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GENERAL PERMIT FOR THE DISCHARGE OF WATER TREATMENT WASTEWATER FROM
THE PURE WATER FACILITY AND THE POWER PLAN WATER SOFTNERS NSB NEW
LONDON CT
4/1/1997
HRP ASSOCIATION, INC

**GENERAL PERMIT
FOR THE DISCHARGE OF
WATER TREATMENT WASTEWATER
FROM THE PURE WATER FACILITY AND
THE POWER PLANT WATER SOFTENERS**

CONTRACT N62472-95-D-1448

**NAVAL SUBMARINE BASE NEW LONDON
ROUTE 12 AND CRYSTAL LAKE ROAD
GROTON, CONNECTICUT**

HRP #NAV-0096.FE

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1.0 INTRODUCTION

1.1 Scope

Naval Submarine Base New London (SUBASENLON) in Groton, Connecticut has identified four (4) wastewater discharges to be included under the General Permit for the Discharge of Water Treatment Wastewater which is included as Appendix A. Each of the four (4) discharges was evaluated for compliance with the General Permit by HRP Associates, Inc. (HRP) personnel by the methods described below. A site location map of SUBASENLON is included as Figure 1.

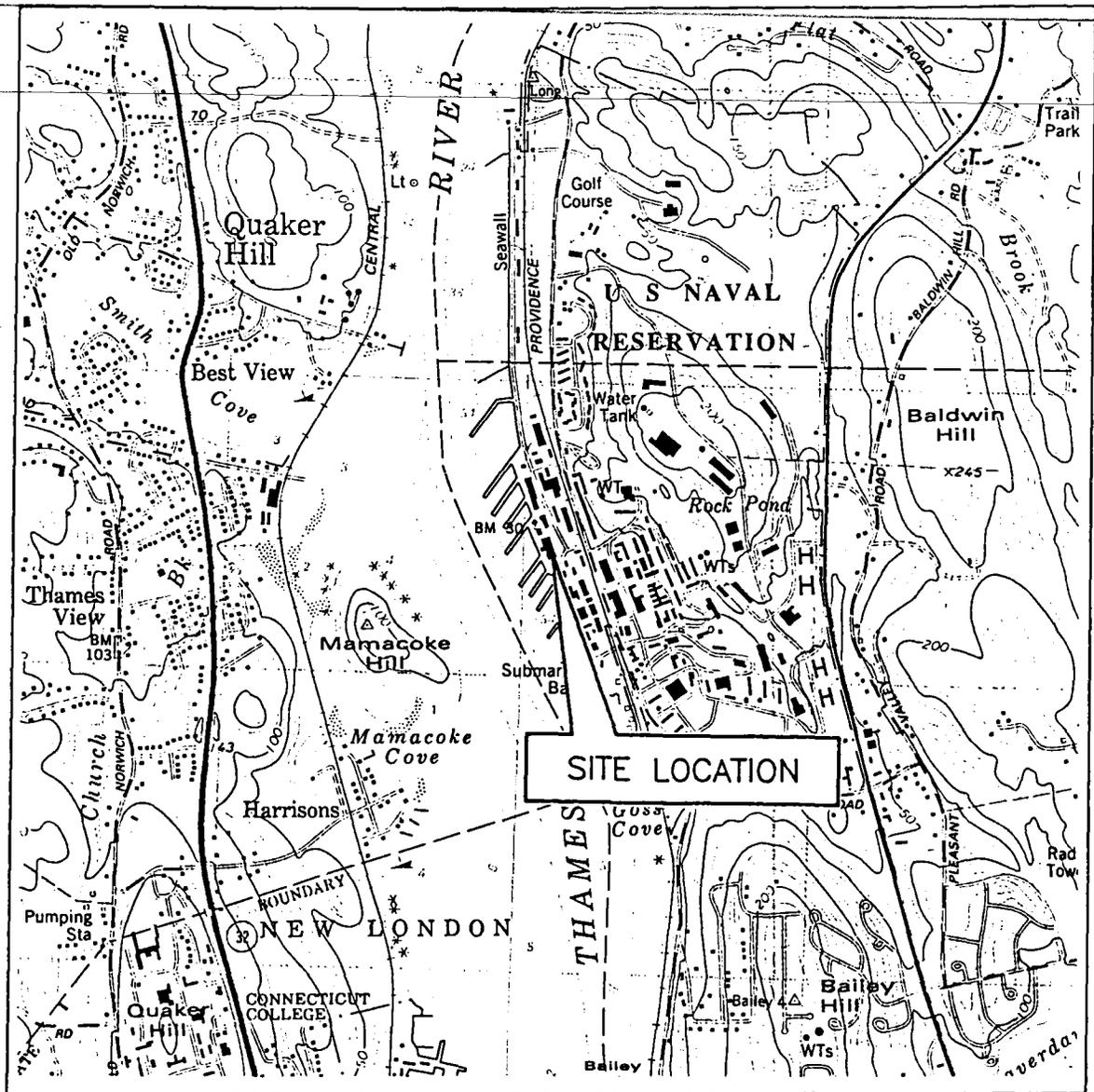
Information on each process and discharge was discussed during the project initiation meeting. The meeting minutes are included as Attachment B. Interviews were conducted with people familiar with each discharge and process to gain a further understanding of the operations. Interview Logs are included as Attachment C. Operation and Maintenance Manuals and other associated documents were reviewed and finally, sample results of each discharge were analyzed and field observations were made to determine compliance with the General Permit. The laboratory results are included as Appendix D.

1.2 Facility Description

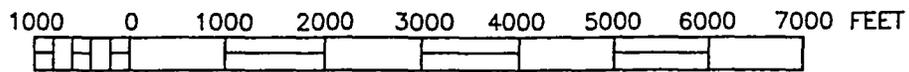
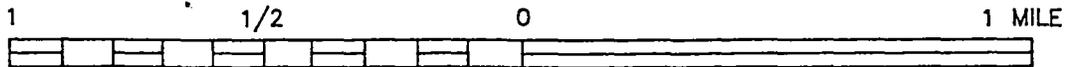
All four discharges evaluated are located in Building 29, the Power Plant, on the Lower Base of SUBASENLON as shown in Figure 2, the Building 29 Site Plan. The four processes investigated are as follows:

Discharge S106:	Carbon Filters
Discharge 001C:	Mixed Media Beds
Discharge 001D:	Neutralization Tank
Discharge S032:	Power Plant Water Softeners

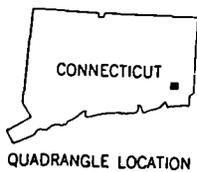
Detailed descriptions of each wastewater generation process are listed in Section 3.0.



SCALE 1 : 24000



CONTOUR INTERVAL 10 FEET



UNCAVILLE, CONN.
41072-D1-TF-024

1984

DMA 6566 I NE-SERIES V816

FIGURE 1
SITE LOCATION
NAVAL SUBBASE NEW LONDON
GROTON, CONNECTICUT
HRP # NAV0096.FE

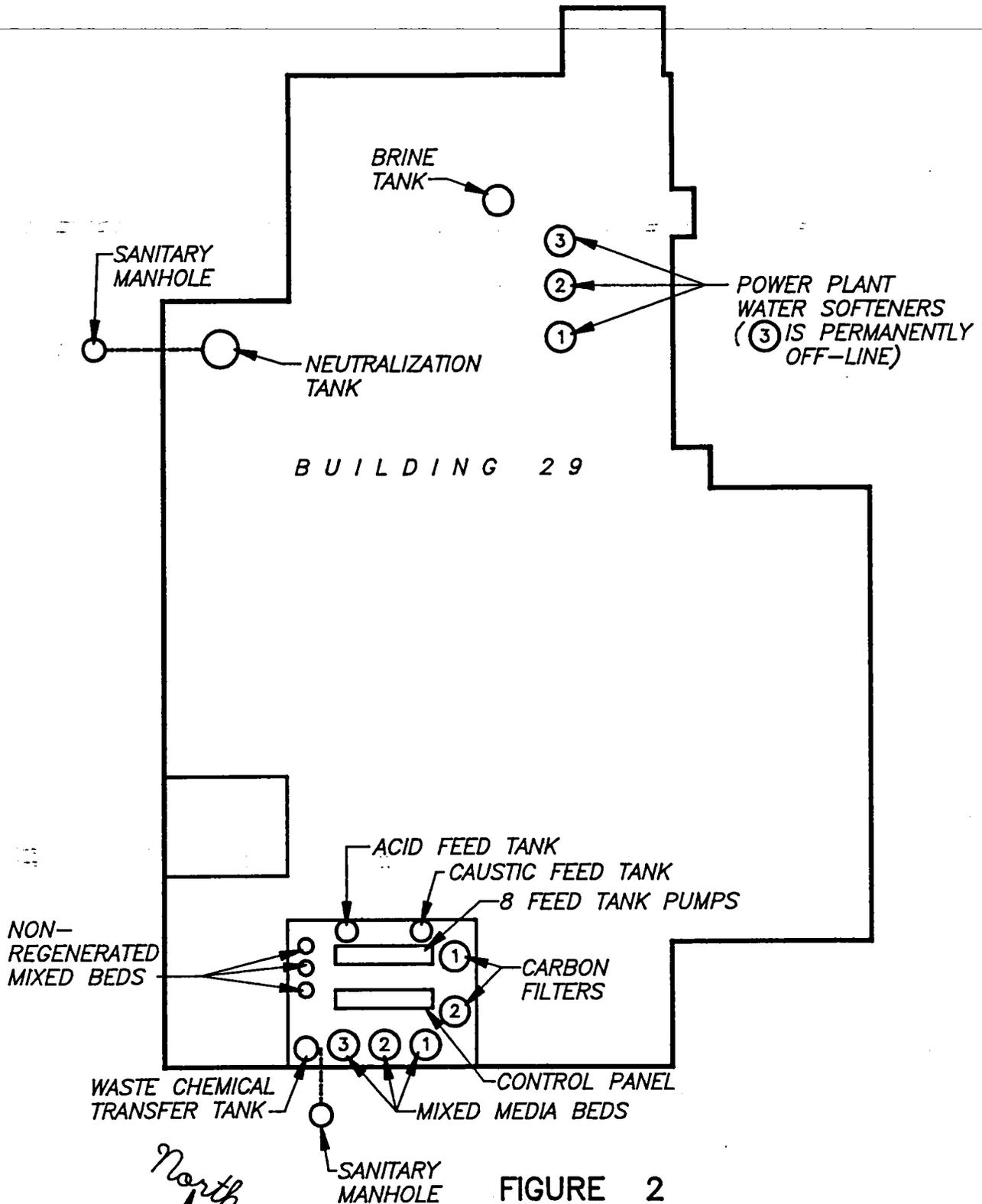


FIGURE 2
 BUILDING 29
 NAVAL SUBBASE NEW LONDON
 GROTON, CONNECTICUT
 HRP # NAV0096.FE
 NOT TO SCALE

2.0 EXECUTIVE SUMMARY

HRP Associates, Inc. (HRP) evaluated and tested four (4) different wastewater discharges at SUBASENLON with respect to their potential to be permitted under the Connecticut Department of Environmental Protection (DEP) General Permit for the Discharge of Water Treatment Wastewater (General Permit). The four (4) discharges are generated by the following two (2) facilities:

1. Pure Water Facility, and
2. Water Softeners for Boilers.

All discharges are generated in Building 29, the Power Plant on the Lower Base, and all are currently directed to the town of Groton sewage treatment plant through the SUBASENLON and Groton sanitary sewer systems.

The discharges were evaluated for their permit eligibility with respect to "Activities Authorized" and "Permit Terms and Conditions" as these terms are defined in the General Permit. Each discharge was also sampled and tested in order to establish compliance with effluent limitations set forth by the General Permit.

All discharges were found to be eligible for coverage under the General Permit. Most, but not all, sample results complied with the General Permit effluent limits. Recommendations were made by HRP which are expected to result in these discharges meeting effluent limits. The recommendations include operational changes, such as more effective pH monitoring and preventative pump maintenance, in addition to capital investments such as high level alarm installation and water softener resin replacement.

Finally, HRP has prepared the General Permit Registration Form for submittal to DEP. The registration serves to notify DEP that these four (4) discharges exist and are covered by the General Permit. It also provides DEP with pertinent information about the discharges including the processes

generating them and their maximum flow rates. The Registration must be certified by a representative of SUBASENLON and a licensed Professional Engineer (P.E.). HRP will provide the P.E. certification.

3.0 WASTEWATER GENERATION PROCESS DESCRIPTIONS

3.1 Pure Water Facility

The Pure Water Facility is used to produce a purified water for use on submarines and for use in the boilers, if necessary. The Pure Water Facility treats incoming town of Groton potable water using Carbon Filters and Mixed Media Beds. A Neutralization Tank treats some of the wastewater from the Mixed Media Beds regeneration. These processes are described below.

3.1.1 *Carbon Filters*

The carbon filters are the first treatment unit in the Pure Water Facility. They remove substances such as organics, inorganics, chlorine and suspended solids from the incoming town of Groton potable water in order to increase the effectiveness of the subsequent mixed media beds. There are two (2) carbon filter units so that one can be regenerated while the other is in use. A carbon filter is taken off-line and regenerated when there is a specified head loss, or pressure differential, across the bed of activated carbon. When the operator detects the head loss, the regeneration process is started by prompting the control panel to switch the units and begin regeneration. Regeneration is controlled by the automatic system, but a manual override is available.

Each carbon filter unit contains stacked parallel graphite-like planes of condensed carbon rings. The carbon rings contain granular activated carbon (GAC) and have very strong adsorptive properties. When the incoming water passes through the unit, the unwanted materials in the water, such as organics, inorganics, and chlorine, are adsorbed to the GAC. As the GAC adsorbs more

substances, the filter becomes clogged and a pressure loss results. In order to regenerate the adsorptive capacity of the filter, it is backwashed with treated water from the other filter to remove impurities from the GAC. It is then rinsed with incoming town water for a final cleaning.

The carbon filter regeneration lasts 25 minutes including 20 minutes of backwashing, and 5 minutes of rinsing. The backwash discharges 5,700 gallons of wastewater and the rinse discharges 1,125 gallons of wastewater from each regeneration process for a total of 6,825 gallons to the sanitary sewer. These flow rates were obtained from the operation and maintenance manual. The flow rates are monitored and controlled by the automatic control system, an additional means of verification. Under current operating conditions each carbon filter needs to be regenerated once or twice per year depending on water usage at the SUBASENLON. Therefore, the maximum daily carbon filter discharge to the sanitary sewer is 6,825 gallons per day.

3.1.2 Mixed Media Beds

The mixed media beds are used to remove minerals from the incoming town of Groton potable water to produce the demineralized water used in the submarines. There are three mixed media units at SUBASENLON. A unit is regenerated when the quality of the water, as monitored by an ORP (oxidation reduction potential) meter in the control system, is unsatisfactory. The operator manually prompts the control system to regenerate a mixed bed when it is exhausted. The mixed media beds utilize an ion exchange process.

The mixed beds include both cationic and anionic media to deionize incoming water. Once all the exchange sites are exhausted, the media needs to be regenerated. The cationic medium is regenerated with caustic (sodium hydroxide) and the anionic medium is regenerated with acid (sulfuric acid).

The regeneration process consists of thirteen steps. The first step is to backwash the bed. Backwashing allows the heavier acid resin to fall to the bottom of the unit and allows the lighter base resin to rise to the top of the unit. This is important because the regenerants have to be introduced at opposite ends of the unit so they do not contact each other. After the backwash is complete, introduction of the regenerants, sodium hydroxide and sulfuric acid, takes place during steps two through eight. In the ninth step, air is used to evenly distribute the two types of resin throughout the bed. In Steps 10, 11 and 12, the resins are rinsed with water which is then discharged to the neutralization tank. In the thirteenth and final step, the bed receives a final rinse which is discharged directly to the sanitary sewer.

The mixed media bed regeneration process results in the discharge of backwash and final rinse wastewater (the first and thirteenth steps) to the sanitary sewer. The backwash step results in a discharge of 1,400 gallons in 20 minutes. The final rinse results in a discharge of 4,500 gallons in 30 minutes. Therefore, the total discharge per regeneration to the sanitary sewer is 5,900 gallons. The entire regeneration process lasts a maximum of 3 hours, with the above two discharges to the sanitary sewer occurring over 50 minutes. These flow rates were obtained from the operation and maintenance manual. The flow

rates are monitored and controlled by the automatic control system, which offers an additional means of verifying the flow rates.

There are three mixed media beds in the Pure Water Facility. Each of the three units usually needs to be regenerated 1 to 3 times per month, depending on the water usage requirements at the base. If water use at SUBASENLON is extremely high, one unit will need to be regenerated every 12 hours. It is possible that two beds need regeneration on the same day. Therefore, the maximum daily flow is 11,800 gallons per day.

3.1.3 Neutralization Tank

The neutralization tank is used to neutralize the excess sulfuric acid and sodium hydroxide regenerant that is not absorbed by the resin in the mixed media beds. The excess chemicals and dilution water from steps 10 through 12 of the mixed media bed regeneration are pumped to the neutralization tank for pH adjustment. Both the level of the water in the tank and its pH are displayed on the Pure Water Facility control panel. When the level of water in the tank reaches a certain height, the operator manually begins neutralization by starting either the acid or caustic pumps. The caustic or acid is fed into the tank and mixed with the water in the tank with a mechanical mixer until the pH of the water is between 6.0 and 9.0 S.U. The operator manually stops the pump when the pH is in range and then discharges the wastewater to the sanitary sewer.

After reviewing the discharge logs of the neutralization tank for the year of 1996, it was found that the maximum single discharge was approximately 7,250 gpd. A conservative estimate

for the maximum daily flow is 14,500 gallons. This estimate is based on discharging 7,250 gallons twice in one day. The average volume discharged was 5,500 gallons per day based on the 1996 discharge logs. The discharge volume is calculated based on the water level displayed on the control panel, since the entire volume of water in the tank is discharged at one time. A conversion chart in the pure water room converts inches of water in the tank to gallons of water in the tank. The maximum capacity of the tank is 9,250 gallons, therefore, based on 2 discharges in one day, the design flow is 18,500 gallons per day.

3.2 Power Plant Water Softeners

The power plant water softeners are used to remove hardness, in the form of calcium and magnesium, from the incoming town of Groton potable water. The softened water is then used in the power plant boilers. There are two (2) softener units, Unit 1 and Unit 2. Unit 1 is the southerly unit of the two. One unit is in service while the other unit is regenerated. An operator monitors the hardness of the water being produced and manually switches from the unit in service to the regenerated unit when the hardness level is too high. The water softeners remove hardness from the water using an ion exchange process.

The ion exchange process consists of an exchange medium, in this case a resin, which will exchange base resin ions with the calcium and magnesium cations dissolved in the water to be treated. These softeners use sodium as the exchange ions. When incoming water passes through the medium, base sodium ions are exchanged with calcium and magnesium cations dissolved in the incoming water. Once all the exchange sites are exhausted, the medium requires regeneration.

Regeneration of the base resin ions consists of four steps, and is begun by backwashing the medium to remove any accumulated solids. During the second step, sodium chloride brine and a water rinse are passed through the medium. This allows sodium ions in the brine to bond to the resin and the calcium and magnesium cations to bond to the chloride anions in the brine. The last two steps in the regeneration of the medium, a fast flush and a final rinse, wash out any excess brine and chloride compounds. Each step of the regeneration process is manually controlled by an operator and lasts between 35 and 45 minutes, with the exception of the final rinse on Unit 1. The final rinse of a softener is run until the hardness of the discharge is zero. The final rinse for Unit 1 can run as long as 2 to 4 hours before the hardness becomes zero. The final rinse for Unit 2 requires 30-45 minutes to achieve a hardness of zero.

All of the regeneration steps, the 90 gpm backwash, the 21.4 gpm brine rinse, the 90 gpm fast flush, and the 21.4 gpm final rinse, are discharged to the sanitary sewer. Based on recent SUBASENLON estimates, the maximum total discharge for the regeneration of Unit 1 consists of 14,200 gallons and Unit 2 consists of 10,025 gallons. Therefore, since one regeneration of each softener is possible in any given day, the maximum flow is considered to be 24,225 gallons per day (gpd). These flow rates were obtained from the operation and maintenance manual.

As discussed above, the entire regeneration process lasts approximately 3 hours for Unit 2 and approximately 7 hours for Unit 1. Unit 1 will be regenerated every 48 to 72 hours of operation, and Unit 2 will be regenerated approximately every 12 hours of operation. The tables below summarize the information presented in this section.

Softener Unit	Duration of Discharge	Frequency of Regeneration	Discharge per Regeneration
1	7 hrs	48 to 72 hrs	14,200 gallons
2	3 hrs	12 hrs	10,025 gallons
Maximum Daily Discharge			24,225 gallons

Step Name	Softener Unit	Maximum Duration of Maximum Discharge	Discharge per Regeneration	Total Discharge per Step (both units)
Backwash	1	45 min	4,050 gal	8,100
	2	45 min	4,050 gal	
Brine and Rinse	1	45 min	963 gal	1,925
	2	45 min	963 gal	
Fast Flush	1	45 min	4,050 gal	8,100
	2	45 min	4,050 gal	
Final Rinse	1	45 min	963 gal	6,100
	2	240 min	5,136 gal	
Maximum Daily Discharge				24,225

4.0 SAMPLING PROCEDURES

According to Section 4(c)(2)(K)(ii) of the General Permit, the certification of existing discharges with a maximum flow of 5,000 gallons per day or greater must be based on the review of analyses of a minimum of three effluent samples, taken within the previous 12 months, at least one week apart. The certification of existing discharges with a maximum flow less than 5,000 gallons per day may be based on the review of analyses from one effluent sample. In accordance with these criteria, discharges S106, 001C, 001D, and S032 were each required to have three effluent samples analyzed. Due to scheduling constraints, the first and second sampling events for Discharge S032, the Power Plant water softeners regeneration wastewater, were collected only six days apart. This is considered to meet the intent of the one week interval. All of the other discharges were sampled as required by the General Permit.

Section 4(c)(2)(K)(ii) of the General Permit also states that the samples must be representative and are the type specified in Section 5(c)(5) of the General Permit. Section 5(c)(5) of the General Permit states that all samples must be grab samples. This section also states that for batch discharges, one sample of the discharge must be taken during the first 10 percent of time the discharge is expected to continue, and one sample shall be taken during the last 10 percent of the time the discharge is expected to continue. This procedure was followed for the sampling reported on herein.

Section 5(b)(3) of the General Permit requires the analysis of each sample for pH, temperature, total settleable solids, total suspended solids, total residual chlorine, total aluminum, total copper, total manganese, total zinc, and total iron. The analysis for volatile organic compounds (VOCs) is only required for discharges for which there is a reason to suspect their presence. According to Mr. Andrew Stackpole of SUBASENLON, VOC contamination is not an issue

with the incoming water source. However, for screening purposes, VOCs were measured in all Round 1 samples. Section 5(b)(3) of the General Permit sets effluent limitations for temperature, pH, and total VOCs only; there are no effluent limitations for the other parameters that are required to be monitored by the General Permit. Table 1 lists the parameters monitored during each sampling round and the corresponding effluent limitations set forth by the General Permit.

All of the samples for each discharge were collected by HRP personnel. The carbon filter and mixed bed regeneration samples were collected in a clean plastic bucket which was rinsed with the discharge before the sample was taken. The carbon filter and mixed media bed regeneration samples were taken from a manhole south of the Power Plant outside the pure water room and were immediately poured into the properly labelled sample containers and placed in a cooler with ice. The neutralization tank discharge was sampled from the port located in the tank's discharge pipe in the same manner. The Power Plant water softeners samples were collected in a bucket, as described above, from the sampling port of the unit. A State-certified laboratory analyzed all samples.

TABLE 1

**WATER TREATMENT WASTEWATER
MONITORING PARAMETERS**

**SUBASENLON
GROTON, CONNECTICUT
HRP #NAV-0096.FE**

Parameter	General Permit Regulatory Level	Units
Temperature	150	°F
pH	5 < pH < 10	S.U.
Total Daily Flow	---	gpd
Aluminum, total	---	mg/l
Copper, total	---	mg/l
Manganese, total	---	mg/l
Iron, total	---	mg/l
Zinc, total	---	mg/l
Settleable Solids, total	---	ml/l
Suspended Solids, total	---	mg/l
Residual Chlorine, total	---	mg/l
Volatile Organic Compounds, total	1.0	mg/l

5.0 SAMPLING RESULTS

All samples were analyzed by Connecticut Testing Laboratories, Inc. (CTL) located at 165 Gracey Avenue in Meriden, Connecticut. CTL is a State-certified laboratory. Results are summarized by discharge source in the following tables.

- 1 Monitoring Parameters
- 2 Sampling Results - Carbon Filter Backwash and Rinse
- 3A Sampling Results - Mixed Media Backwash Step
- 3B Sampling Results - Mixed Media Final Rinse Step
- 4 Sampling Results - Neutralization Tank
- 5A Sampling Results - Power Plant Water Softeners Backwash Step
- 5B Sampling Results - Power Plant Water Softeners Brine and Rinse Step
- 5C Sampling Results - Power Plant Water Softeners Fast Flush Step
- 5D Sampling Results - Power Plant Water Softeners Final Rinse Step

Table 3A

SUBASENLON
Groton, Connecticut
Water Treatment Wastewater
General Permit

HRP# NAV0096.FE

Discharge Name: Mixed media backwash									
Discharge Number: 001C-A									
Maximum Daily Flow: 2,800 gal/day									
Parameter	Round 1 Value 12/10/96 Unit # 1		Round 2 Value 12/18/96 Unit # 2		Round 3 Value 1/8/97 Unit # 1		General Permit Effluent Limit	Minimum Detection Level (MDL)	Units
	First 10%	Last 10%	First 10%	Last 10%	First 10%	Last 10%			
Temperature	49	49	66	58	50	49	150	1	°F
pH	6.2	6	6.7	11.6	8	7.4	5<pH<10	0.1	S.U.
Total Settleable Solids	ND	ND	ND	ND	ND	ND	----	0.2	ml/l
Total Suspended Solids	2	4	1	2	7	ND	----	1	mg/l
Total Residual Chlorine	ND	ND	ND	ND	ND	ND	----	0.05	mg/l
Total Aluminum	0.1	0.2	ND	ND	0.1	0.2	----	0.1	mg/l
Total Copper	ND	ND	ND	ND	ND	ND	----	0.01	mg/l
Total Manganese	ND	ND	ND	ND	0.01	0.01	----	0.01	mg/l
Total Zinc	ND	0.2	ND	ND	ND	ND	----	0.05	mg/l
Total Iron	0.1	0.15	0.07	0.14	0.44	0.13	----	0.05	mg/l
Total Volatile Organic Compounds	0.021	0.023	---	---	---	---	1.0	----	mg/l

Notes:
 ND = Not Detected
 Total Volatile Organic Compounds measured in Round 1 for screening purposes only.
 Results printed in **Bold** exceed General Permit limits.
 MDL's for Total Volatile Organic Compounds vary for each constituent. See Laboratory Reports in Appendix D.

