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Director

90-e15
WA-14-0040

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DEPARTMENT OF ECOLOGY
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August 6, 1990

TO: Darrel Anderson, Department of Ecology, SWRO

FROM: Betsy Dickes, Department of Ecology, EILS BD

SUBJECT: Shelton Storm Drain Sediment Study (1989) Results

Storm drain sediment sampling was conducted at six sites in Shelton, Washington on June 1, 1989 to 1) provide information on baseline stormwater priority pollutant concentrations using accumulated sediments as a surrogate and 2) allow for comparison of stormwater water quality after completion of the sanitary sewer upgrade. Site locations are shown in Figure 1 and described in Table 1. Efforts were taken to locate sites in representative areas of the City which had deposits of fine grained sediment. Safety considerations also limited site selection to those which had sediment accessible by a hand lowered sampler rather than having to climb down into the drain system.

Collection methods were based on the Elliott Bay stormdrain monitoring approach (Tetra Tech, 1988). Samples were collected with a stainless steel petite Ponar sampler. The top 2 cm of sediment from three grabs were composited and homogenized in stainless steel beakers with stainless steel spoons; sediment touching the inside walls of the sampler was avoided. Subsamples were taken for parameter groups listed in Table 2 (detailed in Appendix B) and placed in appropriate containers (Huntamer, 1986).

The decontamination procedure for all stainless steel sampling equipment was as follows: washing with non-phosphate detergent followed by successive rinses with hot tap water, 10% nitric acid, three times with deionized water, pesticide-grade methylene chloride, and pesticide-grade acetone. Equipment was air-dried then wrapped separately in aluminum foil until utilized. A separate spoon and beaker were used at each site. The Ponar sampler was rinsed with deionized water between sites. Sediment samples were put on ice immediately and shipped within 24 hours to the Ecology/EPA Environmental Laboratory in Manchester, Washington for analysis. Selected analyses were then performed by Laucks Testing Laboratory and Aquatic Research Incorporated. Analytical methods are listed in Table 2.

Percent recoveries for some metals were outside normal limits, however, duplicate sample precision was acceptable. The high concentrations of iron resulted in spectral interference for lead and manganese; these data are qualified (Table 3). The high concentration of bis(2-Ethylhexyl)Phthalate seen in SEGR-DUP (Table 4) may be due to sample inhomogeneity, however, it is also a common laboratory contaminant.

There are currently no freshwater sediment quality criteria, therefore, proposed marine sediment criteria for Puget Sound (Betts, 1990) will be used here as a gauge for sediment quality. The storm system ultimately enters Oakland Bay and therefore the sediment quality reflects potential impact to the marine biological communities. It is also important to note that the stormdrains sampled are cleaned each summer and therefore these sediment quality data reflect deposition over a one year period.

Analytical results are summarized in Tables 3 and 4; raw data can be found in Appendices A and B. The chemicals detected are common to urban runoff (Tetra Tech, 1988 and Joy, 1985). Of the six sites sampled, three had concentrations which exceeded the marine sediment quality criteria. The site at Second and Grove Street (SEGR) exceeded both metal (Table 3) and organic criteria for several contaminants (Table 4). SEGR was the most contaminated site of the survey; the concentration of 4-Methylphenol at this site, in relation to the marine criteria, is especially noteworthy. Site FFRA (Front and Railroad Street) and FITU (First and Turner Street) also had violations in organic criteria violations (Table 4).

Based on the results of this study, I recommend that a part of any future stormdrain sediment study include sampling sites at the mouth of the stormdrains where they enter the Bay, as well as at stations from this survey where potential violations to the receiving water were found: SEGR, FFRA, and FITU. From the data collected, I would also recommend that Southwest Regional Office investigate possible waste disposal violations occuring in the vicinity of Second and First Street.

BD:jc

cc: Gary Rhoades, City of Shelton
Lynn Singleton, Ecology

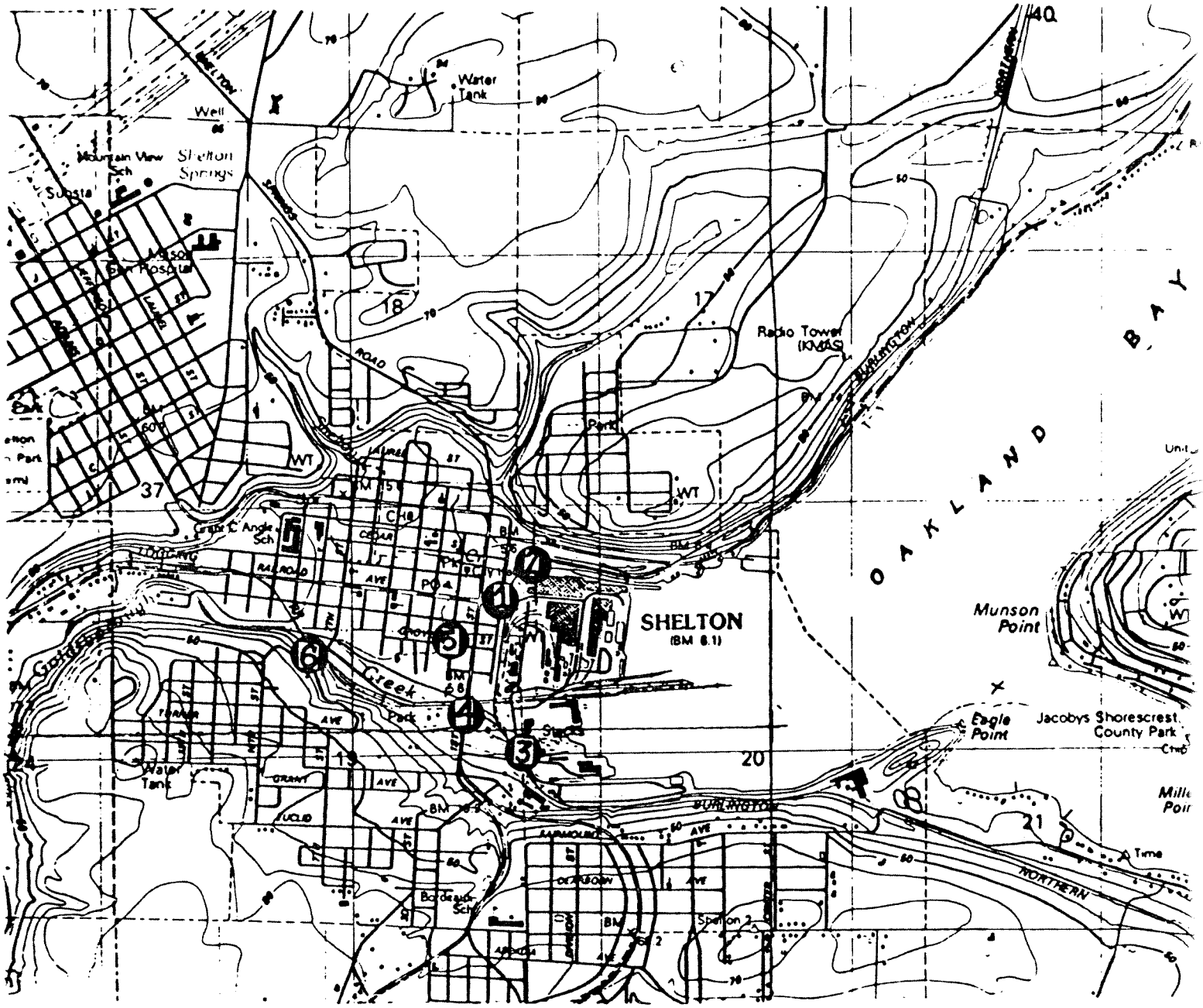

Figure 1. Locations of the storm drain catchment areas for the June 1, 1989 sampling in Shelton, WA. 1=FFRA; 2=SHCR; 3=DEMI; 4=FITU; 5=SEGR; 6=ANHI.

Table 1. Location of storm water sediment catchment areas sampled in Shelton WA on July 1, 1989.

LOCATION	DESCRIPTION
FFRA	Intersection of Front and Railroad Streets at the entrance to Simpson Timber. covered manhole.
SHCR	Shelton Creek; east of Front Street and the pump house, downstream of the culvert. creek back eddies.
DEMI	On the east side of Delaware Street just up hill from Mill Street. large open grate.
FITU	Just north of the intersection of First and Turner Streets, across from Kneeland Park. covered manhole.
SEGR	Intersection of Second and Grove Streets. small open grate.
ANHI	Intersection of Angleside and Highland Streets; large open grate just off Highland Street.

Table 2. Analytical methods for the storm drain sediment survey in Shelton WA, June 1, 1989.

Parameter	Method	Laboratory (1)
TOC	Tetra Tech, 1986	Laucks
% Solids	Tetra Tech, 1986	Laucks
Grain Size	Tetra Tech, 1986	Laucks
BNA	EPA, 1986: #8270	ARI
Pest/PCB	EPA, 1986: #8080	ARI
Metals	EPA, 1983: #200 series	Ecology

(1) Laucks: Laucks Testing Lab, Seattle, WA
ARI: Aquatic Research Incorporated, Seattle, WA
Ecology: EPA/Ecology Environmental Laboratory, Manchester, WA

'able 3. Results from the storm drain monitoring survey in Shelton, WA, June 1, 1989 (mg/kg/dry weight).

Parameter	Site							Sediment Criteria(a)
	FRRA	SHCR	FITU	SEGR	SEGR/DUP	SEGR/REP	ANHI	
ntimony	-	-	-	-	7.4	14	-	
rsenic	14.3	13.0	17.7	17.2	10.6	30.6	12.3	57
admium	-	-	-	1.2	-	1.3	-	5.1
hromium	104	45.9	66.8	185	270*	284*	53.7	260
opper	86.1	36.7	38.0	67.2	71.0	69.2	47.6	390
ron	24100	23100	22600	18100	18500	21000	24500	
ead	345 D	59.9 D	70.4 D	1010 J*	1280 J*	1350 J*	52.5 D	450
anganese	319 D	473 D	398 D	288 D	304 D	350 D	426 D	
ickel	42.3	25.9	40.6	31.0	35.5	45.5	37.7	
ilver	0.76	0.38	0.41	0.82	0.80	1.1	0.42	6.1
inc	489	83.1	66.5	434 *	447 *	473 *	67.9	410
ercury	0.0015	0.0005	0.0001	0.0026	0.0027	0.0021	0.0002	0.41

(a) = Betts, 1990, interim marine sediment quality criteria

- = Below detection limits (values of detection can be found in Appendix B)

* = exceeds marine sediment criteria

) = Sample high due to interfering substance

J = Estimated concentration due to interfering substance and high levels with respect to standard curve.

Table 4. Results from the storm drain sediment monitoring in Shelton WA, June 1, 1989.
Data (mg/kg/dry weight) are normalized to total organic carbon.

