U	221 B
ANTIMONY	1.7 U	1.7 U	1.7 U	1.7 U	1.9	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.2	3.2	1.1 U	1.1 U
BARIUM	87.0	89.1	54.6	166	129	142	104	39.0
CALCIUM	25200	26000	15000	25400	10900	7970	14200	4680
CHROMIUM	2.4 U	2.4 U	3.2 K	7.0 K	17.4	40.5	2.4 U	5.5
COBALT	5.4	8.7	15.1	7.6	9.3	39.3	3.8 U	4.8
COPPER	3.8 B	5.5 B	6.2	3.1	18.7	25.0	1.4 U	4.1 B
CYANIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
IRON	8360	8610	13100	14900	21800	44700	777	445
LEAD	1.0 U	1.0 U	1.0 UL	1.0 UL	6.7	5.6 K	1.0 UL	1.0 U
MAGNESIUM	18300	18900	10900	11300	6730	9110	6820	3190
MANGANESE	1350	1400	1600	738	1190	1130	87.7	99.4
MERCURY	0.10 U	0.10 U	0.10 UL	0.10 UL	0.13	0.10 U	0.10 UL	0.10 U
NICKEL	43.9	52.9	41.8	13.8	9.2	29.6	8.8 U	8.8 U
POTASSIUM	3640	3920	2930	4230	4070	6970	3700	1630
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	15400	16000	10100	22200	29000	37500	13500	10200
THALLIUM	3.7 U	3.7 U	5.5 B	4.5 B	3.7 U	3.8	4.2 B	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4	14.2	27.2	2.4 U	2.4 U
ZINC	18.7	13.8	22.9	12.6	37.4	75.2	2.1	41.8
MISCELLANEOUS PARAMETERS (µg/L)								
PERCHLORATES	8 U	8 U	4 U	4 U	4 U	4 U	4 U	4 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW1020003	3GW1040003	3GW1070003
LOCATION:	03GW102	03GW104	03GW107
SAMPLE DATE:	07/29/99	07/27/99	07/27/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)			
1,2,4-TRICHLOROBENZENE	5 U	1 U	1 U
1,3-DICHLOROBENZENE	5 U	1 U	1 U
CHLOROBENZENE	5 U	1 U	0.21 B
CIS-1,2-DICHLOROETHENE	41	3.5	8.9
TETRACHLOROETHENE	5 U	1 U	0.36 J
TRANS-1,2-DICHLOROETHENE	5 U	1 U	0.42 J
TRICHLOROETHENE	24	6.5	0.88 J
VINYL CHLORIDE	1.5 J	1 U	1.3
EXPLOSIVES (µg/L)			
2,4,6-TRINITROTOLUENE	0.2 U	0.2 U	0.2 U
HMX	0.5 U	0.5 U	1
RDX	0.5 U	0.5 U	1
INORGANICS (µg/L)			
ALUMINUM	29.4 U	744	70400
ANTIMONY	1.7 U	1.7 U	1.7 UL
ARSENIC	1.1 U	1.1 U	11.9
BARIUM	147	159	328
CALCIUM	25200	19700	16400
CHROMIUM	2.4 U	50.1	108
COBALT	3.8 U	16.2	79.1
COPPER	1.4 U	8.8	169
CYANIDE	1.4 U	1.7	1.4 U
IRON	6180	6130	105000
LEAD	1.0 UL	1.0 UL	49.3
MAGNESIUM	10900	8400	18200
MANGANESE	268	273	4730
MERCURY	0.10 UL	0.10 UL	0.27
NICKEL	8.8 U	39.9	106
POTASSIUM	4020	3500	20700
SELENIUM	2.7 U	2.7 U	5.8 K
SILVER	2.2 U	2.2 U	5.5 K
SODIUM	10300	9250 K	34200
THALLIUM	3.7 U	4.4 B	3.9 L
VANADIUM	2.4 U	2.4 U	141
ZINC	7.3	14.3	278
MISCELLANEOUS PARAMETERS (µg/L)			
PERCHLORATES	4 U	4 U	4 U

SITE 3

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

POSITIVE DETECTIONS

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW180003-F	3GW470003-F	3GW770003-F	3GW1040003-F	3GW1070003-F
LOCATION:	03GW18	03GW47	03GW77	03GW104	03GW107
SAMPLE DATE:	07/27/99	07/26/99	07/26/99	07/27/99	07/27/99
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)					
BARIUM	50.0	57.7	42.5	124	44.9
CALCIUM	14800	11500	7510	21600	8820
CHROMIUM	2.4 U	2.4 U	2.4 U	6.8 K	2.4 U
COBALT	14.9	6.6	6.0	5.4	26.1
IRON	12300	1200	23000	2830	2800
MAGNESIUM	10700	5540	4670	8320	5850
MANGANESE	1540	1390	1060	269	3050
NICKEL	43.8	8.8 U	8.8 U	13.1	24.0
POTASSIUM	3020	2830	2840	3860	6600
SODIUM	10000 K	29300	41300	9180 K	27700
THALLIUM	4.2 B	3.7 U	4.1	4.1 B	3.7 U
ZINC	11.3	9.1	2.8	6.1	16.5

SITE 4

GROUNDWATER DATA
JULY/AUGUST 1999

POSITIVE DETECTIONS

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW120003	4GW130003	4GW150003	4GW480003	4GW49D0003	4GW500003	4GW520003	4GW790003	4GW800003
LOCATION:	04GW12	04GW13	04GW15	04GW48	04GW49D	04GW50	04GW52	04GW79	04GW80
SAMPLE DATE:	07/30/99	08/03/99	08/02/99	08/03/99	08/02/99	07/28/99	07/30/99	08/02/99	08/02/99
ASSOCIATED DUPLICATE:									4GW800003-D
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)									
1,1,2,2-TETRACHLOROETHANE	1 U	2 U	1 U	1 U	1 U	300 J	1 U	9.3	8.2 J
1,1,2-TRICHLOROETHANE	1 U	0.46 J	1 U	0.15 J	1 U	100 U	1 U	2 U	10 U
1,1-DICHLOROETHANE	1 U	2 U	0.37 J	1 U	0.62 J	100 U	1 U	2 U	10 U
1,2-DICHLOROETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,4-DICHLOROBENZENE	1 U	2 U	1 U	0.49 J	1 U	100 U	1 U	2 U	10 U
BENZENE	1 U	0.99 B	1 U	1 U	1 U	100 U	1 U	2 U	10 U
BROMOMETHANE	0.11 J	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
CARBON DISULFIDE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
CHLOROBENZENE	1 U	6.3	1 U	0.2 B	1 U	100 U	1 U	0.47 B	10 U
CHLOROETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
CHLOROFORM	1 U	2 U	1 U	0.27 J	1 U	100 U	0.25 J	2 U	1.7 J
CIS-1,2-DICHLOROETHENE	1 U	16	1 U	0.64 J	1 U	150	1 U	0.77 J	5.6 J
TETRACHLOROETHENE	1 U	2 U	1 U	1.2	1 U	100 U	1 U	2 U	2.0 J
TRANS-1,2-DICHLOROETHENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
TRICHLOROETHENE	1 U	26	1.3	64	1 U	1200	1 U	33	110
VINYL CHLORIDE	1 U	5.0	1 U	1 U	1 U	100 U	1 U	2 U	10 U
SEMIVOLATILES (µg/L)									
BIS(2-ETHYLHEXYL)PHTHALATE	3 B	8.4 B	4.9 B	3.5 B	1.3 B	2.5 B	31	7.3 B	1.6 B
EXPLOSIVES (µg/L)									
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3
RDX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.80
INORGANICS (µg/L)									
ALUMINUM	1110	342	2960	577	1780	3190	11700	65.6 B	2370
ARSENIC	1.8	1.1	3.5	1.1 U	2.5	3.0	18.8	1.1 U	3.7
BARIUM	50.8	51.5	51.3	54.0	73.8	59.8	163	55.2	36.4
CALCIUM	21300	30500	33000	86900	24200	37400	7390	21300	4650
CHROMIUM	52.0	8.1 L	27.2	2.4 UL	22.5	23.8	672	2.4 UL	130
COBALT	74.9	25.7	19.6 B	4.9 B	17.7 B	10.7	119	13.4 B	29.7
COPPER	7.1	10.5	6.5	5.6	16.6	17.2	219	4.6	28.2
IRON	7110	5350	7900	1600	7020	14200	126000	102	50600
LEAD	3.0 B	1.9 B	2.7 B	1.1 B	3.2 B	4.3 L	23.5	1.0 B	3.3 B
MAGNESIUM	18200	18500	15000	10500	9440	13800	15900	12700	4090
MANGANESE	1880	1940	637	21.5	358	737	423	441	219
MERCURY	2.2	0.16 L	1.2	0.10 UL	3.7	2.4	6.9	4.5	0.10 UL
NICKEL	43.5	11.1	9.4	8.8 U	15.4	9.2	486	8.8 U	109
POTASSIUM	2460 B	3830	3890	3340	5020	3010	4050	3030	2760

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW120003**	**4GW130003**	**4GW150003**	**4GW480003**	**4GW49D0003**	**4GW500003**	**4GW520003**	**4GW790003**	**4GW800003**
LOCATION:	**04GW12**	**04GW13**	**04GW15**	**04GW48**	**04GW49D**	**04GW50**	**04GW52**	**04GW79**	**04GW80**
SAMPLE DATE:	**07/30/99**	**08/03/99**	**08/02/99**	**08/03/99**	**08/02/99**	**07/28/99**	**07/30/99**	**08/02/99**	**08/02/99**
ASSOCIATED DUPLICATE:									**4GW800003-D**
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
SELENIUM	4.8 K	2.7 U	2.7 U	2.7 U	7.4 K	2.7 U	70.5 K	2.7 U	8.9 K
SILVER	2.2 U	13.6 B	6.9 B	4.1 B	7.4 B	2.2 U	8.1	2.3 B	8.9 B
SODIUM	10200	8340	16800	3140	14600	8210 K	7190 K	11500	68200
VANADIUM	4.2 B	3.3 B	16.1	4.3 B	13.0 B	17.4	151	3.5 B	17.7
ZINC	13.8 B	19.0 B	26.4 B	10.1 B	50.2	16.9	49.2	13.9 B	17.3 B
MISCELLANEOUS PARAMETERS (µg/L)									
PERCHLORATES	4 U	4 U	4 U	8 U	4 U	4 U	4 U	4 U	10

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW800003-D	4GW81D0003	4GW81D0003-D	4GW81S0003	4GW820003	4GW890003	4GW890003-D	4GW1000003
LOCATION:	04GW80	04GW81D	04GW81D	04GW81S	04GW82	04PZ89	04PZ89	04GW100
SAMPLE DATE:	08/02/99	08/03/99	08/03/99	08/03/99	08/02/99	08/02/99	08/02/99	07/29/99
ASSOCIATED DUPLICATE:	4GW800003	4GW81D0003-D	4GW81D0003			4GW890003-D	4GW890003	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,2,2-TETRACHLOROETHANE	10 U	1.5	1.4 J	4.5 J	1 U	2 U	1.7 J	1 U
1,1,2-TRICHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,1-DICHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	0.24 J
1,2-DICHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,4-DICHLOROBENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
BENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
BROMOMETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
CARBON DISULFIDE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
CHLOROBENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
CHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	0.62 J
CHLOROFORM	1.8 J	0.31 J	0.29 J	0.26 J	2.4	2 U	2 U	1 U
CIS-1,2-DICHLOROETHENE	5.4 J	0.23 J	1 U	0.46 J	1 U	2 U	2 U	1 U
TETRACHLOROETHENE	1.8 J	0.93 J	0.97 J	1.8	1 U	2 U	2 U	1 U
TRANS-1,2-DICHLOROETHENE	10 U	1 U	1 U	0.28 J	1 U	2 U	2 U	1 U
TRICHLOROETHENE	100	0.74 J	0.76 J	1.5	1 U	15	16	4.6
VINYL CHLORIDE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
SEMIVOLATILES (µg/L)								
BIS(2-ETHYLHEXYL)PHTHALATE	5 U	2.8 B	6.6 B	4.4 B	3.4 B	2.3 B	3.7 B	4 B
EXPLOSIVES (µg/L)								
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.29	0.31	0.23	0.2 U	0.2 U	0.2 U	0.2 U
HMX	1.4	2.0	1.9	2	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.78	1.0	1.1	0.81	0.5 U	0.5 U	0.5 U	0.5 U
INORGANICS (µg/L)								
ALUMINUM	1760	104 B	86.1 B	128 B	4850	117 B	108 B	25300
ARSENIC	1.8	1.1 U	1.1 U	1.1 U	2.5	1.1 U	1.1 U	11.2
BARIUM	33.1	94.6	94.1	83.3	99.7	35.8	34.5	78.7
CALCIUM	4480	2910	2900 B	2800	2790	16700	15900	12900
CHROMIUM	96.2	2.4 UL	2.4 UL	31.1	10.7 L	2.7 UL	2.4 UL	41.0
COBALT	26.5	4.1 B	3.8 U	53.3	18.2 B	6.3 B	7.1 B	3.8 U
COPPER	24.2	1.4 U	1.4 U	12.9	23.9	3.4	4.3	24.6
IRON	44100	9.2 U	9.2 U	1260	19600	269	264	27200
LEAD	3.3 B	1.0 B	1.0 U	1.0 U	7.3 B	1.0 U	1.0 U	10.4
MAGNESIUM	3950	7570	7460	5650	7080	9580	9260	9340
MANGANESE	199	91.0	91.0	140	178	338	324	196
MERCURY	0.10 UL	4.8	4.8	3.0	0.10 UL	3.1	3.3	1.4
NICKEL	85.9	8.8 U	8.8 U	42.2 B	44.9	8.8 U	8.8 U	8.8 U
POTASSIUM	2250 B	2170 B	1770 B	1740 B	4330	2590 B	2400 B	2820

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW800003-D**	**4GW81D0003**	**4GW81D0003-D**	**4GW81S0003**	**4GW820003**	**4GW890003**	**4GW890003-D**	**4GW1000003**
LOCATION:	**04GW80**	**04GW81D**	**04GW81D**	**04GW81S**	**04GW82**	**04PZ89**	**04PZ89**	**04GW100**
SAMPLE DATE:	**08/02/99**	**08/03/99**	**08/03/99**	**08/03/99**	**08/02/99**	**08/02/99**	**08/02/99**	**07/29/99**
ASSOCIATED DUPLICATE:	**4GW800003**	**4GW81D0003-D**	**4GW81D0003**			**4GW890003-D**	**4GW890003**	
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
SELENIUM	8.0 K	4.0 K	4.0	2.7 U	2.7 U	2.7 U	2.7 U	3.1 B
SILVER	5.0 B	3.3 B	2.2 U	2.2 U	2.2 U	4.0 B	2.2 U	2.2 U
SODIUM	67400	7480	7180	8810	31600	11000	10800	11300
VANADIUM	12.2 B	2.4 U	2.4 U	2.4 U	12.9 B	2.4 U	2.4 U	75.7
ZINC	18.8 B	8.0 B	7.4 B	28.4 J	102	9.8 B	21.5 B	23.8
MISCELLANEOUS PARAMETERS (µg/L)								
PERCHLORATES	10	4 U	4 U	4 U	4 U	4 U	4 U	4 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW1040003	4GW1050003	4GW1050003-D	4GW1060003	4GW1070003	4GW1080003	4GW1090003	4GW1100003
LOCATION:	04GW104	04GW105	04GW105	04GW106	04GW107	04GW108	04GW109	04GW110
SAMPLE DATE:	07/30/99	07/29/99	07/29/99	07/30/99	07/29/99	07/30/99	08/02/99	08/03/99
ASSOCIATED DUPLICATE:		4GW1050003-D	4GW1050003					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,2,2-TETRACHLOROETHANE	1 U	290	340	1 U	1.7	1 U	65	1 U
1,1,2-TRICHLOROETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5.5	1 U
1,1-DICHLOROETHANE	1 U	200 U	200 U	1 U	0.22 J	1 U	5 U	1 U
1,2-DICHLOROETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5.7 B	1.5
1,4-DICHLOROBENZENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
BENZENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	0.15 J
BROMOMETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
CARBON DISULFIDE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	0.65 J
CHLOROBENZENE	1 U	33 J	39 J	1 U	1 U	1 U	5 U	1 U
CHLOROETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
CHLOROFORM	1 U	200 U	200 U	1 U	1 U	1.1	5 U	1 U
CIS-1,2-DICHLOROETHENE	1 U	330	380	1 U	0.44 J	1 U	8.6	3.6
TETRACHLOROETHENE	1 U	200 U	200 U	1 U	1 U	1 U	3.4 J	5.4
TRANS-1,2-DICHLOROETHENE	1 U	200 U	200 U	1 U	1 U	1 U	8.4	1 U
TRICHLOROETHENE	1 U	1200	1400	1 U	8.6	1 U	14	3.1
VINYL CHLORIDE	1 U	47 J	59 J	1 U	1 U	1 U	5 U	1 U
SEMIVOLATILES (µg/L)								
BIS(2-ETHYLHEXYL)PHTHALATE	4.6 B	5.7 B	4.9 B	7.3 B	1 B	2.3 B	3.1 B	44
EXPLOSIVES (µg/L)								
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
RDX	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.99	0.5 U
INORGANICS (µg/L)								
ALUMINUM	2350	29.4 U	29.4 U	175	48.8	1070	3400	1440
ARSENIC	2.1	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2.9	1.3
BARIUM	90.8	69.5	71.9	152	46.2	210	50.1	56.8
CALCIUM	13800	63200	65400	13800	17000	7230	3680	19400
CHROMIUM	4.6 L	2.4 U	2.9 K	35.0	5.4 K	2.4 U	57.3	2.4 UL
COBALT	6.2 B	4.9	6.5	18.9	9.7	15.4	11.1 B	31.1
COPPER	5.4	1.4 U	1.4 U	4.7	3.1	6.9	25.0	16.1
IRON	3130	40000	41300	12900	1910	1570	25300	17700
LEAD	3.9 B	1.0 UL	1.0 UL	1.0 UL	1.0 UL	1.0 UL	8.3 B	2.6 B
MAGNESIUM	13600	20600	21300	13700	10500	11800	3290	13300
MANGANESE	189	1470	1520	1920	468	181	903	6170
MERCURY	2.8	0.10 UL	0.10 UL	0.22 B	0.34 B	0.10 UL	0.10 UL	0.10 UL
NICKEL	8.8 U	8.8 U	8.8 U	37.1	11.7	24.6	41.6	13.6
POTASSIUM	2260 B	4270	4650	2430	2140	3850	3330	13100

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW1040003**	**4GW1050003**	**4GW1050003-D**	**4GW1060003**	**4GW1070003**	**4GW1080003**	**4GW1090003**	**4GW1100003**
LOCATION:	**04GW104**	**04GW105**	**04GW105**	**04GW106**	**04GW107**	**04GW108**	**04GW109**	**04GW110**
SAMPLE DATE:	**07/30/99**	**07/29/99**	**07/29/99**	**07/30/99**	**07/29/99**	**07/30/99**	**08/02/99**	**08/03/99**
ASSOCIATED DUPLICATE:		**4GW1050003-D**	**4GW1050003**					
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
SELENIUM	2.9 K	2.7 U	2.7 U	3.4 B	2.7 U	3.0 B	12.6	8.5 K
SILVER	2.8 B	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	3.3 B	2.8 B
SODIUM	13500	13200	13600	14300	12600	34600	24300	204000
VANADIUM	9.7 B	2.4 U	2.4 U	2.4 U	2.4 U	5.4	14.2 B	4.3 B
ZINC	13.0 B	7.4	6.6	9.3	11.4	22.3	17.7 B	13.6 B
MISCELLANEOUS PARAMETERS (µg/L)								
PERCHLORATES	4 U	8 U	8 U	4 U	4 U	4 U	4 U	20 U

SITE 4

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

POSITIVE DETECTIONS

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW120003-F	4GW130003-F	4GW150003-F	4GW480003-F	4GW49D0003-F	4GW500003-F	4GW520003-F
LOCATION:	04GW12	04GW13	04GW15	04GW48	04GW49D	04GW50	04GW52
SAMPLE DATE:	07/30/99	08/03/99	08/02/99	08/03/99	08/02/99	07/28/99	07/30/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)							
ALUMINUM	299	29.4 U	29.4 U	29.4 U	29.4 U	29.4 U	45.1
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.4	1.1 U	1.1 U
BARIUM	48.4	43.9	42.2	43.3	37.6	47.1	115
CALCIUM	19900	28100	31400	82800	23200	37100	6950
CHROMIUM	2.4 UL	2.4 UL	2.4 UL	2.4 UL	2.4 UL	2.4 U	2.4 U
COBALT	70.3	22.2 B	18.3 B	3.8 U	15.9 B	8.1	44.9
COPPER	2.0	2.0	1.4 U	1.4 U	1.4 U	1.4 U	17.0
IRON	371	2550	571	9.2 U	1960	1630	579
LEAD	2.3 B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UL	1.0 UL
MAGNESIUM	18100	17100	14300	10200	9220	13500	17100
MANGANESE	1800	1810	605	5.0 B	345	729	299
MERCURY	2.3	0.10 UL	0.39 L	0.10 UL	0.10 UL	0.10 UL	0.10 UL
NICKEL	13.1	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U	58.4
POTASSIUM	2480 B	3210	3610	2590 B	4590	3090	3020
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	7.2 B
SODIUM	9870	7430	15900	2860	14000	8150 K	7850 K
ZINC	10.1 B	19.9 B	11.6 B	10.4 B	9.9 B	6.6	22.9

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW800003-F	4GW800003-F-D	4GW81S0003-F	4GW820003-F	4GW890003-F	4GW890003-F-D	4GW1000003-F
LOCATION:	04GW80	04GW80	04GW81S	04GW82	04PZ89	04PZ89	04GW100
SAMPLE DATE:	08/02/99	08/02/99	08/03/99	08/02/99	08/02/99	08/02/99	07/29/99
ASSOCIATED DUPLICATE:	4GW800003-F-D	4GW800003-F			4GW890003-F-D	4GW890003-F	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)							
ALUMINUM	34.9 B	29.4 U	63.6 B	138 B	29.4 U	34.7 B	29.4 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
BARIUM	25.1	21.8	89.1	42.8	32.7	33.5	34.2
CALCIUM	4220	3940	2590	2300	15900	15500	12900
CHROMIUM	2.4 UL	2.4 UL	5.3 L	2.4 UL	2.4 UL	2.4 UL	2.4 U
COBALT	24.6	21.0 B	58.6	17.8 B	4.9 B	8.2 B	3.8 U
COPPER	3.6	1.4 U	12.7	10.7	1.4 U	1.4 U	1.4 U
IRON	5750	5220	484	487	9.2 U	9.2 U	38.0 B
LEAD	1.0 U	1.8 B	1.4	1.4 B	1.0 U	1.0 U	1.0 UL
MAGNESIUM	3980	3700	6000	5480	9080	9200	8770
MANGANESE	200	172	152	131	323	325	168
MERCURY	0.10 UL	0.10 UL	2.8	0.10 UL	2.9	2.7	0.32 B
NICKEL	36.4	28.7	31.1 B	31.9	8.8 U	8.8 U	8.8 U
POTASSIUM	2610 B	2050 B	2260 B	3290	2300 B	2120 B	1870
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SODIUM	68500	65100	9260	35400	10100	10300	11900
ZINC	16.3 B	7.3 B	13 J	50.8	6.5 B	9.8 B	4.5

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW1040003-F	4GW1060003-F	4GW1080003-F	4GW1090003-F	4GW1100003-F
LOCATION:	04GW104	04GW106	04GW108	04GW109	04GW110
SAMPLE DATE:	07/30/99	07/30/99	07/30/99	08/02/99	08/04/99
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)					
ALUMINUM	168 B	67.2	329	36.2 B	31.5 B
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
BARIUM	82.5	159	213	33.0	47.5
CALCIUM	13000	14200	7210	2930	18600
CHROMIUM	2.4 UL	2.4 U	2.4 U	2.4 UL	2.4 UL
COBALT	6.0 B	21.4	16.2	9.3 B	32.4
COPPER	1.6	1.4 U	1.4 U	1.4 U	2.8
IRON	208	12600	14.9 B	15100	2330
LEAD	1.2 B	1.0 UL	1.0 UL	1.0 U	1 U
MAGNESIUM	13400	14200	12100	2700	13100
MANGANESE	182	1950	182	781	5970
MERCURY	0.13 L	0.1 UL	0.10 UL	0.10 UL	0.1 U
NICKEL	8.8 U	20.4	28.0	8.8 U	16.4 B
POTASSIUM	2060 B	2560	3710	2420 B	13400
SELENIUM	2.9 K	2.7 U	2.7 U	2.7 U	2.7 U
SODIUM	13300	15000	37000	23400	206000
ZINC	5.9 B	7.1	21.7	11.5 B	13.5 J

SITE 7

GROUNDWATER DATA
JULY/AUGUST 1999

POSITIVE DETECTIONS

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW080003	7GW080003-D	7GW410003	7GW410003-D	7GW420003	7GW430003	7GW1010003
LOCATION:	07GW08	07GW08	07GW41	07GW41	07PZ42	07GW43	07GW101
SAMPLE DATE:	07/12/99	07/12/99	07/13/99	07/13/99	07/12/99	07/12/99	07/12/99
ASSOCIATED DUPLICATE:	7GW080003-D	7GW080003	7GW410003-D	7GW410003			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)							
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	27	25	1 U	100 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U
CHLOROBENZENE	1 U	1 U	20 U	4.2 J	1 U	100 U	1 U
CHLOROFORM	0.95 J	0.83 J	20 U	20 U	0.16 J	100 U	0.33 J
CIS-1,2-DICHLOROETHENE	1 U	1 U	21	21	1 U	44 J	1 U
TRICHLOROETHENE	1 U	1 U	180	170	0.42 J	710	1 U
SEMIVOLATILES (µg/L)							
2,4-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	2 J	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)							
ALPHA-CHLORDANE	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.041 J
GAMMA-CHLORDANE	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.049 J
EXPLOSIVES (mg/L)							
2,4,6-TRINITROTOLUENE	240	210	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	70	58	0.2 U	0.2 U	0.2 U	0.2 U	0.26
4-AMINO-2,6-DINITROTOLUENE	110	89	0.2 U	0.2 U	0.2 U	0.2 U	0.28
HMX	160	150	0.5 U	0.5 U	0.5 U	0.5 U	2
RDX	530	470	0.5 U	0.5 U	0.5 U	0.5 U	3.5
INORGANICS (µg/L)							
ALUMINUM	125	239	83.0	67.5	95.8	668	121
BARIUM	34.8	36.8	47.8	49.5	72.3	45.2	43.4
CALCIUM	4370	4620	14400	15000	11900	5140	5010
CHROMIUM	21.1	31.9	5.3	6.3	6.7	21.5	4.7
COBALT	3.8 U	4.0	3.8 U	3.8 U	3.8 U	10.0	6.6
COPPER	6.7	8.5	5.6	6.3	4.1	8.3	6.1
IRON	350 J	559 J	445 J	358 J	115 J	3450 J	532 J
LEAD	1.0 U	1.0	1.0 U	1.0 U	1.0 U	2.1	1.0 U
MAGNESIUM	4300	4540	10000	10400	11300	6370	5370
MANGANESE	19.0	20.6	97.7	101	137	92.0	23.3
MERCURY	0.10 U	0.10 U	0.84	0.69	7.2	0.46	0.10 K
NICKEL	17.1	21.3	10.0	8.8 U	8.8 U	16.2	8.8 U
POTASSIUM	1510	1650	1960	1940	1800	2100	1770
SODIUM	3960	4190	11400	11900	12800	15400	5270
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.6	2.4 U
ZINC	12.5	21.3	26.6	32.5	17.5	11.8	17.8

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	**7GW080003**	**7GW080003-D**	**7GW410003**	**7GW410003-D**	**7GW420003**	**7GW430003**	**7GW1010003**
LOCATION:	**07GW08**	**07GW08**	**07GW41**	**07GW41**	**07PZ42**	**07GW43**	**07GW101**
SAMPLE DATE:	**07/12/99**	**07/12/99**	**07/13/99**	**07/13/99**	**07/12/99**	**07/12/99**	**07/12/99**
ASSOCIATED DUPLICATE:	**7GW080003-D**	**7GW080003**	**7GW410003-D**	**7GW410003**			
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
MISCELLANEOUS PARAMETERS (µg/L)							
PERCHLORATES	14	16	8 U	4 U	4 U	4 U	9.4

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW1020003	7GW1030003	7GW1040003	7GW1050003
LOCATION:	07GW102	07GW103	07GW104	07GW105
SAMPLE DATE:	07/13/99	07/12/99	07/08/99	07/12/99
ASSOCIATED DUPLICATE:				
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)				
1,1,2,2-TETRACHLOROETHANE	18	1 U	1 U	1 U
BROMODICHLOROMETHANE	10 U	0.44 J	1 U	1 U
CHLOROBENZENE	10 U	1 U	1 U	1 U
CHLOROFORM	10 U	20	0.83 J	0.36 J
CIS-1,2-DICHLOROETHENE	12	1 U	1 U	1 U
TRICHLOROETHENE	100	1 U	1 U	1 U
SEMIVOLATILES (µg/L)				
2,4-DINITROTOLUENE	5 U	5 U	1.3 J	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)				
ALPHA-CHLORDANE	0.050 U	0.050 UJ	0.050 UL	0.042 J
GAMMA-CHLORDANE	0.050 U	0.050 UJ	0.050 UL	0.047 J
EXPLOSIVES (mg/L)				
2,4,6-TRINITROTOLUENE	0.2 U	4.1	300	4
2-AMINO-4,6-DINITROTOLUENE	0.2 U	1.8	94	2.7
4-AMINO-2,6-DINITROTOLUENE	0.2 U	2.5	150	2.7
HMX	0.5 U	11	190	7.4
RDX	0.5 U	7.4	590	33
INORGANICS (µg/L)				
ALUMINUM	1990	104	150	80.3
BARIUM	69.2	66.3	18.5	38.5
CALCIUM	10600	9550	3470	4620
CHROMIUM	27.2	5.5	2.4 U	6.1
COBALT	3.8 U	3.8 U	3.8 U	3.8 U
COPPER	6.2	2.8	4.8	6.1
IRON	9070 J	115 J	227 J	122 J
LEAD	2.8	1.0 U	1.0 U	1.0 U
MAGNESIUM	9280	5410	2550	5280
MANGANESE	126	23.4	12.4	20.3
MERCURY	1.4	0.15 K	0.10 U	0.10 U
NICKEL	8.8 U	8.8 U	8.8 U	8.8 U
POTASSIUM	1780	1130	1460	1390
SODIUM	11100	8170	2960	5390
VANADIUM	18.2	2.4 U	2.4 U	2.4 U
ZINC	27.6	10.2 B	11.6	34.1

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	**7GW1020003**	**7GW1030003**	**7GW1040003**	**7GW1050003**
LOCATION:	**07GW102**	**07GW103**	**07GW104**	**07GW105**
SAMPLE DATE:	**07/13/99**	**07/12/99**	**07/08/99**	**07/12/99**
ASSOCIATED DUPLICATE:				
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
MISCELLANEOUS PARAMETERS (µg/L)				
PERCHLORATES	4 U	4 U	11	8

SITE 7

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

POSITIVE DETECTIONS

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW080003-F	7GW080003-F-D	7GW410003-F	7GW410003-F-D	7GW420003-F	7GW430003-F	7GW1010003-F	7GW1020003-F
LOCATION:	07GW08	07GW08	07GW41	07GW41	07PZ42	07GW43	07GW101	07GW102
SAMPLE DATE:	07/12/99	07/12/99	07/13/99	07/13/99	07/12/99	07/12/99	07/12/99	07/13/99
ASSOCIATED DUPLICATE:	7GW080003-F-D	7GW080003-F	7GW410003-F-D	7GW410003-F				
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)								
ALUMINUM	32.1	32.5	29.4 U	29.4 U	50.2	29.4 U	42.0	49.8
ANTIMONY	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
BARIUM	36.9	36.6	50.1	47.6	74.6	41.9	43.6	55.1
CALCIUM	4450	4500	15200	14600	12300	4960	5010	10400
CHROMIUM	2.4 U	2.4 U	2.4 U	2.7	2.4 U	2.4 U	2.4 U	2.4 U
COBALT	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	5.8	12.5	3.8 U
COPPER	3.5	3.9	1.4 U	2.6	1.4 U	1.7	2.2	1.9
IRON	57.4 J	59.3 J	35.2 J	23.5 J	24.1 J	133 J	15.5 J	716 J
LEAD	5.6	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U	1 U
MAGNESIUM	4570	4570	10600	10100	11800	6390	5430	9180
MANGANESE	18.7	19.3	103	97.5	142	90.2	22.1	119
MERCURY	0.10 U	0.1 U	0.53	0.54	6.5	0.10 U	0.10 U	0.10 U
NICKEL	8.8 U	11.6	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U
POTASSIUM	1590	1740	1720	1970	1790	1660	1720	1910
SODIUM	4030	4190	11900	11400	13500	16400	4940	11100
ZINC	5.2 B	5.7 B	3.6 B	4.6 B	4.6 B	5.1 B	6.9 B	11

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW1030003-F	7GW1040003-F	7GW1050003-F
LOCATION:	07GW103	07GW104	07GW105
SAMPLE DATE:	07/12/99	07/08/99	07/12/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)			
ALUMINUM	52.8	35.1	41.5
ANTIMONY	1.8	1.7 U	1.7 U
BARIUM	64.1	17.8	39.3
CALCIUM	9330	3400	4610
CHROMIUM	2.4 U	2.4 U	2.4 U
COBALT	3.8 U	3.8 U	3.8 U
COPPER	1.4 U	1.8	1.7
IRON	20.7 J	11.6 J	25.5 J
LEAD	1.0 U	1.0 U	1.0 U
MAGNESIUM	5220	2530	5380
MANGANESE	22.3	12.7	20.3
MERCURY	0.10 U	0.10 U	0.10 U
NICKEL	8.8 U	8.8 U	8.8 U
POTASSIUM	1200	1410	1480
SODIUM	7580	2650	5240
ZINC	20.4	5.7 B	6.5 B

SITE 8

GROUNDWATER DATA
JULY/AUGUST 1999

POSITIVE DETECTIONS

SITE 8
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	8GW330003	8GW340003	8GW350003	8GW360003	8GW530003	8GWB10003	8GWB30003
LOCATION:	08GW33	08GW34	08GW35	08GW36	08GW53	B-1	B-3
SAMPLE DATE:	07/08/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)							
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1.3	1 U	1 U	1 U
CHLOROFORM	5.8	1.4	15	0.74 J	3.7	5.4	0.95 J
SEMIVOLATILES (mg/L)							
BIS(2-ETHYLHEXYL)PHTHALATE	3.9 B	1.5 B	2.9 B	3.3 B	3.2 B	51	3.7 B
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	1.1 J	5 U	4.9 J
DIMETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	1.6 J
INORGANICS (µg/L)							
ALUMINUM	2590	1120	72500	16300	2640	1400	576
ARSENIC	1.2 B	1.1 U	17.4	4.6 B	1.3 B	1.7 B	1.1 U
BARIUM	45.8	22.6	674	218	24.1	39.5	52.0
BERYLLIUM	0.50 B	0.13 B	11.9	2.2	0.42 B	0.13 B	0.11 U
CADMIUM	3.0 U	3.0 U	3.0 UL	3.1 K	3.0 U	3.0 U	3.0 U
CALCIUM	3220	1950	14800	10200	2300	4930	8400
CHROMIUM	93.7	9.2	94.2	756	8.5	2.4 U	2.4 U
COBALT	8.2	3.8 U	69.4	47.2	3.8 U	12.5	3.8 U
COPPER	12.2	7.6	119	45.4	12.3	9.1	4.6
IRON	7660 J	2680 J	120000 J	41100 J	4860 J	2820 J	1310 J
LEAD	1.2	1.0 U	30.8	8.6	1.9	1.2	1.0 U
MAGNESIUM	3260	1810	26700	11900	1660	3100	3580
MANGANESE	287	37.4	2060	1280	198	951	106
MERCURY	0.10 U	0.10 U	0.10 U	0.19 K	0.10 U	0.10 U	0.10 U
NICKEL	76.7	10.2	115 L	573	11.6	8.8 U	8.8 U
POTASSIUM	3580	1930	27200	12800	1550	5650	5670
SILVER	2.2 U	2.2 U	2.5 J	3.5 K	2.2 U	2.2 U	2.2 U
SODIUM	4530	4270	7520	8610	2930	8250	8950
THALLIUM	3.7 U	3.7 U	9.6 L	4.4	3.7 U	4.4	3.7 U
VANADIUM	4.7	2.4 U	166	36.1	2.4 U	2.4 U	2.4 U
ZINC	31.1	18.0	358	114	68.6	30.3	22.6

SITE 8

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

POSITIVE DETECTIONS

SITE 8
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	8GW330003-F	8GW340003-F	8GW350003-F	8GW360003-F	8GW530003-F	8GWB10003-F	8GWB30003-F
LOCATION:	08GW33	08GW34	08GW35	08GW36	08GW53	B-1	B-3
SAMPLE DATE:	07/08/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)							
ALUMINUM	29.4 U	29.4 U	34.8	76.7	43.4	29.4 U	29.5
ARSENIC	1.1 U	1.1 U	1.1 U	1.1	1.1 U	1.1 U	1.1 U
BARIUM	18.0	14.0	37	40.7	5.5	23.1	46.4
CALCIUM	2690	1850	3710	6710	1640	5190	8830
COBALT	5.3	3.8 U	3.8 U	11.1	3.8 U	5.3	5.0
COPPER	1.4 U	2.2	1.4 U	3.0	2.8	1.8	3.4
IRON	357 J	58.8 J	10.4 J	577 J	18.2 J	17.6 J	313 J
MAGNESIUM	2030	1370	2050	4400	825	2600	3610
MANGANESE	166	13.3	17.0	501	75.8	860	101
NICKEL	15.4	9.2	8.8 U	56.2	8.8 U	8.8 U	8.8 U
POTASSIUM	2200	1570	1410	4350	763	5460	5770
SODIUM	4070	3720	6030	7070	2410	8400	8740
THALLIUM	3.7 U	3.9	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
ZINC	4.9 B	7.4 B	6.2 B	14.8	28.6	7.8 B	50.2

SITE 9

GROUNDWATER DATA
JULY/AUGUST 1999

POSITIVE DETECTIONS

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW010003	9GW020003	9GW020003-D	9GW030003	9GW040003	9GW050003	9GW060003	9GW060003-D
LOCATION:	09GW01	09GW02	09GW02	09GW03	09GW04	09GW05	09GW06	09GW06
SAMPLE DATE:	8/9/99	8/5/99	8/5/99	8/5/99	8/9/99	8/9/99	8/5/99	8/5/99
ASSOCIATED DUPLICATE:		9GW020003-D	9GW020003				9GW060003-D	9GW060003
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	0.49 J	0.41 J	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
ACETONE	1.7 B	1.9 B	2.3 B	2.2 B	1.8 B	2.4 B	1.9 B	2 B
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.21 J
CARBON TETRACHLORIDE	0.17 J	0.87 J	0.65 J	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	0.17 J	0.23 J	1 U	0.16 J	1 U	0.18 J	1 U	1 U
CHLOROFORM	0.95 J	0.93 J	0.79 J	0.64 J	5.3	2.3	1.4	1.9
CHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	0.39 J	0.4 J	0.37 J	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	0.33 J	4.7	3.8	1 U	1 U	1 U	1 U	1 U
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	16	8.7	6.8	0.33 J	1 U	0.96 J	0.31 J	0.4 J
XYLENES, TOTAL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (µg/L)								
BIS(2-ETHYLHEXYL)PHTHALATE	4.5 B	7 B	2.4 B	6.2 B	5.3 B	10 B	3.4 B	2.1 B
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	1.2 J	5 U	5 U
PESTICIDES/PCBs (µg/L)								
ALPHA-CHLORDANE	0.34 J	0.050 U	0.050 U	0.050 U	0.050 U	0.076	0.1 J	0.090
GAMMA-CHLORDANE	0.28	0.050 U	0.050 U	0.050 U	0.050 U	0.038 J	0.054	0.046 J
HEPTACHLOR EPOXIDE	0.039 J	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.028 R	0.050 U
EXPLOSIVES (µg/L)								
2,6-DINITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	11	0.5 U	0.5 U	0.5 U	3.1	0.5 U	0.5 U	0.5 U
RDX	160	0.63	0.65	0.5 U	5	0.5 U	0.5 U	0.5 U
INORGANICS (µg/L)								
ALUMINUM	616	99.2	166	99.9	98.9	1420	266	747
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	3.3	1.6	1.2
BARIUM	20.2	100	106	40.7	38.4	100	92.7	103
BERYLLIUM	0.10 U	0.27 B	0.24 B	0.12 B	0.10 U	0.18 B	0.37 B	0.17 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 U	3.0 UL
CALCIUM	3750	8650	8890	1860	2270	3700	3720	3950
CHROMIUM	10.8 K	3.7 K	4.6 K	6.0 K	7.4 K	71.2	20.0	31.2
COBALT	15.5	11.1	12.2	5.8	23.1	10.8	8.2 B	5.8
COPPER	4.6 B	4.7 B	3.6 B	6.2 B	4.8 B	13.9	4.7	8.0 B
IRON	884	3490	3940	457	378	11700	1190	3500
LEAD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.0 U	1.0 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	**9GW010003**	**9GW020003**	**9GW020003-D**	**9GW030003**	**9GW040003**	**9GW050003**	**9GW060003**	**9GW060003-D**
LOCATION:	**09GW01**	**09GW02**	**09GW02**	**09GW03**	**09GW04**	**09GW05**	**09GW06**	**09GW06**
SAMPLE DATE:	**8/9/99**	**8/5/99**	**8/5/99**	**8/5/99**	**8/9/99**	**8/9/99**	**8/5/99**	**8/5/99**
ASSOCIATED DUPLICATE:		**9GW020003-D**	**9GW020003**				**9GW060003-D**	**9GW060003**
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
MAGNESIUM	1820	6950	7240	2640	3650	6790	6320	6830
MANGANESE	27.0	519	540	40.2	32.0	170	145	155
MERCURY	0.10 U	0.10 U	0.10 U	0.10 U	0.38	1.1	0.10	0.18
NICKEL	13.0	21.0	16.0	14.8	10.8	71.7	20.5 B	29.2
POTASSIUM	1710 B	4930	4710	1530 B	1790 B	2760	2830	2770
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	6.6 B	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	6660	7740	8150	20500	19500	30500	22800	24700
THALLIUM	5.2 B	4.7 B	3.7 U	4.9 B	5.8 B	5.5 B	4.0 B	3.7 U
VANADIUM	3.4 J	2.4 U	2.4 U	3.4	3.4	13.6	3.3 B	6.8
ZINC	13.6 B	40.6	32.2	21.8	9.9 B	13.8 B	18.6 J	20.8
MISCELLANEOUS PARAMETERS (µg/L)								
PERCHLORATES	240	4 U	4 U	4 U	4 U	4 U	4 U	4 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW070003	9GW440003	9GW550003	9GW57D0003	9GW57S0003	9GW0580003	9GW590003	9GW740003
LOCATION:	09GW07	09PZ44	09PZ55	09GW57D	09GW57S	09GW58	09GW59	09GW74
SAMPLE DATE:	8/4/99	8/4/99	8/4/99	8/5/99	8/5/99	8/4/99	8/9/99	8/10/99
ASSOCIATED DUPLICATE:								
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,1-TRICHLOROETHANE	1 U	0.44 J	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	0.38 J	1 U	1 U	0.32 J	1 U	1 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	3.1 L	5 UR	5 UR	6.2 L	5 UR	5 UR
ACETONE	4.8 B	1.5 B	3.8 U	2.2 B	2 B	5.3 B	1.6 B	2.4 B
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.27 J
CHLOROBENZENE	1 U	1 U	1 U	0.19 J	1 U	0.16 J	1 U	1 U
CHLOROFORM	3.2	8.4	4.8	2.2	1.5	2.4	1.5	1.5
CHLOROMETHANE	2.7	1 U	0.6 J	1 U	1 U	0.85 J	1 U	1 U
CIS-1,2-DICHLOROETHENE	1 U	1 U	1 U	3.6	0.96 J	1 U	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	0.19 J	1 U	1 U	1 U
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	1 U	1 U	0.77 J	27 J	8.9	1 U	1 U	1.1
XYLENES, TOTAL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (µg/L)								
BIS(2-ETHYLHEXYL)PHTHALATE	1.8 B	N/A	1.6 B	5.2 B	7.8 B	51	120	2.1 J
DI-N-BUTYL PHTHALATE	5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)								
ALPHA-CHLORDANE	0.033 J	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.038 J	0.050 U	0.050 U
EXPLOSIVES (µg/L)								
2,6-DINITROTOLUENE	0.2 U	N/A	0.32 J	0.2 U	0.2 U	1 U	0.2 U	0.20 U
HMX	0.5 U	N/A	0.5 U	2.8	1.1	13	2.3	0.50 U
RDX	0.5 U	N/A	0.5 U	6.7	1.9	23	4.2	1.6
INORGANICS (µg/L)								
ALUMINUM	19900	1300	5100	34.6 B	10400	10500	1800	2210
ARSENIC	17.8	1.1	7.8	1.1 U	2.8	9.0	1.3	1.7 B
BARIUM	151	60.2	40.2	27.1	43.2	119	56.9	55.4
BERYLLIUM	0.74 B	0.37 B	0.30 B	0.18 B	0.70 B	0.70 B	0.18 B	0.45 B
CADMIUM	3.0 U	6.7 L	3.0 U	3.0 U	3.0 UL	3.1	3.0 UL	3.0 U
CALCIUM	5360	5800	1650	3380	3300	6710	5430	6360 J
CHROMIUM	78.6	7.1 K	34.0	2.4 UL	14.2 K	106	14.7 K	15.8 K
COBALT	17.0 B	12.1	7.2 B	3.8 U	30.2	48.5	15.5	5.1
COPPER	64.5	22.8	35.3	1.4 U	13.6	79.6	9.5	8.9
IRON	65000	4590	40000	9.2 U	11800	95200	2920	6280
LEAD	22.5	4.1	11.1	1.0 U	3.3	35.7	1.0 U	1.7 K

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	**9GW070003**	**9GW440003**	**9GW550003**	**9GW57D0003**	**9GW57S0003**	**9GW0580003**	**9GW590003**	**9GW740003**
LOCATION:	**09GW07**	**09PZ44**	**09PZ55**	**09GW57D**	**09GW57S**	**09GW58**	**09GW59**	**09GW74**
SAMPLE DATE:	**8/4/99**	**8/4/99**	**8/4/99**	**8/5/99**	**8/5/99**	**8/4/99**	**8/9/99**	**8/10/99**
ASSOCIATED DUPLICATE:								
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
MAGNESIUM	6780	4970	2360	2070	4260	5660	3720	5100
MANGANESE	236	756	30.0	12.4	131	93.8	58.0	130
MERCURY	0.54	0.10 U	1.1	0.10 U	0.10 U	8.2	0.61	0.10 U
NICKEL	31.6 B	31.9	8.8 U	8.8 U	9.4	15.1 B	11.9	23.9 K
POTASSIUM	3510	4260	2190 B	1240 B	1920 B	2910	1950 B	2930
SELENIUM	23.2	2.7 U	9.1	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	4.7 B	2.2 U	5.9 B	2.2 U	2.2 U	12.5 B	2.4 K	2.2 U
SODIUM	23700	49200	6850	9320	7800	16500	18000	8060
THALLIUM	4.7 B	4.1 B	4.0 B	4.4 B	8.9 B	3.7 UL	5.9 B	3.7 U
VANADIUM	150	5.6	51.6	2.4 U	17.8	121	4.5	5.9 B
ZINC	104 J	65.3	25.2 J	5.8 B	40.0	38.5 J	15.5 B	43.1
MISCELLANEOUS PARAMETERS (µg/L)								
PERCHLORATES	4 U	N/A	4 U	27	16	12	4 U	8.4

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW750003	9GW830003	9GW1000003	9GW1010003	9GW1020003	9GW1030003	9GW1040003	9GW1050003
LOCATION:	09GW75	09GW83	09GW100	09GW101	09GW102	09GW103	09GW104	09GW105
SAMPLE DATE:	8/10/99	8/10/99	8/4/99	8/4/99	8/10/99	8/5/99	8/9/99	8/4/99
ASSOCIATED DUPLICATE:								
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
1,2-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
2-BUTANONE	5 UR	5 UR	4.1 L	4.1 L	5 UR	5 UR	2.8 L	6.8 L
ACETONE	5 UR	5 UR	5 UR	2 B	5 UR	5 UR	3.5 B	3.2 B
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
CHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
CHLOROFORM	2.1	0.17 J	1 U	1 U	1 U	0.99 J	1 U	1 J
CHLOROMETHANE	1 U	1 U	0.58 J	0.56 J	1 U	1 U	0.61 J	1 J
CIS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	0.3 J	1.6	3.5
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	1 U	0.97 J	0.18 J	2 U
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
TRICHLOROETHENE	1 U	1 U	0.18 J	0.88 J	1 U	3.5 J	3.4	25
XYLENES, TOTAL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U
SEMIVOLATILES (µg/L)								
BIS(2-ETHYLHEXYL)PHTHALATE	11 B	1.7 B	5 B	14 B	3.6 B	27 B	1.3 B	1.5 B
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)								
ALPHA-CHLORDANE	0.050 U	0.050 U	0.03 J	0.05 U	0.050 U	0.05 U	0.05 U	0.05 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.05 U	0.05 U	0.05 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.05 U	0.05 U	0.05 U
EXPLOSIVES (µg/L)								
2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	2.7	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U	1
RDX	4.3	0.5 U	0.5 U	0.5 U	0.5 U	3.6	0.5 U	4
INORGANICS (µg/L)								
ALUMINUM	14000	1570	11100	60.0 B	235	408	77.4	3340
ARSENIC	8.9	1.1 U	1.1 U	1.1 U	1.2	1.1 U	1.1 U	2.4
BARIUM	58.8	47.4	136	34.4	46.1	23.8	51.7	85.2
BERYLLIUM	0.48 B	0.19 B	1.3 B	0.13 B	0.21 B	0.11 U	0.10 U	0.98 B
CADMIUM	3.0 UL	3.0 UL	3.0 U	3.0 U	3.0 UL	3.0 U	3.0 UL	3.0 U
CALCIUM	4470	7230	23900	23300	2090	5360	9470	6220
CHROMIUM	77.2	2.4 U	10.8 L	2.4 UL	56.2	2.4 UL	2.4 U	51.6
COBALT	6.1 B	3.8 U	13.3 B	8.8 B	62.0	38.2	3.8 U	20.0 B
COPPER	40.4	4.6 B	26.6	1.4	35.1	2.2	3.6 B	6.1
IRON	55000	4630	26900	89.4	1060	609	346	9370
LEAD	22.5	1.4	5.6	1.0 U	1.0	1.0 U	1.0 U	3.5

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	**9GW750003**	**9GW830003**	**9GW1000003**	**9GW1010003**	**9GW1020003**	**9GW1030003**	**9GW1040003**	**9GW1050003**
LOCATION:	**09GW75**	**09GW83**	**09GW100**	**09GW101**	**09GW102**	**09GW103**	**09GW104**	**09GW105**
SAMPLE DATE:	**8/10/99**	**8/10/99**	**8/4/99**	**8/4/99**	**8/10/99**	**8/5/99**	**8/9/99**	**8/4/99**
ASSOCIATED DUPLICATE:								
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
MAGNESIUM	4880	5080	13700	9720	2690	4170	5420	5020
MANGANESE	68.4	702	779	323	357	88.0	546	460
MERCURY	0.38	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
NICKEL	22.0	8.8 U	13.8 B	8.8 U	69.2	8.8 U	8.8 U	44.7 B
POTASSIUM	3150	4500	8730	5140	2200 B	2870	3970	4650
SELENIUM	8.0 B	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.4 B	2.2 U	2.2 U	3.1 B	2.2 U	4.2 B
SODIUM	18200	9600	22700	22700	4650	14100	10200	8670
THALLIUM	7.2 B	6.1 B	4.8 B	3.7 UL	7.4 B	4.3 B	4.0 B	4.2 B
VANADIUM	61.3	2.4 U	24.8	2.4 U	3.6	2.4 U	2.4 U	8.5 B
ZINC	18.0 B	19.5 B	56.5 J	10.4 J	32.1	17.8 J	24.5	37.5 J
MISCELLANEOUS PARAMETERS (µg/L)								
PERCHLORATES	4 U	4 U	4 U	4 U	4 U	4 U	4 U	8.4

