03.01- 11/25/96-00656

CH2M HILL
Engineers
Planners
Economists
Scientists

FAX

Reston Office
TEL: 703/471-6405 x4321 FAX: 703/481-0980

Fax #:	**757/322-4805**	**Total Pages:**	**37**
To:	**Mr. Randy Jackson, Code 18221**	**From:**	**Jack Robinson**
Company:	**LANTDIV**	**Date:**	**November 25, 1996**

Message:

Randy,

Here are the results of IDW sampling for wastes generated at IRP Sites 2, 5, and 21. Please give me a call after you have scanned the results. The plan is for you to call Tim Reisch. He will have the forms that he needs to sign. He will fax the forms to IMS so that they can expedite the removal of the wastes.

Thanks,

-JR.

The information in this fax is confidential and proprietary and is intended only for the individual or entity named on the cover sheet. If you are not the intended recipient, disclosure, copying, distribution or use of this information is prohibited. If you do not receive all of the pages or have received this fax in error, please notify us immediately at the above telephone number.

IMS ENVIRONMENTAL
Division of Industrial Marine Service, Inc.

MAILING ADDRESS: P.O. BOX 1779 / NORFOLK, VA 23501-1779
SHIPPING ADDRESS: 929 PROFESSIONAL PLACE / CHESAPEAKE, VA 23320-3618
TELEPHONE: (24 HOURS) 804/436-3000
FAX: 804/436-5266

Established
1958

November 14, 1996

Jack Robinson
Project Manager
CH2M Hill
625 Herndon Parkway
Reston, VA 22090

Re: Norfolk Naval Base CTO's 003 and 008 Sampling/Analysis of the Investigative Derived Waste (IDW) soil and groundwater activities.

Dear Mr. Robinson:

Please see the enclosed information pertaining to the IDW at the above referenced site.

CTO-003: (Site 5 the Pesticide Disposal Site and Site 21 Building W-316 PCB Waste Work Area):

Site 5 the Pesticide Disposal Site:

IMS personnel sampled the drums on October 29, 1996. Based on 29 CFR 1910.1000 Table Z-1-A/OSHA/NIOSH Threshold Limit Values (TLV), after initial approach to the drums in LEVEL B and review of atmospheric monitoring equipment data, the site safety officer decided on LEVEL D protection for sampling activities.

Sampling activities consisted of a grab sample collected from each drum then composited to form one sample per matrix.

The sample was analyzed by the Toxicity Characteristic Leaching Procedure full parameter list including Ignitability, Reactivity, Corrosivity, PCB's, Total Organic Halogens, and DDD, DDE, DDT, and Dieldrin per matrix.

Laboratory analysis (Attachment 1 and 2) performed on the site did not detect any concentrations in the soil or water matrices of the IDW. Therefore, based on the laboratory analysis, the soil and water is **Non-Hazardous** and will be disposed at the following approved Non-Hazardous permitted TSDF facilities.

IDW Water and PPE:
Profile: Non-Hazardous

TSDF: Industrial Marine Service (1301 Marsh Street, Norfolk, VA)

Number of Drums: 4 Water and 0 PPE

IDW Soil:
Profile: Non-Hazardous

TSDF: SOILEX Corporation (5025 Southern Boulevard, Virginia Beach, VA)

Number of Drums: 2

The above listed facilities have accepted the waste (Attachment 3). Please sign the profile sheets for the SOILEX Corporation (Attachment 4).

Site 21 Building W-316 PCB Waste Work Area:

IMS personnel sampled the drums on October 29, 1996. Based on 29 CFR 1910.1000 Table Z-1-A/OSHA/NIOSH Threshold Limit Values (TLV), after initial approach to the drums in LEVEL B and review of atmospheric monitoring equipment data, the site safety officer decided on LEVEL D protection for sampling activities.

Sampling activities consisted of a grab sample collected from each drum then composited to form one sample per matrix.

The sample was analyzed by the Toxicity Characteristic Leaching Procedure full parameter list including Ignitability, Reactivity, Corrosivity, PCB's, Total Organic Halogens per matrix.

Laboratory analysis (Attachment 1 and 2) performed on the site did not detect any concentrations in the soil or water matrices of the IDW. Therefore, based on the laboratory analysis, the soil, water, and PPE is **Non-Hazardous** and will be disposed at the following approved Non-Hazardous permitted TSDF facilities.

IDW Water and PPE:
Profile: Non-Hazardous

TSDF: Industrial Marine Service (1301 Marsh Street, Norfolk, VA)

Number of Drums: 3 Water and 1 PPE

IDW Soil:
Profile: Non-Hazardous

TSDF: SOILEX Corporation (5025 Southern Boulevard, Virginia Beach, VA)

Number of Drums: 2

The above listed facilities have accepted the waste (Attachment 3). Please sign the profile sheets for the SOILEX Corporation (Attachment 4).

CTO-008: (Site 2 the NM Slag Pile)

IMS personnel sampled the drums on October 29, 1996. Based on 29 CFR 1910.1000 Table Z-1-A/OSHA/NIOSH Threshold Limit Values (TLV), after initial approach to the drums in LEVEL B and review of atmospheric monitoring equipment data, the site safety officer decided on LEVEL D protection for sampling activities.

Sampling activities consisted of a grab sample collected from each drum then composited to form one sample per matrix.

The sample was analyzed by the Toxicity Characteristic Leaching Procedure full parameter list including Ignitability, Reactivity, Corrosivity, PCB's, Total Organic Halogens per matrix.

Laboratory analysis (Attachment 1 and 2) performed on the site did not detect any concentrations in the soil or water matrices of the IDW. Therefore, based on the laboratory analysis, the soil, water, and PPE is **Non-Hazardous** and will be disposed at the following approved Non-Hazardous permitted TSDF facilities.

IDW Water and PPE:
Profile: Non-Hazardous

TSDF: Industrial Marine Service (1301 Marsh Street, Norfolk, VA)

Number of Drums: 1 Water and 1 PPE

IDW Soil:
Profile: Non-Hazardous

TSDF: SOILEX Corporation (5025 Southern Boulevard, Virginia Beach, VA)

Number of Drums: 2

Due to the profile reqiurements for the SOILEX disposal facility, a soil grab sample was collected from the sites and composited for TPH-418.1 analysis (Attachment 2).

The above listed facilities have accepted the waste (Attachment 3). Please sign the profile sheets for the SOILEX Corporation (Attachment 4).

The removal of the IDW is tentatively scheduled for **November 25, 1996**, weather permitting. All handling, transportation, profiling, and disposal of the waste will be in accordance with all VDOT, EPA, and VDEQ Non-Hazardous solid waste regulations.

If you have any questions concerning the above listed information please contact me at 757-436-3000.