Table 5A

SUBASENLON
Groton, Connecticut
Water Treatment Wastewater
General Permit

HRP# NAV0096.FE

Discharge Name: Power plant water softeners - backwash and flush									
Discharge Number: S032-A									
Maximum Daily Flow: 8,100gal/day									
Parameter	Round 1 Value 12/11/96 Unit # 2		Round 2 Value 12/17/96 Unit # 1		Round 3 Value 12/26/96 Unit # 2		General Permit Effluent Limit	Minimum Detection Level (MDL)	Units
	First 10%	Last 10%	First 10%	Last 10%	First 10%	Last 10%			
Temperature	50	49	51	50	47	48	150	1	°F
pH	6.6	6.7	6.8	6.7	6.4	6.8	5<pH<10	0.1	S.U.
Total Settleable Solids	ND	ND	ND	ND	ND	ND	----	0.2	ml/l
Total Suspended Solids	11	ND	2	3	ND	ND	----	1	mg/l
Total Residual Chlorine	1.77	1.82	0.3	0.73	0.38	1.17	----	0.05	mg/l
Total Aluminum	1.8	0.3	0.2	0.4	0.2	0.1	----	0.1	mg/l
Total Copper	ND	ND	ND	ND	ND	ND	----	0.01	mg/l
Total Manganese	0.18	0.02	0.02	0.04	0.03	ND	----	0.01	mg/l
Total Zinc	0.16	0.12	0.06	ND	ND	ND	----	0.05	mg/l
Total Iron	0.68	0.08	0.08	0.23	0.49	0.08	----	0.05	mg/l
Total Volatile Organic Compounds	0.008	0.008	----	----	----	----	1.0	----	mg/l

Notes:
 ND = Not Detected
 Total Volatile Organic Compounds measured in Round 1 for screening purposes only.
 Results printed in **Bold** exceed General Permit limits.
 MDL's for Total Volatile Organic Compounds vary for each constituent. See Laboratory Results in Appendix D.

Table 5B

SUBASENLON
Groton, Connecticut
Water Treatment Wastewater
General Permit

HRP# NAV0096.FE

Discharge Name: Power plant water softeners - brining and rinse									
Discharge Number: S032-B									
Maximum Daily Flow: 1,926 gal/day									
Parameter	Round 1 Value 12/11/96 Unit # 2		Round 2 Value 12/17/96 Unit # 1		Round 3 Value 12/26/96 Unit # 2		General Permit Effluent Limit	Minimum Detection Level (MDL)	Units
	First 10%	Last 10%	First 10%	Last 10%	First 10%	Last 10%			
Temperature	49	54	50	51	51	53	150	1	°F
pH	6.6	4.9	6.7	4.6	6.5	5.5	5<pH<10	0.1	S.U.
Total Settleable Solids	ND	ND	ND	ND	ND	ND	----	0.2	ml/l
Total Suspended Solids	1	2	1	4	2	6	----	1	mg/l
Total Residual Chlorine	1.67	0.39	0.5	ND	1.22	ND	----	0.05	mg/l
Total Aluminum	0.3	1.5	0.3	5.2	0.1	0.3	----	0.1	mg/l
Total Copper	ND	0.01	ND	ND	ND	ND	----	0.01	mg/l
Total Manganese	0.02	0.08	0.04	0.12	0.01	ND	----	0.01	mg/l
Total Zinc	0.14	3.36	ND	2.47	ND	0.33	----	0.05	mg/l
Total Iron	0.24	0.16	0.3	ND	0.12	ND	----	0.05	mg/l
Total Volatile Organic Compounds	0.007	0.004	----	----	----	----	1.0	----	mg/l

Notes:
 ND = Not Detected
 Total Volatile Organic Compounds measured in Round 1 for screening purposes only.
 Results printed in **Bold** exceed General Permit limits.
 MDL's for Total Volatile Organic Compounds vary for each constituent. See Laboratory Reports in Appendix D.

6.0 FINDINGS

Findings based on HRP's site inspections, interviews, document reviews and laboratory results are summarized below.

6.1 Pure Water Facility

6.1.1 *Carbon Filters*

As seen in Table 2, the carbon filter discharge meets the effluent limitations set by the General Permit. Since this discharge existed before the effective date of the General Permit (May 1, 1995), in accordance with Section 4(c)(2)(H) of the permit, it does not require certification from the town of Groton.

6.1.2 *Mixed Media Beds*

The first and third rounds of the mixed media bed samples of both the backwash and final rinse met the effluent limits set by the Water Treatment Wastewater General Permit. Prior to the second round of sampling, however, the caustic pumps malfunctioned and regeneration of Unit 2 was terminated prematurely at this stage. The caustic pump was repaired but was inadvertently left in manual mode instead of automatic mode. Regeneration was then started again from the initial backwash step. Therefore, the which backwash sample exceeded the upper pH limit of the General Permit because of caustic remaining in the filter from the aborted regeneration. The lower pH limit of the General Permit was then exceeded by the final rinse because the caustic pumps were not tuned on (were in manual mode). The first and third rounds of sampling are considered representative of the actual discharge when all equipment is operating properly, whereas the second round was not.

This discharge also existed before the effective date of the General Permit and therefore does not require certification from the town of Groton. The sample results are summarized in Tables 3A and 3B.

6.1.3 Neutralization Tank

The neutralization tank discharge met all the effluent limitations required by the General Permit. This discharge also existed before the effective date of the General Permit and therefore does not require certification from the town of Groton. The sample results are summarized in Table 4.

6.2 Power Plant Water Softeners

Tables 5A-5D present the sample results from power plant water softener discharges. All effluent limitations set by the General Permit were met with the exception of three pH exceedances of the lower pH limit of 5.0 set by the General Permit.

The pH exceedances occurred in the first and second round samples during the last 10% of the brine phase and the first 10% of the fast flush phase. The brine phase consists of a brine or sodium chloride solution rinse, which occurs simultaneously with a slow water rinse. During the fast flush, excess brine is being rinsed out of the unit. Therefore, the discharge from the first 10% of the fast flush phase contains a greater concentration of brine than the last 10% of the phase. During the third round of sampling, the brine phase took 1 hour instead of the usual 35 to 45 minutes. Because the brine supply tank took longer to empty than in the first 2 rounds, it is likely that the valve allowing the brine to enter the softener was not completely open. This would have allowed a greater dilution of the brine by the simultaneous slow water rinse, which would result in lesser concentrations of brine in

the discharge. The exceedences measured in the first and second rounds might be avoided by pumping the brine at the slightly slower rate used in the third round.

Since this discharge existed before the effective date of the General Permit (May 1, 1995), according to Section 4(c)(2)(H) of the permit it does not need certification from the town of Groton.

7.0 RECOMMENDATIONS

7.1 Pure Water Facility

- a. Contact the manufacturer to inquire about reprogramming or reconfiguring the unit to allow SUBASENLON to monitor the pH of the mixed media bed backwash and final rinse more closely and redirect the discharge to the neutralization tank if the discharge pH is not within the pH limits (5.0-10.0) of the General Permit.
- b. Inspect and maintain caustic and acid pumps on a regular basis to ensure that they are in good working order. Refer to the Operation and Maintenance Manual. Twice per year is recommended.
- c. Install a high level alarm in the neutralization tank to ensure no overflows will occur.

7.2 Power Plant Water Softeners

- a. Install flow meters on the discharge pipes of each unit to accurately monitor the flow rates of the discharges as required by the General Permit, Section 5(c)(4)(C).
- b. Extend the length of the brine phase of regeneration by decreasing the flow rate of brine into the softener while using the same volume of brine. This will allow for greater dilution of the brine by the simultaneous slow rinse and eliminate low pH readings at the end of the brine phase and the beginning of the fast flush phase.
- c. Replace the old resin with new resin to increase the length of time each unit is in operation before regeneration is necessary. This is particularly needed in Unit 2.

7.3 General Recommendations

- a. Monitor the discharges in accordance with Section 5(c)(4)(C) of the General Permit by sampling each of the discharges quarterly. Also, record the Total Daily Flow of each discharge once each month. A log for recording this information is included below.
- b. Maintain a copy of this report on-site as well as the logs referenced above in order to satisfy the recording requirements in Section 5(d)(2) of the General Permit.
- c. Report any permit violations to the CT DEP and the Groton POTW as described in Section 5(e) of the General Permit.

- d. Keep all information, records and analytical results regarding these discharges on-site at all times as required by Section 5(d)(1) of the General Permit.

DISCHARGE LOG

**NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT**

YEAR: _____

TREATMENT UNIT: _____

Month	Chemical¹ Parameters	Daily Flow² (gpd)	Date of Sam- pling or Flow Recording	Signature of SUBASENLON Sampling Personnel
JANUARY				
FEBRUARY				
MARCH				
APRIL				
MAY				
JUNE				
JULY				
AUGUST				
SEPTEMBER				
OCTOBER				
NOVEMBER				
DECEMBER				

NOTES:

1. One (1) sample per quarter required.
2. For one (1) day per month.

APPENDIX A

**GENERAL PERMIT FOR THE DISCHARGE
OF WATER TREATMENT WASTEWATER**



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
GENERAL PERMIT FOR THE DISCHARGE OF
WATER TREATMENT WASTEWATER



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GENERAL PERMIT FOR THE DISCHARGE OF WATER TREATMENT WASTEWATER

Section 1. Authority

This general permit is issued under the authority of section 22a-430b of the General Statutes.

Section 2. Definitions

The definitions of terms used in this general permit shall be the same as the definitions contained in section 22a-423 of the General Statutes and section 22a-430-3(a) and section 19-13-B102(a) of the Regulations of Connecticut State Agencies. If any term has multiple definitions in such statutes and regulations, the definitions in section 22a-423 of the General Statutes, and section 22a-430-3 (a) of the Regulations of Connecticut State Agencies shall apply. In addition, the following definitions shall apply:

"Coastal waters" means those waters of Long Island Sound and its harbors, embayments, tidal rivers, streams and creeks which contain a salinity concentration of at least five hundred parts per million under low flow conditions.

"Filtration" means a process of reducing concentrations of sand, grit, iron, manganese, or turbidity by passing water through a straining media.

"Filter to waste" means the initial volume of filtrate produced following backwash of a filter, or following the initial construction, rebuilding or maintenance of a filter.

"Laboratory wastewaters" means laboratory utensil cleaning wastewaters with no chemical additives or reagents containing any of the substances listed in Appendix B, Tables II, III, and V, or Appendix D of section 22a-430-4 of the Regulations of Connecticut State Agencies. Laboratory wastewater covered under this general permit includes only that which is generated at a facility which treats water supplies for potable or industrial process use.

"Oxidation/filtration" means the process of converting an undesirable dissolved solid to a particulate which is then removed by the addition of ozone, oxygen, manganese dioxide or permanganate followed by filtration.

"Permittee" means any person who or municipality which initiates, creates, originates or maintains a discharge in accordance with Section 3 of this general permit.

"Point of entry water treatment device" means a device for the treatment of potable water which is located at the water service entry in a building.

"POTW Authority" means the chairperson, or duly authorized representative, of the Water Pollution Control Authority which owns or operates a Publicly Owned Treatment Works.

"Public Water System" as defined in section 19-13-B102(a) of the Regulations of Connecticut State Agencies.

~~"Raw water" means water withdrawn from a reservoir or well prior to any physical treatment of such water.~~

"Registrant" means a person who or municipality which submits a registration in accordance with Section 4 of this general permit.

"Registration" means a completed registration form and registration fee submitted to the Commissioner pursuant to Section 4 of this general permit.

"Site" means geographically contiguous land on which an authorized activity takes place under this general permit. Non-contiguous land owned by the same person and connected by a right-of-way which such person controls and to which the public does not have access shall be deemed the same site.

"Source Water" as defined in section 19-13-B102(a) of the regulations of Connecticut State Agencies.

"Water Quality Standards" means water quality standards as adopted by the Commissioner in accordance with section 22a-426 of the General Statutes.

"Water Treatment Facility" means any system, excluding a reservoir, used to treat water for potable or industrial process use, including but not limited to any industrial, municipal or private water treatment facility.

"Water Treatment Wastewaters or WTW" means wastewaters generated by a well or water treatment facility, used to produce water supplies for potable or industrial process use, including but not limited to wastewaters from the following:

- (a) clarifier tank sludge blowdown;
- (b) clarifier tank supernatant;
- (c) facility and equipment cleaning rinsewaters, excluding rinsewaters generated by the rinseout of containers used to store any chemical for which an effluent limitation is not specified in section 5(b) of this general permit;
- (d) activated carbon and filter media backwash, including filter to waste, and regeneration wastewaters;
- (e) raw or treated water from equipment leakage and bleed-off;
- (f) mechanical and non-mechanical sludge dewatering wastewaters;
- (g) infiltration bed and settling lagoon wastewaters;
- (h) raw or treated water from process sampling points and on-line process analytical instrumentation;

- (i) ~~designed overflows from storage tanks and other WTW facilities resulting from emergency conditions and routine maintenance;~~
- (j) start-up wastewaters for water treatment plants, facilities or equipment which commenced operation after the date of issuance of this General Permit;
- (k) ion exchange regeneration wastewaters;
- (l) reverse osmosis brine; and
- (m) laboratory wastewaters.

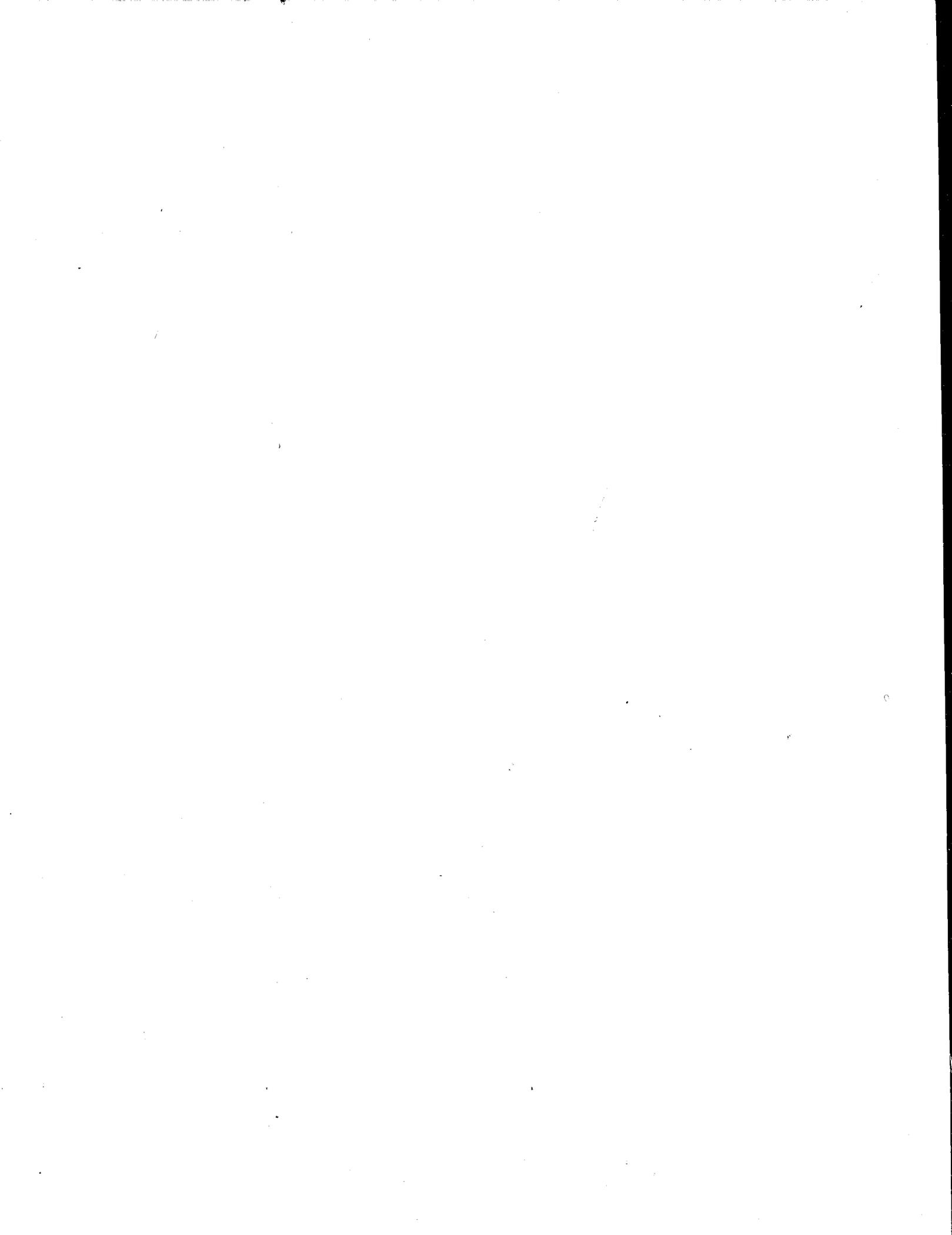
WTW does not include wastewaters generated by any residential or commercial point of entry treatment device.

Section 3. Authorization Under This General Permit

(a) Activities Authorized

This general permit authorizes discharges comprised solely of WTW, as defined above, provided:

- (1) The discharge is *not* authorized by a valid individual permit issued under section 22a-430 of the General Statutes.
- (2) For any discharge to a Publicly Owned Treatment Works (POTW) initiated after the effective date of this general permit, the information specified in Section 4(c)(2)(H) of this general permit has been submitted to the POTW authority and the POTW authority has approved the discharge.
- (3) The discharge of WTW within a coastal boundary as defined in section 22a-94 of the General Statutes is consistent with all applicable goals and policies of the Coastal Management Act specified in section 22a-92 of the General Statutes.
- (4) The discharge of WTW does not threaten the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat designated as essential to such species in accordance with section 26-310 of the General Statutes.
- (5) No categorical effluent limitation standard or guideline adopted by the U.S. Environmental Protection Agency under the federal Clean Water Act is applicable to the discharge.



Any discharge of water, substance or material into the waters of the state other than those specified in this subsection is not authorized by this general permit. Any person who or municipality which wishes to initiate, create, originate or maintain such other discharge shall first apply for and obtain an individual permit under section 22a-430 of the General Statutes.

(b) Geographic Area

This general permit applies throughout the State of Connecticut.

(c) Effective Date and Expiration Date

This permit is effective on May 1, 1995 and expires on May 1, 2000 for discharges of WTW to surface waters, and on May 1, 2005 for discharges of WTW to a POTW or to the groundwater.

(d) Effective Date of Authorization

The effective date of authorization under this general permit is the effective date of this general permit listed in subsection (c) of this Section or the date the discharge is initiated in accordance with the requirements of Section 3 (a) of this General Permit, whichever is later.

(e) Issuance of an Individual Permit

When the Commissioner issues an individual permit under section 22a-430 of the General Statutes authorizing a discharge previously authorized by this general permit, the applicability of this general permit as it applies to the individual permittee is automatically terminated on the effective date of the individual permit.

Section 4. Registration Requirements

(a) Who Must Submit a Registration

Any person who or municipality which initiates, creates, originates or maintains a WTW discharge as defined in this general permit and in accordance with Section 3 of this general permit, with the exception of those discharges specified below, shall submit a completed registration form and fee. For any discharge of WTW which was initiated on or before the effective date of this general permit, such registration shall be submitted no later than 365 days after the effective date of this permit, unless the discharge is covered by an individual permit. Discharges which are authorized by an individual permit, and which otherwise would qualify for this general permit, shall register for coverage under this general permit at least 180 days prior to expiration of the individual permit. For any other discharge of WTW, the registration shall be submitted before such discharge is initiated. If the source or activity generating the discharge for which a registration is submitted under this general permit is owned by one person or municipality but is leased or in some other way the legal responsibility of another person or municipality (the operator), ~~it is the operator's responsibility to submit the registration required by this general permit.~~

Any person initiating, creating, originating or maintaining any of the following discharges pursuant to this general permit need not submit a registration or fee:

- A discharge consisting only of raw water;
- Any discharge from pump leakage, sampling taps, or on-line analytical instrumentation which are not discharged directly to a surface water body;
- Any discharge generated from the backwash of filtration, oxidation/filtration, or ion exchange units designed to remove iron, manganese, sand, grit, or turbidity from wells used as a source of potable water supply provided the discharge is less than 500 gallons per day and directed to either a sanitary sewer or the groundwaters of the state.

(b) Scope of Registration

A registration shall only include discharges of WTW from a single site. All discharges of WTW occurring at a particular time for a single site shall be included in the same registration.

(c) Contents of Registration

(1) Fees

(A) A registration fee of \$250 for any person or \$125 for any municipality shall be submitted with a completed registration form. A registration shall not be deemed complete and no activity shall be authorized by this general permit unless the registration fee has been paid in full.

(B) The registration fee shall be paid by certified check or money order payable to the Department of Environmental Protection. The check shall state on its face, "Water Management Permit Fee".

(C) The registration fee is nonrefundable.

(2) Registration Form: A registration shall be submitted on a form prescribed by the Commissioner and shall include, without limitation, the following:

(A) Legal name, address, and telephone number of the person or municipality proposing to initiate, create, originate or maintain the discharge and of the person who or municipality which owns the activity or source generating the discharge. If any such person(s) is a corporation transacting business in Connecticut, include the exact name as registered with the Connecticut Secretary of the State.

(B) Legal name, address, and telephone number of the owner of the property on which the discharge is proposed to be located.

(C) Legal name, address, and telephone number of the registrant's attorney or other representative, if any.

- (vii) any other information necessary to determine whether such discharge will adversely impact the performance of the POTW and cause any violation of their discharge permit, or render the sludge generated at the POTW unsuitable for landfilling, land application, or incineration.
- (I) For any discharge initiated on or before the effective date of this general permit, which does not comply with the treatment and control requirements contained in Section 5(a)(6) as of the effective date of this general permit, a report detailing all such conditions or terms which are not being complied with, and a schedule of modifications or facility upgrades required to meet any such term or condition.
- (J) A plan for minimizing the use of copper if the registrant utilizes a water supply reservoir and copper compounds are used, or intended to be used in the water supply reservoir. Such plan shall take into account, at a minimum, an assessment of nutrient loadings in the watershed, the amount of copper needed to control algae, intake levels, and opportunities for recycling the wastewater stream and shall include a plan for monitoring algae and using copper sulfate only when needed to control algae.
- (K) The following certification, signed by a professional engineer licensed to practice in Connecticut:
- (i) For any WTW discharge which is required to be registered and which has not been initiated, created, originated or maintained as of the date the registration is submitted:
- "I certify that in my professional judgement proper operation and maintenance of any systems installed to treat the discharge(s) which are the subject of this registration will ensure that all effluent limitations and other conditions in the general permit for the discharge of WTW issued on May 1, 1995 are met, or if there is no treatment system for such discharge(s), that the discharge(s) will meet all effluent limitations and conditions of such general permit without treatment. This certification is based on my review of engineering reports and plans and specifications describing (1) the proposed discharges and (2) any proposed treatment system for the wastewaters to be discharged. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements."
- (ii) For any WTW discharge which exists on the date of issuance of this general permit and which is required to be registered:
- "I certify that in my professional judgement all discharge(s) which are the subject of this registration comply with all conditions of the general permit for the discharge of WTW issued on May 1, 1995, including but not limited to all effluent limitations in Section 5(b) of such general permit,

- (i) Regeneration and backwash wastewaters from sodium chloride ion exchange units.
 - (ii) Activated carbon backwash and regeneration wastewaters for filters which treat for volatile organic compounds, except that initial start-up backwash conducted for the removal of loose carbon fines may be discharged to any surface water or groundwater provided such initial start-up backwash has been pretreated to remove solids in accordance with section 5(b) of this general permit.
 - (iii) Other WTW's containing chemical additives which contain any substances identified in Appendix B, Tables II, and V, and Appendix D of section 22a-430-4 of the Regulations of Connecticut State Agencies, except those WTW discharges which do not exceed: (a) all effluent limits specified in sections 5.(b)(1) and 5.(b)(2) of this general permit; or (b) if no such limit is specified in said sections 5.(b)(1) or 5.(b)(2), the most restrictive aquatic life or human health criteria listed in Appendix D of the Water Quality Standards .
- (B) The following types of WTW shall not be discharged to a surface water without treatment or best management practices to ensure compliance with effluent limitations specified in Section 5(b)(1) and numerical water quality criteria for chemical substances listed in Appendix D of the Water Quality Standards:
- (i) Facility and equipment cleaning rinsewaters containing *no* detergents or surfactants;
 - (ii) Water discharged from on-line analytical instruments;
 - (iii) Start-up wastewaters for new facilities or equipment containing *no* detergents or surfactants;
 - (iv) Designed emergency overflows of water, other than raw water, from any water treatment plant, unless best management practices have been implemented to minimize this type of discharge such as high level alarms, solenoid shut-off valves, or containment. For any existing water treatment plant with a designed emergency overflow to a surface water, the permittee shall submit a report to the Commissioner within one year of permit issuance detailing existing or proposed best management practices. Such report shall be submitted to the following address:

INDUSTRIAL PERMIT SECTION
WATER MANAGEMENT BUREAU/PERD
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD CT 06106-5127

- (C) The following types of WTW may be discharged directly to a POTW without treatment; and shall be discharged to the surface water or ground water *only* after treatment for solids removal to meet the effluent limitations specified in Section 5(b)(1)(F) for total suspended solids:
- (i) Clarifier tank sludge blowdown;
 - (ii) Green sand filter ion exchange regeneration wastewaters;
 - (iii) filter media backwash and regeneration wastewaters.
- (D) Clarifier tank sludge blowdown shall not be discharged to subsurface disposal systems.
- (E) For discharges to a surface water or to the ground water for which a registration is required to be submitted by section 4(a) of this general permit except discharges which contains no chemicals, including but not limited to treatment chemicals used for taste/odor control, coagulants, corrosion control or disinfection, and except discharges from emergency overflows, the maximum daily flow of all discharges of WTW generated by a registrant on one site shall not exceed 1,000,000 gallons per day.
- (F) For discharges to a subsurface disposal system, the maximum daily flow of all discharges of WTW generated by a registrant on one site shall not exceed 50,000 gallons per day.
- (G) All lagoons used to treat or convey WTW and inlet and outlet structures, gates, valves, motors, pumps, and controls associated with such lagoons shall be designed and constructed to minimize short-circuiting of flow, vandalism and tampering.
- (H) Stormwater runoff shall not be discharged to any lagoons and beds which are used for the treatment of WTW, but may be discharged to lagoons or beds used to treat stormwater run-off and which are also used to hold emergency overflows of WTW.
- (I) Lagoon and beds used to treat WTW, and areas adjacent to such lagoons and beds, shall be graded to prevent stormwater runoff from discharging into them.
- (J) For all discharges of WTW to groundwater except those for which no registration is required to be submitted pursuant to section 4(2) of this general permit, those WTW discharges to the groundwater which require submission of a registration, the following minimum separating distances shall be maintained between any point of a disposal system and ~~any potable water supply well which is not downgradient~~ and also not associated with this discharge:

- (i) for potable water supply wells yielding less than 10 gallons per minute - 75 feet;
 - (ii) for potable water supply wells yielding 10 or more gallons per minute but less than 50 gallons per minute - 150 feet;
 - (iii) for potable water supply wells yielding more than 50 gallons per minute - 200 feet.
- (K) For discharges of WTW to the ground water which require submission of a registration, the minimum separating distance between any point of the disposal system and any downgradient potable water supply well shall be 1,000 feet, unless a ground water monitoring program has been approved in writing by the Commissioner. The minimum separating distance between a disposal system and downgradient potable water supply well, if a ground water monitoring program has been approved in writing by the Commissioner, shall be 200 feet. For the purpose of this subparagraph, Downgradient refers to groundwater gradient if it is known, or if no data indicating groundwater gradient is known, topographic gradient.
- (L) For discharges of WTW to the ground water, there shall be a minimum depth of 2 feet between the bottom of any lagoon or bed used to treat or convey WTW and any underlying bedrock surface, and for any lagoon constructed after the effective date of this general permit, at least 2 feet separation between the bottom of any such lagoon or bed and the seasonal high ground water table.
- (M) Discharges of WTW to the ground water shall not interfere with another subsurface disposal system and its treatment of wastewater, or render a drainfield or subsurface disposal system incapable of infiltration, or cause such drainfield or subsurface system to exceed its hydraulic capacity.

