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ENGINEERING REPORT PLANS AND SPECIFICATIONS FOR INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM CNC CHARLESTON SC

5/22/2001

ALBRECHT ENVIRONMENTAL

ENGINEERING REPORT PLANS & SPECIFICATIONS FOR AN INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM

SANI-TECH ENVIRONMENT, LLC

ALBRECHT
ENVIRONMENTAL

ASSESSMENT · REMEDIATION · COMPLIANCE · LAKE MANAGEMENT

Your Solution to Turnkey Environmental Services

May 22, 2001

Prepared for:

SCDHEC
Federal, Energy, and Pretreatment (FEP) Section
2600 Bull Street
Columbia, SC 29201

Prepared by:

ALBRECHT Environmental, Inc.
Post Office Box 189
Mt. Pleasant, South Carolina 29465
(843) 856-8450 / *fax:* 856-8453

ALBRECHT Project# 99-1414

SANI-TECH ENVIRONMENT, INC.

RECEIVED
AUG 21 2001
CHARLESTON NAVAL COMPLEX
REDEVELOPMENT AUTHORITY

August 21, 2001

Mr. Robert Ryan
Charleston Naval Redevelopment Authority
1360 Truxton Ave, Suite 300
Charleston, SC 29405

Re: Sani-Tech, LLC Wastewater Treatment Operation
Request for Lease Modifications

Dear Mr. Ryan,

As a result of our meeting yesterday concerning the construction of the wastewater treatment plant, the following is submitted. By copy of this letter, we are requesting your consideration of 1) modification of our lease agreement to allow for the construction of a wastewater treatment plant at the subject property, and 2) to modify the boundaries of our property to allow for the inclusion of the lot to the west of the main building. Background for each of these requests is provided as follows.

Wastewater Treatment Plant – We at Sani Tech have contracted with Albrecht Environmental, Inc. to prepare a wastewater treatment permit application for treatment of third party wastewater. This operation will be totally aboveground, and will discharge to the North Charleston Sewer District. The North Charleston has approved accepting this treated effluent. The treatment system is described in the enclosed permit application. The system will be aboveground, and treatment tanks will be inside the building.

We regret having disturbed the soil at the site, and were unaware of the exclusion from excavation in our lease. It was our understanding that we could not place pilings on site as part of this operation, but we did not realize the site was restricted from any excavation. We hired Wright Padgett Christopher to design a geo-grid mat foundation, which included removal of approximately 5 feet of material, placement of a geo-grid fabric, and backfilling with suitable fill. This would allow for even settlement of the tank pad over the next several years. The report prepared by WPC is included in the cover of our permit application. As you know, upon excavation, we were encountered debris, and were told by the Navy to stop digging. We now understand that this site is part of a RCRA investigation, and is identified as a Solid Waste Management Unit (SWMU) within the Base Closure process.

As a means to mitigate damage to the site, we propose to place the material back into the excavation, and to construct a reinforced concrete pad over the top of the area. The repair would match closely to the concrete pad at the site prior to disturbance, and would be an impervious barrier to infiltration. We would propose to have this pad designed as a reinforced concrete pad. Our intentions are to place all site upgrades aboveground and to use this pad for placement of the storage tanks for the treatment system. Any further upgrades would be done aboveground to prevent any digging and installation of utilities.

C:\WINDOWS\TEMP\sani tech letter to RDA.doc printed 08/21/01

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Easement Restriction – The SCDHEC has requested that we provide them with evidence of an easement that will allow for the placement of the wastewater treatment operation on the property. As such, we request your assistance with modifying the lease to allow for an easement to be placed on a site drawing that will show the treatment plant on this location for the life of the lease.

In the review process, we have noticed that the RDA documents do not show a portion of our property that we thought was included in our lease. We ask for modifications to the site plan to allow for this portion of the property to be added to the documents, as discussed yesterday.

Again, please accept our apologies for excavating on the site. We felt that the permit was very close to approval, and thought out coordination had been very thorough, but somewhere a miscommunication occurred.

Sincerely,
Sani Tech Environment, LLC

Paul Goodsell
President

WRIGHT CHRISTOPHER
Engineering & Construction Services

April 9, 2001

Mr. John Albrecht, P.E.
Albrecht Environmental, Inc
1111 Bowman Rd
Mt. Pleasant, SC 29464

Geotechnical Investigation
Sanitech Facilities
North Charleston, SC
WPC Project #2001-021

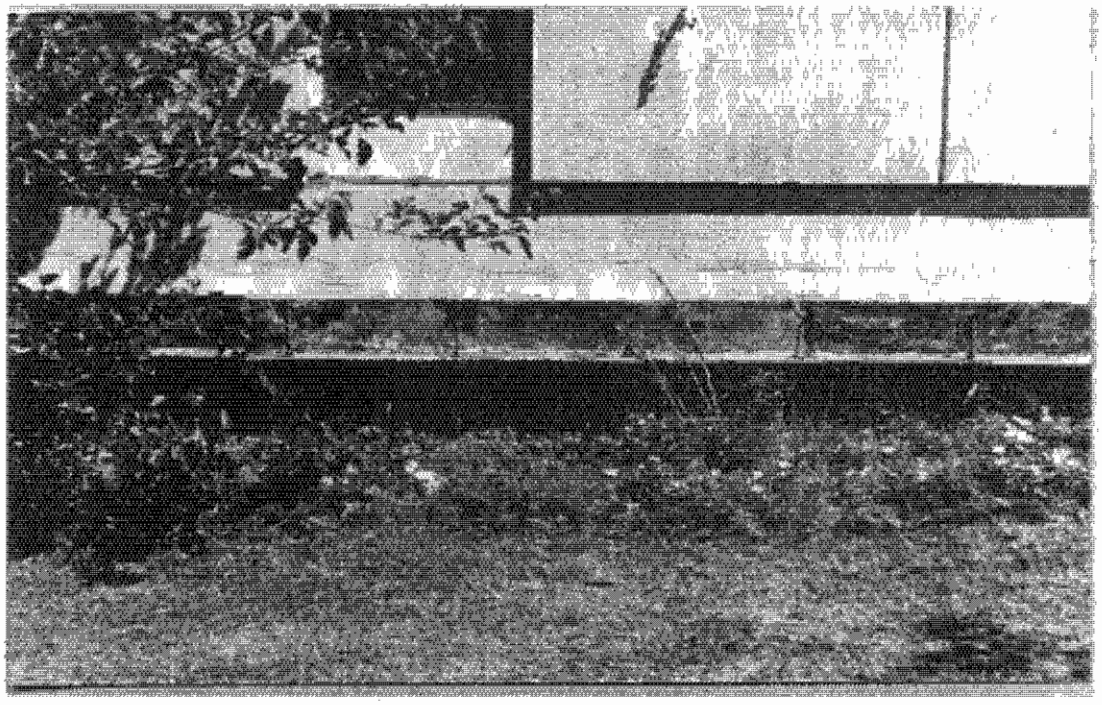
Dear Mr. Albrecht:

WRIGHTPADGETTCHRISTOPHER (WPC) has completed the Geotechnical Investigation for the proposed expansion of the Sanitech facilities in North Charleston, SC. The following paragraphs describe the project, outline exploratory procedures used, discuss the subsurface conditions and provide seismic considerations. The scope of the project included recommendations for site preparation and foundation support which are based upon the proposed construction, subsurface data as well as experience with similar conditions.

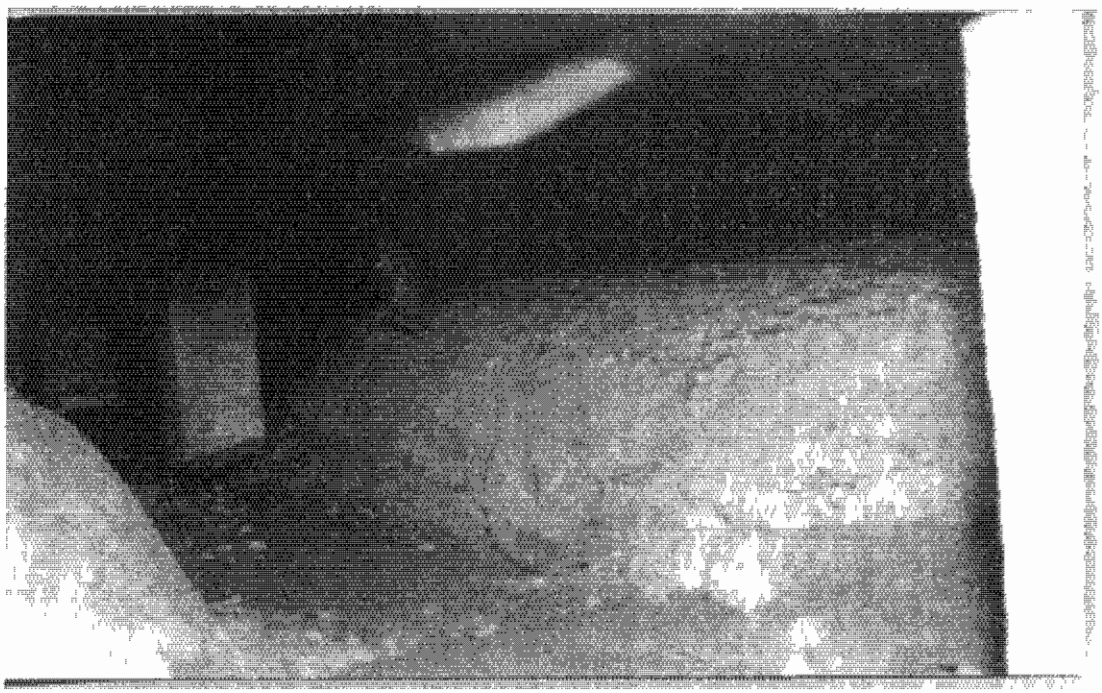
PROJECT DESCRIPTION

The Sanitech facilities are located in an office warehouse building at the old Naval Base in North Charleston. The building primarily contains office space but has a garage bay at one end that is proposed to be converted into the waste water processing system.

Construction at the old Naval Base began in the 1930's and additional building were added over time. This area was originally marsh and tidal creeks that re-claimed during the construction process. With time this reclaimed land has been gradually settling as the underlying marsh clays consolidate from the weight of the fill that has been placed upon it. This building was probably constructed in the 1970's or 1980's and is supported on 10 inch concrete piles. Metal sheeting has been attached around the base of the building to close the gap that has developed as shown in Photograph 1. However, the sheeting was not present in one area and it was possible to see beneath the building as seen in Photograph 2. We could not determine the pile spacing from this view. However, it appears that since construction the surrounding soils have settled relatively uniformly 1 to 2 feet, leaving grade beams and piles exposed as shown in the following photographs.



Photograph 1 : A side view of the building. The ground surrounding the building has susided 1 to 2 feet.



Photograph 2: A view beneath the building through the gap shown in Photograph 1. The piles can be seen as well as the spaces between the grade beams. Typically, the gap was covered by metal sheeting, except for this portion of the building.

The Sanitech facilities are proposed to be improved by adding a processing system within the garage bay. The processing system will consist of filters, mixers and two 12 foot diameter treatment tanks. Adjacent to the building, three (3) equilization tanks, 18 feet in diameter, and one (1) oil storage tank, 12 feet in diameter, are proposed to be constructed on the existing concrete slab. Each 18 foot diameter tank will have loaded weight of 459,850 pounds. The loaded weight of the 12 foot diameter tank will be 76,924 pounds. We understand that it is desirable to have these tanks supported on a shallow foundation system. Near the exterior tanks a containment area consisting of small dikes is proposed to be constructed. The dike area ranges in size from 512 to 1920 square feet and could contain up to 4 feet of waste water. We assume that a containment system will be constructed around the tanks in the event of a breach or spill.

EXPLORATION PROCEDURES

The site was explored using one (1) Piezocone Penetration Test (CPTu) and two (2) Flat Blade Dilatometer Tests (DMTs). Soil classifications using CPTu and DMT data are based on published correlations and a discussion of CPTu and DMT technology with the associated classification chart is included in the Appendix. Three (3) Test Pits were excavated to investigate the thickness of the existing slab and to explore the near surface conditions. Details of the subsurface conditions encountered by CPTu, DMT or Test Pits is included on the logs in the Appendix.

GEOTECHNICAL FINDINGS

Subsurface Conditions

Based on the Test Pit excavations, the existing driveway slab thickness ranges from 8 to 12 inches and is underlain by base course to a depth of about 16 inches from the ground surface. Depending on the test pit location, the base course was underlain by either silty sand, clayey sand or sandy clay that extended to depths ranging between 29 and 36 inches below the ground surface. The Test Pits were terminated within the surficial crust of fill around 3 feet below the ground surface.

Below the Test Pit termination depth, the CPTu and DMTs encountered old sandy fill intermixed with soft clays, debris and organics was encountered to depths of around 12 feet. This upper crust was underlain by very soft, organic marine clay that extended to a depth of approximately 60 feet. Stiff clayey silt extend from 60 to 66 feet and is underlain by the Cooper Marl Formation, an overconsolidated silt that

underlies the Charleston area and is several hundred feet thick. The CPTu and DMTs were terminated within this stratum at depths ranging between 70 and 74 feet.

Groundwater The depth to the top of the groundwater table was estimated to be 5 feet. Groundwater depth was determined by calculating the hydrostatic line (height of water below the ground surface) on the porewater pressure (U) graph on the Piezocone Penetration Test Logs. Rainfall events, tides, surface drainage, and seasonal weather patterns vary with time and influence the level of the groundwater table. Further, with clayey soils near the surface, a perched groundwater table likely develops after rainfall. A perched groundwater table occurs as the low permeability clays trap water at or near the ground surface. The trapped water moves laterally across the site to collect in low areas before it gradually descends to its natural groundwater level.

Seismic Considerations Ground shaking at the foundation of structures is the principal seismic hazard to be considered in design of earthquake-resistant buildings. Potential damage can be mitigated by structural measures. However, we are not familiar with the considerations used to design the existing structure. Based upon the 1997 Standard Building Code and ASCE 7-95, the site is identified as being in an area where the peak acceleration is 0.12g. The soil conditions can be classified as Soil-Profile Type S_4.

We performed a seismic analysis of the subsurface conditions based on an earthquake magnitude of 6 and an acceleration of 0.12g. Calculations indicated that the soils encountered below the groundwater table are resistant to liquefaction. While any amount of settlement is dependent on the magnitude of the seismic event and the final density of the subgrade after compaction, we estimate 1 inch of settlement may occur. This would probably result in minor damage to the slab. However, the tanks containing liquids may require special design considerations due to the differing resonate frequencies of soils versus liquids.

CONCLUSIONS AND RECOMMENDATIONS

The site is underlain by three basic soil layers: 1) the upper crust of uncontrolled fill and debris, 2) very soft marine clays and 3) the Cooper Marl Formation. Due to the weight of the fill that previously placed to reclaim the marshland, the area has settled 1 to 2 feet. Based on experience with similar soil conditions, the ground surrounding and beneath the building will continue to settle.

Outside Tanks If settlement of the proposed tanks is a concern, a deep foundation system, consisting of steel pipe piles, can be used to support the proposed tanks. However, a shallow foundation system can be used with the understanding that routine maintenance in the form of pipe adjustment at tie-in locations should be anticipated to accommodate the differential settlement between the slab and the adjacent pile supported building.

The existing concrete driveway slab is unsuitable to support the proposed 18 foot diameter tanks. A new slab should be constructed to evenly distribute the loads of the overlying tanks. A strengthened and uniform subgrade is critical in order to provide an adequate bearing surface. The subgrade improvement and slab design is described in the following section.

Constructing a loaded slab adjacent to the building will accelerate the ongoing settlement at the site. Depending on the applied load, the rate of settlement may exceed the rate of the surrounding soils creating a plunging effect. Distributing the load of the tanks over a larger area so reduce the net load to be less than 400 pounds per square foot can deter a plunging effect. If the containment system for the tanks is supported on a separate slab, it may settle at a slower rate than the tanks. Therefore, the containment system should be supported on the same foundation as the tanks to ensure that it is at the same level as the base of the tanks.

Additional weight of the loaded slab near the building will also increase the downdrag forces on the nearby piles caused by the increased settlement of the underlying clays. The capacity or the current loading of these piles is unknown, but this additional downdrag force may damage the piles. The edge of the slab should be a minimum 10 feet from the building to help reduce downdrag forces.

Slab on Grade To minimize differential settlement, a uniform bearing surface will be essential. This will require the removal of the existing slab and excavation of 5 feet of the underlying soils. The excavation should extend a minimum of 5 feet beyond the edge of the proposed slab. To create a uniform subgrade, 4 layers of geogrid

reinforcement should be placed within the Controlled Fill. As shown in the following sketch, geogrid (Tensar BX 1100 or equivalent) should be placed 1 foot below the bottom of the slab and the subsequent 3 layers should be separated by 1 foot of Controlled Fill. A Geotechnical Engineer should inspect the slab excavation and monitor the placement of the geogrid and Controlled Fill. The excavations may encounter the groundwater table and de-watering may be necessary.

With the subgrade prepared, the slab can be designed as a beam on an elastic foundation using a subgrade modulus of 200 kips per cubic foot. Prior to initial use, the tanks should be slowly incrementally loaded with all tanks on the same slab loaded at the same time and rate to evenly distribute the loads across the slab. Otherwise the slab may plunge due to concentrated eccentric loads.

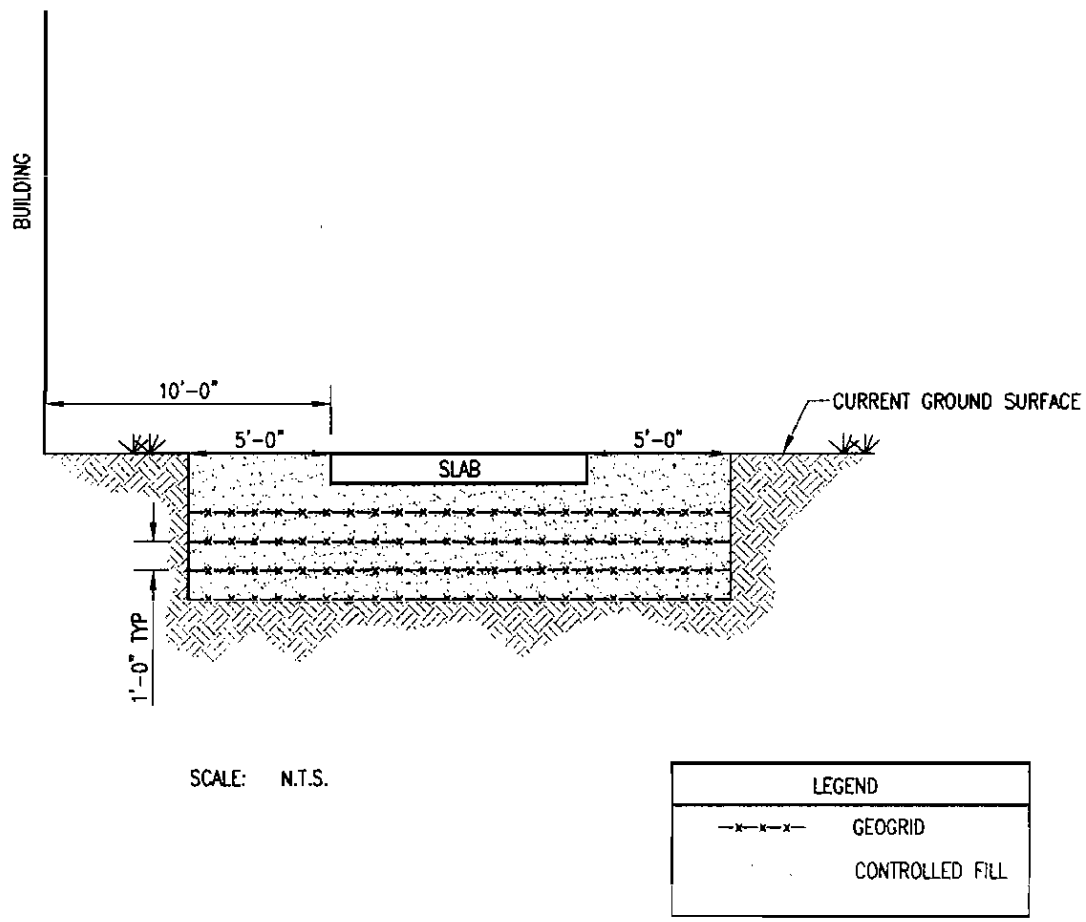


Figure 1: A sketch of the subgrade improvement for the constructiou of the slab to support the tanks.

Controlled Fill Controlled Fill material should be free of organics and debris. To further reduce settlements, light-weight fill soils should be used. These fill soils should be clayey or silty sands classified as SC or SM according to the Unified Soil Classification System, with a Maximum Dry Density of around 80 pounds per cubic foot (pcf) (Modified Proctor; ASTM D 1557). Fill should be placed in uniform lifts and compacted to at least 95% of its Modified Proctor Maximum Dry Density as determined by ASTM D 1557. The upper 3 feet of fill beneath the slab should be compacted to 100% of the soils Maximum Dry Density (ASTM D 1557).

Interior Tanks Without a structural analysis of the existing building and foundation system, it is uncertain if the proposed tanks within the building will overload the existing floor system. Further, a shallow foundation system is not recommended for the interior tanks since the slab will be close to the existing piles and downdrag forces may damage the existing piles. It would also be difficult to position a proposed slab between the existing grade beams and piles, since neither should be cut. Instead, the interior tanks should be placed on a new isolated floor system supported by steel pipe piles. Using a system of splices, steel pipe piles can be installed within the confines of the garage bay to support what would be an elevated platform at the same level as the existing floor system.

Steel Pipe Piles As mentioned, a deep foundation system can be used to support the proposed interior and exterior tanks. A deep foundation system eliminates concerns for excessive settlements and the need for continual shimming and pipe adjustment.

The pipe piles should have an outer diameter of 8 inches. With a 15 to 18 foot embedment into the Cooper Marl Formation, an allowable capacity of 10 tons can be achieved. For estimating purposes, the cost of the pipe piles is approximately $15.00 per foot. The pipe piles should be installed using a hammer with a rated energy between 30 and 45 kip-feet. A test pile should be installed at a production location to verify the capacity and to confirm driving criteria. The pile should be dynamically tested after a minimum of 7 days after installation using a Pile Driving Analyzer. WPC can provide additional detail for a deep foundation system if needed.

WRIGHTPADGETTCHRISTOPHER appreciates the opportunity to provide this report. Should the project change or as additional information becomes available, we can review and modify our recommendations as needed. This report is for the sole use of this project and should not be relied upon otherwise. If you have questions concerning the contents herein, please contact us.

Respectfully submitted,
WRIGHTPADGETTCHRISTOPHER

Matthew L. Silveston, P.E.
Geotechnical Engineer

William B. Wright, P.E.
Senior Engineer

CERTIFICATE OF AUTHORIZATION
No. C00483

Attachments: Piezocone Penetration Classification
Flat Blade Dilatometer Description
Test Location Plan
Piezocone Test Log
Flat Blade Dilatometer Test Log
Test Pit Log
Liquefaction Analysis

CONE PENETRATION CLASSIFICATION

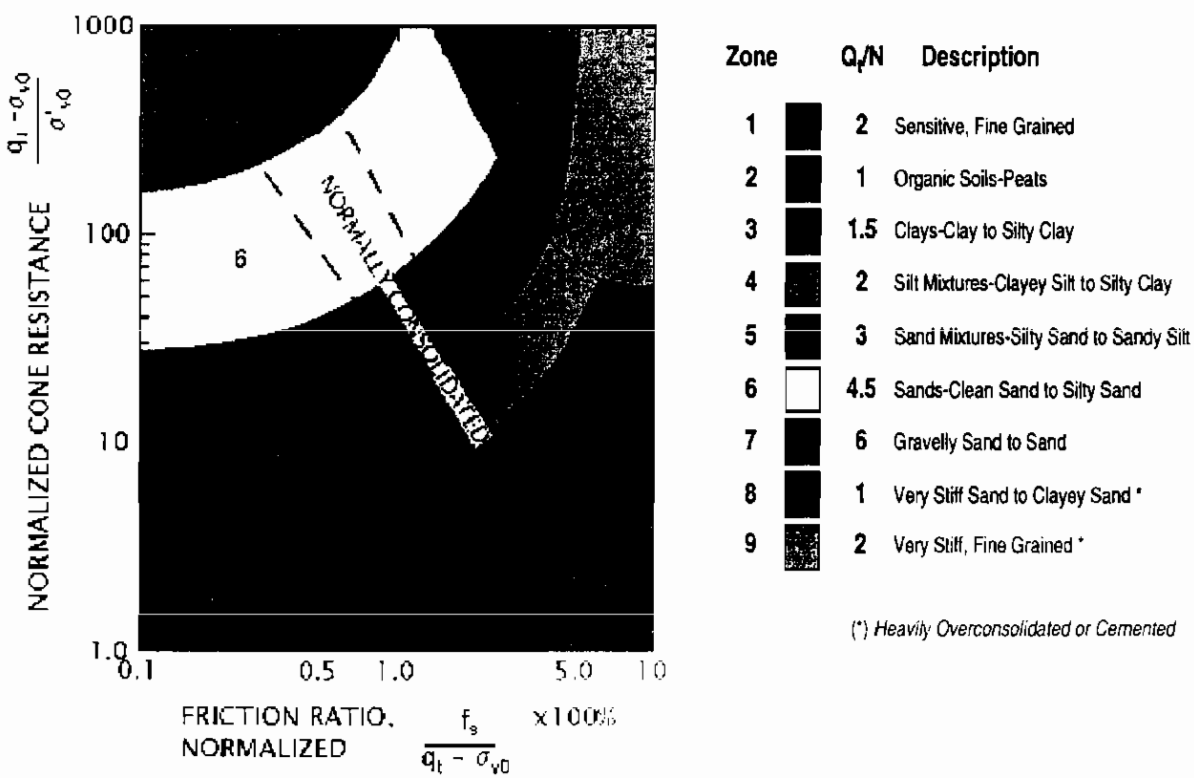
Cone Penetration Classification

The tip resistance (q_c) is measured as the maximum force over the projected area of the tip. It is a point stress related to the bearing capacity of the soil. The measured q_c must be corrected for porewater pressure effects (Lunne et al, 1997), especially in clays and silts where porewater pressures typically vary greatly from hydrostatic. This corrected value is known as q_t, which is reported in the Piezocone Penetration Logs. The u_2 position element is required for the measurement of penetration porewater pressures and the correction of tip resistance. The sleeve friction (f_s) is used as a measure of soil type and can be expressed by friction ratio: $\mathbf{FR = f_s/q_t}$.

The estimated stratigraphic profiles included in the Piezocone Penetration Logs are based on relationships between q_t, f_s, and U_2. The normalized friction ratio (FR_N)is calculated by using:

$$FR_N = \frac{f_s}{q_t - \sigma_{vo}'} \times 100\%$$

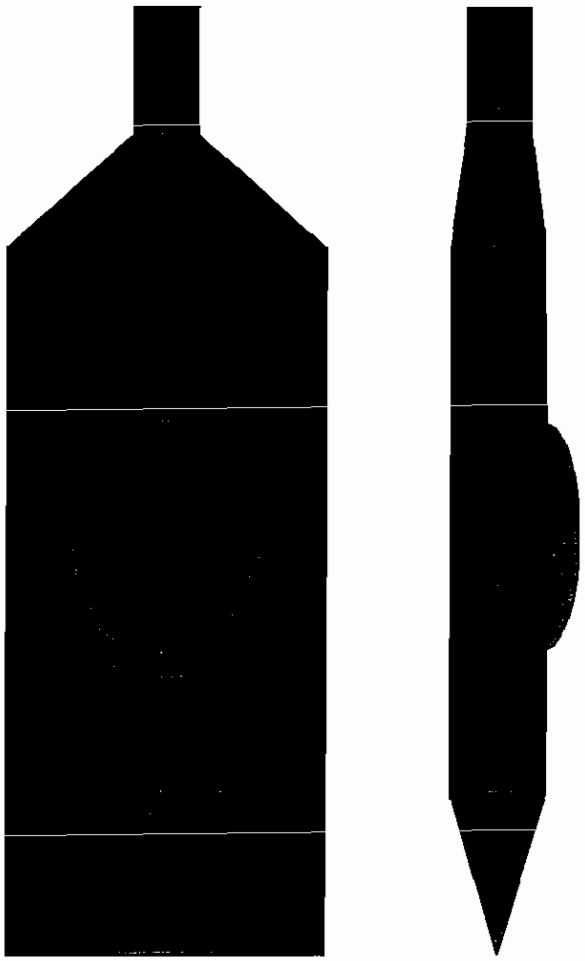
and is indicative of soil behavior and is used to classify the soil behavior type. Typically, cohesive soils, such as plastic silts and clays, have high FR values, low qt values and generate large excess penetration porewater pressures. Cohesionless soils, such as sands, have lower FR's, high qt values and typically do not generate excess penetration porewater pressures. The following graph (Robertson, 1990) presents one of the accepted correlations used to classify soils behavior types.



FLAT BLADE DILATOMETER DESCRIPTION

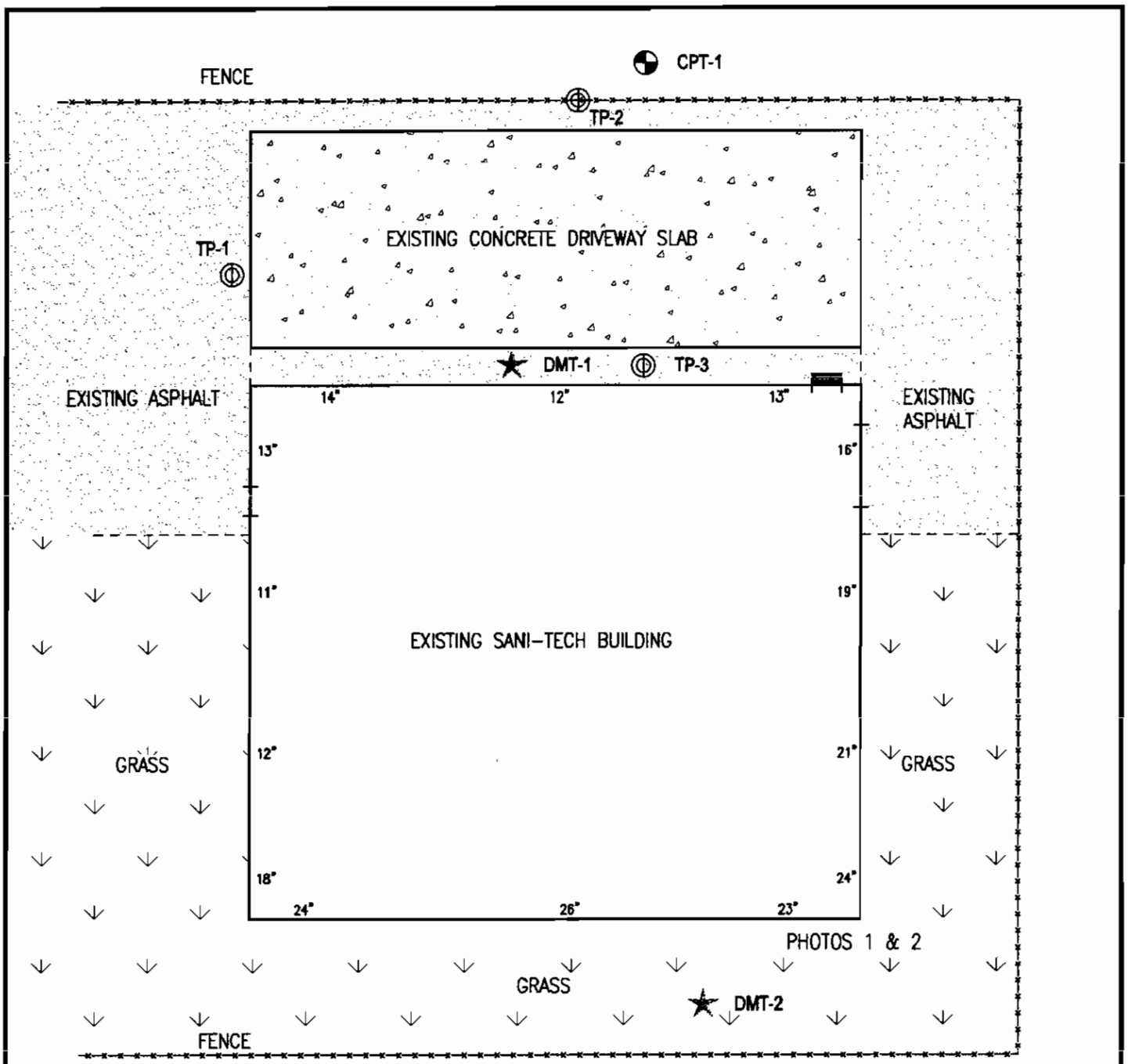
Flat Blade Dilatometer

Similar to the CPT, the Flat Blade Dilatometer (DMT) is hydraulically pushed into the ground. The DMT consists of a steel blade with a circular membrane near the center of the blade. Every foot in depth, the steel membrane is inflated 1.1 millimeters into the surrounding soil. From the pressure required to inflate the membrane, the Dilatometer Modulus (E_D) can be calculated. The E_D is very similar to the Youngs Modulus and thus a stress-strain relationship can be determined for the soil profile.



A schematic of the front and side profile of the Flat Blade Dilatometer.

TEST LOCATION PLAN



LEGEND	
⊕	PIEZOCONE PENETRATION TEST (CPTu)
★	DILATOMETER (DMT)
⦶	TEST PIT (TP)
18"	ESTIMATED GROUND SETTLEMENT

WPC
WRIGHT PADGETT CHRISTOPHER
Engineering & Construction Services
1017 Chuck Dawley Blvd. Mt. Pleasant, South Carolina 29464
tel 843.884.1234 fax 843.884.9234 www.wpceng.com

TEST LOCATION PLAN

SANI-TECH
N. CHARLESTON, SC

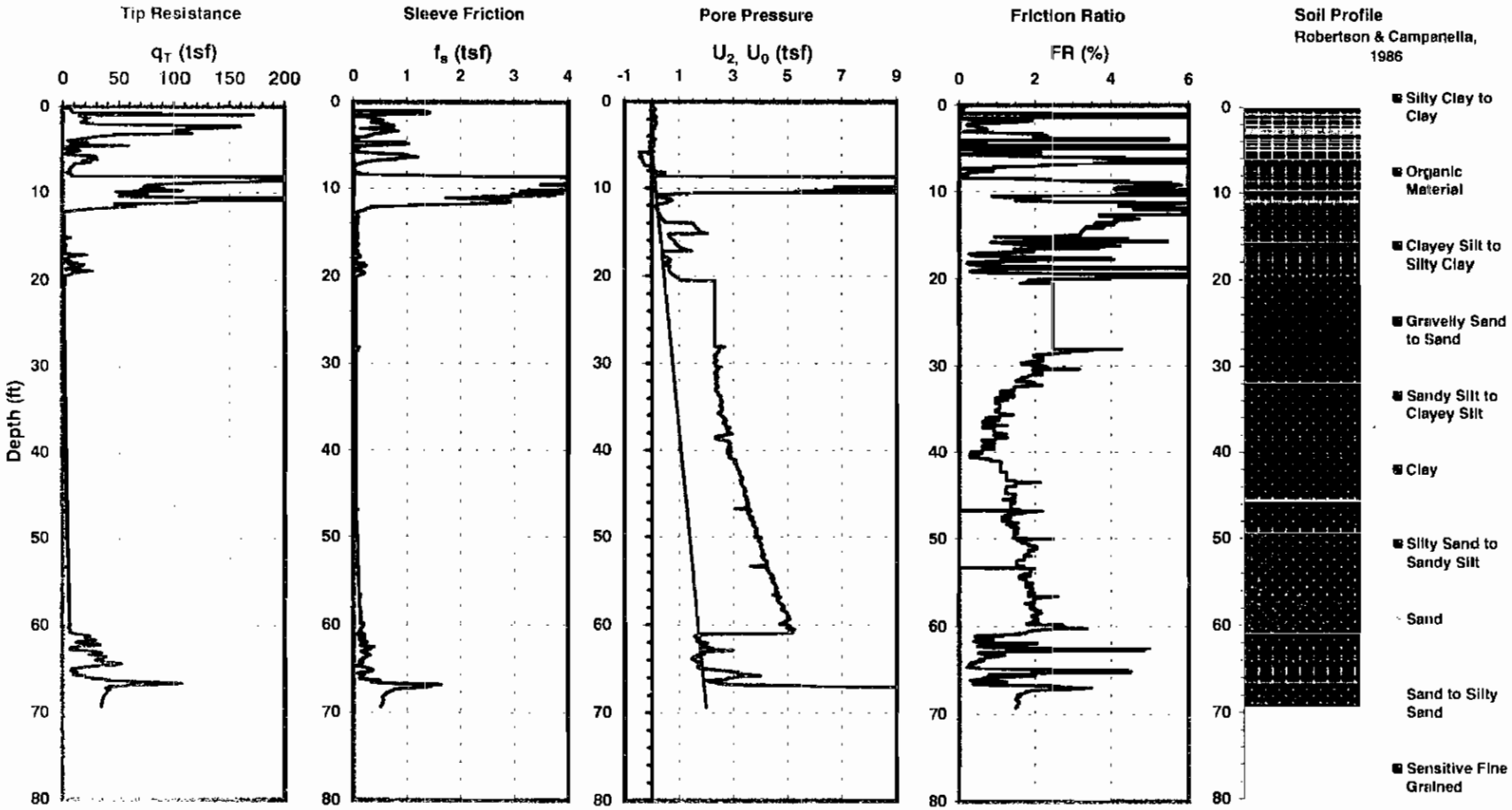
WPC Project # 2001-021

PIEZOCONE TEST LOGS

WRIGHT PADGETT CHRISTOPHER

Engineering & Construction Services

Test Site: Sani-Tech	Truck: Pagani 220-73
Location: N. Charleston	Cone: Geotech AB 5 ton
Client: Albrecht Environmental	Sounding: CPT1
Project: 2001-021	GWT: 5.0 ft
Latitude:	ASTM: D 5778
Longitude:	Supervisor: Mike Basha
Date: 18-Jan-01	Operator: Bryant Quisenberry



FLAT BLADE DILATOMETER TEST LOG

WRIGHT/PAGET/CHRISTOPHER
Engineering & Construction Services

Test Site: Sanitech
Location: North Charleston, SC
Client: Albrect Environmental, Inc
Project: WPC82001-021
Latitude:
Longitude:
Date: 18-Jan-01

Truck: Pagani 220-73
Cone: Geotech AB 5 ton
Sounding: DMT1
GWT (ft): 5
ASTM: Sub Committee 18.02
Supervisor: Mike Bashe
Operator: Bryant Quisenberry

Calibration:	Before	After
ΔA (bar)	0.10	0.10
ΔB (bar)	0.25	0.25
z_m (bar)	0.00	0.00

Depth (m)	Depth (ft)	Thrust (kg/cm²)	A (bar)	B (bar)
0.2	0.7	21.0	1.5	2.7
0.4	1.3	34.0	1.3	4.0
0.6	2.0	38.0	1.8	4.2
0.8	2.6	110.0	2.1	4.2
1.0	3.3	176.0	4.7	16.0
1.2	3.9	171.0	0.0	0.0
1.4	4.6	129.0	0.0	0.0
1.6	5.2	0.0	0.0	0.0
1.8	5.9	52.0	2.2	4.7
2.0	6.6	48.0	2.5	4.2
2.2	7.2	40.0	2.3	3.7
2.4	7.9	73.0	2.5	5.6
2.6	8.5	76.0	4.3	7.6
2.8	9.2	51.0	3.5	5.5
3.0	9.8	39.0	2.7	4.0
3.2	10.5	210.0	2.6	3.7
3.4	11.2	604.0	12.0	38.5
3.6	11.8	534.0	21.0	37.5
3.8	12.5	185.0	3.1	10.0
4.0	13.1	222.0	2.4	5.8
4.2	13.8	366.0	5.4	32.5
4.4	14.4	487.0	8.8	29.5
4.6	15.1	600.0	14.0	37.5
4.8	15.7	576.0	17.5	42.0
5.0	16.4	583.0	25.0	45.0
5.2	17.1	656.0	23.0	43.5
5.4	17.7	590.0	25.5	50.0
5.6	18.4	428.0	8.0	32.0
5.8	19.0	156.0	3.1	6.7
6.0	19.7	59.0	3.1	4.1
6.2	20.3	44.0	3.0	3.9
6.4	21.0	41.0	3.0	3.9
6.6	21.7	40.0	3.0	3.7
6.8	22.3	48.0	3.2	4.0
7.0	23.0	51.0	3.3	4.2
7.2	23.6	47.0	3.2	4.0
7.4	24.3	51.0	0.0	0.0
7.6	24.9	51.0	3.0	3.8
7.8	25.6	51.0	0.0	0.0
8.0	26.2	50.0	3.0	3.8
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8.4	27.6	54.0	3.2	4.0
8.6	28.2	60.0	3.2	4.0
8.8	28.9	66.0	0.0	0.0
9.0	29.5	66.0	3.2	4.0
9.2	30.2	64.0	0.0	0.0
9.4	30.8	61.0	3.0	3.9
9.6	31.5	63.0	0.0	0.0
9.8	32.2	65.0	3.3	4.0
10.0	32.8	67.0	0.0	0.0
10.2	33.5	62.0	3.3	4.1
10.4	34.1	65.0	0.0	0.0
10.6	34.8	69.0	3.1	4.0
10.8	35.4	73.0	0.0	0.0
11.0	36.1	72.0	3.3	4.0
11.2	36.7	63.0	0.0	0.0
11.4	37.4	66.0	3.3	4.1
11.6	38.1	68.0	0.0	0.0
11.8	38.7	69.0	3.2	4.0
12.0	39.4	72.0	0.0	0.0
12.2	40.0	65.0	3.5	4.3
12.4	40.7	74.0	0.0	0.0
12.6	41.3	75.0	3.5	4.5
12.8	42.0	75.0	0.0	0.0
13.0	42.7	70.0	3.7	4.7
13.2	43.3	68.0	0.0	0.0
13.4	44.0	75.0	3.9	4.8
13.6	44.6	76.0	0.0	0.0
13.8	45.3	77.0	3.9	4.9
14.0	45.9	75.0	0.0	0.0
14.2	46.6	70.0	3.8	4.8
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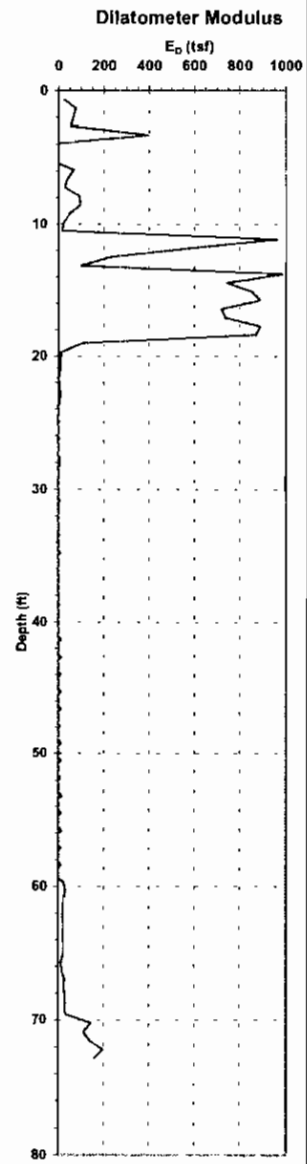
14.8	48.6	80.0	0.0	0.0
15.0	49.2	79.0	4.0	5.0
15.2	49.9	76.0	0.0	0.0
15.4	50.5	79.0	4.0	5.0
15.6	51.2	80.0	0.0	0.0
15.8	51.8	83.0	4.3	5.2
16.0	52.5	85.0	0.0	0.0
16.2	53.2	80.0	4.6	5.7
16.4	53.8	88.0	0.0	0.0
16.6	54.5	90.0	4.5	5.5
16.8	55.1	94.0	0.0	0.0
17.0	55.8	92.0	4.7	5.8
17.2	56.4	88.0	0.0	0.0
17.4	57.1	97.0	4.8	5.8
17.6	57.7	100.0	0.0	0.0
17.8	58.4	99.0	4.8	5.8
18.0	59.1	98.0	0.0	0.0
18.2	59.7	97.0	4.4	5.7
18.4	60.4	116.0	4.7	6.2
18.6	61.0	119.0	5.0	6.3
18.8	61.7	119.0	5.2	6.4
19.0	62.3	114.0	5.1	6.3
19.2	63.0	109.0	5.2	6.5
19.4	63.7	121.0	5.3	6.5
19.6	64.3	117.0	5.5	6.8
19.8	65.0	123.0	5.9	7.2
20.0	65.6	127.0	6.0	7.0
20.2	66.3	123.0	6.3	7.4
20.4	66.9	133.0	5.9	7.3
20.6	67.6	128.0	6.2	7.5
20.8	68.2	132.0	6.2	7.7
21.0	68.9	132.0	6.5	8.0
21.2	69.6	130.0	6.5	8.0
21.4	70.2	160.0	6.4	11.0
21.6	70.9	169.0	6.3	10.0
21.8	71.5	209.0	6.5	11.0
22.0	72.2	221.0	12.0	18.0
22.2	72.8	192.0	16.0	21.0
22.4	73.5	186.0	15.0	20.0



WRIGHT PAGETT CHRISTOPHER
Engineering & Construction Services

Test Site: Sanitech
Location: North Charleston, SC
Client: Albrect Environmental, Inc
Project: WPC#2001-021
Latitude:
Longitude:
Date: 18-Jan-01

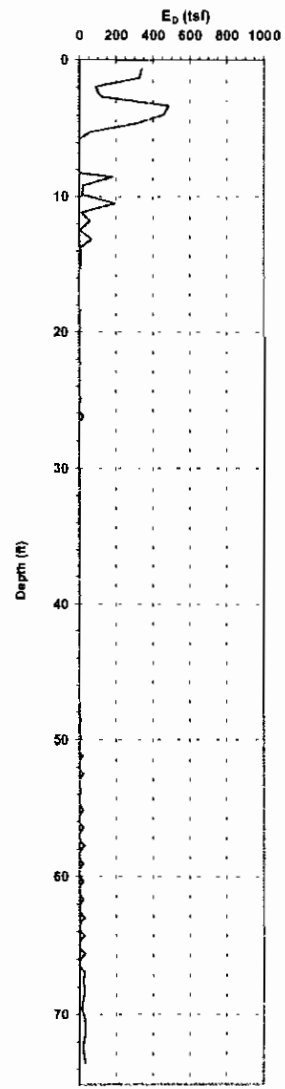
Truck: Pagani 220-73
Cone: Geotech AB 5 ton
Sounding: DMT2
GWT (ft): 5
ASTM: Sub Committee 18.02
Supervisor: Mike Elasha
Operator: Bryan Quisenberry

Calibration:	Before	After
ΔA (bar)	0.10	0.10
ΔB (bar)	0.25	0.25
z_m (bar)	0.00	0.00

Depth (m)	Depth (ft)	Thrust (kg/cm²)	A (bar)	B (bar)
0.2	0.7	154.0	1.5	12.0
0.4	1.3	142.0	4.8	14.0
0.6	2.0	55.0	3.4	6.2
0.8	2.6	47.0	4.3	8.0
1.0	3.3	194.0	4.6	18.0
1.2	3.9	239.0	6.3	19.0
1.4	4.6	130.0	4.2	13.0
1.6	5.2	47.0	2.0	4.0
1.8	5.9	159.0	0.0	0.0
2.0	6.6	88.0	0.0	0.0
2.2	7.2	208.0	0.0	0.0
2.4	7.9	397.0	6.0	2.2
2.6	8.5	133.0	3.5	8.8
2.8	9.2	42.0	1.0	2.0
3.0	9.8	86.0	1.6	2.5
3.2	10.5	151.0	4.3	10.0
3.4	11.2	61.0	1.5	2.3
3.6	11.8	105.0	1.5	3.5
3.8	12.5	139.0	1.5	2.0
4.0	13.1	148.0	1.5	3.8
4.2	13.8	67.0	2.2	2.8
4.4	14.4	50.0	2.5	3.2
4.6	15.1	46.0	2.4	3.0
4.8	15.7	45.0	2.5	3.0
5.0	16.4	45.0	2.5	3.0
5.2	17.1	45.0	2.5	3.0
5.4	17.7	50.0	0.0	0.0
5.6	18.4	51.0	2.5	3.1
5.8	19.0	53.0	0.0	0.0
6.0	19.7	59.0	2.5	3.1
6.2	20.3	51.0	0.0	0.0
6.4	21.0	49.0	2.6	3.1
6.6	21.7	50.0	0.0	0.0
6.8	22.3	51.0	2.7	3.3
7.0	23.0	51.0	0.0	0.0
7.2	23.6	50.0	2.8	3.3
7.4	24.3	55.0	0.0	0.0
7.6	24.9	55.0	2.5	3.2
7.8	25.6	56.0	0.0	0.0
8.0	26.2	54.0	2.5	3.5
8.2	26.9	54.0	0.0	0.0
8.4	27.6	56.0	2.2	2.6
8.6	28.2	57.0	0.0	0.0
8.8	28.9	57.0	2.8	3.3
9.0	29.5	54.0	0.0	0.0
9.2	30.2	50.0	3.0	3.5
9.4	30.8	54.0	0.0	0.0
9.6	31.5	53.0	3.1	3.6
9.8	32.2	54.0	0.0	0.0
10.0	32.8	52.0	3.0	3.5
10.2	33.5	53.0	0.0	0.0
10.4	34.1	51.0	3.0	3.5
10.6	34.8	50.0	0.0	0.0
10.8	35.4	51.0	3.0	3.6
11.0	36.1	59.0	0.0	0.0
11.2	36.7	56.0	3.0	3.5
11.4	37.4	51.0	0.0	0.0
11.6	38.1	51.0	3.0	3.5
11.8	38.7	51.0	0.0	0.0

Depth (m)	Depth (ft)	Thrust (kg/cm²)	A (bar)	B (bar)
12.0	39.4	59.0	3.1	3.6
12.2	40.0	59.0	0.0	0.0
12.4	40.7	63.0	3.5	4.0
12.6	41.3	63.0	0.0	0.0
12.8	42.0	62.0	3.4	3.9
13.0	42.7	63.0	0.0	0.0
13.2	43.3	62.0	3.2	3.7
13.4	44.0	64.0	0.0	0.0
13.6	44.6	62.0	3.5	4.0
13.8	45.3	64.0	0.0	0.0
14.0	45.9	62.0	3.5	4.0
14.2	46.6	62.0	0.0	0.0
14.4	47.2	66.0	3.5	4.0
14.6	47.9	67.0	0.0	0.0
14.8	48.6	67.0	3.5	4.2
15.0	49.2	69.0	0.0	0.0
15.2	49.9	66.0	3.5	4.2
15.4	50.5	70.0	0.0	0.0
15.6	51.2	68.0	3.5	4.4
15.8	51.8	67.0	0.0	0.0
16.0	52.5	65.0	3.5	4.5
16.2	53.2	66.0	0.0	0.0
16.4	53.8	73.0	3.8	4.5
16.6	54.5	73.0	0.0	0.0
16.8	55.1	73.0	4.0	5.0
17.0	55.8	73.0	0.0	0.0
17.2	56.4	72.0	4.0	5.0
17.4	57.1	76.0	0.0	0.0
17.6	57.7	76.0	4.0	5.2
17.8	58.4	75.0	0.0	0.0
18.0	59.1	74.0	4.5	5.5
18.2	59.7	77.0	0.0	0.0
18.4	60.4	80.0	4.0	5.0
18.6	61.0	79.0	0.0	0.0
18.8	61.7	79.0	4.5	5.5
19.0	62.3	81.0	0.0	0.0
19.2	63.0	85.0	4.5	5.7
19.4	63.7	87.0	0.0	0.0
19.6	64.3	84.0	4.5	5.7
19.8	65.0	83.0	0.0	0.0
20.0	65.6	81.0	4.5	5.8
20.2	66.3	83.0	0.0	0.0
20.4	66.9	87.0	4.8	6.0
20.6	67.6	88.0	5.0	6.0
20.8	68.2	88.0	5.0	6.2
21.0	68.9	82.0	5.2	6.2
21.2	69.6	81.0	5.2	6.0
21.4	70.2	97.0	5.2	6.4
21.6	70.9	97.0	5.5	6.8
21.8	71.5	98.0	5.4	6.7
22.0	72.2	98.0	5.6	6.6
22.2	72.8	103.0	5.9	7.0
22.4	73.5	107.0	6.0	7.3

Dilatometer Modulus



TEST PIT LOG

TEST PIT LOG
Sani-Tech
N. Charleston, SC
WPC Project #2001-021

TEST PIT NUMBER	DEPTH (inches)	SOIL DESCRIPTION
TP-1	0 to 8	Concrete
	8 to 18	Base Coarse Material
	18 to 24	Silty SAND (SM), brown, fine
	24 to 29	Clayey SAND (SC), orange/gray, fine
	29	SAND and CLAY (CL), organics & debris, black
		No Groundwater Encountered
		Test Pit Terminated at 29"
TP-2	0 to 12	Concrete
	12 to 16	Base Coarse Material
	16 to 31	Clayey SAND (SC), brown/orange
	31	SAND and CLAY (CL), organics & debris, black
		No Groundwater Encountered
		Test Pit Terminated at 31"
TP-3	0 to 9	Concrete
	9 to 16	Base Coarse Material
	16 to 26	Silty Sandy CLAY (SC), red/brown, fine
	26 to 36	SAND (SM), gray/black, fine, organics & debris
		No Groundwater Encountered
		Test Pit Terminated at 36"

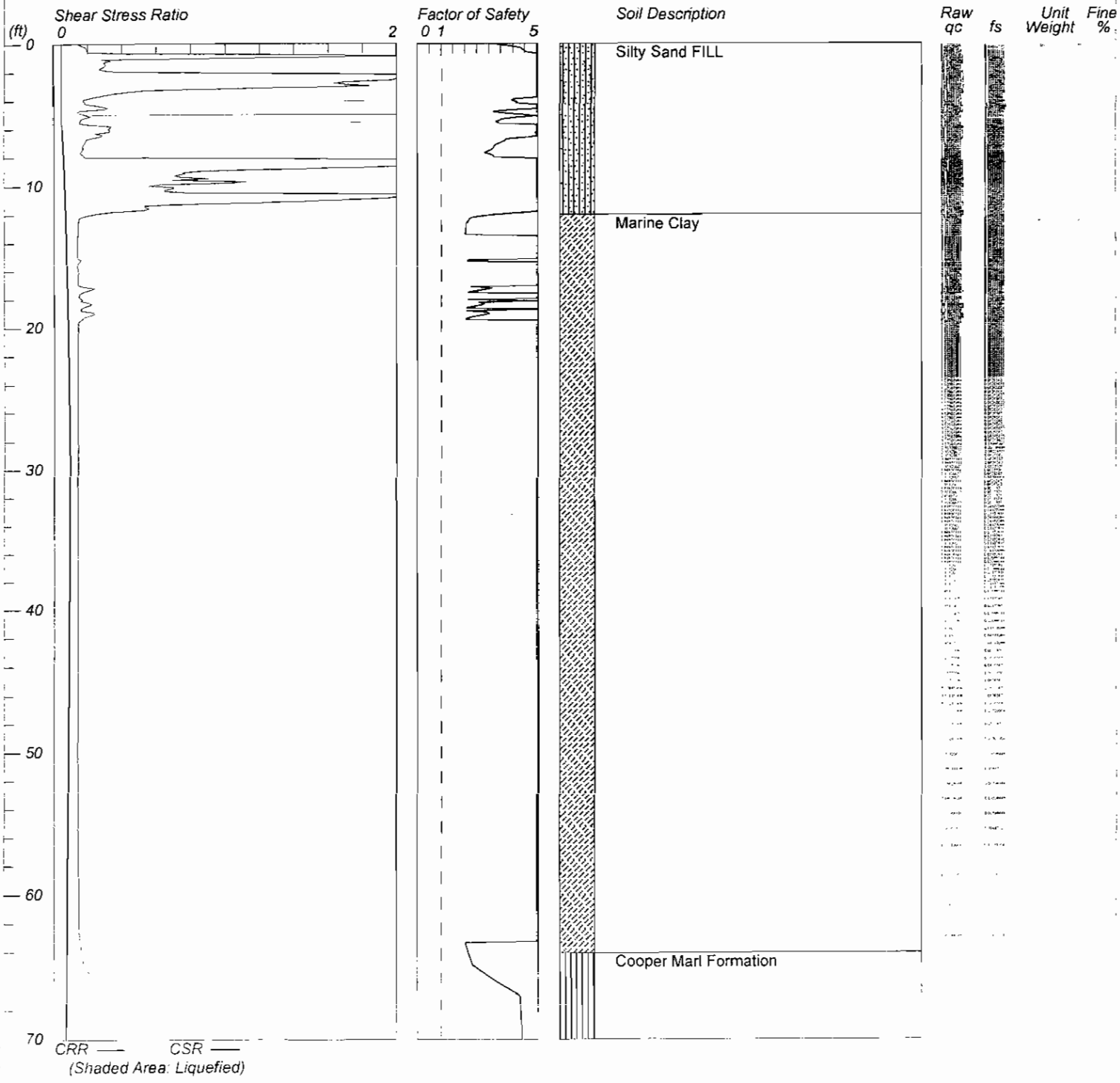
LIQUEFACTION ANALYSIS

LIQUEFACTION ANALYSIS

Sanitech Facilities

Hole No.=CPT Water Depth=5 ft

Magnitude=6
Acceleration=0.12g



WPC Project #2001-021

ENGINEERING REPORT PLANS & SPECIFICATIONS FOR AN INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM

SANI-TECH ENVIRONMENT, LLC

ALBRECHT
ENVIRONMENTAL

ASSESSMENT · REMEDIATION · COMPLIANCE · LAKE MANAGEMENT

Your Solution to Turnkey Environmental Services

May 22, 2001

Prepared for:

SCDHEC
Federal, Energy, and Pretreatment (FEP) Section
2600 Bull Street
Columbia, SC 29201

Prepared by:

ALBRECHT Environmental, Inc.
Post Office Box 189
Mt. Pleasant, South Carolina 29465
(843) 856-8450 / *fax:* 856-8453

ALBRECHT Project# 99-1414

ALBRECHT
ENVIRONMENTAL

ASSESSMENT • REMEDIATION • COMPLIANCE • LAKE MANAGEMENT

May 22, 2001

Federal, Energy, and Pretreatment (FEP) Section
Bureau of Water
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Attn: Ms. Melissa King
Section Manager

Re: Engineering Report, Plans and Specifications for an Industrial Wastewater Pretreatment System
Sani-Tech Environment, LLC

Dear Ms. King:

The purpose of this letter is to request the South Carolina Department of Health and Environmental Control (SCDHEC) to issue Sani-Tech Environment, LLC (Sani-Tech) an Industrial Wastewater Pretreatment System Permit. The permit would authorize the construction of an industrial wastewater pretreatment system at Sani-Tech's present location at 2051 Bainbridge Avenue in North Charleston, South Carolina.