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW1060003	9GW1070003	9GW1080003	9GW1090003	9GW1100003	9GWBLDG3670003	9GWC50003
LOCATION:	09GW106	09GW107	09GW108	09GW109	09GW110	BLD367	C-05
SAMPLE DATE:	8/10/99	8/5/99	8/5/99	8/4/99	8/10/99	8/10/99	8/11/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)							
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	5 UR	5.8 L	5 UR	5 UR	5 UR
ACETONE	5 UR	5 UR	0.86 B	2.6 B	5 UR	5 UR	5 UR
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	0.36 J
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	0.85 J
CHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	0.53 J	1 U	1 U	1.8	0.9 J	1 U	5.4
CHLOROMETHANE	1 U	1 U	1 U	0.76 J	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	1 U	1 U	0.36 J	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	1.4	1 U	1 U	1 U	1 U
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	1 U	1 U	2.9	1 U	1.5	1 U	1.6
XYLENES, TOTAL	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (µg/L)							
BIS(2-ETHYLHEXYL)PHTHALATE	2.1 J	1.2 B	3.7 B	15 B	3.7 J	6.1	43
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)							
ALPHA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.035 J	0.050 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U
EXPLOSIVES (µg/L)							
2,6-DINITROTOLUENE	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U	0.20 U	0.26
HMX	0.71	0.5 U	0.5 U	3.6	2.6	0.50 U	1.8
RDX	4.8	0.5 U	0.5 U	5.7	1.9	0.50 U	7.2
INORGANICS (µg/L)							
ALUMINUM	185	129	267	17500	110	33.7	68.5
ARSENIC	1.1 U	1.1 U	1.1 U	13.2	1.8 B	1.1 U	1.1 U
BARIUM	17.0 B	55.5	38.7	70.6	43.3	71.4	37.4
BERYLLIUM	0.17	0.10 U	0.10 U	0.67 B	0.17 B	0.11 U	0.20 B
CADMIUM	3.0 U	3.0 UL	3.0 UL	3.0 U	3.0 U	3.0 U	3.0 U
CALCIUM	878 B	3850	9890	3150	4470 J	9460 J	3140 B
CHROMIUM	28.8	5.8 K	7.1 K	102	2.4 U	2.4 U	2.8 K
COBALT	31.0	3.8 U	19.2	16.6 B	43.5	3.8 U	18.8
COPPER	6.0	4.0 B	3.1 B	30.7	2.4	2.9	1.6
IRON	1510	908	6160	54900	342	5900	62.0
LEAD	1.0 U	1.0 U	1.0 U	17.8	1.0 U	1.0 U	1.0 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	**9GW1060003**	**9GW1070003**	**9GW1080003**	**9GW1090003**	**9GW1100003**	**9GWBLDG3670003**	**9GWC50003**
LOCATION:	**09GW106**	**09GW107**	**09GW108**	**09GW109**	**09GW110**	**BLD367**	**C-05**
SAMPLE DATE:	**8/10/99**	**8/5/99**	**8/5/99**	**8/4/99**	**8/10/99**	**8/10/99**	**8/11/99**
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
MAGNESIUM	949	2460	8000	3750	3560	7040	3430
MANGANESE	52.0	52.2	747	318	1280	119	168
MERCURY	0.10 U	0.10 U	0.10 U	0.35	0.10 U	0.10 U	0.10 U
NICKEL	21.4 K	8.8 U	8.8 U	8.8 U	11.1 K	8.8 U	16.4 K
POTASSIUM	1180	3110	8570	2430 B	2470	4020	1760
SELENIUM	2.7 U	2.7 U	2.7 U	5.4	2.7 U	2.7 U	2.7 U
SILVER	2.9 B	2.2 U	2.2 U	4.4 B	2.2 U	2.2 U	2.5 B
SODIUM	4530	44800	11700	15500	11000	4810	7770
THALLIUM	3.7 U	5.8 B	4.3 B	4.3 B	3.7 U	4.9	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	113	2.4 U	2.4 U	2.4 U
ZINC	18.9 B	10.3 B	11.4 B	35.6 J	19.4 B	801	8.3 B
MISCELLANEOUS PARAMETERS (µg/L)							
PERCHLORATES	4 U	4 U	4 U	4	7	4 U	18

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	**9GWC60003**	**9GWC140003**
LOCATION:	**C-06**	**C-14**
SAMPLE DATE:	**8/11/99**	**8/12/99**
ASSOCIATED DUPLICATE:		
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**
VOLATILES (µg/L)		
1,1,1-TRICHLOROETHANE	N/A	1 U
1,2-DICHLOROETHANE	N/A	1 U
2-BUTANONE	N/A	5 UR
ACETONE	N/A	36 L
BENZENE	N/A	0.26 J
BROMODICHLOROMETHANE	N/A	1 U
CARBON TETRACHLORIDE	N/A	1 U
CHLOROBENZENE	N/A	1 U
CHLOROFORM	N/A	1 U
CHLOROMETHANE	N/A	1 U
CIS-1,2-DICHLOROETHENE	N/A	1 U
TETRACHLOROETHENE	N/A	1 U
TOLUENE	N/A	0.41 J
TRICHLOROETHENE	N/A	1 U
XYLENES, TOTAL	N/A	0.43 J
SEMIVOLATILES (µg/L)		
BIS(2-ETHYLHEXYL)PHTHALATE	N/A	5.9
DI-N-BUTYL PHTHALATE	N/A	5 U
PESTICIDES/PCBs (µg/L)		
ALPHA-CHLORDANE	N/A	0.050 U
GAMMA-CHLORDANE	N/A	0.050 U
HEPTACHLOR EPOXIDE	N/A	0.050 U
EXPLOSIVES (µg/L)		
2,6-DINITROTOLUENE	N/A	0.20 U
HMX	N/A	0.50 U
RDX	N/A	0.50 U
INORGANICS (µg/L)		
ALUMINUM	N/A	349
ARSENIC	N/A	1.1 U
BARIUM	N/A	107
BERYLLIUM	N/A	0.19 B
CADMIUM	N/A	3.0 U
CALCIUM	N/A	22300 J
CHROMIUM	N/A	10.2 K
COBALT	N/A	3.8 U
COPPER	N/A	9.0
IRON	N/A	1300
LEAD	N/A	1.0 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.: **LOCATION:** **SAMPLE DATE:** **ASSOCIATED DUPLICATE:** **VALIDATION STATUS:**	**9GWC60003** **C-06** **8/11/99** **VALIDATED**	**9GWC140003** **C-14** **8/12/99** **VALIDATED**
MAGNESIUM	N/A	4470
MANGANESE	N/A	128
MERCURY	N/A	0.10 U
NICKEL	N/A	9.1 K
POTASSIUM	N/A	11000
SELENIUM	N/A	2.7 U
SILVER	N/A	2.2 U
SODIUM	N/A	13000
THALLIUM	N/A	3.7 U
VANADIUM	N/A	4.8 B
ZINC	N/A	25.1 B
MISCELLANEOUS PARAMETERS (µg/L)		
PERCHLORATES	4 U	4 U

SITE 9

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

POSITIVE DETECTIONS

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW010003-F	9GW030003-F	9GW040003-F	9GW050003-F	9GW0580003-F	9GW060003-F	9GW060003-F-D	9GW070003-F
LOCATION:	09GW01	09GW03	09GW04	09GW05	09GW58	09GW06	09GW06	09GW07
SAMPLE DATE:	08/09/99	08/05/99	08/09/99	08/09/99	08/04/99	08/05/99	08/05/99	08/04/99
ASSOCIATED DUPLICATE:						9GW060003-F-D	9GW060003-F	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)								
ALUMINUM	29.4 U	44.3	29.4 U	75.9	29.4 U	121 B	106	40.9 B
BARIUM	16.9	42.2	39.1	100	37.3	104	103	91
CALCIUM	3720	1940	2240	3920	3490	3700	3970	4860
CHROMIUM	2.4 U	3.1 K	2.4 U	2.4 U	2.4 UL	2.8 L	2.4 U	2.4 UL
COBALT	13.6	8.3	21.1	7.8	3.8 U	8.4 B	5.8	3.8 U
COPPER	1.4 U	3 B	1.9 B	2.8 B	3.5	2.7	2.1 B	3.1
IRON	10 J	14.5	19.8	68.5	388	31.4 B	70.1	11.1 B
MAGNESIUM	1740	2770	3770	7170	4840	6890	6980	6140
MANGANESE	12.9	45.6	32.7	170	41.4	151	154	58.9
MERCURY	0.1 U	0.1 U	0.41	0.25	0.1 U	0.1 U	0.1	0.1 U
NICKEL	8.8 U	16.7	10.2	23.3	8.8 U	13.5 B	12.9	15.4 B
POTASSIUM	1670 B	1610 B	1640 B	2820	1860 B	2890	2840	3080
SODIUM	6610	21900	20300	32200	17100	25700	25600	25900
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	6.4 B	7.5 B	11 B	9 B	4 B	9.2 B	12.3 B	31.2 J

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW550003-F	9GW57S0003-F	9GW590003-F	9GW740003-F	9GW750003-F	9GW830003-F	9GW1000003-F	9GW1020003-F
LOCATION:	09PZ55	09GW57S	09GW59	09GW74	09GW75	09GW83	09GW100	09GW102
SAMPLE DATE:	08/04/99	08/05/99	08/09/99	08/10/99	08/09/99	08/10/99	08/04/99	08/10/99
ASSOCIATED DUPLICATE:								
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)								
ALUMINUM	36.4 B	29.4 U	59.7	42.6	40.7	29.4 U	30.6 B	64
BARIUM	23.4	14.5	51.5	41.8	15.9	29.7	50.5	44.8
CALCIUM	1200	3150	5280	6070 J	4250	7190	24200	2210
CHROMIUM	2.4 UL	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 UL	5.3 K
COBALT	3.8 U	24.2	8.1	3.8 U	3.8 U	3.8 U	3.8 U	65.6
COPPER	2	1.5 B	3.4 B	1.4 U	1.7 B	4.3 B	3.8	34.7
IRON	13.9 B	9.2 U	82.5	12.8 B	20.1	13	24.9 B	77.6
MAGNESIUM	2320	3610	3640	4490	4350	4670	10600	2660
MANGANESE	11.9	6.8	54	33.2	26.6	96.4	255	368
MERCURY	0.1 U	0.1 U	0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL	8.8 U	8.8 U	8.9	15.1 K	8.9	8.8 U	8.8 U	46.5
POTASSIUM	1420 B	1250 B	1840 B	2390	1550 B	4170	4930	2050 B
SODIUM	7820	8060	18200	8540	18700	10300	24300	4450
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	4.2 B	4.8 B	12.3 B	16 B	5.8 B	11.8 B	2.1 B	52.1

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF POSITIVE ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW1030003-F	9GW1040003-F	9GW1050003-F	9GW1060003-F	9GW1080003-F	9GW1090003-F	9GWBLDG3670003-F
LOCATION:	09GW103	09GW104	09GW105	09GW106	09GW108	09GW109	BLD367
SAMPLE DATE:	08/05/99	08/09/99	08/04/99	08/10/99	08/05/99	08/04/99	08/10/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)							
ALUMINUM	41.8 B	29.4 U	59.3 B	31.3	29.4 U	64.1 B	37.7
BARIUM	22.8	105	39.6	16	34.9	27.8	70.1
CALCIUM	5610	12000	5420	576 B	9640	2380	9810 J
CHROMIUM	2.4 UL	2.8 K	2.4 UL	2.4 U	2.4 U	2.4 UL	2.4 U
COBALT	37	3.8 U	14.4 B	27.7	19.2	5.4 B	3.8 U
COPPER	1.4 U	2.6 B	1.6	2.2	1.6 B	1.4 U	1.8
IRON	19.9 B	47.5	932	338	4890	202	2930
MAGNESIUM	4210	6700	3060	939	7740	3220	7520
MANGANESE	90.4	825	370	51.4	714	232	122
MERCURY	0.1 U	0.1 U	0.1 U	0.10 U	0.1 U	0.1 U	0.10
NICKEL	8.8 U	9.4	19 B	12 K	8.8 U	8.8 U	8.8 U
POTASSIUM	3060	4720	2890	1070	8680	1740 B	4620
SODIUM	15100	10600	8830	4580	11600	17700	4950
VANADIUM	2.4 U	3.4	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	5.5 B	11 B	6.5 B	9.3 B	7.4 B	7.4 B	686

SECTION F

ANALYTICAL DATA

SITE 2

GROUNDWATER DATA
JULY/AUGUST 1999

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW1000003	2GW1010003	2GW1020003	2GW1020003-D	2GW1030003	2GW1040003	2GW1050003
LOCATION:	02SB100/2GW100	02SB101/2GW101	02GW102	02GW102	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/26/99	07/22/99	07/22/99	07/21/99	07/22/99	07/21/99
ASSOCIATED DUPLICATE:			2GW1020003-D	2GW1020003			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)							
1,1,1-TRICHLOROETHANE	0.21 J	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	0.23 J	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR
1,2-DIBROMOETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
2-HEXANONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYL-2-PENTANONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	3.1 B	3.4 B	3.5 B	3.5 B	2.9 B	4.4 B	2.6 B
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOFORM	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	0.36 B	1.2 B	1 U	0.24 B	0.15 B	0.31 B	0.46 B
CHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	1.2	0.61 J	1 U	1 U	0.18 J	1 U	1 U
CHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	0.33 J	0.36 J	2.8	2.8	1 U	2.1	0.25 J
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
DIBROMOCHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	2 U	0.22 B	2 U	2 U	2 U	2 U	2 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW1000003	2GW1010003	2GW1020003	2GW1020003-D	2GW1030003	2GW1040003	2GW1050003
LOCATION:	02SB100/2GW100	02SB101/2GW101	02GW102	02GW102	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/26/99	07/22/99	07/22/99	07/21/99	07/22/99	07/21/99
ASSOCIATED DUPLICATE:			2GW1020003-D	2GW1020003			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
STYRENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	3.9	2.5	6.7	6.4	0.86 J	1.3	1.3
VINYL CHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
XYLENES, TOTAL	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (µg/L)							
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	1.4 J	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW1000003	2GW1010003	2GW1020003	2GW1020003-D	2GW1030003	2GW1040003	2GW1050003
LOCATION:	02SB100/2GW100	02SB101/2GW101	02GW102	02GW102	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/26/99	07/22/99	07/22/99	07/21/99	07/22/99	07/21/99
ASSOCIATED DUPLICATE:			2GW1020003-D	2GW1020003			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
ACENAPHTHYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(B)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	2.7 B	5 B	4 B	43 J	1.2 B	3.8 B	4.4 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZOFURAN	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	1.8 J
DIMETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW1000003	2GW1010003	2GW1020003	2GW1020003-D	2GW1030003	2GW1040003	2GW1050003
LOCATION:	02SB100/2GW100	02SB101/2GW101	02GW102	02GW102	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/26/99	07/22/99	07/22/99	07/21/99	07/22/99	07/21/99
ASSOCIATED DUPLICATE:			2GW1020003-D	2GW1020003			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
PESTICIDES/PCBs (µg/L)							
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
AROCLOR-1016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1254	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
EXPLOSIVES (µg/L)							
1,3,5-TRINITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DINITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4,6-TRINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW1000003	2GW1010003	2GW1020003	2GW1020003-D	2GW1030003	2GW1040003	2GW1050003
LOCATION:	02SB100/2GW100	02SB101/2GW101	02GW102	02GW102	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/26/99	07/22/99	07/22/99	07/21/99	07/22/99	07/21/99
ASSOCIATED DUPLICATE:			2GW1020003-D	2GW1020003			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
3-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-AMINO-2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.68
NITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
RDX	0.5 U	0.5 U	0.5 U	0.5 U	0.86	0.5 U	0.5 U
TETRYL	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
INORGANICS (µg/L)							
ALUMINUM	362	373	75.6 B	73.6 B	2690	1320	1930
ANTIMONY	1.7 UL	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.4	1.1 U	1.7	2.4	1.1 U
BARIUM	858	306	436	445	66.4	302	139
BERYLLIUM	0.11 B	0.25 B	0.11 U	0.11 U	0.16 B	0.11 U	0.22 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL
CALCIUM	156000	40300	53600	57000	19100	68100	15100
CHROMIUM	4.9 K	5.0	2.4 U	2.4 U	5.0	2.4 U	3.1
COBALT	8.1 K	3.8 U	4.8	3.9	3.8 U	3.8 U	8.2
COPPER	12.3	4.9 U	1.4 U	1.7 B	7.6 B	7.2 B	13.8
CYANIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
IRON	791	1120	11000	11400	5320	3760	4090
LEAD	1.0 UL	1.0 U	1.0 U	1.0 U	1.8 K	1.0 U	1.0 U
MAGNESIUM	54400	23600	21200	21800	7590	19900	9200
MANGANESE	525	607	1130	1180	298	413	311
MERCURY	0.11	0.21	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
NICKEL	23.9 L	85.7	8.8 U	8.8 U	10.8	8.8 U	59.0
POTASSIUM	11100	5470	6870	6800	7380	6930	5470
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.3
SODIUM	514000	72200	17600	17600	34400	30700	30400
THALLIUM	8.6 L	4.2	3.9	4.5	4.5	5.3	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW1000003	2GW1010003	2GW1020003	2GW1020003-D	2GW1030003	2GW1040003	2GW1050003
LOCATION:	02SB100/2GW100	02SB101/2GW101	02GW102	02GW102	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/26/99	07/22/99	07/22/99	07/21/99	07/22/99	07/21/99
ASSOCIATED DUPLICATE:			2GW1020003-D	2GW1020003			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
ZINC	70.9	58.1	5.0	5.3	22.3	49.3	34.1
MISCELLANEOUS PARAMETERS (µg/L)							
PERCHLORATES	50 U	16 U	8 U	8 U	8 U	8 U	8 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW300003	2GW310003	2GW320003	2GW450003	2GW760003
LOCATION:	02GW30	02GW31	02GW32	02GW45	02GW76
SAMPLE DATE:	07/22/99	07/21/99	07/26/99	07/21/99	07/20/99
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)					
1,1,1-TRICHLOROETHANE	1 U	1 U	3 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	3 U	1 U	1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	3 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	1 U	3 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1 U	3 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	1 U	1 U	3 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	1 UR	3 UR	1 UR	1 UR
1,2-DIBROMOETHANE	1 U	1 U	3 U	1 U	1 U
1,2-DICHLOROBENZENE	1 U	1 U	3 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	1 U	3 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U	1 U	3 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U	1 U	3 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U	1 U	3 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	15 UR	5 UR	5 UR
2-HEXANONE	5 U	5 U	15 U	5 U	5 U
4-METHYL-2-PENTANONE	5 U	5 U	15 U	5 U	5 U
ACETONE	3.8 B	2.7 B	15 UR	2.7 B	5 UR
BENZENE	1 U	1 U	3 U	1 U	1 U
BROMOCHLOROMETHANE	1 U	1 U	3 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	3 U	1 U	1 U
BROMOFORM	1 U	1 U	3 U	1 U	1 U
BROMOMETHANE	1 U	1 U	3 U	1 U	1 U
CARBON DISULFIDE	1 U	1 U	3 U	1 U	1 U
CARBON TETRACHLORIDE	1 U	1 U	3 U	1 U	1 U
CHLOROBENZENE	0.2 B	0.23 B	3 U	0.21 B	1 U
CHLOROETHANE	1 U	1 U	3 U	1 U	1 U
CHLOROFORM	0.23 J	1 U	3 U	0.2 J	1 U
CHLOROMETHANE	1 U	1 U	3 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	0.43 J	1 U	0.93 J	0.23 J	1 U
CIS-1,3-DICHLOROPROPENE	1 U	1 U	3 U	1 U	1 U
DIBROMOCHLOROMETHANE	1 U	1 U	3 U	1 U	1 U
ETHYLBENZENE	1 U	1 U	3 U	1 U	1 U
METHYLENE CHLORIDE	0.29 B	2 U	1.8 B	2 U	2 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW300003	2GW310003	2GW320003	2GW450003	2GW760003
LOCATION:	02GW30	02GW31	02GW32	02GW45	02GW76
SAMPLE DATE:	07/22/99	07/21/99	07/26/99	07/21/99	07/20/99
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
STYRENE	1 U	1 U	3 U	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	3 U	1 U	1 U
TOLUENE	1 U	1 U	3 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	3 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	3 U	1 U	1 U
TRICHLOROETHENE	14	1 U	35	2.6 J	1 U
VINYL CHLORIDE	1 U	1 U	3 U	1 U	1 U
XYLENES, TOTAL	1 U	1 U	3 U	1 U	1 U
SEMIVOLATILES (µg/L)					
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	2.3 J	5 U	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 U	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U	5 U	5 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW300003	2GW310003	2GW320003	2GW450003	2GW760003
LOCATION:	02GW30	02GW31	02GW32	02GW45	02GW76
SAMPLE DATE:	07/22/99	07/21/99	07/26/99	07/21/99	07/20/99
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
ACENAPHTHYLENE	5 U	5 U	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U	5 U	5 U
BENZO(A)ANTHRACENE	5 U	5 U	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 U	5 U	5 U	5 U
BENZO(B)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	8 B	4.1 B	6.8 B	8.7 B	6.2 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U	5 U	5 U
DIBENZOFURAN	5 U	5 U	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U
DIMETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U
FLUORANTHENE	5 U	5 U	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U	5 U	5 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW300003	2GW310003	2GW320003	2GW450003	2GW760003
LOCATION:	02GW30	02GW31	02GW32	02GW45	02GW76
SAMPLE DATE:	07/22/99	07/21/99	07/26/99	07/21/99	07/20/99
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
PESTICIDES/PCBs (µg/L)					
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
AROCLOR-1016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1254	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
EXPLOSIVES (µg/L)					
1,3,5-TRINITROBENZENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
1,3-DINITROBENZENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
2,4,6-TRINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
2,4-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	2GW300003	2GW310003	2GW320003	2GW450003	2GW760003
LOCATION:	02GW30	02GW31	02GW32	02GW45	02GW76
SAMPLE DATE:	07/22/99	07/21/99	07/26/99	07/21/99	07/20/99
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
2-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
3-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
4-AMINO-2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
4-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
HMX	0.5 U	0.5 U	0.5 U	12	0.5 U
NITROBENZENE	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
RDX	0.5 U	0.5 U	0.5 U	1 U	0.5 U
TETRYL	0.2 U	0.2 U	0.2 U	0.4 U	0.2 U
INORGANICS (μg/L)					
ALUMINUM	239 B	52500	7710	9460	588
ANTIMONY	1.7 U	1.7 U	3.4 UL	1.7 U	1.7 U
ARSENIC	1.4	9.4	10.0	2.4	1.9
BARIUM	52.0	222	182	119	23.4
BERYLLIUM	0.11 U	4.2 B	6.0 B	1.0 B	0.53 B
CADMIUM	3.0 UL	3.0 UL	12.3 L	3.0 UL	3.0 UL
CALCIUM	67300	5620	145000	43400	2100
CHROMIUM	3.5	51.5	2.4 U	13.2	5.9
COBALT	9.0	48.2	93.5	19.8	3.8 U
COPPER	6.7 B	87.7	16.2	22.2	10.4
CYANIDE	1.4 U	1.4 U	1.4 U	1.9	1.4 U
IRON	500	80100	130	25400	456
LEAD	1.0 U	21.7	7.3	5.2 K	1.0 U
MAGNESIUM	37000	12700	88600	22100	1100
MANGANESE	3360	1580	18200	1010	139
MERCURY	0.10 U	0.29	1.8	0.10 U	0.10 U
NICKEL	36.4	74.1	155	27.1	8.8 U
POTASSIUM	8180	10200	26500	6390	1880
SELENIUM	2.7 U	2.7 U	5.4 U	2.7 U	2.7 U
SILVER	2.2 U	3.3	3.8 K	2.2 U	2.5
SODIUM	267000	3990	3400000	241000	66800
THALLIUM	5.7	5.8	12.3 L	6.1	5.6
VANADIUM	2.4 U	54.5	2.4 U	15.4	2.4 U

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA JULY 1999

SAMPLE I.D.:	**2GW300003**	**2GW310003**	**2GW320003**	**2GW450003**	**2GW760003**
LOCATION:	**02GW30**	**02GW31**	**02GW32**	**02GW45**	**02GW76**
SAMPLE DATE:	**07/22/99**	**07/21/99**	**07/26/99**	**07/21/99**	**07/20/99**
ASSOCIATED DUPLICATE:					
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
ZINC	18.8	172	300	49.6	14.2
MISCELLANEOUS PARAMETERS (µg/L)					
PERCHLORATES	32 U	4 U	200 U	20 U	8 U

SITE 2

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

SITE 2
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	2GW310003-F	2GW450003-F	2GW760003-F	2GW1010003-F	2GW1030003-F	2GW1040003-F	2GW1050003-F
LOCATION:	02GW31	02GW45	02GW76	02SB101/2GW101	02GW103	02GW104	02GW105
SAMPLE DATE:	07/21/99	07/21/99	07/20/99	07/26/99	07/21/99	07/22/99	07/21/99
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (μg/L)							
ALUMINUM	42.6 B	44.2 B	75.1 B	92.9 B	36.4 B	29.4 U	74.8 B
ANTIMONY	1.7 U	1.7 U	1.7 U	2.1	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
BARIUM	19.4	61.6	24.3	312	25.4	282	105
BERYLLIUM	0.11 U	0.29 B	0.61 B	0.43 B	0.14 B	0.23 B	0.23 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL
CALCIUM	3490	42600	2070	39300	19100	59100	14200
CHROMIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
COBALT	3.8 U	8.4	3.8 U	5.4	3.8 U	3.8 U	6.6
COPPER	1.4 U	1.9 B	7.2 B	1.4 U	2.0 B	1.4 U	6.0 B
IRON	25.3 B	116 B	84.5 B	21.2 B	85.6 B	561	241
LEAD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MAGNESIUM	2400	21300	1120	24300	7340	19900	8470
MANGANESE	17.2	908	143	549	163	352	289
MERCURY	0.10 U	0.10 U	0.10 U	0.13	0.10 U	0.1 U	0.10 U
NICKEL	8.8 U	8.8 U	8.8 U	82.9	8.8 U	8.8 U	55.9
POTASSIUM	1210	5310	2230	6030	6900	7510	4840
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	3450	264000	75400	79100	38800	34300	31300
THALLIUM	3.7 U	5.5	3.7 U	4.3	3.7 U	3.7 U	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	4.4	9.5	9.7	51.5	8.3	17.1	41.6

SITE 3

GROUNDWATER DATA
JULY/AUGUST 1999

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW170003	3GW170003-D	3GW180003	3GW190003	3GW470003	3GW770003	3GW78D0003	3GW78S0003
LOCATION:	03GW17	03GW17	03GW18	03GW19	03GW47	03GW77	03GW78D	03GW78S
SAMPLE DATE:	07/27/99	07/27/99	07/27/99	07/30/99	07/26/99	07/26/99	07/28/99	07/27/99
ASSOCIATED DUPLICATE:	3GW170003-D	3GW170003						
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U	3.9	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	1 UR	1 UR	3 UR	1 UR	1 UR	1 UR	1 UR
1,2-DIBROMOETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U	1 U	1 U	1.4 J	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U	1 U	1 U	3.6 B	1 U	1 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	5 UR	15 UR	5 UR	5 UR	5 UR	5 UR
2-HEXANONE	5 U	5 U	5 U	15 U	5 U	5 U	5 U	5 U
4-METHYL-2-PENTANONE	5 U	5 U	5 U	15 U	5 U	5 U	5 U	5 U
ACETONE	5 UR	5 UR	2.9 B	15 UR	5 UR	5 UR	5 UR	5 UR
BENZENE	1 U	1 U	1 U	1.9 B	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
BROMOFORM	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
BROMOMETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	1 U	1 U	0.38 J	48	1 U	1 U	1 U	1 U
CHLOROETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
CHLOROFORM	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
CHLOROMETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	0.28 J	0.26 J	2.9	25	0.57 J	1.5	1 U	1 U
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
DIBROMOCHLOROMETHANE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	2 U	2 U	2 U	6 U	2 U	2 U	2 U	2 U
STYRENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW170003	3GW170003-D	3GW180003	3GW190003	3GW470003	3GW770003	3GW78D0003	3GW78S0003
LOCATION:	03GW17	03GW17	03GW18	03GW19	03GW47	03GW77	03GW78D	03GW78S
SAMPLE DATE:	07/27/99	07/27/99	07/27/99	07/30/99	07/26/99	07/26/99	07/28/99	07/27/99
ASSOCIATED DUPLICATE:	3GW170003-D	3GW170003						
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
TOLUENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	0.24 J	5.4	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	1 U	1 UJ	0.81 J	1.1 J	0.48 J	0.32 J	1 U	1 U
VINYL CHLORIDE	1 U	1 U	0.39 J	4.3	1 U	1 U	1 U	1 U
XYLENES, TOTAL	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (µg/L)								
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACENAPHTHYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW170003	3GW170003-D	3GW180003	3GW190003	3GW470003	3GW770003	3GW78D0003	3GW78S0003
LOCATION:	03GW17	03GW17	03GW18	03GW19	03GW47	03GW77	03GW78D	03GW78S
SAMPLE DATE:	07/27/99	07/27/99	07/27/99	07/30/99	07/26/99	07/26/99	07/28/99	07/27/99
ASSOCIATED DUPLICATE:	3GW170003-D	3GW170003						
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
BENZO(B)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	3.1 B	2.1 B	5 U	3.6 B	6.1 B	2 B	6.3 B	4 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZOFURAN	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIMETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)								
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW170003	3GW170003-D	3GW180003	3GW190003	3GW470003	3GW770003	3GW78D0003	3GW78S0003
LOCATION:	03GW17	03GW17	03GW18	03GW19	03GW47	03GW77	03GW78D	03GW78S
SAMPLE DATE:	07/27/99	07/27/99	07/27/99	07/30/99	07/26/99	07/26/99	07/28/99	07/27/99
ASSOCIATED DUPLICATE:	3GW170003-D	3GW170003						
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
ALPHA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
AROCLOR-1016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1254	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
EXPLOSIVES (µg/L)								
1,3,5-TRINITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
1,3-DINITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
2,4,6-TRINITROTOLUENE	0.2 U	0.23	0.2 U	0.2 U	0.34 U	0.2 U	0.21	0.2 U
2,4-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
2-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
3-NITROTOLUENE	0.2 U	0.2 U	0.2 U	3.9 U	0.34 U	0.2 U	0.2 U	0.2 U
4-AMINO-2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
4-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.86 U	0.5 U	0.5 U	0.5 U
NITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW170003	3GW170003-D	3GW180003	3GW190003	3GW470003	3GW770003	3GW78D0003	3GW78S0003
LOCATION:	03GW17	03GW17	03GW18	03GW19	03GW47	03GW77	03GW78D	03GW78S
SAMPLE DATE:	07/27/99	07/27/99	07/27/99	07/30/99	07/26/99	07/26/99	07/28/99	07/27/99
ASSOCIATED DUPLICATE:	3GW170003-D	3GW170003						
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
RDX	0.5 U	0.5 U	0.5 U	0.5 U	0.86 U	0.5 U	0.5 U	0.5 U
TETRYL	0.2 U	0.2 U	0.2 U	0.2 U	0.34 U	0.2 U	0.2 U	0.2 U
INORGANICS (µg/L)								
ALUMINUM	90.6 B	145 B	912	103	9040	14100	29.4 U	221 B
ANTIMONY	1.7 U	1.7 U	1.7 U	1.7 U	1.9	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.2	3.2	1.1 U	1.1 U
BARIUM	87.0	89.1	54.6	166	129	142	104	39.0
BERYLLIUM	0.26 B	0.26 B	0.18 B	0.31 B	0.69 B	0.94 B	0.11 U	0.20 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL
CALCIUM	25200	26000	15000	25400	10900	7970	14200	4680
CHROMIUM	2.4 U	2.4 U	3.2 K	7.0 K	17.4	40.5	2.4 U	5.5
COBALT	5.4	8.7	15.1	7.6	9.3	39.3	3.8 U	4.8
COPPER	3.8 B	5.5 B	6.2	3.1	18.7	25.0	1.4 U	4.1 B
CYANIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
IRON	8360	8610	13100	14900	21800	44700	777	445
LEAD	1.0 U	1.0 U	1.0 UL	1.0 UL	6.7	5.6 K	1.0 UL	1.0 U
MAGNESIUM	18300	18900	10900	11300	6730	9110	6820	3190
MANGANESE	1350	1400	1600	738	1190	1130	87.7	99.4
MERCURY	0.10 U	0.10 U	0.10 UL	0.10 UL	0.13	0.10 U	0.10 UL	0.10 U
NICKEL	43.9	52.9	41.8	13.8	9.2	29.6	8.8 U	8.8 U
POTASSIUM	3640	3920	2930	4230	4070	6970	3700	1630
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	15400	16000	10100	22200	29000	37500	13500	10200
THALLIUM	3.7 U	3.7 U	5.5 B	4.5 B	3.7 U	3.8	4.2 B	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4	14.2	27.2	2.4 U	2.4 U
ZINC	18.7	13.8	22.9	12.6	37.4	75.2	2.1	41.8
MISCELLANEOUS PARAMETERS (µg/L)								
PERCHLORATES	8 U	8 U	4 U	4 U	4 U	4 U	4 U	4 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW1020003	3GW1040003	3GW1070003
LOCATION:	03GW102	03GW104	03GW107
SAMPLE DATE:	07/29/99	07/27/99	07/27/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)			
1,1,1-TRICHLOROETHANE	5 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	5 U	1 U	1 U
1,1,2-TRICHLOROETHANE	5 U	1 U	1 U
1,1-DICHLOROETHANE	5 U	1 U	1 U
1,1-DICHLOROETHENE	5 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	5 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	5 UR	1 UR	1 UR
1,2-DIBROMOETHANE	5 U	1 U	1 U
1,2-DICHLOROBENZENE	5 U	1 U	1 U
1,2-DICHLOROETHANE	5 U	1 U	1 U
1,2-DICHLOROPROPANE	5 U	1 U	1 U
1,3-DICHLOROBENZENE	5 U	1 U	1 U
1,4-DICHLOROBENZENE	5 U	1 U	1 U
2-BUTANONE	25 UR	5 UR	5 UR
2-HEXANONE	25 U	5 U	5 U
4-METHYL-2-PENTANONE	25 U	5 U	5 U
ACETONE	25 UR	5 UR	5 UR
BENZENE	5 U	1 U	0.32 B
BROMOCHLOROMETHANE	5 U	1 U	1 U
BROMODICHLOROMETHANE	5 U	1 U	1 U
BROMOFORM	5 U	1 U	1 U
BROMOMETHANE	5 U	1 U	1 U
CARBON DISULFIDE	5 U	1 U	1 U
CARBON TETRACHLORIDE	5 U	1 U	1 U
CHLOROBENZENE	5 U	1 U	0.21 B
CHLOROETHANE	5 U	1 U	1 U
CHLOROFORM	5 U	1 U	1 U
CHLOROMETHANE	5 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	41	3.5	8.9
CIS-1,3-DICHLOROPROPENE	5 U	1 U	1 U
DIBROMOCHLOROMETHANE	5 U	1 U	1 U
ETHYLBENZENE	5 U	1 U	1 U
METHYLENE CHLORIDE	10 U	2 U	0.26 B
STYRENE	5 U	1 U	1 U
TETRACHLOROETHENE	5 U	1 U	0.36 J

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW1020003	3GW1040003	3GW1070003
LOCATION:	03GW102	03GW104	03GW107
SAMPLE DATE:	07/29/99	07/27/99	07/27/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
TOLUENE	5 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	5 U	1 U	0.42 J
TRANS-1,3-DICHLOROPROPENE	5 U	1 U	1 U
TRICHLOROETHENE	24	6.5	0.88 J
VINYL CHLORIDE	1.5 J	1 U	1.3
XYLENES, TOTAL	5 U	1 U	1 U
SEMIVOLATILES (µg/L)			
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5.4 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	22 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5.4 U
2,4-DICHLOROPHENOL	5 U	5 U	5.4 U
2,4-DIMETHYLPHENOL	5 U	5 U	5.4 U
2,4-DINITROPHENOL	20 U	20 U	22 U
2,4-DINITROTOLUENE	5 U	5 U	5.4 U
2,6-DINITROTOLUENE	5 U	5 U	5.4 U
2-CHLORONAPHTHALENE	5 U	5 U	5.4 U
2-CHLOROPHENOL	5 U	5 U	5.4 U
2-METHYLNAPHTHALENE	5 U	5 U	5.4 U
2-METHYLPHENOL	5 U	5 U	5.4 U
2-NITROANILINE	20 U	20 U	22 U
2-NITROPHENOL	5 U	5 U	5.4 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5.4 U
3-NITROANILINE	20 U	20 U	22 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	22 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5.4 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5.4 U
4-CHLOROANILINE	5 U	5 U	5.4 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5.4 U
4-METHYLPHENOL	5 U	5 U	5.4 U
4-NITROANILINE	20 U	20 U	22 U
4-NITROPHENOL	20 U	20 U	22 U
ACENAPHTHENE	5 U	5 U	5.4 U
ACENAPHTHYLENE	5 U	5 U	5.4 U
ANTHRACENE	5 U	5 U	5.4 U
BENZO(A)ANTHRACENE	5 U	5 U	5.4 U
BENZO(A)PYRENE	5 U	5 U	5.4 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW1020003	3GW1040003	3GW1070003
LOCATION:	03GW102	03GW104	03GW107
SAMPLE DATE:	07/29/99	07/27/99	07/27/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
BENZO(B)FLUORANTHENE	5 U	5 U	5.4 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5.4 U
BENZO(K)FLUORANTHENE	5 U	5 U	5.4 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5.4 U
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5.4 U
BIS(2-ETHYLHEXYL)PHTHALATE	6.1 B	3.9 B	2.3 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5.4 U
CHRYSENE	5 U	5 U	5.4 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5.4 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5.4 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5.4 U
DIBENZOFURAN	5 U	5 U	5.4 U
DIETHYL PHTHALATE	5 U	5 U	5.4 U
DIMETHYL PHTHALATE	5 U	5 U	5.4 U
FLUORANTHENE	5 U	5 U	5.4 U
FLUORENE	5 U	5 U	5.4 U
HEXACHLOROBENZENE	5 U	5 U	5.4 U
HEXACHLOROBUTADIENE	5 U	5 U	5.4 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5.4 U
HEXACHLOROETHANE	5 U	5 U	5.4 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5.4 U
ISOPHORONE	5 U	5 U	5.4 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5.4 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5.4 U
NAPHTHALENE	5 U	5 U	5.4 U
NITROBENZENE	5 U	5 U	5.4 U
PENTACHLOROPHENOL	20 U	20 U	22 U
PHENANTHRENE	5 U	5 U	5.4 U
PHENOL	5 U	5 U	5.4 U
PYRENE	5 U	5 U	5.4 U
PESTICIDES/PCBs (µg/L)			
4,4'-DDD	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.050 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW1020003	3GW1040003	3GW1070003
LOCATION:	03GW102	03GW104	03GW107
SAMPLE DATE:	07/29/99	07/27/99	07/27/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
ALPHA-CHLORDANE	0.050 U	0.050 U	0.050 U
AROCLOR-1016	1.0 U	1.0 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1.0 U
AROCLOR-1254	1.0 U	1.0 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.050 U
HEPTACHLOR	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5.0 U
EXPLOSIVES (µg/L)			
1,3,5-TRINITROBENZENE	0.2 U	0.2 U	0.2 U
1,3-DINITROBENZENE	0.2 U	0.2 U	0.2 U
2,4,6-TRINITROTOLUENE	0.2 U	0.2 U	0.2 U
2,4-DINITROTOLUENE	0.2 U	0.2 U	0.2 U
2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U
2-NITROTOLUENE	0.2 U	0.2 U	0.2 U
3-NITROTOLUENE	0.2 U	0.2 U	0.2 U
4-AMINO-2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U
4-NITROTOLUENE	0.2 U	0.2 U	0.2 U
HMX	0.5 U	0.5 U	1
NITROBENZENE	0.2 U	0.2 U	0.2 U

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW1020003	3GW1040003	3GW1070003
LOCATION:	03GW102	03GW104	03GW107
SAMPLE DATE:	07/29/99	07/27/99	07/27/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
RDX	0.5 U	0.5 U	1
TETRYL	0.2 U	0.2 U	0.2 U
INORGANICS (µg/L)			
ALUMINUM	29.4 U	744	70400
ANTIMONY	1.7 U	1.7 U	1.7 UL
ARSENIC	1.1 U	1.1 U	11.9
BARIUM	147	159	328
BERYLLIUM	0.11 U	0.11 U	3.8 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL
CALCIUM	25200	19700	16400
CHROMIUM	2.4 U	50.1	108
COBALT	3.8 U	16.2	79.1
COPPER	1.4 U	8.8	169
CYANIDE	1.4 U	1.7	1.4 U
IRON	6180	6130	105000
LEAD	1.0 UL	1.0 UL	49.3
MAGNESIUM	10900	8400	18200
MANGANESE	268	273	4730
MERCURY	0.10 UL	0.10 UL	0.27
NICKEL	8.8 U	39.9	106
POTASSIUM	4020	3500	20700
SELENIUM	2.7 U	2.7 U	5.8 K
SILVER	2.2 U	2.2 U	5.5 K
SODIUM	10300	9250 K	34200
THALLIUM	3.7 U	4.4 B	3.9 L
VANADIUM	2.4 U	2.4 U	141
ZINC	7.3	14.3	278
MISCELLANEOUS PARAMETERS (µg/L)			
PERCHLORATES	4 U	4 U	4 U

SITE 3

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

SITE 3
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	3GW180003-F	3GW470003-F	3GW770003-F	3GW1040003-F	3GW1070003-F
LOCATION:	03GW18	03GW47	03GW77	03GW104	03GW107
SAMPLE DATE:	07/27/99	07/26/99	07/26/99	07/27/99	07/27/99
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (μg/L)					
ALUMINUM	29.4 U	57.6 B	51.9 B	29.4 U	53.3 B
ANTIMONY	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
BARIUM	50.0	57.7	42.5	124	44.9
BERYLLIUM	0.11 U	0.17 B	0.17 B	0.11 U	0.20 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL
CALCIUM	14800	11500	7510	21600	8820
CHROMIUM	2.4 U	2.4 U	2.4 U	6.8 K	2.4 U
COBALT	14.9	6.6	6.0	5.4	26.1
COPPER	1.4 U	2.5 B	1.4 U	1.4 U	1.8 B
IRON	12300	1200	23000	2830	2800
LEAD	1.0 UL	1.0 U	1.0 U	1.0 UL	1.0 U
MAGNESIUM	10700	5540	4670	8320	5850
MANGANESE	1540	1390	1060	269	3050
MERCURY	0.1 UL	0.10 U	0.10 U	0.1 UL	0.10 U
NICKEL	43.8	8.8 U	8.8 U	13.1	24.0
POTASSIUM	3020	2830	2840	3860	6600
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	10000 K	29300	41300	9180 K	27700
THALLIUM	4.2 B	3.7 U	4.1	4.1 B	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	11.3	9.1	2.8	6.1	16.5

SITE 4

GROUNDWATER DATA
JULY/AUGUST 1999

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW120003	4GW130003	4GW150003	4GW480003	4GW49D0003	4GW500003	4GW520003	4GW790003	4GW800003
LOCATION:	04GW12	04GW13	04GW15	04GW48	04GW49D	04GW50	04GW52	04GW79	04GW80
SAMPLE DATE:	07/30/99	08/03/99	08/02/99	08/03/99	08/02/99	07/28/99	07/30/99	08/02/99	08/02/99
ASSOCIATED DUPLICATE:									4GW800003-D
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)									
1,1,1-TRICHLOROETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,1,2,2-TETRACHLOROETHANE	1 U	2 U	1 U	1 U	1 U	300 J	1 U	9.3	8.2 J
1,1,2-TRICHLOROETHANE	1 U	0.46 J	1 U	0.15 J	1 U	100 U	1 U	2 U	10 U
1,1-DICHLOROETHANE	1 U	2 U	0.37 J	1 U	0.62 J	100 U	1 U	2 U	10 U
1,1-DICHLOROETHENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,2,4-TRICHLOROBENZENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	2 UR	1 UR	1 UR	1 UR	100 UR	1 UR	2 UR	10 UR
1,2-DIBROMOETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,2-DICHLOROBENZENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,2-DICHLOROETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,2-DICHLOROPROPANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,3-DICHLOROBENZENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
1,4-DICHLOROBENZENE	1 U	2 U	1 U	0.49 J	1 U	100 U	1 U	2 U	10 U
2-BUTANONE	5 UR	10 UR	5 UR	5 UR	5 UR	500 UR	5 UR	10 UR	50 UR
2-HEXANONE	5 U	10 U	5 U	5 U	5 U	500 U	5 U	10 U	50 U
4-METHYL-2-PENTANONE	5 U	10 U	5 U	5 U	5 U	500 U	5 U	10 U	50 U
ACETONE	5 UR	10 UR	5 UR	5 UR	1.8 B	500 UR	2.3 B	10 UR	50 UR
BENZENE	1 U	0.99 B	1 U	1 U	1 U	100 U	1 U	2 U	10 U
BROMOCHLOROMETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
BROMODICHLOROMETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
BROMOFORM	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
BROMOMETHANE	0.11 J	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
CARBON DISULFIDE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
CARBON TETRACHLORIDE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
CHLOROBENZENE	1 U	6.3	1 U	0.2 B	1 U	100 U	1 U	0.47 B	10 U
CHLOROETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
CHLOROFORM	1 U	2 U	1 U	0.27 J	1 U	100 U	0.25 J	2 U	1.7 J
CHLOROMETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
CIS-1,2-DICHLOROETHENE	1 U	16	1 U	0.64 J	1 U	150	1 U	0.77 J	5.6 J
CIS-1,3-DICHLOROPROPENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
DIBROMOCHLOROMETHANE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
ETHYLBENZENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
METHYLENE CHLORIDE	2 U	4 U	2 U	2 U	2 U	52 B	2 U	4 U	20 U
STYRENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
TETRACHLOROETHENE	1 U	2 U	1 U	1.2	1 U	100 U	1 U	2 U	2.0 J
TOLUENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
TRANS-1,2-DICHLOROETHENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW120003	4GW130003	4GW150003	4GW480003	4GW49D0003	4GW500003	4GW520003	4GW790003	4GW800003
LOCATION:	04GW12	04GW13	04GW15	04GW48	04GW49D	04GW50	04GW52	04GW79	04GW80
SAMPLE DATE:	07/30/99	08/03/99	08/02/99	08/03/99	08/02/99	07/28/99	07/30/99	08/02/99	08/02/99
ASSOCIATED DUPLICATE:									4GW800003-D
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
TRANS-1,3-DICHLOROPROPENE	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
TRICHLOROETHENE	1 U	26	1.3	64	1 U	1200	1 U	33	110
VINYL CHLORIDE	1 U	5.0	1 U	1 U	1 U	100 U	1 U	2 U	10 U
XYLENES, TOTAL	1 U	2 U	1 U	1 U	1 U	100 U	1 U	2 U	10 U
SEMIVOLATILES (µg/L)									
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
ACENAPHTHYLENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)ANTHRACENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
BENZO(B)FLUORANTHENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW120003	4GW130003	4GW150003	4GW480003	4GW49D0003	4GW500003	4GW520003	4GW790003	4GW800003
LOCATION:	04GW12	04GW13	04GW15	04GW48	04GW49D	04GW50	04GW52	04GW79	04GW80
SAMPLE DATE:	07/30/99	08/03/99	08/02/99	08/03/99	08/02/99	07/28/99	07/30/99	08/02/99	08/02/99
ASSOCIATED DUPLICATE:									4GW800003-D
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	3 B	8.4 B	4.9 B	3.5 B	1.3 B	2.5 B	31	7.3 B	1.6 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
DIBENZOFURAN	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
DIMETHYL PHTHALATE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
FLUORANTHENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U	5.3 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)									
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
AROCLOR-1016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW120003	4GW130003	4GW150003	4GW480003	4GW49D0003	4GW500003	4GW520003	4GW790003	4GW800003
LOCATION:	04GW12	04GW13	04GW15	04GW48	04GW49D	04GW50	04GW52	04GW79	04GW80
SAMPLE DATE:	07/30/99	08/03/99	08/02/99	08/03/99	08/02/99	07/28/99	07/30/99	08/02/99	08/02/99
ASSOCIATED DUPLICATE:									4GW800003-D
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
AROCLOR-1254	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
EXPLOSIVES (µg/L)									
1,3,5-TRINITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DINITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4,6-TRINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
3-NITROTOLUENE	0.2 U	0.32 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-AMINO-2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3
NITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
RDX	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.80
TETRYL	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
INORGANICS (µg/L)									
ALUMINUM	1110	342	2960	577	1780	3190	11700	65.6 B	2370
ANTIMONY	2.1 B	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.8	1.1	3.5	1.1 U	2.5	3.0	18.8	1.1 U	3.7
BARIUM	50.8	51.5	51.3	54.0	73.8	59.8	163	55.2	36.4
BERYLLIUM	0.34 B	0.12 B	0.17 B	0.12 B	0.10 U	0.11 U	0.75 B	0.23 B	0.17 B

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW120003**	**4GW130003**	**4GW150003**	**4GW480003**	**4GW49D0003**	**4GW500003**	**4GW520003**	**4GW790003**	**4GW800003**
LOCATION:	**04GW12**	**04GW13**	**04GW15**	**04GW48**	**04GW49D**	**04GW50**	**04GW52**	**04GW79**	**04GW80**
SAMPLE DATE:	**07/30/99**	**08/03/99**	**08/02/99**	**08/03/99**	**08/02/99**	**07/28/99**	**07/30/99**	**08/02/99**	**08/02/99**
ASSOCIATED DUPLICATE:									**4GW800003-D**
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL
CALCIUM	21300	30500	33000	86900	24200	37400	7390	21300	4650
CHROMIUM	52.0	8.1 L	27.2	2.4 UL	22.5	23.8	672	2.4 UL	130
COBALT	74.9	25.7	19.6 B	4.9 B	17.7 B	10.7	119	13.4 B	29.7
COPPER	7.1	10.5	6.5	5.6	16.6	17.2	219	4.6	28.2
CYANIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
IRON	7110	5350	7900	1600	7020	14200	126000	102	50600
LEAD	3.0 B	1.9 B	2.7 B	1.1 B	3.2 B	4.3 L	23.5	1.0 B	3.3 B
MAGNESIUM	18200	18500	15000	10500	9440	13800	15900	12700	4090
MANGANESE	1880	1940	637	21.5	358	737	423	441	219
MERCURY	2.2	0.16 L	1.2	0.10 UL	3.7	2.4	6.9	4.5	0.10 UL
NICKEL	43.5	11.1	9.4	8.8 U	15.4	9.2	486	8.8 U	109
POTASSIUM	2460 B	3830	3890	3340	5020	3010	4050	3030	2760
SELENIUM	4.8 K	2.7 U	2.7 U	2.7 U	7.4 K	2.7 U	70.5 K	2.7 U	8.9 K
SILVER	2.2 U	13.6 B	6.9 B	4.1 B	7.4 B	2.2 U	8.1	2.3 B	8.9 B
SODIUM	10200	8340	16800	3140	14600	8210 K	7190 K	11500	68200
THALLIUM	10.2 B	5.6 B	5.4 B	4.9 B	5.0 B	5.2 B	6.2 B	5.1 B	5.0 B
VANADIUM	4.2 B	3.3 B	16.1	4.3 B	13.0 B	17.4	151	3.5 B	17.7
ZINC	13.8 B	19.0 B	26.4 B	10.1 B	50.2	16.9	49.2	13.9 B	17.3 B
MISCELLANEOUS PARAMETERS (µg/L)									
PERCHLORATES	4 U	4 U	4 U	8 U	4 U	4 U	4 U	4 U	10