Very truly yours;
IMS ENVIRONMENTAL

Stephen J. Matney, PHM
Technical Operations Manager

Attachment 1:
(Laboratory Analysis For IDW Water)

Group No.: 304-0001
Date: 11/13/96

Submitted to:

S. MATNEY
I M S ENVIRONMENTAL
929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

The following types of samples were submitted for analysis on October 30, 1996

; 4 - Soil Sample; 3 - Water

Attached are the results we obtained on the analysis of your samples.
Any Chains-of-Custody associated with this sample group are also enclosed.
We appreciate your confidence in allowing Analytics to be your testing laboratory. Any questions regarding this report can be addressed by calling our client services department (800-888-8061).

Thank you for your business.

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

:. MATNEY
M S ENVIRONMENTAL

'29 PROFESSIONAL PLACE
:HESAPEAKE, VA 23320

Final Report

)ate Received: 10/30/96
'ample Type: ; 4 - Soil Sample; 3 - Water
'roject: 351.2249 N.O.B. PO Number: 2274-C

'ummary of Samples Received

Lab No.	Client ID	Sample Date	Receive Date	Sample Description
304-0001-001	SITE-5 CTO-003	10/29/96 11:30	10/30/96 06:35	
304-0001-002	SITE-21 CTO-003	10/29/96 10:20	10/30/96 06:35	
304-0001-003	SITE-2 CTO-008	10/29/96 13:00	10/30/96 06:35	
304-0001-004	SITE-5 CTO-003	10/29/96	10/30/96	
304-0001-005	SITE-21 CTO-003	10/29/96 10:20	10/30/96 06:35	
304-0001-006	SITE-2 CTO-008	10/29/96 13:00	10/30/96 06:35	
304-0001-007	SITE LP-20 CTO-005	10/29/96 14:25	10/30/96 06:35	

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-001	SITE-5 CTO-003	Aroclor 1016	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Aroclor 1221	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Aroclor 1232	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Aroclor 1242	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Aroclor 1248	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Aroclor 1254	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Aroclor 1260	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	DDD	< 0.005 mg/l	0.005	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	DDE	< 0.005 mg/l	0.005	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	DDT	< 0.005 mg/l	0.005	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Dieldrin	< 0.005 mg/l	0.005	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	2,4 D	< 0.1 mg/l	0.1	mg/l	J. Flora	11/05/96 12:00
-001	SITE-5 CTO-003	2,4,5-TP (Silvex)	< 0.01 mg/l	0.01	mg/l	J. Flora	11/05/96 12:00
-001	SITE-5 CTO-003	Chlordane	< 0.002 mg/l	0.002	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Endrin	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Heptachlor	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Heptachlor Epoxide	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Lindane	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Methoxychlor	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Toxaphene	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-001	SITE-5 CTO-003	Arsenic	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 11:49
-001	SITE-5 CTO-003	Barium	< 10.0 mg/L	10	mg/L	K.P.	11/04/96 11:49
-001	SITE-5 CTO-003	Cadmium	< 0.100 mg/L	.1	mg/L	K.P.	11/04/96 11:49
-001	SITE-5 CTO-003	Chromium	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 11:49
-001	SITE-5 CTO-003	Lead	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 11:49
-001	SITE-5 CTO-003	Mercury	< 0.002 mg/L	.002	mg/L	Shm	11/04/96 11:49
-001	SITE-5 CTO-003	Selenium	< 0.100 mg/L	.1	mg/L	K.P.	11/04/96 11:49

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-001	SITE-5 CTO-003	Silver	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 11:49
-001	SITE-5 CTO-003	1,4-Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	2,4,5-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	2,4,6-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	2,4-Dinitrotoluene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	Cresol (total)	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	Hexachlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	Hexachlorobutadiene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	Hexachloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	Nitrobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	Pentachlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	Pyridine	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-001	SITE-5 CTO-003	1,1 Dichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	1,2 Dichloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	1,4 Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	2-Butanone	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	Benzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	Carbon Tetrachloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	Chlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	Chloroform	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	Tetrachloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	Trichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	Vinyl Chloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:00
-001	SITE-5 CTO-003	Corrosivity	7.6 SU	0	SU	D. Craze	11/01/96 11:54
-001	SITE-5 CTO-003	Ignitability	No Flash	–		M. Wade	11/01/96 12:01
-001	SITE-5 CTO-003	Cyanide	< 0.02 mg/l	0.02	mg/l	M. Wade	11/05/96 11:43
-001	SITE-5 CTO-003	Sulfide	< 2 mg/l	2	mg/l	M. Wade	11/06/96 10:30
-001	SITE-5 CTO-003	TOX WATER	< 40 ug/l	10	ug/l	M. Wade	11/07/96 16:44