(b) Effluent Limitations

(1) For discharges to a surface water:

(A) Temperature

The temperature of the discharge shall not increase the temperature of the receiving water above 85°F for freshwaters, and 83°F for marine waters, nor shall the discharge raise the temperature of the receiving stream more than 4°F at any time, except for marine waters during the months of July, August, and September, during which time the discharge shall not raise the temperature of the receiving waters more than 1.5°F.

(B) Salinity

Discharges of WTW to coastal waters shall not lower the salinity of the receiving water by more than 5 percent.

(C) pH

The pH of the discharge shall not be less than 5.0 nor greater than 9.0 standard units at any time.

(D) Appearance

Discharges of WTW shall not contain a visible oil sheen, visible discoloration, or foaming, or cause any such condition in the receiving water body.

(E) Chemical Limitations

Discharges of WTW to any surface water shall be analyzed for Total Copper, Total Zinc, Total Residual Chlorine and any additional substances, including but not limited to *inorganic chemicals, pesticides, organic chemicals* which have been detected within the previous twelve months in any sample analyzed in accordance with section 19-13-B102 of the Regulations of Connecticut State Agencies, except any substance added to the finished water which substance is not used in treating the raw water or otherwise introduced directly or indirectly into the WTW, including but not limited to disinfectant, fluoride, and corrosion control chemicals. Discharges of WTW to any surface water shall also be analyzed for any substance the permittee has reason to believe could be present within the raw water supply at a concentration exceeding a Maximum Contaminant Level (MCL) as defined in Section 19-13-B102 of the Regulations of Connecticut State Agencies. No discharge of WTW to any surface water shall contain such substance in excess of any MCL. Samples shall be collected in accordance with the sample requirements set forth in Section 5(c)(5) of this general permit.

- (F) In addition, for all discharges to a surface water, the following parameters shall also be monitored and the concentration of such substances in the discharge shall not exceed the maximum concentrations listed in table 1:

TABLE 1

<u>Pollutant Parameter</u>	<u>Maximum Concentration</u>
Total Aluminum	1.5 mg/l
Total Manganese	3.0 mg/l
Total Iron	3.0 mg/l
Total Dissolved Solids	1500.0 mg/l
Total Suspended Solids	20.0 mg/l
Total Settleable Solids	--- mg/l (no limit)

All discharges of WTW to surface water initiated after the effective date of this general permit shall not exceed the limits specified in Table II. Any WTW discharge initiated on or before the effective date of this general permit, the limits specified in table II shall be met no later than three years after the issuance date of this permit.

TABLE II

<u>Parameter</u>	<u>Instream Waste Concentration⁽¹⁾</u>			
	<u>Reservoir</u>	<u><1%</u>	<u>1% - 10%</u>	<u>>10%</u>
Copper	0.217 mg/l	1.09 mg/l	0.11 mg/l	10.9 ug/l
Total Chlorine Residual	0.262 mg/l	0.90 mg/l	0.09 mg/l	9.0 ug/l
Zinc	0.557 mg/l	2.0 mg/l	0.28 mg/l	27.8 ug/l
Toxicity	LC ₅₀ > 100%	LC ₅₀ > 100%	LC ₅₀ > 100%	NOAEL = 100%

⁽¹⁾The Instream Waste Concentration shall be calculated by dividing the maximum daily flow of the discharge by the sum of the maximum daily flow of the discharge and the seven day ten year low flow of the receiving stream and multiplying the result by 100.

(2) For discharges to ground water:

(A) Temperature

No temperature limitation.

(B) pH

The pH of the discharge shall not be less than 5.0 nor greater than 9.0 standard units at any time.

(C) Chemical Limitations

Discharges of WTW to any ground water shall be analyzed for those substances including, but not limited to: *inorganic chemicals, pesticides, organic chemicals* which have been detected within the last twelve month period as a result of sampling required under section 19-13-B102 of the Public Health Code of the State of Connecticut as amended. Discharges of WTW to any ground water shall also be analyzed for any substance which can reasonably be expected to be present within the raw water supply at concentrations above any MCL. ~~No discharge of WTW to ground water shall contain such inorganic chemicals, pesticides, organic chemicals in concentrations in excess of any~~

MCL and such discharge of WTW shall conform to the ground water standards set forth in the Water Quality Standards and Classifications of the Connecticut Department of Environmental Protection. Pollutants shall be sampled in accordance with the sample requirements set forth in Section 5(c)(5) of this general permit.

- (D) In addition, for all discharges to any ground water, the following parameters shall also be monitored and shall not exceed the maximum concentrations listed below:

<u>Pollutant Parameter</u>	<u>Maximum Concentration</u>
Total Residual Chlorine	3.0 mg/l
Total Dissolved Solids	1500.0 mg/l
Total Aluminum	1.5 mg/l
Total Manganese	3.0 mg/l
Total Iron	3.0 mg/l

- (S) For discharges to a PCTW:

- (A) Temperature

The temperature of the discharge shall not exceed 150°F at any time, or cause temperatures in excess of 104°F at the POTW.

- (B) pH

The pH of discharges of WTW shall not be less than 5.0 nor greater than 10.0 standard units at any time.

- (C) Chemical Limitations

Discharges of WTW to a POTW shall be analyzed for the following parameters, and shall not exceed the maximum concentrations listed below at any time:

<u>Pollutant Parameter</u>	<u>Maximum Concentration</u>
Total Settleable Solids	--- mg/l
Total Suspended Solids	--- mg/l
Total Residual Chlorine	--- mg/l
Total Aluminum	--- mg/l
Total Copper	--- mg/l
Total Manganese	--- mg/l
Total Zinc	--- mg/l
Total Iron	--- mg/l
*Total Volatile Organics	1.0 mg/l

*Testing for total volatile organics shall be required for only those discharges for which there is reason to suspect their presence, such as activated carbon backwash and regeneration wastewaters for those filters which treat for volatile organic compounds.

(c) Monitoring Requirements

(1) Aquatic toxicity: Samples collected for determination of aquatic toxicity shall be tested using the NOAEL protocol specified in section 22a-430-3(j)(7)(a) of the Regulations of Connecticut State Agencies. The following additional specifications apply:

- (A) Toxicity tests shall be initiated within 36 hours of sample collection.
- (B) Toxicity tests shall employ neonatal (less than 24 hours old) *Daphnia pulex* and juvenile (30 +/- 5 days old) *Pimephales promelas* as test species.
- (C) Toxicity tests shall be 48 hours in duration.
- (D) The permittee shall retain, for the period of time required by section 22a-430-3(j)(9)(B) of the Regulations of Connecticut State Agencies, records of information necessary to verify the validity of aquatic toxicity test procedures, including but not limited to all records of organism mortality and environmental conditions noted during these tests.
- (E) Samples collected for determination of aquatic toxicity analysis shall also be analyzed for the chemical parameters listed in Section 5(d)(1), the results of which may be used to fulfill the requirement for chemical monitoring of effluent quality under this general permit.

(2) Chemical Analysis:

- (A) Chemical analysis to determine compliance with surface water effluent limits and conditions established in this general permit shall be performed using methods which have been approved by the U.S. Environmental Protection Agency in accordance with 40 CFR 136 and are capable of quantification of the parameter

at the concentration present in the sample without sample concentration. Failure to use an analytical method capable of achieving the minimum analytical quantification levels specified during analysis of effluent samples shall constitute a permit violation.

<u>Pollutant Parameter</u>	<u>Minimum Analytical Quantification Level</u>
Total Copper	5.0 ug/l
Total Lead	5.0 ug/l
Total Nickel	5.0 ug/l
Total Zinc	5.0 ug/l
Total Aluminum	100.0 ug/l

- (B) Chemical analysis to determine compliance with effluent limits and conditions for discharges to the groundwater or to a POTW shall be performed using the methods approved in accordance with 40 CFR 136 which are capable of achieving a limit of detection below the level established as an effluent limitation in Section 5(b) of this general permit.
- (C) For those discharges required to be tested for total volatile organics, the analysis required by this subsection shall be performed using EPA methods 8010 and 8020.
- (D) For discharges to ground water only, samples collected shall be prepared by settling of solids and filtration through a 0.45 μ M filter prior to analysis.

(3) Monitoring Location

All wastewater samples shall be composed solely of WTW, prior to combination with wastewaters of any other type or with the receiving waters. For discharges to ground waters, samples shall be collected at the influent to the treatment system which directs the WTW into the ground waters, including but not limited to a lagoon or a subsurface drainfield.

(4) Monitoring Frequency

Monitoring to verify compliance with effluent limitations in Section 5(b) of this general permit shall be performed according to the following schedule:

(A) For discharges to a surface water:

<u>Monitoring Frequency</u>			
<u>Maximum Daily Flow</u> (gallons per day)	<u>Total Daily Flow</u>	<u>Aquatic Toxicity</u>	<u>Chemical Parameters</u>
Less than 5,000	monthly	none	annually
5,000 - 49,999	monthly	annually	quarterly
≥ 50,000	twice per month	twice per year	monthly

(i) In addition, except as provided in subdivision (ii) of this subparagraph, all surface water discharges, regardless of flow volume, shall on a weekly basis be monitored for pH, and total residual chlorine if chlorine is added prior to WTW generation or can be expected to be found in the discharge. If the discharge occurs less frequent than weekly, each discharge shall be monitored for pH and total residual chlorine.

(ii) Monitoring shall only be for those parameters listed in Table I in Section 5.b.(1)(F), except that required to prepare the registration required by section 4 of this general permit, pursuant to this subparagraph for any discharge to a surface water if the permittee certifies to the Commissioner in writing that the discharge does not contain any added chemicals or byproducts thereof, including but not limited to chemicals used for algae control within a reservoir, coagulants used to aid in solids removal and disinfectants, corrosion control chemicals, or fluoride.

(B) For all discharges to ground water:

<u>Monitoring Frequency</u>		
<u>Total Daily Flow</u>	<u>Aquatic toxicity</u>	<u>Chemical Parameters</u>
monthly	none	*twice per year

*The frequency of monitoring for chemical parameters may be reduced to annually, if the results of 3 consecutive tests document that all chemical parameters do not exceed the limitations specified in Section 5(b)(2) of this general permit.

(C) For discharges to a POTW:

<u>Monitoring Frequency</u>		
<u>Maximum Daily Flow</u> (gallons per day)	<u>Total Daily Flow</u>	<u>Chemical Parameters</u>
Less than 5,000	monthly	annually
5,000 - 49,999	monthly	quarterly
≥ 50,000	twice per month	monthly

(5) Sampling

- (A) Samples collected for purposes of monitoring aquatic toxicity and chemical parameters shall be grab samples.
- (B) For batch discharges of WTW to surface waters, ground waters, or to a POTW, at least two samples shall be taken at the frequency specified in Section 5(c)(4) of this general permit. One sample shall be taken during the first 10 percent of the time the discharge is expected to continue, and one sample shall be taken during the last 10 percent of the time the discharge is expected to continue.

(6) Representative Samples

All samples shall be representative of the discharge to assure compliance with effluent limitations. Any permittee who applies copper sulfate to reservoirs shall sample any surface water or POTW discharge authorized by this general permit when the discharge would be expected to have its highest concentration of copper.

(d) Reporting and Recordkeeping Requirements

- (1) Except as provided below, or as otherwise specified by the Commissioner, all analytical results and other information required under this general permit shall not be required to be submitted to the Commissioner but instead shall be retained on-site or at the permittee's principal place of business in Connecticut, as required by Regulations of Connecticut State Agencies section 22a-430-3(j)(9)(B), and shall be made available to the Commissioner, or the local POTW authority immediately upon request.
- (2) For all discharges of WTW, the permittee shall maintain records for review and inspection by the Department of Environmental Protection. Such records shall include, at a minimum, the information below:
 - (A) frequency of discharge, per day, per month, and per year;
 - (B) duration of discharge;
 - (C) daily solids discharged, in pounds per day in dry weight for each day in which solids monitoring is required for discharges to a POTW only;
 - (D) description of type of discharge, such as filter backwash, settling wastes, continuous, infrequent batch processing, or combined;

- (E) for discharges to ground water, the name of the nearest watercourse downgradient from the site;
 - (F) a list of materials/chemicals used in treatment process (e.g. alum, polymer, etc.);
 - (G) a site plan at scale of 1" = 100' or less showing location of all discharge points, topography, north arrow, bar scale, buildings, lagoons, watercourses, and wetlands.
 - (H) For each discharge, a detailed 8-1/2 X 11 inch flow diagram and plan showing all major treatment and discharge components. Identify and label each discharge by assigning consecutive numbers to each discharge beginning with 001.
 - (I) Indicate whether discharge is on a public water supply watershed or aquifer as mapped to Level A standards (use level B aquifer maps if Level A aquifer maps are unavailable), as specified in section 22a-354c of the General Statutes. If yes, indicate name of supply and approximate distance from discharge. If on an aquifer, indicate whether the site is on a direct or indirect recharge area;
- (3) For discharges to ground water the permittee shall maintain on site, plans and specifications of any lagoons or other subsurface drainage system. At a minimum, such plans and specifications shall include:
- (A) plan view and cross sections;
 - (B) influent and effluent locations;
 - (C) location of seasonal high ground-water elevation;
 - (D) elevation of bedrock, if less than 10 feet from the bottom of the drainage system or other discharge point, otherwise indicate "greater than 10 feet".

(e) Recording and Reporting of Violations

- (1) If any analytical results or monitoring data collected under this general permit, or any other information, indicate that a violation of an effluent limitation or another condition of this general permit has occurred, such violation shall be recorded within twenty-four hours of receipt of such information in a log which contains at least the following information:
 - (A) the condition(s) or effluent limitation(s) violated;
 - (B) the analytical results and information demonstrating such violation(s);
 - (C) the cause of the violation(s), if known;

- (D) period of noncompliance including exact dates and times;
 - (E) if the noncompliance has not been corrected, the anticipated time it is expected to continue, and, upon correction, the date and time of correction;
 - (F) steps taken and planned to reduce, eliminate and prevent a recurrence of the noncompliance, and the dates such steps are executed; and
 - (G) the name and title of the person recording the information and the date and time of such recording.
- (2) The permittee shall comply with the following requirements within the time frame specified, unless an alternative time frame is approved in writing by the Commissioner, if analytical results, monitoring data or other information indicate (a) three simultaneous or consecutive violations of the same or different conditions applicable to any single discharge covered by this general permit (e.g. three effluent limitation violations involving the same effluent limitation, or one effluent limitation violation, one flow violation, and one recording violation of the same discharge), (b) four violations of the same or different conditions of this general permit in any consecutive twelve month period, or (c) the exceedance of any effluent limitation, other than that for pH, by more than two hundred percent, and for pH, by more than one standard unit:

- (A) Within twenty days after the third simultaneous or consecutive violation of a specific discharge effluent limitation, or fourth annual violation, as applicable, or within ten days after the exceedance of any effluent limitation, other than that for pH, by more than two hundred percent, and for pH by more than one standard unit, the permittee shall submit to the Commissioner a report prepared by a professional engineer licensed to practice in Connecticut. Such report shall contain at least the information required to be recorded under paragraph (1) of this subsection for each of the violations which led to the requirement for such report, and for each subsequent violation which occurred prior to the date the report was completed. Such report shall be submitted to the following address:

ENFORCEMENT SECTION
WATER MANAGEMENT BUREAU/PERD
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD CT 06106-5127

- (B) Within sixty days after the deadline for submitting the report specified in the preceding paragraph, the permittee shall submit to the Commissioner the following certification signed by a professional engineer licensed to practice in Connecticut:

"I certify that in my professional judgement all discharge(s) which are maintained at the facility referenced herein, and which are authorized by the general permit for WTWs issued on May 1, 1995 comply with all conditions of said permit,

including but not limited to all effluent limitations in Section 5(b) of such general permit, and proper operation and maintenance of any systems installed to treat such discharge(s) will insure that all effluent limitations and other conditions in such general permit are met, or if there is no treatment system for such discharge(s), that the discharge(s) will meet all effluent limitations and conditions of such general permit without treatment. This certification is based in part on my review of analyses of a minimum of three effluent samples collected, preserved, handled and analyzed in accordance with 40 CFR 136, which samples were representative of the discharge(s) during standard operating conditions, were taken within the previous 12 months, at least one week apart, and were of the type(s) specified in Section 5(c)(5) of said general permit, and were analyzed for the parameters specified in Section 5(c)(1) and (2) of said general permit. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements."

- (C) For any discharge to a POTW, the Permittee shall notify the POTW authority of each violation and a copy of any report required to be submitted under this subsection shall also be sent to the POTW which receives the discharge.

Section 6. General Conditions

- (2) The permittee shall comply with the following Regulations of Connecticut State Agencies which are hereby incorporated into this general permit, as if fully set forth herein:

- (1) Section 22a-430-3:

Subsection (b) General - subparagraph (1)(D) and subdivisions (2), (3),(4) and (5)
Subsection (c) Inspection and Entry
Subsection (d) Effect of a Permit - subdivisions (1) and (4)
Subsection (e) Duty to Comply
Subsection (f) Proper Operation and Maintenance
Subsection (g) Sludge Disposal
Subsection (h) Duty to Mitigate
Subsection (i) Facility Modifications, Notification - subdivisions (1) and (4)
Subsection (j) Monitoring, Records and Reporting Requirements -
subdivisions (1), (6), (7), (8), (9) and (11) (except subparagraphs (9)(A)(2), and
(9)(C))
Subsection (k) Bypass
Subsection (m) Effluent Limitation Violations
Subsection (n) Enforcement
Subsection (o) Resource Conservation
Subsection (p) Spill Prevention and Control
Subsection (q) Instrumentation, Alarms, Flow Recorders
Subsection (r) Equalization

(2) Section 22a-430-4:

Subsection (t) - Prohibitions

Subsection (p) - Revocation, Denial, Modification

Appendices

(b) The permittee shall comply with the following additional terms and conditions:

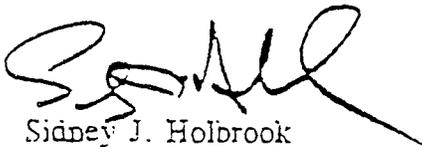
- (1) The permittee is authorized to discharge (a) pollutants in quantities and concentrations as specified in this general permit; and (b) any substances resulting from the processes or activities described in this general permit in concentrations and quantities which the Commissioner determines cannot reasonably be expected to cause pollution and will not adversely affect surface waters, ground waters, or the operation of a POTW. The Commissioner may seek an injunction or issue an order to prevent or abate pollution, and may seek criminal penalties against a permittee who willfully or with criminal negligence causes or threatens pollution.
- (2) Discharge of any substance which does not result from the processes or activities authorized by this general permit shall be considered a violation of this general permit unless it is authorized by an individual permit issued under section 22a-430 of the General Statutes or another General Permit issued under section 22a-430b of the General Statutes.
- (3) The permittee shall at all times continue to comply with the conditions for authorization set forth in Section 3 of this general permit.
- (4) Nothing in this general permit shall relieve the registrant of other obligations under applicable federal, state and local law.
- (5) Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this general permit by the permittee shall be signed by the permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157 of the General Statutes, and in accordance with any other applicable statute."

- (6) The Commissioner reserves the right to make appropriate revisions to this general permit, in accordance with applicable law, in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be necessary to adequately protect human health and the environment.
- (7) The Commissioner may order summary suspension of this general permit in accordance with section 4-182 of the General Statutes.

Section 7. Unauthorized Activities

Any person who or municipality which initiates, creates, originates or maintains a discharge of WTW into the waters of the state without authorization under this general permit, except those authorized by an individual permit issued under section 22a-430 of the General Statutes, or an authorization as authorized by Public Act No. 95-428 of the General Statutes, is in violation of the General Statutes and is subject to injunction and penalties of up to \$25,000 per day per violation under Chapter 446k of the General Statutes.



Sidney J. Holbrook
Commissioner

Dated : May 1, 1995



General Permit Registration Form for Water Treatment Wastewater

Please complete this form in accordance with the instructions in order to ensure the proper handling of your registration. Print or type unless otherwise noted. You must submit the permit application transmittal form and the registration fee along with this form.

DEP USE ONLY
Application No. _____
Permit No. _____
Facility I.D. _____

Part I: Registration Type

Enter a check mark in the appropriate box identifying the registration type.

- A new general permit;
- A discharge previously authorized by an individual State or NPDES permit;
Provide Permit No. _____

Part II: Registrant Information

Please provide the applicant/registrant's name as indicated on the transmittal form

Applicant/Registrant: _____

When a facility or activity is owned by one person or municipality but is leased or in some other way the legal responsibility of another person or municipality (the operator) it is the operator's responsibility to submit any applications required under this section. (Section 22a-430-4-(a)(3)).

Operator: _____

Mailing Address: _____

City/Town: _____ State: _____ Zip Code: _____

Business Phone: () _____ ext. _____ Fax: () _____

Contact: _____ Title: _____

Facility or Site Owner: _____ Mailing

Address: _____ City/Town: _____

_____ State: _____ Zip Code: _____ Business Phone: (

) _____ ext. _____ Fax: () _____ Contact: _____

_____ Title: _____

Part II: Registrant Information (continued)

List primary contact for departmental correspondence and inquiries. (If other than the applicant.)

Name: _____ Mailing
Address: _____
City/Town: _____ State: _____ Zip Code: _____
Business Phone: () _____ ext. _____ Fax: () _____
Contact: _____ Title: _____

List attorney or other representative if applicable.

Name: _____
Mailing Address: _____
City/Town: _____ State: _____ Zip Code: _____
Business Phone: () _____ ext. _____ Fax: () _____
Contact: _____ Title: _____

List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration or to design, construct or operate the water treatment wastewater activity. Please enter a check mark if additional sheets are attached.

Name: _____
Mailing Address: _____
City/Town: _____ State: _____ Zip Code: _____
Business Phone: () _____ ext. _____ Fax: () _____
Contact: _____ Title: _____
Service Provided: _____

Part III: Site Information

1. Name of facility, if applicable _____
Street Address and/or Geographical Description _____

City or Town _____

Part IV: Activity Information

1. Discharge Serial Number _____
Average Daily Flow _____ gpd Maximum Daily Flow _____ gpd
Design Flow _____
Date Discharge Began or Will Begin _____
Average Number of hours per day or per event of the discharge _____
Maximum Number of hours per day or per event of the discharge _____

2. For batch, intermittent, or seasonal discharges, indicate the duration and frequency of the discharge.

3. Description of each specific activity or each process generating the discharge.

4. Identification of all types of wastes generated by each process producing a discharge.

5. For discharges to a POTW
a. Name and location of POTW _____ Design Flow of POTW _____

6. For discharges to a surface water body: Name of receiving stream _____

7. A detailed description of the type of treatment system installed to treat the discharge.

8. A brief description of the BMP's to be implemented by the permittee to minimize the adverse environmental affects of activities covered under this general permit.

Part V: Certification

The registrant and the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all signatures asked for are provided. If the registrant is the preparer, please mark N/A in the spaces provided for the preparer.

"I certify under penalty of law that I have read and understand all conditions of the general permit for Water Treatment Wastewater (WTW) discharges issued on May 1, 1995, that all requirements for authorization under this general permit are met for all discharges which are the subject of this registration, and all terms and conditions of this general permit are being met for all discharges which have been initiated and are the subject of this registration. This document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained in this registration is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowingly making false statements."

Signature of Registrant

Date

Name of Registrant (print or type)

Title (if applicable)

Signature of Preparer

Date

Name of Preparer (print or type)

Title (if applicable)

Please enter a check mark if additional signature blocks are attached.

Part VI: Supporting Documents

The supporting documents outlined below must be submitted with the registration form.

1. Plan of the site showing at least the boundaries of the site, the exact location of any drinking water wells on the site, the location of discharges covered under this general permit, the monitoring locations, the treatment systems and the location of wetlands and watercourses as defined by sections 226-28 and 226-38 of the General Statutes.
2. For discharge(s) to surface water or ground water, an 8 1/2" by 11" copy of applicable sections of a United States Geological Survey (USGS) quadrangle map, with a scale of 1:24,000, showing the exact location of the discharge, specifying the longitude and latitude of the discharge to within the closest 15 seconds, and including the name of the USGS map.
3. For discharges to a POTW initiated after the effective date of the Water Treatment Wastewater General Permit, the attached POTW certification.
4. The attached Professional Engineer Certification.
5. For any discharge initiated on or before the effective date of this general permit, which does not comply with the treatment and control requirements contained in Section 5(a)(6) as of the effective date of the general permit for Water treatment Wastewater, a report detailing all such conditions or terms which are not being complied with, and a schedule of modifications or facility upgrades required to meet any such term or condition.
6. A plan for minimizing the use of copper if the registrant utilizes a water supply reservoir and copper compounds are used, or intended to be used in the water supply reservoir. Such plan shall take into account, at a minimum, an assessment of nutrient loadings in the watershed, the amount of copper needed to control algae, intake levels, and opportunities for recycling the wastewater stream and shall include a plan for monitoring algae and using copper sulfate only when needed to control algae.