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW800003-D	4GW81D0003	4GW81D0003-D	4GW81S0003	4GW820003	4GW890003	4GW890003-D	4GW1000003
LOCATION:	04GW80	04GW81D	04GW81D	04GW81S	04GW82	04PZ89	04PZ89	04GW100
SAMPLE DATE:	08/02/99	08/03/99	08/03/99	08/03/99	08/02/99	08/02/99	08/02/99	07/29/99
ASSOCIATED DUPLICATE:	4GW800003	4GW81D0003-D	4GW81D0003			4GW890003-D	4GW890003	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,1-TRICHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,1,2,2-TETRACHLOROETHANE	10 U	1.5	1.4 J	4.5 J	1 U	2 U	1.7 J	1 U
1,1,2-TRICHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,1-DICHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	0.24 J
1,1-DICHLOROETHENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,2,4-TRICHLOROBENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	10 UR	1 UR	1 UR	1 UR	1 UR	2 UR	2 UR	1 UR
1,2-DIBROMOETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,2-DICHLOROBENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,2-DICHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,2-DICHLOROPROPANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,3-DICHLOROBENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
1,4-DICHLOROBENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
2-BUTANONE	50 UR	5 UR	5 UR	5 UR	5 UR	10 UR	10 UR	5 UR
2-HEXANONE	50 U	5 U	5 U	5 U	5 U	10 U	10 U	5 U
4-METHYL-2-PENTANONE	50 U	5 U	5 U	5 U	5 U	10 U	10 U	5 U
ACETONE	50 UR	5 UR	5 UR	5 UR	5 UR	10 UR	10 UR	5 UR
BENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
BROMOCHLOROMETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
BROMODICHLOROMETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
BROMOFORM	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
BROMOMETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
CARBON DISULFIDE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
CARBON TETRACHLORIDE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
CHLOROBENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
CHLOROETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	0.62 J
CHLOROFORM	1.8 J	0.31 J	0.29 J	0.26 J	2.4	2 U	2 U	1 U
CHLOROMETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
CIS-1,2-DICHLOROETHENE	5.4 J	0.23 J	1 U	0.46 J	1 U	2 U	2 U	1 U
CIS-1,3-DICHLOROPROPENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
DIBROMOCHLOROMETHANE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
ETHYLBENZENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
METHYLENE CHLORIDE	20 U	2 U	2 U	2 U	2 U	4 U	4 U	2 U
STYRENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
TETRACHLOROETHENE	1.8 J	0.93 J	0.97 J	1.8	1 U	2 U	2 U	1 U
TOLUENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
TRANS-1,2-DICHLOROETHENE	10 U	1 U	1 U	0.28 J	1 U	2 U	2 U	1 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW800003-D	4GW81D0003	4GW81D0003-D	4GW81S0003	4GW820003	4GW890003	4GW890003-D	4GW1000003
LOCATION:	04GW80	04GW81D	04GW81D	04GW81S	04GW82	04PZ89	04PZ89	04GW100
SAMPLE DATE:	08/02/99	08/03/99	08/03/99	08/03/99	08/02/99	08/02/99	08/02/99	07/29/99
ASSOCIATED DUPLICATE:	4GW800003	4GW81D0003-D	4GW81D0003			4GW890003-D	4GW890003	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
TRANS-1,3-DICHLOROPROPENE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
TRICHLOROETHENE	100	0.74 J	0.76 J	1.5	1 U	15	16	4.6
VINYL CHLORIDE	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
XYLENES, TOTAL	10 U	1 U	1 U	1 U	1 U	2 U	2 U	1 U
SEMIVOLATILES (µg/L)								
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACENAPHTHYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(B)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW800003-D	4GW81D0003	4GW81D0003-D	4GW81S0003	4GW820003	4GW890003	4GW890003-D	4GW1000003
LOCATION:	04GW80	04GW81D	04GW81D	04GW81S	04GW82	04PZ89	04PZ89	04GW100
SAMPLE DATE:	08/02/99	08/03/99	08/03/99	08/03/99	08/02/99	08/02/99	08/02/99	07/29/99
ASSOCIATED DUPLICATE:	4GW800003	4GW81D0003-D	4GW81D0003			4GW890003-D	4GW890003	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	5 U	2.8 B	6.6 B	4.4 B	3.4 B	2.3 B	3.7 B	4 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZOFURAN	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIMETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)								
4,4'-DDD	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-CHLORDANE	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
AROCLOR-1016	1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW800003-D	4GW81D0003	4GW81D0003-D	4GW81S0003	4GW820003	4GW890003	4GW890003-D	4GW1000003
LOCATION:	04GW80	04GW81D	04GW81D	04GW81S	04GW82	04PZ89	04PZ89	04GW100
SAMPLE DATE:	08/02/99	08/03/99	08/03/99	08/03/99	08/02/99	08/02/99	08/02/99	07/29/99
ASSOCIATED DUPLICATE:	4GW800003	4GW81D0003-D	4GW81D0003			4GW890003-D	4GW890003	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
AROCLOR-1254	1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.5 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U
EXPLOSIVES (µg/L)								
1,3,5-TRINITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DINITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4,6-TRINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.29	0.31	0.23	0.2 U	0.2 U	0.2 U	0.2 U
2-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
3-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-AMINO-2,6-DINITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-NITROTOLUENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	1.4	2.0	1.9	2	0.5 U	0.5 U	0.5 U	0.5 U
NITROBENZENE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
RDX	0.78	1.0	1.1	0.81	0.5 U	0.5 U	0.5 U	0.5 U
TETRYL	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
INORGANICS (µg/L)								
ALUMINUM	1760	104 B	86.1 B	128 B	4850	117 B	108 B	25300
ANTIMONY	1.7 U	2.4 B	2.2 B	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.8	1.1 U	1.1 U	1.1 U	2.5	1.1 U	1.1 U	11.2
BARIUM	33.1	94.6	94.1	83.3	99.7	35.8	34.5	78.7
BERYLLIUM	0.13 B	0.35 B	0.16 B	0.18 B	0.56 B	0.13 B	0.10 U	0.45 B

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW800003-D**	**4GW81D0003**	**4GW81D0003-D**	**4GW81S0003**	**4GW820003**	**4GW890003**	**4GW890003-D**	**4GW1000003**
LOCATION:	**04GW80**	**04GW81D**	**04GW81D**	**04GW81S**	**04GW82**	**04PZ89**	**04PZ89**	**04GW100**
SAMPLE DATE:	**08/02/99**	**08/03/99**	**08/03/99**	**08/03/99**	**08/02/99**	**08/02/99**	**08/02/99**	**07/29/99**
ASSOCIATED DUPLICATE:	**4GW800003**	**4GW81D0003-D**	**4GW81D0003**			**4GW890003-D**	**4GW890003**	
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
CADMIUM	3.0 UL	3.0 UL	3.0 U	3.0 U	3.0 UL	3.0 UL	3.0 UL	3.0 UL
CALCIUM	4480	2910	2900 B	2800	2790	16700	15900	12900
CHROMIUM	96.2	2.4 UL	2.4 UL	31.1	10.7 L	2.7 UL	2.4 UL	41.0
COBALT	26.5	4.1 B	3.8 U	53.3	18.2 B	6.3 B	7.1 B	3.8 U
COPPER	24.2	1.4 U	1.4 U	12.9	23.9	3.4	4.3	24.6
CYANIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
IRON	44100	9.2 U	9.2 U	1260	19600	269	264	27200
LEAD	3.3 B	1.0 B	1.0 U	1.0 U	7.3 B	1.0 U	1.0 U	10.4
MAGNESIUM	3950	7570	7460	5650	7080	9580	9260	9340
MANGANESE	199	91.0	91.0	140	178	338	324	196
MERCURY	0.10 UL	4.8	4.8	3.0	0.10 UL	3.1	3.3	1.4
NICKEL	85.9	8.8 U	8.8 U	42.2 B	44.9	8.8 U	8.8 U	8.8 U
POTASSIUM	2250 B	2170 B	1770 B	1740 B	4330	2590 B	2400 B	2820
SELENIUM	8.0 K	4.0 K	4.0	2.7 U	2.7 U	2.7 U	2.7 U	3.1 B
SILVER	5.0 B	3.3 B	2.2 U	2.2 U	2.2 U	4.0 B	2.2 U	2.2 U
SODIUM	67400	7480	7180	8810	31600	11000	10800	11300
THALLIUM	6.7 B	5.2 B	3.7 UL	6.6 B	6.0 B	5.4 B	5.4 B	8.8 B
VANADIUM	12.2 B	2.4 U	2.4 U	2.4 U	12.9 B	2.4 U	2.4 U	75.7
ZINC	18.8 B	8.0 B	7.4 B	28.4 J	102	9.8 B	21.5 B	23.8
MISCELLANEOUS PARAMETERS (μg/L)								
PERCHLORATES	10	4 U	4 U	4 U	4 U	4 U	4 U	4 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW1040003	4GW1050003	4GW1050003-D	4GW1060003	4GW1070003	4GW1080003	4GW1090003	4GW1100003
LOCATION:	04GW104	04GW105	04GW105	04GW106	04GW107	04GW108	04GW109	04GW110
SAMPLE DATE:	07/30/99	07/29/99	07/29/99	07/30/99	07/29/99	07/30/99	08/02/99	08/03/99
ASSOCIATED DUPLICATE:		4GW1050003-D	4GW1050003					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,1-TRICHLOROETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	290	340	1 U	1.7	1 U	65	1 U
1,1,2-TRICHLOROETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5.5	1 U
1,1-DICHLOROETHANE	1 U	200 U	200 U	1 U	0.22 J	1 U	5 U	1 U
1,1-DICHLOROETHENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
1,2,4-TRICHLOROBENZENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	200 UR	200 UR	1 UR	1 UR	1 UR	5 UR	1 UR
1,2-DIBROMOETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
1,2-DICHLOROBENZENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
1,2-DICHLOROETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5.7 B	1.5
1,2-DICHLOROPROPANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
1,3-DICHLOROBENZENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
1,4-DICHLOROBENZENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
2-BUTANONE	5 UR	1000 UR	1000 UR	5 UR	5 UR	5 UR	25 UR	5 UR
2-HEXANONE	5 U	1000 U	1000 U	5 U	5 U	5 U	25 U	5 U
4-METHYL-2-PENTANONE	5 U	1000 U	1000 U	5 U	5 U	5 U	25 U	5 U
ACETONE	5 UR	1000 UR	1000 UR	5 UR	5 UR	5 UR	25 UR	4.4 B
BENZENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	0.15 J
BROMOCHLOROMETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
BROMODICHLOROMETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
BROMOFORM	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
BROMOMETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
CARBON DISULFIDE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	0.65 J
CARBON TETRACHLORIDE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
CHLOROBENZENE	1 U	33 J	39 J	1 U	1 U	1 U	5 U	1 U
CHLOROETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
CHLOROFORM	1 U	200 U	200 U	1 U	1 U	1.1	5 U	1 U
CHLOROMETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
CIS-1,2-DICHLOROETHENE	1 U	330	380	1 U	0.44 J	1 U	8.6	3.6
CIS-1,3-DICHLOROPROPENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
DIBROMOCHLOROMETHANE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
ETHYLBENZENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
METHYLENE CHLORIDE	2 U	400 U	400 U	2 U	2 U	2 U	10 U	2 U
STYRENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
TETRACHLOROETHENE	1 U	200 U	200 U	1 U	1 U	1 U	3.4 J	5.4
TOLUENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	200 U	200 U	1 U	1 U	1 U	8.4	1 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW1040003**	**4GW1050003**	**4GW1050003-D**	**4GW1060003**	**4GW1070003**	**4GW1080003**	**4GW1090003**	**4GW1100003**
LOCATION:	**04GW104**	**04GW105**	**04GW105**	**04GW106**	**04GW107**	**04GW108**	**04GW109**	**04GW110**
SAMPLE DATE:	**07/30/99**	**07/29/99**	**07/29/99**	**07/30/99**	**07/29/99**	**07/30/99**	**08/02/99**	**08/03/99**
ASSOCIATED DUPLICATE:		**4GW1050003-D**	**4GW1050003**					
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
TRANS-1,3-DICHLOROPROPENE	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
TRICHLOROETHENE	1 U	1200	1400	1 U	8.6	1 U	14	3.1
VINYL CHLORIDE	1 U	47 J	59 J	1 U	1 U	1 U	5 U	1 U
XYLENES, TOTAL	1 U	200 U	200 U	1 U	1 U	1 U	5 U	1 U
SEMIVOLATILES (µg/L)								
2,2'-OXYBIS(1-CHLOROPROPANE)	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2,4,5-TRICHLOROPHENOL	27 U	20 U	20 U	20 U	20 U	20 U	20 U	26 U
2,4,6-TRICHLOROPHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2,4-DICHLOROPHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2,4-DIMETHYLPHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2,4-DINITROPHENOL	27 U	20 U	20 U	20 U	20 U	20 U	20 U	26 U
2,4-DINITROTOLUENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2,6-DINITROTOLUENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2-CHLORONAPHTHALENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2-CHLOROPHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2-METHYLNAPHTHALENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2-METHYLPHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
2-NITROANILINE	27 U	20 U	20 U	20 U	20 U	20 U	20 U	26 U
2-NITROPHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
3,3'-DICHLOROBENZIDINE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
3-NITROANILINE	27 U	20 U	20 U	20 U	20 U	20 U	20 U	26 U
4,6-DINITRO-2-METHYLPHENOL	27 U	20 U	20 U	20 U	20 U	20 U	20 U	26 U
4-BROMOPHENYL PHENYL ETHER	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
4-CHLORO-3-METHYLPHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
4-CHLOROANILINE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
4-CHLOROPHENYL PHENYL ETHER	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
4-METHYLPHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
4-NITROANILINE	27 U	20 U	20 U	20 U	20 U	20 U	20 U	26 U
4-NITROPHENOL	27 U	20 U	20 U	20 U	20 U	20 U	20 U	26 U
ACENAPHTHENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
ACENAPHTHYLENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
ANTHRACENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
BENZO(A)ANTHRACENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
BENZO(A)PYRENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
BENZO(B)FLUORANTHENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
BENZO(G,H,I)PERYLENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
BENZO(K)FLUORANTHENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
BIS(2-CHLOROETHOXY)METHANE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW1040003	4GW1050003	4GW1050003-D	4GW1060003	4GW1070003	4GW1080003	4GW1090003	4GW1100003
LOCATION:	04GW104	04GW105	04GW105	04GW106	04GW107	04GW108	04GW109	04GW110
SAMPLE DATE:	07/30/99	07/29/99	07/29/99	07/30/99	07/29/99	07/30/99	08/02/99	08/03/99
ASSOCIATED DUPLICATE:		4GW1050003-D	4GW1050003					
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
BIS(2-CHLOROETHYL)ETHER	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
BIS(2-ETHYLHEXYL)PHTHALATE	4.6 B	5.7 B	4.9 B	7.3 B	1 B	2.3 B	3.1 B	44
BUTYLBENZYL PHTHALATE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
CHRYSENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
DI-N-BUTYL PHTHALATE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
DI-N-OCTYL PHTHALATE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
DIBENZO(A,H)ANTHRACENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
DIBENZOFURAN	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
DIETHYL PHTHALATE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
DIMETHYL PHTHALATE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
FLUORANTHENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
FLUORENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
HEXACHLOROBENZENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
HEXACHLOROBUTADIENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
HEXACHLOROCYCLOPENTADIENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
HEXACHLOROETHANE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
INDENO(1,2,3-CD)PYRENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
ISOPHORONE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
N-NITROSO-DI-N-PROPYLAMINE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
N-NITROSODIPHENYLAMINE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
NAPHTHALENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
NITROBENZENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
PENTACHLOROPHENOL	27 U	20 U	20 U	20 U	20 U	20 U	20 U	26 U
PHENANTHRENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
PHENOL	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
PYRENE	6.8 U	5 U	5 U	5 U	5 U	5 U	5 U	6.4 U
PESTICIDES/PCBs (µg/L)								
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
AROCLOR-1016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW1040003**	**4GW1050003**	**4GW1050003-D**	**4GW1060003**	**4GW1070003**	**4GW1080003**	**4GW1090003**	**4GW1100003**
LOCATION:	**04GW104**	**04GW105**	**04GW105**	**04GW106**	**04GW107**	**04GW108**	**04GW109**	**04GW110**
SAMPLE DATE:	**07/30/99**	**07/29/99**	**07/29/99**	**07/30/99**	**07/29/99**	**07/30/99**	**08/02/99**	**08/03/99**
ASSOCIATED DUPLICATE:		**4GW1050003-D**	**4GW1050003**					
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
AROCLOR-1254	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
EXPLOSIVES (µg/L)								
1,3,5-TRINITROBENZENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DINITROBENZENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4,6-TRINITROTOLUENE	0.2 U	0.4 U	0.66 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4-DINITROTOLUENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,6-DINITROTOLUENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-NITROTOLUENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
3-NITROTOLUENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-AMINO-2,6-DINITROTOLUENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-NITROTOLUENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
NITROBENZENE	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
RDX	0.5 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.99	0.5 U
TETRYL	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
INORGANICS (µg/L)								
ALUMINUM	2350	29.4 U	29.4 U	175	48.8	1070	3400	1440
ANTIMONY	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	2.1	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2.9	1.3
BARIUM	90.8	69.5	71.9	152	46.2	210	50.1	56.8
BERYLLIUM	0.19 B	0.11 U	0.11 U	0.11 U	0.11 U	0.30 B	0.23 B	0.10 U

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW1040003**	**4GW1050003**	**4GW1050003-D**	**4GW1060003**	**4GW1070003**	**4GW1080003**	**4GW1090003**	**4GW1100003**
LOCATION:	**04GW104**	**04GW105**	**04GW105**	**04GW106**	**04GW107**	**04GW108**	**04GW109**	**04GW110**
SAMPLE DATE:	**07/30/99**	**07/29/99**	**07/29/99**	**07/30/99**	**07/29/99**	**07/30/99**	**08/02/99**	**08/03/99**
ASSOCIATED DUPLICATE:		**4GW1050003-D**	**4GW1050003**					
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**	**VALIDATED**
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL
CALCIUM	13800	63200	65400	13800	17000	7230	3680	19400
CHROMIUM	4.6 L	2.4 U	2.9 K	35.0	5.4 K	2.4 U	57.3	2.4 UL
COBALT	6.2 B	4.9	6.5	18.9	9.7	15.4	11.1 B	31.1
COPPER	5.4	1.4 U	1.4 U	4.7	3.1	6.9	25.0	16.1
CYANIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
IRON	3130	40000	41300	12900	1910	1570	25300	17700
LEAD	3.9 B	1.0 UL	1.0 UL	1.0 UL	1.0 UL	1.0 UL	8.3 B	2.6 B
MAGNESIUM	13600	20600	21300	13700	10500	11800	3290	13300
MANGANESE	189	1470	1520	1920	468	181	903	6170
MERCURY	2.8	0.10 UL	0.10 UL	0.22 B	0.34 B	0.10 UL	0.10 UL	0.10 UL
NICKEL	8.8 U	8.8 U	8.8 U	37.1	11.7	24.6	41.6	13.6
POTASSIUM	2260 B	4270	4650	2430	2140	3850	3330	13100
SELENIUM	2.9 K	2.7 U	2.7 U	3.4 B	2.7 U	3.0 B	12.6	8.5 K
SILVER	2.8 B	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	3.3 B	2.8 B
SODIUM	13500	13200	13600	14300	12600	34600	24300	204000
THALLIUM	4.5 B	6.7 B	3.8 B	6.0 B	6.2 B	6.2 B	5.1 B	10.2 B
VANADIUM	9.7 B	2.4 U	2.4 U	2.4 U	2.4 U	5.4	14.2 B	4.3 B
ZINC	13.0 B	7.4	6.6	9.3	11.4	22.3	17.7 B	13.6 B
MISCELLANEOUS PARAMETERS (μg/L)								
PERCHLORATES	4 U	8 U	8 U	4 U	4 U	4 U	4 U	20 U

SITE 4

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	4GW120003-F	4GW130003-F	4GW150003-F	4GW480003-F	4GW49D0003-F	4GW500003-F	4GW520003-F	4GW800003-F	4GW800003-F-D	4GW81S0003-F
LOCATION:	04GW12	04GW13	04GW15	04GW48	04GW49D	04GW50	04GW52	04GW80	04GW80	04GW81S
SAMPLE DATE:	07/30/99	08/03/99	08/02/99	08/03/99	08/02/99	07/28/99	07/30/99	08/02/99	08/02/99	08/03/99
ASSOCIATED DUPLICATE:								4GW800003-F-D	4GW800003-F	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)										
ALUMINUM	299	29.4 U	29.4 U	29.4 U	29.4 U	29.4 U	45.1	34.9 B	29.4 U	63.6 B
ANTIMONY	2.0 B	1.7 U	1.7 U	2.0 B	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.4	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
BARIUM	48.4	43.9	42.2	43.3	37.6	47.1	115	25.1	21.8	89.1
BERYLLIUM	0.20 B	0.10 U	0.10 U	0.10 U	0.10 U	0.11 U	0.11 U	0.21 B	0.10 U	0.13 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3 U
CALCIUM	19900	28100	31400	82800	23200	37100	6950	4220	3940	2590
CHROMIUM	2.4 UL	2.4 UL	2.4 UL	2.4 UL	2.4 UL	2.4 U	2.4 U	2.4 UL	2.4 UL	5.3 L
COBALT	70.3	22.2 B	18.3 B	3.8 U	15.9 B	8.1	44.9	24.6	21.0 B	58.6
COPPER	2.0	2.0	1.4 U	1.4 U	1.4 U	1.4 U	17.0	3.6	1.4 U	12.7
IRON	371	2550	571	9.2 U	1960	1630	579	5750	5220	484
LEAD	2.3 B	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UL	1.0 UL	1.0 U	1.8 B	1.4
MAGNESIUM	18100	17100	14300	10200	9220	13500	17100	3980	3700	6000
MANGANESE	1800	1810	605	5.0 B	345	729	299	200	172	152
MERCURY	2.3	0.10 UL	0.39 L	0.10 UL	0.10 UL	0.10 UL	0.10 UL	0.10 UL	0.10 UL	2.8
NICKEL	13.1	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U	58.4	36.4	28.7	31.1 B
POTASSIUM	2480 B	3210	3610	2590 B	4590	3090	3020	2610 B	2050 B	2260 B
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	7.2 B	2.7 U	2.7 U	2.7 U
SILVER	2.4 B	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	9870	7430	15900	2860	14000	8150 K	7850 K	68500	65100	9260
THALLIUM	7.3 B	6.0 B	4.1 B	6.7 B	5.1 B	3.7 U	6.9 B	7.8 B	5.3 B	3.7 UL
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	10.1 B	19.9 B	11.6 B	10.4 B	9.9 B	6.6	22.9	16.3 B	7.3 B	13 J

SITE 4
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY/AUGUST 1999

SAMPLE I.D.:	**4GW820003-F**	**4GW890003-F**	**4GW890003-F-D**
LOCATION:	**04GW82**	**04PZ89**	**04PZ89**
SAMPLE DATE:	**08/02/99**	**08/02/99**	**08/02/99**
ASSOCIATED DUPLICATE:		**4GW890003-F-D**	**4GW890003-F**
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**
DISSOLVED INORGANICS (μg/L)			
ALUMINUM	138 B	29.4 U	34.7 B
ANTIMONY	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U
BARIUM	42.8	32.7	33.5
BERYLLIUM	0.32 B	0.10 U	0.18 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL
CALCIUM	2300	15900	15500
CHROMIUM	2.4 UL	2.4 UL	2.4 UL
COBALT	17.8 B	4.9 B	8.2 B
COPPER	10.7	1.4 U	1.4 U
IRON	487	9.2 U	9.2 U
LEAD	1.4 B	1.0 U	1.0 U
MAGNESIUM	5480	9080	9200
MANGANESE	131	323	325
MERCURY	0.10 UL	2.9	2.7
NICKEL	31.9	8.8 U	8.8 U
POTASSIUM	3290	2300 B	2120 B
SELENIUM	2.7 U	2.7 U	2.7 U
SILVER	3.8 B	2.2 U	2.9 B
SODIUM	35400	10100	10300
THALLIUM	5.1 B	3.8 B	4.7 B
VANADIUM	2.4 U	2.4 U	2.4 U
ZINC	50.8	6.5 B	9.8 B

SITE 7

GROUNDWATER DATA
JULY/AUGUST 1999

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW080003	7GW080003-D	7GW410003	7GW410003-D	7GW420003	7GW430003	7GW1010003	7GW1020003
LOCATION:	07GW08	07GW08	07GW41	07GW41	07PZ42	07GW43	07GW101	07GW102
SAMPLE DATE:	07/12/99	07/12/99	07/13/99	07/13/99	07/12/99	07/12/99	07/12/99	07/13/99
ASSOCIATED DUPLICATE:	7GW080003-D	7GW080003	7GW410003-D	7GW410003				
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,1-TRICHLOROETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	27	25	1 U	100 U	1 U	18
1,1,2-TRICHLOROETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,1-DICHLOROETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,1-DICHLOROETHENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,2,4-TRICHLOROBENZENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	1 UR	20 UR	20 UR	1 UR	100 UR	1 UR	10 UR
1,2-DIBROMOETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,2-DICHLOROBENZENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,2-DICHLOROETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,2-DICHLOROPROPANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,3-DICHLOROBENZENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
1,4-DICHLOROBENZENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
2-BUTANONE	5 UR	5 UR	100 UR	100 UR	5 UR	500 UR	5 UR	50 UR
2-HEXANONE	5 U	5 U	100 U	100 U	5 U	500 U	5 U	50 U
4-METHYL-2-PENTANONE	5 U	5 U	100 U	100 U	5 U	500 U	5 U	50 U
ACETONE	5 UR	5 UR	100 UR	100 UR	5 UR	500 UR	5 UR	50 UR
BENZENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
BROMOCHLOROMETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
BROMODICHLOROMETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
BROMOFORM	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
BROMOMETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
CARBON DISULFIDE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
CARBON TETRACHLORIDE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
CHLOROBENZENE	1 U	1 U	20 U	4.2 J	1 U	100 U	1 U	10 U
CHLOROETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
CHLOROFORM	0.95 J	0.83 J	20 U	20 U	0.16 J	100 U	0.33 J	10 U
CHLOROMETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
CIS-1,2-DICHLOROETHENE	1 U	1 U	21	21	1 U	44 J	1 U	12
CIS-1,3-DICHLOROPROPENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
DIBROMOCHLOROMETHANE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
ETHYLBENZENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
METHYLENE CHLORIDE	2 U	2 U	40 U	40 U	2 U	200 U	2 U	20 U
STYRENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW080003	7GW080003-D	7GW410003	7GW410003-D	7GW420003	7GW430003	7GW1010003	7GW1020003
LOCATION:	07GW08	07GW08	07GW41	07GW41	07PZ42	07GW43	07GW101	07GW102
SAMPLE DATE:	07/12/99	07/12/99	07/13/99	07/13/99	07/12/99	07/12/99	07/12/99	07/13/99
ASSOCIATED DUPLICATE:	7GW080003-D	7GW080003	7GW410003-D	7GW410003				
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
TETRACHLOROETHENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
TOLUENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
TRICHLOROETHENE	1 U	1 U	180	170	0.42 J	710	1 U	100
VINYL CHLORIDE	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
XYLENES, TOTAL	1 U	1 U	20 U	20 U	1 U	100 U	1 U	10 U
SEMIVOLATILES (µg/L)								
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	2 J	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACENAPHTHYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW080003	7GW080003-D	7GW410003	7GW410003-D	7GW420003	7GW430003	7GW1010003	7GW1020003
LOCATION:	07GW08	07GW08	07GW41	07GW41	07PZ42	07GW43	07GW101	07GW102
SAMPLE DATE:	07/12/99	07/12/99	07/13/99	07/13/99	07/12/99	07/12/99	07/12/99	07/13/99
ASSOCIATED DUPLICATE:	7GW080003-D	7GW080003	7GW410003-D	7GW410003				
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
BENZO(A)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(B)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	2.1 B	9 B	6.2 B	4.2 B	2 B	2.5 B	6.9 B	2 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZOFURAN	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIMETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)								
4,4'-DDD	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U
4,4'-DDE	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW080003	7GW080003-D	7GW410003	7GW410003-D	7GW420003	7GW430003	7GW1010003	7GW1020003
LOCATION:	07GW08	07GW08	07GW41	07GW41	07PZ42	07GW43	07GW101	07GW102
SAMPLE DATE:	07/12/99	07/12/99	07/13/99	07/13/99	07/12/99	07/12/99	07/12/99	07/13/99
ASSOCIATED DUPLICATE:	7GW080003-D	7GW080003	7GW410003-D	7GW410003				
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
4,4'-DDT	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U
ALDRIN	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U
ALPHA-BHC	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U
ALPHA-CHLORDANE	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.041 J	0.050 U
AROCLOR-1016	1.0 UL	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U
AROCLOR-1221	2.0 UL	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 U	2.0 UJ	2.0 U
AROCLOR-1232	1.0 UL	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U
AROCLOR-1242	1.0 UL	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U
AROCLOR-1248	1.0 UL	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U
AROCLOR-1254	1.0 UL	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U
AROCLOR-1260	1.0 UL	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U
BETA-BHC	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U
DELTA-BHC	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U
DIELDRIN	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U
ENDOSULFAN I	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U
ENDOSULFAN II	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U
ENDOSULFAN SULFATE	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U
ENDRIN	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U
ENDRIN ALDEHYDE	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U
ENDRIN KETONE	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 UJ	0.10 U	0.10 UJ	0.10 U
GAMMA-BHC (LINDANE)	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U
GAMMA-CHLORDANE	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.049 J	0.050 U
HEPTACHLOR	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U
HEPTACHLOR EPOXIDE	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 UJ	0.050 U
METHOXYCHLOR	0.50 UL	0.50 U	0.50 U	0.50 U	0.50 UJ	0.50 U	0.50 UJ	0.50 U
TOXAPHENE	5.0 UL	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 UJ	5.0 U
EXPLOSIVES (µg/L)								
1,3,5-TRINITROBENZENE	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DINITROBENZENE	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4,6-TRINITROTOLUENE	240	210	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4-DINITROTOLUENE	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,6-DINITROTOLUENE	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	70	58	0.2 U	0.2 U	0.2 U	0.2 U	0.26	0.2 U
2-NITROTOLUENE	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
3-NITROTOLUENE	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW080003	7GW080003-D	7GW410003	7GW410003-D	7GW420003	7GW430003	7GW1010003	7GW1020003
LOCATION:	07GW08	07GW08	07GW41	07GW41	07PZ42	07GW43	07GW101	07GW102
SAMPLE DATE:	07/12/99	07/12/99	07/13/99	07/13/99	07/12/99	07/12/99	07/12/99	07/13/99
ASSOCIATED DUPLICATE:	7GW080003-D	7GW080003	7GW410003-D	7GW410003				
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
4-AMINO-2,6-DINITROTOLUENE	110	89	0.2 U	0.2 U	0.2 U	0.2 U	0.28	0.2 U
4-NITROTOLUENE	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	160	150	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U
NITROBENZENE	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
RDX	530	470	0.5 U	0.5 U	0.5 U	0.5 U	3.5	0.5 U
TETRYL	15 U	15 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
INORGANICS (μg/L)								
ALUMINUM	125	239	83.0	67.5	95.8	668	121	1990
ANTIMONY	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	3.4 B
BARIUM	34.8	36.8	47.8	49.5	72.3	45.2	43.4	69.2
BERYLLIUM	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.12 B	0.11 U	0.14 B
CADMIUM	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
CALCIUM	4370	4620	14400	15000	11900	5140	5010	10600
CHROMIUM	21.1	31.9	5.3	6.3	6.7	21.5	4.7	27.2
COBALT	3.8 U	4.0	3.8 U	3.8 U	3.8 U	10.0	6.6	3.8 U
COPPER	6.7	8.5	5.6	6.3	4.1	8.3	6.1	6.2
CYANIDE	1.9 B	1.4 U	1.4 U	1.4 U	1.5 B	1.4 U	1.4 U	1.4 U
IRON	350 J	559 J	445 J	358 J	115 J	3450 J	532 J	9070 J
LEAD	1.0 U	1.0	1.0 U	1.0 U	1.0 U	2.1	1.0 U	2.8
MAGNESIUM	4300	4540	10000	10400	11300	6370	5370	9280
MANGANESE	19.0	20.6	97.7	101	137	92.0	23.3	126
MERCURY	0.10 U	0.10 U	0.84	0.69	7.2	0.46	0.10 K	1.4
NICKEL	17.1	21.3	10.0	8.8 U	8.8 U	16.2	8.8 U	8.8 U
POTASSIUM	1510	1650	1960	1940	1800	2100	1770	1780
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	3960	4190	11400	11900	12800	15400	5270	11100
THALLIUM	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.6	2.4 U	18.2
ZINC	12.5	21.3	26.6	32.5	17.5	11.8	17.8	27.6
MISCELLANEOUS PARAMETERS (μg/L)								
PERCHLORATES	14	16	8 U	4 U	4 U	4 U	9.4	4 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW1030003	7GW1040003	7GW1050003
LOCATION:	07GW103	07GW104	07GW105
SAMPLE DATE:	07/12/99	07/08/99	07/12/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)			
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	1 UR	1 UR
1,2-DIBROMOETHANE	1 U	1 U	1 U
1,2-DICHLOROBENZENE	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	5 UR
2-HEXANONE	5 U	5 U	5 U
4-METHYL-2-PENTANONE	5 U	5 U	5 U
ACETONE	5 UR	5 UR	5 UR
BENZENE	1 U	1 U	1 U
BROMOCHLOROMETHANE	1 U	1 U	1 U
BROMODICHLOROMETHANE	0.44 J	1 U	1 U
BROMOFORM	1 U	1 U	1 U
BROMOMETHANE	1 U	1 U	1 U
CARBON DISULFIDE	1 U	1 U	1 U
CARBON TETRACHLORIDE	1 U	1 U	1 U
CHLOROBENZENE	1 U	1 U	1 U
CHLOROETHANE	1 U	1 U	1 U
CHLOROFORM	20	0.83 J	0.36 J
CHLOROMETHANE	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U
DIBROMOCHLOROMETHANE	1 U	1 U	1 U
ETHYLBENZENE	1 U	1 U	1 U
METHYLENE CHLORIDE	2 U	2 U	2 U
STYRENE	1 U	1 U	1 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	**7GW1030003**	**7GW1040003**	**7GW1050003**
LOCATION:	**07GW103**	**07GW104**	**07GW105**
SAMPLE DATE:	**07/12/99**	**07/08/99**	**07/12/99**
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**
TETRACHLOROETHENE	1 U	1 U	1 U
TOLUENE	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U
TRICHLOROETHENE	1 U	1 U	1 U
VINYL CHLORIDE	1 U	1 U	1 U
XYLENES, TOTAL	1 U	1 U	1 U
SEMIVOLATILES (µg/L)			
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	1.3 J	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U
ACENAPHTHYLENE	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW1030003	7GW1040003	7GW1050003
LOCATION:	07GW103	07GW104	07GW105
SAMPLE DATE:	07/12/99	07/08/99	07/12/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
BENZO(A)ANTHRACENE	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 U	5 U
BENZO(B)FLUORANTHENE	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	11 B	7.2 B	6.8 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U
DIBENZOFURAN	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U
DIMETHYL PHTHALATE	5 U	5 U	5 U
FLUORANTHENE	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)			
4,4'-DDD	0.10 UJ	0.10 UL	0.10 U
4,4'-DDE	0.10 UJ	0.10 UL	0.10 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	**7GW1030003**	**7GW1040003**	**7GW1050003**
LOCATION:	**07GW103**	**07GW104**	**07GW105**
SAMPLE DATE:	**07/12/99**	**07/08/99**	**07/12/99**
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**
4,4'-DDT	0.10 UJ	0.10 UL	0.10 U
ALDRIN	0.050 UJ	0.050 UL	0.050 U
ALPHA-BHC	0.050 UJ	0.050 UL	0.050 U
ALPHA-CHLORDANE	0.050 UJ	0.050 UL	0.042 J
AROCLOR-1016	1.0 UJ	1.0 UL	1.0 U
AROCLOR-1221	2.0 UJ	2.0 UL	2.0 U
AROCLOR-1232	1.0 UJ	1.0 UL	1.0 U
AROCLOR-1242	1.0 UJ	1.0 UL	1.0 U
AROCLOR-1248	1.0 UJ	1.0 UL	1.0 U
AROCLOR-1254	1.0 UJ	1.0 UL	1.0 U
AROCLOR-1260	1.0 UJ	1.0 UL	1.0 U
BETA-BHC	0.050 UJ	0.050 UL	0.050 U
DELTA-BHC	0.050 UJ	0.050 UL	0.050 U
DIELDRIN	0.10 UJ	0.10 UL	0.10 U
ENDOSULFAN I	0.050 UJ	0.050 UL	0.050 U
ENDOSULFAN II	0.10 UJ	0.10 UL	0.10 U
ENDOSULFAN SULFATE	0.10 UJ	0.10 UL	0.10 U
ENDRIN	0.10 UJ	0.10 UL	0.10 U
ENDRIN ALDEHYDE	0.10 UJ	0.10 UL	0.10 U
ENDRIN KETONE	0.10 UJ	0.10 UL	0.10 U
GAMMA-BHC (LINDANE)	0.050 UJ	0.050 UL	0.050 U
GAMMA-CHLORDANE	0.050 UJ	0.050 UL	0.047 J
HEPTACHLOR	0.050 UJ	0.050 UL	0.050 U
HEPTACHLOR EPOXIDE	0.050 UJ	0.050 UL	0.050 U
METHOXYCHLOR	0.50 UJ	0.50 UL	0.50 U
TOXAPHENE	5.0 UJ	5.0 UL	5.0 U
EXPLOSIVES (µg/L)			
1,3,5-TRINITROBENZENE	0.4 U	15 U	1 U
1,3-DINITROBENZENE	0.4 U	15 U	1 U
2,4,6-TRINITROTOLUENE	4.1	300	4
2,4-DINITROTOLUENE	0.4 U	15 U	1 U
2,6-DINITROTOLUENE	0.4 U	15 U	1 U
2-AMINO-4,6-DINITROTOLUENE	1.8	94	2.7
2-NITROTOLUENE	0.4 U	15 U	1 U
3-NITROTOLUENE	0.4 U	15 U	1 U

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	**7GW1030003**	**7GW1040003**	**7GW1050003**
LOCATION:	**07GW103**	**07GW104**	**07GW105**
SAMPLE DATE:	**07/12/99**	**07/08/99**	**07/12/99**
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	**VALIDATED**	**VALIDATED**	**VALIDATED**
4-AMINO-2,6-DINITROTOLUENE	2.5	150	2.7
4-NITROTOLUENE	0.4 U	15 U	1 U
HMX	11	190	7.4
NITROBENZENE	0.4 U	15 U	1 U
RDX	7.4	590	33
TETRYL	0.4 U	15 U	1 U
INORGANICS (μg/L)			
ALUMINUM	104	150	80.3
ANTIMONY	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U
BARIUM	66.3	18.5	38.5
BERYLLIUM	0.11 U	0.11 U	0.11 U
CADMIUM	3.0 U	3.0 U	3.0 U
CALCIUM	9550	3470	4620
CHROMIUM	5.5	2.4 U	6.1
COBALT	3.8 U	3.8 U	3.8 U
COPPER	2.8	4.8	6.1
CYANIDE	1.4 U	2.0 B	1.4 U
IRON	115 J	227 J	122 J
LEAD	1.0 U	1.0 U	1.0 U
MAGNESIUM	5410	2550	5280
MANGANESE	23.4	12.4	20.3
MERCURY	0.15 K	0.10 U	0.10 U
NICKEL	8.8 U	8.8 U	8.8 U
POTASSIUM	1130	1460	1390
SELENIUM	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U
SODIUM	8170	2960	5390
THALLIUM	3.7 U	3.7 U	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U
ZINC	10.2 B	11.6	34.1
MISCELLANEOUS PARAMETERS (μg/L			
PERCHLORATES	4 U	11	8

SITE 7

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW080003-F	7GW080003-F-D	7GW410003-F	7GW410003-F-D	7GW420003-F	7GW430003-F	7GW1010003-F	7GW1020003-F
LOCATION:	07GW08	07GW08	07GW41	07GW41	07PZ42	07GW43	07GW101	07GW102
SAMPLE DATE:	07/12/99	07/12/99	07/13/99	07/13/99	07/12/99	07/12/99	07/12/99	07/13/99
ASSOCIATED DUPLICATE:	7GW080003-F-D	7GW080003-F	7GW410003-F-D	7GW410003-F				
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)								
ALUMINUM	32.1	32.5	29.4 U	29.4 U	50.2	29.4 U	42.0	49.8
ANTIMONY	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.9 B	1.1 U	1.1 U	1.1 U
BARIUM	36.9	36.6	50.1	47.6	74.6	41.9	43.6	55.1
BERYLLIUM	0.11 U	0.14 B	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
CADMIUM	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
CALCIUM	4450	4500	15200	14600	12300	4960	5010	10400
CHROMIUM	2.4 U	2.4 U	2.4 U	2.7	2.4 U	2.4 U	2.4 U	2.4 U
COBALT	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	5.8	12.5	3.8 U
COPPER	3.5	3.9	1.4 U	2.6	1.4 U	1.7	2.2	1.9
IRON	57.4 J	59.3 J	35.2 J	23.5 J	24.1 J	133 J	15.5 J	716 J
LEAD	5.6	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U	1 U
MAGNESIUM	4570	4570	10600	10100	11800	6390	5430	9180
MANGANESE	18.7	19.3	103	97.5	142	90.2	22.1	119
MERCURY	0.10 U	0.1 U	0.53	0.54	6.5	0.10 U	0.10 U	0.10 U
NICKEL	8.8 U	11.6	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U	8.8 U
POTASSIUM	1590	1740	1720	1970	1790	1660	1720	1910
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	4030	4190	11900	11400	13500	16400	4940	11100
THALLIUM	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	5.2 B	5.7 B	3.6 B	4.6 B	4.6 B	5.1 B	6.9 B	11

SITE 7
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	7GW1030003-F	7GW1040003-F	7GW1050003-F
LOCATION:	07GW103	07GW104	07GW105
SAMPLE DATE:	07/12/99	07/08/99	07/12/99
ASSOCIATED DUPLICATE:			
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)			
ALUMINUM	52.8	35.1	41.5
ANTIMONY	1.8	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U
BARIUM	64.1	17.8	39.3
BERYLLIUM	0.11 U	0.11 B	0.11 U
CADMIUM	3.0 U	3.0 U	3.0 U
CALCIUM	9330	3400	4610
CHROMIUM	2.4 U	2.4 U	2.4 U
COBALT	3.8 U	3.8 U	3.8 U
COPPER	1.4 U	1.8	1.7
IRON	20.7 J	11.6 J	25.5 J
LEAD	1.0 U	1.0 U	1.0 U
MAGNESIUM	5220	2530	5380
MANGANESE	22.3	12.7	20.3
MERCURY	0.10 U	0.10 U	0.10 U
NICKEL	8.8 U	8.8 U	8.8 U
POTASSIUM	1200	1410	1480
SELENIUM	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U
SODIUM	7580	2650	5240
THALLIUM	3.7 U	3.7 U	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U
ZINC	20.4	5.7 B	6.5 B

SITE 8

GROUNDWATER DATA
JULY/AUGUST 1999

SITE 8
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	8GW330003	8GW340003	8GW350003	8GW360003	8GW530003	8GWB10003	8GWB30003
LOCATION:	08GW33	08GW34	08GW35	08GW36	08GW53	B-1	B-3
SAMPLE DATE:	07/08/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)							
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1.3	1 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR
1,2-DIBROMOETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
2-HEXANONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYL-2-PENTANONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOFORM	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.8	1.4	15	0.74 J	3.7	5.4	0.95 J
CHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
DIBROMOCHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	2 U	2 U	2 U	2 U	2 U	2 U	2 U
STYRENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U

SITE 8
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	8GW330003	8GW340003	8GW350003	8GW360003	8GW530003	8GWB10003	8GWB30003
LOCATION:	08GW33	08GW34	08GW35	08GW36	08GW53	B-1	B-3
SAMPLE DATE:	07/08/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
VINYL CHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U
XYLENES, TOTAL	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (mg/L)							
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACENAPHTHYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U

SITE 8
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	8GW330003	8GW340003	8GW350003	8GW360003	8GW530003	8GWB10003	8GWB30003
LOCATION:	08GW33	08GW34	08GW35	08GW36	08GW53	B-1	B-3
SAMPLE DATE:	07/08/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
BENZO(B)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	3.9 B	1.5 B	2.9 B	3.3 B	3.2 B	51	3.7 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZOFURAN	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	1.1 J	5 U	4.9 J
DIMETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	1.6 J
FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)							
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
4,4'-DDT	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U

SITE 8
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	8GW330003	8GW340003	8GW350003	8GW360003	8GW530003	8GWB10003	8GWB30003
LOCATION:	08GW33	08GW34	08GW35	08GW36	08GW53	B-1	B-3
SAMPLE DATE:	07/08/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
ALPHA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
AROCLOR-1016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1254	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
GAMMA-CHLORDANE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
HEPTACHLOR EPOXIDE	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

SITE 8

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

SITE 8
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - JULY 1999

SAMPLE I.D.:	8GW330003-F	8GW340003-F	8GW350003-F	8GW360003-F	8GW530003-F	8GWB10003-F	8GWB30003-F
LOCATION:	08GW33	08GW34	08GW35	08GW36	08GW53	B-1	B-3
SAMPLE DATE:	07/08/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99	07/07/99
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (μg/L)							
ALUMINUM	29.4 U	29.4 U	34.8	76.7	43.4	29.4 U	29.5
ANTIMONY	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1	1.1 U	1.1 U	1.1 U
BARIUM	18.0	14.0	37	40.7	5.5	23.1	46.4
BERYLLIUM	0.11 U	0.11 U	0.17 B	0.11 B	0.11 U	0.11 U	0.11 U
CADMIUM	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
CALCIUM	2690	1850	3710	6710	1640	5190	8830
CHROMIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
COBALT	5.3	3.8 U	3.8 U	11.1	3.8 U	5.3	5.0
COPPER	1.4 U	2.2	1.4 U	3.0	2.8	1.8	3.4
IRON	357 J	58.8 J	10.4 J	577 J	18.2 J	17.6 J	313 J
LEAD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MAGNESIUM	2030	1370	2050	4400	825	2600	3610
MANGANESE	166	13.3	17.0	501	75.8	860	101
MERCURY	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
NICKEL	15.4	9.2	8.8 U	56.2	8.8 U	8.8 U	8.8 U
POTASSIUM	2200	1570	1410	4350	763	5460	5770
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	4070	3720	6030	7070	2410	8400	8740
THALLIUM	3.7 U	3.9	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	4.9 B	7.4 B	6.2 B	14.8	28.6	7.8 B	50.2

SITE 9

GROUNDWATER DATA
JULY/AUGUST 1999

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW010003	9GW020003	9GW020003-D	9GW030003	9GW040003	9GW050003	9GW060003	9GW060003-D
LOCATION:	09GW01	09GW02	09GW02	09GW03	09GW04	09GW05	09GW06	09GW06
SAMPLE DATE:	8/9/99	8/5/99	8/5/99	8/5/99	8/9/99	8/9/99	8/5/99	8/5/99
ASSOCIATED DUPLICATE:		9GW020003-D	9GW020003				9GW060003-D	9GW060003
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
VOLATILES (µg/L)								
1,1,1-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-TETRACHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-TRICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-TRICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DIBROMO-3-CHLOROPROPANE	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR
1,2-DIBROMOETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROETHANE	1 U	0.49 J	0.41 J	1 U	1 U	1 U	1 U	1 U
1,2-DICHLOROPROPANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-DICHLOROBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-BUTANONE	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR	5 UR
2-HEXANONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYL-2-PENTANONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACETONE	1.7 B	1.9 B	2.3 B	2.2 B	1.8 B	2.4 B	1.9 B	2 B
BENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOCHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMODICHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.21 J
BROMOFORM	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BROMOMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON DISULFIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	0.17 J	0.87 J	0.65 J	1 U	1 U	1 U	1 U	1 U
CHLOROBENZENE	0.17 J	0.23 J	1 U	0.16 J	1 U	0.18 J	1 U	1 U
CHLOROETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	0.95 J	0.93 J	0.79 J	0.64 J	5.3	2.3	1.4	1.9
CHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	0.39 J	0.4 J	0.37 J	1 U	1 U	1 U	1 U	1 U
CIS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
DIBROMOCHLOROMETHANE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
METHYLENE CHLORIDE	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
STYRENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	0.33 J	4.7	3.8	1 U	1 U	1 U	1 U	1 U
TOLUENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

TRICHLOROETHENE	16	8.7	6.8	0.33 J	1 U	0.96 J	0.31 J	0.4 J
VINYL CHLORIDE	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
XYLENES, TOTAL	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
SEMIVOLATILES (µg/L)								
2,2'-OXYBIS(1-CHLOROPROPANE)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-TRICHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,6-TRICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DICHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DIMETHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-DINITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-DINITROTOLUENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLORONAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-CHLOROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLNAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2-NITROPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-DICHLOROBENZIDINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4,6-DINITRO-2-METHYLPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-BROMOPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLORO-3-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROANILINE	5 U	5 UR	5 U	5 U	5 U	5 U	5 U	5 U
4-CHLOROPHENYL PHENYL ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-METHYLPHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-NITROANILINE	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-NITROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
ACENAPHTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ACENAPHTHYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(A)PYRENE	5 U	5 UR	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(B)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(G,H,I)PERYLENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZO(K)FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHOXY)METHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-CHLOROETHYL)ETHER	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BIS(2-ETHYLHEXYL)PHTHALATE	4.5 B	7 B	2.4 B	6.2 B	5.3 B	10 B	3.4 B	2.1 B
BUTYLBENZYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHRYSENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DI-N-BUTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	1.2 J	5 U	5 U
DI-N-OCTYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIBENZO(A,H)ANTHRACENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

DIBENZOFURAN	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIMETHYL PHTHALATE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORANTHENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
FLUORENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROBUTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROCYCLOPENTADIENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
HEXACHLOROETHANE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
INDENO(1,2,3-CD)PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
ISOPHORONE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSO-DI-N-PROPYLAMINE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
N-NITROSODIPHENYLAMINE	5 U	5 UR	5 U	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
NITROBENZENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PENTACHLOROPHENOL	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
PHENANTHRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PHENOL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PYRENE	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PESTICIDES/PCBs (µg/L)								
4,4'-DDD	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
4,4'-DDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
4,4'-DDT	0.10 U	0.10 UL	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
ALDRIN	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
ALPHA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
ALPHA-CHLORDANE	0.34 J	0.050 U	0.050 U	0.050 U	0.050 U	0.076	0.1 J	0.090
AROCLOR-1016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
AROCLOR-1221	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U
AROCLOR-1232	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
AROCLOR-1242	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
AROCLOR-1248	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
AROCLOR-1254	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
AROCLOR-1260	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
BETA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
DELTA-BHC	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
DIELDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
ENDOSULFAN I	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
ENDOSULFAN II	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
ENDOSULFAN SULFATE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
ENDRIN	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
ENDRIN ALDEHYDE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
ENDRIN KETONE	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
GAMMA-BHC (LINDANE)	0.050 U	0.050 UL	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
GAMMA-CHLORDANE	0.28	0.050 U	0.050 U	0.050 U	0.050 U	0.038 J	0.054	0.046 J

