APPENDIX B

REPORTS FOR ANALYSES OF WATER QUALITY OF PRIVATE WELLS

SERCO Laboratories

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 1579 PAGE 1
07/28/87

Karen Nelson
21508 Lofton Avenue N.
Scandia, MN 55073

DATE COLLECTED:
DATE RECEIVED: 06/26/87
COLLECTED BY: CLIENT
PICKED UP BY: CLIENT
SAMPLE TYPE: DRINKING WATER

SERCO SAMPLE NO:	43007
SAMPLE DESCRIPTION:	WATER SAMPLE
ANALYSIS:	
Acenaphthene, ug/L	<0.30
Acenaphthylene, ug/L	<0.10
Anthracene, ug/L	<0.01
Benzo(a)anthracene, ug/L	<0.01
Benzo(a)pyrene, ug/L	0.10
Benzo(b)fluoranthene, ug/L	0.15
Benzo(ghi)perylene, ug/L	0.22
Benzo(k)fluoranthene, ug/L	<0.01
Chrysene, ug/L	<0.01
Dibenzo(ah)anthracene, ug/L	0.37
Fluoranthene, ug/L	<0.01
Fluorene, ug/L	<0.01
Indeno(1,2,3-cd)pyrene, ug/L	0.06
Naphthalene, ug/L	<0.10
Phenanthrene, ug/L	<0.01
Pyrene, ug/L	<0.01

Approved by: CC

< means "not detected at this level"

continued

Member

SERCO Laboratories

1931 West County Road C2. St Paul, Minnesota 55113 (612) 636-7173

All analyses were performed using EPA or other recognized methodologies.

Report submitted by,

LCC

Linda Crawford
Project Manager

< means "not detected at this level"

Member

SERCO Laboratories

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 1732 PAGE 1
08/10/87

John Sandok
10370 - 216th Street N.
Scandia, MN 55073

DATE COLLECTED:
DATE RECEIVED: 07/29/87
COLLECTED BY: CLIENT
PICKED UP BY: CLIENT
SAMPLE TYPE: DRINKING WATER

SERCO SAMPLE NO:	50027
SAMPLE DESCRIPTION:	WATER SAMPLE

ANALYSIS:	
Acenaphthene, ug/L	<0.30
Acenaphthylene, ug/L	<0.10
Anthracene, ug/L	<0.01
Benzo(a)anthracene, ug/L	<0.01
Benzo(a)pyrene, ug/L	<0.03
Benzo(b)fluoranthene, ug/L	0.23
Benzo(ghi)perylene, ug/L	<0.10
Benzo(k)fluoranthene, ug/L	<0.01
Chrysene, ug/L	<0.01
Dibenzo(ah)anthracene, ug/L	<0.03
Fluoranthene, ug/L	<0.01
Fluorene, ug/L	<0.01
Indeno(1,2,3-cd)pyrene, ug/L	<0.03
Naphthalene, ug/L	<0.10
Phenanthrene, ug/L	<0.01
Pyrene, ug/L	<0.01

Approved by: JCC

< means "not detected at this level"

continued

Member

SERCO Laboratories

St. Paul, Minnesota • County Road C2

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

All analyses were performed using EPA or other recognized methodologies.

Report submitted by,

LCC

Linda Crawford
Project Manager

< means "not detected at this level"

Member

SERCO Laboratories

St. Paul, Minnesota • Cedar Falls, Iowa

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 1756 PAGE 1
08/19/87

Karen Nelson
21508 Lofton Avenue N.
Scandia, MN 55073

DATE COLLECTED:
DATE RECEIVED: 08/01/87
COLLECTED BY: CLIENT
PICKED UP BY: CLIENT
SAMPLE TYPE: WATER

SERCO SAMPLE NO: 50767
SAMPLE DESCRIPTION: WATER SAMPLE

ANALYSIS:

Acenaphthene, ug/L	<0.30
Acenaphthylene, ug/L	<0.10
Anthracene, ug/L	<0.01
Benzo(a)anthracene, ug/L	<0.01
Benzo(a)pyrene, ug/L	(a)
Benzo(b)fluoranthene, ug/L	0.10(b)
Benzo(ghi)perylene, ug/L	(a)
Benzo(k)fluoranthene, ug/L	0.04(b)
Chrysene, ug/L	<0.01
Dibenzo(ah)anthracene, ug/L	<0.03
Fluoranthene, ug/L	<0.01
Fluorene, ug/L	<0.01
Indeno(1,2,3-cd)pyrene, ug/L	<0.03
Naphthalene, ug/L	<0.10
Phenanthrene, ug/L	<0.01
Pyrene, ug/L	0.32(b)

Approved by: JOC < means "not detected at this level". 1 mg = 1000 ug.

continued

Member

SERCO Laboratories

St. Paul, Minnesota • Cedar Rapids, Iowa

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

All analyses were performed using EPA or other recognized methodologies.

Report submitted by,

LCC

Linda Crawford
Project Manager

(a) Interfering peaks prohibited detection.

b) This sample was split and run twice. These compounds did not show up in the second run.

< means "not detected at this level". 1 mg = 1000 ug.

Member

SERCO Laboratories

St Paul, Minnesota • Cedar Falls, Iowa

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

LABORATORY ANALYSIS REPORT NO: 1904 PAGE 1
08/31/87

Scandia Private Wells
10375 216 Street North
Scandia, MN 55073

Don Fena

DATE COLLECTED: 08/19/87
DATE RECEIVED: 08/20/87
COLLECTED BY: CLIENT
PICKED UP BY: CLIENT
SAMPLE TYPE: WATER

SERCO SAMPLE NO:	57247	57257
SAMPLE DESCRIPTION:	#003 FENA	#003 FIELD BLANK
ANALYSIS:		
Acenaphthene, ug/L	<0.30	<0.30
Acenaphthylene, ug/L	<0.10	<0.10
Anthracene, ug/L	<0.01	<0.01
Benzo(a)anthracene, ug/L	<0.01	<0.01
Benzo(a)pyrene, ug/L	<0.03	<0.03
Benzo(b)fluoranthene, ug/L	<0.02	<0.02
Benzo(ghi)perylene, ug/L	<0.10	<0.10
Benzo(k)fluoranthene, ug/L	<0.01	<0.01
Chrysene, ug/L	<0.01	<0.01
Dibenzo(ah)anthracene, ug/L	(a)	<0.03
Fluoranthene, ug/L	<0.01	<0.01
Fluorene, ug/L	<0.01	<0.01
Indeno(1,2,3-cd)pyrene, ug/L	(a)	(a)
Naphthalene, ug/L	<0.10	<0.10
Phenanthrene, ug/L	<0.01	<0.01
Pyrene, ug/L	0.06(b)	<0.01

(a) Interfering peaks prohibited detection.
(b) This sample was run in duplicate. This compound did not show up in the second run.