Enclosed with this letter are three (3) copies of the document entitled "Engineering Report, Plans and Specifications for an Industrial Wastewater Pretreatment System". Each of these documents contains a copy of the following:

- Construction permit application (Appendix 1),
- Signed and sealed plans and specifications,
- Plan showing sewer lines (Drawing 10),
- Calculations (Appendix 18)
- Site location map (Drawing 1)
- Letter of waste acceptance from the North Charleston Sewer District (Appendix 9),

Also enclosed is the original permit application, a check in the amount of $600 for the application fee and a letter from Sani-Tech agreeing to be responsible for the operation and maintenance (O&M) of the proposed pretreatment facilities.

Based on a review of appropriate SCDHEC documents and a recent phone conversation with Mr. Tim Eleazer of your department, we believe the enclosures provide the details for SCDHEC to perform the required technical and administrative reviews of the proposed facility. However, if you have any questions or need additional information, please call me at the number below or Jim Honeycutt at (843) 763-4700.

ALBRECHT Environmental, Inc. • Post Office Box 189 • Mount Pleasant, South Carolina 29465
Phone: (843) 856-8450 • Fax: (843) 856-8453 • Email: albrecht@albrechtenvironmental.com • www.albrechtenvironmental.com

Sincerely,

ALBRECHT Environmental, Inc.

John H. Albrecht, PE

John H. Albrecht, PE
President

Jimmy D. Honeycutt, PE

Jimmy D. Honeycutt, PE
Senior Engineer

Enclosure

c: Mr. Paul Goodsell, President, Sani-Tech Environmental, Inc.
Ms. Kelly Singer, Pretreatment System Coordinator, North Charleston Sewer District

SANI-TECH ENVIRONMENT, INC.

May 18, 2001

SCDHEC
Federal, Energy and Pretreatment (FEP) Section
2600 Bull Street
Columbia, SC 29201

Re: Proposed Pretreatment Systems

The purpose of this letter is to confirm the South Carolina Department of Health and Environmental Control (SCDHEC) that Sani-Tech Environment, LLC (Sani-Tech) will be responsible for the operation and maintenance (O&M) of the proposed pretreatment system. The system is proposed for construction at our present location at 2051 Bainbridge Avenue in North Charleston, South Carolina.

Sincerely,

Paul Goodsell
President

Post Office Box 71619 • Charleston, South Carolina 29405 • (843) 744-0406 • Fax (843) 744-0730

ENGINEERING REPORT, PLANS AND SPECIFICATIONS FOR AN INDUSTRIAL WASTEWATER PRETREATMENT SYSTEM

SANI-TECH ENVIRONMENT, LLC

Prepared For:

SCDHEC
Federal, Energy, and Pretreatment (FEP) Section
2600 Bull Street
Columbia, SC 29201

Submitted by:

ALBRECHT ENVIRONMENTAL
ASSESSMENT · REMEDIATION · COMPLIANCE · LAKE MANAGEMENT

(843) 856-8450 Fax (843) 856-8453

ALBRECHT Project # 99-1414

Prepared by:

Jimmy D. Honeycutt, PE
Senior Engineer

Reviewed by:

John H. Albrecht, PE
President

May 22, 2001

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1.0 OVERVIEW OF REPORT

Sani-Tech Environment, LLC (Sani-Tech) proposes to construct a facility to process waste at its location on Bainbridge Avenue in North Charleston, South Carolina. A map showing the vicinity of this site is enclosed as Drawing 1.

Sani-Tech presently operates a business providing industrial waste reduction, disposal and recycling services at this site. Plans call for installation of a system for pre-treating metal bearing and oily waste (Beckart System) inside the present building. Free oil separation and storage, wastewater equalization, and sludge storage facilities associated with the Beckart System will be constructed outside the present structure as shown in Drawing 2. An equalization and pH neutralization tank for wastewater containing concentrations of metals and oils not requiring pretreatment is also proposed for construction outside the present building. Sani-Tech proposes to discharge the wastewater from both pre-treatment systems to the North Charleston Sewer District (NCSD), the publicly owned treatment works facility that is currently providing sanitary sewer services for the site.

The following paragraphs and enclosures describe the sources of waste for treatment, the characterization of this waste and applicable regulatory / anticipated NCSD requirements. This report presents data developed by the EPA on the treatability of similar waste and treatability studies on typical Sani-Tech receipts. This report concludes with a presentation of design details, plans and specifications for the processes and equipment that Sani-Tech proposes to use to accept, process, reclaim and discharge this waste.

The wastewater permit application associated with the proposed construction is enclosed as Appendix I. An overall process flow diagram for the proposed facility is enclosed as Drawing 3.

2.0 SOURCES OF WASTE

The following waste streams are proposed for acceptance and treatment by Sani-Tech.

Metals Subcategory:

- Air pollution control blow down water and sludges
- Cleaning, rinsing, and surface preparation solutions from electroplating or phosphating operations
- Vibratory deburring wastewater
- Mildly alkaline and acidic solutions (2.5<pH<12.5) used to clean metal parts or equipment

Oils Subcategory:

- Used oils
- Oil-water emulsions or mixtures
- Lubricants
- Coolants
- Contaminated groundwater clean-up from petroleum sources
- Used petroleum products
- Oil spill clean-up
- Bilge water
- Rinse/wash waters from petroleum sources
- Interceptor wastes
- Off-specification fuels

- Underground storage remediation waste
- Tank clean-out from petroleum or oily sources
- Non-contact used glycols
- Aqueous and oil mixtures from parts cleaning operations
- Wastewater from oil bearing paint washes

Organics Subcategory:

- Contaminated groundwater clean-up from non-petroleum sources
- Still bottoms
- Wastewater from paint washes
- Wastewater from adhesives and/or epoxies formulation
- Tank clean-out from organic, non-petroleum sources

These sources are a subset of those presented listed Table XIII.A-1 of the pre-amble to the Environmental Protection Agency's (EPA's) final rule entitled "Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Centralized Waste Treatment Point source Category" published in the December 22, 2000, issue of the Federal Register. This rule is referred to in this report as the CWT Regulation, a copy of which is enclosed as Appendix 2.

Sani-Tech has no plans to receive, handle or treat Hazardous Waste. Therefore, accepted streams will be limited to those that do not exhibit Resource Conservation and Recovery Act (RCRA) characteristics of ignitability, corrosivity, and reactivity and do not contain toxic constituents or listed hazardous wastes.

3.0 INFLUENT WASTE CHARACTERIZATION

Sani-Tech has compiled influent characterization data for each of the three (3) subcategories of raw waste receipts (raw waste) noted above. Table 1 consists of a summary of this data relevant to the facility design. This influent data is discussed in the paragraphs below.

3.1 Metals Subcategory Waste

Laboratory analyses have been performed on a sample of Sani-Tech's most significant prospective metals subcategory waste receipt. The results of these analyses are presented in Appendix 3.

As part of its development of the CWT Regulation, the Environmental Protection Agency (EPA) characterized the influent streams of centralized waste treatment facilities (CWT Facilities) treating metals subcategory waste. A summary of these analyses is presented under the column entitled "Raw Treatment" in Table 12.1 of the "Development Document for Final Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry" or TDD. A copy of this table is included as Appendix 4.

The data included in the "Raw Treatment" column of Appendix 4 includes influent data for facilities handling Hazardous Waste streams such as spent electroplating baths and metal finishing rinse waters. These waste streams will not be accepted by Sani-Tech.

A comparison of the pollutant concentrations in Appendix 3 versus the concentrations of these same pollutants presented in Appendix 4 shows that Sani-Tech's metals subcategory waste receipt contains much lower levels of eight (8) pollutants versus metal subcategory receipts for CWT Facilities in general. Based on this data and discussions with persons knowledgeable of waste generated in the area,

Appendix 4 significantly overstates the pollutant loadings of the metals subcategory wastewater accepted by Sani-Tech for treatment.

3.2 Oils Subcategory Waste

Analyses have been performed on a sample of ship's bilge water. The results of these analyses are shown in Appendix 5. Current business prospects indicate that bilge water will be Sani-Tech's most significant receipt of oils subcategory wastes.

Identical to discussion above for the metals subcategory, the EPA characterized the influent streams of the CWT Facilities processing oils subcategory waste. A summary of these analyses for those facilities not handling Hazardous Waste is presented under the column entitled "LTA for Non-RCRA Facilities" in Table 12-7 of the TDD. A copy of this table is included as Appendix 6. This data was collected from some 84 facilities treating oils subcategory waste.[1]

A comparison of the pollutant concentrations in Appendix 5 versus Appendix 6 shows that bilge water contains significantly lower levels of oils and other pollutants than is typical for oily waste receipts for CWT Facilities in general. This has been confirmed in conversations with EPA officials responsible for development of the CWT Regulations.

3.3 Organics Subcategory Waste

For the purposes of this report, organics subcategory waste includes all wastewater receipts containing concentrations of metals and oils below their anticipated discharge limit in Sani-Tech's permit. Our sole source of quantitative characterization data for its organics subcategory waste receipts is the TDD. A summary of this data is presented under the column entitled "Raw" in Table 12-8 of the TDD. A copy of this table is included in Appendix 7.

The base technology for treatment of organic waste is biological. Sani-Tech will neither construct any biological treatment facilities nor any equivalent treatment systems. However, Sani-Tech has qualitative data indicating that much of the organic subcategory waste generated in the area will contain much lower concentrations of pollutants than shown in the column entitled "Raw" in Appendix 7. In fact, Sani-Tech believes many of these wastes contain sufficiently low concentrations of regulated pollutants so as to be amenable to pre-treatment solely by equalization and pH neutralization. Sani-Tech proposes to accept such waste. Also, on occasion Sani-Tech may accept small quantities of organics subcategory waste that is not amenable to pre-treatment at the proposed facility. As such, this wastewater will not be discharged to the NCSD but instead, accumulated and transported off site to another CWT facility, one that can pre-treat or treat the waste biologically.

[1] In the influent concentrations for oily waste shown in Table 12-7 of the TDD note that the samples collected and analyzed for use in this table were actually taken from the discharge of the initial chemical emulsion breaking/gravity separation process. Some of these samples were biphasic, i.e. containing two distinct layers, an aqueous layer and an organic one. In these instances, EPA analyzed each phase separately and then performed calculations to determine an actual overall concentration for each pollutant.

3.4 Raw Waste Receipt Rates

Sani-Tech anticipates its receipts of metals subcategory and oils subcategory waste to initially average less than 7,000 gallons per day (gpd) but grow to as much as 14,000 gallons per day. Shipments of organics subcategory waste are anticipated to initially average less than 2,800 gallons initially. These receipt rates are anticipated to be highly variable, primarily due to the needs of the maritime industry. Plans are to accommodate waste receipts in any single day in excess of approximately 50,000 gallons.

4.0 REGULATORY COMPLIANCE AND EFFLUENT LIMITS

As part of the design of the subject facility, the following documents and web page were reviewed:

- South Carolina DHEC Water Pollution Control Regulations 61-9.403 (General Pretreatment Regulations for Existing and New Sources of Pollution) and dated June 28, 1996.
- South Carolina DHEC Water Pollution Control Regulations 61-9.504 (Standards for the Use and Disposal of Industrial Sludge) dated June 28, 1996.
- South Carolina DHEC Standards for Wastewater Facility Construction Regulations 61-67 (General Provision, Engineering Reports, Construction Permits and Reliability Classifications) dated June 26, 1998.
- South Carolina DHEC Industrial Pretreatment Permitting (A guide to DHEC's approval process) dated August 1998.
- Environmental Protection Agency's Internet web site Entitled "Effluent Guidelines and Standards" at "www.epa.gov/ost/guide".
- Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Centralized Waste Treatment Point Source Category (40 CFR Parts 136 and 437)
- Environmental Protection Agency's Development Document for Final Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry (TDD) – Executive Summary and Chapters 7, 8, 9, 10 and 12.
- North Charleston Sewer District Resolution 94-01 adopted January 10, 1994.

Also, a meeting was conducted the week of February 5, 2001, with NCSD representative Ms. Kelly Singer, Pretreatment Coordinator for the NCSD. Based on this meeting and a review of the above, the standards and limits presented below as applicable to the proposed Sani-Tech facility and its two proposed discharges.

4.1 Categorical Pretreatment Standards for the Centralized Waste Treatment Industry

On December 22, 2000, the Environmental Protection Agency (EPA) issued final pretreatment standards for a category of facility entitled "Centralized Waste Treatment Point Source Category". A copy of these standards is included as Appendix 2 and we believe that these standards apply to the proposed facility.

This CWT Regulation establishes technology-based effluent limitations, guidelines and standards to reduce the discharge of pollutants into waters of the United States and into publicly owned treatment works such as the NCSD. The regulation applies to existing and new facilities that treat or recover hazardous or non-hazardous industrial waste, wastewater, or used material from off-site sources. The regulations contain numerical effluent standards based on specific processes or treatment technologies. The regulation does not require Sani-Tech to use these specific technologies. Instead the regulation allows an individual facility such as Sani-Tech to meet the numerical requirements using whatever types of treatment technologies, process changes, or waste management practices it chooses.

The regulation specifies different limitations and standards depending on the type of waste received for treatment or recovery. EPA established the following subcategories for the CWT industry:

- Subcategory A – Facilities that treat or recover metal from metal bearing waste, wastewater, or used material received from off-site ("metals subcategory").
- Subcategory B – Facilities that treat or recover oil from oily waste, wastewater, or used material received from off-site ("oils subcategory").
- Subcategory C – Facilities that treat or recover organics from organic waste, wastewater, or used material received from off-site ("organics subcategory").
- Subcategory D – Facilities that treat or recover some combination of metal bearing, oily, and organic waste, wastewater, or used material received from off-site ("multiple waste subcategory").

The multiple waste subcategory, Subcategory D, is intended to simplify implementation of the CWT regulation for facilities that treat wastes subject to more than one of the metals, oils and organics subcategories. As such a facility may elect to comply with the provisions of Subcategory D rather than the applicable provisions of Subcategories A, B, or C. However, in doing so a facility must certify to the control authority (NCSD) that an equivalent treatment system is installed and properly designed, maintained, and operated.

Subcategory D / Metal Bearing and Oily Waste Compliance

In Section 1.0 of this report, Sani-Tech introduced its intent to treat metals and oils subcategory waste. Based on our understanding of the CWT Regulation, Sani-Tech proposes to co-mingle these two waste subcategories prior to compliance discharge sampling. Therefore, Sani-Tech must comply with multiple Subcategory D standards in processing receipts of these two types of wastes.

In the CWT Regulation, EPA presents eight sets (BPT, BCT, BAT, NSPS, PSES and PSNS) of performance standards for each of the subcategories of CWT facilities. In the case of Sani-Tech the PSNS (Pretreatment Standards for New Sources) are applicable. For PSNS facilities such as Sani-Tech, the CWT Regulation established the following technologies as the basis for treating metals and oils subcategory wastes.

Metal Bearing Waste (EPA's Option 4)	Oily Waste (EPA's Option 9)
Batch Precipitation	Emulsion Breaking/Gravity Separation
Liquid Solid Separation	Secondary Gravity Separation
Secondary Precipitation	Dissolved Air Floatation
Clarification	
Sand Filtration	

The numerical (categorical) standards based on these technologies are presented in Sections 437.1 through 437.26 of the CWT Regulation.

Subcategory C / Organic Waste Compliance

In order to best serve waste generators in the area, Sani-Tech also proposes to handle some organics subcategory (Subcategory C) wastes. Sani-Tech will comply with Subcategory C standards for any of these wastes it treats and discharges. Therefore, organics subcategory waste will be maintained and treated separate from the metals and oils subcategory wastes and the resulting Subcategory C effluent sampled for compliance prior to mixing with any treated or untreated Subcategory D waste. Therefore, no "Initial Certification Statement" is required by the CWT Regulation (40 CFR 437.41) for Sani-Tech's proposed organic subcategory waste discharge. The CWT Regulation's PSNS numerical effluent standards applicable to this Sani-Tech discharge are detailed in Section 437.36 of the CWT Regulation.

4.2 Local Effluent Restrictions and Limitations for the Sani-Tech Facility

In addition to the categorical effluent standards established by the CWT Regulations, Sani-Tech's discharge permit will contain limits for certain pollutants based on NCSD's "headworks" analysis. These "local limits" will consist of constraints on discharge concentrations of conventional pollutants such as "oil and grease" and priority pollutants that are either unregulated by the CWT Regulation or regulated by the CWT Regulation at elevated concentrations relative to NCSD's needs based on its headworks analysis.

In order to determine the local limits applicable to the proposed facility, Sani-Tech completed a form for the NCSD entitled "Discharge Permit Application Wastewater Survey Questionnaire". The purpose of completing the form was to characterize Sani-Tech's proposed discharge(s) to the NCSD. A copy of this completed form is enclosed as Appendix 8. Based on this questionnaire and other information presented in this report, the NCSD issued a letter of acceptance for Sani-Tech's proposed discharges. This letter is enclosed as Appendix 9.

5.0 DESIGN CRITERIA

This section develops four (4) design criteria using the characterization and regulatory data presented above. These criteria will be used later in this report to evaluate treatment and treatability data.

Target Effluent Long-Term Average Concentrations for Proposed Discharges (LTAs)

Per Appendix 9, the NCSD will soon issue "draft" permit limits for the two proposed discharges. These limits will include daily maximum and average concentrations for all parameters, both categorical limits based on the CWT Regulation and local limit based on NCSD's headworks analysis. Although these limits are not yet finalized, based on discussions with NCSD personnel and our understanding of the CWT Regulation we have developed "target long-term average concentrations" (LTAs) for Sani-Tech based on the daily maximum and monthly maximum effluent limits anticipated for its permit.

For pollutants with anticipated discharge limits based on the CWT Regulation, these LTAs were obtained from the TDD discussed above. For some parameters local limits are controlling, i.e. there is no CWT categorical limit or if present, the local limit is lower. The LTA for these parameters is set at two-thirds (2/3) of the projected NCSD average limit, and if that limit is not applicable, at one-third (1/3) of the local daily maximum. Design of the pretreatment facilities to achieve these LTAs should result in effluents consistently in compliance with their permits.

LTAs applicable to the proposed Subcategory D discharge are shown in Table No. 2. Similarly, Table No. 3 lists these design concentrations for the facility's proposed Subcategory C discharge.

EPA Standard Pollutant Removal Percentage and Local Required Removal Percentage (Standard Efficiencies)

For Sani-Tech's discharge concentration of most pollutants to approach the LTA for that pollutant, the system must remove a certain percentage of the pollutant contained in the influent stream. In order to evaluate such performance, we have developed a standard pollutant removal percentage (Standard Efficiency) for each pollutant for each technology. This Standard Efficiency will be used in determining if a technology will achieve an LTA and then once such a technology is implemented, in determining whether or not a particular design and operation is working efficiently.

Table 2 presents Standard Efficiencies for the Metal Bearing - Option 4 and the Oily Waste - Option 9 Technologies and Table 3 presents similar data for the Organic Waste- Option 4 Technology. EPA developed these efficiencies from its studies of the CWT Industry in 1996. According to the EPA, these Standard Efficiencies can be achieved by a technology if that technology is employed effectively, i.e. operated efficiently.

Table No. 3 presents Standard Efficiencies for treatment of organics subcategory waste based on local limits. These efficiencies have no technology basis, i.e. no one including the EPA has reported these efficiencies to be achievable by a particular treatment technology. These "local" Standard Efficiencies simply show the percentage of a pollutant that must be removed from the influent of a typical CWT facility to comply Sani-Tech's local limits for its Subcategory C discharge.

Standard Mean Influent Concentration

Given that the Sani-Tech system will be designed and operated to achieve the Standard Efficiency for the removal of each pollutant, in order to achieve an LTA, the influent concentration of that pollutant must not exceed a certain concentration. This concentration, the Standard Mean Influent Concentrations, is a key design criterion. As discussed in Section 3.0, Table 1 presents these concentrations as determined by the EPA for CWT facility waste receipts in 1996. These concentrations vary according to the subcategory of waste receipt.

Multiple Wastestream Subcategory Designation and Local Limits

The fourth design criteria relates to the decision by Sani-Tech to combine metals and oils subcategory waste in its Subcategory D system and the additional constraints of the NCSD regarding local discharge limits. The extent to which these decisions impact Sani-Tech's ability to achieve an LTA is an important design criterion. For example, even when Sani-Tech achieves the Standard Efficiency for a pollutant and the concentration of this pollutant in the influent is not above the Standard Mean Influent Concentration; the facility may not achieve a LTA if that LTA is artificially low due to Subcategory D designation or a local limit. Therefore, LTAs based on the Subcategory D designation and local limits are key toward evaluating Sani-Tech's process designs.

6.0 EVALUATION OF EQUIVALENT DESIGNS / OPERATIONS FOR METALS AND OILS SUBCATEGORY WASTE – 1996 CWT FACILITIES STUDIED BY EPA

The CWT Regulation dictates that the Sani-Tech system treat metal bearing and oily waste equally effective (equivalent) to EPA's base subcategory technologies, i.e. Metal Bearing - Option 4 Treatment for metals subcategory waste and Oily Waste - Option 9 Treatment for oils subcategory waste. Therefore, as a first step in evaluating the adequacy of the Beckart System design, we have evaluated the performance of the 1996 CWT facilities studied by EPA against Sani-Tech's LTAs. The data for this evaluation was obtained from Appendix C of the TDD. Specifically, we selected the data for Facility ID 4798, which was using the Metal Bearing - Option 4 Technology and the data for Facility ID's 4813, 4814A, and 4814B using the Oily Waste - Option 9 Technology. Appendix 10 includes the individual analytical results for Facility ID 4798 while Appendix 11 contains the raw data for the other three (3) facilities.

The results of this evaluation are presented in Table 4. They show that the mean concentration of six (6) pollutants in Facility ID 4798's discharge would not approach their respective LTA based on Sani-Tech's anticipated permit limits. These unfavorable variances are indicated in Table 4 by the "bordered cells" under the column entitled "Effluent". With the possible exception of arsenic, the cause of each of these variances does not appear to be poor treatment efficiency. Instead, the root of the problem appears to be the low discharge limits associated with the multiple waste subcategory designation or the local limit.

As for the three (3) facilities treating oils subcategory waste, Facility ID 4813 achieved Sani-Tech's LTA for each pollutants except Lead and Total Phenols. On the other hand, the mean concentration of some eighteen (18) pollutants in Facility ID 4814B's discharge did not approach their LTA. The columns below present the individual concentration exceedences along with their cause as best determined by our review of the data.

Equivalent Designs / Operations Discharge Concentration Exceedences Relative to Sani-Tech's LTAs

	Option 4 Metal's Treatment Technology	Option Oils Treatment Technology		
Parameter Group/Parameter	Facility ID 4798	Facility ID 4813	Facility ID 4814A	Facility ID 4814B
Metal Pollutants				
Antimony	MW			
Arsenic	SEff/LL		LL	SEff/LL
Barium	----			SEff/AIC
Chromium	MW			SEff/MW
Cobalt			SEff/AIC	SEff/AIC
Copper	MW			SEff
Lead		SEff		SEff/AIC
Mercury	MW*		SEff/MW	MW
Nickel	LL	----	----	----
Selenium				SEff/LL
Tin				SEff/MW
Titanium			AIC/MW	
Zinc			AIC/MW	SEff/MW
Organic Pollutants				
Bis (2-ethylhexyl) phthalate	----			AIC
n-Decane	----			AIC
Fluoranthene	----			AIC
n-Octadecane	----			AIC
Conventional Pollutants				
Oil & Grease (Method 413.1)			SEff	SEff
Oil & Grease (SGT-HEM)	----			SEff
Cyanide				AIC
Total Phenols		SEff/AIC/LL	LL	SEff/LL

SEff = Removal efficiencies significantly lower than the Standard Efficiency
MIC = Concentration in influent exceeded Mean Influent Concentration during study.
MW = Lower LTA required due to designation as "multiple wastestream discharge".
LL = Low LTA due to NCSD's local limit.
* Justification for this low design long-term average unknown at time of preparation of this report.
---- = No data

As shown above, there were thirty-three (33) instances in which the mean effluent concentration for a pollutant at a facility did not approach the LTA. Poor removal efficiencies and/or elevated influent concentrations contributed to some twenty-seven (27) of these exceedences. Note that three (3) of the four (4) facilities had failures with arsenic, mercury and Total Phenols. For these three pollutants, the primary cause of the exceedences were low limits due to the multiple wastestream designation (mercury) or due to NCSD's local limit (arsenic and Total Phenols). Overall, Total Phenols appears to be the most problematic pollutant.

7.0 TREATABILITY STUDIES – METALS AND OILS SUBCATEGORY WASTE

Beckart Environmental, Inc. (Beckart) of Kenosha, Wisconsin and John S. Cox and Associates, Inc. (Cox), the local sales representative for Beckart, have performed treatability studies on samples of Sani-Tech's most significant waste receipts, a metals subcategory waste and bilge water, an oils subcategory waste. Samples of these two proposed receipts, receipts discussed previously in Sections 3.1 and 3.2 of this report, were treated in "bench scale" tests of the Beckart Process in March 2000.

Lab reports of the testing are presented in Appendices 12 and 13. Appendix 12 includes a description of the Beckart testing and the qualitative analysis report of each of the treated samples. These analyses show that two of the three treated samples (Sample Nos. 00182 and 00199) were clear and relatively colorless. However, one sample (Sample No. 00200) of the metals subcategory receipt showed some "bleed through" of fines during treatment and a much higher sludge volume. Beckart inserted the recommendation "precoat recommended" on the lab report for this sample.

In April 2000, Cox performed additional treatability studies simulating the Beckart Process. Treatability testing was performed on a 100% sample of the metals subcategory sample characterized in Appendix 2 and a mixed sample comprised of 20% of metals subcategory sample and 80% of the bilge water characterized in Appendix 4. Quantitative analyses of the resulting treated samples are enclosed in Appendix 13 and summarized below. Sample No. 00-14-1495 represents the wastewater generated in treating the 100% sample of metals subcategory waste. It received a 1:1 dilution during treatment. Sample No. 00-14-1494 represents the treated mixture of metals subcategory and bilge water with no dilution.

Treatability Testing of Representative Sani-Tech Receipts

	Representative Metals Subcategory Sample (Sample No. 00-14-1495)			Representative Mixed Subcategory Sample (Sample No. 00-14-1494)		
Parameter Group/Parameter	Untreated (mg/l)	Treated* (mg/l)	Removal (%)	Untreated** (mg/l)	Treated (mg/l)	Removal (%)
Metal Pollutants						
Arsenic	0.016	0.011	32.83%	0.007	0.005	25.63%
Chromium	0.008	0.010	0%	0.007	0.005	30.11%
Copper	6.570	0.129	98.03%	1.362	0.010	99.28%
Lead	0.024	0.010	57.63%	0.016	0.005	68.91%
Nickel	2.500	0.068	97.30%	0.518	0.049	90.50%
Zinc	14.700	0.018	99.88%	3.804	0.035	99.09%
Organic Pollutants						
Bis (2-eh) Phthalate	----	----	----	----	<0.07	----
Conventional Pollutants						
O&G (Method 413.1)	176	----	----	105	51	51.43%
Cyanide	<0.02	<0.01	----	<0.01	<0.01	----

* Calculated as 200% of Sample 00-19-1495 due to 1:1 dilution during treatment.
** Calculated as 20% of Sample 00-19-1492 and 80% of Sample 00-19-1493
---- = No data

A review of this table shows that the concentrations of the eight (8) pollutants in the treated samples are all below their respective Sani-Tech LTAs (Table 2).

As for treatment efficiencies for the Metals Subcategory Sample, they approached the Standard Efficiencies shown in Table 1 for the Metal Bearing - Option 4 Technology in removing the pollutants copper, nickel and zinc. Similarly, copper, nickel and zinc in the Mixed Subcategory Sample were treated at levels approaches their respective Standard Efficiency for the Oily Waste - Option 9 Technology. Evaluation of treatment efficiencies for the other six (6) pollutants serves no real purpose as concentrations of these pollutants prior to treatment approached their respective Sani-Tech LTA.

We have also made comparisons between the treatability of copper; nickel and zinc in the Metals Subcategory Sample versus treatment efficiencies achieved during 1996 by EPA's Facility ID 4798 using the Metal Bearing-Option 4 Technology. The results of this evaluation are presented below.

Comparison of Treatability of the Representative Metals Subcategory Sample with Treatment Efficiencies of an EPA Studied CWT Facility

	Mean Effluent Concentration (mg/l)			Percent Removal (%)		
Parameter Group/Parameter	Copper	Nickel	Zinc	Copper	Nickel	Zinc
EPA's Facility ID 4798	0.414*	1.013*	0.462	99.91%	99.59%	99.93%
Representative Metals Subcategory Sample (Sample No. 00-14-1495)	0.129	0.068	0.018	98.03%	97.30%	99.88%

* Concentration significantly above LTA based on Sani-Tech's anticipate discharge limits. See Table 2.

These results indicate that the Beckart Process will achieve lower LTAs with comparable removal efficiencies in the treatment of Sani-Tech's metals subcategory waste to the Metal Bearing - Option 4 Technology.

Similarly, in the columns below we compare the concentrations of copper, nickel and zinc in the treated sample representative of Sani-Tech's mixed waste receipts versus the treatment achieved by the EPA studied facility using the Oils Treatment - Option 9 Technology.

Comparison of Treatability of the Representative Mixed Subcategory Sample with Treatment Performance of EPA Studied CWT Facilities

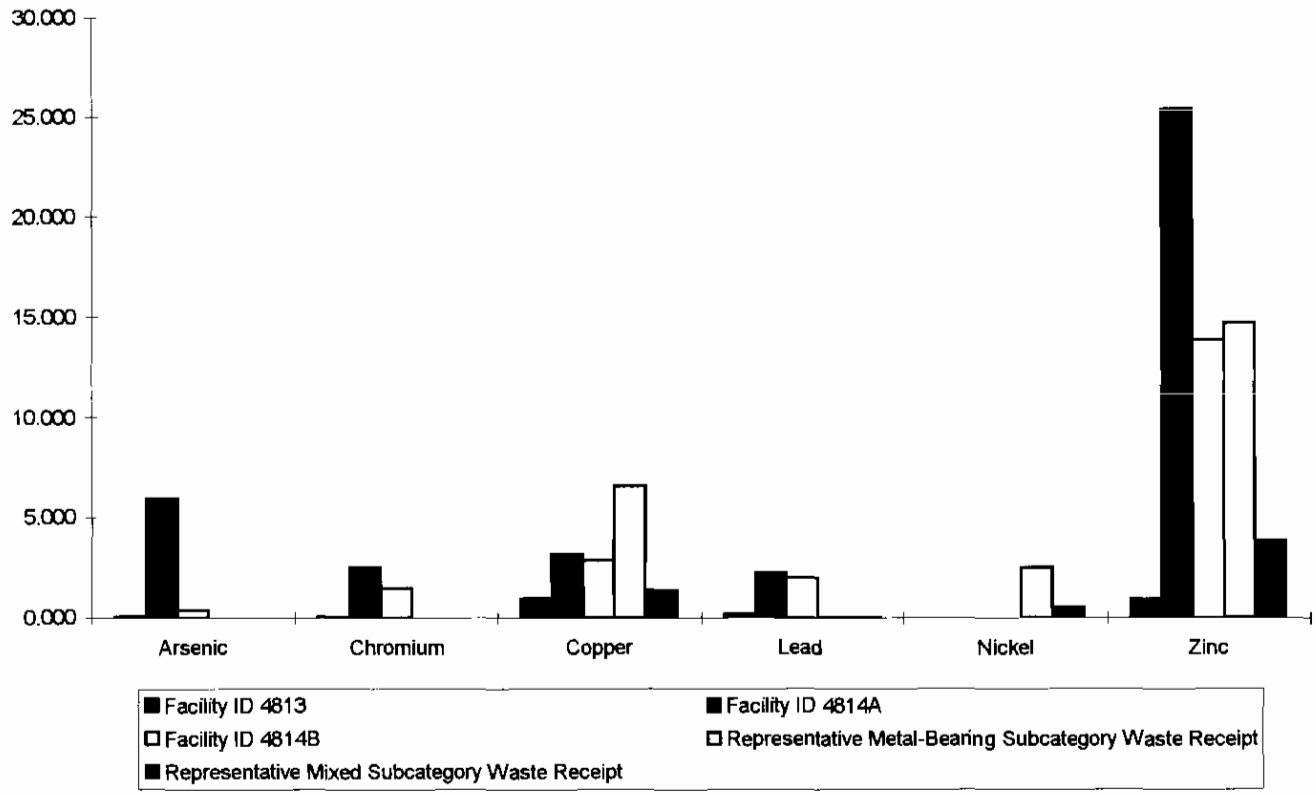
	Mean Effluent Concentration (mg/l)			Percent Removal (%)		
Parameter Group/Parameter	Copper	Nickel	Zinc	Copper	Nickel	Zinc
EPA's Facility ID 4813	0.022	----	0.405	97.67%	---	56.76%
EPA's Facility ID 4814A	0.069	----	3.139*	97.83%	---	87.65%
EPA's Facility ID 4814B	0.445*	----	3.758*	84.35%	---	73.01%
Representative Mixed Subcategory Sample (Sample No. 00-14-1494)	0.010	0.049	0.035	99.28%	90.50%	99.09%

* Concentration significantly above LTA based on Sani-Tech's anticipate discharge limits. See Table 2.

---- No data

These results indicate the Beckart Process will perform favorably to the Oils - Option 9 Technology when processing the mixed metals and oils subcategory waste anticipated for acceptance by Sani-Tech.

It is important to understand that the treatability testing described above, although successful, was very limited in scope. First, only two prospective waste receipts were evaluated, and then only three (3) of the pollutants analyzed for in the raw samples were detected at concentrations above their respective LTAs, i.e. they required no treatment. These relative low metals loadings are pictured graphically below.



Also, it must be considered that the oil and grease loading on the two untreated Sani-Tech samples ranged from 105 mg/l to 176 mg/l versus mean concentrations of 2,954.375 mg/l to 5,928.27mg/l in the influents for Facility ID's 4813, 4814A and 4814B. These low oil and grease concentrations may not be representative of Sani-Techs future receipts and evaluation of an additional sample(s) more heavily loaded with oils and analysis for more analytes would provide more conclusive data. However, based on the treatability data presently available the Beckart Process is equivalent to the base EPA technologies in treatment of the two prospective waste receipts.

8.0 TREATMENT REQUIREMENTS – ORGANICS SUBCATEGORY WASTE

Sani-Tech's organics subcategory (Subcategory C) discharge is expected to contain a limit or a "monitor and report" requirement for each of the twenty-seven (27) parameters listed in Table 3. This table presents LTAs and Standard Efficiencies for these pollutants as discussed in Section 5.0 above.

equalization, i.e. aeration. We anticipate the Subcategory C system will reduce the concentration of these and most other volatiles approximately 50% during equalization. Mean concentrations of the remaining four (4) semi-volatile organic pollutants o-Cresol, p-Cresol, 2,3-Dichloroaniline, and 2,4,6-Trichlorophenol will not be reduced during treatment.

9.0 PROCESS DESIGN

The proposed design for the Sani-Tech facility was developed using the influent characterization, regulatory and treatability testing data presented above and Beckart's vast experience in industrial wastewater treatment. The design consists of three major processes. These are 1) raw waste acceptance, categorization and receipt; 2) metals and oils subcategory (Subcategory D) waste processing; and 3) organics subcategory (Subcategory C) waste processing. These processes are discussed below.

9.1 Raw Waste Acceptance, Categorization and Receipt

The proposed facilities will treat Hazardous Waste, i.e. waste regulated under the Resource Conservation and Recovery Act (RCRA). The raw waste receipts will be characterized initially using a combination of a) knowledge of the process resulting in the waste, b) qualitative (color, odor, clarity, etc.) analysis of a representative sample(s); c) quantitative analysis of a sample for designated parameters; and c) treatability testing where applicable. Sani-Tech has developed the "Waste/Material Profile Sheet" shown in Appendix 14 for documenting this characterization. Once Sani-Tech has developed a profile for a waste and properly qualified it for acceptance by Sani-Tech, the profile will be given a permanent number.

For the profile to be complete, the material must be given its proper CWT subcategory, i.e. metals, oils or organic and a treatment plan developed. Details regarding waste categorization, treatment plans and associated waste acceptance procedures for compliance with the CWT Regulation are presented in Appendix 15.

Once a waste stream has received its profile number, individual receipts of the waste can be scheduled. A copy of Sani-Tech's proposed manifest for the pick-up, transport and delivery of such shipments is shown in Appendix 16.

Procedures for actual receipt of approved wastes will be specific to the profile. Sani-Tech will perform screening tests to insure each receipt matches the profile. Once testing results are completed, approved waste receipts will be received into one of the two separate systems, the Subcategory D System for metal bearing and oily waste or the Subcategory C System for organic waste.

Together Sani-Tech's acceptance, categorization and receiving procedures will assure the following:

a) Rejection of any and all Hazardous Waste as defined by RCRA.
b) Receipt of metals and oils subcategory waste indicated to be amenable to treatment in the proposed Subcategory D system and for which the "equivalent treatment" certification will apply.
c) Receipt of organics subcategory which upon a) equalization and pH neutralization will comply with discharge standards for Subcategory C waste or b) upon consolidation will be suitable for reshipment off site for proper treatment.
d) Receiving waste into the proper system, i.e. Subcategory D or Subcategory C, and if Subcategory D, commingled with other receipts with equivalent treatment plans.

Sani-Tech will use a stringent waste acceptance practice to identify metals and oils subcategory wastes containing high concentrations of "difficult to treat" pollutants. Upon start up, this list of problem pollutants will include the arsenic, mercury and Total Phenols identified as problematic in the evaluation of the 1996 CWT facilities performed in Section 6.0.

Similarly, Sani-Tech will be selective in its acceptance of Subcategory C waste, given that its treatment capabilities for typical pollutants containing in this waste are limited. Organic subcategory wastes with significant concentrations of o-Cresol, p-Cresol, 2,3-Dichloroaniline, 2,4,6-Trichlorophenol and/or volatile constituents will not be accepted or if accepted, will be consolidated and shipped off site for treatment. For example, this screening practice will insure that the mean concentration of o-cresol in wastewater intended for equalization and discharge to the NCSD will be less than 1.61% (100% less 98.39%) of the Standard Influent Concentration for this subcategory of waste. Putting this another way, Sani-Tech's Subcategory C waste screening practices will be every bit as effective at reducing the pollutant loadings prior to receipt as its Subcategory D physical/chemical treatment processes will be at reducing pollutant loadings upon physical/chemical treatment.

9.2 Subcategory D Waste Processing

The system proposed for treating Subcategory D waste consists of three distinct operational units; a) the raw waste receiving and oil recovery system, b) the Beckart System and c) the sludge and treated wastewater handling and disposal systems. Beckart's description of its system design is enclosed as Appendix 17. The other two units are described in the paragraphs below.

Raw Waste Receiving and Oil Recovery

Paul Goodsell, the President of Sani-Tech, has extensive experience in spill cleanups and the transport, handling and phase separation of the resulting oily-water mixtures. Therefore, Paul has had personal input into the design of the raw waste receiving and oil recovery systems for the proposed facility. A description of this process is presented below and shown in the process and instrumentation diagram (P&ID) included as Drawing 4.

This proposed receiving and recovery process begins with the initial separation of "free oil" from the wastewater. This separation actually takes place in the transport vehicle (vacuum truck or tanker) compartment. After the transport parks and adequate time passes for this separation, the plant operator will discharge the lower contents of the compartment into the Oil/Water Switch Box. This box consists of a perforated metal cage enveloped within an open top steel container. The raw waste a) initially enters the cage; b) minus any large debris flows thorough the perforations into the space between the cage and outside box walls; c) discharges through a pipe connection in the bottom of this outside wall to a basket strainer; and then d) floods the suction of an air-operated pump. When water is present, the pump discharge is valved to direct flow to one of the equalization storage tanks. When oil is detected, this valving is switched to direct the oil to the Oil Storage Tank. Every effort is made to keep "free oil" out of the equalization storage tanks. Water entering the Oil Storage Tank will be periodically returned to the Switch Box per Drawing 4.

During the initial overnight of storage, the wastewater is allowed to remain still, resulting in settlement of grit and other particulate on the bottom of the tank and more importantly allowing any free oil not separated during receipt and any unstable oil emulsions to float to the top of the tank for periodic removal.

Equalization, Physical/Chemical Treatment and Solids Separation

The equalization, physical/chemical treatment and solids separation system is referred to as the Beckart System. Beckart based the initial design of the system on the treatability studies discussed in Section 7.0. The original design limited all wastewater to a single physical/chemical treatment. Upon evaluation of the CWT Regulation and review of Sani-Tech's plan for compliance with these regulations, Beckart modified the design of the system to the one presented in this report, a system allowing for multiple passes of difficult to treat wastewaters.

The wastewater enters the Beckart System after the period of quiescence in the equalization storage tanks and final attempts to remove the free oil are completed. In the Beckart System this wastewater is sparged with air as necessary to prevent anaerobic conditions during storage and again prior to charging the wastewater to the Treatment Tank. Details on the Beckart System process are included in Appendix 17. A P&ID for the system is included as Drawing 5.

Subcategory D Treated Water and Sludge Handling and Disposal

Sani-Tech proposes to dispose of the treated wastewater from the Beckart System to the NCSD via an existing sanitary sewer. The water will be metered prior to entering the sewer. The maximum discharge rate will be 35 gallons per minute (gpm), the limiting capacity for the sand filter. Design flow calculations are included in Appendix 18 verifying that the sewer is adequately sized for this added flow. A diagram showing the equipment proposed for metering, sampling and discharging the treated wastewater is included in Drawing 6.

Beckart will supply carts into which Sani-Tech personnel will discharge the press cake from Beckart's Hy-Pack® filter press. A forklift will be used to transport the loaded carts to a roll-off container and discharge the press cake into this container. A diagram showing the sludge handling and disposal process is included in Drawing 6.

Sani-Tech personnel will sample the contents of the roll-off in accordance with applicable requirements of South Carolina Regulation R.61-9.504 and R.61-107.258 and will perform appropriate analyses to include Toxicity Characteristic Leaching Procedure (TCLP) testing. Sani-Tech anticipates that these analyses will confirm that the press cake is not Hazardous Waste and is suitable without further treatment for landfill disposal. As reported by Beckart in Appendix 17, the solids content of the cake should be within the range of 35% to 50%. Present plans indicate the roll-offs will be transported to the Berkley County Landfill for disposal of the press cake.

9.3 Organics Subcategory Waste

An equalization system is proposed for storage and treatment of organics subcategory (Subcategory C) waste. The proposed process is shown in Drawing 7. This system will treat Subcategory C waste both continuously and batch, i.e. pH neutral waste will flow through the system and be equalized continuously and any waste that needs pH adjustment will be isolated in the equalization tank and receive batch neutralization prior to discharge. This system is proposed for a maximum discharge rate of (45) gallons per minute. There will be some (estimated at 50%) removal of volatiles during equalization but otherwise the Subcategory C system will perform very little pollutant removal.

Sani-Tech proposes to "on occasion" accept Subcategory C waste that is not amenable to pre-treatment via equalization and pH neutralization. As such, this wastewater will not be discharged to the NCSD but

instead, accumulated and transported off site to another CWT facility, one that has the required biological treatment / pre-treatment equipment.

10.0 PLANS AND SPECIFICATIONS

Plans and specifications have been developed for constructing facilities to perform the processes described in Section 9.0 above. This design is detailed in the enclosed Drawings 8, 9 and 10. Drawing 11 consists of a legend for the P&IDs discussed in Section 9.0. An equipment list for the Beckart System is presented in Drawing No. 12. Appendix 19 specifies the equipment for the non-Beckart portion of the construction.

In reviewing the plans and specifications, note that the facility consists of the following four systems:

- Subcategory D Raw Waste Receipt, Storage and Free Oil Recovery System
- Beckart Treatment System
- Subcategory D Treated Wastewater and Sludge Disposal System
- Subcategory C System

Specifications for the changes in the sewer are enclosed as Appendix 20 and some information on Beckart is included as Appendix 21.

The Beckart System will make use of a programmable controller (PLC) while the other systems will use more traditional manual controls. With one exception the four (4) systems will operate virtually independent from each other. This exception occurs with the Subcategory D Treated Wastewater and Sludge Disposal System that operates subordinate to the Beckart System.

11.0 INITIAL CERTIFICATION STATEMENT

As presented above, Sani-Tech proposes to combine metal bearing and oily waste receipts prior to the monitoring of their treated wastewater by the NCSD for compliance with the CWT Regulation. Due to this decision, Sections 437.47(a)(2) of the CWT Regulation requires a responsible corporate officer of Sani-Tech to make an initial certification regarding the equivalence of the proposed design and its future operation. A copy of this certification statement is included as Appendix 22.

TABLE NO. 1
Design Influent Concentrations - Sani-Tech Environment, LLC

Parameter		Design Influent Concentrations				
		Metals Subcategory		Oils Subcategory		Organics Subcategory
Common Name	CAS Number	EPA's CWT Data for Metal Bearing Subcategory* (mg/l)	tative Analysis - Sani-Tech Metal-Bearing Waste	EPA's CWT Data for Non-RCRA Oils Subcategory** (mg/l)	tative Analysis - Sani-Tech Bilge Water Receipt (mg/l)	EPA's CWT Data for Organics Subcategory*** (mg/l)
Metals A: Metals Regulated under CWT Metals or Oils Subcategory for NSPS Facilities						
Anitmony	7440-36-0	80.937	----	0.774	----	0.687
Arsenic	7440-38-2	56.873	0.016	0.102	<0.005	0.074
Barium	7440-39-3	----	----	0.664	----	28.343
Cadmium		549.749	----	0.043	----	----
Chromium	7440-47-3	851.525	0.008	0.218	0.007	0.109
Cobalt	7440-48-4	362.914	----	2.077	----	0.425
Copper	7440-50-8	2,514.805	6.570	0.837	0.061	0.910
Leod	7439-92-1	167.649	0.024	0.975	0.014	0.340
Mercury	7439-97-6	0.276	----	0.020	----	----
Molybdenum	7439-98-7	51.573	----	4.640	----	1.765
Nickel	7440-02-0	430.971	2.500	1.228	0.023	1.632
Selenium		0.561	----	0.030		----
Silver		1.172	----	0.052	----	----
Tin	7440-31-5	903.260	----	0.494	----	0.670
Titanium		532.287	----	0.071	----	0.027
Vanadium		30.258	----	----	----	----
Zinc	7440-66-6	2,007.752	14.700	14.488	1.080	0.781
Organics A: Organics Regulated Under CWT Oils or Organics Subcategory for PSNS Facilities						
Bis (2-ethylhexyl) phthalate*		0.292	----	1.472	----	----
Carbazole		----	----	0.629	----	----
n-Decane		----	----	1.969	----	----
Fluoranthene*		----	----	0.335	----	----
n-Octadecone		----	----	6.854	----	----
o-Cresol	95-58-7	----	----	1.357	----	6.195
p-Cresol	106-44-5	----	----	1.018	----	3.322
2,3-Dochloroaniline	608-27-5	----	----	----	----	1.401
2,4,6-Trichlorophenol	88-06-2	----	----	----	----	1.462
Organics B: Volatile Organics Not Regulated Under CWT for PSNS Facilities but To Be Monitored by POTW****						
Benzene	71-43-2	----	----	0.520	----	2.765
Diphenyl Ether	101-84-8	----	----	1.590	----	----
Methylene Chloride	75-09-2	0.264	----	0.133	----	1,958.967
Toluene	108-88-3	0.166	----	1.952	----	746.077
Trichloroethene	79-01-6	0.114	----	0.022	----	6.439
Misc. Pollutants: Additional Pollutants (Conventional, Cyanide, etc.) To Be Regulated by POTW						
Oil & Grease (Method 413.1))		29.7	176	6,130	105.0	----
Oil & Grease (SGT-HEM)		----	----	3,468	----	----
Cyanide****		8.00	<0.02	0.020	<0.01	----
Total Phenols		1.650	----	40.850	----	----
pH		----	----	----	----	----

* Development Document for the Centralized Waste Treatment (CWT) Point souce category, Chapter 12, Table 12-1.
** Development Document for the Centralized Waste Treatment (CWT) Point souce category, Chapter 12, Table 12-7.
*** Development Document for the Centralized Waste Treatment (CWT) Point souce category, Chapter 12, Table 12-8.
---- No Data

Date of last revision: 5/23/01
File No. sani0101.apptablesb

Completed by J. D. Honeycutt
Signature: _____ Date: 05/15/01

TABLE NO. 2
Design Effluent Concentrations / Target Long-Term Averages for Subcategory D Waste - Sani-Tech Environment, LLC

Parameter		Design Effluent Concentrations / Percent Removals				
		LTAs (Cells with borders denote the Lowest / Controlling Concentration)			Standard Pollutant Removal Percentages	
Common Name	CAS Number	EPA's CWT Data for Metals Bearing-Option 4* (mg/l)	EPA's CWT Data far Oily Waste-Option 9* (mg/l)	Based on NCSD's Anticipated Local Limits** (mg/l)	EPA's CWT Data for Metals Bearing-Option 4*** (%)	EPA's CWT Data for Oily Waste-Option 9**** (%)
Metals A: Metals Regulated under CWT Metals						
Anitmony	7440-36-0	0.170	0.103	0.793	94.30%	87.99%
Arsenic	7440-38-2	0.084		0.043	91.74%	57.64%
Barium	7440-39-3		0.221	0.877		91.91%
Cadmium		0.058		0.135	99.97%	88.07%
Chramium	7440-47-3	1.670	0.183	1.718	99.91%	86.24%
Cobalt	7440-48-4	0.115	7.420		98.47%	52.20%
Copper	7440-50-8	0.744	0.157	0.987	99.91%	90.02%
Lead	7439-92-1	0.177	0.099	0.155	99.95%	88.26%
Mercury	7439-97-6	0.00056	0.00309	0.01067	98.38%	77.43%
Molybdenum	7439-98-7	1.747	1.543		26.40%	53.73%
Nickel	7440-02-0	1.160	1.474	0.490	99.59%	41.24%
Selenium		0.280		0.166	57.54%	36.94%
Silver		0.026		0.078	99.62%	
Tin	7440-31-5	0.090	0.107		99.94%	90.77%
Titanium		0.057			99.84%	89.99%
Vanadium		0.050			99.46%	
Zinc	7440-66-6	0.413	3.140	0.744	99.93%	83.48%
Organics A: Organics Regulated Under CWT Oils or Organics Subcategory for PSNS Facilities						
Bis (2-ethylhexyl) phthalate*			0.063	0.395		93.66%
Carbazole			0.151			81.09%
n-Decane			0.238			94.98%
Fluoranthene			0.017	0.333		95.21%
n-Octadecane			0.203			
o-Cresol	95-58-7					
p-Cresol	106-44-5					
2,3-Dochloroaniline	608-27-5					
2,4,6-Trichlorophenol	88-06-2					
Organics B: Volatile Organics Not Regulated Under CWT for PSNS Facilities but To Be Monitored by POTW*****						
Benzene	71-43-2			1.667		
Diphenyl Ether	101-84-8			0.333		
Methylene Chloride	75-09-2			0.333		
Toluene	108-88-3			1.667		
Trichloroethene	79-01-6			0.333		
Misc. Pollutants: Additional Pallutants (Conventional, Cyanide, etc.) Ta Be Regulated by POTW						
Oil & Grease (Method 413.1))				133.3	99.54%	
Oil & Grease (SGT-HEM)				66.7	98.77%	
Cyanide*******				0.100	0.00%	
Total Phenols				1.333	50.65%	
pH						

* Development Document for the Centralized Waste Treatment Point Souce Category, Executive Summary Section, Table Executive Summary 7.

** Equal to two-thirds (2/3) of the anticipated North Charleston Sewer District's (NCSD) monthly maximum limit where applic or if not applicable, at one-third (1/3) of the NCSD's daily maximum limit.

*** Development Document for the Centralized Waste Treatment (CWT) Point souce category, Chapter 7, Table 7-6.

**** Development Document for the Centralized Waste Treatment (CWT) Paint souce category, Chapter 7, Table 7-7, except for Conventional where influent concentrations in Table 12-7 and effluent in Table 12-9 used.

***** Limits set are potential limits only as discussions with NCSD indicate the discharge limits will include a "monitor and report" provision only for these parameters

****** Cyanide treatment requires special processing and will not be treated by Sani-Tech

Date of last revision: 5/23/01
File No. sani0101.apptablesb

Completed by J. D. Honeycutt
Signature: [signature] Date: 05/15/01

TABLE NO. 3

Design Effluent Concentrations / Percent Removals for Subcategory C Waste - Sani-Tech Environment, LLC

Parameter		Design Effluent Concentrations / Percent Removals			
		Target Long-Term Average Concentrations / LTAs (Cells with borders are Controlling Values)		Standard Pollutant Removal Percentages	
Common Name	CAS Number	CWT Data for Organics Bearing-Option 4* (mg/l)	Based on NCSD's Anticipated Local Limits** (mg/l)	EPA's CWT Data for Organics Bearing-Option 4*** (%)	Based on NCSD's Anticipated Local Limits**** (mg/l)
Metals A: Metals Regulated under CWT Metals or Oils Subcategory					
Anitmony	7440-36-0		0.793		0.00%
Arsenic	7440-38-2		0.043		42.34%
Barium	7440-39-3		0.877		96.90%
Cadmium			0.135		----
Chromium	7440-47-3		1.718		0.00%
Cobalt	7440-48-4				
Copper	7440-50-8		0.987		0.00%
Lead	7439-92-1		0.155		54.31%
Mercury	7439-97-6		0.01067		----
Molybdenum	7439-98-7	0.943		57.10%	
Nickel	7440-02-0		0.490		69.98%
Selenium			0.166		----
Silver			0.078		—
Tin	7440-31-5				
Titanium					
Vanadium					
Zinc	7440-66-6		0.744		4.74%
Organics A: Organics Regulated Under CWT Oils or Organics Subcategory for PSNS Facilities					
Bis (2-ethylhexyl) phthalate*			0.395		—
Carbazole					
n-Decane					
Fluoranthene*					
n-Octadecane					
o-Cresol	95-58-7	0.185		98.39%	
p-Cresol	106-44-5	0.068		85.38%	
2,3-Dochloroaniline	608-27-5	0.023		80.45%	
2,4,6-Trichlorophenol	88-06-2	0.086		45.16%	
Organics B: Volatile Organics Not Regulated Under CWT for PSNS Facilities but To Be Monitored by POTW*****					
Benzene	71-43-2		1.667		39.72%
Diphenyl Ether	101-84-8		0.333		—
Methylene Chloride	75-09-2		0.333		99.98%
Toluene	108-88-3		1.667		99.78%
Trichloroethene	79-01-6		0.333		94.82%
Misc. Pollutants: Additional Pollutants (Conventional, Cyanide, etc.) To Be Regulated by POTW					
Oil & Grease (Method 413.1))			133.3		
Oil & Grease (SGT-HEM)			66.7		
Cyanide*******			0.100		—
Total Phenols			1.333		—
pH					

* Development Document for the Centralized Waste Treatment Point Souce Category, Executive Summary Section, Table Executive Summary 7.