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

HEPTACHLOR	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
HEPTACHLOR EPOXIDE	0.039 J	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.028 R	0.050 U
METHOXYCHLOR	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.50 U
TOXAPHENE	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5.0 U
EXPLOSIVES (µg/L)								
1,3,5-TRINITROBENZENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-DINITROBENZENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4,6-TRINITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,4-DINITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,6-DINITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-AMINO-4,6-DINITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-NITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
3-NITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-AMINO-2,6-DINITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-NITROTOLUENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
HMX	11	0.5 U	0.5 U	0.5 U	3.1	0.5 U	0.5 U	0.5 U
NITROBENZENE	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
RDX	160	0.63	0.65	0.5 U	5	0.5 U	0.5 U	0.5 U
TETRYL	4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
INORGANICS (µg/L)								
ALUMINUM	616	99.2	166	99.9	98.9	1420	266	747
ANTIMONY	1.8 B	1.8 B	3.2 B	1.7 U	1.7 U	3.0 B	1.9 B	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	3.3	1.6	1.2
BARIUM	20.2	100	106	40.7	38.4	100	92.7	103
BERYLLIUM	0.10 U	0.27 B	0.24 B	0.12 B	0.10 U	0.18 B	0.37 B	0.17 B
CADMIUM	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 UL	3.0 U	3.0 UL
CALCIUM	3750	8650	8890	1860	2270	3700	3720	3950
CHROMIUM	10.8 K	3.7 K	4.6 K	6.0 K	7.4 K	71.2	20.0	31.2
COBALT	15.5	11.1	12.2	5.8	23.1	10.8	8.2 B	5.8
COPPER	4.6 B	4.7 B	3.6 B	6.2 B	4.8 B	13.9	4.7	8.0 B
CYANIDE	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
IRON	884	3490	3940	457	378	11700	1190	3500
LEAD	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.0 U	1.0 U
MAGNESIUM	1820	6950	7240	2640	3650	6790	6320	6830
MANGANESE	27.0	519	540	40.2	32.0	170	145	155
MERCURY	0.10 U	0.10 U	0.10 U	0.10 U	0.38	1.1	0.10	0.18
NICKEL	13.0	21.0	16.0	14.8	10.8	71.7	20.5 B	29.2
POTASSIUM	1710 B	4930	4710	1530 B	1790 B	2760	2830	2770
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	6.6 B	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	6660	7740	8150	20500	19500	30500	22800	24700
THALLIUM	5.2 B	4.7 B	3.7 U	4.9 B	5.8 B	5.5 B	4.0 B	3.7 U
VANADIUM	3.4 J	2.4 U	2.4 U	3.4	3.4	13.6	3.3 B	6.8
ZINC	13.6 B	40.6	32.2	21.8	9.9 B	13.8 B	18.6 J	20.8

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

MISCELLANEOUS PARAMETERS (µg/L)

AMMONIA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PERCHLORATES	240	4 U	4 U	4 U	4 U	4 U	4 U	4 U

SITE 9
NSWC WHITE OAK
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SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

9GW070003 09GW07 8/4/99 VALIDATED	9GW440003 09PZ44 8/4/99 VALIDATED	9GW550003 09PZ55 8/4/99 VALIDATED	9GW57D0003 09GW57D 8/5/99 VALIDATED	9GW57S0003 09GW57S 8/5/99 VALIDATED	9GW0580003 09GW58 8/4/99 VALIDATED	9GW590003 09GW59 8/9/99 VALIDATED	9GW740003 09GW74 8/10/99 VALIDATED	9GW750003 09GW75 8/10/99 VALIDATED	9GW830003 09GW83 8/10/99 VALIDATED	9GW1000003 09GW100 8/4/99 VALIDATED
1 U	0.44 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR	1 UR
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
0.38 J	1 U	1 U	0.32 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
5 UR	5 UR	3.1 L	5 UR	5 UR	6.2 L	5 UR	5 UR	5 UR	5 UR	4.1 L
5 UR	5 U	5 UR	5 U	5 U	5 UR	5 U	5 U	5 U	5 U	5 UR
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4.8 B	1.5 B	3.8 U	2.2 B	2 B	5.3 B	1.6 B	2.4 B	5 UR	5 UR	5 UR
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.27 J	1 U	1 U	1 U
1 U	1 U	1 U	0.19 J	1 U	0.16 J	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
3.2	8.4	4.8	2.2	1.5	2.4	1.5	1.5	2.1	0.17 J	1 U
2.7	1 U	0.6 J	1 U	1 U	0.85 J	1 U	1 U	1 U	1 U	0.58 J
1 U	1 U	1 U	3.6	0.96 J	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	0.19 J	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

SITE 9
NSWC WHITE OAK
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ROUND 3 DATA - AUGUST 1999

1 U	1 U	0.77 J	27 J	8.9	1 U	1 U	1.1	1 U	1 U	0.18 J
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	N/A	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	N/A	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	N/A	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	N/A	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
20 U	N/A	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	N/A	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
20 U	N/A	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1.8 B	N/A	1.6 B	5.2 B	7.8 B	51	120	2.1 J	11 B	1.7 B	5 B
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
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ROUND 3 DATA - AUGUST 1999

5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	N/A	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U
0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U
0.033 J	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.03 J
1 U	N/A	1 U	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
2 U	N/A	2 U	2 U	2.0 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	2 U
1 U	N/A	1 U	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
1 U	N/A	1 U	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
1 U	N/A	1 U	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
1 U	N/A	1 U	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
1 U	N/A	1 U	1 U	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U
0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U
0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U
0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U
0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.1 U	N/A	0.1 U	0.1 U	0.10 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U
0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U
0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U

SITE 9
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SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.05 U	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U
0.05 U	N/A	0.05 U	0.05 U	0.050 U	0.038 J	0.050 U	0.050 U	0.050 U	0.050 U	0.05 U
0.5 U	N/A	0.5 U	0.5 U	0.50 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U
5 U	N/A	5 U	5 U	5.0 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U

0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.32 J	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.5 U	N/A	0.5 U	2.8	1.1	13	2.3	0.50 U	2.7	0.5 U	0.5 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U
0.5 U	N/A	0.5 U	6.7	1.9	23	4.2	1.6	4.3	0.5 U	0.5 U
0.2 U	N/A	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U

19900	1300	5100	34.6 B	10400	10500	1800	2210	14000	1570	11100
1.7 U	2.3 B	1.7 U	2.0 B	1.7 U	1.7 U	1.7 U	1.7 U	3.5 B	1.8 B	1.7 U
17.8	1.1	7.8	1.1 U	2.8	9.0	1.3	1.7 B	8.9	1.1 U	1.1 U
151	60.2	40.2	27.1	43.2	119	56.9	55.4	58.8	47.4	136
0.74 B	0.37 B	0.30 B	0.18 B	0.70 B	0.70 B	0.18 B	0.45 B	0.48 B	0.19 B	1.3 B
3.0 U	6.7 L	3.0 U	3.0 U	3.0 UL	3.1	3.0 UL	3.0 U	3.0 UL	3.0 UL	3.0 U
5360	5800	1650	3380	3300	6710	5430	6360 J	4470	7230	23900
78.6	7.1 K	34.0	2.4 UL	14.2 K	106	14.7 K	15.8 K	77.2	2.4 U	10.8 L
17.0 B	12.1	7.2 B	3.8 U	30.2	48.5	15.5	5.1	6.1 B	3.8 U	13.3 B
64.5	22.8	35.3	1.4 U	13.6	79.6	9.5	8.9	40.4	4.6 B	26.6
1.4 U		1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
65000	4590	40000	9.2 U	11800	95200	2920	6280	55000	4630	26900
22.5	4.1	11.1	1.0 U	3.3	35.7	1.0 U	1.7 K	22.5	1.4	5.6
6780	4970	2360	2070	4260	5660	3720	5100	4880	5080	13700
236	756	30.0	12.4	131	93.8	58.0	130	68.4	702	779
0.54	0.10 U	1.1	0.10 U	0.10 U	8.2	0.61	0.10 U	0.38	0.10 U	0.10 U
31.6 B	31.9	8.8 U	8.8 U	9.4	15.1 B	11.9	23.9 K	22.0	8.8 U	13.8 B
3510	4260	2190 B	1240 B	1920 B	2910	1950 B	2930	3150	4500	8730
23.2	2.7 U	9.1	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	8.0 B	2.7 U	2.7 U
4.7 B	2.2 U	5.9 B	2.2 U	2.2 U	12.5 B	2.4 K	2.2 U	2.2 U	2.2 U	2.4 B
23700	49200	6850	9320	7800	16500	18000	8060	18200	9600	22700
4.7 B	4.1 B	4.0 B	4.4 B	8.9 B	3.7 UL	5.9 B	3.7 U	7.2 B	6.1 B	4.8 B
150	5.6	51.6	2.4 U	17.8	121	4.5	5.9 B	61.3	2.4 U	24.8
104 J	65.3	25.2 J	5.8 B	40.0	38.5 J	15.5 B	43.1	18.0 B	19.5 B	56.5 J

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
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ROUND 3 DATA - AUGUST 1999

N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4 U	N/A	4 U	27	16	12	4 U	8.4	4 U	4 U	4 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

9GW1010003 09GW101 8/4/99 VALIDATED	9GW1020003 09GW102 8/10/99 VALIDATED	9GW1030003 09GW103 8/5/99 VALIDATED	9GW1040003 09GW104 8/9/99 VALIDATED	9GW1050003 09GW105 8/4/99 VALIDATED	9GW1060003 09GW106 8/10/99 VALIDATED	9GW1070003 09GW107 8/5/99 VALIDATED	9GW1080003 09GW108 8/5/99 VALIDATED	9GW1090003 09GW109 8/4/99 VALIDATED	9GW1100003 09GW110 8/10/99 VALIDATED
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 UR	1 UR	1 UR	1 UR	2 UR	1 UR	1 UR	1 UR	1 UR	1 UR
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
4.1 L	5 UR	5 UR	2.8 L	6.8 L	5 UR	5 UR	5 UR	5.8 L	5 UR
5 UR	5 U	5 U	5 UR	10 UR	5 U	5 U	5 U	5 UR	5 U
5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U
2 B	5 UR	5 UR	3.5 B	3.2 B	5 UR	5 UR	0.86 B	2.6 B	5 UR
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	0.99 J	1 U	1 J	0.53 J	1 U	1 U	1.8	0.9 J
0.56 J	1 U	1 U	0.61 J	1 J	1 U	1 U	1 U	0.76 J	1 U
1 U	1 U	0.3 J	1.6	3.5	1 U	1 U	0.36 J	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	0.97 J	0.18 J	2 U	1 U	1 U	1.4	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

0.88 J	1 U	3.5 J	3.4	25	1 U	1 U	2.9	1 U	1.5
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U
1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U

5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
14 B	3.6 B	27 B	1.3 B	1.5 B	2.1 J	1.2 B	3.7 B	15 B	3.7 J
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

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5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
1 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
2 U	2.0 U	2 U	2 U	2 U	2.0 U	2.0 U	2.0 U	2 U	2.0 U
1 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
1 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
1 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
1 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
1 U	1.0 U	1 U	1 U	1 U	1.0 U	1.0 U	1.0 U	1 U	1.0 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U

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0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.050 U	0.050 U	0.050 U	0.05 U	0.050 U
0.05 U	0.050 U	0.05 U	0.05 U	0.05 U	0.035 J	0.050 U	0.050 U	0.05 U	0.050 U
0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U	0.50 U	0.5 U	0.50 U
5 U	5.0 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5 U	5.0 U

0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.5 U	0.5 U	1.5	0.5 U	1	0.71	0.5 U	0.5 U	3.6	2.6
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U
0.5 U	0.5 U	3.6	0.5 U	4	4.8	0.5 U	0.5 U	5.7	1.9
0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.20 U

60.0 B	235	408	77.4	3340	185	129	267	17500	110
1.9 B	1.7 U	1.7 U	3.6 B	1.7 U	1.7 U	2.1 B	2.1 B	2.2 B	1.7 U
1.1 U	1.2	1.1 U	1.1 U	2.4	1.1 U	1.1 U	1.1 U	13.2	1.8 B
34.4	46.1	23.8	51.7	85.2	17.0 B	55.5	38.7	70.6	43.3
0.13 B	0.21 B	0.11 U	0.10 U	0.98 B	0.17	0.10 U	0.10 U	0.67 B	0.17 B
3.0 U	3.0 UL	3.0 U	3.0 UL	3.0 U	3.0 U	3.0 UL	3.0 UL	3.0 U	3.0 U
23300	2090	5360	9470	6220	878 B	3850	9890	3150	4470 J
2.4 UL	56.2	2.4 UL	2.4 U	51.6	28.8	5.8 K	7.1 K	102	2.4 U
8.8 B	62.0	38.2	3.8 U	20.0 B	31.0	3.8 U	19.2	16.6 B	43.5
1.4	35.1	2.2	3.6 B	6.1	6.0	4.0 B	3.1 B	30.7	2.4
1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U
89.4	1060	609	346	9370	1510	908	6160	54900	342
1.0 U	1.0	1.0 U	1.0 U	3.5	1.0 U	1.0 U	1.0 U	17.8	1.0 U
9720	2690	4170	5420	5020	949	2460	8000	3750	3560
323	357	88.0	546	460	52.0	52.2	747	318	1280
0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.35	0.10 U
8.8 U	69.2	8.8 U	8.8 U	44.7 B	21.4 K	8.8 U	8.8 U	8.8 U	11.1 K
5140	2200 B	2870	3970	4650	1180	3110	8570	2430 B	2470
2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	5.4	2.7 U
2.2 U	2.2 U	3.1 B	2.2 U	4.2 B	2.9 B	2.2 U	2.2 U	4.4 B	2.2 U
22700	4650	14100	10200	8670	4530	44800	11700	15500	11000
3.7 UL	7.4 B	4.3 B	4.0 B	4.2 B	3.7 U	5.8 B	4.3 B	4.3 B	3.7 U
2.4 U	3.6	2.4 U	2.4 U	8.5 B	2.4 U	2.4 U	2.4 U	113	2.4 U
10.4 J	32.1	17.8 J	24.5	37.5 J	18.9 B	10.3 B	11.4 B	35.6 J	19.4 B

N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4 U	4 U	4 U	4 U	8.4	4 U	4 U	4 U	4	7

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

9GWBLDG3670003 BLD367 8/10/99 VALIDATED	9GWC50003 C-05 8/11/99 VALIDATED	9GWC60003 C-06 8/11/99 VALIDATED	9GWC140003 C-14 8/12/99 VALIDATED
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 UR	1 UR	N/A	1 UR
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
5 UR	5 UR	N/A	5 UR
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 UR	5 UR	N/A	36 L
1 U	1 U	N/A	0.26 J
1 U	1 U	N/A	1 U
1 U	0.36 J	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	0.85 J	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	5.4	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
2 U	2 U	N/A	2 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	0.41 J
1 U	1 U	N/A	1 U
1 U	1 U	N/A	1 U

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1 U	1.6	N/A	1 U
1 U	1 U	N/A	1 U
1 U	1 U	N/A	0.43 J

5 U	5 U	N/A	5 U
20 U	20 U	N/A	20 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
20 U	20 U	N/A	20 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
20 U	20 U	N/A	20 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
20 U	20 U	N/A	20 U
20 U	20 U	N/A	20 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
20 U	20 U	N/A	20 U
20 U	20 U	N/A	20 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
6.1	43	N/A	5.9
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U

SITE 9
NSWC WHITE OAK
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ROUND 3 DATA - AUGUST 1999

5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
20 U	20 U	N/A	20 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U
5 U	5 U	N/A	5 U

0.10 U	0.10 U	N/A	0.10 U
0.10 U	0.10 U	N/A	0.10 U
0.10 U	0.10 U	N/A	0.10 U
0.050 U	0.050 U	N/A	0.050 U
0.050 U	0.050 U	N/A	0.050 U
0.050 U	0.050 U	N/A	0.050 U
1.0 U	1.0 U	N/A	1.0 U
2.0 U	2.0 U	N/A	2.0 U
1.0 U	1.0 U	N/A	1.0 U
1.0 U	1.0 U	N/A	1.0 U
1.0 U	1.0 U	N/A	1.0 U
1.0 U	1.0 U	N/A	1.0 U
1.0 U	1.0 U	N/A	1.0 U
0.050 U	0.050 U	N/A	0.050 U
0.050 U	0.050 U	N/A	0.050 U
0.10 U	0.10 U	N/A	0.10 U
0.050 U	0.050 U	N/A	0.050 U
0.10 U	0.10 U	N/A	0.10 U
0.10 U	0.10 U	N/A	0.10 U
0.10 U	0.10 U	N/A	0.10 U
0.10 U	0.10 U	N/A	0.10 U
0.10 U	0.10 U	N/A	0.10 U
0.050 U	0.050 U	N/A	0.050 U
0.050 U	0.050 U	N/A	0.050 U

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

0.050 U	0.050 U	N/A	0.050 U
0.050 U	0.050 U	N/A	0.050 U
0.50 U	0.50 U	N/A	0.50 U
5.0 U	5.0 U	N/A	5.0 U

0.20 U	0.20 U	N/A	0.20 U
0.20 U	0.20 U	N/A	0.20 U
0.20 U	0.20 U	N/A	0.20 U
0.20 U	0.20 U	N/A	0.20 U
0.20 U	0.26	N/A	0.20 U
0.20 U	0.20 U	N/A	0.20 U
0.20 U	0.20 U	N/A	0.20 U
0.20 U	0.20 U	N/A	0.20 U
0.20 U	0.20 U	N/A	0.20 U
0.20 U	0.20 U	N/A	0.20 U
0.50 U	1.8	N/A	0.50 U
0.20 U	0.20 U	N/A	0.20 U
0.50 U	7.2	N/A	0.50 U
0.20 U	0.20 U	N/A	0.20 U

33.7	68.5	N/A	349
1.7 U	1.7 U	N/A	1.7 U
1.1 U	1.1 U	N/A	1.1 U
71.4	37.4	N/A	107
0.11 U	0.20 B	N/A	0.19 B
3.0 U	3.0 U	N/A	3.0 U
9460 J	3140 B	N/A	22300 J
2.4 U	2.8 K	N/A	10.2 K
3.8 U	18.8	N/A	3.8 U
2.9	1.6	N/A	9.0
1.4 U	1.4 U	N/A	1.4 U
5900	62.0	N/A	1300
1.0 U	1.0 U	N/A	1.0 U
7040	3430	N/A	4470
119	168	N/A	128
0.10 U	0.10 U	N/A	0.10 U
8.8 U	16.4 K	N/A	9.1 K
4020	1760	N/A	11000
2.7 U	2.7 U	N/A	2.7 U
2.2 U	2.5 B	N/A	2.2 U
4810	7770	N/A	13000
4.9	3.7 U	N/A	3.7 U
2.4 U	2.4 U	N/A	4.8 B
801	8.3 B	N/A	25.1 B

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
ROUND 3 DATA - AUGUST 1999

N/A	N/A	200 U	N/A
4 U	18	4 U	4 U

SITE 9

GROUNDWATER DATA
JULY/AUGUST 1999

FILTERED

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW010003-F	9GW030003-F	9GW040003-F	9GW050003-F	9GW0580003-F	9GW060003-F	9GW060003-F-D	9GW070003-F
LOCATION:	09GW01	09GW03	09GW04	09GW05	09GW58	09GW06	09GW06	09GW07
SAMPLE DATE:	08/09/99	08/05/99	08/09/99	08/09/99	08/04/99	08/05/99	08/05/99	08/04/99
ASSOCIATED DUPLICATE:						9GW060003-F-D	9GW060003-F	
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)								
ALUMINUM	29.4 U	44.3	29.4 U	75.9	29.4 U	121 B	106	40.9 B
ANTIMONY	1.7 U	2.3 B	5.4 B	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
BARIUM	16.9	42.2	39.1	100	37.3	104	103	91
BERYLLIUM	0.1 U	0.19 B	0.1 U	0.19 B	0.11 U	0.35 B	0.24 B	0.19 B
CADMIUM	3 UL	3 UL	3 UL	3 UL	3 U	3 U	3 UL	3 U
CALCIUM	3720	1940	2240	3920	3490	3700	3970	4860
CHROMIUM	2.4 U	3.1 K	2.4 U	2.4 U	2.4 UL	2.8 L	2.4 U	2.4 UL
COBALT	13.6	8.3	21.1	7.8	3.8 U	8.4 B	5.8	3.8 U
COPPER	1.4 U	3 B	1.9 B	2.8 B	3.5	2.7	2.1 B	3.1
IRON	10 J	14.5	19.8	68.5	388	31.4 B	70.1	11.1 B
LEAD	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
MAGNESIUM	1740	2770	3770	7170	4840	6890	6980	6140
MANGANESE	12.9	45.6	32.7	170	41.4	151	154	58.9
MERCURY	0.1 U	0.1 U	0.41	0.25	0.1 U	0.1 U	0.1	0.1 U
NICKEL	8.8 U	16.7	10.2	23.3	8.8 U	13.5 B	12.9	15.4 B
POTASSIUM	1670 B	1610 B	1640 B	2820	1860 B	2890	2840	3080
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	6610	21900	20300	32200	17100	25700	25600	25900
THALLIUM	3.7 U	3.9 B	5.9 B	6.7 B	3.7 UL	3.7 UL	3.7 U	4.3 B
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	6.4 B	7.5 B	11 B	9 B	4 B	9.2 B	12.3 B	31.2 J

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW550003-F	9GW57S0003-F	9GW590003-F	9GW740003-F	9GW750003-F	9GW830003-F	9GW1000003-F	9GW1020003-F
LOCATION:	09PZ55	09GW57S	09GW59	09GW74	09GW75	09GW83	09GW100	09GW102
SAMPLE DATE:	08/04/99	08/05/99	08/09/99	08/10/99	08/09/99	08/10/99	08/04/99	08/10/99
ASSOCIATED DUPLICATE:								
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)								
ALUMINUM	36.4 B	29.4 U	59.7	42.6	40.7	29.4 U	30.6 B	64
ANTIMONY	1.7 U	1.9 B	1.7 U	1.7 U	2.2 B	1.7 U	1.7 U	4.7 B
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
BARIUM	23.4	14.5	51.5	41.8	15.9	29.7	50.5	44.8
BERYLLIUM	0.1 U	0.1 U	0.13 B	0.2 B	0.1 U	0.1 U	0.11 U	0.19 B
CADMIUM	3 U	3 UL	3 UL	3 U	3 UL	3 UL	3 U	3 UL
CALCIUM	1200	3150	5280	6070 J	4250	7190	24200	2210
CHROMIUM	2.4 UL	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 UL	5.3 K
COBALT	3.8 U	24.2	8.1	3.8 U	3.8 U	3.8 U	3.8 U	65.6
COPPER	2	1.5 B	3.4 B	1.4 U	1.7 B	4.3 B	3.8	34.7
IRON	13.9 B	9.2 U	82.5	12.8 B	20.1	13	24.9 B	77.6
LEAD	1 U	1 U	1 U	1.0 U	1 U	1 U	1 U	1 U
MAGNESIUM	2320	3610	3640	4490	4350	4670	10600	2660
MANGANESE	11.9	6.8	54	33.2	26.6	96.4	255	368
MERCURY	0.1 U	0.1 U	0.1 U	0.10 U	0.1 U	0.1 U	0.1 U	0.1 U
NICKEL	8.8 U	8.8 U	8.9	15.1 K	8.9	8.8 U	8.8 U	46.5
POTASSIUM	1420 B	1250 B	1840 B	2390	1550 B	4170	4930	2050 B
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.9 B	2.2 U	2.2 U	2.2 U	2.2 U
SODIUM	7820	8060	18200	8540	18700	10300	24300	4450
THALLIUM	3.7 UL	7.4 B	4.9 B	3.7 U	7.3 B	6.1 B	3.7 UL	4.3 B
VANADIUM	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	4.2 B	4.8 B	12.3 B	16 B	5.8 B	11.8 B	2.1 B	52.1

SITE 9
NSWC WHITE OAK
SILVER SPRING, MARYLAND
SUMMARY OF ANALYTICAL RESULTS FOR FILTERED GROUNDWATER SAMPLES
ROUND 3 DATA - AUGUST 1999

SAMPLE I.D.:	9GW1030003-F	9GW1040003-F	9GW1050003-F	9GW1060003-F	9GW1080003-F	9GW1090003-F	9GWBLDG3670003-F
LOCATION:	09GW103	09GW104	09GW105	09GW106	09GW108	09GW109	BLD367
SAMPLE DATE:	08/05/99	08/09/99	08/04/99	08/10/99	08/05/99	08/04/99	08/10/99
ASSOCIATED DUPLICATE:							
VALIDATION STATUS:	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED	VALIDATED
DISSOLVED INORGANICS (µg/L)							
ALUMINUM	41.8 B	29.4 U	59.3 B	31.3	29.4 U	64.1 B	37.7
ANTIMONY	1.7 U	3.1 B	1.7 U	1.7 U	1.9 B	1.7 U	1.7 U
ARSENIC	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 B
BARIUM	22.8	105	39.6	16	34.9	27.8	70.1
BERYLLIUM	0.13 B	0.1 U	0.3 B	0.2 B	0.1 U	0.11 B	0.11 U
CADMIUM	3 U	3 UL	3 U	3 U	3 UL	3 U	3 U
CALCIUM	5610	12000	5420	576 B	9640	2380	9810 J
CHROMIUM	2.4 UL	2.8 K	2.4 UL	2.4 U	2.4 U	2.4 UL	2.4 U
COBALT	37	3.8 U	14.4 B	27.7	19.2	5.4 B	3.8 U
COPPER	1.4 U	2.6 B	1.6	2.2	1.6 B	1.4 U	1.8
IRON	19.9 B	47.5	932	338	4890	202	2930
LEAD	1 U	1 U	1 U	1.0 U	1 U	1 U	1.0 U
MAGNESIUM	4210	6700	3060	939	7740	3220	7520
MANGANESE	90.4	825	370	51.4	714	232	122
MERCURY	0.1 U	0.1 U	0.1 U	0.10 U	0.1 U	0.1 U	0.10
NICKEL	8.8 U	9.4	19 B	12 K	8.8 U	8.8 U	8.8 U
POTASSIUM	3060	4720	2890	1070	8680	1740 B	4620
SELENIUM	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
SILVER	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.7 B	4.6 B
SODIUM	15100	10600	8830	4580	11600	17700	4950
THALLIUM	3.7 UL	3.7 U	3.7 UL	3.7 U	4.3 B	3.7 UL	3.7 U
VANADIUM	2.4 U	3.4	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
ZINC	5.5 B	11 B	6.5 B	9.3 B	7.4 B	7.4 B	686

SECTION G

DATA VALIDATION MEMORANDA

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-09-9-158

TO : **R. KOTUN** **DATE:** **SEPTEMBER 17, 1999**

FROM: **JENNIFER M. MALLE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, DISSOLVED TAL METALS AND CYANIDE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – WO065

SAMPLES: 29/Aqueous/

4GW104-00-03	4GW104-00-03-F	4GW109-00-03
4GW109-00-03-F	4GW110-00-03	4GW12-00-03
4GW12-00-03-F	4GW13-00-03	4GW13-00-03-F
4GW15-00-03	4GW15-00-03-F	4GW48-00-03
4GW48-00-03-F	4GW49D-00-03	4GW49D-00-03-F
4GW79-00-03	4GW80-00-03	4GW80-00-03-F
4GW80-99-03	4GW80-99-03-F	4GW81D-00-03
4GW82-00-03	4GW82-00-03-F	4GW89-00-03
4GW89-00-03-F	4GW89-99-03	4GW89-99-03-F
BGW16-00-03	BGW16-00-03-F	

Overview

The sample set for SDG WO065, NSWC White Oak, consists of twenty-nine (29) aqueous environmental samples. Four (4) field duplicate pairs (4GW80-00-03/4GW80-99-03, 4GW80-00-03-F/4GW80-99-03-F, 4GW89-00-03/4GW89-99-03 and 4GW89-00-03-F/4GW89-99-03-F) were included within this SDG.

All samples, with exception to those designated "–F", were analyzed for target analyte list (TAL) metals and cyanide. The samples designated with "–F" were analyzed for dissolved target analyte list (TAL) metals. The samples were collected by Tetra Tech NUS on July 27-30, 1999 and analyzed by Quanterra Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Metals and cyanide analyses were conducted using ICLP ILM03.0/4.0 methodology.

All TAL metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor AA.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, post digestion spike recoveries, laboratory duplicate results, field

duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None.

Minor Problems

- The Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) for cadmium, chromium, and mercury were < 90% quality control limits. The nondetected results reported for cadmium were qualified as biased low, "UL". The positive results < 2X CRDL reported for chromium and mercury were qualified as biased low, "L".

- The Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) lead, selenium, silver and thallium were > 110% quality control limits. The positive results < 2X CRDL reported for selenium were qualified as biased high, "K. There were no qualifiers for lead, silver nor thallium, as sample results were either nondetect or >2X CRDL.

- The following contaminants were detected in the laboratory method / preparation blanks at the following maximum concentrations :

Samples Affected: All

Analyte	Maximum Concentration	Action Level (aqueous)
Aluminum	38.5 µg/L	192.5µg/L
Antimony	2.3 µg/L	11.5 µg/L
Barium	1.4 µg/L	7.0 µg/L
Beryllium	1.3 µg/L	6.5 µg/L
Calcium [1]	81.4µg/L	407µg/L
Cobalt	4.6 µg/L	23.0 µg/L
Lead	2.0 µg/L	10.0 µg/L
Magnesium [1]	55.0 µg/L	275 µg/L
Manganese	1.9 µg/L	9.5 µg/L
Potassium	549.30 µg/L	2746.50 µg/L
Silver	4.0 µg/L	20 µg/L
Sodium [1]	102.38 µg/L	511.90µg/L
Thallium [1]	6.48µg/L	32.4µg/L
Vanadium	3.1 µg/L	15.5 µg/L
Zinc [1]	6.92 µg/L	34.6 µg/L

[1] Maximum concentration present in an aqueous preparation blank.

An action level of 5x the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluating for blank contamination. The positive results < the action level for aluminum, antimony, beryllium, cobalt, lead,

manganese, potassium, silver, thallium, vanadium, and zinc were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes since either the results were greater than the action level or were nondetects.

Notes

A comparison of the field duplicate pairs is included in Appendix C.

The reporting limits on the Electronic Deliverable Data (EDD) for cyanide were incorrect for several of the samples. However, the Form 1s are reported to the correct IDLs and the data reviewer made the changes to the EDD.

The Form 10 for cyanide was missing. The laboratory was contacted and the information was provided.

The laboratory does a 250/500 ml prep for cyanide. See appendix C for sample calculation.

Executive Summary

Laboratory Performance: The CRDL %Rs for several analytes were outside the 90-110% quality control limit. Several analytes were also present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Jennifer M. Malle
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

UL - Nondetected result is considered biased low, "UL", as a result of technical noncompliances.

L - Positive result is considered biased low, "L", as a result of technical noncompliances.

K - Positive result is considered biased high, "K", as a result of technical noncompliances.

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO065

SAMPLE NUMBER:	4GW1040003			4GW1040003-F			4GW1090003			4GW1090003-F		
SAMPLE DATE:	07/30/99			07/30/99			08/02/99			08/02/99		
LABORATORY ID:	C9G310139003			C9G310139003			C9H030214011			C9H030214011		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	2350			168	B	A	3400			36.2	B	A
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	2.1			1.1	U		2.9			1.1	U	
BARIUM	90.8			82.5			50.1			33.0		
BERYLLIUM	0.19	B	A	0.15	B	A	0.23	B	A	0.10	U	
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	13800			13000			3680			2930		
CHROMIUM	4.6	L	C	2.4	UL	C	57.3			2.4	UL	C
COBALT	6.2	B	A	6.0	B	A	11.1	B	A	9.3	B	A
COPPER	5.4			1.6			25.0			1.4	U	
CYANIDE	1.4	U					1.4	U				
IRON	3130			208			25300			15100		
LEAD	3.9	B	A	1.2	B	A	8.3	B	A	1.0	U	
MAGNESIUM	13600			13400			3290			2700		
MANGANESE	189			182			903			781		
MERCURY	2.8			0.13	L	C	0.10	UL	C	0.10	UL	C
NICKEL	8.8	U		8.8	U		41.6			8.8	U	
POTASSIUM	2260	B	A	2060	B	A	3330			2420	B	A
SELENIUM	2.9	K	C	2.9	K	C	12.6			2.7	U	
SILVER	2.8	B	A	4.4	B	A	3.3	B	A	2.2	U	
SODIUM	13500			13300			24300			23400		
THALLIUM	4.5	B	A	6.6	B	A	5.1	B	A	6.5	B	A
VANADIUM	9.7	B	A	2.4	U		14.2	B	A	2.4	U	
ZINC	13.0	B	A	5.9	B	A	17.7	B	A	11.5	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO065

SAMPLE NUMBER:	4GW1100003			4GW120003			4GW120003-F			4GW130003		
SAMPLE DATE:	08/02/99			07/30/99			07/30/99			08/03/99		
LABORATORY ID:	C9H030214002			C9G310139001			C9G310139001			C9H040179002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	1440			1110			299			342		
ANTIMONY	1.7	U		2.1	B	A	2.0	B	A	1.7	U	
ARSENIC	1.3			1.8			1.1	U		1.1		
BARIUM	56.8			50.8			48.4			51.5		
BERYLLIUM	0.10	U		0.34	B	A	0.20	B	A	0.12	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	19400			21300			19900			30500		
CHROMIUM	2.4	UL	C	52.0			2.4	UL	C	8.1	L	C
COBALT	31.1			74.9			70.3			25.7		
COPPER	16.1			7.1			2.0			10.5		
CYANIDE	1.4	U		1.4	U					1.4	U	
IRON	17700			7110			371			5350		
LEAD	2.6	B	A	3.0	B	A	2.3	B	A	1.9	B	A
MAGNESIUM	13300			18200			18100			18500		
MANGANESE	6170			1880			1800			1940		
MERCURY	0.10	UL	C	2.2			2.3			0.16	L	C
NICKEL	13.6			43.5			13.1			11.1		
POTASSIUM	13100			2460	B	A	2480	B	A	3830		
SELENIUM	8.5	K	C	4.8	K	C	2.7	U		2.7	U	
SILVER	2.8	B	A	2.2	U		2.4	B	A	13.6	B	A
SODIUM	204000			10200			9870			8340		
THALLIUM	10.2	B	A	10.2	B	A	7.3	B	A	5.6	B	A
VANADIUM	4.3	B	A	4.2	B	A	2.4	U		3.3	B	A
ZINC	13.6	B	A	13.8	B	A	10.1	B	A	19.0	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO065

SAMPLE NUMBER:	4GW130003-F			4GW150003			4GW150003-F			4GW480003		
SAMPLE DATE:	08/03/99			08/02/99			08/02/99			08/03/99		
LABORATORY ID:	C9H040179002			C9H030214007			C9H030214007			C9H040179004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	29.4	U		2960			29.4	U		577		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		3.5			1.1	U		1.1	U	
BARIUM	43.9			51.3			42.2			54.0		
BERYLLIUM	0.10	U		0.17	B	A	0.10	U		0.12	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	28100			33000			31400			86900		
CHROMIUM	2.4	UL	C	27.2			2.4	UL	C	2.4	UL	C
COBALT	22.2	B	A	19.6	B	A	18.3	B	A	4.9	B	A
COPPER	2.0			6.5			1.4	U		5.6		
CYANIDE				1.4	U					1.4	U	
IRON	2550			7900			571			1600		
LEAD	1.0	U		2.7	B	A	1.0	U		1.1	B	A
MAGNESIUM	17100			15000			14300			10500		
MANGANESE	1810			637			605			21.5		
MERCURY	0.10	UL	C	1.2			0.39	L	C	0.10	UL	C
NICKEL	8.8	U		9.4			8.8	U		8.8	U	
POTASSIUM	3210			3890			3610			3340		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		6.9	B	A	2.2	U		4.1	B	A
SODIUM	7430			16800			15900			3140		
THALLIUM	6.0	B	A	5.4	B	A	4.1	B	A	4.9	B	A
VANADIUM	2.4	U		16.1			2.4	U		4.3	B	A
ZINC	19.9	B	A	26.4	B	A	11.6	B	A	10.1	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO065

SAMPLE NUMBER:	4GW480003-F			4GW49D0003			4GW49D0003-F			4GW790003		
SAMPLE DATE:	08/03/99			08/02/99			08/02/99			08/02/99		
LABORATORY ID:	C9H040179004			C9H030214006			C9H030214006			C9H030214008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	29.4	U		1780			29.4	U		65.6	B	A
ANTIMONY	2.0	B	A	1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		2.5			1.4			1.1	U	
BARIUM	43.3			73.8			37.6			55.2		
BERYLLIUM	0.10	U		0.10	U		0.10	U		0.23	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	82800			24200			23200			21300		
CHROMIUM	2.4	UL	C	22.5			2.4	UL	C	2.4	UL	C
COBALT	3.8	U		17.7	B	A	15.9	B	A	13.4	B	A
COPPER	1.4	U		16.6			1.4	U		4.6		
CYANIDE				1.4	U					1.4	U	
IRON	9.2	U		7020			1960			102		
LEAD	1.0	U		3.2	B	A	1.0	U		1.0	B	A
MAGNESIUM	10200			9440			9220			12700		
MANGANESE	5.0	B	A	358			345			441		
MERCURY	0.10	UL	C	3.7			0.10	UL	C	4.5		
NICKEL	8.8	U		15.4			8.8	U		8.8	U	
POTASSIUM	2590	B	A	5020			4590			3030		
SELENIUM	2.7	U		7.4	K	C	2.7	U		2.7	U	
SILVER	2.2	U		7.4	B	A	2.2	U		2.3	B	A
SODIUM	2860			14600			14000			11500		
THALLIUM	6.7	B	A	5.0	B	A	5.1	B	A	5.1	B	A
VANADIUM	2.4	U		13.0	B	A	2.4	U		3.5	B	A
ZINC	10.4	B	A	50.2			9.9	B	A	13.9	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO065

SAMPLE NUMBER:	4GW800003			4GW800003-F			4GW809903			4GW809903-F		
SAMPLE DATE:	08/02/99			08/02/99			08/02/99			08/02/99		
LABORATORY ID:	C9H030214003			C9H030214003			C9H030214004			C9H030214004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:							4GW800003			4GW800003-F		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	2370			34.9	B	A	1760			29.4	U	
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	3.7			1.1	U		1.8			1.1	U	
BARIUM	36.4			25.1			33.1			21.8		
BERYLLIUM	0.17	B	A	0.21	B	A	0.13	B	A	0.10	U	
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	4650			4220			4480			3940		
CHROMIUM	130			2.4	UL	C	96.2			2.4	UL	C
COBALT	29.7			24.6			26.5			21.0	B	A
COPPER	28.2			3.6			24.2			1.4	U	
CYANIDE	1.4	U					1.4	U				
IRON	50600			5750			44100			5220		
LEAD	3.3	B	A	1.0	U		3.3	B	A	1.8	B	A
MAGNESIUM	4090			3980			3950			3700		
MANGANESE	219			200			199			172		
MERCURY	0.10	UL	C	0.10	UL	C	0.10	UL	C	0.10	UL	C
NICKEL	109			36.4			85.9			28.7		
POTASSIUM	2760			2610	B	A	2250	B	A	2050	B	A
SELENIUM	8.9	K	C	2.7	U		8.0	K	C	2.7	U	
SILVER	8.9	B	A	2.2	U		5.0	B	A	2.2	U	
SODIUM	68200			68500			67400			65100		
THALLIUM	5.0	B	A	7.8	B	A	6.7	B	A	5.3	B	A
VANADIUM	17.7			2.4	U		12.2	B	A	2.4	U	
ZINC	17.3	B	A	16.3	B	A	18.8	B	A	7.3	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO065

SAMPLE NUMBER:	4GW81D0003			4GW820003			4GW820003-F			4GW890003		
SAMPLE DATE:	08/03/99			08/02/99			08/02/99			08/02/99		
LABORATORY ID:	C9H040179006			C9H030214005			C9H030214005			C9H030214009		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	104	B	A	4850			138	B	A	117	B	A
ANTIMONY	2.4	B	A	1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		2.5			1.1	U		1.1	U	
BARIUM	94.6			99.7			42.8			35.8		
BERYLLIUM	0.35	B	A	0.56	B	A	0.32	B	A	0.13	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	2910			2790			2300			16700		
CHROMIUM	2.4	UL	C	10.7	L	C	2.4	UL	C	2.7	UL	C
COBALT	4.1	B	A	18.2	B	A	17.8	B	A	6.3	B	A
COPPER	1.4	U		23.9			10.7			3.4		
CYANIDE	1.4	U		1.4	U					1.4	U	
IRON	9.2	U		19600			487			269		
LEAD	1.0	B	A	7.3	B	A	1.4	B	A	1.0	U	
MAGNESIUM	7570			7080			5480			9580		
MANGANESE	91.0			178			131			338		
MERCURY	4.8			0.10	UL	C	0.10	UL	C	3.1		
NICKEL	8.8	U		44.9			31.9			8.8	U	
POTASSIUM	2170	B	A	4330			3290			2590	B	A
SELENIUM	4.0	K	C	2.7	U		2.7	U		2.7	U	
SILVER	3.3	B	A	2.2	U		3.8	B	A	4.0	B	A
SODIUM	7480			31600			35400			11000		
THALLIUM	5.2	B	A	6.0	B	A	5.1	B	A	5.4	B	A
VANADIUM	2.4	U		12.9	B	A	2.4	U		2.4	U	
ZINC	8.0	B	A	102			50.8			9.8	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO065

SAMPLE NUMBER:	4GW890003-F			4GW899903			4GW899903-F			BGW160003		
SAMPLE DATE:	08/02/99			08/02/99			08/02/99			08/03/99		
LABORATORY ID:	C9H030214009			C9H030214010			C9H030214010			C9H040179005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				4GW890003			4GW890003-F					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	29.4	U		108	B	A	34.7	B	A	39600		
ANTIMONY	1.7	U		1.7	U		1.7	U		2.6	B	A
ARSENIC	1.1	U		1.1	U		1.1	U		20.9		
BARIUM	32.7			34.5			33.5			200		
BERYLLIUM	0.10	U		0.10	U		0.18	B	A	0.97	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	15900			15900			15500			10800		
CHROMIUM	2.4	UL	C	2.4	UL	C	2.4	UL	C	69.7		
COBALT	4.9	B	A	7.1	B	A	8.2	B	A	13.8	B	A
COPPER	1.4	U		4.3			1.4	U		42.8		
CYANIDE				1.4	U					1.4	U	
IRON	9.2	U		264			9.2	U		43800		
LEAD	1.0	U		1.0	U		1.0	U		24.4		
MAGNESIUM	9080			9260			9200			17100		
MANGANESE	323			324			325			175		
MERCURY	2.9			3.3			2.7			3.1		
NICKEL	8.8	U		8.8	U		8.8	U		21.3		
POTASSIUM	2300	B	A	2400	B	A	2120	B	A	4920		
SELENIUM	2.7	U		2.7	U		2.7	U		10.5		
SILVER	2.2	U		2.2	U		2.9	B	A	2.4	B	A
SODIUM	10100			10800			10300			14000		
THALLIUM	3.8	B	A	5.4	B	A	4.7	B	A	6.6	B	A
VANADIUM	2.4	U		2.4	U		2.4	U		120		
ZINC	6.5	B	A	21.5	B	A	9.8	B	A	39.6		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO065

SAMPLE NUMBER:	BGW160003-F											
SAMPLE DATE:	08/03/99			/ /			/ /			/ /		
LABORATORY ID:	C9H040179005											
QC_TYPE:	NORMAL											
% SOLIDS:	0.0 %			100.0 %			100.0 %			100.0 %		
UNITS:	UG/L											
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	137	B	A									
ANTIMONY	1.7	U										
ARSENIC	1.1	U										
BARIUM	102											
BERYLLIUM	0.18	B	A									
CADMIUM	3.0	UL	C									
CALCIUM	9600											
CHROMIUM	2.4	UL	C									
COBALT	9.3	B	A									
COPPER	1.4	U										
IRON	9.2	U										
LEAD	1.2	B	A									
MAGNESIUM	14600											
MANGANESE	76.7											
MERCURY	3.1											
NICKEL	8.8	U										
POTASSIUM	2980											
SELENIUM	8.3	K	C									
SILVER	4.3	B	A									
SODIUM	13500											
THALLIUM	5.4	B	A									
VANADIUM	2.4	U										
ZINC	8.4	B	A									

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-09-9-150

TO : **R. KOTUN** **DATE:** **SEPTEMBER 17, 1999**

FROM: **JENNIFER M. MALLE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, DISSOLVED TAL METALS AND CYANIDE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – WO064

SAMPLES: 24/Aqueous/

13GW03-00-03	13GW03-00-03-F	3GW102-00-03
3GW104-00-03	3GW104-00-03-F	3GW18-00-03
3GW18-00-03-F	3GW19-00-03	3GW78D-00-03
4GW100-00-03	4GW100-00-03-F	4GW105-00-03
4GW105-99-03	4GW106-00-03	4GW106-00-03-F
4GW107-00-03	4GW108-00-03	4GW108-00-03-F
4GW50-00-03	4GW50-00-03-F	4GW52-00-03
4GW52-00-03-F	BGW102-00-03	BGW102-00-03-F

Overview

The sample set for SDG WO064, NSWC White Oak, consists of twenty-four (24) aqueous environmental samples. One (1) field duplicate pair (4GW105-00-03/4GW105-99-03) was included within this SDG.

All samples, with exception to those designated "–F", were analyzed for target analyte list (TAL) metals and cyanide. The samples designated with "–F" were analyzed for dissolved target analyte list (TAL) metals. The samples were collected by Tetra Tech NUS on July 27-30, 1999 and analyzed by Quanterra Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Metals and cyanide analyses were conducted using ICLP ILM03.0/4.0 methodology.

All TAL metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor AA.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, post digestion spike recoveries, laboratory duplicate results, field duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None.

Minor Problems

- The Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) for cadmium, lead and mercury were < 90% quality control limits. The nondetected results reported for cadmium, lead and mercury were qualified as biased low, "UL". The positive results < 2X CRDL reported for lead and mercury were qualified as biased low, "L".

- The Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) for chromium, selenium, sodium, and thallium were > 110% quality control limits. The positive results < 2X CRDL reported for chromium and sodium were qualified as biased high, "K". There were no qualifiers for selenium nor thallium, as sample results were either nondetect or >2X CRDL.

- The following contaminants were detected in the laboratory method / preparation blanks at the following maximum concentrations :

Samples Affected: All

Analyte	Maximum Concentration	Action Level (aqueous)
Barium	0.6µg/L	3.0µg/L
Beryllium	0.5µg/L	2.5µg/L
Iron [1]	11.81µg/L	59.05µg/L
Magnesium [1]	21.93µg/L	109.65µg/L
Manganese	1.2 µg/L	6.0 µg/L
Mercury	0.2 µg/L	1.0 µg/L
Selenium	2.8 µg/L	14 µg/L
Sodium	35.5µg/L	177.5µg/L
Thallium	5.62µg/L	28.10µg/L

[1] Maximum concentration present in an aqueous preparation blank.

An action level of 5x the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluating for blank contamination. The positive results < the action level for beryllium, iron, mercury, selenium and thallium were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes since either the results were greater than the action level or were nondetects.

- The interfering analyte iron was present in sample 4GW52-00-03 at a concentration which was comparable to the level of iron in the Interference Check Sample (ICS) solution. Several analytes, namely barium, cadmium, cobalt, copper, lead, manganese, nickel, selenium, thallium, vanadium, and zinc were present in the ICS solution at concentrations which exceeded the Instrument Detection Limit (IDL). Interference affects exist for cadmium in the affected sample. The nondetected result reported for cadmium was qualified as biased low, "UL" for ICP Interference.

- The Matrix Spike (MS) Percent Recoveries (%Rs) for selenium were > 125% quality control limits. The positive result > IDL for selenium was qualified as biased high, "K". All other results < IDL for selenium, and not qualified for blank contamination, are acceptable for use.

Notes

A comparison of field duplicate pair (4GW105-00-03/4GW105-99-03) is included in Appendix C.

The reporting limits on the Electronic Deliverable Data (EDD) for cyanide were incorrect for several of the samples. However, the Form 1s are reported to the correct IDLs and the data reviewer made the changes to the EDD.

The Form 10 for cyanide was missing. The laboratory was contacted and the information was provided.

The laboratory does a 250/500 ml prep for cyanide. See Appendix C for sample calculation.

Executive Summary

Laboratory Performance: The CRDL %Rs for several analytes were outside the 90-110% quality control limit. Several analytes were also present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: The interfering analyte iron was present in sample 4GW52-00-03. MS noncompliance was qualified for selenium.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Jennifer M. Malle

Tetra Tech NUS
Jennifer M. Malle
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
UL	-	Nondetected result is considered biased low, "UL", as a result of technical noncompliances.
L	-	Positive result is considered biased low, "L", as a result of technical noncompliances.
K	-	Positive result is considered biased high, "K", as a result of technical noncompliances.