Approved by: < means "not detected at this level". 1 mg = 1000 ug.

continued

Member

SERCO Laboratories

St. Paul, Minnesota • Cedar Falls, Iowa

1931 West County Road C2, St. Paul, Minnesota 55113 (612) 636-7173

All analyses were performed using EPA or other recognized methodologies.

Report submitted by,

Linda Crawford

Linda Crawford
Project Manager

< means "not detected at this level". 1 mg = 1000 ug.

Member

twin city testing
corporation
662 CROMWELL AVENUE
ST. PAUL, MN 55114
PHONE 612/645-3601

REPORT OF: PNA ANALYSIS

PROJECT: WATER SAMPLE

DATE: August 31, 1987

REPORTED TO: North Central Construction Supply
Attn: Dennis Warning
731 N Prior Avenue
St Paul, MN 55104

HPLC is superior to GC.

LABORATORY No 4410 87-5499

INTRODUCTION

This report presents the results of our analysis of a water sample received in our laboratory on August 18, 1987 from Dennis Warning. The scope of our work was limited to the analysis of this sample for polynuclear aromatic hydrocarbons (PNAs).

SAMPLE IDENTIFICATION

TCt Sample #9768 Water

METHODOLOGY

The sample was adjusted to pH 14 and extracted with solvent. The extract was dried with anhydrous sodium sulfate and concentrated in a Kuderna-Danish concentrator on a steam bath. PNAs are identified by retention time and quantified by comparison to a known standard using a VG Laboratory data system.

RESULTS

The results are listed in Table 1, attached. A component eluting at the retention time of acenaphthene was present using the fluorescence detector but was not present using the ultraviolet detector. This evidence indicates that the component is not acenaphthene.

REMARKS

The sample was extracted on August 20, 1987 and analyzed on August 20, 1987. The sample was consumed in the analysis.

TWIN CITY TESTING CORPORATION

Harold D Fisher
Chromatography Group Leader

Chris Bremer
Laboratory Supervisor

HDF/CB/klh

AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL.

TABLE 1

POLYNUCLEAR AROMATIC HYDROCARBONS

Compound	#9768, (ug/L)	Lab blank, (ug/L)	LDL, (ug/L)
Naphthalene	ND	ND	0.13
Acenaphthylene	ND	ND	0.25
Acenaphthene	ND	ND	0.15
Fluorene	ND	ND	0.25
Phenanthrene	ND	ND	0.013
Anthracene	ND	ND	0.005
Fluoranthene	ND	ND	0.0025
Pyrene	ND	ND	0.0025
Benzo (a) anthracene	ND	ND	0.002
Chrysene	ND	ND	0.01
Benzo (b) fluoranthene	ND	ND	0.002
Benzo (k) fluoranthene	ND	ND	0.02
Benzo (a) pyrene	ND	ND	0.002
Dibenzo (a, h) anthracene	ND	ND	0.004
Benzo (ghi) perylene	ND	ND	0.004
Indeno (1, 2, 3 cd) pyrene	ND	ND	0.005

ND = Not detected

ug/L = ppb

Laboratory No 4410 87-5499

20June87
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MINNESOTA DEPARTMENT OF HEALTH
Chemical Labortories Section
Organic Chemistry Unit

Date Collected: 7-27-87

Date Received: 7-28-87

WATER ANALYSES ONLY

Budget # : 32 /

Report To: Fie-Tuke/Wallace

Collected by: M. Bares

C.C. #

Field Blank # 132125

Lab Number		Field Number	Sample Description	- Container - Number	Type
132125	a	Field Blank	Karen Nelson well, New Scandia, MN	1 bottle	4 l
132126	b	001	Karen Nelson 21508 Lofton Ave. N New Scandia	3 bottles	4 l
	c				
	d				
	e				

Analysis Request Options		132125 a	132126 b	c	d	e
VOLATILE HC	465					
VOLATILE HAL HC	464					
GASOLINE/FUEL	463 + 465					
VOLATILE GASES	460 + 465					
MAX THMs + VOL HAL HC	467 + 464					
VOLATILE HC -by GC/MS	468					
CHLOROPHYLL A	450					
HERBICIDES, CPA	574					
PAH GROUP	470	Results attached				
PCBs	420					
PHENOLS	481					
PHTHALATE ESTERS	490 + 501					
PESTICIDES, CHLORINATED	502 + 501					
TOXAPHENE	520 + 501					
TECHNICAL CHLORDANE	530 + 501					
DDT GROUP	550 + 501					
PESTICIDES, BASE NEUTRAL	571 + 501					
SPECIAL SAMPLE HOURS	560					

COMPLETED
AUG 12 1987
CHEMICAL LABS

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MPCA, SOLID & HAZ
WASTE DIVISION

Field Notes:

Lab Notes:

MINNESOTA DEPARTMENT OF HEALTH
CHEMICAL LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS (CONCENTRATION IN UG/L)

	QUANTITATION LIMIT	132125	132126
Naphthalene	< 1.7	< 1.9	< 1.9
Acenaphthylene	< 3.2	< 3.6	< 3.5
Acenaphthene	< 1.1	< 1.2	< 1.2
Fluorene	< 0.88	< 0.98	< 0.97
Phenanthrene	< 0.62	< 0.69	< 0.68
Anthracene	< 0.044	< 0.049	< 0.048
Fluoranthene	< 0.020	< 0.022	< 0.022
Pyrene	< 0.25	< 0.28	< 0.28
Benzo(a)anthracene	< 0.010	< 0.011	< 0.011
Chrysene	< 0.24	< 0.27	< 0.26
Benzo(b)fluoranthene	< 0.002	< 0.002	< 0.002
Benzo(k)fluoranthene	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	< 0.002	< 0.002	< 0.002
Dibenzo(a,h)anthracene	< 0.008	< 0.009	< 0.009
Benzo(ghi)perylene	< 0.004	< 0.004	< 0.004
Indeno(1,2,3-cd)pyrene	< 0.096	< 0.11	< 0.11

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WASTE DIVISION
D

Date Collected:	7-27-87	7-27-87
Date Received:	7-28-87	7-28-87
Date Extracted:	7-30-87	7-30-87
Date Extract Cleanup:		
Date Analyzed:	8-07-87	8-07-87
Date Reported:	8-11-87	8-11-87

