

N60478.AR.001403
NWS EARLE
5090.3a

TRANSMITTAL LETTER FOR THE TREATMENT WORKS APPROVAL APPLICATION FOR
TWO BIOSLURPER RECOVERY TREATMENT UNIT NWS EARLE NJ
9/30/1997
FOSTER WHEELER ENVIRONMENTAL CORPORATION



FOSTER WHEELER ENVIRONMENTAL CORPORATION

September 30, 1997

NJDEP, Division of Water Quality
Bureau of Administration and Management
401 East State Street, 3rd Floor West Wing
CN029
Trenton, New Jersey 08625-0029
Attn: Jon Maselli (TWA Program)

Dear Mr. Maselli:

Enclosed is the Treatment Works Approval (TWA) Application for two bioslurper recovery/treatment units for the Naval Weapons Station Earle facility located in Colts Neck, New Jersey. The bioslurper units shall be to remove free-phase diesel fuel from the groundwater while promoting natural biodegradation in the vadose zone. All water shall be treated prior to discharge to the Navy owned and operated NWS-Earle Sewer Treatment facility. Please note that Section A-1, "Consent By Governing Body" is not signed at this time. The Colts Neck Municipality is concurrently reviewing the permit application in order to expedite the review process. The application shall be brought to the floor for signature during the Colts Neck Board Meeting on October 8, 1997. The completed form shall be forwarded to NJDEP upon receipt.

The NJDEP Case Manager for this project is Bob Marcolina. Attached is a record of conversation between the Navy Representative and the NJDEP concerning the TWA application.

If you have any questions or comments, please do not hesitate to contact me at (215) 702-4015.

Sincerely,

Michael Heffron, P.G.
Delivery Order Manager

cc: A. Holcomb G. Goepfert
 J. Gorgol T. Dunn
 L. Reiss File
 P. Briegel
 D. Cooper

12 Sept 97/PC97-008

RECORD OF PHONECON**Caller:** Lew Riess (Code 1813), NORTHDIV**Place Called:** NJDEP, Division of Water Quality, Treatment Works Approval**Person(s) Called:** Nick Horiates - (609) 633-1208. e-mail address:
nhoriate@dep.state.nj.us**Subj: WPNSTA EARLE SITE 16/F BIOSLURPING REMEDIATION PROJECT**

1. Nick explained that this project requires a general industrial treatment works approval. The only way it would not be required if it was discharged back to groundwater after it was treated. However, this would then require a NJPDES permit.
2. Nick clarified the forms that are required to be submitted. In the cover letter that I sent to Mike Heffron, all of the forms are required except for WQM-006.
3. Enclosure (1) was the Checklist for Administrative Completeness. All 10 steps are to be completed, except for Step 2 and Step 10. Steps a), b), and c) in the box beneath that is also required to be completed. Step d) is not required.
Step 7 - just an 8" x 10" USGS quadrangle map is required showing the treatment process location.
Step 8 - All of the sheets have to be signed and sealed with originals. No copies. Also want to include hydraulic profiles of the line going to the manhole from the treatment shed. Also include a process instrumentation diagram.
Step 9 - specs on the piping, installation of the treatment units, testing procedures, and manufacturing specs of the treatment units.
4. Enclosure (2) - TWA Fee Schedule - Nick stated that for this application it would be the minimum fee of \$450.00
5. Enclosure (3) - Form TWA-1 - Section 4 would have to be changed.
 - A. Not applicable
 - B. \$450.00
6. Enclosure (4) - Not Applicable.
7. Enclosure (5) - Form WQM-003. Section A-1 is to be completed by the Colts Neck Twp., Section A-2 is not applicable, Sections A-3, B and C are to be completed by WPNSTA Earle.

8. Enclosure (6) - Form DWR-175 is to be completed to determine the Licensed Operator grading. Section A. Toxicity Group would be II. Depending on the number of points assigned determines the operator license classification.
9. Enclosure (7) - Form WFR-006GI is to be completed by the A/E.
10. Nick stated that once NJDEP receives the application, there is as 30 day review time.

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Water Quality

TREATMENT WORKS APPROVAL PERMIT APPLICATION

— Refer to Instructions on Page 4 and Provide All Applicable Information. Please Print or Type. —

1. APPLICANT/OWNER *

Name U.S. Navy Telephone (908) 866-2317 (PWO)

Permanent Legal Address 201 Highway 34 South

City or Town Colts Neck State NJ Zip Code 07722

* Applicant/Owner should be the eventual owner of the proposed Treatment Works.

