WOODARD & CURRAN
ENVIRONMENTAL SERVICES

REPORT

VACUUM ENHANCED RECOVERY PILOT TEST
PHASE 1 INSTALLATION AND OPERATION REPORT

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O'CONNOR COMPANY SUPERFUND SITE
AUGUSTA, MAINE

WOODARD & CURRAN
ENVIRONMENTAL SERVICES

December 3, 1996

Mr. Ross Gilleland, USEPA
J.F. Kennedy Federal Building (HBT)
Boston, Mass 02203-2211

Re: O'Connor Site Phase 1 installation and operation report.

Dear Ross;

We have completed the phase 1 installation and operation of the vacuum enhanced recovery pilot test. Included is the installation and operation report for phase 1 of the program. We are proceeding with system construction for the operation of phase 2. The results of phase 1 required design changes and operation modifications of the Vacuum Enhanced Recovery Pilot Test Work Plan. We would like to have a teleconference at 9:00 am Thursday December 12 to discuss the results and changes. Please let me know if this date is acceptable. If you have any questions please call.

Sincerely;
WOODARD & CURRAN INC.

Eric Carlson P.E., C.G.
Senior Hydrogeologist

cc: Mary Pothier, CDM (3 copies)
Camelle Parish, MEDEP (3 copies)
Normand Michaud, CMP (2 copies)

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1.0 INTRODUCTION

This document describes the implementation of the first phase of the pilot test for vacuum enhanced recovery (VER) and treatment at the O'Connor Company Superfund Site (Site) in Augusta, Maine. This report describes the installation and operation of the VER system and gives the basis for final treatment design for the second phase of operation. This report is supplemental to both the Management of Migration (MOM) Additional Investigation Report (January 1996) and the MOM Vacuum Enhanced Recovery Work Plan (August 1996). For a detailed discussion of site geology and the purpose of the VER system the reader is referred to the above reports.

1.1 Purpose

The purpose of this document is to describe all well installation details, the operation of the extraction well and treatment system, and the data collected during the operation of the first phase of the test.

1.2 Program Overview

The VER pilot test includes the installation of a new extraction well, submersible pump, vacuum system to enhance recovery, treatment system for a gas phase, and a treatment system for the liquid phase. The objective of the pilot test was to determine if VER will help in recovering free phase oil floating on top of the water table in the TWA II area without further contaminating the bedrock flow system. The extraction system uses a vacuum to induce a gradient to the extraction well without drawing the static water table down. A submersible controllerless pump is used to pump liquid from the well maintaining the water level in the well slightly below the static water level. The effluent from the treatment system is proposed to be re-injected into the till bedrock migration pathway down gradient from the bedrock divide and monitoring wells MW-501 and MW-502 (refer to the Management of Migration Additional Investigation Report, and the Vacuum Enhanced Recovery Work Plan).

1.3 Summary

On August 28, 1996 site work began on the installation of the new extraction well and re-injections wells. The wells were completed on September 20 and the installation of the first phase of the treatment system completed on October 22. On October 22, all system components were checked and the re-injection wells tested. The re-injection wells were found to accept greater than 10 gpm. On October 23, the extraction system was started up and run for a three hour period. The operating vacuum was held at a constant vacuum of 20-inch of Mercury. Thirty-three gallons of liquid were pumped over a three-hour period

(31-gallons of water and 2-gallons of pure product oil). The average air flow through the system was 36 acfm with the highest total VOC concentration of 39 ppm. The total VOC's in the vapor averaged approximately 1.7 ppm. It is not anticipated that vapor treatment will be necessary for Phase 2 of the test.

During pumping a total head change of 0.24 feet was measured in observation well 204B, approximately 45-feet from the pumping well, while draw downs, close to the pumping well, of 2.78 and 1.58 feet were observed in wells OW-202B and OW-302B respectively. The draw down cone induced by the extraction well was shaped as an elongated ellipse with the principle axis of the ellipse parallel to the axis of the bedrock ridge.

2.0 IMPLEMENTATION AND OPERATION OF THE PHASE I PILOT EXTRACTION AND TREATMENT SYSTEM

The following section describes the implementation and operation of the first phase of the VER system for the recovery of free phase oil in the TWA II area. This section describes the well installation, the first phase of treatment system construction, and the operation of the system during a three hour test. All results of the pilot test operation are discussed in detail in section 3.0

2.1 Extraction and Re-injection System

All field work was conducted in modified Level D as described in the Source Control Health and Safety Plan. This section describes the drilling procedures, well installation, and development of both the extraction well and the re-injection wells.

2.1.1 Drilling

Drive and wash drilling technique was utilized in drilling the extraction well. Hollow stem augers were used to drill the re-injection wells. These drilling methods differed from the proposed methods described in the work plan because of the availability of the equipment and schedule of the project. The boring logs for both the extraction wells and the re-injection wells are included in Appendix A.

The extraction well was drilled by advancing 6 inch steel casing to a depth of 23.5 feet below the ground surface. A tri-cone button bit was used to advance the boring five-feet below the bedrock surface. During the drilling the wash water was re-circulated. At the conclusion of drilling the wash water was disposed of in an on site tank that was previously used for development water from existing wells. The result was a cased hole from the surface to 23.5 feet where the casing was set approximately 0.3 feet in the top of the bedrock. Below this point was an open bedrock hole approximately five-feet. Based on drilling speed the bedrock was believed to be very competent with very few to no fracture. A slug test was completed in the open bedrock boring to estimate the hydraulic conductivity of the bedrock. As described in the work plan, a stain steel screen was attempted to be placed in the boring. The annular space between the bedrock and the screen was to small to allow the screen to be lowered to the bottom of the hole. A four inch 20 slot PVC screen was used instead. Figure 1 shows the construction method used for extraction well EW-101.

During the drilling operation the PID did not indicate any VOC in the circulation water or breathing zone. Oil was observed on wash water beginning at 22.2 feet below ground surface. PID readings from circulation water remained at 0.0 ppm. Split spoon samples collected from 21.5 - 23.5 had a head space PID reading of 3.0 ppm.

The re-injection wells were constructed by advancing 8-inch hollow stem augers through the upper clay and till units with the intent of terminating the boring at the till bedrock interface. Appendix A gives the boring logs associated with both the extraction well and each re-injection well. During the drilling of the re-injection wells lithology changes were noted based on changes in the down hole drilling operation and samples retrieved from the auger flights. During the drilling of all the re-injection wells PID reading remained at 0.0 ppm. The sand pack used in the construction of RW-101 was contaminated with BTEX. This is discussed further in section 2.1.2.

2.1.2 Well Construction

The extraction well and re-injection wells were installed by placing slotted PVC and riser pipe into the boring. Filter sand was added to fill the annulus between the boring walls and well materials. The extraction well was constructed within the drive casing. The casing was removed as sand pack was added to the annular space. The screened interval extended from the bottom of the hole to just above the clay till interface. Figure 1 depicts the construction details for the extraction well.

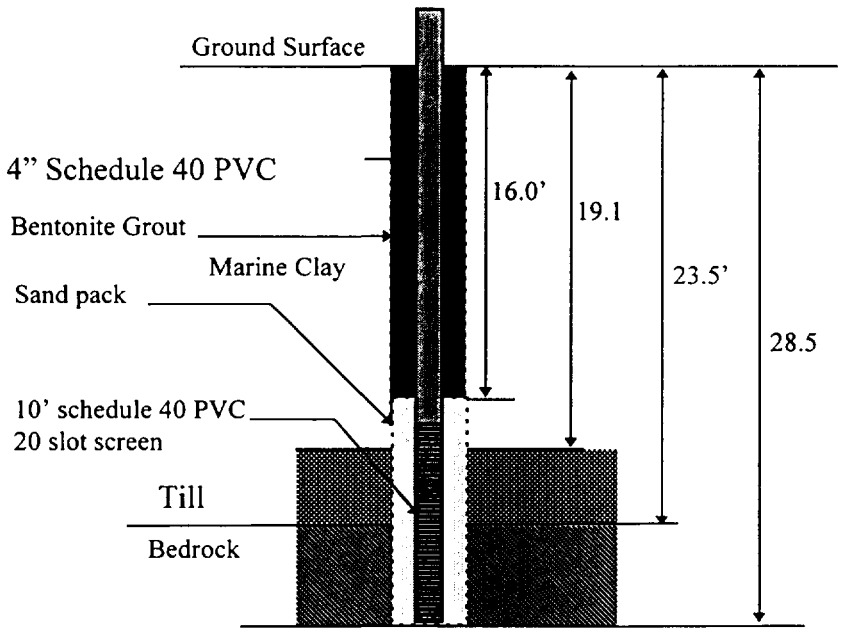

Figure 1. Extraction well Construction details

The re-injection wells were constructed by removing the augers from the boring and placing the well materials in the open hole. Figure 2 and Table 1 give the well construction details for each well.

During the construction of RW-101 it was determined that sand contaminated with BTEX was used during the construction of the screen sand pack. All data and a description of the event and remedy is given in Appendix B.

2.1.3 Development and Testing

The development of the wells was completed using a surge and purge technique. All purge water from the re-injection wells was allowed to seep back into the ground. All purge water from the extraction well has been contained on site for later treatment.

The re-injection wells were tested to determine their capacity for re-injecting the treated effluent. The wells were fitted with caps and air bleeding valves. Each well was connected to a common header constructed of 1 " polyethylene pipe. The header was connected to a 55-gallon recharge reservoir immediately adjacent to the EW-101. The recharge reservoir

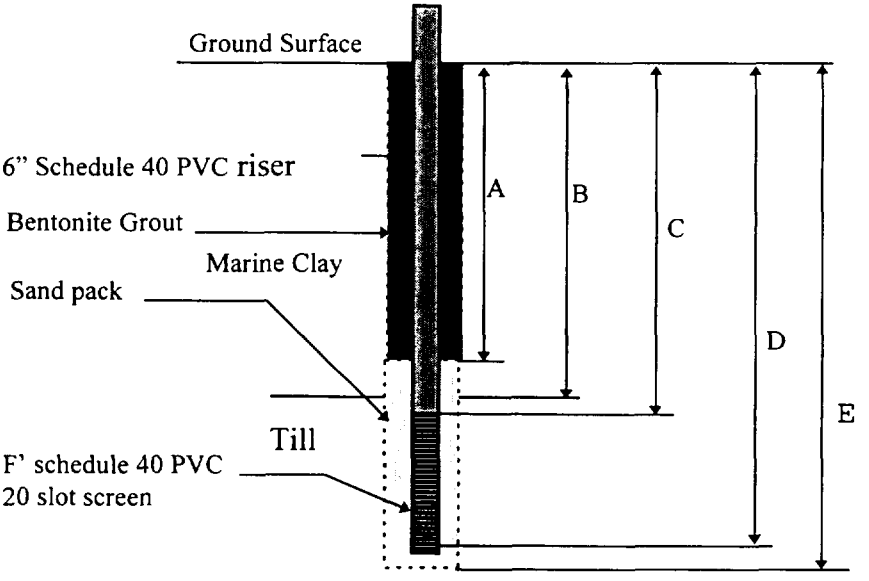

Figure 2. Re-injection well Construction Details

Well Id	A	B	C	D	E	F
RW-101	5.5	4.6	7.6	17.6	18.0	10
RW-102	4.0	8.0	5.4	25.5	34.0	20
RW-103	8.0	15.0	10.4	20.4	25.4	10

Table 1 Well Construction details

was filled with clean water and allowed to re-inject the wells. All air was bled from the system and all piping checked for leaks. All leaks were repaired and the system allowed to run for approximately 2.5 hours continually adding water to the recharge reservoir. At the conclusion of the test the recharge reservoir was fully drained and the wells were infiltrating 100 % of the supply water feeding the recharge reservoir which was estimated at to be approximately 10 gpm.

2.2 Phase I Treatment System Construction

The Phase 1 treatment system construction included installing the pumping equipment in the extraction well, constructing the vacuum and air treatment system as indicated in the Vacuum Enhanced Recovery Work Plan and constructing the air feed for the compressed air pump used to recover fluids within the extraction well.

The treatment system and equipment was constructed in a tractor trailer. The treatment system was constructed as proposed in the Vacuum Enhanced Recovery Work Plan. The seal water for the vacuum pump was supplied through a water supply line from the Augusta Water District. The seal water effluent from the pump was diverted to the re-injection wells.

2.2.1 Groundwater Pumping System

The top of the extraction well casing was sealed with four penetrations:

- a vacuum connection;
- supplied air for the pump;
- discharge line for the pump; and
- a transducer line to determine the water level within the well.

The pump used is a controllerless pulse pump that utilizes compressed air to evacuate the pump body. After the pump body is evacuated it is vented to the vacuum in the well casing and allowed to fill through a check valve. The pump fills through a skimmer port on the top of the pump where the fluid is channeled into the pump body at the bottom. The net effect is that the pump evacuates fluid from the well within a vacuum skimming the oil water mixture from the top of the water table. The pump will pump water down to the level of the top of the pump without any controls.

The pump was set approximately 21.5 feet below the ground surface. A water level transducer was installed at the bottom of the well to monitor water level within the extraction well.

2.2.2 Vacuum System

The vacuum system included a cartridge filter to clean the air stream of solids prior to the vacuum pump and vapor phase granular activated carbon (GAC). The filter is a pleated paper filter capable of removing solids down to five microns.

A liquid-ring vacuum pump was used which is capable of developing a vacuum up to approximately 27-inches mercury (inHg) in the extraction well. The vacuum pump used was a Nash model CP-50 with a 3 horsepower, 1750 rpm motor. It will produce a 25 inHg vacuum at a flow of 44 acfm and a 27 inHg vacuum at 32 acfm. Water supplied by the Augusta Water District was used for the required seal water flow of 1.5 gallons per minute (gpm).

A vapor phase activated carbon canisters was used to treat the filtered air pumped from the vacuum pump. The carbon canister contained 175-pounds of virgin activated carbon and was rated for flows of 0 to 150 acfm. The canister was supplied by QED Model A175.

The influent header from the wells to the air treatment system was equipped with a vacuum gauge (0 to 27 inHg), a manually-actuated flow control butterfly valve and a butterfly valve to bleed in ambient air. The ambient air was used to control the vacuum and flow through the air treatment system. A flow meter (0 to 150 acfm) located on the vacuum pump discharge was used to measure air flow through the system. Sample ports located after the vacuum pump and after the carbon canister was used to monitor the system performance.

2.2.3 Re-injection System

The operation of the re-injection wells for the first phase of the pilot test involved discharging the seal water directly to the re-injection well line. The bleeder valves on each re-injection well was left open until all air was bled from the system. At that time the valves were closed and the seal water was allowed to infiltrate along the till/bedrock interface through the re-injection wells. The re-injection wells operate under an approximate head of 35-feet.

2.3 Phase I Operation

The first phase of operation included the operation of the vacuum system, groundwater pumping system, and the re-injection system. The re-injection system was only used for re-injecting water supplied by the Augusta Water District and used as seal water for the vacuum pump. Both flow rate and quality of both water and vapor from the system was monitored to determine the effectiveness of the extraction system and the suitability of the treatment system.

2.3.1 Startup

The first phase of the test was started by turning on the groundwater pump and recording the natural flow rate without any vacuum applied. The test continued by inducing the vacuum in the well equal to 20-inch of mercury. The test ran for three hours. All liquid was collected in a 55-gallon graduated tank for later treatment and disposal.

The following steps generally describe the startup of the groundwater extraction system:

(1) Start the air compressor in accordance with the manufacturer's instructions and regulate the air flow to the pump. Record the natural flow rate from the well;

(2) Record air flow and all other pertinent data on the Process Monitoring Field Data Sheet;

(3) Open the air inlet valve completely and start the vacuum pump in accordance with manufacturer's instructions;

(4) Close ambient air inlet valve to increase vacuum on well 20-inches of Mercury;

(5) Record air flow, vacuum, and all other pertinent data on the Process Monitoring Field Data Sheet.

2.3.2 Operation and Monitoring

This section describes the first phase of operation and monitoring of groundwater, oil and vapor.

2.3.2.1 Water

Prior to starting Phase I of the pilot test wells OW-202B, OW-301 B, and OW-302B were equipped with a sealed cap and a drop tube extending to a depth of approximately 40-feet below the top of casing. All water levels were collected, prior to system start-up, on wells in the TWA II area. The drop tubes allow the determination of total head at that monitoring location where it was believed that the vacuum induced from the system would cause the water level in the well to drop below the bottom of the surface casing. At the conclusion of the three hour test all wells were monitored again to determine the net head change within each well.

Two groundwater samples were collected during the last half hour of the Phase I operation. One sample (sample id "grab") was a grab sample directly from the well. The second sample (sample id "composit") was a composite sample drawn from the bottom of the 55-gallon storage container collecting all liquids.

The results of this analysis are discussed in section 3.2 and results given in Appendix C.

All liquids during the first phase of operation were collected and contained for later treatment and disposal. The grab and composite samples were analyzed for PCBs, VOC, and oil and grease. Based on the results of these samples an additional sample was collected to determine that oil was not emulsified in the groundwater and that an additional treatment process was not required for the phase 2 operation. The additional sample was collected in a 5 gallon bucket, directly discharging from the extraction well to the bucket. The sample was collected after running the extraction well for approximately 20 minutes. The sample was then split into a groundwater sample (sample id "GW") and an oil sample (sample id "free product"). The GW sample was then acidified in an effort to brake any oil emulsion that may have been present. All samples labled GW-2* are samples analyzed after acid cracking tests were performed. All results are included in Appendix C and a summary of results is discussed in section 3.2

2.3.2.2 Oil

An oil sample was collected from the top of the 55-gallon container to determine the PCB content in the oil. A syringe was used to draw a sample of oil off the top of the 55-gallon contain. A 4-ounce container was collected and submitted to the laboratory for analysis. The results of the analysis are discussed in section 3.4.

2.3.2.3 Vapor

During Phase I VER system operation, vented gas emissions were controlled using one vapor phase activated carbon canister. Air monitoring was conducted to verify that people in the immediate vicinity were not exposed to a health hazard during VER operation. The purpose of area monitoring was to ensure that a 5 ppm threshold was not exceeded

Total VOCs were monitored at 30-minute intervals before and after the carbon canister at Port 1 and Port 2. A Photovac microtip M-1000 PID was used with a lamp having an ionization potential of 10.2. The PID was calibrated using 100 ppm isobutylene. All readings were recorded on the Process Monitoring Field Data Sheet. It was found that moisture in the sampling tube affected the PID instrument readings giving false positives. The comparison of total VOC concentration in TO-14 analysis confirmed moisture affected VOC measurement with a PID.

