

AMTEST

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AmTest Inc.

Professional
Analytical
Services

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Redmond, WA
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Fax: 206 883 3495

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March 18, 1996

**SAIC
18706 North Creek Parkway, Suite 110
Bothell, WA 98011
attn. Mark Herrenkohl**

Dear Mark,

Enclosed you will find the analytical data for the Corps of Engineers Channel Navigation Dredging project at Kenmore, Washington (contract DACW67-95-D-1020, delivery order #1).

On the 23rd of February 1996, Am Test Inc. received a total of fifteen (15) sediment samples from SAIC for chemical analysis (collected 2/21 and 2/22/96). A total of five sample containers were received for each sample. Please refer to the chain of custody form for additional information relative to sample submittal.

At the time of receipt, the samples were logged-in, stored, and handled in accordance with EPA protocols. The samples were prepared and analyzed for the following groups of parameters:

**PSDDA COC's
Conventionals
Grain Size
Metals
Phenols
Polyaromatic Hydrocarbons
Chlorinated Aromatics and Aliphatics
Phthalate Esters
Volatile Organic Compounds
Miscellaneous Compounds
Pesticides and PCB's**

The methods, holding times, QA/QC documentation, and the data report package reflect the analytical protocols described in

"Recommended Protocols for Measuring Selected Environmental Variables in Puget Sound", Puget Sound Estuary Program (PSEP), 1986.

***Protocols for Conventional Sediment Variables 3/86
Protocols for Organic Compounds in Sediment and Tissue
Samples 12/89
Protocols for Metals in Sediment and Tissue Samples 12/89***

Although these documents specifically address environmental analyses in Puget Sound, the majority of the methods are derived from two notable EPA documents:

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods", SW-846, June 1988

"Methods for Chemical Analysis of Water and Wastes", EPA 600/4-82-055, December 1982

The detection limits reported are in accordance with the PSDDA SL values defined in Phase II PSDDA Management Plan Report, September 1989.

The specific information relative to the chemical analyses for the Chemicals of Concern are summarized in the attached table. This table provides a detailed listing of the parameters, the reported units, method references, nominal detection limits, and the PSDDA SL's and ML's. A second table addresses the instrument detection limits.

The sediment samples were analyzed for metals using the Total Acid Digestion (TAD) described in the PSEP documentation. Following the digestion with nitric, hydrochloric, and hydrofluoric acids, the subsequent solutions were analyzed by Graphite Furnace Atomic Absorption (GFAA) for Arsenic, Antimony, Cadmium, Silver (all samples diluted 1:5 due to the resulting TAD matrix). With the exception of Mercury (Cold Vapor), the remaining metals (Copper,

Lead, Nickel and Zinc) were analyzed by Inductively Coupled Plasma Emission Spectroscopy (ICP).

In order to obtain the lower limits of detection that were required for the analysis of the Semi-Volatile Organic compounds, two separate 35 gram subsamples were extracted (EPA 3550) and combined prior to the instrumental analysis (8270, 1ml final extract volume). All of the samples were subjected to GPC clean-up.

The Dichlorobenzenes were analyzed with the other Volatile Organic Compounds (8260), in order to obtain detection limits that were below PSDDA SL values.

Separate 35 gram subsamples were extracted (EPA 3540) and analyzed for the Pesticides and PCB's (method 8080, final extract volume 5ml). The clean-up techniques documented in the respective analytical procedures (florisil, alumina etc.) were employed in order to reduce any matrix problems. Dual column confirmation was utilized in the samples where target compounds were detected. Due to the resulting matrix, dilutions (1:3) were required in several of the samples (Pesticide fractions 96-A002769-96-A002773).

There were no major problems with any of the analyses. In spite of the low Total Solids content of several of the samples (range 32-81%), there was a favorable relationship between the Method Detection Limits (MDL's) and the PSDDA Screening Levels (SL's). None of the MDL's exceeded any of the PSDDA SL's. However in three of the samples (S8, S10, S12), the Hexachlorobutadiene and Hexachlorobenzene were quantitated as a part of the Pesticide analysis (8080), as opposed to the Semi-Volatile Organic analysis (8270), in order to facilitate this task. Furthermore, there were Chemicals of Concern (i.e. LPAH's, Pesticides) in sample S1 (96-A002759) and in sample S10 (96-A002768) that had "hits" which exceeded PSDDA SL values.

Following the analytical data you will find the quality control

summary. Information in this section includes dates of analyses, sample weights, results of standard reference materials, blanks, duplicates (or MSD's), triplicates and matrix spikes.

For the organic parameters (8240, 8270, 8080), the surrogate spike recoveries, the matrix spike recoveries, and the method blanks were within the acceptable limits defined by the analytical procedures, as well as those of the laboratory.

The results of both the Pesticide and the PCB reference materials, certified using EPA methods, were well within the control limits established by the respective manufacturers.

Since the Standard Reference Material (HS-3) for the PAH's is not certified using the extraction (sonication) and instrumental methods (GC/MS) of PSEP, data quality assessment is somewhat difficult. For your assistance I have included the laboratory control limits so that you may compare the data with past laboratory performances using this material.

As a result of the lack of documented quality control information specific to the Total Acid Digestion (TAD) procedure, a true assessment of the data quality for metals is somewhat difficult. Due to the smaller sample size, the resulting matrix, and the potential for contamination, normal EPA QC criteria (i.e. spike recoveries between 75 and 125% Recovery, duplicates within 20% RPD, SRM's between 80 and 120% Recovery) will, with a significant data base, be adjusted.

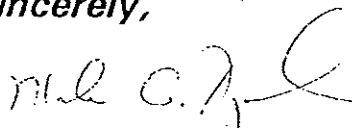
In spite of these limitations, the data quality, in terms of the EPA criteria, would have to be considered excellent. All of the matrix spikes (% recovery), duplicates (RPD) and SRM's were within the EPA limits with the exception of Antimony (both SRM's) and Copper (one of the two SRM's) in the Standard Reference Materials (NBS 2704). However, in all three of these situations, the values obtained for the SRM's were within the acceptable laboratory control limits.

AMTEST

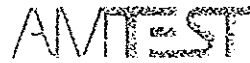
For the organic parameters, all of the detection limits are listed in terms of the specific sample detection limits. This is calculated as a function of the original sample weight, the final volume of the extract, the moisture content of the sample, and the instrument detection limit.

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark A. Fugiel". The signature is fluid and cursive, with a large, sweeping flourish at the end.

Mark A. Fugiel
Technical Director
Am Test Inc.



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 Professional
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 Services
 14503 N.E. 87th St
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SAIC
 18706 North Creek Pkwy suite 110
 Bothell, WA 98011
 Attention: M. Herrenkohl

Date Received: 2/23/96
 Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
 Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002759
 CLIENT ID S1
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	59.0			
Total Volatile Solids (%)	5.50			
Total Organic Carbon (%)	3.7			
Ammonia (mg/kg)	64.			
Total Sulfides (mg/kg)	12.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75 <i>gravel</i>	11.4
-2,	4.00	1.20
-1,	2.00	2.40
0,	1.00	3.40
+1,	0.50	5.90
+2,	0.25	11.9
+3,	0.125	12.2
+4,	0.063	12.2
+5,	0.032	7.00
+6,	0.016	10.3
+7,	0.008	9.80
+8,	0.004	6.50
+9,	0.002	1.40
+10,	0.001	0.40
>+10,	<0.001	4.10

Handwritten notes: "sand" near 4.75 mm, "3 1/4" near 0.016 mm, "Clay" near 0.001 mm.

METALS (MG/KG DRY WEIGHT)

Antimony	1.1	20	200
Arsenic	9.3	57	700
Cadmium	0.30	0.96	10
Copper	26.	81	810
Lead	30.	66	660
Mercury	0.039	0.21	2
Nickel	46.	140	
Silver	0.12	1.2	5
Zinc	89.	160	1,600



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002759
CLIENT ID S1
DATE SAMPLED 2/21/96

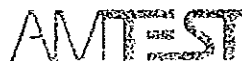
	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 24		64	640
Acenaphthene	68		63	630
Anthracene	170		130	1,300
Fluorene	86		64	640
Naphthalene	< 24		210	2,100
Phenanthrene	330		320	3,200
2-Methylnaphthalene	< 24		67	670
HPAH				
Benzo(a)anthracene	200		450	4,500
Benzo(a)pyrene	120		680	6,800
Benzo(b)fluoranthene	190		800	8,000
Benzo(k)fluoranthene	130			
Benzo(ghi)perylene	63		540	5,400
Chrysene	320		670	6,700
Dibenzo(a,h)anthracene	< 24		120	5,400
Fluoranthene	500		630	6,300
Indeno(1,2,3-cd)pyrene	66		69	5,200
Pyrene	390		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 14		23	230
1,2-Dichlorobenzene	< 4		19	350
1,3-Dichlorobenzene	< 4		170	
1,4-Dichlorobenzene	< 4		26	260
1,2,4-Trichlorobenzene	< 7		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	240		3,100	
Butyl benzyl phthalate	< 24		470	
Diethyl phthalate	74		97	
Dimethyl phthalate	< 24		160	
Di-n-butyl phthalate	< 24		1,400	
Di-n-octyl phthalate	< 24		6,200	
PHENOLS				
Pentachlorophenol	< 59		100	690
Phenol	< 24		120	1,200
2-Methylphenol	< 12		20	72
4-Methylphenol	< 24		120	1,200
2,4-Dimethylphenol	< 12		29	50