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-002	SITE-21 CT0-003	Aroclor 1016	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Aroclor 1221	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Aroclor 1232	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Aroclor 1242	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Aroclor 1248	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Aroclor 1254	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Aroclor 1260	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	2,4 D	< 0.1 mg/l	0.1	mg/l	J. Flora	11/05/96 12:00
-002	SITE-21 CT0-003	2,4,5-TP (Silvex)	< 0.01 mg/l	0.01	mg/l	J. Flora	11/05/96 12:00
-002	SITE-21 CT0-003	Chlordane	< 0.002 mg/l	0.002	mg/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Endrin	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Heptachlor	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Heptachlor Epoxide	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Lindane	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Methoxychlor	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Toxaphene	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-002	SITE-21 CT0-003	Arsenic	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 11:53
-002	SITE-21 CT0-003	Barium	< 10.0 mg/L	10	mg/L	K.P.	11/04/96 11:53
-002	SITE-21 CT0-003	Cadmium	< 0.100 mg/L	.1	mg/L	K.P.	11/04/96 11:53
-002	SITE-21 CT0-003	Chromium	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 11:53
-002	SITE-21 CT0-003	Lead	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 11:53
-002	SITE-21 CT0-003	Mercury	< 0.002 mg/L	.002	mg/L	Shm	11/04/96 11:53
-002	SITE-21 CT0-003	Selenium	< 0.100 mg/L	.1	mg/L	K.P.	11/04/96 11:53
-002	SITE-21 CT0-003	Silver	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 11:53
-002	SITE-21 CT0-003	1,4-Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CT0-003	2,4,5-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CT0-003	2,4,6-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-002	SITE-21 CTO-003	2,4-Dinitrotoluene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CTO-003	Cresol (total)	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CTO-003	Hexachlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CTO-003	Hexachlorobutadiene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CTO-003	Hexachloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CTO-003	Nitrobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CTO-003	Pentachlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CTO-003	Pyridine	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-002	SITE-21 CTO-003	1,1 Dichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	1,2 Dichloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	1,4 Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	2-Butanone	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	Benzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	Carbon Tetrachloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	Chlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	Chloroform	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	Tetrachloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	Trichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	Vinyl Chloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 01:30
-002	SITE-21 CTO-003	Corrosivity	7.2 SU	0	SU	D. Craze	11/01/96 11:54
-002	SITE-21 CTO-003	Ignitability	No Flash	—		M. Wade	11/01/96 12:01
-002	SITE-21 CTO-003	Cyanide	< 0.02 mg/l	0.02	mg/l	M. Wade	11/05/96 11:43
-002	SITE-21 CTO-003	Sulfide	54 mg/l	2	mg/l	M. Wade	11/06/96 10:30
-002	SITE-21 CTO-003	TOX WATER	< 40 ug/l	10	ug/l	M. Wade	11/07/96 16:44
-003	SITE-2 CTO-008	Aroclor 1016	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Aroclor 1221	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Aroclor 1232	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-003	SITE-2 CTO-008	Aroclor 1242	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Aroclor 1248	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Aroclor 1254	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Aroclor 1260	< 2 ug/l	2	ug/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	2,4 D	< 0.1 mg/l	0.1	mg/l	J. Flora	11/05/96 12:00
-003	SITE-2 CTO-008	2,4,5-TP (Silvex)	< 0.01 mg/l	0.01	mg/l	J. Flora	11/05/96 12:00
-003	SITE-2 CTO-008	Chlordane	< 0.002 mg/l	0.002	mg/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Endrin	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Heptachlor	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Heptachlor Epoxide	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Lindane	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Methoxychlor	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Toxaphene	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-003	SITE-2 CTO-008	Arsenic	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 12:03
-003	SITE-2 CTO-008	Barium	< 10.0 mg/L	10	mg/L	K.P.	11/04/96 12:03
-003	SITE-2 CTO-008	Cadmium	< 0.100 mg/L	.1	mg/L	K.P.	11/04/96 12:03
-003	SITE-2 CTO-008	Chromium	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 12:03
-003	SITE-2 CTO-008	Lead	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 12:03
-003	SITE-2 CTO-008	Mercury	< 0.002 mg/L	.002	mg/L	Shm	11/04/96 12:03
-003	SITE-2 CTO-008	Selenium	< 0.100 mg/L	.1	mg/L	K.P.	11/04/96 12:03
-003	SITE-2 CTO-008	Silver	< 0.500 mg/L	.5	mg/L	K.P.	11/04/96 12:03
-003	SITE-2 CTO-008	1,4-Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	2,4,5-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	2,4,6-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	2,4-Dinitrotoluene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Cresol (total)	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Hexachlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Hexachlorobutadiene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-003	SITE-2 CTO-008	Hexachloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Nitrobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Pentachlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Pyridine	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	1,1 Dichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	1,2 Dichloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	1,4 Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	2-Butanone	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Benzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Carbon Tetrachloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Chlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Chloroform	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Tetrachloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Trichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Vinyl Chloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Corrosivity	7.4 SU	0	SU	D. Craze	11/01/96 11:54
-003	SITE-2 CTO-008	Ignitability	No Flash	–		M. Wade	11/01/96 12:01
-003	SITE-2 CTO-008	Cyanide	< 0.02 mg/l	0.02	mg/l	M. Wade	11/05/96 11:43
-003	SITE-2 CTO-008	Sulfide	6 mg/l	2	mg/l	M. Wade	11/06/96 10:30
-003	SITE-2 CTO-008	TOX WATER	< 40 ug/l	10	ug/l	M. Wade	11/07/96 16:44
-004	SITE-5 CTO-003	Aroclor 1016	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1221	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1232	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1242	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1248	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1254	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1260	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL	Analyst	Analysis Date/Time

Abbreviations: ug/L = micrograms per liter, mg/L = milligrams per liter, ug/g = micrograms per gram, mg/kg = milligrams per kilogram, ug/ml = micrograms per milliliter, PQL = Practical Quantitation Limit. uS = microsiemens/centimeter at 25 degrees Celsius.

Summary of Analytical Methods

Parameter	Analytical Method	Parameter	Analytical Method
Corrosivity	EPA 150.1	EOX SOIL	SW846 9020
Ignitability	SW846 Method 1010	Aroclor 1016	SW846 Method 8080
Aroclor 1221	SW846 Method 8080	Aroclor 1232	SW846 Method 8080
Aroclor 1242	SW846 Method 8080	Aroclor 1248	SW846 Method 8080
Aroclor 1254	SW846 Method 8080	Aroclor 1260	SW846 Method 8080
Aroclor 1016	SW846 Method 8080	Aroclor 1221	SW846 Method 8080
Aroclor 1232	SW846 Method 8080	Aroclor 1242	SW846 Method 8080
Aroclor 1248	SW846 Method 8080	Aroclor 1254	SW846 Method 8080
Aroclor 1260	SW846 Method 8080	Cyanide	EPA Methods 335.2 and 376.1
Sulfide	EPA Methods 335.2 and 376.1	Sulfide	
DDD	SW846 Method 8080	DDE	SW846 Method 8080
DDT	SW846 Method 8080	Dieldrin	SW846 Method 8080
TCLP Extraction	METHOD 1311	2,4 D	SW846 Method 8150
2,4,5-TP (Silvex)	SW846 Method 8150	Arsenic	EPA SW846 3010/6010
Barium	EPA SW846 3010/6010	Cadmium	EPA SW846 3010/6010
Chromium	EPA SW846 3010/6010	Lead	EPA SW846 3010/6010
Mercury	EPA SW846 7470	Selenium	EPA SW846 3010/6010
Silver	EPA SW846 3010/6010	Chlordane	SW846 Method 8080

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

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929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Summary of Analytical Methods

Parameter	Analytical Method	Parameter	Analytical Method
Endrin	SW846 Method 8080	Heptachlor	SW846 Method 8080
Heptachlor Epoxide	SW846 Method 8080	Lindane	SW846 Method 8080
Methoxychlor	SW846 Method 8080	Toxaphene	SW846 Method 8080
1,4-Dichlorobenzene	TCLP-semivolatiles	2,4,5-Trichlorophenol	TCLP-semivolatiles
2,4,6-Trichlorophenol	TCLP-semivolatiles	2,4-Dinitrotoluene	TCLP-semivolatiles
Cresol (total)	TCLP-semivolatiles	Hexachlorobenzene	TCLP-semivolatiles
Hexachlorobutadiene	TCLP-semivolatiles	Hexachloroethane	TCLP-semivolatiles
Nitrobenzene	TCLP-semivolatiles	Pentachlorophenol	TCLP-semivolatiles
Pyridine	TCLP-semivolatiles	1,1 Dichloroethene	SW846 Method 8240M
1,2 Dichloroethane	SW846 Method 8240M	1,4 Dichlorobenzene	SW846 Method 8240M
2-Butanone	SW846 Method 8240M	Benzene	SW846 Method 8240M
Carbon Tetrachloride	SW846 Method 8240M	Chlorobenzene	SW846 Method 8240M
Chloroform	SW846 Method 8240M	Tetrachloroethene	SW846 Method 8240M
Trichloroethene	SW846 Method 8240M	Vinyl Chloride	SW846 Method 8240M
TOX WATER	SW 846 9020		

J. Thomas Stone
Environmental Services

James A. Calpin, CIH
Laboratory Director

Attachment 2:
(Laboratory Analysis for IDW Soil)

Group No.: 304-0001
Date: 11/13/96

Submitted to:

S. MATNEY
I M S ENVIRONMENTAL
929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

The following types of samples were submitted for analysis on October 30, 1996

; 4 - Soil Sample; 3 - Water

Attached are the results we obtained on the analysis of your samples.
Any Chains-of-Custody associated with this sample group are also enclosed.
We appreciate your confidence in allowing Analytics to be your testing laboratory. Any questions regarding this report can be addressed by calling our client services department (800-888-8061).