A 2-hour composite air sample was collected at Port 1 with the system operating at 20 inHG, during the second and third hour of operation. The sample was analyzed for individual VOCs in air using USEPA Method TO-14. Results from the TO-14 analysis are is given in Appendix D. A discussion of the results is given in section 3.3.

3.0 RESULTS

The results of the first phase of operation of the pilot test are described in this section. The results have lead to a modification of the treatment design. Based on the results of the first phase of operation several design changes and system modifications are made in section 4.0 which modify the Phase 2 design.

3.1 Groundwater Response

The average groundwater pumping rate from the system for the three hour period was approximately 0.18 gpm. A total of 33-gallons of liquid were pumped from the extraction well; thirty-one gallons of groundwater and two-gallons of pure oil product (refer to the process monitoring field data sheet, Appendix C). During pumping a total head change of 0.24 feet was measured in observation well 204B, approximately 45-feet from the pumping well, while draw downs, close to the pumping well, of 2.78 and 1.58 feet were observed in wells OW-202B and OW-302B respectively. The draw down cone induced by the extraction well was shaped as an elongated ellipse with the principle axis of the ellipse parallel to the axis of the bedrock ridge. Wells EW-1 and MW-104B were not effected by the test. This indicates that the bedrock ridge is effectively acting as a hydraulic barrier of significantly lower hydraulic conductivity and the primary source of recharge to the extraction well is coming from the north side of the bedrock ridge.

Because the total volume of liquid pumped was relatively small compared to the total head response in the observation wells it is likely that a significant portion of the observed response was due to a pressure change rather than water table elevation change. Total head change was not observed in observation wells, not equipped with drop tubes, and having their screened interval stratling the water table. Table 2 give the groundwater elevation changes that occurred during the test.

	Water Level		Top of	Elevation	Elevation	
Well Id	Pre-pump	End of pump	Casing	Pre-pump	End of pump	Change
OW-202b	18.21	20.99	226.42	208.21	205.43	2.78
OW-302b	21.72	23.29	227.26	205.54	203.97	1.57
OW-301b	20.6	21.7	227.47	206.87	205.77	1.1
EW-1	19.88	19.82	221.86	201.98	202.04	-0.06
MW-404a	16.65	16.62	227.67	211.02	211.05	-0.03
OW-204b	13.67	13.91	225.99	212.32	212.08	0.24
MW-403a	3.34	3.33	224.07	220.73	220.74	-0.01
MW-104b	14.32	14.32	214.91	200.59	200.59	0

Table 2. Groundwater Elevation Data

3.2 Water Quality

Groundwater and free product samples were collected during the Phase 1 pilot test and analyzed by Katahdin Analytical Services for volatile organic compounds and PCB's (sample id's "composit" and "grab"). Based on the color of the samples it was thought that the groundwater may contain emulsified oils so an oil and grease analysis was conducted on the composit sample. The laboratory measured oil & grease at 12,000 ppm. The previously proposed treatment system was not designed to treat emulsified oils. An additional sample (sample id "GW") was collected to further examine the potential if emulsified oil existed in the groundwater. A series of jar tests were completed to determine if oil was emulsified in the groundwater and what process would be needed to break the emulsion.

The new sample ("GW") was collected from the extraction well on October 29, 1996 and tested on October 31, 1996. The bench tests and subsequent analytical tests determined that the groundwater did not contain emulsified oils. Instead, the elevated oil & grease concentration of the previous sample was probably due to a small amount of free product in the sample jar. The cloudy appearance was due to clays and silts in the water.

A full series of organic, inorganic and conventional pollutant analyses on the groundwater and free product were performed as part of the bench scale tests. These laboratory results are presented in Appendix C. W&C compared these results to the primary MCLs for drinking water to determine which compounds exceeded the limits. Appendix C contains the laboratory results and a table comparing the results with the primary drinking water MCL's. None of the inorganics exceeded the primary MCLs and of the organics exceeding the limits, granular activated carbon (GAC) was the required treatment process.

3.3 Vapor Quality

Monitoring results indicate that the total VOC concentration in the breathing zone remained at background level. Therefore there was no need to upgrade personnel protection or apply any additional controls for emissions. During operation the air flow rate varied from approximately 22 - 39 acfm. In general, the air flow increased throughout the first two hours of the test and stabilized at 39 acfm for the remaining portion of the test.

A 2-hour composite air sample was collected at Port 1 and analyzed for individual VOCs using USEPA Method TO-14. Results from this sample are given in Appendix D (refer to appendix E for sample port locations). The TO-14 analytical results indicate that the total VOC concentration was ~1.7 ppm.

Analytical results from the TO-14 analysis indicate that no compound exceeded the VOC limits, given in Appendix D, except chloroform. Chloroform exceeds the VOC limit

established by MEDHS. Chloroform concentrations in the vacuum system exhaust was measured at 0.12 ppm. the MEDHS limit for chloroform is 0.042 ppm.

Although it was anticipated that the chloroform concentration in the ambient air would be below the MEDHS limit in the immediate vicinity of the exhaust the USEPA SCREEN3 model was completed. The model was completed to determine what the maximum chloroform concentration can be at the source such that the MEDHS limit will not be exceeded at the property boundary or other occupied work zones on site. In addition, the model was run using the TO-14 analytical results and known operating condition. This result indicated that the MEDHS limit was not exceeded anywhere on site based on a 12 foot high stack height and a 6 foot high receptor.

A second model run was completed to determine maximum stack concentration allowable such that the MEDHS limit will not be exceeded anywhere both on or off site. The results indicate that a source concentration of 328 ppm chloroform at the source would need to exist in order to meet the MEDHS limit at a 6 foot high receptor. As discussed in the work plan it will be assumed, during phase 2 operation, that the total VOCs monitored at the source is chloroform. All modeling inputs and results are included in Appendix E. Operation modifications are discussed in section 4.2.

3.4 PCB's in Oil

A sample (sample id "free product") of the oil was collected and analyzed for PCB's. The results are included in Appendix C. As expected the oil contains high levels of PCB's.

4.0 DESIGN CHANGES AND MODIFICATIONS

Several design changes and operation modifications are made with respect to the water treatment system, the vapor treatment system, and vapor monitoring for the Phase 2 portion of the pilot test.

4.1 Water Treatment System Modifications

The treatment goal is to produce water that meets the current primary maximum contaminant levels (MCLs) established for drinking water (CFR 141.50 to 141.63). Effluent meeting these standards may be discharged to re-injection wells. Otherwise, the water will have to be trucked to off-site disposal at $0.42 to $1.95 per gallon, depending on its PCB concentration. Off-site disposal will be more expensive than treatment and re-injection if the system operates for more than approximately 50 days.

GAC filtration effectively adsorbs a variety of dissolved organics, but it is less effective treating organics that are sorbed to colloidal clay particles. These have to be removed first, otherwise, they can pass through to the effluent. The proposed treatment system has consequently been modified to include a simple physical/chemical process following oil/water separation. The proposed groundwater treatment system is illustrated on sheet P-3 in Appendix F.

Alum will be added to coagulate the colloidal particles and an anionic or nonionic polymer will be added to flocculate the solids. These will be settled from the water by gravity. Alum floc is typically too delicate to remove by direct filtration. The clarified water will be pumped through filters and then treated with activated carbon. The sludge from the clarifier will be pumped to storage where it will thicken. The operator will decant water from the sludge storage tank approximately every two weeks. The thickened sludge will be disposed of off-site. It is expected to have a PCB concentration above 50 ppm.

4.2 Vapor System Modifications

Based on the results from the TO-14 analysis and the SCREEN3 model air treatment will not be necessary for the Phase 2 portion of the test and any continued operation of the system. Total VOC's will be monitored at the source and assumed to be 100 percent chloroform. The maximum allowable chloroform concentration at the source was predicted to be 328 ppm. It is planned that an action level source concentration for total VOC's, during phase 2 operation, will be 165 ppm which is 1/2 the allowable.

4.3 Vapor Monitoring

Based on the difficulties of using a photo ionization detector to monitor the total VOC's in the air stream it is planned that a flame ionization detector (FID) be used in the future. The FID is not susceptible to moisture problems that are inherent in the exhaust of the vacuum system.

APPENDIX

APPENDIX A
BORING LOGS

Field Boring Log (soil)

WOODARD & CURRAN INC.
CONSULTING ENGINEERS

PROJECT: CMP O'CONNOR	PROJECT NO.: 96012.04	BORING NO.: EW-101
DATE-TIME START: 8/20/96 11:00	FINISH: 9/4/96 13:33	SHEET 1 OF 2
ENGINEER: Jim Ekedahl	WEATHER: Hot and sunny	SURFACE ELEVATION:
CONTRACTOR: Northeast Diamond Drilling	DRILLER: Pete Vieira	DATUM:
DRILLING METHOD: Drive and wash with 6 inch but. bit	SAMPLING METHOD: 2 inch split spoon 140 lb. hammer	

GROUNDWATER LEVEL								NOTES TO GWL:
	DATE-TIME							
	DAYS-HOURS							
	DEPTH							

NO.	BLOWS PER 6 INCHES		SAMPLE RANGE (FT.)	SAMPLED/ RECOVERY (INCHES)		DEPTH (FT)	SOIL TYPE	SURFACE CONDITIONS OR OTHER NOTES: / COLOR, DENSITY, SOIL ADMIXTURES, STRENGTH, ODOR, TYPE QUALIFICATIONS:
						0		Fill
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		0 ft. - 9.5 ft. CLAY; brown-gray stiff
1	7	12	9.5-11.5	24	24	9		
	14	15				10		
2	4	8	11.5-13.5	24	24	11		CLAY; gray-brown, stiff
	7	10				12		
						13		

Field Boring Log (soil)

WOODARD & CURRAN INC.
CONSULTING ENGINEERS

PROJECT: CMP O'Connor	PROJECT NO.: 96012.04	BORING NO.: EW-101
	SURFACE ELEVATION:	SHEET 2 of 2

NO.	BLOWS PER 6 INCHES		SAMPLE RANGE (FT.)	SAMPLED/ RECOVERY (INCHES)		DEPTH (FT)	SOIL TYPE	NOTES: COLOR, DENSITY, SOIL ADMIXTURES, STRENGTH, ODOR, TYPE QUALIFICATIONS:
3	5	9	13.5-15.5	24	24	13		CLAY; brown-gray, stiff
	15	15				14		
4	6	7	15.5-17.5	24	24	15		CLAY; brown-gray, stiff
	7	8				16		
5	8	10	17.5-19.5	24	24	17		Sandy CLAY, some gravel
	11	84				18		Silty SAND, some gravel, trace clay
6	21	31	19.5-26.5	24	18	19		Silty SAND, some gravel, trace clay, brown
	26	40				20		
7	110		21.5-23.5	6	6	21		Silty SAND, some gravel, trace fines, brown
						22		
						23		23 ft. 4 inches bedrock
						24		
						25		
						26		
						27		
						28		28 ft. 4 inches bottom of boring.
						29		
						30		
						31		
						32		
						33		

Field Boring Log (soil)

WOODARD & CURRAN INC.
CONSULTING ENGINEERS

PROJECT: CMP O'CONNOR	PROJECT NO.: 96012.04	BORING NO.: RW-101
DATE-TIME START: 9/5/96 11:53	FINISH: 9/6/96 13:30	SHEET 1 OF 2
ENGINEER: Carl Wilcox	WEATHER: Hot and sunny	SURFACE ELEVATION:
CONTRACTOR: Northeast Diamond Drilling	DRILLER: Chris Palmer	DATUM:
DRILLING METHOD: Drive, drill and wash with 8 inch but. bit	SAMPLING METHOD: Examine Cuttings	

GROUNDWATER LEVEL									NOTES TO GWL:
	DATE-TIME								
	DAYS-HOURS								
	DEPTH								

NO.	BLOWS PER 6 INCHES		SAMPLE RANGE (FT.)	SAMPLED/ RECOVERY (INCHES)		DEPTH (FT)		SOIL TYPE	SURFACE CONDITIONS OR OTHER NOTES: / COLOR, DENSITY, SOIL ADMIXTURES, STRENGTH, ODOR, TYPE QUALIFICATIONS:
						0			
						1			
						2			
						3			
						4			Silty cobbles, CLAY, trace sand, brown
						5			
						6			6 ft. 6 inches TILL; silty sand, coarse to medium grain, brown, angular, quartz and feldspar
						7			
						8			
						9			
						10			
						11			
						12			
						13			

Field Boring Log (soil)

WOODARD & CURRAN INC.
CONSULTING ENGINEERS

PROJECT: CMP O'Connor	PROJECT NO.: 96012.04	BORING NO.: RW-101
	SURFACE ELEVATION:	SHEET 2 of 2

NO.	BLOWS PER 6 INCHES		SAMPLE RANGE (FT.)	SAMPLED/ RECOVERY (INCHES)		DEPTH (FT)	SOIL TYPE	NOTES: COLOR, DENSITY, SOIL ADMIXTURES, STRENGTH, ODOR, TYPE QUALIFICATIONS:
								TILL, boulders and cobbles with silty sand to 17 ft. 6 inches
						13		
						14		
						15		
						16		
						17		17 ft. 6 inches refusal, fine black cuttings, pelite.
						18		
						19		
						20		
						21		
						22		
						23		
						24		
						25		
						26		
						27		
						28		
						29		
						30		
						31		
						32		
						33		

Field Boring Log (soil)

WOODARD & CURRAN INC.
CONSULTING ENGINEERS

PROJECT: CMP O'CONNOR	PROJECT NO.: 96012.04	BORING NO.: RW-102
DATE-TIME START: 9/9/96 08:15	FINISH: 9/11/96 10:53	SHEET 1 OF 2
ENGINEER: Carl Wilcox	WEATHER: 70s, fog, rain	SURFACE ELEVATION:
CONTRACTOR: Northeast Diamond Drilling	DRILLER: Chris Palmer	DATUM:
DRILLING METHOD: Drive, drill and wash with 8 inch but. bit	SAMPLING METHOD: Examine Cuttings	

GROUNDWATER LEVEL									NOTES TO GWL:
	DATE-TIME								
	DAYS-HOURS								
	DEPTH								

NO.	BLOWS PER 6 INCHES		SAMPLE RANGE (FT.)	SAMPLED/ RECOVERY (INCHES)		DEPTH (FT)		SOIL TYPE	SURFACE CONDITIONS OR OTHER NOTES: / COLOR, DENSITY, SOIL ADMIXTURES, STRENGTH, ODOR, TYPE QUALIFICATIONS:	
						0				
						1				
						2				
						3				
						4				
						5				
						6				
						7				
						8			0 ft. to 8 ft. CLAY, gray	
						9			8 ft. TILL, cobbles, silty sand	
						10				
						11				
						12				
						13				

Field Boring Log (soil)

WOODARD & CURRAN INC.
CONSULTING ENGINEERS

PROJECT: CMP O'Connor	PROJECT NO.: 96012.04	BORING NO.: RW-102
	SURFACE ELEVATION:	SHEET 2 of 2

NO.	BLOWS PER 6 INCHES	SAMPLE RANGE (FT.)	SAMPLED/ RECOVERY (INCHES)	DEPTH (FT)	SOIL TYPE	NOTES: COLOR, DENSITY, SOIL ADMIXTURES, STRENGTH, ODOR, TYPE QUALIFICATIONS:
				13		8 ft. to 25 ft. cobbly, TILL.
				14		
				15		
				16		
				17		
				18		
				19		
				20		
				21		
				22		
				23		
				24		25 ft. weathered BEDROCK?
				25		26 ft. soft seam.
				26		
				27		
				28		28 ft. 6 inches hard ROCK, finely ground pelite with small quartz, feldspar, trace mica,
				29		31 ft. 4 inches soft seam.
				30		
				31		
				32		
				33		
						34 ft. hard ROCK, bottom of boring.

Field Boring Log (soil)

WOODARD & CURRAN INC.
CONSULTING ENGINEERS

PROJECT: CMP O'CONNOR	PROJECT NO.: 96012.04	BORING NO.: RW-103
DATE-TIME START: 9/11/96 16:09	FINISH: 9/16/96 13:05	SHEET 1 OF 2
ENGINEER: Carl Wilcox	WEATHER: Rain, cool	SURFACE ELEVATION:
CONTRACTOR: Northeast Diamond Drilling	DRILLER: Chris Palmer	DATUM:
DRILLING METHOD: Drive and wash drill with 8 inch but. bit	SAMPLING METHOD: Examine Cuttings	

GROUNDWATER LEVEL								NOTES TO GWL:
	DATE-TIME							
	DAYS-HOURS							
	DEPTH							

NO.	BLOWS PER 6 INCHES		SAMPLE RANGE (FT.)	SAMPLED/ RECOVERY (INCHES)		DEPTH (FT)	SOIL TYPE	SURFACE CONDITIONS OR OTHER NOTES: / COLOR, DENSITY, SOIL ADMIXTURES, STRENGTH, ODOR, TYPE QUALIFICATIONS:
						0		0 ft. to 5 ft. 8 inches brown-gray CLAY.
						1		
						2		
						3		
						4		
						5		5 ft. 8 inches boulder 6 ft. 10 inches through boulder olive-brown clay to 9 ft.
						6		
						7		
						8		
						9		
						10		
						11		
						12		
						13		

Field Boring Log (soil)

WOODARD & CURRAN INC.
CONSULTING ENGINEERS

PROJECT: CMP O'Connor	PROJECT NO.: 96012.04	BORING NO.: RW-103
	SURFACE ELEVATION:	SHEET 2 of 2

NO.	BLOWS PER 6 INCHES	SAMPLE RANGE (FT.)	SAMPLED/ RECOVERY (INCHES)	DEPTH (FT)	SOIL TYPE	NOTES: COLOR, DENSITY, SOIL ADMIXTURES, STRENGTH, ODOR, TYPE QUALIFICATIONS:
				13		9 ft. to 21 ft. 6 inches TILL, cobbles, boulders
				14		
				15		
				16		
				17		
				18		
				19		
				20		
				21		21 ft. 6 inches BEDROCK
				22		
				23		
				24		24 ft. hard ROCK
				25		24 ft. 6 inches soft seam
				26		25 ft. hard ROCK
				27		25 ft. 5 inches bottom of boring.
				28		
				29		
				30		
				31		
				32		
				33		

NORTHEAST DIAMOND DRILLING DIVISION
OF GUILD DRILLING CO. INC.
104 HARPSWELL ROAD • BRUNSWICK, ME

SHEET 1 OF 1

TO **Woodard & Curran** | ADDRESS **Portland** | HOLE NO. **EW-101**
PROJECT NAME **O'Conner Ext. RLNS Wells** | LOCATION **Augusta, Maine** | PROJ. NO.
REPORT SENT TO **Same** | OUR JOB NO. **M97-21** | SURF. ELEV.

