USACHPPM

U.S. Army Center for Health Promotion and Preventive Medicine
(Provisional)

WATER QUALITY INFORMATION PAPER NO. 32-024

DISPOSAL OPTIONS AND PROCEDURES FOR WASTES GENERATED BY REVERSE OSMOSIS WATER PURIFICATION UNITS

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U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE (Provisional)

The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) lineage can be traced back over fifty years to the Army Industrial Hygiene Laboratory. That organization was established at the beginning of World War II and was under the direct jurisdiction of The Army Surgeon General. It was originally located at the Johns Hopkins School of Hygiene and Public Health, with a staff of three and an annual budget not to exceed three thousand dollars. Its mission was to conduct occupational health surveys of Army operated industrial plants, arsenals, and depots. These surveys were aimed at identifying and eliminating occupational health hazards within the Department of Defense's (DOD) industrial production base and proved to be beneficial to the Nation's war effort.

Most recently, it has been nationally and internationally known as the U.S. Army Environmental Hygiene Agency or AEHA. Its mission, by this time, had been expanded to support the worldwide preventive medicine programs of the Army, DOD and other Federal Agencies through consultations/supportive services, investigations and training.

Today, it is redesignated the U.S. Army Center for Health Promotion and Preventive Medicine. Its mission for the future is to provide worldwide technical support for implementing preventive medicine, public health and health promotion/wellness services into all aspects of America's Army and the Army Community anticipating and rapidly responding to operational needs and adaptable to a changing world environment.

The professional disciplines represented at the Center include chemists, physicists, engineers, physicians, optometrists, audiologists, nurses, industrial hygienists, toxicologists, entomologists, and many others as well as sub-specialties within these professions.

The organization's quest has always been one of excellence and continuous quality improvement; and today its vision, to be the nationally recognized Center for Health Promotion and Preventive Medicine, is clearer than ever. To achieve that end, it holds ever fast to its values which are steeped in its rich heritage:

- Integrity is the foundation
- Excellence is the standard
- Customer satisfaction is the focus
- Its people are the most valued resource
- Continuous quality improvement is its pathway

Once again, the organization stands on the threshold of even greater challenges and responsibilities. It is being totally reorganized with a provisional structure and will obtain its first General Officer leadership. As it moves into the next century, new programs are being added related to health promotion/wellness, soldier fitness and disease surveillance. As always, its mission focus is centered upon the Army Imperatives so that we are trained and ready to enhance the Army's readiness for war and operations other than war.

It is an organization fiercely proud of its history, yet equally excited about the future. It is destined to continue it development as a world-class organization with expanded services to the Army, DOD, other Federal Agencies, the Nation and the World Community.

DEPARTMENT OF THE ARMY
U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE (PROVISIONAL)
ABERDEEN PROVING GROUND, MARYLAND 21010-5422

REPLY TO
ATTENTION OF

20 OCT 1994

MCHB-ME-W

WATER QUALITY INFORMATION PAPER NO. 32-024

DISPOSAL OPTIONS AND PROCEDURES FOR WASTES GENERATED BY REVERSE OSMOSIS WATER PURIFICATION UNITS

1. PURPOSE.

a. To provide disposal options to environmental coordinators and personnel responsible for disposal of waste streams produced by operating Reverse Osmosis Water Purification Units (ROWPUs) to include brine, backwash water, Reverse Osmosis Membrane (ROM) cleaning water, product water, spent ROMs, and spent cartridge filters.

b. To increase awareness of advanced planning required to dispose of wastewaters associated with operating ROWPUs during training.

2. REFERENCES. See Appendix A for a list of references.

3. ABBREVIATIONS. See Appendix B for a list of abbreviations.

4. SCOPE.

a. The scope of this paper is operation in a training scenario under peacetime conditions.

b. Information presented is based on a study performed on the 600 gallon per hour (gph) ROWPU by this Center (references 1 and 2). Field water production operations employ the 600 gph, 3000 gph, and 150,000 gallon per day (gpd) ROWPU, each using different chemicals and water qualities for backwashing and cleaning the ROMs. These variances influence the chemical make-up of the waste streams produced.

c. Due to lack of information on chemical quality of waste streams produced by ROWPUs of varying capacity with different operational practices, the disposal options presented in this information paper may not apply, and a chemical analysis of the waste stream may be necessary to determine legally acceptable disposal options. ALL DISPOSAL SCENARIOS IMPLEMENTED MUST BE COORDINATED AND APPROVED BY THE LOCAL INSTALLATION ENVIRONMENTAL COORDINATOR AND THE PRIMACY REGULATORY AUTHORITY. The sewage treatment plant (STP) manager must be coordinated with when the option of discharging to the STP is considered.

5. DISPOSAL OF WASTEWATERS.

a. Regulatory Information (reference 1).

(1) In the United States, rules and regulations for wastewater discharges are established by the U.S. Environmental Protection Agency (EPA) (or a State with an EPA approved program) under the National Pollutant Discharge Elimination System (NPDES) (reference 3), established under the Clean Water Act (CWA). Dischargers must apply for and obtain a site specific NPDES Permit (or State equivalent) or general NPDES Permit.

(2) The EPA must publish and update ambient surface water quality criteria under the CWA (reference 4) which is not legally enforceable; however, many states require that the levels be met in surface waters. The ambient criteria refers to pollutant concentrations found in the receiving water and not solely the discharge.

(3) Foreign countries will have their own guidance on disposal of wastes in their country during a training exercise as well as ambient water quality criteria. Coordinate with the installation point of contact or the environmental coordinator in the foreign country and the country's permitting agency to obtain information on applying for a permit to discharge. In some instances, it may be applicable to compare EPA discharge standards to those of the foreign country and apply the more stringent requirements.

b. Wastewater Generation.

(1) Wastewaters generated during ROWPU operation are brine, backwash water from the multimedia filter(s), and wastewater produced from cleaning the ROMs. Product water, if not used, must also be disposed of.

(2) The amount of wastewater generated will depend on the source water quality and operational practices. For fresh water sources, approximately 50 percent product water and 50 percent brine is produced. If the water source is brackish to saline, approximately 25 percent product water and 75 percent brine is generated. Generally, the multimedia filter is backwashed every 20 hours of operation or when the pressure loss across the filter rises more than 5 pounds per square inch (psi) over initial readings, and when the ROWPU is shut down. Approximately 1000 gallons of backwash wastewater is produced during a 13-minute backwash cycle.

(3) The ROMs are cleaned when the ROM gage increases by 20 percent over the initial reading, the Reverse Osmosis (RO) pressure indicator rises above 960 psi for seawater or 500 psi for fresh and brackish water, or when the product water flow decreases or the brine flow increases noticeably. Source water quality will directly impact how often the ROMs must be cleaned. The two methods of cleaning ROMs is to circulate citric acid solution or Triton X-100®, a soapy cleaning solution, through the vessels which will generate at least 350 gallons of wastewater.

c. Brine. The contaminants present in the brine are the same as those in the source water, only at different concentrations. The suspended solid concentration will be less than that of the raw water; however, the dissolved solids, alkalinity, metals and chloride concentration are greater in the brine. Phosphate concentration is increased in the brine due to the use of sodium hexametaphosphate (SHMP). Disposal of brine should not be a hazard to the environment (reference 1).

(1) Return to Source. The impact of returning brine to the source water is largely dependent on the volume of the source body of water and also mixing zones and flows, particularly at the point of discharge. Each discharge site should be evaluated and approved by the primacy regulatory authority by obtaining a site-specific NPDES discharge permit. Due to the number of variables, a general NPDES discharge permit is not adequate.

(2) Discharge to STP. Most brines can be treated at a STP; however, an elevated metal concentration in the brine may upset biological media at the STP. This is more of a concern in brackish or saline sources with high total dissolved solids (TDS) content.

(3) Discharge to Ground. In lieu of other options, the standard field wastewater disposal method, a soakage pit or trench, is an alternative in many areas except where high ground water tables exist (reference 9). Other options include evaporation beds in arid areas and various conventional land treatment methods. For discharge of brines produced by treating seawater, returning the brine to the source water is more

®Triton X-100 is a registered trademark of Rohm & Haas Co., Independence Mall West, Philadelphia, Pennsylvania. Use of trademarked names does not imply endorsement by the U.S. Army but is intended only to assist in identification of a specific product.

favorable than land disposal because of the increased potential to degrade ground water.

(4) Blend of Brine and Product Water. If the brine is unable to be disposed of due to the high concentrations of contaminants, and extra product water is available, the two medias can be blended to dilute the constituent concentrations. The blended solution may then be allowed by the primacy authority to be returned to the source, discharged to the STP, or discharged to the ground.

d. Backwash. The high total suspended solids (TSS) concentration, which normally exceeds NPDES standards, presents the greatest challenge to disposal of backwash waters. Metals and phosphate levels may also exceed EPA water quality criteria. Returning the backwash waters to the source is not a likely option because of the inability to meet NPDES requirements. Ideally, the backwash water can be discharged to the STP, either directly while backwashing or by collecting and hauling the backwash waters to the STP. As a last resort, the backwash water may be discharged to soaking pits, trenches, or other similar ground disposal option.

e. ROM Cleaning.

(1) The ROMs are cleaned with citric acid or Triton X-100®. For new ROWPUs which use a copper-nickel alloy tubing in conveying water, high levels of copper, nickel, lead, and zinc was detected in wastewater during the citric acid element cleaning. This phenomena was shown to diminish over successive citric acid element cleaning cycles (reference 2).

(2) Direct discharge of wastewaters generated during citric acid and Triton X-100® cleaning cycles to surface waters is unlikely because of:

(a) high 5-day biochemical oxygen demand (BOD_5) and low pH in the citric acid wastewaters, and

(b) high BOD_5, suspended solids, and grease and oil levels in the Triton X-100® wastewaters.

(3) As with backwash water, the ROM cleaning solution should be discharged to a STP. Again, the wastewater can be directly discharged or collected and hauled to the STP. To facilitate handling the contaminant load by the STP, the wastewater can be bled to the sewer, as opposed to being discharged all at once (slug). The elevated metal content in

wastewaters generated during citric acid cleaning on new ROWPUs using a copper-nickel alloy tubing in conveying water may upset biological media at the STP.

(4) Land disposal methods, such as a soakage pit or trench:

(a) will probably not be allowed for wastewater generated during the citric acid cleaning, and

(b) should only be considered a last resort for wastewater generated during the Triton X-100® cleaning cycle.

f. Product Water. For training purposes, product water is not normally used; therefore, disposal is required, unless the installation can find a use for this water (such as backwash water or brine dilution water). A permit will be required if disposal to the raw water source is desired. Discharge to a number of different streams is possible, if training will be conducted at a variety of locations. Other disposal options include discharge to the ground and to the STP.

6. NPDES PERMIT APPLICATION PROCEDURES AND SUGGESTED TIMELINE.

a. A permit can be obtained for return of the following wastewaters to the raw water source: product water, brine wastewater, or a blend of the two (product and brine wastewater). Before applying for a NPDES permit to discharge, the training location or receiving body of water must be known because characterization of ROWPU wastewater or sampling will probably be required in order to apply for a permit.

b. Approximately 250 days prior to discharge: The environmental coordinator must contact the State regulatory agency or appropriate EPA Regional Administrator (whomever has primacy for wastewater permitting) to request appropriate application forms and directions on filling out these forms. Appendix C contains a directory of state and EPA regulatory authority contacts.

c. Forms required may include EPA Form 3510-1 (State form may be different than Federal form), EPA Form 3510-2C and EPA Form 3510-2D. See Appendix D for an example of a completed permit application. A permit application fee will be required.