2. LOCATION OF ACTIVITY

Name of Facility/Site Naval Weapons Station Earle

Street Address/Location 201 Highway South Bldg. C-16 & C-50

Lot No. ----- Block No. -----

City or Town Colts Neck State NJ Zip Code 07722

Municipality Colts Neck County Monmouth

3. NEW JERSEY LICENSED PROFESSIONAL ENGINEER

Name Mr. John F. Gorgol N.J. License No. GE-34357

Name of Firm, if employee Foster Wheeler Environmental Corporation

Mailing Address 2300 Lincoln Highway East, One Oxford Valley-Suite 200

City or Town Langhorne State Pa Zip Code 19047-1829

Telephone (215) 702-4011 Telefax (215) 702-4045

4. ESTIMATED CONSTRUCTION COST AND APPLICATION FEE

A. Cost of treatment works proposed in this application \$ N/A
(attach a breakdown of the cost of all items related to the construction of the proposed treatment works)

B. Application Fee \$ 450.00 *As per Nick Horiates
(in accordance with N.J.A.C. 7:1C-1.5 et seq., made payable to Treasurer, State of NJ, Environmental Services Fund)

5. OTHER REQUIRED PERMITS

If any of the following applications have been submitted for this project, provide the applicable information.

Permit Type	Application Status		Application Date (or Application No.)
	Pending	Approved*	
● Treatment Works Approval	_____	_____	_____
● Exemption From Sewer Ban	_____	_____	_____
● Water Quality Management Plan Amendment	_____	_____	_____
● CAFRA	_____	_____	_____
● Stream Encroachment	_____	_____	_____
● Freshwater Wetlands	_____	_____	_____
● Tidal or Coastal Wetlands	_____	_____	_____
● Waterfront Development	_____	_____	_____
● NJPDES (DSW, DGW or SIU)	_____	_____	_____
● Pinelands Certificate	_____	_____	_____
● Delaware & Raritan Canal Commission	_____	_____	_____
● Hackensack/Meadowlands Commission	_____	_____	_____
● Other Related Approvals	_____	<u>X</u>	<u>July 14, 1997</u>
<u>Air Permit</u>	_____	_____	_____

(* - If any of the above applications were approved, please provide a copy of the approval with this application)

6. PROJECT DESCRIPTION (Brief Description of Proposed Treatment Works and Intended Use)

See Attached Page 2a and Page 2b of 4

**NAVY WEAPONS STATION EARLE
COLTS NECK TOWNSHIP, MONMOUTH COUNTY, NJ
GROUNDWATER REMEDIATION
TREATMENT WORKS APPROVAL APPLICATION**

6. PROJECT DESCRIPTION

The treatment works will be used to treat liquids extracted from the subsurface during the remediation of a petroleum contaminated site. The site will be remediated using bioslurping technology.

Bioslurping is an innovative remedial technology which utilizes vacuum-enhanced dewatering technology to remediate petroleum hydrocarbon contaminated sites. Bioslurping systems are designed to recover light non-aqueous phase liquids (LNAPLs) via vacuum enhanced pumping while simultaneously performing remediation of the vadose zone via bioventing. Therefore, bioslurping simultaneously accomplishes source removal and remediation of the vadose zone. The bioslurper system withdraws LNAPL, small volumes of groundwater and soil gas from recovery wells in the same process stream using a single pump. LNAPL is recovered while groundwater and soil gas are treated and discharged.

Bioslurping enhances LNAPL recovery by creating a pressure gradient to force movement of LNAPL into the recovery wells. The system operates with minimal fluid drawdown in the aquifer, thereby reducing problems associated with LNAPL smearing and entrapment. Bioventing of the vadose zone is achieved by withdrawing soil gas in the recovery wells. The system alternates between withdrawing product (and small amounts of groundwater) and soil gas. The rate of soil gas extraction is dependent of the rate of LNAPL recovery. The slurping action also greatly reduces the amount of groundwater extraction when compared to conventional dual-phase extraction systems.

The areas that will be addressed with the bioslurping remediation at Site 16/F are the LNAPL plume southeast of Building C-16, the suspected LNAPL plume northwest of Building C-50, and a former gas station site near Building C-17.

An underground fuel line located in the area north of Building C-19 was used to transport diesel fuel from an underground storage tank located at the northwestern corner of Building C-18 to a dispensing station near Building C-50. A leak in the fuel line was discovered in 1977 when use of the pipeline was discontinued. Part or all of the former underground diesel transfer line is still in place. Subsequent investigations have determined that there are two potential LNAPL plumes associated with the former diesel fuel line, one southeast of Building C-16 and one north of Building C-50.