POTW Certification

For discharges to a POTW initiated after the effective date of the Water Treatment Wastewater General Permit, the following certification is required from the registrant:

"I certify that (1) the information outlined below has been submitted to the appropriate POTW authority, and 2) the registrant has received written certification signed by the appropriate POTW authority that it has received and reviewed the information outlined below and has authorized the discharge to the POTW, and 3) such information and written certification has been submitted with this registration;

- (i) an analysis of the impact of the discharge on the hydraulic capacity of the receiving POTW, including but not limited to the receiving sewerage system, force mains, pumping stations;
- (ii) the rate, frequency, and time period that the WTW will be discharged to the POTW;
- (iii) wastewater characteristics;
- (iv) provisions for the controlled discharge of WTW to the receiving POTW, including but not limited to equalization, limiting hydraulic loading, or limiting the total suspended solids loading;
- (v) the impact of the discharge of WTW on POTW sludge generation and handling, and any potential alteration of the character of the sludge which may render it unsuitable for further treatment by anaerobic/aerobic digestion, high temperature/pressure and chemical oxidation, sludge dewatering, and composting; or unsuitable for ultimate disposal by incineration, landfilling, or land application;
- (vi) the ratio of flow of WTW in relation to total influent to the POTW; and
- (vii) any other information necessary to ensure that such discharge will not adversely impact the performance of the POTW and cause any violation of their discharge permit, or render the sludge generated at the POTW unsuitable for landfilling, land application, or incineration.

Signature of Registrant

Date

Name of Registrant (print or type)

Title (if applicable)

PROFESSIONAL ENGINEER CERTIFICATION

The following certification, signed by a professional engineer licensed to practice in Connecticut :

- (i) For any discharge which has not been initiated, created, or maintained as of the date of the registration is submitted:

" I certify that in my professional judgement proper operation and maintenance of any systems installed to treat the discharge(s) which are the subject of this registration will ensure that all effluent limitations and other conditions in the general permit for the discharge of WTW issued on May 1, 1995 are met, or if there is no treatment system for such discharge(s), that the discharge(s) will meet all effluent limitations and conditions of such general permit without treatment. This certification is based on my review of engineering reports and plans and specifications describing (1) the proposed discharges and (2) any proposed treatment system for the wastewaters to be discharged. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements."

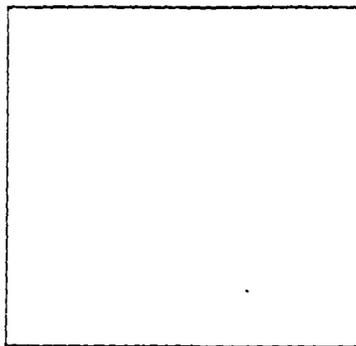
Signature of Professional Engineer

Date

Name of Professional Engineer

P.E. Number

Affix P.E. Stamp here



- (ii) For any discharge other than those specified in paragraph (i) above:

"I certify that in my professional judgement all discharge(s) which are the subject of this registration ~~comply with all conditions~~ of the general permit for the discharge of WTW issued on May 1, 1995, including but not limited to all effluent limitations in Section 5(b) of such general permit and proper operation and maintenance of any systems installed to treat such discharge(s) will ensure that all effluent limitations and other conditions in such general permit are met, or if there is no treatment system for such discharge(s), that the discharge(s) will meet all effluent limitations and conditions of such general permit without treatment. This certification is based in part on my review of analyses of a minimum of three effluent samples collected, preserved, handled and analyzed in accordance with 40 CFR Part 136, which samples were representative of

the discharges) during standard operating conditions, were taken within the previous 12 months, at least one week apart, and were of the type(s) specified in Section 5(c)(5) of the general permit for WTW discharges issued on May 1, 1995, and were analyzed for the parameters specified in Section 5(c) of such general permit. In the case of discharges of WTW less than 5000 gallons per day maximum daily flow, this certification may be based on review of analyses from one effluent sample collected, preserved, handled, and analyzed as specified in the previous sentence. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements."

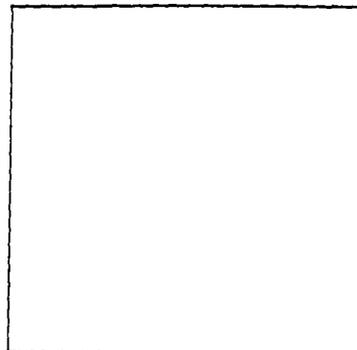
Signature of Professional Engineer

Date

Name of Professional Engineer

P.E. Number

Affix P.E. Stamp here



(iii) In addition, for a discharge to a POTW:

"I certify that in my professional judgement all the requirements for discharges to a POTW in Sections 4 and 5 of the General Permit for Water Treatment Wastewater have been met and the registrant is authorized to discharge to the POTW."

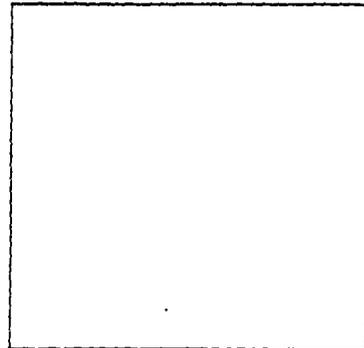
Signature of Professional Engineer

Date

Name of Professional Engineer

P.E. Number

Affix P.E. Stamp here



APPENDIX B
MEETING MINUTES

December 27, 1996

Commanding Officer
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090

Attention: Lew Riess, Code 1813

**RE: NSB NEW LONDON, GENERAL PERMIT COMPLIANCE
(HRP #NAV-0096.FE)**

Dear Mr. Riess:

Following are the minutes of our December 9, 1996, Project initiation Meeting.

Date: December 9, 1996
Time: 1230-1700
Meeting: Project Initiation
Project: General Permit Compliance
Location: NSB New London, Office of Keith Chrisman, Building 166
Attendees: Lew Riess, NORTHDIV
Keith Chrisman, NSB New London
Charles Leonard, HRP
Michael Errickson, HRP
Joseph Magdol, HRP
Herb Cummings, NSB
Bob Hoen, NSSF (for Larry King)
John Dalluge, NSSF
Gregg Collier, NSSF
Janet Bennett, NSSF
(sign-in sheet is attached)

The meeting was originally scheduled for 1230 but was postponed to 1330 because Lew Riess' plane was delayed in Philadelphia for deicing. Because Herb Cummings would not be available at 1330, a preliminary meeting was held with Keith Chrisman, Herb Cummings and the three representatives of HRP.

At the 1230 meeting the Water Treatment Wastewater Sources listed in the Scope of Work and located in Building 29 were discussed. One (of several potential) contacts at Building 29 is Lenny Slater. A tentative schedule for sampling at Building 29 was established as follows. All sampling days to begin at 0730.

<u>Round</u>	<u>Date</u>
#1	Tuesday, December 10, 1996
#2	Tuesday, December 17, 1996
#3	Monday, December 23, 1996

Of particular note were the following points.

- Production is far below capacity which may mean that backwashes and associated rinses will be worst-case quality. On the other hand, backwashing and rinsing more frequently than is warranted for purposes of permitting may result in atypically good water quality.
- Flowrates may be verifiable by determining pumping rates during backwash/rinse operations.
- The two Power Plant water softeners are identical but one requires regeneration approximately every 12 hours and the other, every 72 hours.
- The Gas Turbine system is still in the start-up mode and will not be turned over to the Navy until December 20, 1996. The company and contact of the supplier are Nutmeg Technologies, Barry Lewis, (203) 777-7691.
- An O&M Manual for the Pure Water Facility will be provided to HRP. (As of the date of issuing these minutes, the manual has been provided).

At the 1330 meeting the operations and discharges in the NSSF shops were discussed with the NSSF representatives present. A tentative schedule for sampling the Buildings 88, 89 & 456 discharges was established as follows. All sampling days to begin at 0730.

<u>Round</u>	<u>Date</u>
#1	Wednesday, December 11, 1996
#2	Wednesday, December 18, 1996
#3	Friday, December 27, 1996

The following specific information was provided.

- The Battery Flash Arrestor wash/rinse operation in Building 456 is typically run approximately 3 times per month. Currently, all wastewater is hauled off-site as either CT Regulated Waste or as Hazardous Waste. Each cycle runs for 40-60 minutes. A Point-of-Contact (P.O.C.) for this operation is Chief Chandler at (860) 449-4083.
- The Ventilation Filter Cleaning Unit (VFCU) in Building 89 is used approximately once per week. The Hot Soap Tank solution is quite dirty and has not been emptied for over a year. The steam cleaning tank is also very oily and dirty and did not appear to have been cleaned recently. NSSF personnel indicated that they were not aware of any prescribed cleaning interval. The VFCU discharge leads to a floor drain that possibly discharges to the Thames River. HRP will attempt to obtain building drawings so that this can either be verified or refuted. Submarine crews clean their own filters at the VFCU. One sample shall be taken of the existing hot soap and steam cleaning tanks (dirty) and two samples shall be taken from the tanks after they are cleaned. An NSSF P.O.C. is PO Pincin at (860) 449-3920.
- The Ultrasonic Parts Cleaner, in Building 88, has electrical power supply and can be operated. A supply of trisodium phosphate (TSP) is needed and, since the Navy can not procure this within the short time frame of this project, HRP agreed to supply it. No adjustment of the project budget is necessary. At the time of issuing these minutes, the TSP has been provided. A P.O.C. is PO Carter at (860) 449-4236.

A number of project administrative items were discussed as summarized below.

- Delivery of final documents using EXCEL and WORDPERFECT (rather than Microsoft Word), will be acceptable.
- Reports (draft and final) will include DEP registration forms as appendices. the final registration forms will also be provided as separate documents for submittal to DEP.
- Number of document copies needed:

APPENDIX C
INTERVIEW LOGS

WATER TREATMENT WASTEWATER SAMPLING

INTERVIEW LOG

HRP Job #: NAV-0096.FE

Date: 12/11/96, 12/12/96, 12/17/96, 12/18/96, 12/26/96, 1/8/97

Subject: Pure Water Facility and Power Plant Water Softener Information

Interviewer(s): C. Leonard

Interviewee(s): Bob Loiselle, SUBASENLON

Summary:

Mr. Loiselle started up, ran, and monitored the regeneration of all the treatment units during HRP's evaluation and sampling. Mr. Loiselle also provided the necessary documents and information concerning each of the units.



Interviewers Signature

WATER TREATMENT WASTEWATER SAMPLING

INTERVIEW LOG

HRP Job #: NAV-0096.FE

Date: 12/11/96, 12/12/96, 12/17/96, 12/18/96, 12/26/96, 1/8/97

Subject: Pure Water Facility and Power Plant Water Softener Information

Interviewer(s): C. Leonard

Interviewee(s): Lenny Slater, SUBASENLON

Summary:

Mr. Slater provided additional information supplementing that provided by Mr. Loiselle concerning the treatment units.

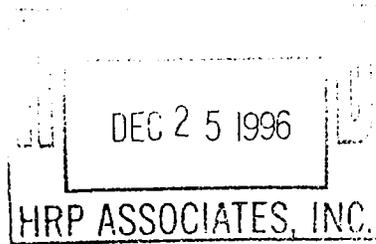


Interviewers Signature

APPENDIX D
LABORATORY REPORTS

December 18, 1996

HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062



Attn: Ms. Pat Terwilliger

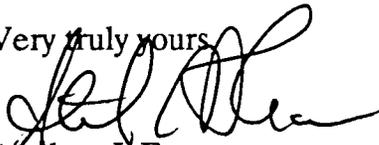
Please find attached laboratory report(s) for the samples submitted on :
December 10, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126139
PO/JOB No. : NAV0096.FE
INVOICE No. : 62957
ORDER No. : 43083
CUSTOMER No.: 350

Please feel free to contact us if you have any questions.

Very truly yours,



Stephen J. Franco
Laboratory Director
PH-0547



STEPHEN J. FRANCO
Laboratory Director

PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Date Samples Received : 12-10-96

Client Name: **HRP Associates Inc.**
 Report Date: 12-17-96

CTL Lab. No. 126139
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	13870	13871	13872	13873
Field Id	3A	3B	4A	4B

pH	5.0	5.0	7.7	7.7
Aluminum-mg/L	ND<0.1	0.1	0.5	0.5
Copper-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Iron-mg/L	0.14	0.08	0.31	0.25
Manganese-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Zinc-mg/L	0.18	0.18	0.22	0.16
Tot. Suspended Solids-mg/L	3	3	9	10
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Total Res. Chlorine-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

Date Samples Received : 12-10-96

Client Name: HRP Associates Inc.
Report Date: 12-17-96

CTL Lab. No. 126139
PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W
CTL Sample No.	13874	13875	13876
Field Id	Flash Arrest Wash	Flash Arrest Rinse	Motor Cleaning
pH	2.0	3.2	6.4
Silver-mg/L	ND<0.01	ND<0.01	ND<0.01
Barium-mg/L	ND<0.5	ND<0.5	ND<0.5
Cadmium-mg/L	0.020	ND<0.005	ND<0.005
Chromium, Total-mg/L	ND<0.05	ND<0.05	ND<0.05
Copper-mg/L	8.91	0.93	0.13
Nickel-mg/L	0.38	0.23	ND<0.05
Lead-mg/L	1.41	0.151	ND<0.010
Selenium-mg/L	ND<0.01	ND<0.01	ND<0.01
Zinc-mg/L	1.53	0.38	0.45
Beryllium-mg/L	ND<0.004	ND<0.004	ND<0.004
Zirconium-mg/L	ND<0.5	ND<0.5	ND<0.5
Molybdenum-mg/L	ND<0.5	ND<0.5	ND<0.5
Boron-mg/L	ND<1.0	ND<1.0	ND<1.0
Cobalt-mg/L	ND<0.1	ND<0.1	ND<0.1
Antimony-mg/L	0.065	ND<0.006	ND<0.006
Vanadium-mg/L	ND<0.1	ND<0.1	ND<0.1
Tin-mg/L	ND<0.5	ND<0.5	ND<0.5
Titanium-mg/L	ND<0.5	ND<0.5	ND<0.5
Thallium-mg/L	ND<0.002	ND<0.002	ND<0.002
Strontium-mg/L	ND<0.5	ND<0.5	ND<0.5
Total Oil & Grease-mg/L	1.2	ND<0.5	12
Settleable Solids-ml/L/hr.	ND<0.2	ND<0.2	ND<0.2

Matrix Types : W = Water/Aqueous
S = Soil/Solid
O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
165 Gracey Avenue / Meriden, CT 06451-2268
(203)-634-3731

Connecticut Certification No. PH-0547

Client	: HRP Associates Inc.	Date Tested	: 12-13-96
Lab No.	: 126140	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-17-96		

EPA METHOD 601/8010

Date Samples Rec'd: 12-10-96

Matrix Type :		W	W	W	W
Field ID :		1A	1B	2A	2B
	MDL				
Chloromethane	2	BDL	BDL	BDL	BDL
Bromomethane	2	BDL	BDL	BDL	BDL
Vinylchloride	2	BDL	BDL	BDL	BDL
Chloroethane	2	BDL	BDL	BDL	BDL
Methylenechloride	1	BDL	BDL	BDL	BDL
Trichlorofluoromethane	1	BDL	BDL	BDL	BDL
11-Dichloroethylene	1	BDL	BDL	BDL	BDL
11-Dichloroethane	1	BDL	BDL	BDL	BDL
t12-Dichloroethylene	1	BDL	BDL	BDL	BDL
Chloroform	1	20.0	16.0	18.0	20.0
12-Dichloroethane	1	BDL	BDL	BDL	BDL
111-Trichloroethane	1	BDL	BDL	BDL	BDL
Carbontetrachloride	1	BDL	BDL	BDL	BDL
Bromodichloromethane	1	6.0	4.0	3.0	3.0
12-Dichloropropane	1	BDL	BDL	BDL	BDL
T13-Dichloropropylene	1	BDL	BDL	BDL	BDL
Trichloroethylene	1	BDL	BDL	BDL	BDL
Dibromochloromethane	1	BDL	BDL	BDL	BDL
112-Trichloroethane	1	BDL	BDL	BDL	BDL
Cis13-Dichloropropylene	1	BDL	BDL	BDL	BDL
2-Chlorethylvinylether	1	BDL	BDL	BDL	BDL
Bromoform	1	BDL	BDL	BDL	BDL
1122-Tetrachloroethane	1	BDL	BDL	BDL	BDL
Tetrachloroethylene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Benzyl Chloride	10	BDL	BDL	BDL	BDL
Bis(2-chlorethoxy)methane	10	BDL	BDL	BDL	BDL
Bis(2-chloroisopropyl)eth	10	BDL	BDL	BDL	BDL
Bromobenzene	1	BDL	BDL	BDL	BDL
Chloroacetaldehyde	10	BDL	BDL	BDL	BDL
1-Chlorohexane	1	BDL	BDL	BDL	BDL
Chloromethyl methyl ether	10	BDL	BDL	BDL	BDL
Chlorotoluene	1	BDL	BDL	BDL	BDL
Dibromomethane	1	BDL	BDL	BDL	BDL
12-Dichlorobenzene	1	BDL	BDL	BDL	BDL
13-Dichlorobenzene	1	BDL	BDL	BDL	BDL
14-Dichlorobenzene	1	BDL	BDL	BDL	BDL
Trichloropropane	1	BDL	BDL	BDL	BDL
c12-Dichloroethylene	1	BDL	BDL	BDL	BDL

MDL= Minimum Detectable Level/BDL= Below Detection Level/UNITS= PPB

Matrix Type : W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
165 Gracey Avenue / Meriden, CT 06451-2268
(203)-634-3731
Connecticut Certification No. PH-0547

Client	: HRP Associates Inc.	Date Tested	: 12-13-96
Lab No.	: 126140	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-17-96		

EPA METHOD 601/8010

Date Samples Rec'd: 12-10-96

Matrix Type :	W	W	W	W	
Field ID :	3A	3B	4A	4B	
	MDL				
Chloromethane	2	BDL	BDL	BDL	BDL
Bromomethane	2	BDL	BDL	BDL	BDL
Vinylchloride	2	BDL	BDL	BDL	BDL
Chloroethane	2	BDL	BDL	BDL	BDL
Methylenechloride	1	BDL	BDL	BDL	BDL
Trichlorofluoromethane	1	BDL	BDL	BDL	BDL
11-Dichloroethylene	1	BDL	BDL	BDL	BDL
11-Dichloroethane	1	BDL	BDL	BDL	BDL
t12-Dichloroethylene	1	BDL	BDL	BDL	BDL
Chloroform	1	15.0	20.0	12.0	12.0
12-Dichloroethane	1	BDL	BDL	BDL	BDL
111-Trichloroethane	1	BDL	BDL	BDL	BDL
Carbontetrachloride	1	BDL	BDL	BDL	BDL
Bromodichloromethane	1	BDL	3.0	BDL	BDL
12-Dichloropropane	1	BDL	BDL	BDL	BDL
T13-Dichloropropylene	1	BDL	BDL	BDL	BDL
Trichloroethylene	1	BDL	BDL	BDL	BDL
Dibromochloromethane	1	BDL	BDL	BDL	BDL
112-Trichloroethane	1	BDL	BDL	BDL	BDL
Cis13-Dichloropropylene	1	BDL	BDL	BDL	BDL
2-Chlorethylvinylether	1	BDL	BDL	BDL	BDL
Bromoform	1	BDL	BDL	BDL	BDL
1122-Tetrachloroethane	1	BDL	BDL	BDL	BDL
Tetrachloroethylene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Benzyl Chloride	10	BDL	BDL	BDL	BDL
Bis(2-chlorethoxy)methane	10	BDL	BDL	BDL	BDL
Bis(2-chloroisopropyl)eth	10	BDL	BDL	BDL	BDL
Bromobenzene	1	BDL	BDL	BDL	BDL
Chloroacetaldehyde	10	BDL	BDL	BDL	BDL
1-Chlorohexane	1	BDL	BDL	BDL	BDL
Chloromethyl methyl ether	10	BDL	BDL	BDL	BDL
Chlorotoluene	1	BDL	BDL	BDL	BDL
Dibromomethane	1	BDL	BDL	BDL	BDL
12-Dichlorobenzene	1	BDL	BDL	BDL	BDL
13-Dichlorobenzene	1	BDL	BDL	BDL	BDL
14-Dichlorobenzene	1	BDL	BDL	BDL	BDL
Trichloropropane	1	BDL	BDL	BDL	BDL
c12-Dichloroethylene	1	BDL	BDL	BDL	BDL

MDL= Minimum Detectable Level/BDL= Below Detection Level/UNITS= PPB

Matrix Type : W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
165 Gracey Avenue / Meriden, CT 06451-2268
(203)-634-3731
Connecticut Certification No. PH-0547

Client	: HRP Associates Inc.	Date Tested	: 12-13-96
Lab No.	: 126140	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-17-96		

EPA METHOD 602/8020

Date Samples Rec'd: 12-10-96

Matrix Type :	W	W	W	W	
Field ID :	1A	1B	2A	2B	
	MDL				
Benzene	1	BDL	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Ethyl Benzene	1	BDL	BDL	BDL	BDL
P & M Xylene	1	BDL	BDL	BDL	BDL
O- Xylene	1	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	1	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	1	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	1	BDL	BDL	BDL	BDL

MDL = Minimum Detectable Level/ **BDL** = Below Detection Level/ **UNITS**= PPB

Matrix Type: **W**= Water/Aqueous **S**= Soil/Solid **O**= Oil/Hydrocarbons

Client	: HRP Associates Inc.	Date Tested	: 12-13-96
Lab No.	: 126140	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-17-96		

EPA METHOD 602/8020

Date Samples Rec'd: 12-10-96

Matrix Type :	W	W	W	W
Field ID :	3A	3B	4A	4B
	MDL			
Benzene	1	BDL	BDL	BDL
Toluene	1	1.0	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL
Ethyl Benzene	1	BDL	BDL	BDL
P & M Xylene	1	BDL	BDL	BDL
O- Xylene	1	BDL	BDL	BDL
1,4-Dichlorobenzene	1	BDL	BDL	BDL
1,3-Dichlorobenzene	1	BDL	BDL	BDL
1,2-Dichlorobenzene	1	BDL	BDL	BDL

MDL = Minimum Detectable Level/ **BDL** = Below Detection Level/ **UNITS**= PPB

Matrix Type: W= Water/Aqueous **S**= Soil/Solid **O**= Oil/Hydrocarbons

HRP Associates, Inc.
167 New Britain Avenue
Plainville, CT 06062
Phone: 860-793-6899
Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 2 of 3
Job Number NAV 0096.FE
Project Manager JM

Place & Address of Collection US Naval Sub base

Samplers Name (Signature) Charles Leonard

Groton, CT

Assistant (Witness)(Signature) Michael D. Emier

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
3B	Mixed Med. Fuel Ring	P.V.	2090ml	cool, HCl	12/10/96	1:14pm	X				temp.
4A	Neutral Tank	P.V.	2080ml	cool, HCl	12/10/96	2:31pm	X				51°F
4B	Neutral Tank	P.V.	2080ml	cool, HCl	12/10/96	2:42pm	X				71°F
10	Neutral Tank	P.V.	2080ml	cool, HCl	12/10/96	2:42pm	X				70°F

Relinquished By (Signature) Charles Leonard

Received By (Signature) M. McAlister

Date 12/10/96 Time 4:45

Relinquished By (Signature)

Received By (Signature)

Date Time

Name & Address of Laboratory CTL, Gracy Ave. Meriden, CT

LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority X 1 week
Other Turnaround per Steve Franco

ANALYSES REQUIRED

Parameters	Sample Number				Parameters	Sample Number			
	3B	4A	4B	10		3B	4A	4B	10
pH	X	X	X	X	TPH 418.1				
Ag					TSS	X	X	X	X
Al -T	X	X	X	X	TRC	X	X	X	X
As					STD Water				
Ba					Total Coliform				
Cd					Fluoride				
CN-A					Chloride				
CN-T					8010/601	X	X	X	X
Cr ⁶⁺					8015				
Cr-T					8020/602	X	X	X	X
Cu -T	X	X	X	X	8020 + MTBE				
Fe ²⁺ -T	X	X	X	X	8080				
Hg					8100				
Na					8 TCLP Metals				
Ni					Total Settleable Solids	X	X	X	X
Pb									
Mn -T	X	X	X	X					
Sp. Cond.									
TDS									
Zn -T	X	X	X	X					

Remarks

1 week turnaround per Steve Franco

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 3 of 3
 Job Number NAV0096.FE
 Project Manager JM

Place & Address of Collection US NAVY SUBBASE - GROTON, CT Samplers Name (Signature) Michael D. Guich
 Assistant (Witness)(Signature) Charles Leonard

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
1	FLASH AIRST WASH	P, G	3L	COOL	12/10/96	11:00 am	X				TEMP = 92°F
2	FLASH AIRST RINSE	P, G	3L	COOL	12/10/96	2:10 pm	X				TEMP = 68°F
3	WATER CLOSINGS	P, G	3L	COOL	12/10/96	2:15 pm	X				TEMP = 146°F
4		P, G	3L	COOL			X				TEMP
5		P, G	3L	COOL			X				TEMP

Relinquished By (Signature) Michael D. Guich Received By (Signature) M. McMahon Date 12/10/96 Time 4:45
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL - GRACEY AVE, MERIDEN, CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 WEEK
 Other TURN AROUND PER STEVE FRANCO

ANALYSES REQUIRED

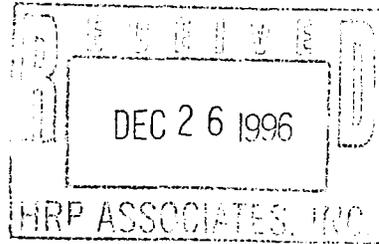
Parameters	Sample Number					Parameters	Sample Number				
	1	2	3	4	5		1	2	3	4	5
pH	X	X	X	X	X	TPH 413.1	X	X	X	X	X
Ag -T	X	X	X	X	X	TOC					
Al						TOX					
As						STD Water					
Ba -T	X	X	X	X	X	Total Cadmium Be-T	X	X	X	X	X
Cd -T	X	X	X	X	X	Zn -T	X	X	X	X	X
CN-A						Mn -T	X	X	X	X	X
CN-T						B -T	X	X	X	X	X
Cr ⁶⁺						Cu -T	X	X	X	X	X
Cr-T	X	X	X	X	X	Sb -T	X	X	X	X	X
Cu -T	X	X	X	X	X	8020 + MTBE					
Fe-D						8080					
Hg						8100					
Na						8 TCLP Metals					
Ni -T	X	X	X	X	X	SETTLABLE SOLIDS	X	X	X	X	X
Pb -T	X	X	X	X	X	V -T	X	X	X	X	X
Se -T	X	X	X	X	X	Sm -T	X	X	X	X	X
Sp. Cond.						Ti -T	X	X	X	X	X
TDS						Tl -T	X	X	X	X	X
Zn -T	X	X	X	X	X	Sr -T	X	X	X	X	X

Remarks 1 WEEK TURN AROUND PER STEVE FRANCO

December 23, 1996

HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062

Attn: Ms. Pat Terwilliger



Please find attached laboratory report(s) for the samples submitted on :
December 11, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126154
PO/JOB No. : NAV0096.FE
INVOICE No. : 63007
ORDER No. : 43133
CUSTOMER No.: 350

Please feel free to contact us if you have any questions.