** Equal to two-thirds (2/3) of the anticipated North Charleston Sewer District's (NCSD) monthly maximum limit where applicable, or if not applicable, at one-third (1/3) of the NCSD's daily maximum limit.

*** Development Document for the Centralized Waste Treatment (CWT) Point souce category, Chapter 7, Table 7-8.

**** Calculated using influent concentrations for CWT facilities (See Table 1).

***** Limits set are potential limits only as discussions with NCSD indicate the discharge limits will include a "monitor and report" provision only for these parameters

****** Cyanide treatment requires special processing not to be treated by Sani-Tech

— No Data

Date of last revision: 5/23/01
File No. sani0101.apptablesb

Completed by J. D. Honeycutt
Signature: _____ Date: 05/~~15~~/01
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TABLE NO. 4

Summary of Effluent Long-Term Averages and Percent Removals for EPA's Facility ID's 4798, 4813, 4814A and 4814B - Sani-Tech Environment, LLC

Parameter		Metals-Option 4 Performance Data*			Oils-Option 9 Performance Data**								
		Facility I.D. 4798			Facility I.D. 4813			Facility I.D. 4814A			Facility I.D. 4814B		
Common Name	CAS Number	Influent*** (mg/l)	Effluent*** (mg/l)	Percent Removal**** (%)	Influent*** (mg/l)	Effluent*** (mg/l)	Percent Removal**** (%)	Influent*** (mg/l)	Effluent*** (mg/l)	Percent Removal**** (%)	Influent*** (mg/l)	Effluent*** (mg/l)	Percent Removal**** (%)
Metals A: Metals Regulated under CWT Metals or Oils													
Anitmony	7440-36-0	2.980	0.170	94.30%	0.116	0.119	0.00%	0.858	0.103	87.99%	0.103	0.075	27.55%
Arsenic	7440-38-2	0.070	0.141	0.00%	0.045	0.013	71.66%	5.942	1.341	77.43%	0.382	0.238	37.84%
Barium	7440-39-3	----	----	----	0.115	0.031	72.92%	2.726	0.221	91.91%	1.979	0.365	81.57%
Cadmium		92.683	0.030	99.97%	0.006	0.005	12.59%	0.079	0.007	90.76%	0.052	0.008	85.39%
Chromium	7440-47-3	763.167	0.661	99.91%	0.045	0.008	81.85%	2.507	0.183	92.70%	1.467	0.464	68.39%
Cobalt	7440-48-4	7.460	0.115	98.47%	0.019	0.010	46.70%	2.133	1.091	48.86%	30.904	13.743	55.53%
Copper	7440-50-8	457.833	0.414	99.91%	0.956	0.022	97.67%	3.168	0.069	97.83%	2.841	0.445	84.35%
Lead	7439-92-1	117.200	0.055	99.95%	0.178	0.135	23.94%	2.234	0.060	97.33%	1.974	0.238	87.96%
Mercury	7439-97-6	0.103	0.00167	98.37%	0.00025	0.00020	20.00%	0.010380	0.003050	70.62%	0.0198	0.0031	84.25%
Molybdenum	7439-98-7	2.373	1.747	26.40%	0.627	0.714	0.00%	3.334	1.543	53.73%	1.406	1.631	0.00%
Nickel	7440-02-0	247.667	1.013	99.59%	----	----	----	----	----	----	----	----	----
Selenium		0.271	0.115	57.54%	0.020	0.020	0.00%	0.170	0.107	36.94%	0.346	0.413	0.00%
Silver		4.873	0.019	99.62%	0.005	0.005	0.00%	0.019	0.005	74.15%	0.013	0.005	59.79%
Tin	7440-31-5	143.800	0.090	99.94%	0.028	0.028	0.00%	1.349	0.031	97.72%	1.133	0.183	83.83%
Titanium		35.350	0.057	99.84%	0.009	0.004	55.36%	0.427	0.014	96.81%	0.177	0.030	83.16%
Vanadium		2.215	0.012	99.46%	----	----	----	----	----	----	----	----	----
Zinc	7440-66-6	641.833	0.462	99.93%	0.937	0.405	56.76%	25.424	3.139	87.65%	13.925	3.758	73.01%
Organics A: Organics Regulated Under CWT Oils or Organics Subcategory for PSNS Facilities													
Bis (2-ethylhexyl) phthalate*		0.013	0.010	20.19%	0.169	0.010	94.09%	0.490	0.018	96.31%	1.707	0.116	93.22%
Carbazole		----	----	----	0.134	0.046	65.31%	0.636	0.033	94.89%	0.801	0.151	81.09%
n-Decane		----	----	----	3.352	0.238	92.89%	6.157	0.016	99.74%	94.097	4.724	94.98%
Fluoranthene		----	----	----	0.209	0.010	95.21%	0.865	0.017	98.01%	8.867	0.489	94.48%
n-Octadecane		----	----	----	7.235	0.203	97.20%	6.907	0.114	98.35%	39.607	1.471	96.29%
o-Cresol	95-58-7	----	----	----	2.243	1.770	NA	0.370	0.403	NA	0.321	0.215	NA
p-Cresol	106-44-5	----	----	----	1.529	1.283	NA	0.785	0.961	NA	1.361	0.630	NA
2,3-Dochloroaniline	608-27-5	----	----	----									
2,4,6-Trichlorophenol	88-06-2	----	----	----									
Organics B: Volatile Organics Not Regulated Under CWT for PSNS Facilities but To Be Monitored by POTW******													
Benzene	71-43-2	----	----	----	0.881	1.354	0.00%	1.053	0.511	51.44%	2.312	1.606	30.53%
Diphenyl Ether	101-84-8	----	----	----	9.230	0.982	89.37%	0.334	0.022	93.52%	0.165	0.073	56.13%
Methylene Chloride	75-09-2	0.013	0.010	24.36%	0.057	0.081	0.00%	4.501	3.252	27.73%	5.788	5.232	9.62%
Toluene	108-88-3	0.064	0.018	71.06%	4.031	3.240	19.63%	9.407	3.613	61.59%	22.499	8.596	61.79%
Trichloroethene	79-01-6	0.223	0.101	54.59%	0.010	0.010	0.00%	559.080	194.600	65.19%	2.606	1.145	56.09%
Misc. Pollutants: Additional Pollutants (Conventional, Cyanide, etc.) To Be Regulated by POTW													
Oil & Grease (Method 413.1))		97.1	7.4	92.38%	1,745.883	134.397	92.30%	5,928.247	226.829	96.17%	2,954.375	822.333	72.17%
Oil & Grease (SGT-HEM)		----	----	----	849.035	42.528	94.99%	1,630.986	41.992	97.43%	1,232.188	243.617	80.23%
Cyanide********		2.91	0.02	99.31%	0.020	0.020	0.00%	0.295	0.105	64.38%	0.376	0.384	0.00%
Total Phenols		0.207	0.081	60.81%	58.860	40.076	31.91%	28.680	15.523	45.88%	32.863	20.160	38.65%
pH													

* Development Document for the Centralized Waste Treatment (CWT) Point souce category, Appendix C, Pages C-55 through C-86. See Appendix __ of this application.

** Development Document for the Centralized Waste Treatment (CWT) Point souce category, Appendix C, PagesC-125 through C-193. See Appendix __ of this application.

*** Values represent mean effluent concentrations for the study period. Cells with borders denote mean values significantly greater that the Sani-Tech's LTA based on its anticipated permit limits. See Table No. 2

**** Values represent mean pollutant removal efficiencies for the study period. Cells with borders denote efficiencies significantly lower than those on which EPA based the numericol limits. See Table No. 2.

***** Limits set are potential limits only as initial permit will include a "monitor and report" provision only for these parameters

****** Cyanide treatment requires special processing and assumed not to be treated by Sani-Tech

---- No Data

Date of last revision: 5/23/01
File No. sani0101 anptablesh

Completed by J. D. Honeycutt
Signature: [illegible] Date: 05/15/01

APPENDIX 1

PERMIT APPLICATION FORM

D H E C
PROMOTE PROTECT PROSPER

CONSTRUCTION PERMIT APPLICATION
Water and/or Wastewater Facilities

BUREAU OF WATER

DRP SUBMITTAL: No ☐ Yes ☐

SELECT ONE ➧ ☐ Water Facilities ☒ Wastewater Facilities ☐ Water & Wastewater Facilities

I. Project Name: Sani-Tech Waste Pre-Treatment System County: Charleston

II. Project Location (street names, etc.): 2051 Bainbridge Avenue
North Charleston, SC 29415

III. Project Description(s): *Water System:* _____

Wastewater System: Pre-Treatment System (new)

Project Type (A-Z): Water: ___ Wastewater: X *(See instructions for the appropriate project code)*

IV. ***Initial* Owner:** [Time of Application] Name/Organization: Sani-Tech Environment, LLC
Address: 2051 Bainbridge City: N.Charleston State: SC Zip: 29415 Phone #: 843744-0406

V. ***Final* Owner:** [After Construction] Name/Organization: Sani-Tech Environment, LLC
Address: 2051 Bainbridge City: N.Charleston State: SC Zip: 29415 Phone #: 843744-0406

VI. **Entity Responsible for Final Operation & Maintenance of System:**
Water System: Name: _____ Address: _____
City: _____ State: ____ Zip: _____ Phone #: ( ) _____ Fax #: ( ) _____
Wastewater System. Name: Sani-Tech Environment Address: 2051 Bainbridge Ave
City: Charleston State: SC Zip: 29415 Phone #: 8437440406 Fax #: 8437440730

VII. **Engineering Firm:** Name: Albrecht Environmental Address: 444A DeAnna Lane
City: Wando State: SC Zip: 29492 Phone #: 8438568450 Fax #: 8438568453

VIII. **Is this project:** A) Part of a phased project? No☒ Yes☐. If Yes, Phase _____ of _____
B) A revision to a previously permitted project? No☒ Yes☐. If Yes, Permit # _____
Date Approved: _____ Project name (if different): _____
C) Submitted based on a Schedule of Compliance or Order issued by DHEC? No☒ Yes☐. Order # _____
D) Anticipating funding by the State Revolving Fund (SRF)? No☒ Yes☐.
E) Crossing a water body? (e.g., river, creek) No☒ Yes☐. If Yes, Name of water body _____

IX. **Are Standard Specifications approved by DHEC being used on this project?** No☒ Yes☐. If Yes:
Water: Date Approved: _____ Approved for whom: _____
Wastewater: Date Approved: _____ Approved for whom: _____

X. **Wastewater Systems:** A) Type: Domestic ☐ Process *(Industrial)* ☒ Combined *(Domestic & Process)* ☐
B) Total average design flow of the project not to exceed 10,000 GPD.
C) *Sewers or Pretreatment* 1. Name of facility (e.g., POTW) treating the wastewater: N.Charleston POTW
2. NPDES/ND Number of facility in Item #1: _____
Treatment Systems 3. Date Preliminary Engineering Report (PER) approved: N/A
4. NPDES/ND application submitted? No☐ Yes☐. If Yes, Date N/A
Disposal Sites 5. Effluent Disposal Site (Description): N/A
6. Sludge Disposal Site (Description): Berkeley County Landfill

XI. **Water Systems:** Project located within city limits? No☐ Yes☐.
Public water system providing water (Name & System ID No.): _____ No. _____
New water system (including master meter)? No☐ Yes☐. If Yes, System name: _____

XII. **Type of Submittal:** Complete **Section A (Standard)** *or* **Section B (Delegated Review Program - DRP).**

A) Standard Submittal *must* include the following, where applicable:

- ☒ 1. A transmittal letter outlining the submittal package.
- ☒ 2. The **original** construction permit application, properly completed, with three (3) copies.
- ☒ 3. Three (3) sets of signed and sealed plans and specifications. Specifications may be omitted if approved standard specifications are on file with DHEC.
- ☒ 4. One (1) additional overall plan sheet showing the proposed and existing (only in the area of proposed construction) water and wastewater lines (highlighted for identification) and their sizes.
- ☒ 5. Three (3) sets of the appropriate design calculations. WASTEWATER: Design flow (based on R.61-67, Appendix A), pump station calc's. and pump curve. WATER: Recent flow test from a location near the tie-on site, design calc's. indicating pressure maintained in the distribution system during max. instantaneous demand, fire flow and flushing velocities achieved. Number/types of service connections. well record form, pumping test results, etc.
- ☒ 6. Three (3) copies of a detailed 8½" x 11" location map. separate from the plans.
- N/A ☐ 7. Three (3) copies of construction easements unless the project owner has the right of eminent domain.
- ☒ 8. A letter(s) from the entity supplying water and/or providing wastewater treatment stating their willingness and ability to serve the project, including pretreatment permits, if applicable. The letter should include the specific flow and, when applicable, the specific number of lots being served.
- ☒ 9. A letter(s) from the entity agreeing to be responsible for the O&M of the water and/or wastewater system.
- ☒ 10. WASTEWATER SYSTEMS: Application fee enclosed $ 600.00 . (Refer to R.61-30, Fee Schedule).
- N/A ☐ 11. WATER SYSTEMS: a) A letter from the local government which has potable water planning authority over the area, if applicable, in which the project is located, stating project consistency with water supply service plan for area.
  - b) For wells, four (4) copies of a wellhead protection area inventory.
  - c) For new wells, a viability demonstration is required in accordance with Regulation 61-58.1.B.(4).

Note: Other approvals may include 208 and OCRM certification, and navigable waterway permitting.

B) DRP submittal (treatment plants are not covered) *must* include the following, where applicable:

- ☐ 1. A transmittal letter, signed by the professional engineer representing the DRP entity, noting this is a DRP submittal. The letter should state that the project has been reviewed and complies with R.61-58 and/or R.61-67.
- ☐ 2. The **original** construction permit application, properly completed, with two (2) copies.
- ☐ 3. Two (2) sets of the signed and sealed plans.
- ☐ 4. One (1) additional plan sheet with water and wastewater lines highlighted, as required under Sec. XII.A.4. above.
- ☐ 5. Two (2) sets of the appropriate design calculations. WASTEWATER: Same information as required under Section XII.A.5. above. WATER: Same information as required under Section XII.A.5. above.
- ☐ 6. Two (2) copies of a detailed 8½" x 11" location map, separate from the plans.
- ☐ 7. Two (2) copies of construction easements, unless the project owner has the right of eminent domain.
- ☐ 8. DHEC's Ocean and Coastal Resource Management certification (for projects in applicable counties).
- ☐ 9. DHEC's Water Quality permit or conditions for placement in navigable waters, and other Agency approvals.
- ☐ 10. WASTEWATER SYSTEMS: a) A letter of acceptance from the entity providing the treatment of the wastewater that includes the specific flow and, when applicable, the specific number of lots being accepted.
  - b) A letter from the organization agreeing to be responsible for the O&M of the sewer system.
  - c) The 208 Plan certification from the appropriate Council of Governments (designated 208 areas), or from DHEC on the non-designated 208 areas.
  - d) Application Fee of $75 for a collection/transmission system submitted as a DRP project.
- ☐ 11. WATER SYSTEMS: A letter from the local government which has potable water planning authority over the area, if applicable, in which the project is located, stating project consistency with water supply service plan for area.

Note: The DRP entity should ensure that a copy of the final approved plans are returned to the design engineer.

XIII. Construction plans, material and construction specifications, the engineering report including supporting design data and calculations are herewith submitted and made a part of this application. I have placed my signature and seal on the engineering documents submitted, signifying that I accept responsibility for the design of this system, and that I have submitted a complete administrative package.

Engineer's Name (Printed): Jimmy D. Honeycutt Signature: Jimmy D. Honeycutt, P.E.

S.C. Registration Number: 16564 Registered Professional Engineer

XIV. Prior to final approval, I will submit a statement certifying that construction is complete and in accordance with the approved plans and specifications, to the best of my knowledge, information and belief. This certification will be based upon periodic observations of construction and a final inspection for design compliance by me or a representative of this office who is under my supervision.

Engineer's Name (Printed): Jimmy D. Honeycutt Signature: Jimmy D. Honeycutt, P.E.

S.C. Registration Number: 16564 Registered Professional Engineer

XV. I hereby make application for a permit to construct the project as described above. I have read this application and agree to the requirements and conditions and agree to the admission of properly authorized persons at all reasonable hours for the purpose of sampling and inspection.

Owner's Name (Printed): Paul Goodsell Signature: Paul Goodsell

Owner's Title: President Date: 05/18/01

APPENDIX 2

EFFLUENT LIMITATIONS GUIDELINES, PRETREATMENT STANDARDS, AND NEW SOURCE PERFORMANCE STANDARDS FOR THE CENTRALIZED WASTE TREATMENT POINT SOURCE CATEGORY

EPA United States Environmental Protection Agency

Federal Register Environmental Documents

[Federal Register: December 22, 2000 (Volume 65, Number 247)]
[Rules and Regulations]
[Page 81241-81313]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr22de00-25]

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Part IX

Environmental Protection Agency

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40 CFR Parts 136 and 437

Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Centralized Waste Treatment Point Source Category; Final Rule

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 136 and 437

[FRL-6863-8]
RIN 2040-AB78

Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Centralized Waste Treatment Point Source Category

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This final rule represents the culmination of the Agency's effort to develop Clean Water Act (CWA) effluent limitations guidelines and standards for wastewater discharges from the centralized waste treatment industry. This final regulation generally applies to wastewater discharges associated with the operation of new and existing centralized waste treatment facilities which accept hazardous or non-hazardous industrial wastes, wastewater, and/or used material from off-site for treatment of the wastes and/or recovery of materials from the wastes.

EPA expects compliance with this regulation to reduce the discharge of conventional pollutants by at least 9.7 million pounds per year and

toxic and non-conventional pollutants by at least 9.3 million pounds per year. EPA estimates the annual cost of the rule will be $35.1 million (pre-tax $1997). EPA estimates that the annual benefits of the rule will range from $2.56 million to $8.09 million ($1997).

This final rule also amends EPA's Guidelines Establishing Test Procedures for the Analysis of Pollutants (40 CFR Part 136) to add 10 semivolatile organic pollutants to Method 625 and 6 semivolatile organic pollutants to Method 1625.

DATES: This regulation shall become effective January 22, 2001. In accordance with 40 CFR 23.2, this action is considered promulgated for purposes of judicial review as of 1 pm Eastern Daylight Time on January 5, 2001.

ADDRESSES: The public record for this rulemaking has been established under docket number W-98-21 and is located in the Water Docket, East Tower Basement, 401 M St. SW, Washington, DC 20460. The record is available for inspection from 9 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. For access to the docket materials, call (202) 260-3027 to schedule an appointment. You may have to pay a reasonable fee for copying.

FOR FURTHER INFORMATION CONTACT: For technical information concerning today's final rule, contact Ms. Jan Matuszko at (202) 260-9126 or Mr. Timothy Connor at (202) 260-3164. For economic information contact Dr. William Wheeler at (202) 260-7905.

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action include facilities of the following types that discharge pollutants to waters of the U.S.:

Category	Examples of regulated entities
Industry.....	Discharges from stand-alone waste treatment and recovery facilities receiving materials from off-site. These facilities may treat hazardous or non-hazardous waste, hazardous or non-hazardous wastewater, and/or used material from off-site, for disposal, recycling, or recovery. Certain discharges from waste treatment systems at facilities primarily engaged in other industrial operations. Thus, industrial facilities which process their own, on-site generated, process wastewater with hazardous or non-hazardous wastes, wastewaters, and/or used material received from off-site, in certain circumstances, may be subject to this rule with respect to a portion of their discharge.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility is regulated by this action, you should carefully examine the

applicability criteria listed in Section 437.1 and the definitions in Section 437.2 of the rule and detailed further in Section V of this preamble. If you still have questions regarding the applicability of this action to a particular entity (after consulting Section V), consult one of the persons listed for technical information in the preceding FOR FURTHER INFORMATION CONTACT section.

Compliance Dates

Existing direct dischargers must comply with limitations based on the best practicable technology currently available, the best conventional pollutant control technology, and the best available technology economically achievable as soon as their National Pollutant Discharge Elimination System (NDPES) permits includes such limitations. Existing indirect dischargers subject to today's regulations must comply with the pretreatment standards for existing sources no later than December 22, 2003. New direct and indirect discharging sources must comply with applicable guidelines and standards on the date the new sources begin discharging.

Supporting Documentation

The final regulations are supported by several major documents:

1. ``Development Document for Final Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry'' (EPA-821-R-00-020) referred to in the preamble as the final technical development document (TDD). This TDD presents the technical information that formed the basis for EPA's decisions concerning the final rule. In it, EPA describes, among other things, the data collection activities, the wastewater treatment technology options considered, the pollutants found in CWT wastewaters, and the estimation of costs to the industry to comply with final limitations and standards.

2. ``Economic Analysis of Final Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry'' (EPA-821-R-00-024) referred to in this preamble as the Final EA. The EA estimates the economic and financial costs of compliance with the final regulation on individual process lines, facilities and companies.

3. ``Detailed Costing Document for the Final Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry'' (EPA-821-R-00-021) referred to in this preamble as the Final Costing Document. This document presents the methodology used to estimate compliance costs for this final rule.

4. ``Cost Effectiveness Analysis of Final Effluent Limitations Guidelines and Standards for the Centralized Waste

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Treatment Industry'' (EPA-821-R-00-023) referred to in this preamble as the Cost Effectiveness Report.

5. ``Environmental Assessment for the Final Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry'' (EPA-821-R-00-022) referred to as the Final Environmental Assessment in this preamble.

How To Obtain Supporting Documents

All of the supporting documents are available from the Office of Water Resource Center, MC-4100, U.S. EPA, 401 M Street, SW, Washington, DC 20460; telephone (202) 260-7786 for publication requests.

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Appendix 1: Definitions, Acronyms, and Abbreviations

I. Legal Authority

The U.S. Environmental Protection Agency is promulgating these regulations under the authority of Sections 301, 304, 306, 307, 308, 402, and 501 of the Clean Water Act, 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361.

II. Background

A. Clean Water Act

Congress adopted the Clean Water Act (CWA) to ``restore and maintain the chemical, physical, and biological integrity of the Nation's waters'' (Section 101(a), 33 U.S.C. 1251(a)). To achieve this goal, the CWA prohibits the discharge of pollutants into navigable waters except in compliance with the statute. The Clean Water Act confronts the problem of water pollution on a number of different fronts. Its primary reliance, however, is on establishing restrictions

on the types and amounts of pollutants discharged from various industrial, commercial, and public sources of wastewater.

Congress recognized that regulating only those sources that discharge effluent directly into the nation's waters would not be sufficient to achieve the CWA's goals. Consequently, the CWA requires EPA to promulgate nationally applicable pretreatment standards that restrict pollutant discharges for those who discharge wastewater indirectly through sewers flowing to publicly-owned treatment works (POTWs) (Section 307(b) and (c), 33 U.S.C. 1317(b) and (c)). National pretreatment standards are established for those pollutants in wastewater from indirect dischargers which may pass through or interfere with POTW operations. Generally, pretreatment standards are designed to ensure that wastewater from direct and indirect industrial dischargers are subject to similar levels of treatment. In addition, POTWs are required to implement local pretreatment limits applicable to their industrial indirect dischargers to satisfy any local requirements (40 CFR 403.5).

Direct dischargers must comply with effluent limitations in National Pollutant Discharge Elimination System (NPDES) permits; indirect dischargers must comply with pretreatment standards. These limitations and standards are established by regulation for categories of industrial dischargers and are based on the degree of control that can be achieved using various levels of pollution control technology.

1. Best Practicable Control Technology Currently Available (BPT)--Section 304(b)(1) of the CWA

In the regulations, EPA defines BPT effluent limits for conventional, priority,\1\ and non-conventional pollutants. In specifying BPT, EPA looks at a number of factors. EPA first considers the cost of achieving effluent reductions in relation to the effluent reduction benefits. The Agency also considers the age of the equipment and facilities, the processes employed and any required process changes, engineering aspects of the control technologies, non-water quality environmental impacts (including energy requirements), and such other factors as the Agency deems appropriate (CWA 304(b)(1)(B)). Traditionally, EPA establishes BPT effluent limitations based on the average of the best performances of facilities within the industry of various ages, sizes, processes or other common characteristic. Where existing performance is uniformly inadequate, EPA may require higher levels of control than currently in place in an industrial category if the Agency determines that the technology can be practically applied.

\1\ In the initial stages of EPA CWA regulation, EPA efforts emphasized the achievement of BPT limitations for control of the ``classical'' pollutants (e.g., TSS, pH, BOD5). However, nothing on the face of the statute explicitly restricted BPT limitations to such pollutants. Following passage of the Clean Water Act of 1977 with its requirement for point sources to achieve best available technology limitations to control discharges of toxic pollutants, EPA shifted its focus to address the listed priority pollutants under the guidelines program. BPT guidelines continue to include limitations to address all pollutants.

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2. Best Conventional Pollutant Control Technology (BCT)--Section 304(b)(4) of the CWA

The 1977 amendments to the CWA required EPA to identify effluent reduction levels for conventional pollutants associated with BCT for discharges from existing industrial point sources. In addition to other factors specified in Section 304(b)(4)(B), the CWA requires that EPA establish BCT limitations after consideration of a two part ``cost-reasonableness'' test. EPA explained its methodology for the development of BCT limitations in July 1986 (51 FR 24974).

Section 304(a)(4) designates the following as conventional pollutants: biochemical oxygen demand (BOD5), total suspended solids (TSS), fecal coliform, pH, and any additional pollutants defined by the Administrator as conventional. The Administrator designated oil and grease as an additional conventional pollutant on July 30, 1979 (44 FR 44501).

3. Best Available Technology Economically Achievable (BAT)--Section 304(b)(2) of the CWA

In general, BAT effluent limitations guidelines represent the best economically achievable performance of plants in the industrial subcategory or category. The factors considered in assessing BAT include the cost of achieving BAT effluent reductions, the age of equipment and facilities involved, the process employed, potential process changes, and non-water quality environmental impacts, including energy requirements. The Agency retains considerable discretion in assigning the weight to be accorded these factors. BAT limitations may be based on effluent reductions attainable through changes in a facility's processes and operations. As with BPT, where existing performance is uniformly inadequate, BAT may require a higher level of performance than is currently being achieved based on technology transferred from a different subcategory or category. BAT may be based upon process changes or internal controls, even when these technologies are not common industry practice.

4. New Source Performance Standards (NSPS)--Section 306 of the CWA

NSPS reflect effluent reductions that are achievable based on the best available demonstrated control technology. New facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies. As a result, NSPS should represent the most stringent controls attainable through the application of the best available control technology for all pollutants (i.e., conventional, non-conventional, and priority pollutants). In establishing NSPS, EPA is directed to take into consideration the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements.

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5. Pretreatment Standards for Existing Sources (PSES)--Section 307(b) of the CWA

PSES are designed to prevent the discharge of pollutants that pass through, interfere-with, or are otherwise incompatible with the operation of publicly-owned treatment works (POTW). The CWA authorizes EPA to establish pretreatment standards for pollutants that pass through POTWs or interfere with treatment processes or sludge disposal methods at POTWs. Pretreatment standards for existing sources are technology-based and analogous to BAT effluent limitations guidelines.

The General Pretreatment Regulations, which set forth the framework for the implementation of national effluent guidelines and standards, are found at 40 CFR Part 403. Those regulations contain a definition of pass-through that addresses localized rather than national instances of pass-through and establish pretreatment standards that apply to all non-domestic discharges.

6. Pretreatment Standards for New Sources (PSNS)--Section 307(b) of the CWA

Like PSES, PSNS are designed to prevent the discharges of pollutants that pass through, interfere-with, or are otherwise incompatible with the operation of POTWs. PSNS are to be issued at the same time as NSPS. New indirect dischargers have the opportunity to incorporate into their plants the best available demonstrated technologies. The Agency considers the same factors in promulgating PSNS as it considers in promulgating NSPS.

B. Section 304(m) Requirements

Section 304(m) of the CWA, added by the Water Quality Act of 1987, requires EPA to establish schedules for (1) reviewing and revising existing effluent limitations guidelines and standards (``effluent guidelines'') and (2) promulgating new effluent guidelines. On January 2, 1990, EPA published an Effluent Guidelines Plan (55 FR 80) that established schedules for developing new and revised effluent guidelines for several industry categories. One of the industries for which the Agency established a schedule was the Hazardous Waste Treatment Industry.

The Natural Resources Defense Council (NRDC) and Public Citizen, Inc. filed suit against the Agency, alleging violation of Section 304(m) and other statutory authorities requiring promulgation of effluent guidelines (NRDC et al. v. Reilly, Civ. No. 89-2980 (D.D.C.)). Under the terms of the consent decree in that case, as amended, EPA agreed, among other things, to propose effluent guidelines for the ``Centralized Waste Treatment Industry'' category by April 31, 1994 and take final action by August 2000.

C. The Land Disposal Restrictions Program

1. Introduction to RCRA Land Disposal Restrictions (LDR)

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), enacted on November 8, 1984, largely prohibit the land disposal of untreated hazardous wastes. Once a hazardous waste is prohibited from land disposal, the statute provides only two options for legal land disposal: Meet the treatment standard for the waste prior to land disposal, or dispose of the waste in a land disposal unit that has been found to satisfy the statutory no-migration-test. A no-migration-unit is one from which there will be no migration of hazardous constituents for as long as the waste remains hazardous (RCRA Sections 3004(d),(e),(g)(5)).

Under section 3004, the treatment standards that EPA develops may be expressed as either constituent concentration levels or as specific methods of treatment. The criteria for these standards is that they must substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized (RCRA Section 3004(m)(1)). For purposes of the restrictions, the RCRA program defines land disposal to include any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave. Land disposal restrictions are published in 40 CFR Part 268.

EPA has used hazardous waste treatability data as the basis for land disposal restrictions standards. First, EPA has identified Best Demonstrated Available Treatment Technology (BDAT) for each listed hazardous waste. BDAT is that treatment technology that EPA finds to be the most effective for a waste, which is also readily available to generators and treaters. In some cases, EPA has designated, for a particular wastestream, a treatment technology which has been shown to successfully treat a similar, but more difficult to treat, wastestream. This ensured that the land disposal restrictions standards for a listed wastestream were achievable since they always reflected the actual treatability of the waste itself or of a more refractory waste.

As part of the Land Disposal Restrictions (LDR), Universal Treatment Standards (UTS) were promulgated as part of the RCRA phase two final rule (July 27,1994). The UTS are a series of concentrations for wastewaters and non-wastewaters that provide a single treatment standard for each constituent. Previously, the LDR regulated constituents according to the identity of the original waste; thus, several numerical treatment standards might exist for each constituent. The UTS simplified the standards by having only one treatment standard

for each constituent in any waste residue.

The LDR treatment standards established under RCRA may differ from the Clean Water Act effluent guidelines published here today both in their format and in the numerical values set for each constituent. The differences result from the use of different legal criteria for developing the limits and resulting differences in the technical and economic criteria and data sets used for establishing the respective limits.

The difference in format between the LDR and effluent guidelines is that LDR establishes a single daily limit for each pollutant parameter whereas the effluent guidelines generally establish monthly and daily limits. Additionally, the effluent guidelines provide for several types of discharge, including new vs. existing sources, and indirect vs. direct discharge.

The differences in numerical limits established under the Clean Water Act may differ, not only from LDR and UTS, but also from point-source category to point-source category (for example, Electroplating, 40 CFR Part 413; and Metal Finishing, 40 CFR Part 433). The effluent guidelines and standards are industry-specific, subcategory-specific, and technology-based. The numerical limits are typically based on different data sets that reflect the performance of specific wastewater management and treatment practices. Differences in the limits reflect consideration of the CWA statutory factors that the Administrator is required to evaluate in developing technically and economically achievable limitations and standards. A consequence of these differing approaches is that similar wastestreams can be regulated at different levels.

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2. Overlap Between LDR Standards and the Centralized Waste Treatment Industry Effluent Guidelines

EPA's survey for this guideline identified no facilities discharging wastewater effluent to land disposal units. There is, consequently, no overlap between this regulation for the CWT Industry and the Universal Treatment Standards. Any CWT facility, however, discharging effluent to a land disposal unit that meets these limitations and standards would meet the Universal Treatment Standards.

III. Centralized Waste Treatment Industry Effluent Guideline Rulemaking History

A. January 27, 1995 Proposal

On January 27, 1995, EPA proposed regulations (60 FR 5464) to reduce discharges to navigable waters of toxic, conventional, and non-conventional pollutants in wastewater from facilities defined in the proposal as ``centralized waste treatment facilities.'' As proposed, these effluent limitations guidelines and standards would have applied to ``any facility that treats any hazardous or non-hazardous industrial waste received from off-site by tanker truck, trailer/roll-off bins, drums, barge or other forms of shipment.'' The proposal did not extend to facilities that received waste from off-site solely via pipeline. Facilities proposed for regulation included both stand-alone waste treatment and recovery facilities that treat waste received from off-site, as well as those facilities that treat on-site generated process wastewater with wastes received from off-site.

The Agency proposed limitations and standards for an estimated 85 facilities in three subcategories. EPA proposed limitations and standards for three subcategories for the centralized waste treatment (CWT) industry: metal-bearing waste treatment and recovery, oily waste treatment and recovery, and organic waste treatment and recovery. EPA based the BPT effluent limitations proposed in 1995 on the technologies

listed in Table III.A-1 below. EPA based BCT, BAT, NSPS, PSES, and PSNS on the same technologies as BPT.

Table III.A-1.--Technology Basis for 1995 Proposal

Proposed subpart	Name of subcategory	Technology basis
A.....	Metal-Bearing Waste Treatment and Recovery.	Selective Metals Precipitation, Pressure Filtration, Secondary Precipitation, Solid-Liquid Separation, and Tertiary Precipitation. For Metal-Bearing Waste Which Includes Concentrated Cyanide Streams: Pretreatment by Alkaline Chlorination at Elevated Operating Conditions.
B.....	Oily Waste Treatment and Recovery.	Emulsion Breaking/ Gravity Separation and Ultrafiltration; or Emulsion Breaking/ Gravity Separation, Ultrafiltration, Carbon Adsorption, and Reverse Osmosis.
C.....	Organic Waste Treatment and Recovery.	Equalization, Air Stripping, Biological Treatment, and Multimedia Filtration.

B. September 16, 1996 Notice of Data Availability

Based on comments received on the 1995 proposal and new information, EPA reexamined its conclusions about the Oily Waste Treatment and Recovery subcategory, or ``oils subcategory.'' (The 1995 proposal had defined facilities in this subcategory as ``facilities that treat, and/or recover oil from oily waste received from off-site.'') Subsequently, in September 1996 EPA announced the availability of the new data on this subcategory (61 FR 48800). EPA explained that it had underestimated the size of the oils subcategory, and that the data used to develop the original proposal may have mischaracterized this portion of the CWT industry. EPA had based its original estimates on the size of this segment of the industry on information obtained from the 1991 Waste Treatment Industry Questionnaire. The basis year for the questionnaire was 1989. However, many of the new oils facilities discussed in this notice began operation after 1989. EPA concluded that many of these facilities may have started up or modified their existing operations in response to requirements in EPA regulations, specifically, the provisions of 40 CFR 279, promulgated on September 10, 1992 (Standards for the Management of Used Oil). These regulations govern the handling of used oils under the Solid Waste Disposal Act and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA's 1996 notice discussed the additional facilities, provided a revised description of the subcategory, and described how the 1995 proposal limitations and

standards, if promulgated, would have affected such facilities. The notice, among other items, also solicited comments on the use of dissolved air flotation as a treatment technology for this subcategory.

C. January 13, 1999 Supplemental Proposal

On January 13, 1999 (64 FR 2280), EPA published a supplemental proposal that represented the Agency's second look at Clean Water Act national effluent guidelines and standards for wastewater discharges from centralized waste treatment facilities. The supplemental proposal presented revised limitations and standards based on the new information obtained from comments to the 1996 Notice of Data Availability and additional field sampling data. It also included changes to the scope of the rule.

In the supplemental proposal, the Agency proposed limitations and standards that EPA estimated would apply to 206 facilities in three subcategories. These subcategories were the same as those proposed in 1995: metal-bearing waste treatment and recovery, used/waste oil treatment and recovery, and organic waste treatment. EPA based the BPT effluent limitations proposed in 1999 on different technologies than those selected at the time of the 1995 proposal. The technology bases for the supplemental proposal are listed in Table III.C-1 below.

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Table III.C-1.--Technology Basis for 1999 Proposal

Proposed subpart	Name of subcategory	Technology basis
A.....	Metal-Bearing Waste Treatment and Recovery.	Batch Precipitation, Liquid-Solid Separation, Secondary Precipitation, Clarification, and Sand Filtration. For Metal-Bearing Waste Which Includes Concentrated Cyanide Streams: Alkaline Chlorination in a two step process.
B.....	Used/Waste Oil Treatment and Recovery.	Emulsion Breaking/ Gravity Separation, Secondary Gravity Separation and Dissolved Air Flotation.
C.....	Organic Waste Treatment	Equalization and Biological Treatment.

For the metals subcategory, EPA proposed limitations and standards for BCT, BAT, and PSES based on the same technologies as BPT, but based NSPS and PSNS on a different technology: selective metals precipitation, liquid-solid separation, secondary precipitation, liquid-solid separation, tertiary precipitation, and clarification.

For the oils subcategory, EPA proposed to base BCT, BAT, NSPS, and PSNS on the same technologies as BPT, but based PSES on a different technology: emulsion breaking/gravity separation and dissolved air flotation.

For the organics subcategory, EPA proposed to base BCT, BAT, NSPS, PSES, and PSNS on the same technologies as BPT.

IV. Re-Consideration of Significant Proposal Issues and Summary of Significant Changes Since Proposal

A. Oils Subcategory--Consideration of Regulatory Options on the Basis of the RCRA Classification of the Waste Receipts

As explained in the 1999 proposal, among other alternatives, EPA was considering whether it should develop limitations and standards for two categories (rather than a single category) of oils treatment facilities. The Small Business Advocacy Review (SBAR) Panel for this rule, convened by EPA in November 1997, discussed this option. For a detailed summary of the panel's findings and discussion, see the 1999 proposal and ``Final Report of the SBREFA Small Business Advocacy Review Panel on EPA's Planned Proposed Rule for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry'' (DCN 21.5.1). Under this approach EPA would establish different limitations and standards for oils subcategory facilities depending on whether they treat RCRA subtitle C hazardous wastes (either exclusively or in combination with non-hazardous wastes) or treat only non-hazardous wastes.

At the time of the SBAR Panel, EPA had collected certain information on facilities that treat a mixture of hazardous and non-hazardous wastes as well as facilities that treat non-hazardous wastes only. The bulk of the data was from RCRA facilities treating RCRA subtitle C hazardous waste together with non-hazardous waste. The data on wastestreams did not show a significant difference in the types of pollutants for the streams being treated at RCRA and at non-RCRA permitted facilities or the treatability of those pollutants. Although the data did suggest that pollutant concentrations tended to be somewhat higher in raw waste going to RCRA permitted facilities, which in turn suggested that treatment would be more cost-effective at such facilities, the information EPA had collected from non-RCRA permitted facilities was insufficient to support the conclusion that EPA should differentiate between oils facilities on the basis of RCRA classification of the wastes treated at the facility. Consequently, EPA did not propose different regulatory requirements for facilities based on distinctions between hazardous and non-hazardous wastes.

EPA, following the SBAR panel, collected wastewater samples at twelve other facilities that treat only non-hazardous materials. EPA collected the samples in order to broaden the database with additional information on the pollutant profiles of the wastes that are treated at these facilities. While EPA included the analytical results of the sampling efforts in the Appendix of the technical development document for the proposal, EPA had not, at the time of the proposal, reviewed the data in detail or compared the data to the earlier data it had collected. As the proposal also explained, EPA planned to review the data in detail and present a preliminary assessment of its findings at a public hearing during the comment period for the proposal.

At a public hearing on February 18, 1999, EPA described the relevant sampling data, the constraints of evaluating this data, and a comparison of data from hazardous and non-hazardous wastestreams. This data showed that, while the mean and median values of influent concentration of hazardous wastestream data are greater than for non-hazardous wastestreams for most pollutants examined, the ranges of concentration for the hazardous and non-hazardous wastestreams overlap for most pollutants. In its presentation, EPA indicated that it planned to re-examine the oils subcategory in terms of pollutant loadings, removals, limitations and standards, costs, impacts, and benefits. EPA requested comment on this issue, and extended the comment period for this issue to 30 days after the public hearing. EPA's presentation is included in the public record for this rulemaking as DCN 28.1.1. [Other supporting information is in Section 28.]

Five commenters provided specific input on basing regulatory options for the oils subcategory on the RCRA classification of the waste receipts. Two commenters supported differentiation on this basis. They asserted that there are significant differences between facilities that accept non-hazardous wastes and those that accept a combination of hazardous and non-hazardous waste in terms of pollutant loadings and the number and type of pollutants, the types of treatment methods employed, and price structures. Three commenters opposed differentiation based on RCRA classification. These commenters do not believe that RCRA classification is a critical distinction, but rather believe that RCRA classification often has no impact on the treatability of the waste or final effluent quality. They commented that non-hazardous waste receipts have approximately the same constituents as hazardous waste receipts. From an environmental perspective, they believe that it is irrelevant whether the source of the pollutants of concern is a hazardous or non-hazardous facility.

EPA has reexamined this data using the same standards it applied earlier in this rulemaking for determining pollutants of concern for this industry (see Chapter 6 of the Final Technical

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Development Document). Based on this review, EPA determined that the pollutants of concern for non-hazardous facilities are largely the same as those previously identified for the oils subcategory (EPA had based its earlier conclusion on data from facilities processing a mix of hazardous and non-hazardous waste receipts).

EPA also looked to see if the treatment technologies at strictly non-hazardous facilities differ from those at facilities that accept both hazardous and non-hazardous wastes. EPA's database shows that the range of treatment technologies employed at both types of facilities is similar.

Essentially, the only operational difference EPA has observed between hazardous and non-hazardous oils treatment facilities is that hazardous oils waste facilities treat wastes with higher influent concentrations. EPA's data show that the average pollutant concentrations in non-hazardous wastes are lower than in hazardous wastes. Consequently, pollutant loadings, removals and treatment cost estimates will differ to some extent depending on the RCRA classification of the wastes that are treated. As explained above, however, both types of facilities treat for the same pollutants and the concentration ranges of these pollutants overlap at hazardous and non-hazardous operations. In these circumstances, the characteristics of wastes treated at hazardous operations do not require a different treatment technology from that used at non-hazardous operations. The choice of treatment technology for a particular facility is a function primarily of the effluent concentration required, not of any inherent differences in the wastes being treated. As a result, EPA concluded that there is no basis in the chemistry of the wastewaters being treated which supported development of different limitations and standards for hazardous and non-hazardous oils facilities. Furthermore, after evaluating treatment technology costs, EPA found that the costs for RCRA permitted facilities were equivalent to those for non-RCRA facilities, although, as noted above, loadings reductions at the non-RCRA permitted facilities will generally be lower. Given these factors, EPA decided that it should not develop different limitations and standards for RCRA hazardous and non-hazardous oils facilities. DCN 33.1.1 discusses the determination in more detail. EPA notes, however, that its estimates of loadings, removals, and revenue generated from treating the different types of wastes take account of differences in the type of wastes treated.

B. Consideration of Regulatory Options on the Basis of Revenue

As detailed in the 1999 proposal, among other alternatives, EPA looked at whether it should develop alternative regulatory requirements for the oils subcategory facilities based on revenue because of potential adverse economic consequences to small businesses. The SBAR Panel, convened by EPA, discussed this option. Among the regulatory alternatives discussed by the panel and detailed in the 1999 proposal was limiting the scope of the rule to minimize impacts. Under this approach, EPA would not establish national pretreatment standards for indirect dischargers owned by small companies with less than $6 million in annual revenue. EPA did not propose to limit the scope of the rule based on this approach but did request comment on the issue.

Concerning the recommendation that EPA establish alternative limitations and standards on the basis of revenue, commenters largely supported EPA's conclusion that this approach should not be adopted. Commenters stated that small businesses should be subject to the same standards and requirements as other industrial users in this category because:

The limitations and standards are economically achievable for small CWT facilities;

The perception that small CWT facilities do not have the potential to cause significant impacts to the environment is not true;

The quantity of pollutants present and the toxicity of the pollutants are the only relevant factors for determining impacts to receiving streams and POTWs from CWT discharges;

The business size is irrelevant to the impact of a facility's discharges;

A small facility can have as great an impact on the environment as a large facility;

There would be no incentive to ensure wastes are adequately treated at all CWT facilities;

Small facilities could operate at a fraction of the cost (since they would not have to meet the limitations and standards) and capture more market share leading to more wastes going to the POTW untreated; and

Large facilities could easily manipulate their corporate structure to take advantage of small business exemptions.

None of the commenters supported a small business exclusion, but a few noted that EPA should look at reducing monitoring requirements for small businesses in order to reduce their costs of compliance without compromising effective treatment. None of the commenters provided EPA with any other suggestions on ways to mitigate small business concerns that EPA had not already considered. After careful consideration of the comments and its database, EPA has decided that it should not limit the scope of today's rule based on revenue . EPA did reassess the costs for all of the alternatives discussed in the proposal for the final rule. Chapter 8 of the Final EA includes a full presentation of the costs of the alternatives.

C. Consideration of Regulatory Options on the Basis of Flow

As detailed in the 1999 proposal, among other alternatives, EPA looked at whether it should develop alternative regulatory requirements for the oils subcategory facilities based on wastewater flow level because of potential adverse economic consequences to small businesses. The SBAR Panel, convened by EPA, discussed this option. Among the regulatory alternatives discussed by the panel and detailed in the 1999 proposal was limiting the scope of the rule to minimize impacts. Under this approach, EPA would not establish national pretreatment standards for indirect oils dischargers with flows under 3.5 million gallons per year, or alternately for non-hazardous oils facilities with flows under either 3.5 or 7.5 MGY. The SBAR Panel noted, in particular, that excluding indirect dischargers with flows of less than 3.5 MGY would

significantly reduce the economic impact of the rule on small businesses while reducing pollutant removals by an estimated 6%. (See Section X.M of this preamble for a more detailed discussion of regulatory flexibility options and their projected impacts.) EPA did not propose to limit the scope of the rule based on these approaches but did request comment on the issue.

Concerning the recommendation that EPA establish alternative limitations and standards on the basis of flow, commenters largely supported EPA's conclusion that this approach should not be adopted. Commenters stated that low flow facilities should be subject to the same standards and requirements as other industrial users in this category because:

The perception that small CWT facilities do not have the potential to cause significant impacts to the environment is not true;

The amount of pollutants in wastewater for a CWT facility is not a function solely of the volume of wastes that the facility receives;

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The quantity of pollutants present and the toxicity of the pollutants are the only relevant factors for determining impacts to receiving streams and POTWs from CWT discharges;

A small facility can have as great an impact on the environment as a large facility;

There would be no incentive to ensure wastes are adequately treated at all CWT facilities; and

Small facilities could operate at a fraction of the cost (since they would not have to meet the limitations and standards) and capture more market share leading to more wastes going to the POTW untreated.

None of the commenters supported an exclusion based on flow, but a few noted that EPA should look at reducing monitoring requirements for small businesses in order to reduce their costs of compliance without compromising effective treatment. None of the commenters provided EPA with any other suggestions on ways to mitigate small business concerns that EPA had not already considered. After careful consideration of the comments and its database, EPA has decided that it should not limit the scope of today's rule based on flow. EPA did reassess the costs for all of the alternatives discussed in the proposal for the final rule. Chapter 8 of the Final EA includes a full presentation of the costs of the alternatives.

D. Consideration of Indicator Parameters for the Oils Subcategory

As detailed in the proposal, EPA looked at various ways to reduce the costs of this rule (particularly the costs to small businesses) while ensuring proper treatment of off-site wastes. One of the options considered by EPA and discussed in the proposal was providing an alternative compliance-monitoring regime for indirect discharging facilities. Under this alternative monitoring approach, facilities could choose to (1) monitor for all regulated pollutants, or (2) monitor for the conventional parameters, metal parameters, and monitor for the regulated organic pollutants in this subcategory using an indicator parameter such as hexane extractable material (HEM) or silica gel treated-hexane extractable material (SGT-HEM). The proposal further noted that EPA was conducting a study to determine which organic pollutants are measured by SGT-HEM and HEM and solicited comment on the use of indicator parameters.

Many commenters responded to EPA's request with essentially an equivalent number opposing and favoring the use of indicator parameters. The commenters that supported its use cited the decreased analytical costs and the wide range of organic compounds that can be

measured with these analyses. Commenters that did not support the use of SGT-HEM or HEM as indicator pollutants raised a number of concerns including the following:

These measurements are non-specific and highly subject to interferences;

No direct and quantified correlation has ever been developed between HEM (or SGT-HEM) and specific organic pollutants;

There is no evidence that regulating HEM or SGT-HEM would result in adequate regulation of toxics;

The determination has not been made that the organic pollutants of interest are measured by either HEM or SGT-HEM; and

SGT-HEM does not measure all of the regulated pollutants, particularly polyaromatic hydrocarbons (PAHs).

None of the commenters suggested possible alternative indicator parameters.

During its development of proposed effluent limitations guidelines and pretreatment standards for the industrial laundries point source category, EPA evaluated the suitability of SGT-HEM and HEM as indicator parameters for that rulemaking. EPA presented the results of its study in a Notice of Data Availability on December 23, 1998 (63 FR 71054). In the study, EPA attempted to identify compounds present in HEM/SGT-HEM extracts from industrial laundry wastewaters using gas chromatography/ mass spectroscopy (GC/MS) in order to determine which pollutants of concern might be components of, and therefore measured by, HEM or SGT-HEM. However, EPA was only able to identify approximately two percent of the constituents present in the wastestream. Most of these constituents identified were alkanes. In general, the data from this study also do not support the use of SGT-HEM as an appropriate indicator parameter for the organic pollutants present in CWT wastewaters since few of these pollutants were identified in the HEM/ SGT-HEM extract.

As part of its consideration of the use of an indicator parameter for this rule, EPA again reviewed the data from the industrial laundries study as well as the data collected here. EPA statistically analyzed the relationship between seven organic pollutants and SGT-HEM or HEM. EPA's data show general trends of increasing concentrations of HEM and SGT-HEM with increasing concentrations of organic pollutants. However, the data demonstrate substantial variability and, despite this general trend, EPA noted that the non-detected values for organics were associated with just about every level of HEM and SGT-HEM and conversely, that high levels of some organic pollutants were associated with low levels of HEM/SGT-HEM. As a result, EPA cannot demonstrate that establishing a numerical limit for SGT-HEM or HEM would provide consistent control of the organic pollutants by the model treatment technologies.

Therefore, while EPA is cognizant of the cost savings that can be achieved in some instances by using indicator parameters, EPA has rejected this alternative monitoring approach for CWT wastewaters.

E. Consideration of Reduced Monitoring for Small Businesses

Another alternative discussed in the proposal which could reduce costs to small businesses was to develop different limitations and pretreatment standards for small businesses based on an assumption of less frequent monitoring for facilities owned and operated by small businesses. The proposal explained that there were three major issues presented by this approach. First, EPA NDPES and pretreatment regulations (applicable to State-authorized program as well) do not require facilities to indicate whether they are small or large businesses in obtaining NPDES or POTW local pretreatment program discharge permits. EPA was concerned about the manner in which the small business determination could be made. Second, EPA does not generally establish nationally applicable monitoring frequency

requirements. EPA expressed concern that permitting authorities would be reluctant to reduce monitoring frequencies on EPA's recommendation alone. Third, while the technology basis and the long-term averages for the limitations would be the same, the monthly average limitations based upon reduced monitoring assumptions would be higher. EPA expressed concern that higher monthly average limitations for facilities with less frequent required monitoring might allow these facilities to target a less stringent level of treatment than that reflected by the long-term average. EPA solicited comment on all these issues as well as ways to ensure that any monitoring relief the Agency might provide would not jeopardize treatment performance or the environment.

EPA only received direct comments on this issue from state and local control authorities. These commenters did not support reduced monitoring frequencies

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for small businesses. They believe that the control authority should continue to establish monitoring frequencies on a case by case basis taking into account the probable impact of the discharge to the surface water or POTW, compliance history of the facility, and other relevant factors. Further they expressed concern over the burden of verifying and maintaining the confidentiality of the economic information provided by facilities claiming the small business status.

Therefore, after careful consideration of comments and its database, EPA has rejected adopting alternative limitations and standards based on reduced monitoring requirements for small businesses.

F. Multiple Wastestream Subcategory Consideration

In the 1999 proposal, EPA proposed to establish limitations and standards for three subcategories of CWT facilities: facilities treating either metal, oily, or organic wastes and wastewater. Section VII of the proposal detailed this subcategorization scheme. See 64 FR 2300 (1999). While EPA did not propose limitations and standards for a multiple wastestream subcategory, the proposal did discuss EPA's consideration of a multiple wastestream subcategory. The proposal explained that multiple wastestream subcategory limitations, if adopted, would apply to facilities that treat wastes in more than one subcategory. EPA would establish limitations and standards for the multiple wastestream subcategory by combining pollutant limitations from the three subcategories, where relevant, and selecting the most stringent value where they overlap.

EPA's consideration of this option responded to comments to the 1995 proposal and the 1996 Notice of Data Availability. The primary reason some members of the waste treatment industry favored development of a multiple wastestream subcategory was to simplify implementation for facilities treating wastes covered by multiple subcategories. As detailed in the proposal, EPA's primary reason for not proposing (and adopting) this option was its concern that facilities that accept wastes in multiple subcategories need to provide effective treatment of all waste receipts. This concern was based on EPA's data that showed such facilities did not currently have adequate treatment-in-place. While these facilities meet their permit limitations, EPA concluded that compliance was likely achieved through co-dilution of dissimilar wastes rather than treatment. As a result, EPA determined that adoption of ``multiple wastestream subcategory'' limitations as described above could arguably encourage ineffective treatment.

EPA solicited comments on ways to develop a ``multiple wastestream subcategory'' which ensures treatment rather than dilution. The vast majority of comments on the 1999 proposal supported the establishment

of a multiple wastestream subcategory for this rule, and re-iterated their concerns about implementing the three-subcategory scheme at multiple-subcategory facilities. One commenter suggested a way to implement a fourth subcategory while ensuring treatment. This commenter suggested that EPA follow the approach taken for the Pesticide Formulating, Packaging and Repackaging (PFPR) Point Source category (40 CFR Part 455). Under this approach, multiple wastestream subcategory facilities would have the option of (1) monitoring for compliance with the appropriate subcategory limitations after each treatment step or (2) monitoring for compliance with the multiple wastestream subcategory limitations at a combined discharge point and certifying that equivalent treatment to that which would be required for each subcategory waste separately is installed and properly designed, maintained, and operated. This option would eliminate the use of the combined wastestream formula or building block approach in calculating limits or standards for multiple wastestream subcategory CWT facilities (The combined wastestream formula and the building block approach are discussed in more detail in Chapter 14 of the Final Technical Development Document). Commenters suggested that an equivalent treatment system could be defined as a wastewater treatment system that is demonstrated to achieve comparable removals to the treatment system on which EPA based the limitations and standards. Ways of demonstrating equivalence might include data from recognized sources of information on pollution control, treatability tests, or self-monitoring data showing comparable removals to the applicable pollution control technology.

EPA has now concluded that the approaches adopted in the PFPR rule address the concerns identified earlier. EPA agrees with commenters that developing appropriate limitations on a site-specific basis for multiple wastestream facilities presents many challenges and that the use of a multiple wastestream subcategory would simplify implementation of the rule. Moreover, the limits applied to multiple wastestream treaters would be a compilation of the most stringent limits from each applicable subcategory and would generally be similar to or stricter than the limits calculated via the application of the combined wastestream formula or building block approach. Most significantly, the equivalent treatment certification requirement would address EPA's concerns that the wastes receive adequate treatment.

Therefore, for today's final rule, EPA has established a fourth subcategory: the multiple wastestream subcategory. Section XIII.A.5.b details the manner in which EPA envisions the multiple wastestream subcategory will be implemented. Further, EPA is preparing a guidance manual to aid permit writers/control authorities and CWT facilities in implementing the certification process.