There will be two separate treatment units that will have a common discharge line to a sanitary sewer connection inside Building C-16. The LNAPL and groundwater extracted from the recovery wells will be processed through an oil/water separator, a bag filter, clay absorption units, and activated carbon adsorption units prior to the discharge to the sanitary sewer line.

The oil/water separator will be a parallel corrugated plate gravity displacement type separator designed to remove free and dispersed non-emulsified oil and settleable solids in accordance with API 421. The separation chamber will contain parallel corrugated plates and the corrugations will have a 60 degree angle with respect to the horizontal. The cross flow configuration through the plate pack allows the oil to collect and coalesce in the high points of the configuration while the solids collect at the low points. The actual coalescing area of the oil/water separator is 1,152 square feet.

The LNAPL from the oil/water separator will be pumped to a oil storage tank, and the aqueous effluent will be pumped through bag filters, clay absorption units and carbon adsorption units prior to discharge. The effluent will first be pumped through a 35 micron bag filter to remove any suspended solids which may decrease the run-times of the downstream filters. The clay absorption units consist of two 300 pound units in series. The clay units are comprised of a chemically modified clay and anthracite media that removes oil and grease and other high molecular weight organics from the effluent. The clay absorption units are capable of absorbing up to 60% of their weight in oil and grease. The removal of oil and grease from the effluent will extend the life of the activated carbon by preventing pore blinding. After the clay units, the effluent will be treated by two 300 pound granular activated carbon units in series. The activated carbon units will remove any remaining dissolved organic constituents from the effluent.

7. APPLICANT'S AGENT (Optional)

I, N/A
(Applicant/Owner's Name)

authorize to act as my agent/representative in all matters pertaining to my application the following person:

Name N/A Position N/A

Address N/A City N/A

State N/A Zip Code N/A Telephone (N/A) N/A

N/A N/A N/A N/A
Signature of Agent Date Signature of Applicant/Owner Date

8. PROPERTY OWNER'S CERTIFICATION

I hereby certify that I, U.S. NAVY
(Property Owner's Name)

own the property identified in this application. As owner, I grant permission for the activity to be permitted under this application and authorize the Department of Environmental Protection to conduct on-site inspections, if necessary. If the construction activity will take place in an easement, I certify that with this application, I presently have or will obtain permission of the property owner(s) prior to initiation of construction of this proposed treatment works.

[Signature] 9/29/97
Signature of Owner Date
LCDR Ginger Rice

Public Works Officer
Print or Type: Name and Position

9. STATEMENT OF PREPARER OF PLANS, SPECIFICATIONS AND ENGINEER'S REPORT AND/OR ABSTRACT

I hereby certify that the engineering plans, specifications, and engineer's report and/or abstract applicable to this project comply with the current rules and regulations of the Department of Environmental Protection with the exceptions as noted.

[Signature] 9/25/97
Signature of Engineer Date

John F. Gorgol, PE
Consulting Engineer
Print or Type: Name and Position

PROFESSIONAL ENGINEER'S
EMBOSSED SEAL

[Signature]
GE 34357

10. PROPER CONSTRUCTION AND OPERATION CLAUSE

I, the Applicant/Owner, U.S. NAVY, agree that the treatment works will be properly constructed and operated in accordance with the engineering plans, specifications and conditions under which approval is granted by the Department of Environmental Protection.

Ginger B Rice 9/29/97
Signature of Applicant/Owner Date

LCDR Ginger Rice
Public Works Officer
Print or Type: Name and Position

11. CERTIFICATION BY APPLICANT/OWNER

I certify, under penalty of law, that the information provided in this application and the attachments is true, accurate, and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

Ginger B Rice 9/29/97
Signature of Applicant/Owner Date

LCDR Ginger Rice
Public Works Officer
Print or Type: Name and Position

INSTRUCTIONS FOR COMPLETING FORM TWA - 1

This form should accompany all Treatment Works Approval permit applications.

1. **General Information** - (items #1 through #4, #6) Complete the requested applicant and project information.
2. **Other Required Permits** (item # 5) - Please list all permits issued for the subject project (in addition to the permits being applied for at this time).
3. **Signatures** (items #7 through #11) - All signatures must comply with N.J.A.C. 7:14A-2.4 and N.J.A.C. 7:14A-22.8. Where indicated under items #1, #10 and #11, the applicant/owner should be the eventual owner of the proposed treatment works. Item #8 shall be completed by the owner of the property.