Very truly yours

Stephen J. Franco
Laboratory Director
PH-0547



STEPHEN J. FRANCO
Laboratory Director
PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Date Samples Received : 12-11-96.

Client Name: HRP Associates Inc.
Report Date: 12-19-96

CTL Lab. No. 126154
PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W
CTL Sample No.	13914	13915
Field Id	#4	#5

pH	8.7	7.5		
Silver-mg/L	0.28	ND<0.01		
Barium-mg/L	ND<0.5	2.4		
Cadmium-mg/L	0.836	0.593		
Copper-mg/L	90.0	14.5		
Nickel-mg/L	8.08	1.46		
Lead-mg/L	0.709	0.542		
Selenium-mg/L	ND<0.01	ND<0.01		
Zinc-mg/L	72.6	23.8		
Chromium, Total-mg/L	1.87	0.40		
Beryllium-mg/L	ND<0.004	ND<0.004		
Zirconium-mg/L	ND<0.5	ND<0.5		
Molybdenum-mg/L	2.4	ND<0.5		
Boron-mg/L	20.0	2.2		
Cobalt-mg/L	0.2	ND<0.1		
Antimony-mg/L	0.9	ND<0.006		
Vanadium-mg/L	ND<0.1	ND<0.1		
Tin-mg/L	ND<0.5	ND<0.5		
Titanium-mg/L	ND<0.5	ND<0.5		
Thallium-mg/L	ND<0.002	ND<0.002		
Strontium-mg/L	0.5	ND<0.5		
Total Oil & Grease-mg/L	254	248		
Settleable Solids-ml/L/hr.	3.5	2.4		

Matrix Types : W = Water/Aqueous
S = Soil/Solid
O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
165 Gracey Avenue / Meriden, CT 06451-2268
(203)-634-3731

Connecticut Certification No. PH-0547

Date Samples Received : 12-11-96

Client Name: HRP Associates Inc.
Report Date: 12-19-96

CTL Lab. No. 126154
PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	13916	13917	13918	13919
Field Id	8A	8B	9A	9B
pH	6.6	6.7	6.6	4.9
Aluminum-mg/L	1.8	0.3	0.3	1.5
Copper-mg/L	ND<0.01	ND<0.01	ND<0.01	0.01
Iron-mg/L	0.68	0.08	0.24	0.16
Manganese-mg/L	0.18	0.02	0.02	0.08
Zinc-mg/L	0.16	0.12	0.14	3.36
Tot. Suspended Solids-mg/L	11	ND<1	1	2
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Residual Chlorine-mg/L	1.77	1.82	1.67	0.39

Matrix Type	W	W	W	W
CTL Sample No.	13920	13921	13922	13923
Field Id	10A	10B	11A	11B
pH	5.9	6.9	7.0	7.0
Aluminum-mg/L	0.8	0.4	0.5	0.5
Copper-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Iron-mg/L	0.18	0.18	0.20	0.12
Manganese-mg/L	0.03	0.02	0.02	0.02
Zinc-mg/L	0.86	ND<0.05	ND<0.05	ND<0.05
Tot. Suspended Solids-mg/L	3	4	4	5
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Residual Chlorine-mg/L	0.84	2.14	1.36	2.04

Matrix Types : W = Water/Aqueous
S = Soil/Solid
O = Oil/Hydrocarbons

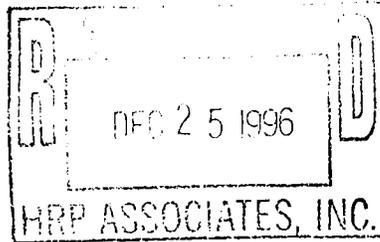
CONNECTICUT TESTING LABORATORIES, INC.
165 Gracey Avenue / Meriden, CT 06451-2268
(203)-634-3731

Connecticut Certification No. PH-0547

December 16, 1996

HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062

Attn: Ms. Pat Terwilliger



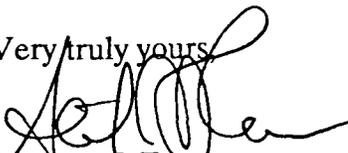
Please find attached laboratory report(s) for the samples submitted on :
December 11, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126155
PO/JOB No. : NAV0096.FE
INVOICE No. : 62899
ORDER No. : 43025
CUSTOMER No.: 350

Please feel free to contact us if you have any questions.

Very truly yours,



Stephen J. Franco
Laboratory Director
PH-0547



**connecticut
testing
laboratories inc.**
WATER ■ SOIL ■ AIR

STEPHEN J. FRANCO
Laboratory Director
PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Client : HRP Associates Inc.	Date Tested : 12-12-96
Lab No. : 126155	Analyst : RS
PO No. : NAV0096.FE	
Rep. Date : 12-16-96	

EPA METHOD 601/8010

Date Samples Rec'd: 12-11-96

Matrix Type :	W	W	W	W	
Field ID :	8A	8B	9A	9B	
	MDL				
Chloromethane	2	BDL	BDL	BDL	BDL
Bromomethane	2	BDL	BDL	BDL	BDL
Vinylchloride	2	BDL	BDL	BDL	BDL
Chloroethane	2	BDL	BDL	BDL	BDL
Methylenechloride	1	BDL	BDL	BDL	BDL
Trichlorofluoromethane	1	BDL	BDL	BDL	BDL
11-Dichloroethylene	1	BDL	BDL	BDL	BDL
11-Dichloroethane	1	BDL	BDL	BDL	BDL
t12-Dichloroethylene	1	BDL	BDL	BDL	BDL
Chloroform	1	6.0	6.0	5.0	3.0
12-Dichloroethane	1	BDL	BDL	BDL	BDL
111-Trichloroethane	1	BDL	BDL	BDL	BDL
Carbontetrachloride	1	BDL	BDL	BDL	BDL
Bromodichloromethane	1	2.0	2.0	2.0	1.0
12-Dichloropropane	1	BDL	BDL	BDL	BDL
T13-Dichloropropylene	1	BDL	BDL	BDL	BDL
Trichloroethylene	1	BDL	BDL	BDL	BDL
Dibromochloromethane	1	BDL	BDL	BDL	BDL
112-Trichloroethane	1	BDL	BDL	BDL	BDL
Cis13-Dichloropropylene	1	BDL	BDL	BDL	BDL
2-Chlorethylvinylether	1	BDL	BDL	BDL	BDL
Bromoform	1	BDL	BDL	BDL	BDL
1122-Tetrachloroethane	1	BDL	BDL	BDL	BDL
Tetrachloroethylene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Benzyl Chloride	10	BDL	BDL	BDL	BDL
Bis(2-chlorethoxy)methane	10	BDL	BDL	BDL	BDL
Bis(2-chloroisopropyl)eth	10	BDL	BDL	BDL	BDL
Bromobenzene	1	BDL	BDL	BDL	BDL
Chloroacetaldehyde	10	BDL	BDL	BDL	BDL
1-Chlorohexane	1	BDL	BDL	BDL	BDL
Chloromethyl methyl ether	10	BDL	BDL	BDL	BDL
Chlorotoluene	1	BDL	BDL	BDL	BDL
Dibromomethane	1	BDL	BDL	BDL	BDL
12-Dichlorobenzene	1	BDL	BDL	BDL	BDL
13-Dichlorobenzene	1	BDL	BDL	BDL	BDL
14-Dichlorobenzene	1	BDL	BDL	BDL	BDL
Trichloropropane	1	BDL	BDL	BDL	BDL
c12-Dichloroethylene	1	BDL	BDL	BDL	BDL

MDL= Minimum Detectable Level/**BDL**= Below Detection Level/**UNITS**= PPB

Matrix Type : W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.

165 Gracey Avenue / Meriden, CT 06451-2268

(203)-634-3731

Connecticut Certification No. PH-0547

Client	: HRP Associates Inc.	Date Tested	: 12-12-96
Lab No.	: 126155	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-16-96		

EPA METHOD 601/8010

Date Samples Rec'd: 12-11-96

Matrix Type :		W	W	W	W
Field ID :		10A	10B	11A	11B
	MDL				
Chloromethane	2	BDL	BDL	BDL	BDL
Bromomethane	2	BDL	BDL	BDL	BDL
Vinylchloride	2	BDL	BDL	BDL	BDL
Chloroethane	2	BDL	BDL	BDL	BDL
Methylenechloride	1	BDL	BDL	BDL	BDL
Trichlorofluoromethane	1	BDL	BDL	BDL	BDL
11-Dichloroethylene	1	BDL	BDL	BDL	BDL
11-Dichloroethane	1	BDL	BDL	BDL	BDL
t12-Dichloroethylene	1	BDL	BDL	BDL	BDL
Chloroform	1	7.0	7.0	7.0	7.0
12-Dichloroethane	1	BDL	BDL	BDL	BDL
111-Trichloroethane	1	BDL	BDL	BDL	BDL
Carbontetrachloride	1	BDL	BDL	BDL	BDL
Bromodichloromethane	1	3.0	3.0	3.0	3.0
12-Dichloropropane	1	BDL	BDL	BDL	BDL
T13-Dichloropropylene	1	BDL	BDL	BDL	BDL
Trichloroethylene	1	BDL	BDL	BDL	BDL
Dibromochloromethane	1	1.0	BDL	BDL	BDL
112-Trichloroethane	1	BDL	BDL	BDL	BDL
Cis13-Dichloropropylene	1	BDL	BDL	BDL	BDL
2-Chlorethylvinylether	1	BDL	BDL	BDL	BDL
Bromoform	1	4.0	BDL	BDL	BDL
1122-Tetrachloroethane	1	BDL	BDL	BDL	BDL
Tetrachloroethylene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Benzyl Chloride	10	BDL	BDL	BDL	BDL
Bis(2-chlorethoxy)methane	10	BDL	BDL	BDL	BDL
Bis(2-chloroisopropyl)eth	10	BDL	BDL	BDL	BDL
Bromobenzene	1	BDL	BDL	BDL	BDL
Chloroacetaldehyde	10	BDL	BDL	BDL	BDL
1-Chlorohexane	1	BDL	BDL	BDL	BDL
Chloromethyl methyl ether	10	BDL	BDL	BDL	BDL
Chlorotoluene	1	BDL	BDL	BDL	BDL
Dibromomethane	1	BDL	BDL	BDL	BDL
12-Dichlorobenzene	1	BDL	BDL	BDL	BDL
13-Dichlorobenzene	1	BDL	BDL	BDL	BDL
14-Dichlorobenzene	1	BDL	BDL	BDL	BDL
Trichloropropane	1	BDL	BDL	BDL	BDL
c12-Dichloroethylene	1	BDL	BDL	BDL	BDL

MDL = Minimum Detectable Level/**BDL** = Below Detection Level/**UNITS** = PPB

Matrix Type : W = Water/Aqueous S = Soil/Solid O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731
 Connecticut Certification No. PH-0547

Client	: HRP Associates Inc.	Date Tested	: 12-12-96
Lab No.	: 126155	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-16-96		

EPA METHOD 602/8020

Date Samples Rec'd: 12-11-96

Matrix Type :		W	W	W	W
Field ID :		8A	8B	9A	9B
	MDL				
Benzene	1	BDL	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Ethyl Benzene	1	BDL	BDL	BDL	BDL
P & M Xylene	1	BDL	BDL	BDL	BDL
O- Xylene	1	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	1	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	1	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	1	BDL	BDL	BDL	BDL

MDL = Minimum Detectable Level/ **BDL** = Below Detection Level/ **UNITS** = PPB

Matrix Type: W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.

165 Gracey Avenue / Meriden, CT 06451-2268

(203)-634-3731

Connecticut Certification No. PH-0547

Client : HRP Associates Inc.	Date Tested : 12-12-96
Lab No. : 126155	Analyst : RS
PO No. : NAV0096.FE	
Rep. Date : 12-16-96	

EPA METHOD 602/8020

Date Samples Rec'd: 12-11-96

Matrix Type :	W	W	W	W
Field ID :	10A	10B	11A	11B
	MDL			
Benzene	1	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL
Ethyl Benzene	1	BDL	BDL	BDL
P & M Xylene	1	BDL	BDL	BDL
O-Xylene	1	BDL	BDL	BDL
1,4-Dichlorobenzene	1	BDL	BDL	BDL
1,3-Dichlorobenzene	1	BDL	BDL	BDL
1,2-Dichlorobenzene	1	BDL	BDL	BDL

MDL = Minimum Detectable Level/ BDL = Below Detection Level/ UNITS= PPB

Matrix Type: W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

26/54

HRP Associates, Inc.
167 New Britain Avenue
Plainville, CT 06062
Phone: 860-793-6899
Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 11 of 13
Job Number NAV0096.FE
Project Manager JM

Place & Address of Collection US NAVY SUBBASE - GROTON, CT Samplers Name (Signature) Michael P. Emdin
Assistant (Witness)(Signature) Charles Leonard

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
4 4	VFCU HEATED SOAP	P,G	3L	CCCL	12/11/96	10:05 AM	X				TEMP = 152°F
5	VFCU STEAM	P,G	3L	CCCL	12/11/96	10 AM	X				TEMP = 106°F

Relinquished By (Signature) Michael P. Emdin Received By (Signature) M. McMahon Date 12/11/96 Time 3:00
Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL - GRACIE AVE, MERIDEN CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority X 1 WEEK
Other TURN AROUND PER STEVE FRANCO

ANALYSES REQUIRED

Parameters	Sample Number					Parameters	Sample Number				
	4	5					4	5			
pH	X	X				TPH <u>413.1</u>	X	X			
Ag -T	X	X				TOC					
Al						TOX					
As						STD Water					
Ba -T	X	X				Total Coliform	B2-T	X	X		
Cd -T	X	X				Zn -T	X	X			
CN-A						Chloride	Mo -T	X	X		
CN-T						BOD/CO2	B -T	X	X		
Cr ⁺⁶						CO2	Co -T	X	X		
Cr-T						Sb -T	X	X			
Cu -T	X	X				8020 + MTBE					
Fe-D						8080					
Hg						8100					
Na						8 TCLP Metals					
Ni -T	X	X				SETTLABLE SOLIDS	X	X			
Pb -T	X	X				V -T	X	X			
Se -T	X	X				Sm -T	X	X			
Sp. Cond.						Ti -T	X	X			
TDS						TL -T	X	X			
Zn -T	X	X				Sn -T	X	X			

Remarks 1 WEEK TURN AROUND PER STEVE FRANCO

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet ~~12~~ of ~~3~~ 3
 Job Number NAV 0096.FE.
 Project Manager JM

Place & Address of Collection US Navy Base Sub Base
Groton, CT

Samplers Name (Signature) Cheryl Leonard
 Assistant (Witness)(Signature) Michael D. Enck

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
8A	Sottener Bio/Flush	P, V	2080ml	cool, HCl	12/11/96	10:49am	X				Temp. 50°F
8B	Sottener Bio/Flush	P, V	2080ml	cool, HCl	12/11/96	10:21am	X				49°F
9A	Sottener Bio/Flush	P, V	2080ml	cool, HCl	12/11/96	11:28am	X				49°F
9B	Sottener Bio/Flush	P, V	2080ml	cool, HCl	12/11/96	11:52am	X				54°F
10A	Sottener Bio/Flush	P, V	2080ml	cool, HCl	12/11/96	11:57am	X				53°F

Relinquished By (Signature) Charles Leonard Received By (Signature) M. McMahon Date 12/11/96 Time 3:00
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 week
 Other turnaround per Steve Franco

ANALYSES REQUIRED

Parameters	Sample Number					Parameters	Sample Number				
	8A	8B	9A	9B	10A		8A	8B	9A	9B	10A
pH	X	X	X	X	X	TPH 418.1					
Ag						TSS	X	X	X	X	X
Al - T	X	X	X	X	X	TRC	X	X	X	X	X
As						STD Water					
Ba						Total Coliform					
Cd						Fluoride					
CN-A						Chloride					
CN-T						8010/601	X	X	X	X	X
Cr ⁶						8015					
Cr-T						8020/602	X	X	X	X	X
Cu - T	X	X	X	X	X	8020 + MTBE					
Fe - T	X	X	X	X	X	8080					
Hg						8100					
Na						8 TCLP Metals					
Ni						Total Settleable Solids	X	X	X	X	X
Pb											
Mn - T	X	X	X	X	X						
Sp. Cond.											
TDS											
Zn - T	X	X	X	X	X						

Remarks 1 week turnaround per Steve Franco

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 3 of 3
 Job Number NAV0096.FE

Project Manager JM

Place & Address of Collection US Navy Sub Base Groton CT
 Samplers Name (Signature) Charles Leonard
 Assistant (Witness)(Signature) Michael P. Gindler

Sample Number	Sample Location	Container Type	Total Volume (uL)	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
10B	Soldener Fast Flush	P, V	2080	HCl, Cool	12/11/96	12:33	X				Temp. 49°F
11A	Soldener Final Rinse	P, V	2080	HCl, Cool	12/11/96	12:37	X				50°F
11B	Soldener Final Rinse	P, V	2080	HCl, Cool	12/11/96	12:53	X				50°F

Relinquished By (Signature) Charles Leonard Received By (Signature) M. McMahon Date 12/11/96 Time 3:00
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL, Gracey Ave, Meriden CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority X 1 week per Steve Franco
 Other _____

ANALYSES REQUIRED

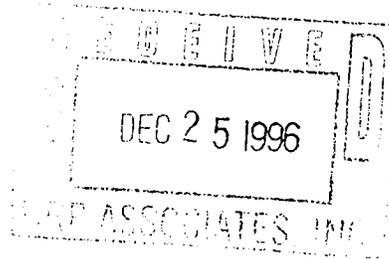
Parameters	Sample Number			Parameters	Sample Number		
	10B	11A	11B		10B	11A	11B
pH	X	X	X	TPH 418.1			
Ag				Ag TSS	X	X	X
Al -T	X	X	X	Al TRC	X	X	X
As				STD Water			
Ba				Total Coliform			
Cd				Fluoride			
CN-A				Chloride			
CN-T				8010/601	X	X	X
Cr ⁶				8015			
Cr-T				8020/602	X	X	X
Cu -T	X	X	X	8020 + MTBE			
Fe -T	X	X	X	8080			
Hg				8100			
Na				8 TCLP Metals			
Ni				Total Soluble Solids	X	X	X
Pb							
Mn -T	X	X	X				
Sp. Cond.							
TDS							
Zn -T	X	X	X				

Remarks 1 week turnaround per Steve Franco

December 20, 1996

HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062

Attn: Ms. Pat Terwilliger



Please find attached laboratory report(s) for the samples submitted on :
December 12, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126184
PO/JOB No. : NAV0096.FE
INVOICE No. : 62992
ORDER No. : 43118
CUSTOMER No.: 350

Please feel free to contact us if you have any questions.

Very truly yours,

Stephen J. Franco
Laboratory Director
PH-0547



STEPHEN J. FRANCO
Laboratory Director
PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Date Samples Received : 12-12-96

Client Name: HRP Associates Inc.
Report Date: 12-20-96

CTL Lab. No. 126184
PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	14011	14012	14013	14014
Field Id	12A	12B	5A	5B
pH	6.9	6.7	6.5	3.2
Aluminum-mg/L	0.2	0.3	0.3	0.2
Copper-mg/L	ND<0.01	ND<0.01	0.05	0.04
Iron-mg/L	ND<0.05	0.06	0.42	0.32
Manganese-mg/L	0.02	0.01	0.03	0.02
Zinc-mg/L	0.06	0.06	0.06	0.06
Tot. Suspended Solids-mg/L	3	4	11	4
Tot. Sett. Solids-ml/L/Hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Residual Chlorine-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05

Total Metals

Matrix Type	W	W	W	W
CTL Sample No.	14015	14016	14017	14018
Field Id	6A	6B	7A	7B
pH	6.2	6.1	6.3	4.1
Aluminum-mg/L	0.3	0.2	0.2	0.2
Copper-mg/L	ND<0.01	0.02	ND<0.01	0.04
Iron-mg/L	0.38	0.20	0.16	0.22
Manganese-mg/L	0.03	0.02	0.01	0.02
Zinc-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Tot. Suspended Solids-mg/L	2	1	1	1
Tot. Sett. Solids-ml/L/Hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Residual Chlorine-mg/L	ND<0.05	ND<0.05	ND<0.05	0.08

Matrix Types : W = Water/Aqueous
S = Soil/Solid
O = Oil/Hydrocarbons

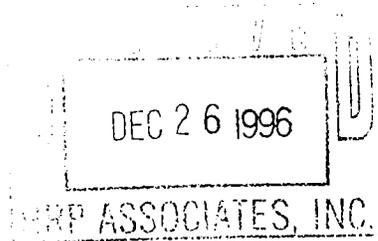
CONNECTICUT TESTING LABORATORIES, INC.
165 Gracey Avenue / Meriden, CT 06451-2268
(203)-634-3731

Connecticut Certification No. PH-0547

December 24, 1996

HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062

Attn: Ms. Pat Terwilliger



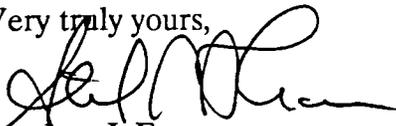
Please find attached laboratory report(s) for the samples submitted on :
December 12, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126184
PO/JOB No. : NAV0096.FE
INVOICE No. : 63041
ORDER No. : 43168
CUSTOMER No.: 350

Please feel free to contact us if you have any questions.

Very truly yours,



Stephen J. Franco
Laboratory Director
PH-0547



STEPHEN J. FRANCO
Laboratory Director
PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Date Samples Received : 12-12-96

Client Name: **HRP Associates Inc.**
 Report Date: 12-20-96

CTL Lab. No. 126184
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	14011	14012	14013	14014
Field Id	12A	12B	5A	5B
pH	6.9	6.7	6.5	3.2
Aluminum-mg/L	0.2	0.3	0.3	0.2
Copper-mg/L	ND<0.01	ND<0.01	0.05	0.04
Iron-mg/L	ND<0.05	0.06	0.42	0.32
Manganese-mg/L	0.02	0.01	0.03	0.02
Zinc-mg/L	0.06	0.06	0.06	0.06
Tot. Suspended Solids-mg/L	3	4	11	4
Tot. Sett. Solids-ml/L/Hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Residual Chlorine-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Hardness-mg/L	---	---	6	ND<2

Total Metals

Matrix Type	W	W	W	W
CTL Sample No.	14015	14016	14017	14018
Field Id	6A	6B	7A	7B
pH	6.2	6.1	6.3	4.1
Aluminum-mg/L	0.3	0.2	0.2	0.2
Copper-mg/L	ND<0.01	0.02	ND<0.01	0.04
Iron-mg/L	0.38	0.20	0.16	0.22
Manganese-mg/L	0.03	0.02	0.01	0.02
Zinc-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Tot. Suspended Solids-mg/L	2	1	1	1
Tot. Sett. Solids-ml/L/Hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Residual Chlorine-mg/L	ND<0.05	ND<0.05	ND<0.05	0.08
Hardness-mg/L	ND<2	ND<2	ND<2	ND<2

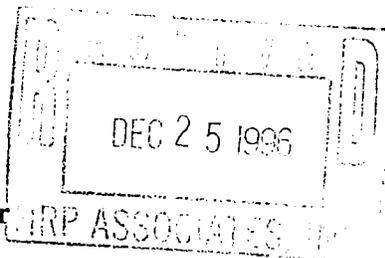
Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

December 17, 1996

HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062



Attn: Ms. Pat Terwilliger

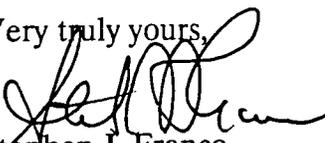
Please find attached laboratory report(s) for the samples submitted on :
December 12, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126185
PO/JOB No. : NAV0096.FE
INVOICE No. : 62914
ORDER No. : 43040
CUSTOMER No. : 350

Please feel free to contact us if you have any questions.