Thank you for your business.

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Summary of Samples Received

Lab No.	Client ID	Sample Date	Receive Date	Sample Description
304-0001-001	SITE-5 CTO-003	10/29/96 11:30	10/30/96 06:35	
304-0001-002	SITE-21 CTO-003	10/29/96 10:20	10/30/96 06:35	
304-0001-003	SITE-2 CTO-008	10/29/96 13:00	10/30/96 06:35	
304-0001-004	SITE-5 CTO-003	10/29/96	10/30/96	
304-0001-005	SITE-21 CTO-003	10/29/96 10:20	10/30/96 06:35	
304-0001-006	SITE-2 CTO-008	10/29/96 13:00	10/30/96 06:35	
304-0001-007	SITE LP-20 CTO-005	10/29/96 14:25	10/30/96 06:35	

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

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CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-003	SITE-2 CTO-008	Hexachloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Nitrobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Pentachlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	Pyridine	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-003	SITE-2 CTO-008	1,1 Dichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	1,2 Dichloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	1,4 Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	2-Butanone	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Benzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Carbon Tetrachloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Chlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Chloroform	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Tetrachloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Trichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Vinyl Chloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:00
-003	SITE-2 CTO-008	Corrosivity	7.4 SU	0	SU	D. Craze	11/01/96 11:54
-003	SITE-2 CTO-008	Ignitability	No Flash	–		M. Wade	11/01/96 12:01
-003	SITE-2 CTO-008	Cyanide	< 0.02 mg/l	0.02	mg/l	M. Wade	11/05/96 11:43
-003	SITE-2 CTO-008	Sulfide	6 mg/l	2	mg/l	M. Wade	11/06/96 10:30
-003	SITE-2 CTO-008	TOX WATER	< 40 ug/l	10	ug/l	M. Wade	11/07/96 16:44
-004	SITE-5 CTO-003	Aroclor 1016	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1221	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1232	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1242	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1248	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1254	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Aroclor 1260	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
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CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-004	SITE-5 CTO-003	DDD	< 0.005 mg/l	0.005	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	DDE	< 0.005 mg/l	0.005	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	DDT	< 0.005 mg/l	0.005	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	Dieldrin	< 0.005 mg/l	0.005	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	TCLP Extraction	Complt	--		D. Craze	10/31/96 16:15
-004	SITE-5 CTO-003	2,4 D	< 0.1 mg/l	0.1	mg/l	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	2,4,5-TP (Silvex)	< 0.01 mg/l	0.01	mg/l	J. Flora	11/05/96 12:00
-004	SITE-5 CTO-003	Chlordane	< 0.002 mg/l	0.002	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	Endrin	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	Heptachlor	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	Heptachlor Epoxide	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	Lindane	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	Methoxychlor	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	Toxaphene	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-004	SITE-5 CTO-003	Arsenic	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-004	SITE-5 CTO-003	Barium	< 10.0 mg/L	10	mg/L	E.S.	11/04/96 17:41
-004	SITE-5 CTO-003	Cadmium	< 0.100 mg/L	.1	mg/L	E.S.	11/04/96 17:41
-004	SITE-5 CTO-003	Chromium	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-004	SITE-5 CTO-003	Lead	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-004	SITE-5 CTO-003	Mercury	< 0.002 mg/L	.002	mg/L	Shm	11/04/96 17:41
-004	SITE-5 CTO-003	Selenium	< 0.100 mg/L	.1	mg/L	E.S.	11/04/96 17:41
-004	SITE-5 CTO-003	Silver	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-004	SITE-5 CTO-003	1,4-Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	2,4,5-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	2,4,6-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	2,4-Dinitrotoluene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	Cresol (total)	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	Hexachlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
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CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-004	SITE-5 CTO-003	Hexachlorobutadiene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	Hexachloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	Nitrobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	Pentachlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	Pyridine	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-004	SITE-5 CTO-003	1,1 Dichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	1,2 Dichloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	1,4 Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	2-Butanone	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	Benzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	Carbon Tetrachloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	Chlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	Chloroform	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	Tetrachloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	Trichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	Vinyl Chloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 02:30
-004	SITE-5 CTO-003	Corrosivity	8.6 SU	0	SU	D. Crave	10/31/96 16:15
-004	SITE-5 CTO-003	EOX SOIL	< 25 mg/kg	25	mg/kg	M. Wade	11/06/96 16:16
-004	SITE-5 CTO-003	Ignitability	No Flash	–		M. Wade	11/01/96 12:01
-004	SITE-5 CTO-003	Cyanide	< 20 mg/kg	20	mg/kg	M. Wade	11/05/96 11:43
-004	SITE-5 CTO-003	Sulfide	< 20 mg/kg	20	mg/kg	M. Wade	11/06/96 10:30
-005	SITE-21 CTO-003	Aroclor 1016	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-005	SITE-21 CTO-003	Aroclor 1221	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-005	SITE-21 CTO-003	Aroclor 1232	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-005	SITE-21 CTO-003	Aroclor 1242	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-005	SITE-21 CTO-003	Aroclor 1248	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-005	SITE-21 CTO-003	Aroclor 1254	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-005	SITE-21 CTO-003	Aroclor 1260	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-005	SITE-21 CTO-003	TCLP Extraction	Complt	—		D. Craze	10/31/96 16:15
-005	SITE-21 CTO-003	2,4 D	< 0.1 mg/l	0.1	mg/l	J. Flora	11/05/96 12:00
-005	SITE-21 CTO-003	2,4,5-TP (Silvex)	< 0.01 mg/l	0.01	mg/l	J. Flora	11/05/96 12:00
-005	SITE-21 CTO-003	Chlordane	< 0.002 mg/l	0.002	mg/l	J. Flora	11/04/96 12:00
-005	SITE-21 CTO-003	Endrin	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-005	SITE-21 CTO-003	Heptachlor	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-005	SITE-21 CTO-003	Heptachlor Epoxide	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-005	SITE-21 CTO-003	Lindane	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-005	SITE-21 CTO-003	Methoxychlor	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-005	SITE-21 CTO-003	Toxaphene	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-005	SITE-21 CTO-003	Arsenic	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-005	SITE-21 CTO-003	Barium	< 10.0 mg/L	10	mg/L	E.S.	11/04/96 17:41