Should you need assistance in completing the application, please call the appropriate phone number listed below:

<p>◆ Bureau of Administration and Management (609) 633-1208 Municipal Treatment Works, Industrial Treatment Works, Sewer Extension, Sewer Ban Exemption, Subsurface Disposal Systems</p>	<p>◆Bureau of Non-Point Pollution Control (609) 292-0407 Alternate Design Septic Systems (design flow less than 2,000 GPD)</p>
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STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Water Quality

STATEMENTS OF CONSENT

A supplement to the TWA-1 or NJPDES-1 Forms

General Information

Applicant/Owner/Operator U.S. NAVY
Location of Work Site Naval Weapons Station Earle
Name of Project/Facility Site 16/F Bioslurping Remediation
Type of permit application TWA
(DSW, DGW, TWA, SIU, etc.)
NJPDES Permit Number (if applicable) N/A

A-1 Consent By Governing Body**

(Consent by the municipality in which the project is located.)

As an authorized representative of the governing body, I hereby certify that the

Colts Neck Township
(Name of Municipality or Municipal Authority)

consents to the submission of the above listed application to the Department of Environmental Protection for approval. I further certify that the project as proposed conforms with the requirements of all municipal ordinances.

Signed* _____ Date _____

Print or Type Name and Position _____

* Cite authorization to sign for the governing body

Resolution# _____ Dated _____
(Submit the resolution with the application. If no such resolution granting authority to sign exists, the Governing Body's full resolution, consenting to the project, must be submitted with the application.)

** Note

- 1. Complete this section for all NJPDES applications.
- 2. For most Treatment Works Approval (TWA) applications, this section may be omitted if a sewerage entity (for example, sewerage authority, utilities authority, municipal utilities authority, joint meeting, etc.) has responsibility for regulating the construction and operation of wastewater treatment and conveyance facilities within the municipality. In such cases, the governing body consent requirement may be satisfied by completing Section A-2. TWAs for industrial/commercial facilities discharging pursuant to NJPDES/DSW or DGW permits must complete section A-1.

A-2 Consent by Sewerage Authority**

As an authorized representative of this agency, I hereby certify that the

_____ N/A _____
(Name of Agency)

consents to the submission of the above listed application to the Department of Environmental Protection for approval. I further certify that the project as proposed conforms with the requirements of this agency.

Signed* _____ N/A _____ Date _____ N/A _____

Print or Type Name and Position _____ N/A _____

* Cite authorization to sign for the agency

Resolution# _____ Dated _____
(Submit the resolution with the application. If no such resolution granting authority to sign exists, the Governing Body's full resolution, consenting to the project, must be submitted with the application.)

** Note
For TWA and NJPDES applications, this section must be completed when a sewerage entity (for example, sewerage authority, utilities authority, municipal utilities authority, joint meeting, etc.) has responsibility for regulating the construction and operation of wastewater treatment and conveyance facilities within the municipality.

A-3 Consent by Owner of Wastewater Treatment Facility**

(For NJPDES/SIU applications only)

As an authorized representative of this agency, I hereby certify that the

_____ N/A _____
(Name of Agency)

consents to the submission of the above listed application to the Department of Environmental Protection for approval. I further certify that the project as proposed conforms with the requirements of this agency and the agency agrees to accept wastewater from the project for treatment.

Signed* _____ N/A _____ Date _____ N/A _____

Print or Type Name and Position _____

* Cite authorization to sign for the agency

Resolution# _____ Dated _____
(Submit the resolution with the application. If no such resolution granting authority to sign exists, the Agency's full resolution, consenting to the project, must be submitted with the application.)

** Note
For NJPDES/SIU applications, this section must be completed when the owner of the receiving wastewater treatment plant is different that the entity listed under A-2.

B. Certification by Wastewater Conveyance System Owner**

I (we) hereby certify that to the best of my (our) knowledge the wastewater conveyance system, into which the project proposed under this application will connect, has adequate capacity in accordance with N.J.A.C. 7:14A-1.9 ("Adequate conveyance capacity"). Furthermore, I (we) am (are) not aware of inadequate conveyance capacity conditions in any portion of the downstream facilities necessary to convey the wastewater from this project to the treatment plant.