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO064

SAMPLE NUMBER:	13GW030003			13GW030003-F			3GW1020003			3GW1040003		
SAMPLE DATE:	07/28/99			07/28/99			07/29/99			07/27/99		
LABORATORY ID:	C9G290199006			C9G290199006			C9G300159002			C9G280159003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	379			39.5			29.4	U		744		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.1	U	
BARIUM	184			205			147			159		
BERYLLIUM	0.11	U		0.13	B	A	0.11	U		0.11	U	
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	48300			51700			25200			19700		
CHROMIUM	2.4	U		2.4	U		2.4	U		50.1		
COBALT	25.1			21.4			3.8	U		16.2		
COPPER	2.0			1.4	U		1.4	U		8.8		
CYANIDE	1.4	U					1.4	U		1.7		
IRON	7150			5350			6180			6130		
LEAD	1.0	UL	C	1.0	UL	C	1.0	UL	C	1.0	UL	C
MAGNESIUM	33700			36800			10900			8400		
MANGANESE	2810			2490			268			273		
MERCURY	0.10	UL	C	0.1	UL	C	0.10	UL	C	0.10	UL	C
NICKEL	74.8			78.7			8.8	U		39.9		
POTASSIUM	13600			14700			4020			3500		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	49000			58000			10300			9250	K	C
THALLIUM	6.8	B	A	4.6	B	A	3.7	U		4.4	B	A
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	147			172			7.3			14.3		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO064

SAMPLE NUMBER:	3GW1040003-F			3GW180003			3GW180003-F			3GW190003		
SAMPLE DATE:	07/27/99			07/27/99			07/27/99			07/30/99		
LABORATORY ID:	C9G280159003			C9G280159001			C9G280159001			C9G310135003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	29.4	U		912			29.4	U		103		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.1	U	
BARIUM	124			54.6			50.0			166		
BERYLLIUM	0.11	U		0.18	B	A	0.11	U		0.31	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	21600			15000			14800			25400		
CHROMIUM	6.8	K	C	3.2	K	C	2.4	U		7.0	K	C
COBALT	5.4			15.1			14.9			7.6		
COPPER	1.4	U		6.2			1.4	U		3.1		
CYANIDE				1.4	U					1.4	U	
IRON	2830			13100			12300			14900		
LEAD	1.0	UL	C	1.0	UL	C	1.0	UL	C	1.0	UL	C
MAGNESIUM	8320			10900			10700			11300		
MANGANESE	269			1600			1540			738		
MERCURY	0.1	UL	C	0.10	UL	C	0.1	UL	C	0.10	UL	C
NICKEL	13.1			41.8			43.8			13.8		
POTASSIUM	3860			2930			3020			4230		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	9180	K	C	10100			10000	K	C	22200		
THALLIUM	4.1	B	A	5.5	B	A	4.2	B	A	4.5	B	A
VANADIUM	2.4	U		2.4	U		2.4	U		2.4		
ZINC	6.1			22.9			11.3			12.6		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO064

SAMPLE NUMBER:	3GW78D0003			4GW1000003			4GW1000003-F			4GW1050003		
SAMPLE DATE:	07/28/99			07/29/99			07/29/99			07/29/99		
LABORATORY ID:	C9G290199003			C9G300159008			C9G300159008			C9G300159005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	29.4	U		25300			29.4	U		29.4	U	
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		11.2			1.1	U		1.1	U	
BARIUM	104			78.7			34.2			69.5		
BERYLLIUM	0.11	U		0.45	B	A	0.11	U		0.11	U	
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	14200			12900			12900			63200		
CHROMIUM	2.4	U		41.0			2.4	U		2.4	U	
COBALT	3.8	U		3.8	U		3.8	U		4.9		
COPPER	1.4	U		24.6			1.4	U		1.4	U	
CYANIDE	1.4	U		1.4	U					1.4	U	
IRON	777			27200			38.0	B	A	40000		
LEAD	1.0	UL	C	10.4			1.0	UL	C	1.0	UL	C
MAGNESIUM	6820			9340			8770			20600		
MANGANESE	87.7			196			168			1470		
MERCURY	0.10	UL	C	1.4			0.32	B	A	0.10	UL	C
NICKEL	8.8	U		8.8	U		8.8	U		8.8	U	
POTASSIUM	3700			2820			1870			4270		
SELENIUM	2.7	U		3.1	B	A	2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	13500			11300			11900			13200		
THALLIUM	4.2	B	A	8.8	B	A	6.2	B	A	6.7	B	A
VANADIUM	2.4	U		75.7			2.4	U		2.4	U	
ZINC	2.1			23.8			4.5			7.4		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO064

SAMPLE NUMBER:	4GW1059903			4GW1060003			4GW1060003-F			4GW1070003		
SAMPLE DATE:	07/29/99			07/30/99			07/30/99			07/29/99		
LABORATORY ID:	C9G300159006			C9G310135002			C9G310135002			C9G300159007		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	4GW1050003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	29.4	U		175			67.2			48.8		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.1	U	
BARIUM	71.9			152			159			46.2		
BERYLLIUM	0.11	U		0.11	U		0.11	U		0.11	U	
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	65400			13800			14200			17000		
CHROMIUM	2.9	K	C	35.0			2.4	U		5.4	K	C
COBALT	6.5			18.9			21.4			9.7		
COPPER	1.4	U		4.7			1.4	U		3.1		
CYANIDE	1.4	U		1.4	U					1.4	U	
IRON	41300			12900			12600			1910		
LEAD	1.0	UL	C	1.0	UL	C	1.0	UL	C	1.0	UL	C
MAGNESIUM	21300			13700			14200			10500		
MANGANESE	1520			1920			1950			468		
MERCURY	0.10	UL	C	0.22	B	A	0.1	UL	C	0.34	B	A
NICKEL	8.8	U		37.1			20.4			11.7		
POTASSIUM	4650			2430			2560			2140		
SELENIUM	2.7	U		3.4	B	A	2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	13600			14300			15000			12600		
THALLIUM	3.8	B	A	6.0	B	A	5.8	B	A	6.2	B	A
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	6.6			9.3			7.1			11.4		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO064

SAMPLE NUMBER:	4GW1080003			4GW1080003-F			4GW500003			4GW500003-F		
SAMPLE DATE:	07/29/99			07/30/99			07/28/99			07/28/99		
LABORATORY ID:	C9G300159003			C9G310135005			C9G290199002			C9G290199002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	1070			329			3190			29.4	U	
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		3.0			1.1	U	
BARIUM	210			213			59.8			47.1		
BERYLLIUM	0.30	B	A	0.34	B	A	0.11	U		0.11	U	
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	7230			7210			37400			37100		
CHROMIUM	2.4	U		2.4	U		23.8			2.4	U	
COBALT	15.4			16.2			10.7			8.1		
COPPER	6.9			1.4	U		17.2			1.4	U	
CYANIDE	1.4	U					1.4	U				
IRON	1570			14.9	B	A	14200			1630		
LEAD	1.0	UL	C	1.0	UL	C	4.3	L	C	1.0	UL	C
MAGNESIUM	11800			12100			13800			13500		
MANGANESE	181			182			737			729		
MERCURY	0.10	UL	C	0.10	UL	C	2.4			0.10	UL	C
NICKEL	24.6			28.0			9.2			8.8	U	
POTASSIUM	3850			3710			3010			3090		
SELENIUM	3.0	B	A	2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	34600			37000			8210	K	C	8150	K	C
THALLIUM	6.2	B	A	4.8	B	A	5.2	B	A	3.7	U	
VANADIUM	5.4			2.4	U		17.4			2.4	U	
ZINC	22.3			21.7			16.9			6.6		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO064

SAMPLE NUMBER:	4GW520003			4GW520003-F			BGW1020003			BGW1020003-F		
SAMPLE DATE:	07/30/99			07/30/99			07/27/99			07/27/99		
LABORATORY ID:	C9G310135006			C9G310135006			C9G280159002			C9G280159002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	11700			45.1			13600			29.4	U	
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	18.8			1.1	U		7.0			1.1	U	
BARIUM	163			115			606			11.0		
BERYLLIUM	0.75	B	A	0.11	U		1.8	B	A	0.11	U	
CADMIUM	3.0	UL	CK	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	7390			6950			2180			1170		
CHROMIUM	672			2.4	U		102			2.4	U	
COBALT	119			44.9			25.2			6.8		
COPPER	219			17.0			65.7			1.4	U	
CYANIDE	1.4	U					1.4	U				
IRON	126000			579			70800			9.2	U	
LEAD	23.5			1.0	UL	C	43.2			1.0	UL	C
MAGNESIUM	15900			17100			2070			925		
MANGANESE	423			299			440			145		
MERCURY	6.9			0.10	UL	C	0.10	UL	C	0.10	UL	C
NICKEL	486			58.4			57.3			10.4		
POTASSIUM	4050			3020			3430			1410		
SELENIUM	70.5	K	D	7.2	B	A	2.7	U		2.7	U	
SILVER	8.1			2.2	U		2.9			2.2	U	
SODIUM	7190	K	C	7850	K	C	7560	K	C	7420	K	C
THALLIUM	6.2	B	A	6.9	B	A	6.5	B	A	5.8	B	A
VANADIUM	151			2.4	U		64.8			2.4	U	
ZINC	49.2			22.9			64.6			26.0		

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-09-9-239

TO : **R. KOTUN** **DATE:** **SEPTEMBER 27, 1999**

FROM: **GRETCHEN A. PHIPPS** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, DISSOLVED TAL METALS AND CYANIDE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – WO062

SAMPLES: 32/Aqueous/

11GW70D0003	11GW70D0003-F	11GW870003
11GW870003-F	2GW1000003	2GW1010003
2GW1010003-F	2GW1020003	2GW1029903
2GW1030003	2GW1030003-F	2GW1040003
2GW1040003-F	2GW1050003	2GW1050003-F
2GW300003	2GW310003	2GW310003-F
2GW320003	2GW450003	2GW450003-F
2GW760003	2GW760003-F	3GW1070003
3GW1070003-F	3GW170003	3GW179903
3GW470003	3GW470003-F	3GW770003
3GW770003-F	3GW78S003	

Overview

The sample set for SDG WO035, NSWC White Oak, consists of thirty-two (3) aqueous environmental samples. Two (2) field duplicate (2GW1020003/ 2GW1029903 and 3GW170003 / 3GW179903) were included within this SDG.

All samples, with exception to those designated –F, were analyzed for target analyte list (TAL) metals and cyanide. The samples designated with –F were analyzed for dissolved target analyte list (TAL) metals. The samples were collected by Tetra Tech NUS on July 20-22, 26 and 27, 1999 and analyzed by Quanterra Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Metals and cyanide analyses were conducted using CLP ILM03.0/4.0 methodology.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, post digestion spike recoveries, laboratory duplicate results, field duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits and analyte quantitation.

All TAL metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using cold vapor AA.

Areas of concern with respect to data quality are listed below.

Minor Problems

- The Contract Required Detection Limit (CRDL) Percent Recovery (%R) for cadmium was <90% quality control limit. The nondetected results reported for cadmium were qualified as biased low, "UL".

- The CRDL %R for lead was >110% quality control limit. The positive results <2X CRDL reported for lead were qualified as biased high, "K".

- The following contaminants were detected in the laboratory method / preparation blanks at the following maximum concentrations :

Samples Affected: All

Analyte	Maximum Concentration	Action Level(aqueous)
Aluminum	52.0µg/L	260µg/L
Barium	1.1µg/L	5.5µg/L
Beryllium	1.3µg/L	6.5µg/L
Calcium	42.5µg/L	212.5µg/L
Copper	2.0µg/L	10.0µg/L
Iron	24.1µg/L	120.5µg/L
Magnesium	44.2µg/L	221µg/L
Manganese	1.6µg/L	8.0µg/L
Sodium[1]	63.630µg/L	318.15µg/L

[1] Maximum concentration present in an aqueous preparation blank.

An action level of 5x the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluating for blank contamination. The positive results < the action level for aluminum, beryllium, copper and iron were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes since either the results were greater than the action level or were nondetects.

- The interfering analyte iron was present is sample 3GW1070003 at a concentration which was comparable to the level iron In the Interference Check Sample (ICS) solution. Several analyte namely antimony, arsenic, barium, cadmium, chromium, cobalt, lead, manganese, nickel, selenium, silver, thallium, vanadium and zinc were present in the ICS solution at concentration which exceeded the Instrument Detection Limit (IDL). Interference affects exist antimony, cadmium, selenium, silver and thallium in the affected sample. The nondetected results reported for antimony and cadmium were qualified as biased low, "UL". The positive results reported for selenium and silver were qualified as biased high, "K". The positive result reported for thallium was qualified as biased low, "L".

- The interfering analyte calcium was present is sample 2GW32003 at a concentration which was comparable to the level calcium In the Interference Check Sample (ICS) solution.

Several analyte namely antimony, arsenic, barium, cadmium, chromium, cobalt, lead, manganese, nickel, selenium, silver, thallium, vanadium and zinc were present in the ICS solution at concentration which exceeded the Instrument Detection Limit (IDL). Interference affects exist antimony, cadmium, chromium, cobalt, lead, nickel and thallium in the affected sample. The nondetected results reported for antimony, cadmium and lead were qualified as biased low, "UL'. The positive results reported for chromium and cobalt were qualified as biased high, "K". The positive results reported for nickel and thallium were qualified as biased low, "L".

- The interfering analyte calcium was present is sample 2GW32003 at a concentration which was comparable to the level calcium In the Interference Check Sample (ICS) solution. Several analyte namely antimony, arsenic, barium, cadmium, chromium, cobalt, lead, manganese, nickel, selenium, silver, thallium, vanadium and zinc were present in the ICS solution at concentration which exceeded the Instrument Detection Limit (IDL). Interference affects exist antimony, cadmium, silver and thallium in the affected sample. The nondetected result reported for antimony was qualified as biased low, "UL'. The positive result reported for silver was qualified as biased high, "K". The positive results reported for cadmium and thallium were qualified as biased low, "L".

Notes

A comparison of field duplicate pairs (2GW1020003/ 2GW1029903 and 3GW170003 / 3GW179903) is included in Appendix C.

Executive Summary

Laboratory Performance: The CRDL %Rs for cadmium and lead were outside the 90-110% quality control limit. Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: The interfering analytes calcium or iron were present in several samples.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Gretchen A. Phipps

Tetra Tech NUS
Gretchen A. Phipps
Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENIDX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	11GW70D0003			11GW70D0003-F			11GW870003			11GW870003-F		
SAMPLE DATE:	07/20/99			07/20/99			07/21/99			07/21/99		
LABORATORY ID:	C9G210147001			C9G210147001			C9G220211006			C9G220211006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	8900			33.2	B	A	248	B	A	29.4	B	A
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	4.0			1.1	U		1.1	U		1.1	U	
BARIUM	141			59.5			287			308		
BERYLLIUM	3.2	B	A	0.32	B	A	1.1	B	A	1.0	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	9800			7710			18800			18700		
CHROMIUM	29.2			2.4	U		3.9			2.4	U	
COBALT	35.1			13.5			14.7			15.9		
COPPER	25.1			1.4	U		4.2	B	A	1.4	U	
CYANIDE	1.4	U					1.4	U				
IRON	38200			4020			33700			31200		
LEAD	12.6			1.0	U		1.0	U		1.0	U	
MAGNESIUM	9490			5970			12600			13400		
MANGANESE	2380			1720			2480			2560		
MERCURY	0.10	U		0.10	U		0.10	U		0.10	U	
NICKEL	61.1			21.3			65.6			67.7		
POTASSIUM	6900			4370			4770			5930		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	4660			4800			20200			22700		
THALLIUM	7.6			3.7	U		3.7	U		3.7	U	
VANADIUM	10.7			2.4	U		2.4	U		2.4	U	
ZINC	144			21.6			64.0			57.0		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1000003			2GW1010003			2GW1010003-F			2GW1020003		
SAMPLE DATE:	07/21/99			07/26/99			07/26/99			07/22/99		
LABORATORY ID:	C9G220211007			C9G270179003			C9G270179003			C9G230211004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	362			373			92.9	B	A	75.6	B	A
ANTIMONY	1.7	UL	K	1.7	U		2.1			1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.4		
BARIUM	858			306			312			436		
BERYLLIUM	0.11	B	A	0.25	B	A	0.43	B	A	0.11	U	
CADMIUM	3.0	UL	CK	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	156000			40300			39300			53600		
CHROMIUM	4.9	K	K	5.0			2.4	U		2.4	U	
COBALT	8.1	K	K	3.8	U		5.4			4.8		
COPPER	12.3			4.9	U	A	1.4	U		1.4	U	
CYANIDE	1.4	U		1.4	U					1.4	U	
IRON	791			1120			21.2	B	A	11000		
LEAD	1.0	UL	K	1.0	U		1.0	U		1.0	U	
MAGNESIUM	54400			23600			24300			21200		
MANGANESE	525			607			549			1130		
MERCURY	0.11			0.21			0.13			0.10	U	
NICKEL	23.9	L	K	85.7			82.9			8.8	U	
POTASSIUM	11100			5470			6030			6870		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	514000			72200			79100			17600		
THALLIUM	8.6	L	K	4.2			4.3			3.9		
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	70.9			58.1			51.5			5.0		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1029903			2GW1030003			2GW1030003-F			2GW1040003		
SAMPLE DATE:	07/22/99			07/21/99			07/21/99			07/22/99		
LABORATORY ID:	C9G230211005			C9G220211003			C9G220211003			C9G230211002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	2GW1020003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	73.6	B	A	2690			36.4	B	A	1320		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.7			1.1	U		2.4		
BARIUM	445			66.4			25.4			302		
BERYLLIUM	0.11	U		0.16	B	A	0.14	B	A	0.11	U	
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	57000			19100			19100			68100		
CHROMIUM	2.4	U		5.0			2.4	U		2.4	U	
COBALT	3.9			3.8	U		3.8	U		3.8	U	
COPPER	1.7	B	A	7.6	B	A	2.0	B	A	7.2	B	A
CYANIDE	1.4	U		1.4	U					1.4	U	
IRON	11400			5320			85.6	B	A	3760		
LEAD	1.0	U		1.8	K	C	1.0	U		1.0	U	
MAGNESIUM	21800			7590			7340			19900		
MANGANESE	1180			298			163			413		
MERCURY	0.10	U		0.10	U		0.10	U		0.10	U	
NICKEL	8.8	U		10.8			8.8	U		8.8	U	
POTASSIUM	6800			7380			6900			6930		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	17600			34400			38800			30700		
THALLIUM	4.5			4.5			3.7	U		5.3		
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	5.3			22.3			8.3			49.3		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1040003-F			2GW1050003			2GW1050003-F			2GW300003		
SAMPLE DATE:	07/22/99			07/21/99			07/21/99			07/22/99		
LABORATORY ID:	C9G230211002			C9G220211002			C9G220211002			C9G230211003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	29.4	U		1930			74.8	B	A	239	B	A
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.4		
BARIUM	282			139			105			52.0		
BERYLLIUM	0.23	B	A	0.22	B	A	0.23	B	A	0.11	U	
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	59100			15100			14200			67300		
CHROMIUM	2.4	U		3.1			2.4	U		3.5		
COBALT	3.8	U		8.2			6.6			9.0		
COPPER	1.4	U		13.8			6.0	B	A	6.7	B	A
CYANIDE				1.4	U					1.4	U	
IRON	561			4090			241			500		
LEAD	1.0	U		1.0	U		1.0	U		1.0	U	
MAGNESIUM	19900			9200			8470			37000		
MANGANESE	352			311			289			3360		
MERCURY	0.1	U		0.10	U		0.10	U		0.10	U	
NICKEL	8.8	U		59.0			55.9			36.4		
POTASSIUM	7510			5470			4840			8180		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.3			2.2	U		2.2	U	
SODIUM	34300			30400			31300			267000		
THALLIUM	3.7	U		3.7	U		3.7	U		5.7		
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	17.1			34.1			41.6			18.8		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW310003			2GW310003-F			2GW320003			2GW450003		
SAMPLE DATE:	07/21/99			07/21/99			07/26/99			07/21/99		
LABORATORY ID:	C9G220211005			C9G220211005			C9G270179002			C9G220211004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	52500			42.6	B	A	7710			9460		
ANTIMONY	1.7	U		1.7	U		3.4	UL	K	1.7	U	
ARSENIC	9.4			1.1	U		10.0			2.4		
BARIUM	222			19.4			182			119		
BERYLLIUM	4.2	B	A	0.11	U		6.0	B	A	1.0	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	12.3	L	K	3.0	UL	C
CALCIUM	5620			3490			145000			43400		
CHROMIUM	51.5			2.4	U		2.4	U		13.2		
COBALT	48.2			3.8	U		93.5			19.8		
COPPER	87.7			1.4	U		16.2			22.2		
CYANIDE	1.4	U					1.4	U		1.9		
IRON	80100			25.3	B	A	130			25400		
LEAD	21.7			1.0	U		7.3			5.2	K	C
MAGNESIUM	12700			2400			88600			22100		
MANGANESE	1580			17.2			18200			1010		
MERCURY	0.29			0.10	U		1.8			0.10	U	
NICKEL	74.1			8.8	U		155			27.1		
POTASSIUM	10200			1210			26500			6390		
SELENIUM	2.7	U		2.7	U		5.4	U		2.7	U	
SILVER	3.3			2.2	U		3.8	K	K	2.2	U	
SODIUM	3990			3450			3400000			241000		
THALLIUM	5.8			3.7	U		12.3	L	K	6.1		
VANADIUM	54.5			2.4	U		2.4	U		15.4		
ZINC	172			4.4			300			49.6		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW450003-F			2GW760003			2GW760003-F			3GW1070003		
SAMPLE DATE:	07/21/99			07/20/99			07/20/99			07/27/99		
LABORATORY ID:	C9G220211004			C9G210147002			C9G210147002			C9G280157002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	44.2	B	A	588			75.1	B	A	70400		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	UL	K
ARSENIC	1.1	U		1.9			1.1	U		11.9		
BARIUM	61.6			23.4			24.3			328		
BERYLLIUM	0.29	B	A	0.53	B	A	0.61	B	A	3.8	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	CK
CALCIUM	42600			2100			2070			16400		
CHROMIUM	2.4	U		5.9			2.4	U		108		
COBALT	8.4			3.8	U		3.8	U		79.1		
COPPER	1.9	B	A	10.4			7.2	B	A	169		
CYANIDE				1.4	U					1.4	U	
IRON	116	B	A	456			84.5	B	A	105000		
LEAD	1.0	U		1.0	U		1.0	U		49.3		
MAGNESIUM	21300			1100			1120			18200		
MANGANESE	908			139			143			4730		
MERCURY	0.10	U		0.10	U		0.10	U		0.27		
NICKEL	8.8	U		8.8	U		8.8	U		106		
POTASSIUM	5310			1880			2230			20700		
SELENIUM	2.7	U		2.7	U		2.7	U		5.8	K	K
SILVER	2.2	U		2.5			2.2	U		5.5	K	K
SODIUM	264000			66800			75400			34200		
THALLIUM	5.5			5.6			3.7	U		3.9	L	K
VANADIUM	2.4	U		2.4	U		2.4	U		141		
ZINC	9.5			14.2			9.7			278		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	3GW1070003-F			3GW170003			3GW179903			3GW470003		
SAMPLE DATE:	07/27/99			07/27/99			07/27/99			07/26/99		
LABORATORY ID:	C9G280157002			C9G280157004			C9G280157005			C9G270179004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:							3GW170003					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	53.3	B	A	90.6	B	A	145	B	A	9040		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.9		
ARSENIC	1.1	U		1.1	U		1.1	U		1.2		
BARIUM	44.9			87.0			89.1			129		
BERYLLIUM	0.20	B	A	0.26	B	A	0.26	B	A	0.69	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	8820			25200			26000			10900		
CHROMIUM	2.4	U		2.4	U		2.4	U		17.4		
COBALT	26.1			5.4			8.7			9.3		
COPPER	1.8	B	A	3.8	B	A	5.5	B	A	18.7		
CYANIDE				1.4	U		1.4	U		1.4	U	
IRON	2800			8360			8610			21800		
LEAD	1.0	U		1.0	U		1.0	U		6.7		
MAGNESIUM	5850			18300			18900			6730		
MANGANESE	3050			1350			1400			1190		
MERCURY	0.10	U		0.10	U		0.10	U		0.13		
NICKEL	24.0			43.9			52.9			9.2		
POTASSIUM	6600			3640			3920			4070		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	27700			15400			16000			29000		
THALLIUM	3.7	U		3.7	U		3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		2.4	U		14.2		
ZINC	16.5			18.7			13.8			37.4		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	3GW470003-F			3GW770003			3GW770003-F			3GW78S0003		
SAMPLE DATE:	07/26/99			07/26/99			07/26/99			07/27/99		
LABORATORY ID:	C9G270179004			C9G270179005			C9G270179005			C9G280157003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	57.6	B	A	14100			51.9	B	A	221	B	A
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		3.2			1.1	U		1.1	U	
BARIUM	57.7			142			42.5			39.0		
BERYLLIUM	0.17	B	A	0.94	B	A	0.17	B	A	0.20	B	A
CADMIUM	3.0	UL	C	3.0	UL	C	3.0	UL	C	3.0	UL	C
CALCIUM	11500			7970			7510			4680		
CHROMIUM	2.4	U		40.5			2.4	U		5.5		
COBALT	6.6			39.3			6.0			4.8		
COPPER	2.5	B	A	25.0			1.4	U		4.1	B	A
CYANIDE				1.4	U					1.4	U	
IRON	1200			44700			23000			445		
LEAD	1.0	U		5.6	K	C	1.0	U		1.0	U	
MAGNESIUM	5540			9110			4670			3190		
MANGANESE	1390			1130			1060			99.4		
MERCURY	0.10	U		0.10	U		0.10	U		0.10	U	
NICKEL	8.8	U		29.6			8.8	U		8.8	U	
POTASSIUM	2830			6970			2840			1630		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	29300			37500			41300			10200		
THALLIUM	3.7	U		3.8			4.1			3.7	U	
VANADIUM	2.4	U		27.2			2.4	U		2.4	U	
ZINC	9.1			75.2			2.8			41.8		

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**MR. RON KOTUN**	**DATE:**	**NOVEMBER 2, 1999**
FROM:	**LINDA KARSONOVICH**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOA/SVOA/PEST/PCB/EXP**
CTO 298, NSWC WHITE OAK, MD
SDG WO066

SAMPLES: 20/Aqueous/

13GW010003	13GW020003	13GW040003
4GW81D9903	4GW81S0003	5GW010003
5GW020003	9GW0580003	9GW060003
9GW070003	9GW1000003	9GW1010003
9GW1030003	9GW1040003	9GW1050003
9GW1090003	9GW550003	9GW57D0003
TB080499-00-03	TB080599-00-03	

OVERVIEW

The sample set for CTO 298, SDG WO066, NSWC White Oak, MD consists of two (2) field quality control blanks and eighteen (18) aqueous environmental samples. All samples were analyzed for Target Compound List (TCL) volatile organic compounds. The environmental samples were also analyzed for TCL semivolatile organic compounds, pesticides/PCBs, and explosive compounds. The field duplicate for 4GW81D9903 was not included in the SDG; therefore, field duplicate results were not evaluated for precision.

The samples were collected by TetraTech NUS on August 3-5, 1999 and were analyzed by Quanterra Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using Contract Laboratory Program (CLP) Statement of Work (SOW) OLC02.1 and SW-846 Method 8330 analytical and reporting protocols.

All samples were successfully analyzed with the exception of those results that were rejected. The findings offered in this report are based upon a general review of all available data including: data completeness, system performance and tuning, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, internal standard recoveries, matrix spike/matrix spike duplicate results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- Initial and continuing calibration relative response factors (RRFs) fell below the 0.05 quality control limit for acetone, 2-butanone, and 1,2-dibromo-3-chloropropane. Nondetected results for all three compounds were rejected, UR. Positive results for acetone and 2-butanone were qualified as biased low, L.

- A continuing calibration RRF fell below the 0.05 quality control limit for 2-hexanone. Nondetected results were rejected, UR.

- The percent difference between columns exceeded 100% for Heptachlor epoxide in sample 9GW060003. The positive result was rejected, R.

Minor Problems

- Continuing calibration percent differences (%Ds) exceeded the 25% quality control limit for bromoform and 1,1,2,2-tetrachloroethane. Nondetected results were not qualified. Positive results for 1,1,2,2-tetrachloroethane were qualified as estimated, J.

- Continuing calibration %Ds exceeded the 25% quality control limit for bromomethane, 4-methyl-2-pentanone, 1,2,4-trichlorobenzene, and 1,1,2,2-tetrachloroethane. Nondetected results were not qualified. Positive results for 1,1,2,2-tetrachloroethane were qualified as estimated, J.

- Continuing calibration %Ds exceeded the 25% quality control limit for bromomethane, chloroethane, 1,1,1-trichloroethane, trichloroethene, benzene, tetrachloroethene, and toluene. Nondetected results were not qualified. Positive results for trichloroethene, tetrachloroethene, and toluene were qualified as estimated, J.

- Continuing calibration %Ds exceeded the 15% quality control limit for 2,6-dinitrotoluene. Nondetected results were not qualified. Positive results were qualified as estimated, J.

- The following compounds were detected in the laboratory method blanks or field quality control blanks (*):

Compound	Maximum Concentration	Blank Action Level
Acetone*	2.9 µg/L	29 µg/L
Methylene chloride*	0.45 µg/L	4.5 µg/L
Toluene*	0.30 µg/L	1.5 µg/L
Xylenes (total)*	0.14 µg/L	0.7 µg/L
Bis(2-ethylhexyl)phthalate	3.1 µg/L	31 µg/L

  Sample aliquot and dilution factors were taken into consideration when applying the blank action limit. Positive results for acetone, methylene chloride, and bis(2-ethylhexyl)phthalate below the blank action level were qualified as nondetected, B. Field quality control blanks were not qualified based on contamination in other field quality control blanks.

- The percent difference between columns exceeded 25% for a-Chlordane in sample 9GW060003. The positive result was qualified as estimated, J.

- Positive results below the CRQL were qualified as estimated, J, due to uncertainty near the detection limit. The direction of bias cannot be determined.

Notes

Several samples in the volatile and explosive fraction required dilution due to the presence of target compounds above the instrument's linear calibration range. This accounts for the elevated reporting limits for these samples.

EXECUTIVE SUMMARY

Laboratory Performance Issues:. Several volatile compounds failed to meet the RRF quality control criteria. Several compounds failed to meet the continuing calibration %D criteria in the volatile and explosive fraction. Several compounds were detected in the laboratory method and field quality control blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III and the NFESC guidelines "Navy Installation Restoration Program Laboratory Quality Assurance Guide" (February, 1996). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

TetraTech NUS

Linda Karsonovich
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

TENTATIVELY IDENTIFIED COMPOUNDS

Volatile

Unknown(s)
sulfur dioxide
trichlorofluoromethane
unknown alkane

Semivolatile

nonanoic acid
unknown(s)

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	13GW010003			13GW020003			13GW040003			4GW81D9903		
SAMPLE DATE:	08/03/99			08/04/99			08/03/99			08/03/99		
LABORATORY ID:	C9H040184004			C9H050153005			C9H040184003			C9H040184002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	50	U		100	U		10	U		1	U	
1,1,2,2-TETRACHLOROETHANE	420	J	C	1100	J	C	10	U		1.4	J	C
1,1,2-TRICHLOROETHANE	50	U		100	U		10	U		1	U	
1,1-DICHLOROETHANE	50	U		100	U		10	U		1	U	
1,1-DICHLOROETHENE	50	U		100	U		10	U		1	U	
1,2,4-TRICHLOROBENZENE	50	U		100	U		10	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	50	UR	C	100	UR	C	10	UR	C	1	UR	C
1,2-DIBROMOETHANE	50	U		100	U		10	U		1	U	
1,2-DICHLOROBENZENE	50	U		100	U		10	U		1	U	
1,2-DICHLOROETHANE	50	U		100	U		10	U		1	U	
1,2-DICHLOROPROPANE	50	U		100	U		10	U		1	U	
1,3-DICHLOROBENZENE	50	U		100	U		10	U		1	U	
1,4-DICHLOROBENZENE	50	U		100	U		10	U		1	U	
2-BUTANONE	250	UR	C	500	UR	C	50	UR	C	5	UR	C
2-HEXANONE	250	UR	C	500	UR	C	50	U		5	U	
4-METHYL-2-PENTANONE	250	U		500	U		50	U		5	U	
ACETONE	250	UR	C	500	UR	C	50	UR	C	5	UR	C
BENZENE	50	U		100	U		10	U		1	U	
BROMOCHLOROMETHANE	50	U		100	U		10	U		1	U	
BROMODICHLOROMETHANE	50	U		100	U		10	U		1	U	
BROMOFORM	50	U		100	U		10	U		1	U	
BROMOMETHANE	50	U		100	U		10	U		1	U	
CARBON DISULFIDE	50	U		100	U		10	U		1	U	
CARBON TETRACHLORIDE	50	U		100	U		10	U		1	U	
CHLOROBENZENE	50	U		100	U		10	U		1	U	
CHLOROETHANE	50	U		100	U		10	U		1	U	
CHLOROFORM	50	U		100	U		10	U		0.29	J	P
CHLOROMETHANE	50	U		100	U		10	U		1	U	
CIS-1,2-DICHLOROETHENE	280			220			58			1	U	
CIS-1,3-DICHLOROPROPENE	50	U		100	U		10	U		1	U	
DIBROMOCHLOROMETHANE	50	U		100	U		10	U		1	U	
ETHYLBENZENE	50	U		100	U		10	U		1	U	
METHYLENE CHLORIDE	100	U		28	B	B	20	U		2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	13GW010003	13GW020003	13GW040003	4GW81D9903
SAMPLE DATE:	08/03/99	08/04/99	08/03/99	08/03/99
LABORATORY ID:	C9H040184004	C9H050153005	C9H040184003	C9H040184002
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	33	J	P	63	J	P	10	U		0.97	J	P
TOLUENE	50	U		100	U		10	U		1	U	
TRANS-1,2-DICHLOROETHENE	60			110			11			1	U	
TRANS-1,3-DICHLOROPROPENE	50	U		100	U		10	U		1	U	
TRICHLOROETHENE	360			280			17			0.76	J	P
VINYL CHLORIDE	50	U		100	U		10	U		1	U	
XYLENES, TOTAL	50	U		100	U		10	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	4GW81S0003			5GW010003			5GW020003			9GW0580003		
SAMPLE DATE:	08/03/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H040184001			C9H050153002			C9H050153004			C9H050153003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		10	U		1	U	
1,1,2,2-TETRACHLOROETHANE	4.5	J	C	1	U		10	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		10	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		10	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		10	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		10	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	10	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		10	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		10	U		1	U	
1,2-DICHLOROETHANE	1	U		0.63	J	P	10	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		10	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		10	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		10	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	50	UR	C	6.2	L	C
2-HEXANONE	5	U		5	UR	C	50	UR	C	5	UR	C
4-METHYL-2-PENTANONE	5	U		5	U		50	U		5	U	
ACETONE	5	UR	C	5.9	B	B	50	UR	C	5.3	B	B
BENZENE	1	U		1	U		10	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		10	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		10	U		1	U	
BROMOFORM	1	U		1	U		10	U		1	U	
BROMOMETHANE	1	U		1	U		10	U		1	U	
CARBON DISULFIDE	1	U		1	U		10	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		10	U		1	U	
CHLOROBENZENE	1	U		0.22	J	P	10	U		0.16	J	P
CHLOROETHANE	1	U		1	U		10	U		1	U	
CHLOROFORM	0.26	J	P	0.38	J	P	10	U		2.4		
CHLOROMETHANE	1	U		1.8			10	U		0.85	J	P
CIS-1,2-DICHLOROETHENE	0.46	J	P	7.1			10	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		10	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		10	U		1	U	
ETHYLBENZENE	1	U		1	U		10	U		1		
METHYLENE CHLORIDE	2	U		0.3	B	B	20	U		2		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	4GW81S0003			5GW010003			5GW020003			9GW0580003		
SAMPLE DATE:	08/03/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H040184001			C9H050153002			C9H050153004			C9H050153003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1.8			19			10	U		1	U	
TOLUENE	1	U		1	U		10	U		1	U	
TRANS-1,2-DICHLOROETHENE	0.28	J	P	0.61	J	P	10	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		10	U		1	U	
TRICHLOROETHENE	1.5			15			10	U		1	U	
VINYL CHLORIDE	1	U		0.41	J	P	10	U		1	U	
XYLENES, TOTAL	1	U		1	U		10	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW060003			9GW070003			9GW1000003			9GW1010003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203005			C9H050153007			C9H050153009			C9H050153010		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		0.38	J	P	1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	4.1	L	CP	4.1	L	CP
2-HEXANONE	5	U		5	UR	C	5	UR	C	5	UR	C
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	1.9	B	B	4.8	B	B	5	UR	C	2	B	B
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1.4			3.2			1	U		1	U	
CHLOROMETHANE	1	U		2.7			0.58	J	P	0.56	J	P
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1		
METHYLENE CHLORIDE	2	U		2	U		2	U		2		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW060003			9GW070003			9GW1000003			9GW1010003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203005			C9H050153007			C9H050153009			C9H050153010		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	0.31	J	CP	1	U		0.18	J	P	0.88	J	P
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW1030003			9GW1040003			9GW1050003			9GW1090003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203002			C9H050153013			C9H050153011			C9H050153008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		2	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		2	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		2	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		2	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		2	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		2	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	2	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		2	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		2	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		2	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		2	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		2	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		2	U		1	U	
2-BUTANONE	5	UR	C	2.8	L	CP	6.8	L	CP	5.8	L	C
2-HEXANONE	5	U		5	UR	C	10	UR	C	5	UR	C
4-METHYL-2-PENTANONE	5	U		5	U		10	U		5	U	
ACETONE	5	UR	C	3.5	B	B	3.2	B	B	2.6	B	B
BENZENE	1	U		1	U		2	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		2	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		2	U		1	U	
BROMOFORM	1	U		1	U		2	U		1	U	
BROMOMETHANE	1	U		1	U		2	U		1	U	
CARBON DISULFIDE	1	U		1	U		2	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		2	U		1	U	
CHLOROBENZENE	1	U		1	U		2	U		1	U	
CHLOROETHANE	1	U		1	U		2	U		1	U	
CHLOROFORM	0.99	J	P	1	U		1	J	P	1.8		
CHLOROMETHANE	1	U		0.61	J	P	1	J	P	0.76	J	P
CIS-1,2-DICHLOROETHENE	0.3	J	P	1.6			3.5			1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		2	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		2	U		1	U	
ETHYLBENZENE	1	U		1	U		2	U		1		
METHYLENE CHLORIDE	2	U		2	U		4	U		2		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW1030003			9GW1040003			9GW1050003			9GW1090003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203002			C9H050153013			C9H050153011			C9H050153008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	0.97	J	CP	0.18	J	P	2	U		1	U	
TOLUENE	1	U		1	U		2	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		2	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		2	U		1	U	
TRICHLOROETHENE	3.5	J	C	3.4			25			1	U	
VINYL CHLORIDE	1	U		1	U		2	U		1	U	
XYLENES, TOTAL	1	U		1	U		2	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW550003			9GW57D0003			TB0804990003			TB0805990003		
SAMPLE DATE:	08/04/99			08/05/99			08/04/99			08/05/99		
LABORATORY ID:	C9H050153012			C9H060203003			C9H050153001			C9H060203001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		0.32	J	P	1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	3.1	L	CP	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	UR	C	5	U		5	UR	C	5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	3.8	U	B	2.2	B	B	2.8	L	CP	2.9	L	CP
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		0.19	J	P	1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	4.8			2.2			1	U		1	U	
CHLOROMETHANE	0.6	J	P	1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		3.6			1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1		
METHYLENE CHLORIDE	2	U		2	U		0.45	J	P	0.31		P
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW550003			9GW57D0003			TB0804990003			TB0805990003		
SAMPLE DATE:	08/04/99			08/05/99			08/04/99			08/05/99		
LABORATORY ID:	C9H050153012			C9H060203003			C9H050153001			C9H060203001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		0.19	J	P	0.3	J	CP
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	0.77	J	P	27	J	C	1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		1	U		0.14	J	P

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	13GW010003			13GW020003			13GW040003			4GW81D9903		
SAMPLE DATE:	08/03/99			08/04/99			08/03/99			08/03/99		
LABORATORY ID:	C9H040184004			C9H050153005			C9H040184003			C9H040184002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:										4GW81D0003		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5	U		5		
	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	13GW010003			13GW020003			13GW040003			4GW81D9903		
SAMPLE DATE:	08/03/99			08/04/99			08/03/99			08/03/99		
LABORATORY ID:	C9H040184004			C9H050153005			C9H040184003			C9H040184002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:										4GW81D0003		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	3.2	B	A	5.7	B	A	3.4	B	A	6.6	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	4GW81S0003			5GW010003			5GW020003			9GW0580003		
SAMPLE DATE:	08/03/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H040184001			C9H050153002			C9H050153004			C9H050153003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5.4	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		22	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5.4	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5.4	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5.4	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		22	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5.4	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5.4	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5.4	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5.4	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5.4	U		5	U	
2-METHYLPHENOL	5	U		5	U		5.4	U		5	U	
2-NITROANILINE	20	U		20	U		22	U		20	U	
2-NITROPHENOL	5	U		5	U		5.4	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5.4	U		5	U	
3-NITROANILINE	20	U		20	U		22	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		22	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5.4	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5.4	U		5	U	
4-CHLOROANILINE	5	U		5	U		5.4	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5.4	U		5	U	
4-METHYLPHENOL	5	U		5	U		5.4	U		5	U	
4-NITROANILINE	20	U		20	U		22	U		20	U	
4-NITROPHENOL	20	U		20	U		22	U		20	U	
ACENAPHTHENE	5	U		5	U		5.4	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5.4	U		5	U	
ANTHRACENE	5	U		5	U		5.4	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5.4	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5.4	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5.4	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5.4	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5.4	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5.4	U		5		
BIS(2-CHLOROETHYL)ETHER	5	U		5	U		5.4	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	4GW81S0003			5GW010003			5GW020003			9GW0580003		
SAMPLE DATE:	08/03/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H040184001			C9H050153002			C9H050153004			C9H050153003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	4.4	B	A	6.3	B	A	8.6	B	A	51		
BUTYLBENZYL PHTHALATE	5	U		5	U		5.4	U		5	U	
CHRYSENE	5	U		5	U		5.4	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5.4	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5.4	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5.4	U		5	U	
DIBENZOFURAN	5	U		5	U		5.4	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5.4	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5.4	U		5	U	
FLUORANTHENE	5	U		5	U		5.4	U		5	U	
FLUORENE	5	U		5	U		5.4	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5.4	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5.4	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5.4	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5.4	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5.4	U		5	U	
ISOPHORONE	5	U		5	U		5.4	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5.4	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5.4	U		5	U	
NAPHTHALENE	5	U		5	U		5.4	U		5	U	
NITROBENZENE	5	U		5	U		5.4	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		22	U		20	U	
PHENANTHRENE	5	U		5	U		5.4	U		5	U	
PHENOL	5	U		5	U		5.4	U		5	U	
PYRENE	5	U		5	U		5.4	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW060003	9GW070003	9GW1000003	9GW1010003
SAMPLE DATE:	08/05/99	08/04/99	08/04/99	08/04/99
LABORATORY ID:	C9H060203005	C9H050153007	C9H050153009	C9H050153010
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHYL)ETHER	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW060003			9GW070003			9GW1000003			9GW1010003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203005			C9H050153007			C9H050153009			C9H050153010		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	3.4	B	A	1.8	B	A	5	B	A	14	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW1030003			9GW1040003			9GW1050003			9GW1090003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203002			C9H050153013			C9H050153011			C9H050153008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5	U		5	U	
	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW1030003			9GW1040003			9GW1050003			9GW1090003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203002			C9H050153013			C9H050153011			C9H050153008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	27	B	A	1.3	B	A	1.5	B	A	15	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW550003			9GW57D0003								
SAMPLE DATE:	08/04/99			08/05/99			/ /			/ /		
LABORATORY ID:	C9H050153012			C9H060203003								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U							
2,4,5-TRICHLOROPHENOL	20	U		20	U							
2,4,6-TRICHLOROPHENOL	5	U		5	U							
2,4-DICHLOROPHENOL	5	U		5	U							
2,4-DIMETHYLPHENOL	5	U		5	U							
2,4-DINITROPHENOL	20	U		20	U							
2,4-DINITROTOLUENE	5	U		5	U							
2,6-DINITROTOLUENE	5	U		5	U							
2-CHLORONAPHTHALENE	5	U		5	U							
2-CHLOROPHENOL	5	U		5	U							
2-METHYLNAPHTHALENE	5	U		5	U							
2-METHYLPHENOL	5	U		5	U							
2-NITROANILINE	20	U		20	U							
2-NITROPHENOL	5	U		5	U							
3,3'-DICHLOROBENZIDINE	5	U		5	U							
3-NITROANILINE	20	U		20	U							
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U							
4-BROMOPHENYL PHENYL ETHER	5	U		5	U							
4-CHLORO-3-METHYLPHENOL	5	U		5	U							
4-CHLOROANILINE	5	U		5	U							
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U							
4-METHYLPHENOL	5	U		5	U							
4-NITROANILINE	20	U		20	U							
4-NITROPHENOL	20	U		20	U							
ACENAPHTHENE	5	U		5	U							
ACENAPHTHYLENE	5	U		5	U							
ANTHRACENE	5	U		5	U							
BENZO(A)ANTHRACENE	5	U		5	U							
BENZO(A)PYRENE	5	U		5	U							
BENZO(B)FLUORANTHENE	5	U		5	U							
BENZO(G,H,I)PERYLENE	5	U		5	U							
BENZO(K)FLUORANTHENE	5	U		5	U							
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U							
[illegible]	5	U		5	U							

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW550003	9GW57D0003		
SAMPLE DATE:	08/04/99	08/05/99	/ /	/ /
LABORATORY ID:	C9H050153012	C9H060203003		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	1.6	B	A	5.2	B	A						
BUTYLBENZYL PHTHALATE	5	U		5	U							
CHRYSENE	5	U		5	U							
DI-N-BUTYL PHTHALATE	5	U		5	U							
DI-N-OCTYL PHTHALATE	5	U		5	U							
DIBENZO(A,H)ANTHRACENE	5	U		5	U							
DIBENZOFURAN	5	U		5	U							
DIETHYL PHTHALATE	5	U		5	U							
DIMETHYL PHTHALATE	5	U		5	U							
FLUORANTHENE	5	U		5	U							
FLUORENE	5	U		5	U							
HEXACHLOROBENZENE	5	U		5	U							
HEXACHLOROBUTADIENE	5	U		5	U							
HEXACHLOROCYCLOPENTADIENE	5	U		5	U							
HEXACHLOROETHANE	5	U		5	U							
INDENO(1,2,3-CD)PYRENE	5	U		5	U							
ISOPHORONE	5	U		5	U							
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U							
N-NITROSODIPHENYLAMINE	5	U		5	U							
NAPHTHALENE	5	U		5	U							
NITROBENZENE	5	U		5	U							
PENTACHLOROPHENOL	20	U		20	U							
PHENANTHRENE	5	U		5	U							
PHENOL	5	U		5	U							
PYRENE	5	U		5	U							

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	4GW81S0003			5GW010003			5GW020003			9GW0580003		
SAMPLE DATE:	08/03/99			08/04/99			08/05/99			08/04/99		
LABORATORY ID:	C9H040184001			C9H050153002			C9H060203004			C9H050153003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.1	U		0.1	U		0.2	U		0.1	U	
4,4'-DDE	0.1	U		0.1	U		0.2	U		0.1	U	
4,4'-DDT	0.1	U		0.1	U		0.2	U		0.1	U	
ALDRIN	0.05	U		0.05	U		0.1	U		0.05	U	
ALPHA-BHC	0.05	U		0.05	U		0.1	U		0.05	U	
ALPHA-CHLORDANE	0.05	U		0.05	U		0.1	U		0.05	U	
AROCLOR-1016	1	U		1	U		2	U		1	U	
AROCLOR-1221	2	U		2	U		4	U		2	U	
AROCLOR-1232	1	U		1	U		2	U		1	U	
AROCLOR-1242	1	U		1	U		2	U		1	U	
AROCLOR-1248	1	U		1	U		2	U		1	U	
AROCLOR-1254	1	U		1	U		2	U		1	U	
AROCLOR-1260	1	U		1	U		2	U		1	U	
BETA-BHC	0.05	U		0.05	U		0.1	U		0.05	U	
DELTA-BHC	0.05	U		0.05	U		0.1	U		0.05	U	
DIELDRIN	0.1	U		0.1	U		0.2	U		0.1	U	
ENDOSULFAN I	0.05	U		0.05	U		0.1	U		0.05	U	
ENDOSULFAN II	0.1	U		0.1	U		0.2	U		0.1	U	
ENDOSULFAN SULFATE	0.1	U		0.1	U		0.2	U		0.1	U	
ENDRIN	0.1	U		0.1	U		0.2	U		0.1	U	
ENDRIN ALDEHYDE	0.1	U		0.1	U		0.2	U		0.1	U	
ENDRIN KETONE	0.1	U		0.1	U		0.2	U		0.1	U	
GAMMA-BHC (LINDANE)	0.05	U		0.05	U		0.1	U		0.05	U	
GAMMA-CHLORDANE	0.05	U		0.05	U		0.1	U		0.05	U	
HEPTACHLOR	0.05	U		0.05	U		0.1	U		0.05	U	
HEPTACHLOR EPOXIDE	0.05	U		0.05	U		0.1	U		0.038	J	P
METHOXYCHLOR	0.5	U		0.5	U		1	U		0.5	U	
TOXAPHENE	5	U		5	U		10	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW060003			9GW070003			9GW1000003			9GW1010003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203005			C9H050153007			C9H050153009			C9H050153010		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.1	U		0.1	U		0.1	U		0.1	U	
4,4'-DDE	0.1	U		0.1	U		0.1	U		0.1	U	
4,4'-DDT	0.1	U		0.1	U		0.1	U		0.1	U	
ALDRIN	0.05	U		0.05	U		0.05	U		0.05	U	
ALPHA-BHC	0.05	U		0.05	U		0.05	U		0.05	U	
ALPHA-CHLORDANE	0.1	J	U	0.033	J	P	0.03	J	P	0.05	U	
AROCLOR-1016	1	U		1	U		1	U		1	U	
AROCLOR-1221	2	U		2	U		2	U		2	U	
AROCLOR-1232	1	U		1	U		1	U		1	U	
AROCLOR-1242	1	U		1	U		1	U		1	U	
AROCLOR-1248	1	U		1	U		1	U		1	U	
AROCLOR-1254	1	U		1	U		1	U		1	U	
AROCLOR-1260	1	U		1	U		1	U		1	U	
BETA-BHC	0.05	U		0.05	U		0.05	U		0.05	U	
DELTA-BHC	0.05	U		0.05	U		0.05	U		0.05	U	
DIELDRIN	0.1	U		0.1	U		0.1	U		0.1	U	
ENDOSULFAN I	0.05	U		0.05	U		0.05	U		0.05	U	
ENDOSULFAN II	0.1	U		0.1	U		0.1	U		0.1	U	
ENDOSULFAN SULFATE	0.1	U		0.1	U		0.1	U		0.1	U	
ENDRIN	0.1	U		0.1	U		0.1	U		0.1	U	
ENDRIN ALDEHYDE	0.1	U		0.1	U		0.1	U		0.1	U	
ENDRIN KETONE	0.1	U		0.1	U		0.1	U		0.1	U	
GAMMA-BHC (LINDANE)	0.05	U		0.05	U		0.05	U		0.05	U	
GAMMA-CHLORDANE	0.054			0.05	U		0.05	U		0.05	U	
HEPTACHLOR	0.05	U		0.05	U		0.05	U		0.05	U	
HEPTACHLOR EPOXIDE	0.028	R	U	0.05	U		0.05	U		0.05	U	
METHOXYCHLOR	0.5	U		0.5	U		0.5	U		0.5	U	
TOXAPHENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW1030003			9GW1040003			9GW1050003			9GW1090003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203002			C9H050153013			C9H050153011			C9H050153008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.1	U		0.1	U		0.1	U		0.1	U	
4,4'-DDE	0.1	U		0.1	U		0.1	U		0.1	U	
4,4'-DDT	0.1	U		0.1	U		0.1	U		0.1	U	
ALDRIN	0.05	U		0.05	U		0.05	U		0.05	U	
ALPHA-BHC	0.05	U		0.05	U		0.05	U		0.05	U	
ALPHA-CHLORDANE	0.05	U		0.05	U		0.05	U		0.05	U	
AROCLOR-1016	1	U		1	U		1	U		1	U	
AROCLOR-1221	2	U		2	U		2	U		2	U	
AROCLOR-1232	1	U		1	U		1	U		1	U	
AROCLOR-1242	1	U		1	U		1	U		1	U	
AROCLOR-1248	1	U		1	U		1	U		1	U	
AROCLOR-1254	1	U		1	U		1	U		1	U	
AROCLOR-1260	1	U		1	U		1	U		1	U	
BETA-BHC	0.05	U		0.05	U		0.05	U		0.05	U	
DELTA-BHC	0.05	U		0.05	U		0.05	U		0.05	U	
DIELDRIN	0.1	U		0.1	U		0.1	U		0.1	U	
ENDOSULFAN I	0.05	U		0.05	U		0.05	U		0.05	U	
ENDOSULFAN II	0.1	U		0.1	U		0.1	U		0.1	U	
ENDOSULFAN SULFATE	0.1	U		0.1	U		0.1	U		0.1	U	
ENDRIN	0.1	U		0.1	U		0.1	U		0.1	U	
ENDRIN ALDEHYDE	0.1	U		0.1	U		0.1	U		0.1	U	
ENDRIN KETONE	0.1	U		0.1	U		0.1	U		0.1	U	
GAMMA-BHC (LINDANE)	0.05	U		0.05	U		0.05	U		0.05	U	
GAMMA-CHLORDANE	0.05	U		0.05	U		0.05	U		0.05	U	
HEPTACHLOR	0.05	U		0.05	U		0.05	U		0.05	U	
HEPTACHLOR EPOXIDE	0.05	U		0.05	U		0.05	U		0.05	U	
METHOXYCHLOR	0.5	U		0.5	U		0.5	U		0.5	U	
TOXAPHENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW550003			9GW57D0003								
SAMPLE DATE:	08/04/99			08/05/99			/ /			/ /		
LABORATORY ID:	C9H050153012			C9H060203003								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.1	U		0.1	U							
4,4'-DDE	0.1	U		0.1	U							
4,4'-DDT	0.1	U		0.1	U							
ALDRIN	0.05	U		0.05	U							
ALPHA-BHC	0.05	U		0.05	U							
ALPHA-CHLORDANE	0.05	U		0.05	U							
AROCLOR-1016	1	U		1	U							
AROCLOR-1221	2	U		2	U							
AROCLOR-1232	1	U		1	U							
AROCLOR-1242	1	U		1	U							
AROCLOR-1248	1	U		1	U							
AROCLOR-1254	1	U		1	U							
AROCLOR-1260	1	U		1	U							
BETA-BHC	0.05	U		0.05	U							
DELTA-BHC	0.05	U		0.05	U							
DIELDRIN	0.1	U		0.1	U							
ENDOSULFAN I	0.05	U		0.05	U							
ENDOSULFAN II	0.1	U		0.1	U							
ENDOSULFAN SULFATE	0.1	U		0.1	U							
ENDRIN	0.1	U		0.1	U							
ENDRIN ALDEHYDE	0.1	U		0.1	U							
ENDRIN KETONE	0.1	U		0.1	U							
GAMMA-BHC (LINDANE)	0.05	U		0.05	U							
GAMMA-CHLORDANE	0.05	U		0.05	U							
HEPTACHLOR	0.05	U		0.05	U							
HEPTACHLOR EPOXIDE	0.05	U		0.05	U							
METHOXYCHLOR	0.5	U		0.5	U							
TOXAPHENE	5	U		5	U							

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	13GW010003			13GW020003			13GW040003			4GW81D9903		
SAMPLE DATE:	08/03/99			08/04/99			08/03/99			08/03/99		
LABORATORY ID:	C9H040184004			C9H050153005			C9H040184003			C9H040184002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.31		
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
HMX	0.71			1			0.5	U		1.9		
NITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
RDX	2.6			5			0.5	U		1.1		
TETRYL	0.2	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	4GW81S0003			5GW010003			5GW020003			9GW0580003		
SAMPLE DATE:	08/03/99			08/04/99			08/05/99			08/04/99		
LABORATORY ID:	C9H040184001			C9H050153002			C9H060203004			C9H050153003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		2.5	U		0.2	U		1	U	
1,3-DINITROBENZENE	0.2	U		2.5	U		0.2	U		1	U	
2,4,6-TRINITROTOLUENE	0.2	U		2.5	U		0.2	U		1	U	
2,4-DINITROTOLUENE	0.2	U		2.5	U		0.2	U		1	U	
2,6-DINITROTOLUENE	0.2	U		2.5	U		0.2	U		1	U	
2-AMINO-4,6-DINITROTOLUENE	0.23			2.5	U		0.2	U		1	U	
2-NITROTOLUENE	0.2	U		2.5	U		0.2	U		1	U	
3-NITROTOLUENE	0.2	U		2.5	U		0.2	U		1	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		2.5	U		0.2	U		1	U	
4-NITROTOLUENE	0.2	U		2.5	U		0.2	U		1	U	
HMX	2			26			0.5	U		13		
NITROBENZENE	0.2	U		2.5	U		0.2	U		1	U	
RDX	0.81			110			0.5	U		23		
TETRYL	0.2	U		2.5	U		0.2	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW060003			9GW070003			9GW1000003			9GW1010003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203005			C9H050153007			C9H050153009			C9H050153010		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
HMX	0.5	U		0.5	U		0.5	U		0.5	U	
NITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
RDX	0.5	U		0.5	U		0.5	U		0.5	U	
TETRYL	0.2	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW1030003			9GW1040003			9GW1050003			9GW1090003		
SAMPLE DATE:	08/05/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H060203002			C9H050153013			C9H050153011			C9H050153008		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
HMX	1.5			0.5	U		1			3.6		
NITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
RDX	3.6			0.5	U		4			5.7		
TETRYL	0.2	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW550003			9GW57D0003								
SAMPLE DATE:	08/04/99			08/05/99			/ /			/ /		
LABORATORY ID:	C9H050153012			C9H060203003								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U							
1,3-DINITROBENZENE	0.2	U		0.2	U							
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U							
2,4-DINITROTOLUENE	0.2	U		0.2	U							
2,6-DINITROTOLUENE	0.32	J	C	0.2	U							
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U							
2-NITROTOLUENE	0.2	U		0.2	U							
3-NITROTOLUENE	0.2	U		0.2	U							
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U							
4-NITROTOLUENE	0.2	U		0.2	U							
HMX	0.5	U		2.8								
NITROBENZENE	0.2	U		0.2	U							
RDX	0.5	U		6.7								
TETRYL	0.2	U		0.2	U							

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-10-9-057

TO: **MR. R. KOTUN** **DATE: DECEMBER 10, 1999**

FROM: **JUSTIN ORBICH** **CC: DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOA/SVOA/PEST/PCB/EXP**
CTO 298, NSWC WHITE OAK
SDG WO069

SAMPLES: 8/Aqueous

9GWC50003	9GW1060003
9GW1100003	9GW740003
9GWBLDG367-00-03	9GWC140003
TB081199-00-03	TB081299-00-03

Overview

The sample set for CTO 298, SDG WO069, Naval Surface Warfare Center (NSWC), White Oak, consists of eight (8) aqueous environmental samples, which includes two (2) trip blank (designated TB). The samples were analyzed for Target Compound List (TCL) volatile, semivolatile, pesticide/PCB, and explosive organic compounds. The trip blanks were analyzed for TCL volatile organic compounds only. No field duplicate pairs were included within this SDG.