(1) Thoroughly read instructions on the application forms and contact permitting authority for additional information.

(2) All applicants are required to submit a map with EPA Form 3510-1 and a process line diagram with Part IIA of EPA Form 3510-2C. See Appendix D for an example of these maps in the sample permit application.

(3) All pollutants expected to be present in the discharge must be listed in Part V.B. of EPA Form 3510-2C.

e. Characterization of ROWPU wastewater or sampling will be required in order to apply for a permit. If sampling is required, this should be performed at least 230 days prior to discharge, because it normally takes at least 30 days to obtain analytical results. This leaves approximately 3 weeks to fill out the application once the analytical results are obtained.

f. Federal regulations contained in Title 40, Code of Federal Regulations, Part 122, Section 21 (40 CFR 122.21) require that applications for new discharges be made 180 days prior to discharge. The environmental coordinator must complete the application and send it to the permitting authority. The application must be complete and accurate.

g. Within approximately 90 days the draft permit and its appropriate fact sheet (page or pages listing the basis for limits in the permit) should be issued. The draft permit will contain effluent limitations and standards, monitoring requirements, discharge prohibitions, compliance schedules, and standard conditions.

h. The regulatory agency will provide public notice and make the draft permit available for a 30-day public comment period.

i. Prior to the comment period deadline, the environmental coordinator should review the draft permit and its fact sheet. This will take about 20 days. The environmental coordinator should address any comments and concerns by phone to appropriate regulatory agency, and follow up important comments in writing.

(1) Comments can include requests for additional information and for modifying the permit. Requests for permit modification must include reasonable arguments and actual supporting information.

(2) Public hearing may be requested but may not be granted.

j. The permitting agency must respond to all written significant comments. A final permit will be sent in approximately 160 days. If permit is not received by the desired date, contact agency to find out how to discharge in the meantime.

k. The permit will be issued for 5 years and the applicant must reapply 180 days before the expiration date of the permit to ensure receiving a new permit (the process repeats itself).

l. See Appendix E for a copy of a sample permit.

7. DISPOSAL OF SOLID WASTES - SPENT ROMs AND CARTRIDGE FILTERS.

a. Regulatory Information.

(1) The 40 CFR 260-280, commonly referred to as the Resource Conservation and Recovery Act (RCRA) (reference 8), defines hazardous wastes and provides regulatory controls for the handling and management of hazardous wastes. A solid waste is considered a hazardous waste if it is listed in Subpart D of 40 CFR 261 or it exhibits any characteristic of a hazardous waste found in Subpart C of 40 CFR 261. More specifically, to be considered a hazardous waste, spent cartridge filters must display one of the following characteristics: ignitability, corrosivity, reactivity, or toxicity.

(2) In foreign country's, coordinate with the installation point of contact or the environmental coordinator in the host nation, and the host nation environmental authorities to obtain information on disposal of spent ROMs and cartridge filters in the host nation. Maintain good housekeeping practices to include containing and collecting spent ROMs and cartridge filters in a central location. The spent ROMs and cartridge filters may be transported back to the United States for disposal.

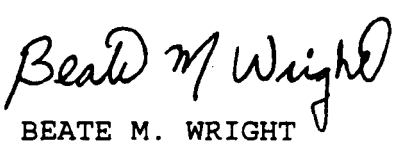
b. Toxicity. Toxicity is the only characteristic that could potentially result in classification of spent cartridge filters and membranes from ROWPU operations as hazardous wastes. The toxicity test extracts constituents in a manner analogous to the natural degradation which occurs within landfills. Toxicity regulations stipulate that a solid waste must be capable of leaching one or more of the compounds specified in 40 CFR 261 in concentrations greater than the established limits in order to be

categorized as a hazardous waste. These compounds are typically found in a dissolved state.

c. Contaminant Transportation. The functions of ROWPU filtration systems, and the nature of the potential contaminants, make it extremely unlikely that contaminants would adhere to filters and membranes in concentrations that would exceed regulatory limits. Compounds that determine toxicity are typically found in a dissolved state. Multimedia and cartridge filters remove particulates but allow dissolved compounds and particles less than five microns to pass. Consequently, potential contaminants may pass through the filters and come into contact with the ROMs. The ROM will either pass or reject the potential contaminants based upon their molecular weights. Rejected compounds are captured in the brine storage tank and are disposed using procedures described in paragraph 5c. A small amount of the compounds listed in 40 CFR 261 could adhere to suspended solids in the raw water; however, filtration and subsequent backwashing removes these compounds from the filters into the backwash water. Disposal of the backwash water is covered in paragraph 5d.

d. Disposal. Dispose of spent ROWPU cartridge filters and ROMs as solid waste in accordance with State and local requirements.

8. ACKNOWLEDGMENTS. The efforts and contributions of Ms. Wendy Mervine, Mr. Mike Robison and CPT Donald Archibald were instrumental in the development of this information paper.



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APPENDIX A

REFERENCES

1. Memorandum, USAEHA, HSHB-ME-WM, 13 June 1989, subject: Water Quality Engineering Study No. 32-24-0895-89, 600 Gallon Per Hour Reverse Osmosis Water Purification Unit Evaluation of Wastes, U.S. Army Belvoir Research, Development, and Engineering Center, Fort Belvoir, Virginia, August-October 1988.

2. Memorandum, USAEHA, HSHB-ME-WM, 2 November 1989, subject: Addendum to Water Quality Engineering Study No. 32-24-0895-89, 600 Gallon Per Hour Reverse Osmosis Water Purification Unit Evaluation of Wastes, U.S. Army Belvoir Research, Development, and Engineering Center, Fort Belvoir, Virginia, August-October 1988.

3. Title 40, Code of Federal Regulations (CFR), Part 122, EPA Administered Permit Programs: National Pollutant Discharge Elimination System.

4. EPA 440/5-86-001, May 1986, Quality Criteria for Water.

5. Memorandum, 83rd ARCOM, 12 October 1990, subject: Disposal of Backwash Water from Water Purification Units.

6. Memorandum, National Guard Bureau, 13 August 1991, subject: Disposal of Sanitizing Solution from the 400 Gallon Water Trailer.

7. EPA 833-B-93-003, March 1993, Training Manual For NPDES Permit Writers.

8. Title 40, Code of Federal Regulations (CFR), Parts 260 - 280, Resource Conservation and Recovery Act (RCRA).

9. FM 21-10, November 1988, Field Hygiene and Sanitation, Headquarters, Department of the Army.

APPENDIX B

ABBREVIATIONS

BOD_5	Biochemical oxygen demand (5-day)
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
gpd	gallon per day
gph	gallon per hour
NPDES	National Pollutant Discharge Elimination System
psi	pounds per square inch
RCRA	Resource Conservation and Recovery Act
RO	Reverse Osmosis
ROM	Reverse Osmosis Membrane
ROWPU	Reverse Osmosis Water Purification Unit
SHMP	sodium hexametaphosphate
STP	sewage treatment plant
TDS	total dissolved solids
TSS	total suspended solids

APPENDIX C

DIRECTORY OF STATE CONTACTS

Directory of State Contacts

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Department of Environmental Management
Water Quality Division
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South Dakota*
Vern Barry
(303) 293-1630**
U.S. EPA, Region 8
999 18th St., Suite 500
Denver, Colo. 80202-2466

Norma Job**
(605) 773-3546
Department of Environment and Natural Resources
Division of Environmental Regulation
Joe Foss Building
523 East Capitol
Pierre, S.D. 57501-3181

Tennessee
Michael Uss
Robert Haley
(615) 532-0625
Department of Environment and Conservation
Division of Water Pollution Control
L & C Annex, 6th Floor
401 Church St.
Nashville, Tenn. 37243-1534

Texas*
For callers in Okla., Texas, La. or N.M.:
(800) 841-8285
U.S. EPA, Region 6
1445 Ross Ave.
Mailcode: 6W-PM
Dallas, Texas 75202

Utah
Harry Campbell, industrial dischargers
Paul Krauth, municipal dischargers
(801) 538-6146
Department of Environmental Quality
Division of Water Quality
Salt Lake City, Utah 84114-4870

Vermont
Brian Dooiker
Randy Bean
(802) 241-3822**
Department of Environmental Conservation
Permits, Compliance and Protection Division
103 S. Main St.
Waterbury, Vt. 05676

Virginia**
Michelle Hooper
Burton Tuxford
Cathy Boatright
(804) 527-5083
Virginia Department of Environmental Quality
Water Division
P.O. Box 11143
Richmond, Va. 23230-1143

Washington
Linda Matlock, Kathy Flynn, industrial permits
(206) ~~438-7614~~ 407-6437
Gary Kruger, municipal permits
(206) 438-7529
Department of Ecology
Office of Water Programs
Mail Stop PV-11
Olympia, Wash. 98504

* For non-NPDES states and territories, EPA regional office contacts are listed.

** Revised, September 1993.

Directory of State Contacts

West Virginia
Art Vickers
(304) 558-8855
Department of Commerce, Labor and Natural Resources
Office of Water Resources
Industrial Branch
1201 Greenbrier St.
Charleston, W.Va. 25311

Wisconsin**
Jim Helm
Kim Knudsen
(608) 264-6262
Department of Natural Resources
Bureau of Wastewater Management
P.O. Box 7921
Madison, Wis. 53707

Wyoming
John Wagner
(307) 777-7082
Department of Environmental Quality
Herschler Building, 4th Floor
Cheyenne, Wyo. 82002

American Samoa*
Eugene Bromley
(415) 744-1906
U.S. EPA, Region 9
75 Hawthorne St.
Mailcode: W-5-1
San Francisco, Calif. 94103

Guam*
Eugene Bromley
(415) 744-1906
U.S. EPA, Region 9
75 Hawthorne St.
Mailcode: W-5-1
San Francisco, Calif. 94103

Northern Mariana Islands*
Eugene Bromley
(415) 744-1906
U.S. EPA, Region 9
75 Hawthorne St.
Mailcode: W-5-1
San Francisco, Calif. 94103

Puerto Rico*
Jose Rivera
(212) 264-2911
U.S. EPA, Region 2
26 Federal Plaza, Room 845
Mailcode: 2AWM-HWPB
New York, N.Y. 10278

Tomas Rivera
(809) 767-8181
Director of Water Quality Area
Environmental Quality Board
P.O. Box 11488
Santurce, Puerto Rico 00910

Virgin Islands**
Benjamin Nazario
Adrian Schottrof
(809) 773-0565
Department of Planning and Natural Resources
Environmental Protection Division
Government House
Charlotte Amalie
St. Thomas, Virgin Islands 00801

Jose Martinez
(809) 774-3320
Director, Coastal Zone Management Office
Department of Planning and Natural Resources
6003 Annas Hope
Christiansted
St. Croix, Virgin Islands 00820-4433

* For non-NPDES states and territories, EPA regional office contacts are listed.