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002759
 CLIENT ID S1
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 120		400	690
Benzyl alcohol	< 14		25	73
Dibenzofuran	33		54	540
Hexachlorobutadiene	< 19		29	290
Hexachloroethane	< 24		1400	14,000
N-Nitrosodiphenylamine	< 14		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	70.0			
D-6-Phenol	74.0			
D-5-Nitrobenzene	70.0			
2-Fluorobiphenyl	85.0			
2,4,6-Tribromophenol	91.0			
D14-Terphenyl	97.0			
VOLATILE ORGANICS				
Ethylbenzene	< 4		10	50
Tetrachloroethene	< 4		14	210
Trichloroethene	< 4		160	1,600
Xylene	< 4		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	101.			
D8-Toluene	103.			
4-Bromofluorobenzene	95.0			
PESTICIDES & PCB's				
Aldrin	< 0.7		10	
Chlordane	< 0.7		10	
DDD	< 1.5		6.9	69
DDE	< 1			
DDT	< 2.4			
Dieldrin	< 1		10	
Heptachlor	< 0.7		10	
Lindane	< 0.7		10	
A-1016	< 12		130	2,500
A-1221	< 47		Total	Total
A-1232	< 12			
A-1242	< 12			
A-1248	< 12			
A-1254	17			
A-1260	< 12			
SURROGATE (% RECOVERY)				
Hexabromobenzene	60.			
Tetrachloro-m-xylene	37.			

VALUES ARE IN UG/KG DRY WEIGHT



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SAIC 18706 North Creek Pkwy suite 110 Bothell, WA 98011 Attention: M. Herrenkohl

Date Received: 2/23/96 Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002760 CLIENT ID S2 DATE SAMPLED 2/21/96

Table with 5 columns: RESULT, Q, S.L., M.L. and rows for CONVENTIONALS (DRY WEIGHT) including Total Solids, Volatile Solids, Organic Carbon, Ammonia, and Sulfides.

GRAIN SIZE DISTRIBUTION PHI OPENING (MM)

Table with 3 columns: PHI, OPENING (MM), % RETENTION. Lists grain size distribution from -2 to >+10.

METALS (MG/KG DRY WEIGHT)

Table with 4 columns: Metal Name, Value, S.L., M.L. Lists metals: Antimony, Arsenic, Cadmium, Copper, Lead, Mercury, Nickel, Silver, Zinc.



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002760
CLIENT ID S2
DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 24		64	640
Acenaphthene	< 24		63	630
Anthracene	< 24		130	1,300
Fluorene	< 24		64	640
Naphthalene	< 24		210	2,100
Phenanthrene	99		320	3,200
2-Methylnaphthalene	< 24		67	670
HPAH				
Benzo(a)anthracene	63		450	4,500
Benzo(a)pyrene	< 24		680	6,800
Benzo(b)fluoranthene	56		800	8,000
Benzo(k)fluoranthene	43			
Benzo(ghi)perylene	< 24		540	5,400
Chrysene	81		670	6,700
Dibenzo(a,h)anthracene	< 24		120	5,400
Fluoranthene	160		630	6,300
Indeno(1,2,3-cd)pyrene	< 24		69	5,200
Pyrene	110		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 15		23	230
1,2-Dichlorobenzene	< 5		19	350
1,3-Dichlorobenzene	< 5		170	
1,4-Dichlorobenzene	< 5		26	260
1,2,4-Trichlorobenzene	< 7		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	140		3,100	
Butyl benzyl phthalate	< 24		470	
Diethyl phthalate	< 24		97	
Dimethyl phthalate	< 24		160	
Di-n-butyl phthalate	< 24		1,400	
Di-n-octyl phthalate	< 24		6,200	
PHENOLS				
Pentachlorophenol	< 61		100	690
Phenol	< 24		120	1,200
2 Methylphenol	< 12		20	72
4 Methylphenol	< 24		120	1,200
2,4-Dimethylphenol	< 12		29	50

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002760
 CLIENT ID S2
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 120		400	690
Benzyl alcohol	< 15		25	73
Dibenzofuran	< 24		54	540
Hexachlorobutadiene	< 20		29	290
Hexachloroethane	< 24		1400	14,000
N-Nitrosodiphenylamine	< 15		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	43.0			
D-6-Phenol	47.0			
D-5-Nitrobenzene	42.0			
2-Fluorobiphenyl	64.0			
2,4,6-Tribromophenol	71.0			
D14-Terphenyl	76.0			
VOLATILE ORGANICS				
Ethylbenzene	< 5		10	50
Tetrachloroethene	< 5		14	210
Trichloroethene	< 5		160	1,600
Xylene	< 5		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	90.0			
D8-Toluene	98.0			
4-Bromofluorobenzene	99.0			
PESTICIDES & PCB's				
Aldrin	< 0.74		10	
Chlordane	< 0.74		10	
DDD	< 1.5		6.9	69
DDE	< 1			
DDT	< 2.5			
Dieldrin	< 1		10	
Heptachlor	< 0.74		10	
Lindane	< 0.74		10	
A-1016	< 12		130	2,500
A-1221	< 49		Total	Total
A-1232	< 12			
A-1242	< 12			
A-1248	< 12			
A-1254	< 12			
A-1260	< 12			
SURROGATE (% RECOVERY)				
Hexabromobenzene	63.			
Tetrachloro-m-xylene	66.			

VALUES ARE IN UG/KG DRY WEIGHT



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 Attention: M. Herrenkohl

Date Received: 2/23/96
 Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
 Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002761
 CLIENT ID S3
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	73.0			
Total Volatile Solids (%)	3.00			
Total Organic Carbon (%)	1.2			
Ammonia (mg/kg)	42.			
Total Sulfides (mg/kg)	9.6			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	15.5
-2,	4.00	0.50
-1,	2.00	2.10
0,	1.00	1.20
+1,	0.50	3.70
+2,	0.25	11.4
+3,	0.125	11.0
+4,	0.063	8.50
+5,	0.032	8.00
+6,	0.016	11.3
+7,	0.008	9.30
+8,	0.004	8.00
+9,	0.002	3.30
+10,	0.001	1.40
>+10,	<0.001	4.90

METALS (MG/KG DRY WEIGHT)

Antimony	0.6	20	200
Arsenic	4.6	57	700
Cadmium	0.13	0.96	10
Copper	16.	81	810
Lead	21.	66	660
Mercury	0.029	0.21	2
Nickel	46.	140	
Silver	< 0.1	1.2	5
Zinc	53.	160	1,600

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002761
 CLIENT ID S3
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 20		64	640
Acenaphthene	< 20		63	630
Anthracene	< 20		130	1,300
Fluorene	< 20		64	640
Naphthalene	< 20		210	2,100
Phenanthrene	44		320	3,200
2-Methylnaphthalene	< 20		67	670
HPAH				
Benzo(a)anthracene	29		450	4,500
Benzo(a)pyrene	21		680	6,800
Benzo(b)fluoranthene	24		800	8,000
Benzo(k)fluoranthene	20			
Benzo(ghi)perylene	< 20		540	5,400
Chrysene	36		670	6,700
Dibenzo(a,h)anthracene	< 20		120	5,400
Fluoranthene	64		630	6,300
Indeno(1,2,3-cd)pyrene	< 20		69	5,200
Pyrene	86		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 12		23	230
1,2-Dichlorobenzene	< 4		19	350
1,3-Dichlorobenzene	< 4		170	
1,4-Dichlorobenzene	< 4		26	260
1,2,4-Trichlorobenzene	< 6		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	87		3,100	
Butyl benzyl phthalate	< 20		470	
Diethyl phthalate	< 20		97	
Dimethyl phthalate	< 20		160	
Di-n-butyl phthalate	< 20		1,400	
Di-n-octyl phthalate	< 20		6,200	
PHENOLS				
Pentachlorophenol	< 49		100	690
Phenol	< 20		120	1,200
2-Methylphenol	< 10		20	72
4-Methylphenol	< 20		120	1,200
2,4-Dimethylphenol	< 10		29	50

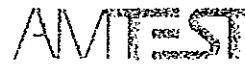
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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002761
 CLIENT ID S3
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 99		400	690
Benzyl alcohol	< 12		25	73
Dibenzofuran	< 20		54	540
Hexachlorobutadiene	< 16		29	290
Hexachloroethane	< 20		1400	14,000
N-Nitrosodiphenylamine	< 12		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	55.0			
D-6-Phenol	64.0			
D-5-Nitrobenzene	69.0			
2-Fluorobiphenyl	87.0			
2,4,6-Tribromophenol	87.0			
D14-Terphenyl	103.			
VOLATILE ORGANICS				
Ethylbenzene	< 4		10	50
Tetrachloroethene	< 4		14	210
Trichloroethene	< 4		160	1,600
Xylene	< 4		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	88.0			
D8-Toluene	94.0			
4-Bromofluorobenzene	94.0			
PESTICIDES & PCB's				
Aldrin	< 0.6		10	
Chlordane	< 0.6		10	
DDD	< 1		6.9	69
DDE	< 0.8			
DDT	< 2			
Diieldrin	< 0.8		10	
Heptachlor	< 0.6		10	
Lindane	< 0.6		10	
A-1016	< 9.9		130	2,500
A-1221	< 40		Total	Total
A-1232	< 9.9			
A-1242	< 9.9			
A-1248	< 9.9			
A-1254	< 9.9			
A-1260	< 9.9			
SURROGATE (% RECOVERY)				
Hexabromobenzene	68.			
Tetrachloro-m-xylene	74.			