-005	SITE-21 CTO-003	Cadmium	< 0.100 mg/L	.1	mg/L	E.S.	11/04/96 17:41
-005	SITE-21 CTO-003	Chromium	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-005	SITE-21 CTO-003	Lead	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-005	SITE-21 CTO-003	Mercury	< 0.002 mg/L	.002	mg/L	Shm	11/04/96 17:41
-005	SITE-21 CTO-003	Selenium	< 0.100 mg/L	.1	mg/L	E.S.	11/04/96 17:41
-005	SITE-21 CTO-003	Silver	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-005	SITE-21 CTO-003	1,4-Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	2,4,5-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	2,4,6-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	2,4-Dinitrotoluene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	Cresol (total)	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	Hexachlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	Hexachlorobutadiene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	Hexachloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	Nitrobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-005	SITE-21 CTO-003	Pentachlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	Pyridine	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-005	SITE-21 CTO-003	1,1 Dichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	1,2 Dichloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	1,4 Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	2-Butanone	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	Benzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	Carbon Tetrachloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	Chlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	Chloroform	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	Tetrachloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	Trichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	Vinyl Chloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 03:30
-005	SITE-21 CTO-003	Corrosivity	8.8 SU	0	SU	D. Craze	10/31/96 16:15
-005	SITE-21 CTO-003	EOX SOIL	< 25 mg/kg	25	mg/kg	M. Wade	11/06/96 16:16
-005	SITE-21 CTO-003	Ignitability	No Flash	—		M. Wade	11/01/96 12:01
-005	SITE-21 CTO-003	Cyanide	< 20 mg/kg	20	mg/kg	M. Wade	11/05/96 11:43
-005	SITE-21 CTO-003	Sulfide	< 20 mg/kg	20	mg/kg	M. Wade	11/06/96 10:30
-006	SITE-2 CTO-008	Aroclor 1016	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-006	SITE-2 CTO-008	Aroclor 1221	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-006	SITE-2 CTO-008	Aroclor 1232	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-006	SITE-2 CTO-008	Aroclor 1242	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-006	SITE-2 CTO-008	Aroclor 1248	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-006	SITE-2 CTO-008	Aroclor 1254	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-006	SITE-2 CTO-008	Aroclor 1260	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-006	SITE-2 CTO-008	TCLP Extraction	Complt	—		D. Craze	10/31/96 16:15
-006	SITE-2 CTO-008	2,4 D	< 0.1 mg/l	0.1	mg/l	J. Flora	11/05/96 12:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-006	SITE-2 CTO-008	2,4,5-TP (Silvex)	< 0.01 mg/l	0.01	mg/l	J. Flora	11/05/96 12:00
-006	SITE-2 CTO-008	Chlordane	< 0.002 mg/l	0.002	mg/l	J. Flora	11/04/96 12:00
-006	SITE-2 CTO-008	Endrin	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-006	SITE-2 CTO-008	Heptachlor	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-006	SITE-2 CTO-008	Heptachlor Epoxide	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-006	SITE-2 CTO-008	Lindane	< 0.001 mg/l	0.001	mg/l	J. Flora	11/04/96 12:00
-006	SITE-2 CTO-008	Methoxychlor	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-006	SITE-2 CTO-008	Toxaphene	< 0.05 mg/l	0.05	mg/l	J. Flora	11/04/96 12:00
-006	SITE-2 CTO-008	Arsenic	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-006	SITE-2 CTO-008	Barium	< 10.0 mg/L	10	mg/L	E.S.	11/04/96 17:41
-006	SITE-2 CTO-008	Cadmium	< 0.100 mg/L	.1	mg/L	E.S.	11/04/96 17:41
-006	SITE-2 CTO-008	Chromium	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-006	SITE-2 CTO-008	Lead	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-006	SITE-2 CTO-008	Mercury	< 0.002 mg/L	.002	mg/L	Shm	11/04/96 17:41
-006	SITE-2 CTO-008	Selenium	< 0.100 mg/L	.1	mg/L	E.S.	11/04/96 17:41
-006	SITE-2 CTO-008	Silver	< 0.500 mg/L	.5	mg/L	E.S.	11/04/96 17:41
-006	SITE-2 CTO-008	1,4-Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	2,4,5-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	2,4,6-Trichlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	2,4-Dinitrotoluene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	Cresol (total)	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	Hexachlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	Hexachlorobutadiene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	Hexachloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	Nitrobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	Pentachlorophenol	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	Pyridine	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 14:00
-006	SITE-2 CTO-008	1,1 Dichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL		Analyst	Analysis Date/Time
-006	SITE-2 CTO-008	1,2 Dichloroethane	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	1,4 Dichlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	2-Butanone	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	Benzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	Carbon Tetrachloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	Chlorobenzene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	Chloroform	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	Tetrachloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	Trichloroethene	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	Vinyl Chloride	< 0.01 mg/l	0.01	mg/l	T. Stone	11/06/96 04:00
-006	SITE-2 CTO-008	Corrosivity	8.4 SU	0	SU	D. Craze	10/31/96 16:15
-006	SITE-2 CTO-008	EOX SOIL	< 25 mg/kg	25	mg/kg	M. Wade	11/06/96 16:16
-006	SITE-2 CTO-008	Ignitability	No Flash	–		M. Wade	11/01/96 12:01
-006	SITE-2 CTO-008	Cyanide	< 20 mg/kg	20	mg/kg	M. Wade	11/05/96 11:43
-006	SITE-2 CTO-008	Sulfide	< 20 mg/kg	20	mg/kg	M. Wade	11/06/96 10:30
-007	SITE LP-20 CTO-005	Aroclor 1016	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-007	SITE LP-20 CTO-005	Aroclor 1221	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-007	SITE LP-20 CTO-005	Aroclor 1232	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-007	SITE LP-20 CTO-005	Aroclor 1242	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-007	SITE LP-20 CTO-005	Aroclor 1248	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-007	SITE LP-20 CTO-005	Aroclor 1254	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-007	SITE LP-20 CTO-005	Aroclor 1260	< 0.5 mg/kg	0.5	mg/kg	J. Flora	11/05/96 12:00
-007	SITE LP-20 CTO-005	Corrosivity	8.4 SU	0	SU	M. Wade	11/07/96 16:20
-007	SITE LP-20 CTO-005	EOX SOIL	< 25 mg/kg	25	mg/kg	M. Wade	11/06/96 16:16
-007	SITE LP-20 CTO-005	Ignitability	No Flash	–		M. Wade	11/01/96 12:01
-007	SITE LP-20 CTO-005	Cyanide	< 20 mg/kg	20	mg/kg	M. Wade	11/05/96 11:43
-007	SITE LP-20 CTO-005	Sulfide	< 20 mg/kg	20	mg/kg	M. Wade	11/06/96 10:30

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Lab No.	Client ID	Sample Parameter	Concentration	POL	Analyst	Analysis Date/Time

Abbreviations: ug/L = micrograms per liter, mg/L = milligrams per liter, ug/g = micrograms per gram, mg/kg = milligrams per kilogram, ug/ml = micrograms per milliliter, PQL = Practical Quantitation Limit. uS = microsiemens/centimeter at 25 degrees Celsius.