G. Analytical Methods

Section 304(h) of the Clean Water Act directs EPA to promulgate guidelines establishing test procedures for the analysis of pollutants. These test procedures (methods) are used to determine the presence and concentration of pollutants in wastewater, and are used for compliance monitoring and for filing applications for the NPDES program under 40 CFR 122.21, 122.41, 122.44 and 123.25, and for the implementation of the pretreatment standards under 40 CFR 403.10 and 403.12. EPA publishes test procedures for the wastewater program at 40 CFR 136.3. Currently approved methods for metals and cyanide are included in the table of approved inorganic test procedures at 40 CFR 136.3, Table I-B. Table I-C at 40 CFR 136.3 lists approved methods for measurement of non-pesticide organic pollutants, and Table I-D lists approved methods for the toxic pesticide pollutants and for other pesticide pollutants. Dischargers must use the test methods promulgated at 40 CFR Part 136.3 or incorporated by reference in the tables to monitor pollutant discharges from the centralized waste treatment (CWT) industry, unless

specified otherwise in part 437 or by the permitting authority.

Today's final rule amends 40 CFR Part 136, Appendix A, to specify the applicability of certain methods for specific wastestreams. The amendments accomplish several objectives, which are outlined in the following paragraphs. Briefly, the amendments clarify EPA's intent regarding the applicability of Methods 625 and 1625 for some of the pollutant parameters in today's rule for Centralized Waste Treatment facilities and also for some of

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the pollutant parameters in 40 CFR 445 (Landfills Point Source Category).

The 1999 CWT proposal (at 64 FR 2297) stated that 11 CWT semivolatile organic pollutants and two CWT volatile organic pollutants (2-butanone and 2-propanone) were not listed in Table I-C at 40 CFR 136.3. Even though these 13 analytes were not shown in Table I-C, there were already approved test methods for six of these 13, as follows: EPA Method 1624 lists 2-butanone and 2-propanone, provides performance data for these two analytes, and is an approved method for these two analytes. EPA Method 1625 lists four of the 11 CWT semivolatile organic pollutants with relevant performance data and is an approved method for these four analytes (alpha-terpineol, carbazole, n-decane, and n-octadecane).

In the 1999 CWT proposal, EPA proposed to expand the analyte list for the already-approved methods and also to allow modified versions of Methods 625 and 1625. The Docket for the proposed rulemaking included the proposed modifications to Methods 625 and 1625 regarding expansion of the analyte list. The expanded list covered 17 pollutants in total, including all of the proposed CWT semivolatile organic pollutants. For 7 of those analytes, performance data were not available for either method and these data were not included in the Docket at proposal. EPA also noted its plans for further validation of the method modifications.

Since proposal, EPA has gathered performance data on the additional seven CWT analytes and additional analytes of interest for other industry categories. In January 2000, EPA amended Methods 625 and 1625 by adding the performance data for the additional analytes. The amendments consist of text, performance data, and quality control (QC) acceptance criteria for the additional analytes. This information will allow a laboratory to practice the methods with the additional analytes as an integral part. The QC acceptance criteria for the additional analytes were validated in single-laboratory studies. The January 2000 amendments were part of the rulemaking notice for the effluent limitations guidelines and standards for the Landfills Point Source Category (65 FR 3008, January 19, 2000). EPA's intent was to promulgate amendments to Methods 625 and 1625 that would allow the use of those methods for specific pollutants regulated in 40 CFR Part 445 (i.e., Landfills) for purposes of that rule only. Some of the pollutants had also been included in the CWT proposal. Subsequent to the Landfills promulgation, EPA received inquiries about the scope and applicability of the amendments to the test methods. In response to those inquiries, EPA published a notice of data availability (NODA) and request for comment on the data collected for the additional analytes (see 65 FR 41391, July 5, 2000).

The NODA clarified EPA's intent regarding the method amendments by explaining that the amendments published on January 19, 2000 ``* * * are applicable only to the five regulated pollutants in the Landfills rule when found in the wastestreams regulated under that rule.'' (65 FR 41392) The NODA also announced EPA's plans to further amend the methods in the final CWT rulemaking (i.e., today's rulemaking) to specify that the revisions to Methods 625 and 1625 apply to the pollutants promulgated in today's rule and only for the wastestreams regulated in

today's rule. In today's amendments to 40 CFR Part 136, Appendix A, EPA thus clarifies its intent regarding the scope of method amendments. Specifically, the amendments include additional text to the Introduction section of the attachment at the end of Methods 625 and 1625 and footnotes to Tables in the attachment. The amendments delineate the scope of Methods 625 and 1625 regarding compliance with monitoring requirements for the wastestreams covered by 40 CFR Parts 437 and 445. In addition, EPA deleted from the attachment to the methods those analytes not covered by the Landfills and CWT final rules.

H. Statistical Methodology Changes

Chapter 10 of the Final Technical Development Document provides a detailed description of the data and methodology used to develop long-term averages, variability factors and limitations and standards for today's final rule. Today's final rule encompasses the following changes in the statistical methodology since the 1999 proposal.

1. Metals Option 4 Long-Term Average and Limitations Calculations

EPA used two different data sets collected at a single facility in developing long-term averages and limitations for Option 4 in the Metals Subcategory. At the time of the proposal, EPA analyzed these data sets separately. That is, even though these data were collected from the same facility, EPA averaged each data set separately and then used the medians of the two sets of averages, just as if the data were from two different facilities. In other effluent guidelines, EPA has often taken this approach when the data were collected by two different data sources. Following comment on this issue, EPA reviewed the data and determined that the data were collected in overlapping time periods. As such, for the final rule, EPA has combined this data together into a single data set and calculated averages accordingly. This has the effect of giving more weight than in the original analysis to the data set with more observations and the result, in most instances, is that the final metals subcategory limitations are less stringent than those proposed in January 1999.

2. Variability Factors

The proposal discussed two different approaches to calculating variability factors--one based on pollutant variability factors and one based on group variability factors. The pollutant variability factor is the average of the variability factors from facilities with the model technologies for the option, and the group variability factor is the median of the pollutant variability factors from pollutants with similar chemical structures. At the time of the proposal, EPA generally used the product of the group variability factor and the pollutant long-term average in calculating each pollutant limitation and solicited comment on this approach. After receiving comments that supported using the pollutant variability factors, EPA assessed the range of values for the pollutant variability factors within each group. Contrary to EPA's expectations for chemically similar pollutants to be treated similarly by each treatment technology, EPA noted a wide range of values for the pollutant variability factors within each group. EPA determined that it is more likely that such ranges resulted from unique features in the data rather than differences in treatment between chemically similar pollutants. But, because of the range in values, EPA concluded that pollutant limitations would be best calculated using the pollutant variability factors. Because it determined that pollutant variability factors were the most appropriate choice for calculating limitations, EPA relaxed its dataset requirements slightly to allow calculation of a few additional pollutant variability factors beyond those in the proposal. For the few pollutants where pollutant variability factors still could not be calculated because the datasets contained too few detected values (which are used to establish variance estimates for the variability

factors), EPA concluded that its use of group variability factors provides reasonable estimates of pollutant specific

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variability factors. After a final review and evaluation of the data and resulting limitations, EPA determined that the final limitations appropriately incorporate the variability of the pollutant concentrations discharged by the CWT industry.

I. Significant Changes in Treatment Technology Cost Estimates

Chapter 11 of the Final Technical Development Document provides a detailed description of the data and methodology used to develop compliance cost estimates for the final CWT regulation. This section provides a summary of major changes in the costing methodology since the 1999 proposal.

1. RCRA Permit Modification Costs Removed

In estimating compliance costs for the proposed regulation, EPA included RCRA permit modification capital costs as one component of the total capital costs. This was an error. The wastewater treatment unit exemption at 40 CFR 264.1(g)(6), 40 CFR 265.1(c)(10), and 40 CFR 270.1(c)(2)(v) exempts, from RCRA permit modification requirements, wastewater treatment units at facilities that are subject to NPDES or pretreatment requirements under the Clean Water Act. Thus, CWT facilities would not need to modify their RCRA permits as a result of this rule and would not incur these RCRA permit modification costs. The final rule does not include these RCRA permit modification costs.

2. Altered DAF Costs for Oils Subcategory Includes Increased Holding Tank Capacity

At the time of the proposal, for facilities with flow rates less than 20 gallons per minute (gpm), EPA included cost estimates for a holding tank. EPA included the holding tank because it assumed that facilities with flow rates less than 20 gpm would not operate their DAF systems every day.

Regardless of the flow rate, EPA's design assumption for the holding tank was one day of storage. EPA received comment that many oils subcategory facilities may require more than 24 hours of storage and thus, EPA did not allow adequate holding capacity for all facilities. In response to this comment, EPA has altered the DAF capital costs to include holding tanks capable of retaining enough flow volume to operate the minimum size DAF system for one 24-hour period, in addition to the holding tank capacity costed at proposal.

3. Nutrient Addition, Heating, and Sludge Disposal Costs Included in the Organic Subcategory Compliance Cost Estimates

At the time of the proposal, EPA estimated operational costs for the technology option selected as the basis for the organics subcategory limitations on the actual practices used at the facility sampled during EPA's sampling episode. This did not include chemical addition or heating of wastes. In response to public comment concerning the need, on occasion, for chemical addition (nutrient addition, pH control, etc.) and heating of the waste during cold temperature months, EPA modified its capital and O&M cost estimates for sequencing batch reactor (SBR) treatment to include costs for nutrient addition and adjustments for cold operating conditions. These adjustments are detailed in Section 3.1 of the ``Final Costing Document.''

Additionally, at the time of the proposal, EPA included capital costs and O&M costs for sludge processing equipment associated with the organics subcategory, but failed to include costs for sludge disposal. EPA has corrected this oversight, and added a separate cost estimate for SBR system sludge disposal.

J. Significant Changes in Oils Subcategory Loadings Estimates

At the time of the 1999 proposal, EPA did not distinguish between facilities with RCRA permits and facilities without RCRA permits when it estimated current pollutant loadings for the oils subcategory. Rather, EPA had seven sets of data representing effluent from emulsion breaking/gravity separation that were collected at various types of oils subcategory facilities. For each pollutant of concern, and for each data set, EPA calculated the mean concentration of the data collected over the sampling episode. Then, for the remaining facilities in the oils subcategory (i.e., those facilities for which EPA did not have facility-specific information), EPA randomly assigned one of the seven data sets. For facilities that had additional treatment-in-place, EPA then reduced these current loadings estimates as detailed in Chapter 12 of the Final Technical Development Document.

For the final CWT rule, EPA has altered this approach. In estimating loadings and removals for the oils subcategory, EPA used data specific to either RCRA or non-RCRA permitted facilities. EPA no longer estimates current performance by randomly assigning a data set as described above. Rather, for each pollutant of concern, EPA has calculated a single concentration value for RCRA permitted facilities and a single concentration value for non-RCRA permitted facilities; both values represent effluent from emulsion breaking/gravity separation. (This is assumed to be the minimum treatment in-place at all oils facilities; only removals beyond this and any other in-place treatment are projected to result from this rule.) The specific methodology used to calculate these values and EPA's final methodology used to estimate pollutant loadings and removals for the entire CWT industry are detailed in Chapter 12 of the Final Technical Development Document.

K. Changes in POTW Percent Removal Estimates

EPA establishes pretreatment standards for those BAT pollutants that pass through POTWs. Therefore, for indirect dischargers, before establishing pretreatment standards, EPA examines whether the pollutants discharged by the industry ``pass through'' POTWs to waters of the U.S. or interfere with POTW operations or sludge disposal practices. Generally, to determine if pollutants pass through POTWs, EPA compares the percentage of the pollutant removed by well-operated POTWs achieving secondary treatment with the percentage of the pollutant removed by facilities meeting BAT effluent limitations.

The primary source of the POTW percent removal data is the ``Fate of Priority Pollutants in Publicly Owned Treatment Works'' (EPA 440/1-82/303, September 1982), commonly referred to as the ``50-POTW Study.'' The 50-POTW Study presents data on the performance of 50 well-operated POTWs that employ secondary biological treatment in removing pollutants.

At the time of the 50-POTW sampling program, which spanned approximately 2\1/2\ years (July 1978 to November 1980), EPA collected samples at selected POTWs across the U.S. The samples were subsequently analyzed by either EPA or EPA-contract laboratories using test procedures (analytical methods) specified by the Agency or in use at the laboratories. Laboratories typically reported the analytical method used along with the test results. However, for those cases in which the laboratory specified no analytical method, EPA was able to identify the method based on the nature of the results and knowledge of the methods available at the time.

Each laboratory reported results for the pollutants for which it tested. If the

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laboratory found a pollutant to be present, the laboratory reported a

result. If the laboratory found the pollutant not to be present, the laboratory reported either that the pollutant was ``not detected'' or a value with a ``less than'' sign () indicating that the pollutant was below that value. The value reported along with the ``less than'' sign was the lowest level to which the laboratory believed it could reliably measure. EPA subsequently established these lowest levels as the ``minimum levels'' of quantitation (MLs). In some instances, different laboratories reported different MLs for the same pollutant using the same analytical method.

Because of the variety of reporting protocols among the 50-POTW Study laboratories (pages 27 to 30, 50-POTW Study), EPA reviewed the percent removal calculations used in the pass-through analysis for previous industry studies, including those performed when developing the CWT proposal and effluent guidelines for Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing, Landfills, and Commercial Hazardous Waste Combustors. EPA found that, for 12 parameters, different analytical MLs were reported for different rulemaking studies (10 of the 25 metals, cyanide, and one of the 41 organics).

To provide consistency for data analysis and establishment of removal efficiencies, EPA reviewed the 50-POTW Study, standardized the reported MLs for use in the CWT final rules and other rulemaking efforts. (This review of the 50-POTW Study analytical laboratory reporting practices and standardization of ML values is described further in DCN 33.3.1).

In using the 50-POTW Study data to estimate percent removals, EPA has established data editing criteria for determining pollutant percent removals. Some of the editing criteria are based on differences between POTW and industry BAT treatment system influent concentrations. For many toxic pollutants, POTW influent concentrations were much lower than those of BAT treatment systems. For many pollutants, particularly organic pollutants, the effluent concentrations from both POTW and BAT treatment systems, were below the level that could be found or measured. As noted in the 50-POTW Study, analytical laboratories reported pollutant concentrations below the analytical ML, qualitatively, as ``not detected'' or ``trace,'' and reported a measured value above this level. Subsequent rulemaking studies such as the 1987 OCPSF study used the analytical method ML established in 40 CFR Part 136 for laboratory data reported below the analytical ML. Use of the nominal ML may overestimate the effluent concentration and underestimate the percent removal. Because the data collected for evaluating POTW percent removals included both effluent and influent levels that were close to the analytical MLs, EPA devised hierarchal data editing criteria to exclude data with low influent concentration levels, thereby minimizing the possibility that low POTW removals might simply reflect low influent concentrations instead of being a true measure of treatment effectiveness.

EPA has generally used hierarchic data editing criteria for the pollutants in the 50-POTW Study. For the final CWT rule, the editing criteria include

(1) Substitute the standardized pollutant-specific analytical ML for values reported as ``not detected,'' ``trace,'' ``less than [followed by a number],'' or a number less than the standardized analytical ML,

(2) Retain pollutant influent and corresponding effluent values if the average pollutant influent level is greater than or equal to 10 times the pollutant ML (10xML), and

(3) If none of the average pollutant influent concentrations are at least 10 times the ML, then retain average influent values greater than or equal to two times the ML (2xML) along with the corresponding average effluent values. (EPA used 2xML for the final rule, instead of the 20 g/l criterion used at proposal, because it more accurately reflects the pollutant-specific data than using a fixed numerical cut-off. For 67 percent of the of pollutants, 2xML is 20

g/l.)

EPA then calculates each POTW percent removal for each pollutant based on its average influent and its average effluent values. The national POTW percent removal used for each pollutant in the pass-through test is the median value of all the POTW pollutant specific percent removals.

The 50-POTW study provided performance data for 48 pollutants of concern for both the 1999 proposal and today's final rule (15 metals, 31 organics, cyanide, and ammonia). These corrections resulted in lower national POTW performance (median percent removal) for 5 metals and ammonia; in higher performance for 5 metals; and no change for the remaining 5 metals, 31 organics, and cyanide.

V. Scope/Applicability of the Regulation

Many of the commenters had questions about what waste treatment facilities were subject to the guideline and in what circumstances. The sections which follow address these issues.

A. Overview

A broad spectrum of facilities engage in waste treatment and waste recovery operations. For some, waste treatment and recovery is their only business. Many of these facilities treat wastes generated in a variety of industries. In addition, there are also a significant number of facilities that are dedicated exclusively to the recovery of a single metal. For other facilities, waste treatment is merely an ancillary component of the industrial operation at the facility. There are still others engaged in industrial activities that the acceptance and treatment of waste (not generated in their own production operations) represents a substantial and integral aspect of the business.

EPA has always intended that these guidelines would regulate the first category of waste treaters. It has struggled, however, with how to draw the line, for purposes of applying this rule between the other types of operations. For example, as noted above, there are certain industries that recover a single metal. EPA has already developed guidelines specifically addressing their particular industrial processes and pollutants. In those circumstances it would make little sense to subject them to regulations developed for waste treatment operations treating a mixture of different wastes.\2\ The data collected for this effort, however, clearly show that there are other industrial operations whose waste treatment operations treat a variety of wastes from on-site and off-site sources. The wastes treated at these industries do not look substantially different from those being treated at facilities engaged exclusively in waste treatment. The discussion below explains how EPA has decided to strike the balance.

\2\ EPA has already established national effluent guidelines and standards for certain metals recovery operations. See, for example, subpart C of 40 CFR part 421--Nonferrous Metals Manufacturing Point Source Category that establishes limitations and standards applicable to discharges resulting from the recovery, processing and remelting of aluminum scraps to produce metallic aluminum alloys.

The universe of facilities which are potentially subject to this guideline generally includes the following. First, except where noted otherwise, EPA is establishing limitations and standards for stand-alone waste treatment and recovery facilities receiving materials from off-site--classic ``centralized waste treaters.'' These facilities may treat either for disposal or for recovery or recycle hazardous or non-

hazardous waste, hazardous or non-hazardous

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wastewater, or used material received from off-site. Second, while EPA is generally not subjecting discharges from waste treatment systems at facilities primarily engaged in other industrial operations to the scope of this rule, the rule will regulate at least a portion of their wastewater in certain circumstances. Thus, industrial facilities which process their own, on-site generated, process wastewater along with hazardous or non-hazardous wastes, wastewaters, and/or used material received from off-site may be subject to this rule with respect to a portion of their discharge unless certain conditions are met.

The wastewater flows covered by this rule include some or all flows related to off-site waste receipts and on-site CWT wastewater generated as a result of CWT operations. The kinds of on-site CWT wastewater generated at these facilities include, for example, the following: solubilization wastewater, emulsion breaking/gravity separation wastewater, used oil processing wastewater, treatment equipment washes, transport washes (tanker truck, drum, and roll-off boxes), laboratory-derived wastewater, air pollution control wastewater, landfill wastewater from on-site landfills, and contaminated storm water. Chapter 14 of the technical development document provides detailed discussion of CWT wastewaters.

The way EPA has expressed the applicability provisions of the final rule is to apply the provisions of this rule to all wastewater discharges to a receiving stream or the introduction of wastewater to a publicly owned treatment works from a facility that this regulation defines as a centralized waste treatment facility unless specifically excluded. The following sections discuss the applicability of the CWT rule to various wastewater discharges associated with centralized waste treatment operations.

EPA received numerous comments on the 1995 proposal and 1996 Notice of Data Availability concerning the applicability of this rule to various operations. Consequently, EPA devoted significant discussion in the 1999 supplemental proposal to applicability issues. Again, in response, EPA received numerous comments on applicability issues. Many commenters were simply seeking clarification of the coverage of this rule to a specific operation. Table V.A-1 below provides a general summary of regulated and non-regulated CWT operations. EPA presents a detailed discussion of these operations in V.B through V.Z.

Table V.A-1.--Examples of Regulated and Non-Regulated CWT

Centralized waste treatment activity	Regulated by this rule	Not regulated b rule
Those performed at federally owned facilities.	All federally owned CWT operations.	None.....
POTWs.....	None.....	All.....
Thermal drying of POTW biosolids....	None.....	All.....
Sanitary wastes or toilet wastes....	None.....	All.....
Food processing wastes.....	None.....	All.....
Manufacturing facilities.....	Those that accept off-site wastes for treatment and/or recovery that are not generated in a manufacturing process subject to the same limitations/standards as on-site generated waste and that the	All others.....

	permit writer determines are not similar to, and compatible with treatment of, the on-site waste.	
Product stewardship.....	Those that accept waste materials from use of their products that are not similar to, and compatible with, treatment of waste generated on-site.	Those that accep their unused pr shipping and st containers with product residue off-specificati products.
Petroleum refineries (SIC Code 2911) and petroleum distribution terminals (SIC Code 4612, 4613, 5171, 5172).	For off-site materials other than those listed in the next column, see discussion for manufacturing facilities.	Those that recei manage off-site petroleum-conta materials gener petroleum explo production, transportation, refining and ma activities.
Pulp and paper off-site landfill leachates.	Those that accept off-site landfill leachates for treatment and/or recovery that are not generated in a manufacturing process subject to the same limitations/standards as on-site generated waste and that the permit writer determines are not similar to, and compatible with, the on-site waste.	All others.....
Pipeline materials.....	Materials received via pipeline from waste consolidators or commingled with other covered CWT wastewaters.	All other piped materials and P
Recycle/recovery activities.....	All unless specifically excluded elsewhere.	.....
Traditional solvent recovery.....	None.....	All.....
Fuel blenders.....	Those that generate a wastewater.	``Dry'' operatio
Scrap metals recyclers.....	None.....	All.....
Silver recovery.....	Only included where wastewater generated from these activities is commingled with other covered wastes.	All others.....
Used oil filters & only absorbent recycling.	Those that generate a wastewater.	``Dry'' operatio
High Temperature Metals Recovery (HTMR).	Those that generate a wastewater.	``Dry'' operatio

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Used glycol recovery.....	All.....	None.....

Re-refining.....	All.....	None.....
Solids, soils, and sludges.....	Those activities which generate a wastewater unless specifically excluded.	``Dry'' operatio
Stabilization/Solidification.....	Those that generate a wastewater.	``Dry'' operatio
Transfer stations and recycling centers.	None.....	All.....
Incineration activities.....	Only included when the wastewater generated from these activities is received from off-site and commingled with other covered wastewater.	All others.....
Transportation and/or transportation equipment cleaning.	Only included where wastewater generated from these activities is commingled with other covered waters.	All others.....
Landfills.....	Only included where wastewater generated from these activities is commingled with other covered waters.	All others.....
Grease trap/interceptor wastes.....	Those which contain petroleum based oils.	Those which cont animal or veget fats/oils.
Marine generated wastes.....	Off-loaded and subsequently sent to a CWT facility at a separate location and commingled with other covered wastewater.	All others.....
Waste, wastewater or used material re-use.	Those activities not listed in the next column or excluded elsewhere.	Not covered if t wastewater is a for use in plac potable water o materials are a in place of vir treatment chemi
Treatability, research and development, or analytical activities.	Only included where wastewater generated from these activities is commingled with other covered waters.	All others.....

B. Manufacturing Facilities

Throughout the development of this rule, EPA has contemplated that the rule would apply to wastewater discharges from facilities that, while primarily engaged in other industrial operations, also may treat and/or treat for recovery or recycle off-site wastes or used materials. These facilities primarily treat wastes generated as a result of their own on-site manufacturing operations. Their wastewater discharges are, by and large, already subject to effluent guidelines and standards. (Some treatment operations, however, may be located at manufacturing facilities which are not subject to effluent guidelines and standards). All of these facilities also accept off-site generated wastes for treatment. In some instances, a facility under the same corporate ownership generates these off-site wastes. The facility treats these

intra-company transfers on a non-commercial basis. In other instances, the off-site wastestreams originate from a company under a different ownership-- an inter-company transfer. In some instances, the off-site wastes received at these industrial facilities are generated by a facility performing the same manufacturing operations, while in other instances, the off-site wastestreams are generated by facilities engaged in entirely unrelated manufacturing operations. Some receive a constant wastestream from only a handful of customers and some receive a wide variety of wastestreams from hundreds of customers.

EPA received extensive comment concerning how the CWT rule should apply to facilities that provide waste treatment and/or recovery operations for off-site generated wastes, but whose primary business is something other than waste treatment or recovery. In general, commenters urged EPA to limit the scope of the regulation in one of several ways. Commenters suggested restricting the scope either to:

Facilities whose sole purpose is the treatment of off-site wastes and wastewaters; or

Facilities which only accept off-site wastes on a commercial basis; or

Facilities which accept off-site wastes which are not produced as a result of industrial operations subject to the same effluent guidelines and standards as the on-site generated wastes or off-site wastes which are not compatible with the on-site generated wastes and the on-site wastewater treatment system; or

Manufacturing facilities which accept off-site wastes in excess of a de minimis level.

In the supplemental proposal, EPA proposed subjecting centralized waste treatment operations at manufacturing facilities to the provisions of the rule unless one of the following conditions was met:

In the case of manufacturing facilities subject to national effluent limitations guidelines for existing sources, standards of performance for new sources, or pretreatment standards for new and existing sources (national effluent guidelines and standards), if the process or operation generating the wastes received from off-site for treatment is subject to the same national effluent guidelines and standards as the process or operation generating the on-site wastes; or

In the case of manufacturing facilities not subject to existing national effluent guidelines and standards, if the process or operation generating the waste received from off-site is from the same industry (other than the waste treatment industry) and of a similar nature to the waste generated on-site.

After careful consideration of comments and further review of its database, EPA continues to regard this approach as appropriate, with some modifications. EPA has concluded that many manufacturing facilities, even though they are engaged primarily in another business, are also engaged in traditional CWT activities and, therefore, should be subject to this rule.

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EPA has been unable to establish any direct correlation between the source of the off-site waste (intra-company or inter-company) and the similarity (or compatibility with) of the off-site waste to the on-site generated wastes that would support a blanket exclusion from this rule for intra-company waste treatment. EPA further concludes that all off-site wastewaters should be treated effectively irrespective of their volume, or their volume in relation to the volume of on-site generated waste and, thus, has rejected any exception for small volumes. As explained in the 1999 proposal, EPA's primary concern is that the effluent guidelines and standards currently in place for one industry may not ensure adequate treatment for wastes generated at another industry.

EPA has, however, concluded that there are circumstances where an off-site waste will receive adequate treatment at the treating facility even though the off-site waste may be generated by a manufacturing process that (if treated at the generating location) would be subject to a different set of effluent guidelines and standards than the effluent guidelines and standards applicable to the treating site. The record for this rule provides information and data on such facilities that support EPA's conclusion. An example is a pesticide formulating and packaging facility (PFPR), subject to 40 CFR 455 Subpart C, which sends its wastewaters off-site for treatment to a facility which manufactures the pesticide active ingredients. (The manufacturing facility is subject to a separate set of effluent guidelines and standards specific to pesticide manufacturers, 40 CFR 455 Subpart A and B). In this case, the same pollutants are likely to be present in the off-site and on-site generated wastewaters, even though the wastewaters are subject to different regulations. Therefore, the treating facility will need to use treatment appropriate for efficient removal of these pollutants. This situation would not be covered by this rule.

As a second example, consider a petroleum refinery that accepts off-site wastewaters. If the petroleum refinery (SIC Code 2911) accepts wastes generated off-site at petroleum distribution terminals (SIC Code 4612, 4613, 5171, and 5172), then the former is subject to effluent guidelines and standards for petroleum refineries (40 CFR 419), but the latter is not currently subject to any national effluent guidelines. However, the wastewaters generated at petroleum marketing terminals are based on materials manufactured at the refineries, and therefore would likely reflect the same pollutant profile. This situation would not be covered by this rule.

A third example involves clean-up activities at manufacturing sites. As part of clean-up operations at its facility, one commenter (called facility A) noted that it accepts contaminated groundwater from a different manufacturing facility located next door (facility B). The contaminated groundwater site (while not located on facility A, the treating facility) was contaminated by the manufacturing process at the treating site (facility A) and not at the site where located (facility B). As such, the contaminated wastewater would be similar and compatible with the on-site generated wastewater at facility A. In this case, the CWT rule would not apply.

EPA received information on each of the examples provided in comment on the rule. The comments detail instances in which the off-site wastewaters, while not subject to the same national effluent guidelines and standards as the wastewater generated on-site, are similar to the on-site generated manufacturing wastewaters and compatible with the on-site treatment system. In these cases, EPA concluded that the application of the CWT rule may not result in increased environmental protection, but simply add an additional layer of complexity for the treating facility and the permit writer or control authority.

Furthermore, EPA determined there are other instances of off-site waste acceptance at manufacturing facilities in which the off-site wastes, while not from the same industrial category, are similar to the on-site generated manufacturing wastewaters and compatible with the manufacturing wastewater treatment system. Consequently, for purposes of this rule, EPA has decided that, where the dischargers establishes that the wastes being treated are of similar nature and compatible with treatment of the on-site wastes, the CWT limitations and standards will not apply to the resulting discharge. EPA concluded that, in those circumstances, the permit writer or control authority should instead apply the limitations or standards applicable to the treatment of on-site wastewater to wastewaters generated through treatment of the off-site waste. Under the approach adopted for the final rule, the permit writer or control authority will determine whether the off-site generated waste accepted for treatment and/or recovery at a

manufacturing facility (whether subject to national effluent guidelines and standards or not) and commingled for treatment in the on-site treatment system is similar to the on-site generated wastes and compatible with the on-site treatment system. If it is, then the discharge of the treated effluent should be subject to the applicable on-site limitations (or standards) even if the off-site wastes would be subject to a different set of national effluent guidelines and standards as the on-site generated wastes (or no national effluent guidelines and standards) if treated where generated. In the event that the permit writer or control authority makes this determination, the treating facility would be subject to the on-site limits only and not subject to the CWT guideline.

For this final rule, EPA has not rigidly defined when a waste is of similar character and the treatment of it is compatible with the treatment of the on-site wastes, believing that permit writers and control authorities are in the best position to determine this term. Permit writers and control authorities should compare the wastewaters at the manufacturing facility to the off-site generated wastewaters (constituents and concentrations) and the appropriateness of the treatment system to the off-site generated wastewaters on a case by case basis. The final guideline commits the decision that an off-site wastewater is similar and compatible (and thus whether CWT limitations or standards would apply) to the permit writer or control authority. A treating facility must submit information demonstrating to the permit writer or control authority that the off-site waste is similar and compatible. EPA cautions permit writers and control authorities that the judgment of ``similar and compatible'' should be made based only on the development of a full record on this issue. If the treating facility has not clearly established that the off-site wastewaters are similar to the on-site generated manufacturing wastewaters and compatible with the treatment system in the permit writer's or control authority's best judgment, the permit writer or control authority must apply the CWT limitations (or standards) to the treating facility.

Therefore, EPA has concluded that centralized waste treatment operations at manufacturing facilities will be subject to provisions of the rule unless one of the following conditions is met:

In the case of a facility subject to national effluent limitation guidelines for existing sources, standards of performance for new sources, or pretreatment standards for new and existing sources, if the facility demonstrates that the wastes received

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from off-site for treatment and/or recovery are generated in a process or operation that would be subject to the same national effluent guidelines and standards as the process or operation generating the on-site wastes; or

In the case of a facility subject to national effluent guidelines and standards if the facility demonstrates that the waste received from off-site is similar in nature to the waste generated on-site and compatible with the on-site treatment system; or

In the case of a facility not subject to national effluent limitations and standards, if the facility demonstrates that the waste received from off-site is similar in nature to the waste generated on-site and compatible with the on-site treatment system.

EPA contemplates that this approach would be implemented in the following manner. A facility that is currently subject to national effluent limitation guidelines or pretreatment standards receives wastewater from off-site for treatment. The wastewater is commingled for treatment with manufacturing wastewater generated on-site. If the off-site wastewater is subject to the same limitations or standards as the onsite wastewater (or would be if treated where generated) or if the off-site wastewater is similar to the onsite wastewater and

compatible with the treatment system, the CWT limitations or standards would not apply to the discharge associated with the off-site wastewater flows. In that case, another guideline or standard applies. If, however, the off-site wastewater is not subject to the same national limitation guidelines or standards (or if none exist) and if the off-site wastewater is not similar to the onsite wastewater and compatible with the treatment system, that portion of the discharge associated with the off-site flow would be subject to CWT requirements. (Of course, the portion of the wastewater generated on-site remains subject to applicable limitations and standards for the facility. If the off-site and on-site wastewaters are commingled prior to discharge, the permit writer or control authority would use the ``combined wastestream formula'' or ``building block approach'' to determine limitations for the commingled wastestream).

Certain facilities that are subject to the CWT regulations because they accept wastes whose treatment is not compatible with the treatment of wastes generated on-site may nevertheless be subject to limitations and standards based on the otherwise applicable provisions of 40 CFR Subchapter N. Thus, the final regulations provide for the permit writer or pretreatment control authority to develop ``alternative limitations and standards'' for certain facilities in a narrow set of circumstances. See e.g., 40 CFR 437.10(b). Under this approach, which EPA discussed in the 1999 proposal, permit writers or control authorities could require manufacturing facilities that treat off-site wastes to meet all otherwise-applicable categorical limitations and standards for the industries from which the waste was generated. This approach would also determine limitations or standards for any commingled on-site and off-site wastewater using the ``combined wastestream formula'' or ``building block approach.'' The permit writer or control authority would apply the categorical limitations or standards from the industries generating the wastewater, rather than the CWT limitations or standards, to the off-site portion of the commingled wastestream. The use of the combined wastestream formula and building block approaches for CWT wastes is discussed further in Section XIV.F of the 1999 proposal (64 FR 2342-2343). The permit writer (or pretreatment control authority) may establish alternative limitations and standards only when a facility receives continuous flows of process wastewaters with relatively consistent pollutant profiles from no more than five customers. EPA's information shows that, in practice, permit writers are currently following this approach for facilities that treat off-site waste for no more than five facilities. This approach is not appropriate for facilities that receive variable off-site wastewaters or that service more than a handful of customers.

After further consideration of the above described alternative and careful consideration of comments received on this alternative, EPA determined that the permit writer (or local pretreatment authority) should have the option in a limited set of circumstances of applying the applicable categorical limitations or standards to the off-site wastestreams. This is the approach described above. Thus, the final rule authorizes permit writers or control authorities (at their discretion) to subject the wastewater associated with the treatment of the off-site wastes to limitations or standards based on the categorical limitations or standards from the industries generating the wastewater, rather than applying the CWT limitations or standards to the off-site portion of the commingled wastestream. Consequently, the applicability provisions of Subparts A, B, C and D provide for such authority. See 40 CFR 437.10(b), 437.20(b), 437.30(b) & 437.40(b).

C. Pipeline Transfers (Fixed Delivery Systems)

EPA did not propose to apply CWT limitations and standards to facilities that receive off-site wastes for treatment solely via an

open or enclosed conduit (for example, pipeline, channels, ditches, trenches, etc.). EPA did not propose to include pipeline facilities because, based on information obtained by the Agency, facilities that receive all their wastes through a pipeline or trench (fixed delivery systems) from the original source of waste generation receive continuous flows of process wastewater with relatively consistent pollutant profiles. These wastewaters are traditional wastewaters from the applicable industrial category that generally remain constant from day to day in terms of the concentration and type of pollutant parameters. Unlike traditional CWT facilities, their customers and wastewater sources do not change and are limited by the physical and monetary constraints associated with pipelines. The preamble to the 1999 proposal provides additional detail on the characteristics of CWT facilities that accept waste for treatment through pipelines only (64 FR 2286-2287). The preamble also explained that permit writers were applying the ``building block approach,'' in writing current discharge permits for pipeline facilities and that in all cases examined, the treating facility was required to comply with otherwise applicable effluent guidelines and standards.

EPA did not receive any information in response to the 1999 proposed rule that has convinced the Agency to change its treatment of pipeline facilities for purposes of this rule. Consequently, the scope of this final rule excludes wastes that are piped to waste treatment facilities. See 40 CFR 437.1(b)(3). These wastes will continue to be subject to otherwise applicable effluent guidelines and standards. In EPA's view, it is more appropriate for permit writers and control authorities to develop restrictions for treatment facilities that receive wastewater by pipeline on an individual basis by applying the ``combined wastestream formula'' or ``building block'' approach.

There are two exceptions to this approach. The first is for facilities that receive waste via conduit (that is, pipeline, trenches, ditches, etc.) from facilities that are acting merely as waste collection or consolidation centers that are not the original source of the waste. These wastewaters are subject to the CWT rule. The basis for EPA's exclusion

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of waste treatment facilities receiving wastes by pipeline from the scope of the rule was that such facilities did not receive the same types of varying wastes as CWT facilities receiving wastes by truck or tanker. Pipeline facilities receive flows of wastes with consistent pollutant profiles. Waste consolidators, on the other hand, which send their flows to a treatment facility via pipeline are delivering wastes like those typically received by CWT facilities in tanks or trucks. See 40 CFR 437.1(b)(3). The second is for facilities that serve as both CWT facilities and pipeline facilities (i.e., receive waste from off-site via pipeline as well as some other mode of transportation such as trucks). If this type of facility commingles the trucked and piped waste prior to discharge, then both the trucked and piped wastewaters at these facilities are subject to the CWT rule. The basis for the pipeline exclusion no longer applies because the addition of hauled waste introduces variability in pollutant concentrations and characteristics that are not true for the piped wastes. See 40 CFR 437.1(b)(3). However, if such a facility discharges these wastewaters separately, then only the trucked off-site wastewater is subject to provisions of the CWT rule and the piped waste subject to limitations and standards based on the applicable 40 CFR Subchapter N limitations and standards. POTWs are not considered CWTs and are not subject to the limitations and standards of this rule. However, as discussed more fully in Section V.F, POTWs should not be receiving wastes from industrial users subject to national effluent guidelines and standards (either by pipeline or otherwise) that do not comply with applicable

pretreament standards.

D. Product Stewardship

As detailed in the proposed rule (64 FR 2287), many members of the manufacturing community have adopted ``product stewardship'' programs as an additional service for their customers to promote recycling and reuse of products and to reduce the potential for adverse environmental impacts from chemical products. Commenters defined ``product stewardship'' in this way: ``Taking back spent, used, or unused products, shipping and storage containers with product residues, off-specification products and waste materials from use of products.'' Generally, whenever possible, these manufacturing plants recover and reuse materials from these products in chemical processes at their facilities. Manufacturing companies that cannot reuse the spent, used, or unused materials treat these materials/wastewaters in their wastewater treatment plants. EPA's review of the comments suggests that, with few exceptions, the materials treated in the on-site wastewater treatment systems were produced at facilities subject to the same effluent limitations guidelines as the materials being manufactured on-site. In industry's view, such materials are inherently compatible with the treatment system.

In the proposal, EPA explained that it had decided it would treat wastewater generated from materials that are taken back for recycle or re-use under a product stewardship program in the same way it proposed to treat wastewater generated in treating any other off-site waste. If the materials received from off-site under the product stewardship program are produced at an industrial operation subject to the same limitations and standards in 40 CFR Subchapter N as the on-site generated manufacturing wastes, the treating facility would not be subject to CWT requirements with respect to the resulting wastewaters. Because EPA remained concerned that circumstances exist in which used materials or waste products may not be compatible with the otherwise existing treatment system, EPA did not propose a blanket exemption for product stewardship activities from the scope of this rulemaking. Under the proposal, wastewater from the treatment of used products or waste materials would be subject to the CWT rule if it were not produced at facilities subject to the same provisions of Subchapter N as wastewater from the treatment of the other on-site generated wastes.

EPA received numerous comments on this approach. Many commenters claimed that the proposed rule would deter product stewardship activities, and that EPA should not extend the rule to cover wastewater from certain product stewardship activities. Some commented that these materials are generally not ``treated,'' but re-used or recovered, and for that reason they were fundamentally different from other wastes in the CWT industry. Others commented that while EPA's intent seemed to be appropriate, the language was much too restrictive. For example, commenters noted that when a product goes off-site to another manufacturing facility that is subject to different effluent limitation guidelines and standards, the product (while it remains unchanged) would then be subject to a different set of effluent limitations or standards. If the manufacturing facilities which originally produced the product took back the off-spec product from its customer, the proposal as written, would require that the treating facility be subject to CWT even though the off-spec waste would clearly be the same as those generated on-site.

EPA applauds the efforts of manufacturing facilities to reduce pollution and the environmental impacts of their products and does not want to discourage these practices. Consequently, the final rule does not cover product stewardship activities in certain circumstances. Product stewardship activities at a manufacturing facility which involve taking back their unused products, shipping and storage containers with product residues, and off-spec products will not be

subject to provisions of the CWT rule.

Certain other recovery activities may, however, remain subject to this rule. EPA is concerned about the treatment of spent, used or waste materials returned to the original manufacturer when it is treated with on-site wastewater. In some cases, wastewater from these recovery processes may not be compatible with the existing treatment system. The mere fact that these materials may be accepted for re-use or recycling rather than ``treatment'' does not ensure that resulting wastewaters would be inherently compatible with the treatment system. EPA is unable to see how such activities differ from waste recovery operations that the Agency has concluded should be subject to these guidelines. Here is an illustrative example. An inorganic chemical manufacturer produces industrial chemicals that one of its customers uses in the manufacture of printed circuit boards. The chemical manufacturer accepts spent etchants (waste materials from use of product) from its customer for recovery and re-use of certain metals in its inorganic chemical manufacturing process. (Note that CWT facilities not located at manufacturing sites also accept spent etchants). The recovery process generates a wastewater. Recovery may have introduced into the wastewater many pollutants that were not present in the wastewater generated in producing the inorganic chemical. These pollutants may not be compatible with, or effectively treated, in the treatment process at the inorganic chemical manufacturing facility. The same may be true if the accepting facility determined that spent etchant could not be effectively reused and recovered and directed the material to their wastewater treatment system.

Therefore, EPA has concluded that product stewardship activities that involve taking back spent, used or waste materials from use of products should,

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as a general matter, be subject to provisions of this rule unless any of the exclusions established for manufacturing facilities as explained in V.B. would apply. See 40 CFR Sec. 437.1(b)(2) & (4). Thus, those activities that involve used products or waste materials that are not subject to effluent guidelines or standards from the same category as the on-site generated wastes or that are not similar to the on-site generated manufacturing wastes and compatible with the treatment systems (as determined by the permit writer or control authority) are subject to today's rulemaking under 40 CFR Sec. 437.1(b)(2). EPA concluded that this approach will not curtail product stewardship activities, in general, but will ensure that all wastes are treated effectively.

E. Federally Owned Facilities

Throughout development of this rule, EPA's database has included information on CWT facilities owned by the federal government. It has always been EPA's intention that federal facilities which accept wastes, wastewater, or used material from off-site for treatment and/or recovery of materials would be subject to provisions of this rule unless they meet the conditions under which the rule would not apply, e.g. treated off-site wastes subject to the same 40 CFR Subchapter N provisions as the federal facility.

EPA's database contains information on 23 federally owned facilities that operate treatment systems. EPA has determined that 15 of these facilities are not subject to provisions of the CWT rule because they do not accept off-site wastes. Of the remaining facilities, 6 are not subject to provisions of the CWT rule because they perform CWT activities to which the rule would not apply. Therefore, EPA has identified 1 federally owned CWT facility that is subject to this rule. EPA has included this facility in all of its

analyses.

F. Publicly Owned Treatment Works (POTWs)

Comments to the 1995 and 1999 CWT proposals establish that large and small POTWs accept a large volume of hauled wastes. A special discharge survey conducted by the Association of Metropolitan Sewerage Agencies (AMSA) indicates that 42.5 percent of POTW respondents accept hauled industrial wastes. More recent comments suggest that this may underestimate the volume of hauled wastes POTWs receive.

A large quantity of the wastes trucked to POTWs is septage and chemical toilet wastes. EPA did not evaluate these wastes for regulation and they are not subject to this rule. EPA would expect that POTWs would adequately treat these sanitary waste flows because EPA would expect septage and chemical toilet wastes to closely resemble sewage with respect to organic content.

POTWs also receive significant volumes of trucked industrial and commercial wastes. Examples of these include wastes subject to pretreatment standards under 40 CFR subchapter N, as well as wastes not subject to national effluent guidelines and standards. These wastes may include oil-water emulsions or mixtures, coolants, tank cleaning water, bilge water, restaurant grease trap wastes, groundwater remediation water, contaminated storm water run-off, interceptor wastewaters, and used glycols. CWT facilities also treat many of these wastes and discharges from these operations may be subject to the final CWT limits.

EPA received numerous comments on how the CWT rule should apply to POTWs. Commenters were largely divided on the applicability of the CWT rule to POTWs. All of the POTWs that commented on the proposal agreed that the CWT rule should not apply to POTWs. They stated that under the CWA, effluent guidelines and pretreatment standards do not apply to POTWs. Rather, as established by the CWA, POTWs are subject to secondary treatment and water quality standards. These commenters further stated that POTWs generally accept trucked wastes as a service to their community to insure that these wastes receive proper treatment. Commenting POTWs further cited that trucked wastes comprise a de minimis portion of the total volume of wastewater treated at their facilities.

Non-POTW commenters were, on the other hand, unanimously of the view that the CWT rule should apply to POTWs. These commenters asserted that POTWs and CWT facilities are competing for many of the same wastestreams, and therefore POTWs should be subject to the same standards as CWT facilities. These commenters stated that POTWs are actively competing for wastestreams not subject to national effluent guidelines and standards, and cautioned that EPA should be concerned that this hauled waste is being accepted with little or no documentation regarding the source, little or no monitoring of the shipments when they arrive, and no pretreatment before mixing with the normal POTW influent. They also expressed concern that POTWs often do not have equivalent treatment compared to CWT facilities and that pollutant reductions are often due to dilution rather than treatment. Finally, many CWT facilities commented that by not including POTWs in the scope of the CWT rule, EPA might actually increase the discharge of pollutants to the nation's waters since waste generators will have an incentive to ship directly to POTWs thus skipping what would have been effective pretreatment at the CWT facility.

It is clear from reviewing the comments that many commenters may misunderstand the interaction between effluent guidelines and pretreatment standards, and they are consequently confused about how this guideline will affect POTW operations. The following discussion is intended as clarification. Under the CWA, all direct dischargers must comply with technology-based effluent guidelines and any more stringent limitations necessary to meet State water quality standards. In the

case of certain pollutants and for certain categories and classes of direct dischargers, EPA promulgates guidelines that establish these technology-based limitations. In the case of POTWs, the CWA specifically identifies the technology--secondary treatment that is the basis for POTW effluent limitations.

In addition, the CWA also requires EPA to establish pretreatment standards for indirect dischargers--those introducing wastewater to a POTW either by pipe or sewer or by transporting the waste by truck or rail to the POTW. These standards are designed to prevent the discharges of pollutants that pass-through, interfere or are otherwise incompatible with POTW operations. The standards are technology-based and analogous to technology-based effluent limitations applicable to direct dischargers. Once EPA has established pretreatment standards, no indirect discharger may introduce wastewater to a POTW for which there are pretreatment standards except in compliance with the standard. The CWA specifically prohibits the owner or operator of any source from violating a pretreatment standard. See section 307(d) of the CWA. This prohibition applies whether the wastewater is discharged through a sewer system or sent to a POTW by truck or rail.

The CWA does authorize a POTW, in limited circumstances, to revise pretreatment standards for a discharger to take account of the POTW's actual removal of a particular pollutant. ``Removal credits'' may be available to a discharger generally under the following conditions. First, the granting of the removal credit by the POTW must not cause a violation of the POTW's permit limitations or conditions.

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Second, the POTW's treatment of the pollutant must not result in a sewage sludge that cannot be use of disposed of in accordance with sewage sludge regulations promulgated pursuant to section 405 of the CWA. See section 307(b) of the CWA.

EPA has promulgated regulations at 40 CFR Part 403 (General Pretreatment Regulations for Existing and New Sources of Pollution) that establish pretreatment standards and requirements that apply to any source introducing pollutants from a non-domestic source into a POTW. These standards include a general prohibition on the introduction of any pollutant that might pass through or interfere as well as prohibitions on specific pollutants such as those that may create a fire or explosion hazard or corrosive structural damage. EPA has also promulgated national effluent pretreatment standards (like the pretreatment standards promulgated here today) for specific industry categories as separate regulations at 40 CFR subchapter N.

The regulations at 40 CFR Part 403 also require all POTWs with a design flow greater than 5 MGD per day to develop a pretreatment program. Moreover, EPA or a State may require a POTW with a design flow that is less than or equal to 5 MGD to develop a pretreatment program if warranted by circumstances in order to prevent pass through or interference. See 40 CFR 403.8(a). These pretreatment programs must require compliance with all applicable pretreatment standards and requirements by industrial users of the POTW. See 40 CFR 403.8(f)(ii). Furthermore, each POTW developing a pretreatment program must develop and enforce specific local limits to implement the general and specific prohibition against pass-through and interference. See 40 CFR 403.5(c). Thus, any POTW subject to the requirement to develop a pretreatment program that accepts waste that does not comply with a general or specific prohibition or with national effluent pretreatment standards is in violation of the regulations.

Consequently, following promulgation of today's rule, POTWs with pretreatment programs that receive wastestreams both subject to and not regulated by national effluent standards and limitations must ensure the wastestreams do not violate these requirements. In practice, with respect to the wastestreams discussed by commenters, this means that a

POTW may not accept untreated wastestreams subject to national effluent guidelines and standards. These would include wastestreams subject to pretreatment standards in 40 CFR subchapter N (e.g., electroplating wastes). Moreover, a POTW may not accept certain other streams not subject to national guidelines and standards such as oil-water emulsions or mixtures if those streams contain pollutants that would pass through or interfere with POTW operation. Note that 40 CFR 403.5(b)(5) specifically prohibits the introduction into a POTW of petroleum oil that will cause pass-through or interference. Given EPA's conclusion here that oily wastewaters contain pollutants that will pass through POTWs, it is likely that many POTWs are accepting wastes for treatment that contain pollutants that will pass through.

EPA is concerned that wastestreams accepted at POTWs, both those subject to and those not regulated by national effluent guidelines and standards, receive proper treatment. In 1999, EPA's Office of Wastewater Management published the ``Guidance Manual for the Control of Wastes Hauled to Publicly Owned Treatment Works'' (EPA 833-B-98-003, September 1999). This document again stresses that national effluent pretreatment standards apply to waste generated by national effluent guidelines and standards (40 CFR parts 401 to 471), whether the waste is introduced to the POTW through the sewer system or hauled to the POTW. Moreover, EPA regulations require that POTWs must ensure pretreatment of wastes subject to national effluent standards received at the POTW regardless of the mode of transportation.

Similarly, because a POTW must ensure that no user is introducing pollutants into the POTW that would pass-through the POTW into the receiving waters or interfere with the POTW operation, EPA strongly recommends that each POTW should document and monitor all hauled wastestreams to ensure that necessary pretreatment steps have been performed. The guidance establishes a waste acceptance procedure that clearly resembles that generally performed at CWT facilities. Further, in the case of wastestreams not subject to national guidelines and standards, the POTW should also monitor the hauled wastestreams to ensure that pollutant reductions at the POTW will be achieved through treatment and not dilution.

Based on the types of hauled wastewater that commenters have indicated POTWs accept, EPA shares the concern of many commenters that pollutant reductions in these hauled wastewaters at POTWs are largely due to dilution. EPA reminds POTWs that wastewaters that contain significant quantities of metal pollutants, significant quantities of petroleum-based oil and grease, or significant quantities of non-biodegradable organic constituents should be pretreated by the generating facility or an appropriate treatment facility prior to acceptance at the POTW. EPA further reminds POTWs that this remains true regardless of whether or not these wastewaters comprise a de minimis portion of the total volume of the wastewaters treated at their facility. EPA concluded that if POTWs monitor hauled wastes appropriately and additionally ensure that all hauled wastes not subject to national effluent guidelines and standards can be effectively treated with their biological treatment systems then many of the issues raised by non-POTW commenters will be alleviated.

EPA is aware of a POTW that plans to open a wastewater treatment system to operate in conjunction with its POTW operations. This facility would accept wastewaters subject to national guidelines and standards, treat them, and then discharge them to the POTW's treatment plant. The acceptance by a POTW of wastes subject to national effluent guidelines and standards that do not comply with pretreatment standards would seem to violate the requirements noted above unless the POTW has revised the applicable standards to take account of its removal of certain pollutants. EPA's regulations at 40 CFR Sec. 403.7 describe the process for obtaining removal credits and identifying the pollutants for which removal credits may be available. Under the current regulations, removal credits are only available for a limited number of

pollutants. The 1999 notice described the removal credits program and when and for what pollutants such credits might be available at 64 FR 2339-10. EPA would note that the new wastewater treatment system would itself be a POTW (or part of the POTW) and, thus, any wastewater introduced to it must meet all applicable pretreatment standards. However, because POTWs are already covered by the technology requirements (i.e., secondary treatment) specified in the CWA (40 CFR 133), they are not considered CWT facilities and are not within the scope of today's rule.

G. Marine Generated Wastes

In the proposed rule (64 FR 2291), EPA defined marine waste as waste generated as part of the normal maintenance and operation of a ship, boat, or barge operating on inland, coastal or open waters. Such wastes may include ballast water, bilge water, and other wastes generated as part of routine ship operations. The proposal further explained that EPA considered

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wastewater off-loaded from a ship as being generated on-site at the point where it is off-loaded provided that the waste is generated as part of the routine maintenance and operation of the ship on which it originated while at sea. The waste is not considered an off-site generated waste (and thus subject to CWT requirements) as long as it is treated and discharged at the ship servicing facility where it is off-loaded. Therefore, EPA proposed not to include these facilities as CWT facilities. The proposal further clarified that if marine generated wastes are off-loaded and subsequently sent to a CWT facility at a separate location and commingled with other covered wastewater, these facilities and their wastestreams would be subject to provisions of this rule.

After careful consideration of comments, EPA has not modified its approach for marine generated waste with one exception. For today's rule, EPA defines marine waste as waste generated as part of the normal maintenance and operation of a ship, boat, or barge operating on inland, coastal or open waters, or while berthed. See 40 CFR Sec. 437.1(c)(2). In response to commenters' requests for clarification, EPA has changed the definition to clarify that wastes generated while ships are berthed are part of normal maintenance and operational activities and are thus ``on-site.'' As a further point of clarification, waste generated while a ship is berthed is not an off-site generated waste so long as it is treated and discharged at the ship servicing facility where it is off-loaded. If, however, marine generated wastes are off-loaded and subsequently sent to a CWT facility at a separate location and commingled with other covered wastewater, these facilities and their wastestreams are subject to provisions of this rule.

H. Thermal Drying of POTW Biosolids

The thermal drying of POTW biosolids was not a focus of EPA's initial regulatory effort to develop this guideline. Consequently, EPA did not target thermal dryers during its data collection activities. However, commenters to the 1999 proposal provided information on thermal drying activities and requested EPA's views as to whether such operations would be subject to this rule. Thermal dryers accept off-site generated POTW biosolids (sludges that remain after wastewater treatment at a POTW) and treat these biosolids with a variety of technologies (e.g. rotary drum dryers) to form pellets. These biosolids can then be land applied. The thermal drying process generates two primary wastewater streams: facility water wash down and blowdown from

wet scrubbers. These wastewaters are discharged back to the POTW that produced the biosolids.

Commenters to the 1999 proposal requested that EPA not include these activities within the scope of this rule for the following reasons:

The POTW and the thermal dryer form a closed loop system. POTWs are the sole source of off-site waste received by thermal dryers. All wastewaters generated from the treatment of these biosolids are returned to the generator (the POTW).

All storage and processing areas at these facilities are enclosed. Therefore, this material poses very little or no threat to storm water.

Thermal drying activities bear little resemblance to the other regulated activities. Mandated testing parameters and other requirements under the CWT rule have little applicability to biosolids processing.

EPA agrees with commenters that thermal drying of biosolids should not be subject to provisions of the CWT rule. Because the only source of off-site wastes received at these drying facilities is biosolids produced at the POTW, the wastewater being generated from thermal drying of these biosolids should contain the same pollutants being treated at the POTW. As a result, the wastewater should be completely compatible with the treatment system at the POTW and should not cause any pass-through or interference. Consequently, thermal drying of POTW biosolids is not subject to provisions of the CWT rule. See 40 CFR 437.1(b)(4).