Very truly yours,


Stephen J. Franco
Laboratory Director
PH-0547



WATER ■ SOIL ■ AIR

STEPHEN J. FRANCO
Laboratory Director
PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Client	: HRP Associates Inc.	Date Tested	: 12-13-96
Lab No.	: 126185	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-17-96		

EPA METHOD 601/8010

Date Samples Rec'd: 12-12-96

Matrix Type :	W	W	W	W	
Field ID :	12A	12B	5A	5B	
	MDL				
Chloromethane	2	7.0	7.0	3.0	BDL
Bromomethane	2	BDL	BDL	BDL	BDL
Vinylchloride	2	BDL	BDL	BDL	BDL
Chloroethane	2	BDL	BDL	BDL	BDL
Methylenechloride	1	BDL	BDL	BDL	BDL
Trichlorofluoromethane	1	BDL	BDL	BDL	BDL
11-Dichloroethylene	1	BDL	BDL	BDL	BDL
11-Dichloroethane	1	BDL	BDL	BDL	BDL
t12-Dichloroethylene	1	BDL	BDL	BDL	BDL
Chloroform	1	BDL	BDL	9.0	6.0
12-Dichloroethane	1	BDL	BDL	BDL	BDL
111-Trichloroethane	1	BDL	BDL	BDL	BDL
Carbontetrachloride	1	BDL	BDL	BDL	BDL
Bromodichloromethane	1	BDL	BDL	4.0	3.0
12-Dichloropropane	1	BDL	BDL	BDL	BDL
T13-Dichloropropylene	1	BDL	BDL	BDL	BDL
Trichloroethylene	1	BDL	BDL	BDL	BDL
Dibromochloromethane	1	BDL	BDL	BDL	BDL
112-Trichloroethane	1	BDL	BDL	BDL	BDL
Cis13-Dichloropropylene	1	BDL	BDL	BDL	BDL
2-Chlorethylvinylether	1	BDL	BDL	BDL	BDL
Bromoform	1	BDL	BDL	BDL	BDL
1122-Tetrachloroethane	1	BDL	BDL	BDL	BDL
Tetrachloroethylene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Benzyl Chloride	10	BDL	BDL	BDL	BDL
Bis(2-chlorethoxy)methane	10	BDL	BDL	BDL	BDL
Bis(2-chloroisopropyl)eth	10	BDL	BDL	BDL	BDL
Bromobenzene	1	BDL	BDL	BDL	BDL
Chloroacetaldehyde	10	BDL	BDL	BDL	BDL
1-Chlorohexane	1	BDL	BDL	BDL	BDL
Chloromethyl methyl ether	10	BDL	BDL	BDL	BDL
Chlorotoluene	1	BDL	BDL	BDL	BDL
Dibromomethane	1	BDL	BDL	BDL	BDL
12-Dichlorobenzene	1	BDL	BDL	BDL	BDL
13-Dichlorobenzene	1	BDL	BDL	BDL	BDL
14-Dichlorobenzene	1	BDL	BDL	BDL	BDL
Trichloropropane	1	BDL	BDL	BDL	BDL
c12-Dichloroethylene	1	BDL	BDL	BDL	BDL

MDL= Minimum Detectable Level/BDL= Below Detection Level/UNITS= PPB

Matrix Type : W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731
 Connecticut Certification No. PH-0547

Client	: HRP Associates Inc.	Date Tested	: 12-13-96
Lab No.	: 126185	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-17-96		

EPA METHOD 601/8010

Date Samples Rec'd: 12-12-96

Matrix Type :	W	W	W	W	
Field ID :	6A	6B	7A	7B	
	MDL				
Chloromethane	2	2.0	2.0	BDL	BDL
Bromomethane	2	BDL	BDL	BDL	BDL
Vinylchloride	2	BDL	BDL	BDL	BDL
Chloroethane	2	BDL	BDL	BDL	BDL
Methylenechloride	1	BDL	BDL	BDL	BDL
Trichlorofluoromethane	1	BDL	BDL	BDL	BDL
11-Dichloroethylene	1	BDL	BDL	BDL	BDL
11-Dichloroethane	1	BDL	BDL	BDL	BDL
t12-Dichloroethylene	1	BDL	BDL	BDL	BDL
Chloroform	1	8.0	10.0	6.0	7.0
12-Dichloroethane	1	BDL	BDL	BDL	BDL
111-Trichloroethane	1	BDL	BDL	BDL	BDL
Carbontetrachloride	1	BDL	BDL	BDL	BDL
Bromodichloromethane	1	3.0	4.0	3.0	3.0
12-Dichloropropane	1	BDL	1.0	BDL	BDL
T13-Dichloropropylene	1	BDL	BDL	BDL	BDL
Trichloroethylene	1	BDL	BDL	BDL	BDL
Dibromochloromethane	1	BDL	BDL	BDL	BDL
112-Trichloroethane	1	BDL	BDL	BDL	BDL
Cis13-Dichloropropylene	1	BDL	BDL	BDL	BDL
2-Chlorethylvinylether	1	BDL	BDL	BDL	BDL
Bromoform	1	BDL	BDL	BDL	BDL
1122-Tetrachloroethane	1	BDL	BDL	BDL	BDL
Tetrachloroethylene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Benzyl Chloride	10	BDL	BDL	BDL	BDL
Bis(2-chlorethoxy)methane	10	BDL	BDL	BDL	BDL
Bis(2-chloroisopropyl)eth	10	BDL	BDL	BDL	BDL
Bromobenzene	1	BDL	BDL	BDL	BDL
Chloroacetaldehyde	10	BDL	BDL	BDL	BDL
1-Chlorohexane	1	BDL	BDL	BDL	BDL
Chloromethyl methyl ether	10	BDL	BDL	BDL	BDL
Chlorotoluene	1	BDL	BDL	BDL	BDL
Dibromomethane	1	BDL	BDL	BDL	BDL
12-Dichlorobenzene	1	BDL	BDL	BDL	BDL
13-Dichlorobenzene	1	BDL	BDL	BDL	BDL
14-Dichlorobenzene	1	BDL	BDL	BDL	BDL
Trichloropropane	1	BDL	BDL	BDL	BDL
c12-Dichloroethylene	1	BDL	BDL	BDL	BDL

MDL= Minimum Detectable Level/BDL= Below Detection Level/UNITS= PPB

Matrix Type : W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731
 Connecticut Certification No. PH-0547

Client : HRP Associates Inc.	Date Tested : 12-13-96
Lab No. : 126185	Analyst : RS
PO No. : NAV0096.FE	
Rep. Date : 12-17-96	

EPA METHOD 602/8020

Date Samples Rec'd: 12-12-96

Matrix Type :	W	W	W	W	
Field ID :	12A	12B	5A	5B	
	MDL				
Benzene	1	BDL	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Ethyl Benzene	1	BDL	BDL	BDL	BDL
P & M Xylene	1	BDL	BDL	BDL	BDL
O- Xylene	1	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	1	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	1	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	1	BDL	BDL	BDL	BDL

MDL = Minimum Detectable Level/ BDL = Below Detection Level/ UNITS= PPB

Matrix Type: W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

Client	: HRP Associates Inc.	Date Tested	: 12-13-96
Lab No.	: 126185	Analyst	: RS
PO No.	: NAV0096.FE		
Rep. Date	: 12-17-96		

EPA METHOD 602/8020

Date Samples Rec'd: 12-12-96

Matrix Type :		W	W	W	W
Field ID :		6A	6B	7A	7B
	MDL				
Benzene	1	BDL	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL	BDL
Chlorobenzene	1	BDL	BDL	BDL	BDL
Ethyl Benzene	1	BDL	BDL	BDL	BDL
P & M Xylene	1	BDL	BDL	BDL	BDL
O- Xylene	1	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	1	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	1	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	1	BDL	BDL	BDL	BDL

MDL = Minimum Detectable Level/ BDL = Below Detection Level/ UNITS= PPB

Matrix Type: W= Water/Aqueous S= Soil/Solid O= Oil/Hydrocarbons

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 1 of 2
 Job Number NAV0096.FE
 Project Manager JM

Place & Address of Collection US Naval Sub Base
Groton, CT

Samplers Name (Signature) Charles Leonard
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
12A	GT Rev. Osmosis	P, V	2080ml	cool, HCl	12/12/96	10:33	X				49°F
12B	GT Rev. Osmosis	P, V	2080ml	cool, HCl	12/12/96	11:06	X				50°F
5A	GT Soft BW	P, V	2080ml	cool, HCl	12/12/96	1:16	X				49°F
5B	GT Soft BW	P, V	2080ml	cool, HCl	12/12/96	1:22	X				49°F
6A	GT Soft Brine	P, V	2080ml	cool, HCl	12/12/96	1:25	X				50°F

Reinquished By (Signature) Charles Leonard Received By (Signature) mmemahon Date 12/12/96 Time 3:50
 Reinquished By (Signature) Received By (Signature) Date Time

Name & Address of Laboratory CTL, Gracey Ave, Meriden

LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 week per Steve Franco

ANALYSES REQUIRED

Parameters	Sample Number					Parameters	Sample Number				
	12A	12B	5A	5B	6A		12A	12B	5A	5B	6A
pH	✓ X	X	X	X	X	TPH 418.1					
Ag						TPH TSS	✓ X	X	X	X	X
Al - T	✓ X	X	X	X	X	TPH TRC	✓ X	X	X	X	X
As						STD Water					
Ba						Total Coliform					
Cd						Fluoride					
CN-A						Chloride					
CN-T						8010/601	✓ X	X	X	X	X
Cr ⁶⁺						8015					
Cr-T						8020/602	✓ X	X	X	X	X
Cu - T	✓ X	X	X	X	X	8020 + MTBE	X	X	X	X	X
Fe - T	✓ X	X	X	X	X	8080					
Hg						8100					
Na						8 TCLP Metals					
Ni						Total Soluble Solids	✓ X	X	X	X	X
Pb											
Mn - T	✓ X	X	X	X	X						
Sp. Cond.											
TDS											
Zn - T	✓ X	X	X	X	X						

Remarks 1 week priority per Steve Franco

HRP Associates, Inc.
 167 New Britain Avenue
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HRP

CHAIN OF CUSTODY

Sheet 2 of 2
 Job Number NAVCO864FE
 Project Manager JM

Place & Address of Collection US Naval Sub Base, Groton, CT
 Samplers Name (Signature) Charles Leonard
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
6B	GT 500F 3200	p,v	2080	HCl, Cool	12/12/96	2:25	X				50°F
7A	GT 500F Fish Range	p,v	2080	HCl, Cool	12/12/96	2:27	X				49°F
7B	GT 500F Final Rinse	p,v	2080	HCl, Cool	12/12/96	2:33	X				50°F

Relinquished By (Signature) Charles Leonard Received By (Signature) M. McMahon Date 12/12/96 Time 3:50
 Relinquished By (Signature) Received By (Signature) Date Time

Name & Address of Laboratory CTL, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED
 None Filter Adjust pH to _____ Priority X 1 week per Steve Franco
 Other _____

ANALYSES REQUIRED

Parameters	Sample Number			Parameters	Sample Number		
	6B	7A	7B		6B	7A	7B
pH	X	X	X	TPH 418.1			
Ag				Ag TSS	X	X	X
Al - T	X	X	X	Al TRC	X	X	X
As				STD Water			
Ba				Total Coliform			
Cd				Fluoride			
CN-A				Chloride			
CN-T				8010/601	X	X	X
Cr ⁶⁺				8015			
Cr-T				8020/602	X	X	X
Cu - T	X	X	X	8020 + MTBE			
Fe ^{Al} - T	X	X	X	8080			
Hg				8100			
Na				8 TCLP Metals			
Ni				<u>Tot. settleable Solids</u>	X	X	X
Pb							
As Mn - T	X	X	X				
Sp. Cond.							
TDS							
Zn - T	X	X	X				

Remarks 1 week priority per Steve Franco

Date Samples Received : 12-17-96

Client Name: **HRP Associates Inc.**
 Report Date: 12-24-96

CTL Lab. No. 126245
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	14135	14136	14137	14138
Field Id	4A	4B	8A	8B
pH	6.6	6.6	6.8	6.7
Aluminum-mg/L	0.3	0.3	0.2	0.4
Copper-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Iron-mg/L	0.55	0.45	0.08	0.23
Manganese-mg/L	0.03	0.02	0.02	0.04
Zinc-mg/L	0.11	0.09	0.06	ND<0.05
Tot. Suspended Solids-mg/L	5	4	2	3
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Residual Chlorine-mg/L	ND<0.05	ND<0.05	0.30	0.73
Sodium-mg/L	---	---	9.1	21.6
Chloride-mg/L	---	---	16	15
Hardness-mg/L	---	---	40	22

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

Date Samples Received : 12-17-96

Client Name: HRP Associates Inc.
Report Date: 12-24-96

CTL Lab. No. 126245
PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	14139	14140	14141	14142
Field Id	9A	9B	10A	10B
pH	6.7	4.6	4.8	6.7
Aluminum-mg/L	0.3	5.2	0.3	0.1
Copper-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Iron-mg/L	0.30	ND<0.05	ND<0.05	0.08
Manganese-mg/L	0.04	0.12	0.01	0.01
Zinc-mg/L	ND<0.05	2.47	1.55	ND<0.05
Tot. Suspended Solids-mg/L	1	4	2	2
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Residual Chlorine-mg/L	0.50	ND<0.05	ND<0.05	0.64
Sodium-mg/L	62	36,000	26,000	77
Chloride-mg/L	158	64,378	29,327	138
Hardness-mg/L	42	12,300	4,382	16

Matrix Types : W = Water/Aqueous
S = Soil/Solid
O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
165 Gracey Avenue / Meriden, CT 06451-2268
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Connecticut Certification No. PH-0547

Date Samples Received : 12-17-96

Client Name: HRP Associates Inc.
Report Date: 12-24-96

CTL Lab. No. 126245
PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	14145	14146	14147	14148
Field Id	Ultra Sonic Wash/ Rinse	Flash Arrest Wash	Flash Arrest Rinse	Motor Clean
pH	11.2	2.6	2.8	6.9
Silver-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Barium-mg/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Cadmium-mg/L	0.005	0.010	0.006	ND<0.005
Copper-mg/L	0.15	3.73	3.31	0.11
Nickel-mg/L	ND<0.05	0.08	ND<0.05	ND<0.05
Lead-mg/L	0.050	1.42	0.825	0.011
Selenium-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Zinc-mg/L	3.75	0.81	0.75	0.17
Chromium, Total-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Beryllium-mg/L	ND<0.004	ND<0.004	ND<0.004	ND<0.004
Zirconium-mg/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Molybdenum-mg/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Boron-mg/L	ND<1	ND<1	ND<1	ND<1
Cobalt-mg/L	ND<0.1	ND<0.1	ND<0.1	ND<0.1
Antimony-mg/L	ND<0.006	0.049	0.030	ND<0.006
Vanadium-mg/L	ND<0.1	ND<0.1	ND<0.1	ND<0.1
Tin-mg/L	1.2	ND<0.5	ND<0.5	ND<0.5
Titanium-mg/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Thallium-mg/L	ND<0.002	ND<0.002	ND<0.002	ND<0.002
Strontium-mg/L	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Tot. Oil & Grease-mg/L	9	ND<0.5	ND<0.5	18
Settleable Solids-mg/L/hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2

Matrix Types : W = Water/Aqueous
S = Soil/Solid
O = Oil/Hydrocarbons

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165 Gracey Avenue / Meriden, CT 06451-2268
(203)-634-3731

Connecticut Certification No. PH-0547

Date Samples Received : 12-17-96

Client Name: **HRP Associates Inc.**
 Report Date: 12-24-96

CTL Lab. No. 126245
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W
CTL Sample No.	14143	14144
Field Id	11A	11B

pH	7.0	6.7		
Aluminum-mg/L	0.2	0.1		
Copper-mg/L	ND<0.01	ND<0.01		
Iron-mg/L	0.07	0.07		
Manganese-mg/L	0.01	0.01		
Zinc-mg/L	ND<0.05	ND<0.05		
Tot. Suspended Solids-mg/L	ND<1	1		
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2		
Tot. Residual Chlorine-mg/L	0.70	0.70		
Sodium-mg/L	64	28.6		
Chloride-mg/L	71	17		
Hardness-mg/L	12	ND<2		

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

126245

HRP Associates, Inc.
167 New Britain Avenue
Plainville, CT 06062
Phone: 860-793-6899
Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 1 of 4
Job Number NAU0096.FE
Project Manager J.M.

Place & Address of Collection US Naval Sub Base
Groton, CT
Samplers Name (Signature) Charles Leonard
Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
3A	Neutralization Tank	P.V	2000ml	cool, HCl	12/17/96	10:36	X				Temp
4A	Neutralization Tank	P.V	2000ml	cool, HCl	12/17/96	10:36	X				72°F
4B	Neutralization Tank	P.V	2000ml	cool, HCl	12/17/96	10:49	X				72°F

Relinquished By (Signature) Charles Leonard Received By (Signature) M. Memahan Date 12/17/96 Time 4:20
Relinquished By (Signature) Received By (Signature) Date Time

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 week per Steve Franco
Other

ANALYSES REQUIRED

Parameters	Sample Number			Parameters	Sample Number		
	3A	4A	4B		3A	4A	4B
pH	X	X	X	TPH 418.1	X		
sg	X			TPH TSS ✓	X	X	X
1-T	X	X	X	TPH TRC ✓	X	X	X
u	X			STD Water	X		
u	X			Total Coliform	X		
d	X			Fluoride	X		
N-A	X			Chloride	X		
N-T	X			B010/601	X	X	X
u	X			B015	X		
-T	X			B020/602	X	X	X
1-T	X	X	X	B020 + MTBE	X		
2-T	X	X	X	B080	X		
7	X			B100	X		
	X			8 TCLP Metals	X		
	X			<u>total settleable solids</u>	X	X	X
u _n -P	X	X	X		X		
Cond.	X				X		
3	X				X		
-T	X	X	X		X		

1 week priority per Steve Franco

THE ASSOCIATES, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

Sheet 2 of 2
 Job Number NAV0096.FE

CHAIN OF CUSTODY

Project Manager Jim

Place & Address of Collection US Naval Sub Base
Groton, CT

Sampler Name (Signature) Charles Leonard
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
8A	Softener	Blue/Plush			12/17/96	10:27	X				Temp
8A	Softener	Blue/Plush			12/17/96	10:27	X				51°F
8B	Softener	Blue/Plush				11:02	X				50°F
9A	Softener	Blue/Plush				11:07	X				50°F
9B	Softener	Blue/Plush				11:43	X				51°F

Relinquished By (Signature) Charles Leonard Received By (Signature) M. McMahon Date 12/17/96 Time 4:20
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 week per Steve Franco
 Other _____

ANALYSES REQUIRED

Parameters	Sample Number					Parameters	Sample Number				
	8A	8A	8B	9A	9B		8A	8A	8B	9A	9B
H ✓	X	X	X	X	X	TPH 418.1	X	X	X	X	X
S	X	X	X	X	X	TSS / TSS ✓	X	X	X	X	X
-TV	X	X	X	X	X	TSCV / TSCV ✓	X	X	X	X	X
S	X	X	X	X	X	STD Water	X	X	X	X	X
S	X	X	X	X	X	Total Coliform	X	X	X	X	X
S	X	X	X	X	X	Fluoride	X	X	X	X	X
+A	X	X	X	X	X	Chloride	X	X	X	X	X
+T	X	X	X	X	X	8010/601	X	X	X	X	X
4	X	X	X	X	X	8015	X	X	X	X	X
T	X	X	X	X	X	8020/602	X	X	X	X	X
-TV	X	X	X	X	X	8020 + MTBE	X	X	X	X	X
b-TV	X	X	X	X	X	8080	X	X	X	X	X
	X	X	X	X	X	8100	X	X	X	X	X
	X	X	X	X	X	8 TCLP Metals	X	X	X	X	X
	X	X	X	X	X	Total Suspended Solids ✓	X	X	X	X	X
Un-TV	X	X	X	X	X		X	X	X	X	X
Cond.	X	X	X	X	X		X	X	X	X	X
-TV	X	X	X	X	X		X	X	X	X	X

1 week Priority per Steve Franco

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

Sheet 3 of 4
 Job Number NAU0096.FE
 Project Manager JM

CHAIN OF CUSTODY

Place & Address of Collection US Naval Sub Base
Groton, CT
 Samplers Name (Signature) Charles Leonard
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
10A	Softener Past-Flush	P, V	2080 ml	cool, HCl	12/17/96	11:48	X				Temp 50°F
10B	Softener Past-Flush					12:23	X				50°F
11A	Softener Final Rinse					12:27	X				50°F
11B	Softener Final Rinse					2:43	X				50°F
12A	OT Reverse										

Relinquished By (Signature) Charles Leonard Received By (Signature) MEMORANDUM Date 12/17/96 Time 4:20
 Relinquished By (Signature) Received By (Signature) Date Time

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT

LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 week per Steve Franco
 Other

ANALYSES REQUIRED

Parameters	Sample Number					Parameters	Sample Number				
	10A	10B	11A	11B	12A		10A	10B	11A	11B	12A
pH	X	X	X	X	X	TPH 418.1					
Ag						TRC TRC ✓	X	X	X	X	X
Al - T	X	X	X	X	X	TSS TSS ✓	X	X	X	X	X
As						STD Water					
Ba						Total Coliform					
Cd						Fluoride					
CN-A						Chloride					
CN-T						8010/601	X	X	X	X	X
Cu						8015					
Cu - T	X	X	X	X	X	8020/602	X	X	X	X	X
Cu - T ✓	X	X	X	X	X	8020 + MTBE					
Cr						8080					
Fe						8100					
Mn						8 TCLP Metals					
Mn - T	X	X	X	X	X	Total Total Settleable Solids ✓	X	X	X	X	X
Cond.											
S											
S - T	X	X	X	X	X						

1 week priority per Steve Franco

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

Sheet 4 of 4
 Job Number NAV0096.FE
 Project Manager JM

CHAIN OF CUSTODY

Place & Address of Collection US NAVY SUBBASE - GROTON, CT Sampler Name (Signature) Michael D. Erickson
 Assistant (Witness)(Signature) Charles ...

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
6	ULTRASONIC WASH/RINSE	P,G	3L	COOL	12/17/96	10:20 AM	X				TEMP=142°F
1	FLASK WASH	P,G	3L	COOL	12/17/96	11:40 AM	X				TEMP=80°F
2	FLASK WASH/RINSE	P,G	3L	COOL	12/17/96	2 PM	X				TEMP=72°F
3	FLASK WASH/RINSE	P,G	3L	COOL	12/17/96	1:46 PM	X				TEMP=146°F

Relinquished By (Signature) Michael D. Erickson Received By (Signature) M. Erickson Date 12/17/96 Time 4:20
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL - GRACEY AVE, MERIDEN, CT
LABORATORY SAMPLE PREPARATION REQUIRED

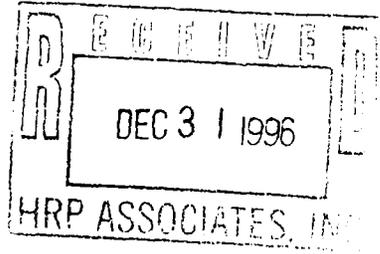
None Filter Adjust pH to _____ Priority X 1 WEEK
 Other TURN AROUND PER STEVE FRANCO

ANALYSES REQUIRED

Parameters	Sample Number				Parameters	Sample Number			
	6	1	2	3		6	1	2	3
PH	X	X	X	X	TPH <u>413.1</u>	X	X	X	X
Ag -T	X	X	X	X	TOC				
Al					TOX				
As					STD Water				
Be -T	X	X	X	X	Iron Be -T	X	X	X	X
Cd -T	X	X	X	X	Fluoride Zn -T	X	X	X	X
CN-A					Chloride Mo -T	X	X	X	X
CN-T					8010501 B -T	X	X	X	X
Cr ⁶⁺					8010502 Co -T	X	X	X	X
Cr-T	X	X	X	X	8010502 Sb -T	X	X	X	X
Cu -T	X	X	X	X	8020 + MTBE				
Fe-D					8080				
Hg					8100				
Na					8 TCLP Metals				
Ni -T	X	X	X	X	SETTLABLE SOLIDS	X	X	X	X
Pb -T	X	X	X	X	V-T	X	X	X	X
Se -T	X	X	X	X	SM-T	X	X	X	X
Sp. Cond.					Ti-T	X	X	X	X
TDS					8010502 TL-T	X	X	X	X
Zn -T	X	X	X	X	SA -T	X	X	X	X

Remarks 1 WEEK TURNAROUND PER STEVE FRANCO

December 27, 1996



HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062

Attn: Ms. Pat Terwilliger

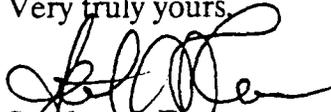
Please find attached laboratory report(s) for the samples submitted on :
December 18, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126263
PO/JOB No. : NAV0096.FE
INVOICE No. : 63077
ORDER No. : 43204
CUSTOMER No.: 350

Please feel free to contact us if you have any questions.

Very truly yours,



Stephen J. Franco
Laboratory Director
PH-0547



STEPHEN J. FRANCO
Laboratory Director
PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Date Samples Received : 12-18-96

Client Name: **HRP Associates Inc.**
 Report Date: 12-26-96

CTL Lab. No. 126263
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	14199	14200	14201	14202
Field Id	1A	1B	2A	2B
0.1 pH	6.5	6.5	6.7	11.6
0.5 Aluminum-mg/L	313	2.3	ND<0.1	ND<0.1
0.01 Copper-mg/L	0.23	ND<0.01	ND<0.01	ND<0.01
0.01 Iron-mg/L	330	2.70	0.07	0.14
0.05 Manganese-mg/L	27.0	0.21	ND<0.01	ND<0.01
0.01 Zinc-mg/L	10.4	0.13	ND<0.05	ND<0.05
0.05 Tot. Suspended Solids-mg/L	2,510	20	1	2
0.05 Tot. Residual Chlorine-mg/L	ND<0.05	0.22	ND<0.05	ND<0.05
0.2 Tot Sett. Solids-ml/L/hr.	518	ND<0.2	ND<0.2	ND<0.2

Total Metals

Matrix Type	W	W	W	W
CTL Sample No.	14203	14204	14205	14206
Field Id	3A	3B	12A	12B
pH	3.8	4.4	6.6	6.6
Aluminum-mg/L	ND<0.1	ND<0.1	ND<0.1	ND<0.1
Copper-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Iron-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Manganese-mg/L	ND<0.01	ND<0.01	0.02	0.01
Zinc-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Tot. Suspended Solids-mg/L	ND<1	1	ND<1	ND<1
Tot. Residual Chlorine-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Tot Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

126263

HRP Associates, Inc.
167 New Britain Avenue
Plainville, CT 06062
Phone: 860-793-6899
Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 1 of 2
Job Number NAV 0096.FE
Project Manager JM

Place & Address of Collection US Naval Sub Base Groton, CT

Samplers Name (Signature) Charles Leonard
Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
1A	Carbon Filter BW	P, V	2080ml	cool, HA	12/18/96	7:57	X				Temp: 52°F
1B	Carbon Filter BW	P, V	2080ml	cool, HA	12/18/96	8:19	X				51°F
2A	Mixed Media BW	P, V	2080ml	cool, HA	12/18/96	8:32	X				66°F
2B	Mixed Media BW	P, V	2080ml	cool, HA	12/18/96	8:48	X				58°F
3A	Mixed Media Fuel Runge	P, V	2080ml	cool, HA	12/18/96	12:05	X				65°F

Relinquished By (Signature) Charles Leonard Received By (Signature) M. McMahon Date 12/18/96 Time 2:40

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority X 1 week per Steve Franco

ANALYSES REQUIRED

Parameters	Sample Number					Parameters	Sample Number				
	1A	1B	2A	2B	3A		1A	1B	2A	2B	3A
pH	X	X	X	X	X	TPH 418.1					
Ag						Ag TSS	X	X	X	X	X
Al - T	X	X	X	X	X	Al TRC	X	X	X	X	X
As						STD Water					
Ba						Total Coliform					
Cd						Fluoride					
CN-A						Chloride					
CN-T						8010/801	X	X	X	X	X
Cr ⁶						8015					
Cr-T						8020/802	X	X	X	X	X
Cu - T	X	X	X	X	X	8020 + MTBE					
Fe - T	X	X	X	X	X	8080					
Hg						8100					
Na						8 TCLP Metals					
Ni						Total Sulfate Solids	X	X	X	X	X
Pb											
Mn - T	X	X	X	X	X						
Sp. Cond.											
TDS											
Zn - T	X	X	X	X	X						

Remarks 1 week priority Per Steve Franco

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

Sheet 2 of 2
 Job Number NAL0096 FE
 Project Manager JM

CHAIN OF CUSTODY

Place & Address of Collection US Naval Sub Base
Groton, CT
 Samplers Name (Signature) Charles Leonard
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
12A	<u>Reverse Osmosis</u>	<u>P, V</u>	<u>2080ml</u>	<u>cool, H₂O</u>	<u>12/18/96</u>	<u>10:52</u>	X				<u>Temp 53°F</u>
12B	<u>"</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>12/18/96</u>	<u>11:19</u>	X				<u>52°F</u>
3B	<u>Mixed medium Peral Rise</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>12/18/96</u>	<u>12:31</u>	X				<u>51°F</u>

Relinquished By (Signature) Charles Leonard Received By (Signature) M. McMahon Date 12/18/96 Time 2:40
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED

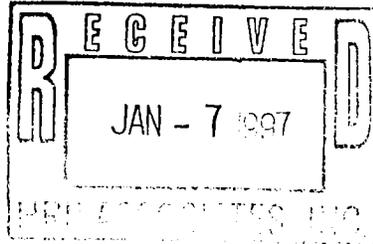
None Filter Adjust pH to _____ Priority 1 week per Steve Franco
 Other _____

ANALYSES REQUIRED

Parameters	Sample Number			Parameters	Sample Number		
	12A	12B	3B		12A	12B	3B
pH ✓	X	X	X	TPH 418.1			
Ag				TRC ✓	X	X	X
Al-T ✓	X	X	X	TSS ✓	X	X	X
As				STD Water			
Ba				Total Coliform			
Cd				Fluoride			
CN-A				Chloride			
CN-T				8010/601			
Cr ⁶⁺				8015			
Cr-T				8020/602			
Cu-T ✓	X	X	X	8020 + MTBE			
Fe-T ✓	X	X	X	8080			
Hg				8100			
Na				8 TCLP Metals			
Ni				<u>Total settleable Solids</u>	X	X	X
Pb							
Mn-T ✓	X	X	X				
Sp. Cond.							
TDS							
Zn-T ✓	X	X	X				

Remarks 1 week turnaround per Steve Franco

January 3, 1997



HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062

Attn: Ms. Pat Terwilliger

Please find attached laboratory report(s) for the samples submitted on :
December 26, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126393
PO/JOB No. : NAV0096.FE
INVOICE No. : 63204
ORDER No. : 43331
CUSTOMER No. : 350

Please feel free to contact us if you have any questions.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Stephen J. Franco".