GROUND WATER OBSERVATIONS
At **2.0'** after **72hrs.** Hours
At ' after Hours

	CASING	SAMPLER	CORE BAR.
Type	**SW**	**SS**	
Size I.D.	**6"**	**1 3/8"**	
Hammer Wt.	**300lbs**	**140lbs**	BIT
Hammer Fall	**29"**	**30"**	

DATE
Start **8/28/96**
Complete **9/5/96**
Boring Foreman **P. Vieira**
Inspector/Engr. **Jim**

LOCATION OF BORING

Depth	Casing Blows per foot	Sample Depths From - To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Elev./ Depth	SOIL OR ROCK IDENTIFICATION Remarks include color, gradation, type of soil etc. Rock-color, type, condition, hardness, drilling time, seams, etc.	SAMPLE No.	Pen"	Rec."
		0.0-9.5	D						FILL			
5								6.0	Gray, Br. CLAY			
10		9.5-11.5	D	7	12	14				1	24	24
						15						
		11.5-13.5	D	4	8	7				2	24	24
						10			Br. Gr. Stiff CLAY			
		13.6-15.6	D	5	9	15				3	24	24
15						15						
		15.6-17.6	D	6	7	7				4	24	24
						8						
		17.6-19.6	D	8	10	11				5	24	24
						84						
20		19.6-21.6	D	21	31	26		19.0	Sandy CLAY sm. Gravel	6	24	18
						40			Silty SAND, Sm. Gravel			
									Br. Silty SAND, sm. Gravel			
									Br. Silty SAND, sm. Gravel			
		23.6-28.6	D	110				23.4	BEDROCK	7	6	6
25												
								28.4	Bottom of Boring @ 28.6'			

GROUND SURFACE TO **23.4'** USED **SW** CASING: THEN **But. Bit**

Sample Type
D = Drive C = Cored W = Washed
UP = Fixed Piston UT = Shelby Tube
TP = Test Pit A = Auger
OE = Open End Rod
* 300# hammer

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. Wt x 30" fall on 2" O.D. Sampler

Cohesionless	Density	Cohesive	Consistency
0-10	Loose	0-4	Soft
10-30	Med. Dense	4-8	M./Stiff
30-50	Dense	8-15	Stiff
50+	Very Dense	15-30	V-Stiff

30 + Hard

SUMMARY:
Earth Boring **23.4'**
Rock Coring **5'**
Samples **6**

HOLE NO. **EW-101**

NORTHEAST DIAMOND DRILLING DIVISION
OF GUILD DRILLING CO. INC.
104 HARPSWELL ROAD • BRUNSWICK, ME

SHEET 1 OF 1

TO **Woodard & Curran** | ADDRESS **Portland** | HOLE NO. **EW-101**
PROJECT NAME **O'Conner Ext. RLNS Wells** | LOCATION **Augusta, Maine** | PROJ. NO.
REPORT SENT TO **Same** | OUR JOB NO. **M97-21** | SURF. ELEV.

GROUND WATER OBSERVATIONS		CASING	SAMPLER	CORE BAR.	DATE	
At **2.0'** after **72hrs.** Hours	Type	**SW**	**SS**		Start	**8/28/96**
	Size I.D.	**6"**	**1 3/8"**		Complete	**9/5/96**
At ' after ____ Hours	Hammer Wt.	**300lbs**	**140lbs**	BIT	Boring Foreman	**P. Vieira**
	Hammer Fall	**29"**	**30"**		Inspector/Engr.	**Jim**

LOCATION OF BORING

Depth	Casing Blows per foot	Sample Depths From - To	Type of Sample	Blows per 6" on Sampler From 0-6	To 6-12	To 12-18	Moisture Density or Consist.	Strata Change Elev./ Depth	SOIL OR ROCK IDENTIFICATION Remarks include color, gradation, type of soil etc. Rock-color, type, condition, hardness, drilling time, seams, etc.	SAMPLE No.	Pen"	Rec."
		0.0-9.5	D						FILL			
5								6.0	Gray, Br. CLAY			
10		9.5-11.5	D	7	12	14 15				1	24	24
		11.5-13.5	D	4	8	7 10				2	24	24
		13.6-15.6	D	5	9	15 15			Br. Gr. Stiff CLAY	3	24	24
15		15.6-17.6	D	6	7	7 8				4	24	24
		17.6-19.6	D	8	10	11 84				5	24	24
20		19.6-21.6	D	21	31	26 40		19.0	Sandy CLAY sm. Gravel Silty SAND, Sm. Gravel Br. Silty SAND, sm. Gravel	6	24	18
		23.6-28.6	D	110				23.4	Br. Silty SAND, sm. Gravel BEDROCK	7	6	6
25												
								28.4	Bottom of Boring @ 28.6'			

GROUND SURFACE TO **23.4'** USED **SW** CASING: THEN **But. Bit**

Sample Type
D = Drive C = Cored W = Washed
UP = Fixed Piston UT = Shelby Tube
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trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. Wt x 30" fall on 2" O.D. Sampler

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30 + Hard

SUMMARY:
Earth Boring **23.4'**
Rock Coring **5'**
Samples **6**
HOLE NO. **EW-101**

NORTHEAST DIAMOND DRILLING DIVISION
OF GUILD DRILLING CO. INC.
104 HARPSWELL ROAD • BRUNSWICK, ME

NOV 7 1996

SHEET 1 OF 1

TO **Woodard & Curran** | ADDRESS **Portland** Woodard & Curran Inc | HOLE NO. **EW-101**
PROJECT NAME **O'Conner Ext. RLNS Wells** | LOCATION **Augusta, Maine** | PROJ. NO.
REPORT SENT TO **Same** | OUR JOB NO. **M97-21** | SURF. ELEV.

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5								6.0	Gray, Br. CLAY			
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						15						
		11.5-13.5	D	4	8	7				2	24	24
						10			Br. Gr. Stiff CLAY			
		13.6-15.6	D	5	9	15				3	24	24
15						15						
		15.6-17.6	D	6	7	7				4	24	24
						8						
		17.6-19.6	D	8	10	11				5	24	24
						84						
20		19.6-21.6	D	21	31	26		19.0	Sandy CLAY sm. Gravel	6	24	18
						40			Silty SAND, Sm. Gravel			
									Br. Silty SAND, sm. Gravel			
									Br. Silty SAND, sm. Gravel			
		23.6-28.6	D	110				23.4	BEDROCK	7	6	6
25												
								28.4	Bottom of Boring @ 28.6'			

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50+	Very Dense	15-30	V-Stiff
		30 +	Hard

SUMMARY:
Earth Boring **23.4'**
Rock Coring **5'**
Samples **6**
HOLE NO. **EW-101**

WOODARD & CURRAN
ENVIRONMENTAL SERVICES

41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
TEL. (207)774-2112

CLIENT LMP
PROJECT VEN SYSTEM
DESIGNED BY CCW DATE 9-23-96
CHECKED BY _____ DATE _____
PROJECT NO. _____ SHEET NO. 1 OF 1

CMP STATIC HEAD TESTS

WELL	INITIAL HEAD FT	LENGTH OF TEST MIN	VOLUME SUPPLIED GAL	TIME PERIOD MIN	FLOW RATE GPM	FLOW RATE ML/MIN
RW-101	6.35'	80	2.25	55	0.041	155
RW-102	6.05	120	24.25	710	0.346	1311
RW-103	5.50	93	3.75	60	0.063	236
SUM					0.45	1,702
MULTIPLY BY 5 FOR ADDITIONAL HEAD					2.25	8,510

APPENDIX B

EPA CORRESPONDENCE ON RW-101

WOODARD & CURRAN
ENVIRONMENTAL SERVICES

October 17, 1996

Ross Gilleland, USEPA
United States Environmental Protection
J.F. Kennedy Federal Building
Boston, Mass. 02203

Re: BTEX detected in RW-101 at the O'Conner site Augusta Maine

Dear Ross:

As you know the sand used to construct the re-injection well, RW-101, was contaminated with gasoline. At the time the well was constructed the contamination of the sand was unknown. A PID reading of 300 ppm was measured as the sand was being placed in the well. It was unknown, at that time, what caused the PID hit. The well construction was completed and a groundwater sample collected and analyzed using EPA method 8260. The results are attached.

After the review of the data it became obvious that gasoline was the contaminant causing the PID hit. As a matter of Woodard & Currans own protocol a sample of the sand pack was collected in a jar during construction. After seeing the BTEX in the first sample result the jarred sand pack was investigated and found to have a strong odor of gasoline.

In an effort to remove the contaminants from RW-101 the well was purged several well volumes, allowed to recover, and sampled using low flow sampling technique. The second sample results are attached to this letter. The results of the second analysis indicate that the well purging was effective in removing the BTEX from the sand pack. At this time we are not proposing any further action on this well. If you have any question or concerns please call.

Sincerely
Woodard & Curran Inc.

Eric Carlson P.E., C.G.
Senior Hydrogeologist

Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2100-1
Report Date: 10/02/96
PO No. : SS 16008

CLIENT: NORM MICHAUD
Central Maine Power
North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

Sample 1

WIC#: O'CONNOR

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIV
RW-101	Aqueous	CLIENT	09/12/96	09/25/

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NO
VOAs (8260)								1,
Dichlorodifluoromethane	<4.	µg/L	2.0	2	EPA 8260	09/25/96	LM	
Chloromethane	<4.	µg/L	2.0	2	EPA 8260	09/25/96	LM	
Vinyl chloride	<4.	µg/L	2.0	2	EPA 8260	09/25/96	LM	
Bromomethane	<4.	µg/L	2.0	2	EPA 8260	09/25/96	LM	
Chloroethane	<4.	µg/L	2.0	2	EPA 8260	09/25/96	LM	
Trichlorofluoromethane	<4.	µg/L	2.0	2	EPA 8260	09/25/96	LM	
1,1-Dichloroethene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Methylene chloride	8.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
trans-1,2-Dichloroethene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,1-Dichloroethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
cis-1,2-Dichloroethene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
2,2-Dichloropropane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Bromochloromethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect samp
specific reporting limits. Sample-specific limits are indicated by results annotated with '<' val

(1) "J" flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.

(2) "B" flag denotes detection of this analyte in the laboratory method blank analyzed concurrently with the sample.

(3) Sample dilution required for quantitation of one or more target analytes; therefore, standard laboratory Practical Quantitation Level (PQL) could not be achieved.

10/02/96

LJO/jcb:p(dw)/kwh
MI25VOW1
CC: 207/774-2112*
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2100-1
Report Date: 10/02/96
PO No. : SS 16008

CLIENT: NORM MICHAUD
Central Maine Power
North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

WIC#: O'CONNOR

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEI
RW-101	Aqueous	CLIENT	09/12/96	09/25/

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NC
Chloroform	17.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,1,1-Trichloroethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,2-Dichloroethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,1-Dichloropropene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Carbon tetrachloride	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Benzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,2-Dichloropropane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Trichloroethene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
cis-1,3-Dichloropropene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Dibromomethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Bromodichloromethane	J1.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Toluene	45.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
trans-1,3-Dichloropropene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,1,2-Trichloroethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect samp
specific reporting limits. Sample-specific limits are indicated by results annotated with '<' val

10/02/96

LJO/jcblp(dw)/kwh
MI25VOW1
CC: 207/774-2112*
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2100-1
Report Date: 10/02/96
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North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

WIC#: O'CONNOR

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIV
RW-101	Aqueous	CLIENT	09/12/96	09/25/9

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NO
1,3-Dichloropropane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Dibromochloromethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Tetrachloroethene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,2-Dibromoethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Chlorobenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,1,1,2-tetrachloroethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Ethylbenzene	53.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
m-Xylene/p-Xylene	B240	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Bromoform	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
o-Xylene	130.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Styrene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,1,2,2-Tetrachloroethane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,2,3-Trichloropropane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Isopropylbenzene	8.	µg/L	2.0	1	EPA 8260	09/25/96	LM	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sampl
specific reporting limits. Sample-specific limits are indicated by results annotated with '<' valu

10/02/96

LJO/jcb\rp(dw)/kwh
MI25VOW1
CC: 207/774-2112*
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2100-1
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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIV
RW-101	Aqueous	CLIENT	09/12/96	09/25/9

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NO
Bromobenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
2-Chlorotoluene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
n-Propylbenzene	24.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
4-Chlorotoluene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,3,5-Trimethylbenzene	240.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
tert-Butylbenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,2,4-Trimethylbenzene	250.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
sec-Butylbenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,3-Dichlorobenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
4-Isopropyltoluene	7.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,4-Dichlorobenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,2-Dichlorobenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
n-Butylbenzene	8.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,2-Dibromo-3-chloropropane	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sampl
specific reporting limits. Sample-specific limits are indicated by results annotated with '<' valu

10/02/96

LJO/jcbkp(dw)/bwh
MISNOW1
CC: 207/774-2112*
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2100-1
Report Date: 10/02/96
PO No. : SS 16008

CLIENT: NORM MICHAUD
Central Maine Power
North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

WIC#: O'CONNOR

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIV
RW-101	Aqueous	CLIENT	09/12/96	09/25/

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NO
1,2,4-Trichlorobenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Naphthalene	32.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Hexachlorobutadiene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
1,2,3-Trichlorobenzene	<2.	µg/L	2.0	1	EPA 8260	09/25/96	LM	
Dibromofluoromethane (Surr.)	97.	%	2.0		EPA 8260	09/25/96	LM	
Toluene-d8 (%)	103.	%	2.0		EPA 8260	09/25/96	LM	
p-Bromofluorobenzene (%)	111.	%	2.0		EPA 8260	09/25/96	LM	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect samp
specific reporting limits. Sample-specific limits are indicated by results annotated with '<' val

10/02/96

LJO/jcb:hp(dw)/kwh
MI25VOW1
CC: 207/774-2112*
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2148-1
Report Date: 10/10/96
PO No. : SS16008
Project : 96012.07

CLIENT: NORM MICHAUD
Central Maine Power
North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

Sample 2

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
RW-101(IW3)	Aqueous	CLIENT	09/26/96	09/27/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
VOAs (8260)								1,2
Dichlorodifluoromethane	<2.	µg/L	1.0	2	EPA 8260	10/03/96	DW	
Chloromethane	<2.	µg/L	1.0	2	EPA 8260	10/03/96	DW	
Vinyl chloride	<2.	µg/L	1.0	2	EPA 8260	10/03/96	DW	
Bromomethane	<2.	µg/L	1.0	2	EPA 8260	10/03/96	DW	
Chloroethane	<2.	µg/L	1.0	2	EPA 8260	10/03/96	DW	
Trichlorofluoromethane	<2.	µg/L	1.0	2	EPA 8260	10/03/96	DW	
1,1-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Methylene chloride	B1	µg/L	1.0	1	EPA 8260	10/03/96	DW	
trans-1,2-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,1-Dichloroethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
cis-1,2-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
2,2-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Bromochloromethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Chloroform	2.	µg/L	1.0	1	EPA 8260	10/03/96	DW	

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(1) "J" flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.

(2) A result reported with a "B" qualifier indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. The concentration of Methylene Chloride in the method blank was 1 ug/L.

10/10/96

LJO/jcbejn/drt/kp(dw)

CC: ERIC CARLSON
W&C

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P.O. Box 720, Westbrook, ME 04098
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210 West Road No. 5, Portsmouth, NH 03801
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Katahdin
ANALYTICAL SERVICES

CLIENT: NORM MICHAUD
Central Maine Power
North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

Lab Number : WM-2148-1
Report Date: 10/10/96
PO No. : SS16008
Project : 96012.07

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
RW-101(IW3)	Aqueous	CLIENT	09/26/96	09/27/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
1,1,1-Trichloroethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2-Dichloroethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,1-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Carbon tetrachloride	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Benzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Trichloroethene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
cis-1,3-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Dibromomethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Bromodichloromethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Toluene	1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
trans-1,3-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,1,2-Trichloroethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,3-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Dibromochloromethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	

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10/10/96

LJO/jcbejn/drt/kp(dw)

CC: ERIC CARLSON
W&C

000003

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Katahdin
ANALYTICAL SERVICES

CLIENT: NORM MICHAUD
Central Maine Power
North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

Lab Number : WM-2148-1
Report Date: 10/10/96
PO No. : SS16008
Project : 96012.07

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
RW-101(IW3)	Aqueous	CLIENT	09/26/96	09/27/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Tetrachloroethene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2-Dibromoethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Chlorobenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,1,1,2-tetrachloroethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Ethylbenzene	1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
m-Xylene/p-Xylene	7.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Bromoform	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
o-Xylene	4.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Styrene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,1,2,2-Tetrachloroethane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2,3-Trichloropropane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Isopropylbenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Bromobenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
2-Chlorotoluene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
n-Propylbenzene	J0.8	µg/L	1.0	1	EPA 8260	10/03/96	DW	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

10/10/96

LJO/jcbejn/drt/kp(dw)

CC: ERIC CARLSON
W&C

CCCCCH

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2148-1
Report Date: 10/10/96
PO No. : SS16008
Project : 96012.07

CLIENT: NORM MICHAUD
Central Maine Power
North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
RW-101(IW3)	Aqueous	CLIENT	09/26/96	09/27/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
4-Chlorotoluene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,3,5-Trimethylbenzene	10.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
tert-Butylbenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2,4-Trimethylbenzene	8.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
sec-Butylbenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,3-Dichlorobenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
4-Isopropyltoluene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,4-Dichlorobenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2-Dichlorobenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
n-Butylbenzene	J0.7	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2-Dibromo-3-chloropropane	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2,4-Trichlorobenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Naphthalene	1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
Hexachlorobutadiene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	
1,2,3-Trichlorobenzene	<1.	µg/L	1.0	1	EPA 8260	10/03/96	DW	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

10/10/96

LJO/jcbejn/drt/kp(dw)

CC: ERIC CARLSON
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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2148-1
Report Date: 10/10/96
PO No. : SS16008
Project : 96012.07

CLIENT: NORM MICHAUD
Central Maine Power
North Augusta Office Annex, 41 Anthony Ave.
Augusta, ME 04330

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
RW-101(IW3)	Aqueous	CLIENT	09/26/96	09/27/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Dibromofluoromethane (Surr.)	105.	%	1.0		EPA 8260	10/03/96	DW	
Toluene-d8 (%)	102.	%	1.0		EPA 8260	10/03/96	DW	
p-Bromofluorobenzene (%)	103.	%	1.0		EPA 8260	10/03/96	DW	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

10/10/96

LJO/jcbejn/drt/kp(dw)

CC: ERIC CARLSON
W&C

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Katahdin
ANALYTICAL SERVICES

