



**US Army Corps
of Engineers®**
Buffalo District

FACSIMILE TRANSMITTAL SHEET

TO:	Mr. Dave Leemhuis	FROM:	Bill Kowalewski, PE
COMPANY:	NYS-DEC	DATE:	09/05/00
FAX NUMBER:	851-7009	TOTAL NO. OF PAGES INCLUDING COVER:	10
PHONE NUMBER:	851-7220	PHONE/FAX NUMBER:	Phone (716) 879-4418 Fax (716) 879-4355
RE:	Discharge of water - CWM property, Lewiston, NY		william.e.kowalewski@usace.army.mil

URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

NOTES/COMMENTS:

- Please review enclosed proposal. Appreciate your input on whether the preferred option is feasible. If not, I'll most likely have to abandon this part of the job and move on. Makes sense to do it now. I'm ready to answer any questions or discuss alternatives. Thanks again.

Bill Kowalewski

PROPOSAL FOR THE DISCHARGE OF STORMWATER

AT

**FORMER LAKE ONTARIO ORDNANCE WORKS (LOOW)
NIAGARA COUNTY, NEW YORK**

1. BACKGROUND: The US Army Corps of Engineers (USACE) Buffalo District is conducting an interim removal action (IRA) at the former LOOW site, located on the property of Chemical Waste Management Incorporated, 1550 Balmer Road, Model City, New York, 14107. The purpose of this IRA is to remove two piping systems dating from the original construction of the LOOW in the 1940s. These systems include wastewater pipelines from former trinitrotoluene (TNT) production facilities and chemical waste sewer (CWS) lines from a former rocket fuel production facility. These pipelines pose a potential threat as contaminant pathways. Portions of the pipelines have been found to contain chemical waste products characterized as hazardous and PCB wastes.

2. CURRENT SITUATION: The scope of the removal action for the CWS lines includes excavating and removing two pipelines connected to a defunct oil/water separator (OWS) and a defunct acid neutralization lagoon (ANL). These pipelines are approximately 10 feet below grade and we believe they are connected to the bottom of the OWS and ANL at a depth of approximately 8-9 feet. In order to safely remove these lines, it is necessary to remove the accumulated rainwater from the OWS and ANL. The total volume of water in the OWS is estimated at 318,240 gallons (80' x 60' x 8.5') and the ANL is estimated at 835,380 gallons (135' x 105' x 12'). These structures are shown in Figures 2-1 and 2-2.

The question at this point in time is how to manage the accumulated water in these structures in an environmentally protective, legally compliant, technically feasible, and cost-effective manner.

a. SAMPLING: A total of nine water grab-samples were taken in August 2000. Three samples were taken from the OWS at depths of approximately 1.5 feet, 5 feet, and 8.5 feet. Six samples were taken from the ANL. This structure consists of two chambers and three samples were taken from each chamber at depths of approximately 3 feet, 7.5 feet, and 10.5 feet.

b. ANALYSIS: Each sample was analyzed for volatile organic compounds, semivolatile organic compounds, explosives, PCBs, metals, ammonia nitrogen, biochemical oxygen demand, oil and grease, pH, phenols, settleable solids, total dissolved solids, and total suspended solids. A summary of the results is provided below. Attachment 1 contains a summary of the laboratory data. Copies of the individual laboratory reports are available if needed.

(1) Oil Water Separator: The laboratory results show the following:

- The upper layer complies with permit requirements with the exception of volatile organics (sample number W-OWS-1)