I. Transporters and/or Transportation Equipment Cleaners

Facilities that treat wastewater that results from cleaning tanker trucks, rail tank cars, or barges may be subject to the provisions of this rule if not subject to the Transportation Equipment Cleaning (TEC) Point Source Category guidelines (40 CFR Part 442). Thus, for example, the CWT rule does not apply to discharges from wastewater treatment at facilities engaged exclusively in cleaning the interiors of transportation equipment covered by the TEC regulation. EPA promulgated these guidelines on August 14, 2000 at 65 FR 49666. The TEC regulation applies to facilities that solely accept tanks which have been previously emptied or that contain a small amount of product, called a ``heel,'' typically accounting for less than one percent of the volume of the tank. A facility that accepts for cleaning a tank truck, rail tank car, or barge not ``empty'' for purposes of TEC may be subject to the provisions established for the CWT rule.

There are some facilities that are engaged in traditional CWT activities and also engaged in traditional TEC activities. If the wastewaters from the two operations are commingled, under the approach adopted for TEC, the commingled wastewater flow from the transportation equipment cleaning activities would be subject to CWT limits. Therefore, a facility performing transportation equipment cleaning as well as other CWT services that commingles these wastes is a CWT facility and all of the wastewater discharges are subject to provisions of this rule. If, however, a facility is performing both operations and the wastestreams are not commingled (that is, transportation equipment cleaning process wastewater is treated in one system and CWT wastes are treated in a second, separate system), both the TEC rule and CWT rule apply to the respective wastewaters. See 40 CFR 437.1(b)(10).

As a further point of clarification, the CWT rule does apply to transportation equipment cleaning wastewater received from off-site. Transportation equipment cleaning wastes received from off-site that are treated at CWT facilities along with other off-site wastes are subject to provisions of this rule.

J. Landfill Wastewaters

EPA published effluent limitations guidelines for Landfills, (40 CFR Part 445) at 65 FR 3007, (January 19, 2000). There, EPA established limits for facilities which operate landfills subject to the provisions established in 40 CFR Parts 257, 258, 264, and 265. The final Landfills rule limitations do not apply to wastewater associated with landfills operated in conjunction with other industrial or commercial operations in most circumstances.

In the CWT industry, there are some facilities that are engaged both in CWT activities and in operating landfills. For the CWT final rule, EPA's approach to facilities which treat mixtures of CWT wastewater and landfill wastewater is consistent with that established for the landfill guideline. Therefore, a facility performing landfill activities as well as other CWT services that commingles the wastewater is a CWT facility only, and all of the wastewater discharges are subject to the provisions of this rule. If a facility is performing both operations and the wastestreams are not commingled (that is, landfill wastewater is treated in one treatment system and CWT wastewater is treated in a second, separate, treatment system), the provisions of the Landfill rule and CWT

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rule apply to their respective wastewater.

Additionally, under the approach established in the Landfills rulemaking, CWT facilities which are dedicated to landfill wastewater only, whether they are located at a landfill site or not, are subject to the effluent limitations for Landfills. These dedicated landfill CWT facilities are not subject to provisions of the CWT rulemaking.

As a further point of clarification, landfill wastewater is not specifically excluded from provisions of this rule. Landfill wastewater that is treated at CWT facilities along with other covered off-site wastestreams are subject to provisions of this rule. Furthermore, a landfill that commingles for treatment its own landfill wastewater with other landfill wastewater only is subject to the Landfill limits in the circumstances described in V.B above.

K. Incineration Activities

In January of this year, EPA promulgated effluent guidelines and pretreatment standards for wastewater discharges from a limited segment of the waste combustion industry. 65 FR 4360 (January 27, 2000). This regulation, codified at 40 CFR Part 444, applies to the discharge from a ``commercial hazardous waste combustor'' (CHWC). CHWCs are commercial incinerators that treat or recover energy from hazardous industrial waste.

There may be certain industrial facilities (for whom EPA has established guidelines limitations or standards in 40 CFR subpart N) which are subject to the CWT regulation that also operate incinerators or CHWCs. For the CWT final rule, EPA has adopted the same approach it has followed for other industrial facilities subject to national limitations and standards. Where a facility treats CHWC (or other incinerator wastewater) with CWT wastewater, the permit writer (or local control authority) would establish discharge limitations (or pretreatment standards) by using a flow-weighted combination of the CHWC limitations/standards (or BPJ incinerator wastewater limitations/ standards) and the CWT limitations/standards. Thus, an organic chemical facility with an on-site CHWC (or other incinerator) that is also a CWT would be subject to combined wastestream formula pretreatment standards or building block limitations based on all three 40 CFR subpart N regulations.

Additionally, a facility which only treats CHWC wastewater (or other incinerator wastewaters or waste that is similar in nature as

determined by the permitting authority, see Section V.B), whether located at a CHWC site or not, would be subject not to the CWT regulations but to the otherwise applicable limitations or standards (either CHWC or, in the case of non-CHWC incinerator wastewater, limitations or standards developed by the permit writer or local control authority). EPA notes, however, that it has not identified any CWT facilities that are dedicated to CHWC (or other incineration) wastewaters only.

Further, incineration wastewaters are not specifically excluded from provisions of this rule. Incineration wastewaters received from off-site that are treated at CWT facilities along with other covered off-site wastestreams are subject to CWT limitations and provisions of this rule.

L. Solids, Soils and Sludges

EPA did not distinguish in its information gathering efforts between those waste treatment and recovery facilities treating aqueous waste and those treating non-aqueous wastes or a combination of both. Thus, EPA's 308 Waste Treatment Industry Questionnaire and related CWT Detailed Monitoring Questionnaire (DMQ) asked for information on CWT operations without regard to the type of waste treated. EPA's sampling program also included facilities that accepted both aqueous and solid wastes for treatment and/or recovery. In fact, the facility that forms the technology basis for the metals subcategory limitations treats both liquid and solid wastes. A facility that accepts wastes from off-site for treatment and/or recovery that generates a wastewater is subject to the CWT rule regardless of whether the wastes are aqueous or non-aqueous. Therefore, wastewater generated in the treatment of solids received from off-site is subject to the CWT rule.

As a further point of clarification, the main concern in the treatment or recycling of off-site ``solid wastes'' is that pollutants contained in the solid waste may be transferred to a process or contact water resulting in a wastewater that may require treatment. Examples of such wastewaters include, but are not limited to:

Entrained water directly removed through dewatering operations (for example, sludge dewatering);

Contact water added to wash or leach contaminants from the waste material; and

Storm water that comes in direct contact with waste material which contain liquids.

The treatment or recovery of solids that remain in solid form when contacted with water and which do not leach any chemicals into the water are not subject to this rule. Examples of excluded solids recovery operations are the recycling of aluminum cans, glass and plastic bottles. As a further point of clarification, any wastewater generated at a municipal recycling center is not subject to provisions of this rule.

M. Scrap Metal Processors and Auto Salvage Operations

During development of this regulation, EPA did not examine facilities engaged in scrap metal processing or auto salvage operations as part of its study. EPA did not attempt to collect information on these types of operations. However, commenters to the 1999 proposal provided some information on these activities. Commenters noted that these operations often generate contaminated wastewaters as a secondary part of their operations. As described by commenters, wastewater is often produced when rainwater comes in contact with the scrap metal and/or automobiles during collection and storage. This rainwater then becomes contaminated with oily residue from the scrap metal and/or automobiles. Contaminated storm water is the only wastewater resulting from these operations.

Because contaminated storm water generated from centralized scrap metal processing or auto salvage operations would, as the regulatory language is specified, be subject to regulation, EPA considered whether it had a basis for regulating wastewaters from these operations. Other than the limited information supplied by commenters, EPA has very little data concerning these activities and the facilities that conduct these activities. As a result, EPA concluded that it should not include within the scope of the guideline wastewaters generated from centralized scrap metal processing or auto salvage at this time. EPA would expect that permit writers and control authorities would develop limitations or local limits to establish site-specific permit requirements for any centralized scrap metal processing or auto salvage operations generating and discharging a contaminated stormwater.

N. Transfer Stations

During the initial stages of development of this rule, EPA did not envision transfer stations as part of the centralized waste treatment industry. As such, EPA did not attempt to collect information on the operation of transfer stations. However, EPA received comment to the 1999 proposal asking

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that EPA clarify its coverage of these facilities by this rule.

EPA has very little information on the operation of transfer stations. Based on comments, while transfer stations could fall within the definition of a CWT since they accept off-site industrial wastes, they do not perform any treatment or recovery of the off-site wastes. Transfer stations simply facilitate the distribution of wastes for disposal. Consequently, EPA has concluded that transfer stations should not be subject to provisions of the CWT rule.

O. Stabilization/Solidification

As explained in the 1999 proposal, EPA concluded that, by definition, stabilization/solidification operations are ``dry'' and do not produce any wastewater. As such, EPA did not propose to include stabilization/solidification processes in the CWT rule. At that time, EPA also explained that it was considering a subcategory for stabilization operations with a zero discharge requirement, and requested comment on this approach.

EPA received very little comment on stabilization/solidification and no new data from industry following the 1999 proposal. One commenter suggested EPA require stabilization/solidification operations to be zero discharge. Another suggested EPA use the same approach proposed for facilities handling used oil filters. A third commented that EPA should not promulgate a zero discharge requirement because, in the event that a wastewater is produced by stabilization/solidification operations, the facility would not have the option to treat the wastewater on-site.

EPA re-examined its database and concluded that while ``solidification/stabilization'' processes do not themselves produce any wastewater, there are often wastewaters associated with these processes. The major wastewater reported by questionnaire respondents associated with stabilization/solidification operations is equipment wash down. Further, the database shows that many of the wastes accepted from off-site for stabilization/solidification are the same or similar to wastes accepted for other covered CWT operations.

Consequently, EPA is not promulgating a subcategory for stabilization/solidification with a zero discharge requirement. EPA agrees with commenters that, in the event that there are wastewaters produced by or associated with these operations, facilities should have

the option of choosing whether to treat the wastes on-site or through other means. If these operations produce a wastewater, then the discharge of wastewater from these facilities should be subject to provisions of this rule. Therefore, ``dry'' stabilization/ solidification operations themselves are not subject to provisions of the CWT rule. However, wastewater discharges from stabilization/ solidification operations that are performed on waste received from off site are subject to provisions of this rule. This approach is consistent with EPA's approach to fuel blending operations and used oil filter management.

P. Waste, Wastewater, or Used Material Re-Use

EPA recognizes that some facilities accept wastewater from off-site for re-use rather than treatment or recovery. The intent in accepting these off-site ``treated'' wastewaters is to replace potable water or more expensive pure water obtained from wells, surface waters, etc. Examples include, but are not limited to:

The acceptance of wastewater from off-site for use in place of potable water in industrial processes;

The use of secondary POTW effluents as non-contact cooling water; and

The use of storm water in place of potable water at shared industrial facilities located in industrial parks.

Likewise, EPA is also aware that some facilities accept used materials such as spent pickle liquor for re-use as a treatment chemical in place of virgin treatment chemicals.

EPA applauds all pollution prevention activities, especially those that allow treated wastewater or spent chemicals to be re-used rather than discharged. EPA does not define this type of activity as treatment or recovery. Therefore, the acceptance of off-site wastewater or spent chemicals for re-use in the treatment system or other industrial process is not a CWT activity and is not subject to provisions of this rule.

Q. Recovery and Recycling Operations

Many CWT facilities perform recovery activities that lead to recycling of materials either at the recovering site or at another location. The purpose of these activities is to recycle product back into a use for which it was originally intended, not the treatment and disposal of wastewater streams. Examples of such activities include but are not limited to: used oil processing, used glycol recovery, fuel blending, metals recovery, and re-refining. Many commenters to both the 1995 proposal and the 1999 proposal noted that these activities should not be included under the scope of this rule because they are not ``treatment,'' but ``recovery'' activities.

EPA applauds efforts to reduce pollution and the ancillary adverse consequences to the environment associated with product disposal and does not want to discourage these practices. However, EPA also recognizes that while the intent of these activities is not treatment of a ``wastewater,'' but rather recovery of a used or waste material, wastewater is usually generated from these recovery processes. Generally, the facility performing the recovery activity also performs on-site treatment of the resulting wastewater. EPA wants to ensure that these wastewaters receive appropriate treatment.

From the beginning of its data gathering activities associated with the development of this rule, EPA has included recycling and recovery activities along with wastewater treatment activities. In fact, EPA developed sections of the 308 Questionnaire to specifically target the collection of information on metals, solids, oils, and organics recovery activities. Many of the facilities visited and sampled by EPA perform recovery operations. Some of these facilities refer to

themselves as ``recyclers'' and not ``wastewater treatment facilities.'' EPA's sampling data show that in many instances the pollutants and concentrations of pollutants in wastewaters generated from recycling/recovery activities are very similar or more concentrated than wastewaters accepted for ``treatment'' only. In fact, many facilities that perform recovery operations combine the wastewater generated from the recovery operations with other off-site wastewater received for treatment. Consequently, EPA has concluded that recovery operations are included in the scope of this rule. Therefore, unless specifically stated elsewhere, facilities that recycle and recover off-site waste, wastewaters and/or used materials are considered ``centralized waste treatment facilities'' and are subject to provisions of this rule. However, if metals recovery operations are subject to the secondary metals provisions of 40 CFR 421, the Nonferrous Metals Manufacturing Point Source Category, then the provisions of this part do not apply. These secondary metals subcategories are Subpart C (Secondary Aluminum Smelting Subcategory), Subpart F (Secondary Copper Subcategory), Subpart L (Secondary Silver Subcategory), Subpart M (Secondary Lead Subcategory), Subpart P (Primary and Secondary Germanium and Gallium Subcategory), Subpart Q (Secondary Indium

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Subcategory), Subpart R (Secondary Mercury Subcategory), Subpart T (Secondary Molybdenum and Vanadium Subcategory), Subpart V (Secondary Nickel Subcategory), Subpart X (Secondary Precious Metals Subcategory), Subpart Z (Secondary Tantalum Subcategory), Subpart AA (Secondary Tin Subcategory), Subpart AB (Primary and Secondary Titanium Subcategory), Subpart AC (Secondary Tungsten and Cobalt Subcategory), and Subpart AD (Secondary Uranium Subcategory).

R. Silver Recovery Operations From Used Photographic and X-Ray Materials

At the time of the 1999 proposal, EPA proposed not to include electrolytic plating/metallic replacement silver recovery operations of used photographic and x-ray materials within the scope of this rule. The Agency based its conclusion on the fundamental difference in technology used to recover silver at facilities devoted exclusively to treatment of photographic and x-ray wastes. However, for off-site wastes that are treated/recovered at these facilities through any other process and/or waste generated at these facilities as a result of any other centralized treatment/recovery process, the Agency proposed that these wastewaters would be subject to provisions of this rule.

The Agency received many comments to the 1999 proposal that supported EPA's decision to not include electrolytic plating/metallic replacement silver recovery operation of used photographic and x-ray materials within the scope of this rule. However, commenters additionally noted that while many of these facilities primarily use electrolytic plating followed by metallic replacement in silver recovery operations, there are other processes that are also utilized. Commenters further noted that new silver recovery technologies are emerging and being studied and developed on a regular basis. As such, commenters asked EPA to not include silver recovery operations from used photographic and x-ray materials regardless of the method used to recover the silver.

EPA agrees with commenters that facilities that are devoted exclusively to the centralized recovery of silver from photographic and x-ray wastes should not be covered by this rule, regardless of the type of process used to recover the silver. As such, facilities that exclusively perform centralized silver recovery from used photographic and x-ray wastes are not subject to provisions of this rule. EPA would

expect that, as is the case now with wastewater discharges associated with this operation, the control authority or permit writer would determine whether to apply the provisions of 40 CFR part 421, Subpart L (the Secondary Silver Subcategory of the Nonferrous Metals Manufacturing Regulation) or establish BPJ, site-specific permit requirements.

There are some facilities, however, which are engaged in traditional CWT activities and also engaged in centralized silver recovery from photographic and x-ray materials. If the wastewaters from the two operations are commingled, the commingled silver recovery wastewater flow would be subject to CWT limitations or standards. Therefore, a facility performing centralized silver recovery from used photographic and x-ray materials as well as some other covered CWT services that commingles these wastes are subject to provision of the CWT rule. All of the wastewater discharges are subject to provisions of this rule. If, however, a facility is performing both operations and the wastestreams are not commingled (that is, silver recovery wastewater is treated in one system and CWT wastes are treated in a second, separate system), the permit writer or control authority should apply the provision of 40 CFR part 421, if applicable, or continue to establish BPJ, site-specific permit requirements for the discharge associated with the silver recovery operations and apply the CWT rule to the wastewaters associated with the other covered CWT activities.

As a further point of clarification, wastewater generated as a result of centralized silver recovery operations are not specifically excluded from provisions of this rule. Silver recovery wastewaters that are treated at CWT facilities with other covered off-site wastestreams are subject to provisions of this rule.

S. High Temperature Metals Recovery

EPA is aware of three facilities in the U.S. that recover metal using a ``high temperature metals recovery'' process (HTMR). HTMR facilities recycle metal-bearing materials in a pyrometallurgical process that employs very high temperature furnaces. These facilities do not use the water-based precipitation/filtration technologies to recover metals from wastewater observed at metals subcategory facilities throughout the CWT industry. At the time of the proposal, EPA believed that all HTMR processes were ``dry'' (i.e., did not produce a wastewater). Consequently, in the 1999 proposal, EPA proposed not to include facilities that perform high temperature metals recovery (HTMR) within the coverage of this rule. EPA further requested comment on whether EPA should promulgate a zero discharge requirement for facilities that utilize the HTMR process.

Based on comment to the proposal, EPA has concluded that while most HTMR processes are dry, one of the three known HTMR facilities produces a wastewater (scrubber blowdown). As such, EPA has concluded that a zero discharge requirement for HTMR facilities is inappropriate and has not included it in the final CWT rule. However, upon further examination of the comments and its database, EPA has concluded that HTMR facilities that generate a wastewater should be included within the scope of the CWT rule. While the HTMR process is different from other recycling technologies studied by EPA for this rulemaking, EPA has concluded that the wastewater produced from HTMR operations contains many of the CWT metals subcategory pollutants of concern and that the concentration of these pollutants falls solidly within the range of wastewaters in the CWT metals subcategory. As such, while the HTMR process may be different from water-based precipitation technologies, the resulting wastewaters are similar (see DCN 33.2.1). Therefore, it is appropriate for EPA to establish limits for HTMR wastewaters using the metals subcategory technology basis and these limits will be achievable. EPA has revised all of its analysis to reflect the inclusion of these ``non-dry'' HTMR facilities within the

scope of the CWT rule. However, if high temperature metals recovery operations are subject to any of the secondary metals provisions of 40 CFR 421, the Nonferrous Metals Manufacturing Point Source Category, then the provisions of this part do not apply. See Section V.Q for a list of the secondary metals subcategories.

T. Solvent Recycling/Fuel Blending

EPA studied the solvent recycling industry in the 1980s. EPA published its findings in the ``Preliminary Data Summary for the Solvent Recycling Industry'' (EPA 440/1-89/102) in September 1989 that describes this industry and its recycling processes. There, EPA has explained solvent recovery as ``the recycling of spent solvents that are not the byproduct or waste product of a manufacturing process or cleaning operation located on the same site.'' Facilities generally recycle spent solvents in two main operations. Traditional solvent recovery involves pretreatment of the wastestream (in some cases) and separation of the solvent mixtures by specially constructed distillation columns. In most cases, traditional

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solvent recovery is performed at organic chemical manufacturing facilities. As a result, wastewater discharges resulting from this process are subject to effluent limitations guidelines and standards for the organic chemicals industry (often abbreviated as OCPSF) (40 CFR part 414).

EPA is aware that there are a few facilities that accept solvents from other facilities for commercial solvent recovery operations. Some perform solvent recovery of spent or contaminated chemicals received from pharmaceutical and other chemical manufacturing companies. Some recycle spent solvents generated by parts washers and other cleaning devices operated by automotive shops, dry cleaners, and other small businesses. Because these commercial solvent recovery facilities are not located at an organic manufacturing facility, the provisions of 40 CFR 414, as written, do not apply to them.

Based on comments to the 1999 CWT proposal, EPA considered whether it should regulate commercial solvent recovery facilities under the provisions of this rule. EPA has determined, however, not to include these commercial solvent recovery operations within the scope of this rule at this time. Throughout the development of this rule, EPA has clearly stated that traditional solvent recovery operations would not be included within the scope of this rule. In developing its database to support this rule, while EPA did collect limited information on these activities, EPA intentionally excluded known solvent recoverers from its data collection activities. As such, EPA has only limited data on solvent recovery activities that are not already subject to OCPSF. It did not obtain information to characterize the wastewaters generated at such operations. Thus, EPA has no basis for determining whether or not such operations are sufficiently similar to the organic waste subcategory so that they may properly be regulated as organic wastestreams. Therefore, wastewaters resulting from traditional solvent recovery activities as defined above are not subject to these effluent guidelines.

For wastewaters associated with traditional solvent recovery activities located at organic chemical manufacturing facilities, permit writers (and local control authorities) will, of course, use the Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) guideline to establish discharge requirements. For commercial traditional solvent recovery activities (not located at an organic chemical manufacturing site), permit writers (and local control authorities) should carefully examine the wastewater to see if it also contains pollutants regulated by the OCPSF guidelines when the permit writer establishes case-by-case

limitations under NPDES regulations at 40 CFR 125.3 or the control authority establishes local limits under the General Pretreatment Regulations at 40 CFR 403.5. Permit writers or local control authorities must include technology-based limits for any toxic pollutant which is or may be discharged at a level greater than the level which can be achieved by treatment requirements appropriate to the permittee, or any pollutant which may pass through or interfere with POTW operations. (See 40 CFR 122.44(e), 125.3. See also 40 CFR 403.5).

Fuel blending is a type of solvent recovery. Fuel blending is the process of mixing wastes for the purpose of regenerating a fuel for reuse. At the time of the 1995 proposal, EPA did not include fuel-blending operations within the scope of the CWT rule because EPA believed the fuel blending process was ``dry'' (that is, no wastewaters were produced). Based on comments to the original proposal and the Notice of Data Availability and its review of data it has obtained, EPA has reconfirmed its conclusion that true fuel blenders do not generate any process wastewaters and are, therefore, zero dischargers. EPA is concerned, however, that the term ``fuel blending'' may be loosely applied to any process where recovered hydrocarbons are combined as a fuel product. Such operations occur at nearly all used oil and fuel recovery facilities.

EPA has, therefore, not included ``dry'' fuel blending operations within the scope of the CWT rule. In the event that wastewater is generated at a CWT fuel blending facility, the discharge of wastewaters associated with these operations is subject to this rule.

U. Re-Refining

When EPA initially proposed guidelines and standards for CWT facilities, the regulations would have limited discharges from used oil reprocessors/reclaimers, but did not specifically include or exclude discharges from used oil re-refiners. During review of information received on the 1995 proposal and assessment of the information collected, the Agency, at one point, considered limiting the scope of this regulation to reprocessors/reclaimers only because it was not clear whether re-refiners actually generated wastewater. However, further data gathering efforts have revealed that re-refiners may generate wastewater and that the principal sources of re-refining wastewaters are essentially the same as for reprocessors/reclaimers. Consequently, the final guidelines will apply to re-refining wastewater.

EPA studied the used oil reclamation and re-refining industry in the 1980s. In September 1989, EPA published the ``Preliminary Data Summary for the Used Oil Reclamation and Re-Refining Industry'' (EPA 440/1-89/014) that describes this industry and the processes utilized. This document generally characterizes the industry in terms of the types of equipment used to process the used oil. Minor processors (reclaimers) generally separate water and solids from the used oil using simple settling technology, primarily in-line filtering, and gravity settling with or without heat addition. Major processors (reclaimers) generally use various combinations of more sophisticated technology including screen filtration, heated settling, centrifugation, and light fraction distillation primarily to remove water. Re-refiners generally use the most sophisticated systems that include, in addition to the previous technologies, a vacuum distillation step to separate the oil into different components.

Today's final rule applies to the process wastewater discharges from used oil re-refining operations. The principal sources of wastewater include oil-water gravity separation (often accompanied by chemical/thermal emulsion breaking) and dehydration unit operations (including light distillation and the first stage of vacuum distillation). EPA has, to date, identified two re-refining facilities.

V. Used Oil Filter and Oily Absorbent Recycling

EPA did not obtain information on used oil filter or oily-absorbent (oil soaked or contaminated disposable rags, paper, or pads) recycling through the Waste Treatment Industry Questionnaire. However, in response to the September 1996 Notice of Data Availability and the 1999 proposal, EPA received comments from facilities which recycle used oil filters and oily absorbents. In addition, EPA also visited several used oil reprocessors that recycle used oil filters or oily absorbents as part of their operations.

Used oil filter and oily absorbent recycling processes range from simple crushing and draining of entrained oil to more involved processes where filters or absorbent materials are shredded and the metal and filter material are separated. Generally, the resulting used oil is recycled, the separated metal product is sold to a smelter, and the

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separated filter material is sold as a solid fuel. Based on information collected during EPA's site visits and comments on the 1999 proposal, wastewater may be generated during all phases of the recycling activity including collection activities, plant maintenance, and air pollution control. EPA notes, however, that based on its observations, many of these activities are ``dry'' and do not produce associated wastewaters. In fact, at the time of the 1999 proposal, EPA believed these activities were largely ``dry'' and requested comment on whether EPA should promulgate a zero discharge requirement for facilities performing used oil filter recovery.

As detailed above, based on comment on the proposal, EPA has learned that not all used oil filter and absorbent recycling activities are dry. Consequently, EPA has decided that it should not adopt a zero discharge requirement for these activities. Upon further examination of the comments and its database, EPA has concluded that it should include used oil filter and absorbent recovery facilities that generate a wastewater within the scope of the CWT rule. While EPA does not have data specific to used oil filter recovery on the characteristics of these wastewaters, these wastewaters are often combined with other covered CWT wastewaters for treatment. Further, since the material being recovered is primarily used oil, EPA has concluded that any resulting wastewaters will be similar (in terms of constituents and concentration) to wastewaters generated from used oil recovery. As a result, EPA has concluded that these operations should be regulated as are other centralized used oil recovery activities. Where information is available to EPA on these operations, EPA has revised its analysis to reflect the inclusion of these ``non-dry'' used oil filter and absorbent facilities within the scope of the CWT rule.

W. Grease Trap/Interceptor Wastes

EPA received comments suggesting that the scope of the CWT rule should not include grease, sand, and oil interceptor wastes. Some of these wastes are from non-industrial sources and some are from industrial sources. Some are treated at central locations designed to treat grease trap/interceptor wastes exclusively and some of these wastes are treated at traditional CWT facilities with traditional CWT wastes. Examples of the types of customers which generate these grease trap/interceptor wastes include, but are not limited to auto and truck maintenance and repair shops; auto body and parts shops; car washes; gas stations; commercial bottling facilities; food and produce distribution shops; restaurants; and tire shops.

Throughout the development of this rule, EPA has directed its

efforts to CWT operations that treat and/or recover off-site industrial wastes and not to food-related wastes. Grease trap/interceptor wastes are defined as animal or vegetable fats/oils from grease traps or interceptors generated by facilities engaged in food service activities. Such facilities include, but are not limited to restaurants, cafeterias, caterers, commercial bottling facilities, and food and distribution shops. EPA has concluded that these wastes are fundamentally different from the types of wastes examined for this rule and are outside the scope of this rule. Grease trap/interceptor wastes should not contain any hazardous chemicals or materials that would prevent the fats/oils from being recovered and recycled.

Wastewater discharges from the centralized treatment of wastes produced from oil interceptors, however, which are designed to collect petroleum-based oils, sand, etc. from industrial type processes, are a different case and EPA has determined that this wastewater is properly subject to this rule. Examples of facilities that produce oil interceptor waste include, but are not limited to, auto and truck maintenance and repair shops; auto body and parts shops; car washes; and gas stations. EPA collected data on the types and concentrations of pollutants in oil interceptor wastes through comments and EPA sampling. The data show, that like other CWT wastes, the concentration of pollutants can vary greatly from one wastestream to another. EPA's sampling data show that these materials can be very similar in nature and concentration to other wastes covered by this rule. Consequently, EPA has determined these wastes should be included within the scope of this rule.

X. Food Processing Wastes

During development of this rule, EPA did not collect information from facilities engaged in centralized waste treatment of food processing wastes. As detailed in V.W, EPA envisioned that this rule would be limited to the treatment and/or recovery of off-site industrial wastes. While food processing may be an ``industrial'' activity, these wastes do not contain heavy metals, concentrated organics, or petroleum based oils. In terms of contaminants of concern, these wastes are similar to those generated by cafeterias, restaurants, etc. Consequently, the final guidelines will not apply to animal and vegetable fats/oils wastewaters at CWT facilities, specifically those generated by food processors/manufacturers.

Y. Sanitary Wastes and/or Chemical Toilet Wastes

The provisions of the CWT rule, as previously explained, will not cover sanitary wastes (such as septage), nor will they cover chemical toilet wastes. EPA expects that permit writers and control authorities would develop BPJ limitations or local limits to establish site-specific permit requirements for any commercial sanitary waste treatment facility.

Similarly, sanitary wastes or chemical toilet wastes received from off-site and treated at an industrial facility or a CWT facility are not subject to the provisions of the CWT rule. If these wastes are mixed with industrial wastes, EPA would expect that, as is the case now with ancillary sanitary waste flows mixed for treatment at facilities subject to national effluent guidelines and standards, the permit writer would establish BPJ, site-specific permit requirements.

Z. Treatability, Research and Development, and Analytical Studies

During the initial stages of development of this rule, EPA did not envision regulation of facilities which accept off-site wastes for treatability studies, research and development, or chemical or physical analysis. As such, EPA did not attempt to collect information on these

activities. However, EPA received comment to its proposals asking that EPA clarify its coverage of these activities by this rule.

EPA has very little information on these activities. Based on comments, these activities, arguably, would fall within the definition of Centralized Waste Treatment since they accept off-site wastes. The purpose of these activities is not treatment or recovery, but rather the evaluation of different treatment techniques. Consequently, EPA has concluded that treatability, research and development or analytical activities should not be subject to provisions of the CWT rule.

Permit writers and local authorities should use their Best Professional Judgment (BPJ) and local limits authority to establish limitations and standards for these wastestreams. Under EPA's regulations, permit writers or local control authorities must include technology-based limits either for any toxic pollutant which is or may be discharged at a level greater than the level which can be achieved by treatment requirements appropriate to

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the permittee or for any pollutant which may pass through or interfere with POTW operations. (See 40 CFR 122.44(e), 125.3.) See also 40 CFR 403.5. EPA would expect that, in some cases, wastewater associated with these activities might look very much like the wastestreams regulated under this rule. In those circumstances, permit writers (and local control authorities) may want to consider the technical development document developed for the CWT guideline when the permit writer establishes case-by-case limitations under NPDES regulations at 40 CFR 125.3 or the control authority establishes local limits under the General Pretreatment Regulations at 40 CFR 403.5.

EPA notes that if a CWT facility accepts off-site wastes for treatability, research and development, or analytical activities, and commingles any resulting wastewaters with other covered wastewaters prior to discharge, these wastewaters would be subject to provisions of this rule.

VI. Subcategorization

EPA developed different limitations and standards for the CWT operations depending on the type of waste received for treatment or recovery. EPA remains convinced this is the most appropriate basis for subcategorizing the CWT industry. EPA has determined that there are four subcategories appropriate for the CWT industry:

Subcategory A: Facilities that treat or recover metal from metal-bearing waste, wastewater, or used material received from off-site (``metals subcategory'');

Subcategory B: Facilities that treat or recover oil from oily waste, wastewater, or used material received from off-site (``oils subcategory'');

Subcategory C: Facilities that treat or recover organics from organic waste, wastewater, or used material received from off-site (``organics subcategory''); and

Subcategory D: Facilities that treat or recover some combination of metal-bearing, oily, or organic waste, wastewater, or used material received from off-site (''multiple wastestream subcategory'').

For a detailed explanation of EPA's subcategorization methodology and factors considered as the basis for today's subcategorization, see the 1999 proposal (64 FR 2300-2301) and Chapter 5 of the Final Technical Development Document.

VII. Industry Description

As detailed in Section V above, the universe of CWT facilities in

the United States is broad. The development of this industry is largely a result of the adoption of the increased pollution control measures required by the CWA and RCRA. The 1999 proposal (64 FR 2293-2294) and Chapter 4 of the technical development document provide a detailed description of the development of this industry and its operation. EPA's 1999 proposal (64 FR 2301-2302) and Chapter 5 of the Final Technical Development Document also provide detailed descriptions of operations at facilities by subcategory.

EPA now estimates that there are 223 CWT facilities. Changes in the estimate of the total number of CWT facilities since the proposal reflect facilities that were included or excluded because of scope changes/clarifications. EPA is aware that CWT facilities have entered or left the centralized waste treatment market. This is expected in a service industry. Even so, EPA is comfortable that its estimate of facilities is reasonable and has not adjusted it, other than to account for scope changes/clarifications. Of these 223 CWT facilities, approximately 14 discharge directly to surface waters of the U.S., 151 discharge indirectly to POTWs, and 58 are zero or alternative dischargers. The zero or alternative discharge methods include (1) wastewater is disposed of by alternate means such as deep well injection or incineration; (2) wastewater is sent off-site for treatment, generally to another CWT; (3) wastewater is evaporated; and (4) no wastewater is generated. There are 62, 178, and 32 facilities in the metals, oils, and organics subcategories, respectively. Thirty-seven facilities accept wastes from multiple subcategories and could be subject to the multiple wastestream subcategory.

VIII. The Final Regulation

For a detailed discussion of all technology options considered in the development of today's final rule, see the proposal (64 FR 2305-2315) and Chapter 9 of the technical development document.

A. Best Practicable Control Technology (BPT)

1. Subcategory A--Metals Subcategory

EPA is establishing BPT limitations for the metals subcategory for 19 pollutants, including cyanide. The technology basis for these BPT limitations is metals option 4: primary precipitation, liquid-solid separation, secondary precipitation, clarification, and sand filtration. This is the same technology that was the basis for the 1999 proposed limitations. Under option 4, the treater varies pH levels and treatment chemicals in order to promote optimal removal of the wide range of metal pollutants found in CWT metals wastewaters. Different metals are preferentially removed with different treatment chemicals and different pH levels. Generally, BPT limitations based on option 4 will require some facilities to more carefully control their treatment systems, increase the quantities of treatment chemicals they use, perform an additional precipitation step, and add a clarification and sand filtration step. In the case of complex cyanide, metal-bearing streams, EPA's limitations require cyanide removal prior to metals treatment. EPA based the cyanide limitations on cyanide option 2 treatment, which is alkaline chlorination in a two-step process.

The Agency concluded that this treatment system represented the best practicable technology currently available and should be the basis for the BPT metals limitations for the following reasons. First, the option 4 technology is one that is readily applicable to all facilities that are treating metal-bearing wastestreams. It is based on a technology including two-stage chemical precipitation that is currently used at approximately 25 percent of the facilities in this subcategory. Second, the adoption of this level of control would represent a significant reduction in pollutants discharged into the environment by facilities in this subcategory. Option 4 would annually remove

approximately 4.1 million pounds of TSS and metals now discharged to the Nation's waters. Third, the Agency assessed the total cost of water pollution controls likely to be incurred for option 4 in relation to the effluent reduction benefits and determined these costs were reasonable--$0.40 per pound ($1997). In the 1999 proposal, EPA explained why it rejected the other options it considered for BPT. See 64 FR 2280 at 2306.

Although EPA is not changing the technology basis from that proposed, EPA is revising all of the BPT metals subcategory limitations. This is due to changes in the statistical methodology used to calculate pollutant long-term averages and limitations as detailed in Section IV.H above.

The Agency used chemical precipitation treatment technology performance data from the Metal Finishing regulation (40 CFR Part 433) to establish direct discharge limitations for TSS because the facility from which the option 4 limitations were derived is an indirect discharger and the treatment system is not necessarily designed for

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optimum removal of conventional parameters, due to the lack of stringent local limits for these parameters. EPA has concluded that the transfer of this data is appropriate given the absence of adequate treatment technology for this pollutant at the only otherwise well-operated BPT CWT facility examined by EPA. Based on a review of the data, EPA concluded that similar wastes (in terms of TSS concentrations) are being treated at both metal finishing and centralized waste treatment facilities, and that the use of the metal finishing data to derive TSS limits for this subcategory is warranted. Because the technology basis for the transferred limitations includes clarification rather than sand filtration, the Agency also included a clarification step prior to sand filtration (which the option 4 facility does not have) in the technology basis for option 4 for facilities subject to BPT. Therefore, because the technology basis for CWT is based on primary chemical precipitation, primary clarification, secondary chemical precipitation, secondary clarification, and sand filtration and the technology basis for Metal Finishing is based on primary precipitation and clarification only, EPA concluded that CWT facilities will perform similarly (or better) when treating TSS in wastes in this subcategory.

BPT limitations established by option 4 (except TSS) are based on data from a single, well-operated system. Generally, for purposes of defining BPT effluent limitations, EPA looks at the performance of the best treatment technology and calculates limitations from some level of average performance measured at facilities that employ this ``best'' treatment technology. In reviewing technologies currently in use in this subcategory, however, EPA found that facilities generally utilize a single stage chemical precipitation step--a technology which does not achieve adequate metals removals for the wastestreams observed at these operations. EPA did identify facilities that utilize additional metals wastewater treatment, generally secondary chemical precipitation, but without the final multimedia filtration step. Also, EPA found that only the BPT model facility accepts a full spectrum of waste, often with extremely high metals concentrations and provides, therefore, a suitable basis to determine the performance that a well-designed and operated system can achieve for a wide range of raw waste concentrations. Consequently, EPA is adopting BPT limitations based on performance data from this facility. For further discussion, see the 1999 proposal at 64 FR 2280-2357.

Cyanide Subset. EPA is adopting BPT limitations for the metals subcategory for cyanide bearing streams. The presence of high cyanide concentrations detrimentally affects the performance of metal precipitation processes due to the formation of metal-cyanide

complexes. Effective treatment of such wastes typically requires a cyanide destruction step prior to any metal precipitation steps. Consequently, in the case of metal streams which contain concentrated cyanide complexes, EPA based BPT limitations on an additional treatment step to destroy cyanide before metals precipitation: alkaline chlorination in a two-step process (cyanide option 2). This is the same technology that was the basis for the 1999 proposed limitations. In the first step, cyanide is oxidized to cyanate in a pH range of 9 to 11. The second step oxidizes cyanate to carbon dioxide and nitrogen at a controlled pH of 8.5.

There are several reasons supporting the selection of limitations based on cyanide option 2, as explained in detail in the 1999 proposal at 64 FR 2309. First, the facility achieving cyanide option 2 removals accepts a full spectrum of cyanide waste. Consequently, the treatment used by the cyanide option 2 facility can be readily applied to all facilities in the subset of this subcategory. Second, adoption of this level of control would represent a significant reduction in pollutants discharged into the environment by facilities in this subset. Finally, the Agency assessed the total cost for cyanide option 2 in relation to the effluent reduction benefits and determined these costs were economically reasonable.

2. Subcategory B--Oils Subcategory

The Agency is today adopting BPT limitations for the oils subcategory for 22 pollutants. The technology basis for the BPT limitations is oils option 9: emulsion breaking/gravity separation, secondary gravity separation and dissolved air flotation. This is the same technology that was the basis for the 1999 proposed limitations. EPA's data indicate that all oils treatment facilities currently utilize some form of emulsion breaking and/or gravity separation system. Secondary gravity separation involves using a series of tanks to separate the oil and water and then skimming the oily component off. The resulting water moves to the next step. The gravity separation steps are then followed by dissolved air flotation (DAF). DAF separates solid or liquid particles from a liquid phase by introducing air bubbles into the liquid phase. The bubbles attach to the particles and rise to the top of the mixture. Often, chemicals are added to increase the removal of metal constituents. BPT limitations based on this option will likely require some facilities to more carefully control their treatment systems, perform additional gravity separation steps, or install and operate a DAF system. For oils streams with relatively high concentrations of metals, these limitations will also require some facilities to use increased quantities of treatment chemicals to enhance the removal of metals.

EPA developed the final limitations for this option using sampling data from facilities both with and without the secondary gravity separation step. EPA's data show that the secondary gravity separation step may not always be necessary to meet the final limitations, depending on the level of treatment in the initial gravity-separation/ emulsion-breaking step. EPA's data show there is a wide range of pollutants being discharged from this initial treatment step. EPA concluded that if many of the facilities optimize treatment at this level, the secondary gravity separation step may not be required. However, EPA estimated the costs to comply with the limitations with the secondary gravity separation step included to ensure this technology option's economic achievability.

The Agency is today adopting BPT limitations for the oils subcategory based on Option 9, emulsion breaking/gravity separation, secondary gravity separation and dissolved air flotation for two reasons. First, the adoption of this level of control would represent a significant reduction in pollutants discharged into the environment by facilities in this subcategory. Second, the Agency assessed the total costs of water pollution controls likely to be incurred for this option in relation to the effluent reduction benefits and determined these

costs were reasonable at $0.63/lb ($1997). In the 1999 proposal, EPA explained why it rejected the other options it considered for BPT for this subcategory. See 64 FR 2280 at 2309-11.

EPA believes it is important to note that BPT limitations for conventional parameters established by Option 9 are based on data from a single, well-operated, indirect-discharging system. Generally, for purposes of defining BPT effluent limitations, EPA looks at the performance of the best treatment technology and calculates limitations from some level of average performance measured at facilities that employ this ``best'' treatment technology. The

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facilities sampled as the technology basis for this subcategory, however, were not required to optimize their oil and grease or TSS removals because they discharge to POTWs. Current POTW/local permit limitations for oil and grease in this subcategory range from 100 mg/L to 2,000 mg/L and for TSS from 250 mg/L to 10,000 mg/L. Many have no oil and grease or TSS limits at all. EPA concluded that only one of the systems in this subcategory for which EPA has data was designed to remove oil and grease and TSS effectively. EPA concluded that the oil and grease and TSS removals are uniformly inadequate at the other facilities included in the BPT limitations calculations for other parameters. Consequently, EPA based the oil and grease and TSS limitations on data from a single facility.

3. Subcategory C--Organics Subcategory

The Agency is today adopting BPT limitations for the organics subcategory for 17 pollutants. The technology basis for the BPT limitations is organics option 4: equalization and biological treatment. Biological treatment for this option is in the form of a sequential batch reactor. This is the same technology that was the basis for the 1999 proposed limitations. The preamble to the proposal provided further explanation of EPA's decision (64 FR 2311-12).

The Agency concluded that this treatment system represented the best practicable technology currently available and should be the basis for the BPT organics limitations for several reasons. The technology is already used at the four direct discharging facilities that treat organic wastes and results in the removal of 28,700 lbs annually of conventional pollutants (at baseline). Moreover, because the treatment is in place, the cost of compliance with the limitations will obviously be reasonable.

Unlike the other BPT limitations adopted today, the adoption of limitations based on option 4 will not, in all probability, result in any significant change in the quantity of pollutants discharged into the environment by facilities in this subcategory. As noted, EPA's data suggests that all direct discharging facilities in this subcategory currently employ equalization and biological treatment systems, and EPA assumed that all those facilities will be able to meet the BPT limitations without additional capital or operating costs. If any facilities were to incur increased operating costs associated with the limits, EPA concluded these increases are negligible and has not quantified them. Many of these facilities are not currently required to monitor for organic parameters or are only required to monitor a couple of times a year. Thus, the estimated costs for complying with BPT limitations for this subcategory are associated with additional monitoring only. The Agency determined the additional monitoring is warranted, and will promote more effective and consistent treatment at these facilities. In the 1999 proposal, EPA explained why it rejected the other options it considered for BPT for this subcategory. See 64 FR 2280 at 2311-12.

The selected BPT option is based on the performance of a single indirect discharging facility. While EPA identified four direct discharging organics subcategory facilities that utilize biological

treatment, EPA did not use data from these facilities to establish limitations because they commingle organics subcategory wastewaters with other CWT subcategory wastewaters or wastewaters subject to other national effluent guidelines and standards. Many facilities that are treating wastes that will be subject to effluent limitations for the organics subcategory also operate other industrial processes that generate much larger amounts of wastewater than the quantity of off-site generated organic waste receipts. The off-site generated organic waste receipts are directly mixed with the wastewater from the other industrial processes for treatment. Therefore, identifying facilities to sample for limitations development was difficult because the waste received for treatment and treatment unit effectiveness could not be properly characterized for off-site generated waste. The treatment system on which EPA based option 4 was one of the few facilities identified which treated organic waste receipts separately from other on-site industrial wastewater.

The Agency used biological treatment performance data from the Thermosetting Resin Subcategory of the OCPSF regulation to establish direct discharge limitations for BOD5 and TSS because the facility from which Option 4 limitations were derived is an indirect discharger and the treatment system is not operated to effectively remove conventional pollutants. EPA has concluded that the transfer of this data is appropriate given the absence of adequate treatment technology for these pollutants at the only otherwise well-operated BPT CWT facility in this subcategory that the Agency was able to evaluate. Moreover, EPA concluded that the biological treatment systems at CWT facilities will perform similarly to those at OCPSF facilities. EPA based this conclusion on its review of the NPDES permits for the four direct discharging facilities in this subcategory. Two of these facilities are located at manufacturing facilities that commingle their wastewater for treatment and are already subject to OCPSF. The other two facilities have conventional pollutant limits which are lower than those adopted today. EPA has concluded that all of these facilities should be able to comply with the transferred limitations without incurring additional costs. Likewise, EPA has not estimated any additional pollutant removals associated with this data transfer.

4. Subcategory D--Multiple Wastestream Subcategory

The Agency is today adopting BPT limitations for the multiple wastestream subcategory for up to 38 pollutants. EPA developed four sets of limitations for each of the possible combinations of the three subcategories of wastestreams: oils and metals, oils and organics, metals and organics, and oils, metals and organics. The multiple wastestream subcategory limitations were derived by combining BPT pollutant limitations from up to all three subcategories selecting the most stringent values where they overlap.\3\ Therefore, the technology basis for the multiple wastestream subcategory limitations reflects the technology basis for the applicable subcategories as detailed in VIII.A.1-3.

\3\ EPA selected the most stringent maximum monthly average limitations and its corresponding maximum daily limitation.

As detailed in IV.F, multiple wastestream subcategory limitations are only available to CWT facilities which accept waste in multiple subcategories. These facilities must certify as well as demonstrate that their treatment system obtains equivalent removals to those which are the basis for the separate subcategory limits. The multiple wastestream subcategory allows the facility to monitor for compliance just prior to discharge rather than directly following treatment of a each subcategory's wastestream. For multiple subcategory facilities, this option simplifies implementation and reduces monitoring costs. EPA

has, however, estimated additional burden associated with the certification process in ``National Pollutant Discharge Elimination System (NPDES)/Compliance Assessment/Certification Information'' ICR (No.1427.05) for direct dischargers and ``National Pretreatment Program (40 CFR part 403)'' ICR (No. 0002.08) for indirect dischargers.

EPA has determined these limitations are also best practicable technology

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limitations for facilities that operate in one or more CWT categories for the following reasons. EPA has concluded that, for multiple subcategory facilities, the limitations adopted in this subcategory in combination with the certification process will provide pollutant removals equal to or greater than those projected if the facility elects to comply with the individual subcategory limitations. Further, analysis shows that the costs for multi-subcategory facilities to comply with the multiple wastestream subcategory limitations are generally equal to or less than the costs associated with complying with each applicable subcategory's limitations individually. Because EPA determined that costs of complying with the individual subcategory limits are achievable and costs of complying with the multiple subcategory limits are no greater, EPA concluded that the multiple subcategory wastestream limits are economically achievable.

B. Best Conventional Pollutant Control Technology (BCT)

In today's rule, EPA adopts BCT limitations equivalent to BPT for all subcategories. In deciding whether to adopt different BCT limits, EPA considered whether there are technologies that achieve greater removals of conventional pollutants than adopted for BPT, and whether those technologies are cost-reasonable under the standards established by the CWA, and implemented through regulation. EPA generally refers to the decision criteria as the ``BCT Cost Test.'' For all four subcategories, EPA identified no technologies that can achieve greater removals of conventional pollutants than those that are the basis for BPT that are also cost-reasonable under the BCT Cost Test. Accordingly, EPA is adopting BCT effluent limitations equal to the BPT effluent limitations. For additional information on the results of the BCT Cost Test, refer to Section X.F.

C. Best Available Technology Economically Achievable (BAT)

EPA today is adopting BAT effluent limitations for all subcategories of the CWT industry based on the same technologies selected as the basis for BPT for each subcategory. The BAT limitations are the same as the BPT limitations for priority and non-conventional pollutants. As described in the BPT discussion, in general, the adoption of this level of control will represent a significant reduction in pollutants discharged into the environment by facilities in this industry. Additionally, EPA has evaluated the economic impacts associated with compliance and found the technologies to be economically achievable. The economic analysis is discussed in Section X.G.

With the exception of the metals subcategory, EPA has not identified any more stringent treatment technology option different from those evaluated for BPT that might represent best available technology economically achievable for this industry.

For the metals subcategory, EPA did consider as BAT technology a treatment technology that it had evaluated for the 1999 proposal, option 3, based on the use of selective metals precipitation. However, as detailed in the proposal (64 FR 2307-2308, 2312), there is little additional toxic removal associated with option 3 while the costs to

the industry for are four times greater than the cost of the BPT option, option.\4\

\4\ EPA's data show that option 3 would remove approximately 6% more additional toxic pound-equivalents than option 4.

EPA has concluded that it should not adopt BAT limitations based on Option 3 for several reasons. First, the option 3 technology may not be the best ``available'' technology for existing metals subcategory facilities because physical constraints may prevent its use at certain facilities. Currently, only one facility in the metals subcategory is employing selective metals precipitation, which requires the separation and holding of wastestreams in numerous treatment tanks. EPA is aware that some facilities do not have, and may not be able to obtain, sufficient space to install the additional treatment tanks that would be needed for selective metals precipitation. Second, while the removals associated with option 4 are not as great as those calculated for option 3, achievement of limitations based on the option 4 technology will still represent a significant advance in removals for the industry over those obtained from conventional precipitation technology. Given these factors, EPA has concluded it should adopt BAT limitations based on the option 4 technology.

For the oils and organics subcategories, as detailed in the proposal (64 FR 2312-2313), EPA has evaluated treatment technologies for BAT limitations, which theoretically should provide greater removal of pollutants of concern. For example, EPA identified an add-on treatment technology to technologies considered for BPT--carbon adsorption--that should have further increased removals of pollutants of concern. However, EPA's data show increases rather than decreases in concentrations of specific pollutants of concern. EPA has found that the treatment performance of activated carbon is sometimes unreliable due to the competitive adsorption and desorption of pollutants that have different affinities for adsorption on activated carbon. Also, pH changes of the wastewater going through the carbon adsorption system may cause stable metal complexes to dissolve and thus cause an increase in some metal concentrations through the adsorption system. Consequently, EPA is not adopting BAT limitations based on this technology.

D. New Source Performance Standards (NSPS)

As previously noted, under Section 306 of the Act, EPA must propose and promulgate Federal standards of performance of for categories of new sources. Section 306(e) provides that, after the effective date of the standards of performance, the owner or operator of a new source may not operate the source in violation of any applicable standard of performance. The statute defines ``standard of performance'' as a standard for the control of the discharge of pollutants which reflects the greatest degree of effluent reduction achievable through application of the best available demonstrated control technologies, processes, operating methods or other alternatives, including, where practicable, a standard permitting no discharge of pollutants. See Section 306(a)(1) of the CWA, 33 U.S.C. 1316(a)(1). Congress envisioned that new treatment systems could meet tighter controls than existing sources because of the opportunity to incorporate the most efficient processes and treatment systems into plant design. See general discussion of legislative history in American Iron and Steel Institute v. EPA, 526 F.2d 1027, 1057-59 (3rd Cir. 1975). In establishing these standards, Congress directed EPA to consider the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements. As the legislative history of the CWA makes clear,

consideration of cost in establishing new source standards is given less weight than in establishing BAT limitations because pollution control alternatives are available to new sources that would not be available to existing sources. See Legis. Hist. (Sen. Muskie statement of House-Senate Conference Report on 1972 Act).

For the oils and the organics subcategory, EPA is promulgating NSPS that would control the same

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conventional, priority, and non-conventional pollutants as the BPT effluent limitations. The technologies used to control pollutants at existing facilities are fully applicable to new facilities. Therefore, EPA is promulgating NSPS oils and organics subcategory limitations that are identical to BPT/BCT/BAT.

For the metals subcategory, however, EPA is promulgating NSPS effluent limitations based on a technology which is different from that used to establish BPT/BCT/BAT limitations. EPA is promulgating NSPS for the metals subcategory based on the NSPS technology proposed in 1999--selective metals precipitation, liquid-solid separation, secondary precipitation, liquid-solid separation, and tertiary precipitation and clarification. This technology (option 3) provides the most stringent controls attainable through the application of demonstrated technology. EPA has concluded that this technology is the best demonstrated controlled technology for removing metals from the metal wastestreams typically treated in the CWT industry. Additionally, EPA has concluded that there is no barrier to entry for new sources to install, operate, and maintain treatment systems that will achieve discharge levels associated with these option 3 technologies. See X.I for a more detailed discussion of EPA's barrier to entry analysis.

An additional critical factor in EPA's decision is that new facilities will not face the same constraints on using selective metals precipitation that existing facilities may. Thus, new facilities in configuring their operation will have the opportunity to provide sufficient space to operate the multiple tanks associated with the option 3 technology.

EPA's determination to establish new source limitations based on option 3 is also tied to its conclusion that facilities using this technology have the technical capability to recover and reuse metals, whereas facilities employing technologies to comply with option 4 limitations do not generally have the capability to reuse the metals and will dispose of metal-bearing sludges in landfills. EPA's analysis shows that in the event that a new facility elects to recover and re-use metals rather than simply treating the wastes, the start-up costs for the option 3 technology may actually be less than the start-up costs for the option 4 technology. This is because of the significant reduction in RCRA permitting costs associated with recycling activities versus wastewater treatment activities. Furthermore, EPA has examined the market for re-use of metals and has concluded that these markets exist. Consequently, EPA has concluded that metals re-use with option 3 is viable. As such, this technology selection promotes the objectives of both the Clean Water Act and the Pollution Prevention Act. While EPA has concluded there is no barrier to entry associated with the option 3 technology, EPA recognizes that a CWT metals recycling facility will be required to be somewhat more selective about the waste receipts it accepts than a CWT treatment facility. However, EPA's data show that the vast majority of metal-bearing wastewaters accepted at CWT facilities are not dilute. In EPA's view, this is because generating facilities elect to treat dilute metal-bearing wastestreams on-site because of the ease in treating these wastes and the costs associated with the transport and treatment of these dilute wastes off-site. Also, there is a large amount of capacity available at existing CWT metals subcategory facilities. Consequently, EPA has concluded that existing

CWT metals subcategory facilities already provide adequate capacity for dilute metal-bearing wastestreams in the event that the frequency of dilute wastes being transferred off-site for treatment increases. Finally, EPA notes that new CWT metals subcategory facilities are not required to install the option 3 technology or to recover metals. However, EPA's economic analyses show that new sources should carefully consider recycling as an alternative to wastewater treatment.

The Agency used performance data from the CWT metals subcategory BAT limitations data set to promulgate NSPS limitations for oil and grease because the facility from which the NSPS limitations were derived did not have oil and grease in its influent at treatable levels during EPA's sampling episodes. EPA has concluded that transfer of this data is appropriate given that the technology basis for NSPS includes selective metals precipitation and an additional precipitation step. As such, EPA has every reason to conclude that facilities employing the NSPS technology could achieve the limitations, given the fact that the oil and grease limitations are based on performance at a facility employing fewer treatment steps.

As was the case for BPT/BAT, the technology basis for the multiple wastestream subcategory new source limitations reflects the technology basis for the applicable subcategories.

E. Pretreatment Standards for Existing Sources (PSES)

Section 307(b) of the Clean Water Act requires EPA to promulgate pretreatment standards for pollutants that are not susceptible to treatment by POTWs or which would interfere with the operation of POTWs. EPA looks at a number of factors in deciding whether a pollutant is not susceptible to treatment at a POTW or would interfere with POTW operations--the predicate to establishment of pretreatment standards. First, EPA assesses the pollutant removals achieved by directly discharging CWT facilities using BAT treatment. Second, for CWT facilities that are indirect dischargers, EPA estimates the quantity of pollutants likely to be discharged to receiving waters after POTW removals. Third, EPA studies whether any of the pollutants introduced to POTWs by CWT facilities interfere with or are otherwise incompatible with POTW operations. In some cases, EPA also looks at the costs, other economic impacts, likely effluent reduction benefits, and treatment systems currently in-place at CWT facilities.