Stephen J. Franco
Laboratory Director
PH-0547

A logo for Connecticut Testing Laboratories Inc. featuring a stylized illustration of laboratory glassware: a beaker with liquid, a graduated cylinder, and a round-bottom flask. The text "connecticut testing laboratories inc." is written in a bold, sans-serif font. Below the text, the words "WATER ■ SOIL ■ AIR" are separated by small squares.

**connecticut
testing
laboratories inc.**
WATER ■ SOIL ■ AIR

STEPHEN J. FRANCO
Laboratory Director

PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Date Samples Received : 12-26-96

Client Name: **HRP Associates Inc.**
 Report Date: 1-3-97

CTL Lab. No. 126393
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	14560	14561	14562	14563
Field Id	1A	1B	8A	8B
pH	6.3	6.5	6.4	6.8
Aluminum-mg/L	14.3	0.6	0.2	0.1
Copper-mg/L	0.07	ND<0.01	ND<0.01	ND<0.01
Iron-mg/L	17.8	0.61	0.49	0.08
Manganese-mg/L	1.74	0.06	0.03	ND<0.01
Zinc-mg/L	0.59	0.06	ND<0.05	ND<0.05
Tot. Sett. Solids-ml/L/Hr.	0.3	ND<0.2	ND<0.2	ND<0.2
Tot. Suspended Solids-mg/L	125	2	ND<1	ND<1
Tot. Residual Chlorine-mg/L	ND<0.05	0.22	0.38	1.17

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

Date Samples Received : 12-26-96

Client Name: **HRP Associates Inc.**
 Report Date: 1-3-97

CTL Lab. No. 126393
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	14564	14565	14566	14567
Field Id	9A	9B	10A	10B

pH	6.5	5.5	5.7	6.8
Aluminum-mg/L	0.1	0.3	0.4	0.1
Copper-mg/L	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Iron-mg/L	0.12	ND<0.05	ND<0.05	ND<0.05
Manganese-mg/L	0.01	ND<0.01	ND<0.01	ND<0.01
Zinc-mg/L	ND<0.05	0.33	0.21	ND<0.05
Tot. Sett. Solids-ml/L/Hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2
Tot. Suspended Solids-mg/L	2	6	5	ND<1
Tot. Residual Chlorine-mg/L	1.22	ND<0.05	0.38	1.38

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

Date Samples Received : 12-26-96

Client Name: HRP Associates Inc.	CTL Lab. No. 126393
Report Date: 1-3-97	PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS

Total Metals

Matrix Type	W	W
CTL Sample No.	14568	14569
Field Id	11A	11B

pH	6.7	6.6		
Aluminum-mg/L	0.1	0.1		
Copper-mg/L	ND<0.01	ND<0.01		
Iron-mg/L	0.06	0.07		
Manganese-mg/L	ND<0.01	ND<0.01		
Zinc-mg/L	ND<0.05	ND<0.05		
Tot. Sett. Solids-ml/L/Hr.	ND<0.2	ND<0.2		
Tot. Suspended Solids-mg/L	ND<1	3		
Tot. Residual Chlorine-mg/L	1.42	0.70		

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 1 of 2
 Job Number NAV 0096, FE
 Project Manager JM

Place & Address of Collection US Naval Sub Base
Groton, CT

Samplers Name (Signature) Charles Leonard
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
1A	Carbon Filter B/W	plastic	2000ml	cool	12/26/96	12:30	X				Temp. 68°F
1B	"	"	"	"	"	12:51	X				50°F
2A	Carbon Filter B/W	"	"	"	"	8:57	X				47°F
2B	"	"	"	"	"	9:30	X				48°F
3A	Carbon Filter B/W	"	"	"	"	9:35	X				51°F

Relinquished By (Signature) Charles Leonard Received By (Signature) John F. ... Date 1/14/97 Time 3pm
 Relinquished By (Signature) Received By (Signature) Date Time

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 week per Steve

ANALYSES REQUIRED

Parameters	Sample Number					Parameters	Sample Number				
	1A	1B	2A	2B	3A		1A	1B	2A	2B	3A
pH	X	X	X	X	X	TPH 418.1					
Ag						TRC ✓	X	X	X	X	X
Al - T ✓	X	X	X	X	X	TSS ✓	X	X	X	X	X
As						STD Water					
Ba						Total Coliform					
Cd						Fluoride					
CN-A						Chloride			X	X	X
CN-T						8010/601					
Cr ⁶⁺						8015					
Cr-T						8020/602					
Cu - T ✓	X	X	X	X	X	8020 + MTBE					
Fe - T ✓	X	X	X	X	X	8080					
Hg						8100					
Na			X	X	X	8 TCLP Metals					
Ni						total settleable solids	X	X	X	X	X
Pb						hardness			X	X	X
PA-T ✓	X	X	X	X	X						
Sp. Cond.											
TDS											
Zn - T ✓	X	X	X	X	X						

Remarks 1 week priority per Steve Franco

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 2 of 2
 Job Number NAU0096FE
 Project Manager JM

Place & Address of Collection US Naval Sub Base
Groton, CT

Samplers Name (Signature) Charles Leonard
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
9B	Softener Drive	plastic	2L	cool	12/26/96	11:02	X				Temp 53°F
10A	Softener Flush					11:08	X				53°F
10B	"					11:42	X				51°F
11A	Softener final rinse					11:47	X				50°F
11B	"					12:01	X				49°F

Relinquished By (Signature) Charles Leonard Received By (Signature) [Signature] Date 12/26/96 Time 3:21
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 week per Steve Franco

ANALYSES REQUIRED

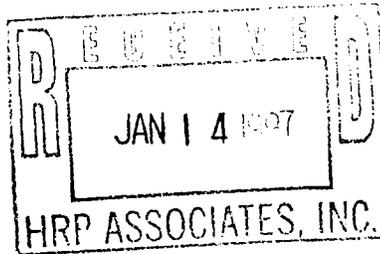
Parameters	Sample Number					Parameters	Sample Number				
	9B	10A	10B	11A	11B		9B	10A	10B	11A	11B
pH ✓	X	X	X	X	X	TPH 418.1					
Ag						TRC ✓	X	X	X	X	X
Al -TV	X	X	X	X	X	TSS ✓	X	X	X	X	X
As						STD Water					
Ba						Total Coliform					
Cd						Fluoride					
CN-A						Chloride	X	X	X	X	X
CN-T						8010/601					
Cr ⁶						8015					
Cr-T						8020/602					
Cu -TV	X	X	X	X	X	8020 + MTBE					
Fe -TV	X	X	X	X	X	8080					
Hg						8100					
Na	X	X	X	X	X	8 TCLP Metals					
Ni						Total Suspended Solids	X	X	X	X	X
Pb						hardness	X	X	X	X	X
Mn -TV	X	X	X	X	X						
Sp. Cond.											
TDS											
Zn -TV	X	X	X	X	X						

Remarks
 1 week priority per Steve Franco

January 8, 1997

HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062

Attn: Ms. Pat Terwilliger



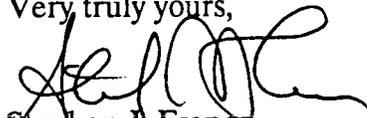
Please find attached laboratory report(s) for the samples submitted on :
December 27, 1996

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 126412
PO/JOB No. : NAV0096.FE
INVOICE No. : 63298
ORDER No. : 43425
CUSTOMER No.: 350

Please feel free to contact us if you have any questions.

Very truly yours,


Stephen J. Franco
Laboratory Director
PH-0547


**connecticut
testing
laboratories inc.**
WATER ■ SOIL ■ AIR

STEPHEN J. FRANCO
Laboratory Director

PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Date Samples Received : 12-27-96

Client Name: HRP Associates Inc.
Report Date: 1-7-97CTL Lab. No. 126412
PO/Job No. NAV0096.FE**RESULTS OF ANALYSIS****Total Metals**

Matrix Type CTL Sample No. Field Id	W 14611 Flash Arrest Wash	W 14612 Flash Arrest Rinse	W 14613 Motor Clean
pH	2.1	2.7	6.4
Silver-mg/L	0.02	ND<0.01	ND<0.01
Barium-mg/L	ND<0.5	ND<0.5	ND<0.5
Cadmium-mg/L	0.028	0.010	ND<0.005
Chromium, Total-mg/L	ND<0.05	ND<0.05	ND<0.05
Copper-mg/L	19.8	16.7	0.15
Nickel-mg/L	0.26	0.12	ND<0.05
Lead-mg/L	2.10	2.09	ND<0.010
Selenium-mg/L	ND<0.05	ND<0.05	ND<0.05
Zinc-mg/L	1.74	1.62	0.10
Beryllium-mg/L	ND<0.004	ND<0.004	ND<0.004
Zirconium-mg/L	ND<0.5	ND<0.5	ND<0.5
Molybdenum-mg/L	ND<0.5	ND<0.5	ND<0.5
Boron-mg/L	ND<1	ND<1	ND<1
Cobalt-mg/L	ND<0.1	ND<0.1	ND<0.1
Antimony-mg/L	0.104	0.095	ND<0.006
Vanadium-mg/L	ND<0.05	ND<0.05	ND<0.05
Tin-mg/L	ND<0.5	ND<0.5	ND<0.5
Titanium-mg/L	ND<0.5	ND<0.5	ND<0.5
Thallium-mg/L	ND<0.002	ND<0.002	ND<0.002
Strontium-mg/L	ND<0.5	ND<0.5	ND<0.5
Tot. Oil & Grease-mg/L	ND<0.5	ND<0.5	0.7
Settleable Solids-ml/L/Hr.	ND<0.2	ND<0.2	ND<0.2

Matrix Types : W = Water/Aqueous
S = Soil/Solid
O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
165 Gracey Avenue / Meriden, CT 06451-2268
(203)-634-3731

Connecticut Certification No. PH-0547

Date Samples Received : 12-27-96

Client Name: HRP Associates Inc.	CTL Lab. No. 126412
Report Date: 1-7-97	PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS

Total Metals

Matrix Type	W	W
CTL Sample No.	14614	14615
Field Id	12A	12B

pH	6.5	6.4		
Aluminum-mg/L	ND<0.1	0.1		
Manganese-mg/L	0.03	0.02		
Copper-mg/L	ND<0.01	ND<0.01		
Iron-mg/L	0.05	ND<0.05		
Zinc-mg/L	0.10	0.09		
Tot. Residual Chlorine-mg/L	ND<0.05	ND<0.05		
Tot. Suspended Solids-mg/L	ND<1	4		
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2		

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

126712

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 1 of 1
 Job Number NAV0096.FE
 Project Manager JM

Place & Address of Collection US NAVY SUBBASE - GROTON, CT

Samplers Name (Signature) Michael D. Erickson
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
1	FLASH ARREST WASH	P,G	3L	cool	12/27/96	8:00	X				TEMP=71°F
2	FLASH ARREST RINSE	P,G	3L	cool	12/27/96	8:15	X				TEMP=67°F
3	MORN CLEANING	P,G	3L	cool	12/27/96	8:48	X				TEMP=71°F
12A	GT RW OSMOSIS	P	2L	cool	12/27/96	9:56	X				TEMP=55°F
12B	GT RW OSMOSIS	P	2L	cool	12/27/96	10:37	X				TEMP=53°F

Relinquished By (Signature) Michael D. Erickson Received By (Signature) M. McMahon Date 12/27/96 Time 12:35
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL - GRACEY AVE, MERIDEN, CT

LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority X 1 WEEK
 Other TURN AROUND PER STEVE FRANCO

ANALYSES REQUIRED

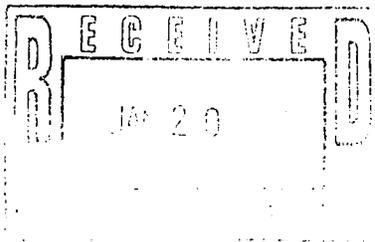
Parameters	Sample Number					Parameters	Sample Number				
	1	2	3	12A	12B		1	2	3	12A	12B
pH ✓	X	X	X	X	X	TPH X 413.1M ✓	X	X	X		
Ag -TV ✓	X	X	X			TOC -TRC ✓				X	X
Al ✓				X	X	TSS ✓				X	X
As						STD Water					
Ba -TV ✓	X	X	X			Total Coliform Be-TV ✓	X	X	X		
Cd -TV ✓	X	X	X			Fluoride Zn -TV ✓	X	X	X		
CN-A						Chloride Mo -TV ✓	X	X	X		
_____ Mn -TV ✓				X	X	_____ B -TV ✓	X	X	X		
Cr-T ✓	X	X	X			0045 Co -TV ✓	X	X	X		
Cu -TV ✓	X	X	X	X	X	0000/002 Sb -TV ✓	X	X	X		
Fe B -TV ✓				X	X	8020 + MTBE ✓					
Hg						0000 TOTAL SETTLEABLE SOLIDS				X	X
Na						8100					
Ni -TV ✓	X	X	X			8 TCLP Metals					
Pb -TV ✓	X	X	X			SETTLEABLE SOLIDS ✓	X	X	X		
Se -TV ✓	X	X	X			V-T ✓	X	X	X		
Sp. Cond.						Sm -T ✓	X	X	X		
TDS						Ti -T ✓	X	X	X		
Zn -TV ✓	X	X	X	X	X	Tp -T ✓	X	X	X		
						Sr -T ✓	X	X	X		

Remarks 1 WEEK TURNAROUND PER STEVE FRANCO

January 15, 1997

HRP Associates Inc.
167 New Britain Ave
Plainville, CT 06062

Attn: Ms. Pat Terwilliger



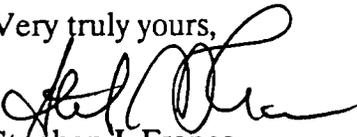
Please find attached laboratory report(s) for the samples submitted on :
January 8, 1997

All pertinent information for this analysis is located on the report. Should it be necessary to contact us regarding billing and or the test results, please have the following information readily available :

LAB No. : 197087
PO/JOB No. : NAV0096.FE
INVOICE No. : 63432
ORDER No. : 43559
CUSTOMER No.: 350

Please feel free to contact us if you have any questions.

Very truly yours,


Stephen J. Franco
Laboratory Director
PH-0547



STEPHEN J. FRANCO
Laboratory Director
PHONE ■ 203/634-3731

165 GRACEY AVENUE ■ MERIDEN, CT ■ 06451

Date Samples Received : 1-8-97

Client Name: **HRP Associates Inc.**
 Report Date: 1-15-97

CTL Lab. No. 197087
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type	W	W	W	W
CTL Sample No.	174	175	176	177
Field Id	2A	2B	3A	3B
pH	8.0	7.4	7.4	7.6
Aluminum-mg/L	0.1	0.2	ND<0.1	0.1
Copper-mg/L	ND<0.01	ND<0.01	ND<0.01	0.02
Iron-mg/L	0.44	0.13	ND<0.05	1.04
Manganese-mg/L	0.01	0.01	ND<0.01	0.02
Zinc-mg/L	ND<0.05	ND<0.05	ND<0.05	0.37
Tot. Res. Chlorine-mg/L	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Tot. Suspended Solids-mg/L	7	ND<1	7	3
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2	ND<0.2	ND<0.2

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

Date Samples Received : 1-8-97

Client Name: **HRP Associates Inc.**
 Report Date: 1-15-97

CTL Lab. No. 197087
 PO/Job No. NAV0096.FE

RESULTS OF ANALYSIS**Total Metals**

Matrix Type
 CTL Sample No.
 Field Id

W
 178
 4A

W
 179
 4B

	W 178 4A	W 179 4B		
pH	9.9	9.8		
Aluminum-mg/L	1.0	1.3		
Copper-mg/L	ND<0.01	ND<0.01		
Iron-mg/L	0.31	0.38		
Manganese-mg/L	0.01	0.01		
Zinc-mg/L	0.05	0.07		
Tot. res. Chlorine-mg/L	ND<0.05	ND<0.05		
Tot. Susp. Solids-mg/L	1	2		
Tot. Sett. Solids-ml/L/hr.	ND<0.2	ND<0.2		

Matrix Types : W = Water/Aqueous
 S = Soil/Solid
 O = Oil/Hydrocarbons

CONNECTICUT TESTING LABORATORIES, INC.
 165 Gracey Avenue / Meriden, CT 06451-2268
 (203)-634-3731

Connecticut Certification No. PH-0547

Tracking # 197087

HRP Associates, Inc.
167 New Britain Avenue
Plainville, CT 06062
Phone: 860-793-6899
Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 1 of 2
Job Number NAU0096.FE
Project Manager JM

Place & Address of Collection US Naval Sub Base
Groton, CT

Samplers Name (Signature) Charles Leonard
Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
2A	Mixed Bed Bw	plastic	2L	cool	1/8/97	8:27am	X				Temp 50°F
2B		↓	↓	↓	1/8/97	8:43am	X				49°F
3A	Mixed Bed Final rinse	↓	↓	↓	1/8/97	11:17	X				62°F

Relinquished By (Signature) Charles Leonard Received By (Signature) _____ Date _____ Time _____
Relinquished By (Signature) Steve Franco Received By (Signature) _____ Date 1/7/97 Time 2:10pm

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT

LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority 1 week per Steve Franco
Other _____

ANALYSES REQUIRED

Parameters	Sample Number			Parameters	Sample Number		
	2A	2B	3A		2A	2B	3A
pH ✓	X	X	X	TPH 418.1			
Ag				TRC ✓	X	X	X
Al - T ✓	X	X	X	TSS ✓	X	X	X
As				STD Water			
Ba				Total Coliform			
Cd				Fluoride			
CN-A				Chloride			
CN-T				8010/601			
Cr ⁶⁺				8015			
Cr-T				8020/602			
Cu - T ✓	X	X	X	8020 + MTBE			
Fe - T ✓	X	X	X	8080			
Hg				8100			
Na				8 TCLP Metals			
Ni				total settleable solids ✓	X	X	X
Pb							
Mn - T ✓	X	X	X				
Sp. Cond.							
TDS							
Zn - T ✓	X	X	X				

Remarks 1 week Priority Per Steve Franco

HRP Associates, Inc.
 167 New Britain Avenue
 Plainville, CT 06062
 Phone: 860-793-6899
 Fax: 860-793-6871

HRP

CHAIN OF CUSTODY

Sheet 2 of 2
 Job Number NAV0096, FE
 Project Manager JM

Place & Address of Collection US Navy Sub Base Groton, CT Samplers Name (Signature) Charles Leonard
 Assistant (Witness)(Signature)

Sample Number	Sample Location	Container Type	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
3B	mixed Red Final Rinse	plastic	200ml	cool	1/8/97	11:43	X				Temp 60°F
4A	Neutral Tank	↓	↓	↓	1/8/97	12:03	X				68°F
4B		↓	↓	↓	1/8/97	12:27	X				68°F
12A	GTRQ	↓	↓	↓	1/8/97	12:27	X				
12B	H	↓	↓	↓	1/8/97	12:27	X				

Relinquished By (Signature) Charles Leonard Received By (Signature) Steve Franco Date 1/7/97 Time 2:10 pm
 Relinquished By (Signature) _____ Received By (Signature) _____ Date _____ Time _____

Name & Address of Laboratory CTL, Gracey Ave, Meriden, CT
LABORATORY SAMPLE PREPARATION REQUIRED

None Filter Adjust pH to _____ Priority X 1 week per Steve Franco
 Other _____

ANALYSES REQUIRED

Parameters	Sample Number					Parameters	Sample Number				
	3B	4A	4B	12A	12B		3B	4A	4B	12A	12B
pH	X	X	X	X	X	TPH 418.1				X	X
Ag				X	X	TRC	X	X	X	X	X
Al -T	X	X	X	X	X	TSS	X	X	X	X	X
As				X	X	STD Water				X	X
Ba				X	X	Total Coliform				X	X
Cd				X	X	Fluoride				X	X
CN-A				X	X	Chloride				X	X
CN-T				X	X	8010/601				X	X
Cr ⁶⁺				X	X	8015				X	X
Cr-T				X	X	8020/602				X	X
Cu -T	X	X	X	X	X	8020 + MTBE				X	X
Fe ²⁺ -T	X	X	X	X	X	8080				X	X
Hg				X	X	8100				X	X
Nb				X	X	8 TCLP Metals				X	X
Ni				X	X	<u>Total Settleable Solids</u>	X	X	X	X	X
Pb				X	X					X	X
Mn -T	X	X	X	X	X					X	X
Sp. Cond.				X	X					X	X
TDS				X	X					X	X
Zn -T	X	X	X	X	X					X	X

Remarks 1 week priority per Steve Franco

APPENDIX E

**PERMIT APPLICATION TRANSMITTAL FORM
AND
GENERAL PERMIT REGISTRATION FORM
FOR THE DISCHARGE OF WATER TREATMENT WASTEWATER**

General Permit Registration Form for Water Treatment Wastewater

Please complete this form in accordance with the instructions in order to ensure the proper handling of your registration. Print or type unless otherwise noted. You must submit the permit application transmittal form and the registration fee along with this form.

DEP USE ONLY	
Application No.	_____
Permit No.	_____
Facility I.D.	_____

Part I: Registration Type

Enter a check mark in the appropriate box identifying the registration type.	
<input type="checkbox"/>	A new general permit registration;
<input checked="" type="checkbox"/>	A discharge previously authorized by an individual State or NPDES permit; Provide Permit No. <u>SPO000915</u>

Part II: Registration Information

Please provide the applicant/registrant's name as indicated on the transmittal form	
Applicant/Registrant: <u>Commanding Officer, Naval Submarine Base New London</u>	
When a facility or activity is owned by one person or municipality but is leased or in some other way the legal responsibility of another person or municipality (the operator) it is the operator's responsibility to submit any applications required under this section. (Section 22a-430-4-(a)(3)).	
Operator: <u>Department of Navy, Naval Submarine Base New London</u>	
Mailing Address: <u>P.O. Box 00</u>	
City/Town: <u>Groton</u>	State: <u>CT</u> Zip Code: <u>06349-5000</u>
Business Phone: <u>(860) 449-5133</u>	ext. _____ Fax: <u>(860) 449-2653</u>
Contact: <u>Suzanne Berkman</u>	Title: <u>Environmental Department Head</u>
Facility or Site Owner: <u>Department of Navy, Naval Submarine Base New London</u>	
Mailing Address: <u>P.O. Box 00</u>	
City/Town: <u>Groton</u>	State: <u>CT</u> Zip Code: <u>06349-5000</u>
Business Phone: <u>(860) 449-5133</u>	ext. _____ Fax: <u>(860) 449-2653</u>
Contact: <u>Suzanne Berkman</u>	Title: <u>Environmental Department Head</u>

Part II: Registration Information (continued)

List primary contact for departmental correspondence and inquiries. (If other than the applicant.)

Name: Environmental Department

Mailing Address: P.O. Box 39

City/Town: Groton State: CT Zip Code: 06349-5039

Business Phone: (860) 449-5192 ext. _____ Fax: (860) 449-4899

Contact: Keith Chrisman Title: Environmental Engineer

List attorney or other representative if applicable.

Name: _____

Mailing Address: _____

City/Town: _____ State: _____ Zip Code: _____

Business Phone: () _____ ext. _____ Fax: () _____

Contact: _____ Title: _____

List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration or to design, construct or operate the water treatment wastewater activity. Please enter a check mark if additional sheets are attached.

Name: HRP Associates, Inc.

Mailing Address: 167 New Britain Avenue

City/Town: Plainville State: CT Zip Code: 06062

Business Phone: (860) 793-6899 ext. _____ Fax: (860) 793-6871

Contact: Joseph Magdol, P.E. Title: Senior Project Manager

Services Provided: Sampling and application forms

Part III: Site Information

1. Name of facility, if applicable Naval Submarine Base New London

Street Address and/or Geographical Description Route 12 & Crystal Lake Road

City or Town Groton

Part IV: Activity Information

1. Discharge Serial Number S106 - Carbon Filter Regeneration

Average Daily Flow 6,825 gpd Maximum Daily Flow 6,825 gpd

Design Flow 6,825

Date Discharge Began or Will Begin 6/93

Average Number of hours per day or per event of the discharge 0.5 hrs

Maximum Number of hours per day or per event of the discharge 0.5 hrs

2. For batch, intermittent, or seasonal discharges, indicate the duration and frequency of the discharge.
Each carbon filter is regenerated one or two times per year depending on water usage on the base.
There are two carbon filter units. Both units are used simultaneously unless one is being regenerated.

3. Description of each specific activity or each process generating the discharge.
Carbon filters are utilized as a primary water treatment unit for producing pure water for use
in submarines and the power plant boilers

4. Identification of all types of wastes generated by each process producing a discharge.
The carbon filter regeneration includes discharges of backwash and final rinse wastewaters to the
sanitary sewer.