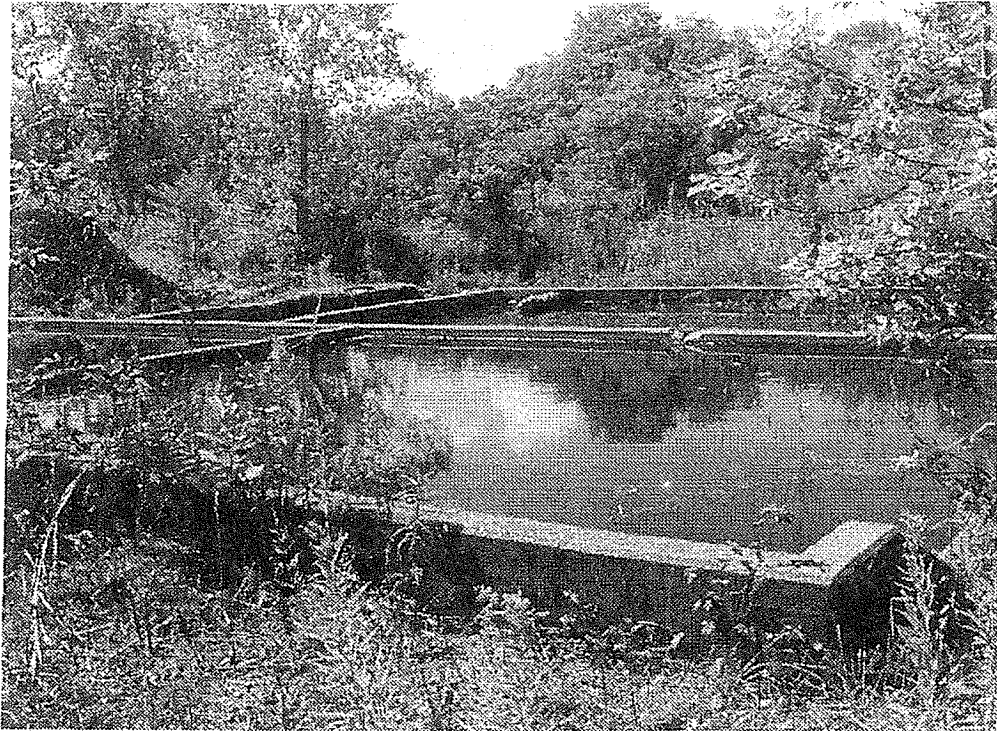


Figure 2-1 (Oil/Water Separator)

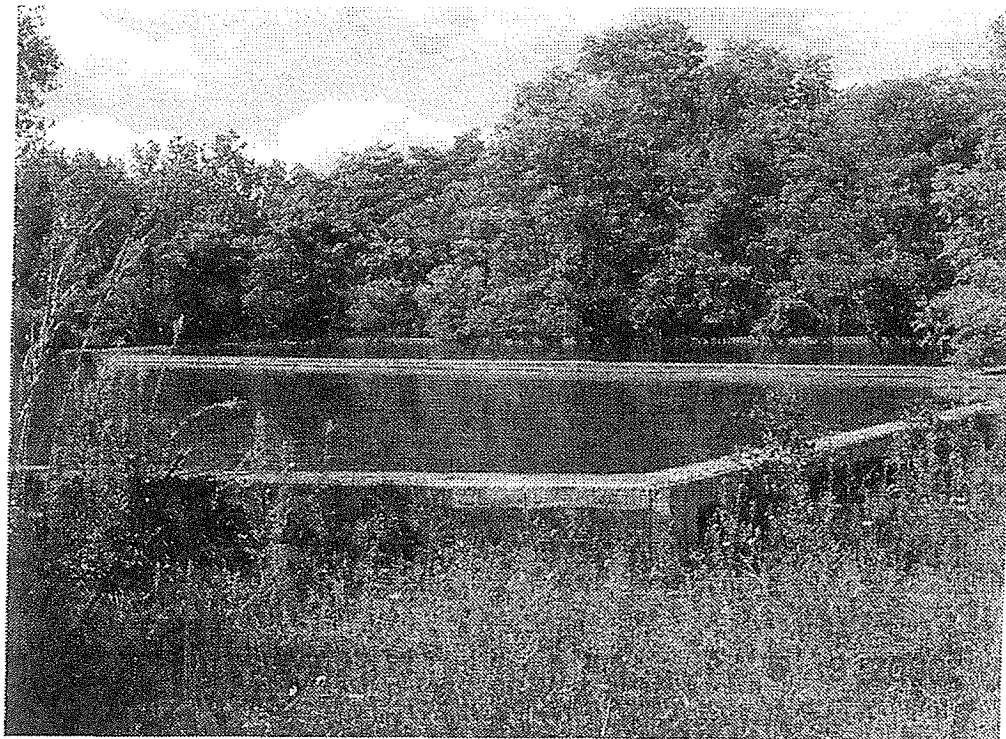


Figure 2-2 (Acid Neutralization Lagoon)