** Revised, September 1993.

APPENDIX D

SAMPLE NPDES PERMIT APPLICATION

Please print or type in the unshaded areas only
(shaded areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

FORM 1 — GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER: F V A 0 0 5 9 1 6 1 . D

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)	X		
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: USACASCOM and FORT LEE

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 BARTHOLOMEW, KATHLEEN ENV PR SP	804 734 2564

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 ATTN: ATZM-EP

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 FORT LEE	VA	23801-5200

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5

B. COUNTY NAME

PRINCE GEORGE

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 FORT LEE	VA	23801	

EPA Form 3510-1 (6-80)

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
9711 (specify) U.S. ARMY INSTALLATION	4941 (specify) WATER SUPPLY TRAINING
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME	B. Is the name listed in Item VIII-A also the owner?
LTC GREGORY D. GIBBONS	☐ YES ☒ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)	D. PHONE (area code & no.)
F = FEDERAL; S = STATE; P = PRIVATE; M = PUBLIC (other than federal or state); O = OTHER (specify) — F (specify)	A 804 734 2981

E. STREET OR P.O. BOX			
USACASCOM & FORT LEE, ATTN: ATSM-PWD			
F. CITY OR TOWN	**G. STATE**	**H. ZIP CODE**	**IX. INDIAN LAND**
FORT LEE	VA	23801	Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	D. PSD (Air Emissions from Proposed Sources)
9N VA0059161	9P 50564
B. UIC (Underground Injection of Fluids)	**E. OTHER (specify)**
9U N/A	9 C1951 (specify) WATERWORKS OPERATION CONSTRUCTION
C. RCRA (Hazardous Wastes)	**E. OTHER (specify)**
9R VA7210020502	9 3149247 (specify) WATERWORKS OPERATION CONSTRUCTION

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

See Attachment #1

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
SAMUEL N. WAKEFIELD Lieutenant General, U.S. Army Commanding		

COMMENTS FOR OFFICIAL USE ONLY

C1

EPA Form 3510-1 (6-80) REVERSE

ATTACHMENT #1

XII. NATURE OF BUSINESS

The U. S. Army Combined Arms Support Command and Fort Lee is a major Army installation under the U. S. Army Training and Doctrine Command. The major activities of Fort Lee are the U. S. Army Combined Arms Support Command, and the U. S. Army Quartermaster Center and School. The outfall(s) identified in the permit application are associated primarily with the Quartermaster School.

Discharges from outfalls 001 and 002 are the result of training on mobile water treatment plants. The units are designed to turn a raw water source into potable water. The product water is solely for training purposes and will not be used for human consumption.

At outfall 001, the 600 and 3000 GPH ROWPU units will be used. Chemicals to be used at this outfall include chlorine, a polymer for coagulation and sodium hexametaphosphate. Treated water will go to the settling basin where the chlorine will dissipate and the polymer and sodium hexametaphosphate will settle out. The supernatant from the settling basin will be tested for chlorine prior to discharge to the river. The sludge from the settling basin will be pumped into a truck and transported to a sanitary sewer access point. Units are backwashed to the sanitary sewer. The Hopewell Regional Wastewater Treatment Facility has previously given permission to discharge backwash.

At outfall 002 the 600 and 3000 GPH ROWPU units will be used. No chemicals will be used at this site.

Outfalls 003, 004, and 005 are from ponds constructed to catch runoff from three petroleum training sites. The ponds act as tertiary containment in the event of a major spill. No average flow data is available. Values given are estimated peak flows from a ten year storm event. Outfalls 003 and 005 are assumed to be essentially the same as 004.

Please type or print in the unshaded areas only

EPA ID Number *(copy from Item 1 of Form 1)*: VA0059161

Form Approved OMB No. 2040-0086 Approval expires 7-31-88

Form 2D NPDES

EPA New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

I. Outfall Location

For each outfall, list the latitude and longitude, and the name of the receiving water

Outfall Number *(list)*	Latitude			Longitude			Receiving Water *(name)*
	Deg	Min	Sec	Deg	Min	Sec	
005	37°	13'	30"	77°	20'	15"	Baileys Creek

II. Discharge Date *(When do you expect to begin discharging?)*

No later than May 1992.

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

Outfall Number	1. Operations Contributing Flow *(list)*	2. Average Flow *(include units)*	3. Treatment *(Description or List Codes from Table 2D-1)*
005	Petroleum Training Facility	Rainfall dependent. Is designed to accommodate a 25 year storm plus 420,000 gallons.	4-A

B. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item III-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. See Attachment 1.

C. Except for storm runoff, leaks, or spills, will any of the discharges described in item III-A be intermittent or seasonal?

☐ Yes *(complete the following table)* ☒ No *(go to item IV)*

Outfall Number	1. Frequency		2. Flow		
	a. Days Per Week *(specify average)*	b. Months Per Year *(specify average)*	a. Maximum Daily Flow Rate *(in mgd)*	b. Maximum Total Volume *(specify with units)*	c. Duration *(in days)*

IV. Production

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not design), expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet)

Year	a. Quantity Per Day	b. Units of Measure	c. Operation, Product, Material, etc *(specify)*
			N/A

FROM THE FRONT	EPA ID Number (copy from Item 1 of Form 1)	Outfall Number
	VA0059161	005

V. Effluent Characteristics

A, and B: These items require you to report estimated amounts *(both concentration and mass)* of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

***General Instructions** (See table 2D-2 for Pollutants)*

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value (include units)	3. Average Daily Value (include units)	4. Source (see instructions)
pH (mg/l)	Monthly extreme=5.86	Average monthly=6.36	3
Oil and Grease (mg/l)	Monthly Maximum = 8	Average monthly =<5	3
Biological Oxygen Demand	2 mg/l		3
Chemical Oxygen Demand	4.6 mg/l		3
Total Organic Carbon	12.6 mg/l		3
Total Suspended Solids	152 mg/l		3
Flow	65 CFS		3
Ammonia (as N)	.08 mg/l		3
Temperature (winter)	4°C		3
Temperature (summer)	20°C		3
GROUP B			
Benzene ug/l	< 2.50		3
Toluene ug/l	< 2.50		3
Ethylbenzene ug/l	< 2.50		3
Xylene ug/l	< 2.50		3

CONTINUED FROM THE FRONT	EPA ID Number *(copy from Item 1 of Form 1)* VA0059161	

C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge
NONE	

VI. Engineering Report on Wastewater Treatment

A If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below

☒ Report Available ☐ No Report

B Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location
None	

EPA ID Number *(copy from item one of Form 1)*
VA0059161

VII. Other Information *(Optional)*

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

VIII. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure 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 submitted 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 knowing violations.

A. Name and Official Title *(type or print)*	B. Phone No.
SAMUEL N. WAKEFIELD Lieutenant General, U.S. Army Commanding	734-1542
C. Signature	D. Date Signed

* U.S. Government Printing Office : 19[illegible]

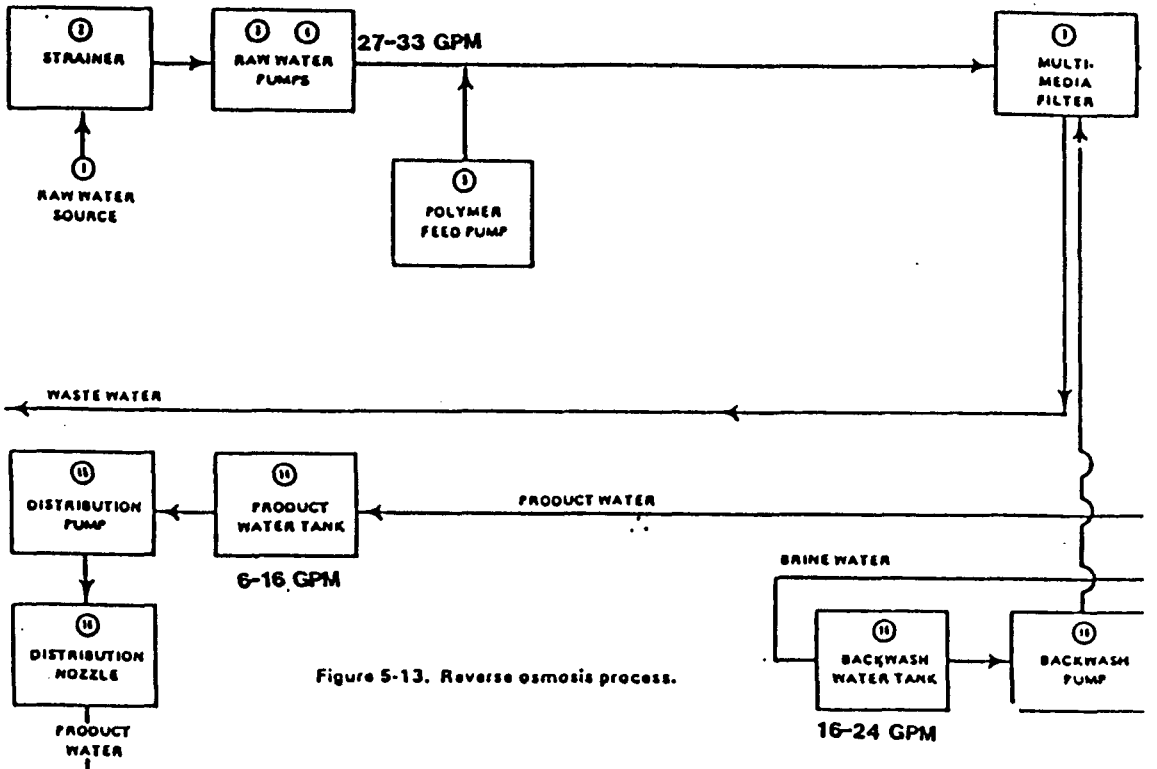
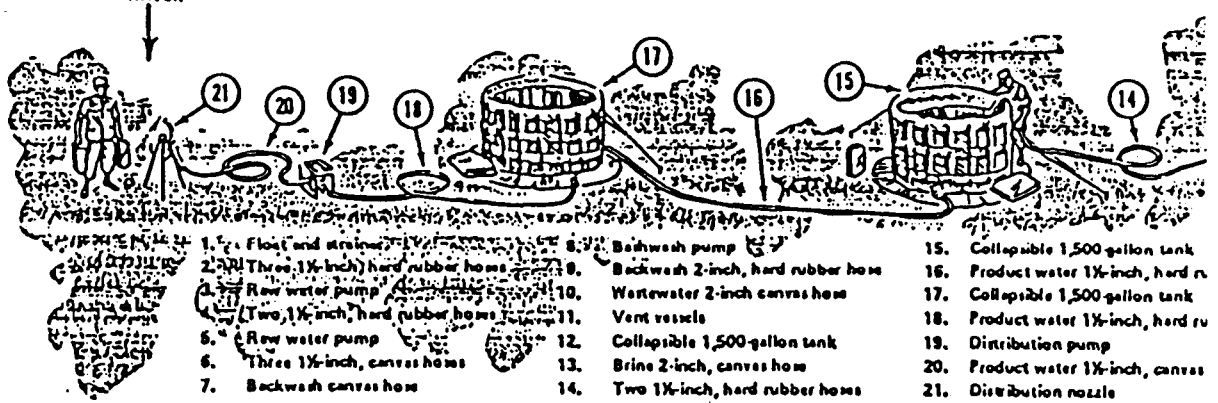


Figure 5-13. Reverse osmosis process.



2A Typical field installation of the 600 GPH ROWPU

Please print or type in the unshaded areas only.