Summary of Analytical Methods

Parameter	Analytical Method	Parameter	Analytical Method
Corrosivity	EPA 150.1	EOX SOIL	SW846 9020
Ignitability	SW846 Method 1010	Aroclor 1016	SW846 Method 8080
Aroclor 1221	SW846 Method 8080	Aroclor 1232	SW846 Method 8080
Aroclor 1242	SW846 Method 8080	Aroclor 1248	SW846 Method 8080
Aroclor 1254	SW846 Method 8080	Aroclor 1260	SW846 Method 8080
Aroclor 1016	SW846 Method 8080	Aroclor 1221	SW846 Method 8080
Aroclor 1232	SW846 Method 8080	Aroclor 1242	SW846 Method 8080
Aroclor 1248	SW846 Method 8080	Aroclor 1254	SW846 Method 8080
Aroclor 1260	SW846 Method 8080	Cyanide	EPA Methods 335.2 and 376.1
Sulfide	EPA Methods 335.2 and 376.1	Sulfide	
DDD	SW846 Method 8080	DDE	SW846 Method 8080
DDT	SW846 Method 8080	Dieldrin	SW846 Method 8080
TCLP Extraction	METHOD 1311	2,4 D	SW846 Method 8150
2,4,5-TP (Silvex)	SW846 Method 8150	Arsenic	EPA SW846 3010/6010
Barium	EPA SW846 3010/6010	Cadmium	EPA SW846 3010/6010
Chromium	EPA SW846 3010/6010	Lead	EPA SW846 3010/6010
Mercury	EPA SW846 7470	Selenium	EPA SW846 3010/6010
Silver	EPA SW846 3010/6010	Chlordane	SW846 Method 8080

Group No. 304-0001
Account No. 45409880
Report Date: 11/11/96
Amend Date: 11/13/96

S. MATNEY
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929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 10/30/96 06:35
Sample Type: ; 4 - Soil Sample; 3 - Water
Project: 351.2249 N.O.B. PO Number: 2274-C

Summary of Analytical Methods

Parameter	Analytical Method	Parameter	Analytical Method
Endrin	SW846 Method 8080	Heptachlor	SW846 Method 8080
Heptachlor Epoxide	SW846 Method 8080	Lindane	SW846 Method 8080
Methoxychlor	SW846 Method 8080	Toxaphene	SW846 Method 8080
1,4-Dichlorobenzene	TCLP-semivolatiles	2,4,5-Trichlorophenol	TCLP-semivolatiles
2,4,6-Trichlorophenol	TCLP-semivolatiles	2,4-Dinitrotoluene	TCLP-semivolatiles
Cresol (total)	TCLP-semivolatiles	Hexachlorobenzene	TCLP-semivolatiles
Hexachlorobutadiene	TCLP-semivolatiles	Hexachloroethane	TCLP-semivolatiles
Nitrobenzene	TCLP-semivolatiles	Pentachlorophenol	TCLP-semivolatiles
Pyridine	TCLP-semivolatiles	1,1 Dichloroethene	SW846 Method 8240M
1,2 Dichloroethane	SW846 Method 8240M	1,4 Dichlorobenzene	SW846 Method 8240M
2-Butanone	SW846 Method 8240M	Benzene	SW846 Method 8240M
Carbon Tetrachloride	SW846 Method 8240M	Chlorobenzene	SW846 Method 8240M
Chloroform	SW846 Method 8240M	Tetrachloroethene	SW846 Method 8240M
Trichloroethene	SW846 Method 8240M	Vinyl Chloride	SW846 Method 8240M
TOX WATER	SW 846 9020		

J. Thomas Stone
Environmental Services

James A. Calpin, CIH
Laboratory Director

Group No.: 318-0069
Date: 11/14/96

Submitted to:

STEVE MATNEY
I M S ENVIRONMENTAL
929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

The following types of samples were submitted for analysis on November 13, 1996

; 1 - Soil Sample

Attached are the results we obtained on the analysis of your samples.
Any Chains-of-Custody associated with this sample group are also enclosed.
We appreciate your confidence in allowing Analytics to be your testing laboratory. Any questions regarding this report can be addressed by calling our client services department (800-888-8061).

Thank you for your business.

Group No. 318-0069
Account No. 45409880
Report Date: 11/13/96

STEVE MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 11/13/96
Sample Type: ; 1 - Soil Sample
Project: 351.2249 PO Number: 2274C

Summary of Samples Received

Lab No.	Client ID	Sample Date	Receive Date	Sample Description
318-0069-001	SITE5,21,2,LP20	10/29/96	11/13/96 16:15	COMPOSITE

Group No. 318-0069
Account No. 45409880
Report Date: 11/13/96

STEVE MATNEY
I M S ENVIRONMENTAL

929 PROFESSIONAL PLACE
CHESAPEAKE, VA 23320

Final Report

Date Received: 11/13/96 16:15
Sample Type: ; 1 - Soil Sample
Project: 351.2249 PO Number: 2274C

Lab No.	Client ID	Sample Parameter	Concentration	PQL		Analyst	Analysis Date/Time
-001	SITE5,21,2,LP20	TPH-IR	97 mg/kg	10	mg/kg	D. Craze	11/13/96 16:41

Abbreviations: ug/L = micrograms per liter, mg/L = milligrams per liter, ug/g = micrograms per gram, mg/kg = milligrams per kilogram, ug/ml = micrograms per milliliter, PQL = Practical Quantitation Limit. uS = microsiemens/centimeter at 25 degrees Celsius.

Summary of Analytical Methods

Parameter	Analytical Method	Parameter	Analytical Method
TPH-IR	EPA 418.1		

J. Thomas Stone
Environmental Services

James A. Calpin, CIH
Laboratory Director

Attachment 3:
(TSDF Acceptance Letters)

IMS

INDUSTRIAL MARINE SERVICE, INC.

1301 MARSH STREET / P.O. BOX 1779 / NORFOLK, VA 23501-1779

MEMBER: Hampton Roads Chamber of Commerce/Hampton Roads Maritime Assoc.
National Fire Protection Assoc./National Safety Council
National Ground Water Association/Remedial Contractors Institute
South Tidewater Association of Ship Repairers
Associated East Coast Responders

TELEPHONE
24 HOURS
(804) 543-5718
(800) 229-4671
FAX
(804) 543-4561

November 12, 1996

Stephen J. Matney, PHM
IMS Environmental
929 Professional Place
Chesapeake, VA 23320

Re: IDW (CTO-003 and 008) from the CH2M Hill project at the Norfolk Naval Operations Base in Norfolk, VA.

Dear Stephen;

After review of the analysis from the IDW wastewater (CTO-003 and 008) at the above referenced site, IMS will accept the wastewater at the 1301 Marsh Street facility.

If you have any questions concerning the enclosed information please contact me at 757-543-5718.

Very truly yours,
IMS ENVIRONMENTAL

Larry Griffin

Larry Griffin
Corporate Environmental Compliance Manager

SOILEX

Soilex Corporation

Plant Address
5025 Southern Boulevard, Virginia Beach, VA 23462

Mailing Address
Post Office Box 62601, Virginia Beach, VA 23466

Phone: 804/499-1177 • Fax: 804/499-3567

November 14, 1996

Mr. Steve Matney
IMS Environmental
P.O. Box 1779
Norfolk, VA 23501

Reference: Drummed Well Cuttings
NOB Norfolk
Project 351.2249 NOB

Dear Mr. Matney,

Based upon the previously submitted lab analysis, the above referenced material is acceptable for receipt and thermal treatment at the Virginia Beach Facility.

Please do not hesitate to contact me should you have any questions.

Sincerely,

John W. Ruffin

Attachment 4:
(SOILEX Profile Sheets)

MATERIAL CHARACTERIZATION FORM

GENERATOR'S NAME Norfolk Naval Operations Base

ADDRESS Commander Naval Base 1530 Gilbert Street ATTN: Dinne Bailey

TELEPHONE 757-322-2900

CONSULTANT NAME & ADDRESS IMS Environmental 929 Professional Place Chesapeake, VA 23320

DESCRIBE ACTIVITY WHICH GENERATES THIS MATERIAL (BE SPECIFIC) Investigative Derived Waste from CH2M Hill CTO-003 (Site 5), CTO-003 (Site-21)

SOIL QUANTITY _____ CUBIC YARDS

SOIL TYPE(S) _____

FLASHPOINT _____ CYANIDES _____ppm SULFIDES _____ppm

METALLICS	Arsenic _____ppm	Chromium _____ppm	Selenium _____ppm
TCLP	Barium _____ppm	Silver _____ppm	Cadmium _____ppm
	Mercury _____ppm	Lead _____ppm	Other _____ppm
PCB	_____ppm	_____ppm	_____ppm _____ppm
BTEX	_____ppm	_____ppm	_____ppm _____ppm

TPH See Analysis ppm TOX _____ppm MOISTURE ____ %

IS THIS MATERIAL CORROSIVE? NO IS THIS MATERIAL REACTIVE? NO

PAINT FILTER TEST ____ pH OF MATERIAL See Analysis

IS THIS A LISTED HAZARDOUS WASTE PER USEPA REGULATION? NO

OTHER INFORMATION See Analysis

This is a complete and accurate description of this material and I hereby certify this material to be non-hazardous as defined by US Department of Transportation, US Environmental Protection Agency (EPA C-RCRA, 40 CFR 261), Virginia Department of Waste Management, or local regulations. I further certify that this material is non-hazardous as defined by regulations of the state in which it was generated. If this material is generated in Virginia, I certify that the Virginia Water Control Board has ben notified according to the existing State of Virginia regulations and guidelines.

GENERATOR'S SIGNATURE _____

TITLE _____ DATE _____

MATERIAL CHARACTERIZATION FORM

GENERATOR'S NAME Norfolk Naval Operations Base

ADDRESS Commander Naval Base 1530 Gilbert Street ATTN: Dave Bailey

TELEPHONE 757-322-2900

CONSULTANT NAME & ADDRESS IMS Environmental 929 Professional Place Chesapeake, VA 23320

DESCRIBE ACTIVITY WHICH GENERATES THIS MATERIAL (BE SPECIFIC) Investigative Derived waste from CH2M Hill CTO-008 (Site 2)

SOIL QUANTITY _____ CUBIC YARDS

SOIL TYPE(S) _____

FLASHPOINT _____ CYANIDES _____ ppm SULFIDES _____ ppm

METALLICS	Arsenic _____ ppm	Chromium _____ ppm	Selenium _____ ppm
TCLP	Barium _____ ppm	Silver _____ ppm	Cadmium _____ ppm
	Mercury _____ ppm	Lead _____ ppm	Other _____ ppm
PCB	_____ ppm	_____ ppm	_____ ppm _____ ppm
BTEX	_____ ppm	_____ ppm	_____ ppm _____ ppm

TPH See Analysis ppm TOX _____ ppm MOISTURE _____ %

IS THIS MATERIAL CORROSIVE? NO IS THIS MATERIAL REACTIVE? NO

PAINT FILTER TEST _____ pH OF MATERIAL See Analysis

IS THIS A LISTED HAZARDOUS WASTE PER USEPA REGULATION? NO

OTHER INFORMATION See Analysis

This is a complete and accurate description of this material and I hereby certify this material to be non-hazardous as defined by US Department of Transportation, US Environmental Protection Agency (EPA C-RCRA, 40 CFR 261), Virginia Department of Waste Management, or local regulations. I further certify that this material is non-hazardous as defined by regulations of the state in which it was generated. If this material is generated in Virginia, I certify that the Virginia Water Control Board has ben notified according to the existing State of Virginia regulations and guidelines.

GENERATOR'S SIGNATURE _____

TITLE _____ DATE _____

12/19 @ GIS mtg

DEPARTMENT OF THE NAVY
NAVY ENVIRONMENTAL HEALTH CENTER
2510 WALMER AVENUE
NORFOLK, VIRGINIA 23513-2617

5090.5
Ser EP/KK:4167/ 08502

12 NOV 1996

From: Commanding Officer, Navy Environmental Health Center
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Attn: David Forsythe, 1510 Gilbert Street, Norfolk, VA 23511-2699

Subj: REVIEW OF INSTALLATION RESTORATION PROGRAM DOCUMENTS FOR NORFOLK NAVAL BASE, NORFOLK, VA

Ref: (a) CH2M Hill transmittal ltr of 10 Oct 96

Encl: (1) Medical Review of "Draft Human Health and Ecological Risk Assessment Assumptions for Remedial Investigation/Feasibility Study NM Slag Pile (Site 2)"
(2) Medical/Health Comments Survey

1. Per reference (a), we have completed a medical review of the "Draft Human Health and Ecological Risk Assessment Assumptions for Remedial Investigation/Feasibility Study NM Slag Pile (Site 2)" and it is forwarded to you as enclosure (1).

2. Please complete and return enclosure (2). Your comments are needed to continually improve our services to you.

3. We are available to discuss the enclosed information by telephone with you and, if necessary, with you and your contractor. If you require additional assistance, please call Ms. Katharine M. Kurtz or Mr. David F. McConaughy at (757) 363-5553 or (757) 363-5557. The DSN prefix is 864.

W. E. Luttrell
W. E. LUTTRELL
By direction

MEDICAL REVIEW OF DRAFT
HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT
ASSUMPTIONS FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NM SLAG PILE (SITE 2) NORFOLK NAVAL BASE, NORFOLK, VA

Ref: (a) Phone conversation with Mr. Dave Forsythe, LANTDIV, of 5 Nov 96
(b) Risk Assessment Guidance for Superfund, Vol. 1, Part A: Human Health Evaluation Manual, December 1989 (EPA/540/1-89/002)
(c) Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program, June 1988 (NEESA 20.2-047B)

General Comments:

1. The draft document entitled "Draft Human Health and Ecological Risk Assessment Assumptions for Remedial Investigation/Feasibility Study NM Slag Pile (Site 2)" was provided to the Navy Environmental Health Center for review on 15 October 1996. The report was prepared for the Naval Facilities Engineering Command, Atlantic Division, by CH2M HILL under Contract Task Order 008.

2. Although we reviewed the entire document, per reference (a), our comments address only the human health risk assessment (HHRA) issues. In general, we feel that the HHRA in this report is based on very conservative exposure assumptions for this partially paved military base site. The exposure factors that currently are listed represent worst case exposure assumptions that will produce a highly conservative risk estimate. We are available to review work plans, sampling and analysis plans, health and safety plans (HASPs), baseline HHRA documents, etc. Our specific comments and recommendations are provided below.