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Westbrook, ME 04098
Tel: (207) 874-2400

CHAIN of CUSTODY

• PLEASE PRINT IN PEN

Page ___ of ___

Client	Contact	Phone #	Fax #
CMP- Augusta	Norm Michaud	( )	( )

Address | City | State | Zip Code

P.O. # SS 16008 | Proj. Name/No. 96012.07

Bill (if different than above) | Address

Sample (Print/Sign) | Copies To: Eric Carlson Woodard + Curl

LAB USE ONLY | WORK ORDER #: WM2148

KATAHDIN PROJECT MANAGER _____

REMARKS: _____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: _____

TEMP°C _____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date/Time coll'd	Matrix	Filt. Y/N	No. of Cntrs.	EPA 8260A, W									
	RW-101 (EW3)	9/26/96 1500	Aq	N	3	X									
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COMMENTS 14 day TAT QC Level I

FINAL PAGE

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	9/27/96 8:10	Kelly Hawkins			000003
Relinquished By (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

APPENDIX C

PROCESS MONITORING FIELD DATA SHEET
AND
WATER QUALITY DATA

FIGURE 6
PROCESS MONITORING FIELD DATA SHEET

Oil Tank - Volume/Inch: 1.64 gal/inch
Water Tank - Volume/Inch: 1.64 "

Date	Time	Vacuum Setting	Vent Gas Flow Rate	Avg. Liquid Flow Rate	Barometric Pressure	Inches of Oil	Calculated On Volume	Inches of Water	Calculated Water Volume	Total Head Extraction
start 10/23	10:12	20"	21 acfm	0	29"	0	0	0	0	
10/23	10:26	20"	21	0.36	29	0.3	0.5	2.75	4.52	
10/23	11:12	20"	24	0.23	29	0.7	1.15	7.7	12.7	
10/23	12:12	20"	29	0.19	29	0.95	1.56	13.5	22.1	
10/23	1:12	20"	39	0.18	29	1.25	2.05	18.8	30.9	

PARAMETER	ALTERNATE NAME	CAS #	USEPA BAT	REG. STATUS	UNITS	MAX. RI DATA	Comp. Sample	Grab Sample	10/31 Sample	Primary MCLs	Secondary MCLs
Organic Compounds That Have an MCL and May Require Treatment											
benzene		71-43-2	4,12	Final	mg/L	2	5	<5	3	5	none
bis(2-ethylhexyl)phthalate	diethylhexyl phthalate	117-81-7	4	Final	mg/L	55			[2]	6	none
1,4-dichlorobenzene	*p*-dichlorobenzene	106-46-7	4,12	Final	mg/L	30	39	30	11	75	none
methylene chloride	dichloromethane	75-09-2	12	Final	mg/L	8.5	n/a	14	0.5	5	none
Polychlorinated biphenyls	PCBs, total aroclors	1336-36-3	4	Final	mg/L	50	742	5000	45	0.5	none
- Aroclor 1242		53469-21-9	4	N/A	mg/L		92	500	5.7	0.5	none
- Aroclor 1254		11097-69-1	4	N/A	mg/L		150	900	<0.25	0.5	none
- Aroclor 1260		11096-82-5	4	N/A	mg/L		500	3600	39	0.5	none
1,2,4-trichlorobenzene		20-82-1	4,12	Final	mg/L	310	43	33	20	70	none
trichloroethylene	trichloroethene, TCE	79-01-6	4,12	Final	mg/L	1.2			<1	5	none
Organic Compounds That Have an MCL But Do Not Need Treatment											
1,2-dichlorobenzene	*o*-dichlorobenzene	95-50-1	4,12	Final	mg/L	25	14	9	[4]	600	none
1,3-dichlorobenzene	*m*-dichlorobenzene	541-73-1	4,12	Final	mg/L	14	10	7	[3]	600	none
monochlorobenzene	chlorobenzene	108-90-7	4	Final	mg/L	16	4	4	3	100	none
m-Xylene, p-Xylene	xylenes (mixed)	1330-20-7	4,12	Final	mg/L		1	<5	[1]	10000	none
Organic Compounds That Do Not Have an MCL											
acetone	2-propanone	67-64-1	N/A	N/A	mg/L	1900	440	260		none	none
2-butanone	ethyl methyl ketone, MEK	78-93-3	N/A	Final	mg/L		1100	550	150	none	none
di-n-butylphthalate	dibutylphthalate	84-74-2	N/A	not given	mg/L	3.2			22	none	none
1,2,3-trichlorobenzene		87-61-6	N/A	Final	mg/L		9	13	4	none	none
1,3,5-trimethylbenzene		108-67-8	N/A	Draft	mg/L		3	<5	<1	none	none
1,2,4-trimethylbenzene		95-63-6	N/A	Draft	mg/L		2	<5	<1	none	none
phenanthrene	PAH	85-01-8	N/A	under review	mg/L				11	none	none
Inorganics That Have Primary MCL or Action Level and Do Not Require Treatment											
antimony, total			2,7	Final	mg/L	[55]		<6		6	none
antimony, dissolved					mg/L			<6			
arsenic, total			N/A	under	mg/L	49		17		50	none

		review					
arsenic, dissolved			mg/L		11		
barium, total	5,6,7,9	Final	mg/L	[83]	98.1	2000	none
barium, dissolved			mg/L		75.8		
beryllium, total	1,2,5,6,7	Final	mg/L	[2.8]	<4.0	4	none
beryllium, dissolved			mg/L		<4.0		
cadmium, total	2,5,6,7	Final	mg/L	ND	<5	5	none
cadmium, dissolved			mg/L		<5		
chromium, total	2,5,7	Final	mg/L		29.8	100	none
chromium, dissolved			mg/L		<15		
copper, total	N/A	Final	mg/L	[14]	<25	1300*	1000
copper, dissolved			mg/L		<25		
lead, total	N/A	Final	mg/L	26	9.8	15*	none
lead, dissolved			mg/L		7.4		
mercury (inorganic), total	2,4,6,7	*Final*	*mg/L*	0.27	<2	2	*none*
mercury (inorganic), dissolved			mg/L		<2		
nickel, total	5,6,7	Final	mg/L	ND	48.1	100	none
nickel, dissolved			mg/L		<40		
nitrate as N	5,7,9	Final	mg/L		0.12	10	none
nitrite as N	5,7	Final	mg/L		<0.05	1	none
selenium, total	1,2,6,7,9	Final	mg/L		<10	1	none
selenium, dissolved			mg/L		<10		
			mg/L				
Inorganics That Have Secondary MCLs and Do Not Require Treatment							
aluminum, total		**Final**	mg/L	**[115]**	**9,220**	**none**	**50 to 200**
aluminum, dissolved			mg/L		**700**		
chloride		Final	mg/L		6,600	none	250,000
copper, total		Final	mg/L		<25	1300*	1,000
copper, dissolved			mg/L		<25		
iron, total		**Final**	mg/L	**2330**	**16,100**	**none**	**300**
iron, dissolved			mg/L		**4,250**		
manganese, total		**Final**	mg/L	**5400**	**3,240**	**none**	**50**
manganese, dissolved			mg/L		**3,210**		
silver, total		Final	mg/L	17	<15	none	100
silver, dissolved			mg/L		<15		
sulfate		Final	mg/L		5,200	none	250,000
total dissolved solids		Final	mg/L		340,000	none	500,000
zinc, total		Final	mg/L	208	123	none	5,000
zinc, dissolved			mg/L		108		

N/A = NOT APPLICABLE
dissolved defined as less than 0.7 microns
BAT TREATMENT LEGEND

1 = activated alumina
2 = coagulation/filtration
3 = direct and diatomite filtration
4 = granular activated carbon
5 = ion exchange
6 = lime softening
7 = reverse osmosis
8 = corrosion control
9 = electrodialysis
10 = chlorine
11 = ultraviolet
12 = packed tower aeration

Katahdin
ANALYTICAL SERVICES

November 14, 1996

Hugh Tozer
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

RE: Katahdin Lab Number: WM2431
Project ID: CMP O'Connor
Project Manager: Ms. Kelly Perkins
Sample Receipt Date: October 31, 1996

Dear Mr. Tozer:

Please find enclosed the following information:

* Report of Analysis
* Confirmation
* Chain of Custody

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. This cover letter is an integral part of the ROA.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Sincerely,

KATAHDIN ANALYTICAL SERVICES

Deborah J. Nadeau
Authorized Signature

11·15·96
Date

340 County Road No. 5
P.O. Box 720, Westbrook, ME 04098
Tel: (207) 874-2400 Fax: (207) 775-4029

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

TECHNICAL NARRATIVE

The oil and grease results for sanples WM2431-2 and -4 were reported uncorrected for the blank contamination. The blank hit of 16 mg/L is believed to be an anomaly. Prior analysis which used the same lot of freon for extraction have yielded blank results that are consistentlly below the PQL.

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-1
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW-2S	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Aluminum, Dissolved	0.70	mg/L	1.0	0.10	200.7/6010	11/05/96	EM	1
Antimony, Dissolved	<0.006	mg/L	1.0	0.006	200.7/6010	11/05/96	EM	1
Arsenic, Dissolved	0.011	mg/L	1.0	0.008	200.7/6010	11/05/96	EM	1
Barium, Dissolved	0.0758	mg/L	1.0	0.0050	200.7/6010	11/05/96	EM	1
Beryllium, Dissolved	<0.0040	mg/L	1.0	0.0040	200.7/6010	11/05/96	EM	1
Cadmium, Dissolved	<0.0050	mg/L	1.0	0.0050	200.7/6010	11/05/96	EM	1
Chromium, Dissolved	<0.0150	mg/L	1.0	0.0150	200.7/6010	11/05/96	EM	1
Copper, Dissolved	<0.0250	mg/L	1.0	0.0250	200.7/6010	11/05/96	EM	1
Iron, Dissolved	4.25	mg/L	1.0	0.025	200.7/6010	11/05/96	EM	1
Lead, Dissolved	0.0074	mg/L	1.0	0.0050	200.7/6010	11/05/96	EM	1
Manganese, Dissolved	3.21	mg/L	1.0	0.0050	200.7/6010	11/05/96	EM	1
Mercury, Dissolved	<0.200	µg/L	1.0	0.200	245.1	11/08/96	DP	2
Nickel, Dissolved	<0.0400	mg/L	1.0	0.0400	200.7/6010	11/05/96	EM	1
Selenium, Dissolved	<0.010	mg/L	1.0	0.010	200.7/6010	11/05/96	EM	1
Silver, Dissolved	<0.0150	mg/L	1.0	0.0150	200.7/6010	11/05/96	EM	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 11/04/96 by PLC using 3010
(2) Sample Preparation on 11/05/96 by PLC using 245.1

11/15/96

LJO/kdwkp(dw)
MK04ICW1

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-1
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW-2S	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Zinc, Dissolved	0.108	mg/L	1.0	0.0250	200.7/6010	11/05/96	EM	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values

(1) Sample Preparation on 11/04/96 by PLC using 3010

11/15/96

LJO/kdwkp(dw)
MK04ICW1

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Aluminum, Total	9.22	mg/L	1.0	0.10	200.7/6010	11/05/96	EM	1
Antimony, Total	<0.006	mg/L	1.0	0.006	200.7/6010	11/05/96	EM	1
Arsenic, Total	0.017	mg/L	1.0	0.008	200.7/6010	11/05/96	EM	1
Barium, Total	0.0981	mg/L	1.0	0.0050	200.7/6010	11/05/96	EM	1
Beryllium, Total	<0.0040	mg/L	1.0	0.0040	200.7/6010	11/05/96	EM	1
Cadmium, Total	<0.0050	mg/L	1.0	0.0050	200.7/6010	11/05/96	EM	1
Chromium, Total	0.0298	mg/L	1.0	0.0150	200.7/6010	11/05/96	EM	1
Copper, Total	<0.0250	mg/L	1.0	0.0250	200.7/6010	11/05/96	EM	1
Iron, Total	16.1	mg/L	1.0	0.025	200.7/6010	11/05/96	EM	1
Lead, Total	0.0098	mg/L	1.0	0.0050	200.7/6010	11/05/96	EM	1
Manganese, Total	3.24	mg/L	1.0	0.0050	200.7/6010	11/05/96	EM	1
Mercury, Total	<0.200	µg/L	1.0	0.200	245.1	11/08/96	DP	2
Nickel, Total	0.0481	mg/L	1.0	0.0400	200.7/6010	11/05/96	EM	1
Selenium, Total	<0.010	mg/L	1.0	0.010	200.7/6010	11/05/96	EM	1
Silver, Total	<0.0150	mg/L	1.0	0.0150	200.7/6010	11/05/96	EM	1

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(1) Sample Preparation on 11/04/96 by PLC using 3010
(2) Sample Preparation on 11/05/96 by PLC using 245.1

11/15/96

LJO/kdwkp(dw)
MK04ICW1

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Zinc, Total	0.123	mg/L	1.0	0.0250	200.7/6010	11/05/96	EM	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 11/04/96 by PLC using 3010

11/15/96

LJO/kdwkp (dw)
MK04ICW1

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Chloride	6.6	mg/L	1.0	2.0	325.2	11/01/96	WL	
Nitrate as N	0.12	mg/L	1.0	0.050	353.2	10/31/96	CM	
Nitrite as N	<0.050	mg/L	1.0	0.050	353.2	10/31/96	CM	
Solids - Filterable Residue (TDS)	340.	mg/L	1.0	10	160.1	11/01/96	JF	1
Solids - Non Filterable Residue (TSS)	170.	mg/L	2.5	4.0	160.2	11/01/96	JF	1
Sulfate	5.2	mg/L	1.0	1.0	375.4	11/01/96	CM	

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(1) Sample Preparation on 10/31/96 by JF

11/15/96

LJO/ejnkp(dw)/pph

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
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WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Oil and Grease, Total Recoverable	B61	mg/L	1.1	5.0	413.1	11/02/96	DW	1,2

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(1) Sample Preparation on 11/01/96 by NEN
(2) A result reported with a "B" qualifier indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. The concentration of oil & grease in the method blank was 16 mg/L.

11/15/96

LJO/ejnkp(dw)/pph

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
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Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
PCBs only by USEPA 8081								1
AROCLOR-1016	<0.25	µg/L	1.0	0.25	EPA 8081	11/03/96	SW	
AROCLOR-1221	<0.25	µg/L	1.0	0.25	EPA 8081	11/03/96	SW	
AROCLOR-1232	<0.25	µg/L	1.0	0.25	EPA 8081	11/03/96	SW	
AROCLOR-1242	5.7	µg/L	1.0	0.25	EPA 8081	11/03/96	SW	
AROCLOR-1248	<0.25	µg/L	1.0	0.25	EPA 8081	11/03/96	SW	
AROCLOR-1254	<0.25	µg/L	1.0	0.25	EPA 8081	11/03/96	SW	
AROCLOR-1260	39.	µg/L	1.0	0.25	EPA 8081	11/03/96	SW	
2,4,5,6-Tetrachloro-meta-xylene (%	66.	%	1.0		EPA 8081	11/03/96	SW	
Decachlorobiphenyl (% Recovery)	69.	%	1.0		EPA 8081	11/03/96	SW	

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(1) Sample Preparation on 10/31/96 by BWG using EPA 3520

11/15/96

LJO/jcbkp/kp(dw)/sw

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
TCL Base/Neutral Extractables by USEPA 8270								1,2,3,4
bis(2-Chloroethyl)ether	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
1,3-Dichlorobenzene	J3	µg/L	0.5	10	EPA 8270	11/08/96	TN	
1,4-Dichlorobenzene	11.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
1,2-Dichlorobenzene	J4	µg/L	0.5	10	EPA 8270	11/08/96	TN	
bis(2-Chloroisopropyl) ether	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
n-Nitroso-dipropylamine	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Hexachloroethane	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Nitrobenzene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Isophorone	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
bis(2-Chloroethoxy)methane	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
1,2,4-Trichlorobenzene	20.	µg/L	0.5	10	EPA 8270	11/08/96	TN	

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(1) Sample Preparation on 10/31/96 by BWG using EPA 3510
(2) "J" flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.
(3) Final volume 0.5 ml to meet client PQLs.
(4) Internal standard area(s) are out of criteria. Reanalysis confirmed matrix interference.

11/15/96

LJO/jcbejn/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Naphthalene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
4-Chloroaniline	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Hexachlorobutadiene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
2-Methylnaphthalene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Hexachlorocyclopentadiene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
2-Chloronaphthalene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
2-Nitroaniline	<13.	µg/L	0.5	25	EPA 8270	11/08/96	TN	
Dimethylphthalate	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Acenaphthylene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
2,6-Dinitrotoluene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
3-Nitroaniline	<13.	µg/L	0.5	25	EPA 8270	11/08/96	TN	
Acenaphthene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Dibenzofuran	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	

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11/15/96

LJO/jcbejn/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
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WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
2,4-Dinitrotoluene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Diethylphthalate	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
4-Chlorophenyl phenyl ether	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Fluorene	J4	µg/L	0.5	10	EPA 8270	11/08/96	TN	
4-Nitroaniline	<13.	µg/L	0.5	25	EPA 8270	11/08/96	TN	
n-Nitrosodiphenylamine	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
4-Bromophenyl phenyl ether	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Hexachlorobenzene	<1.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Phenanthrene	11.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Anthracene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Carbazole	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Di-n-butylphthalate	22.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Fluoranthene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	

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11/15/96

LJO/jcbejn/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
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Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Pyrene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Butyl benzylphthalate	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
3,3'-Dichlorobenzidine	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Benzo(a)anthracene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Chrysene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
bis(2-Ethylhexyl)phthalate	J2	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Di-n-octylphthalate	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Benzo(b)fluoranthene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Benzo(k)fluoranthene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Benzo(a)pyrene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Indeno(1,2,3-cd)pyrene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Dibenzo(a,h)anthracene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	
Benzo(g,h,i)perylene	<5.	µg/L	0.5	10	EPA 8270	11/08/96	TN	

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11/15/96

LJO/jcbejn/kp(dw)/kwh

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P.O. Box 720, Westbrook, ME 04098
Tel: (207) 874-2400 Fax: (207) 775-4029

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Nitrobenzene-d5 (% Recovery)	73.	%	0.5		EPA 8270	11/08/96	TN	
2-Fluorobiphenyl (% Recovery)	93.	%	0.5		EPA 8270	11/08/96	TN	
Terphenyl-d14 (% Recovery)	56.	%	0.5		EPA 8270	11/08/96	TN	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

11/15/96

LJO/jcbejn/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
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WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
VOAs (8260)								1,2
Dichlorodifluoromethane	<2.	µg/L	1.0	2	EPA 8260	11/07/96	DP	
Chloromethane	<2.	µg/L	1.0	2	EPA 8260	11/07/96	DP	
Vinyl chloride	<2.	µg/L	1.0	2	EPA 8260	11/07/96	DP	
Bromomethane	<2.	µg/L	1.0	2	EPA 8260	11/07/96	DP	
Chloroethane	<2.	µg/L	1.0	2	EPA 8260	11/07/96	DP	
Trichlorofluoromethane	<2.	µg/L	1.0	2	EPA 8260	11/07/96	DP	
1,1-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Methylene chloride	JB0.5	µg/L	1.0	1	EPA 8260	11/07/96	DP	
trans-1,2-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,1-Dichloroethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
cis-1,2-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
2,2-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Bromochloromethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Chloroform	J0.7	µg/L	1.0	1	EPA 8260	11/07/96	DP	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) "J" flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.
(2) A result reported with a "B" qualifier indicates the analytes were detected in the laboratory method blank analyzed concurrently with the sample. The concentrations of Acetone, Methylene Chloride, and Naphthalene in the method blank were J5 ug/l, J1 ug/L, and J0.6 ug/L respectively.