- The middle layer complies with permit requirements with the exception of total suspended solids, settleable solids, and volatile organics (sample number W-OWS-2)

- The lower layer complies with permit requirements with the exception of total suspended solids, settleable solids, total copper, total zinc, aroclor 1248, and aroclor 1254 (sample number W-OWS-3)

(2) Acid Neutralization Lagoon (East Chamber): The laboratory results show the following:

- The upper layer complies with permit requirements with the exception of volatile organics (sample number W-AN-E1)

- The middle layer complies with permit requirements with the exception of volatile organics (sample number W-AN-E2)

- The lower layer complies with permit requirements with the exception of total suspended solids, settleable solids, total copper, total zinc, aroclor 1248, aroclor 1260, and volatile organics (sample number W-AN-E3)

(3) Acid Neutralization Lagoon (West Chamber): The laboratory results show the following:

- The upper layer complies with permit requirements with the exception of volatile organics (sample number W-AN-W1)

- The middle layer complies with permit requirements with the exception of volatile organics (sample number W-AN-W2)

- The lower layer complies with permit requirements with the exception of total suspended solids, total copper, total zinc, aroclor 1248, and volatile organics (sample number W-AN-W3)

3. PROPOSAL: There are several options available for managing the accumulated water and achieving the goals of the IRA. These options are provided below.

a. Option 1 - Pump and Treat All Water: This option would not require any on-site discharge of the accumulated water in the structures. The total volume to be treated is approximately 1,645,020 gallons. The OWS and ANL would be pumped down to a depth where the discharge pipes are visible. The contents of the structures would be stored in portable water tanks and then trucked to a properly permitted treatment facility. It is estimated that treatment of this volume of water would cost approximately \$330,000 (based on a unit price of \$0.20 per gallon). This cost does not include handling, shipping, and management costs.

b. Option 2 - Partial On-Site Discharge Water: This option would require on-site discharge of the upper two layers of accumulated water in the structures (approximately 1,238,445 gallons). First, the upper layers of the OWS and ANL would be pumped directly to the Central Drainage Ditch or to one or more stormwater retention ponds on Chemical Waste Management Incorporated property. Due to the proximity of the OWS and ANL to the Central Drainage Ditch, it would be preferable to discharge to it rather than pumping the water approximately 1500 linear feet to the nearest retention pond. Second, the lower layer of water in the OWS would be pumped into the ANL west chamber to facilitate removal of the OWS discharge line. Third, the contents of the ANL west chamber would be pumped into the ANL east chamber to facilitate removal of the ANL discharge pipe. The contents of the ANL west chamber would remain pending future remediation not in the scope of this project. There would be no treatment cost associated with Option 2.