VALUES ARE IN UG/KG DRY WEIGHT



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 Attention: M. Herrenkohl

Date Received: 2/23/96
 Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
 Project #: 01-0440-04-0272

Tel: 206 885 1664

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002762
 CLIENT ID S4
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	64.2			
Total Volatile Solids (%)	4.40			
Total Organic Carbon (%)	2.1			
Ammonia (mg/kg)	75.			
Total Sulfides (mg/kg)	9.8			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	2.20
-2,	4.00	< 0.1
-1,	2.00	1.40
0,	1.00	2.00
+1,	0.50	6.90
+2,	0.25	17.9
+3,	0.125	16.7
+4,	0.063	14.3
+5,	0.032	9.50
+6,	0.016	8.20
+7,	0.008	7.50
+8,	0.004	7.10
+9,	0.002	2.00
+10,	0.001	0.80
>+10,	<0.001	3.60

METALS (MG/KG DRY WEIGHT)

Antimony	1.0	20	200
Arsenic	4.7	57	700
Cadmium	0.18	0.96	10
Copper	16.	81	810
Lead	25.	66	660
Mercury	0.031	0.21	2
Nickel	43.	140	
Silver	< 0.1	1.2	5
Zinc	55.	160	1,600

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002762
 CLIENT ID S4
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 23		64	640
Acenaphthene	< 23		63	630
Anthracene	< 23		130	1,300
Fluorene	< 23		64	640
Naphthalene	< 23		210	2,100
Phenanthrene	63		320	3,200
2-Methylnaphthalene	< 23		67	670
HPAH				
Benzo(a)anthracene	47		450	4,500
Benzo(a)pyrene	24		680	6,800
Benzo(b)fluoranthene	43		800	8,000
Benzo(k)fluoranthene	31			
Benzo(ghi)perylene	< 23		540	5,400
Chrysene	63		670	6,700
Dibenzo(a,h)anthracene	< 23		120	5,400
Fluoranthene	140		630	6,300
Indeno(1,2,3-cd)pyrene	< 23		69	5,200
Pyrene	120		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 14		23	230
1,2-Dichlorobenzene	< 4		19	350
1,3-Dichlorobenzene	< 4		170	
1,4-Dichlorobenzene	< 4		26	260
1,2,4-Trichlorobenzene	< 7		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	180		3,100	
Butyl benzyl phthalate	< 23		470	
Diethyl phthalate	< 23		97	
Dimethyl phthalate	< 23		160	
Di-n-butyl phthalate	< 23		1,400	
Di-n-octyl phthalate	< 23		6,200	
PHENOLS				
Pentachlorophenol	< 59		100	690
Phenol	< 23		120	1,200
2-Methylphenol	< 12		20	72
4-Methylphenol	< 23		120	1,200
2,4-Dimethylphenol	< 12		29	50

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002762
 CLIENT ID S4
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 120		400	690
Benzyl alcohol	< 14		25	73
Dibenzofuran	< 23		54	540
Hexachlorobutadiene	< 19		29	290
Hexachloroethane	< 23		1400	14,000
N-Nitrosodiphenylamine	< 14		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	52.0			
D-6-Phenol	58.0			
D-5-Nitrobenzene	56.0			
2-Fluorobiphenyl	77.0			
2,4,6-Tribromophenol	81.0			
D14-Terphenyl	81.0			
VOLATILE ORGANICS				
Ethylbenzene	< 4		10	50
Tetrachloroethene	< 4		14	210
Trichloroethene	< 4		160	1,600
Xylène	< 4		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	102.			
D8-Toluene	110.			
4-Bromofluorobenzene	112.			
PESTICIDES & PCB's				
Aldrin	< 0.7		10	
Chlordane	< 0.7		10	
DDD	< 2		6.9	69
DDE	< 1			
DDT	< 2.3			
Dieldrin	< 1		10	
Heptachlor	< 0.7		10	
Lindane	< 0.7		10	
A-1016	< 14		130	2,500
A-1221	< 46		Total	Total
A-1232	< 14			
A-1242	< 14			
A-1248	< 14			
A-1254	< 14			
A-1260	< 14			
SURROGATE (% RECOVERY)				
Hexabromobenzene	63.			
Tetrachloro-m-xylene	69.			

VALUES ARE IN UG/KG DRY WEIGHT



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 Attention: M. Herrenkohl

Date Received: 2/23/96
 Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
 Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002763
 CLIENT ID S5
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	55.3			
Total Volatile Solids (%)	5.50			
Total Organic Carbon (%)	3.5			
Ammonia (mg/kg)	8.3			
Total Sulfides (mg/kg)	4.9			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION		
	4.75	0.40		
-2,	4.00	< 0.1		
-1,	2.00	0.50		
0,	1.00	0.70		
+1,	0.50	2.40		
+2,	0.25	31.3	76	
+3,	0.125	31.3		
+4,	0.063	11.9		
+5,	0.032	7.50		
+6,	0.016	4.40		
+7,	0.008	5.70		
+8,	0.004	3.60		
+9,	0.002	0.30		
+10,	0.001	< 0.1		
>+10,	<0.001	0.90		

METALS (MG/KG DRY WEIGHT)

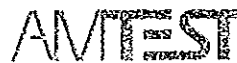
Antimony	0.6	20	200
Arsenic	7.5	57	700
Cadmium	0.12	0.96	10
Copper	7.1	81	810
Lead	22.	66	660
Mercury	< 0.036	0.21	2
Nickel	26.	140	
Silver	< 0.1	1.2	5
Zinc	41.	160	1,600

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002763
CLIENT ID S5
DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 26		64	640
Acenaphthene	< 26		63	630
Anthracene	< 26		130	1,300
Fluorene	< 26		64	640
Naphthalene	< 26		210	2,100
Phenanthrene	< 26		320	3,200
2-Methylnaphthalene	< 26		67	670
HPAH				
Benzo(a)anthracene	< 26		450	4,500
Benzo(a)pyrene	< 26		680	6,800
Benzo(b)fluoranthene	< 26		800	8,000
Benzo(k)fluoranthene	< 26			
Benzo(ghi)perylene	< 26		540	5,400
Chrysene	< 26		670	6,700
Dibenzo(a,h)anthracene	< 26		120	5,400
Fluoranthene	< 32		630	6,300
Indeno(1,2,3-cd)pyrene	< 26		69	5,200
Pyrene	40		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 16		23	230
1,2-Dichlorobenzene	< 5		19	350
1,3-Dichlorobenzene	< 5		170	
1,4-Dichlorobenzene	< 5		26	260
1,2,4-Trichlorobenzene	< 8		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	94		3,100	
Butyl benzyl phthalate	< 26		470	
Diethyl phthalate	< 26		97	
Dimethyl phthalate	< 26		160	
Di-n-butyl phthalate	< 26		1,400	
Di-n-octyl phthalate	< 26		6,200	
PHENOLS				
Pentachlorophenol	< 66		100	690
Phenol	< 26		120	1,200
2-Methylphenol	< 13		20	72
4-Methylphenol	< 26		120	1,200
2,4-Dimethylphenol	< 13		29	50



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002763
CLIENT ID S5
DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 130		400	690
Benzyl alcohol	< 16		25	73
Dibenzofuran	< 26		54	540
Hexachlorobutadiene	< 21		29	290
Hexachloroethane	< 26		1400	14,000
N-Nitrosodiphenylamine	< 16		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	50.0			
D-6-Phenol	57.0			
D-5-Nitrobenzene	57.0			
2-Fluorobiphenyl	72.0			
2,4,6-Tribromophenol	72.0			
D14-Terphenyl	77.0			
VOLATILE ORGANICS				
Ethylbenzene	< 5		10	50
Tetrachloroethene	< 5		14	210
Trichloroethene	< 5		160	1,600
Xylene	< 5		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	92.0			
D8-Toluene	95.0			
4-Bromofluorobenzene	84.0			
PESTICIDES & PCB's				
Aldrin	< 0.8		10	
Chlordane	< 0.8		10	
DDD	< 2.5		6.9	69
DDE	< 1			
DDT	< 2.6			
Diieldrin	< 1		10	
Heptachlor	< 0.8		10	
Lindane	< 0.8		10	
A-1016	< 13		130	2,500
A-1221	< 52		Total	Total
A-1232	< 13			
A-1242	< 13			
A-1248	< 13			
A-1254	< 13			
A-1260	< 13			
SURROGATE (% RECOVERY)				
Hexabromobenzene	70.			
Tetrachloro-m-xylene	76.			