11/15/96

LJO/jcbert/kp(dw)

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
1,1,1-Trichloroethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2-Dichloroethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,1-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Carbon tetrachloride	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Benzene	3.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Trichloroethene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
cis-1,3-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Dibromomethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Bromodichloromethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Toluene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
trans-1,3-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,1,2-Trichloroethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,3-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Dibromochloromethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

11/15/96

LJO/jcbert/kp(dw)

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Tetrachloroethene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2-Dibromoethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Chlorobenzene	3.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,1,1,2-tetrachloroethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Ethylbenzene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
m-Xylene/p-Xylene	J1	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Bromoform	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
o-Xylene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Styrene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,1,2,2-Tetrachloroethane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2,3-Trichloropropane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Isopropylbenzene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Bromobenzene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
2-Chlorotoluene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
n-Propylbenzene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	

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11/15/96

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
4-Chlorotoluene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,3,5-Trimethylbenzene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
tert-Butylbenzene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2,4-Trimethylbenzene	J0.6	µg/L	1.0	1	EPA 8260	11/07/96	DP	
sec-Butylbenzene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,3-Dichlorobenzene	4.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
4-Isopropyltoluene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,4-Dichlorobenzene	14.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2-Dichlorobenzene	5.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
n-Butylbenzene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2-Dibromo-3-chloropropane	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2,4-Trichlorobenzene	15.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Naphthalene	JB0.7	µg/L	1.0	1	EPA 8260	11/07/96	DP	
Hexachlorobutadiene	<1.	µg/L	1.0	1	EPA 8260	11/07/96	DP	
1,2,3-Trichlorobenzene	4.	µg/L	1.0	1	EPA 8260	11/07/96	DP	

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11/15/96

LJO/jcbert/kp(dw)

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-2
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
GW	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Dibromofluoromethane (Surr.)	102.	%	1.0		EPA 8260	11/07/96	DP	
Toluene-d8 (%)	101.	%	1.0		EPA 8260	11/07/96	DP	
p-Bromofluorobenzene (%)	101.	%	1.0		EPA 8260	11/07/96	DP	
Acetone	B79	µg/L	1.0	5.0	EPA 8260	11/07/96	DP	
2-Butanone	150.	µg/L	1.0	5.0	EPA 8260	11/07/96	DP	
4-Methyl-2-pentanone	<3.	µg/L	1.0	3.0	EPA 8260	11/07/96	DP	
2-Hexanone	<4.	µg/L	1.0	4.0	EPA 8260	11/07/96	DP	
1,2-Dichloroethane-d4 (Surr.)	105.	%	1.0		EPA 8260	11/07/96	DP	

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11/15/96

LJO/jcbert/kp(dw)

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-3
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
FREE PRODUCT	Free Product/ Liquid	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
PCBs in Oil by EPA 600/4/81-045								1,2,3,4
PCB-1016	<250.	mg/kg	50	5.0	600/4/81-045	11/02/96	SW	
PCB-1221	<500.	mg/kg	50	10.	600/4/81-045	11/02/96	SW	
PCB-1232	<250.	mg/kg	50	5.0	600/4/81-045	11/02/96	SW	
PCB-1242	J110.	mg/kg	50	5.0	600/4/81-045	11/02/96	SW	
PCB-1248	<250.	mg/kg	50	5.0	600/4/81-045	11/02/96	SW	
PCB-1254	<250.	mg/kg	50	5.0	600/4/81-045	11/02/96	SW	
PCB-1260	3900.	mg/kg	50	5.0	600/4/81-045	11/02/96	SW	
2,4,5,6-Tetrachloro-meta-xylene	DL	%	50		600/4/81-045	11/02/96	SW	
Decachlorobiphenyl (% Recovery)	DL	%	50		600/4/81-045	11/02/96	SW	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 10/31/96 by KGT using 3580
(2) "J" flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.
(3) Sample dilution required for quantitation of one or more target analytes; therefore, standard laboratory Practical Quantitation Level (PQL) could not be achieved.
(4) "DL" flag denotes inability to calculate surrogate recovery due to sample dilution.

11/15/96

LJO/jcbbwg/kp/kp(dw)/sw

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-4
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW-20	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Oil and Grease, Total Recoverable	B75	mg/L	1.1	5.0	413.1	11/02/96	DW	1,2

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 11/01/96 by NEN
(2) A result reported with a "B" qualifier indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. The concentration of oil & grease in the method blank was 16 mg/L.

11/15/96

LJO/ejnkp/kp (dw) /pph

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Katahdin
ANALYTICAL SERVICES

Lab Number : WM-2431-5
Report Date: 11/15/96
PO No. : 96012.13

CLIENT: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

WIC#: CMP-O'CONNOR SITE REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GW-2A	Aqueous	E.CARLSON	10/31/96	10/31/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids - Non Filterable Residue (TSS)	1200.	mg/L	5.0	4.0	160.2	11/01/96	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 10/31/96 by JF

11/15/96

LJO/ejnkp(dw)

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KATAHDIN ANALYTICAL SERVICES, INCORPORATED
New England-ME Laboratory (207) 874-2400
CONFIRMATION

ORDER NO WM-2431

Project Manager: Kelly Perkins
ORDER DATE: 10/31/96

REPORT TO: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

PHONE: 207/774-2112
FAX: 207/774-2112
DUE: 14 NOV
FAC.ID: CMP-O'CONNOR SITE

INVOICE: Tanya Talbot
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

PHONE: 207/774-2112
PO: 96012.13

SAMPLED BY: E.CARLSON DELIVERED BY: CLIENT DISPOSE: AFTER 30 NOV

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WM2431-1	GW-2S	31 OCT 1030	31 OCT	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Aluminum, Dissolved	200.7/6010	1	145.00	145.00
Antimony, Dissolved	200.7/6010	1	0.00	0.00
Arsenic, Dissolved	200.7/6010	1	0.00	0.00
Barium, Dissolved	200.7/6010	1	0.00	0.00
Beryllium, Dissolved	200.7/6010	1	0.00	0.00
Cadmium, Dissolved	200.7/6010	1	0.00	0.00
Chromium, Dissolved	200.7/6010	1	0.00	0.00
Copper, Dissolved	200.7/6010	1	0.00	0.00
Iron, Dissolved	200.7/6010	1	0.00	0.00
Lead, Dissolved	200.7/6010	1	0.00	0.00
Manganese, Dissolved	200.7/6010	1	0.00	0.00
Mercury, Dissolved	245.1	1	0.00	0.00
Nickel, Dissolved	200.7/6010	1	0.00	0.00
Selenium, Dissolved	270.2/7740	1	0.00	0.00
Silver, Dissolved	200.7/6010	1	0.00	0.00
Zinc, Dissolved	200.7/6010	1	0.00	0.00
TOTALS		1	145.00	145.00

KAP 11/1/96

LABORATORY ORDER CONTINUED ON PAGE 2

C DER NO WM-2431

Project Manager: Kelly Perkins
ORDER DATE: 10/31/96

REPORT TO: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

PHONE: 207/774-2112
FAX: 207/774-2112
DUE: 14 NOV
FAC.ID: CMP-O'CONNOR SITE

I VOICE: Tanya Talbot
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

PHONE: 207/774-2112
PO: 96012.13

SAMPLED BY: E.CARLSON DELIVERED BY: CLIENT DISPOSE: AFTER 30 NOV

LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
2	WM2431-2 GW	31 OCT 1030	31 OCT	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
TCL Base/Neutral Extractables by USEPA	EPA 8270	1	315.00	315.00
PCBs only by USEPA 8081	EPA 8081	1	94.00	94.00
Aluminum, Total	200.7/6010	1	145.00	145.00
Antimony, Total	200.7/6010	1	0.00	0.00
Arsenic, Total	200.7/6010	1	0.00	0.00
Barium, Total	200.7/6010	1	0.00	0.00
Beryllium, Total	200.7/6010	1	0.00	0.00
Cadmium, Total	200.7/6010	1	0.00	0.00
Chromium, Total	200.7/6010	1	0.00	0.00
Copper, Total	200.7/6010	1	0.00	0.00
Iron, Total	200.7/6010	1	0.00	0.00
Lead, Total	200.7/6010	1	0.00	0.00
Manganese, Total	200.7/6010	1	0.00	0.00
Mercury, Total	245.1	1	0.00	0.00
Nickel, Total	200.7/6010	1	0.00	0.00
Selenium, Total	270.2/7740	1	0.00	0.00
Silver, Total	200.7/6010	1	0.00	0.00
Zinc, Total	200.7/6010	1	0.00	0.00
Nitrate as N	353.2	1	13.00	13.00
Nitrite as N	353.2	1	13.00	13.00
Sulfate	375.4	1	21.00	21.00
Solids - Filterable Residue (TDS)	160.1	1	14.00	14.00
Solids - Non Filterable Residue (TSS)	160.2	1	14.00	14.00
Oil and Grease, Total Recoverable	413.1	1	30.00	30.00
VOAs (8260)	EPA 8260	1	156.00	156.00
Chloride	325.2	1	11.00	11.00
TOTALS		1	826.00	826.00

KAB 11/1/96

LABORATORY ORDER CONTINUED ON PAGE 3

ORDER NO WM-2431

Project Manager: Kelly Perkins
ORDER DATE: 10/31/96
PHONE: 207/774-2112
FAX: 207/774-2112
DUE: 14 NOV
FAC.ID: CMP-O'CONNOR SITE

REPORT TO: HUGH TOZER
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

INVOICE: Tanya Talbot
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

PHONE: 207/774-2112
PO: 96012.13

SAMPLED BY: E.CARLSON DELIVERED BY: CLIENT DISPOSE: AFTER 30 NOV

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
3	WM2431-3	FREE PRODUCT	31 OCT 1030	31 OCT	FP

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
PCBs in Oil by EPA 600/4/81-045	600/4/81-0	1	94.00	94.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
4	WM2431-4	GW-20	31 OCT 1030	31 OCT	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Oil and Grease, Total Recoverable	413.1	1	30.00	30.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
5	WM2431-5	GW-2A	31 OCT 1030	31 OCT	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Solids - Non Filterable Residue (TSS)	160.2	1	14.00	14.00

	OTHER CHARGES	QTY	PRICE	AMOUNT
6	Equipment Rental	1	200.00	200.00

ORDER NOTE: CMP O'CONNOR QC-I
DD(WCCMP)

KAP 11/1/96

INVOICE: With Report

TOTAL ORDER AMOUNT $1,309.00
This is NOT an Invoice

KP/SM/WEST.KP(dw)
1 -01Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04098
Tel: (207) 874-2400

CHAIN of CUSTODY

* PLEASE PRINT IN PEN

Page ___ of ___

Client	Contact	Phone #	Fax #
Woodard / Curran	Hugh Tozer	(207) 774-2112	(207) 774-4751

Address: Hutchins Drive | City: Portland | State: ME | Zip Code:

P.O. #: | Proj. Name/No.: Carp - O'Connor

Bill (if different than above): | Address:

Sample (Print/Sign): ~~Hugh Tozer~~ COP WEISS ERIC CARLSON | Copies To:

LAB USE ONLY WORK ORDER #: WM2431

KATAHDIN PROJECT MANAGER: Kelly

REMARKS: Samples Prepped at Katahdin

SHIPPING INFO: ☐ FED EX ☐ UPS ☒ CLIENT

AIRBILL NO:

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date/Time coll'd	Matrix	Filt. Y/N	No. of Cntrs.	Full Suite	PCB's	Metals - Filtered	Oil / Grease	TSS					
	GW-2S *	10/31/96 10:30AM	GW	Y/N	1			X							
	GW	10/31/96 10:30AM	GW	N		X									
	Free Product	10/31/96 10:30AM	Oil	N	1		X								
	GW-2D	10/31/96 10:30AM	GW	N	1				X						
	GW-2A	10/31/96 10:30AM	GW	N	1					X					
		/													
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COMMENTS: GW-2S - For Metals Filter with Glass Fiber Filter

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	10/31 11:15 AM			10/31/96 1130	Stephanie Magoffe
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
					0000026

Katahdin
ANALYTICAL SERVICES

CLIENT: ERIC CARLSON
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-1
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
COMPOSIT	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
PCBs only by USEPA 8081								1,2,3
AROCLOR-1016	<2.5	µg/L	10	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1221	<2.5	µg/L	10	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1232	<2.5	µg/L	10	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1242	92.	µg/L	10	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1248	<2.5	µg/L	10	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1254	150.	µg/L	10	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1260	500.	µg/L	10	0.25	EPA 8081	10/25/96	SW	
2,4,5,6-Tetrachloro-meta-xylene (%	DL	%	10		EPA 8081	10/25/96	SW	
Decachlorobiphenyl (% Recovery)	DL	%	10		EPA 8081	10/25/96	SW	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 10/23/96 by BWG using EPA 3520
(2) "DL" flag denotes inability to calculate surrogate recovery due to sample dilution.
(3) Sample dilution required for quantitation of one or more target analytes; therefore, standard laboratory Practical Quantitation Level (PQL) could not be achieved.

10/30/96

LJO/jcbkp(dw)/sw

340 County Road No. 5
P.O. Box 720, Westbrook, ME 04098
Tel: (207) 874-2400 Fax: (207) 775-4029

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

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Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-1
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
COMPOSIT	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
VOAs (8260)								1,2
Dichlorodifluoromethane	<2.	µg/L	1.0	2	EPA 8260	10/25/96	SG	
Chloromethane	<2.	µg/L	1.0	2	EPA 8260	10/25/96	SG	
Vinyl chloride	<2.	µg/L	1.0	2	EPA 8260	10/25/96	SG	
Bromomethane	<2.	µg/L	1.0	2	EPA 8260	10/25/96	SG	
Chloroethane	<2.	µg/L	1.0	2	EPA 8260	10/25/96	SG	
Trichlorofluoromethane	<2.	µg/L	1.0	2	EPA 8260	10/25/96	SG	
1,1-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Methylene chloride	B3	µg/L	1.0	1	EPA 8260	10/25/96	SG	
trans-1,2-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,1-Dichloroethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
cis-1,2-Dichloroethene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
2,2-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Bromochloromethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Chloroform	B1	µg/L	1.0	1	EPA 8260	10/25/96	SG	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) "J" flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.
(2) A result reported with a "B" qualifier indicates the analytes were detected in the laboratory method blank analyzed concurrently with the sample. The concentrations of Methylene Chloride and Chloroform in the method blank were 3 and J0.6 ug/L respectively.

10/30/96

LJO/jcbeaw/kp/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

CLIENT: ERIC CARLSON
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-1
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
COMPOSIT	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
1,1,1-Trichloroethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2-Dichloroethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,1-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Carbon tetrachloride	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Benzene	5.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Trichloroethene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
cis-1,3-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Dibromomethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Bromodichloromethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Toluene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
trans-1,3-Dichloropropene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,1,2-Trichloroethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,3-Dichloropropane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Dibromochloromethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	

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10/30/96

LJO/jcbeaw/kp/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

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Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-1
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
COMPOSIT	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Tetrachloroethene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2-Dibromoethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Chlorobenzene	4.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,1,1,2-tetrachloroethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Ethylbenzene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
m-Xylene/p-Xylene	1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Bromoform	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
o-Xylene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Styrene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,1,2,2-Tetrachloroethane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2,3-Trichloropropane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Isopropylbenzene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Bromobenzene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
2-Chlorotoluene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
n-Propylbenzene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	

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10/30/96

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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
COMPOSIT	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
4-Chlorotoluene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,3,5-Trimethylbenzene	3.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
tert-Butylbenzene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2,4-Trimethylbenzene	2.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
sec-Butylbenzene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,3-Dichlorobenzene	10.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
4-Isopropyltoluene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,4-Dichlorobenzene	39.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2-Dichlorobenzene	14.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
n-Butylbenzene	J0.7	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2-Dibromo-3-chloropropane	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2,4-Trichlorobenzene	43.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Naphthalene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
Hexachlorobutadiene	<1.	µg/L	1.0	1	EPA 8260	10/25/96	SG	
1,2,3-Trichlorobenzene	9.	µg/L	1.0	1	EPA 8260	10/25/96	SG	

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10/30/96

LJO/jcbeaw/kp/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

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Lab Number : WM-2370-1
Report Date: 10/30/96
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Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
COMPOSIT	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Dibromofluoromethane (Surr.)	99.	%	1.0		EPA 8260	10/25/96	SG	
Toluene-d8 (%)	101.	%	1.0		EPA 8260	10/25/96	SG	
p-Bromofluorobenzene (%)	96.	%	1.0		EPA 8260	10/25/96	SG	
Acetone	440.	µg/L	10.	5.0	EPA 8260	10/25/96	SG	
2-Butanone	1100.	µg/L	10.	5.0	EPA 8260	10/25/96	SG	
4-Methyl-2-pentanone	<3.	µg/L	1.0	3.0	EPA 8260	10/25/96	SG	
2-Hexanone	<4.	µg/L	1.0	4.0	EPA 8260	10/25/96	SG	

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10/30/96

LJO/jcbeaw/kp/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

CLIENT: ERIC CARLSON
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-2
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GRAB	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
PCBs only by USEPA 8081								1,2,3
AROCLOR-1016	<25.	µg/L	100	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1221	<25.	µg/L	100	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1232	<25.	µg/L	100	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1242	500.	µg/L	100	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1248	<25.	µg/L	100	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1254	900.	µg/L	100	0.25	EPA 8081	10/25/96	SW	
AROCLOR-1260	3600.	µg/L	100	0.25	EPA 8081	10/25/96	SW	
2,4,5,6-Tetrachloro-meta-xylene (%	DL	%	100		EPA 8081	10/25/96	SW	
Decachlorobiphenyl (% Recovery)	DL	%	100		EPA 8081	10/25/96	SW	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values

(1) Sample Preparation on 10/23/96 by BWG using EPA 3520
(2) "DL" flag denotes inability to calculate surrogate recovery due to sample dilution.
(3) Sample dilution required for quantitation of one or more target analytes; therefore, standard laboratory Practical Quantitation Level (PQL) could not be achieved.