The samples were collected by Tetra Tech, NUS on August 11th and 12th, 1999, and analyzed by Quanterra Environmental Services. The samples were all analyzed under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) and according to U.S. EPA Contract Laboratory Program (CLP) OLC02.1 and SW 846 Method 8330 analytical and reporting protocols.

Summary

All compounds were successfully analyzed with the exception of those compounds qualified as rejected. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction/analysis, GC/MS tuning and calibration data, laboratory and field quality control blank results, surrogate spike recoveries, Laboratory Control Sample (LCS) results, Matrix Spike/Matrix Spike Duplicate (MS/MSD) results, internal standard performance, compound identification and quantitation, detection limits, and Tentatively Identified Compound (TIC) evaluation.

Areas of concern with respect to data quality are listed below.

Major Problems

- The initial and continuing calibration Relative Response Factors (RRFs) were below the 0.05 quality control limits for acetone, 2-butanone, and 1,2-dibromo-3-chloropropane. The nondetected results were qualified as rejected (UR), in the affected samples.

Minor Problems

- The initial and continuing calibration Relative Response Factors (RRFs) were below the 0.05 quality control limits for acetone. The positive results were qualified as biased low (L), in the affected samples.

- The following compounds were detected in the laboratory method and/or field quality control blanks at the maximum concentrations indicated below:

Compound	Concentration	Aqueous Action Level
Bromomethane	0.15µg/L	0.75µg/L
Acetone(*)	3.3µg/L	33.0µg/L
Chlorobenzene(*)	0.15µg/L	0.75µg/L

(*) Trip blank

Sample aliquots and dilution factors were taken into consideration during the application of all action level. The positive results for bromomethane were qualified as (B) as a result of blank contamination. It should be noted that field quality control blanks are not qualified based on field quality control blank contamination.

- Positive results reported at concentrations below the Contract Required Quantitation Limits (CRQL) were qualified as estimated (J).

Notes

Several volatile and semivolatile continuing calibration %Ds exceeded the 25% quality control limits. No action was warranted since only nondetected results were reported, and the %D did not exceed 50%.

It should be noted 1,2,4-trichlorobenzene was analyzed in the volatile fraction.

It should be noted in the pesticide/PCB fraction, the laboratory incorrectly analyzed the samples using method CLP SOW OLM3.2. However, the laboratory was supposed to analyze for low concentration organics via method CLP SOW OLM2.1. Therefore, the reporting limits on the Form Is and the electronic data exceeded the reporting limits in the laboratory specification.

EXECUTIVE SUMMARY

Laboratory Performance: The initial and continuing calibration RRFs exceeded the 0.05 quality control limits for acetone and 1,2-dibromo-3-chloropropane. Bromomethane, acetone, and chlorobenzene were detected as blank contaminants. The laboratory analyzed the pesticide/PCB fraction via method CLP SOW OLM3.2, however, the laboratory specification requested method CLP SOW OLM2.1.

Other Factors Affecting Data Quality: None.

MEMO TO: MR. R. KOTUN
DATE: DECEMBER 10, 1999 – PAGE 3

The data for these analyses were reviewed with reference to method specific quality control criteria, the "National Functional Guidelines for Organic Data Evaluation" (September 1994), and the NFESC Interim Guidance Document entitled "Navy Installation Restoration.

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP).

Justin Orbich

Tetra Tech, NUS
Chemist/Data Validator

Joseph A. Samchuck

Tetra Tech, NUS
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A Qualified Analytical Results
2. Appendix B Results as Reported by the Laboratory
3. Appendix C Support Documentation

MEMO TO: MR. R. KOTUN
DATE: DECEMBER 10, 1999 – PAGE 4

Summary of Tentatively Identified Compounds (TICs)

Fraction Name	TIC
Volatile	Trichloromonofluoromethane
Semivolatile	Unknown

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

DATA QUALIFIER DEFINITIONS:

U	-	Value is a nondetected result as reported by the laboratory and should not be considered present.
J	-	Positive result is estimated as a result of a value below the CRQL or a technical noncompliance.
B	-	Nondetected blank (for Region III) as a result of blank contamination and should not be considered present.
UR	-	Compound was rejected due to severe technical noncompliances or as a result of calibration RRF noncompliances.

APPENDIX A

Qualified Analytical Results

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GW1060003			9GW1100003			9GW740003			9GWBLDG3670003		
SAMPLE DATE:	08/10/99			08/10/99			08/10/99			08/10/99		
LABORATORY ID:	C9H110183003			C9H110183002			C9H110183004			C9H110183001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	5	UR	C	5	UR	C	2.4	B	B	5	UR	C
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		0.27	J	P	1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	0.53	J	P	0.9	J	P	1.5			1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GW1060003	9GW1100003	9GW740003	9GWBLDG3670003
SAMPLE DATE:	08/10/99	08/10/99	08/10/99	08/10/99
LABORATORY ID:	C9H110183003	C9H110183002	C9H110183004	C9H110183001
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1.5			1.1			1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GWC140003			9GWC50003			TB0811990003			TB0812990003		
SAMPLE DATE:	08/12/99			08/11/99			08/11/99			08/12/99		
LABORATORY ID:	C9H130153002			C9H120136002			C9H120136001			C9H130153001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	36	L	C	5	UR	C	3.3	L	CP	5	UR	C
BENZENE	0.26	J	P	1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		0.36	J	P	1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		0.85	J	P	1	U		1	U	
CHLOROBENZENE	1	U		1	U		0.15	J	P	1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		5.4			1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GWC140003			9GWC50003			TB0811990003			TB0812990003		
SAMPLE DATE:	08/12/99			08/11/99			08/11/99			08/12/99		
LABORATORY ID:	C9H130153002			C9H120136002			C9H120136001			C9H130153001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	0.41	J	P	1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1.6			1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	0.43	J	P	1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GW1060003	9GW1100003	9GW740003	9GWBLDG3670003
SAMPLE DATE:	08/10/99	08/10/99	08/10/99	08/10/99
LABORATORY ID:	C9H110183003	C9H110183002	C9H110183004	C9H110183001
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5	U		5	U	
[illegible]	[illegible]	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GW1060003			9GW1100003			9GW740003			9GWBLDG3670003		
SAMPLE DATE:	08/10/99			08/10/99			08/10/99			08/10/99		
LABORATORY ID:	C9H110183003			C9H110183002			C9H110183004			C9H110183001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	2.1	J	P	3.7	J	P	2.1	J	P	6.1		
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CARBAZOLE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GWC140003	9GWC50003	/ /	/ /
SAMPLE DATE:	08/12/99	08/11/99		
LABORATORY ID:	C9H130153002	C9H120136002		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U							
2,4,5-TRICHLOROPHENOL	20	U		20	U							
2,4,6-TRICHLOROPHENOL	5	U		5	U							
2,4-DICHLOROPHENOL	5	U		5	U							
2,4-DIMETHYLPHENOL	5	U		5	U							
2,4-DINITROPHENOL	20	U		20	U							
2,4-DINITROTOLUENE	5	U		5	U							
2,6-DINITROTOLUENE	5	U		5	U							
2-CHLORONAPHTHALENE	5	U		5	U							
2-CHLOROPHENOL	5	U		5	U							
2-METHYLNAPHTHALENE	5	U		5	U							
2-METHYLPHENOL	5	U		5	U							
2-NITROANILINE	20	U		20	U							
2-NITROPHENOL	5	U		5	U							
3,3'-DICHLOROBENZIDINE	5	U		5	U							
3-NITROANILINE	20	U		20	U							
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U							
4-BROMOPHENYL PHENYL ETHER	5	U		5	U							
4-CHLORO-3-METHYLPHENOL	5	U		5	U							
4-CHLOROANILINE	5	U		5	U							
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U							
4-METHYLPHENOL	5	U		5	U							
4-NITROANILINE	20	U		20	U							
4-NITROPHENOL	20	U		20	U							
ACENAPHTHENE	5	U		5	U							
ACENAPHTHYLENE	5	U		5	U							
ANTHRACENE	5	U		5	U							
BENZO(A)ANTHRACENE	5	U		5	U							
BENZO(A)PYRENE	5	U		5	U							
BENZO(B)FLUORANTHENE	5	U		5	U							
BENZO(G,H,I)PERYLENE	5	U		5	U							
BENZO(K)FLUORANTHENE	5	U		5	U							
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U							

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GWC140003			9GWC50003								
SAMPLE DATE:	08/12/99			08/11/99			/ /			/ /		
LABORATORY ID:	C9H130153002			C9H120136002								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	5.9			43								
BUTYLBENZYL PHTHALATE	5	U		5	U							
CARBAZOLE	5	U		5	U							
CHRYSENE	5	U		5	U							
DI-N-BUTYL PHTHALATE	5	U		5	U							
DI-N-OCTYL PHTHALATE	5	U		5	U							
DIBENZO(A,H)ANTHRACENE	5	U		5	U							
DIBENZOFURAN	5	U		5	U							
DIETHYL PHTHALATE	5	U		5	U							
DIMETHYL PHTHALATE	5	U		5	U							
FLUORANTHENE	5	U		5	U							
FLUORENE	5	U		5	U							
HEXACHLOROBENZENE	5	U		5	U							
HEXACHLOROBUTADIENE	5	U		5	U							
HEXACHLOROCYCLOPENTADIENE	5	U		5	U							
HEXACHLOROETHANE	5	U		5	U							
INDENO(1,2,3-CD)PYRENE	5	U		5	U							
ISOPHORONE	5	U		5	U							
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U							
N-NITROSODIPHENYLAMINE	5	U		5	U							
NAPHTHALENE	5	U		5	U							
NITROBENZENE	5	U		5	U							
PENTACHLOROPHENOL	20	U		20	U							
PHENANTHRENE	5	U		5	U							
PHENOL	5	U		5	U							
PYRENE	5	U		5	U							

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GW1060003			9GW1100003			9GW740003			9GWBLDG3670003		
SAMPLE DATE:	08/10/99			08/10/99			08/10/99			08/10/99		
LABORATORY ID:	C9H110183003			C9H110183002			C9H110183004			C9H110183001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDE	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDT	0.10	U		0.10	U		0.10	U		0.10	U	
ALDRIN	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
AROCLOR-1016	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1221	2.0	U		2.0	U		2.0	U		2.0	U	
AROCLOR-1232	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1242	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1248	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1254	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1260	1.0	U		1.0	U		1.0	U		1.0	U	
BETA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DELTA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DIELDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN I	0.050	U		0.050	U		0.050	U		0.050	U	
ENDOSULFAN II	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN KETONE	0.10	U		0.10	U		0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	U		0.050	U		0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.035	J	P	0.050	U		0.050	U		0.050	U	
METHOXYCHLOR	0.50	U		0.50	U		0.50	U		0.50	U	
TOXAPHENE	5.0	U		5.0	U		5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GWC140003	9GWC50003		
SAMPLE DATE:	08/12/99	08/11/99	/ /	/ /
LABORATORY ID:	C9H130153002	C9H120136002		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U							
4,4'-DDE	0.10	U		0.10	U							
4,4'-DDT	0.10	U		0.10	U							
ALDRIN	0.050	U		0.050	U							
ALPHA-BHC	0.050	U		0.050	U							
ALPHA-CHLORDANE	0.050	U		0.050	U							
AROCLOR-1016	1.0	U		1.0	U							
AROCLOR-1221	2.0	U		2.0	U							
AROCLOR-1232	1.0	U		1.0	U							
AROCLOR-1242	1.0	U		1.0	U							
AROCLOR-1248	1.0	U		1.0	U							
AROCLOR-1254	1.0	U		1.0	U							
AROCLOR-1260	1.0	U		1.0	U							
BETA-BHC	0.050	U		0.050	U							
DELTA-BHC	0.050	U		0.050	U							
DIELDRIN	0.10	U		0.10	U							
ENDOSULFAN I	0.050	U		0.050	U							
ENDOSULFAN II	0.10	U		0.10	U							
ENDOSULFAN SULFATE	0.10	U		0.10	U							
ENDRIN	0.10	U		0.10	U							
ENDRIN ALDEHYDE	0.10	U		0.10	U							
ENDRIN KETONE	0.10	U		0.10	U							
GAMMA-BHC (LINDANE)	0.050	U		0.050	U							
GAMMA-CHLORDANE	0.050	U		0.050	U							
HEPTACHLOR	0.050	U		0.050	U							
HEPTACHLOR EPOXIDE	0.050	U		0.050	U							
METHOXYCHLOR	0.50	U		0.50	U							
TOXAPHENE	5.0	U		5.0	U							

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GW1060003	9GW1100003	9GW740003	9GWBLDG3670003
SAMPLE DATE:	08/10/99	08/10/99	08/10/99	08/10/99
LABORATORY ID:	C9H110183003	C9H110183002	C9H110183004	C9H110183001
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.20	U		0.20	U		0.20	U		0.20	U	
1,3-DINITROBENZENE	0.20	U		0.20	U		0.20	U		0.20	U	
2,4,6-TRINITROTOLUENE	0.20	U		0.20	U		0.20	U		0.20	U	
2,4-DINITROTOLUENE	0.20	U		0.20	U		0.20	U		0.20	U	
2,6-DINITROTOLUENE	0.20	U		0.20	U		0.20	U		0.20	U	
2-AMINO-4,6-DINITROTOLUENE	0.20	U		0.20	U		0.20	U		0.20	U	
2-NITROTOLUENE	0.20	U		0.20	U		0.20	U		0.20	U	
3-NITROTOLUENE	0.20	U		0.20	U		0.20	U		0.20	U	
4-AMINO-2,6-DINITROTOLUENE	0.20	U		0.20	U		0.20	U		0.20	U	
4-NITROTOLUENE	0.20	U		0.20	U		0.20	U		0.20	U	
HMX	0.71			2.6			0.50	U		0.50	U	
NITROBENZENE	0.20	U		0.20	U		0.20	U		0.20	U	
RDX	4.8			1.9			1.6			0.50	U	
TETRYL	0.20	U		0.20	U		0.20	U		0.20	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GWC140003			9GWC50003								
SAMPLE DATE:	08/12/99			08/11/99			/ /			/ /		
LABORATORY ID:	C9H130153002			C9H120136002								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.20	U		0.20	U							
1,3-DINITROBENZENE	0.20	U		0.20	U							
2,4,6-TRINITROTOLUENE	0.20	U		0.20	U							
2,4-DINITROTOLUENE	0.20	U		0.20	U							
2,6-DINITROTOLUENE	0.20	U		0.26								
2-AMINO-4,6-DINITROTOLUENE	0.20	U		0.20	U							
2-NITROTOLUENE	0.20	U		0.20	U							
3-NITROTOLUENE	0.20	U		0.20	U							
4-AMINO-2,6-DINITROTOLUENE	0.20	U		0.20	U							
4-NITROTOLUENE	0.20	U		0.20	U							
HMX	0.50	U		1.8								
NITROBENZENE	0.20	U		0.20	U							
RDX	0.50	U		7.2								
TETRYL	0.20	U		0.20	U							

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-09-9-291

TO :	**R. KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**JENNIFER M. MALLE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, DISSOLVED TAL METALS AND CYANIDE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – WO069

SAMPLES: 9/Aqueous/

9GWC5-00-03	9GW106-00-03	9GW106-00-03-F
9GW110-00-03	9GW74-00-03	9GW74-00-03-F
9GWBLDG367-00-03	9GWBLDG367-00-03-F	9SWC14-00-03

Overview

The sample set for SDG WO069, NSWC White Oak, consists of nine (9) aqueous environmental samples.

All samples, with exception to those designated "–F", were analyzed for target analyte list (TAL) metals and cyanide. The samples designated with "–F" were analyzed for dissolved target analyte list (TAL) metals. The samples were collected by Tetra Tech NUS on August 10-12, 1999 and analyzed by Quanterra Laboratories under Naval Facilities Engineering Service Center (NFESC) Navy Installation Restoration Laboratory Quality Assurance Guide (February 1996). Metals and cyanide analyses were conducted using EPA method ILM03.0/4.0.

All TAL metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor AA.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None.

Minor Problems

Calibration Data

- The Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) bracketing samples for arsenic, lead, chromium, nickel, and silver were greater than the 110% quality control limits. Positive results less than 2 times the CRDL value reported for lead, chromium, and nickel were qualified as biased high, "K", as a result of calibration noncompliances. All results for arsenic and silver were either previously qualified as nondetects ,"U", by the laboratory or nondetects, "B", as a result of blank contamination, and were not qualified for calibration noncompliances.

Blank Analysis

- The following contaminants were detected in the laboratory method / preparation blanks at the following maximum concentrations :

Samples Affected: All

Analyte	Maximum Concentration	Action Level (aqueous)
Arsenic	1.1 µg/L	5.5 µg/L
Barium	0.6 µg/L	3.0 µg/L
Beryllium	0.4 µg/L	2.0 µg/L
Calcium	648.4 µg/L	3242 µg/L
Iron	11.9 µg/L	59.5 µg/L
Magnesium	21.6 µg/L	108 µg/L
Manganese	1.8 µg/L	9.0 µg/L
Silver	3.2 µg/L	16.0 µg/L
Sodium (1)	59.34 µg/L	296.7 µg/L
Vanadium	2.5 µg/L	12.5 µg/L
Zinc (1)	5.81 µg/L	29.05 µg/L

(1) Maximum concentration present in an aqueous preparation blank.

An action level of 5x the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluating for blank contamination. The positive results less than the action level for arsenic, beryllium, calcium, iron, silver, vanadium and zinc were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes since either the results were greater than the action level or were previously qualified nondetects by the laboratory.

ICP Serial Dilution

The ICP Serial Dilution Percent Difference (%D) for calcium was greater than the 10% quality control limits. Positive results for calcium have been qualified as estimated, "J" for ICP Serial Dilution noncompliance.

Notes

The reporting limits on the Electronic Deliverable Data (EDD) for beryllium and cyanide were incorrect for several of the samples. However, the Form 1s are reported to the correct IDLs and the data reviewer made the changes to the EDD.

The Form 10 for cyanide was missing. The laboratory was contacted and the information was provided.

The laboratory does a 250/500 ml prep for cyanide. See appendix C for a sample calculation.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks. Chromium, lead and nickel were qualified for calibration noncompliances. Also, calcium was qualified for ICP Serial Dilution noncompliance.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Jennifer M. Malle
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

K - Positive result is considered biased high, "K", as a result of technical noncompliances.

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GW1060003			9GW1060003-F			9GW1100003			9GW740003		
SAMPLE DATE:	08/10/99			08/10/99			08/10/99			08/10/99		
LABORATORY ID:	C9H110183003			C9H110183003			C9H110183002			C9H110183004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	185			31.3			110			2210		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.8	B	A	1.7	B	A
BARIUM	17.0	B	A	16			43.3			55.4		
BERYLLIUM	0.17			0.2	B	A	0.17	B	A	0.45	B	A
CADMIUM	3.0	U		3	U		3.0	U		3.0	U	
CALCIUM	878	B	A	576	B	A	4470	J	I	6360	J	I
CHROMIUM	28.8			2.4	U		2.4	U		15.8	K	C
COBALT	31.0			27.7			43.5			5.1		
COPPER	6.0			2.2			2.4			8.9		
CYANIDE	1.4	U					1.4	U		1.4	U	
IRON	1510			338			342			6280		
LEAD	1.0	U		1.0	U		1.0	U		1.7	K	C
MAGNESIUM	949			939			3560			5100		
MANGANESE	52.0			51.4			1280			130		
MERCURY	0.10	U		0.10	U		0.10	U		0.10	U	
NICKEL	21.4	K	C	12	K	C	11.1	K	C	23.9	K	C
POTASSIUM	1180			1070			2470			2930		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.9	B	A	2.2	U		2.2	U		2.2	U	
SODIUM	4530			4580			11000			8060		
THALLIUM	3.7	U		3.7	U		3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		2.4	U		5.9	B	A
ZINC	18.9	B	A	9.3	B	A	19.4	B	A	43.1		

CTO29 NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GW740003-F			9GWBLDG3670003			9GWBLDG3670003-F			9GWC140003		
SAMPLE DATE:	08/10/99			08/10/99			08/10/99			08/12/99		
LABORATORY ID:	C9H110183004			C9H110183001			C9H110183001			C9H130153002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	42.6			33.7			37.7			349		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.2	B	A	1.1	U	
BARIUM	41.8			71.4			70.1			107		
BERYLLIUM	0.2	B	A	0.11	U		0.11	U		0.19	B	A
CADMIUM	3	U		3.0	U		3	U		3.0	U	
CALCIUM	6070	J	I	9460	J	I	9810	J	I	22300	J	I
CHROMIUM	2.4	U		2.4	U		2.4	U		10.2	K	C
COBALT	3.8	U		3.8	U		3.8	U		3.8	U	
COPPER	1.4	U		2.9			1.8			9.0		
CYANIDE				1.4	U					1.4	U	
IRON	12.8	B	A	5900			2930			1300		
LEAD	1.0	U		1.0	U		1.0	U		1.0	U	
MAGNESIUM	4490			7040			7520			4470		
MANGANESE	33.2			119			122			128		
MERCURY	0.10	U		0.10	U		0.10			0.10	U	
NICKEL	15.1	K	C	8.8	U		8.8	U		9.1	K	C
POTASSIUM	2390			4020			4620			11000		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.9	B	A	2.2	U		4.6	B	A	2.2	U	
SODIUM	8540			4810			4950			13000		
THALLIUM	3.7	U		4.9			3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		2.4	U		4.8	B	A
ZINC	16	B	A	801			686			25.1	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO069

SAMPLE NUMBER:	9GWC50003											
SAMPLE DATE:	08/11/99			/ /			/ /			/ /		
LABORATORY ID:	C9H120136002											
QC_TYPE:	NORMAL											
% SOLIDS:	0.0 %			100.0 %			100.0 %			100.0 %		
UNITS:	UG/L											
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	68.5											
ANTIMONY	1.7	U										
ARSENIC	1.1	U										
BARIUM	37.4											
BERYLLIUM	0.20	B	A									
CADMIUM	3.0	U										
CALCIUM	3140	B	A									
CHROMIUM	2.8	K	C									
COBALT	18.8											
COPPER	1.6											
CYANIDE	1.4	U										
IRON	62.0											
LEAD	1.0	U										
MAGNESIUM	3430											
MANGANESE	168											
MERCURY	0.10	U										
NICKEL	16.4	K	C									
POTASSIUM	1760											
SELENIUM	2.7	U										
SILVER	2.5	B	A									
SODIUM	7770											
THALLIUM	3.7	U										
VANADIUM	2.4	U										
ZINC	8.3	B	A									

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-10-9-038

TO :	**R. KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**GRETCHEN A. PHIPPS**	**COPIES:**	**DV FILE**

SUBJECT: **MISCELLANEOUS DATA VALIDATION –AMMONIA AND PERCHLORATE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – 995325

SAMPLES: 61Aqueous/

9GWC6003

Overview

The sample set for SDG 995325, NSWC White Oak, consists of one (1) aqueous environmental sample.

The sample was analyzed for ammonia and perchlorate. The sample was collected by Tetra Tech NUS on August 11, 1999 and analyzed by Applied Physics and Chemistry Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Ammonium perchlorate analyses were conducted using Ion Chromatography. Ammonia analyses were conducted using EPA method 350.2.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, matrix spike results, laboratory duplicate results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None

Minor Problems

- None.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Chemical Data Quality Manual" (NFESC 6/98).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Gretchen A. Phipps

Tetra Tech NUS
Gretchen A. Phipps
Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

APPENIDX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995325

SAMPLE NUMBER:	9GWC60003			
SAMPLE DATE:	08/11/99	/ /	/ /	/ /
LABORATORY ID:	99-5325-2			
QC_TYPE:	NORMAL			
% SOLIDS:	0.0 %	100.0 %	100.0 %	100.0 %
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
AMMONIA(MG/L)	0.2	U										
PERCHLORATES(UG/L)	4	U										

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-10-9-046

TO : **R. KOTUN** **DATE:** **DECEMBER 13, 1999**

FROM: **JENNIFER M. MALLE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, DISSOLVED TAL METALS AND CYANIDE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – WO058

SAMPLES: 38/Aqueous/

7GW08-00-03	7GW08-00-03-F	7GW08-99-03	7GW08-99-03-F
7GW101-00-03	7GW101-00-03-F	7GW102-00-03	7GW102-00-03-F
7GW103-00-03	7GW103-00-03-F	7GW104-00-03	7GW104-00-03-F
7GW105-00-03	7GW105-00-03-F	7GW41-00-03	7GW41-00-03-F
7GW41-99-03	7GW41-99-03-F	7GW42-00-03	7GW42-00-03-F
7GW43-00-03	7GW43-00-03-F	8GW33-00-03	8GW33-00-03-F
8GW34-00-03	8GW34-00-03-F	8GW35-00-03	8GW35-00-03-F
8GW36-00-03	8GW36-00-03-F	8GW53-00-03	8GW53-00-03-F
8GWB1-00-03	8GWB1-00-03-F	8GWB3-00-03	8GWB3-00-03-F
BGW100-00-03	BGW100-00-03-F		

Overview

The sample set for SDG WO058, NSWC White Oak, consists of thirty-eight (38) aqueous environmental samples. Four field duplicate pairs (7GW08-00-03/7GW08-99-03, 7GW08-00-03-F /7GW08-99-03-F, 7GW41-00-03/7GW41-99-03 and 7GW41-00-03-F/7GW41-99-03-F) were included within this SDG.

All samples, with exception to those designated "–F", were analyzed for target analyte list (TAL) metals and cyanide. The samples designated with "–F" were analyzed for dissolved target analyte list (TAL) metals. The samples were collected by Tetra Tech NUS on July 7,8, 12 and 13, 1999 and analyzed by Quanterra Laboratories under Naval Facilities Engineering Service Center (NFESC) Navy Installation Restoration Laboratory Quality Assurance Guide (February 1996). Metals and cyanide analyses were conducted using EPA method ILM03.0/4.0.

All TAL metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor AA.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, field duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None.

Minor Problems

- The Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) for cadmium mercury, and silver were greater than the 110% quality control limits. Positive results less than 2 times the CRDL value reported for cadmium and mercury were qualified as biased high, "K". The positive result less than 2 times the CRDL value for silver was qualified as estimated, "J", as a result of a conflicting noncompliance with ICP Interference results.

- The following contaminants were detected in the laboratory method / preparation blanks at the following maximum concentrations :

Samples Affected: All

Analyte	Maximum Concentration	Action Level (aqueous)
Arsenic	1.3 µg/L	6.5 µg/L
Barium	0.3 µg/L	1.5 µg/L
Beryllium	0.4 µg/L	2.0 µg/L
Calcium [1]	47.370 µg/L	236.85 µg/L
Cyanide	4.9 µg/L	2.45 µg/L
Sodium [1]	39.85 µg/L	199.25 µg/L
Zinc [1]	2.09 µg/L	10.45 µg/L

[1] Maximum concentration present in an aqueous preparation blank.

An action level of 5x the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluating for blank contamination. The positive results less than the action level for arsenic, beryllium, cyanide and zinc were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes since either the results were greater than the action level or were previously qualified nondetects, "U", by the laboratory.

- Field duplicate imprecision greater than 30% relative percent difference (RPD) was noted for iron. Positive results for iron have been qualified as estimated, "J", for field duplicate imprecision.

- The interfering analyte iron was present in sample 8GW35-00-03 at a concentration which was comparable to the level of iron in the Interference Check Sample (ICS) solution. Several analytes, namely arsenic, barium, cadmium, cobalt, copper, lead, manganese, nickel, thallium vanadium and zinc were present in the ICS solution at concentrations which exceeded the Instrument Detection Limits (IDLs). Interference affects exist for arsenic, barium, cadmium,

cobalt, copper, manganese, nickel, selenium, silver, thallium and zinc in the affected sample. The nondetect result reported for cadmium was qualified as biased low, "UL", and the positive results reported for nickel and thallium were qualified as biased low, "L". The positive result reported for silver was qualified as estimated, "J", due to a conflicting noncompliance with calibration verifications.

Notes

The Form 10 for cyanide was missing. The laboratory was contacted and the information was provided.

The laboratory does a 250/500 ml prep for cyanide. See appendix C for a sample calculation.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks. Cadmium, mercury and silver were qualified for calibration noncompliances. The Interfering analyte iron was present in sample 8GW35-00-03. Field duplicate imprecision was noted for iron.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Jennifer M. Malle

Tetra Tech NUS
Jennifer M. Malle
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
UL	-	Nondetected result is considered biased low, "UL", as a result of technical noncompliances.
L	-	Positive result is considered biased low, "L", as a result of technical noncompliances.
K	-	Positive result is considered biased high, "K", as a result of technical noncompliances.
J	-	Positive result is considered estimated, "J", as a result of technical noncompliances.

APPENDIX A

Qualified Analytical Results

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW080003			7GW080003-F			7GW089903			7GW089903-F		
SAMPLE DATE:	07/12/99			07/12/99			07/12/99			07/12/99		
LABORATORY ID:	C9G130192005			C9G130192005			C9G130192006			C9G130192006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:										7GW080003-F		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	125			32.1			239			32.5		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.1	U	
BARIUM	34.8			36.9			36.8			36.6		
BERYLLIUM	0.11	U		0.11	U		0.11	U		0.14	B	A
CADMIUM	3.0	U		3.0	U		3.0	U		3.0	U	
CALCIUM	4370			4450			4620			4500		
CHROMIUM	21.1			2.4	U		31.9			2.4	U	
COBALT	3.8	U		3.8	U		4.0			3.8	U	
COPPER	6.7			3.5			8.5			3.9		
CYANIDE	1.9	B	A				1.4	U				
IRON	350	J	G	57.4	J	G	559	J	G	59.3	J	G
LEAD	1.0	U		5.6			1.0			1.0	U	
MAGNESIUM	4300			4570			4540			4570		
MANGANESE	19.0			18.7			20.6			19.3		
MERCURY	0.10	U		0.10	U		0.10	U		0.1	U	
NICKEL	17.1			8.8	U		21.3			11.6		
POTASSIUM	1510			1590			1650			1740		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	3960			4030			4190			4190		
THALLIUM	3.7	U		3.7	U		3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	12.5			5.2	B	A	21.3			5.7	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1010003			7GW1010003-F			7GW1020003			7GW1020003-F		
SAMPLE DATE:	07/12/99			07/12/99			07/13/99			07/13/99		
LABORATORY ID:	C9G130192003			C9G130192003			C9G140150006			C9G140150006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	121			42.0			1990			49.8		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		3.4	B	A	1.1	U	
BARIUM	43.4			43.6			69.2			55.1		
BERYLLIUM	0.11	U		0.11	U		0.14	B	A	0.11	U	
CADMIUM	3.0	U		3.0	U		3.0	U		3.0	U	
CALCIUM	5010			5010			10600			10400		
CHROMIUM	4.7			2.4	U		27.2			2.4	U	
COBALT	6.6			12.5			3.8	U		3.8	U	
COPPER	6.1			2.2			6.2			1.9		
CYANIDE	1.4	U					1.4	U				
IRON	532	J	G	15.5	J	G	9070	J	G	716	J	G
LEAD	1.0	U		1.0	U		2.8			1	U	
MAGNESIUM	5370			5430			9280			9180		
MANGANESE	23.3			22.1			126			119		
MERCURY	0.10	K	C	0.10	U		1.4			0.10	U	
NICKEL	8.8	U		8.8	U		8.8	U		8.8	U	
POTASSIUM	1770			1720			1780			1910		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	5270			4940			11100			11100		
THALLIUM	3.7	U		3.7	U		3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		18.2			2.4	U	
ZINC	17.8			6.9	B	A	27.6			11		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1030003			7GW1030003-F			7GW1040003			7GW1040003-F		
SAMPLE DATE:	07/12/99			07/12/99			07/08/99			07/08/99		
LABORATORY ID:	C9G130192001			C9G130192001			C9G090177003			C9G090177003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	104			52.8			150			35.1		
ANTIMONY	1.7	U		1.8			1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.1	U	
BARIUM	66.3			64.1			18.5			17.8		
BERYLLIUM	0.11	U		0.11	U		0.11	U		0.11	B	A
CADMIUM	3.0	U		3.0	U		3.0	U		3.0	U	
CALCIUM	9550			9330			3470			3400		
CHROMIUM	5.5			2.4	U		2.4	U		2.4	U	
COBALT	3.8	U		3.8	U		3.8	U		3.8	U	
COPPER	2.8			1.4	U		4.8			1.8		
CYANIDE	1.4	U					2.0	B	A			
IRON	115	J	G	20.7	J	G	227	J	G	11.6	J	G
LEAD	1.0	U		1.0	U		1.0	U		1.0	U	
MAGNESIUM	5410			5220			2550			2530		
MANGANESE	23.4			22.3			12.4			12.7		
MERCURY	0.15	K	C	0.10	U		0.10	U		0.10	U	
NICKEL	8.8	U		8.8	U		8.8	U		8.8	U	
POTASSIUM	1130			1200			1460			1410		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	8170			7580			2960			2650		
THALLIUM	3.7	U		3.7	U		3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	10.2	B	A	20.4			11.6			5.7	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1050003			7GW1050003-F			7GW410003			7GW410003-F		
SAMPLE DATE:	07/12/99			07/12/99			07/13/99			07/13/99		
LABORATORY ID:	C9G130192004			C9G130192004			C9G140150003			C9G140150003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	80.3			41.5			83.0			29.4	U	
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.1	U	
BARIUM	38.5			39.3			47.8			50.1		
BERYLLIUM	0.11	U		0.11	U		0.11	U		0.11	U	
CADMIUM	3.0	U		3.0	U		3.0	U		3.0	U	
CALCIUM	4620			4610			14400			15200		
CHROMIUM	6.1			2.4	U		5.3			2.4	U	
COBALT	3.8	U		3.8	U		3.8	U		3.8	U	
COPPER	6.1			1.7			5.6			1.4	U	
CYANIDE	1.4	U					1.4	U				
IRON	122	J	G	25.5	J	G	445	J	G	35.2	J	G
LEAD	1.0	U		1.0	U		1.0	U		1.0	U	
MAGNESIUM	5280			5380			10000			10600		
MANGANESE	20.3			20.3			97.7			103		
MERCURY	0.10	U		0.10	U		0.84			0.53		
NICKEL	8.8	U		8.8	U		10.0			8.8	U	
POTASSIUM	1390			1480			1960			1720		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	5390			5240			11400			11900		
THALLIUM	3.7	U		3.7	U		3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	34.1			6.5	B	A	26.6			3.6	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW419903			7GW419903-F			7GW420003			7GW420003-F		
SAMPLE DATE:	07/13/99			07/13/99			07/12/99			07/12/99		
LABORATORY ID:	C9G140150005			C9G140150005			C9G130192008			C9G140150001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				7GW410003-F								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	67.5			29.4	U		95.8			50.2		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.9	B	A
BARIUM	49.5			47.6			72.3			74.6		
BERYLLIUM	0.11	U		0.11	U		0.11	U		0.11	U	
CADMIUM	3.0	U		3.0	U		3.0	U		3.0	U	
CALCIUM	15000			14600			11900			12300		
CHROMIUM	6.3			2.7			6.7			2.4	U	
COBALT	3.8	U		3.8	U		3.8	U		3.8	U	
COPPER	6.3			2.6			4.1			1.4	U	
CYANIDE	1.4	U					1.5	B	A			
IRON	358	J	G	23.5	J	G	115	J	G	24.1	J	G
LEAD	1.0	U		1.0	U		1.0	U		1.0	U	
MAGNESIUM	10400			10100			11300			11800		
MANGANESE	101			97.5			137			142		
MERCURY	0.69			0.54			7.2			6.5		
NICKEL	8.8	U		8.8	U		8.8	U		8.8	U	
POTASSIUM	1940			1970			1800			1790		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	11900			11400			12800			13500		
THALLIUM	3.7	U		3.7	U		3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	32.5			4.6	B	A	17.5			4.6	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW430003			7GW430003-F			8GW330003			8GW330003-F		
SAMPLE DATE:	07/12/99			07/12/99			07/08/99			07/08/99		
LABORATORY ID:	C9G130192007			C9G130192007			C9G090177001			C9G090177001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	668			29.4	U		2590			29.4	U	
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.2	B	A	1.1	U	
BARIUM	45.2			41.9			45.8			18.0		
BERYLLIUM	0.12	B	A	0.11	U		0.50	B	A	0.11	U	
CADMIUM	3.0	U		3.0	U		3.0	U		3.0	U	
CALCIUM	5140			4960			3220			2690		
CHROMIUM	21.5			2.4	U		93.7			2.4	U	
COBALT	10.0			5.8			8.2			5.3		
COPPER	8.3			1.7			12.2			1.4	U	
CYANIDE	1.4	U					1.4	U				
IRON	3450	J	G	133	J	G	7660	J	G	357	J	G
LEAD	2.1			1	U		1.2			1.0	U	
MAGNESIUM	6370			6390			3260			2030		
MANGANESE	92.0			90.2			287			166		
MERCURY	0.46			0.10	U		0.10	U		0.10	U	
NICKEL	16.2			8.8	U		76.7			15.4		
POTASSIUM	2100			1660			3580			2200		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	15400			16400			4530			4070		
THALLIUM	3.7	U		3.7	U		3.7	U		3.7	U	
VANADIUM	2.6			2.4	U		4.7			2.4	U	
ZINC	11.8			5.1	B	A	31.1			4.9	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GW340003			8GW340003-F			8GW350003			8GW350003-F		
SAMPLE DATE:	07/07/99			07/07/99			07/07/99			07/07/99		
LABORATORY ID:	C9G080174003			C9G080174003			C9G080174006			C9G080174006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	1120			29.4	U		72500			34.8		
ANTIMONY	1.7	U		1.7	U		3.4	U		1.7	U	
ARSENIC	1.1	U		1.1	U		17.4			1.1	U	
BARIUM	22.6			14.0			674			37		
BERYLLIUM	0.13	B	A	0.11	U		11.9			0.17	B	A
CADMIUM	3.0	U		3.0	U		3.0	UL	K	3.0	U	
CALCIUM	1950			1850			14800			3710		
CHROMIUM	9.2			2.4	U		94.2			2.4	U	
COBALT	3.8	U		3.8	U		69.4			3.8	U	
COPPER	7.6			2.2			119			1.4	U	
CYANIDE	1.4	U					1.4	U				
IRON	2680	J	G	58.8	J	G	120000	J	G	10.4	J	G
LEAD	1.0	U		1.0	U		30.8			1.0	U	
MAGNESIUM	1810			1370			26700			2050		
MANGANESE	37.4			13.3			2060			17.0		
MERCURY	0.10	U		0.10	U		0.10	U		0.10	U	
NICKEL	10.2			9.2			115	L	K	8.8	U	
POTASSIUM	1930			1570			27200			1410		
SELENIUM	2.7	U		2.7	U		5.4	U		2.7	U	
SILVER	2.2	U		2.2	U		2.5	J	CK	2.2	U	
SODIUM	4270			3720			7520			6030		
THALLIUM	3.7	U		3.9			9.6	L	K	3.7	U	
VANADIUM	2.4	U		2.4	U		166			2.4	U	
ZINC	18.0			7.4	B	A	358			6.2	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GW360003			8GW360003-F			8GW530003			8GW530003-F		
SAMPLE DATE:	07/07/99			07/07/99			07/07/99			07/07/99		
LABORATORY ID:	C9G080174002			C9G080174002			C9G080174005			C9G080174005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	16300			76.7			2640			43.4		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	4.6	B	A	1.1			1.3	B	A	1.1	U	
BARIUM	218			40.7			24.1			5.5		
BERYLLIUM	2.2			0.11	B	A	0.42	B	A	0.11	U	
CADMIUM	3.1	K	C	3.0	U		3.0	U		3.0	U	
CALCIUM	10200			6710			2300			1640		
CHROMIUM	756			2.4	U		8.5			2.4	U	
COBALT	47.2			11.1			3.8	U		3.8	U	
COPPER	45.4			3.0			12.3			2.8		
CYANIDE	1.4	U					1.5	B	A			
IRON	41100	J	G	577	J	G	4860	J	G	18.2	J	G
LEAD	8.6			1.0	U		1.9			1.0	U	
MAGNESIUM	11900			4400			1660			825		
MANGANESE	1280			501			198			75.8		
MERCURY	0.19	K	C	0.10	U		0.10	U		0.10	U	
NICKEL	573			56.2			11.6			8.8	U	
POTASSIUM	12800			4350			1550			763		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	3.5	K	C	2.2	U		2.2	U		2.2	U	
SODIUM	8610			7070			2930			2410		
THALLIUM	4.4			3.7	U		3.7	U		3.7	U	
VANADIUM	36.1			2.4	U		2.4	U		2.4	U	
ZINC	114			14.8			68.6			28.6		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GWB10003			8GWB10003-F			8GWB30003			8GWB30003-F		
SAMPLE DATE:	07/07/99			07/07/99			07/07/99			07/07/99		
LABORATORY ID:	C9G080174001			C9G080174001			C9G080174004			C9G080174004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	1400			29.4	U		576			29.5		
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	1.7	B	A	1.1	U		1.1	U		1.1	U	
BARIUM	39.5			23.1			52.0			46.4		
BERYLLIUM	0.13	B	A	0.11	U		0.11	U		0.11	U	
CADMIUM	3.0	U		3.0	U		3.0	U		3.0	U	
CALCIUM	4930			5190			8400			8830		
CHROMIUM	2.4	U		2.4	U		2.4	U		2.4	U	
COBALT	12.5			5.3			3.8	U		5.0		
COPPER	9.1			1.8			4.6			3.4		
CYANIDE	1.5	B	A				1.4	U				
IRON	2820	J	G	17.6	J	G	1310	J	G	313	J	G
LEAD	1.2			1.0	U		1.0	U		1.0	U	
MAGNESIUM	3100			2600			3580			3610		
MANGANESE	951			860			106			101		
MERCURY	0.10	U		0.10	U		0.10	U		0.10	U	
NICKEL	8.8	U		8.8	U		8.8	U		8.8	U	
POTASSIUM	5650			5460			5670			5770		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		2.2	U		2.2	U		2.2	U	
SODIUM	8250			8400			8950			8740		
THALLIUM	4.4			3.7	U		3.7	U		3.7	U	
VANADIUM	2.4	U		2.4	U		2.4	U		2.4	U	
ZINC	30.3			7.8	B	A	22.6			50.2		

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	BGW1000003			BGW1000003-F								
SAMPLE DATE:	07/07/99			07/13/99			/ /			/ /		
LABORATORY ID:	C9G140150004			C9G140150004								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	26700			29.4	U							
ANTIMONY	1.7	U		1.7	U							
ARSENIC	5.6	B	A	1.1	U							
BARIUM	252			21.1								
BERYLLIUM	4.6			0.11	B	A						
CADMIUM	3.0	U		3.0	U							
CALCIUM	13300			9570								
CHROMIUM	105			2.4	U							
COBALT	44.0			6.9								
COPPER	13.2			1.4	U							
CYANIDE	1.4	U										
IRON	77900	J	G	315	J	G						
LEAD	10.6			1.0	U							
MAGNESIUM	27300			10000								
MANGANESE	2300			664								
MERCURY	0.11	K	C	0.10	U							
NICKEL	125			15.4								
POTASSIUM	23800			7280								
SELENIUM	2.7	U		2.7	U							
SILVER	2.2	U		2.2	U							
SODIUM	5230			4630								
THALLIUM	7.9			3.7	U							
VANADIUM	63.2			2.4	U							
ZINC	333			20.7								

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-09-9-241

TO :	**R. KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**JENNIFER M. MALLE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, DISSOLVED TAL METALS AND CYANIDE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – WO066

SAMPLES: 30/Aqueous/

13GW01-00-03	13GW01-00-03-F	13GW02-00-03
13GW02-00-03-F	13GW04-00-03	4GW110-00-03-F
4GW81D-99-03	4GW81S-00-03	4GW81S-00-03-F
5GW01-00-03	5GW01-00-03-F	5GW02-00-03
9GW058-00-03	9GW058-00-03-F	9GW06-00-03
9GW06-00-03-F	9GW07-00-03	9GW07-00-03-F
9GW100-00-03	9GW100-00-03-F	9GW101-00-03
9GW103-00-03	9GW103-00-03-F	9GW105-00-03
9GW105-00-03-F	9GW109-00-03	9GW109-00-03-F
9GW55-00-03	9GW55-00-03-F	9GW57D-00-03

Overview

The sample set for SDG WO066, NSWC White Oak, consists of thirty (30) aqueous environmental samples.

All samples, with exception to those designated "–F", were analyzed for target analyte list (TAL) metals and cyanide. The samples designated with "–F" were analyzed for dissolved target analyte list (TAL) metals. The samples were collected by Tetra Tech NUS on August 3-5, 1999 and analyzed by Quanterra Laboratories under Naval Facilities Engineering Service Center (NFESC) Navy Installation Restoration Laboratory Quality Assurance Guide (February 1996). Metals and cyanide analyses were conducted using CLP ILM03.0/4.0 methodology.

All TAL metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor AA.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None.

Minor Problems

- The Contract Required Detection Limit (CRDL) Percent Recoveries (%Rs) for chromium and thallium were < 90% quality control limits. The nondetected results reported for thallium were qualified as biased low, "UL". The positive results < 2X CRDL reported for chromium were qualified as biased low, "L".

- The following contaminants were detected in the laboratory method / preparation blanks at the following maximum concentrations :

Samples Affected: All

Analyte	Maximum Concentration	Action Level (aqueous)
Aluminum	38.5 µg/L	192.5µg/L
Antimony	3.2 µg/L	16 µg/L
Barium	1.4 µg/L	7.0 µg/L
Beryllium	1.3 µg/L	6.5 µg/L
Cobalt	4.6 µg/L	23.0 µg/L
Iron	13.1 µg/L	65.5 µg/L
Magnesium	55 µg/L	275 µg/L
Manganese	1.9 µg/L	9.5 µg/L
Nickel	9.6 µg/L	48 µg/L
Potassium	563.10 µg/L	2815.50 µg/L
Silver	4.0 µg/L	20 µg/L
Thallium (1)	4.39 µg/L	21.95 µg/L
Vanadium	3.4 µg/L	17 µg/L
Zinc (1)	2.4 µg/L	12 µg/L

(1) Maximum concentration present in an aqueous preparation blank.