FIELD BLANK: 132125

	QUALITY CONTROL SPIKE MATRIX: 132126			QUALITY CONTROL DUPLICAT MATRIX: 132126	
	FOUND UG	TRUE UG	% REC	132126A	132126
Naphthalene	31	50	62%	< 1.9	< 1.9
Acenaphthylene	0	50	0%	< 3.5	< 3.5
Acenaphthene	0	50	0%	< 1.2	< 1.2
Fluorene				< 0.97	< 0.97
Phenanthrene	17	50	34%	< 0.68	< 0.68
Anthracene	30	50	60%	< 0.048	< 0.048
Fluoranthene	4.0	5.0	80%	< 0.022	< 0.022
Pyrene	4.5	5.0	90%	< 0.28	< 0.28
Benzo(a)anthracene	5.2	5.0	104%	< 0.011	< 0.011
Chrysene	6.1	5.0	122%	< 0.26	< 0.26
Benzo(b)fluoranthene	6.2	5.0	124%	< 0.002	< 0.002
Benzo(k)fluoranthene	2.8	2.5	112%	< 0.001	< 0.001
Benzo(a)pyrene	4.9	5.0	98%	< 0.002	< 0.002
Dibenzo(a,h)anthracene	4.6	5.0	92%	< 0.009	< 0.009
Benzo(ghi)perylene	5.2	5.0	104%	< 0.004	< 0.004
Indeno(1,2,3-cd)pyrene	5.4	5.0	108%	< 0.11	< 0.11

Analysis was performed by high pressure liquid chromatography equipped with variable wavelength ultraviolet (UV) and fluorescence detectors. All positive values were identified on at least two wavelength settings. Results for the following compounds are suspect because the recovery of the spike lies outside the acceptance limits of the method: acenaphthylene, acenaphthene and phenanthrene.

20June87
Org.form.FY88

MINNESOTA DEPARTMENT OF HEALTH
Chemical Labortories Section
Organic Chemistry Unit

Date Collected: 7-27-87

Date Received: 7-28-87

WATER ANALYSES ONLY

Budget # : 32

Report To: Fier Tucker/Wallner

Collected by: M Bares

C.C. #

Field Blank # 132127

Lab Number		Field Number	Sample Description	- Container - Number	Type
132132	a	217	Alfred Miller 600 Quinmore Ave N	4 vials	40 ml
132133	b	218	Debbie Ellis 567 Quinlan Ave N	"	"
132134	c	219	Betty Miller 354 Quinell Ave N	"	"
132135	d	220	I.R. Eerickson 11 Croixview	"	"
132[illegible]	e	001	Karen Nelson 21508 Lofton Ave N. New Scandia	"	"

Analysis Request Options		132132 a	132133 b	132134 c	132135 d	132[illegible] e
VOLATILE HC	465					
VOLATILE HAL HC	464					
GASOLINE/FUEL	463 + 465					
VOLATILE GASES	460 + 465					
MAX THMs + VOL HAL HC	467 + 464					
VOLATILE HC by GC/MS	468					
CHLOROPHYLL A	450					
HERBICIDES, CPA	574					
PAH GROUP	470					
PCBs	420					
PHENOLS	481					
PHTHALATE ESTERS	490 + 501					
PESTICIDES, CHLORINATED	502 + 501					
TOXAPHENE	520 + 501					
TECHNICAL CHLORDANE	530 + 501					
DDT GROUP	550 + 501					
PESTICIDES, BASE NEUTRAL	571 + 501					
SPECIAL SAMPLE HOURS	560					

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AUG 13 1987
CHEMICAL LABS

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AUG 18 1987
MPCA, SOLID & HAZ.
WASTE DIVISION

Field Notes:

D

Lab Notes:

64

V4 MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY 1

VOLATILE HYDROCARBONS (code 465)

07/13/87

Compound	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
HALOGENATED (code 464)		
Chloromethane	NQ	
Dichlorodifluoromethane	NQ	
Vinyl Chloride	NQ	
Bromomethane	NQ	
Chloroethane	NQ	
Dichlorofluoromethane	NQ	
Methylene Chloride	< 1.0	
Trichlorofluoromethane	< 0.5	
1,1,Dichloroethene	< 0.2	
Allyl Chloride	< 0.5	
1,1,Dichloroethane	< 0.2	
c-1,2 Dichloroethene	< 0.2	
t-1,2 Dichloroethene	< 0.2	
Chloroform	< 0.2	
112 Trichlorotrifluoroethane	< 0.5	
1,2, Dichloroethane	< 0.2	
Dibromomethane	< 1.0	
1,1,1, Trichloroethane	< 0.2	
Carbon Tetrachloride	< 0.2	
Bromodichloromethane	< 0.2	
Dichloroacetonitrile	NQ	
2,3 Dichloro-1-propene	< 0.2	
1,2 Dichloropropane	< 0.2	
1,1 Dichloro-1-propene	< 0.2	
t-1,3 Dichloro-1-propene	< 0.2	
1,1,2 Trichloroethene	< 0.2	
1,3 Dichloropropane	NQ	
Chlorodibromomethane	< 0.5	
c-1,3 Dichloro-1-propene	< 0.2	
1,1,2 Trichloroethane	< 0.2	
1,2 Dibromoethane	< 0.5	
2-Chloroethylvinyl ether	NQ	
Bromoform	< 1.0	
1,1,1,2 Tetrachloroethane	< 0.2	
1,2,3 Trichloropropane	NQ	
1,1,2,2 Tetrachloroethene	< 1.0	
1,1,2,2 Tetrachloroethane	< 1.0	
Pentachloroethane	NQ	
Chlorobenzene	< 0.5	
1,3 Dichlorobenzene	< 1.0	
1,2 Dichlorobenzene	< 1.0	
1,4 Dichlorobenzene	< 1.0	
NON-HALOGENATED (code 462)		
Acetone	< 20	
Tetrahydrofuran	< 10	
Ethyl Ether	< 1.0	
Methyl Ethyl Ketone	< 10	
Benzene	< 0.5	
Methyl Isobutyl Ketone	< 2.0	
Toluene	< 0.5	
Ethyl Benzene	< 0.5	
Cumene	< 1.0	
m Xylene	< 0.5	
p & o Xylene	< 0.5	

LAB SAMPLE#: 132127

FIELD BLANK #: 132127

DATE SAMPLED: 07/27/87
ANALYZED: 07/30/87
REPORTED: 08/05/87

Comments: Field Blank
Samples 214 - 220
and 001 (New Scan

RECEIVED
AUG 13 1987
MPC, SOLID & HAZ
WASTE DIVISION

D

Legend:
NQ = not quantitated
< = less than
PP = peak present

VOLATILE HYDROCARBONS (code 460)