As noted above, among the factors EPA considers before establishing pretreatment standards is whether the pollutants discharged by an industry pass through a POTW or interfere with the POTW operation or sludge disposal practices. One of the tools traditionally used by EPA in evaluating whether pollutants pass through a POTW, is a comparison of the percentage of a pollutant removed by POTWs with the percentage of the pollutant removed by discharging facilities applying BAT. In most cases, EPA has concluded that a pollutant passes through the POTW when the median percentage removed nationwide by representative POTWs (those meeting secondary treatment requirements) is less than the median percentage removed by facilities complying with BAT effluent limitations guidelines for that pollutant. For a full explanation of how EPA performs its removal analysis, see Chapter 7 of the Technical Development Document. Based on EPA's evaluation of pass-through potential, 16 of the 19 BAT pollutants regulated by the metals subcategory, 14 of the 22 BAT pollutants regulated by the oils subcategory, 5 of the 17 BAT pollutants regulated by the organics subcategory, and up to 27 of the 38 potential BAT pollutants regulated by the multiple wastestream subcategory would pass through. EPA has accordingly adopted PSES for these pollutants. The BAT pollutants in each subcategory that were determined to pass-through are listed in Tables 7-6 through 7-8 in the TDD.

For the metal and organics subcategories, the Agency today is promulgating pretreatment standards for

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existing sources (PSES) based on the same technologies as adopted for BPT and BAT.\5\ EPA has determined that the technology that forms the basis for PSES for this final rule is economically achievable for both subcategories. These standards will apply to existing facilities in the metals and organics subcategories of the CWT industry that introduce wastewater to publicly-owned treatment works (POTWs). These standards will prevent pass-through of pollutants from POTWs into receiving streams and also help control contamination of POTW sludge. Today's pretreatment standards represent a national baseline for treatment of CWT wastewaters. Local authorities may establish stricter limitations (based on site-specific water quality concerns or other local factors) where necessary.

\5\ For the metals subcategory, the technology basis for PSES does not include the second clarification step since this step was only included to meet the transferred TSS limitations that apply to direct dischargers only.

For the oils subcategory, EPA proposed to base PSES on option 8 even though option 9 (the BAT technology) achieved greater removals. Option 8 is the same technology as option 9, but does not include the secondary gravity separation step. At that time, the economic analysis showed that the additional costs associated with option 9 resulted in higher economic impacts for the subcategory. In particular, EPA expressed concerns about the economic impacts of the more expensive technology for small businesses in the oils subcategory. Furthermore, EPA estimated that pollutant removals (in pound-equivalents) for option 9 were only one percent higher than the removals for option 8.

Following proposal, EPA finalized its estimates of costs, loadings reductions, and economic impacts, and then re-examined its technology selection for PSES in the oils subcategory. As part of this examination, EPA carefully considered the impacts of both option 8 and option 9 and the differences between them. EPA also looked at subsets of the oils facilities, including the set of small businesses. Based on an evaluation of all factors, EPA has not changed the technology basis from the 1999 proposal and today sets PSES standards for the oils subcategory based on option 8.

The Agency's economic analysis is discussed in detail in Section X of this preamble and Chapter 5 of the final EA. Briefly, in evaluating economic impacts, EPA looks at a variety of impacts to facilities and firms (in particular, small businesses). For this industry, EPA determined that the most relevant economic impacts are on CWT processes and facilities. Waste industries such as the CWT industry are difficult to model economically; EPA's first attempts to model CWT operations as part of a larger facility greatly overestimated closures (see Section 7.2 of the 1995 EA and 64 FR 2326). EPA therefore decided to examine the impacts on the CWT operations and, in particular, the profitability of individual CWT processes and facilities (note that a CWT ``facility'' is all of the CWT processes at a given facility and does not include the non-CWT operations at a given facility).

EPA estimates that option 8 will cost $8.2 million per year while option 9 would cost $11.9 million per year. As discussed in Section X.H, based on these costs EPA projects 10 process closures (4.7 percent of indirect oils processes) and 12 facility closures (9.4 percent of indirect oils facilities) associated with option 8. EPA projects 15 process closures (7.0 percent of indirect oils processes) and 12 facility closures associated with option 9. The incremental economic impact of option 9 relative to option 8 for oils indirect dischargers

is thus five process closures. For small businesses, however, EPA projects two process closures (2.1 percent of indirect oils processes owned by small businesses) and eight facility closures (14.0 percent of indirect oils facilities owned by small businesses) for option 8. EPA projects seven process closures (7.4 percent of indirect oils processes owned by small businesses) and eight facility closures for option 9. Thus, small businesses represent a significant share of facility closures and all of the additional process closures associated with moving from option 8 to option 9. However, EPA estimates lower additional pollutant removals between option 8 and option 9 than estimated in 1999. Today, EPA estimates an incremental pollutant reduction of only 2,644 pound-equivalents between option 8 and option 9, compared to 3,658 pound equivalents estimated at the 1999 proposal (see Section IV.J for a discussion of changes in estimated pollutant reductions). EPA has determined that achieving these slight additional pound-equivalent removals does not warrant imposition of the additional cost and impacts of option 9. All of these reasons support the selection of option 8 as the PSES technology basis. Therefore, EPA is promulgating PSES standards for the oils subcategory technology based on option 8.

In determining economic achievability for indirect dischargers in the oils subcategory, EPA acknowledges that its estimates of the impacts are not trivial (e.g., an almost 10% facility closure rate). However, EPA has determined that the standards are economically achievable for the oils subcategory as a whole. EPA has concluded that, in the circumstances of this industry, the costs reflect appropriate levels for PSES control for a number of reasons. First, costs are high because a significant number of facilities in the oils subcategory will require major upgrades to their in-place treatment. The information collected for this rulemaking shows that many of the facilities with the larger impacts have little effective treatment in place. Second, this rule represents the first time EPA has established limitations and standards for this industry, so some economic impact may be expected. (American Iron and Steel Institute v. EPA, 526 F.2d 1027,1052 (3rd Cir. 1975)).

As was the case for BPT/BAT, the technology basis for pretreatment standards for the multiple wastestream subcategory reflect the technology bases for the applicable subcategories.

F. Pretreatment Standards for New Sources (PSNS)

EPA is today establishing pretreatment standards for new sources that are equal to NSPS for priority and non-conventional pollutants for the oils and organics subcategories. Since the pass-through analysis remains unchanged, for these subcategories, the Agency is establishing PSNS for the same priority and non-conventional pollutants as are being established for PSES. EPA considered the cost of the PSNS technology for new oils and organics facilities. EPA concluded that such costs are not so great as to present a barrier to entry, as demonstrated by the fact that currently operating facilities are using these technologies. The Agency considered energy requirements and other non-water quality environmental impacts and found no basis for any different standards than the selected PSNS.

For the metals subcategory, however, EPA is establishing PSNS based on a different technology than that proposed in 1999. At that time, EPA proposed to base PSNS on the option 3 technology. For the final rule, however, EPA based the pretreatment standards for new sources on the option 4 technology. EPA concluded the additional removals projected with the option 3 technology for indirect dischargers do not justify the selection of option 3. This is because, unlike in the case of direct dischargers, a significant share of the additional pollutant removals associated

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with option 3 for indirect dischargers will occur at the POTW anyway.

As was the case for PSES, the technology basis for the multiple wastestream subcategory new source limitations reflects the technology basis for the applicable subcategories.

IX. Compliance Cost and Pollutant Reduction Estimates

A. Regulatory Costs

The Agency estimated the cost for CWT facilities to achieve each of the effluent limitations and standards promulgated today. Chapter 11 of the Final Technical Development Document provides information on the methodologies used to estimate these costs. More detailed information, including the cost curves for all treatment technologies considered as the basis for today's rule, are located in the ``Detailed Costing Document for Final Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry.'' This section summarizes these estimated costs. All cost estimates in this section are expressed in terms of 1997 dollars. The cost components reported in this section represent estimates of the investment cost of purchasing and installing equipment, the annual operating and maintenance costs associated with that equipment, land costs associated with equipment, and additional costs for discharge monitoring.

1. BPT Costs

Table IX.B-1 summarizes, by subcategory, the total capital expenditures, and annual O&M costs for implementing BPT (on a pre-tax, annualized basis). The total capital expenditures for BPT are estimated to be $5.32 million with annual O&M costs of $3.75 million.

Table IX.B-1.--Cost of Implementing BPT Regulati
[In 1997 dollars]

Subcategory	Number of facilities \1\	Total capita and land cost
Metals Treatment and Recovery.....	9	4,069,60
Oils Treatment and Recovery.....	5	1,168,10
Organics Treatment.....	4	80,00
Multiple wastestream Subcategory \2\.....	3	1,836,20
Total for All Subcategories \3\.....	14	5,317,70

\1\ There are 14 direct dischargers. Because some direct dischargers include op subcategory, the sum of the facilities with operations in any one subcategory facilities.

\2\ This estimate assumes that all facilities that accept waste in multiple sub the single Subcategory limitations.

\3\ This total assumes that all facilities that accept waste in multiple subcat set of limitations separately.

2. BCT/BAT Costs

The costs of compliance for implementing BCT/BAT are identical to the cost of compliance with BPT because the technology used to develop BCT/BAT limitations is identical to BPT.

3. PSES Costs

The Agency estimated the cost for implementing PSES applying the same assumptions and methodology used to estimate the cost of implementing BPT. Table IX.B-2 summarizes, by subcategory, the capital expenditures and annual O&M costs for implementing PSES. The total capital expenditures for PSES are estimated to be $52.6 million with annual O&M costs of $25.5 million.

Table IX.B-2.--Cost of Implementing PSES Regulat
[In 1997 dollars]

Subcategory	Number of facilities \1\	Total capita and land cost
Metals Treatment and Recovery.....	44	11,111,10
Oils Treatment and Recovery.....	127	23,834,00
Organics Treatment.....	16	17,709,20
Multiple wastestream Subcategory \2\.....	24	44,576,10
Total for All Subcategories \3\.....	151	52,654,30

\1\ There are 151 indirect dischargers. Because some indirect dischargers inclu subcategory, the sum of the facilities with operations in any one subcategory facilities.
\2\ This estimate assumes that all facilities that accept waste in multiple sub the single waste subcategory limitations.
\3\ This total assumes that all facilities that accept waste in multiple subcat set of limitations separately.

B. Pollutant Reductions

The Agency estimated pollutant reductions for CWT activities achieving each of the effluent limitations and standards promulgated today. This section summarizes these estimated reductions and Chapter 12 of the technical development document discusses the methodology in detail. For multiple subcategory facilities, EPA estimated pollutant reductions assuming facilities will elect to comply with each subcategory's limitations separately. Table IX.C-1 summarizes, by subcategory, the reduction in discharge of pollutants for implementing BPT/BAT. For multiple subcategory facilities which elect to comply with the multiple wastestream subcategory limitations, EPA estimates pollutant removals will be equal to or greater than those presented here.

1. Conventional Pollutant Reductions

The Agency estimates that this regulation will reduce BOD5 discharges by approximately 5.0 million pounds per year, TSS discharges by approximately 4.4 million pounds per year, and oil and grease discharges by

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approximately 0.3 million pounds per year.

2. Priority and Non-Conventional Pollutant Reductions

Today's rule will reduce discharges of priority and non-conventional pollutants. Because EPA has promulgated BAT limitations equivalent to BPT, EPA estimates pollutant reductions associated with BPT and BAT will be equal.

a. Direct Discharge Facilities (BPT/BAT). The estimated reductions in priority and non-conventional pollutants directly discharged in treated final effluent resulting from implementation of BPT/BAT are listed in Table IX.C-1. The Agency estimates that promulgated BPT/BAT regulations will reduce direct discharges of priority and non-conventional pollutants by approximately 2.7 million pounds per year.

Table IX.C-1--Reduction in Direct Discharge of Priority and Non-Conventional P
BPT/BAT Regulations

Subcategory	Priority metal and organics compounds lbs/	Non-priority metal and organic compounds lbs

	year	year
Metals Treatment and Recovery.....	981,200	1,708,60
Oils Treatment and Recovery.....	2,100	23,10
Organics Treatment 1.....	0	
Total Removals for all Subcategories.....	983,300	1,731,70

1 EPA estimates there will be no additional removal of organic compounds for th all facilities had the treatment-in-place for removal of organic compounds.

b. PSES Effluent Discharges to POTWs. Table IX.C-2 lists the estimated reductions in priority and non-conventional pollutants indirectly discharged to POTWs resulting from implementation of PSES. The Agency estimates that promulgated PSES regulations will reduce indirect facility discharge to POTWs by 1.9 million pounds per year. These figures are not adjusted for pollutant removals expected from POTWs, and thus do not reflect reductions in discharges to waters of the U.S. Estimated reductions in pollutants discharged indirectly to surface waters are provided on a subcategory basis in Tables 12-10 through 12-13 of the technical development document.

Table IX.C-2--Reduction in Discharges to POTWs of Priority and Non-Conventiona of PSES Regulations

Subcategory	Priority metal and organics compounds lbs/ year	Non-priority metal and organic compounds lbs year
Metals Treatment and Recovery.....	61,897	419,66
Oils Treatment and Recovery.....	82,359	752,42
Organics Treatment.....	163,664	447,62
Total Removals for All Subcategories.....	307,920	1,619,71

X. Economic Analyses

A. Introduction

EPA's economic analysis for this regulation assesses the costs and a variety of impacts. The record for the final rule contains the detailed results of this analysis. This section reviews that analysis. A report titled ``Economic Analysis of Final Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry'' (hereinafter ``final EA'') summarizes the results of that assessment. The EA estimates the economic and financial costs of compliance with the final regulation on individual process lines, facilities and companies. The EA also considers impacts on new sources. Community impacts, foreign trade impacts, market impacts, and an ``environmental justice'' analysis are also presented there. The EA also includes a Regulatory Flexibility Analysis detailing the effects on small CWT businesses. The results of a cost-effectiveness analysis are in a report titled ``Cost-Effectiveness Analysis of Final Effluent Limitations Guidelines and Standards for the CWT Industry.'' EPA has used the same methodology for estimating compliance costs and impacts of the final rule as it used for the 1999 proposal except for adjustments to costs discussed under section IV.I above.

B. Annualized Compliance Cost Estimate

As discussed previously, EPA identified 223 CWT facilities, including 14 direct dischargers, 151 indirect dischargers, and 58 zero discharge facilities. EPA calculated the economic impact on each of the facilities based on the cost of compliance using the selected technology basis for the final limitations and standards. For direct dischargers, EPA calculated impacts for compliance with the selected BPT/BCT/BAT; for indirect dischargers, EPA calculated impacts for compliance with PSES. As detailed previously in Section VIII, EPA based the final limitations on metals option 4, oils option 9, and organics option 4 and the final standards on metals option 4, oils

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option 8, and organics option 4. EPA conservatively assigned costs to a facility with processes in multiple subcategories for meeting the limits or standards in each subcategory although an alternative costing scheme was also applied.

The technologies that are the basis for today's final rule are estimated to have a total pre-tax annualized cost of $35.1 million (unlike the costs presented in Section IX.B, these costs are annualized to represent the yearly cost of compliance). Table X.B-1 presents the total annualized costs for BPT/BCT/BAT and PSES in 1997 dollars for the entire CWT industry. This table differentiates between pre-tax annualized costs and post-tax annualized costs. The pre-tax annualized costs are the engineering estimates of annualized control costs, but the post-tax costs more accurately reflect the costs businesses will incur. For that reason, post-tax costs are used in the economic impact analysis. Pre-tax costs, however, more accurately reflect the total cost to society of the rule and are used in the cost-effectiveness analysis and elsewhere.

Table X.B-1--Total Annualized Costs
($1997)

	Pre-tax costs ($ million)	Post-tax costs ($ million)
BPT/BCT/BAT Costs (Direct Dischargers).....	4.31	2.68
PSES Costs (Indirect Dischargers).....	30.8	17.1
Total Costs.....	35.1	19.8

C. Economic Description of the CWT Industry and Baseline Conditions

The 1999 proposal and Chapter 2 of the Final EA detail the current economic conditions in the industry and the data sources used in determining these conditions. This section updates the information presented at the time of the 1999 proposal.

EPA now estimates that there are 223 CWT facilities. EPA includes 211 CWT facilities in its economic baseline,\6\ 207 facilities are commercial, accepting waste generated by other facilities and/or generators for treatment and/or recovery for a fee. Three facilities are non-commercial facilities that accept waste from off-site for treatment and/or recovery exclusively from facilities under the same ownership, and one is owned by the Federal government and is treated as noncommercial. Some facilities perform both commercial and non-commercial operations. For the purposes of this analysis, a facility's commercial status refers only to the operations subject to today's final rule and not other operations at that facility. That is, a facility that performs non-commercial CWT operations along with other non-CWT commercial operations would still be considered a non-

commercial facility.

\6\ Twelve zero dischargers were identified after proposal for which EPA does not have adequate data to perform modeling. They are therefore not included in the economic baseline.

The 167 companies owning CWT facilities range from large, multi-facility companies to small companies that operate only a single facility. Company-level sales information is available or estimated for 208 facilities. Company level profit information is available for 144 facilities. One hundred and nine companies own these 144 facilities. EPA currently estimates that 82 companies owning CWT facilities (including zero discharge facilities) are small businesses (for the purposes of this analysis, EPA has defined small businesses as companies with less than $6 million in annual revenues--see Section X.M). Sixty-three small companies own two direct discharging facilities and 61 indirect discharging facilities.

D. Economic Impact and Closure Methodology

1. Overview of Economic Impact Methodology

There are no differences between the economic methodology used for the 1999 proposal and the current methodology. Standard economic and financial analysis methods are used to assess the economic effects of the proposed regulation. These methods incorporate an integrated view of CWT facilities, the companies that own these facilities, the markets the facilities serve, and the communities where they are located.

CWT facilities are divided into two groups: commercial (those that charge a fee for their services) and noncommercial (those that handle intra-company waste). Impacts on commercial CWT facilities are estimated based on the results of a market model that allows facilities to adjust operations in response to changes in operating costs. The market model predicts adjustments in market prices and quantities and facility-level changes in revenues and employment. (EPA also performed sensitivity analysis in which prices do not adjust.) After the markets and facilities have responded to the regulation, facilities are assumed to close CWT treatment operations (or processes) for which operating costs (including compliance costs) exceed operating revenues. Because non-commercial CWT facilities do not operate in the markets defined by the model, impacts on these facilities are estimated at the company level, assuming that the firm must absorb the full cost of compliance. For a detailed description of the economic methodology see the 1999 proposal (64 FR 2324) and Chapter 5 of the Final EA.

In the economic analysis, EPA examines impacts on commercial CWT facilities in terms of closures, but focuses on potential closures of CWT processes by examining the costs and revenues of each waste treatment or recovery operation with the regulation in effect. (This isolates the analysis to examine only CWT operations and not overall facility operations). If with-regulation costs of the operation exceed revenues, then the model predicts (assumes) that the operation shuts down. This is called a ``process closure.'' If all the CWT treatment processes at a facility are estimated to shut down, this is called a ``facility closure.'' This does not mean that if a CWT facility with other non-CWT operations experiences a facility closure that the entire facility shuts down; other operations at a facility are not included in the economic modeling, only CWT operations. Employment losses are calculated from process closures, facility closures, and from reductions in waste treated by process lines that do not close. In all cases, the reduction in employment is calculated as a percentage decrease of the facility's total CWT employment proportionate to the percentage reduction in waste treated (this does not account for any

possible increases in employment due to the regulations).

EPA notes that its model for the 1999 proposal and the final rule, unlike the market model used for the 1995 proposal, does not assume that wastewater from processes or facilities that close will be transferred to another facility in the market. Although the model assumes the price increase caused by increased compliance costs forces the total quantity of waste treated in the market to decline (the amount of this decline is governed by the elasticity of demand for a market), some of the waste previously treated at a facility that closes will be treated at other facilities. By assuming that all changes in quantity occur at the highest-priced facilities and that waste is not sent to other facilities, EPA is assuming an all-or-nothing impact. The model may overstate impacts at those facilities that could

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accept waste from another facility that closes. Conversely, the model may understate impacts at those facilities that cannot raise their price as much as projected. (EPA solicited comments on this issue and on appropriate ways to model this transfer but received none, so no changes were made to the methodology.)

Changes in facility revenues and costs result in changes in the revenues and costs of the companies owning the facilities, and thus changes in company profits. Increased borrowing and changes in the assets owned by the companies, together with changes in profits, result in changes in overall company financial health. EPA evaluates company-level impacts by examining changes in company profit margins and returns-to-assets test. These results are presented separately for small businesses. For small businesses, EPA also evaluates the economic impacts using a cost-to-sales test, comparing company compliance costs to baseline sales (unadjusted for cost pass-through).

Finally, the communities where the CWT facilities are located may be affected. Obviously, if facilities cut back operations, employment and income may fall, sending ripple effects throughout the local community. On the other hand, there may be increased employment associated with operating the pollution controls associated with the regulation, resulting in increased community employment and income. Facility-level changes in employment are used to calculate total employment changes. At the same time, for the communities in which CWT facilities are located, water quality may be expected to improve.

2. Comments on Economic Methodology

During the SBAR Panel consideration of the 1999 proposal, the Small Business Administration (SBA) expressed concern that EPA's economic methodology understates impacts. In particular, SBA questioned the elasticity of demand assumption used by the Agency, which affects the extent to which facilities will be able to pass on cost increases to their customers. As discussed in the final EA and this notice, the elasticity of demand (which varies depending on the number of facilities in each market) is based on economic reasoning that the Agency determines to be sound and reflects the limited empirical evidence available in the literature. In response to SBA's comment (but prior to the 1999 proposal), EPA reexamined the literature and attempted to contact waste generators to obtain further information on their responsiveness to the price of CWT services. EPA identified several additional empirical studies that support the elasticity parameters used in the EA. The Agency has not been successful, however, in eliciting information from waste generators. In the 1999 proposal, EPA solicited comment on the elasticity parameter and requested data that EPA could use tc calculate the parameter, but received neither. EPA is therefore not altering its choice of parameters. For a complete discussion of the elasticity parameters used in this analysis, see

Appendix E of the proposal EA.

In Appendix E to the proposal EA, EPA presents a sensitivity analysis that assumes that CWT facilities are unable to pass costs to their customers. In this analysis, impacts on direct dischargers are unchanged, but impacts on indirect dischargers increase from 13 to 16 facility closures and from 16 to 29 process closures.

E. Costs and Economic Impacts of BPT

For BPT, EPA evaluates treatment options first by calculating pre-tax total annualized costs and total pollutant removals in pounds. The ratios of the costs to the removals for each option considered for the final rule are presented in Table X.E-1. (EPA is no longer considering two options considered in the 1999 proposal: metals option 2 and organics option 3. See 64 FR 2308 and 64 FR 2312.) In all cases throughout section X, estimated costs and impacts for facilities with operations in multiple operations are presented assuming that the facilities comply with the limits for each subcategory separately, rather than with the limits for the multiple wastestream subcategory. See section VIII.A.4)

EPA based the selected BPT options for the metals, oils, and organics subcategories on option 4, option 9, and option 4, respectively. As detailed in Section VIII.A.3, all direct dischargers in the organics subcategory employ the BPT technology basis. As such, other than monitoring costs, EPA assigned no compliance costs to these facilities nor did it estimate incremental pollutant removals.

Table X.E-1.--BPT Cost Analysis

Option	Pre-tax tota annualized costs ($199 million)
Metals Subcategory--9 Facilities	
4	$3.5
3	14.
Oils Subcategory--5 Facilities	
9 \1\	0.54
Organics Subcategory--4 Facilities	
4	0.22

\1\ Since all direct discharging oils facilities already have treatment-in-plac separation, EPA did not consider the Option 8 technology.

Table X.E-2 presents the economic impact results for the selected BPT options. Options in the Metals and Organics subcategories more stringent than promulgated BPT are evaluated in Sections X.F and X.G. Impacts are presented for process closures, facility closures, and employment losses. Process closures are a direct output of the market model. EPA concludes that a facility will close if all of the processes at a facility close.

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Table X.E-2.--Economic Impacts of BPT Options

	Post-tax total

Option	annualized costs ($1997 M)	Process closures
Metals Subcategory--9 Facilities		
4	$2.19	
Oils Subcategory--5 Facilities		
9 \1\	0.348	
Organics Subcategory--4 Facilities		
4	0.138	

\1\ Since all direct discharging oils facilities already have treatment-in-plac separation, EPA did not consider the Option 8 technology.

EPA projects that the selected BPT regulations will result in only one process closure and one facility closure in the metals subcategory; two process closures, but no facility closures, in the oils subcategory; and only 2 process closures, but no facility closures, in the organics subcategory. The summed job losses for the BPT options are 47. (There are no job losses associated with the organics subcategory even though there are two process closures because job losses are proportional to flow. The organics flow at the facilities with the process closures is so low compared to the facility flow that there are no proportional job losses.)

Many facilities in the CWT industry have operations in more than one subcategory. EPA therefore evaluated the impacts of a combined BPT option on all direct dischargers. The combined impacts of this option are presented in Table X.E-3.

Table X.E-3.--Economic Impacts of Combined BPT Op

Option	Post-tax total annualized costs ($1997 M)	Process closures
All Direct Dischargers--14 Facilities		
Combined	$2.68	

EPA projects that the final BPT regulations will result in three process closures, two facility closures, and a total employment loss of 47 jobs. The totals for the individual subcategories shown in Table X.E-2 do not add to the totals shown in Table X.E-3 because a facility may have operations in more that one subcategory. For example, a closure is counted when all of the processes at a given facility close, and a process closure is counted when one, but not all, of the processes close. Therefore, for facilities with process closures in more than one subcategory, the analysis of the combined option can show a lower number of process closures and a higher number of facility closures.

F. Results of BCT Cost Test

In July 1986, EPA explained how it developed its methodology for setting effluent limitations based on BCT (51 FR 24974). EPA evaluates the reasonableness of BCT candidate technologies--those that remove

more conventional pollutants than BPT--by applying a two-part cost test: a POTW test and an industry cost-effectiveness test.

EPA first calculates the cost per pound of conventional pollutant removed by industrial dischargers in upgrading from BPT to a BCT candidate technology, and then compares this cost to the cost per pound of conventional pollutants removed in upgrading POTWs to advanced secondary treatment. The upgrade cost to industry must be less than the POTW benchmark of $0.25 per pound (in 1976 dollars) (i.e. ``the POTW test''). In the industry cost-effectiveness test, the ratio of the incremental BPT to BCT cost divided by the BPT cost for the industry must be less than 1.29 (that is, the cost increase must be less than 29 percent).

Table X.F-1 presents the calculations for the BCT cost test for the metals subcategory. For option 3 (the only more stringent option considered for the metals subcategory in the final rule), the table presents costs and conventional pollutant removals and compares them to the BPT baseline, option 4. For a candidate BCT option to pass the POTW test, the ratio of costs to removals for that option must be less than $0.71 ($1997) per pound. Option 3's ratio is $20.11, well above the benchmark of $0.71, so it fails the POTW test. This option therefore does not pass the BCT cost test and it is not necessary to perform the industry cost-effectiveness test. Thus, BCT is set equal to BPT.

For the final CWT rule, EPA did not consider any technologies for the oils and organics subcategories that are more stringent than the selected BPT technology basis. As such, EPA did not perform a BCT cost test for these subcategories and set BCT equal to BPT.

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Table X.F-1.--BCT Cost Test Calculations
[Metals Subcategory]

Option	Pre-tax total annualized costs ($1997 M)	Conventional pollutant removals (M lbs)
4 (BPT)	$3.54	8.7
3 (BCT Candidate)	14.8	9.3

G. Costs and Economic Impacts of BAT Options

EPA also evaluated options more stringent than BPT in the metals subcategory for BAT (in the oils and organics subcategories, EPA set BPT equal to the most stringent option that it considered for the final rule). This is metals option 3. For a given technology to be the basis for BAT limitations it must be economically achievable. EPA is today adopting BAT limitations equivalent to BPT for all subcategories; economic impacts are, therefore, equivalent to those presented in Section X.E for the final BPT limits. Table X.G-1 presents the economic impact results for the options considered for BAT.

Table X.G-1.--Economic Impacts of BAT Options

Option	Post-tax total annualized costs ($1997 M)	Process closures
Metals Subcategory--8 Facilities		

4	$2.19
3	9.01
Oils Subcategory--5 Facilities	
9 1	0.348
Organics Subcategory--4 Facilities	
3	0.263

1 Since all direct discharging oils facilities already have treatment-in-place separation, EPA did not consider the option 8 technology.

EPA projects (see Table X.E-3) that the selected BAT regulations will result in three process closures, two facility closures and 47 job losses. The projected closure impacts for the rejected metals option are equivalent to the impacts for the selected option, although there are slightly more employment losses for the rejected metals options. However, as discussed in Section VIII.C, EPA did not select this option for BAT.

H. Costs and Economic Impacts of PSES Options

In addition to evaluating impacts to direct dischargers for BPT/BCT/BAT, EPA evaluated the impacts to indirect dischargers for complying with PSES. For the metals and organics subcategory, EPA is selecting the same options for PSES that were selected for BPT/BAT: metals option 4 and organics option 4. For the oils subcategory, EPA selected oils option 8 for PSES. The impacts of the PSES options are presented in Table X.H-1. Impacts are presented for process closures, facility closures, and employment losses. Process closures are a direct output of the market model; facility closures are designated if all of the processes at a facility close. Employment losses are calculated from process closures, facility closures, and from reductions in waste treated by process lines that do not close. In all cases, the reduction in employment is calculated as a decrease of the facility's total CWT employment proportionate to the reduction in waste treated.

Table X.H-1.--Impacts of PSES Options

Option	Post-tax total annualized costs ($1997 M)	Process closures
Metals Subcategory--47 Facilities		
4	$6.25	
3	26.8	
Oils Subcategory--127 Facilities		
8	8.23	1
[[Page 81279]]		
9	11.9	1
Organics Subcategory--16 Facilities		
4	2.67	

In the metals subcategory, EPA projects that Option 4, the selected PSES technology basis, will result in six process closures, no facility closures, and 152 job losses. For the oils subcategory, EPA projects that option 8, the selected PSES technology basis, results in 10 process closures, 12 facility closures, and 224 job losses. For the organics subcategory, EPA projects that Option 4 results in seven process closures and no facility closures, with 30 job losses.

Many facilities in the CWT industry have operations in more than one subcategory. EPA therefore evaluated the impacts of a combined PSES option on all indirect dischargers. This option consists of metals option 4, oils option 8, and organics option 4. The projected impacts of the combined option are presented in Table X.H-2. The impacts of the selected PSES options shown in Table X.H-1 do not add to the impacts shown in Table X.H-2 because a facility closure is counted if all of the processes at a given facility close while a process closure is counted if one, but not all, processes close. Therefore, in the combined options, the number of process closures can go down while facility closures go up if processes in different subcategories close. The employment losses also do not add up because of rounding.

Table X.H-2.--Economic Impacts of Combined PSES Op

Option	Post-tax total annualized costs ($1997 M)	Process closures
All Indirect Discharges--151 Facilities		
Combined.....	$17.1	1

I. Economic Impacts for New Sources

EPA is establishing NSPS limitations equivalent to the limitations that are established for BPT/BCT/BAT for both the organics and oils subcategories. These limitations are economically achievable because, in general, EPA concludes that new sources will be able to comply at costs that are similar to, or less than, the costs for existing sources. They may be able to comply at lower cost since new sources can apply control technologies more efficiently than sources that need to retrofit for those technologies. Therefore, NSPS limitations will not present a barrier to entry for new facilities in these subcategories.

For the metals subcategory, EPA is establishing NSPS limitations based on the option 3 technology. EPA's analysis shows that the start-up costs for the option 3 technology for new sources may be less than the start-up costs for the option 4 technology. Consequently, EPA has concluded that compliance with limitations based on this option would not constitute a barrier to entry for new direct discharging metals subcategory sources. EPA also investigated the extent of the market for recycling or reuse of the metals-rich sludge generated by option 3 to determine if a market exists for these materials (since promoting recycling was part of the justification for option 3). EPA has determined that there is a wide market for a number of metals that could be recycled through this process, though as discussed previously, EPA recognizes that there are some metal bearing wastestreams that may not be suitable for recycling because of the low concentrations of metals. Also, for some metals, such as aluminum, there are no current markets for recycling.

EPA is setting PSNS equal to PSES limitations for existing sources for the metals and organics subcategories. Given EPA's finding of economic achievability for PSES in those two subcategories, EPA also

finds that the PSNS regulation will be economically achievable and will not constitute a barrier to entry for new sources.

For the oils subcategory, EPA is establishing pretreatment standards for new sources that are equal to NSPS for priority and non-conventional pollutants. EPA concluded there is no barrier to entry for new indirect discharging facilities in the oils subcategory because existing oils indirect dischargers are using the technology.

NSPS

J. Firm Level Impacts

Complying with the selected effluent limitations guidelines and standards affects the revenues and profitability of firms owning CWT facilities. In Section 6.1.4 of the Final EA, the Agency examines two financial ratios to assess the magnitude of these impacts: firm profit margin (profit/revenues) and return on assets or ROA (profit/total assets). Baseline values are compared to post-regulation values that are determined by calculating changes in profits based on output from the market model. EPA does not have complete data for all firms, but the two measures decline for more than half of the firms for which EPA has data. EPA also examined these measures by size categories, including a category for small businesses. For most size categories, median profit margin and median ROA decline or stay approximately the same (although for some size categories the medians may increase). EPA has profit data on 56 small firms and asset data for 26 small

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firms; profit margin declines for 33 of the 56 firms and ROA declines for 15 of the 26 firms. As discussed more fully in the EA, these results are dependent on the assumptions used in the market model and the market in which EPA placed the facilities.

K. Community Impacts

EPA estimated impacts on communities in which CWT facilities were located by estimating the overall change in employment in the community as a result of the CWT rule. EPA estimated the change in employment at each CWT facility associated with reductions in the quantity of waste treated at facilities incurring economic impacts. Then, EPA applied state-specific direct-effect employment multipliers to estimate the total change in employment. Most of the change in employment will occur in the community where the CWT facility is located. Thus, EPA estimated the change in community employment as a result of the rule by assigning all of the change in employment to the community. Table X.K-1 shows a distribution of the estimated changes in community employment resulting from the economic impacts of the regulation. Community employment losses range from zero to 213 full time equivalents. Even the largest reduction in employment represents only 0.7 percent of the baseline employment in that community. Thus, the Agency expects the negative employment impacts of the regulation to be extremely small. In fact, EPA estimates that most facilities that do not close or scale back their CWT operations will have to hire from one to three additional workers to comply with the regulation (although this is not taken into account in Table X.K-1). Taking these impacts into effect, almost all of these facilities will experience increases in employment due to the regulation. The overall impact of the regulation on community employment may, therefore, be either positive or negative.

Table X.K-1.--Estimated Community Employment Impacts of the CWT Regulation \1\

Reductions in community employment as a result of process and facility closures	Number of communities

Greater than 50 full time equivalents	5
20 to 50	11
1 to 20	14
0 to 1	12
Zero	100

\1\ Does not account for employment gains associated with compliance.

The Agency also examined the distribution of benefits across communities with different socioeconomic and ethnic characteristics. Pursuant to Executive Order 12898, EPA must, to the greatest extent practicable and permitted by law, make achieving environmental justice part of its mission. Environmental justice concerns arise when disadvantaged or minority communities experience disproportionately high and adverse human health or environmental impacts. CWT facilities are frequently located in industrial areas; as such, the communities frequently have higher minority populations and greater poverty than the rest of their state or the nation as a whole. Reductions in pollutant exposures to these populations would, benefit such communities, but they may bear a disproportionate share of the costs of attaining these reductions. Table X.K-2 characterizes the communities in which CWT facilities are located.

Table X.K-2.--Socioeconomic Profile of Communities in Which CWT Facilities Are Located

Percentage	Number of communities
Percent of the Population that are Non-Caucasian (National Percentage=16.8%)	
Less than 10	32
10 to 20	17
20 to 30	35
30 to 50	39
over 50	23
Percent of the Population With Incomes Below Poverty Level (National Percentage=13.5)	
Less than 7	19
7 to 13	33
13 to 20	56
20 to 30	31
over 30	7

Using the most recent census data, in 1990, the nation as a whole had a population that was 16.8 percent non-Caucasian. Of the communities in which CWT facilities were located, on the other hand, 38 percent had populations that were at least 30 percent minority, and 54 percent of communities had populations whose minority percentage exceeded that of the state in which they were located by more than five percentage points. In 1990, 13.5 percent of the U.S. population had incomes below the poverty level, 22 percent of communities with CWT facilities had at least 20 percent of their residents in poverty, and 33 percent had percentages of the population in poverty that exceeded by at least 5 percentage points the percentage of the population in poverty for the states in which they were located. Thus, environmental justice is a concern for these communities. The costs of the rule fall disproportionately on facilities in minority and low-income

communities. Benefits may also accrue to these communities as a result of this rule, but a large share of benefits are likely to accrue to communities downstream from the CWT or POTW, which may not be the same community.

L. Foreign Trade Impacts

The EA does not project any foreign trade impacts as a result of the effluent limitations guidelines and standards. Many of the affected CWT facilities treat waste that is considered hazardous under RCRA and international trade in CWT services for treatment of hazardous wastes is virtually nonexistent. Furthermore, there is very little, if any, international trade in treatment of non-hazardous CWT wastes.

M. Small Business Analysis

The Agency prepared a final regulatory flexibility analysis to assess the impacts on small businesses owning CWT facilities. No small governmental jurisdictions or small organizations own and/or operate CWT facilities. For purposes of this analysis, EPA defines small CWT businesses as those having sales less than $6 million--the Small Business Administration definition of a small business for SIC code 4953, Refuse Systems. This is the SIC code that most CWT facilities listed in their questionnaire responses (see final EA Chapter 3). Two small companies own facilities that discharge directly. There are 61 small companies that own facilities that discharge indirectly. (The total number of small companies includes applying weights to some of the facilities). EPA evaluated the impact on small CWT companies using a cost-to-sales test, which compares baseline sales to compliance costs (adjusted for inflation so that the costs and sales are expressed in the same year's dollars). This assessment does not account for any ability of the companies to pass any increase in operating costs through to their customers. EPA recognizes that for many industries, costs-to-sales ratios in excess of one percent may correspond to much higher ratios of cost to pre-compliance profits, and, thus, serve as a signal for additional analysis. EPA sought to identify those small business that would experience costs in excess of one percent of sales and those experiencing costs exceeding three

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percent of sales. However, EPA does not believe that the cost-to-sales ratio is a particularly precise measure of economic impact for this industry.

The two small companies that own direct discharging facilities, both in the oils subcategory, have cost-to-sales ratios of over three percent. Results of the cost-to-sales test for the PSES options are presented in Table X.M-1 for the number of facilities with estimated costs exceeding one percent and three percent of sales.

Table X.M--1.--Results of Cost-to-Sales Test for PSES Options for Small Businesses

Option	# of small companies with cost/sales > 1%	# of small companies with cost/sales > 3%
Metals Subcategory--4 Small Businesses		
4	4	2
3	4	4

Oils Subcategory--57 Small Businesses		
8	47	25
9	53	36
Organics Subcategory--2 Small Businesses		
4	2	1

As can be seen from Table X.M-1, the bulk of the small businesses are in the oils subcategory. Oils option 8 has 47 firms (82 percent of the small businesses) with cost-to-sales ratios in excess of 1 percent and 25 firms (44 percent of the small businesses) with cost-to-sales ratios in excess of 3 percent (without adjustment for pass-through of costs). On the other hand, oils option 9 has 53 firms (93 percent of the small businesses) with cost-to-sales ratios in excess of 1 percent and 36 firms (63 percent of the small businesses) with cost-to-sales ratios in excess of 3 percent (without adjustment for pass-through of costs).

Many of the facilities owned by small businesses operate processes in more than one subcategory so, as with the economic impact analyses presented earlier in this section, cost-to-sales test results are presented for combined PSES options. In order to be consistent with the 1999 proposal, there are two combined options: one based on oils option 8 and one based on oils option 9. These results are presented in Table X.M-2.

Table X.M-2.--Results of Cost-to-Sales Test for Combined PSES Options for Small Businesses

Combined option	# of small companies with cost/sales > 1%	# of small companies with cost/sales > 3%
Indirect Dischargers--61 Small Businesses		
w/Oils Option 8	51	28
w/Oils Option 9	57	38

The PSES combined option with Oils Option 8 has 51 firms (84 percent of small businesses) with cost-to-sales ratios in excess of 1 percent and 28 firms (46 percent of small businesses) with cost-to-sales ratios in excess of 3 percent. On the other hand, the combined option with Oils Option 9 has 57 firms (93 percent of small businesses) with cost-to-sales ratios in excess of 1 percent and 38 firms (62 percent of small businesses) with cost-to-sales ratios in excess of 3 percent.

EPA convened a Small Business Advocacy Review (SBAR) Panel during the development of this rule and also considered several regulatory alternatives to provide relief for small businesses. These alternatives are summarized below, and are discussed in other sections of the preamble along with EPA's conclusions (See Sections IV.A-IV.E).

EPA examined several criteria for establishing an exclusion for small businesses such as the volume of wastewater flow, employment, or annual revenues. The objective was to minimize the impacts on small businesses, still achieve the environmental benefits, and stay responsive to the Clean Water Act. EPA is defining small CWT businesses according to the SBA size definition of $6 million in annual revenue, but considered other criteria that would be easier to implement in practice, such as wastewater flow. To target relief to small

businesses, EPA examined the correlation between these criteria and the size definition.

Because most CWT facilities have similar numbers of employees regardless of their size (i.e., revenue), EPA first eliminated employment as a basis for establishing a small business exclusion. While EPA also found no correlation between annual volume of wastewater and the size of a facility, EPA retained this criterion in the 1999 proposal due to the anticipated ease in implementing an exclusion based on this criterion. However, if an exclusion based on volume of wastewater had ultimately been selected, the regulation would have excluded both small and large businesses.

EPA evaluated three alternatives based on wastewater flow and size as

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potential bases for limiting the scope of the regulation to: (i) Indirect dischargers with flows greater than 3.5 million gallons per year (MGY), or (ii and iii) indirect dischargers that manage non-hazardous wastes only with flows greater than either 3.5 MGY or 7.5 MGY. EPA also considered limiting the applicability of the proposed regulation to indirect dischargers not owned by small businesses without any specific reference to flow (referred to as ``no smalls'', below). The justification for EPA's consideration of these particular exclusion alternatives is included in the record in materials submitted to the SBAR Panel.

For each alternative, EPA estimated the projected economic impacts, both in absolute terms and in relative terms (that is, whether the impacts were higher, proportionately, for small businesses). The economic impacts that EPA considered for small companies include process closures, facility closures, employment losses, and the cost-to-sales test. Table X.M-3 shows the results of the facility-level analyses (if current facility receipts do not change) and the results of the analyses for the selected options for comparison purposes for all indirect dischargers. Table X.M-4 shows the results of the cost-to-sales test, which are company-level impacts for small companies that own indirect dischargers. Preliminary versions of these results were provided to the small entity representatives (SERs) who provided advice to the SBAR Panel.

Table X.M.-3.--Impacts of PSES Options With Limited

Option	Post-tax total annualized costs ($1997 M)	Process closures (small/large
All Indirect Dischargers--151 Facilities		
Combined Option w/ Oils 8	$20.83	4/1
reduced monitoring	17.87	4/1
>3.5 MGY, non-hazardous	17.14	7/1
>3.5 MGY	14.89	5/
>7.5 MGY, non-hazardous	15.49	7/1
``No smalls''	13.21	0/1

Table X.M-4.--Results of Cost-to-Sales Test for Small Businesses for PSES Options With Limited Scope

Option	Cost/sales > 1%	Cost/sales > 3%

Indirect Dischargers--61 Small Businesses

Combined Option w/Oils Option 8.....	57	38
Reduced monitoring.....	35	14
>3.5 MGY, non-hazardous.....	30	19
>3.5 MGY.....	24	14
>7.5 MGY, non-hazardous.....	23	17
``No smalls''.....	0	0

These results are roughly consistent with the magnitude of impacts presented for the same options in the 1999 proposal (see 64 FR 2332) with the exception of the reduced monitoring option. At the time of the 1999 proposal, EPA estimated that the reduced monitoring option resulted in 5 small and 11 large process closures, 4 small and 7 large facility closures, and 286 job losses. Now, EPA estimates that the reduced monitoring option would result in 4 small and 11 large process closures, 7 small and 7 large facility closures, and 420 job losses.

Some SBAR Panel members and SERs argued that these results supported excluding small businesses from the regulation. As described in the Panel's final report, these Panel members and SERs believed that the ``lost'' pollutant reductions associated with excluding small businesses would not be environmentally significant. Based on analysis available at the time of the Panel, limiting the applicability to exclude all oils facilities owned by small businesses would have reduced removals by 12 percent. Excluding indirect dischargers with flows under 3.5 MGY would have reduced removals by 6 percent. They also suggested that these facilities provide an important ``safety valve'' for an affordable and effective treatment alternative for industrial facilities that would otherwise find it prohibitively expensive to comply with industry-specific national effluent guidelines and standards.

Other SERs opposed this approach. These SERs argued that excluding small businesses from the scope of this rule would adversely impact the image of the industry. One of these SERs preferred reduced monitoring and also suggested that small businesses might be granted additional time to comply with the new standards, rather than excluding those businesses within the scope of the rule. EPA expressed concern that the absence of national effluent guidelines and standards for CWT facilities has been a major ``loophole'' in a national program to control industrial pollution, allowing wastes to be treated off-site less effectively than would be required of the same wastes if treated on-site. One of EPA's primary concerns with any of the alternatives that limit the scope of the rule is that the limited scope encourages such a loophole. If a segment of the industry is not subject to national regulation, these companies might quickly expand, leading to much greater discharges within a few years. This tendency would be limited by the flow or size cut-off itself unless more concentrated wastes are funneled through plants below the cut-off. In addition, as demonstrated by the survey responses and public comments, almost all CWT facilities have substantial amounts of unused capacity. Because

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this industry is extremely competitive, by limiting the scope of the CWT rule, EPA could actually be encouraging ineffective treatment while discouraging effective treatment.

N. Cost-Effectiveness Analysis

EPA also conducted an analysis of the cost-effectiveness of the alternative treatment technology options that were considered. The report, ``Cost-Effectiveness Analysis of Final Effluent Limitations

Guidelines and Standards for the CWT Industry'' (hereinafter, ``Cost-Effectiveness Report''), describes the methodology, data, and results; the report is included in the record of this rulemaking. The results of this cost-effectiveness analysis are expressed in terms of the costs (in 1981 dollars) per pound-equivalent removed, where pounds-equivalent removed for a particular pollutant is determined by multiplying the number of pounds of a pollutant removed by each option by a toxic weighting factor. The toxic weighting factors account for the differences in toxicity among pollutants and are derived using ambient water quality criteria. Cost effectiveness results are presented in 1981 dollars as a reporting convention. Cost-effectiveness is calculated as the ratio of pre-tax annualized costs of an option to the annual pounds-equivalent removed by that option, and can be expressed as the average or incremental cost-effectiveness for an option.

Average cost-effectiveness can be thought of as the ``increment'' between no regulation and the selected option for any given rule. For direct dischargers, the technologies used as the basis for BPT/BCT/BAT in all subcategories have an average cost-effectiveness ratio of $6.77/lb-equivalent. For indirect dischargers, the technologies used as the basis for PSES in all subcategories have an average cost-effectiveness ratio of $175/lb-equivalent. These results incorporate all subcategories with their selected options.

Incremental cost-effectiveness is the appropriate measure for comparing one regulatory option to another regulatory option for the same subcategory. Cost-effectiveness results by subcategory and option are presented for direct dischargers in Table X.N-1 and indirect dischargers in Table X.N-2. The options are listed in order of increasing removals.

Table X.N-1.--BPT/BCT/BAT Cost-Effectiveness Anal

Option	Pre-tax total annualized costs ($1981 M)	Removals (lb eq)
Metals Subcategory--9 Facilities		
4	$2.15	384,41
3	9.00	401,42
Oils Subcategory--5 Facilities		
9 a	0.329	1,77
Organics Subcategory--4 Facilities		
4	0.135	

a Since all direct discharging oils facilities already have treatment-in-place separation, EPA did not consider the option 8 technology.

Table X.N-2.--PSES Cost-Effectiveness Analysis

Option	Pre-tax total annualized costs ($1981 M)	Removals (lb eq)
Metals Subcategory--42 Facilities		
4	$6.95	39,21
3	26.9	48,00

Oils Subcategory--123 Facilities		
8	8.98	48,14
9	12.8	50,79
Organics Subcategory--15 Facilities		
4	2.79	19,81

XI. Water Quality Analysis and Environmental Benefits

EPA evaluated the environmental benefits of controlling the discharges of 104 \7\ priority and non-conventional pollutants from centralized waste treatment facilities to surface waters and POTWs in national analyses of direct and indirect discharges. Discharges of these pollutants into freshwater and estuarine ecosystems may alter aquatic habitats, adversely affect aquatic biota, and adversely impact human health through the consumption of

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contaminated fish and drinking water. Furthermore, these pollutants may also interfere with POTW operations in terms of inhibition of activated sludge or biological treatment and contamination of sewage sludges, thereby limiting the method of disposal and thereby raising its costs. All of these pollutants have at least one toxic effect (human health carcinogen and/or systemic toxicant or aquatic toxicant). In addition, many of these pollutants bioaccumulate in aquatic organisms and persist in the environment.

\7\ EPA accounted for a total of 161 pollutant of concern analytes. However, ambient water quality criteria or toxicity profiles are established for only 104 analytes.

EPA has updated its analysis to reflect changes to the National Ambient Water Quality Criteria made after the 1999 CWT proposal was issued. National Ambient Water Quality Criteria have been updated for 63 of the analytes modeled in the water quality benefits analysis. In some cases, water criteria for aquatic organisms were completely removed, while for others, criteria for human health were made more stringent.

The Agency did not evaluate the effects of conventional pollutants since the analysis focused on priority and non-conventional pollutants. However, the discharge of a conventional pollutant such as total suspended solids (TSS) can have adverse effects on the environment. For example, habitat degradation can result from increased suspended particulate matter that reduces light penetration, and thus primary productivity, or from accumulation of sludge particles that alter benthic spawning grounds and feeding habitats.

Of a total of 223 CWT facilities, for the purposes of the water quality and benefits analysis, EPA evaluated 12 direct dischargers and 101 indirect dischargers. Facilities not evaluated include zero dischargers (58) and those with insufficient data (2 direct and 50 indirect facilities) to conduct the water quality analysis. To estimate benefits from the improvements in water quality, in-stream concentration estimates are modeled and then compared to both aquatic life and human health ambient water quality criteria (AWQC) or toxic effect levels. The analyses were first performed on a subcategory-specific basis. The subcategory-specific analyses, however, consider only impacts of discharges from individual subcategories, and

therefore, underestimate overall water quality impacts for facilities that treat wastes in more than one subcategory. At least 15 percent of facilities in the CWT industry accept wastes in multiple subcategories. In order to evaluate overall benefits of the final technologies, EPA also analyzed water quality and POTW impacts for multiple subcategory combinations.

EPA expects a variety of human health, environmental, and economic benefits to result from these projected reductions in effluent loadings (see ``Environmental Assessment of the Final Effluent Guidelines for the Centralized Waste Treatment Industry,'' (Environmental Assessment)). In particular, the assessment addresses the following benefit categories: (a) Human health benefits due to reductions in excess cancer risk; (b) human health benefits due to reductions in lead exposure; (c) human health benefits due to reductions in non-carcinogenic hazard (systemic); (d) ecological and recreational benefits due to improved water quality with respect to toxic pollutants; and (e) benefits to POTWs from reductions in interference, pass through, and biosolid contamination, and elimination of some of the efforts associated with establishing local pretreatment limits.

A. Reduced Human Health Cancer Risk

EPA expects that reduced loadings to surface waters associated with the final rule will reduce cancer incidences by approximately 0.03 per year with estimated monetized benefits of $0.076 to $0.412 million ($1997) per year. These estimated benefits are attributable to reducing the cancer risks associated with consuming contaminated fish tissue. EPA developed these benefit estimates by applying an existing estimate of the value of a statistical life to the estimated number of excess cancer cases avoided. The estimated range of the value of a statistical life used in this analysis is $2.3 million to 12.4 million ($1997).

B. Reduced Lead Health Risk

EPA solicited comment on, and updated its methodology used to estimate lead health risks due to ingestion of lead-contaminated fish tissues by recreational and subsistence anglers. For the proposed rule EPA used the 7Q10 flow (lowest seven day flow which reoccurs every ten years), although the harmonic mean flow would have been more appropriate to estimate the human health effects due to consumption of lead contaminated fish tissues. As a result, EPA's calculated benefit at the time of proposal for the reduction of lead discharges into the environment was overestimated.

For the final rule, EPA used the harmonic-mean flow to estimate human health effects due to consumption of lead contaminated fish tissue. Under the final treatment levels, the ingestion of lead-contaminated fish tissues by recreational and subsistence anglers would be reduced at 10 water bodies. Because elevated blood lead levels can cause intellectual impairment in exposed children 0 to 6 years of age, benefits to the at-risk child populations are quantified by estimating the reduced potential IQ point loss. Benefits to adults are quantified by estimating the reduced risk for cardiovascular diseases including hypertension, coronary heart disease, and strokes (the benefits of reduced heart disease and strokes include both fatal and non-fatal cases). The benefits are quantified and monetized using methodologies developed in the Retrospective Analysis of the Clean Air Act (Final Report to Congress on Benefits and Costs of the Clean Air Act, 1970 to 1990; EPA 410-R-97-002). EPA estimates that this final regulation will reduce cases of these adverse health effects; the total benefit for these reductions would range from approximately $0.488 million to $1.59 million.

C. Reduced Noncarcinogenic Human Health Hazard

Exposure to toxic substances poses risk of systemic and other effects to humans, including effects on the circulatory, respiratory or digestive systems, and neurological and developmental effects. This final rule is expected to generate human health benefits by reducing exposure to these substances, thus reducing the hazards of these associated effects. EPA expects that reduced loadings to surface waters would reduce the number of persons potentially exposed to non-cancer effects due to consumption of contaminated fish tissue by 1880 people. Presently EPA does not have methodology for monetizing these benefits.

D. Improved Ecological Conditions and Recreational Activity

EPA expects this final rule to generate environmental benefits by improving water quality. There are a wide range of benefits associated with the maintenance and improvement of water quality. These benefits include use values (e.g., recreational fishing), ecological values (e.g., preservation of habitat), and passive use values. For example, water pollution might affect the quality of the fish and wildlife habitat provided by water resources, thus affecting the species using these resources. This in turn might affect the quality and value of recreational experiences of users, such as anglers fishing in the effected streams. EPA has estimated the value of the recreational

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fishing benefits and intrinsic benefits resulting from this final rule.

EPA estimates that the annual monetized recreational benefits to anglers associated with the expected changes in water quality range from $1.23 million to $3.49 million ($1997). EPA evaluates these recreational benefits, applying a model that considers the increase in value of a ``contaminant-free fishery'' to recreational anglers resulting from the elimination of all pollutant concentrations in excess of AWQC at 5 of the 43 receiving water locations. EPA's modeling projects that discharges from CWT facilities are responsible for 252 AWQC violations at 43 receiving water locations and that the rule would eliminate all violations at 5 of these locations. Note these results are derived from computer modeling only. The monetized value of impaired recreational fishing opportunity is estimated by first calculating the baseline value of the receiving stream using a value per-person-day of recreational fishing, and the number of person-days fished on the receiving stream. The value of improving water quality in this fishery, based on the increase in value to anglers of achieving contaminant-free fishing, is then calculated. However, adding these benefits to the cancer and lead toxicity reduction benefits calculated above may result in double counting. Presumably reduced incidence of adverse health effects is one of the factors anglers considered when valuing a ``contaminant free fishery.''

In addition, EPA estimates that the annual monetized intrinsic benefits to the general public, as a result of the same improvements in water quality, range from at least $0.62 million to $1.75 million ($1997). These intrinsic benefits are estimated as half of the recreational benefits and may be either underestimated or overestimated.

E. Improved POTW Operations

EPA considers two potential sources of benefits to POTWs from this final regulation: (1) Reductions in the likelihood of interference, pass through, and biosolid contamination problems; and (2) reductions in costs potentially incurred by POTWs in analyzing toxic pollutants and determining whether to, and the appropriate level at which to, set local limits. Although the benefits from reducing these effects at

POTWs might be substantial, EPA is unable to quantify them.

First, regarding potential interference, pass through and biosolid contamination, this final rule is expected to help reduce these problems by reducing pollutant loadings in the industry's effluent and reducing shock releases. Anecdotal evidence from POTW operators and sampling results indicate that such effects can occur. EPA also expects the final rule to improve the biosolid quality of 3900 metric tons, permitting the use of less expensive disposal mechanisms. The estimated monetized benefits for improving biosolid quality range from $0.14 million to $0.85.