VALUES ARE IN UG/KG DRY WEIGHT



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Date Received: 2/23/96
 Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
 Project #: 01-0440-04-0272

Tel: 206 885 1664

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002764
 CLIENT ID S6
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	43.8			
Total Volatile Solids (%)	7.90			
Total Organic Carbon (%)	3.6			
Ammonia (mg/kg)	87.			
Total Sulfides (mg/kg)	66.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	0.20
-2,	4.00	< 0.1
-1,	2.00	1.40
0,	1.00	1.80
+1,	0.50	7.50
+2,	0.25	28.3
+3,	0.125	12.1
+4,	0.063	12.8
+5,	0.032	11.0
+6,	0.016	6.50
+7,	0.008	10.0
+8,	0.004	6.60
+9,	0.002	0.60
+10,	0.001	< 0.1
>+10,	<0.001	1.10

METALS (MG/KG DRY WEIGHT)

Antimony	1.0	20	200
Arsenic	9.8	57	700
Cadmium	0.28	0.96	10
Copper	14.	81	810
Lead	28.	66	660
Mercury	0.046	0.21	2
Nickel	34.	140	
Silver	0.11	1.2	5
Zinc	64.	160	1,600

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002764
 CLIENT ID S6
 DATE SAMPLED 2/21/96

-----	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 33		64	640
Acenaphthene	< 33		63	630
Anthracene	< 33		130	1,300
Fluorene	< 33		64	640
Naphthalene	< 33		210	2,100
Phenanthrene	70		320	3,200
2-Methylnaphthalene	< 33		67	670
HPAH				
Benzo(a)anthracene	66		450	4,500
Benzo(a)pyrene	60		680	6,800
Benzo(b)fluoranthene	81		800	8,000
Benzo(k)fluoranthene	52			
Benzo(ghi)perylene	40		540	5,400
Chrysene	97		670	6,700
Dibenzo(a,h)anthracene	< 33		120	5,400
Fluoranthene	160		630	6,300
Indeno(1,2,3-cd)pyrene	41		69	5,200
Pyrene	140		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 20		23	230
1,2-Dichlorobenzene	< 7		19	350
1,3-Dichlorobenzene	< 7		170	
1,4-Dichlorobenzene	< 7		26	260
1,2,4-Trichlorobenzene	< 10		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	420		3,100	
Butyl benzyl phthalate	< 33		470	
Diethyl phthalate	< 33		97	
Dimethyl phthalate	< 33		160	
Di-n-butyl phthalate	< 33		1,400	
Di-n-octyl phthalate	< 33		6,200	
PHENOLS				
Pentachlorophenol	< 83		100	690
Phenol	< 33		120	1,200
2-Methylphenol	< 17		20	72
4-Methylphenol	< 33		120	1,200
2,4-Dimethylphenol	< 17		29	50

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002764
 CLIENT ID S6
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 170		400	690
Benzyl alcohol	< 20		25	73
Dibenzofuran	< 33		54	540
Hexachlorobutadiene	< 27		29	290
Hexachloroethane	< 33		1400	14,000
N-Nitrosodiphenylamine	< 20		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	60.0			
D-6-Phenol	69.0			
D-5-Nitrobenzene	89.0			
2-Fluorobiphenyl	86.0			
2,4,6-Tribromophenol	91.0			
D14-Terphenyl	94.0			
VOLATILE ORGANICS				
Ethylbenzene	< 7		10	50
Tetrachloroethene	< 7		14	210
Trichloroethene	< 7		160	1,600
Xylene	< 7		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	93.0			
D8-Toluene	96.0			
4-Bromofluorobenzene	90.0			
PESTICIDES & PCB's				
Aldrin	1.3		10	
Chlordane	< 1		10	
DDD	4.6		6.9	69
DDE	< 1.6			
DDT	< 3.4			
Diieldrin	< 1.6		10	
Heptachlor	< 1		10	
Lindane	< 1		10	
A-1016	< 17		130	2,500
A-1221	< 67		Total	Total
A-1232	< 17			
A-1242	< 17			
A-1248	< 17			
A-1254	18			
A-1260	< 17			
SURROGATE (% RECOVERY)				
Hexabromobenzene	68.			
Tetrachloro-m-xylene	74.			

VALUES ARE IN UG/KG DRY WEIGHT



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Attention: M. Herrenkohl

Date Received: 2/23/96
Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002765
CLIENT ID S7
DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	52.4			
Total Volatile Solids (%)	5.40			
Total Organic Carbon (%)	2.6			
Ammonia (mg/kg)	130			
Total Sulfides (mg/kg)	44.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	0.20
-2,	4.00	< 0.1
-1,	2.00	0.40
0,	1.00	0.40
+1,	0.50	0.60
+2,	0.25	7.30
+3,	0.125	19.5
+4,	0.063	9.50
+5,	0.032	7.90
+6,	0.016	14.1
+7,	0.008	16.0
+8,	0.004	10.3
+9,	0.002	4.80
+10,	0.001	2.40
>+10,	<0.001	6.70

METALS (MG/KG DRY WEIGHT)

Antimony	0.9	20	200
Arsenic	8.7	57	700
Cadmium	0.17	0.96	10
Copper	12.	81	810
Lead	24.	66	660
Mercury	0.046	0.21	2
Nickel	41.	140	
Silver	0.11	1.2	5
Zinc	58.	160	1,600

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002765
 CLIENT ID S7
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 27		64	640
Acenaphthene	< 27		63	630
Anthracene	< 27		130	1,300
Fluorene	< 27		64	640
Naphthalene	< 27		210	2,100
Phenanthrene	34		320	3,200
2-Methylnaphthalene	< 27		67	670
HPAH				
Benzo(a)anthracene	32		450	4,500
Benzo(a)pyrene	33		680	6,800
Benzo(b)fluoranthene	47		800	8,000
Benzo(k)fluoranthene	33			
Benzo(ghi)perylene	< 27		540	5,400
Chrysene	46		670	6,700
Dibenzo(a,h)anthracene	< 27		120	5,400
Fluoranthene	86		630	6,300
Indeno(1,2,3-cd)pyrene	< 27		69	5,200
Pyrene	70		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 16		23	230
1,2-Dichlorobenzene	< 5		19	350
1,3-Dichlorobenzene	< 5		170	
1,4-Dichlorobenzene	< 5		26	260
1,2,4-Trichlorobenzene	< 8		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	290		3,100	
Butyl benzyl phthalate	< 27		470	
Diethyl phthalate	< 27		97	
Dimethyl phthalate	< 27		160	
Di-n-butyl phthalate	< 27		1,400	
Di-n-octyl phthalate	< 27		6,200	
PHENOLS				
Pentachlorophenol	< 68		100	690
Phenol	< 27		120	1,200
2 Methylphenol	< 14		20	72
4 Methylphenol	< 27		120	1,200
2,4-Dimethylphenol	< 14		29	50



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002765
CLIENT ID S7
DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 140		400	690
Benzyl alcohol	< 16		25	73
Dibenzofuran	< 27		54	540
Hexachlorobutadiene	< 22		29	290
Hexachloroethane	< 27		1400	14,000
N-Nitrosodiphenylamine	< 16		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	46.0			
D-6-Phenol	56.0			
D-5-Nitrobenzene	47.0			
2-Fluorobiphenyl	66.0			
2,4,6-Tribromophenol	79.0			
D14-Terphenyl	85.0			
VOLATILE ORGANICS				
Ethylbenzene	< 5		10	50
Tetrachloroethene	< 5		14	210
Trichloroethene	< 5		160	1,600
Xylene	< 5		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	91.0			
D8-Toluene	98.0			
4-Bromofluorobenzene	102.			
PESTICIDES & PCB's				
Aldrin	1.6		10	
Chlordane	< 0.8		10	
DDD	< 1.5		6.9	69
DDE	< 1			
DDT	< 2.7			
Dieldrin	< 1		10	
Heptachlor	< 0.8		10	
Lindane	< 0.8		10	
A-1016	< 13		130	2,500
A-1221	< 54		Total	Total
A-1232	< 13			
A-1242	< 13			
A-1248	< 13			
A-1254	< 13			
A-1260	< 13			
SURROGATE (% RECOVERY)				
Hexabromobenzene	70.			
Tetrachloro-m-xylene	79.			