07/10/87

Compound HALOGENATED (code 464)	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Chloromethane	NQ	
Dichlorodifluoromethane	NQ	
Vinyl Chloride	NQ	
Bromomethane	NQ	
Chloroethane	NQ	
Dichlorofluoromethane	NQ	
Methylene Chloride	< 1.0	
Trichlorofluoromethane	< 0.5	
1,1,Dichloroethene	< 0.2	
Allyl Chloride	< 0.5	
1,1,Dichloroethane	< 0.2	
c-1,2 Dichloroethene	< 0.2	
t-1,2 Dichloroethene	< 0.2	
Chloroform	< 0.2	
113 Trichlorotrifluoroethane	< 0.5	
1,2, Dichloroethane	< 0.2	
Dibromomethane	< 1.0	
1,1,1, Trichloroethane	< 0.2	
Carbon Tetrachloride	< 0.2	
Bromodichloromethane	< 0.2	
Dichloroacetonitrile	NQ	
2,3 Dichloro-1-propene	< 0.2	
1,2 Dichloropropane	< 0.2	
1,1 Dichloro-1-propene	< 0.2	
t 1,3 Dichloro-1 propene	< 0.2	
1,1,2 Trichloroethane	< 0.2	
1,3 Dichloropropane	NQ	
Chlorodibromomethane	< 0.5	
c 1,3 Dichloro-1 propene	< 0.2	
1,1,2 Trichloroethane	< 0.2	
1,2 Dibromoethane	< 0.5	
2 Chloroethyl vinyl ether	NQ	
Bromoform	< 1.0	
1,1,1,2 Tetrachloroethane	< 0.2	
1,2,3 Trichloropropane	NQ	
1,1,2,2 Tetrachloroethene	< 1.0	
1,1,2,2 Tetrachloroethane	< 1.0	
Pentachloroethane	NQ	
Chlorobenzene	< 0.5	
1,3 Dichlorobenzene	< 1.0	
1,2 Dichlorobenzene	< 1.0	
1,4 Dichlorobenzene	< 1.0	
NON HALOGENATED (code 462)		
Acetone	< 20	
Tetrahydrofuran	< 10	
Ethyl Ether	< 1.0	
Methyl Ethyl Ketone	< 10	
Benzene	< 0.5	
Methyl Isobutyl Ketone	< 1.0	
Toluene	< 0.5	
Ethyl Benzene	< 0.5	
Cumene	< 1.0	
m Xylene	< 0.5	
p & o Xylene	< 0.5	

LAB SAMPLE#: 102136

FIELD BLANK #: 102137

DATE SAMPLED: 07/07/87

ANALYZED: 07/08/87

REPORTED: 08/05/87

Comments:

Karen Nelson
21508 Lofton Ave. No
New Scandia, MN

RECEIVED
AUG 13 1987
MPCA, SOLID & HAZ
WASTE DIVISION
D

Legend:
NQ = not quantitated
< = less than
TR = peak present

MINNESOTA POLLUTION CONTROL AGENCY

ANALYTICAL DATA

BILLING NO: PCA - 32

Samples Collected By Mike Bares

Report To Fier Tucker/[illegible]

Field Number		River, Town, Etc.	Sampling Point and Source of Sample
216	a	Lakeland, MN	Lakeland City Hall
001	b	New Scandia, MN	Karen Nelson 21508 Lofton Ave. N., well sampled at tap
	c		
	d		
	e		

This line for Lab use only Sample Number		a	b	c	d	e
		132123	132124			
Date Collected		7-27-87	7-27-87			
Time Collected		[illegible]	4:15 PM			
Date Received by Lab		7-28-87	7-28-87			
Temperature, °C		5°				
Dissolved Oxygen						
pH value, SU	013					
Total Residual Chlorine						
Fecal Coliform, MPN/100 ml	~~305~~ 310	<2	<2			
Fecal Strep., No/100 ml	313					
Total Solids	001					
Suspended Solids	003					
Turbidity, NTU	011					
Calcium as CaCO3	251					
Magnesium as CaCO3	253					
Total Hardness as CaCO3	021					
Chloride as Cl	023					
5-Day B.O.D.	096					
Nitrification Inhibited BOD5	083					
Total Phosphorus as P	059					
Orthophosphorus as P	063					
Organic Nitrogen as N	065					
Ammonia Nitrogen as N	064					
Nitrite + Nitrate Nitro.	069					
Nitrite Nitrogen as N	067					
METALS (µg/l) Arsenic as As	108					
Cadmium as Cd	*125/122					
Total Chromium as Cr	129					
Hexavalent Chromium as Cr	034					
Copper as Cu	145/143					
Iron as Fe	152/150					
Lead as Pb	159/157					
Manganese as Mn	166/164					
Mercury as Hg	200					
Nickel as Ni	173/171					
Zinc as Zn	194/192					
Flame Metals Ashing Code	207					
Phenol µg/l	085					
Oil and Grease	089					
Chlorophyll a, µg/l	450					
Kjeldahl Nitrogen	068					

*Flame/Furnace

Results are in mg/l except as otherwise noted

COMPLETED

AUG 3 1987

CHEMICAL LABS

RECEIVED

AUG 6 1987

MPCA, SOLID & HAZ. WASTE DIVISION

DFT

NR

MINNESOTA POLLUTION CONTROL AGENCY

ANALYTICAL DATA

BILLING NO: PCA - ~~66~~ 032

Samples Collected By J. Dalgleish

Report To Fier Tucker - Dalgleish

Field Number		River, Town, Etc.	Sampling Point and Source of Sample
100	a	New Scandia Private Well	Kitchen Sink Karen Nelson 21508 Lofton Ave N New Scandia
	b		
	c		
	d		
	e		

This line for Lab use only		a	b	c	d	e
Sample Number		132347				
Date Collected 8/31/87						
Time Collected 8:20 AM						
Date Received by Lab 8/31/87						
Temperature, °C						
Dissolved Oxygen						
pH value, SU	013					
Total Residual Chlorine						
Fecal Coliform, MPN/100 ml	305					
Fecal Strep., Mc/100 ml	313					
Total Solids	001					
Suspended Solids	003					
Turbidity, NTU	011					
Calcium as CaCO3	251					
Magnesium as CaCO3	253					
Total Hardness as CaCO3	021					
Chloride as Cl	023					
5-Day B.O.D.	096					
Nitrification Inhibited BOD5	083					
Total Phosphorus as P	059					
Orthophosphorus as P	063					
Organic Nitrogen as N	065					
Ammonia Nitrogen as N	064					
Nitrite + Nitrate Nitro.	069					
Nitrite Nitrogen as N	067					
METALS (µg/l) Arsenic as As	108					
Cadmium as Cd	*125/122					
Total Chromium as Cr	129					
Hexavalent Chromium as Cr	034					
Copper as Cu	145/143					
Iron as Fe	152/150					
Lead as Pb	159/157					
Manganese as Mn	166/164					
Mercury as Hg	200					
Nickel as Ni	173/171					
Zinc as Zn	194/192					
Flame Metals Ashing Code	207					
Phenol µg/l	085					
Oil and Grease	089					
Chlorophyll a, µg/l	450					
Kieldahl Nitrogen	068					
Heterotrophic Total Plate Count	315 ✓	43				
Microbial-Microscopic Exam	320 ✓	NEG.				
*Flame/Furnace						