Location	FFRA	SHCR	DEMI	FITU	SEGR	SEGR-DUP	SEGR-REP	ANHI	:Sediment :Criteria(a)
Conventionals									:
Total Organic Carbon (%)	12.4	2.1	0.34	0.88	4.6	3.1	8.6	1.1	:
Moisture (%)	53.7	37.0	18.2	24.0	29.7	29.7	27.4	18.3	:
Grain Size (%)									:
Gravel (2mm)	27	20	33	48	15	22	28	49	:
Sand (2mm-62um)	49.7	59.3	64.0	48.7	72.4	68.3	63.6	47.0	:
Silt (62um-4um)	21.7	20.4	3.0	3.3	12.1	9.5	8.4	4.0	:
Clay (<4um)	1.7	0.2	<1	<1	0.6	0.2	<1	<1	:
Polyaromatic Hydrocarbons (PAH)									:
Low Molecular Weigh PAH									:
Naphthalene	-	-	-	-	28	-	-	-	: 99
2-Methylnaphthalene	2M	-	-	-	22	-	-	-	: 64
Acenaphthyene	-	-	-	-	10M	-	-	-	: 66
Acenaphthene	-	-	-	-	21*	-	-	-	: 16
Fluorene	2M	-	-	-	35*	-	-	-	: 23
Phenanthrene	16	4M	-	4M	204*	158*	37	-	: 100
Anthracene	3M	-	-	-	26	-	7M	-	: 220
Total	23M	4M	0	4M	346M	158	44M	0	: 370
High Molecular Weight PAH									:
Fluoranthene	14	5	-	4J	96	119	44	6M	: 160
Pyrene	23	3	-	3J	128	113	45	5M	: 1000
Benzo(a)Anthracene	7	-	-	-	61M	36	14M	-	: 110
Chrysene	10	3M	35	9	48M	119*	23M	8M	: 110
Benzo(b)Fluoranthene &									:
Benzo(k)Fluoranthene	7M	3M	-	-	100M	103	40M	6M	: 230
Benzo(a)Pyrene	2M	-	-	-	85	68	28M	-	: 99
Indeno(1,2,3-cd)Pyrene	-	-	-	-	-	58*	12M	-	: 34
Dibenz(a,h)Anthracene	-	-	-	-	-	26M	-	-	: 12
Benzo(ghi)Perylene	5M	-	-	-	-	55*	11M	-	: 31
Total	69	14	35	16	517	697	217	25	: 960
Total PAH detected:	92	18	35	21	863	856	261	25	:
Phthalate Acid Esters									:
Dimethyl Phthalate	10M	-	-	-	-	-	-	-	: 53
Di-n-Butylphthalate	-	11	-	10	4	152	10	-	: 220
Butylbenzylphthalate	20*	-	-	8*	76*	284*	28*	-	: 5
bis(2-Ethylhexyl)Phthalate	53*	7	26	55*	59*	2000*	51*	9	: 47
Di-n-OctylPhthalate	-	-	-	-	-	-	90*	-	: 58
Other Aromatic Hydrocarbons									:
Dibenzofuran	-	-	-	-	9	-	-	-	: 15
Pesticides									:
Alpha-BHC	-	-	-	-	-	-	<1J	-	: -
4,4-DDT	-	<1J	-	-	-	-	-	-	: -
Gamma-Chlordane	-	<1J	-	-	-	-	-	<1J	: -
Alpha-Chlordane	-	<1J	-	-	-	-	-	<1J	: -
PCBs									:
Aroclor 1254	6	-	-	-	10	13*	3	-	: 12 (total PCB
Phenols									:
4-Methylphenol	-	-	-	-	22*	-	-	-	: 0.670

(a) = Betts, 1990, interim marine sediment quality criteria
- = Below detection (values of detection can be found in Appendix B)
* = exceeds marine criteria
M = Presence verified, but had low spectral match parameters
J = Estimated concentration

REFERENCES

Betts, 1990. personal communication, memo. Updated, interim sediment quality evaluation process for Puget Sound.

EPA, 1983. Methods for chemical analysis of water and wastes, EPA 600/4-79-020, revised March 1983.

EPA, 1986. Test methods for evaluating solid waste, physical/chemical methods, SW-846, 3rd ed., November 1986.

Huntamer, D., 1986. Laboratory user's manual. Washington State Department of Ecology, Manchester, WA. 139 pp.

Joy, J., 1985. Areport on priority pollutant data from the U.S. Environmental Protection Agency and Washington Department of Ecology Programs, 1978 - 1980. unpublished report.

Tetra Tech, 1986. Recommended protocols for measuring selected environmental variables in Puget Sound. Prepared for Puget Sound Estuary Program.

Tetra Tech, 1988. Elliott Bay revised action program: a storm drain monitoring approach. Bellevue, WA.

Appendix A. Data summary for organics detected in stormdrain sediment, Shelton WA, June 1, 1989, (ug/kg/dry weight).

Location	FFRA	SHCR	DEMI	FITU	SEGR	SEGR (DUP)	SEGR (REP)	ANHI
Conventionals								
Total Organic Carbon (mg/g)	124	21	3	9	46	31	86	11
Moisture (%)	53.7	37.0	18.2	24.0	29.7	29.7	27.4	18.3
Grain Size (%)								
Gravel (2mm)	27	20	33	48	15	22	28	49
Sand (2mm-62um)	49.7	59.3	64.0	48.7	72.4	68.3	63.6	47.0
Silt (62um-4um)	21.7	20.4	3.0	3.3	12.1	9.5	8.4	4.0
Clay (<4um)	1.7	0.2	<1	<1	0.6	0.2	<1	<1
Polyaromatic Hydrocarbons (PAH)								
Low Molecular Weigh PAH:								
Naphthalene	-	-	-	-	1300	-	-	-
2-Methylnaphthalene	310 M	-	-	-	1000	-	-	-
Acenaphthyene	-	-	-	-	460 M	-	-	-
Acenaphthene	-	-	-	-	950	-	-	-
Fluorene	190 M	-	-	-	1600	-	-	-
Phenanthrene	2000	81 M	-	39 M	9400	4900	3200	-
Anthracene	330 M	-	-	-	1200	-	620 M	-
Total	2830	81	0	39	15910	4900	3820	0
High Molecular Weight PAH								
Fluoranthene	1800	96	-	34 J	4400	3700	3800	64 M
Pyrene	2800	71	-	30 J	5900	3500	3900	52 M
Benzo(a)Anthracene	830	-	-	-	2800 M	1100	1200 M	-
Chrysene	1300	59 M	120	78	2200 M	3700	2000 M	92 M
Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	900 M	68 M	-	-	4600 M	3200	3400 M	72 M
Benzo(a)Pyrene	300 M	-	-	-	3900	2100	2400 M	-
Indeno(1,2,3-cd)Pyrene	-	-	-	-	-	1800	1000 M	-
Dibenz(a,h)Anthracene	-	-	-	-	-	820 M	-	-
Benzo(ghi)Perylene	610 M	-	-	-	-	1700	940 M	-
Total	8540	294	120	142	23800	21620	18640	280
Total PAH detected:	11370	375	120	181				
Phthalate Acid Esters								
Dimethyl Phthalate	1200 M	-	-	-	-	-	-	-
Di-n-Butylphthalate	-	230	-	92	190	4700	900	-
Butylbenzylphthalate	2500	-	-	71	3500	8800	2400	-
bis(2-Ethylhexyl)Phthalate	6600	150	87	480	2700	62000	4400	95
Di-n-OctylPhthalate	-	-	-	-	-	2800	-	-
Other Aromatic Hydrocarbons								
Dibenzofuran	-	-	-	-	430	-	-	-
Pesticides								
Alpha-BHC	-	-	-	-	-	-	1.7	-
4,4-DDT	-	0.9 J	-	-	-	-	-	-
Gamma-Chlordane	-	1.0 J	-	-	-	-	-	3.1
Alpha-Chlordane	-	0.6 J	-	-	-	-	-	2.4
PCBs								
Aroclor 1254	740	-	-	-	450	390	280	-
Phenols								
4-Methylphenol	-	-	-	-	1000 M	-	-	-

- = Below detection (values of detection can be found in Appendix B)

M = Presence verified, but had low spectral match parameters

J = Estimated concentration

Appendix B

Raw organics and metals data for Shelton stormdrain sediment, June 1, 1989.

*** Lab Analysis Report ***

Transaction #: 10230841 Laboratory: (WE) Ecology, Manchester Lab

k Group: (38) Metals - ICP Scan

strument: (ICP) ICP, Jarrell-Ash AtomComp 1100 (DOE)

thod: (EP1-200.7) Inductively Coupled Plasma Atomic Emissions Analysis

emist: (CLV) Vezzani, Cheryl DOE Hours Worked: _____

oject: DOE-113A SHELTON STORMWATER SEDIMENTS Prg Ele#: 4C6E2

j Off: Dickes, Betsy DOE Analysis Due: 890602 Revised Due:

*** Sample Records in Transaction ***

rameter Form File: ICP384001 Title: ICP Scan, Sediment/Soil/Sludge (Dry Basi

q#	Sample #	QA	Date/Time	Description	Alternate Keys		
1	89228080		890601	FRRA			
2	89228081		890601	SHCR			
3	89228082		890601	DEMI			
4	89228083		890601	FITU			
5	89228084		890601	SEGR			
6	89228085		890601	ANHI			
7	89228086		890601	DUPI			
8	89228087		890601	REPI			
9	89228080	LBK1	890601	FRRA			
10	89228080	LBK2	890601	FRRA			
11	89228080	LMX1	890601	FRRA			
12	89228080	LMX2	890601	FRRA			

Record Type: TRNIN1 Date Verified: 11-1-89 By:
Transaction Status: Edited Transaction...First Printing...Unverified.
Processed: 31-OCT-89 17:09:51 Status: E Batch: (In CUR DB)

nsaction #: 10230841 (38) Metals - ICP Scan
j Code : DOE-113A SHELTON STORMWATER SEDIMENTS PE # : 4C6E2

ple Number:			89228080	89228081	89228082	89228083	89228084
ple Description:			FRRA Sediment	SHCR Sediment	DEMI Sediment	FITU Sediment	SEGR Sediment
rix:							
ts:							
lds:							
Code:							
e Extract:							
e Analyzd:			891003	891003	891003	891003	891003
Aluminum	Al-Sedmt	mg/kg-dr					
Antimony	Sb-Sedmt	mg/kg-dr	5.0U	5.0U	9.1	5.0U	5.0U
Arsenic	As-Sedmt	mg/kg-dr	14.3	13.0	10.3	17.7	17.2
Barium	Ba-Sedmt	mg/kg-dr					
Berylium	Be-Sedmt	mg/kg-dr					
Boron	B -Sedmt	mg/kg-dr					
Cadmium	Cd-Sedmt	mg/kg-dr	0.5U	0.5U	0.5U	0.5U	1.2
Calcium	Ca-Sedmt	mg/kg-dr					
Chromium	Cr-Sedmt	mg/kg-dr	104	45.9	51.9	66.8	185
HexChrom	Cr6Sedmt	mg/kg-dr					
Cobalt	Co-Sedmt	mg/kg-dr					
Copper	Cu-Sedmt	mg/kg-dr	86.1	36.7	35.9	38.0	67.2
Iron	Fe-Sedmt	mg/kg-dr	24100	23100	20300	22600	18100
Lead	Pb-Sedmt	mg/kg-dr	354D	59.9D	31.8D	70.4D	1010J
Mgnsium	Mg-Sedmt	mg/kg-dr					
Mangnese	Mn-Sedmt	mg/kg-dr	319D	473D	502D	398D	288D
Molybdnm	Mo-Sedmt	mg/kg-dr					
Nickel	Ni-Sedmt	mg/kg-dr	42.3	25.9	39.2	40.6	31.0
Potssium	K -Sedmt	mg/kg-dr					
Selenium	Se-Sedmt	mg/kg-dr					
Silver	Ag-Sedmt	mg/kg-dr	0.76	0.38	0.26	0.41	0.82
Sodium	Na-Sedmt	mg/kg-dr					
Strntium	Sr-Sedmt	mg/kg-dr					
Thallium	Tl-Sedmt	mg/kg-dr					
Tin	Sn-Sedmt	mg/kg-dr					
Titanium	Ti-Sedmt	mg/kg-dr					
Tungsten	W -Sedmt	mg/kg-dr					
Vanadium	V -Sedmt	mg/kg-dr					
Zinc	Zn-Sedmt	mg/kg-dr	489	83.1	71.0	66.5	434