VALUES ARE IN UG/KG DRY WEIGHT



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Date Received: 2/23/96
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Project Name: Kenmore Nav. Channel
Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002766
CLIENT ID S8
DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	35.4			
Total Volatile Solids (%)	13.1			
Total Organic Carbon (%)	4.1			
Ammonia (mg/kg)	130			
Total Sulfides (mg/kg)	82.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	0.30
-2,	4.00	0.30
-1,	2.00	0.80
0,	1.00	1.40
+1,	0.50	1.70
+2,	0.25	6.80
+3,	0.125	11.9
+4,	0.063	20.6
+5,	0.032	4.00
+6,	0.016	12.4
+7,	0.008	14.6
+8,	0.004	14.5
+9,	0.002	2.30
+10,	0.001	< 0.1
>+10,	<0.001	8.50

METALS (MG/KG DRY WEIGHT)

Antimony	1.0	20	200
Arsenic	9.7	57	700
Cadmium	0.22	0.96	10
Copper	14.	81	810
Lead	27.	66	660
Mercury	0.068	0.21	2
Nickel	44.	140	
Silver	< 0.1	1.2	5
Zinc	63.	160	1,600

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002766
 CLIENT ID S8
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 39		64	640
Acenaphthene	< 39		63	630
Anthracene	< 39		130	1,300
Fluorene	< 39		64	640
Naphthalene	< 39		210	2,100
Phenanthrene	45		320	3,200
2-Methylnaphthalene	< 39		67	670
HPAH				
Benzo(a)anthracene	< 39		450	4,500
Benzo(a)pyrene	< 39		680	6,800
Benzo(b)fluoranthene	47		800	8,000
Benzo(k)fluoranthene	< 39			
Benzo(ghi)perylene	< 39		540	5,400
Chrysene	47		670	6,700
Dibenzo(a,h)anthracene	< 39		120	5,400
Fluoranthene	87		630	6,300
Indeno(1,2,3-cd)pyrene	< 39		69	5,200
Pyrene	93		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 12		23	230
1,2-Dichlorobenzene	< 9		19	350
1,3-Dichlorobenzene	< 9		170	
1,4-Dichlorobenzene	< 9		26	260
1,2,4-Trichlorobenzene	< 12		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	350		3,100	
Butyl benzyl phthalate	< 39		470	
Diethyl phthalate	46		97	
Dimethyl phthalate	< 39		160	
Di-n-butyl phthalate	< 39		1,400	
Di-n-octyl phthalate	< 39		6,200	
PHENOLS				
Pentachlorophenol	< 98		100	690
Phenol	< 39		120	1,200
2-Methylphenol	< 20		20	72
4-Methylphenol	< 39		120	1,200
2,4-Dimethylphenol	< 20		29	50



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002766
CLIENT ID S8
DATE SAMPLED 2/21/96

Table with columns: RESULT, Q, S.L., M.L.
Sections include: MISCELLANEOUS COMPOUNDS, SURROGATES (% RECOVERY), VOLATILE ORGANICS, SURROGATES (% RECOVERY), PESTICIDES & PCB's, SURROGATE (% RECOVERY)

VALUES ARE IN UG/KG DRY WEIGHT



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Attention: M. Herrenkohl

Date Received: 2/23/96
Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002767
CLIENT ID S9
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	45.6			
Total Volatile Solids (%)	9.40			
Total Organic Carbon (%)	4.0			
Ammonia (mg/kg)	220			
Total Sulfides (mg/kg)	68.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	0.20
-2,	4.00	< 0.1
-1,	2.00	0.90
0,	1.00	1.10
+1,	0.50	1.10
+2,	0.25	9.90
+3,	0.125	28.3
+4,	0.063	18.6
+5,	0.032	15.0
+6,	0.016	6.20
+7,	0.008	9.70
+8,	0.004	6.00
+9,	0.002	0.80
+10,	0.001	< 0.1
>+10,	<0.001	2.20

METALS (MG/KG DRY WEIGHT)

Antimony	1.2	20	200
Arsenic	9.8	57	700
Cadmium	0.37	0.96	10
Copper	18.	81	810
Lead	36.	66	660
Mercury	0.050	0.21	2
Nickel	42.	140	
Silver	0.10	1.2	5
Zinc	81.	160	1,600

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002767
 CLIENT ID S9
 DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 28		64	640
Acenaphthene	< 28		63	630
Anthracene	< 28		130	1,300
Fluorene	< 28		64	640
Naphthalene	< 28		210	2,100
Phenanthrene	74		320	3,200
2-Methylnaphthalene	< 28		67	670
HPAH				
Benzo(a)anthracene	57		450	4,500
Benzo(a)pyrene	61		680	6,800
Benzo(b)fluoranthene	76		800	8,000
Benzo(k)fluoranthene	66			
Benzo(ghi)perylene	49		540	5,400
Chrysene	86		670	6,700
Dibenzo(a,h)anthracene	< 28		120	5,400
Fluoranthene	170		630	6,300
Indeno(1,2,3-cd)pyrene	51		69	5,200
Pyrene	150		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 17		23	230
1,2-Dichlorobenzene	< 7		19	350
1,3-Dichlorobenzene	< 7		170	
1,4-Dichlorobenzene	< 7		26	260
1,2,4-Trichlorobenzene	< 9		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	850		3,100	
Butyl benzyl phthalate	< 28		470	
Diethyl phthalate	< 28		97	
Dimethyl phthalate	< 28		160	
Di-n-butyl phthalate	< 28		1,400	
Di-n-octyl phthalate	< 28		6,200	
PHENOLS				
Pentachlorophenol	< 71		100	690
Phenol	< 28		120	1,200
2-Methylphenol	< 14		20	72
4-Methylphenol	< 28		120	1,200
2,4-Dimethylphenol	< 14		29	50



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002767
CLIENT ID S9
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 140		400	690
Benzyl alcohol	< 17		25	73
Dibenzofuran	< 28		54	540
Hexachlorobutadiene	< 23		29	290
Hexachloroethane	< 28		1400	14,000
N-Nitrosodiphenylamine	< 17		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	46.0			
D-6-Phenol	58.0			
D-5-Nitrobenzene	50.0			
2-Fluorobiphenyl	72.0			
2,4,6-Tribromophenol	78.0			
D14-Terphenyl	98.0			
VOLATILE ORGANICS				
Ethylbenzene	< 7		10	50
Tetrachloroethene	< 7		14	210
Trichloroethene	< 7		160	1,600
Xylene	< 7		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	88.0			
D8-Toluene	94.0			
4-Bromofluorobenzene	91.0			
PESTICIDES & PCB's				
Aldrin	1.7		10	
Chlordane	< 1.4		10	
DDD	4.2		6.9	69
DDE	2.2			
DDT	< 2.8			
Dieldrin	< 1.1		10	
Heptachlor	< 0.9		10	
Lindane	< 0.9		10	
A-1016	< 14		130	2,500
A-1221	< 57		Total	Total
A-1232	< 14			
A-1242	< 14			
A-1248	< 14			
A-1254	15			
A-1260	< 15			
SURROGATE (% RECOVERY)				
Hexabromobenzene	76.			
Tetrachloro-m-xylene	74.			

VALUES ARE IN UG/KG DRY WEIGHT



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Date Received: 2/23/96
 Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
 Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002768
 CLIENT ID S10
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	34.2			
Total Volatile Solids (%)	13.0			
Total Organic Carbon (%)	5.3			
Ammonia (mg/kg)	280			
Total Sulfides (mg/kg)	91.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	< 0.1
-2,	4.00	< 0.1
-1,	2.00	< 0.1
0,	1.00	0.60
+1,	0.50	0.90
+2,	0.25	2.30
+3,	0.125	7.30
+4,	0.063	18.4
+5,	0.032	26.0
+6,	0.016	11.7
+7,	0.008	17.6
+8,	0.004	9.80
+9,	0.002	2.10
+10,	0.001	0.70
>+10,	<0.001	2.60

METALS (MG/KG DRY WEIGHT)

Antimony	1.5	20	200
Arsenic	11.	57	700
Cadmium	0.53	0.96	10
Copper	23.	81	810
Lead	45.	66	660
Mercury	0.10	0.21	2
Nickel	47.	140	
Silver	0.19	1.2	5
Zinc	93.	160	1,600

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002768
 CLIENT ID S10
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 43		64	640
Acenaphthene	< 43		63	630
Anthracene	< 43		130	1,300
Fluorene	< 43		64	640
Naphthalene	< 43		210	2,100
Phenanthrene	76		320	3,200
2-Methylnaphthalene	< 43		67	670
HPAH				
Benzo(a)anthracene	48		450	4,500
Benzo(a)pyrene	50		680	6,800
Benzo(b)fluoranthene	69		800	8,000
Benzo(k)fluoranthene	50			
Benzo(ghi)perylene	45		540	5,400
Chrysene	77		670	6,700
Dibenzo(a,h)anthracene	< 43		120	5,400
Fluoranthene	150		630	6,300
Indeno(1,2,3-cd)pyrene	< 43		69	5,200
Pyrene	150		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 12		23	230
1,2-Dichlorobenzene	< 10		19	350
1,3-Dichlorobenzene	< 10		170	
1,4-Dichlorobenzene	< 10		26	260
1,2,4-Trichlorobenzene	< 13		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	680		3,100	
Butyl benzyl phthalate	< 43		470	
Diethyl phthalate	< 43		97	
Dimethyl phthalate	< 43		160	
Di-n-butyl phthalate	< 43		1,400	
Di-n-octyl phthalate	< 43		6,200	
PHENOLS				
Pentachlorophenol	< 87		100	690
Phenol	< 43		120	1,200
2 Methylphenol	< 17		20	72
4 Methylphenol	< 43		120	1,200
2,4-Dimethylphenol	< 22		29	50