10/30/96

LJO/jcbkp(dw)/sw

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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GRAB	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
VOAs (8260)								1,2,3
Dichlorodifluoromethane	<10.	µg/L	5.0	2	EPA 8260	10/25/96	SG	
Chloromethane	<10.	µg/L	5.0	2	EPA 8260	10/25/96	SG	
Vinyl chloride	<10.	µg/L	5.0	2	EPA 8260	10/25/96	SG	
Bromomethane	<10.	µg/L	5.0	2	EPA 8260	10/25/96	SG	
Chloroethane	<10.	µg/L	5.0	2	EPA 8260	10/25/96	SG	
Trichlorofluoromethane	<10.	µg/L	5.0	2	EPA 8260	10/25/96	SG	
1,1-Dichloroethene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Methylene chloride	B14	µg/L	5.0	1	EPA 8260	10/25/96	SG	
trans-1,2-Dichloroethene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,1-Dichloroethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
cis-1,2-Dichloroethene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
2,2-Dichloropropane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Bromochloromethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

(1) "J" flag denotes an estimated value less than the Laboratory's Practical Quantitation Level.

(2) A result reported with a "B" qualifier indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. The concentration of Methylene Chloride in the method blank was 3 ug/L.

(3) Sample dilution required for quantitation of one or more target analytes; therefore, standard laboratory Practical Quantitation Level (PQL) could not be achieved.

10/30/96

LJO/jcbeaw/kp/kp(dw)/kwh

Katahdin
ANALYTICAL SERVICES

CLIENT: ERIC CARLSON
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-2
Report Date: 10/30/96
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REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
GRAB	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Chloroform	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,1,1-Trichloroethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,2-Dichloroethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,1-Dichloropropene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Carbon tetrachloride	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Benzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,2-Dichloropropane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Trichloroethene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
cis-1,3-Dichloropropene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Dibromomethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Bromodichloromethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Toluene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
trans-1,3-Dichloropropene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,1,2-Trichloroethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

10/30/96

LJO/jcbeaw/kp/kp(dw)/kwh

340 County Road No. 5
P.O. Box 720, Westbrook, ME 04098
Tel: (207) 874-2400 Fax: (207) 775-4029

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

CLIENT: ERIC CARLSON
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-2
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GRAB	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
1,3-Dichloropropane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Dibromochloromethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Tetrachloroethene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,2-Dibromoethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Chlorobenzene	J4	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,1,1,2-tetrachloroethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Ethylbenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
m-Xylene/p-Xylene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Bromoform	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
o-Xylene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Styrene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,1,2,2-Tetrachloroethane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,2,3-Trichloropropane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Isopropylbenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	

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Lab Number : WM-2370-2
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GRAB	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Bromobenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
2-Chlorotoluene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
n-Propylbenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
4-Chlorotoluene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,3,5-Trimethylbenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
tert-Butylbenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,2,4-Trimethylbenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
sec-Butylbenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,3-Dichlorobenzene	7.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
4-Isopropyltoluene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,4-Dichlorobenzene	30.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,2-Dichlorobenzene	9.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
n-Butylbenzene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,2-Dibromo-3-chloropropane	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	

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10/30/96

LJO/jcbeaw/kp/kp(dw)/kwh

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Katahdin
ANALYTICAL SERVICES

CLIENT: ERIC CARLSON
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-2
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
GRAB	Aqueous	E.CARLSON	10/23/96	10/24/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
1,2,4-Trichlorobenzene	33.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Naphthalene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Hexachlorobutadiene	<5.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
1,2,3-Trichlorobenzene	13.	µg/L	5.0	1	EPA 8260	10/25/96	SG	
Dibromofluoromethane (Surr.)	101.	%	5.0		EPA 8260	10/25/96	SG	
Toluene-d8 (%)	101.	%	5.0		EPA 8260	10/25/96	SG	
p-Bromofluorobenzene (%)	107.	%	5.0		EPA 8260	10/25/96	SG	
Acetone	260.	µg/L	5.0	5.0	EPA 8260	10/25/96	SG	
2-Butanone	550.	µg/L	5.0	5.0	EPA 8260	10/25/96	SG	
4-Methyl-2-pentanone	<15.	µg/L	5.0	3.0	EPA 8260	10/25/96	SG	
2-Hexanone	<20.	µg/L	5.0	4.0	EPA 8260	10/25/96	SG	

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.

10/30/96

LJO/jcbeaw/kp/kp(dw)/kwh

Katahdin
ANALYTICAL SERVICES

CLIENT: ERIC CARLSON
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

Lab Number : WM-2370-4
Report Date: 10/30/96
PO No. : 96012.13
Project : VER SYSTEM

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
COMPOSIT	Aqueous	E.CARLSON	10/23/96	10/23/96

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Oil and Grease, Total Recoverable	12000	mg/L	1.0	5.0	413.1	10/26/96	NN	1,2

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values

(1) Sample Preparation on 10/25/96 by DEW

(2) Results for the LCS and/or LCSD associated with this sample were outside laboratory acceptance criteria. The sample was not reanalyzed due to insufficient sample.

10/30/96

LJO/ejnkp(dw)/mft/pph

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Tel: (603) 431-5777 Fax: (603) 436-3356

KATAHDIN ANALYTICAL SERVICES, INCORPORATED
New England-ME Laboratory (207) 874-2400
CONFIRMATION

ORDER NO WM-2370

Project Manager: Kelly Perkins
ORDER DATE: 10/24/96
PHONE: 207-774-2112
FAX: 207/774-4751
DUE: 28 OCT

REPORT TO: ERIC CARLSON
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

INVOICE: ACCOUNTS PAYABLE
Woodard & Curran
41 Hutchins Dr.
Portland, ME 04102

PO: 96012.13

PROJECT: VER SYSTEM

SAMPLED BY: E.CARLSON DELIVERED BY: CLIENT DISPOSE: AFTER 23 NOV

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WM2370-1	COMPOSIT	23 OCT 1400	24 OCT	AQ
	WM2370-2	GRAB	23 OCT 1400		
	WM2370-3	TANK	23 OCT 1440		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
PCBs only by USEPA 8081	EPA 8081	3	131.00	393.00
VOAs (8260)	EPA 8260	3	125.00	375.00
TOTALS		3	256.00	768.00

	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
2	WM2370-4	COMPOSIT	23 OCT 1440	23 OCT	AQ

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Oil and Grease, Total Recoverable	413.1	1	30.00	30.00

ORDER NOTE: O'CONNOR SITE
VER SYSTEM
DD(WCCMP)
Prices include RUSH surcharges

KAP 10/28/96

INVOICE: With Report

TOTAL ORDER AMOUNT $798.00
This is NOT an Invoice

..P/SM/WEST.KP(dw)
10-28Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

APPENDIX D

VAPOR QUALITY ANALYSIS SUMMARY
AND
TO-14 ANALYSIS RESULTS

TO-14 RESULTS SUMMARY 1
Inlet VOCs with respective RELs, PELs, TLVs or AAQLs

Compound	VOC Limits (ppmv)	Inlet VOC (ppmv)
Freon 12	1000 (N)	0.0012
Freon 114	1000 (N)	Not Detected
Chloromethane	50 (O)	0.0012
Vinyl Chloride	0.016 (M)	Not Detected
Bromomethane	5 (O)	Not Detected
Chloroethane	100 (A)	Not Detected
Freon 11	1000 (N)	1.1
1,1-Dichloroethene	**** (U)	Not Detected
Freon 113	1000 (N)	Not Detected
Methylene Chloride	0.65 (M)	Not Detected
1,1-Dichloroethane	100 (N)	Not Detected
cis-1,2-Dichloroethene	**** (U)	Not Detected
Chloroform	**0.042 (M)**	**0.120**
1,1,1-Trichloroethane	1.8 (M)	Not Detected
Carbon Tetrachloride	0.13 (M)	Not Detected
Benzene	0.1 (N)	0.0016
1,2-Dichloroethane	0.012 (M)	Not Detected
Trichloroethene	2.0 (M)	Not Detected
1,2-Dichloropropane	75 (O)	Not Detected
cis-1,3-Dichloropropene	**** (U)	Not Detected
Toluene	0.68 (M)	0.0019
trans-1,3-Dichloropropene	**** (U)	Not Detected
1,1,2-Trichloroethane	10 (N)	Not Detected
Tetrachloroethene	0.58 (M)	Not Detected
Ethylene Dibromide	0.045 (N)	Not Detected
Chlorobenzene	75 (O)	Not Detected
Ethyl Benzene	12 (M)	Not Detected
m,p-Xylene	14 (M)	0.00086
o-Xylene	14 (M)	Not Detected
Styrene	9.9 (M)	Not Detected
1,1,2,2-Tetrachloroethane	1 (N)	Not Detected
1,3,5-Trimethylbenzene	25 (N)	Not Detected
1,2,4-Trimethylbenzene	25 (N)	Not Detected
1,3-Dichlorobenzene	**** (U)	Not Detected
1,4-Dichlorobenzene	75 (O)	Not Detected
Chlorotoluene	1 (N)	Not Detected
1,2-Dichlororbenzene	4.9 (M)	Not Detected
1,2,4-Trichlorobenzene	5 (N)	Not Detected

Compound	VOC Limits (ppmv)	Inlet VOC (ppmv)
Hexachlorobutadiene	0.020 (A)	Not Detected
Propylene	**** (U)	Not Detected
1,3-Butadiene	0.16 (M)	Not Detected
Acetone	1.4 (M)	0.071
Carbon Disulfide	1 (N)	Not Detected
2-Propanol	400 (N)	Not Detected
trans-1,2-Dichloroethene	**** (U)	Not Detected
Vinyl Acetate	10 (A)	Not Detected
Chloroprene	1 (N)	Not Detected
2-Butanone (Methyl Ethyl Ketone)	12 (M)	0.13
Hexane	59 (M)	Not Detected
Tetrahydrofuran	25 (M)	0.2
Cyclohexane	300 (N)	Not Detected
1,4-Dioxane	0.4 (M)	Not Detected
Bromodichloromethane	**** (U)	0.0069
4-Methyl-2-pentanone	50 (N)	Not Detected
2-Hexanone	1 (N)	Not Detected
Dibromochloromethane	**** (U)	Not Detected
Bromoform	0.5 (N)	Not Detected
Ethanol	1000 (A)	0.098
Methyl-Butyl Ether (MTBE)	40 (A)	Not Detected
Heptane	85 (N)	Not Detected
Total VOCs		1.73

(A) ACGIH exposure level
(M) MEDHS interim ambient air guidelines
(N) NIOSH exposure level
(O) OSHA exposure level
(U) Unavailable guidance to provide exposure level

@ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 9610324

Work Order Summary

CLIENT:	Mr. Andre Casavant Woodard & Curran, Inc. 41 Hutchins Drive Portland, ME 04102	**BILL TO:**	Same
PHONE:	207-774-2112	**INVOICE #**	12326
FAX:	207-774-4751	**P.O. #**	96012
DATE RECEIVED:	10/25/96	**PROJECT #**	96012 CMP
DATE COMPLETED:	11/7/96	**AMOUNT$:**	$374.22

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	PRICE
01A	94606*	TO-14	NA	NC
02A	1052	TO-14	4.5 "Hg	$240.00
03A	Lab Blank	TO-14	NA	NC

Misc. Charges	6 Liter Summa Canister Preparation (1) @ $35.00 each.	$35.00
	6 Liter Summa Canister Preparation (1) @ $25.00 each.	$25.00
	Flow Controller Preparation (1) @ $35.00 each.	$35.00
	Shipping (10/17/96)	$39.22

LAB NARRATIVE:
***Sample not analyzed per client's request.**

CERTIFIED BY: Linda D. Truman
Laboratory Director

DATE: 11/7/96

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

AIR TOXICS LTD.

SAMPLE NAME: 94606*

ID#: 9610324-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**NA**	**Date of Collection:**	**10/23/96**
Dil. Factor:	**1.00**	**Date of Analysis:**	**NA**

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	0.50	Not Analyzed
Freon 114	0.50	Not Analyzed
Chloromethane	0.50	Not Analyzed
Vinyl Chloride	0.50	Not Analyzed
Bromomethane	0.50	Not Analyzed
Chloroethane	0.50	Not Analyzed
Freon 11	0.50	Not Analyzed
1,1-Dichloroethene	0.50	Not Analyzed
Freon 113	0.50	Not Analyzed
Methylene Chloride	0.50	Not Analyzed
1,1-Dichloroethane	0.50	Not Analyzed
cis-1,2-Dichloroethene	0.50	Not Analyzed
Chloroform	0.50	Not Analyzed
1,1,1-Trichloroethane	0.50	Not Analyzed
Carbon Tetrachloride	0.50	Not Analyzed
Benzene	0.50	Not Analyzed
1,2-Dichloroethane	0.50	Not Analyzed
Trichloroethene	0.50	Not Analyzed
1,2-Dichloropropane	0.50	Not Analyzed
cis-1,3-Dichloropropene	0.50	Not Analyzed
Toluene	0.50	Not Analyzed
trans-1,3-Dichloropropene	0.50	Not Analyzed
1,1,2-Trichloroethane	0.50	Not Analyzed
Tetrachloroethene	0.50	Not Analyzed
Ethylene Dibromide	0.50	Not Analyzed
Chlorobenzene	0.50	Not Analyzed
Ethyl Benzene	0.50	Not Analyzed
m,p-Xylene	0.50	Not Analyzed
o-Xylene	0.50	Not Analyzed
Styrene	0.50	Not Analyzed
1,1,2,2-Tetrachloroethane	0.50	Not Analyzed
1,3,5-Trimethylbenzene	0.50	Not Analyzed
1,2,4-Trimethylbenzene	0.50	Not Analyzed
1,3-Dichlorobenzene	0.50	Not Analyzed
1,4-Dichlorobenzene	0.50	Not Analyzed
Chlorotoluene	0.50	Not Analyzed
1,2-Dichlorobenzene	0.50	Not Analyzed
1,2,4-Trichlorobenzene	0.50	Not Analyzed
Hexachlorobutadiene	0.50	Not Analyzed

AIR TOXICS LTD.

SAMPLE NAME: 94606*

ID#: 9610324-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**NA**	**Date of Collection: 10/23/96**
Dil. Factor:	**1.00**	**Date of Analysis: NA**

Compound	Det. Limit (ppbv)	Amount (ppbv)
Propylene	2.0	Not Analyzed
1,3-Butadiene	2.0	Not Analyzed
Acetone	2.0	Not Analyzed
Carbon Disulfide	2.0	Not Analyzed
2-Propanol	2.0	Not Analyzed
trans-1,2-Dichloroethene	2.0	Not Analyzed
Vinyl Acetate	2.0	Not Analyzed
Chloroprene	2.0	Not Analyzed
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Analyzed
Hexane	2.0	Not Analyzed
Tetrahydrofuran	2.0	Not Analyzed
Cyclohexane	2.0	Not Analyzed
1,4-Dioxane	2.0	Not Analyzed
Bromodichloromethane	2.0	Not Analyzed
4-Methyl-2-pentanone	2.0	Not Analyzed
2-Hexanone	2.0	Not Analyzed
Dibromochloromethane	2.0	Not Analyzed
Bromoform	2.0	Not Analyzed
4-Ethyltoluene	2.0	Not Analyzed
Ethanol	2.0	Not Analyzed
Methyl tert-Butyl Ether	2.0	Not Analyzed
Heptane	2.0	Not Analyzed

Container Type: 6 Liter Summa Canister

Surrogates	% Recovery	Method Limits
Octafluorotoluene	**NA**	**70-130**
Toluene-d8	**NA**	**70-130**
4-Bromofluorobenzene	**NA**	**70-130**

AIR TOXICS LTD.

SAMPLE NAME: 1052

ID#: 9610324-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1110311**	**Date of Collection:**	**10/23/96**
Dil. Factor:	**1.58**	**Date of Analysis:**	**11/3/96**

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	0.79	1.2
Freon 114	0.79	Not Detected
Chloromethane	0.79	1.2
Vinyl Chloride	0.79	Not Detected
Bromomethane	0.79	Not Detected
Chloroethane	0.79	Not Detected
Freon 11	0.79	1.1
1,1-Dichloroethene	0.79	Not Detected
Freon 113	0.79	Not Detected
Methylene Chloride	0.79	Not Detected
1,1-Dichloroethane	0.79	Not Detected
cis-1,2-Dichloroethene	0.79	Not Detected
Chloroform	0.79	120
1,1,1-Trichloroethane	0.79	Not Detected
Carbon Tetrachloride	0.79	Not Detected
Benzene	0.79	1.6
1,2-Dichloroethane	0.79	Not Detected
Trichloroethene	0.79	Not Detected
1,2-Dichloropropane	0.79	Not Detected
cis-1,3-Dichloropropene	0.79	Not Detected
Toluene	0.79	1.9
trans-1,3-Dichloropropene	0.79	Not Detected
1,1,2-Trichloroethane	0.79	Not Detected
Tetrachloroethene	0.79	Not Detected
Ethylene Dibromide	0.79	Not Detected
Chlorobenzene	0.79	Not Detected
Ethyl Benzene	0.79	Not Detected
m,p-Xylene	0.79	0.86
o-Xylene	0.79	Not Detected
Styrene	0.79	Not Detected
1,1,2,2-Tetrachloroethane	0.79	Not Detected
1,3,5-Trimethylbenzene	0.79	Not Detected
1,2,4-Trimethylbenzene	0.79	Not Detected
1,3-Dichlorobenzene	0.79	Not Detected
1,4-Dichlorobenzene	0.79	Not Detected
Chlorotoluene	0.79	Not Detected
1,2-Dichlorobenzene	0.79	Not Detected
1,2,4-Trichlorobenzene	0.79	Not Detected
Hexachlorobutadiene	0.79	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: 1052

ID#: 9610324-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1110311**	**Date of Collection:**	**10/23/96**
Dil. Factor:	**1.58**	**Date of Analysis:**	**11/3/96**

Compound	Det. Limit (ppbv)	Amount (ppbv)
Propylene	3.2	Not Detected
1,3-Butadiene	3.2	Not Detected
Acetone	3.2	71
Carbon Disulfide	3.2	Not Detected
2-Propanol	3.2	Not Detected
trans-1,2-Dichloroethene	3.2	Not Detected
Vinyl Acetate	3.2	Not Detected
Chloroprene	3.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.2	130
Hexane	3.2	Not Detected
Tetrahydrofuran	3.2	200
Cyclohexane	3.2	Not Detected
1,4-Dioxane	3.2	Not Detected
Bromodichloromethane	3.2	6.9
4-Methyl-2-pentanone	3.2	Not Detected
2-Hexanone	3.2	Not Detected
Dibromochloromethane	3.2	Not Detected
Bromoform	3.2	Not Detected
4-Ethyltoluene	3.2	Not Detected
Ethanol	3.2	98
Methyl tert-Butyl Ether	3.2	Not Detected
Heptane	3.2	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	% Recovery	Method Limits
Octafluorotoluene	**81**	**70-130**
Toluene-d8	**110**	**70-130**
4-Bromofluorobenzene	**100**	**70-130**

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 9610324-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1110304**	**Date of Collection:**	**NA**
Dil. Factor:	**1.00**	**Date of Analysis:**	**11/3/96**

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	0.50	Not Detected
Freon 114	0.50	Not Detected
Chloromethane	0.50	Not Detected
Vinyl Chloride	0.50	Not Detected
Bromomethane	0.50	Not Detected
Chloroethane	0.50	Not Detected
Freon 11	0.50	Not Detected
1,1-Dichloroethene	0.50	Not Detected
Freon 113	0.50	Not Detected
Methylene Chloride	0.50	Not Detected
1,1-Dichloroethane	0.50	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected
Chloroform	0.50	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected
Carbon Tetrachloride	0.50	Not Detected
Benzene	0.50	Not Detected
1,2-Dichloroethane	0.50	Not Detected
Trichloroethene	0.50	Not Detected
1,2-Dichloropropane	0.50	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected
Toluene	0.50	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected
Tetrachloroethene	0.50	Not Detected
Ethylene Dibromide	0.50	Not Detected
Chlorobenzene	0.50	Not Detected
Ethyl Benzene	0.50	Not Detected
m,p-Xylene	0.50	Not Detected
o-Xylene	0.50	Not Detected
Styrene	0.50	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected
Chlorotoluene	0.50	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected
Hexachlorobutadiene	0.50	Not Detected

AIR TOXICS LTD.