5. For discharges to a POTW

a. Name and location of POTW Groton Design Flow of POTW 5 MGD

6. For discharges to a surface water body: Name of receiving stream N/A

7. A detailed description of the type of treatment system installed to treat the discharge.
None

8. A brief description of the BMP's to be implemented by the permittee to minimize the adverse environmental affects of activities covered under this general permit.
N/A

Part IV: Activity Information

1. Discharge Serial Number	<u>001C - Mixed Media Bed Regeneration</u>	
Average Daily Flow	<u>5,900</u> gpd	Maximum Daily Flow <u>11,800</u> gpd
Design Flow	<u>17,700</u>	
Date Discharge Began or Will Begin	<u>6/93</u>	
Average Number of hours per day or per event of the discharge	<u>0.83 hrs.</u>	
Maximum Number of hours per day or per event of the discharge	<u>1.7 hrs.</u>	
2. For batch, intermittent, or seasonal discharges, indicate the duration and frequency of the discharge.	<u>One of the three mixed media bed units are regenerated a maximum of every 12 hours, depending on water usage on the base. More than one of the units can be used at a time, and no more than two are expected to be regenerated on any given day.</u>	
3. Description of each specific activity or each process generating the discharge.	<u>The mixed media beds are utilized as a secondary water treatment unit after the carbon filters for producing pure water for use in the submarines and the power plant boilers.</u>	
4. Identification of all types of wastes generated by each process producing a discharge.	<u>The mixed media bed regeneration includes discharges of backwash and final rinse wastewaters to the sanitary sewer.</u>	
5. For discharges to a POTW		
-a. Name and location of POTW	<u>Groton</u>	Design Flow of POTW <u>5 MGD</u>
6. For discharges to a surface water body: Name of receiving stream	<u>N/A</u>	
7. A detailed description of the type of treatment system installed to treat the discharge.	<u>A neutralization tank is utilized to treat the chemical wastes during the intermediate regeneration steps. Only steps 1 and 13 (the backwash and final rinse) are discharged to the sanitary sewer. Steps 2-12 are treated in the neutralization tank.</u>	
8. A brief description of the BMP's to be implemented by the permittee to minimize the adverse environmental affects of activities covered under this general permit.	<u>N/A</u>	

Part IV: Activity Information

1. Discharge Serial Number 001D - Neutralization

Average Daily Flow 5,500 gpd Maximum Daily Flow 14,500 gpd

Design Flow 18,500 gpd

Date Discharge Began or Will Begin 6/93

Average Number of hours per day or per event of the discharge 0.5 hrs

Maximum Number of hours per day or per event of the discharge 1.0 hrs

2. For batch, intermittent, or seasonal discharges, indicate the duration and frequency of the discharge.
The discharge lasts approximately one half hour and occurs when a mixed bed is regenerated, usually two to six three times per month but a maximum of once every twelve hours.

3. Description of each specific activity or each process generating the discharge.
The discharge is generated from the neutralization of the regeneration wastewater from the mixed media beds.

4. Identification of all types of wastes generated by each process producing a discharge.
Neutralized regeneration wastewater.

5. For discharges to a POTW

a. Name and location of POTW Groton Design Flow of POTW 5 MGD

6. For discharges to a surface water body: Name of receiving stream N/A

7. A detailed description of the type of treatment system installed to treat the discharge.
None

8. A brief description of the BMP's to be implemented by the permittee to minimize the adverse environmental affects of activities covered under this general permit.
N/A

Part IV: Activity Information

1. Discharge Serial Number S032 - Power Plant Water Softeners

Average Daily Flow 14,200 gpd Maximum Daily Flow 24,225 gpd

Design Flow 24,225 gpd

Date Discharge Began or Will Begin 1970

Average Number of hours per day or per event of the discharge 6.5 hrs.

Maximum Number of hours per day or per event of the discharge 9.5 hrs.

2. For batch, intermittent, or seasonal discharges, indicate the duration and frequency of the discharge.
Currently, one of the two power water softeners must be regenerated approximately every 12 hours and the other every 48-72, hours depending on water usage. The regeneration of a unit takes a maximum of 7.0 hours.

3. Description of each specific activity or each process generating the discharge.
The power plant softeners remove hardness from the incoming town of Groton potable water by ion exchange in order to soften the water for use in the boilers.

4. Identification of all types of wastes generated by each process producing a discharge.
The power plant softener regeneration results in four discharges to the sanitary sewer: a backwash, a brine rinse, a fast flush, and a final rinse. All are included in the flows listed above on this page.

5. For discharges to a POTW

a. Name and location of POTW Groton Design Flow of POTW 5 MGD

6. For discharges to a surface water body: Name of receiving stream N/A

7. A detailed description of the type of treatment system installed to treat the discharge.
None

8. A brief description of the BMP's to be implemented by the permittee to minimize the adverse environmental affects of activities covered under this general permit.
N/A

Part V: Certifications

The registrant and the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all signatures asked for are provided. If the registrant is the preparer, please mark N/A in the spaces provided for the preparer.

"I certify under penalty of law that I have read and understand all the conditions of the general permit for Water Treatment Wastewater (WTW) discharges issued on May 1, 1995, that all requirements for authorization under this general permit are met for all discharges which are subject of this registration, and all terms and conditions of this general permit are being met for all discharges which have been initiated and are the subject of this registration. This document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained in this registration is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowingly making false statements."

Signature of Registrant

Date

Suzanne Berkman
Name of Registrant (print or type)

Environmental Department Head
Title (if applicable)

Joseph Magdol
Signature of Preparer

4/23/97
Date

Joseph Magdol, P.E.
Name of Preparer (print or type)

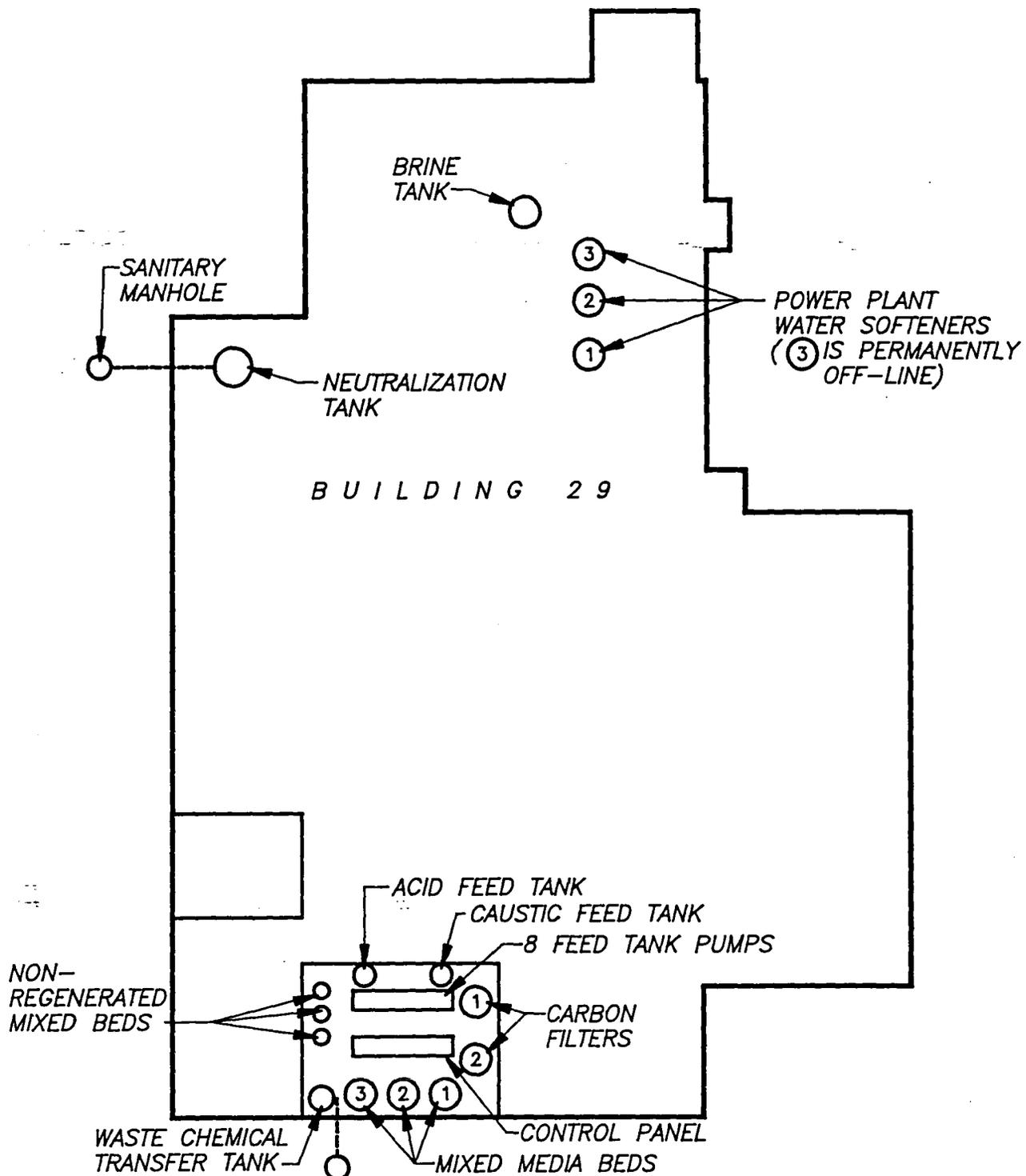
Senior Project Manager
Title (if applicable)

Please enter a check mark if additional signature blocks are attached.

Part VI: Supporting Documents

The supporting documents outlined below must be submitted with the registration form.

1. Plan of the site showing at least the boundaries of the site, the exact location of any drinking water wells on the site, the location of discharges covered under this general permit, the monitoring locations, the treatment systems and the location of wetlands and watercourses as defined by sections 22a-28 and 22a-38 of the General Statutes.
2. For discharge(s) to surface water or ground water, an 8 1/2" by 11" copy of applicable sections of a United States Geological Survey (USGS) quadrangle map, with a scale of 1:24,000, showing the exact location of the discharge, specifying the longitude and latitude of the discharge to within the closest 15 seconds, and including the name of the USGS map. N/A
3. For discharges to a POTW initiated after the effective date of the Water Treatment Wastewater General Permit, the attached POTW certification. N/A
4. The attached Professional Engineer Certification.
5. For any discharge initiated on or before the effective date of this general permit, which does not comply with the treatment and control requirements contained in Section 5(a)(6) as of the effective date of the general permit for Water Treatment Wastewater, a report detailing all such conditions or terms which are not being complied with, and a schedule of modifications or facility upgrades required to meet any such term or condition. N/A
6. A plan for minimizing the use of copper if the registrant utilizes a water supply reservoir and copper compounds are used, or intended to be used in the water supply reservoir. Such plan shall take into account, at a minimum, an assessment of nutrient loadings in the watershed, the amount of copper needed to control algae, intake levels, and opportunities for recycling the wastewater stream and shall include a plan for monitoring algae and using copper sulfate only when needed to control algae. N/A



BUILDING 29

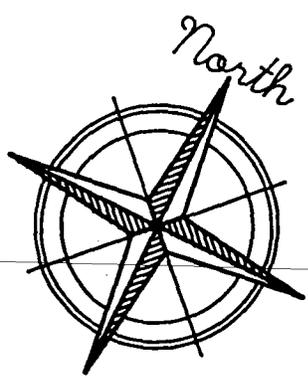


FIGURE 2
 BUILDING 29
 NAVAL SUBBASE NEW LONDON
 GROTON, CONNECTICUT
 HRP # NAV0096.FE
 NOT TO SCALE

POTW Certification

For discharges to a POTW initiated after the effective date of the Water Treatment Wastewater General Permit, the following certification is required from the registrant:

"I certify that (1) the information outlined below has been submitted to the appropriate POTW authority, and (2) the registrant has received written certification signed by the appropriate POTW authority that it has received and reviewed the information outlined below and has authorized the discharge to the POTW, and (3) such information and written certification has been submitted with this registration;

- (i) an analysis of the impact of the discharge on the hydraulic capacity of the receiving POTW, including but not limited to the receiving sewerage system, force mains, pumping stations;
- (ii) the rate, frequency, and time period that the WTW will be discharged to the POTW;
- (iii) wastewater characteristics;
- (iv) provisions for the controlled discharge of WTW to the receiving POTW, including but not limited to equalization, limiting hydraulic loading, or limiting the total suspended solids loading;
- (v) the impact of the discharge of WTW on POTW sludge generation and handling, and any potential alteration of the character of the sludge which may render it unsuitable for further treatment by anaerobic/aerobic digestion, high temperature/pressure and chemical oxidation, sludge dewatering, and composting; or unsuitable for ultimate disposal by incineration, landfilling, or land application;
- (vi) the ratio of flow of WTW in relation to total influent to the POTW; and
- (vii) any other information necessary to ensure that such discharge will not adversely impact the performance of the POTW and cause any violation of their discharge permit, or render the sludge generated at the POTW unsuitable for landfilling, land application, or incineration.

Signature of Registrant

Date

Name of Registrant (print or type)

Title (if applicable)

PROFESSIONAL ENGINEER CERTIFICATION

The following certification, signed by a professional engineer licensed to practice in Connecticut:

- (i) For any discharge which has not been initiated, created, or maintained as of the date of the registration is submitted:

"I certify that in my professional judgement proper operation and maintenance of any systems installed to treat the discharge(s) which are subject of this registration will ensure that all effluent limitations and other conditions in the general permit for the discharge of WTW issued on May 1, 1995 are met, or if there is no treatment system for such discharge(s), that the discharge(s) will meet all effluent limitations and conditions of such general permit without treatment. This certification is based on my review of engineering reports and plans and specifications describing (1) the proposed discharges and (2) any proposed treatment system for the wastewaters to be discharged. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements.

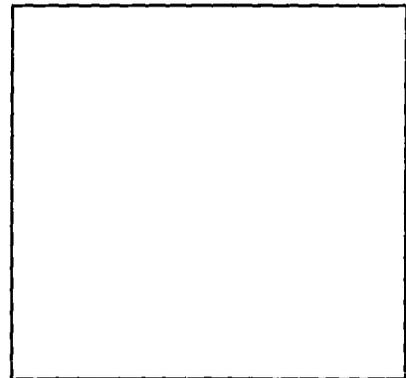
Signature of Professional Engineer

Date

Name of Professional Engineer

P.E. Number

Affix P.E. Stamp here



- (ii) For any discharge other than those specified in paragraph (i) above:

"I certify that in my professional judgement all discharge(s) which are the subject of this registration comply with all conditions of the general permit for the discharge of WTW issued on May 1, 1995, including but not limited to all effluent limitations in Section 5(b) of such general permit and proper operation and maintenance of any systems installed to treat such discharge(s) will ensure that all effluent limitations and other conditions in such general permit are met, or if there is no treatment system for such discharge(s), that the discharge(s) will meet all effluent limitations and conditions of such general permit without treatment. This certification is based

(PROFESSIONAL ENGINEER CERTIFICATION continued)

in part on my review of analyses of a minimum of three effluent samples collected, preserved, handled and analyzed in accordance with 40 CFR Part 136, which samples were representative of the discharge(s) during standard operating conditions, were taken within the previous 12 months, at least one week apart, and were of the type(s) specified in Section 5(c)(5) of the general permit for WTW discharges issued on May 1, 1995, and were analyzed for the parameters specified in Section 5(c) of such general permit. In the case of discharges of WTW less than 5000 gallons per day maximum daily flow, this certification may be based on review of analyses from one effluent sample collected, preserved, handled, and analyzed as specified in the previous sentence. I am aware that there are significant penalties for false statements in this certification, including the possibility of fine and imprisonment for knowingly making false statements."

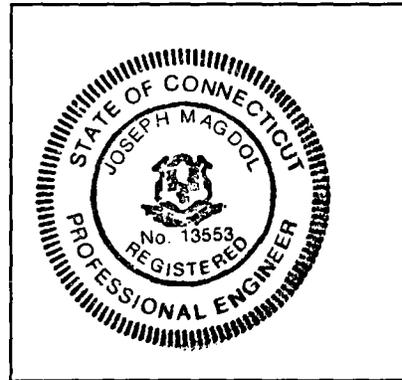
Joseph Magdol
Signature of Professional Engineer

4/23/97
Date

Joseph Magdol, P.E.
Name of Professional Engineer

13553
P.E. Number

Affix P.E. Stamp here



(PROFESSIONAL ENGINEER CERTIFICATION continued)

(iii) In addition, for a discharge to a POTW:

"I certify that in my professional judgement all the requirements for discharges to a POTW in Sections 4 and 5 of the General Permit for Water Treatment Wastewater have been met and the registrant is authorized to discharge to the POTW."

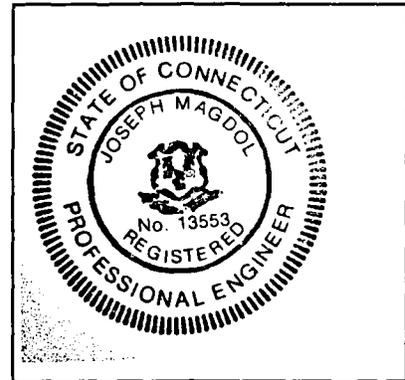
Joseph Magdol
Signature of Professional Engineer

4/23/97
Date

Joseph Magdol, P.E.
Name of Professional Engineer

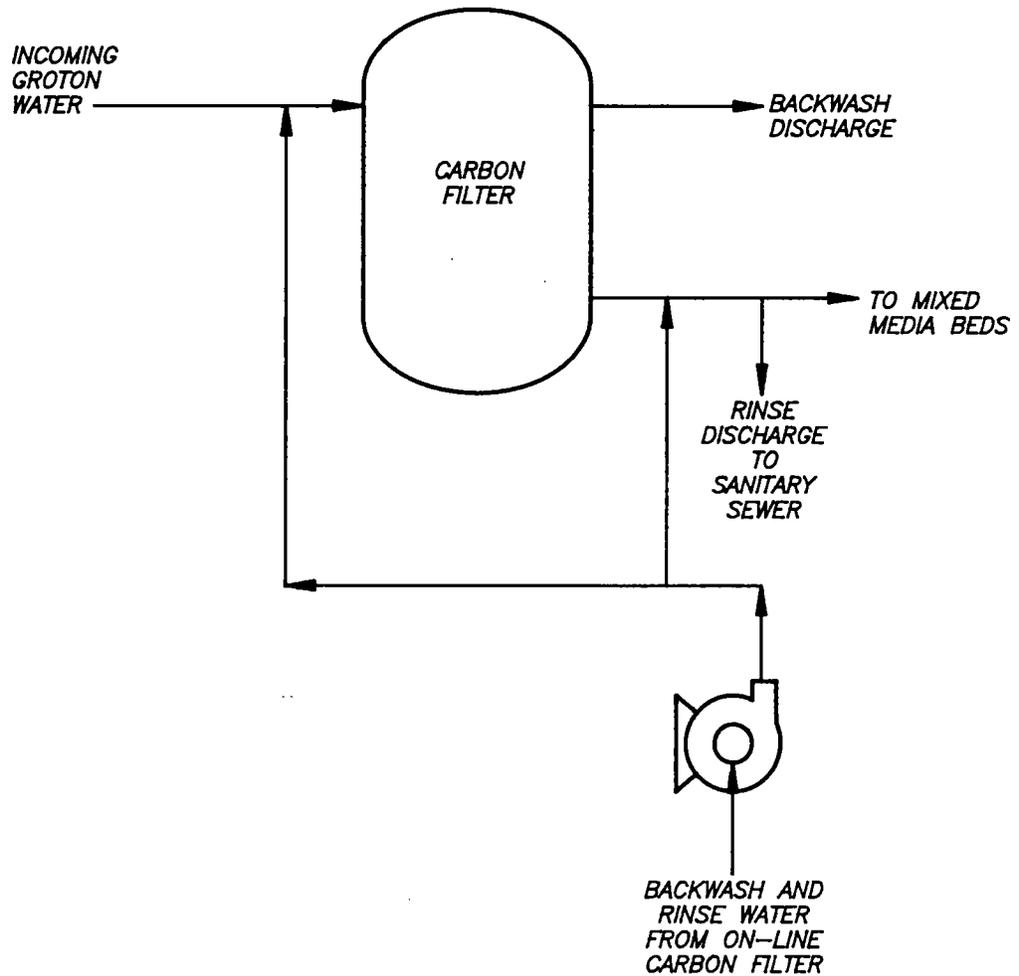
13553
P.E. Number

Affix P.E. Stamp here

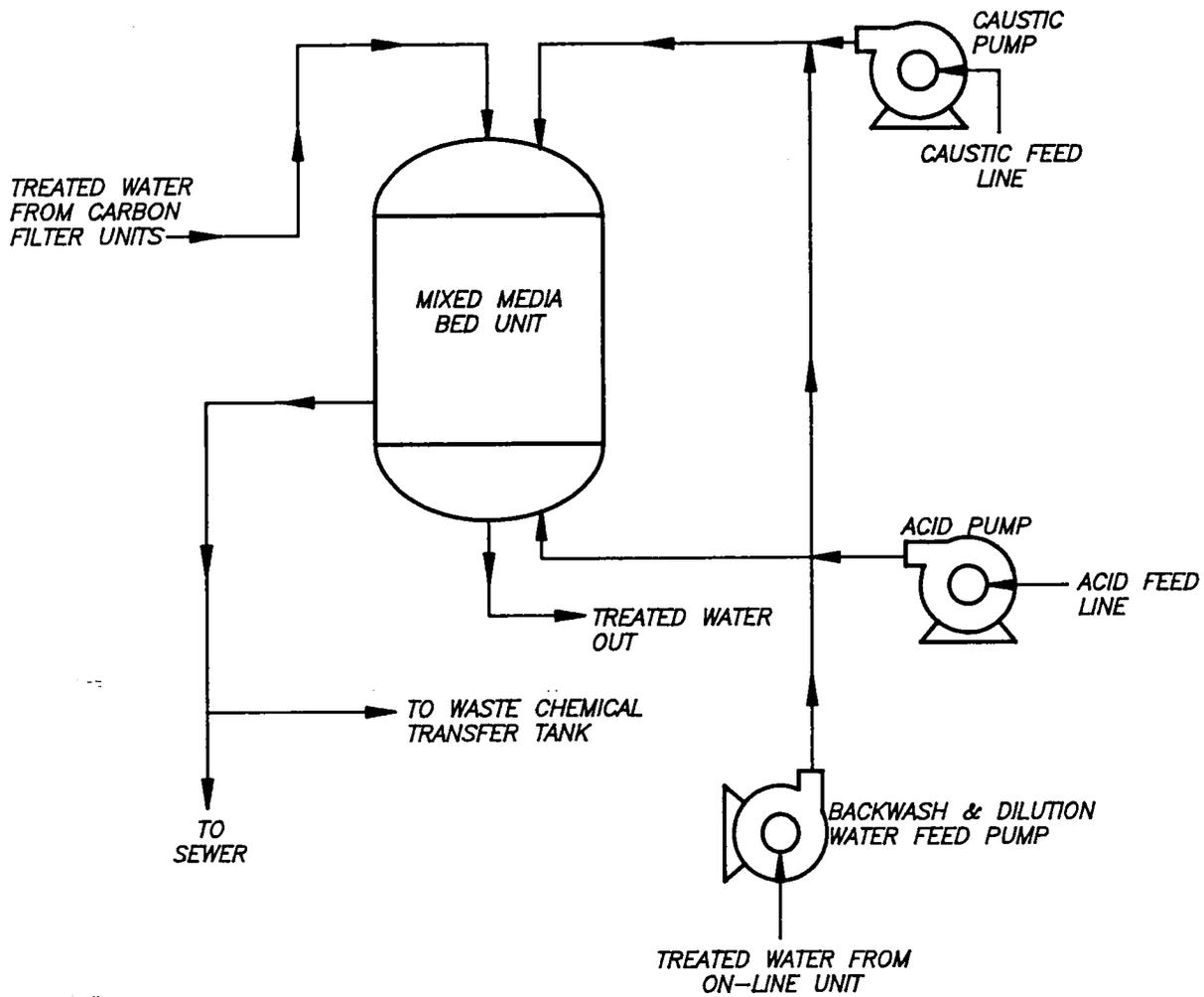


APPENDIX F
FLOW DIAGRAMS

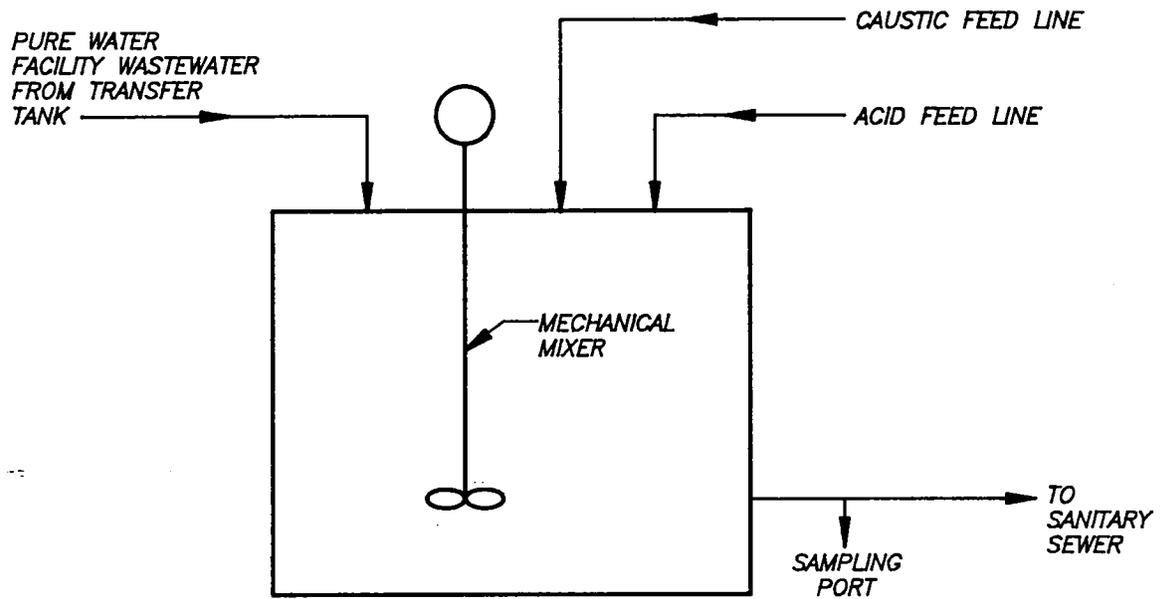
CARBON FILTER UNIT FLOW DIAGRAM
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT



MIXED MEDIA BED UNIT FLOW DIAGRAM
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT



NEUTRALIZATION TANK FLOW DIAGRAM
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT



POWER PLANT WATER SOFTENER FLOW DIAGRAM
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT