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002768
 CLIENT ID S10
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 220		400	690
Benzyl alcohol	< 21		25	73
Dibenzofuran	< 43		54	540
Hexachlorobutadiene	< 20		29	290
Hexachloroethane	< 43		1400	14,000
N-Nitrosodiphenylamine	< 26		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	61.0			
D-6-Phenol	71.0			
D-5-Nitrobenzene	69.0			
2-Fluorobiphenyl	82.0			
2,4,6-Tribromophenol	90.0			
D14-Terphenyl	100.			
VOLATILE ORGANICS				
Ethylbenzene	< 10		10	50
Tetrachloroethene	< 10		14	210
Trichloroethene	< 10		160	1,600
Xylene	< 10		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	92.0			
D8-Toluene	97.0			
4-Bromofluorobenzene	91.0			
PESTICIDES & PCB's				
Aldrin	< 1.3		10	
Chlordane	< 1.3		10	
DDD	6.8		6.9	69
DDE	3.0			
DDT	< 4.3			
Dieldrin	< 1.7		10	
Heptachlor	< 1.3		10	
Lindane	< 1.3		10	
A-1016	< 22		130	2,500
A-1221	< 87		Total	Total
A-1232	< 22			
A-1242	< 22			
A-1248	< 22			
A-1254	26			
A-1260	< 22			
SURROGATE (% RECOVERY)				
Hexabromobenzene	63.			
Tetrachloro-m-xylene	53.			

VALUES ARE IN UG/KG DRY WEIGHT



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Date Received: 2/23/96
Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002769
CLIENT ID S11
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	44.0			
Total Volatile Solids (%)	11.3			
Total Organic Carbon (%)	4.4			
Ammonia (mg/kg)	270			
Total Sulfides (mg/kg)	86.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	< 0.1
-2,	4.00	0.20
-1,	2.00	0.20
0,	1.00	0.70
+1,	0.50	1.40
+2,	0.25	3.00
+3,	0.125	18.2
+4,	0.063	20.2
+5,	0.032	16.8
+6,	0.016	10.0
+7,	0.008	12.7
+8,	0.004	6.80
+9,	0.002	4.00
+10,	0.001	2.20
>+10,	<0.001	3.60

METALS (MG/KG DRY WEIGHT)

Antimony	1.3	20	200
Arsenic	10.	57	700
Cadmium	0.36	0.96	10
Copper	19.	81	810
Lead	35.	66	660
Mercury	0.068	0.21	2
Nickel	43.	140	
Silver	< 0.1	1.2	5
Zinc	81.	160	1,600



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002769
CLIENT ID S11
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 33		64	640
Acenaphthene	< 33		63	630
Anthracene	< 33		130	1,300
Fluorene	< 33		64	640
Naphthalene	< 33		210	2,100
Phenanthrene	110		320	3,200
2-Methylnaphthalene	< 33		67	670
HPAH				
Benzo(a)anthracene	78		450	4,500
Benzo(a)pyrene	96		680	6,800
Benzo(b)fluoranthene	100		800	8,000
Benzo(k)fluoranthene	83			
Benzo(ghi)perylene	75		540	5,400
Chrysene	120		670	6,700
Dibenzo(a,h)anthracene	< 33		120	5,400
Fluoranthene	210		630	6,300
Indeno(1,2,3-cd)pyrene	68		69	5,200
Pyrene	200		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 20		23	230
1,2-Dichlorobenzene	< 8		19	350
1,3-Dichlorobenzene	< 8		170	
1,4-Dichlorobenzene	< 8		26	260
1,2,4-Trichlorobenzene	< 10		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	1000		3,100	
Butyl benzyl phthalate	< 33		470	
Diethyl phthalate	< 33		97	
Dimethyl phthalate	< 33		160	
Di-n-butyl phthalate	< 33		1,400	
Di-n-octyl phthalate	< 33		6,200	
PHENOLS				
Pentachlorophenol	< 83		100	690
Phenol	< 33		120	1,200
2 Methylphenol	< 17		20	72
4 Methylphenol	< 33		120	1,200
2,4-Dimethylphenol	< 17		29	50

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002769
CLIENT ID S11
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 170		400	690
Benzyl alcohol	< 20		25	73
Dibenzofuran	< 33		54	540
Hexachlorobutadiene	< 27		29	290
Hexachloroethane	< 33		1400	14,000
N-Nitrosodiphenylamine	< 20		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	55.0			
D-6-Phenol	61.0			
D-5-Nitrobenzene	67.0			
2-Fluorobiphenyl	79.0			
2,4,6-Tribromophenol	75.0			
D14-Terphenyl	91.0			
VOLATILE ORGANICS				
Ethylbenzene	< 8		10	50
Tetrachloroethene	< 8		14	210
Trichloroethene	< 8		160	1,600
Xylene	< 8		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	93.0			
D8-Toluene	97.0			
4-Bromofluorobenzene	93.0			
PESTICIDES & PCB'S				
Aldrin	< 3	D	10	
Chlordane	< 3	D	10	
DDD	< 5	D	6.9	69
DDE	< 4	D		
DDT	< 6.9	D		
Dieldrin	< 4	D	10	
Heptachlor	< 3	D	10	
Lindane	< 3	D	10	
A-1016	< 17		130	2,500
A-1221	< 68		Total	Total
A-1232	< 17			
A-1242	< 17			
A-1248	< 17			
A-1254	23			
A-1260	< 17			
SURROGATE (% RECOVERY)				
Hexabromobenzene	66.			
Tetrachloro-m-xylene	74.			

VALUES ARE IN UG/KG DRY WEIGHT



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Date Received: 2/23/96
Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002770
CLIENT ID S12
DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	31.5			
Total Volatile Solids (%)	12.1			
Total Organic Carbon (%)	6.2			
Ammonia (mg/kg)	100			
Total Sulfides (mg/kg)	67.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION		
	4.75	0.60		
-2,	4.00	< 0.1		
-1,	2.00	0.30		
0,	1.00	1.30		
+1,	0.50	1.90		
+2,	0.25	4.80		
+3,	0.125	19.0	45	
+4,	0.063	19.4		
+5,	0.032	16.6		
+6,	0.016	10.2		
+7,	0.008	11.6		
+8,	0.004	9.90		
+9,	0.002	1.10		
+10,	0.001	< 0.1		
>+10,	<0.001	3.20		

METALS (MG/KG DRY WEIGHT)

Antimony	1.2	20	200
Arsenic	7.6	57	700
Cadmium	0.30	0.96	10
Copper	15.	81	810
Lead	26.	66	660
Mercury	< 0.063	0.21	2
Nickel	37.	140	
Silver	< 0.1	1.2	5
Zinc	61.	160	1,600



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002770
CLIENT ID S12
DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 44		64	640
Acenaphthene	< 44		63	630
Anthracene	< 44		130	1,300
Fluorene	< 44		64	640
Naphthalene	< 44		210	2,100
Phenanthrene	47		320	3,200
2-Methylnaphthalene	< 44		67	670
HPAH				
Benzo(a)anthracene	< 44		450	4,500
Benzo(a)pyrene	< 44		680	6,800
Benzo(b)fluoranthene	58		800	8,000
Benzo(k)fluoranthene	< 44			
Benzo(ghi)perylene	< 44		540	5,400
Chrysene	55		670	6,700
Dibenzo(a,h)anthracene	< 44		120	5,400
Fluoranthene	110		630	6,300
Indeno(1,2,3-cd)pyrene	< 44		69	5,200
Pyrene	89		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 12		23	230
1,2-Dichlorobenzene	< 10		19	350
1,3-Dichlorobenzene	< 10		170	
1,4-Dichlorobenzene	< 10		26	260
1,2,4-Trichlorobenzene	< 13		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	410		3,100	
Butyl benzyl phthalate	55		470	
Diethyl phthalate	< 44		97	
Dimethyl phthalate	< 44		160	
Di-n-butyl phthalate	< 44		1,400	
Di-n-octyl phthalate	< 44		6,200	
PHENOLS				
Pentachlorophenol	< 87		100	690
Phenol	< 44		120	1,200
2 Methylphenol	< 17		20	72
4 Methylphenol	< 44		120	1,200
2,4-Dimethylphenol	< 22		29	50

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002770
 CLIENT ID S12
 DATE SAMPLED 2/21/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 220		400	690
Benzyl alcohol	< 21		25	73
Dibenzofuran	< 44		54	540
Hexachlorobutadiene	< 20		29	290
Hexachloroethane	< 44		1400	14,000
N-Nitrosodiphenylamine	< 26		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	61.0			
D-6-Phenol	69.0			
D-5-Nitrobenzene	59.0			
2-Fluorobiphenyl	85.0			
2,4,6-Tribromophenol	92.0			
D14-Terphenyl	105.			
VOLATILE ORGANICS				
Ethylbenzene	< 10		10	50
Tetrachloroethene	< 10		14	210
Trichloroethene	< 10		160	1,600
Xylene	< 10		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	91.0			
D8-Toluene	91.0			
4-Bromofluorobenzene	83.0			
PESTICIDES & PCB's				
Aldrin	< 4	D	10	
Chlordane	< 4	D	10	
DDD	< 6.6	D	6.9	69
DDE	< 5.3	D		
DDT	< 6.9	D		
Dieldrin	< 5.3	D	10	
Heptachlor	< 4	D	10	
Lindane	< 4	D	10	
A-1016	< 22		130	2,500
A-1221	< 88		Total	Total
A-1232	< 22			
A-1242	< 22			
A-1248	< 22			
A-1254	< 22			
A-1260	< 22			
SURROGATE (% RECOVERY)				
Hexabromobenzene	76.			
Tetrachloro-m-xylene	82.			