*** Lab Analysis Report ***

ansaction #: 10230841 (38) Metals - ICP Scan
oj Code : DOE-113A SHELTON STORMWATER SEDIMENTS PE # : 4C6E2

ank ID:							PB 39.25	PB 36.26
ımple Number:			89228085	89228086	89228087	89228080	89228080
ımple Description:			ANHI	DUPI	REPI	FRRA	FRRA
ıtrix:			Sediment	Sediment	Sediment	Sediment	Sediment
ıits:							
Slds:							
٩ Code:							LBK1	LBK2
ıte Extract:								
ıte Analyzd:			891003	891003	891003	891003	891003
1 Aluminum	Al-Sedmt	mg/kg-dr					
2 Antimony	Sb-Sedmt	mg/kg-dr	5.0U	7.4	14	5.0U	5.0U
3 Arsenic	As-Sedmt	mg/kg-dr	12.3	10.6	30.6	5.0U	5.0U
4 Barium	Ba-Sedmt	mg/kg-dr					
5 Berylium	Be-Sedmt	mg/kg-dr					
6 Boron	B -Sedmt	mg/kg-dr					
7 Cadmium	Cd-Sedmt	mg/kg-dr	0.5U	0.5U	1.3	0.5U	0.5U
8 Calcium	Ca-Sedmt	mg/kg-dr					
9 Chromium	Cr-Sedmt	mg/kg-dr	53.7	270	284	0.5U	0.5U
0 HexChrom	Cr6Sedmt	mg/kg-dr					
1 Cobalt	Co-Sedmt	mg/kg-dr					
2 Copper	Cu-Sedmt	mg/kg-dr	47.6	71.0	69.2	0.4U	0.4U
.3 Iron	Fe-Sedmt	mg/kg-dr	24500	18500	21000	0.5U	0.5U
.4 Lead	Pb-Sedmt	mg/kg-dr	52.5D	1280J	1350J	2.5U	3.0
.5 Mgnsium	Mg-Sedmt	mg/kg-dr					
.6 Mangnese	Mn-Sedmt	mg/kg-dr	426D	304D	350D	0.1U	0.1U
17 Molybdnm	Mo-Sedmt	mg/kg-dr					
18 Nickel	Ni-Sedmt	mg/kg-dr	37.7	35.5	45.5	2.0U	2.0U
19 Potssium	K -Sedmt	mg/kg-dr					
20 Selenium	Se-Sedmt	mg/kg-dr					
21 Silver	Ag-Sedmt	mg/kg-dr	0.42	0.80	1.1	0.2U	0.2U
22 Sodium	Na-Sedmt	mg/kg-dr					
23 Strntium	Sr-Sedmt	mg/kg-dr					
24 Thallium	Tl-Sedmt	mg/kg-dr					
25 Tin	Sn-Sedmt	mg/kg-dr					
26 Titanium	Ti-Sedmt	mg/kg-dr					
27 Tungsten	W -Sedmt	mg/kg-dr					
28 Vanadium	V -Sedmt	mg/kg-dr					
29 Zinc	Zn-Sedmt	mg/kg-dr	67.9	447	473	3.6	3.9

nsaction #: 10230841 (38) Metals - ICP Scan
oj Code : DOE-113A SHELTON STORMWATER SEDIMENTS PE # : 4C6E2

nple Number:			89228080	89228080
nple Description:			FRRA	FRRA
trix:			Sediment	Sediment
its:			% Recov	% Recov
Slds:				
Code:			LMX1	LMX2
te Extract:				
te Analyzd:			891003	891003
Aluminum	Al-Sedmt	mg/kg-dr		
Antimony	Sb-Sedmt	mg/kg-dr	66	84
Arsenic	As-Sedmt	mg/kg-dr	91	95
Barium	Ba-Sedmt	mg/kg-dr		
Berylium	Be-Sedmt	mg/kg-dr		
Boron	B -Sedmt	mg/kg-dr		
Cadmium	Cd-Sedmt	mg/kg-dr	112	75
Calcium	Ca-Sedmt	mg/kg-dr		
Chromium	Cr-Sedmt	mg/kg-dr	68	140
HexChrom	Cr6Sedmt	mg/kg-dr		
Cobalt	Co-Sedmt	mg/kg-dr		
Copper	Cu-Sedmt	mg/kg-dr	186	96
Iron	Fe-Sedmt	mg/kg-dr		
Lead	Pb-Sedmt	mg/kg-dr		
Mgnsium	Mg-Sedmt	mg/kg-dr		
Mangnese	Mn-Sedmt	mg/kg-dr		
Molybdnm	Mo-Sedmt	mg/kg-dr		
Nickel	Ni-Sedmt	mg/kg-dr	83	100
Potssium	K -Sedmt	mg/kg-dr		
Selenium	Se-Sedmt	mg/kg-dr		
Silver	Ag-Sedmt	mg/kg-dr		
Sodium	Na-Sedmt	mg/kg-dr		
Strntium	Sr-Sedmt	mg/kg-dr		
Thallium	Tl-Sedmt	mg/kg-dr		
Tin	Sn-Sedmt	mg/kg-dr		
Titanium	Ti-Sedmt	mg/kg-dr		
Tungsten	W -Sedmt	mg/kg-dr		
Vanadium	V -Sedmt	mg/kg-dr		
Zinc	Zn-Sedmt	mg/kg-dr		

*** Lab Analysis Report ***

ansaction #: 10230836 Seq #: 01 (30) Metals - Specified
(WE) Ecology, Manchester Lab
oject: (DOE-113A) SHELTON STORMWATER SEDIMENTS 4C6E2 BZD
ram: (71920 S) Mercury Hg-Sedmt mg/kg-wt

QA Code: ( ) Normal Data
Instrument: (ACF403) AA Cold Flame (PE403)
Method: (EP1-245.5) Mercury, Cold Vapor, Manual, Sediments
Chemist: (JMS) Snarski, Joanne EPA Hours Worked:
Lab Prep: ( ) Unspecifed
Matrix: (40) Sediment Date Preprd:
Units: (24) mg/kg-wt Date Anlyzd: 890608

ne	Sample #	Result	Sample Location/Description	#Days to Anl
1	89 228080	0.0710	FRRA	890601 (7)
2	89 228081	0.032	SHCR	890601 (7)
3	89 228082	0.0083	DEMI	890601 (7)
4	89 228083	0.006U	FITU	890601 (7)
5	89 228084	0.185	SEGR	890601 (7)
6	89 228085	0.019	ANHI	890601 (7)
7	89 228086	0.193	DUPI	890601 (7)
8	89 228087	0.152	REPI	890601 (7)

Record Type: TRNIN2 Date Verified: 11-89 By:
Transaction Status: Edited Transaction...First Printing...Unverified.
Processed: 31-OCT-89 17:09:51 Status: E Batch: (In CUR DB)

*** Lab Analysis Report ***

ansaction #: 10230836 Seq #: 02 (30) Metals - Specified
(WE) Ecology, Manchester Lab
oject: (DOE-113A) SHELTON STORMWATER SEDIMENTS 4C6E2 BZD
ram: (71920 S) Mercury Hg-Sedmt % Recov

QA Code: (LMX1) Lab Mtrx Spike #1 (% Rec
Instrument: (ACF403) AA Cold Flame (PE403)
Method: (EP1-245.5) Mercury, Cold Vapor, Manual, Sediments
Chemist: (JMS) Snarski, Joanne EPA Hours Worked:
Lab Prep: ( ) Unspecifed
Matrix: (40) Sediment Date Preprd:
Units: (94) % Recov Date Anlyzd: 890608

ne	Sample #	Result	Sample Location/Description	#Days to Anl
1	89 228080	97	FRRA	890601 (7)

Record Type: TRNIN2 Date Verified: 11-1-89 By:
ransaction Status: Edited Transaction...First Printing...Unverified.
rocessed: 31-OCT-89 17:09:51 Status: E Batch: (In CUR DB)

*** Lab Analysis Report ***

Transaction #: 10230836 Seq #: 03 (30) Metals - Specified
(WE) Ecology, Manchester Lab
Project: (DOE-113A) SHELTON STORMWATER SEDIMENTS 4C6E2 BZD
Param: (71920 S) Mercury Hg-Sedmt % Recov

QA Code: (LMX2) Lab Mtrx Spike #2 (% Rec
Instrument: (ACF403) AA Cold Flame (PE403)
Method: (EP1-245.5) Mercury, Cold Vapor, Manual, Sediments
Chemist: (JMS) Snarski, Joanne EPA Hours Worked:
Lab Prep: ( ) Unspecifed
Matrix: (40) Sediment Date Preprd:
Units: (94) % Recov Date Anlyzd: 890608

Line	Sample #	Result	Sample Location/Description	#Days to Anl
1	89 228080	99	FRRA	890601 (7)

Record Type: TRNIN2 Date Verified: 11-1-89 By:
Transaction Status: Edited Transaction...First Printing...Unverified.
Processed: 31-OCT-89 17:09:51 Status: E Batch: (In CUR DB)

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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 3094MB
Matrix: Solls/Sediments

Sample No: Method Blank

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: _____
Report prepared 07/03/89 MAC:B

Sample Wt: 30.0 gm (Equivalent Dry Weight)
Date extracted: 06/12/89
Percent Moisture: NA
Analyzed (FINN 2): 06/19/89
pH: NA
GPC Clean-up: YES (1 of 2)
Conc/Dilution: 1 to 1

CAS Number		µg/Kg
108-95-2	Phenol	130U
111-44-4	bis(2-Chloroethyl)Ether	67U
95-57-8	2-Chlorophenol	67U
541-73-1	1,3-Dichlorobenzene	67U
106-46-7	1,4-Dichlorobenzene	67U
100-51-6	Benzyl Alcohol	330U
95-50-1	1,2-Dichlorobenzene	67U
95-48-7	2-Methylphenol	67U
39638-32-9	bis(2-chloroisopropyl)Ether	67U
106-44-5	4-Methylphenol	67U
621-64-7	N-Nitroso-Di-n-Propylamine	67U
67-72-1	Hexachloroethane	130U
98-95-3	Nitrobenzene	67U
78-59-1	Isophorone	67U
88-75-5	2-Nitrophenol	330U
105-67-9	2,4-Dimethylphenol	130U
65-85-0	Benzoic Acid	670U
111-91-1	bis(2-Chloroethoxy)Methane	67U
120-83-2	2,4-Dichlorophenol	200U
120-82-1	1,2,4-Trichlorobenzene	67U
91-20-3	Naphthalene	67U
106-47-8	4-Chloroaniline	200U
87-68-3	Hexachlorobutadiene	130U
59-50-7	4-Chloro-3-Methylphenol	130U
91-57-6	2-Methylnaphthalene	67U
77-47-4	Hexachlorocyclopentadiene	330U
88-06-2	2,4,6-Trichlorophenol	330U
95-95-4	2,4,5-Trichlorophenol	330U
91-58-7	2-Chloronaphthalene	67U
88-74-4	2-Nitroaniline	330U
131-11-3	Dimethyl Phthalate	67U
208-96-8	Acenaphthylene	67U
99-09-2	3-Nitroaniline	330U

CAS Number		µg/Kg
83-32-9	Acenaphthene	67U
51-28-5	2,4-Dinitrophenol	670U
100-02-7	4-Nitrophenol	330U
132-64-9	Dibenzofuran	67U
121-14-2	2,4-Dinitrotoluene	330U
606-20-2	2,6-Dinitrotoluene	330U
84-66-2	Diethylphthalate	67U
7005-72-3	4-Chlorophenyl-phenylether	67U
86-73-7	Fluorene	67U
100-01-6	4-Nitroaniline	330U
534-52-1	4,6-Dinitro-2-Methylphenol	670U
86-30-6	N-Nitrosodiphenylamine(1)	67U
101-55-3	4-Bromophenyl-phenylether	67U
118-74-1	Hexachlorobenzene	67U
87-86-5	Pentachlorophenol	330U
85-01-8	Phenanthrene	67U
120-12-7	Anthracene	67U
84-74-2	Di-n-Butylphthalate	67U
206-44-0	Fluoranthene	67U
129-00-0	Pyrene	67U
85-68-7	Butylbenzylphthalate	67U
91-94-1	3,3'-Dichlorobenzidine	330U
56-55-3	Benzo(a)Anthracene	67U
117-81-7	bis(2-Ethylhexyl)Phthalate	67U
218-01-9	Chrysene	67U
117-84-0	Di-n-Octyl Phthalate	67U
205-99-2	Benzo(b)Fluoranthene	67U
207-08-9	Benzo(k)Fluoranthene	67U
50-32-8	Benzo(a)Pyrene	67U
193-39-5	Indeno(1,2,3-cd)Pyrene	67U
53-70-3	Dibenz(a,h)Anthracene	67U
191-24-2	Benzo(ghi)Perylene	67U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	33.5%
2-Fluorobiphenyl	57.9%
d14-p-Terphenyl	66.3%