Name of Municipality or Authority Naval Weapons Station Earle

Signed* Ginger B Rice Date 9/29/97

Print or Type Name and Position LCDR Ginger Rice, Public Works Officer

* Cite authorization to sign for the governing body

Resolution# N/A Dated _____
(Submit the resolution with the application. If no such resolution granting authority to sign exists, the governing body's full resolution, consenting to the project, must be submitted with the application.)

** Note

For TWA applications, this section must be completed by the owner/operator of the wastewater conveyance system into which the project named herein will directly connect.

C. Certification by Wastewater Treatment Facility Owner**

(For TWA applications that include a sewer connection/extension.)

I (we) hereby certify that the committed flow*** to the

NAVAL WEAPONS STATION EARLE - Treatment Plant
(Name of Wastewater Treatment Plant)

does not exceed the presently permitted design capacity and with the additional flow proposed by this application, the permitted design capacity is not anticipated to be exceeded. I (we) further certify that the treatment plant is currently complying with its conventional and non-conventional NJPDES permit requirements (see N.J.A.C. 7:14A-22.17(b)-(d), percent removal and toxicity requirements excluded from this certification) as determined by a rolling average of the three most recent monthly discharge monitoring reports that were required to be submitted to the Department as of this date, and based upon my (our) assessment of all information pertinent to this permit request, is anticipated to continue to do so with the additional flow from this project.

Accepted for Treatment by U.S. NAVY
(Name of Treating Authority)

Signed* Ginger B Rice Date 9/29/97

Print or Type Name and Position LCDR Ginger Rice, Public Works Officer

Name of project and/or location Site 16/F Bioslurping Remediation

* Cite authorization to sign for the governing body

Resolution# N/A Dated _____
(Submit the resolution with the application. If no such resolution granting authority to sign exists, the governing body's full resolution, consenting to the project, must be submitted with the application.)

** For TWA applications, this section must be completed by the owner of the wastewater treatment facility receiving the wastewater identified in this application.

*** For the purposes of this certification, committed flow means the sum of the 1) actual metered flow, 2) flow from DEP approved TWA applications (not yet operational), and 3) flow from locally approved projects that do not require DEP approval.

Additional Information (For TWA Applications)

1. Approvals, permits, service contracts, or other reservations of flow capacity issued or agreed to by any participating municipality or sewerage agency do not constitute the required approval of the DEP.
2. For computation of actual flow at the receiving wastewater treatment plant, the average flow processed by the facility for the three (3) month period immediately preceding the submission of the application shall be used. Pursuant to the NJPDES regulations (N.J.A.C. 7:14A), no application shall be submitted to the DEP if the wastewater treatment facility is not meeting its discharge permit requirements.

Lack of Consent*

1. The affected sewerage authority or municipality must consent to the application or submit comments to the DEP within 60 days of the applicant's request for consent. Prior to the expiration of the 60-day period to respond to a request for a written statement of consent, the municipality or sewerage authority may request a 30-day time extension.
2. Any document issued by a sewerage authority or municipality which is a tentative, preliminary, or conditional approval shall not be considered a statement of consent.
3. When the affected sewerage authority or municipality does not consent to a project, it shall state all reasons for rejection or disapproval in a resolution and send a certified copy of the resolution to the DEP.
4. When the affected sewerage authority or municipality expressly denies a request for a written statement of consent for a project, the permit application may be determined by the DEP to be incomplete for processing; or in the alternative, the DEP may review the reasons for denial. Any such reasons shall be considered by the DEP in determining whether to issue a draft permit in accordance with N.J.A.C. 7:14A-7.6, or a Treatment Works Approval or sewer connection approval in accordance with N.J.A.C. 7:14A-22.
5. When the affected sewerage authority or municipality does not issue a written statement of consent in accordance with (1) above, or a denial in accordance with (3) above, the DEP, upon receipt of proof that the applicant has delivered to the affected agency a written request for a statement of consent, shall review the reasons therefore, if known on the basis of reasonably reliable information. Any such reasons shall be considered by the DEP in determining whether to issue a draft permit in accordance with N.J.A.C. 7:14A-7.6, or a Treatment Works Approval in accordance with N.J.A.C. 7:14A-22. The DEP, may in its discretion, deem the application to be incomplete pending the expiration of the time period set forth in (1) above.

* This section has been excerpted from the NJPDES regulations for guidance purposes only. Please refer to N.J.A.C. 7:14A-2.1(k) for the complete requirements concerning statements of consent.

Notice: False statements, representations, or certifications, in any application, record, or document are subject to fines and penalties as set forth in the Water Pollution Control Act (N.J.S.A. 58:10A-10F 2 and 3.