VALUES ARE IN UG/KG DRY WEIGHT



AmTest Inc.

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Attention: M. Herrenkohl

Date Received: 2/23/96
Date Reported: 3/18/96

Project Name: Kenmore Nav. Channel
Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002771
CLIENT ID S13
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	45.0			
Total Volatile Solids (%)	7.00			
Total Organic Carbon (%)	3.7			
Ammonia (mg/kg)	200			
Total Sulfides (mg/kg)	58.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	< 0.1
-2,	4.00	< 0.1
-1,	2.00	< 0.1
0,	1.00	0.40
+1,	0.50	0.90
+2,	0.25	1.80
+3,	0.125	12.7
+4,	0.063	13.1
+5,	0.032	11.6
+6,	0.016	13.1
+7,	0.008	15.3
+8,	0.004	13.7
+9,	0.002	5.80
+10,	0.001	2.80
>+10,	<0.001	8.90

METALS (MG/KG DRY WEIGHT)

Antimony	1.2	20	200
Arsenic	9.4	57	700
Cadmium	0.37	0.96	10
Copper	18.	81	810
Lead	33.	66	660
Mercury	0.080	0.21	2
Nickel	43.	140	
Silver	< 0.1	1.2	5
Zinc	79.	160	1,600

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002771
 CLIENT ID S13
 DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 32		64	640
Acenaphthene	< 32		63	630
Anthracene	< 32		130	1,300
Fluorene	< 32		64	640
Naphthalene	< 32		210	2,100
Phenanthrene	62		320	3,200
2-Methylnaphthalene	< 32		67	670
HPAH				
Benzo(a)anthracene	48		450	4,500
Benzo(a)pyrene	55		680	6,800
Benzo(b)fluoranthene	62		800	8,000
Benzo(k)fluoranthene	51			
Benzo(ghi)perylene	47		540	5,400
Chrysene	73		670	6,700
Dibenzo(a,h)anthracene	< 32		120	5,400
Fluoranthene	120		630	6,300
Indeno(1,2,3-cd)pyrene	43		69	5,200
Pyrene	130		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 19		23	230
1,2-Dichlorobenzene	< 8		19	350
1,3-Dichlorobenzene	< 8		170	
1,4-Dichlorobenzene	< 8		26	260
1,2,4-Trichlorobenzene	< 10		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	700		3,100	
Butyl benzyl phthalate	40		470	
Diethyl phthalate	< 32		97	
Dimethyl phthalate	< 32		160	
Di-n-butyl phthalate	< 32		1,400	
Di-n-octyl phthalate	< 32		6,200	
PHENOLS				
Pentachlorophenol	< 81		100	690
Phenol	< 32		120	1,200
2-Methylphenol	< 16		20	72
4-Methylphenol	< 32		120	1,200
2,4-Dimethylphenol	< 16		29	50

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PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002771
 CLIENT ID S13
 DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 160		400	690
Benzyl alcohol	< 19		25	73
Dibenzofuran	< 32		54	540
Hexachlorobutadiene	< 26		29	290
Hexachloroethane	< 32		1400	14,000
N-Nitrosodiphenylamine	< 19		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	56.0			
D-6-Phenol	62.0			
D-5-Nitrobenzene	67.0			
2-Fluorobiphenyl	82.0			
2,4,6-Tribromophenol	77.0			
D14-Terphenyl	95.0			
VOLATILE ORGANICS				
Ethylbenzene	< 8		10	50
Tetrachloroethene	< 8		14	210
Trichloroethene	< 8		160	1,600
Xylene	< 8		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	95.0			
D8-Toluene	98.0			
4-Bromofluorobenzene	91.0			
PESTICIDES & PCB's				
Aldrin	< 3	D	10	
Chlordane	< 3	D	10	
DDD	< 5	D	6.9	69
DDE	< 4	D		
DDT	< 6.9	D		
Dieldrin	< 3	D	10	
Heptachlor	< 3	D	10	
Lindane	< 3	D	10	
A-1016	< 16		130	2,500
A-1221	< 65		Total	Total
A-1232	< 16			
A-1242	< 16			
A-1248	< 16			
A-1254	< 16			
A-1260	< 16			
SURROGATE (% RECOVERY)				
Hexabromobenzene	69.			
Tetrachloro-m-xylene	82.			

VALUES ARE IN UG/KG DRY WEIGHT



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Project Name: Kenmore Nav. Channel
Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002772
CLIENT ID S14
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	56.8			
Total Volatile Solids (%)	5.00			
Total Organic Carbon (%)	4.4			
Ammonia (mg/kg)	130			
Total Sulfides (mg/kg)	13.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	0.20
-2,	4.00	< 0.1
-1,	2.00	0.40
0,	1.00	0.50
+1,	0.50	0.50
+2,	0.25	3.90
+3,	0.125	20.6
+4,	0.063	15.8
+5,	0.032	11.1
+6,	0.016	15.0
+7,	0.008	13.1
+8,	0.004	8.90
+9,	0.002	3.10
+10,	0.001	1.30
>+10,	<0.001	5.60

METALS (MG/KG DRY WEIGHT)

Antimony	1.1	20	200
Arsenic	5.6	57	700
Cadmium	0.13	0.96	10
Copper	12.	81	810
Lead	24.	66	660
Mercury	0.049	0.21	2
Nickel	40.	140	
Silver	< 0.1	1.2	5
Zinc	55.	160	1,600



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002772
CLIENT ID S14
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 25		64	640
Acenaphthene	< 25		63	630
Anthracene	26		130	1,300
Fluorene	< 25		64	640
Naphthalene	< 25		210	2,100
Phenanthrene	26		320	3,200
2-Methylnaphthalene	< 25		67	670
HPAH				
Benzo(a)anthracene	< 25		450	4,500
Benzo(a)pyrene	< 25		680	6,800
Benzo(b)fluoranthene	< 25		800	8,000
Benzo(k)fluoranthene	< 25			
Benzo(ghi)perylene	< 25		540	5,400
Chrysene	31		670	6,700
Dibenzo(a,h)anthracene	< 25		120	5,400
Fluoranthene	50		630	6,300
Indeno(1,2,3-cd)pyrene	< 25		69	5,200
Pyrene	51		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 15		23	230
1,2-Dichlorobenzene	< 6		19	350
1,3-Dichlorobenzene	< 6		170	
1,4-Dichlorobenzene	< 6		26	260
1,2,4-Trichlorobenzene	< 8		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	380		3,100	
Butyl benzyl phthalate	< 25		470	
Diethyl phthalate	< 25		97	
Dimethyl phthalate	< 25		160	
Di-n-butyl phthalate	< 25		1,400	
Di-n-octyl phthalate	< 25		6,200	
PHENOLS				
Pentachlorophenol	< 63		100	690
Phenol	< 25		120	1,200
2 Methylphenol	< 13		20	72
4 Methylphenol	< 25		120	1,200
2,4-Dimethylphenol	< 13		29	50



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002772
CLIENT ID S14
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 130		400	690
Benzyl alcohol	< 15		25	73
Dibenzofuran	< 25		54	540
Hexachlorobutadiene	< 20		29	290
Hexachloroethane	< 25		1400	14,000
N-Nitrosodiphenylamine	< 15		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	48.0			
D-6-Phenol	54.0			
D-5-Nitrobenzene	59.0			
2-Fluorobiphenyl	80.0			
2,4,6-Tribromophenol	70.0			
D14-Terphenyl	86.0			
VOLATILE ORGANICS				
Ethylbenzene	< 6		10	50
Tetrachloroethene	< 6		14	210
Trichloroethene	< 6		160	1,600
Xylene	< 6		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	92.0			
D8-Toluene	96.0			
4-Bromofluorobenzene	89.0			
PESTICIDES & PCB's				
Aldrin	< 2.3	D	10	
Chlordane	< 2.3	D	10	
DDD	< 4	D	6.9	69
DDE	< 3	D		
DDT	< 6.9	D		
Dieldrin	< 3	D	10	
Heptachlor	< 2.3	D	10	
Lindane	< 2.3	D	10	
A-1016	< 13		130	2,500
A-1221	< 50		Total	Total
A-1232	< 13			
A-1242	< 13			
A-1248	< 13			
A-1254	< 13			
A-1260	< 13			
SURROGATE (% RECOVERY)				
Hexabromobenzene	75.			
Tetrachloro-m-xylene	77.			