COMPLETED
SEP 10 1987
CHEMICAL LABS

RECEIVED
SEP 16 1987
MPCA, SOLID & HAZ. WASTE DIVISION

Results are in mg/l except as otherwise noted

SF-00006-05 (4.86)

DEPARTMENT : POLLUTION CONTROL AGENCY

STATE OF MINNESOTA

Office Memorandum

DATE : September 9, 1987

TO : Janet Dalgleish, Hydrologist, Responsible Party Unit I
Site Response Section
Solid and Hazardous Waste Division

RECEIVED
SEP 11 1987
MPCA, SOLID & HAZ. WASTE DIVISION

FROM : Orbbie K. Webber Orbbie K. Webber
Program Development Section
Solid and Hazardous Waste Division

PHONE : 296-7286

SUBJECT : MICROSCOPICAL EXAMINATION OF SWIMMING POOL SAMPLES--NEW SCANDIA

This memorandum is written to confirm the examination of the sample collected from the Karen Nelson swimming pool on August 31, 1987, in the New Scandia area. The examination amounted to a microscopical scan of the sample by myself on the same morning in which the sample was collected. It must be pointed out that my analysis of the sample can only be considered qualitative. No approved methodology providing a statistically-based scientific examination was followed.

Several genera of algae were observed in the sample. Two biflagellated alga were noted as dominant in the sample. These were Chlamydomonas sp. and Chlorochromonas sp. which are less than 10 microns in length.

I also noted several bluegreen algae filaments, either Oscillatoria sp. or Phormidium sp., in which I was not able to provide a more specific identification. In addition, I also observed one bluegreen filament which appeared to be Aphanizomenon flosaquae. This particular species can be the most predominant algae in local lakes during the months of July and August. This species is notably much larger than the other bluegreen algae filaments noted. Bluegreens will layer at the water surface because of gas vacuoles located in individual cells within each filament. Surface layering will be especially evident on sunny days as the gas vacuoles warm and expand, providing more buoyancy of the filaments.

A protozoan resembling Vorticella sp. was also noted in the sample. This particular organism attaches itself to a substrate which in this case would be the side of the swimming pool.

There was also a lot of what appeared to be organic debris or detritus in the sample. This debris appeared to be gelatinous in nature, but its origin is not known. Since the sample included scrapings from the side of the pool, it may have been present due to "slime" producing bacteria and epiphytic algae. The material may have also originated in part by the destruction of previous algae populations by chlorination activities conducted by the owners. The total plate count to be conducted by the Minnesota Department of Health should help to clear up the problems experienced by the owners.

Please contact me if you have any questions or comments.

OKW:bmj

20June87
Org.form.FY88

PRIORITY 1

MINNESOTA DEPARTMENT OF HEALTH
Chemical Labortories Section
Organic Chemistry Unit

Date Collected: 8-19-87

Date Received: 8-20-87

WATER ANALYSES ONLY

Budget # : 32 CC 001

Report To: Fier Tucker, Dalgleish

Collected by: L. Beilke, M. Bores C.C. # 506750

Field Blank # 132318

Lab Number		Field Number	Sample Description (Please list town)	Container Number	Container Type
132318	a	Field Blank	RESIDENTIAL HOMES, SCANDIA, MN	1	4-l amber
132319	b	002	SAMPLE 002 Sandok	4	4-l amber
132320	c	003	SAMPLE 003 Fence	2	4-l amber
	d				
	e				

Analysis Request Options		132318 a	132319 b	132320 c	d	e
VOLATILE HC	465					
VOLATILE HAL HC	464					
GASOLINE/FUEL	463 + 465					
VOLATILE GASES	460 + 465					
MAX THMs + VOL HAL HC	467 + 464					
VOLATILE HC by GC/MS	468					
CHLOROPHYLL A	450					
HERBICIDES, CPA	574					
PAH GROUP	470	See Attached Sheet				
PCBs	420					
PHENOLS	481					
PHTHALATE ESTERS	490 + 501					
PESTICIDES, CHLORINATED	502 + 501					
TOXAPHENE	520 + 501					
TECHNICAL CHLORDANE	530 + 501					
DDT GROUP	550 + 501					
PESTICIDES, BASE NEUTRAL	571 + 501					
SPECIAL SAMPLE HOURS	560					

COMPLETED
SEP 10 1987
CHEMICAL LABS

RECEIVED
SEP 15 1987
SOLID & HAZ WASTE DIVISION

Field Notes:

Lab Notes: Called results to J. Dalgleish on 9.9.87 – S. Skorich

G.P.

MINNESOTA DEPARTMENT OF HEALTH
CHEMICAL LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS (CONCENTRATION IN UG/L)

	QUANTITATION LIMIT (4 LITERS)	Blank 132318	Sandok 132319	Fenu 132320
Naphthalene	< 2.1	< 2.2	< 2.2	< 2.2
Acenaphthylene	< 3.2	< 3.4	< 3.4	< 3.4
Acenaphthene	< 1.2	< 1.3	< 1.3	< 1.3
Fluorene	< 0.38	< 0.41	< 0.40	< 0.41
Phenanthrene	< 0.71	< 0.76	< 0.75	< 0.76
Anthracene	< 0.047	< 0.050	< 0.049	< 0.050
Fluoranthene	< 0.023	< 0.025	< 0.024	< 0.025
Pyrene	< 0.27	< 0.29	< 0.28	< 0.29
Benzo(a)anthracene	< 0.009	< 0.010	< 0.009	< 0.010
Chrysene	< 0.26	< 0.28	< 0.27	< 0.28
Benzo(b)fluoranthene	< 0.002	< 0.002	< 0.002	< 0.002
Benzo(k)fluoranthene	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	< 0.002	< 0.002	< 0.002	< 0.002
Dibenzo(a,h)anthracene	< 0.010	< 0.011	< 0.011	< 0.011
Benzo(ghi)perylene	< 0.004	< 0.004	< 0.004	< 0.004
Indeno(1,2,3-cd)pyrene	< 0.092	< 0.098	< 0.097	< 0.098
Date Collected:		8-19-87	8-19-87	8-19-87
Date Received:		8-20-87	8-20-87	8-20-87
Date Extracted:		8-25-87	8-25-87	8-25-87
Date Extract Cleanup:				
Date Analyzed:		9-08-87	9-08-87	9-08-87
Date Reported:		9-09-87	9-09-87	9-09-87

RECEIVED
SEP 15 1987
MPCA, SOLID & HAZ.
WASTE DIVISION
D

FIELD BLANK: 132318

	QUALITY CONTROL SPIKE MATRIX: 132320			QUALITY CONTROL DUPLICA MATRIX: 132319	
	FOUND UG	TRUE UG	% REC	132319	13231
Naphthalene	54	50	108%	< 2.2	< 2.
Acenaphthylene	49	50	98%	< 3.4	< 3.
Acenaphthene	51	50	102%	< 1.3	< 1.
Fluorene				< 0.40	< 0.4
Phenanthrene	51	50	102%	< 0.75	< 0.7
Anthracene	44	50	88%	< 0.049	< 0.04
Fluoranthene	5.4	5.0	108%	< 0.024	< 0.02
Pyrene	5.6	5.0	112%	< 0.28	< 0.2
Benzo(a)anthracene	5.1	5.0	102%	< 0.009	< 0.00
Chrysene	5.6	5.0	112%	< 0.27	< 0.2
Benzo(b)fluoranthene	5.9	5.0	118%	< 0.002	< 0.00
Benzo(k)fluoranthene	2.9	2.5	116%	< 0.001	< 0.00
Benzo(a)pyrene	4.2	5.0	84%	< 0.002	< 0.00
Dibenzo(a,h)anthracene	4.6	5.0	92%	< 0.011	< 0.01
Benzo(ghi)perylene	5.1	5.0	102%	< 0.004	< 0.00
Indeno(1,2,3-cd)pyrene	5.6	5.0	112%	< 0.097	< 0.09

Analysis was performed by high pressure liquid chromatography equipped with variable wavelength ultraviolet (UV) and fluorescence detectors. All positive values were identified on at least two wavelength settings. Quantitation limits are based on 4 liter volume, "less than" values of samples ar adjusted for sample volume (and sample dilution where applicable).

PRIORITY 1

WM

CHAIN of Custody
S06749

MINNESOTA POLLUTION CONTROL AGENCY

ANALYTICAL DATA

BILLING NO: PCA - 32

Samples Collected By M. Bares / L Beilke Report To Fier-Tucker/Wallner

Field Number		River, Town, Etc.	Sampling Point and Source of Sample
002	a	Sample 002	outside front tap.
003	b	Sample 003	outside front tap
	c		
	d		
	e		

This line for Lab use only		a	b	c	d	e
Sample Number		132272	132273			
Date Collected						
Time Collected						
Date Received by Lab 8/20/87						
Temperature, °C						
Dissolved Oxygen						
pH value, SU	013					
Total Residual Chlorine						
Fecal Coliform, MPN/100 ml	305					
Fecal Strep., No/100 ml	313	X 315 heterotrophic plate cnt.				
Total Solids	001	2 CFU/ML	<1 CFU/ML	*	both a and b	
Suspended Solids	003	X 320 micro exam				
Turbidity, NTU	011	negative	negative	*		
Calcium as CaCO3	251	microscopic	microscopic			
Magnesium as CaCO3	253	result	result			
Total Hardness as CaCO3	021					
Chloride as Cl	023					
5-Day B.O.D.	096					
Nitrification Inhibited BOD5	083					
Total Phosphorus as P	059					
Orthophosphorus as P	063					
Organic Nitrogen as N	065					
Ammonia Nitrogen as N	064					
Nitrite + Nitrate Nitro.	069					
Nitrite Nitrogen as N	067					
METALS (µg/l) Arsenic as As	108					
Cadmium as Cd	*125/122					
Total Chromium as Cr	129					
Hexavalent Chromium as Cr	034					
Copper as Cu	145/143					
Iron as Fe	152/150					
Lead as Pb	159/157					
Manganese as Mn	166/164					
Mercury as Hg	200					
Nickel as Ni	173/171					
Zinc as Zn	194/192					
Flame Metals Ashing Code	207					
Phenol µg/l	085					
Oil and Grease	089					
Chlorophyll a, µg/l	450					
Kjeldahl Nitrogen	068					

*Flame/Furnace

Results are in mg/l except as other ...

COMPLETED
AUG 26 1987
CHEMICAL LABS

RECEIVED
AUG 25 1987
MPCA, SOLID & HAZ
WASTE DIVISION

Not Pr. 1 as per O. Webber memo rec'd. 8/21/87

~~PRIORITY 1~~

20June87
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MINNESOTA DEPARTMENT OF HEALTH
Chemical Labortories Section
Organic Chemistry Unit

Date Collected: 8-19-87

Date Received: 8-20-87

WATER ANALYSES ONLY

Budget # : 32 CC001

Report To: Fier Tucker, Dalgleish

Collected by: L. Beilke, M. Bares C.C. # S 06748

Field Blank # 132311

Lab Number		Field Number	Sample Description (Please list town)	- Container - Number	Type
132311	a	Field Blank	RESIDENTIAL HOMES, SCANDIA, MN	3	40ml
132312	b	002	SAMPLE 002 Sandok	4	"
132313	c	003	SAMPLE 003 Fenna	4	"
	d				
	e				

Analysis Request Options		132311 a	132312 b	132312 c	d	e
VOLATILE HC	465					
VOLATILE HAL HC	464					
GASOLINE/FUEL	463 + 465					
VOLATILE GASES	460 + 465					
MAX THMs + VOL HAL HC	467 + 464					
VOLATILE HC by GC/MS	468					
CHLOROPHYLL A	450					
HERBICIDES, CPA	574					
PAH GROUP	470					
PCBs	420					
PHENOLS	481					
PHTHALATE ESTERS	490 + 501					
PESTICIDES, CHLORINATED	502 + 501					
TOXAPHENE	520 + 501					
TECHNICAL CHLORDANE	530 + 501					
DDT GROUP	550 + 501					
PESTICIDES, BASE NEUTRAL	571 + 501					
SPECIAL SAMPLE HOURS	560					

COMPLETED
SEP 09 1987
CHEMICAL LABS

RECEIVED
SEP 1 1987
MPCA SOLID & HAZ WASTE DIVISION

Field Notes:

Lab Notes:

CY

V4 MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY 1

VOLATILE HYDROCARBONS (code 465)