Finally, reducing the pollutant load to local POTWs may eliminate some of the efforts associated with establishing local pollutant limits. Local limits are sometimes required to protect against pass through and interference, and to protect worker health and safety. Several POTWs indicated that establishment of more effective national pretreatment standards will reduce the time and effort required to establish local limits.

F. Other Benefits Not Quantified

The above benefit analyses focus mainly on identified compounds with quantifiable toxic or carcinogenic effects. This potentially leads to an underestimation of benefits, since some pollutant characterizations are not explicitly considered. While the analysis does include a general estimate for non-use benefits, it is possible that some potential effects of reductions in certain pollutants were not fully captured in the monetized estimates. For example, the analyses do not include the benefits associated with reducing the particulate load (measured as TSS), or the oxygen demand (measured as BOD5 and COD) of the effluents. TSS loads can degrade ecological habitat by reducing light penetration and primary productivity, and from accumulation of solid particles that alter benthic spawning grounds and feeding habitats. BOD5 and COD loads can deplete oxygen levels, which can produce mortality or other adverse effects in fish, as well as reduce biological diversity.

G. Summary of Benefits

EPA estimates that the annual monetized benefits resulting from this final rule are in the range from $2.56 million to $8.09 million ($1997). Table XI.G-1 summarizes these benefits, by category. The range reflects the uncertainty in evaluating the effects of this final rule and in placing a dollar value on these effects. As indicated in Table XI.G-1, these monetized benefits ranges do not explicitly reflect some potential benefit categories, including aspects of improved ecological conditions from improvements in water quality; and improved POTW operations.

At the same time, there may be a certain amount of double counting in the benefits categories that have been monetized, for example, between the health and recreational benefits. Therefore the reported benefits may understate or overestimate the total benefits of this final rule.

Table XI.G-1.--Potential Economic Benefits

Benefit category	Millions of 1997 dollars per year
Reduced Cancer Risk.....	0.076-0.412
Reduced Lead Health Risk.....	0.49-1.59
Reduced Non-Carcinogenic Hazard.....	Unquantified
Improved Recreation Value.....	1.23-3.49
Improved Intrinsic Value (including	0.62-1.75*

ecological conditions).	
Reduced Biosolid Contamination at POTW...	0.14-0.85
Potentially Improved POTW Operation (inhibition).	Unquantified
Total Monetized Benefits.....	2.56-8.09

* May not fully capture all ecological effects.

XII. Non-Water Quality Environmental Impacts

The elimination or reduction of one form of pollution may create or aggravate other environmental problems. Therefore, Sections 304(b) and 306 of the Act require EPA to consider non-water quality environmental impacts of effluent limitations guidelines and standards. Accordingly, EPA has considered the effect of these regulations on air pollution, waste treatment residual generation, and energy consumption.

A. Air Pollution

CWT facilities generate wastewater that contain significant concentrations of organic compounds, some of which are also on the list of Hazardous Air Pollutants (HAP) in title 3 of the Clean Air Act Amendments (CAAA) of 1990. These wastewaters often pass through a series of collection and treatment units that are open to the atmosphere and allow wastewater containing organic compounds to contact ambient air. Atmospheric exposure of the organic-containing wastewater may result in significant volatilization of both volatile organic compounds (VOC), which contribute to the formation of ambient ozone, and HAP from the wastewater.

As discussed in 1999 proposal, EPA considered including air stripping in the technology basis for today's limitations and standards, but rejected it because it

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would not have resulted in significantly different limitations. Because this rule would not allow any less stringent control of VOCs than is currently in place at most CWT facilities, EPA does not project any net increase in air emissions from volatilization of organic pollutants due to today's final action. As such, no adverse air impacts are expected to occur as a result of today's regulations.

Although this rule does not require the use of air stripping with emissions control to control the emission of volatile pollutants, EPA encourages all facilities which accept waste containing volatile pollutants to incorporate air stripping with overhead recovery or destruction into their wastewater treatment systems. Additionally, EPA also notes that CWT sources of hazardous air pollutants are subject to maximum achievable control technology (MACT) as promulgated for off-site waste and recovery operations on July 1, 1996 (61 FR 34140) at 40 CFR Part 63.

Finally, EPA notes that the increased energy requirements discussed below may result in increased emissions of combustion byproducts associated with energy production. Given the relatively small projected increases in energy use, however, EPA does not anticipate that this effect would be signficant.

B. Solid Waste

Solid waste will be generated due to a number of the treatment technologies selected as the basis for today's rule. These wastes include sludge from biological treatment systems, chemical precipitation and clarification systems, and gravity separation and dissolved air flotation systems. EPA estimated costs for off-site

disposal in Subtitle C and D landfills of the solid wastes generated due to the implementation of the technologies discussed above. These costs were included in the economic evaluation of the selected technologies.

The precipitation and subsequent separation selected as the technology basis for the metals subcategory will produce a metal-rich filter cake which requires disposal. EPA estimates that metals subcategory facilities will generate annually 3.7 million gallons of filter cake. Dissolved air flotation and additional gravity separation steps selected as the technology basis \8\ for the oils subcategory will also produce a metal-rich filter press cake that requires disposal. EPA estimates that oils subcategory facilities will generate approximately 23 million gallons of filter press cake annually. Finally, the biological treatment system selected as the technology basis for the organics subcategory will also produce a sludge that requires disposal. EPA estimates that 4.3 million gallons of sludge will be generated annually by the organics subcategory facilities.

\8\ The technology basis for indirect discharges in the oils subcategory does not include additional gravity separation steps. See Section VIII.E.

EPA has concluded that the disposal of these filter cakes and/or sludges will not have an adverse effect on the environment or result in the release of pollutants in the filter cake to other media. EPA made this conclusion for two reasons. First, EPA estimates that the additional solid wastes disposed in landfills as a result of this regulation will be less than 0.19% of the annual tonnage of waste currently disposed in landfills. Second, the disposal of these wastes into controlled Subtitle C and D landfills is strictly regulated by the RCRA program.

C. Energy Requirements

EPA estimates that the attainment of BPT, BCT, BAT, and PSES will increase energy consumption by a small increment over present industry use. With the exception of the oils subcategory, the projected increase in energy consumption is primarily due to the incorporation of components such as power pumps, mixers, blowers, and controls. For the metals subcategory, EPA projects an increased energy usage of 3.5 million kilowatt hours per year and, for the organics subcategory, an increased energy usage of 0.5 million-kilowatt hours per year. For the oils subcategory, however, the main energy requirement in today's rule is for the operation of dissolved air flotation units. Dissolved air flotation units require air sparging to help separate the wastestream. For the oils subcategory, EPA projects an increased energy usage of 3.4 million kilowatt hours per year. Overall, an increase of 7.5 million kilowatt-hours per year would be required for today's regulation which equates to 4210 barrels of oil per day. In 1996, the United States consumed 18.3 million barrels of oil per day.

XIII. Regulatory Implementation

The purpose of this section is to provide assistance and direction to permit writers, control authorities, and CWT facilities to aid in their implementation of this regulation. This section also discusses the relationship of upset and bypass provisions and variances and modifications to the final limitations and standards.

A. Implementation of the Limitations and Standards

1. Introduction

Effluent limitations and pretreatment standards act as a primary mechanism to control the discharges of pollutants to waters of the United States. These limitations and standards are applied to individual facilities through NPDES permits and local limits developed for POTWs issued by the EPA or authorized States under Section 402 of the Act and local pretreatment programs under Section 307 of the Act.

In specific cases, the NPDES permitting authority or local POTW may elect to establish technology-based permit limits or local limits for pollutants not covered by this regulation. In addition, if State water quality standards or other provisions of State or Federal law require limits on pollutants not covered by this regulation (or require more stringent limits or standards on covered pollutants to achieve compliance), the permitting authority must apply those limitations or standards.

2. Compliance Dates

New and reissued Federal and State NPDES permits to direct dischargers must include the effluent limitations promulgated today. Existing indirect dischargers must comply with today's pretreatment standards no later than December 22, 2003. New direct and indirect discharging sources must comply with applicable limitations and standards on the date the new sources begin operations. As a further point of clarification, new direct and indirect sources are those that began construction of CWT operations after August 28, 2000.

3. Applicability

EPA provided detailed information on the applicability of this rule to various operations in Section V. EPA also provided examples of regulated and non-regulated CWT operations in Table V.A-1. Also see 40 CFR 437.1. Permit writers and pretreatment authorities should closely examine all CWT operations to determine if they should be subject to provisions of this rule.

4. Subcategorization Determination

Each CWT facility subject to this rule will need to make an initial determination of which subcategories are applicable. Multiple subcategory facilities will need to choose to comply with each of the applicable subcategory limitations or standards separately (directly following treatment of each subcategory's waste) or to certify

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equivalent treatment and comply with one of the four sets of limitations or standards in the multiple wastestream subcategory. The following sections provide guidance on a facility's subcategorization determination as well as implementation of the rule for multiple subcategory facilities. In addition, this section provides a procedure that should assist CWT facilities in determining into which category particular waste receipts might fall.

EPA determined that the paperwork and analyses currently performed at CWT facilities, as part of their waste acceptance procedures, provide CWT facilities with sufficient information for them to determine into which of the subcategories their treated waste would fall. EPA based its recommended subcategorization determination procedure on information generally obtained during these waste acceptance and confirmation procedures. In EPA's view, permit writers and local pretreatment authorities should not (because they need not) require additional monitoring or paperwork solely for the purpose of subcategory determinations, unless the CWT facility's waste acceptance procedures are inadequate. EPA concluded that if CWT facilities follow EPA's recommendations, they should easily classify their wastes. Permit writers and local authorities, in these circumstances, would only need to satisfy themselves that the facility made a good-faith effort to determine the category of wastes treated. In most cases, as detailed below, EPA determined that the subcategory determination can be made on

the type of waste receipt, e.g., metal-bearing sludge, used oil, or landfill leachate. Certainly, in EPA's estimation, all CWT facilities should, at a minimum, collect adequate information from the generator on the type of waste received at the CWT facility because this is the minimum information required by CWT facilities to treat off-site wastes effectively.

To determine an existing facility's subcategory classification(s), the facility should review data for a period of one year on its incoming wastes (that is, at the point where the shipment is received at the facility). The facility should first use Table XIII.A-1 below to classify each of its waste receipts into a subcategory for that one-year period.

TABLE XIII.A-1--Waste Receipt Classification

Metals Subcategory:
Spent electroplating baths and/or sludges
Metal finishing rinse water and sludges
Chromate wastes
Air pollution control blow down water and sludges
Spent anodizing solutions
Incineration wastewaters
Waste liquid mercury
Cyanide-containing wastes
Waste acids and bases with or without metals
Cleaning, rinsing, and surface preparation solutions from electroplating or phosphating operations
Vibratory deburring wastewater
Alkaline and acid solutions used to clean metal parts or equipment
Oils Subcategory:
Used oils
Oil-water emulsions or mixtures
Lubricants
Coolants
Contaminated groundwater clean-up from petroleum sources
Used petroleum products
Oil spill clean-up
Bilge water
Rinse/wash waters from petroleum sources
Interceptor wastes
Off-specification fuels
Underground storage remediation waste
Tank clean-out from petroleum or oily sources
Non-contact used glycols
Aqueous and oil mixtures from parts cleaning operations
Wastewater from oil bearing paint washes
Organics Subcategory:
Landfill leachate
Contaminated groundwater clean-up from non-petroleum sources
Solvent-bearing wastes
Off-specification organic product
Still bottoms
Byproduct waste glycol
Wastewater from paint washes
Wastewater from adhesives and/or epoxies formulation
Wastewater from organic chemical product operations
Tank clean-out from organic, non-petroleum sources

If the CWT facility receives the wastes listed above, the subcategory determination may be made solely from this information. If,

however, the wastes are unknown or not listed above, EPA recommends that the facility use the following hierarchy to determine how to characterize the wastes it is treating, so as to identify the appropriate regulatory subcategory.

(1) If the waste receipt contains oil and grease at or in excess of 100 mg/L, the waste receipt should be classified in the oils subcategory;

(2) If the waste receipt contains oil and grease 100 mg/L, and has any of the pollutants listed below in concentrations in excess of the values listed below, the waste receipt should be classified in the metals subcategory.

Cadmium: 0.2 mg/L
Chromium: 8.9 mg/L
Copper: 4.9 mg/L
Nickel: 37.5 mg/L

(3) If the waste receipt contains oil and grease 100 mg/L, and does not have concentrations of cadmium, chromium, copper, or nickel above any of the values listed above, the waste receipt should be classified in the organics subcategory.

Once a facility's subcategory determination has been made, in EPA's view, the facility would not need to repeat this annual determination process unnecessarily. However, if a CWT facility alters its operation to accept wastes from another subcategory (or to no longer accept waste from a subcategory), the facility should notify the appropriate permit writer or pretreatment authority and the subcategory determination should be re-visited. EPA notes that current permit regulations require notification to the permitting authority when significant changes occur. EPA also recommends that the subcategory determination be reevaluated whenever the permit is reissued, though this would not necessarily require complete characterization of a subsequent year's waste receipts if there were no indication that the make-up of the facility's receipts had significantly changed.

For new CWT facilities, the facility should estimate the percentage of waste receipts expected in each subcategory. Alternatively, the facility could compare the treatment technologies being installed to the selected treatment technologies for each subcategory. After the initial year of operation, the permit writer or pretreatment authority should reassess the facility's subcategory determination and follow the procedure outlined for existing facilities.

5. Implementation for Facilities in Multiple CWT Subcategories

EPA estimates that many facilities in the CWT industry accept wastes in two or more of the individual subcategories adopted for regulation here. In other words, the facilities actively accept a variety of waste types. This situation is different from the case in which metal-bearing wastestreams may include low-level organic pollutants or that oily wastes may include low-level metal pollutants due to the origin of the wastestream accepted for treatment.

As promulgated today, multiple subcategory facilities may comply with this rule in one of two ways: (1)

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Facilities may elect to comply with the limitations or standards for each applicable subcategory directly following treatment (before commingling with different subcategory wastes); or (2) facilities may certify equivalent treatment and comply with one of the four sets of limitations or standards for the multiple wastestream subcategory. Each of these options is discussed further below.

a. Comply with Limitations or Standards for Subcategory A, B, and/or C. In implementing this rule for multiple subcategory facilities in this manner, the permit writer or pretreatment control authority needs

to ensure that the CWT facility has an optimal waste management program. First, the permit writer or control authority should verify that the CWT facility is identifying and segregating wastestreams appropriately since segregation of similar wastestreams is the first step in obtaining optimal mass removals of pollutants from industrial wastes. Next, the permit writer or control authority should verify that the CWT facility is employing treatment technologies designed to treat all off-site waste receipts effectively. Finally, the permit writer or control authority should establish compliance monitoring for each applicable subcategory directly following treatment of the each subcategory's waste stream. As a further point of clarification, the permit writer or control authority should not allow CWT facilities to commingle wastestreams from different subcategories prior to monitoring for compliance with each subcategory's limitations or standards.

b. Comply with Limitations or Standards for Subcategory D. First, facilities which desire this option would submit an initial request to their permit writer or local control authority certifying that their treatment train includes all applicable equivalent treatment systems. This initial certification would include, at a minimum, the applicable subcategories (i.e., metals, oils, organics), a listing of and descriptions of the treatment technologies and operating conditions used to treat wastes in each subcategory, and the justification for making an equivalent treatment determination (see Sec. 437.40 of the final rule). For example, a direct discharging facility which accepts metals subcategory and oils subcategory wastewaters could show that their treatment train includes two-stage oil/water separation, two-stage chemical precipitation, and dissolved air flotation operated in a similar manner to that costed by EPA. Since these are the treatment technologies selected as the basis for this rule, the equivalent treatment determination could be established. However, EPA is not defining ``equivalent treatment'' as specific treatment technologies or the technology bases, but rather as a ``wastewater treatment system that is demonstrated in literature, treatability tests, or self-monitoring data to remove a similar level of the appropriate pollutants as the applicable treatment technology selected as the basis for the applicable regulations''.\9\ EPA is leaving the decision as to whether a particular treatment train is ``equivalent treatment'' to the permit writer's or local control authority's best professional judgment. However, the requesting facility is responsible for providing the permit writer or local control authority with enough information and/or data to make the equivalent treatment determination. This initial certification statement must be signed by the responsible corporate officer as defined in 40 CFR 403.12(l) or 40 CFR 122.22. If the permit writer or local control authority determines that equivalent treatment is demonstrated, then the permit writers of local control authority will issue discharge requirements based on one of the four subsets of limitations or standards promulgated for the multiple wastestream subcategory.

\9\ The pollutant removals for each treatment technology selected as the basis are listed in Tables 7.6 through 7.9 in the TDD.

Next, the facility shall submit an annual certification statement which indicates that the treatment technologies are being utilized in the manner set forth in their original certification or a justification to allow modification of the practices listed in its initial certification (see Sec. 437.41 of the final rule). If the information contained in the initial certification statement is still applicable, a facility shall simply state that in a letter to the permitting authority or local control authority, and the letter shall constitute

the periodic statement. However, if the facility has modified its treatment system in any way, it shall submit the revised information in a manner similar to the initial certification. Once again, the permit writer or local control authority would be expected to use BEJ/BPJ in reviewing any modifications.

Finally, the facility shall be required to maintain on-site compliance paperwork. The on-site compliance paperwork should include information from the initial and periodic certifications, but must also include: (1) The supporting documentation for any modifications that have been made to the treatment system; (2) a method for demonstrating that the treatment system is well operated and maintained; and (3) a discussion of the rationale for choosing the method of demonstration. Proper operation and maintenance of a system includes a qualified person to operate the system, use of correct treatment chemicals in appropriate quantities, and operation of the system within the stated design parameters. For example, a facility may operate dissolved air flotation. The method for demonstrating the dissolved air flotation system is well operated can be as simple as maintaining records on the temperature and pH, the chemicals added (including quantity), the duration of treatment, recycle ratio, and physical characteristics of the wastewater before and after dissolved air flotation. Alternatively, the facility could monitor for selected parameters for the purpose of demonstrating effective treatment. This could include any pollutant or a combination of pollutants.

Control authorities, at any time after entering into an individual control mechanism, or permitting authorities, or any time after issuing, reissuing, or modifying the NPDES permit, could inspect the CWT facility to confirm that the listed practices are being employed, that the treatment system is well operated and maintained, and that the necessary paperwork provides sufficient justification for any modifications.

6. Implementation for Metals Subcategory Facilities With Cyanide Subset

Whenever a CWT facility accepts a waste receipt that contains more than 136 mg/L of total cyanide, the CWT facility must monitor for cyanide when the wastewater exits the cyanide destruction process rather than after mixing with other process wastewater. Alternatively, the facility may monitor for compliance after mixing if the cyanide limitations are adjusted using the ``building block approach'' or ``combined wastestream formula,'' assuming the cyanide limitations do not fall below the minimum analytical detection limit.

7. Implementation for CWT Facilities Subject to Multiple Effluent Limitations Guidelines or Pretreatment Standards

For determination of effluent limits where there are multiple categories, the effluent guidelines are applied using a flow-weighted combination of the appropriate guideline for each category (i.e., ``the building block approach''). Where a facility treats a CWT wastestream and process wastewater from other non-CWT industrial operations, the effluent guidelines

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would be applied by using a flow-weighted combination of the BPT/BAT limitations for the CWT and the other non-CWT industrial operation to derive the appropriate limitations. Similarly, for indirect dischargers, under these circumstances, the pretreatment standards would be applied using the ``combined wastestream formula'' as defined in 40 CFR 403.6(e). The only exceptions to this are for facilities also subject to effluent guidelines for Landfills (40 CFR 445) and effluent limitations guidelines and pretreatment standards for Transportation Equipment Cleaning (40 CFR 442). The interaction between these categories and the CWT rule are detailed in Section V. J and V.I, respectively.

8. Internal Monitoring Requirements

Working in conjunction with the effluent guidelines and pretreatment standards are the monitoring conditions set out in the NPDES or POTW discharge permit. An integral part of monitoring conditions is the point at which a facility must demonstrate compliance. The point at which a sample is collected can have a dramatic effect on the monitoring results for that facility. Therefore, as detailed elsewhere in the implementation section, it may be necessary to require internal monitoring points in order to assure compliance. Authority to address internal wastestreams is provided in 40 CFR 122.44(i)(1)(iii), 122.45(h), and 40 CFR 403.6(e)(2) and (4). Permit writers or local control authorities may establish additional internal monitoring points to the extent consistent with EPA's regulations.

B. Upset and Bypass Provisions

A ``bypass'' is an intentional diversion of wastestreams from any portion of a treatment facility. An ``upset'' is an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. EPA's regulations concerning bypasses and upsets for direct dischargers are set forth at 40 CFR 122.41(m) and (n) and for indirect dischargers at 40 CFR 403.16 and 403.17.

C. Variances and Modifications

Upon the promulgation of these regulations, all new and reissued Federal and State NPDES permits issued to direct dischargers in the CWT Industry must include the effluent limitations. In addition, the indirect dischargers must comply with the pretreatment standards within three years of issuance.

1. Fundamentally Different Factors (FDF) Variances

The CWA requires application of the effluent limitations established pursuant to Section 301 or the pretreatment standards of section 307 to all direct and indirect dischargers. However, the statute provides for the modification of these national requirements in a limited number of circumstances. Moreover, the Agency has established administrative mechanisms to provide an opportunity for relief from the application of national effluent limitations guidelines and pretreatment standards for categories of existing sources for priority, conventional, and non-conventional pollutants.

EPA will develop effluent limitations or standards different from the otherwise applicable requirements if an individual existing discharging facility is fundamentally different with respect to factors considered in establishing the limitations or standards applicable to the individual facility. Such a modification is known as a ``fundamentally different factors'' (FDF) variance.

Early on, EPA, by regulation, provided for FDF modifications from BPT effluent limitations, BAT limitations for priority and non-conventional pollutants, and BCT limitations for conventional pollutants for direct dischargers. For indirect dischargers, EPA provided for FDF modifications from pretreatment standards for existing facilities. FDF variances for priority pollutants were challenged judicially and ultimately sustained by the Supreme Court (Chemical Manufacturers Ass'n v. NRDC, 479 U.S. 116 (1985)).

Subsequently, in the Water Quality Act of 1987, Congress added new Section 301(n) of the Act explicitly to authorize modification of the otherwise applicable BAT effluent limitations or national effluent pretreatment standards for existing sources if a facility is fundamentally different with respect to the factors specified in Section 304 (other than costs) from those considered by EPA in establishing the effluent limitations or pretreatment standards.

Section 301(n) also defined the conditions under which EPA may establish alternative requirements. Under Section 301(n), an application for approval of FDF variance must be based solely on (1) information submitted during the rulemaking raising the factors that are fundamentally different, or (2) information the applicant did not have an opportunity to submit. The alternate limitation or standard must be no less stringent than justified by the difference, and not result in markedly more adverse non-water quality environmental impacts than the national limitation or standard.

EPA regulations at 40 CFR 125 Subpart D, authorizing the Regional Administrators to establish alternative limitations and standards, further detail the substantive criteria used to evaluate FDF variance requests for existing direct dischargers.

Thus, 40 CFR 125.31(d) identifies six factors (for example, volume of process wastewater, age, and size of a discharger's facility) that may be considered in determining if a facility is fundamentally different. The Agency must determine whether, on the basis of one or more of these factors, the facility in question is fundamentally different from the facilities and factors considered by the EPA in developing the nationally applicable effluent guidelines. The regulation also lists four other factors (for example, infeasibility of installation within the time allowed or a discharger's ability to pay) that may not provide a basis for an FDF variance. In addition, under 40 CFR 125.31(b)(3), a request for limitations less stringent than the national limitation may be approved only if compliance with the national limitations would result in either (a) a removal cost wholly out of proportion to the removal cost considered during development of the national limitations, or (b) a non-water quality environmental impact (including energy requirements) fundamentally more adverse than the impact considered during development of the national limits. EPA regulations provide for an FDF variance for existing indirect dischargers at 40 CFR 403.13. The conditions for approval of a request to modify applicable pretreatment standards and factors considered are the same as those for direct dischargers.

The legislative history of Section 301(n) underscores the necessity for the FDF variance applicant to establish eligibility for the variance. EPA's regulations at 40 CFR 125.32(b)(1) are explicit in imposing this burden upon the applicant. The applicant must show that the factors relating to the discharge controlled by the applicant's permit which are claimed to be fundamentally different are, in fact, fundamentally different from those factors considered by the EPA in establishing the applicable guidelines. The pretreatment regulations incorporate a similar requirement at 40 CFR 403.13(h)(9).

An FDF variance is not available to a new source subject to NSPS or PSNS.

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2. Water Quality Variances

Section 301(g) of the CWA authorizes a variance from BAT effluent guidelines for certain non-conventional pollutants due to localized environmental factors. These pollutants include ammonia, chlorine, color, iron, and total phenols.

3. Permit Modifications

Even after EPA (or an authorized State) has issued a final permit to a direct discharger, the permit may still be modified under certain conditions. (When a permit modification is under consideration, however, all other permit conditions remain in effect.) A permit modification may be triggered in several circumstances. These could include a regulatory inspection or information submitted by the permittee that reveals the need for modification. Any interested person may request a permit modification. There are two classifications of modifications: major and minor. From a procedural standpoint, they

differ primarily with respect to the public notice requirements. Major modifications require public notice while minor modifications do not. Virtually any modification that results in less stringent conditions is treated as a major modification, with provisions for public notice and comment. Conditions that would necessitate a major modification of a permit are described in 40 CFR 122.62. Minor modifications are generally non-substantive changes. The conditions for minor modification are described in 40 CFR 122.63.

XIV. Related Acts of Congress, Executive Orders, and Agency Initiatives

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 [58 Federal Register 51735, (October 4, 1993)], the Agency must determine whether a regulatory action is ``significant'' and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines ``significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a ``significant regulatory action.'' Consequently, EPA submitted this action to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

B. Regulatory Flexibility Act (RFA), as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et seq.

1. Background

The RFA generally requires an agency to prepare a regulatory flexibility analysis for any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the Agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impact of today's rule on small entities, small entity is defined as (1) a small business with gross revenue under $6 million (based on Small Business Administration size standards); (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

In accordance with section 603 of the RFA, EPA prepared an initial regulatory flexibility analysis (IRFA) for the proposed rule and convened a Small Business Advocacy Review (SBAR) Panel to obtain advice and recommendations of representatives of affected small entities in

accordance with section 609(b) of the RFA. See 64 FR 2298-2300, 2332-33 (January 13, 1999). A detailed discussion of the SBAR Panel's advice and recommendations can be found in the Panel Report which is available in the docket for this rule (DCN 21.5.1). The 1999 proposal provides a summary of the Panel's recommendation. See 64 FR 2298-2300.

2. Summary of Final Regulatory Flexibility Analysis

As required by section 604 of the RFA, EPA also prepared a final regulatory flexibility analysis (FRFA) for today's rule. The FRFA addresses the issues raised by public comments on the IRFA, which was part of the proposal of this rule. The FRFA is available for review in the docket (in Section 8 of the Final EA) and is summarized below.

a. Need for and Objectives of the Regulation. A detailed discussion of the need for the regulation is presented in Section V of the 1999 preamble (64 FR 2293-2295). A summary may also be found in Section 9.1.2 of the Final EA. A detailed discussion of the objectives and legal basis for the rule is presented in Sections I and II of this preamble and Chapter 1 of the final development document. Very briefly, the Clean Water Act requires EPA to establish effluent limitations guidelines and standards to control pollutant discharges to the nation's waters. The CWT industry is not currently subject to national standards that provide for an adequate level of control.

b. Significant Comments on the IRFA. The significant comments on the IRFA all addressed the following regulatory alternatives: exemptions for small businesses, exemptions based on flow cutoffs, reduced monitoring frequency for small businesses, and the use of an indicator parameter for compliance monitoring. These alternatives are discussed more fully in Section 8.3.6 of the EA and Section IV of this preamble.

Most commenters who discussed the small business exemptions, the flow cutoffs, and the reduced monitoring alternatives were opposed to them. Many commenters argued that size and flow were not necessarily related to the environmental impact of the facility. Others asserted that company revenue was a difficult basis for implementing an exemption. Other commenters noted that exempted facilities would have lower operating costs; they could, therefore, capture more market share which would lead to more untreated wastes going to a POTW. With respect to reduced monitoring, commenters stated that permit writers and control authorities should continue to establish monitoring frequencies on a case-by-case basis, taking into account the probable impact of the discharge to surface waters or a POTW, compliance history of the facility, and other relevant factors.

Many commenters responded on the subject of indicator parameters, with essentially an equivalent number opposing and favoring the use of an

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indicator parameter for compliance monitoring for indirect discharging oils subcategory facilities. Commenters that did not support the use of oil and grease (either SGT-HEM or HEM) as indicator parameters raised a number of technical concerns. Commenters that supported their use cited the decreased analytical costs and the wide range of organic compounds that can be measured with these analyses.

EPA shared the concerns of some of these commenters. In the final rule, EPA is not adopting any of these alternatives, but is taking steps to minimize the impacts on small businesses (see XIV.B.2.e). See Section IV of this preamble for more information on the comments, EPA's responses to those comments, and EPA's justification for final decisions on these options. EPA's detailed responses to comments, and the comments themselves, are contained in the Comment Response Document in response categories SBREFA, Small Business, and Indicator Parameters.

c. Description and Estimation of Number of Small Entities to Which

the Regulation Will Apply. The small entities subject to this rule are small businesses. There are no nonprofit organizations or small governmental operations that operate CWT facilities. For purposes of assessing the impacts of today's rule on small businesses, EPA relied on the SBA size standard for SIC code 4953, ``Refuse Systems,'' and applied that standard to companies owning CWT facilities. For this SIC code, SBA defines a small business as one receiving less than $6 million/year, averaged over the most recent three fiscal years.

The CWT industry is composed of an estimated 167 companies (as discussed in Section 3, this number is scaled up to reflect the total number of CWT companies). Small companies make up approximately half of all companies in the CWT industry (an estimated 82 of 167). All of these small companies, except for one, operate single CWT facilities. One company in the analysis operates two facilities. Sixty-three small companies own discharging facilities (61 own indirect dischargers and 2 own direct dischargers) that are subject to the requirements of this rule. Fifty-nine of these small companies are in the oil treatment/ recovery business. The number of employees at each of these companies ranges from 2 to 115, with a median of 18. Fifty-three out of the 63 companies have costs greater than one percent of sales; 30 out of the 63 companies have costs greater than three percent of sales. Section X.M provides more detail on the impacts to small businesses.

d. Description of the Reporting, Recordkeeping, and Other Compliance Requirements. For almost all of the small businesses subject to the final CWT rule, this regulation does not contain any specific new requirements for monitoring, recordkeeping, or reporting. Regulations for the existing NPDES and national pretreatment programs already contain minimum requirements; and permit writers and control authorities establish the monitoring regime for individual facilities. Consequently, for almost all of the CWT facilities owned by small businesses, there are similarly no new professional skills required to meet any new requirements.

However, for CWT facilities that accept waste in more than one CWT subcategory that elect to comply with the multiple wastestream subcategory limitations or standards, the final rule does include new requirements for monitoring, recordkeeping, and reporting. These requirements and the multiple wastestream subcategory are described in Sections IV.F and XIII.A.5 of the final preamble. See also Sec. 437.41. EPA concluded that CWT facilities already have the professional skills to meet these new requirements. Based on the information in EPA's database, only two CWT facilities owned by small businesses may be subject to these new requirements.

e. Steps Taken to Minimize Significant Impacts on Small Entities. EPA went to some length to explore and analyze a variety of regulatory alternatives to minimize impacts on small businesses. Today's notice includes extensive discussions of the alternatives, EPA's analysis of those alternatives, and the rationale for EPA's decisions. EPA selected the least expensive option that was considered for the final rule as the technology basis for the standards and limitations for existing sources. Furthermore, EPA selected oils option 8 as the technology basis for PSES in the oils subcategory (which contains most of the small businesses affected by the final rule), in part, based on the incremental economic impact to small businesses. For EPA's option selection rationale, see Section VIII. Most of the other regulatory alternatives incorporated exemptions for groups of facilities. EPA rejected those options for multiple reasons, including implementation difficulty and concerns about environmental impacts. For a detailed discussion of EPA's rationale for rejection of these options, see Sections IV.A-IV.E.

3. Compliance Guide

As required by section 212 of SBREFA, EPA is also preparing a small entity compliance guide to help small businesses comply with this rule. To request a copy, use any of the contacts shown in FOR FURTHER

INFORMATION CONTACT section of this preamble, above. EPA expects that the guide will be available in January 2001.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ``Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes the final rule with an explanation of why that alternative was adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed, under section 203 of the UMRA, a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local and tribal governments, in the aggregate, or the private sector in any one year. EPA has estimated total annualized costs of

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the final rule as $35.1 million ($1997). Thus, today's rule is not subject to the requirements of sections 202 and 205 of UMRA.

EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. No small governments are subject to this rule. The final rule, at most, imposes only minimal administrative requirements on small local governments that are administering approved pretreament programs. The final rule does not uniquely affect small governments because small and large governments are affected in the same way. Thus, today's rule is not subject to the requirements of section 203 of the UMRA.

D. Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1980 (PRA), 44 U.S.C. 3501 et seq., EPA must submit an information collection request covering information collection requirements in proposed rules to the Office of Management and Budget (OMB) for review and approval. There are no new information collection reporting requirements for facilities that comply with the limits for the metals-bearing, oily waste, and/or organics waste subcategories separately. The information collection reporting requirements and the burden estimates for these subcategories are contained in the ``National Pollutant Discharge Elimination System (NPDES)/Compliance Assessment/Certification Information'' ICR (No.

1427.05; OMB Approval No. 2040-0110) and in the ``National Pretreatment Program (40 CFR Part 403)'' ICR (No. 0002.08l; OMB Approval No. 2040-0009).

EPA established a fourth multiple wastestream subcategory to simplify implementation and reduce burden for facilities treating wastes covered by more than one subcategory. EPA notes that no facility is required to use this subcategory and its requirements unless the facility chooses to. The new information reporting requirements under this subcategory, described at Sec. 437.41, include submission of an initial certification statement and annual certification statements thereafter, and maintenance of on-site compliance paperwork. These requirements are the same as those previously approved by OMB for facilities in the pesticide formulating, packaging, and repackaging category that choose to comply with the pollution prevention alternative. OMB is in the process of approving the extension of these requirements to multiple wastestream facilities in the CWT category, as part of the revisions to the ICRs listed above.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15. The OMB control numbers for the information collection requirements in this rule will be listed in an amendment(s) to 40 CFR part 9 in a subsequent Federal Register document(s) after OMB approves the ICRs.

E. National Technology Transfer and Advancement Act

As noted in the proposed rule, section 12(d) of the National Technology Transfer and Advancement Act (NTTAA), Pub L. 104-113, section 12(d) (15 U.S.C. 272 note), directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through the Office of Management and Budget (OMB), explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This rulemaking involves technical standards. EPA performed a search of the technical literature to identify any applicable analytical test methods from industry, academia, voluntary consensus standard bodies and other parties that could be used to measure the analytes in today's rulemaking. EPA's search revealed that there are consensus test procedures for many of the analytes in today's rule already specified in the tables at 40 CFR 136.3. Even prior to enactment of the NTTAA, EPA has traditionally included any applicable consensus test methods in its regulations. Consistent with the requirements of the CWA, those applicable consensus test methods are incorporated by reference in the tables at 40 CFR Part 136.3. The consensus test methods in these tables include American Society for Testing Materials (ASTM) and ``Standard Methods.''

Today's rule requires dischargers to monitor for up to 17 metals, 16 organics, BOD5, total cyanide, Oil and Grease (HEM), and TSS. Examples of pollutants with consensus methods already in place include the metals, total cyanide, BOD5, TSS, and some organic pollutants such as fluoranthene and 2,4,6-trichlorophenol.

In addition, EPA noted in the 1999 proposed rule that EPA was developing additional data for certain additional pollutants not included in the Tables at 40 CFR 136.3. EPA asked commenters to identify any potentially applicable voluntary consensus standards for those pollutants. No commenters identified any such standards. Therefore, EPA has amended existing EPA test procedures included in 40 CFR 136.3 to cover the additional pollutants in today's rule.

F. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The Executive Order ``Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be ``economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health risk or safety risk that the Agency has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This rule is not subject to E.O. 13045 because it is not an economically significant rule as defined under Executive Order 12866. Further, EPA does not believe this rule concerns an environmental or safety risk that EPA has reason to believe may have a disproportionate effect on children. This rule sets technology based limits according to the requirements of the Clean Water Act. However, EPA did evaluate children's health effects (specifically, impaired IQ) in its analysis of environmental benefits of this rule (see Section XI.B). EPA estimates that this rule will reduce the number of children that might otherwise experience reduced IQ.

G. The Edible Oil Regulatory Reform Act

The Edible Oil Regulatory Reform Act, Public Law 104-55, requires most Federal agencies to differentiate between, and establish separate classes for (1) animal fats and oils and greases, fish and marine mammal oils, and oils of vegetable origin, and (2) other greases and oils, including petroleum, when issuing or enforcing any regulation or establishing any interpretation or guideline relating to the transportation,

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storage, discharge, release, emission, or disposal of a fat, oil, or grease.

The Agency believes that vegetable oils and animal fats pose similar types of threats to the environment as petroleum oils when spilled to the environment (62 FR 54508 Oct. 20, 1997).

The deleterious environmental effects of spills of petroleum and non-petroleum oils, including animal fats and vegetable oils, are produced through physical contact and destruction of food sources (via smothering or coating) as well as toxic contamination (62 FR 54511). However, the permitted discharge of CWT wastewater containing residual and dilute quantities of petroleum and non-petroleum oils is significantly different from an uncontrolled spill of pure petroleum or non-petroleum oil products.

CWT facilities that would be subject to the rule do not typically accept wastes with appreciable amounts of animal fats and oils, etc. The exception are grease trap wastes. Today's rule will not apply to that portion of wastewater treated at CWT facilities that represents grease trap wastes.

H. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial

direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ``to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. EPA has not identified any facilities covered by today's rule that are owned and/or operated by Indian tribal governments. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

I. Executive Order 13132 (Federalism)

Executive Order 13132, entitled ``Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ``meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ``Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ``substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. The rule establishes effluent limitations and pretreatment standards imposing requirements that apply to CWT facilities when they discharge wastewater or introduce wastewater to a POTW. EPA has determined that there are no CWT facilities owned and operated by State or local governments that are subject to today's rule so the rule will not impose any treatment technology costs on State or local governments. Further, the rule will only affect State and local governments incidentally in their capacity as implementers of CWA permitting programs. Therefore, the final rule, at most, imposes only minimal administrative costs on States that have authorized NPDES programs and on local governments that are administering approved pretreatment programs. (These States and localities must incorporate the new limitations and standards in new and reissued NPDES permits or local pretreatment orders or permits). Thus, Executive Order 13132 does not apply to this rule.

Even though section 6 of Executive Order 13132 does not apply to this rule, EPA did consult with representatives of State and local governments in developing this rule. The concerns raised during those consultations and EPA's response to their concerns are reflected in the Response to Comments section and elsewhere in the administrative record.

J. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule,

to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a ``major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective January 22, 2001.

Appendix 1 to the Preamble--Definitions, Acronyms, and Abbreviations

ADMINISTRATOR--The Administrator of the U.S. Environmental Protection Agency.

AGENCY--The U.S. Environmental Protection Agency.

AVERAGE MONTHLY DISCHARGE LIMITATION--The highest allowable average of ``daily discharges'' over a calendar month, calculated as the sum of all ``daily discharges'' measured during the calendar month divided by the number of ``daily discharges'' measured during the month.

BAT--The best available technology economically achievable, applicable to effluent limitations to be achieved by March 31, 1984, for industrial discharges to surface waters, as defined by Sec. 304(b)(2)(B) of the CWA.

BCT--The best conventional pollutant control technology, applicable to discharges of conventional pollutants from existing industrial point sources, as defined by Sec. 304(b)(4) of the CWA.

BPT--The best practicable control technology currently available, applicable to effluent limitations to be achieved by July 1, 1977, for industrial discharges to surface waters, as defined by Sec. 304(b)(1) of the CWA.

CENTRALIZED WASTE TREATMENT FACILITY--Any facility that treats (for disposal, recycling, or recovery of materials) or recycles any hazardous or non-hazardous industrial waste, hazardous or non-hazardous industrial wastewater, and/or used material from off-site. ``CWT facility'' includes both a facility that treats waste received from off-site exclusively, and a facility that treats wastes generated on-site as well as waste received from off-site. For example, an organic chemical manufacturing plant may, in certain circumstances, be a CWT facility if it treats industrial wastes received from offsite as well as industrial waste generated at the

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organic chemical manufacturing plant. CWT facilities include re-refiners and may be owned by the federal government.

CENTRALIZED WASTE TREATMENT WASTEWATER--Any wastewater generated as a result of CWT activities. CWT wastewater sources may include, but are not limited to: liquid waste receipts, solubilization water, used oil emulsion-breaking wastewater, tanker truck/drum/roll-off box washes, equipment washes, air pollution control scrubber blow-down, laboratory-derived wastewater, on-site landfill wastewaters, and contaminated storm water.

CLEAN WATER ACT (CWA)--The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. Section 1251 et seq.), as amended.

CLEAN WATER ACT (CWA) SECTION 308 QUESTIONNAIRE--A questionnaire sent to facilities under the authority of Section 308 of the CWA, which requests information to be used in the development of national effluent guidelines and standards.

COMMERCIAL FACILITY--A CWT facility that accepts off-site generated wastes, wastewaters, or used material from other facilities not under the same ownership as this facility. Commercial operations are usually made available for a fee or other

remuneration.

CONTAMINATED STORM WATER--Storm water which comes in direct contact with off-site waste, the waste handling and treatment areas, or other centralized waste treatment wastewater.

CONVENTIONAL POLLUTANTS--Constituents of wastewater as determined by Sec. 304(a)(4) of the CWA, including, but not limited to, pollutants classified as biochemical oxygen demand, total suspended solids, oil and grease, fecal coliform, and pH.

CWT--Centralized Waste Treatment

DAILY DISCHARGE--The discharge of a pollutant measured during any calendar day or any 24-hour period that reasonably represents a calendar day.

DETAILED MONITORING QUESTIONNAIRE (DMQ)--Questionnaires sent to collect daily monitoring data from 20 selected CWT facilities based on responses to the Section 308 Questionnaire.

DIRECT DISCHARGER--A facility that discharges or may discharge treated or untreated wastewaters into waters of the United States.

EXISTING SOURCE--Any facility from which there is or may be a discharge of pollutants, the construction of which is commenced before the publication of the proposed regulations prescribing a standard of performance under Sec. 306 of the CWA.

FACILITY--All contiguous property owned, operated, leased, or under the control of the same person or entity

FUEL BLENDING--The process of combining waste, wastewater, or used material for the purpose of regenerating a fuel for reuse.

HAZARDOUS WASTE--Any waste, including wastewater, defined as hazardous under RCRA.

HIGH TEMPERATURE METALS RECOVERY (HTMR)--A metals recovery process in which solid forms of metal containing materials are processed with a heat-based pyrometallurgical technology to produce metal products.

INDIRECT DISCHARGER--A facility that discharges or may discharge wastewaters into a publicly-owned treatment works.

INTERCOMPANY--Facilities that treat and/or recycle/recover waste, wastewater, and/or used material generated by off-site facilities not under the same corporate ownership. These facilities are also referred to as ``commercial'' CWT facilities.

INTRACOMPANY TRANSFER--Facilities that treat and/or recycle/recover waste, wastewater, and/or used material generated by off-site facilities under the same corporate ownership. These facilities are also referred to as ``non-commercial'' CWT facilities.

LTA (Long-Term Average)--For purposes of the effluent guidelines, average pollutant levels achieved over a period of time by a facility, subcategory, or technology option. LTAs were used in developing the limitations and standards in today's proposed regulation.

MARINE-GENERATED WASTE--Any waste, wastewater, and/or used material generated as part of the normal maintenance and operation of a ship, boat, or barge operating on inland, coastal, or open waters, or while berthed.

METAL-BEARING WASTES--Wastes and/or used materials from manufacturing or processing facilities or other commercial operations that contain significant quantities of metal pollutants, but not significant quantities of oil and grease (generally less than 100 mg/L), from manufacturing or processing facilities or other commercial operations. Examples of these wastes are as follows: spent electroplating baths and sludges, metal finishing rinse water and sludges, chromate wastes, air pollution control blow down water and sludges, spent anodizing solutions, incineration air pollution control wastewaters, waste liquid mercury, cyanide containing wastes greater than 136 mg/L, and waste acids and bases with or without metals.

MINIMUM LEVEL--the lowest level at which the entire analytical

system must give a recognizable signal and an acceptable calibration point for the analyte.

MIXED COMMERCIAL/NON-COMMERCIAL FACILITY--Facilities that treat and/or recycle/recover waste, wastewater, and/or used material generated by off-site facilities both under the same corporate ownership and different corporate ownership.

MULTIPLE WASTESTREAM CWT FACILITY--A CWT facility that accepts waste in more than one CWT subcategory (metals, oils, or organics) and combines any portion of these different subcategory wastes at any point prior to the compliance discharge sampling location.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT--A permit to discharge wastewater into waters of the United States issued under the National Pollutant Discharge Elimination system, authorized by Section 402 of the CWA.

NEW SOURCE--Any facility from which there is or may be a discharge of pollutants, the construction of which is commenced after the promulgation of regulations prescribing a standard of performance under section 306 of the Act and 403.3(k).

NON-COMMERCIAL FACILITY--Facilities that accept waste from off-site for treatment and/or recovery from generating facilities under the same corporate ownership as the CWT facility.

NON-CONTAMINATED STORMWATER--Stormwater that does not come into direct contact with the waste, the waste handling and treatment areas, or other centralized waste treatment wastewater.

NON-CONVENTIONAL POLLUTANTS--Pollutants that are neither conventional pollutants nor priority pollutants listed at 40 CFR Section 401.

NON-DETECT VALUE--The analyte is below the level of detection that can be reliably measured by the analytical method. This is also known, in statistical terms, as left-censoring.

NON-WATER QUALITY ENVIRONMENTAL IMPACT--Deleterious aspects of control and treatment technologies applicable to point source category wastes, including, but not limited to air pollution, noise, radiation, sludge and solid waste generation, and energy used.

NSPS--New Sources Performance Standards, applicable to industrial facilities whose construction is begun after the publication of the proposed regulations, as defined by Sec. 306 of the CWA.

OCPSF--Organic chemicals, plastics, and synthetic fibers manufacturing point source category. (40 CFR Part 414).

OFF SITE--Outside the boundaries of a facility.

OILY ABSORBENT RECYCLING--The process of recycling oil soaked or contaminated disposable rags, paper, or pads for the purpose of regenerating a fuel for reuse.

OILY WASTES--Wastes and/or used materials that contain oil and grease (generally at or in excess of 100 mg/L) from manufacturing or processing facilities or other commercial operations. Examples of these wastes are as follows: used oils, oil-water emulsions or mixtures, lubricants, coolants, contaminated groundwater clean-up from petroleum sources, used petroleum products, oil spill clean-up, bilge water, rinse/wash waters from petroleum sources, interceptor wastes, off-specification fuels, underground storage tank remediation waste, and tank clean out from petroleum or oily sources.

ON SITE--Within the boundaries of a facility. A facility may encompass land areas that are bisected by public thoroughfares but are under the control of a common owner.

ORGANIC WASTES--Wastes and/or used materials that contain organic pollutants, but not a significant quantity of oil and grease (generally less than 100 mg/L) from manufacturing or processing facilities or other commercial operations. Examples of these wastes are as follows: landfill leachate, contaminated groundwater clean-up from non-petroleum sources, solvent-bearing wastes, off-

specification organic product, still bottoms, waste byproduct glycols, wastewater from paint washes, wastewater

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from adhesives and/or epoxies formulation, wastewater from chemical product operations, and tank clean-out from organic, non-petroleum sources.

OUTFALL--The mouth of conduit drains and other conduits from which a facility effluent discharges into receiving waters.

OUT-OF-SCOPE--Out-of-scope facilities are facilities that only perform centralized waste treatment activities that EPA has not determined to be subject to provisions of this guideline or facilities that do not accept off-site waste for treatment.

PIPELINE--Pipeline means an open or closed conduit used for the conveyance of material. A conduit includes a channel, pipe, tube, trench, ditch, or fixed delivery system.

PASS THROUGH--A pollutant is determined to ``pass through'' a POTW when the national average percentage removed by efficiently operated POTWs is less than the average percentage removed by the industry's direct dischargers that are using well-defined, well-operated BAT technology.

POINT SOURCE--Any discernable, confined, and discrete conveyances from which pollutants are or may be discharged.

POLLUTANTS OF CONCERN (POCs)--Pollutants commonly found in centralized waste treatment wastewaters. For the purposes of this guideline, a POC is a pollutant that is detected at or above a treatable level in influent wastewater samples from centralized waste treatment facilities. Additionally, a CWT POC must be present in at least ten percent of the influent wastewater samples.

PRIORITY POLLUTANT--One hundred twenty-six compounds that are a subset of the 65 toxic pollutants and classes of pollutants outlined in Section 307 of the CWA. The priority pollutants are specified in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 [D.D.C. 1976], modified 12 E.R.C. 1833 [D.D.C. 1979]).

PRODUCT STEWARDSHIP--For purposes of this final rule, product stewardship means a manufacturer's treatment or recovery of its own unused products, shipping and storage containers with product residues, off-specification products, and does not include spent or used materials from use of its products.

PSES--Pretreatment standards for existing sources of indirect discharges, under Sec. 307(b) of the CWA.

PSNS--Pretreatment standards for new sources of indirect discharges, under Sec. 307(b) of the CWA.

PUBLICLY OWNED TREATMENT WORKS (POTW)--Any device or system, owned by a state or municipality, used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature that is owned by a state or municipality. This includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment (40 CFR 122.2).

RCRA--The Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S.C. Section 6901 et seq.), which regulates the generation, treatment, storage, disposal, or recycling of solid and hazardous wastes.

RE-REFINING--Distillation, hydrotreating, and/or other treatment employing acid, caustic, solvent, clay and/or chemicals of used oil in order to produce high quality base stock for lubricants or other petroleum products.

RECOVERY--The recycling or processing of a waste, wastewater, or used material such that the material, or a portion thereof, may be reused or converted to a raw material, intermediate, or product.

SIC--Standard Industrial Classification (SIC)--A numerical

categorization system used by the U.S. Department of Commerce to catalogue economic activity. SIC codes refer to the products, or group of products, produced or distributed, or to services rendered by an operating establishment. SIC codes are used to group establishments by the economic activities in which they are engaged. SIC codes often denote a facility's primary, secondary, tertiary, etc. economic activities.

SMALL BUSINESS--Businesses with annual sales revenues less than $6 million. This is the Small Business Administration definition of small business for SIC code 4953, Refuse Systems (13 CFR Ch.1, Sec. 121.601) which is being used to characterize the CWT industry.

SOLIDIFICATION--The addition of sorbents to convert liquid or semi-liquid waste to a solid by means of adsorption, absorption or both. The process is usually accompanied by stabilization.

SOLVENT RECOVERY--Fuel blending operations and the recycling of spent solvents through separation of solvent mixtures in distillation columns. Solvent recovery may require an additional, pretreatment step prior to distillation.

STABILIZATION--A waste process that decreases the mobility of waste constituents by means of a chemical reaction. For the purpose of this rule, chemical precipitation is not a technique for stabilization.

SUBCHAPTER N--Refers to Subchapter N of Chapter I of Title 40 of the Federal Regulations. This includes, but is not limited to, the industrial effluent limitation guidelines and standards included in 40 CFR Parts 405 through 471.

TREATMENT--Any method, technique, or process designed to change the physical, chemical or biological character or composition of any metal-bearing, oily, or organic waste so as to neutralize such wastes, to render such wastes amenable to discharge or to recover energy or recover metal, oil, or organic content from the wastes.

USED OIL FILTER RECYCLING--The process of crushing and draining of used oil filters of entrained oil and/or shredding and separation of used oil filters.

VARIABILITY FACTOR--Used in calculating a limitation (or standard) to allow for reasonable variation in pollutant concentrations when processed through extensive and well-designed treatment systems. Variability factors assure that normal fluctuations in a facility's treatment are accounted for in the limitations. By accounting for these reasonable excursions above the long-term average, EPA's use of variability factors results in limitations that are generally well above the actual long-term averages.

WASTE--Includes aqueous, non-aqueous, and solid waste, wastewater, and/or used material.

WASTE RECEIPT--Wastes, wastewater, or used material received for treatment and/or recovery. Waste receipts can be liquids or solids.

ZERO OR ALTERNATIVE DISCHARGE--No discharge of pollutants to waters of the United States or to a POTW. Also included in this definition is disposal of pollutants by way of evaporation, deep-well injection, off-site transfer, and land application.

List of Subjects

40 CFR Part 136

Environmental protection, Reporting and recordkeeping requirements, Water pollution control.

40 CFR Part 437

Environmental protection, Waste treatment and disposal, Water pollution control.

Dated: August 28, 2000.
Carol M. Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter 1 of the Code of Federal Regulations is amended as follows:

PART 136--TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS

1. The authority citation for Part 136 continues to read as follows:

Authority: Secs. 301, 304(h), 307, and 501(a) Pub. L. 95-217, 91 Stat. 1566, et seq. (33 U.S.C. 1251, et seq.).

Appendix A--[Amended]

2. Appendix A to Part 136 is amended by revising Attachment 1 of Method 625 to read as follows:

Appendix A To Part 136--Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater

* * * * *

Method 625--Base/Neutrals and Acids

* * * * *

Attachment 1 to Method 625

Introduction

To support measurement of several semivolatile pollutants, EPA has developed this attachment to EPA Method 625.\1\ The modifications listed in this attachment are approved only for monitoring wastestreams from the Centralized Waste Treatment Point Source Category (40 CFR Part 437) and the Landfills Point Source Category (40 CFR Part 445). EPA Method 625 (the Method) involves sample extraction with methylene chloride followed by analysis of the extract using either packed or capillary column gas

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chromatography/mass spectrometry (GC/MS). This attachment addresses the addition of the semivolatile pollutants listed in Tables 1 and 2, to all applicable standard, stock, and spiking solutions utilized for the determination of semivolatile organic compounds by EPA Method 625.

\1\ EPA Method 625: Base/Neutrals and Acids, 40 CFR Part 136, Appendix A.

1.0 EPA METHOD 625 MODIFICATION SUMMARY

The additional semivolatile organic compounds listed in Tables 1 and 2 are added to all applicable calibration, spiking, and other solutions utilized in the determination of base/neutral and acid compounds by EPA Method 625. The instrument is to be calibrated with these compounds, using a capillary column, and all procedures and

quality control tests stated in the Method must be performed.

2.0 SECTION MODIFICATIONS

Note: All section and figure numbers in this Attachment reference section and figure numbers in EPA Method 625 unless noted otherwise. Sections not listed here remain unchanged.

Section 6.7 The stock standard solutions described in this section are modified such that the analytes in Tables 1 and 2 of this attachment are required in addition to those specified in the Method.
Section 7.2 The calibration standards described in this section are modified to include the analytes in Tables 1 and 2 of this attachment.
Section 8.2 The precision and accuracy requirements are modified to include the analytes listed in Tables 1 and 2 of this attachment. Additional performance criteria are supplied in Table 5 of this attachment.
Section 8.3 The matrix spike is modified to include the analytes listed in Tables 1 and 2 of this attachment.
Section 8.4 The QC check standard is modified to include the analytes listed in Tables 1 and 2 of this attachment. Additional performance criteria are supplied in Table 5 of this attachment.
Section 16.0 Additional method performance information is supplied with this attachment.

Table 1.--Base/Neutral Extractables

Parameter	CAS No.
acetophenone 1	98-86-2
alpha-terpineol 3	98-55-5
aniline 2	62-53-3
carbazole 1	86-74-8
o-cresol 1	95-48-7
n-decane 1	124-18-5
2,3-dichloroaniline 1	608-27-5
n-octadecane 1	593-45-3
pyridine 2	110-86-1

CAS = Chemical Abstracts Registry.
1 Analysis of this pollutant is approved only for the Centralized Waste Treatment industry.
2 Analysis of this pollutant is approved only for the Centralized Waste Treatment and Landfills industries.
3 Analysis of this pollutant is approved only for the Landfills industry.

Table 2.--Acid Extractables

Parameter	CAS No.
p-cresol 1	106-44-5

CAS = Chemical Abstracts Registry.
1 Analysis of this pollutant is approved only for the Centralized Waste Treatment and Landfills industries.