VALUES ARE IN UG/KG DRY WEIGHT



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Project Name: Kenmore Nav. Channel
 Project #: 01-0440-04-0272

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002773
 CLIENT ID S15
 DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
CONVENTIONALS (DRY WEIGHT)				
Total Solids (%)	59.2			
Total Volatile Solids (%)	4.00			
Total Organic Carbon (%)	1.6			
Ammonia (mg/kg)	73.			
Total Sulfides (mg/kg)	49.			

GRAIN SIZE DISTRIBUTION

PHI	OPENING (MM)	% RETENTION
	4.75	0.50
-2,	4.00	0.20
-1,	2.00	0.30
0,	1.00	0.50
+1,	0.50	1.90
+2,	0.25	15.4
+3,	0.125	12.0
+4,	0.063	9.80
+5,	0.032	12.5
+6,	0.016	15.9
+7,	0.008	12.5
+8,	0.004	8.30
+9,	0.002	4.00
+10,	0.001	2.10
>+10,	<0.001	4.20

METALS (MG/KG DRY WEIGHT)

Antimony	1.0	20	200
Arsenic	7.2	57	700
Cadmium	0.11	0.96	10
Copper	10.	81	810
Lead	23.	66	660
Mercury	< 0.034	0.21	2
Nickel	39.	140	
Silver	< 0.1	1.2	5
Zinc	50.	160	1,600

PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002773
 CLIENT ID S15
 DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
ORGANICS (UG/KG DRY WEIGHT)				
LPAH				
Acenaphthalene	< 24		64	640
Acenaphthene	< 24		63	630
Anthracene	< 24		130	1,300
Fluorene	< 24		64	640
Naphthalene	< 24		210	2,100
Phenanthrene	< 24		320	3,200
2-Methylnaphthalene	< 24		67	670
HPAH				
Benzo(a)anthracene	< 24		450	4,500
Benzo(a)pyrene	< 24		680	6,800
Benzo(b)fluoranthene	< 24		800	8,000
Benzo(k)fluoranthene	< 24			
Benzo(ghi)perylene	< 24		540	5,400
Chrysene	< 24		670	6,700
Dibenzo(a,h)anthracene	< 24		120	5,400
Fluoranthene	34		630	6,300
Indeno(1,2,3-cd)pyrene	< 24		69	5,200
Pyrene	32		430	7,300
CHLORINATED HYDROCARBONS				
Hexachlorobenzene	< 14		23	230
1,2-Dichlorobenzene	< 5		19	350
1,3-Dichlorobenzene	< 5		170	
1,4-Dichlorobenzene	< 5		26	260
1,2,4-Trichlorobenzene	< 7		13	64
PHTHALATES				
Bis(2-ethylhexyl)phthalate	98		3,100	
Butyl benzyl phthalate	< 24		470	
Diethyl phthalate	< 24		97	
Dimethyl phthalate	< 24		160	
Di-n-butyl phthalate	< 24		1,400	
Di-n-octyl phthalate	< 24		6,200	
PHENOLS				
Pentachlorophenol	< 60		100	690
Phenol	< 24		120	1,200
2 Methylphenol	< 12		20	72
4 Methylphenol	< 24		120	1,200
2,4-Dimethylphenol	< 12		29	50



PSDDA CHEMICALS OF CONCERN

AM TEST ID 96-A002773
CLIENT ID S15
DATE SAMPLED 2/22/96

	RESULT	Q	S.L.	M.L.
MISCELLANEOUS COMPOUNDS				
Benzoic acid	< 120		400	690
Benzyl alcohol	< 14		25	73
Dibenzofuran	< 24		54	540
Hexachlorobutadiene	< 19		29	290
Hexachloroethane	< 24		1400	14,000
N-Nitrosodiphenylamine	< 14		28	220
SURROGATES (% RECOVERY)				
2-Fluorophenol	57.0			
D-6-Phenol	60.0			
D-5-Nitrobenzene	63.0			
2-Fluorobiphenyl	85.0			
2,4,6-Tribromophenol	74.0			
D14-Terphenyl	87.0			
VOLATILE ORGANICS				
Ethylbenzene	< 5		10	50
Tetrachloroethene	< 5		14	210
Trichloroethene	< 5		160	1,600
Xylene	< 5		12	160
SURROGATES (% RECOVERY)				
D4-1,2-Dichloroethane	93.0			
D8-Toluene	96.0			
4-Bromofluorobenzene	96.0			
PESTICIDES & PCB's				
Aldrin	< 2	D	10	
Chlordane	< 2	D	10	
DDD	< 4	D	6.9	69
DDE	< 3	D		
DDT	< 6.9	D		
Dieldrin	< 3	D	10	
Heptachlor	< 2	D	10	
Lindane	< 2	D	10	
A-1016	< 12		130	2,500
A-1221	< 47		Total	Total
A-1232	< 12			
A-1242	< 12			
A-1248	< 12			
A-1254	< 12			
A-1260	< 12			
SURROGATE (% RECOVERY)				
Hexabromobenzene	81.			
Tetrachloro-m-xylene	77.			

VALUES ARE IN UG/KG DRY WEIGHT

AMTEST

PSDDA

METALS (PPM)	D.L.	S.L.	M.L.	METHODS
Antimony	2.5	20	200	PSEP APPEN D GFAA
Arsenic	2.5	57	700	PSEP APPEN D GFAA
Cadmium	0.3	0.96	10	PSEP APPEN D GFAA
Copper	15.0	81	810	PSEP APPEN D ICP
Lead	5.0	66	660	PSEP APPEN D ICP
Mercury	0.02	0.21	2	7471 CV
Nickel	2.5	140		PSEP APPEN D ICP
Silver	0.2	1.2	5	PSEP APPEN D GFAA
Zinc	15.0	160	1,600	PSEP APPEN D ICP

ORGANICS (PPB)

LPAH

Acenaphthalene	20	64	640	3550/8270
Acenaphthene	20	63	630	3550/8270
Anthracene	20	130	1,300	3550/8270
Fluorene	20	64	640	3550/8270
2-Methylnaphthalene	20	67	670	3550/8270
Naphthalene	20	210	2,100	3550/8270
Phenanthrene	20	320	3,200	3550/8270

HPAH

Benzo(a)anthracene	20	450	4,500	3550/8270
Benzo(a)pyrene	20	680	6,800	3550/8270
Benzo(b)fluoranthene	20	800	8,000	3550/8270
Benzo(k)fluoranthene	20			3550/8270
Benzo(ghi)perylene	20	540	5,400	3550/8270
Chrysene	20	670	6,700	3550/8270
Dibenzo(a,h)anthracene	20	120	1,200	3550/8270
Fluoranthene	20	630	6,300	3550/8270
Indeno(1,2,3-cd)pyrene	20	69	5,200	3550/8270
Pyrene	20	430	7,300	3550/8270

CHLORINATED HYDROCARBONS

1,2-Dichlorobenzene	3.2	19	350	8240
1,3-Dichlorobenzene	3.2	170		8240
1,4-Dichlorobenzene	3.2	26	260	8240
Hexachlorobenzene	12	23	230	3550/8270
1,2,4-Trichlorobenzene	6.0	13	64	3550/8270

PHTHALATES

Bis(2-ethylhexyl)phthalate	20	3,100		3550/8270
Butyl benzyl phthalate	20	470		3550/8270
Diethyl phthalate	20	97		3550/8270
Dimethyl phthalate	20	160		3550/8270
Di-n-butyl phthalate	20	1,400		3550/8270
Di-n-octyl phthalate	20	6,200		3550/8270

PHENOLS

2,4-Dimethylphenol	10	29	50	3550/8270
2 Methylphenol	10	20	72	3550/8270
4 Methylphenol	20	120	1,200	3550/8270
Pentachlorophenol	61	100	690	3550/8270

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Phenol	20	120	1,200	3550/8270
MISCELLANEOUS COMPOUNDS				
Benzoic acid	100	400	690	3550/8270
Benzyl alcohol	10	25	73	3550/8270
Dibenzofuran	20	54	540	3550/8270
Hexachloroethane	20	1,400	14,000	3550/8270
Hexachlorobutadiene	20	29	290	3550/8270
N-Nitrosodiphenylamine	15	28	220	3550/8270
VOLATILE ORGANICS				
Ethylbenzene	3.2	10	50	8240
Tetrachloroethene	3.2	14	210	8240
Trichloroethene	3.2	160	1,600	8240
Xylene	3.2	12	160	8240
PESTICIDES				
DDD	3.3	6.9	69	3540/8080
DDE	2.3			3540/8080
DDT	6.7			3540/8080
Aldrin	1.7	10		3540/8080
Chlordane	1.7	10		3540/8080
Dieldrin	2.3	10		3540/8080
Heptachlor	1.7	10		3540/8080
Lindane	1.7	10		3540/8080
Total PCB's	67	130	2,500	3540/8080

All values are on a dry weight basis

* 8270 Compounds MDL's based on two 35g extracts (70% solids)

CONVENTIONALS

Total Solids	PSEP p17
Total Volatile Solids	PSEP p20
Total Organic Carbon	SM 5310B
Ammonia	Plumb, 1981
Total Sulfides	PSEP p32
Grain Size Distribution	PSEP p9