EPA I.D. NUMBER (copy from Item 1 of Form 1): VA0059161

Form Approved. OMB No. 2000-0059 Approval expires 12-31-85

FORM 2C NPDES

U.S. ENVIRONMENTAL PROTECTION AGENCY

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS

Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	37°	17'	15"	77°	21'	15"	Appomattox River
002	37°	14'	45"	77°	19'	45"	Baileys Creek

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1
001	ROWPU	8,000 GPD	2 units - Non-treated Product Water and Wastewater blended and returned to River (backwash to sanitary sewer).	1-S
			Treated water to settling basins, sludge to sanitary sewer and settling basin supernatant to river.	
002	ROWPU	26,000 GPD	2 Units - Product and Wastewater (backwash to sanitary sewer).	1-S

OFFICIAL USE ONLY (*effluent guidelines sub-categories*)

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☒ YES *(complete the following table)* ☐ NO *(go to Section III)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(S) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK *(specify average)*	b. MONTHS PER YEAR *(specify average)*	a. FLOW RATE *(in mgd)*		b. TOTAL VOLUME *(specify with units)*		c. DURATION *(in days)*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	
001	ROWPU	3	12	.008	.0138		.0138 MG	
002	ROWPU	3	12	.026	.060		.060 MG	

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☐ YES *(complete Item III-B)* ☒ NO *(go to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

☐ YES *(complete Item III-C)* ☒ NO *(go to Section IV)*

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS *(list outfall numbers)*
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES *(complete the following table)* ☒ NO *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

EPA I.D. NUMBER (copy from Item 1 of Form 1)
VA0059161

Form Approved.
OMB No. 2000-0059
Approval expires 12-31-85

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding — Complete one set of tables for each outfall — Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
NONE			

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES *(list all such pollutants below)* ☒ NO *(go to Item VI-B)*

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ YES (identify the test(s) and describe their purposes below) ☒ NO (go to Section VIII)

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ YES (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below) ☐ NO (go to Section IX)

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
Environmental Laboratories, Inc.	9211 Burge Avenue Richmond, VA 23237		

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure 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 submitted 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 knowing violations.

A. NAME & OFFICIAL TITLE (type or print)	B. PHONE NO. (area code & no.)
LEON E. SALOMON Lieutenant General, U.S. Army Commanding Officer	(804) 734-1542
C. SIGNATURE	D. DATE SIGNED

PLE[illegible] PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUC[illegible]ONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: VA0059161

Form Approved. OMB No. 2000-0069. Approval expires 12-31-85

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO.: 001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	2. EFFLUENT c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVG. VALUE (if available) (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS (specify if blank) b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	less than 2	less than 60,480					1	mg/1	mg/d			
b. Chemical Oxygen Demand *(COD)*	less than 20	less than 604,800					1	mg/1	mg/d			
c. Total Organic Carbon *(TOC)*	3.9	117,936					1	mg/1	mg/d			
d. Total Suspended Solids *(TSS)*	less than 1	less than 30,240					1	mg/1	mg/d			
e. Ammonia *(as N)*	1.1	33,264					1	mg/1	mg/d			
f. Flow	VALUE 13,800 GPD		VALUE		VALUE 8,000 GPD					VALUE		
g. Temperature *(winter)*	VALUE 5° C		VALUE		VALUE		1	°C		VALUE		
h. Temperature *(summer)*	VALUE 21° C		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 6.84	MAXIMUM 7.09	MINIMUM	MAXIMUM			12	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVG. VALUE (if available) (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual	X	X	5	151,400			0.0		NONE	mg/1	mg/d			
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite *(as N)*		X												

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease		X												
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)		X												
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)		X												
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: VA0059161

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V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO.: 001

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS (specify if blank) b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	less than 2	less than 60,480					1	mg/1	mg/d			
b. Chemical Oxygen Demand (COD)	less than 20	less than 604,800					1	mg/1	mg/d			
c. Total Organic Carbon (TOC)	3.9	117,936					1	mg/1	mg/d			
d. Total Suspended Solids (TSS)	less than 1	less than 30,240					1	mg/1	mg/d			
e. Ammonia (as N)	1.1	33,264					1	mg/1	mg/d			
f. Flow	VALUE 13,800 GPD		VALUE		VALUE 8,000 GPD					VALUE		
g. Temperature (winter)	VALUE 5° C		VALUE		VALUE		1	°C		VALUE		
h. Temperature (summer)	VALUE 21° C		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 5.84	MAXIMUM 7.09	MINIMUM	MAXIMUM			12	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual	X	X	5	151,400			0.0		NONE	mg/1	mg/d			
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite (as N)		X												

CONTINUE ON REVERSE

1. POLLUTANT AND CAS NO. (If available)	2. MARK 'X' a. Believed Present	2. MARK 'X' b. Believed Absent	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (If available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (If available) (2) Mass	c. LONG TERM AVG. VALUE (If available) (1) Concentration	c. LONG TERM AVG. VALUE (If available) (2) Mass	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) Concentration	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) Mass	5. INTAKE (optional) b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease		X												
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)		X												
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)		X												
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

CONTINUED FROM PAGE 3 OF FORM 2-C

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
VA0059161	001

Form Approved
OMB No. 2000-0089
Approval expires 12-31-85

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (If available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X												
2M. Arsenic, Total (7440-38-2)			X												
3M. Beryllium, Total, 7440-41-7)			X												
4M. Cadmium, Total (7440-43-9)			X												
5M. Chromium, Total (7440-47-3)			X												
6M. Copper, Total (7440-50-8)			X												
7M. Lead, Total (7439-92-1)			X												
8M. Mercury, Total (7439-97-6)			X												
9M. Nickel, Total (7440-02-0)			X												
10M. Selenium, Total (7782-49-2)			X												
11M. Silver, Total (7440-22-4)			X												
12M. Thallium, Total (7440-28-0)			X												
13M. Zinc, Total (7440-66-6)			X												
14M. Cyanide, Total (57-12-5)			X												
15M. Phenols, Total			X												
DIOXIN															
2,3,7,8-Tetrachlorodibenzo P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

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1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X' a. TESTED FOR BELIEVED ABSENT	b. BELIEVED PRESENT	c. BELIEVED PRESENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (If available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (Chloromethyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodibromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichlorobromomethane (75-27-4)			X												
13V. Dichlorodifluoromethane (75-71-8)			X												
14V. 1,1-Dichloroethane (75-34-3)			X												
15V. 1,2-Dichloroethane (107-06-2)			X												
16V. 1,1-Dichloroethylene (75-35-4)			X												
17V. 1,2-Dichloropropene (78-87-5)			X												
18V. 1,3-Dichloropropylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl Bromide (74-83-9)			X												
21V. Methyl Chloride (74-87-3)			X												

CONTINUED FROM PAGE V-4

EPA I.D. NUMBER (copy from Item 1 of Form 1): VA0059161 | OUTFALL NUMBER: 001

Form Approved
OMB No. 2000-0059
Approval expires 12-31-85

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (If available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoromethane (75-69-4)			X												
31V. Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)			X												
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6 Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (If available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (a) Anthracene (56-55-3)			X												
6B. Benzo (a) Pyrene (50-32-8)			X												
7B. 3,4-Benzo-fluoranthene (205-99-2)			X												
8B. Benzo (ghi) Perylene (191-24-2)			X												
9B. Benzo (k) Fluoranthene (207-08-9)			X												
10B. Bis (2-Chloro-ethoxy) Methane (111-91-1)			X												
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)			X												
12B. Bis (2-Chloroiso-propyl) Ether (102-60-1)			X												
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)			X												
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (a,h) Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												
21B. 1,3-Dichloro-benzene (541-73-1)			X												

CONTINUE ON PAGE V-7

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Endosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

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EPA I.D. NUMBER (copy from Item 1 of Form 1): VA0059161

OUTFALL NUMBER: 001

Form Approved
OMB No. 2000 0059
Approval expires 12 31 85

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(1) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(1) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(1) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(1) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichlorobenzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitrotoluene (121-14-2)			X												
28B. 2,6-Dinitrotoluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachlorobenzene (118-74-1)			X												
34B. Hexachlorobutadiene (87-68-3)			X												
35B. Hexachlorocyclopentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												

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CONTINUE ON REVERSE

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OUTFALL NUMBER: 001

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TEST-ING REQUIRED	b. BE-LIEVED PRESENT	c. BE-LIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANAL-YSES	4. UNITS a. CONCEN-TRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCEN-TRATION	(2) MASS	b. NO. OF ANAL-YSES
GC/MS FRACTION – PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

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V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO.: 002

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	3. UNITS (specify if blank) b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (optional) b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	less than 2	less than 196,560					1	mg/1	mg/d			
b. Chemical Oxygen Demand *(COD)*	less than 20	less than 1,965,600					1	mg/1	mg/d			
c. Total Organic Carbon *(TOC)*	8.2	805,896					1	mg/1	mg/d			
d. Total Suspended Solids *(TSS)*	less than 1	less than 98,280					1	mg/1	mg/d			
e. Ammonia *(as N)*	1.4	137,592					1	mg/1	mg/d			
f. Flow	VALUE 60,000 GPD		VALUE		VALUE 26,000 GPD					VALUE		
g. Temperature *(winter)*	VALUE 5° C		VALUE		VALUE		1	°C		VALUE		
h. Temperature *(summer)*	VALUE 21° C		VALUE		VALUE		1	°C		VALUE		
i. pH	MINIMUM 6.62	MAXIMUM 6.98	MINIMUM	MAXIMUM			12	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite *(as N)*		X												

CONTINUE ON REVERSE

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ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (If available)	2. MARK 'X' a. Believed Present	2. MARK 'X' b. Believed Absent	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (if available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (if available) (2) Mass	c. LONG TERM AVG. VALUE (if available) (1) Concentration	c. LONG TERM AVG. VALUE (if available) (2) Mass	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) Concentration	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) Mass	5. INTAKE (optional) b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease		X												
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)		X												
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)		X												
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

EPA I.D. NUMBER (copy from Item 1 of Form 1): VA0059161

OUTFALL NUMBER: 002

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PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X												
2M. Arsenic, Total (7440-38-2)			X												
3M. Beryllium, Total, 7440-41-7)			X												
4M. Cadmium, Total (7440 43 9)			X												
5M. Chromium, Total (7440-47-3)			X												
6M. Copper, Total (7440-50-8)			X												
7M. Lead, Total (7439-92-1)			X												
8M. Mercury, Total (7439-97-6)			X												
9M. Nickel, Total (7440-02-0)			X												
10M. Selenium, Total (7782-49-2)			X												
11M. Silver, Total (7440-22-4)			X												
12M. Thallium, Total (7440-28-0)			X												
13M. Zinc, Total (7440-66-6)			X												
14M. Cyanide, Total (57-12-5)			X												
15M. Phenols, Total			X												
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764 01 6)			X	DESCRIBE RESULTS											

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CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (If available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION -- VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (Chloromethyl) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodibromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloroethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichlorobromomethane (75-27-4)			X												
13V. Dichlorodifluoromethane (75-71-8)			X												
14V. 1,1-Dichloroethane (75-34-3)			X												
15V. 1,2-Dichloroethane (107-06-2)			X												
16V. 1,1-Dichloroethylene (75-35-4)			X												
17V. 1,2-Dichloropropane (78-87-5)			X												
18V. 1,3-Dichloropropylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl Bromide (74-83-9)			X												
21V. Methyl Chloride (74-87-3)			X												