State of New Jersey
Department of Environmental Protection
Division of Water Quality
CN-029, Trenton, New Jersey 08625-0029

PROFESSIONAL ENGINEER'S CERTIFICATION FOR
GENERAL INDUSTRIAL TREATMENT WORKS APPROVAL (TWA) APPLICATIONS
FOR INDUSTRIAL WASTEWATER TREATMENT FACILITIES

Name of Project: Site 16/F Bioslurping Remediation

Municipality: Colts Neck Township

County: Monmouth

Description of Project: Groundwater remediation at Site 16/F at U.S. Navy Naval
Weapon Station Earle Using Bioslurping System.

1. The proposed treatment works, as designed, will enable the facility to meet the applicable Federal, State and local effluent limitations, conditions and/or requirements.
2. The proposed treatment works or contributing facility will not dilute any portion of its waste stream for the purpose of meeting any applicable NJPDES effluent limitation or condition.
3. The permittee currently holds a valid final NJPDES permit, General Permit authorization, or for indirect dischargers, the applicant is specifically exempted by the Department to obtain such an approval.

In accordance with N.J.A.C. 7:14A-22.6(a)3, I hereby certify that the above statements are true and correct for the proposed treatment works identified above.

Professional Engineer's
Embossed Seal

John F. Gorgol, GE-34357
Engineer Name and N.J.P.E. License No.

John F. Gorgol 9/25/97
Signature and Date

John F. Gorgol
GE-34357

Foster Wheeler Environmental Corporation, Consulting
Name of Firm and Position Engineer

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER QUALITY
CN-029, TRENTON, NEW JERSEY 08625

LICENSED OPERATOR GRADING SHEET

NJPDES PERMIT NO.:	FACILITY NAME: Naval Weapons Station Earle
LOCATION OF FACILITY: Colts Neck, NJ 07722	

FACILITY CLASS	N1	N2	N3	N4	NS
RANGE OF POINTS	6 to 19	20 to 49	50 to 69	70 & greater	Special/ Limited(*)

POINTS ARE ASSIGNED TO EACH ITEM LISTED BELOW THAT APPLIES TO THE INDUSTRIAL TREATMENT SYSTEM	POINTS	
	RATING	ACTUAL
A. TOXICITY GROUP		
I	1	
II	5	
III	10	
IV	15	
V	20	20
VI	25	
B. RECEIVING WATER (DTW's)		
Surface Water-FW	5	5
Surface Water-TW	3	
Surface Water-CW	2	
Ground Water	5	
C. HYDRAULIC LOAD		
Less than 0.1 MGD	2	2
0.1 - 1.0 MGD	4	
1.0 - 10.0 MGD	6	
Greater than 10.0 MGD	10	
D. PRIMARY		
pH Adjustment	1	
Equalization	1	
Oil Separator	3	3
Dissolved Air Flotation	3	
Chemical Coagulation/Flocculation	5	
Sedimentation/Clarification	3	
Chemical Addition	2	
Filtration	5	
Disinfection	2	
Air Stripping	5	
E. SECONDARY		
Activated Sludge	15	
Bio-Filtration	10	
Stabilization	5	
Disinfection	2	
Spray Irrigation	10	
Subtotal		30

POINTS ARE ASSIGNED TO EACH ITEM LISTED BELOW THAT APPLIES TO THE INDUSTRIAL TREATMENT SYSTEM	POINTS	
	RATING	ACTUAL
F. ADVANCED		
Ammonia Removal	10	
Nutrient Removal	10	
Filtration	5	5
Carbon Adsorption	10	10
Ion Exchange	10	
Post Aeration	2	
Reverse Osmosis	10	
G. SLUDGE HANDLING/DISPOSAL		
Digestion	5	
Sludge Conditioning	2	
Mechanical Dewatering	4	
Drying Beds/Lagoons	2	
Thickening or DAF	3	
On-Site Landfill	2	
Composting	7	
Incineration	10	
Subtotal		15

Grand Total: **45**

I hereby certify that the treatment units, as noted above, comprise the entire treatment process for the above referenced facility, and subsequently the operator licensing requirement has been accurately determined.

John F. Gorgol, PE
Typed Name of Certifying Engineer
John F. Gorgol 9/25/97
Signature and Date

John F. Gorgol
Professional Engineer's
Embossed Seal
GE 34357

(*) Facility class NS: N1 facility using only Gravity Oil Separation and/or Gravity Separation.