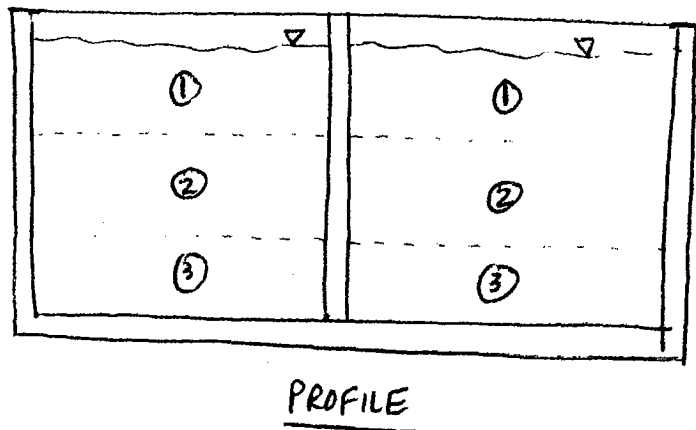
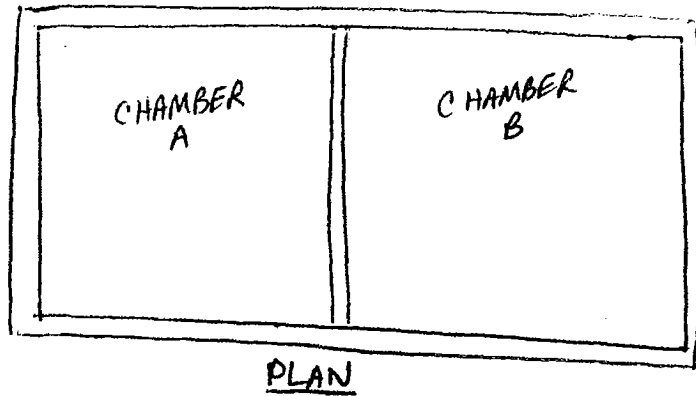
c. Option 2a - If on-site discharge is not possible, Option 2 could be modified to treat the two upper layers of water. This modification would cost approximately \$247,689 for treatment.

d. Option 3 - On-Site Discharge of All Water: This option would require a one-time exemption to the Chemical Waste Management Incorporated stormwater discharge permit. The water from the OWS and ANL would be pumped directly into the Central Drainage Ditch or to one or more stormwater retention ponds on Chemical Waste Management Property. Due to the proximity of the OWS and ANL to the Central Drainage Ditch, it would be preferable to discharge to it rather than pumping the water approximately 1500 linear feet to the nearest retention pond.

4. PREFERRED OPTION: From a technical and financial point of view, the preferred option is Option 2. However, consultation with NYS DEC is required to assess the threat to human health and the environment and whether the option would qualify for a one-time exemption to the Chemical Waste Management Incorporated stormwater discharge permit and/or clearance to discharge water to the Central Drainage Ditch. It is not known whether this volume of water could be discharged on-site in a manner to minimize the potential threat.

	OWS	ANL		OWS	ANL
LENGTH	80.0	135.0		80.0	135.0
WIDTH	60.0	105.0		60.0	105.0
DEPTH	8.5	12.0		6.5	9.0
VOL (CF)	40,800	170,100		31,200	127,575
VOL (GAL)	318,240	1,326,780		243,360	995,085
TOTAL VOL (GAL)	1,645,020			1,238,445	
OPTION 2 (TREAT VOL)	406,575				
OPTION 2 (COST)	\$73,184				

LOCATION W-11



- SAMPLE # W-11-01
Composite sample from water taken at
A1 + B1
- SAMPLE # W-11-02
Composite sample from water taken at
A2 + B2
- SAMPLE # W-11-03
Composite sample from water taken
at A3 + B3
- All samples taken @ mid-depth of respective
layer of water
- Divide total depth into 3 equal layers
- Sediments to be collected in layer 3 with
water

TRANSMISSION VERIFICATION REPORT

TIME : 09/06/2000 14:17
NAME : BUFF DIST ENG DIV
FAX : 7168794355
TEL :

DATE, TIME	09/06 14:16
FAX NO./NAME	915184579240
DURATION	00:01:19
PAGE(S)	05
RESULT	OK
MODE	STANDARD ECM



**US Army Corps
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Buffalo District

FACSIMILE TRANSMITTAL SHEET

TO: KENT

Kent Johnson

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URGENT FOR REVIEW PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

NOTES/COMMENTS:

Kent

Here is the water results summary for the OWS and ANL. Thanks for your help - hope to hear something soon.

By the way - we just had a very productive conference call with USACE and US Army explosives safety experts and have approval to proceed with removal of the TNT line. Will be starting in a few days

Bill

7/1

SEVENSON ENVIRONMENTAL OIL WATER SEPARATOR AND ACID NUTRIALIZATION POND RESULTS

**Parameters included on
WM SPDES Permit**

Parameters included on WM SPDES Permit	Units		Detection Limit	W-OWS-1	W-OWS-2	W-OWS-3	W-AN-E1	W-AN-E2	W-AN-E3	W-AN-W1
	Compliance level									
pH	6.5-8.5	SU		8.81	6.98	7.06	9.49	9.42	7.75	9.26
Total Suspended Solids	20 daily Ave.									
Total Dissolved Solids	40 daily max.	mg/L	4.0 mg/L	U	44	518	10	9.2	491	10.8
Settleable solids	monitor	mg/L	4.0 mg/L	445	374	364	282	307	276	123
BOD5	0.1 daily max.	ml/L	0.1 ml/L	U	2	19	U	U	12	U
Dissolved Oxygen	monitor	mg/L	10.0 mg O ₂ /L	U	U	23.5	U	U	15.6	U
Ammonia	1.5 daily ave.	mg/L	0.1 mg/L	0.21	0.14	0.2	0.4	0.75	0.11	0.13
Oil & Grease	15 daily max.	mg/L	4.1-4.5	U	U	U	7.5	U	U	U
Total Copper	60 daily max.	ug/L	9.0 ug/L	9	U	1660	U	U	746	U
Total Zinc	135 daily max.	ug/L	13.0 ug/L	20	82	246	40	25	276	33
Aroclor 1016	300 daily max.	ng/L	250 ng/L	U	U	U	U	U	U	U
Aroclor 1221	300 daily max.	ng/L	310 ng/L	U	U	U	U	U	U	U
Aroclor 1232	300 daily max.	ng/L	270 ng/L	U	U	U	U	U	U	U
Aroclor 1242	300 daily max.	ng/L	230 ng/L	U	U	U	U	U	U	U
Aroclor 1248	300 daily max.	ng/L	320 ng/L	U	U	U	520 ng/L	300 ng/L	U	560 ng/L
Aroclor 1254	300 daily max.	ng/L	260 ng/L	U	U	670 ng/L	U	U	15300 ng/L	U
Aroclor 1260	300 daily max.	ng/L	240 ng/L	U	U	260 ng/L	U	U	U	U
Total Phenols	10 daily Ave.	ug/L	5 ug/L	U	U	U	U	U	2100 ng/L	U
2-Chloroethyl Vinyl Ether	20 daily max.	ug/L	10 ug/L	U	U	U	U	U	U	U
Dichlorodifluoromethane	10 daily max.	ug/L		U	U	U	U	U	U	U
Methylene Chloride	20 daily max.	ug/L	5 ug/L	U	U	U	U	U	U	U
Volatile Organics	10 daily max.	ug/L		25	122	2	25	68	49	138
Additional Constituents										
Explosives:										
HMX		ug/L	0.39	U	U	U	U	U	U	U
RDX		ug/L	0.16	U	U	U	U	U	U	U

08/15

**SEVENSON ENVIRONMENTAL
OIL WATER SEPARATOR AND ACID NUETRALIZATION POND RESULTS**

**Parameters included on
WM SPDES Permit**

	<u>Units</u>	<u>Detection Limit</u>	<u>W-OWS-1</u>	<u>W-OWS-2</u>	<u>W-OWS-3</u>	<u>W-AN-E1</u>	<u>W-AN-E2</u>	<u>W-AN-E3</u>	<u>W-AN-W1</u>
1,3,5-Trinitrobenzene	ug/L	0.16	U	U	U	U	U	U	U
1,3-Dinitrobenzene	ug/L	0.16	U	U	U	U	U	U	U
Nitrobenzene	ug/L	0.16	U	U	U	U	U	U	U
2,4,6-TNT	ug/L	0.16	U	U	U	U	U	U	U
Tetryl	ug/L	0.16	U	U	U	U	U	U	U
2,4-Dinitrotoluene	ug/L	0.31	U	U	U	U	U	U	0.45
2,6-Dinitrotoluene	ug/L	0.16	U	U	U	U	U	U	U
2-Amino-4,6-Dinitrotoluene	ug/L	0.31	U	U	U	U	U	U	U
4-Amino-2,6-Dinitrotoluene	ug/L	0.31	U	U	U	U	U	U	U
2-Nitrotoluene	ug/L	0.31	U	U	U	U	U	U	U
4-Nitrotoluene	ug/L	0.31	U	U	U	U	U	U	U
3-Nitrotoluene	ug/L	0.78	U	U	U	U	U	U	U
	ug/L	0.31	U	U	U	U	U	U	U