07/13/87

COMPOUND -Halogenated	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Chloromethane	NQ	
Dichlorodifluoromethane	NQ	
Vinyl Chloride	NQ	
Bromomethane	NQ	
Chloroethane	NQ	
Dichlorofluoromethane	NQ	
Methylene Chloride	< 1.0	
Trichlorofluoromethane	< 0.5	
1,1,Dichloroethene	< 0.2	
Allyl Chloride	< 0.5	
1,1,Dichloroethane	< 0.2	
c-1,2 Dichloroethene	< 0.2	
t-1,2 Dichloroethene	< 0.2	
Chloroform	< 0.2	
112 Trichlorotrifluoroethane	< 0.5	
1,2, Dichloroethane	< 0.2	
Dibromomethane	< 1.0	
1,1,1, Trichloroethane	< 0.2	
Carbon Tetrachloride	< 0.2	
Bromodichloromethane	< 0.2	
Dichloroacetonitrile	NQ	
2,3 Dichloro-1-propene	< 0.2	
1,2 Dichloropropane	< 0.2	
1,1 Dichloro-1-propene	< 0.2	
t-1,3 Dichloro-1-propene	< 0.2	
1,1,2 Trichloroethene	< 0.2	
1,3 Dichloropropane	NQ	
Chlorodibromomethane	< 0.5	
c-1,3 Dichloro-1-propene	< 0.2	
1,1,2 Trichloroethane	< 0.2	
1,2 Dibromoethane	< 0.5	
2-Chloroethylvinyl ether	NQ	
Bromoform	< 1.0	
1,1,1,2 Tetrachloroethane	< 0.2	
1,2,3 Trichloropropane	NQ	
1,1,2,2 Tetrachloroethene	< 1.0	
1,1,2,2 Tetrachloroethane	< 1.0	
Pentachloroethane	NQ	
Chlorobenzene	< 0.5	
1,3 Dichlorobenzene	< 1.0	
1,2 Dichlorobenzene	< 1.0	
1,4 Dichlorobenzene	< 1.0	
NON-HALOGENATED		
Acetone	< 20	
Tetrahydrofuran	< 10	
Ethyl Ether	< 1.0	
Methyl Ethyl Ketone	< 10	
Benzene	< 0.5	
Methyl Isobutyl Ketone	< 2.0	
Toluene	< 0.5	
Ethyl Benzene	< 0.5	
Cumene	< 1.0	
m Xylene	< 0.5	
p & o Xylene	< 0.5	

LAB SAMPLE#: 132311

FIELD BLANK #: 132311

DATE SAMPLED: 8/19/87
ANALYZED: 8/21/87
REPORTED: 8/27/87

Comments: Blank
For Samples 002 and 003

RECEIVED
SEP 11 1987
MPCA, SOLID & HAZ
WASTE DIVISION

Legend:
NQ = not quantitated
< = less than
PP = peak present

V4 MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY 1

VOLATILE HYDROCARBONS (code 465)

07/13/87

COMPOUND -Halogenated	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Chloromethane	NQ	
Dichlorodifluoromethane	NQ	
Vinyl Chloride	NQ	
Bromomethane	NQ	
Chloroethane	NQ	
Dichlorofluoromethane	NQ	
Methylene Chloride	< 1.0	
Trichlorofluoromethane	< 0.5	
1,1,Dichloroethene	< 0.2	
Allyl Chloride	< 0.5	
1,1,Dichloroethane	< 0.2	
c-1,2 Dichloroethene	< 0.2	
t-1,2 Dichloroethene	< 0.2	
Chloroform	< 0.2	
112 Trichlorotrifluoroethane	< 0.5	
1,2, Dichloroethane	< 0.2	
Dibromomethane	< 1.0	
1,1,1, Trichloroethane	< 0.2	
Carbon Tetrachloride	< 0.2	
Bromodichloromethane	< 0.2	
Dichloroacetonitrile	NQ	
2,3 Dichloro-1-propene	< 0.2	
1,2 Dichloropropane	< 0.2	
1,1 Dichloro-1-propene	< 0.2	
t-1,3 Dichloro-1-propene	< 0.2	
1,1,2 Trichloroethene	< 0.2	
1,3 Dichloropropane	NQ	
Chlorodibromomethane	< 0.5	
c-1,3 Dichloro-1-propene	< 0.2	
1,1,2 Trichloroethane	< 0.2	
1,2 Dibromoethane	< 0.5	
2-Chloroethylvinyl ether	NQ	
Bromoform	< 1.0	
1,1,1,2 Tetrachloroethane	< 0.2	
1,2,3 Trichloropropane	NQ	
1,1,2,2 Tetrachloroethene	< 1.0	
1,1,2,2 Tetrachloroethane	< 1.0	
Pentachloroethane	NQ	
Chlorobenzene	< 0.5	
1,3 Dichlorobenzene	< 1.0	
1,2 Dichlorobenzene	< 1.0	
1,4 Dichlorobenzene	< 1.0	
NON-HALOGENATED		
Acetone	< 20	
Tetrahydrofuran	< 10	
Ethyl Ether	< 1.0	
Methyl Ethyl Ketone	< 10	
Benzene	< 0.5	
Methyl Isobutyl Ketone	< 2.0	
Toluene	< 0.5	
Ethyl Benzene	< 0.5	
Cumene	< 1.0	
m Xylene	< 0.5	
p & o Xylene	< 0.5	

LAB SAMPLE#: 132312

FIELD BLANK #: 132311

DATE SAMPLED: 8/19/87
ANALYZED: 8/21/87
REPORTED: 8/27/87

Comments: 002

Sandok

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SEP 11 1987
MPCA, SOLID & HAZ. WASTE DIVISION

Legend:
NQ = not quantitated
< = less than
PP = peak present

V4 MINNESOTA DEPT OF HEALTH - CHEMICAL LABORATORY 1

VOLATILE HYDROCARBONS (code 465)