***Acid surrogate recoveries**

d5-Phenol	50.5%
2-Fluorophenol	65.6%
2,4,6-Tribromophenol	53.2%

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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 3094ADL
Matrix: Soils/Sediments

Sample No: 228080

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: _____
Report prepared 07/03/89 MAC:B

Sample Wt: 17.1 gm (Dry Weight)
Date extracted: 06/12/89
Percent Moisture: 40.6%
Analyzed (FINN 2): 06/30/89
pH: 7.3
GPC Clean-up: YES (1 of 2)
Conc/Dilution: 1 to 5

CAS Number		µg/Kg
108-95-2	Phenol	1200U
111-44-4	bis(2-Chloroethyl)Ether	580U
95-57-8	2-Chlorophenol	580U
541-73-1	1,3-Dichlorobenzene	580U
106-46-7	1,4-Dichlorobenzene	580U
100-51-6	Benzyl Alcohol	2900U
95-50-1	1,2-Dichlorobenzene	580U
95-48-7	2-Methylphenol	580U
39638-32-9	bis(2-chloroisopropyl)Ether	580U
106-44-5	4-Methylphenol	580U
621-64-7	N-Nitroso-Di-n-Propylamine	580U
67-72-1	Hexachloroethane	1200U
98-95-3	Nitrobenzene	580U
78-59-1	Isophorone	580U
88-75-5	2-Nitrophenol	2900U
105-67-9	2,4-Dimethylphenol	1200U
65-85-0	Benzoic Acid	5800U
111-91-1	bis(2-Chloroethoxy)Methane	580U
120-83-2	2,4-Dichlorophenol	1800U
120-82-1	1,2,4-Trichlorobenzene	580U
91-20-3	Naphthalene	580U
106-47-8	4-Chloroaniline	1800U
87-68-3	Hexachlorobutadiene	1200U
59-50-7	4-Chloro-3-Methylphenol	1200U
91-57-6	2-Methylnaphthalene	310 M
77-47-4	Hexachlorocyclopentadiene	2900U
88-06-2	2,4,6-Trichlorophenol	2900U
95-95-4	2,4,5-Trichlorophenol	2900U
91-58-7	2-Chloronaphthalene	580U
88-74-4	2-Nitroaniline	2900U
131-11-3	Dimethyl Phthalate	1200 M
208-96-8	Acenaphthylene	580U
99-09-2	3-Nitroaniline	2900U

CAS Number		µg/Kg
83-32-9	Acenaphthene	580U
51-28-5	2,4-Dinitrophenol	5800U
100-02-7	4-Nitrophenol	2900U
132-64-9	Dibenzofuran	580U
121-14-2	2,4-Dinitrotoluene	2900U
606-20-2	2,6-Dinitrotoluene	2900U
84-66-2	Diethylphthalate	580U
7005-72-3	4-Chlorophenyl-phenylether	580U
86-73-7	Fluorene	190 M
100-01-6	4-Nitroaniline	2900U
534-52-1	4,6-Dinitro-2-Methylphenol	5800U
86-30-6	N-Nitrosodiphenylamine(1)	580U
101-55-3	4-Bromophenyl-phenylether	580U
118-74-1	Hexachlorobenzene	580U
87-86-5	Pentachlorophenol	2900U
85-01-8	Phenanthrene	2000
120-12-7	Anthracene	330 M
84-74-2	Di-n-Butylphthalate	580U
206-44-0	Fluoranthene	1800
129-00-0	Pyrene	2800
85-68-7	Butylbenzylphthalate	2500
91-94-1	3,3'-Dichlorobenzidine	2900U
56-55-3	Benzo(a)Anthracene	830
117-81-7	bis(2-Ethylhexyl)Phthalate	6600
218-01-9	Chrysene	1300
117-84-0	Di-n-Octyl Phthalate	580U
205-99-2 207-08-9	Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	900 M
50-32-8	Benzo(a)Pyrene	300 M
193-39-5	Indeno(1,2,3-cd)Pyrene	580U
53-70-3	Dibenz(a,h)Anthracene	580U
191-24-2	Benzo(ghi)Perylene	610 M

(1) Cannot be separated from diphenylamine

*Base/neutral surrogate recoveries

d5-Nitrobenzene	53.2%
2-Fluorobiphenyl	79.3%
d14-p-Terphenyl	91.5%

*Acid surrogate recoveries

d5-Phenol	56.5%
2-Fluorophenol	51.7%
2,4,6-Tribromophenol	56.7%

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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 30948
Matrix: Soils/Sediments

Sample No: 228081

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: _____

Report prepared 07/03/89 MAC:B

Sample Wt: 28.3 gm (Dry Weight)
Percent Moisture: 25.2%
pH: 7.3
Conc/Dilution: 1 to 1

Date extracted: 06/12/89
Analyzed (FINN 2): 06/19/89
GPC Clean-up: YES (1 of 2)

CAS Number		µg/Kg
108-95-2	Phenol	140U
111-44-4	bis(2-Chloroethyl)Ether	71U
95-57-8	2-Chlorophenol	71U
541-73-1	1,3-Dichlorobenzene	71U
106-46-7	1,4-Dichlorobenzene	71U
100-51-6	Benzyl Alcohol	350U
95-50-1	1,2-Dichlorobenzene	71U
95-48-7	2-Methylphenol	71U
39638-32-9	bis(2-chloroisopropyl)Ether	71U
106-44-5	4-Methylphenol	71U
621-64-7	N-Nitroso-Di-n-Propylamine	71U
67-72-1	Hexachloroethane	140U
98-95-3	Nitrobenzene	71U
78-59-1	Isophorone	71U
88-75-5	2-Nitrophenol	350U
105-67-9	2,4-Dimethylphenol	140U
65-85-0	Benzoic Acid	710U
111-91-1	bis(2-Chloroethoxy)Methane	71U
120-83-2	2,4-Dichlorophenol	210U
120-82-1	1,2,4-Trichlorobenzene	71U
91-20-3	Naphthalene	71U
106-47-8	4-Chloroaniline	210U
87-68-3	Hexachlorobutadiene	140U
59-50-7	4-Chloro-3-Methylphenol	140U
91-57-6	2-Methylnaphthalene	71U
77-47-4	Hexachlorocyclopentadiene	350U
88-06-2	2,4,6-Trichlorophenol	350U
95-95-4	2,4,5-Trichlorophenol	350U
91-58-7	2-Chloronaphthalene	71U
88-74-4	2-Nitroaniline	350U
131-11-3	Dimethyl Phthalate	71U
208-96-8	Acenaphthylene	71U
99-09-2	3-Nitroaniline	350U

CAS Number		µg/Kg
83-32-9	Acenaphthene	71U
51-28-5	2,4-Dinitrophenol	710U
100-02-7	4-Nitrophenol	350U
132-64-9	Dibenzofuran	71U
121-14-2	2,4-Dinitrotoluene	350U
606-20-2	2,6-Dinitrotoluene	350U
84-66-2	Diethylphthalate	71U
7005-72-3	4-Chlorophenyl-phenylether	71U
86-73-7	Fluorene	71U
100-01-6	4-Nitroaniline	350U
534-52-1	4,6-Dinitro-2-Methylphenol	710U
86-30-6	N-Nitrosodiphenylamine(1)	71U
101-55-3	4-Bromophenyl-phenylether	71U
118-74-1	Hexachlorobenzene	71U
87-86-5	Pentachlorophenol	350U
85-01-8	Phenanthrene	81 M
120-12-7	Anthracene	71U
84-74-2	Di-n-Butylphthalate	230
206-44-0	Fluoranthene	96
129-00-0	Pyrene	71
85-68-7	Butylbenzylphthalate	71U
91-94-1	3,3'-Dichlorobenzidine	350U
56-55-3	Benzo(a)Anthracene	71U
117-81-7	bis(2-Ethylhexyl)Phthalate	150
218-01-9	Chrysene	59 M
117-84-0	Di-n-Octyl Phthalate	71U
205-99-2 / 207-08-9	Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	68 M
50-32-8	Benzo(a)Pyrene	71U
193-39-5	Indeno(1,2,3-cd)Pyrene	71U
53-70-3	Dibenz(a,h)Anthracene	71U
191-24-2	Benzo(ghi)Perylene	71U

(1) Cannot be separated from diphenylamine

*Base/neutral surrogate recoveries

d5-Nitrobenzene	62.5%
2-Fluorobiphenyl	76.1%
d14-p-Terphenyl	80.0%

*Acid surrogate recoveries

d5-Phenol	62.1%
2-Fluorophenol	83.2%
2,4,6-Tribromophenol	85.7%

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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 3094C
Matrix: Soils/Sediments

Sample No: 228082

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: Brian W. Ebe
Report prepared 07/03/89 MAC:B

Sample Wt: 31.0 gm (Dry Weight)
Date extracted: 06/12/89
Percent Moisture: 14.7%
Analyzed (FINN 2): 06/19/89
pH: 7.6
GPC Clean-up: YES (1 of 2)
Conc/Dilution: 1 to 1

CAS Number		µg/Kg
108-95-2	Phenol	130U
111-44-4	bis(2-Chloroethyl)Ether	64U
95-57-8	2-Chlorophenol	64U
541-73-1	1,3-Dichlorobenzene	64U
106-46-7	1,4-Dichlorobenzene	64U
100-51-6	Benzyl Alcohol	320U
95-50-1	1,2-Dichlorobenzene	64U
95-48-7	2-Methylphenol	64U
39638-32-9	bis(2-chloroisopropyl)Ether	64U
106-44-5	4-Methylphenol	64U
621-64-7	N-Nitroso-Di-n-Propylamine	64U
67-72-1	Hexachloroethane	130U
98-95-3	Nitrobenzene	64U
78-59-1	Isophorone	64U
88-75-5	2-Nitrophenol	320U
105-67-9	2,4-Dimethylphenol	130U
65-85-0	Benzoic Acid	640U
111-91-1	bis(2-Chloroethoxy)Methane	64U
120-83-2	2,4-Dichlorophenol	190U
120-82-1	1,2,4-Trichlorobenzene	64U
91-20-3	Naphthalene	64U
106-47-8	4-Chloroaniline	190U
87-68-3	Hexachlorobutadiene	130U
59-50-7	4-Chloro-3-Methylphenol	130U
91-57-6	2-Methylnaphthalene	64U
77-47-4	Hexachlorocyclopentadiene	320U
88-06-2	2,4,6-Trichlorophenol	320U
95-95-4	2,4,5-Trichlorophenol	320U
91-58-7	2-Chloronaphthalene	64U
88-74-4	2-Nitroaniline	320U
131-11-3	Dimethyl Phthalate	64U
208-96-8	Acenaphthylene	64U
99-09-2	3-Nitroaniline	320U

CAS Number		µg/Kg
83-32-9	Acenaphthene	64U
51-28-5	2,4-Dinitrophenol	640U
100-02-7	4-Nitrophenol	320U
132-64-9	Dibenzofuran	64U
121-14-2	2,4-Dinitrotoluene	320U
606-20-2	2,6-Dinitrotoluene	320U
84-66-2	Diethylphthalate	64U
7005-72-3	4-Chlorophenyl-phenylether	64U
86-73-7	Fluorene	64U
100-01-6	4-Nitroaniline	320U
534-52-1	4,6-Dinitro-2-Methylphenol	640U
86-30-6	N-Nitrosodiphenylamine(1)	64U
101-55-3	4-Bromophenyl-phenylether	64U
118-74-1	Hexachlorobenzene	64U
87-86-5	Pentachlorophenol	320U
85-01-8	Phenanthrene	64U
120-12-7	Anthracene	64U
84-74-2	Di-n-Butylphthalate	64U
206-44-0	Fluoranthene	64U
129-00-0	Pyrene	64U
85-68-7	Butylbenzylphthalate	64U
91-94-1	3,3'-Dichlorobenzidine	320U
56-55-3	Benzo(a)Anthracene	64U
117-81-7	bis(2-Ethylhexyl)Phthalate	87
218-01-9	Chrysene	120
117-84-0	Di-n-Octyl Phthalate	64U
205-99-2	Benzo(b)Fluoranthene	64U
207-08-9	Benzo(k)Fluoranthene	64U
50-32-8	Benzo(a)Pyrene	64U
193-39-5	Indeno(1,2,3-cd)Pyrene	64U
53-70-3	Dibenz(a,h)Anthracene	64U
191-24-2	Benzo(ghi)Perylene	64U

(1) Cannot be separated from diphenylamine

*Base/neutral surrogate recoveries

d5-Nitrobenzene	74.6%
2-Fluorobiphenyl	81.1%
d14-p-Terphenyl	65.9%

*Acid surrogate recoveries

d5-Phenol	69.5%
2-Fluorophenol	90.7%
2,4,6-Tribromophenol	97.4%

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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 3094D
Matrix: Soils/Sediments

Sample No: 228083

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: _____
Report prepared 07/03/89 MAC:B

Sample Wt: 33.0 gm (Dry Weight)
Date extracted: 06/12/89
Percent Moisture: 14.6%
Analyzed (FINN 2): 06/19/89
pH: 7.5
GPC Clean-up: YES (1 of 2)
Conc/Dilution: 1 to 1

CAS Number		µg/Kg
108-95-2	Phenol	120U
111-44-4	bis(2-Chloroethyl)Ether	61U
95-57-8	2-Chlorophenol	61U
541-73-1	1,3-Dichlorobenzene	61U
106-46-7	1,4-Dichlorobenzene	61U
100-51-6	Benzyl Alcohol	300U
95-50-1	1,2-Dichlorobenzene	61U
95-48-7	2-Methylphenol	61U
39638-32-9	bis(2-chloroisopropyl)Ether	61U
106-44-5	4-Methylphenol	61U
621-64-7	N-Nitroso-Di-n-Propylamine	61U
67-72-1	Hexachloroethane	120U
98-95-3	Nitrobenzene	61U
78-59-1	Isophorone	61U
88-75-5	2-Nitrophenol	300U
105-67-9	2,4-Dimethylphenol	120U
65-85-0	Benzoic Acid	610U
111-91-1	bis(2-Chloroethoxy)Methane	61U
120-83-2	2,4-Dichlorophenol	180U
120-82-1	1,2,4-Trichlorobenzene	61U
91-20-3	Naphthalene	61U
106-47-8	4-Chloroaniline	180U
87-68-3	Hexachlorobutadiene	120U
59-50-7	4-Chloro-3-Methylphenol	120U
91-57-6	2-Methylnaphthalene	61U
77-47-4	Hexachlorocyclopentadiene	300U
88-06-2	2,4,6-Trichlorophenol	300U
95-95-4	2,4,5-Trichlorophenol	300U
91-58-7	2-Chloronaphthalene	61U
88-74-4	2-Nitroaniline	300U
131-11-3	Dimethyl Phthalate	61U
208-96-8	Acenaphthylene	61U
99-09-2	3-Nitroaniline	300U

CAS Number		µg/Kg
83-32-9	Acenaphthene	61U
51-28-5	2,4-Dinitrophenol	610U
100-02-7	4-Nitrophenol	300U
132-64-9	Dibenzofuran	61U
121-14-2	2,4-Dinitrotoluene	300U
606-20-2	2,6-Dinitrotoluene	300U
84-66-2	Diethylphthalate	61U
7005-72-3	4-Chlorophenyl-phenylether	61U
86-73-7	Fluorene	61U
100-01-6	4-Nitroaniline	300U
534-52-1	4,6-Dinitro-2-Methylphenol	610U
86-30-6	N-Nitrosodiphenylamine(1)	61U
101-55-3	4-Bromophenyl-phenylether	61U
118-74-1	Hexachlorobenzene	61U
87-86-5	Pentachlorophenol	300U
85-01-8	Phenanthrene	39 M
120-12-7	Anthracene	61U
84-74-2	Di-n-Butylphthalate	92
206-44-0	Fluoranthene	34 J
129-00-0	Pyrene	30 J
85-68-7	Butylbenzylphthalate	71
91-94-1	3,3'-Dichlorobenzidine	300U
56-55-3	Benzo(a)Anthracene	61U
117-81-7	bis(2-Ethylhexyl)Phthalate	480
218-01-9	Chrysene	78
117-84-0	Di-n-Octyl Phthalate	61U
205-99-2	Benzo(b)Fluoranthene	61U
207-08-9	Benzo(k)Fluoranthene	61U
50-32-8	Benzo(a)Pyrene	61U
193-39-5	Indeno(1,2,3-cd)Pyrene	61U
53-70-3	Dibenz(a,h)Anthracene	61U
191-24-2	Benzo(ghi)Perylene	61U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	60.6%
2-Fluorobiphenyl	87.2%
d14-p-Terphenyl	71.7%

***Acid surrogate recoveries**

d5-Phenol	65.5%
2-Fluorophenol	79.7%
2,4,6-Tribromophenol	91.2%

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ORGANICS ANALYSIS DATA SHEET

Semivolatiles by Methods 625/8270

Lab ID: 3094E

Matrix: Soils/Sediments

Date Release Authorized: [signature]

Report prepared 07/03/89 MAC:B

Sample No: 228084

QC Report No: 3094 - WDOE

Project No: Shelton Stormwater

Sampled: 06/01/89

VTSR: 06/06/89

Date extracted: 06/12/89

Analyzed (FINN 2): 06/19/89

GPC Clean-up: YES (1 of 2)

Sample Wt: 17.8 gm (Dry Weight)

Percent Moisture: 30.3%

pH: 6.9

Conc/Dilution: 1 to 1

CAS Number		µg/Kg
108-95-2	Phenol	220U
111-44-4	bis(2-Chloroethyl)Ether	110U
95-57-8	2-Chlorophenol	110U
541-73-1	1,3-Dichlorobenzene	110U
106-46-7	1,4-Dichlorobenzene	110U
100-51-6	Benzyl Alcohol	560U
95-50-1	1,2-Dichlorobenzene	110U
95-48-7	2-Methylphenol	110U
39638-32-9	bis(2-chloroisopropyl)Ether	110U
106-44-5	**4-Methylphenol**	**1000 M**
621-64-7	N-Nitroso-Di-n-Propylamine	110U
67-72-1	Hexachloroethane	220U
98-95-3	Nitrobenzene	110U
78-59-1	Isophorone	110U
88-75-5	2-Nitrophenol	560U
105-67-9	2,4-Dimethylphenol	220U
65-85-0	Benzoic Acid	1100U
111-91-1	bis(2-Chloroethoxy)Methane	110U
120-83-2	2,4-Dichlorophenol	340U
120-82-1	1,2,4-Trichlorobenzene	110U
91-20-3	**Naphthalene**	**1300**
106-47-8	4-Chloroaniline	340U
87-68-3	Hexachlorobutadiene	220U
59-50-7	4-Chloro-3-Methylphenol	220U
91-57-6	**2-Methylnaphthalene**	**1000**
77-47-4	Hexachlorocyclopentadiene	560U
88-06-2	2,4,6-Trichlorophenol	560U
95-95-4	2,4,5-Trichlorophenol	560U
91-58-7	2-Chloronaphthalene	110U
88-74-4	2-Nitroaniline	560U
131-11-3	Dimethyl Phthalate	110U
208-96-8	**Acenaphthylene**	**460 M**
99-09-2	3-Nitroaniline	560U

CAS Number		µg/Kg
83-32-9	**Acenaphthene**	**950**
51-28-5	2,4-Dinitrophenol	1100U
100-02-7	4-Nitrophenol	560U
132-64-9	**Dibenzofuran**	**430**
121-14-2	2,4-Dinitrotoluene	560U
606-20-2	2,6-Dinitrotoluene	560U
84-66-2	Diethylphthalate	110U
7005-72-3	4-Chlorophenyl-phenylether	110U
86-73-7	**Fluorene**	**1600**
100-01-6	4-Nitroaniline	560U
534-52-1	4,6-Dinitro-2-Methylphenol	1100U
86-30-6	N-Nitrosodiphenylamine(1)	110U
101-55-3	4-Bromophenyl-phenylether	110U
118-74-1	Hexachlorobenzene	110U
87-86-5	Pentachlorophenol	560U
85-01-8	**Phenanthrene**	**9400**
120-12-7	**Anthracene**	**1200**
84-74-2	**Di-n-Butylphthalate**	**190**
206-44-0	**Fluoranthene**	**4400**
129-00-0	**Pyrene**	**5900**
85-68-7	**Butylbenzylphthalate**	**3500**
91-94-1	3,3'-Dichlorobenzidine	560U
56-55-3	**Benzo(a)Anthracene**	**2800 M**
117-81-7	**bis(2-Ethylhexyl)Phthalate**	**2700**
218-01-9	**Chrysene**	**2200 M**
117-84-0	Di-n-Octyl Phthalate	110U
205-99-2 **207-08-9**	**Benzo(b)Fluoranthene &** **Benzo(k)Fluoranthene**	**4600 M**
50-32-8	**Benzo(a)Pyrene**	**3900 M**
193-39-5	Indeno(1,2,3-cd)Pyrene	110U
53-70-3	Dibenz(a,h)Anthracene	110U
191-24-2	Benzo(ghi)Perylene	110U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	48.4%
2-Fluorobiphenyl	56.9%
d14-p-Terphenyl	48.6%

***Acid surrogate recoveries**

d5-Phenol	51.4%
2-Fluorophenol	54.6%
2,4,6-Tribromophenol	43.1%

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A1D-

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 3094F
Matrix: Soils/Sediments

Sample No: 228085

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: Brian Allen
Report prepared 07/03/89 MAC:B

Sample Wt: 31.4 gm (Dry Weight)
Percent Moisture: 18.3%
pH: 7.2
Conc/Dilution: 1 to 1

Date extracted: 06/12/89
Analyzed (FINN 2): 06/19/89
GPC Clean-up: YES (1 of 2)

CAS Number		µg/Kg
108-95-2	Phenol	130U
111-44-4	bis(2-Chloroethyl)Ether	64U
95-57-8	2-Chlorophenol	64U
541-73-1	1,3-Dichlorobenzene	64U
106-46-7	1,4-Dichlorobenzene	64U
100-51-6	Benzyl Alcohol	320U
95-50-1	1,2-Dichlorobenzene	64U
95-48-7	2-Methylphenol	64U
39638-32-9	bis(2-chloroisopropyl)Ether	64U
106-44-5	4-Methylphenol	64U
621-64-7	N-Nitroso-Di-n-Propylamine	64U
67-72-1	Hexachloroethane	130U
98-95-3	Nitrobenzene	64U
78-59-1	Isophorone	64U
88-75-5	2-Nitrophenol	320U
105-67-9	2,4-Dimethylphenol	130U
65-85-0	Benzoic Acid	640U
111-91-1	bis(2-Chloroethoxy)Methane	64U
120-83-2	2,4-Dichlorophenol	190U
120-82-1	1,2,4-Trichlorobenzene	64U
91-20-3	Naphthalene	64U
106-47-8	4-Chloroaniline	190U
87-68-3	Hexachlorobutadiene	130U
59-50-7	4-Chloro-3-Methylphenol	130U
91-57-6	2-Methylnaphthalene	64U
77-47-4	Hexachlorocyclopentadiene	320U
88-06-2	2,4,6-Trichlorophenol	320U
95-95-4	2,4,5-Trichlorophenol	320U
91-58-7	2-Chloronaphthalene	64U
88-74-4	2-Nitroaniline	320U
131-11-3	Dimethyl Phthalate	64U
208-96-8	Acenaphthylene	64U
99-09-2	3-Nitroaniline	320U