An action level of 5x the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluating for blank contamination. The positive results < the action level for aluminum, antimony, beryllium, cobalt, iron, nickel, potassium, silver, thallium, vanadium and zinc were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes since either the results were greater than the action level or were previously qualified nondetects by the laboratory.

Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) for zinc was > 20% quality control limits. Positive results for zinc have been qualified as estimated, "J", for laboratory duplicate imprecision.

Notes

The reporting limits on the Electronic Deliverable Data (EDD) for beryllium and cyanide were incorrect for several of the samples. However, the Form 1s are reported to the correct IDLs and the data reviewer made the changes to the EDD.

The Form 10 for cyanide was missing. The laboratory was contacted and the information was provided.

A duplicate sample for 96W06-00-03 was taken on site but not analyzed for in this SDG. Also the original sample for duplicate sample 4GW81D-99-03 was not included within this SDG.

The laboratory does a 250/500 ml prep for cyanide. See appendix C for a sample calculation.

Executive Summary

Laboratory Performance: The CRDL %Rs for chromium and thallium were outside the 90-110% quality control limits. Several analytes were also present in the laboratory method/preparation blanks. Laboratory duplicate imprecision was noted for zinc.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Jennifer M Malle

Tetra Tech NUS
Jennifer M. Malle
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
UL	-	Nondetected result is considered biased low, "UL", as a result of technical noncompliances.
L	-	Positive result is considered biased low, "L", as a result of technical noncompliances.

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	13GW010003			13GW010003-F			13GW020003			13GW020003-F		
SAMPLE DATE:	08/03/99			08/03/99			08/04/99			08/04/99		
LABORATORY ID:	C9H040184004			C9H040184004			C9H050153005			C9H050153005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	19000			45.1	B	A	242			170	B	A
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	4.4			1.1	U		1.1	U		1.1	U	
BARIUM	264			58.3			76.7			84.8		
BERYLLIUM	3.6	B	A	0.49	B	A	0.56	B	A	0.48	B	A
CADMIUM	3.0	U		3	U		3.0	U		3	U	
CALCIUM	20600			17200			14900			16200		
CHROMIUM	34.6			2.4	UL	C	7.4	L	C	2.4	UL	C
COBALT	48.0			24.5			33.1			44.7		
COPPER	58.0			8.6			13.5			9.2		
CYANIDE	1.4	U					1.4	U				
IRON	47400			99.6			382			25.9	B	A
LEAD	13.6			1	U		1.0	U		1	U	
MAGNESIUM	24700			15700			16700			18100		
MANGANESE	1410			854			451			426		
MERCURY	0.10	U		0.1	U		0.10	U		0.1	U	
NICKEL	83.9			50.3			83.3			94.4		
POTASSIUM	21100			9070			5870			6390		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	3.1	B	A	2.2	U		2.2	U		2.2	U	
SODIUM	20300			22400			41300			46400		
THALLIUM	11.1	B	A	3.8	B	A	3.7	UL	C	3.7	UL	C
VANADIUM	51.8			2.4	U		2.4	U		2.4	U	
ZINC	245	J	F	106	J	F	185	J	F	193	J	F

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	13GW040003			4GW1100003-F			4GW81D9903			4GW81S0003		
SAMPLE DATE:	08/03/99			08/04/99			08/03/99			08/03/99		
LABORATORY ID:	C9H040184003			C9H050153006			C9H040184002			C9H040184001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	29.4	U		31.5	B	A	86.1	B	A	128	B	A
ANTIMONY	1.7	U		1.7	U		2.2	B	A	1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		1.1	U	
BARIUM	103			47.5			94.1			83.3		
BERYLLIUM	0.11	U		0.13	B	A	0.16	B	A	0.18	B	A
CADMIUM	3.0	U		3	U		3.0	U		3.0	U	
CALCIUM	12400			18600			2900	B	A	2800		
CHROMIUM	2.4	UL	C	2.4	UL	C	2.4	UL	C	31.1		
COBALT	3.8	B	A	32.4			3.8	U		53.3		
COPPER	1.4	U		2.8			1.4	U		12.9		
CYANIDE	1.4	U					1.4	U		1.4	U	
IRON	1730			2330			9.2	U		1260		
LEAD	1.0	U		1	U		1.0	U		1.0	U	
MAGNESIUM	7410			13100			7460			5650		
MANGANESE	194			5970			91.0			140		
MERCURY	0.10	U		0.1	U		4.8			3.0		
NICKEL	8.8	U		16.4	B	A	8.8	U		42.2	B	A
POTASSIUM	3940			13400			1770	B	A	1740	B	A
SELENIUM	2.7	U		2.7	U		4.0			2.7	U	
SILVER	2.4	B	A	2.2	U		2.2	U		2.2	U	
SODIUM	4640			206000			7180			8810		
THALLIUM	3.7	UL	C	4.4	B	A	3.7	UL	C	6.6	B	A
VANADIUM	3.2	B	A	2.4	U		2.4	U		2.4	U	
ZINC	3.6	B	A	13.5	J	F	7.4	B	A	28.4	J	F

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	4GW81S0003-F			5GW010003			5GW010003-F			5GW020003		
SAMPLE DATE:	08/03/99			08/04/99			08/04/99			08/05/99		
LABORATORY ID:	C9H040184001			C9H050153002			C9H050153002			C9H060203004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	63.6	B	A	2900			49.8	B	A	114	B	A
ANTIMONY	1.7	U		1.7	U		1.7	U		2.1	B	A
ARSENIC	1.1	U		1.1	U		1.1	U		1.1	U	
BARIUM	89.1			50.4			26.4			67.2		
BERYLLIUM	0.13	B	A	0.65	B	A	0.19	B	A	0.27	B	A
CADMIUM	3	U		3.0	U		3	U		3.0	U	
CALCIUM	2590			7590			7360			3670		
CHROMIUM	5.3	L	C	33.3			5.3	L	C	2.4	UL	C
COBALT	58.6			12.0	B	A	12.8	B	A	9.3	B	A
COPPER	12.7			11.3			7.7			5.5		
CYANIDE				1.4	U					1.4	U	
IRON	484			6690			62.6	B	A	3240		
LEAD	1.4			4.4			1	U		1.0	U	
MAGNESIUM	6000			6120			4900			8510		
MANGANESE	152			616			812			664		
MERCURY	2.8			0.15			0.1	U		0.10	U	
NICKEL	31.1	B	A	35.3	B	A	38.3	B	A	11.1	B	A
POTASSIUM	2260	B	A	7350			6880			2910		
SELENIUM	2.7	U		65.7			63.3			2.7	U	
SILVER	2.2	U		2.5	B	A	2.2	U		2.6	B	A
SODIUM	9260			227000			257000			24600		
THALLIUM	3.7	UL	C	4.3	B	A	3.7	UL	C	3.7	UL	C
VANADIUM	2.4	U		7.6	B	A	2.4	U		2.4	U	
ZINC	13	J	F	74.4	J	F	44.5	J	F	32.0	J	F

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW0580003			9GW0580003-F			9GW060003			9GW060003-F		
SAMPLE DATE:	08/04/99			08/04/99			08/05/99			08/05/99		
LABORATORY ID:	C9H050153003			C9H050153003			C9H060203005			C9H060203005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	10500			29.4	U		266			121	B	A
ANTIMONY	1.7	U		1.7	U		1.9	B	A	1.7	U	
ARSENIC	9.0			1.1	U		1.6			1.1	U	
BARIUM	119			37.3			92.7			104		
BERYLLIUM	0.70	B	A	0.11	U		0.37	B	A	0.35	B	A
CADMIUM	3.1			3	U		3.0	U		3	U	
CALCIUM	6710			3490			3720			3700		
CHROMIUM	106			2.4	UL	C	20.0			2.8	L	C
COBALT	48.5			3.8	U		8.2	B	A	8.4	B	A
COPPER	79.6			3.5			4.7			2.7		
CYANIDE	1.4	U					1.4	U				
IRON	95200			388			1190			31.4	B	A
LEAD	35.7			1	U		1.0	U		1	U	
MAGNESIUM	5660			4840			6320			6890		
MANGANESE	93.8			41.4			145			151		
MERCURY	8.2			0.1	U		0.10			0.1	U	
NICKEL	15.1	B	A	8.8	U		20.5	B	A	13.5	B	A
POTASSIUM	2910			1860	B	A	2830			2890		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	12.5	B	A	2.2	U		2.2	U		2.2	U	
SODIUM	16500			17100			22800			25700		
THALLIUM	3.7	UL	C	3.7	UL	C	4.0	B	A	3.7	UL	C
VANADIUM	121			2.4	U		3.3	B	A	2.4	U	
ZINC	38.5	J	F	4	B	A	18.6	J	F	9.2	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW070003			9GW070003-F			9GW1000003			9GW1000003-F		
SAMPLE DATE:	08/04/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H050153007			C9H050153007			C9H050153009			C9H050153009		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	19900			40.9	B	A	11100			30.6	B	A
ANTIMONY	1.7	U		1.7	U		1.7	U		1.7	U	
ARSENIC	17.8			1.1	U		1.1	U		1.1	U	
BARIUM	151			91			136			50.5		
BERYLLIUM	0.74	B	A	0.19	B	A	1.3	B	A	0.11	U	
CADMIUM	3.0	U		3	U		3.0	U		3	U	
CALCIUM	5360			4860			23900			24200		
CHROMIUM	78.6			2.4	UL	C	10.8	L	C	2.4	UL	C
COBALT	17.0	B	A	3.8	U		13.3	B	A	3.8	U	
COPPER	64.5			3.1			26.6			3.8		
CYANIDE	1.4	U					1.4	U				
IRON	65000			11.1	B	A	26900			24.9	B	A
LEAD	22.5			1	U		5.6			1	U	
MAGNESIUM	6780			6140			13700			10600		
MANGANESE	236			58.9			779			255		
MERCURY	0.54			0.1	U		0.10	U		0.1	U	
NICKEL	31.6	B	A	15.4	B	A	13.8	B	A	8.8	U	
POTASSIUM	3510			3080			8730			4930		
SELENIUM	23.2			2.7	U		2.7	U		2.7	U	
SILVER	4.7	B	A	2.2	U		2.4	B	A	2.2	U	
SODIUM	23700			25900			22700			24300		
THALLIUM	4.7	B	A	4.3	B	A	4.8	B	A	3.7	UL	C
VANADIUM	150			2.4	U		24.8			2.4	U	
ZINC	104	J	F	31.2	J	F	56.5	J	F	2.1	B	A

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW1010003			9GW1030003			9GW1030003-F			9GW1050003		
SAMPLE DATE:	08/04/99			08/05/99			08/05/99			08/04/99		
LABORATORY ID:	C9H050153010			C9H060203002			C9H060203002			C9H050153011		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	60.0	B	A	408			41.8	B	A	3340		
ANTIMONY	1.9	B	A	1.7	U		1.7	U		1.7	U	
ARSENIC	1.1	U		1.1	U		1.1	U		2.4		
BARIUM	34.4			23.8			22.8			85.2		
BERYLLIUM	0.13	B	A	0.11	U		0.13	B	A	0.98	B	A
CADMIUM	3.0	U		3.0	U		3	U		3.0	U	
CALCIUM	23300			5360			5610			6220		
CHROMIUM	2.4	UL	C	2.4	UL	C	2.4	UL	C	51.6		
COBALT	8.8	B	A	38.2			37			20.0	B	A
COPPER	1.4			2.2			1.4	U		6.1		
CYANIDE	1.4	U		1.4	U					1.4	U	
IRON	89.4			609			19.9	B	A	9370		
LEAD	1.0	U		1.0	U		1	U		3.5		
MAGNESIUM	9720			4170			4210			5020		
MANGANESE	323			88.0			90.4			460		
MERCURY	0.10	U		0.10	U		0.1	U		0.10	U	
NICKEL	8.8	U		8.8	U		8.8	U		44.7	B	A
POTASSIUM	5140			2870			3060			4650		
SELENIUM	2.7	U		2.7	U		2.7	U		2.7	U	
SILVER	2.2	U		3.1	B	A	2.2	U		4.2	B	A
SODIUM	22700			14100			15100			8670		
THALLIUM	3.7	UL	C	4.3	B	A	3.7	UL	C	4.2	B	A
VANADIUM	2.4	U		2.4	U		2.4	U		8.5	B	A
ZINC	10.4	J	F	17.8	J	F	5.5	B	A	37.5	J	F

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW1050003-F			9GW1090003			9GW1090003-F			9GW550003		
SAMPLE DATE:	08/04/99			08/04/99			08/04/99			08/04/99		
LABORATORY ID:	C9H050153011			C9H050153008			C9H050153008			C9H050153012		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	59.3	B	A	17500			64.1	B	A	5100		
ANTIMONY	1.7	U		2.2	B	A	1.7	U		1.7	U	
ARSENIC	1.1	U		13.2			1.1	U		7.8		
BARIUM	39.6			70.6			27.8			40.2		
BERYLLIUM	0.3	B	A	0.67	B	A	0.11	B	A	0.30	B	A
CADMIUM	3	U		3.0	U		3	U		3.0	U	
CALCIUM	5420			3150			2380			1650		
CHROMIUM	2.4	UL	C	102			2.4	UL	C	34.0		
COBALT	14.4	B	A	16.6	B	A	5.4	B	A	7.2	B	A
COPPER	1.6			30.7			1.4	U		35.3		
CYANIDE				1.4	U					1.4	U	
IRON	932			54900			202			40000		
LEAD	1	U		17.8			1	U		11.1		
MAGNESIUM	3060			3750			3220			2360		
MANGANESE	370			318			232			30.0		
MERCURY	0.1	U		0.35			0.1	U		1.1		
NICKEL	19	B	A	8.8	U		8.8	U		8.8	U	
POTASSIUM	2890			2430	B	A	1740	B	A	2190	B	A
SELENIUM	2.7	U		5.4			2.7	U		9.1		
SILVER	2.2	U		4.4	B	A	2.7	B	A	5.9	B	A
SODIUM	8830			15500			17700			6850		
THALLIUM	3.7	UL	C	4.3	B	A	3.7	UL	C	4.0	B	A
VANADIUM	2.4	U		113			2.4	U		51.6		
ZINC	6.5	B	A	35.6	J	F	7.4	B	A	25.2	J	F

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO066

SAMPLE NUMBER:	9GW550003-F			9GW57D0003								
SAMPLE DATE:	08/04/99			08/05/99			/ /			/ /		
LABORATORY ID:	C9H050153012			C9H060203003								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
ALUMINUM	36.4	B	A	34.6	B	A						
ANTIMONY	1.7	U		2.0	B	A						
ARSENIC	1.1	U		1.1	U							
BARIUM	23.4			27.1								
BERYLLIUM	0.1	U		0.18	B	A						
CADMIUM	3	U		3.0	U							
CALCIUM	1200			3380								
CHROMIUM	2.4	UL	C	2.4	UL	C						
COBALT	3.8	U		3.8	U							
COPPER	2			1.4	U							
CYANIDE				1.4	U							
IRON	13.9	B	A	9.2	U							
LEAD	1	U		1.0	U							
MAGNESIUM	2320			2070								
MANGANESE	11.9			12.4								
MERCURY	0.1	U		0.10	U							
NICKEL	8.8	U		8.8	U							
POTASSIUM	1420	B	A	1240	B	A						
SELENIUM	2.7	U		2.7	U							
SILVER	2.2	U		2.2	U							
SODIUM	7820			9320								
THALLIUM	3.7	UL	C	4.4	B	A						
VANADIUM	2.4	U		2.4	U							
ZINC	4.2	B	A	5.8	B	A						

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-10-9-035

TO :	**R. KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**GRETCHEN A. PHIPPS**	**COPIES:**	**DV FILE**

SUBJECT: **MISCELLANEOUS DATA VALIDATION – PERCHLORATE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – 995109

SAMPLES: 16/Aqueous/

3GW1020003	3GW190003	4GW100003
4GW1040003	4GW1050003	4GW1059903
4GW1060003	4GW1070003	4GW1080003
4GW120003	4GW520003	4GW800003
4GW809903	4GW820003	4GW890003
4GW899903		

Overview

The sample set for SDG 995109, NSWC White Oak, consists of sixteen (16) aqueous environmental samples. Three (3) field duplicate pairs (4GW1050003 / 4GW1059903, 4GW800003 / 4GW809903 and 4GW890003 / 4GW899903) were included within this SDG.

The samples were analyzed for perchlorate. The samples were collected by Tetra Tech NUS on July 29, 30 and August 2, 1999 and analyzed by Applied Physics and Chemistry Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Ammonium perchlorate analyses were conducted using Ion Chromatography.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, matrix spike results, laboratory duplicate results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None

Minor Problems

- None.

Notes

A comparison of field duplicate pairs (4GW1050003 / 4GW1059903, 4GW800003 / 4GW809903 and 4GW890003 / 4GW899903) is included in Appendix C.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Chemical Data Quality Manual" (NFESC 6/98).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Gretchen A. Phipps

Tetra Tech NUS
Gretchen A. Phipps
Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

APPENIDX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's r < 0.995
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning r < 0.995 (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995109

SAMPLE NUMBER:	3GW1020003			3GW190003			4GW1000003			4GW1040003		
SAMPLE DATE:	07/29/99			07/30/99			07/29/99			07/30/99		
LABORATORY ID:	99-5109-1			99-5109-3			99-5109-10			99-5109-11		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995109

SAMPLE NUMBER:	4GW1050003			4GW1059903			4GW1060003			4GW1070003		
SAMPLE DATE:	07/29/99			07/29/99			07/30/99			07/29/99		
LABORATORY ID:	99-5109-12			99-5109-13			99-5109-14			99-5109-15		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				4GW1050003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	8	U		8	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995109

SAMPLE NUMBER:	4GW1080003			4GW120003			4GW520003			4GW800003		
SAMPLE DATE:	07/30/99			07/30/99			07/30/99			08/02/99		
LABORATORY ID:	99-5109-16			99-5109-2			99-5109-4			99-5109-5		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		10		

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995109

SAMPLE NUMBER:	4GW809903			4GW820003			4GW890003			4GW899903		
SAMPLE DATE:	08/02/99			08/02/99			08/02/99			08/02/99		
LABORATORY ID:	99-5109-6			99-5109-7			99-5109-8			99-5109-9		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	4GW800003									4GW890003		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	10			4	U		4	U		4	U	

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-10-9-037

TO :	**R. KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**GRETCHEN A. PHIPPS**	**COPIES:**	**DV FILE**

SUBJECT: **MISCELLANEOUS DATA VALIDATION – PERCHLORATE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – 995324

SAMPLES: 16/Aqueous/

4GW1100003	5GW020003	9GW010003
9GW040003	9GW050003	9GW1020003
9GW1040003	9GW1060003	9GW1100003
9GW590003	9GW740003	9GW750003
9GW830003	9GWBLD3670003	9GWC140003
9GWC50003		

Overview

The sample set for SDG 995324, NSWC White Oak, consists of sixteen (16) aqueous environmental samples.

The samples were analyzed for perchlorate. The samples were collected by Tetra Tech NUS on August 9-12, 1999 and analyzed by Applied Physics and Chemistry Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Ammonium perchlorate analyses were conducted using Ion Chromatography.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, matrix spike results, laboratory duplicate results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None

Minor Problems

- None.

Notes

Incomplete Chains of Custody were included with the data package.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Chemical Data Quality Manual" (NFESC 6/98).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Gretchen A. Phipps

Tetra Tech NUS
Gretchen A. Phipps
Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

APPENIDX A
QUALIFIED ANALYTICAL RESULTS

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995324

SAMPLE NUMBER:	4GW1100003			5GW020003			9GW010003			9GW040003		
SAMPLE DATE:	08/09/99			08/10/99			08/09/99			08/09/99		
LABORATORY ID:	99-5324-1			99-5324-2			99-5324-3			99-5324-4		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	16	U		4	U		240			4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995324

SAMPLE NUMBER:	9GW050003			9GW1020003			9GW1040003			9GW1060003		
SAMPLE DATE:	08/09/99			08/10/99			08/09/99			08/10/99		
LABORATORY ID:	99-5324-5			99-5324-10			99-5324-11			99-5324-12		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995324

SAMPLE NUMBER:	9GW1100003			9GW590003			9GW740003			9GW750003		
SAMPLE DATE:	08/10/99			08/09/99			08/10/99			08/10/99		
LABORATORY ID:	99-5324-13			99-5324-6			99-5324-7			99-5324-8		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	7			4	U		8.4			4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995324

SAMPLE NUMBER:	9GW830003			9GWBLDG3670003			9GWC140003			9GWC50003		
SAMPLE DATE:	08/10/99			08/10/99			08/12/99			08/11/99		
LABORATORY ID:	99-5324-9			99-5324-14			99-5324-16			99-5324-15		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		18		

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's r < 0.995
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning r < 0.995 (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-10-9-036

TO : **R. KOTUN** **DATE:** **DECEMBER 13, 1999**

FROM: **GRETCHEN A. PHIPPS** **COPIES:** **DV FILE**

SUBJECT: **MISCELLANEOUS DATA VALIDATION – PERCHLORATE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – 995189

SAMPLES: 32/Aqueous/

13GW010003	13GW020003	13GW040003
4GW1090003	4GW1100003	4GW130003
4GW150003	4GW480003	4GW49D0003
4GW790003	4GW81D0003	4GW81D9903
4GW81S0003	5GW010003	9GW020003
9GW029903	9GW030003	9GW0580003
9GW060003	9GW069903	9GW070003
9GW1000003	9GW1010003	9GW1030003
9GW1050003	9GW1070003	9GW1080003
9GW1090003	9GW550003	9GW57D0003
9GW57S0003	BGW160003	

Overview

The sample set for SDG 995189, NSWC White Oak, consists of thirty-two (32) aqueous environmental samples. Three (3) field duplicate pairs (4GW81D0003 / 4GW81D9903, 9GW060003/ 9GW069903 and 9GW020003 / 9GW029903) were included within this SDG.

The samples were analyzed for perchlorate. The samples were collected by Tetra Tech NUS on August 2, 4 and 5, 1999 and analyzed by Applied Physics and Chemistry Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Ammonium perchlorate analyses were conducted using Ion Chromatography.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, matrix spike results, laboratory duplicate results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None

Minor Problems

- None.

Notes

The Form 1s were amended by the data reviewer per laboratory request to eliminate results reported below the established reporting limit. It was determined that a positive result below the reporting limit could be caused by background noise or interference and therefore, should be considered as a nondetect.

Incomplete Chains of Custody were included with the data package.

A comparison of field duplicate pairs (4GW81D0003 / 4GW81D9903, 9GW060003/ 9GW069903 and 9GW020003 / 9GW029903) is included in Appendix C.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Chemical Data Quality Manual" (NFESC 6/98).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Gretchen A. Phipps

Tetra Tech NUS
Gretchen A. Phipps
Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

APPENIDX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's r < 0.995
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning r < 0.995 (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995189

SAMPLE NUMBER:	13GW010003			13GW020003			13GW040003			4GW1090003		
SAMPLE DATE:	08/02/99			08/02/99			08/02/99			08/02/99		
LABORATORY ID:	99-5189-29			99-5189-30			99-5189-31			99-5189-8		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	8	U		8	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995189

SAMPLE NUMBER:	4GW1100003			4GW130003			4GW150003			4GW480003		
SAMPLE DATE:	08/04/99			08/02/99			08/02/99			08/02/99		
LABORATORY ID:	99-5189-28			99-5189-1			99-5189-2			99-5189-3		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	20	U		4	U		4	U		8	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995189

SAMPLE NUMBER:	4GW49D0003			4GW790003			4GW81D0003			4GW81D9903		
SAMPLE DATE:	08/02/99			08/02/99			08/02/99			08/02/99		
LABORATORY ID:	99-5189-4			99-5189-5			99-5189-9			99-5189-6		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:										4GW81D0003		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995189

SAMPLE NUMBER:	4GW81S0003			5GW010003			9GW020003			9GW029903		
SAMPLE DATE:	08/02/99			08/02/99			08/05/99			08/05/99		
LABORATORY ID:	99-5189-7			99-5189-10			99-5189-11			99-5189-12		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:										9GW020003		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		20	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995189

SAMPLE NUMBER:	9GW030003			9GW0580003			9GW060003			9GW069903		
SAMPLE DATE:	08/05/99			08/02/99			08/05/99			08/05/99		
LABORATORY ID:	99-5189-13			99-5189-20			99-5189-14			99-5189-15		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:										9GW060003		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		12			4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995189

SAMPLE NUMBER:	9GW070003			9GW1000003			9GW1010003			9GW1030003		
SAMPLE DATE:	08/02/99			08/04/99			08/04/99			08/05/99		
LABORATORY ID:	99-5189-16			99-5189-21			99-5189-22			99-5189-23		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995189

SAMPLE NUMBER:	9GW1050003			9GW1070003			9GW1080003			9GW1090003		
SAMPLE DATE:	08/04/99			08/05/99			08/05/99			08/04/99		
LABORATORY ID:	99-5189-24			99-5189-25			99-5189-26			99-5189-27		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	8.4			4	U		4	U		4		

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995189

SAMPLE NUMBER:	9GW550003			9GW57D0003			9GW57S0003			BGW160003		
SAMPLE DATE:	08/04/99			08/05/99			08/05/99			08/02/99		
LABORATORY ID:	99-5189-17			99-5189-18			99-5189-19			99-5189-32		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		27			16			4	U	

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-10-9-186

TO:	**RON KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**SEAN NIXON**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOAS, SVOAS, PESTICIDES/PCBS, AND EXPLOSIVES**
CTO 298 NSWC WHITE OAK, MARYLAND
SDG – WO058

SAMPLES: 23/Aqueous

7GW080003	7GW089903	7GW1010003	7GW1020003	7GW1030003	7GW1040003
7GW1050003	7GW410003	7GW419903	7GW420003	7GW430003	8GW330003
8GW340003	8GW350003	8GW360003	8GW530003	8GWB10003	8GWB30003
BGW1000003	TB0707990003	TB0708990003	TB0712990003	TB0713990003	

Overview

The sample set for CTO 298 NSWC White Oak, Maryland SDG WO058, consists of twenty-three (23) aqueous environmental samples including three (3) trip blanks.

All of the samples were analyzed for selected Target Compound List (TCL) Low Concentration volatiles. All of the samples except the trip blanks were analyzed for Low Concentration semivolatiles. All of the samples except the trip blanks were analyzed for TCL pesticides/PCBs, and explosives. The samples were collected by Tetra Tech NUS on July 7-8, 12-13, 1999 and analyzed by Quanterra – Pittsburgh (VOA, SVOA, PEST/PCB) and Knoxville (Explosives) under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. The VOAs and SVOAs analyses were conducted according to Contract Laboratory Procedure (CLP) OLC02.1, the pesticides/PCBs according to CLP OLM03.1, and the explosives were analyzed according to SW-846 Method 8330.

Summary

All analytes were successfully analyzed with the exception of those compounds that were rejected. The findings offered in this report were based upon a general review of all available data including data completeness, holding times, calibration data, laboratory and field quality control blank results, GC/MS tuning and performance, Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) analyses, surrogate spike recoveries, Laboratory Control Sample (LCS) analyses, field duplicate results, compound identification and quantification, and detection limits.

Areas of concern with respect to data quality are listed below.

MAJOR PROBLEMS

Volatiles

- Initial and continuing calibrations contained Relative Response Factors (RRFs) below the 0.05 quality control limit for 1,2-dibromo-3-chloropropane, 2-btanone, and acetone. The nondetected results for the aforementioned compounds were rejected, UR, in the affected samples (all samples).

MINOR PROBLEMS

Semivolatiles

- The following contaminant was detected in the preparation blank:

Analyte	Maximum Concentration	Aqueous Action level
Bis(2-ethylhexyl)phthalate	2.4 ug/L	24 ug/L

Samples Affected: All.

Sample aliquot and dilution factors were taken into consideration when applying the action level. Positive results for bis(2-ethylhexyl)phthalate reported below the action levels were considered false positives and were qualified, (B).

Pesticides/PCBs

- Samples 7GW080003 and 7GW1040003 yielded poor surrogate recoveries (0%) for tetrachloro-meta-xylene on both analytical columns. The nondetected results were qualified as biased low, UL, in the aforementioned samples.

- Samples 7GW1010003, 7GW1030003, 7GW420003, and BGW1000003 yielded surrogate recoveries belwo the 60% quality control limit for tetrachloro-meta-xylene on both analytical columns. The positive and nondetected results were qualified as estimated, J and UJ, in the aforementioned samples.

- Samples 7GW1050003 and 7GW1010003 contained Percent Differences (%Ds) between analytical columns above the 25% quality control limit for alpha-Chlordane. The positive results for alpha-Chlordane were qualified as estimated, J.

Notes

Positive results reported below the Contract Required Quantitation Limits (CRQL) were qualified as estimated, (J).

The following contaminants were detected in the trip blanks or instrument blanks:

Analyte	Maximum Concentration	Aqueous Action level
1,4-dichlorobenzene	0.91 ug/L	4.6 ug/L
methylene chloride	0.63 ug/L	6.3 ug/L
4,4'-DDT	0.0017 ug/L	0.0085 ug/L

Samples Affected: All.

Sample aliquot and dilution factors were taken into consideration when applying the action level. No positive results for 1,4-dichlorobenzene, methylene chloride, or 4,4'-DDT were reported. It should be noted that field quality control blanks were not qualified for field quality control blank contamination.

The volatile MS/MSD analysis of sample 7GW1010003 yielded a recovery above the quality control limit for vinyl chloride. Only nondetected results were reported for vinyl chloride and the LCS yielded an accetable recovery for vinyl chloride. No action was taken for MS/MSD noncompliances.

A continuing calibration for volatiles contained a Percent Difference above the 25% quality control limit for 1,2,4-trichlorobenzene. Because only nondetected results were reported for 1,2,4-trichlorobenzene in the affected samples, no action was taken.

The pesticide initial calibrations contained a Percent Relative Standard Deviations (%RSDs) above the 20% quality control limit for alpha-BHC, Methoxychlor, and gamma-BHC. Because the %RSDs were above 20% only on one column, no action was taken.

The volatile analysis of samples 7GW1020003, 7GW410003, 7GW419903, and 7GW430003 were analyzed at dilutions as a result of high concentrations of target analytes. Elevated detection limits were reported for the aforementioned samples.

Several samples were analyzed at dilutions for the explosives analyses as a result of high concentrations of target analytes. Elevated detection limits were reported for the affected samples.

The following samples contained positive results for the following compounds on the primary column, but were not confirmed and were not reported:

Sample	Compound
7GW1020003	3-nitrotoluene
7GW430003	3-nitrotoluene
8GW340003	3-nitrotoluene
8GWB30003	3-nitrotoluene and 4-nitrotoluene

Sample 7GW089903 reported a positive result for 2,6-dinitrotoluene in the semivolatile analysis, but reported a nondetected result for 2,6-dinitrotoluene in its explosive analysis. No action was taken for this issue.

Executive Summary

Laboratory Performance: Nondetected results for acetone, 2-butanone, and 1,2-dibromo-3-chloropropane were rejected for gross calibration noncompliances. Blank contamination was noted for bis(2-ethylhexyl)phthalate.

Other Factors Affecting Data Quality: Low pesticide/PCB surrogate recovery resulted in the estimation of positive and nondetected results in several samples. Nondetected results for pesticide/PCB analyses were qualified a biased low for poor surrogate recovery (0%).

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation", September 1994 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide " (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Sean T. Nixon
Environmental Scientist
Tetra Tech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer
Tetra Tech NUS

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation.

DATA QUALIFIER TABLE:

U	-	Value is a nondetected result as reported by the laboratory.
UL	-	Nondetected result is considered biased low as a result of various technical noncompliances.
UJ	-	Nondetected result is considered estimated as a result of various technical noncompliances.
B	-	Positive result is considered to be an artifact of blank contamination.
J	-	Positive result is considered estimated as a result of various technical noncompliances.
UR	-	Nondetected result is rejected for gross technical noncompliances.

TENTATIVELY IDENTIFIED COMPOUND SUMMARY

Volatiles
None

Semivolatiles
Caprolactam
Methenamine
Benzene, 2-methyl-1,3,5-trin (CAS 118-96-7)
Unknown substituted benzenea-

APPENDIX A
Qualified Analytical Results

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW080003			7GW089903			7GW1010003			7GW1020003		
SAMPLE DATE:	07/12/99			07/12/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192005			C9G130192006			C9G130192003			C9G140150006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				7GW080003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		10	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		18		
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		10	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		10	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		10	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		10	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	10	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		10	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		10	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		10	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		10	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		10	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		10	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	50	UR	C
2-HEXANONE	5	U		5	U		5	U		50	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		50	U	
ACETONE	5	UR	C	5	UR	C	5	UR	C	50	UR	C
BENZENE	1	U		1	U		1	U		10	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		10	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		10	U	
BROMOFORM	1	U		1	U		1	U		10	U	
BROMOMETHANE	1	U		1	U		1	U		10	U	
CARBON DISULFIDE	1	U		1	U		1	U		10	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		10	U	
CHLOROBENZENE	1	U		1	U		1	U		10	U	
CHLOROETHANE	1	U		1	U		1	U		10	U	
CHLOROFORM	0.95	J	P	0.83	J	P	0.33	J	P	10	U	
CHLOROMETHANE	1	U		1	U		1	U		10	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		12		
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		10	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		10	U	
ETHYLBENZENE	1	U		1	U		1	U		10	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		20	U	
STYRENE	1	U		1	U		1	U		10	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW080003			7GW089903			7GW1010003			7GW1020003		
SAMPLE DATE:	07/12/99			07/12/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192005			C9G130192006			C9G130192003			C9G140150006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				7GW080003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		10	U	
TOLUENE	1	U		1	U		1	U		10	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		10	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		10	U	
TRICHLOROETHENE	1	U		1	U		1	U		100		
VINYL CHLORIDE	1	U		1	U		1	U		10	U	
XYLENES, TOTAL	1	U		1	U		1	U		10	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1030003			7GW1040003			7GW1050003			7GW410003		
SAMPLE DATE:	07/12/99			07/08/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192001			C9G090177003			C9G130192004			C9G140150003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		20	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		27		
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		20	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		20	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		20	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		20	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	20	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		20	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		20	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		20	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		20	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		20	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		20	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	100	UR	C
2-HEXANONE	5	U		5	U		5	U		100	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		100	U	
ACETONE	5	UR	C	5	UR	C	5	UR	C	100	UR	C
BENZENE	1	U		1	U		1	U		20	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		20	U	
BROMODICHLOROMETHANE	0.44	J	P	1	U		1	U		20	U	
BROMOFORM	1	U		1	U		1	U		20	U	
BROMOMETHANE	1	U		1	U		1	U		20	U	
CARBON DISULFIDE	1	U		1	U		1	U		20	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		20	U	
CHLOROBENZENE	1	U		1	U		1	U		20	U	
CHLOROETHANE	1	U		1	U		1	U		20	U	
CHLOROFORM	20			0.83	J	P	0.36	J	P	20	U	
CHLOROMETHANE	1	U		1	U		1	U		20	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		21		
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		20	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		20	U	
ETHYLBENZENE	1	U		1	U		1	U		20	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		40	U	
STYRENE	1	U		1	U		1	U		20	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1030003			7GW1040003			7GW1050003			7GW410003		
SAMPLE DATE:	07/12/99			07/08/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192001			C9G090177003			C9G130192004			C9G140150003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		20	U	
TOLUENE	1	U		1	U		1	U		20	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		20	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		20	U	
TRICHLOROETHENE	1	U		1	U		1	U		180		
VINYL CHLORIDE	1	U		1	U		1	U		20	U	
XYLENES, TOTAL	1	U		1	U		1	U		20	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW419903			7GW420003			7GW430003			8GW330003		
SAMPLE DATE:	07/13/99			07/12/99			07/12/99			07/08/99		
LABORATORY ID:	C9G140150005			C9G130192008			C9G130192007			C9G090177001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	7GW410003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	20	U		1	U		100	U		1	U	
1,1,2,2-TETRACHLOROETHANE	25			1	U		100	U		1	U	
1,1,2-TRICHLOROETHANE	20	U		1	U		100	U		1	U	
1,1-DICHLOROETHANE	20	U		1	U		100	U		1	U	
1,1-DICHLOROETHENE	20	U		1	U		100	U		1	U	
1,2,4-TRICHLOROBENZENE	20	U		1	U		100	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	20	UR	C	1	UR	C	100	UR	C	1	UR	C
1,2-DIBROMOETHANE	20	U		1	U		100	U		1	U	
1,2-DICHLOROBENZENE	20	U		1	U		100	U		1	U	
1,2-DICHLOROETHANE	20	U		1	U		100	U		1	U	
1,2-DICHLOROPROPANE	20	U		1	U		100	U		1	U	
1,3-DICHLOROBENZENE	20	U		1	U		100	U		1	U	
1,4-DICHLOROBENZENE	20	U		1	U		100	U		1	U	
2-BUTANONE	100	UR	C	5	UR	C	500	UR	C	5	UR	C
2-HEXANONE	100	U		5	U		500	U		5	U	
4-METHYL-2-PENTANONE	100	U		5	U		500	U		5	U	
ACETONE	100	UR	C	5	UR	C	500	UR	C	5	UR	C
BENZENE	20	U		1	U		100	U		1	U	
BROMOCHLOROMETHANE	20	U		1	U		100	U		1	U	
BROMODICHLOROMETHANE	20	U		1	U		100	U		1	U	
BROMOFORM	20	U		1	U		100	U		1	U	
BROMOMETHANE	20	U		1	U		100	U		1	U	
CARBON DISULFIDE	20	U		1	U		100	U		1	U	
CARBON TETRACHLORIDE	20	U		1	U		100	U		1	U	
CHLOROBENZENE	4.2	J	P	1	U		100	U		1	U	
CHLOROETHANE	20	U		1	U		100	U		1	U	
CHLOROFORM	20	U		0.16	J	P	100	U		5.8		
CHLOROMETHANE	20	U		1	U		100	U		1	U	
CIS-1,2-DICHLOROETHENE	21			1	U		44	J	P	1	U	
CIS-1,3-DICHLOROPROPENE	20	U		1	U		100	U		1	U	
DIBROMOCHLOROMETHANE	20	U		1	U		100	U		1	U	
ETHYLBENZENE	20	U		1	U		100	U		1	U	
METHYLENE CHLORIDE	40	U		2	U		200	U		2	U	
STYRENE	20	U		1	U		100	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW419903			7GW420003			7GW430003			8GW330003		
SAMPLE DATE:	07/13/99			07/12/99			07/12/99			07/08/99		
LABORATORY ID:	C9G140150005			C9G130192008			C9G130192007			C9G090177001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	7GW410003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	20	U		1	U		100	U		1	U	
TOLUENE	20	U		1	U		100	U		1	U	
TRANS-1,2-DICHLOROETHENE	20	U		1	U		100	U		1	U	
TRANS-1,3-DICHLOROPROPENE	20	U		1	U		100	U		1	U	
TRICHLOROETHENE	170			0.42	J	P	710			1	U	
VINYL CHLORIDE	20	U		1	U		100	U		1	U	
XYLENES, TOTAL	20	U		1	U		100	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GW340003			8GW350003			8GW360003			8GW530003		
SAMPLE DATE:	07/07/99			07/07/99			07/07/99			07/07/99		
LABORATORY ID:	C9G080174003			C9G080174006			C9G080174002			C9G080174005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1.3			1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1.4			15			0.74	J	P	3.7		
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GW340003			8GW350003			8GW360003			8GW530003		
SAMPLE DATE:	07/07/99			07/07/99			07/07/99			07/07/99		
LABORATORY ID:	C9G080174003			C9G080174006			C9G080174002			C9G080174005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GWB10003			8GWB30003			BGW1000003			TB0707990003		
SAMPLE DATE:	07/07/99			07/07/99			07/13/99			07/07/99		
LABORATORY ID:	C9G080174001			C9G080174004			C9G140150004			C9G080174007		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		0.91	J	P
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	5.4			0.95	J	P	1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GWB10003			8GWB30003			BGW1000003			TB0707990003		
SAMPLE DATE:	07/07/99			07/07/99			07/13/99			07/07/99		
LABORATORY ID:	C9G080174001			C9G080174004			C9G140150004			C9G080174007		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	TB0708990003			TB0712990003			TB0713990003					
SAMPLE DATE:	07/08/99			07/12/99			07/13/99			/ /		
LABORATORY ID:	C9G090177002			C9G130192002			C9G140150002					
QC_TYPE:	NORMAL			NORMAL			NORMAL					
% SOLIDS:	0.0 %			0.0 %			0.0 %			100.0 %		
UNITS:	UG/L			UG/L			UG/L					
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U				
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U				
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U				
1,1-DICHLOROETHANE	1	U		1	U		1	U				
1,1-DICHLOROETHENE	1	U		1	U		1	U				
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U				
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C			
1,2-DIBROMOETHANE	1	U		1	U		1	U				
1,2-DICHLOROBENZENE	1	U		1	U		1	U				
1,2-DICHLOROETHANE	1	U		1	U		1	U				
1,2-DICHLOROPROPANE	1	U		1	U		1	U				
1,3-DICHLOROBENZENE	1	U		1	U		1	U				
1,4-DICHLOROBENZENE	1	U		1	U		1	U				
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C			
2-HEXANONE	5	U		5	U		5	U				
4-METHYL-2-PENTANONE	5	U		5	U		5	U				
ACETONE	5	UR	C	5	UR	C	5	UR	C			
BENZENE	1	U		1	U		1	U				
BROMOCHLOROMETHANE	1	U		1	U		1	U				
BROMODICHLOROMETHANE	1	U		1	U		1	U				
BROMOFORM	1	U		1	U		1	U				
BROMOMETHANE	1	U		1	U		1	U				
CARBON DISULFIDE	1	U		1	U		1	U				
CARBON TETRACHLORIDE	1	U		1	U		1	U				
CHLOROBENZENE	1	U		1	U		1	U				
CHLOROETHANE	1	U		1	U		1	U				
CHLOROFORM	1	U		1	U		1	U				
CHLOROMETHANE	1	U		1	U		1	U				
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U				
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U				
DIBROMOCHLOROMETHANE	1	U		1	U		1	U				
ETHYLBENZENE	1	U		1	U		1	U				
METHYLENE CHLORIDE	0.32	J	P	0.63	J	P	2	U				
STYRENE	1	U		1	U		1	U				

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	TB0708990003			TB0712990003			TB0713990003					
SAMPLE DATE:	07/08/99			07/12/99			07/13/99			/ /		
LABORATORY ID:	C9G090177002			C9G130192002			C9G140150002					
QC_TYPE:	NORMAL			NORMAL			NORMAL					
% SOLIDS:	0.0 %			0.0 %			0.0 %			100.0 %		
UNITS:	UG/L			UG/L			UG/L					
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U				
TOLUENE	1	U		1	U		1	U				
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U				
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U				
TRICHLOROETHENE	1	U		1	U		1	U				
VINYL CHLORIDE	1	U		1	U		1	U				
XYLENES, TOTAL	1	U		1	U		1	U				

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW080003			7GW089903			7GW1010003			7GW1020003		
SAMPLE DATE:	07/12/99			07/12/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192005			C9G130192006			C9G130192003			C9G140150006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				7GW080003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		2	J	P	5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CH[illegible]ETHOXY)METHANE	5	U		5			5	U		5	U	
BIS(2-CHL[illegible]ETHYL)ETHER	5	U		5			5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW080003			7GW089903			7GW1010003			7GW1020003		
SAMPLE DATE:	07/12/99			07/12/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192005			C9G130192006			C9G130192003			C9G140150006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				7GW080003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	2.1	B	A	9	B	A	6.9	B	A	2	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1030003			7GW1040003			7GW1050003			7GW410003		
SAMPLE DATE:	07/12/99			07/08/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192001			C9G090177003			C9G130192004			C9G140150003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		1.3	J	P	5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)F[illegible]ORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHI[illegible]THOXY)METHANE	5	U		5	[illegible]		5	U		5	U	
BIS(2-CHL[illegible]ETHYL)ETHER	5	U		5	[illegible]		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1030003			7GW1040003			7GW1050003			7GW410003		
SAMPLE DATE:	07/12/99			07/08/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192001			C9G090177003			C9G130192004			C9G140150003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	11	B	A	7.2	B	A	6.8	B	A	6.2	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW419903			7GW420003			7GW430003			8GW330003		
SAMPLE DATE:	07/13/99			07/12/99			07/12/99			07/08/99		
LABORATORY ID:	C9G140150005			C9G130192008			C9G130192007			C9G090177001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	7GW410003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5			5	U		5	U	
BIS(2-CHLOROETHYL)ETHER	5	U		5			5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW419903			7GW420003			7GW430003			8GW330003		
SAMPLE DATE:	07/13/99			07/12/99			07/12/99			07/08/99		
LABORATORY ID:	C9G140150005			C9G130192008			C9G130192007			C9G090177001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	7GW410003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	4.2	B	A	2	B	A	2.5	B	A	3.9	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GW340003			8GW350003			8GW360003			8GW530003		
SAMPLE DATE:	07/07/99			07/07/99			07/07/99			07/07/99		
LABORATORY ID:	C9G080174003			C9G080174006			C9G080174002			C9G080174005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	[illegible]		5	U		5	U	
BIS(2-CHLOROETHYL)ETHER	5	U		5	[illegible]		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GW340003	8GW350003	8GW360003	8GW530003
SAMPLE DATE:	07/07/99	07/07/99	07/07/99	07/07/99
LABORATORY ID:	C9G080174003	C9G080174006	C9G080174002	C9G080174005
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	1.5	B	A	2.9	B	A	3.3	B	A	3.2	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		1.1	J	P
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GWB10003	8GWB30003	BGW1000003	
SAMPLE DATE:	07/07/99	07/07/99	07/13/99	/ /
LABORATORY ID:	C9G080174001	C9G080174004	C9G140150004	
QC_TYPE:	NORMAL	NORMAL	NORMAL	
% SOLIDS:	0.0 %	0.0 %	0.0 %	100.0 %
UNITS:	UG/L	UG/L	UG/L	
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U				
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U				
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U				
2,4-DICHLOROPHENOL	5	U		5	U		5	U				
2,4-DIMETHYLPHENOL	5	U		5	U		5	U				
2,4-DINITROPHENOL	20	U		20	U		20	U				
2,4-DINITROTOLUENE	5	U		5	U		5	U				
2,6-DINITROTOLUENE	5	U		5	U		5	U				
2-CHLORONAPHTHALENE	5	U		5	U		5	U				
2-CHLOROPHENOL	5	U		5	U		5	U				
2-METHYLNAPHTHALENE	5	U		5	U		5	U				
2-METHYLPHENOL	5	U		5	U		5	U				
2-NITROANILINE	20	U		20	U		20	U				
2-NITROPHENOL	5	U		5	U		5	U				
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U				
3-NITROANILINE	20	U		20	U		20	U				
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U				
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U				
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U				
4-CHLOROANILINE	5	U		5	U		5	U				
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U				
4-METHYLPHENOL	5	U		5	U		5	U				
4-NITROANILINE	20	U		20	U		20	U				
4-NITROPHENOL	20	U		20	U		20	U				
ACENAPHTHENE	5	U		5	U		5	U				
ACENAPHTHYLENE	5	U		5	U		5	U				
ANTHRACENE	5	U		5	U		5	U				
BENZO(A)ANTHRACENE	5	U		5	U		5	U				
BENZO(A)PYRENE	5	U		5	U		5	U				
BENZO(B)FLUORANTHENE	5	U		5	U		5	U				
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U				
BENZO(K)FLUORANTHENE	5	U		5	U		5	U				
BIS(2-CHLOROETHOXY)METHANE	5	U		5			5	U				
BIS(2-CHLOROETHYL)ETHER	5	U		5			5	U				

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GWB10003			8GWB30003			BGW1000003					
SAMPLE DATE:	07/07/99			07/07/99			07/13/99			/ /		
LABORATORY ID:	C9G080174001			C9G080174004			C9G140150004					
QC_TYPE:	NORMAL			NORMAL			NORMAL					
% SOLIDS:	0.0 %			0.0 %			0.0 %			100.0 %		
UNITS:	UG/L			UG/L			UG/L					
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	51			3.7	B	A	11	B	A			
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U				
CHRYSENE	5	U		5	U		5	U				
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U				
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U				
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U				
DIBENZOFURAN	5	U		5	U		5	U				
DIETHYL PHTHALATE	5	U		4.9	J	P	5	U				
DIMETHYL PHTHALATE	5	U		1.6	J	P	5	U				
FLUORANTHENE	5	U		5	U		5	U				
FLUORENE	5	U		5	U		5	U				
HEXACHLOROBENZENE	5	U		5	U		5	U				
HEXACHLOROBUTADIENE	5	U		5	U		5	U				
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U				
HEXACHLOROETHANE	5	U		5	U		5	U				
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U				
ISOPHORONE	5	U		5	U		5	U				
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U				
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U				
NAPHTHALENE	5	U		5	U		5	U				
NITROBENZENE	5	U		5	U		5	U				
PENTACHLOROPHENOL	20	U		20	U		20	U				
PHENANTHRENE	5	U		5	U		5	U				
PHENOL	5	U		5	U		5	U				
PYRENE	5	U		5	U		5	U				