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1. POLLUTANT AND CAS NUMBER (If available)	2. MARK "X" a. Testing required by applicable GP	b. Believed present	c. Believed absent	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) Concentration	a. MAXIMUM DAILY VALUE (2) Mass	b. MAXIMUM 30 DAY VALUE (If available) (1) Concentration	b. MAXIMUM 30 DAY VALUE (If available) (2) Mass	c. LONG TERM AVRG. VALUE (If available) (1) Concentration	c. LONG TERM AVRG. VALUE (If available) (2) Mass	d. NO. OF ANALYSES	4. UNITS a. Concentration	4. UNITS b. Mass	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) Concentration	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) Mass	5. INTAKE (optional) b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethene (79-34-5)			X												
24V. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethene (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoromethane (75-69-4)			X												
31V. Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichlorophenol (120-83-2)			X												
3A. 2,4-Dimethylphenol (105-67-9)			X												
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X												
5A. 2,4-Dinitrophenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachlorophenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVG. VALUE (If available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (a) Anthracene (56-55-3)			X												
6B. Benzo (a) Pyrene (50-32-8)			X												
7B. 3,4-Benzo-fluoranthene (205-99-2)			X												
8B. Benzo (ghi) Perylene (191-24-2)			X												
9B. Benzo (k) Fluoranthene (207-08-9)			X												
10B. Bis (2-Chloro-ethoxy) Methane (111-91-1)			X												
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)			X												
12B. Bis (2-Chloroso-propyl) Ether (102-80-1)			X												
13B. Bis (2-Ethyl-hexyl) Phthalate (117-81-7)			X												
14B. 4-Bromo-phenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (a,h) Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												
21B. 1,3-Dichloro-benzene (541-73-1)			X												

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1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichlorobenzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitrotoluene (121-14-2)			X												
28B. 2,6-Dinitrotoluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachlorobenzene (118-74-1)			X												
34B. Hexachlorobutadiene (87-68-3)			X												
35B. Hexachlorocyclopentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitrosodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichlorobenzene (120-82-1)			X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Endosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

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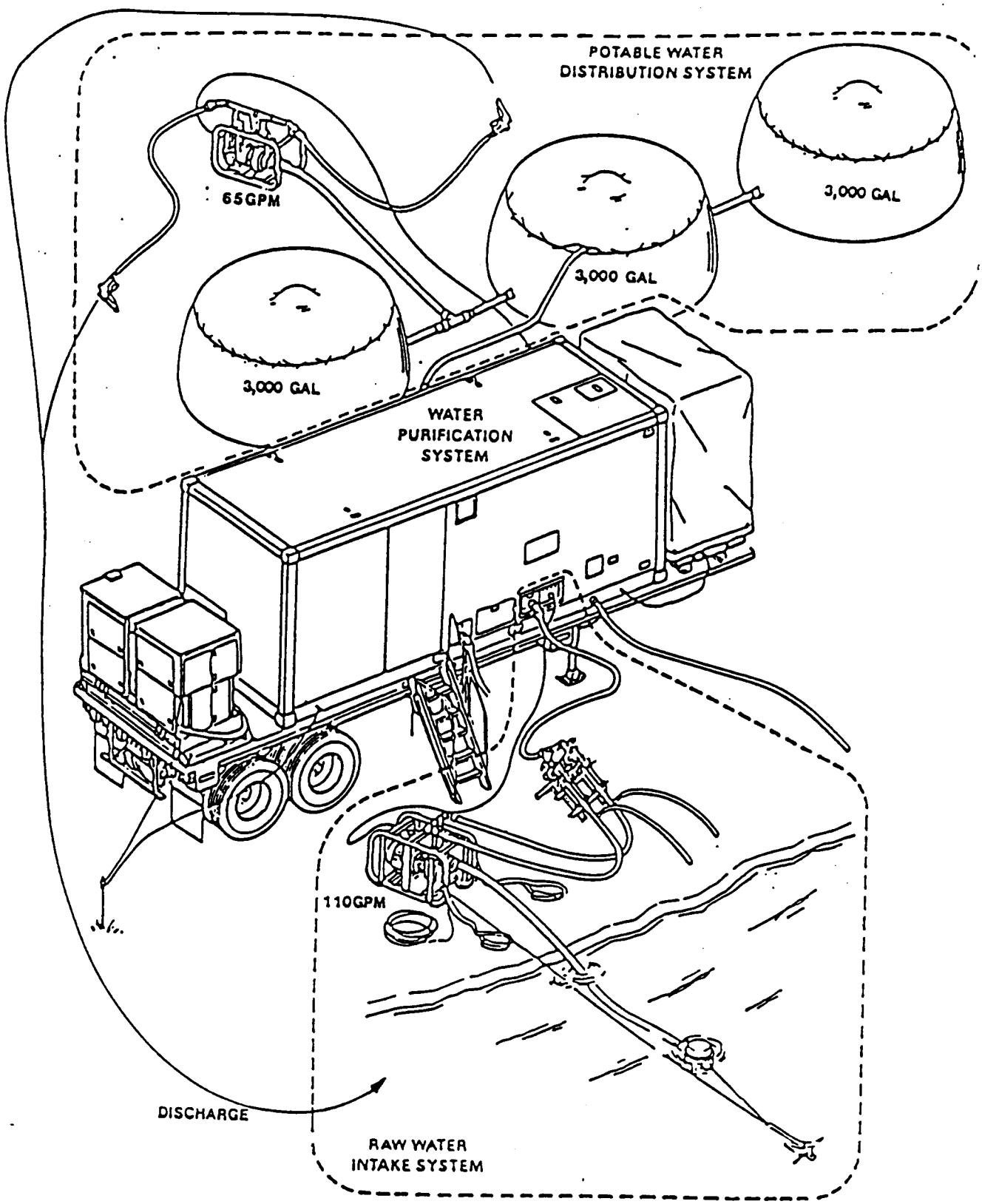
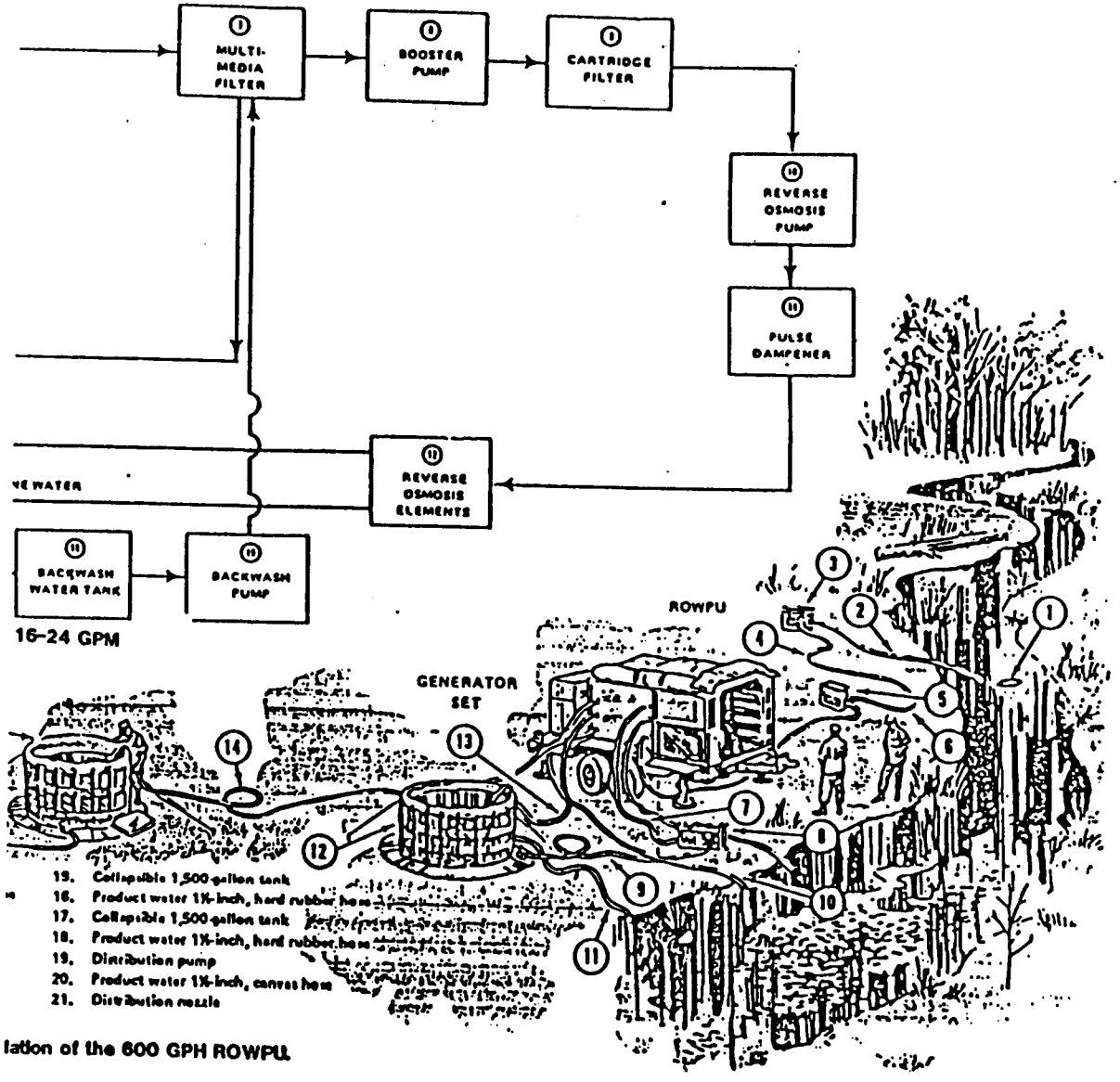
OMB No. 2000-0069
Approval expires 12-31-85

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. ANALYSES
GC/MS FRACTION -- PESTICIDES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												



2A Major Systems of the 3,000 GPH ROWPO.



lation of the 600 GPH ROWPU

APPENDIX E

SAMPLE NPDES PERMIT

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD

Richard N. Burton
Executive Director

Please reply to Piedmont Regional Office
P. O. Box 11143
Richmond, Virginia 23230
(804) 527-5020

Gerard Seeley, Jr.
Regional Director

Permit No. VA0059161
Effective Date: April 24, 1990
Modification Date: March 29, 1993
Expiration Date: April 24, 1995

AUTHORIZATION TO DISCHARGE UNDER THE

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM

AND THE VIRGINIA STATE WATER CONTROL LAW

In compliance with the provisions of the Clean Water Act as amended and pursuant to the State Water Control Law and regulations adopted pursuant thereto, the following owner is authorized to discharge in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

Owner: U. S. Army
Facility Name: USACASCOM and Fort Lee
City: Fort Lee
County: Prince George
Facility Location: Fort Lee

The owner is authorized to discharge to the following receiving streams:

Outfall:	001	002;004;005	003
Stream:	Appomattox River	Bailey's Creek	Blackwater Swamp
Basin:	James (Middle)	James (Middle)	Chowan & Dismal Swamp
Subbasin:	N/A	N/A	Chowan River
Section:	2a	7	2
Class:	II	III	III
Special Standards:	PWS	None	None

The authorized discharge shall be in accordance with this cover page, Part I - Effluent Limitations and Monitoring Requirements, Part II - Monitoring and Reporting Requirements, and Part III - Management Requirements, as set forth herein.

Gerard Seeley Jr. (for)
Executive Director, State Water Control Board

3/29/93
Date

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall 001.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATION				MONITORING REQUIREMENTS	
	Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NL	NL	NA	NL	1/D-M	Estimate
pH (Standard units)	NA	NA	6.0	9.0	1/D-M	Grab
Total Residual Chlorine (mg/l)	NA	NA	NA	5.0	1/D-M	Grab
Total Suspended Solids (mg/l)	30	NA	NA	60	1/D-M	5G/8HC*

NL = No Limitation
NA = Not Applicable

* 5G/8HC - Eight hour composite - consisting of 5 grab samples collected at hourly intervals until the discharge ceases or until a minimum of 5 grab samples have been collected.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall 002.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATION				MONITORING REQUIREMENTS	
	Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NL	NL	NA	NL	1/D-M	Estimate
pH (Standard units)	NA	NA	6.0	9.0	1/D-M	Grab
Total Suspended Solids (mg/l)	30	NA	NA	60	1/D-M	5G/8HC*

NL = No Limitation
NA = Not Applicable

* 5G/8HC - Eight hour composite - consisting of 5 grab samples collected at hourly intervals until the discharge ceases or until a minimum of 5 grab samples have been collected.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall 003, 004, and 005.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATION				MONITORING REQUIREMENTS	
	Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NL	NL	NA	NL	1/D-M	Estimate
pH (Standard units)	NA	NA	6.0	9.0	1/D-M	Grab
Oil and Grease (mg/l)*	30	NA	NA	NA	1/D-M	Grab
Total Petroleum Hydrocarbons (mg/l)	NL	NA	NA	NA	1/6 M	5G/8HC**

NL = No Limitation
NA = Not Applicable

* See Special Conditions

** 5G/8HC - Eight hour composite - consisting of 5 grab samples collected at hourly intervals until the discharge ceases or until a minimum of 5 grab samples have been collected.

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.

B. Other Requirements or Special Conditions

1. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b) (2) (c), (D), and (E), 304 (b) (2) (3) (4), and 307 (a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

   a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
   b. Controls any pollutant not limited in the permit.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

   Immediately after EPA's promulgation of applicable standards or limitations, a draft permit incorporating the new requirements shall be sent to the permittee.

2. Chlorine shall not be used on any of the water discharged from the mobile water treatment unit (outfall 002).

3. The intake and discharges for the mobile water treatment units shall be from the same surface water source.

4. The "monthly average" limitation for oil and grease in Part I.A.1. above, shall be deemed to have been exceeded if either:

   a. The arithmetic average of the analysis of all representative samples taken during a calendar month by the permittee in accordance with the monitoring requirements set forth above exceed 30 mg/l; or

   b. The analysis of any two representative grab samples taken by the state at least six (6) hours apart during any consecutive thirty (30) day period each individually exceed 30 mg/l.

   Each sample taken by either the permittee or the State shall be assumed to be representative. However, due to the variability of the sampling and analysis of oil and grease discharged from petroleum marketing terminals, the permittee may in good faith declare a maximum of 10 percent of the samples taken by it during a calendar year to be nonrepresentative. No sample may be excluded if it is the only sample taken by the permittee during a

calendar month. Such a declaration must be included in writing with the next Discharge Monitoring Report submitted in accordance with the permit, and must include the results of the analysis of the excluded sample and a written explanation for the exclusion of that sample. If any sample is so excluded, the "monthly average" concentration shall be the arithmetic average of the analysis of the remaining non-excluded samples.

Report the sample analysis on the DMR under monthly average.

5. This permit presently imposes no limitation on the discharge of stormwater uncontaminated by any industrial or commercial activity and not discharged through any oil-water separator or other treatment equipment or facility. However, this permit may be modified or alternatively revoked and reissued to reflect any future storm water regulations.

6. a. TPH shall be monitored once every six months for a period of 4 years commencing within 60 days of the modification date of this permit. After 4 years, or after a total of 8 analyses which are determined by the Board's staff to be representative of the discharge, are obtained, the permittee may request that the monitoring frequency be reduced to no less than once per year. The SWCB may approve this reduction in monitoring frequency by letter from the Executive Director. This permit may be modified or alternatively revoked and reissued to reflect the results of the TPH monitoring.

   b. Sampling of oil and grease, TPH, and pH shall be conducted within the first hour of the first day of discharge in each month there is a discharge. If this cannot be accomplished, the sample shall be taken as soon as possible after the discharge commences.

7. Groundwater Monitoring

Within 90 days of the modification date of this permit, the permittee shall submit to the Board's Regional Office a groundwater monitoring program for the treatment ponds at outfalls 003, 004, and 005. The purpose of this program will be to determine if the activities at these sites are resulting in violations of the Board's Groundwater Standards. This program may be approved by the Director of the Board's Regional Office. Once approved, this program shall become an enforceable condition of this permit.

MONITORING AND REPORTING

A. Sampling and Analysis Methods

1. Samples and measurements taken as required by this permit shall be representative of the volume and nature of the monitored activity.

2. Unless otherwise specified in the permit all sample preservation methods, maximum holding times and analysis methods for pollutants shall comply with requirements set forth in Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act as published in the Federal Register (40 CFR 136).

3. The sampling and analysis program to demonstrate compliance with the permit shall at a minimum, conform to Part I of this permit.

4. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will insure accuracy of measurements.

B. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

1. The date, exact place and time of sampling or measurements;

2. The person(s) who performed the sampling or measurements;

3. The dates analyses were performed;

4. The person(s) who performed each analysis;

5. The analytical techniques or methods used; and

6. The results of such analyses and measurements.

C. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for three (3) years from the date of the sample, measurement, report or application. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Board.

D. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the monitoring report. Such increased frequency shall also be reported.

E. Water Quality Monitoring

The Board may require every permittee to furnish such plans, specifications, or other pertinent information as may be necessary to determine the effect of the pollutant(s) on the water quality or to ensure pollution of State waters does not occur or such information as may be necessary to accomplish the purposes of the Virginia State Water Control Law, Clean Water Act or the Board's Permit Regulation.

The permittee shall obtain and report such information if requested by the Board. Such information shall be subject to inspection by authorized State and Federal representatives and shall be submitted with such frequency and in such detail as requested by the Board.

F. Reporting Requirements

1. The permittee shall submit to the State Water Control Board Regional Office, at the following address by the 10th of each month for the preceding month's performance, an original monitoring report. In addition, a monthly report covering the facility's general operational data may be required. If this report is required, the permittee will be so notified.

Send report to:

State Water Control Board
Piedmont Regional Office
P. O. Box 11143
Richmond, Virginia 23230

2. If, for any reason, the permittee does not comply with one or more limitations, standards, monitoring or management requirements specified in this permit, the permittee shall submit to the Board with the monitoring report at least the following information:

   a. A description and cause of noncompliance;

   b. The period of noncompliance, including exact dates and times and/or the anticipated time when the noncompliance will cease; and

   c. Actions taken or to be taken to reduce, eliminate, and prevent recurrence of the noncompliance.

   Whenever such noncompliance may adversely affect State waters or may endanger public health, the permittee shall submit the above required information by oral report within 24 hours from the time the permittee becomes aware of the circumstances and by written report within five days. The Board may waive the written report requirement on a case by case basis if the oral report has been received within 24 hours and no adverse impact on State waters has been reported.

3. The permittee shall report any unpermitted, unusual or extraordinary discharge which enters or could be expected to enter State waters. The permittee shall provide information specified in Part II.F.2.a-c. regarding each such discharge immediately, that is as quickly as possible upon discovery, however, in no case later than 24 hours. A written submission covering these points shall be provided within five days of the time the permittee becomes aware of the circumstances covered by this paragraph.

Unusual or extraordinary discharge would include but not be limited to (1) unplanned bypasses, (2) upsets, (3) spillage of materials resulting directly or indirectly from processing operations or pollutant management activities,

MANAGEMENT REQUIREMENTS

A. Change in Discharge or Management of Pollutants

1. Any permittee proposing a new discharge or the management of additional pollutants shall submit a permit application at least 180 days prior to commencing erection, construction, or expansion or employment of new pollutant management activities or processes at any facility. There shall be no commencement of treatment or management of pollutants activities until issuance of a permit.

2. All discharges or pollutant management activities authorized by this permit shall be made in accordance with the terms and conditions of the permit. The permittee shall submit to the Board a new application 180 days prior to all expansions, production increases, or process modifications, that will result in new or increased pollutants. The discharge or management of any pollutant more frequently than, or at a level greater than that identified and authorized by this permit, shall constitute a violation of the terms and conditions of this permit.

3. The permittee shall promptly provide written notice to the Board of the following:

   a. Any new introduction of pollutant(s), into treatment works or pollutant management activities which represents a significant increase in the discharge or management of pollutant(s) which may interfere with, pass through, or otherwise be incompatible with such works or activities, from an establishment, treatment works, or discharge(s), if such establishment, treatment works, or discharge(s) were discharging or has the potential to discharge pollutants to State waters; and,

   b. Any substantial change, whether permanent or temporary, in the volume or character of pollutants being introduced into such treatment works by an establishment, treatment works, pollutant management activities, or discharge(s) that was introducing pollutants into such treatment works at the time of issuance of the permit.

(4) breakdown of processing or accessory equipment, (5) failure of or taking out of service, sewage or industrial waste treatment facilities, auxiliary facilities or pollutant management activities, or (6) flooding or other acts of nature.

If the Regional Office cannot be reached, the Board maintains a 24-hour telephone service in Richmond (804-527-5200) to which the report required above is to be made.

c. Any reason to believe that any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) One hundred micrograms per liter (100 ug/l);
(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
(3) Five times the maximum concentration value reported for the pollutant in the permit application; or
(4) The level established in accordance with regulation under 307(a) of the Act and accepted by the Board.

d. Any activity has occurred or will occur which would result in any discharge on a non-routine or infrequent basis of a toxic pollutant which is not limited in the permit if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 ug/l);
(2) One milligram per liter (1 mg/l) for antimony;
(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application;
(4) The level established by the Board.

Such notice shall include information on: (1) the characteristics and quantity of pollutants to be introduced into or from such treatment works or pollutant management activities; (2) any anticipated impact of such change in the quantity and characteristics of the pollutants to be discharged from such treatment works or pollutants managed at a pollutant management activity; and (3) any additional information that may be required by the Board.

B. Operator Requirements

1. If specified in Part I of this permit, the permittee shall employ or contract at least one operator who holds a current wastewater license appropriate for the permitted facility or the pollutant management activity.

2. The permittee shall notify the Board in writing whenever he is not complying, or has grounds for anticipating he will not comply with the requirements in the above paragraph. The notification shall include a statement of reasons and a prompt schedule for achieving compliance.

C. Treatment Works Operation and Quality Control

1. Design and operation of facilities and/or treatment works and disposal of all wastes shall be in accordance with the application filed with the State Water Control Board and in conformity with the conceptual design, or the plans, specifications, and/or other supporting data approved by the Board. The approval of the treatment works conceptual design or the plans and specifications does not relieve the permittee of the responsibility of designing and operating the facility in a reliable and consistent manner to meet the facility performance requirements in the permit. If facility deficiencies, design and/or operational, are identified in the future which could affect the facility performance or reliability, it is the responsibility of the permittee to correct such deficiencies.

2. All waste collection, control, treatment, management of pollutant activities and disposal facilities shall be operated in a manner consistent with the following:

   a. At all times, all facilities and pollutant management activities shall be operated in accordance with the terms and conditions of the Certificate To Operate (CTO) and/or approved Operation and Maintenance (O&M) Manual, if applicable, and in a prudent and workmanlike manner so as to minimize upsets and discharges of excessive pollutants to State waters.

   b. The permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance and testing functions required to insure compliance with the conditions of this permit.

c. Maintenance of treatment facilities or pollutant management activities shall be carried out in such a manner that the monitoring and/or limitation requirements are not violated.

d. Collected sludges shall be stored in such a manner as to prevent entry of those wastes (or runoff from the wastes) into State waters, and disposed of in accordance with this permit or plans approved by the Board.

D. Adverse Impact

The permittee shall take all feasible steps to minimize any adverse impact to State waters resulting from noncompliance with any limitation(s) and/or conditions specified in this permit, and shall perform and report such accelerated or additional monitoring as is necessary to determine the nature and impact of the noncomplying limitation(s) and/or conditions.

E. Duty to Halt, Reduce Activity or to Mitigate

1. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. The permittee shall take all reasonable steps to minimize, correct or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Structural Stability

The structural stability of any of the units or parts of the facilities herein permitted is the sole responsibility of the permittee and the failure of such structural units or parts shall not relieve the permittee of the responsibility of complying with all terms and conditions of this permit.

G. Bypassing

Any bypass ("Bypass - means intentional diversion of waste streams from any portion of a treatment works") of the treatment works herein permitted is prohibited unless:

1. Anticipated Bypass - If the permittee knows in advance of the need for a bypass, the permittee shall notify the Board promptly at least 10 days prior to the bypass. After considering its adverse effects the Board may approve an anticipated bypass if:

   a. The bypass is unavoidable to prevent a loss of life, personal injury, or severe property damage ("Severe Property Damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.); and

   b. There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment down-time. However, if a bypass occurs during normal periods of equipment down-time, or preventive maintenance and in the exercise of reasonable engineering judgment the permittee could have installed adequate backup equipment to prevent such bypass, this exclusion shall not apply as a defense.

2. Unplanned Bypass - If an unplanned bypass occurs, the permittee shall notify the Board as soon as possible, but in no case later than 24 hours, and shall take steps to halt the bypass as early as possible. This notification will be a condition for defense to an enforcement action that an unplanned bypass met the conditions in Part III.G.1. above and in light of the information reasonably available to the owner at the time of the bypass.

H. Conditions Necessary to Demonstrate an Upset

A permittee may claim an upset as an affirmative defense to an action brought for noncompliance for only technology- based effluent limitations. In order to establish an affirmative defense of upset, the permittee shall present properly signed, contemporaneous operating logs or other relevant evidence that shows:

1. That an upset occurred and that the cause can be identified;

2. The facility permitted herein was at the time being operated efficiently and in compliance with proper operation and maintenance procedures;

3. The permittee submitted a notification of noncompliance as required by Part II.F. above; and

4. The permittee took all reasonable steps to minimize or correct any adverse impact to State waters resulting from noncompliance with the permit.

I. Compliance With State and Federal Law

Compliance with this permit during its term constitutes compliance with the State Water Control Law and the Clean Water Act except for any toxic standard imposed under Section 307(a) of the Clean Water Act.

Nothing in this permit shall be construed to preclude the institution of any legal action under, or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any other State law or regulation or under authority preserved by Section 510 of the Clean Water Act.

J. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any in- fringement of Federal, State, or Local Laws or regulations.

K. Severability

The provisions of this permit are severable.

L. Duty to Reapply

At least 180 days before the expiration date of this permit, unless permission for a later date has been granted by the Board, the permittee shall submit a new application for a permit.

M. Right of Entry

The permittee shall allow authorized State and Federal representatives, upon the presentation of credentials:

1. To enter upon the permittee's premises on which the establishment, treatment works, pollutant management activities, or discharge(s) is located or in which any records are required to be kept under the terms and conditions of this permit;

2. To have access to inspect and copy at reasonable times any records required to be kept under the terms and conditions of this permit;

3. To inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

4. To sample at reasonable times any waste stream, discharge, process stream, raw material or by-product; and

5. To inspect at reasonable times any collection, treatment, pollutant management activities or discharge facilities required under this permit.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging or involved in managing pollutants. Nothing contained herein shall make an inspection time unreasonable during an emergency.

N. Transferability of Permits

This permit may be transferred to another person by a permittee if:

1. The current owner notifies the Board 30 days in advance of the proposed transfer of the title to the facility or property;

2. The notice to the Board includes a written agreement between the existing and proposed new owner containing a specific date of transfer of permit responsibility, coverage and liability between them; and

3. The Board does not within the 30-day time period notify the existing owner and the proposed owner of its intent to modify or revoke and reissue the permit.

Such a transferred permit shall, as of the date of the transfer, be as fully effective as if it had been issued directly to the new permittee.

O. Public Access to Information

All information pertaining to permit processing or in reference to any source of discharge of any pollutant, shall be available to the public, unless the information has been identified by the applicant as a trade secret, of which the effluent data remain open public information. All information claimed confidential must be identified as such at the time of submission to the Board and/or EPA. Otherwise, all information will be made available to the public. Not withstanding the foregoing, any supplemental information that the Board may obtain from filings made under the Virginia Toxics Substance Information Act (TSIA) shall be subject to the confidentiality requirements of TSIA.

P. Permit Modification

The permit may be modified when any of the following developments occur:

1. When additions or alterations have been made to the affected facility which require the application of permit conditions that differ from those of the existing permit or are absent from it;

2. When new information becomes available about the operation, pollutant management activity or discharge covered by this permit which was not available at permit issuance and would have justified the application of different permit conditions at the time of permit issuance;

3. When a change is made in the promulgated standards or regulations on which the permit was based;

4. When it becomes necessary to change final dates in compliance schedules due to circumstances over which the permittee has little or no control such as acts of God, materials shortages, etc. However, in no case may a compliance schedule be modified to extend beyond any applicable statutory deadline of the Clean Water Act;

5. When a variance is requested and after the granting of the variance by EPA;

6. When an effluent standard or prohibition for a toxic pollutant must be incorporated in the permit in accordance with provisions of Section 307(a) of the Clean Water Act;

7. When changes occur which are subject to "Reopener Clauses" in the permit;

8. When the permittee requests the Board to allow "net limitations" to take into account pollutants in the permittee's intake water and the Board agrees to allow the use of net limitations;

9. When changes occur in the development and implementation of a pretreatment program;

10. When the level of discharge of or management of a pollutant not limited in the permit exceeds applicable Water Quality Standards or Water Quality Criteria, or the level which can be achieved by technology-based treatment requirements appropriate to the permittee;

11. When the permittee begins or expects to begin to use or manufacture any toxic pollutant not reported in the application; and

12. When other States were not notified of the change in the permit and their waters may be affected by the discharge.

Q. Permit Termination

After public notice and opportunity for a hearing, the permit may be terminated on any of the following grounds:

1. The permittee has violated any regulation or order of the Board, any condition of a permit, any provision of the Law, or any order of a court, where such violation results in a release of harmful substances into the environment or poses a substantial threat of release of harmful substances into the environment or presents a hazard to human health or the violation is representative of a pattern of serious or repeated violations which in the opinion of the Board, demonstrates the permittee's disregard for or inability to comply with applicable laws, regulations or requirements;

2. The permittee has failed to disclose fully all relevant material facts or has misrepresented a material fact in applying for a permit, or in any other report or document required under applicable laws or regulations;

3. The activity for which the permit was issued endangers human health or the environment and can be regulated to acceptable levels by modification or termination of the permit; or

4. There exists a material change in the basis on which the permit was issued that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit necessary to protect human health or the environment.

R. Civil and Criminal Liability

Except as provided in permit conditions on "bypassing" (Part III.G.), and "upset" (Part III.H.) nothing in this permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

S. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act or Sections 62.1-44.34(1) through 62.1-44.34(7) of the Law.

T. Unauthorized Discharge of Pollutants

Except in compliance with this permit, it shall be unlawful for any permittee to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances, or

2. Otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the uses of such waters for domestic or industrial consumption, or for recreation, or for other uses.

MEMORANDUM

VIRGINIA WATER CONTROL BOARD
Piedmont Regional Office

4900 Cox Road Glen Allen, VA 23060 804/527-5020

SUBJECT: Modification of VPDES Permit No. VA0059161
USACASCOM and Fort Lee
Attn: ATZM-EP
Fort Lee, Virginia 23801-5200

TO: Richard N. Burton

FROM: J. R. Bell, Jr.

DATE: March 24, 1993

COPIES: PRO, OWRM

Legal Name of Owner: U. S. Army

Modification Requested By: Fort Lee

Type of Discharge: Four existing and one proposed industrial discharges resulting from the operation of water treatment units and storm water runoff from petroleum training areas.

Receiving Stream:

Outfall 001
Stream: Appomattox River
Basin: James (Middle)
Subbasin: N/A
Section: 2A
Class: II
Special Standard: PWS

Outfalls 002, 004, 005
Stream: Bailey's Creek
Basin: James (Middle)
Subbasin: N/A
Section: 7
Class: III
Special Standard: None

Outfall 003
Stream: Blackwater Swamp
Basin: Chowan and Dismal Swamp
Subbasin: Chowan River
Section: 2
Class: III
Special Standard: None

Modification Description:	The modifications consist of adding effluent limitations for total residual chlorine at Outfall 001, a change of location for Outfall 002 and the addition of Outfall 005.
Public Notice:	The modification has received public notice in accordance with the Permit Regulation and no comments were received.
Planning:	The discharges are not addressed in any planning document but will be included when the plan is updated.
EPA Comments:	EPA has waived the right to comment and/or object to the adequacy of the modified permit.
COE Comments:	None
VDH Comments:	By letter dated February 26, 1993, the VDH believes no adverse health effects will be created by the discharges.
Previous Board Action:	None
Staff Comments:	Outfall 001: Outfall 001 consists of the finished water and backwash from a training site for portable water treatment units. Effluent limitations are being added to the permit for total residual chlorine. Treatment is provided by a two-cell settling basin (parallel operation). Outfall 002: The location has changed. The discharge consists of finished water only. There will be no use of chemicals and no backwash discharge to the receiving stream at this location.

Staff Comments:

Outfall 003: Outfall 003 is the outfall from the old Petroleum Training Facility, which is no longer in use. All fuel has been removed. Drainage from this area continues to flow through one of three oil water separators and then to a common pond. The discharge from the pond is Outfall 003. This outfall will remain in the permit until closure has been completed.

Outfall 004: Outfall 004 is the discharge from a pond that collects drainage from the Military in the Field training area. This training is concerned with moving fuel in relatively small quantities into battle areas. Treatment is provided by a pond constructed with a liner. The pond discharge is Outfall 004.

Outfall 005: Outfall 005 is the discharge from a pond collecting drainage from a new Petroleum Training Facility. This facility includes fuel storage tanks with containment facilities around individual tanks.

A vehicle wash rack is also located in this area. Wastewater from the wash rack will go through a grit chamber and an oil/water separator prior to discharge to the pond.

The treatment pond is designed on the basis of a 25 yr./24 hr. rain event and provides a storage volume of 2.5 MG. The pond is lined with a 60 mil HDPE liner. The outfall structure in the pond is designed such that oil would be retained in the pond.

Staff Comments: VPDES Permit No. VA0059161 was issued on April 24, 1990 and expires on April 24, 1995.

The staff believes that the attached effluent limitations will maintain the Water Quality Standards adopted by the Board.

Basis for Effluent Limits: The effluent limits are based on the State's Water Quality Standards and the staff's Best Professional Judgment.

STAFF RECOMMENDATIONS:

The staff recommends that the Executive Director:

1. Issue the modified VPDES Permit No. VA0059161.

2. Approve the conceptual plans for the treatment facilities for Outfall 005.

APPROVED: _____
Executive Director

DATE: 3/29/93

COMMONWEALTH OF VIRGINIA STATE WATER CONTROL BOARD

PERMITTEE NAME/ADDRESS (INCLUDE FACILITY NAME/LOCATION IF DIFFERENT)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

INDUSTRIAL MINOR

STATE WATER CONTROL BOARD (REGIONAL OFFICE)

NAME FT LEE WTPS & PETROLEUM TRAINING AREAS

ADDRESS DIR BLDG & HOUSING BLDG T 6205
FORT LEE VA 23801

FACILITY

LOCATION FILE NO

PERMIT NUMBER	DISCHARGE NUMBER
VA0059161	001

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM				TO			

PIEDMONT REGIONAL OFFICE
P.O. BOX 11143
RICHMOND, VA. 23230
804-527-5020

NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE COMPLETING THIS FORM.

PARAMETER		QUANTITY OR LOADING AVERAGE	QUANTITY OR LOADING MAXIMUM	QUANTITY OR LOADING UNITS	QUALITY OR CONCENTRATION MINIMUM	QUALITY OR CONCENTRATION AVERAGE	QUALITY OR CONCENTRATION MAXIMUM	QUALITY OR CONCENTRATION UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
001 FLOW	REPORTED				**********	**********	**********				
	PERMIT REQUIREMENT	NL	NL	MGD	**********	**********	**********			1/D	EST
002 PH	REPORTED	**********	**********			**********					
	PERMIT REQUIREMENT	**********	**********		6.0000	**********	9.0000	SU		1/D-M	GRAB
004 TOTAL SUS. SOLIDS	REPORTED	**********	**********		**********						
	PERMIT REQUIREMENT	**********	**********		**********	30.0000	60.0000	MG/L		1/D-M	SG/3H
005 TOTAL CL2	REPORTED	**********	**********		**********	**********					
	PERMIT REQUIREMENT	**********	**********		**********	**********	5.0000	MG/L		1/D-M	GRAB
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										

ADDITIONAL PERMIT REQUIREMENTS OR COMMENTS

BYPASSES AND OVERFLOWS	TOTAL OCCURRENCES	TOTAL FLOW (M.G.)	TOTAL BOD5 (K G)

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U. S. C. § 1001 AND 33 U. S. C. § 1319. (Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)

OPERATOR IN RESPONSIBLE CHARGE			DATE
TYPED OR PRINTED NAME	SIGNATURE	CERTIFICATE NO.	YEAR MO DAY
PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE	DATE
TYPED OR PRINTED NAME	SIGNATURE	AREA	

COMMONWEALTH OF VIRGINIA STATE WATER CONTROL BOARD

PERMITTEE NAME/ADDRESS (INCLUDE FACILITY NAME/LOCATION IF DIFFERENT)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

INDUSTRIAL MINOR 01/05/93

STATE WATER CONTROL BOARD (REGIONAL OFFICE)

NAME FT LEE WTPS & PETROLEUM TRAINING AREAS

ADDRESS DIR BLDG & HOUSING BLDG T-6205
FORT LEE VA 23801

FACILITY LOCATION FILE NO. - .

VA0059161 PERMIT NUMBER

002 DISCHARGE NUMBER

MONITORING PERIOD FROM YEAR MO DAY TO YEAR MO DAY

PIEDMONT REGIONAL OFFICE
P.O. BOX 11143
RICHMOND, VA. 23230
804-527-5020

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001 FLOW	REPORTED				**********	**********	**********				
	PERMIT REQUIREMENT	NL	NL	MGD	**********	**********	**********			1/D-M	EST
002 PH	REPORTED	**********	**********			**********					
	PERMIT REQUIREMENT	**********	**********		6.0000	**********	9.0000	SU		1/D-M	GRAB
004 TOTAL SUS.SOLIDS	REPORTED	**********	**********		**********						
	PERMIT REQUIREMENT	**********	**********		**********	30.0000	60.0000	MG/L		1/D-M	SC/8H
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
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	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										

ADDITIONAL PERMIT REQUIREMENTS OR COMMENTS

BYPASSES AND OVERFLOWS	TOTAL OCCURRENCES	TOTAL FLOW (M.G.)	TOTAL BOD5 (K G)

OPERATOR IN RESPONSIBLE CHARGE — DATE

TYPED OR PRINTED NAME | SIGNATURE | CERTIFICATE NO. | DATE: YEAR MO DAY

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PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT — TELEPHONE — DATE

TYPED OR PRINTED NAME | SIGNATURE | AREA CODE | NUMBER

SWCB NPDES FORM 5

COMMONWEALTH OF VIRGINIA STATE WATER CONTROL BOARD

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INDUSTRIAL MINOR 01/05/93

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NAME FT LEE WTPS & PETROLEUM TRAINING AREAS

ADDRESS DIR BLDG & HOUSING BLDG T-6205
FORT LEE VA 23801

FACILITY LOCATION

FILE NO.

VA0059161 PERMIT NUMBER

003 DISCHARGE NUMBER

MONITORING PERIOD FROM YEAR MO DAY TO YEAR MO DAY

PIEDMONT REGIONAL OFFICE
P.O. BOX 11143
RICHMOND, VA. 23230
804-527-5020

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002 PH	REPORTED	**********	**********			**********					
	PERMIT REQUIREMENT	**********	**********		6.0000	**********	9.0000	SU		1/D-N	GRAB
257 T.PETRO HYDROCARBONS	REPORTED	**********	**********		**********		**********				
	PERMIT REQUIREMENT	**********	**********		**********	NL	**********	MG/L		1/6M	GRAB
500 OIL & GREASE	REPORTED	**********	**********		**********		**********				
	PERMIT REQUIREMENT	**********	**********		**********	30.0000	**********	MG/L		1/D-N	GRAB
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										

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TYPED OR PRINTED NAME	SIGNATURE		

COMMONWEALTH OF VIRGINIA STATE WATER CONTROL BOARD

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INDUSTRIAL MINOR 01/05/93

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NAME FT LEE WTPS & PETROLEUM TRAINING AREAS

ADDRESS DIR BLDG & HOUSING BLDG T-6205
FORT LEE VA 23801

FACILITY

LOCATION FILE NO. - .

VA0059161 PERMIT NUMBER

004 DISCHARGE NUMBER

MONITORING PERIOD FROM YEAR MO DAY TO YEAR MO DAY

PIEDMONT REGIONAL OFFICE
P.O. BOX 11143
RICHMOND, VA. 23230
804-527-5020

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	PERMIT REQUIREMENT	**********	**********		6.0000	**********	9.0000	SU		1/D-M	GRAB
257 T.PETRO HYDROCARBONS	REPORTED	**********	**********		**********		**********				
	PERMIT REQUIREMENT	**********	**********		**********	NL	**********	MG/L		1/6M	GRAB
500 OIL & GREASE	REPORTED	**********	**********		**********		**********				
	PERMIT REQUIREMENT	**********	**********		**********	30.0000	**********	MG/L		1/D-M	GRAB
	REPORTED										
	PERMIT REQUIREMENT										
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	PERMIT REQUIREMENT										
	REPORTED										
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OPERATOR IN RESPONSIBLE CHARGE

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TYPED OR PRINTED NAME	SIGNATURE	AREA			

COMMONWEALTH OF VIRGINIA STATE WATER CONTROL BOARD

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)

INDUSTRIAL MINOR 01/05/93

STATE WATER CONTROL BOA (REGIONAL OFFICE)

NAME FT LEE WTPS & PETROLEUM TRAINING AREAS

ADDRESS DIR BLDG & HOUSING BLDG T-6205
FORT LEE VA 23801

FACILITY LOCATION FILE NO. - .

VA0059161	005
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM				TO			

PIEDMONT REGIONAL OFFI
P.O. BOX 11143
RICHMOND, VA. 23230
804-527-5020

NOTE: READ PERMIT AND GENERAL INSTRUCTION BEFORE COMPLETING THIS FORM.

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMP TYP
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
001 FLOW	REPORTED				**********	**********	**********				
	PERMIT REQUIREMENT	NL	NL	MGD	**********	**********	**********			1/D-N	EST
002 PH	REPORTED	**********	**********			**********					
	PERMIT REQUIREMENT	**********	**********		6.0000	**********	9.0000	SU		1/D-N	GR
257 T. PETRO HYDROCARBONS	REPORTED	**********	**********		**********		**********				
	PERMIT REQUIREMENT	**********	**********		**********	NL	**********	MG/L		1/6M	GR
500 OIL & GREASE	REPORTED	**********	**********		**********		**********				
	PERMIT REQUIREMENT	**********	**********		**********	30.0000	**********	MG/L		1/D-N	GR
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										
	REPORTED										
	PERMIT REQUIREMENT										

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TYPED OR PRINTED NAME	SIGNATURE	AREA			

COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD

Richard N. Burton
Executive Director

Please reply to Piedmont Regional Office
P O Box 11143
Richmond, Virginia 23230
(804) 527-5020

Gerard Seeley, Jr.
Regional Director

MAR 3 0 1993

USACASCOM and Fort Lee
Attn: ATZM-EP
Fort Lee, Va. 23801

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Attn: Kathleen Bartholomew

Re: VPDES Permit No. VA0059161, VPDES Permit Modification
USACASCOM and Fort Lee

Dear Permittee:

The Executive Director has approved the enclosed effluent limitations and monitoring requirements for the above referenced permit. This approval is in accordance with the enclosed memorandum.

Your permit is also enclosed. In accordance with the permit, you are required to submit monitoring reports to:

Virginia Water Control Board
Piedmont Regional Office
P.O. Box 11143
Richmond, Virginia 23230

The reporting form is included with the permit. You will be responsible for obtaining additional copies of the reporting (DMR) form. The first DMRs are due for the month of April by May 10, 1993.

The enclosed memorandum also contains our approval of the treatment facility for Outfall 005. Please notify the Piedmont Regional Office in writing that construction has been completed in accordance with the approved plans.

Board approval of these facilities does not relieve the permittee (owner) of the responsibility for designing, maintaining, and operating the facility in a reliable and consistent manner to meet the effluent limitations or special conditions in the permit. If facility deficiencies, design and/or operational, are identified in the future which could affect the facility

performance or reliability, it is the responsibility of the permittee (owner) to correct such deficiencies.

If you have any questions, please do not hesitate to contact us.

Sincerely,

J. R. Bell, Jr.
Regulatory Services Supervisor

Enclosure: Memorandum
VPDES Permit No. VA0059161

cc: OWRM
EPA, Region III (3WM53)