CAS Number		µg/Kg
83-32-9	Acenaphthene	64U
51-28-5	2,4-Dinitrophenol	640U
100-02-7	4-Nitrophenol	320U
132-64-9	Dibenzofuran	64U
121-14-2	2,4-Dinitrotoluene	320U
606-20-2	2,6-Dinitrotoluene	320U
84-66-2	Diethylphthalate	64U
7005-72-3	4-Chlorophenyl-phenylether	64U
86-73-7	Fluorene	64U
100-01-6	4-Nitroaniline	320U
534-52-1	4,6-Dinitro-2-Methylphenol	640U
86-30-6	N-Nitrosodiphenylamine(1)	64U
101-55-3	4-Bromophenyl-phenylether	64U
118-74-1	Hexachlorobenzene	64U
87-86-5	Pentachlorophenol	320U
85-01-8	Phenanthrene	64U
120-12-7	Anthracene	64U
84-74-2	Di-n-Butylphthalate	64U
206-44-0	**Fluoranthene**	**64 M**
129-00-0	**Pyrene**	**52 M**
85-68-7	Butylbenzylphthalate	64U
91-94-1	3,3'-Dichlorobenzidine	320U
56-55-3	Benzo(a)Anthracene	64U
117-81-7	**bis(2-Ethylhexyl)Phthalate**	**95**
218-01-9	**Chrysene**	**92 M**
117-84-0	Di-n-Octyl Phthalate	64U
205-99-2 207-08-9	**Benzo(b)Fluoranthene & Benzo(k)Fluoranthene**	**72 M**
50-32-8	Benzo(a)Pyrene	64U
193-39-5	Indeno(1,2,3-cd)Pyrene	64U
53-70-3	Dibenz(a,h)Anthracene	64U
191-24-2	Benzo(ghi)Perylene	64U

(1) Cannot be separated from diphenylamine

***Base/neutral surrogate recoveries**

d5-Nitrobenzene	87.8%
2-Fluorobiphenyl	138%
d14-p-Terphenyl	69.1%

***Acid surrogate recoveries**

d5-Phenol	73.1%
2-Fluorophenol	90.6%
2,4,6-Tribromophenol	151%

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DUP SEG 2

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 3094G
Matrix: Soils/Sediments

Sample No: 228086

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: Brian N. Peterson
Report prepared 07/03/89 MAC:B

Sample Wt: 20.6 gm (Dry Weight)
Percent Moisture: 30.2%
pH: 6.9
Conc/Dilution: 1 to 5

Date extracted: 06/12/89
Analyzed (FINN 2): 06/20/89
GPC Clean-up: YES (1 of 2)

CAS Number		µg/Kg
108-95-2	Phenol	1000U
111-44-4	bis(2-Chloroethyl)Ether	490U
95-57-8	2-Chlorophenol	490U
541-73-1	1,3-Dichlorobenzene	490U
106-46-7	1,4-Dichlorobenzene	490U
100-51-6	Benzyl Alcohol	2400U
95-50-1	1,2-Dichlorobenzene	490U
95-48-7	2-Methylphenol	490U
39638-32-9	bis(2-chloroisopropyl)Ether	490U
106-44-5	4-Methylphenol	490U
621-64-7	N-Nitroso-Di-n-Propylamine	490U
67-72-1	Hexachloroethane	1000U
98-95-3	Nitrobenzene	490U
78-59-1	Isophorone	490U
88-75-5	2-Nitrophenol	2400U
105-67-9	2,4-Dimethylphenol	1000U
65-85-0	Benzoic Acid	4900U
111-91-1	bis(2-Chloroethoxy)Methane	490U
120-83-2	2,4-Dichlorophenol	1500U
120-82-1	1,2,4-Trichlorobenzene	490U
91-20-3	Naphthalene	490U
106-47-8	4-Chloroaniline	1500U
87-68-3	Hexachlorobutadiene	1000U
59-50-7	4-Chloro-3-Methylphenol	1000U
91-57-6	2-Methylnaphthalene	490U
77-47-4	Hexachlorocyclopentadiene	2400U
88-06-2	2,4,6-Trichlorophenol	2400U
95-95-4	2,4,5-Trichlorophenol	2400U
91-58-7	2-Chloronaphthalene	490U
88-74-4	2-Nitroaniline	2400U
131-11-3	Dimethyl Phthalate	490U
208-96-8	Acenaphthylene	490U
99-09-2	3-Nitroaniline	2400U

CAS Number		µg/Kg
83-32-9	Acenaphthene	490U
51-28-5	2,4-Dinitrophenol	4900U
100-02-7	4-Nitrophenol	2400U
132-64-9	Dibenzofuran	490U
121-14-2	2,4-Dinitrotoluene	2400U
606-20-2	2,6-Dinitrotoluene	2400U
84-66-2	Diethylphthalate	490U
7005-72-3	4-Chlorophenyl-phenylether	490U
86-73-7	Fluorene	490U
100-01-6	4-Nitroaniline	2400U
534-52-1	4,6-Dinitro-2-Methylphenol	4900U
86-30-6	N-Nitrosodiphenylamine(1)	490U
101-55-3	4-Bromophenyl-phenylether	490U
118-74-1	Hexachlorobenzene	490U
87-86-5	Pentachlorophenol	2400U
85-01-8	Phenanthrene	4900
120-12-7	Anthracene	490U
84-74-2	Di-n-Butylphthalate	4700
206-44-0	Fluoranthene	3700
129-00-0	Pyrene	3500
85-68-7	Butylbenzylphthalate	8800
91-94-1	3,3'-Dichlorobenzidine	2400U
56-55-3	Benzo(a)Anthracene	1100
117-81-7	bis(2-Ethylhexyl)Phthalate	62000
218-01-9	Chrysene	3700
117-84-0	Di-n-Octyl Phthalate	2800
205-99-2 207-08-9	Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	3200
50-32-8	Benzo(a)Pyrene	2100
193-39-5	Indeno(1,2,3-cd)Pyrene	1800
53-70-3	Dibenz(a,h)Anthracene	820 M
191-24-2	Benzo(ghi)Perylene	1700

(1) Cannot be separated from diphenylamine

*Base/neutral surrogate recoveries

d5-Nitrobenzene	11.5%
2-Fluorobiphenyl	93.7%
d14-p-Terphenyl	90.0%

*Acid surrogate recoveries

d5-Phenol	51.0%
2-Fluorophenol	53.1%
2,4,6-Tribromophenol	50.3%

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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270
Lab ID: 3094HDL
Matrix: Soils/Sediments

Sample No: 228087

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized:
Repot prepared 07/03/89 MAC:B

Sample Wt: 21.1 gm (Dry Weight)
Percent Moisture: 30.9%
pH: 6.8
Conc/Dilution: 1 to 5

Date extracted: 06/12/89
Analyzed (FINN 2): 06/20/89
GPC Clean-up: YES (1 of 2)

CAS Number		µg/Kg
108-95-2	Phenol	950U
111-44-4	bis(2-Chloroethyl)Ether	470U
95-57-8	2-Chlorophenol	470U
541-73-1	1,3-Dichlorobenzene	470U
106-46-7	1,4-Dichlorobenzene	470U
100-51-6	Benzyl Alcohol	2400U
95-50-1	1,2-Dichlorobenzene	470U
95-48-7	2-Methylphenol	470U
39638-32-9	bis(2-chloroisopropyl)Ether	470U
106-44-5	4-Methylphenol	470U
621-64-7	N-Nitroso-Di-n-Propylamine	470U
67-72-1	Hexachloroethane	950U
98-95-3	Nitrobenzene	470U
78-59-1	Isophorone	470U
88-75-5	2-Nitrophenol	2400U
105-67-9	2,4-Dimethylphenol	950U
65-85-0	Benzoic Acid	4700U
111-91-1	bis(2-Chloroethoxy)Methane	470U
120-83-2	2,4-Dichlorophenol	1400U
120-82-1	1,2,4-Trichlorobenzene	470U
91-20-3	Naphthalene	470U
106-47-8	4-Chloroaniline	1400U
87-68-3	Hexachlorobutadiene	950U
59-50-7	4-Chloro-3-Methylphenol	950U
91-57-6	2-Methylnaphthalene	470U
77-47-4	Hexachlorocyclopentadiene	2400U
88-06-2	2,4,6-Trichlorophenol	2400U
95-95-4	2,4,5-Trichlorophenol	2400U
91-58-7	2-Chloronaphthalene	470U
88-74-4	2-Nitroaniline	2400U
131-11-3	Dimethyl Phthalate	470U
208-96-8	Acenaphthylene	470U
99-09-2	3-Nitroaniline	2400U

CAS Number		µg/Kg
83-32-9	Acenaphthene	470U
51-28-5	2,4-Dinitrophenol	4700U
100-02-7	4-Nitrophenol	2400U
132-64-9	Dibenzofuran	470U
121-14-2	2,4-Dinitrotoluene	2400U
606-20-2	2,6-Dinitrotoluene	2400U
84-66-2	Diethylphthalate	470U
7005-72-3	4-Chlorophenyl-phenylether	470U
86-73-7	Fluorene	470U
100-01-6	4-Nitroaniline	2370U
534-52-1	4,6-Dinitro-2-Methylphenol	4700U
86-30-6	N-Nitrosodiphenylamine(1)	470U
101-55-3	4-Bromophenyl-phenylether	470U
118-74-1	Hexachlorobenzene	470U
87-86-5	Pentachlorophenol	2400U
85-01-8	Phenanthrene	3200
120-12-7	Anthracene	620 M
84-74-2	Di-n-Butylphthalate	900
206-44-0	Fluoranthene	3800
129-00-0	Pyrene	3900
85-68-7	Butylbenzylphthalate	2400
91-94-1	3,3'-Dichlorobenzidine	2400U
56-55-3	Benzo(a)Anthracene	1200 M
117-81-7	bis(2-Ethylhexyl)Phthalate	4400
218-01-9	Chrysene	2000
117-84-0	Di-n-Octyl Phthalate	470U
205-99-2 207-08-9	Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	3400 M
50-32-8	Benzo(a)Pyrene	2400 M
193-39-5	Indeno(1,2,3-cd)Pyrene	1000 M
53-70-3	Dibenz(a,h)Anthracene	470U
191-24-2	Benzo(ghi)Perylene	940 M

(1) Cannot be separated from diphenylamine

*Base/neutral surrogate recoveries

d5-Nitrobenzene	29.7%
2-Fluorobiphenyl	77.1%
d14-p-Terphenyl	76.0%

*Acid surrogate recoveries

d5-Phenol	53.9%
2-Fluorophenol	64.6%
2,4,6-Tribromophenol	55.8%

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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 3094HMS
Matrix: Soils/Sediments

Sample No: 228087-MS

QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: _____
Report prepared 07/03/89 MAC:B

Sample Wt: 22.4 gm (Dry Weight)
Percent Moisture: 30.9%
pH: 6.8
Conc/Dilution: 1 to 5

Date extracted: 06/12/89
Analyzed (FINN 2): 06/22/89
GPC Clean-up: YES (1 of 2)

CAS Number		µg/Kg
108-95-2	Phenol	-
111-44-4	bis(2-Chloroethyl)Ether	450U
95-57-8	2-Chlorophenol	-
541-73-1	1,3-Dichlorobenzene	450U
106-46-7	1,4-Dichlorobenzene	-
100-51-6	Benzyl Alcohol	2200U
95-50-1	1,2-Dichlorobenzene	450U
95-48-7	2-Methylphenol	450U
39638-32-9	bis(2-chloroisopropyl)Ether	450U
106-44-5	4-Methylphenol	450U
621-64-7	N-Nitroso-Di-n-Propylamine	-
67-72-1	Hexachloroethane	890U
98-95-3	Nitrobenzene	450U
78-59-1	Isophorone	450U
88-75-5	2-Nitrophenol	2200U
105-67-9	2,4-Dimethylphenol	890U
65-85-0	Benzoic Acid	4500U
111-91-1	bis(2-Chloroethoxy)Methane	450U
120-83-2	2,4-Dichlorophenol	1300U
120-82-1	1,2,4-Trichlorobenzene	-
91-20-3	Naphthalene	450U
106-47-8	4-Chloroaniline	1300U
87-68-3	Hexachlorobutadiene	890U
59-50-7	4-Chloro-3-Methylphenol	-
91-57-6	2-Methylnaphthalene	450U
77-47-4	Hexachlorocyclopentodiene	2200U
88-06-2	2,4,6-Trichlorophenol	2200U
95-95-4	2,4,5-Trichlorophenol	2200U
91-58-7	2-Chloronaphthalene	450U
88-74-4	2-Nitroaniline	2200U
131-11-3	Dimethyl Phthalate	450U
208-96-8	Acenaphthylene	450U
99-09-2	3-Nitroaniline	2200U

CAS Number		µg/Kg
83-32-9	Acenaphthene	-
51-28-5	2,4-Dinitrophenol	4500U
100-02-7	4-Nitrophenol	-
132-64-9	Dibenzofuran	450U
121-14-2	2,4-Dinitrotoluene	-
606-20-2	2,6-Dinitrotoluene	2200U
84-66-2	Diethylphthalate	450U
7005-72-3	4-Chlorophenyl-phenylether	450U
86-73-7	Fluorene	450U
100-01-6	4-Nitroaniline	2230U
534-52-1	4,6-Dinitro-2-Methylphenol	4500U
86-30-6	N-Nitrosodiphenylamine(1)	450U
101-55-3	4-Bromophenyl-phenylether	450U
118-74-1	Hexachlorobenzene	450U
87-86-5	Pentachlorophenol	-
85-01-8	Phenanthrene	2100
120-12-7	Anthracene	450U
84-74-2	Di-n-Butylphthalate	1100
206-44-0	Fluoranthene	2300
129-00-0	Pyrene	-
85-68-7	Butylbenzylphthalate	2500
91-94-1	3,3'-Dichlorobenzidine	2200U
56-55-3	Benzo(a)Anthracene	1100
117-81-7	bis(2-Ethylhexyl)Phthalate	10000
218-01-9	Chrysene	1600
117-84-0	Di-n-Octyl Phthalate	450U
205-99-2 207-08-9	Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	2600
50-32-8	Benzo(a)Pyrene	400J
193-39-5	Indeno(1,2,3-cd)Pyrene	570M
53-70-3	Dibenz(a,h)Anthracene	450U
191-24-2	Benzo(ghi)Perylene	720M

(1) Cannot be separated from diphenylamine

*Base/neutral surrogate recoveries

d5-Nitrobenzene	44.7%
2-Fluorobiphenyl	104%
d14-p-Terphenyl	103%

*Acid surrogate recoveries

d5-Phenol	77.5%
2-Fluorophenol	71.8%
2,4,6-Tribromophenol	78.5%

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ORGANICS ANALYSIS DATA SHEET
Semivolatiles by Methods 625/8270

Lab ID: 3094HMSD
Matrix: Soils/Sediments

Sample No: 228087-MSD
QC Report No: 3094 - WDOE
Project No: Shelton Stormwater
Sampled: 06/01/89
VTSR: 06/06/89

Date Release Authorized: _____

Report prepared 07/03/89 MAC:B

Sample Wt: 23.2 gm (Dry Weight)
Date extracted: 06/12/89
Percent Moisture: 30.9%
Analyzed (FINN 2): 06/22/89
pH: 6.8
GPC Clean-up: YES (1 of 2)
Conc/Dilution: 1 to 5

CAS Number		µg/Kg
108-95-2	Phenol	-
111-44-4	bis(2-Chloroethyl)Ether	430U
95-57-8	2-Chlorophenol	-
541-73-1	1,3-Dichlorobenzene	430U
106-46-7	1,4-Dichlorobenzene	-
100-51-6	Benzyl Alcohol	2200U
95-50-1	1,2-Dichlorobenzene	430U
95-48-7	2-Methylphenol	430U
39638-32-9	bis(2-chloroisopropyl)Ether	430U
106-44-5	4-Methylphenol	430U
621-64-7	N-Nitroso-Di-n-Propylamine	-
67-72-1	Hexachloroethane	860U
98-95-3	Nitrobenzene	430U
78-59-1	Isophorone	430U
88-75-5	2-Nitrophenol	2200U
105-67-9	2,4-Dimethylphenol	860U
65-85-0	Benzoic Acid	4300U
111-91-1	bis(2-Chloroethoxy)Methane	430U
120-83-2	2,4-Dichlorophenol	1300U
120-82-1	1,2,4-Trichlorobenzene	-
91-20-3	Naphthalene	430U
106-47-8	4-Chloroaniline	1300U
87-68-3	Hexachlorobutadiene	860U
59-50-7	4-Chloro-3-Methylphenol	-
91-57-6	2-Methylnaphthalene	430U
77-47-4	Hexachlorocyclopentadiene	2200U
88-06-2	2,4,6-Trichlorophenol	2200U
95-95-4	2,4,5-Trichlorophenol	2200U
91-58-7	2-Chloronaphthalene	430U
88-74-4	2-Nitroaniline	2200U
131-11-3	Dimethyl Phthalate	430U
208-96-8	Acenaphthylene	430U
99-09-2	3-Nitroaniline	2200U

CAS Number		µg/Kg
83-32-9	Acenaphthene	-
51-28-5	2,4-Dinitrophenol	4300U
100-02-7	4-Nitrophenol	-
132-64-9	Dibenzofuran	430U
121-14-2	2,4-Dinitrotoluene	-
606-20-2	2,6-Dinitrotoluene	2200U
84-66-2	Diethylphthalate	430U
7005-72-3	4-Chlorophenyl-phenylether	430U
86-73-7	Fluorene	430U
100-01-6	4-Nitroaniline	2160U
534-52-1	4,6-Dinitro-2-Methylphenol	4300U
86-30-6	N-Nitrosodiphenylamine(1)	430U
101-55-3	4-Bromophenyl-phenylether	430U
118-74-1	Hexachlorobenzene	430U
87-86-5	Pentachlorophenol	-
85-01-8	Phenanthrene	6500
120-12-7	Anthracene	630
84-74-2	Di-n-Butylphthalate	660
206-44-0	Fluoranthene	3900
129-00-0	Pyrene	-
85-68-7	Butylbenzylphthalate	2600
91-94-1	3,3'-Dichlorobenzidine	2200U
56-55-3	Benzo(a)Anthracene	1300
117-81-7	bis(2-Ethylhexyl)Phthalate	5800
218-01-9	Chrysene	2600
117-84-0	Di-n-Octyl Phthalate	430U
205-99-2 / 207-08-9	Benzo(b)Fluoranthene & Benzo(k)Fluoranthene	3400
50-32-8	Benzo(a)Pyrene	1800
193-39-5	Indeno(1,2,3-cd)Pyrene	1400
53-70-3	Dibenz(a,h)Anthracene	480 M
191-24-2	Benzo(ghi)Perylene	990 M

(1) Cannot be separated from diphenylamine

*Base/neutral surrogate recoveries

d5-Nitrobenzene	48.7%
2-Fluorobiphenyl	90.3%
d14-p-Terphenyl	103%

*Acid surrogate recoveries

d5-Phenol	78.8%
2-Fluorophenol	67.9%
2,4,6-Tribromophenol	69.2%

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ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: Method Blank

Lab Sample ID: 3094MB
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton
Storm Water

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/23/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 20.00 g (equiv. dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.5U
319-85-7	Beta-BHC	1.5U
319-86-8	Delta-BHC	3.0U
58-89-9	Gamma-BHC (Lindane)	1.5U
76-44-8	Heptachlor	1.5U
309-00-2	Aldrin	1.5U
1024-57-3	Heptachlor Epoxide	1.5U
959-98-8	Endosulfan I	1.5U
60-57-1	Dieldrin	3.0U
72-55-9	4,4'-DDE	3.0U
72-20-8	Endrin	3.0U
33212-65-9	Endosulfan II	3.0U
72-54-8	4,4'-DDD	4.5U
1031-07-8	Endosulfan Sulfate	6.0U
50-29-3	4,4'-DDT	4.5U
72-43-5	Methoxychlor	6.0U
53494-70-5	Endrin Ketone	4.5U
5103-74-2	Gamma-Chlordane	1.5U
5103-71-9	Alpha-Chlordane	1.5U
8001-35-2	Toxaphene	225U
53469-21-9	Aroclor 1242/1016	30U
12672-29-6	Aroclor 1248	30U
11097-69-1	Aroclor 1254	30U
11096-82-5	Aroclor 1260	30U

Pesticide Surrogate Recovery	
Dibutylchlorendate	92%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228080

Lab Sample ID: 3094A
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton Storm Water

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/23/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 17.11 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.5U
319-85-7	Beta-BHC	1.5U
319-86-8	Delta-BHC	3.0U
58-89-9	Gamma-BHC (Lindane)	1.5U
76-44-8	Heptachlor	1.5U
309-00-2	Aldrin	1.5U
1024-57-3	Heptachlor Epoxide	1.5U
959-98-8	Endosulfan I	1.5U
60-57-1	Dieldrin	3.0U
72-55-9	4,4'-DDE	3.0U
72-20-8	Endrin	3.0U
33212-65-9	Endosulfan II	3.0U
72-54-8	4,4'-DDD	4.5U
1031-07-8	Endosulfan Sulfate	6.0U
50-29-3	4,4'-DDT	4.5U
72-43-5	Methoxychlor	6.0U
53494-70-5	Endrin Ketone	4.5U
5103-74-2	Gamma-Chlordane	15U
5103-71-9	Alpha-Chlordane	1.5U
8001-35-2	Toxaphene	225U
53469-21-9	Aroclor 1242/1016	30U
12672-29-6	Aroclor 1248	30U
11097-69-1	Aroclor 1254	740
11096-82-5	Aroclor 1260	30U

Pesticide Surrogate Recovery	
Dibutylchlorendate	79%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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DEM 1

ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228082

Lab Sample ID: 3094C
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton Storm Water

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/23/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 31.03 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.5U
319-85-7	Beta-BHC	1.5U
319-86-8	Delta-BHC	3.0U
58-89-9	Gamma-BHC (Lindane)	1.5U
76-44-8	Heptachlor	1.5U
309-00-2	Aldrin	1.5U
1024-57-3	Heptachlor Epoxide	1.5U
959-98-8	Endosulfan I	1.5U
60-57-1	Dieldrin	3.0U
72-55-9	4,4'-DDE	3.0U
72-20-8	Endrin	3.0U
33212-65-9	Endosulfan II	3.0U
72-54-8	4,4'-DDD	4.5U
1031-07-8	Endosulfan Sulfate	6.0U
50-29-3	4,4'-DDT	4.5U
72-43-5	Methoxychlor	6.0U
53494-70-5	Endrin Ketone	4.5U
5103-74-2	Gamma-Chlordane	1.5U
5103-71-9	Alpha-Chlordane	1.5U
8001-35-2	Toxaphene	225U
53469-21-9	Aroclor 1242/1016	30U
12672-29-6	Aroclor 1248	30U
11097-69-1	Aroclor 1254	30U
11096-82-5	Aroclor 1260	30U

Pesticide Surrogate Recovery

Dibutylchlorendate	81%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228081

Lab Sample ID: 3094B
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton Storm Water

Date Release Authorized: Peter K. Kaplan
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/23/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 28.30 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.5U
319-85-7	Beta-BHC	1.5U
319-86-8	Delta-BHC	3.0U
58-89-9	Gamma-BHC (Lindane)	1.5U
76-44-8	Heptachlor	1.5U
309-00-2	Aldrin	1.5U
1024-57-3	Heptachlor Epoxide	1.5U
959-98-8	Endosulfan I	1.5U
60-57-1	Dieldrin	3.0U
72-55-9	4,4'-DDE	3.0U
72-20-8	Endrin	3.0U
33212-65-9	Endosulfan II	3.0U
72-54-8	4,4'-DDD	4.5U
1031-07-8	Endosulfan Sulfate	6.0U
50-29-3	4,4'-DDT	0.9J
72-43-5	Methoxychlor	6.0U
53494-70-5	Endrin Ketone	4.5U
5103-74-2	Gamma-Chlordane	1.0J
5103-71-9	Alpha-Chlordane	0.6J
8001-35-2	Toxaphene	225U
53469-21-9	Aroclor 1242/1016	30U
12672-29-6	Aroclor 1248	30U
11097-69-1	Aroclor 1254	30U
11096-82-5	Aroclor 1260	30U

Pesticide Surrogate Recovery

Dibutylchlorendate	78%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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F1-J

ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228083

Lab Sample ID: 3094D
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton Storm Water

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/23/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 32.95 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.5U
319-85-7	Beta-BHC	1.5U
319-86-8	Delta-BHC	3.0U
58-89-9	Gamma-BHC (Lindane)	1.5U
76-44-8	Heptachlor	1.5U
309-00-2	Aldrin	1.5U
1024-57-3	Heptachlor Epoxide	1.5U
959-98-8	Endosulfan I	1.5U
60-57-1	Dieldrin	3.0U
72-55-9	4,4'-DDE	3.0U
72-20-8	Endrin	3.0U
33212-65-9	Endosulfan II	3.0U
72-54-8	4,4'-DDD	4.5U
1031-07-8	Endosulfan Sulfate	6.0U
50-29-3	4,4'-DDT	4.5U
72-43-5	Methoxychlor	6.0U
53494-70-5	Endrin Ketone	4.5U
5103-74-2	Gamma-Chlordane	1.5U
5103-71-9	Alpha-Chlordane	1.5U
8001-35-2	Toxaphene	225U
53469-21-9	Aroclor 1242/1016	30U
12672-29-6	Aroclor 1248	30U
11097-69-1	Aroclor 1254	30U
11096-82-5	Aroclor 1260	30U

Pesticide Surrogate Recovery	
Dibutylchlorendate	79%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228084

Lab Sample ID: 3094E
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton Storm Water

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/27/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 17.82 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.7 U
319-85-7	Beta-BHC	1.5 U
319-86-8	Delta-BHC	3.0 U
58-89-9	Gamma-BHC (Lindane)	1.5 U
76-44-8	Heptachlor	1.5 U
309-00-2	Aldrin	1.5 U
1024-57-3	Heptachlor Epoxide	1.5 U
959-98-8	Endosulfan I	1.5 U
60-57-1	Dieldrin	3.0 U
72-55-9	4,4'-DDE	3.0 U
72-20-8	Endrin	3.0 U
33212-65-9	Endosulfan II	3.0 U
72-54-8	4,4'-DDD	4.5 U
1031-07-8	Endosulfan Sulfate	6.0 U
50-29-3	4,4'-DDT	4.5 U
72-43-5	Methoxychlor	6.0 U
53494-70-5	Endrin Ketone	4.5 U
5103-74-2	Gamma-Chlordane	18 U
5103-71-9	Alpha-Chlordane	1.5 U
8001-35-2	Toxaphene	225 U
53469-21-9	Aroclor 1242/1016	30 U
12672-29-6	Aroclor 1248	30 U
11097-69-1	Aroclor 1254	450
11096-82-5	Aroclor 1260	30 U

Pesticide Surrogate Recovery	
Dibutylchlorendate	54%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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A1041

ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228085

Lab Sample ID: 3094F
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton Storm Water

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/28/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 31.35 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.5 U
319-85-7	Beta-BHC	1.5 U
319-86-8	Delta-BHC	3.0 U
58-89-9	Gamma-BHC (Lindane)	1.5 U
76-44-8	Heptachlor	1.5 U
309-00-2	Aldrin	1.5 U
1024-57-3	Heptachlor Epoxide	1.5 U
959-98-8	Endosulfan I	1.5 U
60-57-1	Dieldrin	3.0 U
72-55-9	4,4'-DDE	3.0 U
72-20-8	Endrin	3.0 U
33212-65-9	Endosulfan II	3.0 U
72-54-8	4,4'-DDD	4.5 U
1031-07-8	Endosulfan Sulfate	6.0 U
50-29-3	4,4'-DDT	4.5 U
72-43-5	Methoxychlor	6.0 U
53494-70-5	Endrin Ketone	4.5 U
5103-74-2	Gamma-Chlordane	3.1
5103-71-9	Alpha-Chlordane	2.4
8001-35-2	Toxaphene	225 U
53469-21-9	Aroclor 1242/1016	30 U
12672-29-6	Aroclor 1248	30 U
11097-69-1	Aroclor 1254	30 U
11096-82-5	Aroclor 1260	30 U

Pesticide Surrogate Recovery	
Dibutylchlorendate	85%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228086

Lab Sample ID: 3094G
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton Storm Water

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/28/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 20.63 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.5U
319-85-7	Beta-BHC	1.5U
319-86-8	Delta-BHC	3.0U
58-89-9	Gamma-BHC (Lindane)	1.5U
76-44-8	Heptachlor	1.5U
309-00-2	Aldrin	1.5U
1024-57-3	Heptachlor Epoxide	1.5U
959-98-8	Endosulfan I	1.5U
60-57-1	Dieldrin	3.0U
72-55-9	4,4'-DDE	3.0U
72-20-8	Endrin	3.0U
33212-65-9	Endosulfan II	3.0U
72-54-8	4,4'-DDD	4.5U
1031-07-8	Endosulfan Sulfate	6.0U
50-29-3	4,4'-DDT	4.5U
72-43-5	Methoxychlor	6.0U
53494-70-5	Endrin Ketone	4.5U
5103-74-2	Gamma-Chlordane	17U
5103-71-9	Alpha-Chlordane	1.5U
8001-35-2	Toxaphene	225U
53469-21-9	Aroclor 1242/1016	30U
12672-29-6	Aroclor 1248	30U
11097-69-1	Aroclor 1254	390
11096-82-5	Aroclor 1260	30U

Pesticide Surrogate Recovery	
Dibutylchlorendate	76%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

REF SEGR

ANALYTICAL RESOURCES INCORPORATED

Analytical Chemists & Consultants

333 Ninth Ave North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228087

Lab Sample ID: 3094H
Sample Matrix: Soil/Sediment

QC Report No: 3094-WDOE
Project No: Shelton Storm Water

Date Release Authorized: Peter McGuire
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/28/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 21.08 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.7
319-85-7	Beta-BHC	1.5U
319-86-8	Delta-BHC	3.0U
58-89-9	Gamma-BHC (Lindane)	1.5U
76-44-8	Heptachlor	1.5U
309-00-2	Aldrin	1.5U
1024-57-3	Heptachlor Epoxide	1.5U
959-98-8	Endosulfan I	1.5U
60-57-1	Dieldrin	3.0U
72-55-9	4,4'-DDE	3.0U
72-20-8	Endrin	3.0U
33212-65-9	Endosulfan II	3.0U
72-54-8	4,4'-DDD	4.5U
1031-07-8	Endosulfan Sulfate	6.0U
50-29-3	4,4'-DDT	4.5U
72-43-5	Methoxychlor	6.0U
53494-70-5	Endrin Ketone	4.5U
5103-74-2	Gamma-Chlordane	13U
5103-71-9	Alpha-Chlordane	1.5U
8001-35-2	Toxaphene	225U
53469-21-9	Aroclor 1242/1016	30U
12672-29-6	Aroclor 1248	30U
11097-69-1	Aroclor 1254	280
11096-82-5	Aroclor 1260	30U

Pesticide Surrogate Recovery	
Dibutylchlorendate	75%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228087
Matrix Spike
QC Report No: 3094-WDOE
Project No: Shelton
Storm Water

Lab Sample ID: 3094HMS
Sample Matrix: Soil/Sediment

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/28/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 22.40 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.3 J
319-85-7	Beta-BHC	1.5 U
319-86-8	Delta-BHC	3.0 U
58-89-9	Gamma-BHC (Lindane)	-----
76-44-8	Heptachlor	-----
309-00-2	Aldrin	-----
1024-57-3	Heptachlor Epoxide	1.5 U
959-98-8	Endosulfan I	1.5 U
60-57-1	Dieldrin	-----
72-55-9	4,4'-DDE	3.0 U
72-20-8	Endrin	-----
33212-65-9	Endosulfan II	3.0 U
72-54-8	4,4'-DDD	4.5 U
1031-07-8	Endosulfan Sulfate	6.0 U
50-29-3	4,4'-DDT	-----
72-43-5	Methoxychlor	6.0 U
53494-70-5	Endrin Ketone	4.5 U
5103-74-2	Gamma-Chlordane	17 U
5103-71-9	Alpha-Chlordane	3.0 U
8001-35-2	Toxaphene	225 U
53469-21-9	Aroclor 1242/1016	30 U
12672-29-6	Aroclor 1248	30 U
11097-69-1	Aroclor 1254	360
11096-82-5	Aroclor 1260	30 U

Pesticide Surrogate Recovery

Dibutylchlorendate	83%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.

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ORGANICS ANALYSIS DATA SHEET - METHOD 8080

Sample No: 228087
Matrix Spike Dup.
QC Report No: 3094-WDOE
Project No: Shelton
Storm Water

Lab Sample ID: 3094HMSD
Sample Matrix: Soil/Sediment

Date Release Authorized:
Report Prepared: 06/29/89 - MAC:E

Date extracted: 06/12/89
Date Analyzed: 06/28/89
GPC Clean-up: YES
Alumina Cleanup: YES

Date Sampled: 06/01/89
Date Received: 06/06/89
Amount extracted: 23.21 g (dry wt.)
Conc/Dilution: 1 to 20

CAS Number		ug/Kg
319-84-6	Alpha-BHC	1.7
319-85-7	Beta-BHC	1.5U
319-86-8	Delta-BHC	3.0U
58-89-9	Gamma-BHC (Lindane)	-----
76-44-8	Heptachlor	-----
309-00-2	Aldrin	-----
1024-57-3	Heptachlor Epoxide	1.5U
959-98-8	Endosulfan I	1.5U
60-57-1	Dieldrin	-----
72-55-9	4,4'-DDE	3.0U
72-20-8	Endrin	-----
33212-65-9	Endosulfan II	3.0U
72-54-8	4,4'-DDD	4.5U
1031-07-8	Endosulfan Sulfate	6.0U
50-29-3	4,4'-DDT	-----
72-43-5	Methoxychlor	6.0U
53494-70-5	Endrin Ketone	4.5U
5103-74-2	Gamma-Chlordane	27U
5103-71-9	Alpha-Chlordane	1.5U
8001-35-2	Toxaphene	225U
53469-21-9	Aroclor 1242/1016	30U
12672-29-6	Aroclor 1248	30U
11097-69-1	Aroclor 1254	730
11096-82-5	Aroclor 1260	30U

Pesticide Surrogate Recovery

Dibutylchlorendate	82%

Data Reporting Qualifiers

Value	If the result is a value greater than or equal to the detection limit, report the value.
U	Indicates compound was analyzed for but not detected at the given detection limit.
J	Indicates an estimated value when the result is less than the calculated detection limit.
NR	Analysis not required.