SAMPLE NAME: Lab Blank

ID#: 9610324-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1110304**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/96**	

Compound	Det. Limit (ppbv)	Amount (ppbv)
Propylene	2.0	Not Detected
1,3-Butadiene	2.0	Not Detected
Acetone	2.0	Not Detected
Carbon Disulfide	2.0	Not Detected
2-Propanol	2.0	Not Detected
trans-1,2-Dichloroethene	2.0	Not Detected
Vinyl Acetate	2.0	Not Detected
Chloroprene	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected
Hexane	2.0	Not Detected
Tetrahydrofuran	2.0	Not Detected
Cyclohexane	2.0	Not Detected
1,4-Dioxane	2.0	Not Detected
Bromodichloromethane	2.0	Not Detected
4-Methyl-2-pentanone	2.0	Not Detected
2-Hexanone	2.0	Not Detected
Dibromochloromethane	2.0	Not Detected
Bromoform	2.0	Not Detected
4-Ethyltoluene	2.0	Not Detected
Ethanol	2.0	Not Detected
Methyl tert-Butyl Ether	2.0	Not Detected
Heptane	2.0	Not Detected

Container Type: NA

Surrogates	% Recovery	Method Limits
Octafluorotoluene	**93**	**70-130**
Toluene-d8	**92**	**70-130**
4-Bromofluorobenzene	**98**	**70-130**

AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

CHAIN-OF-CUSTODY RECORD

Nº 009053

Page 1 of 1

Contact Person ANDRE CASAVANT
Company WOODARD & CURRAN INC
Address 41 HUTCHINS DRIVE City PORTLAND State ME Zip 04102
Phone 207-774-2112 FAX 207-774-6751
Collected By: Signature

Project info:
P.O. #
Project # 96012
Project Name CMP

Turn Around Time:
☒ Normal
☐ Rush
Specify

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
01A	94606		DO NOT ANALYZE			
02A	1052	10-23 @ 1100	TO-14 TARGET COMPOUNDS	28.0"	5.0"	4.5

Relinquished By: (Signature) Date/Time: 10-27/1730 Print Name: ANDRE CASAVANT
Relinquished By: (Signature) Date/Time
Received By: (Signature) Date/Time

Relinquished By: (Signature) Date/Time
Received By: (Signature) Date/Time: Scott Clinton ATL 10/25/96 1021

Notes:

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Date/Time	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	FEDEX	2701825066	JC	10/25/96 1021	AMBIENT	GOOD	Yes No (None) N/A	9610324

Form 1293 rev 06

APPENDIX E
SCREEN3 MODELING RESULTS

WOODARD & CURRAN
ENVIRONMENTAL SERVICES

41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
TEL. (207)774-2112

CLIENT CMP
PROJECT VER
DESIGNED BY _____ DATE 11-27-86
CHECKED BY _____ DATE _____
PROJECT NO. _____ SHEET NO _____ OF _____

CHLOROFORM EMISSION RATE

20-39 SCFM
0.120 ppmv

NEED $g \cdot s^{-1}$

1 ppm = 4.96 $mg \cdot m^{-3}$

$0.12 \left(4.96\ mg \cdot m^{-3}/ppm\right) = 0.59\ mg \cdot m^{-3}$

$0.59\ mg/m^3 \left(.0283\ m^3/SCF\right)\left(39\ SCF/1\right)\left(1/60s\right)$

$\left(\frac{70}{72}\right) \cdot 001\ g/mg\right)$

$= 1.09 \times 10^{-5}\ g \cdot s^{-1}$

MODEL INPUTS

POINT
0.0000109 $g \cdot s^{-1}$
4 m STACK HEIGHT
0.0508 m (2 INCH ID)
39 ACFM
STACK GAS TEMP ⇒ 60° F ⇒ 288 °K
AMBIENT TEMP ⇒ 273 °K ← 280 °K = 48F 305 = 90°F 255 = 0°F
RECEPTOR HEIGHT 2 m
RURAL
N BLDG DOWNWASH

0.062 $ug \cdot m^{-3}$ @ 21 m

LIMIT OF 0.042 ppmv ⇒ 0.208 $mg \cdot m^{-3}$
⇒ 208 $ug \cdot m^{-3}$

WOODARD & CURRAN
ENVIRONMENTAL SERVICES

41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
TEL. (207)774-2112

CLIENT CMP
PROJECT VOR
DESIGNED BY _____ DATE 11-27-96
CHECKED BY _____ DATE _____
PROJECT NO. _____ SHEET NO. _____ OF _____

MAXIMUM ALLOWABLE CHLOROFORM EMISSIONS @ VENT

0.037 $g \cdot s^{-1}$ BASED ON 45 °F @ 39 SCFM

$mg/m^3 = 3.7 \times 10^{-2}\ g \cdot s^{-1} \left(\frac{1000\ mg}{g}\right)\left(60\ s/min\right)\left(min/39\ SCF\right)\left(\frac{SCF}{0.0283\ m^3}\right)$

$= 2011\ mg \cdot m^3$

$= 405\ ppm$

MAXIMUM ALLOWABLE CHLOROFORM EMISSIONS @ VENT

0.030 $g \cdot s^{-1}$ BASED ON 90°F @ 39 SCFM

$mg/m^3 = 3.0 \times 10^{-2}\ g \cdot s^{-1} (1000\ mg/g)(60\ s/min)(1\ min/39\ SCF)(SCF/0.0283\ m^3)$

$= 1631\ mg \cdot m^3$

$\simeq 328\ ppm$

USING HALF THAT LEVEL FOR AN ACTION LEVEL IS 165 PPM.

11/27/96
13:34:12

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

CMP - VER CHLOROFORM EMISSIONS AT MINIMUM AMBIENT TEMPERATURE (0 F)

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.109000E-04
STACK HEIGHT (M)	=	4.0000
STK INSIDE DIAM (M)	=	.0508
STK EXIT VELOCITY (M/S)	=	9.0812
STK GAS EXIT TEMP (K)	=	288.0000
AMBIENT AIR TEMP (K)	=	255.0000
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 39.000000 (ACFM)

BUOY. FLUX = .007 M**4/S**3; MOM. FLUX = .047 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	5.38	.49	.31	NO
100.	.4776E-01	4	1.0	1.0	320.0	5.38	8.21	4.67	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
21.	.6195E-01	2	1.0	1.0	320.0	5.38	4.84	2.62	NO

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	.4776E-01	4	1.0	1.0	320.0	5.38	8.21	4.67	NO
200.	.2109E-01	4	1.0	1.0	320.0	5.38	15.57	8.51	NO
300.	.1955E-01	6	1.0	1.0	10000.0	8.41	11.30	5.76	NO
400.	.1677E-01	6	1.0	1.0	10000.0	8.41	14.69	7.16	NO
500.	.1388E-01	6	1.0	1.0	10000.0	8.41	18.01	8.49	NO
600.	.1146E-01	6	1.0	1.0	10000.0	8.41	21.27	9.77	NO
700.	.9547E-02	6	1.0	1.0	10000.0	8.41	24.49	11.00	NO

800.	.8102E-02	6	1.0	1.0	10000.0	8.41	27.66	12.04	NO
900.	.6966E-02	6	1.0	1.0	10000.0	8.41	30.80	13.04	NO
1000.	.6059E-02	6	1.0	1.0	10000.0	8.41	33.91	14.01	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

100.	.4776E-01	4	1.0	1.0	320.0	5.38	8.21	4.67	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
* SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN HT (M)	DISTANCE RANGE (M) MINIMUM	MAXIMUM
0.	1.	100.
0.	100.	1000.

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.6195E-01	21.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

11/27/96
13:42:43

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MP - VER OPERATION AT 20 ACFM

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.550000E-05
STACK HEIGHT (M)	=	4.0000
STK INSIDE DIAM (M)	=	.0508
STK EXIT VELOCITY (M/S)	=	4.6570
STK GAS EXIT TEMP (K)	=	288.0000
AMBIENT AIR TEMP (K)	=	280.0000
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 20.000000 (ACFM)

BUOY. FLUX = .001 M**4/S**3; MOM. FLUX = .014 M**4/S**2.

** FULL METEOROLOGY ***

****
** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	4.71	.44	.23	NO
100.	.2746E-01	4	1.0	1.0	320.0	4.71	8.20	4.66	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
16.	.4731E-01	2	1.0	1.0	320.0	4.71	3.81	2.04	NO

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	.2746E-01	4	1.0	1.0	320.0	4.71	8.20	4.66	NO
200.	.1972E-01	6	1.0	1.0	10000.0	6.27	7.76	4.14	NO
300.	.1506E-01	6	1.0	1.0	10000.0	6.27	11.25	5.66	NO
400.	.1130E-01	6	1.0	1.0	10000.0	6.27	14.65	7.08	NO
500.	.8653E-02	6	1.0	1.0	10000.0	6.27	17.98	8.42	NO
600.	.6804E-02	6	1.0	1.0	10000.0	6.27	21.25	9.71	NO
700.	.5485E-02	6	1.0	1.0	10000.0	6.27	24.47	10.95	NO

800.	.4559E-02	6	1.0	1.0	10000.0	6.27	27.64	11.99	NO
900.	.3859E-02	6	1.0	1.0	10000.0	6.27	30.78	13.00	NO
1000.	.3316E-02	6	1.0	1.0	10000.0	6.27	33.89	13.97	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

100.	.2746E-01	4	1.0	1.0	320.0	4.71	8.20	4.66	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
* SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN HT (M)	DISTANCE RANGE (M) MINIMUM	MAXIMUM
0.	1.	100.
0.	100.	1000.

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.4731E-01	16.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

11/27/96
13:17:42

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MP - VER CHLOROFORM EMISSIONS AT AMBIENT TEMPERATURE (45 F)

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.109000E-04
STACK HEIGHT (M)	=	4.0000
STK INSIDE DIAM (M)	=	.0508
STK EXIT VELOCITY (M/S)	=	9.0812
STK GAS EXIT TEMP (K)	=	288.0000
AMBIENT AIR TEMP (K)	=	280.0000
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 39.000000 (ACFM)

BUOY. FLUX = .002 M**4/S**3; MOM. FLUX = .052 M**4/S**2.

** FULL METEOROLOGY ***

****
** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	5.38	.49	.32	NO
100.	.4776E-01	4	1.0	1.0	320.0	5.38	8.21	4.67	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
21.	.6195E-01	2	1.0	1.0	320.0	5.38	4.84	2.62	NO

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	.4776E-01	4	1.0	1.0	320.0	5.38	8.21	4.67	NO
200.	.3298E-01	6	1.0	1.0	10000.0	6.84	7.77	4.17	NO
300.	.2695E-01	6	1.0	1.0	10000.0	6.84	11.26	5.68	NO
400.	.2089E-01	6	1.0	1.0	10000.0	6.84	14.66	7.09	NO
500.	.1631E-01	6	1.0	1.0	10000.0	6.84	17.98	8.43	NO
600.	.1297E-01	6	1.0	1.0	10000.0	6.84	21.25	9.72	NO
700.	.1054E-01	6	1.0	1.0	10000.0	6.84	24.47	10.96	NO

800.	.8806E-02	6	1.0	1.0	10000.0	6.84	27.65	12.00	NO
900.	.7481E-02	6	1.0	1.0	10000.0	6.84	30.79	13.01	NO
1000.	.6447E-02	6	1.0	1.0	10000.0	6.84	33.89	13.98	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

100.	.4776E-01	4	1.0	1.0	320.0	5.38	8.21	4.67	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
* SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN HT (M)	DISTANCE RANGE (M) MINIMUM	MAXIMUM
0.	1.	100.
0.	100.	1000.

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.6195E-01	21.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

11/27/96
13:24:47

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MP - VER CHLOROFORM EMISSIONS AT MAXIMUM AMBIENT TEMPERATURE (90 F)

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.109000E-04
STACK HEIGHT (M)	=	4.0000
STK INSIDE DIAM (M)	=	.0508
STK EXIT VELOCITY (M/S)	=	9.0812
STK GAS EXIT TEMP (K)	=	288.0000
AMBIENT AIR TEMP (K)	=	305.0000
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 39.000000 (ACFM)
A > TS!!! BUOY. FLUX SET = 0.0

UOY. FLUX = .000 M**4/S**3; MOM. FLUX = .053 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	5.38	.49	.32	NO
100.	.6562E-01	6	1.0	1.0	10000.0	5.38	4.09	2.36	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

100.	.6562E-01	6	1.0	1.0	10000.0	5.38	4.09	2.36	NO

****
** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	.6562E-01	6	1.0	1.0	10000.0	5.38	4.09	2.36	NO
200.	.4973E-01	6	1.0	1.0	10000.0	5.38	7.74	4.11	NO
300.	.3447E-01	6	1.0	1.0	10000.0	5.38	11.24	5.64	NO
400.	.2467E-01	6	1.0	1.0	10000.0	5.38	14.64	7.06	NO
500.	.1840E-01	6	1.0	1.0	10000.0	5.38	17.97	8.40	NO
600.	.1423E-01	6	1.0	1.0	10000.0	5.38	21.24	9.69	NO

700.	.1134E-01	6	1.0	1.0	10000.0	5.38	24.46	10.94	NO
800.	.9366E-02	6	1.0	1.0	10000.0	5.38	27.64	11.98	NO
900.	.7887E-02	6	1.0	1.0	10000.0	5.38	30.78	12.99	NO
1000.	.6750E-02	6	1.0	1.0	10000.0	5.38	33.89	13.96	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

102.	.6566E-01	6	1.0	1.0	10000.0	5.38	4.13	2.38	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
* SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN HT (M)	DISTANCE RANGE (M) MINIMUM	MAXIMUM
0.	1.	100.
0.	100.	1000.

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.6566E-01	102.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

11/27/96
13:50:56

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MP - VER CHLOROFORM EMISSIONS AT 20 SCFM AND 90 F

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.550000E-05
STACK HEIGHT (M)	=	4.0000
STK INSIDE DIAM (M)	=	.0508
STK EXIT VELOCITY (M/S)	=	4.6570
STK GAS EXIT TEMP (K)	=	288.0000
AMBIENT AIR TEMP (K)	=	305.0000
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 20.000000 (ACFM)
A > TS!!! BUOY. FLUX SET = 0.0

UOY. FLUX = .000 M**4/S**3; MOM. FLUX = .014 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	4.71	.44	.23	NO
100.	.4840E-01	6	1.0	1.0	10000.0	4.71	4.07	2.33	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
36.	.5334E-01	4	1.0	1.0	320.0	4.71	3.26	1.97	NO

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	.4840E-01	6	1.0	1.0	10000.0	4.71	4.07	2.33	NO
200.	.2944E-01	6	1.0	1.0	10000.0	4.71	7.73	4.10	NO
300.	.1913E-01	6	1.0	1.0	10000.0	4.71	11.23	5.63	NO
400.	.1327E-01	6	1.0	1.0	10000.0	4.71	14.64	7.05	NO
500.	.9723E-02	6	1.0	1.0	10000.0	4.71	17.97	8.40	NO
600.	.7439E-02	6	1.0	1.0	10000.0	4.71	21.24	9.69	NO

700.	.5887E-02	6	1.0	1.0	10000.0	4.71	24.46	10.93	NO
800.	.4838E-02	6	1.0	1.0	10000.0	4.71	27.64	11.98	NO
900.	.4060E-02	6	1.0	1.0	10000.0	4.71	30.78	12.98	NO
1000.	.3466E-02	6	1.0	1.0	10000.0	4.71	33.88	13.95	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

100.	.4840E-01	6	1.0	1.0	10000.0	4.71	4.07	2.33	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
* SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN HT (M)	DISTANCE RANGE (M) MINIMUM	MAXIMUM
0.	1.	100.
0.	100.	1000.

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.5334E-01	36.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

11/27/96
13:56:22

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MP - VER CHLOROFORM EMISSIONS AT 20 SCFM AND 0 F

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.550000E-05
STACK HEIGHT (M)	=	4.0000
STK INSIDE DIAM (M)	=	.0508
STK EXIT VELOCITY (M/S)	=	4.6570
STK GAS EXIT TEMP (K)	=	288.0000
AMBIENT AIR TEMP (K)	=	255.0000
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 20.000000 (ACFM)

BUOY. FLUX = .003 M**4/S**3; MOM. FLUX = .012 M**4/S**2.