9/11

**SEVENSON ENVIRONMENTAL
OIL WATER SEPARATOR AND ACID NUETRALIZATION POND RESULTS**

**Parameters included on
WM SPDES Permit**

	<u>Compliance level</u>	<u>Units</u>	<u>Detection Limit</u>	<u>W-AN-W2</u> <u>W-AN-W3</u>	
pH	6.5-8.5	SU		8.91	7.48
Total Suspended Solids	20 daily Ave.				
Total Dissolved Solids	40 daily max.	mg/L	4.0 mg/L	8.8	241
Settleable solids	monitor	mg/L	4.0 mg/L	260	307
BOD5	0.1 daily max.	ml/L	0.1 ml/L	U	8
Dissolved Oxygen	monitor	mg/L	10.0 mg O ₂ /L	U	U
Ammonia	1.5 daily ave.	mg/L	0.1 mg/L	0.12	0.4
Oil & Grease	15 daily max.	mg/L	4.1-4.5	U	U
Total Copper	60 daily max.	ug/L	9.0 ug/L	U	901
Total Zinc	135 daily max.	ug/L	13.0 ug/L	17	229
Aroclor 1016	300 daily max.	ng/L	250 ng/L	U	U
Aroclor 1221	300 daily max.	ng/L	310 ng/L	U	U
Aroclor 1232	300 daily max.	ng/L	270 ng/L	U	U
Aroclor 1242	300 daily max.	ng/L	230 ng/L	460 ng/L	U
Aroclor 1248	300 daily max.	ng/L	320 ng/L	U	40700 ng/L
Aroclor 1254	300 daily max.	ng/L	260 ng/L	U	U
Aroclor 1260	300 daily max.	ng/L	240 ng/L	U	U
Total Phenols	10 daily Ave.	ug/L	5 ug/L	U	U
2-Chloroethyl Vinyl Ether	20 daily max.	ug/L	10 ug/L	U	U
Dichlorodifluoromethane	10 daily max.	ug/L		U	U
Methylene Chloride	20 daily max.	ug/L	5 ug/L	U	U
Volatile Organics	10 daily max.	ug/L		17	38

Additional Constituents

Explosives:

HMX					
RDX		ug/L	0.39	U	U
		ug/L	0.16	U	U

10/10

SEVENSON ENVIRONMENTAL OIL WATER SEPARATOR AND ACID NUETRALIZATION POND RESULTS

Parameters Incuded on WM SPDES Permit

	<u>Units</u>	<u>Detection Limit</u>	<u>W-AN-W2</u>	<u>W-AN-W3</u>
1,3,5-Trinitrobenzene	ug/L	0.16	U	U
1,3-Dinitrobenzene	ug/L	0.16	U	U
Nitrobenzene	ug/L	0.16	U	U
2,4,6-TNT	ug/L	0.16	U	U
Tetryl	ug/L	0.16	U	U
2,4-Dinitrotoluene	ug/L	0.31	U	U
2,6-Dinitrotoluene	ug/L	0.16	U	U
2-Amino-4,6-Dinitrotoluene	ug/L	0.31	U	U
4-Amino-2,6-Dinitrotoluene	ug/L	0.31	U	U
2-Nitrotoluene	ug/L	0.31	U	U
4-Nitrotoluene	ug/L	0.31	U	U
3-Nitrotoluene	ug/L	0.78	U	U
		0.31	U	U

TRANSMISSION VERIFICATION REPORT

TIME : 09/05/2000 15:00
NAME : BUFF DIST ENG DIV
FAX : 7168794355
TEL :

DATE, TIME	09/05 14:55
FAX NO./NAME	98517009
DURATION	00:04:36
PAGE(S)	10
RESULT	OK
MODE	STANDARD ECM