07/13/87

COMPOUND -Halogenated	REPORTING LIMIT (UG/L)	AMOUNT FOUND (UG/L)
Chloromethane	NQ	
Dichlorodifluoromethane	NQ	
Vinyl Chloride	NQ	
Bromomethane	NQ	
Chloroethane	NQ	
Dichlorofluoromethane	NQ	
Methylene Chloride	< 1.0	
Trichlorofluoromethane	< 0.5	
1,1,Dichloroethene	< 0.2	
Allyl Chloride	< 0.5	
1,1,Dichloroethane	< 0.2	
c-1,2 Dichloroethene	< 0.2	
t-1,2 Dichloroethene	< 0.2	
Chloroform	< 0.2	
112 Trichlorotrifluoroethane	< 0.5	
1,2, Dichloroethane	< 0.2	
Dibromomethane	< 1.0	
1,1,1, Trichloroethane	< 0.2	
Carbon Tetrachloride	< 0.2	
Bromodichloromethane	< 0.2	
Dichloroacetonitrile	NQ	
2,3 Dichloro-1-propene	< 0.2	
1,2 Dichloropropane	< 0.2	
1,1 Dichloro-1-propene	< 0.2	
t-1,3 Dichloro-1-propene	< 0.2	
1,1,2 Trichloroethene	< 0.2	
1,3 Dichloropropane	NQ	
Chlorodibromomethane	< 0.5	
c-1,3 Dichloro-1-propene	< 0.2	
1,1,2 Trichloroethane	< 0.2	
1,2 Dibromoethane	< 0.5	
2-Chloroethylvinyl ether	NQ	
Bromoform	< 1.0	
1,1,1,2 Tetrachloroethane	< 0.2	
1,2,3 Trichloropropane	NQ	
1,1,2,2 Tetrachloroethene	< 1.0	
1,1,2,2 Tetrachloroethane	< 1.0	
Pentachloroethane	NQ	
Chlorobenzene	< 0.5	
1,3 Dichlorobenzene	< 1.0	
1,2 Dichlorobenzene	< 1.0	
1,4 Dichlorobenzene	< 1.0	
NON-HALOGENATED		
Acetone	< 20	40.0
Tetrahydrofuran	< 10	
Ethyl Ether	< 1.0	
Methyl Ethyl Ketone	< 10	
Benzene	< 0.5	
Methyl Isobutyl Ketone	< 2.0	
Toluene	< 0.5	
Ethyl Benzene	< 0.5	
Cumene	< 1.0	
m Xylene	< 0.5	
p & o Xylene	< 0.5	

LAB SAMPLE#: 132313

FIELD BLANK #: 132311

DATE SAMPLED: 8/19/87
ANALYZED: 8/21/87
REPORTED: 8/27/87

Comments: 003

Fena

RECEIVED
SEP 11 1987
MPCA, SOLID & HAZ. WASTE DIVISION

Legend:
NQ = not quantitated
< = less than
PP = peak present

20June87
Org.form.FY88

MINNESOTA DEPARTMENT OF HEALTH
Chemical Labortories Section
Organic Chemistry Unit

RECEIVED
SEP 21 1987
MPCA, SOLID & HAZ. WASTE DIVISION

Date Collected: _____

Date Received: 8-18-87

WATER ANALYSES ONLY

Budget # : 32

Report To: O. Webber

Collected by: _____

C.C. # ____

Field Blank # ____

Lab Number		Field Number	Sample Description	- Container - Number	Type
132395	a	50027	Seveco Lab extracts - New Scandia	1	VIAL
132396	b	50027-DUP		1	
132397	c	50767		1	
132398	d	50767-DUP		1	
132399	e	PNA-BLK		1	

Analysis Request Options		132395 a	132396 b	132397 c	132398 d	132399 e
VOLATILE HC	465					
VOLATILE HAL HC	464					
GASOLINE/FUEL	463 + 465					
VOLATILE GASES	460 + 465					
MAX TPHs + VOL HAL HC	467 + 464					
VOLATILE HC by GC/MS	468					
CHLOROPHYLL A	450					
HERBICIDES, CPA	574					
PAH GROUP	470					
PCBs	420					
PHENOLS	491					
PHTHALATE ESTERS	490 + 501					
PESTICIDES, CHLORINATED	502 + 501					
TOXAPHENE	520 + 501					
TECHNICAL CHLORDANE	530 + 501					
DDT GROUP	550 + 501					
PESTICIDES, BASE NEUTRAL	571 + 501					
SPECIAL SAMPLE HOURS	560	Results attached				
- PAH Analysis						

COMPLETED
SEP 21 1987
CHEMICAL LABS

Field Notes: MDH To run extracts of Seveco's samples To verify PAH data, As per Cobbie Webber.

Lab Notes:

CP

MINNESOTA DEPARTMENT OF HEALTH
CHEMICAL LABORATORIES

POLYNUCLEAR AROMATIC HYDROCARBONS (CONCENTRATION IN UG/L)

	QUANTITATION LIMIT (2 LITERS)	Sandok 50027 132395	Sandok 50027D 132396	Nelson 50767 132397	Nelson 50767D 132398	Blank 13239
Naphthalene	< 5.3	< 3.2	< 3.2	< 5.4	< 5.5	< 13.
Acenaphthylene	< 9.0	< 5.5	< 5.4	< 9.2	< 9.4	< 22.
Acenaphthene	< 3.0	< 1.8	< 1.8	< 3.1	< 3.1	< 7.
Fluorene	< 0.95	< 0.58	< 0.57	< 0.97	< 0.99	< 2.3
Phenanthrene	< 1.1	< 0.7	< 0.7	< 1.1	< 1.1	< 2.
Anthracene	< 0.11	< 0.07	< 0.07	< 0.11	< 0.11	< 0.2
Fluoranthene	< 0.032	< 0.019	< 0.019	< 0.033	0.063	< 0.07
Pyrene	< 0.39	< 0.24	< 0.24	< 0.40	< 0.41	< 0.9
Benzo(a)anthracene	< 0.014	< 0.009	< 0.008	< 0.014	< 0.015	< 0.03
Chrysene	< 0.64	< 0.39	< 0.39	< 0.66	< 0.67	< 1.5
Benzo(b)fluoranthene	< 0.004	0.004	< 0.002	< 0.004	0.017	< 0.01
Benzo(k)fluoranthene	< 0.002	0.002	< 0.001	< 0.002	0.008	< 0.00
Benzo(a)pyrene	< 0.004	0.003	< 0.002	< 0.004	0.008	< 0.01
Dibenzo(a,h)anthracene	< 0.014	< 0.009	< 0.008	< 0.014	< 0.015	< 0.03
Benzo(ghi)perylene	< 0.064	< 0.039	< 0.039	< 0.066	< 0.067	< 0.15
Indeno(1,2,3-cd)pyrene	< 0.54	< 0.33	< 0.33	< 0.55	< 0.56	< 1.3
Date Received:		8-18-87	8-18-87	8-18-87	8-18-87	8-18-
Date Analyzed:		9-14-87	9-14-87	9-14-87	9-14-87	9-14-
Date Reported:		9-15-87	9-15-87	9-15-87	9-15-87	9-15-

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Analysis was performed by high pressure liquid chromatography equipped with variable wavelength ultraviolet (UV) and fluorescence detectors. All positive values were identified on at least two wavelength settings. Quantitation limits are based on 2 liter volume, "less than" values of samples are adjusted for sample volume (and sample dilution where applicable).