** FULL METEOROLOGY ***

****
** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	4.71	.44	.23	NO
100.	.2746E-01	4	1.0	1.0	320.0	4.71	8.20	4.66	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
16.	.4731E-01	2	1.0	1.0	320.0	4.71	3.81	2.04	NO

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	.2746E-01	4	1.0	1.0	320.0	4.71	8.20	4.66	NO
200.	.1333E-01	6	1.0	1.0	10000.0	7.53	7.79	4.22	NO
300.	.1188E-01	6	1.0	1.0	10000.0	7.53	11.28	5.71	NO
400.	.9616E-02	6	1.0	1.0	10000.0	7.53	14.67	7.12	NO
500.	.7692E-02	6	1.0	1.0	10000.0	7.53	17.99	8.46	NO
600.	.6217E-02	6	1.0	1.0	10000.0	7.53	21.26	9.74	NO
700.	.5104E-02	6	1.0	1.0	10000.0	7.53	24.48	10.98	NO

800.	.4292E-02	6	1.0	1.0	10000.0	7.53	27.65	12.02	NO
900.	.3665E-02	6	1.0	1.0	10000.0	7.53	30.79	13.02	NO
1000.	.3170E-02	6	1.0	1.0	10000.0	7.53	33.90	13.99	NO

AXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

100.	.2746E-01	4	1.0	1.0	320.0	4.71	8.20	4.66	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
* SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN HT (M)	DISTANCE RANGE (M) MINIMUM	MAXIMUM
0.	1.	100.
0.	100.	1000.

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
IMPLE TERRAIN	.4731E-01	16.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

11/27/96
14:00:35

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MP - VER MAXIMUM ALLOWABLE CHLOROFORM EMISSIONS

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.370000E-01
STACK HEIGHT (M)	=	4.0000
STK INSIDE DIAM (M)	=	.0508
STK EXIT VELOCITY (M/S)	=	9.0812
STK GAS EXIT TEMP (K)	=	288.0000
AMBIENT AIR TEMP (K)	=	280.0000
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 39.000000 (ACFM)

BUOY. FLUX = .002 M**4/S**3; MOM. FLUX = .052 M**4/S**2.

** FULL METEOROLOGY ***

****
** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	5.38	.49	.32	NO
100.	162.1	4	1.0	1.0	320.0	5.38	8.21	4.67	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
21.	210.3	2	1.0	1.0	320.0	5.38	4.84	2.62	NO

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	162.1	4	1.0	1.0	320.0	5.38	8.21	4.67	NO
200.	112.0	6	1.0	1.0	10000.0	6.84	7.77	4.17	NO
300.	91.48	6	1.0	1.0	10000.0	6.84	11.26	5.68	NO
400.	70.93	6	1.0	1.0	10000.0	6.84	14.66	7.09	NO
500.	55.35	6	1.0	1.0	10000.0	6.84	17.98	8.43	NO
600.	44.04	6	1.0	1.0	10000.0	6.84	21.25	9.72	NO
700.	35.78	6	1.0	1.0	10000.0	6.84	24.47	10.96	NO

800.	29.89	6	1.0	1.0	10000.0	6.84	27.65	12.00	NO
900.	25.40	6	1.0	1.0	10000.0	6.84	30.79	13.01	NO
1000.	21.89	6	1.0	1.0	10000.0	6.84	33.89	13.98	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

100.	162.1	4	1.0	1.0	320.0	5.38	8.21	4.67	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
* SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN HT (M)	DISTANCE RANGE (M) MINIMUM	MAXIMUM
0.	1.	100.
0.	100.	1000.

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	210.3	21.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

11/27/96
15:38:11

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 95250 ***

MP - VER MAXIMUM ALLOWABLE VENT EMISSIONS AT 90 F

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.300000E-01
STACK HEIGHT (M)	=	4.0000
STK INSIDE DIAM (M)	=	.0508
STK EXIT VELOCITY (M/S)	=	9.0812
STK GAS EXIT TEMP (K)	=	288.0000
AMBIENT AIR TEMP (K)	=	305.0000
RECEPTOR HEIGHT (M)	=	2.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 39.000000 (ACFM)
A > TS!!! BUOY. FLUX SET = 0.0

UOY. FLUX = .000 M**4/S**3; MOM. FLUX = .053 M**4/S**2.

*** FULL METEOROLOGY ***

****
** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	5.38	.49	.32	NO

AXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

1.	.0000	0	.0	.0	.0	.00	.00	.00	

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	112.4	1	1.5	1.5	480.0	4.92	3.37	1.61	NO
100.	180.6	6	1.0	1.0	10000.0	5.38	4.09	2.36	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

100.	180.6	6	1.0	1.0	10000.0	5.38	4.09	2.36	NO

****

** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
100.	180.6	6	1.0	1.0	10000.0	5.38	4.09	2.36	NO
200.	136.9	6	1.0	1.0	10000.0	5.38	7.74	4.11	NO
300.	94.88	6	1.0	1.0	10000.0	5.38	11.24	5.64	NO
400.	67.91	6	1.0	1.0	10000.0	5.38	14.64	7.06	NO
500.	50.64	6	1.0	1.0	10000.0	5.38	17.97	8.40	NO
600.	39.17	6	1.0	1.0	10000.0	5.38	21.24	9.69	NO
700.	31.22	6	1.0	1.0	10000.0	5.38	24.46	10.94	NO
800.	25.78	6	1.0	1.0	10000.0	5.38	27.64	11.98	NO
900.	21.71	6	1.0	1.0	10000.0	5.38	30.78	12.99	NO
1000.	18.58	6	1.0	1.0	10000.0	5.38	33.89	13.96	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 100. M:

102.	180.7	6	1.0	1.0	10000.0	5.38	4.13	2.38	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SCREEN DISCRETE DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	5.38	.49	.32	NO
2.	.1017E-05	1	3.0	3.0	960.0	4.46	.79	.37	NO
4.	2.259	1	3.0	3.0	960.0	4.46	1.47	.68	NO
8.	77.89	1	2.0	2.0	640.0	4.69	2.75	1.30	NO
15.	151.6	1	1.0	1.0	320.0	5.38	4.87	2.36	NO
20.	169.8	2	1.0	1.0	320.0	5.38	4.44	2.40	NO
25.	184.7	3	1.0	1.0	320.0	5.38	3.47	2.13	NO
30.	192.7	3	1.0	1.0	320.0	5.38	4.10	2.51	NO
35.	188.8	3	1.0	1.0	320.0	5.38	4.73	2.88	NO
40.	182.0	4	1.0	1.0	320.0	5.38	3.53	2.13	NO
45.	187.7	4	1.0	1.0	320.0	5.38	3.93	2.36	NO
50.	187.7	4	1.0	1.0	320.0	5.38	4.33	2.58	NO
55.	187.5	5	1.0	1.0	10000.0	5.38	3.54	2.18	NO
60.	190.7	5	1.0	1.0	10000.0	5.38	3.83	2.34	NO
65.	190.9	5	1.0	1.0	10000.0	5.38	4.12	2.50	NO
70.	189.1	5	1.0	1.0	10000.0	5.38	4.42	2.65	NO
75.	186.1	5	1.0	1.0	10000.0	5.38	4.71	2.81	NO
80.	182.4	5	1.0	1.0	10000.0	5.38	4.99	2.96	NO
80.	182.4	5	1.0	1.0	10000.0	5.38	4.99	2.96	NO
90.	177.6	6	1.0	1.0	10000.0	5.38	3.71	2.17	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
* SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN HT (M)	DISTANCE RANGE (M) MINIMUM	MAXIMUM
0.	1.	10.
0.	10.	100.
0.	100.	1000.
0.	1.	--
0.	2.	--
0.	4.	--
0.	8.	--
0.	15.	--
0.	20.	--
0.	25.	--
0.	30.	--
0.	35.	--
0.	40.	--
0.	45.	--
0.	50.	--
0.	55.	--
0.	60.	--
0.	65.	--
0.	70.	--
0.	75.	--
0.	80.	--
0.	80.	--
0.	90.	--

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	192.7	30.	0.

****
* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

APPENDIX F

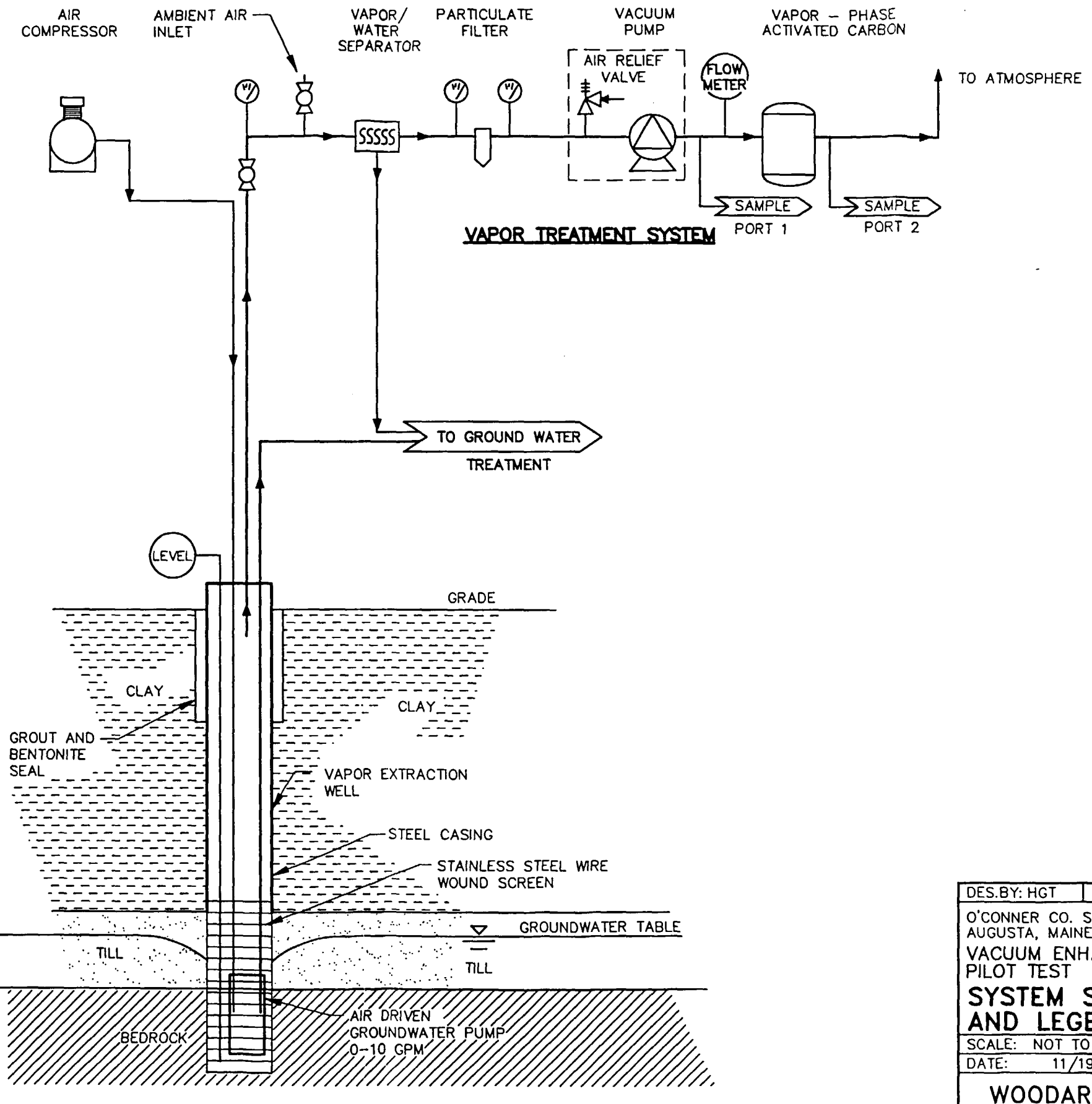
TREATMENT SYSTEM MODIFICATIONS

LEGEND

AC = COMPRESSED AIR
AFF = ABOVE FINISHED FLOOR
CFM = CUBIC FEET PER MINUTE
CAL = ALUM
CP = ANIONIC OR NON-IONIC POLYMER
CS = CARBON STEEL A53, SCHEDULE 40
CU = COPPER PIPE
EBCT = EMPTY BED CONTACT TIME
FI = FLOW METER - INDICATOR ONLY
FQ = FLOW METER - TOTALIZER ONLY
FQI = FLOW METER W/INDICATOR AND TOTALIZER
GAC = GRANULAR ACTIVATED CARBON
HOA = HAND - OFF - AUTO SWITCH
HS = HAND SWITCH
in HG = INCHES MERCURY
in WC = INCHES WATER COLUMN
LAH = LEVEL ALARM - HIGH
LE = LEVEL ELEMENT (PRESSURE TRANSDUCER)
LI = LEVEL INDICATOR
LSH = LEVEL SWITCH - HIGH
LSL = LEVEL SWITCH - LOW
LSM = LEVEL SWITCH - MID
OW = WASTE OIL
PI = PRESSURE INDICATOR (GAUGE)
PSI = POUNDS PER SQUARE INCH
PVC = POLYVINYL CHLORIDE, SCHEDULE 40
SCFM = STANDARD CUBIC FEET PER MINUTE
SL = WASTE SOLIDS
V = VENT
VAC = VACUUM
VOL = VOLUME
WG = GROUNDWATER
WS = SEAL WATER
= BALL OR SWING CHECK VALVE, PVC
= TRUE UNION BALL VALVE, PVC
= GLOBE VALVE
= UNION

NOTES:

1. DESIGN FLOW = 1.0 GPM
2. EFFLUENT TO MEET PRIMARY DRINKING WATER STANDARDS



DES.BY: HGT	DR.BY: HJN	CK.BY: HJV

O'CONNER CO. SUPERFUND SITE
AUGUSTA, MAINE
VACUUM ENHANCED RECOVERY PILOT TEST

SYSTEM SCHEMATIC AND LEGEND

SCALE: NOT TO SCALE	JOB NO.: 96012.13	
DATE: 11/19/96	SHEET: P-1	VER2-P1

WOODARD & CURRAN INC.
ENVIRONMENTAL SERVICES
PORTLAND, ME • BANGOR, ME • DEDHAM, MA

OIL/WATER SEPARATOR
T-1001
48"ø x 79"H
MAX VOL = 550 GAL

RAPID MIX TANK
T-1002

FLOC TANK
T-1003

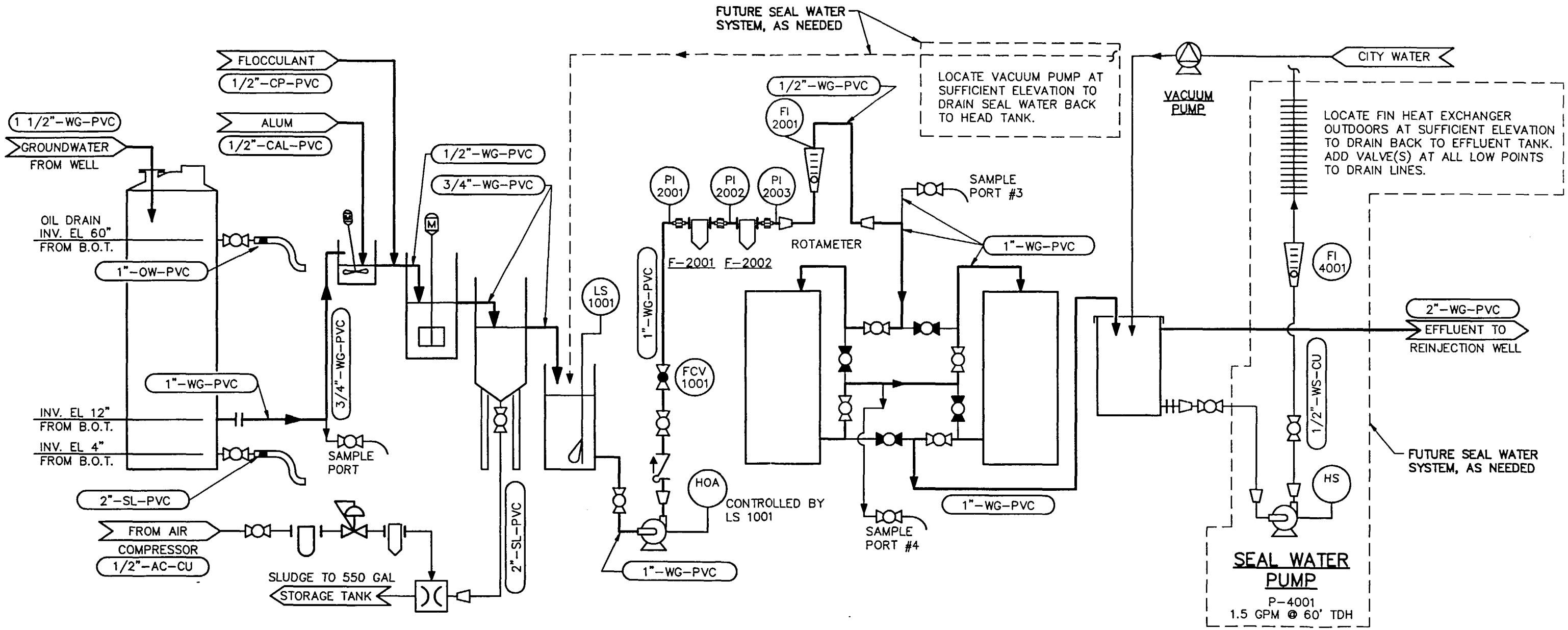
CLARIFIER TANK
T-1004

HEAD TANK
T-1005

PARTICULATE FILTERS
F-2001: 10 MICRON
F-2002: 5 MICRON
3 - 20" CARTRIDGES PER HOUSING

LIQUID PHASE GAC VESSELS
T-3001 T-3002
EBCT = 30 MIN
GAC = 275 LB/VESSEL

EFFLUENT TANK
T-4001
VOL = 55 GAL



SLUDGE PUMP
P-1004
15 GPM

GAC FEED PUMP
P-1001
2.5 GPM @ 40' TDH

NOTES:

1. ALL SAMPLE AND DRAIN PORTS TO BE EQUIPPED WITH MINIMUM 2' FLEXIBLE PLASTIC HOSE

DES.BY: HGT	DR.BY: HJN	CK.BY: HJV

O'CONNER CO. SUPERFUND SITE
AUGUSTA, MAINE
VACUUM ENHANCED RECOVERY PILOT TEST
GROUNDWATER TREATMENT SYSTEM

SCALE: NOT TO SCALE	JOB NO.: 96012.13	
DATE: 11/19/96	SHEET: P-3	VER2-P3

WOODARD & CURRAN INC.
ENVIRONMENTAL SERVICES
PORTLAND, ME • BANGOR, ME • DEDHAM, MA