Review Comments and Recommendations:

1. Page 1, "Site Description"

Comment: The text states that storm water runoff from the site flows into drainage ditches. These ditches eventually empty into Mason Creek. The report does not contain a description of these ditches or specify the condition of the surface waters.

Recommendation: Provide a description of the drainage ditches in the HHRA and include additional information concerning the condition of the surrounding surface waters.

2. Page 1, "Remedial Investigation Data Collection"

Comment: The text does not discuss any background samples taken at or nearby Site 2. Reference (b) states that "Background sampling is conducted to distinguish site-related contamination from naturally occurring or other non-site-related levels of chemicals and should

be collected from each medium of concern." Background sampling locations were not indicated on the site map depicting sampling locations presented in Figure 2.

Recommendation: Provide information on any background samples and indicate sampling locations on a site map. Discuss how the background concentrations will be used in the HHRA.

3. Page 1, "Monitoring Well Installation and Sampling"

Comments:

a. Although monitoring well sampling and groundwater analysis were mentioned in the report, the text does not indicate whether data from both filtered and unfiltered groundwater samples will be obtained. Reference (b) states that "unfiltered groundwater data should be used to estimate exposure concentrations."

b. We endorse using both filtered and unfiltered types of samples in the risk assessment. Although the regional United States Environmental Protection Agency (USEPA) guidance requires use of unfiltered sample results in the quantitative baseline HHRA, if risk estimates for both filtered and unfiltered samples are developed, both values can be discussed. Because some heavy metals absorb strongly to soil/sediment particles, the difference between the resultant risk estimates from filtered and unfiltered sampling results can be large. Providing comparison values can therefore be very useful in demonstrating that the risk estimates from unfiltered groundwater samples are too conservative.

Recommendation: Develop risk estimates for both filtered and unfiltered groundwater samples, and discuss both values in the baseline HHRA.

4. Pages 2 - 4, "RI Baseline Human Health Risk Assessment"

Comments:

a. Potential exposure scenario information presented in the report appears confusing and contradictory. Page 2 of the text states that "The future use of the site is expected to remain industrial...a future industrial groundwater-use scenario will be evaluated for information and decision-making." This information does not correlate with the summary of exposure pathways and potentially exposed populations listed in Table 1.

b. Exposure parameters for the residential groundwater exposure scenario are given in Table 1. Because the shallow groundwater condition is currently reported to be non-potable and the future use of this site is anticipated to continue to be military, we question the need for a residential future groundwater use scenario. We feel that use of these exposure assumptions will derive an overly conservative risk estimate for this site. Also, we feel that use of the trespasser

exposure parameters given in Table 1 of the report in the HHRA calculations will result in an overly conservative risk estimate.

c. In addition, information concerning whether recreational activities are conducted in surface water bodies possibly influenced by the site would be helpful in determining potential affect on human exposure.

d. The report does not discuss current employee populations at or near this site and their potential for exposure to site-related contaminants..

e. Although the report states that future residential development of Site 2 is unlikely, it does not describe any specific restrictions that would be put in place to prevent future residential development of the area should the land be transferred to non-Department of Defense ownership.

Recommendations:

a. Clarify the potential exposure scenarios in the text and include in the baseline HHRA a "Conceptual Site Model" per reference (b) to depict both current and future potential exposure scenarios. Correct the apparent discrepancies between the text and table.

b. Either use more realistic exposure assumptions for this site or further justify the use of the future residential groundwater scenario. Consider using no more than 9 years for the current trespasser youth exposure duration parameter because this site is in a military complex.

c. Discuss recreational activities that may provide the potential for risk to nearby populations, to include fishing and/or shellfish harvesting activities, or justify their exclusion.

d. Characterize the activities and activity patterns of potentially exposed employee populations in the final Remedial Investigation/Feasibility Study (RI/FS) report, as applicable.

e. Provide additional information outlining the actions required to prevent this site from being used for future residential purposes.

5. Page 2, "Soil Sampling"

Comment: The text states that composite subsurface soil samples were collected from three soil boring locations. The text does not provide an explanation for taking this type of sample.

Recommendation: The statement concerning composite surface soil samples is unclear and additional information should be supplied in the text for taking this type of sample.

6. Page 3, "RI Baseline Human Health Risk Assessment"

Comments:

a. The text states that "The 95 percent upper confidence limit of the mean (95UCL) will be used as the exposure concentration for soil, sediment, and surface water...If the 95UCL is greater than the maximum detected concentration, the maximum detected concentration will be used as the exposure concentration."

b. A USEPA Deputy Administrator memorandum dated 26 February 1992 ("Guidance on Risk Characterization for Risk Managers and Risk Assessors") and a USEPA publication dated May 1992 ("Supplemental Guidance to RAGS: Calculating the Concentration Term") indicates that a single number used to represent the health risk to an individual or population may hamper the risk manager's ability to make an informed risk decision. Although the guidance discusses the concept at length, the bottom line is that risk estimates for both the upper bound (reasonable maximum exposure (RME)) and average case should be presented. We fully endorse USEPA's guidance for calculating quantitative risk estimates for the average as well as the RME case.

Recommendation: Future remedial investigations should provide quantitative risk estimates for the average as well as the RME case.

7. Figure 2, "Soil, Surface Water, Sediment, and Groundwater Sampling Locations"

Comment: The flow of groundwater is not indicated on the Site 2 map. The ability to estimate future exposure concentrations can depend on the flow of groundwater transporting possible contaminants.

Recommendation: Indicate the flow of groundwater in future RI/FS documents for this site.

FROM: (YOUR NAME/COMMAND)
TO: NAVENVIRHLTHCEN, ENVIRONMENTAL PROGRAMS
FAX: COM: (757) 444-7261/DSN: 564-7261

MEDICAL/HEALTH COMMENTS - YOUR VIEW

Please help us improve our review process by indicating the extent to which you agree or disagree with the comments we provided your activity.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. "Value added" to IR/BRAC process?	1	2	3	4	5
2. Received in a timely manner?	1	2	3	4	5
3. High level of technical expertise?	1	2	3	4	5
4. Very useful to the RPM?	1	2	3	4	5
5. Contractor incorporated comments?	1	2	3	4	5
6. Easily readable/useful format?	1	2	3	4	5
7. Overall review was of high quality?	1	2	3	4	5
8. NAVENVIRHLTHCEN was easily accessible?	1	2	3	4	5
9. NAVENVIRHLTHCEN input during scoping or workplan development would be "value added"?	1	2	3	4	5
10. Added involvement in IR/BRAC document needed?	1	2	3	4	5

Please return by fax using the box provided at the top of this page. If you have any other comments, please list them below or call Mr. David McConaughy, Head, Health/Risk Assessment Department, at (757) 363-5557, DSN 864 at any time to discuss your viewpoint. As our customer, your comments and suggestions of how we can improve our services to you are important!