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW080003			7GW089903			7GW1010003			7GW1020003		
SAMPLE DATE:	07/12/99			07/12/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192005			C9G130192006			C9G130192003			C9G140150006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				7GW080003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
4,4'-DDE	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
4,4'-DDT	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
ALDRIN	0.050	UL	R	0.050	U		0.050	UJ	R	0.050	U	
ALPHA-BHC	0.050	UL	R	0.050	U		0.050	UJ	R	0.050	U	
ALPHA-CHLORDANE	0.050	UL	R	0.050	U		0.041	J	PRU	0.050	U	
AROCLOR-1016	1.0	UL	R	1.0	U		1.0	UJ	R	1.0	U	
AROCLOR-1221	2.0	UL	R	2.0	U		2.0	UJ	R	2.0	U	
AROCLOR-1232	1.0	UL	R	1.0	U		1.0	UJ	R	1.0	U	
AROCLOR-1242	1.0	UL	R	1.0	U		1.0	UJ	R	1.0	U	
AROCLOR-1248	1.0	UL	R	1.0	U		1.0	UJ	R	1.0	U	
AROCLOR-1254	1.0	UL	R	1.0	U		1.0	UJ	R	1.0	U	
AROCLOR-1260	1.0	UL	R	1.0	U		1.0	UJ	R	1.0	U	
BETA-BHC	0.050	UL	R	0.050	U		0.050	UJ	R	0.050	U	
DELTA-BHC	0.050	UL	R	0.050	U		0.050	UJ	R	0.050	U	
DIELDRIN	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
ENDOSULFAN I	0.050	UL	R	0.050	U		0.050	UJ	R	0.050	U	
ENDOSULFAN II	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
ENDOSULFAN SULFATE	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
ENDRIN	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
ENDRIN ALDEHYDE	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
ENDRIN KETONE	0.10	UL	R	0.10	U		0.10	UJ	R	0.10	U	
GAMMA-BHC (LINDANE)	0.050	UL	R	0.050	U		0.050	UJ	R	0.050	U	
GAMMA-CHLORDANE	0.050	UL	R	0.050	U		0.049	J	P	0.050	U	
HEPTACHLOR	0.050	UL	R	0.050	U		0.050	UJ	R	0.050	U	
HEPTACHLOR EPOXIDE	0.050	UL	R	0.050	U		0.050	UJ	R	0.050	U	
METHOXYCHLOR	0.50	UL	R	0.50	U		0.50	UJ	R	0.50	U	
TOXAPHENE	5.0	UL	R	5.0	U		5.0	UJ	R	5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1030003			7GW1040003			7GW1050003			7GW410003		
SAMPLE DATE:	07/12/99			07/08/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192001			C9G090177003			C9G130192004			C9G140150003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
4,4'-DDE	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
4,4'-DDT	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
ALDRIN	0.050	UJ	R	0.050	UL	R	0.050	U		0.050	U	
ALPHA-BHC	0.050	UJ	R	0.050	UL	R	0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	UJ	R	0.050	UL	R	0.042	J	PU	0.050	U	
AROCLOR-1016	1.0	UJ	R	1.0	UL	R	1.0	U		1.0	U	
AROCLOR-1221	2.0	UJ	R	2.0	UL	R	2.0	U		2.0	U	
AROCLOR-1232	1.0	UJ	R	1.0	UL	R	1.0	U		1.0	U	
AROCLOR-1242	1.0	UJ	R	1.0	UL	R	1.0	U		1.0	U	
AROCLOR-1248	1.0	UJ	R	1.0	UL	R	1.0	U		1.0	U	
AROCLOR-1254	1.0	UJ	R	1.0	UL	R	1.0	U		1.0	U	
AROCLOR-1260	1.0	UJ	R	1.0	UL	R	1.0	U		1.0	U	
BETA-BHC	0.050	UJ	R	0.050	UL	R	0.050	U		0.050	U	
DELTA-BHC	0.050	UJ	R	0.050	UL	R	0.050	U		0.050	U	
DIELDRIN	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
ENDOSULFAN I	0.050	UJ	R	0.050	UL	R	0.050	U		0.050	U	
ENDOSULFAN II	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
ENDRIN	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
ENDRIN KETONE	0.10	UJ	R	0.10	UL	R	0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	UJ	R	0.050	UL	R	0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	UJ	R	0.050	UL	R	0.047	J	P	0.050	U	
HEPTACHLOR	0.050	UJ	R	0.050	UL	R	0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.050	UJ	R	0.050	UL	R	0.050	U		0.050	U	
METHOXYCHLOR	0.50	UJ	R	0.50	UL	R	0.50	U		0.50	U	
TOXAPHENE	5.0	UJ	R	5.0	UL	R	5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW419903			7GW420003			7GW430003			8GW330003		
SAMPLE DATE:	07/13/99			07/12/99			07/12/99			07/08/99		
LABORATORY ID:	C9G140150005			C9G130192008			C9G130192007			C9G090177001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	7GW410003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
4,4'-DDE	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
4,4'-DDT	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
ALDRIN	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
ALPHA-BHC	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
AROCLOR-1016	1.0	U		1.0	UJ	R	1.0	U		1.0	U	
AROCLOR-1221	2.0	U		2.0	UJ	R	2.0	U		2.0	U	
AROCLOR-1232	1.0	U		1.0	UJ	R	1.0	U		1.0	U	
AROCLOR-1242	1.0	U		1.0	UJ	R	1.0	U		1.0	U	
AROCLOR-1248	1.0	U		1.0	UJ	R	1.0	U		1.0	U	
AROCLOR-1254	1.0	U		1.0	UJ	R	1.0	U		1.0	U	
AROCLOR-1260	1.0	U		1.0	UJ	R	1.0	U		1.0	U	
BETA-BHC	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
DELTA-BHC	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
DIELDRIN	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
ENDOSULFAN I	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
ENDOSULFAN II	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
ENDRIN	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
ENDRIN KETONE	0.10	U		0.10	UJ	R	0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
HEPTACHLOR	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.050	U		0.050	UJ	R	0.050	U		0.050	U	
METHOXYCHLOR	0.50	U		0.50	UJ	R	0.50	U		0.50	U	
TOXAPHENE	5.0	U		5.0	UJ	R	5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GW340003			8GW350003			8GW360003			8GW530003		
SAMPLE DATE:	07/07/99			07/07/99			07/07/99			07/07/99		
LABORATORY ID:	C9G080174003			C9G080174006			C9G080174002			C9G080174005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDE	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDT	0.10	U		0.10	U		0.10	U		0.10	U	
ALDRIN	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
AROCLOR-1016	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1221	2.0	U		2.0	U		2.0	U		2.0	U	
AROCLOR-1232	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1242	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1248	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1254	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1260	1.0	U		1.0	U		1.0	U		1.0	U	
BETA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DELTA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DIELDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN I	0.050	U		0.050	U		0.050	U		0.050	U	
ENDOSULFAN II	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN KETONE	0.10	U		0.10	U		0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	U		0.050	U		0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.050	U		0.050	U		0.050	U		0.050	U	
METHOXYCHLOR	0.50	U		0.50	U		0.50	U		0.50	U	
TOXAPHENE	5.0	U		5.0	U		5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GWB10003			8GWB30003			BGW1000003					
SAMPLE DATE:	07/07/99			07/07/99			07/13/99			/ /		
LABORATORY ID:	C9G080174001			C9G080174004			C9G140150004					
QC_TYPE:	NORMAL			NORMAL			NORMAL					
% SOLIDS:	0.0 %			0.0 %			0.0 %			100.0 %		
UNITS:	UG/L			UG/L			UG/L					
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U		0.10	UJ	R			
4,4'-DDE	0.10	U		0.10	U		0.10	UJ	R			
4,4'-DDT	0.10	U		0.10	U		0.10	UJ	R			
ALDRIN	0.050	U		0.050	U		0.050	UJ	R			
ALPHA-BHC	0.050	U		0.050	U		0.050	UJ	R			
ALPHA-CHLORDANE	0.050	U		0.050	U		0.050	UJ	R			
AROCLOR-1016	1.0	U		1.0	U		1.0	UJ	R			
AROCLOR-1221	2.0	U		2.0	U		2.0	UJ	R			
AROCLOR-1232	1.0	U		1.0	U		1.0	UJ	R			
AROCLOR-1242	1.0	U		1.0	U		1.0	UJ	R			
AROCLOR-1248	1.0	U		1.0	U		1.0	UJ	R			
AROCLOR-1254	1.0	U		1.0	U		1.0	UJ	R			
AROCLOR-1260	1.0	U		1.0	U		1.0	UJ	R			
BETA-BHC	0.050	U		0.050	U		0.050	UJ	R			
DELTA-BHC	0.050	U		0.050	U		0.050	UJ	R			
DIELDRIN	0.10	U		0.10	U		0.10	UJ	R			
ENDOSULFAN I	0.050	U		0.050	U		0.050	UJ	R			
ENDOSULFAN II	0.10	U		0.10	U		0.10	UJ	R			
ENDOSULFAN SULFATE	0.10	U		0.10	U		0.10	UJ	R			
ENDRIN	0.10	U		0.10	U		0.10	UJ	R			
ENDRIN ALDEHYDE	0.10	U		0.10	U		0.10	UJ	R			
ENDRIN KETONE	0.10	U		0.10	U		0.10	UJ	R			
GAMMA-BHC (LINDANE)	0.050	U		0.050	U		0.050	UJ	R			
GAMMA-CHLORDANE	0.050	U		0.050	U		0.050	UJ	R			
HEPTACHLOR	0.050	U		0.050	U		0.050	UJ	R			
HEPTACHLOR EPOXIDE	0.050	U		0.050	U		0.050	UJ	R			
METHOXYCHLOR	0.50	U		0.50	U		0.50	UJ	R			
TOXAPHENE	5.0	U		5.0	U		5.0	UJ	R			

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW080003			7GW089903			7GW1010003			7GW1020003		
SAMPLE DATE:	07/12/99			07/12/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192005			C9G130192006			C9G130192003			C9G140150006		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				7GW080003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	15	U		15	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	15	U		15	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	240			210			0.2	U		0.2	U	
2,4-DINITROTOLUENE	15	U		15	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	15	U		15	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	70			58			0.26			0.2	U	
2-NITROTOLUENE	15	U		15	U		0.2	U		0.2	U	
3-NITROTOLUENE	15	U		15	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	110			89			0.28			0.2	U	
4-NITROTOLUENE	15	U		15	U		0.2	U		0.2	U	
HMX	160			150			2			0.5	U	
NITROBENZENE	15	U		15	U		0.2	U		0.2	U	
RDX	530			470			3.5			0.5	U	
TETRYL	15	U		15	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW1030003			7GW1040003			7GW1050003			7GW410003		
SAMPLE DATE:	07/12/99			07/08/99			07/12/99			07/13/99		
LABORATORY ID:	C9G130192001			C9G090177003			C9G130192004			C9G140150003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.4	U		15	U		1	U		0.2	U	
1,3-DINITROBENZENE	0.4	U		15	U		1	U		0.2	U	
2,4,6-TRINITROTOLUENE	4.1			300			4			0.2	U	
2,4-DINITROTOLUENE	0.4	U		15	U		1	U		0.2	U	
2,6-DINITROTOLUENE	0.4	U		15	U		1	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	1.8			94			2.7			0.2	U	
2-NITROTOLUENE	0.4	U		15	U		1	U		0.2	U	
3-NITROTOLUENE	0.4	U		15	U		1	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	2.5			150			2.7			0.2	U	
4-NITROTOLUENE	0.4	U		15	U		1	U		0.2	U	
HMX	11			190			7.4			0.5	U	
NITROBENZENE	0.4	U		15	U		1	U		0.2	U	
RDX	7.4			590			33			0.5	U	
TETRYL	0.4	U		15	U		1	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	7GW419903			7GW420003			7GW430003			8GW330003		
SAMPLE DATE:	07/13/99			07/12/99			07/12/99			07/08/99		
LABORATORY ID:	C9G140150005			C9G130192008			C9G130192007			C9G090177001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	7GW410003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
HMX	0.5	U		0.5	U		0.5	U		0.5	U	
NITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
RDX	0.5	U		0.5	U		0.5	U		0.5	U	
TETRYL	0.2	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GW340003			8GW350003			8GW360003			8GW530003		
SAMPLE DATE:	07/07/99			07/07/99			07/07/99			07/07/99		
LABORATORY ID:	C9G080174003			C9G080174006			C9G080174002			C9G080174005		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
HMX	0.5	U		0.5	U		0.5	U		0.5	U	
NITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
RDX	0.5	U		0.5	U		0.5	U		0.5	U	
TETRYL	0.2	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO058

SAMPLE NUMBER:	8GWB10003			8GWB30003			BGW1000003					
SAMPLE DATE:	07/07/99			07/07/99			07/13/99			/ /		
LABORATORY ID:	C9G080174001			C9G080174004			C9G140150004					
QC_TYPE:	NORMAL			NORMAL			NORMAL					
% SOLIDS:	0.0 %			0.0 %			0.0 %			100.0 %		
UNITS:	UG/L			UG/L			UG/L					
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U				
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U				
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U				
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U				
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U				
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U				
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U				
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U				
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U				
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U				
HMX	0.5	U		0.5	U		0.5	U				
NITROBENZENE	0.2	U		0.2	U		0.2	U				
RDX	0.5	U		0.5	U		0.5	U				
TETRYL	0.2	U		0.2	U		0.2	U				

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-10-9-030

TO :	**R. KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**GRETCHEN A. PHIPPS**	**COPIES:**	**DV FILE**

SUBJECT: **MISCELLANEOUS DATA VALIDATION –PERCHLORATE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – 994910

SAMPLES: 30/Aqueous/

11GW1020003	11GW1070003	11GW1100003
11GW1110003	11GW1119903	11GW220003
11GW229903	11GW230003	11GW240003
11GW250003	11GW260003	11GW269903
11GW270003	11GW280003	11GW620003
11GW630003	11GW650003	11GW660003
11GW670003	11GW70D0003	11GW710003
11GW719903	11GW720003	11GW730003
11GW840003	11GW850003	11GW880003
2GW760003	BGW1010003	BGW400003

Overview

The sample set for SDG 994910, NSWC White Oak, consists of thirty (30) aqueous environmental samples. Four (4) field duplicate pairs (11GW1110003 / 11GW1119903, 11GW220003 / 11GW229903, 11GW260003 / 11GW269903 and 11GW710003 / 11GW719903) were included within this SDG.

The samples were analyzed for perchlorate. The samples were collected by Tetra Tech NUS on July 14-16, 19 and 20, 1999 and analyzed by Applied Physics and Chemistry Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Ammonium perchlorate analyses were conducted using Ion Chromatography.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, matrix spike results, laboratory duplicate results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None

Minor Problems

- None.

Notes

The Form 1s were amended by the data reviewer per laboratory request to eliminate results reported below the established reporting limit. It was determined that a positive result below the reporting limit could be caused by background noise or interference and therefore, should be considered as a nondetect.

A comparison of field duplicate pairs (11GW1110003 / 11GW1119903, 11GW220003 / 11GW229903, 11GW260003 / 11GW269903 and 11GW710003 / 11GW719903) is included in Appendix C.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Chemical Data Quality Manual" (NFESC 6/98).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Gretchen A. Phipps

Tetra Tech NUS
Gretchen A. Phipps
Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

APPENIDX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 994910

SAMPLE NUMBER:	11GW1020003			11GW1070003			11GW1100003			11GW1110003		
SAMPLE DATE:	07/14/99			07/16/99			07/15/99			07/15/99		
LABORATORY ID:	99-4910-24			99-4910-25			99-4910-26			99-4910-27		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		40			4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 994910

SAMPLE NUMBER:	11GW1119903			11GW220003			11GW229903			11GW230003		
SAMPLE DATE:	07/15/99			07/20/99			07/20/99			07/19/99		
LABORATORY ID:	99-4910-28			99-4910-2			99-4910-3			99-4910-4		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	11GW1110003						11GW220003					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		6			7			190		

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 994910

SAMPLE NUMBER:	11GW240003			11GW250003			11GW260003			11GW269903		
SAMPLE DATE:	07/14/99			07/19/99			07/16/99			07/16/99		
LABORATORY ID:	99-4910-5			99-4910-6			99-4910-7			99-4910-8		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:										11GW260003		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	110			7			8	U		8	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 994910

SAMPLE NUMBER:	11GW270003			11GW280003			11GW620003			11GW630003		
SAMPLE DATE:	07/16/99			07/16/99			07/15/99			07/19/99		
LABORATORY ID:	99-4910-9			99-4910-10			99-4910-11			99-4910-12		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	9			4	U		4	U		8	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 994910

SAMPLE NUMBER:	11GW650003			11GW660003			11GW670003			11GW70D0003		
SAMPLE DATE:	07/15/99			07/14/99			07/16/99			07/20/99		
LABORATORY ID:	99-4910-13			99-4910-14			99-4910-15			99-4910-16		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		14			4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 994910

SAMPLE NUMBER:	11GW710003			11GW719903			11GW720003			11GW730003		
SAMPLE DATE:	07/19/99			07/19/99			07/15/99			07/16/99		
LABORATORY ID:	99-4910-17			99-4910-18			99-4910-19			99-4910-20		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				11GW710003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 994910

SAMPLE NUMBER:	11GW840003			11GW850003			11GW880003			2GW760003		
SAMPLE DATE:	07/15/99			07/20/99			07/19/99			07/20/99		
LABORATORY ID:	99-4910-21			99-4910-22			99-4910-23			99-4910-1		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		8	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 994910

SAMPLE NUMBER:	BGW1010003	BGW400003		
SAMPLE DATE:	07/19/99	07/20/99	/ /	/ /
LABORATORY ID:	99-4910-30	99-4910-29		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U							

Tetra Tech NUS INTERNAL CORRESPONDENCE

PITT-10-9-034

TO :	**R. KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**GRETCHEN A. PHIPPS**	**COPIES:**	**DV FILE**

SUBJECT: **MISCELLANEOUS DATA VALIDATION – PERCHLORATE**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – 995049

SAMPLES: 24/Aqueous/

11GW870003	13GW030003	2GW1000003
2GW1010003	2GW1020003	2GW1029903
2GW1030003	2GW1040003	2GW1050003
2GW300003	2GW310003	2GW320003
2GW450003	3GW1040003	3GW1070003
3GW170003	3GW179903	3GW180003
3GW470003	3GW770003	3GW78D0003
3GW78S0003	4GW500003	BGW1020003

Overview

The sample set for SDG 995049, NSWC White Oak, consists of twenty-four (24) aqueous environmental samples. Two (2) field duplicate pairs (2GW1020003 / 2GW1029903 and 3GW170003 / 3GW179903) were included within this SDG.

The samples were analyzed for perchlorate. The samples were collected by Tetra Tech NUS on July 21, 22, 26-28, 1999 and analyzed by Applied Physics and Chemistry Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Ammonium perchlorate analyses were conducted using Ion Chromatography.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, matrix spike results, laboratory duplicate results, detection limits and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- None

Minor Problems

- None.

Notes

Several samples were analyzed at a dilution. Therefore, the reporting limits were elevated. A summary with dilution factors is included in Appendix C.

A comparison of field duplicate pairs (2GW1020003 / 2GW1029903 and 3GW170003 / 3GW179903) is included in Appendix C.

Executive Summary

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Chemical Data Quality Manual" (NFESC 6/98).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Gretchen A. Phipps

Tetra Tech NUS
Gretchen A. Phipps
Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

APPENIDX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's r < 0.995
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning r < 0.995 (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995049

SAMPLE NUMBER:	11GW870003			13GW030003			2GW1000003			2GW1010003		
SAMPLE DATE:	07/21/99			07/28/99			07/21/99			07/26/99		
LABORATORY ID:	99-5049-21			99-5049-22			99-5049-4			99-5049-5		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	8	U		16	U		50	U		16	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995049

SAMPLE NUMBER:	2GW1020003			2GW1029903			2GW1030003			2GW1040003		
SAMPLE DATE:	07/22/99			07/22/99			07/21/99			07/22/99		
LABORATORY ID:	99-5049-6			99-5049-7			99-5049-8			99-5049-9		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				2GW1020003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	8	U		8	U		8	U		8	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995049

SAMPLE NUMBER:	2GW1050003			2GW300003			2GW310003			2GW320003		
SAMPLE DATE:	07/21/99			07/28/99			07/21/99			07/26/99		
LABORATORY ID:	99-5049-10			99-5049-24			99-5049-1			99-5049-2		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	8	U		32	U		4	U		200	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995049

SAMPLE NUMBER:	2GW450003			3GW1040003			3GW1070003			3GW170003		
SAMPLE DATE:	07/21/99			07/27/99			07/27/99			07/27/99		
LABORATORY ID:	99-5049-3			99-5049-17			99-5049-18			99-5049-11		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	20	U		4	U		4	U		8	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995049

SAMPLE NUMBER:	3GW179903			3GW180003			3GW470003			3GW770003		
SAMPLE DATE:	07/27/99			07/27/99			07/26/99			07/26/99		
LABORATORY ID:	99-5049-12			99-5049-13			99-5049-14			99-5049-15		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	3GW170003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	8	U		4	U		4	U		4	U	

CTO298 - NSWC WHITE OAK
WATER DATA
APCL
SDG: 995049

SAMPLE NUMBER:	3GW78D0003			3GW78S0003			4GW500003			BGW1020003		
SAMPLE DATE:	07/28/99			07/27/99			07/28/99			07/27/99		
LABORATORY ID:	99-5049-16			99-5049-19			99-5049-20			99-5049-23		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
PERCHLORATES	4	U		4	U		4	U		4	U	

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

PITT-11-9-035

TO :	**R. KOTUN**	**DATE:**	**DECEMBER 13, 1999**
FROM:	**GRETCHEN A. PHIPPS**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION –VOLATILES, SEMIVOLATILES, PESTICIDES/PCBs AND EXPLOSIVES**
CTO 298 – NSWC WHITE OAK, MD
SAMPLE DELIVERY GROUP SDG – WO062

SAMPLES: 24/Aqueous/

11GW70D0003	11GW870003	2GW1000003
2GW1010003	2GW1020003	2GW1029903
2GW1030003	2GW1040003	2GW1050003
2GW300003	2GW310003	2GW320003
2GW450003	2GW760003	3GW1070003
3GW170003	3GW179903	3GW470003
3GW770003	3GW78S0003	TB072199-00-03
TB072299-00-03	TB072699-00-03	TB072799-00-03

Overview

The sample set for CTO 298 SDG WO062, NSWC White Oak, consists of twenty (20) aqueous environmental samples and four (4) trip blanks (TB072199-00-03, TB072299-00-03, TB072699-00-03 and TB-072799-00-03). Two (2) field duplicate pairs (2GW1020003 / 2GW1029903 and 3GW170003 / 3GW179903) were included within this SDG.

All aqueous environmental samples were analyzed for target compound list (TCL) volatile organic, TCL semivolatile organics, pesticides/PCBs and explosives. The samples were collected by Tetra Tech NUS on July, 20-22, 26 and 27, 1999 and analyzed by Quanterra Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Volatile and semivolatile analyses were conducted using CLP SOW method OLC02.1. Pesticide/PCB analyses were conducted using CLP SOW method OLM03.2. Explosive analyses were conducted using SW 846 method 8330.

Summary

All analytes, with exception to those results that were qualified as rejected, were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, GC/MS tuning and system performance, initial/continuing calibration, laboratory method blanks, field quality control blanks, surrogate spike recoveries, matrix spike/ matrix spike duplicate results, blank spike/blank spike duplicate results, internal standard performance, field duplicate results, compound identification, compound quanitation and detection limits.

Areas of concern with respect to data quality are listed below.

Major Problems

The initial and continuing calibrations RRFs for acetone, 2-butanone and 1,2-dibromo-3-chloropropane were <0.05 quality control. The nondetected results reported for the above listed compounds were qualified as rejected, "UR". The positive results reported for acetone were qualified as estimated, "J".

Minor Problems

The continuing calibration %D for 1,2-dichloroethane was >25% quality control limit affecting the samples analyzed on July 26. The positive results reported for 1,2-dichloroethane in the affected samples were qualified as estimated, "J".

The continuing calibration %D for acetone was >25% quality control limit affecting the samples analyzed on July 28. The positive results reported for acetone in the affected samples were qualified as estimated, "J".

The following volatile contaminants were present in the trip blanks at the following maximum concentrations:

Compound	Maximum Concentration	Action Level
Acetone	5.5µg/L	55.0µg/L
Benzene	0.62µg/L	3.1µg/L
Chlorobenzene	0.31µg/L	1.55µg/L
Ethylbenzene	0.20µg/L	1.0µg/L
Methylene Chloride	0.42µg/L	4.2µg/L
Toluene	3.1µg/L	15.5µg/L
Xylenes	0.99µg/L	4.95µg/L

An action level of 5x or 10X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluation for blank contamination. Positive results < the action levels for acetone, benzene, chlorobenzene and methylene chloride were qualified as, "B", as a result of blank contamination. No validation action was required for the remaining compounds as all results reported were nondetected. It should be noted that field quality control blanks are not qualified for field or laboratory blank contamination.

The following semivolatile contaminant was present in the laboratory method blanks at the following maximum concentration:

Compound	Maximum Concentration	Action Level
Bis(2-ethylhexyl)phthalate)	2.5µg/L	12.5µg/L

An action level of 5x the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors were taken into consideration when evaluation for blank contamination. Positive results < the action levels for bis(2-ethylhexyl)phthalate were qualified as, "B", as a result of blank contamination.

Field duplicate imprecision (>30%) was noted for trichloroethene in field duplicate pair 3GW170003 / 3GW179903. The positive and nondetected results reported for trichloroethene in

the affected field duplicate pair were qualified as estimated, "J" and "UJ", respectively. The direction of bias could not be determined.

Field duplicate imprecision (>30%) was noted for bis(2-ethylhexyl)phthalate in field duplicate pair 2GW1020003 / 2GW1029903. The positive results reported for bis(2-ethylhexyl)phthalate in the affected field duplicate pair were qualified as estimated, "J". The direction of bias could not be determined.

All positive results reported at concentrations less than the Contract Required Quanitation Limit (CRQL) were qualified as estimated, "J".

Notes

The following compounds were analyzed as volatiles: 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene.

The following volatile compounds were analyzed in addition to those specified on the laboratory requirements: 1,2-dibromo-3-chloropropane, 1,2-dibromoethane and bromochloromethane.

Total 1,2-dichloroethene was reported as cis and trans.

Several continuing calibration %Ds were >25% quality control limit. However, no positive results were affected. Therefore, no validation action was required.

A continuing calibration %D for acetone was >25% quality control limit. However, all results reported for acetone were qualified based on initial calibration RRF noncompliances.

Several Tentatively Identified Compound (TIC) were reported in the volatile and semivolatile samples and blanks. No validation action was taken.

The Matrix Spike (MS) / Matrix Spike Duplicate (MSD) Percent Recoveries (%Rs) for benzo(a)pyrene, gamma-BHC (Lindane) and 4,4'-DDT affecting sample 2GW760003 were less than the lower quality control limit. However, no validation action was taken on this basis.

The surrogate tetrachloro-m-xylene was less than the lower control limit on both columns affecting sample 2GW1029903. No validation action was taken.

The Laboratory Control Sample (LCS) Percent Recovery (%R) for 2-amino-4,6-dinitrotoluene exceeded the upper quality control limit. No validation action was taken.

Comparisons of the positive results in the field duplicate pairs are included in Appendix C.

Sample 2GW320003 was analyzed for volatiles at a 3X dilution. Therefore, reporting limits are elevated.

Executive Summary

Laboratory Performance: Bis(2-ethylhexyl)phthalate was present in the laboratory method blanks. Several RRFs for acetone, 2-butanone and 1,2-dibromo-3-chloropropane were <0.05 quality control limit. A continuing calibration %D for 1,2-dichloroethane was >25% quality control limit.

Other Factors Affecting Data Quality: Several compounds were present in the trip blanks. Field duplicate imprecision was noted for trichloroethene and bis(2-ethylhexyl)phthalate.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation", September 1994 Revision as amended for use within USEPA Region III, and the NFESC document entitled "Navy Installation Restoration Laboratory Quality Assurance Guide" (NFESC 2/96).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Gretchen A. Phipps

Tetra Tech NUS
Gretchen A. Phipps
Chemist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
J	-	Positive result is considered estimated, "J", as a result of technical noncompliances.
UR	-	Nondetected result is considered rejected, "UR", as a result of technical noncompliances.

APPENIDX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration (i.e., % RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
D = MS/MSD Noncompliance
E = LCS/LCSD Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - include ICSAB % R's
L = Instrument Calibration Range Exceedance
M = Sample Preservation
N = Internal Standard Noncompliance
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = Pest/PCB D% between columns for positive results
V = Non-linear calibrations, tuning $r < 0.995$ (correlation coefficient)
W = EMPC result
X = Signal to noise response drop
Y = % Solid content is less than 30%

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	11GW70D0003			11GW870003			2GW1000003			2GW1010003		
SAMPLE DATE:	07/20/99			07/21/99			07/21/99			07/26/99		
LABORATORY ID:	C9G210147001			C9G220211006			C9G220211007			C9G270179003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		0.21	J	P	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		0.35	J	P	1	U		0.23	J	P
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1.2	J	C	1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	3.8	B	B	2.8	B	B	3.1	B	B	3.4	B	B
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	0.2	B	B	0.2	B	B	0.36	B	B	1.2	B	B
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1.2			0.61	J	P
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		3.4			0.33	J	P	0.36	J	P
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		0.22	B	B
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	11GW70D0003	11GW870003	2GW1000003	2GW1010003
SAMPLE DATE:	07/20/99	07/21/99	07/21/99	07/26/99
LABORATORY ID:	C9G210147001	C9G220211006	C9G220211007	C9G270179003
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		3.2			3.9			2.5		
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1020003			2GW1029903			2GW1030003			2GW1040003		
SAMPLE DATE:	07/22/99			07/22/99			07/21/99			07/22/99		
LABORATORY ID:	C9G230211004			C9G230211005			C9G220211003			C9G230211002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				2GW1020003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	3.5	B	B	3.5	B	B	2.9	B	B	4.4	B	B
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		0.24	B	B	0.15	B	B	0.31	B	B
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		0.18	J	P	1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	2.8			2.8			1	U		2.1		
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1020003			2GW1029903			2GW1030003			2GW1040003		
SAMPLE DATE:	07/22/99			07/22/99			07/21/99			07/22/99		
LABORATORY ID:	C9G230211004			C9G230211005			C9G220211003			C9G230211002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				2GW1020003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	6.7			6.4			0.86	J	P	1.3		
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1050003			2GW300003			2GW310003			2GW320003		
SAMPLE DATE:	07/21/99			07/22/99			07/21/99			07/26/99		
LABORATORY ID:	C9G220211002			C9G230211003			C9G220211005			C9G270179002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		3	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		3	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		3	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		3	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		3	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		3	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	3	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		3	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		3	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		3	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		3	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		3	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		3	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	15	UR	C
2-HEXANONE	5	U		5	U		5	U		15	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		15	U	
ACETONE	2.6	B	B	3.8	B	B	2.7	B	B	15	UR	C
BENZENE	1	U		1	U		1	U		3	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		3	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		3	U	
BROMOFORM	1	U		1	U		1	U		3	U	
BROMOMETHANE	1	U		1	U		1	U		3	U	
CARBON DISULFIDE	1	U		1	U		1	U		3	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		3	U	
CHLOROBENZENE	0.46	B	B	0.2	B	B	0.23	B	B	3	U	
CHLOROETHANE	1	U		1	U		1	U		3	U	
CHLOROFORM	1	U		0.23	J	P	1	U		3	U	
CHLOROMETHANE	1	U		1	U		1	U		3	U	
CIS-1,2-DICHLOROETHENE	0.25	J	P	0.43	J	P	1	U		0.93	J	P
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		3	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		3	U	
ETHYLBENZENE	1	U		1	U		1	U		3	U	
METHYLENE CHLORIDE	2	U		0.29	B	B	2	U		1.8	B	B
STYRENE	1	U		1	U		1	U		3	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1050003			2GW300003			2GW310003			2GW320003		
SAMPLE DATE:	07/21/99			07/22/99			07/21/99			07/26/99		
LABORATORY ID:	C9G220211002			C9G230211003			C9G220211005			C9G270179002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		3	U	
TOLUENE	1	U		1	U		1	U		3	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		3	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		3	U	
TRICHLOROETHENE	1.3			14			1	U		35		
VINYL CHLORIDE	1	U		1	U		1	U		3	U	
XYLENES, TOTAL	1	U		1	U		1	U		3	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW450003			2GW760003			3GW1070003			3GW170003		
SAMPLE DATE:	07/21/99			07/20/99			07/27/99			07/27/99		
LABORATORY ID:	C9G220211004			C9G210147002			C9G280157002			C9G280157004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	2.7	B	B	5	UR	C	5	UR	C	5	UR	C
BENZENE	1	U		1	U		0.32	B	B	1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	0.21	B	B	1	U		0.21	B	B	1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	0.2	J	P	1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	0.23	J	P	1	U		8.9			0.28	J	P
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		0.26	B	B	2	U	
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW450003			2GW760003			3GW1070003			3GW170003		
SAMPLE DATE:	07/21/99			07/20/99			07/27/99			07/27/99		
LABORATORY ID:	C9G220211004			C9G210147002			C9G280157002			C9G280157004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		0.36	J	P	1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		0.42	J	P	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	2.6	J	G	1	U		0.88	J	P	1	U	
VINYL CHLORIDE	1	U		1	U		1.3			1	U	
XYLENES, TOTAL	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	3GW179903			3GW470003			3GW770003			3GW78S0003		
SAMPLE DATE:	07/27/99			07/26/99			07/26/99			07/27/99		
LABORATORY ID:	C9G280157005			C9G270179004			C9G270179005			C9G280157003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	3GW170003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
BENZENE	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		1	U	
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	0.26	J	P	0.57	J	P	1.5			1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	2	U		2	U		2	U		2	U	
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	3GW179903	3GW470003	3GW770003	3GW78S0003
SAMPLE DATE:	07/27/99	07/26/99	07/26/99	07/27/99
LABORATORY ID:	C9G280157005	C9G270179004	C9G270179005	C9G280157003
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:	3GW170003			

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	UJ	G	0.48	J	P	0.32	J	P	1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	TB0721990003			TB0722990003			TB0726990003			TB0727990003		
SAMPLE DATE:	07/21/99			07/22/99			07/26/99			07/27/99		
LABORATORY ID:	C9G220211001			C9G230211001			C9G270179001			C9G280157001		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE	1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	UR	C	1	UR	C	1	UR	C	1	UR	C
1,2-DIBROMOETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	1	U		1	U		1	U		1	U	
2-BUTANONE	5	UR	C	5	UR	C	5	UR	C	5	UR	C
2-HEXANONE	5	U		5	U		5	U		5	U	
4-METHYL-2-PENTANONE	5	U		5	U		5	U		5	U	
ACETONE	5	UR	C	2.3	J	CP	5.5	J	C	3.3	J	P
BENZENE	1	U		1	U		0.62	J	P	1	U	
BROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	1	U		1	U		1	U		1	U	
BROMOFORM	1	U		1	U		1	U		1	U	
BROMOMETHANE	1	U		1	U		1	U		1	U	
CARBON DISULFIDE	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	1	U		1	U		1	U		1	U	
CHLOROBENZENE	1	U		1	U		1	U		0.31	J	P
CHLOROETHANE	1	U		1	U		1	U		1	U	
CHLOROFORM	1	U		1	U		1	U		1	U	
CHLOROMETHANE	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	1	U		1	U		1	U		1	U	
ETHYLBENZENE	1	U		1	U		0.2	J	P	1	U	
METHYLENE CHLORIDE	0.31	J		0.4	J	P	0.39	J	P	0.42	J	P
STYRENE	1	U		1	U		1	U		1	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	TB0721990003	TB0722990003	TB0726990003	TB0727990003
SAMPLE DATE:	07/21/99	07/22/99	07/26/99	07/27/99
LABORATORY ID:	C9G220211001	C9G230211001	C9G270179001	C9G280157001
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TETRACHLOROETHENE	1	U		1	U		1	U		1	U	
TOLUENE	1	U		1	U		3.1			0.4	J	P
TRANS-1,2-DICHLOROETHENE	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	1	U		1	U		1	U		1	U	
TRICHLOROETHENE	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	1	U		1	U		1	U		1	U	
XYLENES, TOTAL	1	U		1	U		0.99	J	P	0.17	J	P

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	11GW70D0003	11GW870003	2GW1000003	2GW1010003
SAMPLE DATE:	07/20/99	07/21/99	07/21/99	07/26/99
LABORATORY ID:	C9G210147001	C9G220211006	C9G220211007	C9G270179003
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHYL)ETHER	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	11GW70D0003			11GW870003			2GW1000003			2GW1010003		
SAMPLE DATE:	07/20/99			07/21/99			07/21/99			07/26/99		
LABORATORY ID:	C9G210147001			C9G220211006			C9G220211007			C9G270179003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	11	B	A	2.9	B	A	2.7	B	A	5	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1020003			2GW1029903			2GW1030003			2GW1040003		
SAMPLE DATE:	07/22/99			07/22/99			07/21/99			07/22/99		
LABORATORY ID:	C9G230211004			C9G230211005			C9G220211003			C9G230211002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				2GW1020003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		1.4	J	P
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHYL)ETHER	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1020003			2GW1029903			2GW1030003			2GW1040003		
SAMPLE DATE:	07/22/99			07/22/99			07/21/99			07/22/99		
LABORATORY ID:	C9G230211004			C9G230211005			C9G220211003			C9G230211002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				2GW1020003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	4	B	A	43	J	G	1.2	B	A	3.8	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1050003			2GW300003			2GW310003			2GW320003		
SAMPLE DATE:	07/21/99			07/22/99			07/21/99			07/26/99		
LABORATORY ID:	C9G220211002			C9G230211003			C9G220211005			C9G270179002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		2.3	J	P
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHYL)ETHER	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1050003			2GW300003			2GW310003			2GW320003		
SAMPLE DATE:	07/21/99			07/22/99			07/21/99			07/26/99		
LABORATORY ID:	C9G220211002			C9G230211003			C9G220211005			C9G270179002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	4.4	B	A	8	B	A	4.1	B	A	6.8	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	1.8	J	P	5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW450003			2GW760003			3GW1070003			3GW170003		
SAMPLE DATE:	07/21/99			07/20/99			07/27/99			07/27/99		
LABORATORY ID:	C9G220211004			C9G210147002			C9G280157002			C9G280157004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5.4	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		22	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5.4	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5.4	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5.4	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		22	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5.4	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5.4	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5.4	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5.4	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5.4	U		5	U	
2-METHYLPHENOL	5	U		5	U		5.4	U		5	U	
2-NITROANILINE	20	U		20	U		22	U		20	U	
2-NITROPHENOL	5	U		5	U		5.4	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5.4	U		5	U	
3-NITROANILINE	20	U		20	U		22	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		22	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5.4	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5.4	U		5	U	
4-CHLOROANILINE	5	U		5	U		5.4	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5.4	U		5	U	
4-METHYLPHENOL	5	U		5	U		5.4	U		5	U	
4-NITROANILINE	20	U		20	U		22	U		20	U	
4-NITROPHENOL	20	U		20	U		22	U		20	U	
ACENAPHTHENE	5	U		5	U		5.4	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5.4	U		5	U	
ANTHRACENE	5	U		5	U		5.4	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5.4	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5.4	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5.4	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5.4	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5.4	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5.4	U		5	U	
BIS(2-CHLOROETHYL)ETHER	5	U		5	U		5.4	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW450003			2GW760003			3GW1070003			3GW170003		
SAMPLE DATE:	07/21/99			07/20/99			07/27/99			07/27/99		
LABORATORY ID:	C9G220211004			C9G210147002			C9G280157002			C9G280157004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	8.7	B	A	6.2	B	A	2.3	B	A	3.1	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5.4	U		5	U	
CHRYSENE	5	U		5	U		5.4	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5.4	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5.4	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5.4	U		5	U	
DIBENZOFURAN	5	U		5	U		5.4	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5.4	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5.4	U		5	U	
FLUORANTHENE	5	U		5	U		5.4	U		5	U	
FLUORENE	5	U		5	U		5.4	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5.4	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5.4	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5.4	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5.4	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5.4	U		5	U	
ISOPHORONE	5	U		5	U		5.4	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5.4	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5.4	U		5	U	
NAPHTHALENE	5	U		5	U		5.4	U		5	U	
NITROBENZENE	5	U		5	U		5.4	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		22	U		20	U	
PHENANTHRENE	5	U		5	U		5.4	U		5	U	
PHENOL	5	U		5	U		5.4	U		5	U	
PYRENE	5	U		5	U		5.4	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	3GW179903			3GW470003			3GW770003			3GW78S0003		
SAMPLE DATE:	07/27/99			07/26/99			07/26/99			07/27/99		
LABORATORY ID:	C9G280157005			C9G270179004			C9G270179005			C9G280157003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	3GW170003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U		5	U		5	U		5	U	
2,4,5-TRICHLOROPHENOL	20	U		20	U		20	U		20	U	
2,4,6-TRICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DICHLOROPHENOL	5	U		5	U		5	U		5	U	
2,4-DIMETHYLPHENOL	5	U		5	U		5	U		5	U	
2,4-DINITROPHENOL	20	U		20	U		20	U		20	U	
2,4-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2,6-DINITROTOLUENE	5	U		5	U		5	U		5	U	
2-CHLORONAPHTHALENE	5	U		5	U		5	U		5	U	
2-CHLOROPHENOL	5	U		5	U		5	U		5	U	
2-METHYLNAPHTHALENE	5	U		5	U		5	U		5	U	
2-METHYLPHENOL	5	U		5	U		5	U		5	U	
2-NITROANILINE	20	U		20	U		20	U		20	U	
2-NITROPHENOL	5	U		5	U		5	U		5	U	
3,3'-DICHLOROBENZIDINE	5	U		5	U		5	U		5	U	
3-NITROANILINE	20	U		20	U		20	U		20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U		20	U		20	U		20	U	
4-BROMOPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-CHLORO-3-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-CHLOROANILINE	5	U		5	U		5	U		5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U		5	U		5	U		5	U	
4-METHYLPHENOL	5	U		5	U		5	U		5	U	
4-NITROANILINE	20	U		20	U		20	U		20	U	
4-NITROPHENOL	20	U		20	U		20	U		20	U	
ACENAPHTHENE	5	U		5	U		5	U		5	U	
ACENAPHTHYLENE	5	U		5	U		5	U		5	U	
ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)ANTHRACENE	5	U		5	U		5	U		5	U	
BENZO(A)PYRENE	5	U		5	U		5	U		5	U	
BENZO(B)FLUORANTHENE	5	U		5	U		5	U		5	U	
BENZO(G,H,I)PERYLENE	5	U		5	U		5	U		5	U	
BENZO(K)FLUORANTHENE	5	U		5	U		5	U		5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	3GW179903			3GW470003			3GW770003			3GW78S0003		
SAMPLE DATE:	07/27/99			07/26/99			07/26/99			07/27/99		
LABORATORY ID:	C9G280157005			C9G270179004			C9G270179005			C9G280157003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	3GW170003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES												
BIS(2-ETHYLHEXYL)PHTHALATE	2.1	B	A	6.1	B	A	2	B	A	4	B	A
BUTYLBENZYL PHTHALATE	5	U		5	U		5	U		5	U	
CHRYSENE	5	U		5	U		5	U		5	U	
DI-N-BUTYL PHTHALATE	5	U		5	U		5	U		5	U	
DI-N-OCTYL PHTHALATE	5	U		5	U		5	U		5	U	
DIBENZO(A,H)ANTHRACENE	5	U		5	U		5	U		5	U	
DIBENZOFURAN	5	U		5	U		5	U		5	U	
DIETHYL PHTHALATE	5	U		5	U		5	U		5	U	
DIMETHYL PHTHALATE	5	U		5	U		5	U		5	U	
FLUORANTHENE	5	U		5	U		5	U		5	U	
FLUORENE	5	U		5	U		5	U		5	U	
HEXACHLOROBENZENE	5	U		5	U		5	U		5	U	
HEXACHLOROBUTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROCYCLOPENTADIENE	5	U		5	U		5	U		5	U	
HEXACHLOROETHANE	5	U		5	U		5	U		5	U	
INDENO(1,2,3-CD)PYRENE	5	U		5	U		5	U		5	U	
ISOPHORONE	5	U		5	U		5	U		5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U		5	U		5	U		5	U	
N-NITROSODIPHENYLAMINE	5	U		5	U		5	U		5	U	
NAPHTHALENE	5	U		5	U		5	U		5	U	
NITROBENZENE	5	U		5	U		5	U		5	U	
PENTACHLOROPHENOL	20	U		20	U		20	U		20	U	
PHENANTHRENE	5	U		5	U		5	U		5	U	
PHENOL	5	U		5	U		5	U		5	U	
PYRENE	5	U		5	U		5	U		5	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	11GW70D0003			11GW870003			2GW1000003			2GW1010003		
SAMPLE DATE:	07/20/99			07/21/99			07/21/99			07/26/99		
LABORATORY ID:	C9G210147001			C9G220211006			C9G220211007			C9G270179003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDE	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDT	0.10	U		0.10	U		0.10	U		0.10	U	
ALDRIN	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
AROCLOR-1016	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1221	2.0	U		2.0	U		2.0	U		2.0	U	
AROCLOR-1232	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1242	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1248	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1254	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1260	1.0	U		1.0	U		1.0	U		1.0	U	
BETA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DELTA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DIELDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN I	0.050	U		0.050	U		0.050	U		0.050	U	
ENDOSULFAN II	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN KETONE	0.10	U		0.10	U		0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	U		0.050	U		0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.050	U		0.050	U		0.050	U		0.050	U	
METHOXYCHLOR	0.50	U		0.50	U		0.50	U		0.50	U	
TOXAPHENE	5.0	U		5.0	U		5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1020003			2GW1029903			2GW1030003			2GW1040003		
SAMPLE DATE:	07/22/99			07/22/99			07/21/99			07/22/99		
LABORATORY ID:	C9G230211004			C9G230211005			C9G220211003			C9G230211002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				2GW1020003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDE	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDT	0.10	U		0.10	U		0.10	U		0.10	U	
ALDRIN	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
AROCLOR-1016	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1221	2.0	U		2.0	U		2.0	U		2.0	U	
AROCLOR-1232	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1242	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1248	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1254	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1260	1.0	U		1.0	U		1.0	U		1.0	U	
BETA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DELTA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DIELDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN I	0.050	U		0.050	U		0.050	U		0.050	U	
ENDOSULFAN II	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN KETONE	0.10	U		0.10	U		0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	U		0.050	U		0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.050	U		0.050	U		0.050	U		0.050	U	
METHOXYCHLOR	0.50	U		0.50	U		0.50	U		0.50	U	
TOXAPHENE	5.0	U		5.0	U		5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1050003			2GW300003			2GW310003			2GW320003		
SAMPLE DATE:	07/21/99			07/22/99			07/21/99			07/26/99		
LABORATORY ID:	C9G220211002			C9G230211003			C9G220211005			C9G270179002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDE	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDT	0.10	U		0.10	U		0.10	U		0.10	U	
ALDRIN	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
AROCLOR-1016	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1221	2.0	U		2.0	U		2.0	U		2.0	U	
AROCLOR-1232	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1242	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1248	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1254	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1260	1.0	U		1.0	U		1.0	U		1.0	U	
BETA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DELTA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DIELDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN I	0.050	U		0.050	U		0.050	U		0.050	U	
ENDOSULFAN II	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN KETONE	0.10	U		0.10	U		0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	U		0.050	U		0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.050	U		0.050	U		0.050	U		0.050	U	
METHOXYCHLOR	0.50	U		0.50	U		0.50	U		0.50	U	
TOXAPHENE	5.0	U		5.0	U		5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW450003			2GW760003			3GW1070003			3GW170003		
SAMPLE DATE:	07/21/99			07/20/99			07/27/99			07/27/99		
LABORATORY ID:	C9G220211004			C9G210147002			C9G280157002			C9G280157004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDE	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDT	0.10	U		0.10	U		0.10	U		0.10	U	
ALDRIN	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
AROCLOR-1016	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1221	2.0	U		2.0	U		2.0	U		2.0	U	
AROCLOR-1232	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1242	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1248	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1254	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1260	1.0	U		1.0	U		1.0	U		1.0	U	
BETA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DELTA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DIELDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN I	0.050	U		0.050	U		0.050	U		0.050	U	
ENDOSULFAN II	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN KETONE	0.10	U		0.10	U		0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	U		0.050	U		0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.050	U		0.050	U		0.050	U		0.050	U	
METHOXYCHLOR	0.50	U		0.50	U		0.50	U		0.50	U	
TOXAPHENE	5.0	U		5.0	U		5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	3GW179903			3GW470003			3GW770003			3GW78S0003		
SAMPLE DATE:	07/27/99			07/26/99			07/26/99			07/27/99		
LABORATORY ID:	C9G280157005			C9G270179004			C9G270179005			C9G280157003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	3GW170003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBs												
4,4'-DDD	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDE	0.10	U		0.10	U		0.10	U		0.10	U	
4,4'-DDT	0.10	U		0.10	U		0.10	U		0.10	U	
ALDRIN	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
ALPHA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
AROCLOR-1016	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1221	2.0	U		2.0	U		2.0	U		2.0	U	
AROCLOR-1232	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1242	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1248	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1254	1.0	U		1.0	U		1.0	U		1.0	U	
AROCLOR-1260	1.0	U		1.0	U		1.0	U		1.0	U	
BETA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DELTA-BHC	0.050	U		0.050	U		0.050	U		0.050	U	
DIELDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN I	0.050	U		0.050	U		0.050	U		0.050	U	
ENDOSULFAN II	0.10	U		0.10	U		0.10	U		0.10	U	
ENDOSULFAN SULFATE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN ALDEHYDE	0.10	U		0.10	U		0.10	U		0.10	U	
ENDRIN KETONE	0.10	U		0.10	U		0.10	U		0.10	U	
GAMMA-BHC (LINDANE)	0.050	U		0.050	U		0.050	U		0.050	U	
GAMMA-CHLORDANE	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR	0.050	U		0.050	U		0.050	U		0.050	U	
HEPTACHLOR EPOXIDE	0.050	U		0.050	U		0.050	U		0.050	U	
METHOXYCHLOR	0.50	U		0.50	U		0.50	U		0.50	U	
TOXAPHENE	5.0	U		5.0	U		5.0	U		5.0	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	11GW70D0003			11GW870003			2GW1000003			2GW1010003		
SAMPLE DATE:	07/20/99			07/21/99			07/21/99			07/26/99		
LABORATORY ID:	C9G210147001			C9G220211006			C9G220211007			C9G270179003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
HMX	0.5	U		0.5	U		0.5	U		0.5	U	
NITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
RDX	0.5	U		0.5	U		0.5	U		0.5	U	
TETRYL	0.2	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1020003			2GW1029903			2GW1030003			2GW1040003		
SAMPLE DATE:	07/22/99			07/22/99			07/21/99			07/22/99		
LABORATORY ID:	C9G230211004			C9G230211005			C9G220211003			C9G230211002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:				2GW1020003								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
HMX	0.5	U		0.5	U		0.5	U		0.5	U	
NITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
RDX	0.5	U		0.5	U		0.86			0.5	U	
TETRYL	0.2	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW1050003	2GW300003	2GW310003	2GW320003
SAMPLE DATE:	07/21/99	07/22/99	07/21/99	07/26/99
LABORATORY ID:	C9G220211002	C9G230211003	C9G220211005	C9G270179002
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.2	U		0.2	U		0.2	U	
HMX	0.68			0.5	U		0.5	U		0.5	U	
NITROBENZENE	0.2	U		0.2	U		0.2	U		0.2	U	
RDX	0.5	U		0.5	U		0.5	U		0.5	U	
TETRYL	0.2	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	2GW450003			2GW760003			3GW1070003			3GW170003		
SAMPLE DATE:	07/21/99			07/20/99			07/27/99			07/27/99		
LABORATORY ID:	C9G220211004			C9G210147002			C9G280157002			C9G280157004		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.4	U		0.2	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.4	U		0.2	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.4	U		0.2	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.4	U		0.2	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.4	U		0.2	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.4	U		0.2	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.4	U		0.2	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.4	U		0.2	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.4	U		0.2	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.4	U		0.2	U		0.2	U		0.2	U	
HMX	12			0.5	U		1			0.5	U	
NITROBENZENE	0.4	U		0.2	U		0.2	U		0.2	U	
RDX	1	U		0.5	U		1			0.5	U	
TETRYL	0.4	U		0.2	U		0.2	U		0.2	U	

CTO298 - NSWC WHITE OAK
WATER DATA
QUANTERRA
SDG: WO062

SAMPLE NUMBER:	3GW179903			3GW470003			3GW770003			3GW78S0003		
SAMPLE DATE:	07/27/99			07/26/99			07/26/99			07/27/99		
LABORATORY ID:	C9G280157005			C9G270179004			C9G270179005			C9G280157003		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:	3GW170003											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
EXPLOSIVES												
1,3,5-TRINITROBENZENE	0.2	U		0.34	U		0.2	U		0.2	U	
1,3-DINITROBENZENE	0.2	U		0.34	U		0.2	U		0.2	U	
2,4,6-TRINITROTOLUENE	0.23			0.34	U		0.2	U		0.2	U	
2,4-DINITROTOLUENE	0.2	U		0.34	U		0.2	U		0.2	U	
2,6-DINITROTOLUENE	0.2	U		0.34	U		0.2	U		0.2	U	
2-AMINO-4,6-DINITROTOLUENE	0.2	U		0.34	U		0.2	U		0.2	U	
2-NITROTOLUENE	0.2	U		0.34	U		0.2	U		0.2	U	
3-NITROTOLUENE	0.2	U		0.34	U		0.2	U		0.2	U	
4-AMINO-2,6-DINITROTOLUENE	0.2	U		0.34	U		0.2	U		0.2	U	
4-NITROTOLUENE	0.2	U		0.34	U		0.2	U		0.2	U	
HMX	0.5	U		0.86	U		0.5	U		0.5	U	
NITROBENZENE	0.2	U		0.34	U		0.2	U		0.2	U	
RDX	0.5	U		0.86	U		0.5	U		0.5	U	
TETRYL	0.2	U		0.34	U		0.2	U		0.2	U	