Table 3.--Chromatographic Conditions,\1\ Method Detection Limits (MDLs), and Neutral Extractables

	Retention \2\	MDL (g/L) Pr
pyridine \3\	4.93	4.6
N-Nitro sodimethylamine	4.95	.....
aniline \3\	10.82	3.3
Bis(2-chloroethyl)ether	10.94	.....
n-decane \4\	11.11	5.0
1,3-Dichlorobenzene	11.47	.....
1,4-Dichlorobenzene	11.62	.....
1,2-Dichlorobenzene	12.17	.....
o-creso \1\	12.48	4.7
Bis(2-chloro- isopropyl)ether	12.51	.....
acetophenone \4\	12.88	3.4
N-Nitrosodi-n-propylamine	12.97	.....
Hexachloroethane	13.08	.....
Nitrobenzene	13.40	.....
Isophorone	14.11	.....
Bis (2-chloro ethoxy)methane	14.82	.....
1,2,4-Trichlorobenzene	15.37	.....
alpha-terpineol	15.55	5.0
Naphthalene	15.56	.....
Hexachlorobutadiene	16.12	.....
Hexachlorocyclopentadiene	18.47	.....
2,3-dichloroaniline \4\	18.82	2.5
2-Chloronaphthalene	19.35	.....
Dimethyl phthalate	20.48	.....
Acenaphthylene	20.69	.....
2,6-Dinitrotoluene	20.73	.....
Acenaphthene	21.30	.....
2,4-Dinitrotoluene	22.00	.....
Diethylphthalate	22.74	.....
4-Chlorophenyl phenyl ether	22.90	.....
Fluorene	22.92	.....
N-Nitro sodiphenylamine	23.35	.....
4-Bromophenyl phenyl ether	24.44	.....
Hexachlorobenzene	24.93	.....
n-octadecane \4\	25.39	2.0

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Phenanthrene	25.98	.....
Anthracene	26.12	.....
Carbazole \4\	26.66	4.0
Dibutyl phthalate	27.84	.....
Fluoranthene	29.82	.....
Benzidine	30.26	.....
Pyrene	30.56	.....
Butyl benzyl phthalate	32.63	.....
3,3'-Dichlorobenzidine	34.28	.....
Benzo(a)anthracene	34.33	.....
Bis(2-ethyl hexyl)phthalate	34.36	.....
Chrysene	34.44	.....
Di-n-octyl-phthalate	36.17	.....
Benzo(b)fluoranthene	37.90	.....
Benzo(k)fluoranthene	37.97	.....
Benzo(a)pyrene	39.17	.....
Dibenzo(a,h) anthracene	44.91	.....
Indeno(1,2,3-c,d)pyrene	45.01	.....
Benzo(ghi)perylene	46.56	.....

\1\ The data presented in this table were obtained under the following conditio

Column--30 5 meters x 0.25 .02 mm i.d., 94% methyl, 5% phenyl, 1% vinyl, bon
fused silica capillary column (DB-5).
Temperature program--Five minutes at 30 deg.C; 30-280 deg.C at 8 deg.C per m
until benzo(ghi)perylene elutes.
Gas velocity--305 cm/sec at 30 deg.C.

\2\ Retention times are from Method 1625, Revision C, using a capillary column
consistent for all analytes in Tables 4 and 5 of this attachment.
\3\ Analysis of this pollutant is approved only for the Centralized Waste Treat
\4\ Analysis of this pollutant is approved only for the Centralized Waste Treat

Table 4.--Chromatographic Conditions,\1\ Method Detection Limits (MDLs), an
Extractables

	Retention (min)	MDL (g/L)	
			Pr
Phenol	10.76	.....	
2-Chlorophenol	11.08	.....	
p-cresol \3\	12.92	7.8	
2-Nitrophenol	14.38	.....	
2,4-Dimethylphenol	14.54	.....	
2,4-Dichlorophenol	15.12	.....	
4-Chloro-3-methylphenol	16.83	.....	
2,4,6-Trichlorophenol	18.80	.....	
2,4-Dinitrophenol	21.51	.....	
4-Nitrophenol	21.77	.....	
2-Methyl-4,6-dinitrophenol	22.83	.....	
Pentachlorophenol	25.52	.....	

\1\ The data presented in this table were obtained under the following conditio
Column--30 +/-5 meters x 0.25 +/-.02 mm i.d., 94% methyl, 5% phenyl, 1% viny
silica capillary column (DB-5).
Temperature program--Five minutes at 30 deg.C; 30-280 deg.C at 8 deg.C per
until benzo(ghi)perylene elutes.
Gas velocity--30+/-5 cm/sec at 30 deg.C
\2\ Retention times are from EPA Method 1625, Revision C, using a capillary col
consistent for all analytes in Tables 3 and 4 of this attachment.
\3\ Analysis of this pollutant is approved only for the Centralized Waste Treat

Table 5.--QC Acceptance Criteria

Analyte	Test conclusion (g/ L)	(g/	(g/	Limits f P, Ps L)
acetophenone \1\	100			
alpha-terpineol	100			
aniline \2\	100			

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carbazole \1\	100			
o-cresol \1\	100			
p-cresol \2\	100			
n-decane \1\	100			
2,3-dichloroaniline \1\	100			
n-octadecane \1\	100			
pyridine \2\	100			

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s = Standard deviation for four recovery measurements, in g/L (Section 8.2)
X = Average recovery for four recovery measurements in g/L (Section 8.2)
P,Ps = Percent recovery measured (Section 8.3, Section 8.4)
D = Detected; result must be greater than zero.
ns = no specification; limit is outside the range that can be measured reliabl
\1\ Analysis of this pollutant is approved only for the Centralized Waste Treat
\2\ Analysis of this pollutant is approved only for the Centralized Waste Treat

3. Appendix A to Part 136 is amended by revising Attachment 1 of Method 1625 to read as follows:

* * * * *

Method 1625--Revision B--Semivolatile Organic Compounds by Isotope Dilution GC/MS

* * * * *

Attachment 1 to Method 1625

Introduction

To support measurement of several semivolatile pollutants, EPA has developed this attachment to EPA Method 1625B.\1\ The modifications listed in this attachment are approved only for monitoring wastestreams from the Centralized Waste Treatment Point Source Category (40 CFR Part 437) and the Landfills Point Source Category (40 CFR Part 445). EPA Method 1625B (the Method) employs sample extraction with methylene chloride followed by analysis of the extract using capillary column gas chromatography-mass spectrometry (GC/MS). This attachment addresses the addition of the semivolatile pollutants listed in Tables 1 and 2 to all applicable standard, stock, and spiking solutions utilized for the determination of semivolatile organic compounds by EPA Method 1625B.

\1\ EPA Method 1625 Revision B, Semivolatile Organic Compounds by Isotope Dilution GC/MS, 40 CFR Part 136, Appendix A.

1.0 EPA METHOD 1625 REVISION B MODIFICATION SUMMARY

The additional semivolatile organic compounds listed in Tables 1 and 2 are added to all applicable calibration, spiking, and other solutions utilized in the determination of semivolatile compounds by EPA Method 1625. The instrument is to be calibrated with these compounds, and all procedures and quality control tests described in the Method must be performed.

2.0 SECTION MODIFICATIONS

Note: All section and figure numbers in this Attachment reference section and figure numbers in EPA Method 1625 Revision B unless noted otherwise. Sections not listed here remain unchanged.

Section 6.7 The stock standard solutions described in this section are modified such that the analytes in Tables 1 and 2 of this attachment are required in addition to those specified in the Method.
Section 6.8 The labeled compound spiking solution in this section is modified to include the labeled compounds listed in Tables 5 and 6 of this attachment.
Section 6.9 The secondary standard is modified to include the

additional analytes listed in Tables 1 and 2 of this attachment.
Section 6.12 The solutions for obtaining authentic mass spectra are to include all additional analytes listed in Tables 1 and 2 of this attachment.
Section 6.13 The calibration solutions are modified to include the analytes listed in Tables 1 and 2 and the labeled compounds listed in Tables 5 and 6 of this attachment.
Section 6.14 The precision and recovery standard is modified to include the analytes listed in Tables 1 and 2 and the labeled compounds listed in Tables 5 and 6 of this attachment.
Section 6.15 The solutions containing the additional analytes listed in Tables 1 and 2 of this attachment are to be analyzed for stability.
Section 7.2.1 This section is modified to include the analytes listed in Tables 1 and 2 and the labeled compounds listed in Tables 5 and 6 of this attachment.
Section 7.4.5 This section is modified to include the analytes listed in Tables 1 and 2 and the labeled compounds listed in Tables 5 and 6 in the calibration.
Section 8.2 The initial precision and recovery (IPR) requirements are modified to include the analytes listed in Tables 1 and 2 and the labeled compounds listed in Tables 5 and 6 of this attachment. Additional IPR performance criteria are supplied in Table 7 of this attachment.
Section 8.3 The labeled compounds listed in Tables 3 and 4 of this attachment are to be included in the method performance tests. Additional method performance criteria are supplied in Table 7 of this attachment.
Section 8.5.2 The acceptance criteria for blanks includes the analytes listed in Tables 1 and 2 of this attachment.
Section 10.1.2 The labeled compound solution must include the labeled compounds listed in Tables 5 and 6 of this attachment.
Section 10.1.3 The precision and recovery standard must include the analytes listed in Tables 1 and 2 and the labeled compounds listed in Tables 5 and 6 of this attachment.
Section 12.5 Additional QC requirements for calibration verification are supplied in Table 7 of this attachment.
Section 12.7 Additional QC requirements for ongoing precision and recovery are supplied in Table 7 of this attachment.

Table 1.--Base/Neutral Extractable Compounds

Compound	Pollutant	
	CAS Registry	EPA-EGD
acetophenone 1	98-86-2	758
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aniline 2	62-53-3	757
-2,3-dichloroaniline1	608-27-5	578
-o-cresol 1	95-48-7	771
pyridine 2	110-86-1	1330

CAS = Chemical Abstracts Registry.
EGD = Effluent Guidelines Division.
1 Analysis of this pollutant is approved only for the Centralized Waste Treatment industry.
2 Analysis of this pollutant is approved only for the Centralized Waste Treatment and Landfills industries.

Table 2.--Acid Extractable Compounds

Compound	Pollutant	
	CAS Registry	EPA-EGD
p-cresol 1	106-44-5	1744

CAS = Chemical Abstracts Registry.
EGD = Effluent Guidelines Division.
1 Analysis of this pollutant is approved only for the Centralized Waste Treatment and Landfills industries.

Table 3.--Gas Chromatography 1 of Bas

EGD No.	Compound	Retention tim	
		Mean (sec)	EGD Ref
758	acetophenone 4	818	6
757	aniline 5	694	6
578	2,3-dichloroaniline 4	1160	1
771	o-cresol 4	814	6
1330	pyridine 5	378	12

EGD = Effluent Guidelines Division.
1 The data presented in this table were obtained under the chromatographic cond
2 Retention times are approximate and are intended to be consistent with the re
3 See the definition in footnote 2 to Table 3 of EPA Method 1625B.
4 Analysis of this pollutant is approved only for the Centralized Waste Treatme
5 Analysis of this pollutant is approved only for the Centralized Waste Treatme

Table 4.--Gas Chromatography 1 of Acid Extractable Co

EGD No.	Compound	Retention time	
		Mean (sec)	EGD Ref
1744	p-cresol 4	834	164

EGD = Effluent Guidelines Division.
1 The data presented in this table were obtained under the chromatographic cond Table 4 of EPA Method 1625B.
2 Retention times are approximate and are intended to be consistent with the re EPA Method 1625B.
3 See the definition in footnote 2 to Table 4 of EPA Method 1625B.
4 Analysis of this pollutant is approved only for the Centralized Waste Treatme

Table 5.--Base/Neutral Extractable Compound Characteristic m/z's

Compound	Labeled Analog	Primary m/z 1
acetophenone 2	d5	105/110
aniline 3	d7	93/100
o-cresol 2	d7	108/116
2,3-dichloroaniline 2	n/a	161
pyridine 3	d5	79/84

m/z = mass to charge ratio.
1 Native/labeled.

2 Analysis of this pollutant is approved only for the Centralized Waste Treatment industry.
3 Analysis of this pollutant is approved only for the Centralized Waste Treatment and Landfills industries.

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Table 6.--Acid Extractable Compound Characteristic m/z's

Compound	Labeled Analog	Primary m/z 1
p-cresol 2	d7	108/116

m/z = mass to charge ratio.
1 Native/labeled.
2 Analysis of this pollutant is approved only for the Centralized Waste Treatment and Landfills industries.

Table 7.--Acceptance Criteria for Performance Te

EGD No.	Compound	Acceptance criteria: Initial precision and accuracy section 8.2 (g/L) s (g/L)	X	Labe reco and 14 (perc
758	acetophenone 1	34	44-167	.....
658	acetophenone-d 5 1	51	23-254	4
757	aniline 2	32	30-171	.....
657	aniline-d 7 2	71	15-278	3
771	o-cresol 1	40	31-226	.....
671	o-cresol-d 7 1	23	30-146	3
1744	p-cresol 2	59	54-140	.....
1644	p-cresol-d7 2	22	11-618	3
578	2,3-dichloroaniline 1.	13	40-160	.....
1330	pyridine 2	28	10-421	.....
1230	pyridine-d 5 2	ns	7-392	1

s = Standard deviation of four recovery measurements.
X = Average recovery for four recovery measurements.
EGD = Effluent Guidelines Division.
ns = no specification; limit is outside the range that can be measured reliably
1 Analysis of this pollutant is approved only for the Centralized Waste Treatme
2 Analysis of this pollutant is approved only for the Centralized Waste Treatme

4. Part 437 is added to read as follows:

PART 437--THE CENTRALIZED WASTE TREATMENT POINT SOURCE CATEGORY

Sec.
437.1 General applicability.
437.2 General definitions.
437.3 General pretreatment standards.
437.4 Monitoring requirements.
Subpart A--Metals Treatment and Recovery
437.10 Applicability.
437.11 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

437.12 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).
437.13 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
437.14 New source performance standards (NSPS).
437.15 Pretreatment standards for existing sources (PSES).
437.16 Pretreatment standards for new sources (PSNS).
Subpart B--Oils Treatment and Recovery
437.20 Applicability.
437.21 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
437.22 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).
437.23 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
437.24 New source performance standards (NSPS).
437.25 Pretreatment standards for existing sources (PSES).
437.26 Pretreatment standards for new sources (PSNS).
Subpart C--Organics Treatment and Recovery
437.30 Applicability.
437.31 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
437.32 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).
437.33 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
437.34 New source performance standards (NSPS).
437.35 Pretreatment standards for existing sources (PSES).
437.36 Pretreatment standards for new sources (PSNS).
Subpart D--Multiple Wastestreams
437.40 Applicability.
437.41 Special Definitions.
437.42 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
437.43 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).
437.44 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
437.45 New source performance standards (NSPS).
437.46 Pretreatment standards for existing sources (PSES).
437.47 Pretreatment standards for new sources (PSNS).

Authority: Secs 301, 304, 306, 307, 308, 402, and 501 of the Clean Water Act, as amended; 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361.

Sec. 437.1 General applicability.

(a) Except as provided in paragraphs (b), (c), or (d) of this section, this part applies to that portion of wastewater discharges from a centralized waste treatment (CWT) facility that results from any of the following activities:

(1) Treatment and recovery of hazardous or non-hazardous industrial

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metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site; and

(2) The treatment of CWT wastewater.

(b) This part does not apply to the following discharges of wastewater from a CWT facility:

(1) Wastewater from the treatment of wastes that are generated on-site when the wastes generated on-site are otherwise subject to another

part of subchapter N.

(2) Wastewater from the treatment of wastes that are generated off-site if the discharger: a) demonstrates that the off-site wastes are generated at a facility that is subject to the same provisions in 40 CFR subchapter N as non-CWT wastes generated at the CWT facility or b) demonstrates that the off-site wastes are of similar nature and the treatment of such wastes are compatible with the treatment of non-CWT wastes generated and treated at the CWT.

(3) Wastewater from the treatment of wastes received from off-site via conduit (e.g., pipelines, channels, ditches, trenches, etc.) from the facility that generates the wastes unless the resulting wastewaters are commingled with other wastewaters subject to this provision. A facility that acts as a waste collection or consolidation center is not a facility that generates wastes.

(4) Wastewater from product stewardship activities, the treatment of sanitary wastes and wastes of domestic origin including chemical toilet wastes, septage, and restaurant wastes or thermal drying of POTW biosolids. Product stewardship activities for purposes of this provision are limited to the following activities at a manufacturing facility: acceptance for treatment or recovery of its unused products, shipping and storage containers with product residues and off-spec products.

(5) Wastewater from solids recovery operations so long as the wastes recovered are from non-industrial sources, and recovery of the wastes does not generate a wastewater or leach appreciable metal or organic chemicals or petroleum-based oil and grease into the water. Examples of solids recovery operations to which this subpart would not apply include, but are not limited to, the recycling of aluminum cans, glass and plastic bottles.

(6) Wastewater from scrap metal processing or auto salvage operations.

(7) Wastewater from transfer stations or municipal recycling centers.

(8) Wastewater from the treatment of, or recovery of material from, animal or vegetable fats/oils from grease traps or interceptors generated by facilities engaged in food service activities.

(9) Wastewater from the treatment of, or recovery of material from, off-site wastes generated by facilities engaged only in food processing.

(10) Wastewater from facilities that are subject to 40 CFR part 442. Wastewater resulting from the treatment of off-site wastewater generated in cleaning transportation equipment (or on-site wastewater generated in cleaning equipment) along with other off-site wastes (subject to this part) not generated in cleaning transportation equipment is, however, subject to this part.

(11) Wastewater resulting from solvent recovery operations if the solvent recovery operations involve the separation of solvent mixtures by distillation.

(12) Wastewater from facilities that are engaged exclusively in centralized silver recovery from used photographic or x-ray materials activities. The discharge resulting from centralized silver recovery from used photographic or x-ray materials that is treated at a CWT facility along with other off-site wastestreams (subject to this part) is subject to this part.

(13) Wastewater from facilities that accept off-site wastes only for treatability studies, research and development, or chemical or physical analysis. The wastewater resulting from treatability studies, research and development, or chemical or physical analysis that is treated at a CWT facility along with other off-site wastestreams (subject to this part) is subject to this part.

(c) This part also does not apply to the following activities:

(1) ``Dry'' fuel blending operations, ``dry'' waste solidification/stabilization operations, ``dry'' used oil filter or oily absorbents

recycling operations, or ``dry'' high temperature metals recovery operations. However, this part does apply to wastewater discharges from a CWT resulting from any of these operations that do produce wastewater.

(2) The discharge of marine generated wastes including wash water from equipment and tank cleaning, ballast water, bilge water, and other wastes generated (while operating on inland, coastal, or open waters or while berthed) as part of routine ship maintenance and operation as long as they are treated and discharged at the ship servicing facility where it is off-loaded. The discharges resulting from the treatment of marine generated wastes that are off-loaded and subsequently sent to a centralized waste treatment facility at a separate location are, however, subject to this part.

(3) Discharge of wastewater from land treatment units or land application operations.

(4) Discharge of wastewater from facilities that are engaged exclusively in landfilling activities and/or the treatment of landfill wastewaters (whether generated on or off-site). The discharge resulting from the treatment of landfill wastewater, whether generated on-site or off-site, treated at CWT facilities along with other off-site waste is, however, subject to this part.

(5) Discharge of wastewater from facilities that are engaged exclusively in incineration activities. The discharge resulting from the treatment of off-site wastewater generated in the incineration of industrial waste that is treated at a CWT facility along with other off-site wastestreams (subject to this part) is subject to this part.

(d) Notwithstanding paragraph (a) of this section, the provisions of this part are not applicable to any metals treatment and recovery wastewater discharges which are subject to the secondary metals provisions of 40 CFR part 421, the Nonferrous Metals Manufacturing Point Source Category. These secondary metals subcategories are Subpart C (Secondary Aluminum Smelting Subcategory), Subpart F (Secondary Copper Subcategory), Subpart L (Secondary Silver Subcategory), Subpart M (Secondary Lead Subcategory), Subpart P (Primary and Secondary Germanium and Gallium Subcategory), Subpart Q (Secondary Indium Subcategory), Subpart R (Secondary Mercury Subcategory), Subpart T (Secondary Molybdenum and Vanadium Subcategory), Subpart V (Secondary Nickel Subcategory), Subpart X (Secondary Precious Metals Subcategory), Subpart Z (Secondary Tantalum Subcategory), Subpart AA (Secondary Tin Subcategory), Subpart AB (Primary and Secondary Titanium Subcategory), Subpart AC (Secondary Tungsten and Cobalt Subcategory), and Subpart AD (secondary Uranium Subcategory).

Sec. 437.2 General definitions.

As used in this part:

(a) The general definitions and abbreviations in 40 CFR part 401 apply to this part.

(b) Alternative effluent limitations or pretreatment standards mean effluent limitations determined on a case-by-case basis under section 402(a)(1) of the CWA or pretreatment standards developed as local limits by the control authority under 40 CFR Sec. 403.6(c) that apply to the discharge of wastewater subject to this provision. The permit writer (or control authority) will

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calculate these limitations or standards using a ``building block'' approach or the ``combined wastestream formula.'' Under this approach, the permit writer (or control authority) will develop flow-weighted effluent limitations or standards for the treated combined wastestream by applying the limitations or standards in 40 CFR subchapter N that would otherwise apply to a particular wastestream received from off-

site if the wastestream were treated and discharged from the facility at which it was generated.

(c) Centralized waste treatment (CWT) facility means any facility that treats (for disposal, recycling or recovery of material) any hazardous or non-hazardous industrial wastes, hazardous or non-hazardous industrial wastewater, and/or used material received from off-site. ``CWT facility'' includes both a facility that treats waste received exclusively from off-site and a facility that treats wastes generated on-site as well as waste received from off-site. For example, an organic chemical manufacturing plant may, in certain circumstances, be a CWT facility if it treats industrial wastes received from offsite as well as industrial waste generated at the organic chemical manufacturing plant. CWT facilities may also include re-refiners and may be owned by the federal government.

(d) Centralized waste treatment wastewater means any wastewater generated as a result of CWT activities. CWT wastewater sources may include, but are not limited to: liquid waste receipts, solubilization water, used oil emulsion-breaking wastewater, tanker truck/drum/roll-off box washes, equipment washes, air pollution control scrubber blow-down, laboratory-derived wastewater, on-site landfill wastewaters, and contaminated storm water.

(e) Contaminated storm water means storm water which comes in direct contact with CWT wastes, the waste handling and treatment areas, or other centralized waste treatment wastewater as defined in paragraph (d) of this section.

(f) Discharger means a facility that discharges wastewater directly to waters of the United States or introduces wastewater to a publicly-owned treatment works.

(g) Dry means not producing a wastewater.

(h) Equivalent treatment means a wastewater treatment system that achieves comparable pollutant removals to the applicable treatment technology selected as the basis for the limitations and pretreatment standards. Comparable removals may be demonstrated through literature, treatability tests, or self-monitoring data.

(i) Fuel blending means the process of combining waste, wastewater, or used material for the purpose of regenerating a fuel for reuse. However, fuel blending may be loosely applied to any process where recovered hydrocarbons are combined as a fuel product where some pretreatment operations generate wastewater.

(j) High temperature metals recovery means a metals recovery process in which solid forms of metal-containing materials are processed with a heat-based pyrometallurgical technology to produce a metal product.

(k) Marine generated waste means any waste, wastewater, and/or used material generated as part of the normal maintenance and operation of a ship, boat, or barge operating on inland, coastal, or open waters, or while berthed.

(l) Metal-bearing wastes means wastes and/or used materials from manufacturing or processing facilities or other commercial operations that contain significant quantities of metal pollutants, but not significant quantities of oil and grease (generally less than 100 mg/L). Examples of these wastes are spent electroplating baths and sludges, metal-finishing rinse water and sludges, chromate wastes, blow-down water and sludges from air pollution control, spent anodizing solutions, incineration air pollution control wastewaters, waste liquid mercury, cyanide containing wastes greater than 136 mg/L, and waste acids and bases with or without metals.

(m) Multiple wastestream CWT facility means a CWT facility which accepts waste in more than one CWT subcategory (metals, oils, or organics) and combines any portion of these different subcategory wastes at any point prior to the compliance discharge sampling location.

(n) Off-site means outside the boundaries of a facility.

(o) Oily absorbent recycling means the process of recycling oil-soaked or contaminated disposable rags, paper, or pads for the purpose of regenerating a fuel for reuse.

(p) Oily wastes means wastes and/or used materials that contain oil and grease (generally at or in excess of 100 mg/L) from manufacturing or processing facilities or other commercial operations. Examples of these wastes are used oils, oil-water emulsions or mixtures, lubricants, coolants, contaminated groundwater clean-up from petroleum sources, used petroleum products, oil spill clean-up, bilge water, rinse/wash waters from petroleum sources, interceptor wastes, off-specification fuels, underground storage tank remediation waste, and tank clean out from petroleum or oily sources.

(q) On-site means within the boundaries of a facility. A facility may encompass land areas that are bisected by public thoroughfares but are under the control of a common owner.

(r) Organic wastes means wastes and/or used materials that contain organic pollutants, but not a significant quantity of oil and grease (generally less than 100 mg/L) from manufacturing or processing facilities or other commercial operations. Examples of these wastes are landfill leachate, contaminated groundwater clean-up from non-petroleum sources, solvent-bearing wastes, off-specification organic product, still bottoms, byproduct glycols, wastewater from paint washes, wastewater from adhesives and/or epoxies, wastewater from chemical product operations, and tank clean-out from organic, non-petroleum sources.

(s) The following regulated parameters are listed with approved methods of analysis in Table 1B at 40 CFR 136.3, and are defined as follows:

(1) Antimony means total antimony.
(2) Arsenic means total arsenic.
(3) Barium means total barium.
(4) BOD5 means 5-day biochemical oxygen demand.
(5) Cadmium means total cadmium.
(6) Chromium means total chromium.
(7) Cobalt means total cobalt.
(8) Copper means total copper.
(9) Cyanide means total cyanide.
(10) Lead means total lead.
(11) Mercury means total mercury.
(12) Molybdenum means total molybdenum.
(13) Nickel means total nickel.
(14) O&G means total recoverable oil and grease (n-hexane extractable material).
(15) Selenium means total selenium.
(16) Silver means total silver.
(17) Tin means total tin.
(18) Titanium means total titanium.
(19) TSS means total suspended solids.
(20) Vanadium means total vanadium.
(21) Zinc means total zinc.

(t) The following regulated parameters are listed with approved methods of analysis in Table 1C at 40 CFR 136.3:

(1) Bis(2-ethylhexyl) phthalate.
(2) Butylbenzyl phthalate.
(3) Fluoranthene.
(4) Phenol.
(5) 2,4,6-trichlorophenol.

(u) The following regulated parameters are listed with approved methods of analysis (Methods 625 and 1625) at 40 CFR 136.3, Appendix A:

(1) Acetone.
(2) Acetophenone.

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(3) Aniline.
(4) 2-Butanone.
(5) Carbazole.
(6) o-Cresol.
(7) p-Cresol.
(8) n-Decane.
(9) 2,3-dichloroaniline.
(10) n-Octadecane.
(11) Pyridine.

(v) Pipeline means an open or closed conduit used for the conveyance of material. A pipeline includes a channel, pipe, tube, trench, or ditch, or fixed delivery system.

(w) Product stewardship means a manufacturer's treatment or recovery of its own unused products, shipping and storage containers with product residues, off-specification products, and does not include spent or used materials from use of its products.

(x) Re-refining means the processing of used oil using distillation, hydrotreating, and/or other treatment employing acid, caustic, solvent, clay and/or chemicals in order to produce high quality base stock for lubricants or other petroleum products.

(y) Recovery means the recycling or processing of a waste, wastewater or used material such that the material, or a portion thereof, may be reused or converted to a raw material, intermediate, or product. Recovery does not include the re-use of treated or untreated wastewater in place of potable or pure water in industrial processes such as the use of secondary POTW effluents as non-contact cooling water, storm water in place of process water, or the re-use of spent chemicals in place of virgin treatment chemicals.

(z) Solidification means the addition of sorbents to convert liquid or semi-liquid waste to a solid by means of adsorption, absorption or both. The process is usually accompanied by stabilization.

(aa) Solvent recovery includes fuel blending operations and the recycling of spent solvents through separation of solvent mixtures in distillation columns. Solvent recovery may require an additional, pretreatment step prior to distillation.

(bb) Stabilization means a waste process that decreases the mobility of waste constituents by means of a chemical reaction. For the purpose of this rule, chemical precipitation is not a technique for stabilization.

(cc) Treatment means any method, technique, or process designed to change the physical, chemical or biological character or composition of any metal-bearing, oily, or organic wastes to neutralize such wastes; to render such wastes amenable to discharge; or to recover energy or recover metal, oil, or organic content from the wastes. Treatment does not include (a) the re-use of treated or untreated wastewater in place of potable or pure water in industrial processes such as the use of secondary POTW effluents as non-contact cooling water or storm water in place of process water or (b) the re-use of treated or untreated spent chemicals (such as pickle liquor) as treatment chemicals.

(dd) Non-contaminated storm water means storm water which does not come in direct contact with CWT wastes, the waste handling and treatment areas, or other CWT wastewater that is defined in paragraph (d) of this section.

(ee) Used oil filter recycling means crushing and draining of used oil filters of entrained oil and/or shredding and separation of used oil filters.

(ff) Waste includes aqueous, non-aqueous, and solid waste, wastewater, and/or used material.

Sec. 437.3 General pretreatment standards.

Any source subject to this part that introduces process wastewater

pollutants into a publicly owned treatment works (POTW) must comply with 40 CFR part 403.

Sec. 437.4 Monitoring requirements.

(a) Permit compliance monitoring is required for each regulated parameter.

(b) Any CWT facility that discharges wastewater resulting from the treatment of metal-bearing waste, oily waste, or organic-bearing waste must monitor as follows:

(1) Facilities subject to more than one subpart of this part must monitor for compliance for each subpart after treatment and before mixing of the waste with wastes of any other subpart. Alternatively, a multiple wastestream subcategory facility may certify that it provides equivalent treatment as defined in Sec. 437.2(h) for the applicable waste and monitor for compliance with the applicable set of multiple wastestream subcategory limitations after mixing.

(2) Facilities subject to one or more subpart of this part must monitor for compliance with the applicable subpart after treatment and before mixing of the waste with wastes of any other subpart, uncontaminated storm water, or wastewater subject to another effluent limitation or standard in Subchapter N. If, however, the facility can demonstrate to the receiving POTW or permitting authority the capability of achieving the effluent limitation or standard for each subpart after treatment and before mixing with other wastestreams, the facility may monitor for compliance after mixing. In the case of a facility which elects to comply with the applicable set of multiple wastestream subcategory limitations or standards, it is only subject to one subpart.

(3) When a CWT facility treats any waste receipt that contains cyanide at a concentration higher than 136 mg/L, the CWT facility must monitor for cyanide after cyanide treatment and before dilution with other wastestreams. If, however, the facility can demonstrate to the receiving POTW or permitting authority the capability of achieving the cyanide limitation or standard after cyanide treatment and before mixing with other wastestreams, the facility may monitor for compliance after mixing.

Subpart A--Metals Treatment and Recovery

Sec. 437.10 Applicability.

(a) Except as provided in Sec. 437.1(b), (c), or (d) or in paragraph (b) of this section, this subpart applies to that portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of metals from, both metal-bearing wastes received from off-site and other CWT wastewater associated with the treatment of, or recovery of metal-bearing wastes.

(b) In order to ensure appropriate treatment rather than dilution of dissimilar wastes, an NPDES permit writer or control authority may require a new source or an existing facility subject to this subpart to achieve alternative effluent limitations and standards as defined in Sec. 437.2(b) in the following circumstances:

(1) The facility receives, on a continuing basis, flows of process wastewater from five or fewer facilities subject to 40 CFR Subchapter N limitations and standards; and

(2) The process wastewater flows received for treatment at the facility have relatively consistent pollutant profiles.

Sec. 437.11 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32 or

437.10(b), any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT:

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BPT Limitations

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Conventional Parameters		
O&G	205	50.2
pH	(\2\)	(\2\)
TSS	60.0	31.0
Metal Parameters		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641

\1\ mg/L (ppm).
\2\ Within the range 6 to 9.

(b) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Cyanide	500	178

\1\ mg/L (ppm).

Sec. 437.12 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32 or 437.10(b), any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BCT: Limitations for oil and grease, pH, and TSS are the same as the corresponding limitation specified in Sec. 437.11(a).

Sec. 437.13 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32 or 437.10(b), any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BAT: Limitations for antimony, arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, tin, titanium, vanadium, and zinc are the same as the corresponding limitation specified in Sec. 437.11(a).

(b) In-plant standards for cyanide are the same as the limitations specified in Sec. 437.11(b).

Sec. 437.14 New source performance standards (NSPS).

(a) Except as provided in Sec. 437.10(b), any new source subject to this subpart must achieve the following performance standards:

Performance Standards

Regulated parameter	Maximum daily 1	Maximum monthly avg. 1
Contentional Parameters		
O&G	205	50.2
pH	(2)	(2)
TSS	29.6	11.3
Metal Parameters		
Antimony	0.111	0.0312
Arsenic	0.0993	0.0199
Cadmium	0.782	0.163
Chromium	0.167	0.0522
Cobalt	0.182	0.0703
Copper	0.659	0.216
Lead	1.32	0.283
Mercury	0.000641	0.000246
Nickel	0.794	0.309
Selenium	0.176	0.0698
Silver	0.0318	0.0122
Tin	0.0955	0.0367
Titanium	0.0159	0.00612
Vanadium	0.0628	0.0518
Zinc	0.657	0.252

1 mg/L (ppm).
2 Within the range 6 to 9.

(b) In-plant standards for cyanide are the same as the limitations specified in Sec. 437.11(b).

Sec. 437.15 Pretreatment standards for existing sources (PSES).

(a) Except as provided in 40 CFR 403.7, 403.13 or 437.10(b), and no later than December 22, 2003, any existing source subject to this subpart must achieve the following pretreatment standards: Standards for antimony, arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, tin, titanium, vanadium, and zinc are the same as the corresponding limitation specified in Sec. 437.11(a).

(b) In-plant standards for cyanide are the same as the limitations specified in Sec. 437.11(b).

Sec. 437.16 Pretreatment standards for new sources (PSNS).

(a) Except as provided in 40 CFR 403.7 or 437.10(b), any new source subject to this subpart must achieve the following pretreatment standards: Standards for antimony, arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, tin, titanium, vanadium, and zinc are the same as the corresponding limitation specified in Sec. 437.11(a)

(b) In-plant standards for cyanide are the same as the limitations specified in Sec. 437.11(b).

Subpart B--Oils Treatment and Recovery

Sec. 437.20 Applicability.

(a) Except as provided in Sec. 437.1(b), (c), or (d) or in paragraph (b) of this section, this subpart applies to that portion of the discharge of wastewater from a CWT facility that results from the treatment or recovery of oil from both oily wastes received from off-site and other CWT wastewater associated with the treatment of, or recovery of oily wastes.

(b) In order to ensure appropriate treatment rather than dilution of dissimilar wastes, an NPDES permit writer or control authority may require a new source or an existing source subject to this subpart to achieve alternative effluent limitations and standards, as defined in Sec. 437.2(b), in the following circumstances:

(1) The facility receives, on a continuing basis, flows of process wastewater from five or fewer facilities subject to 40 CFR Subchapter N limitations and standards; and

(2) The process wastewater flows received for treatment at the facility have relatively consistent pollutant profiles.

Sec. 437.21 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32 or 437.20(b), any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT:

BPT Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Conventional Parameters		
O&G	127	38.0
pH	(2)	(2)
TSS	74.1	30.6
Metal Parameters		
Antimony	0.237	0.141
Arsenic	2.95	1.33
Barium	0.427	0.281
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160

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Mercury	0.0172	0.00647
Molybdenum	3.50	2.09
Tin	0.335	0.165
Titanium	0.0510	0.0299
Zinc	8.26	4.50
Organic Parameters		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

1 mg/L (ppm).
2 Within the range 6 to 9.

Sec. 437.22 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32 or 437.20(b), any existing point source subject to this subpart must achieve the following effluent limitations attainable by the application of BCT: Limitations for O&G, pH, and TSS are the same as the corresponding limitation specified in Sec. 437.21.

Sec. 437.23 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32 or 437.20(b), any existing point source subject to this subpart must achieve the following effluent limitations by the application of BAT: Limitations for antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, tin, titanium, zinc, butylbenzyl phthalate, carbazole, n-decane, bis(2-ethylhexyl) phthalate, fluoranthene, and n-octadecane are the same as the corresponding limitation specified in Sec. 437.21.

Sec. 437.24 New source performance standards (NSPS).

Except as provided in Sec. 437.20(b), any new source subject to this subpart must achieve the following performance standards: Standards for oil and grease, pH, TSS, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, tin, titanium, zinc, butylbenzyl phthalate, carbazole, n-decane, bis(2-ethylhexyl) phthalate, fluoranthene, and n-octadecane are the same as the corresponding limitation specified in Sec. 437.21.

Sec. 437.25 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7, 403.13 or Sec. 437.20(b), and no later than December 22, 2003, any existing source subject to this subpart must achieve the following pretreatment standards:

Pretreatment Standards (PSES)

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\

Metal Parameters

Antimony	0.237	0.141
Barium	0.427	0.281
Chromium	0.947	0.487
Cobalt	56.4	18.8
Copper	0.405	0.301
Lead	0.222	0.172
Molybdenum	3.50	2.09
Tin	0.249	0.146
Zinc	6.95	4.46

Organic Parameters

Bis(2-ethylhexyl) phthalate	0.267	0.158
Carbazole	0.392	0.233
n-Decane	5.79	3.31
Fluoranthene	0.787	0.393
n-Octadecane	1.22	0.925

\1\ mg/L (ppm).

Sec. 437.26 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 or Sec. 437.20(b), any new source subject to this subpart must achieve the following pretreatment standards: Standards for antimony, barium, chromium, cobalt, copper, lead, molybdenum, tin, zinc, carbazole, n-decane, bis(2-ethylhexyl) phthalate, fluoranthene, and n-octadecane are the same as the corresponding limitation specified in Sec. 437.21.

Subpart C--Organics Treatment and Recovery

Sec. 437.30 Applicability.

(a) Except as provided in Sec. 437.1(b), (c), or (d) or in paragraph (b) of this section, this subpart applies to that portion of the discharge of wastewater from a CWT facility that results from the treatment of, or recovery of organic material from, both organic wastes received from off-site and other CWT wastewater associated with the treatment of, or recovery of organic wastes.

(b) In order to ensure appropriate treatment rather than dilution of dissimilar wastes, an NPDES permit writer or control authority may require a new source or an existing facility subject to Sec. 437.30 to achieve alternative effluent limitations and standards as defined in Sec. 437.2 (h) in the following circumstances:

(1) The facility receives, on a continuing basis, flows of process wastewater from five or fewer facilities subject to 40 CFR Subchapter N limitations and standards; and

(2) The process wastewater flows received for treatment at the facility have relatively consistent pollutant profiles.

Sec. 437.31 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32 or Sec. 437.30(b), any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT:

BPT Limitations

	Maximum

Regulated parameter	Maximum daily \1\	monthly avg.\1\
Conventional Parameters		
BOD5	163	53.0
pH	(\2\)	(\2\)
TSS	216	61.3
Metal Parameters		
Antimony	0.928	0.679
Copper	0.865	0.757
Molybdenum	1.01	0.965
Zinc	0.497	0.420
Organic Parameters		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Aniline	0.0333	0.0164
2-Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,3-Dichloroaniline	0.0731	0.0361
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

\1\ mg/L (ppm).
\2\ Within the range 6 to 9.

Sec. 437.32 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32 or Sec. 437.30(b), any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BCT: Limitaticns for BOD5, pH, and TSS are the same as the corresponding limitation specified in Sec. 437.31.

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Sec. 437.33 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32 or Sec. 437.30(b), any existing point source subject to this subpart must achieve limitations representing the application of BAT: Limitations for antimony, copper, molybdenum, zinc, acetone, acetophenone, aniline, 2-butanone, o-cresol, p-cresol, 2,3-dichloroaniline, phenol, pyridine, and 2,4,6-trichlorophenol are the same as the corresponding limitation specified in Sec. 437.31.

Sec. 437.34 New source performance standards (NSPS).

Except as provided in Sec. 437.30(b), any new source subject to this subpart must achieve the following new source performance standards: Standards for BOD5, pH, TSS, antimony, copper, molybdenum, zinc, acetone, acetophenone, aniline, 2-butanone, o-cresol, p-cresol, 2,3-dichloroaniline, phenol, pyridine, and 2,4,6-trichlorophenol are the same as the corresponding limitation specified in Sec. 437.31.

Sec. 437.35 Pretreatment standards for existing sources (PSES).

Except as provided in 40 CFR 403.7, 403.13 or Sec. 437.30(b), and no later than December 22, 2003, any existing source subject to this subpart must achieve the following pretreatment standards: Standards for molybdenum, 2,3-dichloroaniline, o-cresol, p-cresol, 2,4,6-trichlorophenol are the same as the corresponding limitation specified in Sec. 437.31.

Sec. 437.36 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR 403.7 or Sec. 437.30(b), any new source subject to this subpart must achieve the following pretreatment standards: Standards for molybdenum, 2,3-dichloroaniline, o-cresol, p-cresol, 2,4,6-trichlorophenol are the same as the corresponding limitation specified in Sec. 437.31.

Subpart D--Multiple Wastestreams

Sec. 437.40 Applicability.

(a) Except as provided in Sec. 437.1(b), (c), or (d) or in paragraph (b) of this section, facilities that treat wastes subject to more than one of the previous Subparts must comply with either provisions of this subpart or the applicable provisions of Subpart A, B, or C. The provisions of this subpart are applicable to that portion of wastewater discharges from a centralized waste treatment facility that results from mixing any combination of treated or untreated waste otherwise subject to Subpart A, Subpart B, or Subpart C of this part only if a facility requests the permit writer or control authority to develop Subpart D limitations (or standards) and establishes that it provides equivalent treatment as defined in Sec. 437.2(h).

(b) In order to ensure appropriate treatment rather than dilution of dissimilar wastes, an NPDES permit writer or control authority may require a new or existing facility subject to paragraph (a) of this section to achieve alternative effluent limitations or standards as defined in Sec. 437.2 (b) in the following circumstances:

(1) The facility receives, on a continuing basis, flows of process wastewater from five or fewer facilities subject to 40 CFR Subchapter N limitations and standards; and

(2) The process wastewater flows received for treatment at the facility have relatively consistent pollutant profiles.

Sec. 437.41 Special definitions.

(a) Initial Certification Statement for this subpart means a written submission to the appropriate permitting authority (either the local control authority (the POTW) or NPDES permit writer) that is signed by the responsible corporate officer as defined in 40 CFR 403.12(l) or 40 CFR 122.22. The statement must:

(1) List and describe the subcategories of wastes accepted for treatment at the facility;

(2) List and describe the treatment systems in-place at the facility and conditions under which the treatment systems are operated for the subcategories of wastes accepted for treatment at the facility;

(3) Include information and supporting data establishing that these treatment systems will achieve equivalent treatment.

(b) Periodic Certification Statement for this subpart means a written submission to the appropriate permitting authority (the local control authority (the POTW) or NPDES permit writer) which certifies that the facility is operating its treatment systems to provide equivalent treatment as set forth in the initial certification. In the

event that the facility has modified its treatment systems, the facility should submit a description of the modified systems and information and supporting data to establish that the modified system will achieve equivalent treatment. The periodic certification statement must be signed by the responsible corporate officer as defined in 40 CFR 403.12(l) or 40 CFR 122.22.

(c) On-site Compliance Paperwork for this subpart means data or information retained in the offices of the facility which supports the initial and periodic certification statements. This Paperwork must:

(1) List and describe the subcategory wastes being accepted for treatment at the facility;

(2) List and describe the treatment systems in-place at the facility, modifications to the treatment systems and the conditions under which the systems are operated for the subcategories of wastes accepted for treatment at the facility;

(3) Provide information and supporting data establishing that these treatment systems will achieve equivalent treatment;

(4) Describe the procedures it follows to ensure that its treatment systems are well-operated and maintained; and

(5) Explain why the procedures it has adopted will ensure its treatment systems are well-operated and maintained.

Sec. 437.42 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32 or Sec. 437.40(b), any existing facility subject to this subpart which combines treated or untreated wastes from subparts A, B, or C of this part may be subject to Multiple Wastestream Subcategory effluent limitations representing the application of BPT set forth in paragraphs (b), (c), (d), or (e) of this section if the discharger agrees to the following conditions in its NPDES permit:

(1) The discharger will meet the applicable Multiple Wastestream Subcategory limitations set forth in (b), (c), (d) or (e);

(2) The discharger will notify its NPDES permit writer at the time of renewal or modification of its permit, of its desire to be subject to the Multiple Waste Subcategory by submitting to the NPDES permit writer an initial certification statement as described in Sec. 437.41(a);

(3) The discharger will submit to its NPDES permitting authority a periodic certification statement as described in Sec. 437.41(b) once a year; and

(4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as described in Sec. 437.41(c).

(b) Combined waste receipts from subparts A, B, and C of this part. (1) As provided in Sec. 437.42(a), any existing point source subject to this paragraph must achieve the following effluent

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limitations representing the application of BPT:

BPT Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Conventional Parameters		
BOD5	163	53.0
O&G	127	38.0

pH	(2)	(2)
TSS	74.1	30.6
Metal Parameters		
Antimony	0.237	0.141
Arsenic	0.162	0.104
Barium	0.427	0.281
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Molybdenum	1.01	0.965
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0510	0.0299
Vanadium	0.218	0.0662
Zinc	0.497	0.420
Organic Parameters		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Aniline	0.0333	0.0164
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
2,3-Dichloroaniline	0.0731	0.0361
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

1 mg/L (ppm).
2 OSC Within the range 6 to 9.

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg. 1
Cyanide	500	178

1 mg/L (ppm).

(c) Combined waste receipts from subparts A and B of this part. (1) As provided in Sec. 437.42(a), any existing point source subject tc this paragraph must achieve the following effluent limitations representing the application of BPT:

BPT Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg. 1
Conventional Parameters		
O&G	127	38.0
pH	(2)	(2)
TSS	74.1	30.6
Metal Parameters		
Antimony	0.237	0.141
Arsenic	0.162	0.104
Barium	0.427	0.281
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Molybdenum	3.50	2.09
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0510	0.0299
Vanadium	0.218	0.0662
Zinc	2.87	0.641
Organic Parameters		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

1 mg/L (ppm).
2 Within the range 6 to 9.

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily \1\	Maximum monthly avg. \1\
Cyanide	500	178

\1\ mg/L (ppm).

(d) Combined waste receipts from subparts A and C of this part. (1) As provided in Sec. 437.42(a), any existing point source subject to this paragraph must achieve the following effluent limitations representing the application of BPT:

BPT Limitations

Regulated parameter	Maximum daily \1\	Maximum monthly avg. \1\
Conventional Parameters		
BOD 5	163	3.0
O&G	205	50.2
pH	(2)	(2)
TSS	60.0	31.0
Metal Parameters		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	0.865	0.757
Lead	1.32	0.283
Mercury	0.00234	0.000739
Molybdenum	1.01	0.965
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	0.497	0.420
Organic Parameters		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Aniline	0.0333	0.0164
2-Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,3-Dichloroaniline	0.0731	0.0361
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

1 mg/L (ppm).
2 Within the range 6 to 9.

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Cyanide	500	178

1 mg/L)ppm).

(e) Combined waste receipts from subparts B and C of this part. As provided in Sec. 437.42(a), any existing point source subject to this paragraph must achieve the following effluent limitations representing

the application of BPT:

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BPT Limitations

Regulated parameter	Maximum daily \1\	Maximum monthly avg. \1\
Conventional Parameters		
BOD5	163	53.0
O&G	127	38.0
pH	(\2\)	(\2\)
TSS	74.1	30.6
Metal Parameters		
Antimony	0.237	0.141
Arsenic	2.95	1.33
Barium	0.427	0.281
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.0172	0.00647
Molybdenum	1.01	0.965
Tin	0.335	0.165
Titanium	0.0510	0.0299
Zinc	0.497	0.420
Organic Parameters		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Aniline	0.0333	0.0164
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
2,3-Dichloroaniline	0.0731	0.0361
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

\1\ mg/L (ppm).
\2\ Within the range 6 to 9.

Sec. 437.43 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).

(a) Except as provided in 40 CFR 125.30 through 125.32 or 437.40(b), any existing facility subject to this subpart which combines treated or untreated wastes from subparts A, B, or C of this part may be subject to Multiple Wastestream Subcategory effluent limitations representing the application of BCT set forth in paragraphs (b), (c),

(d), or (e) of this section if the discharger agrees to the following conditions in its NPDES permit:

(1) The discharger will meet the applicable Multiple Wastestream Subcategory limitations set forth in paragraphs (b), (c), (d) or (e) of this section;

(2) The discharger will notify its NPDES permit writer at the time of renewal or modification of its permit, of its desire to be subject to the Multiple Waste Subcategory by submitting to the NPDES permit writer an initial certification statement as described in Sec. 437.41(a);

(3) The discharger will submit to its NPDES permitting authority a periodic certification statement as described in Sec. 437.41(b) once a year; and

(4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as described in Sec. 437.41(c).

(b) Combined waste receipts from subparts A, B and C of this part: Limitations for BOD5, O&G, pH, and TSS are the same as the corresponding limitation specified in Sec. 437.42(b).

(c) Combined waste receipts from subparts A and B of this part: Limitations for O&G, pH, and TSS are the same as the corresponding limitation specified in Sec. 437.42(c).

(d) Combined waste receipts from subparts A and C of this part: Limitations for BOD5, O&G, pH, and TSS are the same as the corresponding limitation specified in Sec. 437.42(d).

(e) Combined waste receipts from subparts B and C of this part: Limitations for BOD5, O&G, pH, and TSS are the same as the corresponding limitation specified in Sec. 437.42(e).

Sec. 437.44 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32 or 437.40(b), any existing facility subject to this subpart which combines treated or untreated wastes from subparts A, B, or C of this part may be subject to Multiple Wastestream Subcategory effluent limitations representing the application of BAT set forth in paragraphs (b), (c), (d), or (e) of this section if the discharger agrees to the following conditions in its NPDES permit:

(1) The discharger will meet the applicable Multiple Wastestream Subcategory limitations set forth in paragraphs (b), (c), (d) or (e) of this section;

(2) The discharger will notify its NPDES permit writer at the time of renewal or modification of its permit, of its desire to be subject to the Multiple Waste Subcategory by submitting to the NPDES permit writer an initial certification statement as described in Sec. 437.41(a);

(3) The discharger will submit to its NPDES permitting authority a periodic certification statement as described in Sec. 437.41(b) once a year; and

(4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as described in Sec. 437.41(c).

(b) Combined waste receipts from subparts A, B and C of this part. (1) Limitations for the following parameters are the same as the corresponding limitation specified in Sec. 437.42(b)(1):

Organic parameters	Metal parameters
Acetone	Antimony.
Acetophenone	Arsenic.
Aniline	Barium.

bis (2-ethylhexyl) phthalate.....	Cadmium.
2-Butanone.....	Chromium.
Butylbenzyl phthalate.....	Cobalt.
Carbazole.....	Copper.
o-Cresol.....	Lead.
p-Cresol.....	Mercury.
n-Decane.....	Molybdenum.
2,3-dichloroaniline.....	Nickel.
Fluoranthene.....	Selenium.
n-Octadecane.....	Silver.
Phenol.....	Tin.
Pyridine.....	Titanium.
2,4,6-trichlorophenol.....	Vanadium.
	Zinc.

(2) The in-plant limitations that apply to metal-bearing wastewater containing cyanide are the same as the corresponding limitations specified in Sec. 437.42(b)(2).

(c) Combined waste receipts from subparts A and B of this part. (1) Limitations for the following parameters are the same as the corresponding limitation specified in Sec. 437.42(c)(1):

Organic parameters	Metal parameters
Bis (2-ethylhexyl) phthalate.....	Antimony.
Butylbenzyl phthalate.....	Arsenic.
Carbazole.....	Barium.
n-Decane.....	Cadmium.
Fluoranthene.....	Chromium.
n-Octadecane.....	Cobalt.
	Copper.
	Lead.
	Mercury.
	Molybdenum.
	Nickel.
	Selenium.
	Silver.
	Tin.
	Titanium.
	Vanadium.
	Zinc.

(2) The in-plant limitations that apply to metal-bearing wastewater containing cyanide are the same as the corresponding limitations specified in Sec. 437.42(c)(2).

(d) Combined waste receipts from subparts A and C of this part. (1) Limitations for the following parameters

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are the same as the corresponding limitation specified in Sec. 437.42(d)(1):

Organic parameters	Metal parameters
Acetone.....	Antimony.
Acetophenone.....	Arsenic.
Aniline.....	Cadmium.
2-Butanone.....	Chromium.

o-Cresol	Cobalt.
p-Cresol	Copper.
Phenol	Lead.
Pyridine	Mercury.
2,4,6-trichlorophenol	Molybdenum.
	Nickel.
	Selenium.
	Silver.
	Tin.
	Titanium.
	Vanadium.
	Zinc.

(2) The in-plant limitations that apply to metal-bearing wastewater containing cyanide are the same as the corresponding limitations specified in Sec. 437.42(e)(2).

(e) Combined waste receipts from subparts B and C of this part. Limitations for the following parameters are the same as the corresponding limitation specified in Sec. 437.42(e):

Organic parameters	Metal parameters
Acetone	Antimony.
Acetophenone	Arsenic.
Aniline	Barium.
Bis(2-ethylhexyl) phthalate	Cadmium.
2-Butanone	Chromium.
Butylbenzyl phthalate	Cobalt.
Carbazole	Copper.
o-Cresol	Lead.
p-Cresol	Mercury.
n-Decane	Molybdenum.
2,3-dichloroaniline	Tin.
Fluoranthene	Titanium.
n-Octadecane	Zinc.
Phenol	
Pyridine	
2,4,6-trichlorophenol	

Sec. 437.45 New source performance standards (NSPS).

(a) Except as provided in Sec. 437.40(b), any new source subject to this subpart which combines treated or untreated wastes from subparts A, B, or C of this part may be subject to Multiple Wastestream Subcategory effluent limitations representing the application of NSPS set forth in paragraphs (b), (c), (d), or (e) of this section if the discharger agrees to the following conditions in its NPDES permit:

(1) The discharger will meet the applicable Multiple Wastestream Subcategory limitations set forth in paragraphs (b), (c), (d) or (e) of this section;

(2) The discharger will notify its NPDES permit writer at the time of submitting its application for permit, of its desire to be subject to the Multiple Waste Subcategory by submitting to the NPDES permit writer an initial certification statement as described in Sec. 437.41(a);

(3) The discharger will submit to its NPDES permitting authority a periodic certification statement as described in Sec. 437.41(b) once a year; and

(4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as

described in Sec. 437.41(c).

(b) Combined waste receipts from subparts A, B and C of this part. (1) As provided in Sec. 437.45(a), any new source subject to this paragraph must achieve the following performance standards:

Performance Standards

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Conventional Parameters		
BOD 5	163	53.0
O&G	127	38.0
pH	(2)	(2)
TSS	29.6	11.3
Metal Parameters		
Antimony	0.111	0.0312
Arsenic	0.0993	0.0199
Barium	0.427	0.281
Cadmium	0.0172	0.0102
Chromium	0.167	0.0522
Cobalt	0.182	0.0703
Copper	0.659	0.216
Lead	0.350	0.160
Mercury	0.000641	0.000246
Molybdenum	1.01	0.965
Nickel	0.794	0.309
Selenium	0.176	0.0698
Silver	0.0318	0.0122
Tin	0.0955	0.0367
Titanium	0.0159	0.00612
Vanadium	0.0628	0.0518
Zinc	0.657	0.252
Organic Parameters		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Aniline	0.0333	0.0164
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
2,3-Dichloroaniline	0.0731	0.0361
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

1 mg/L (ppm).
2 Within the range 6 to 9.

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Cyanide	500	178

1 mg/L (ppm).

(c) Combined waste receipts from subparts A and B of this part. (1) As provided in Sec. 437.45(a), any new source subject to this paragraph must achieve the following standards:

Performance Standards

Regulated parameter	Maximum daily1	Maximum monthly avg.1
Conventional Parameters		
O&G	127	38.0
pH	(2)	(2)
TSS	29.6	11.3
Metal Parameters		
Antimony	0.111	0.0312
Arsenic	0.0993	0.0199
Barium	0.427	0.281
Cadmium	0.0172	0.0102
Chromium	0.167	0.0522
Cobalt	0.182	0.0703
Copper	0.659	0.216
Lead	0.350	0.160
Mercury	0.000641	0.000246
Molybdenum	3.50	2.09
Nickel	0.794	0.309
Selenium	0.176	0.0698
Silver	0.0318	0.0122
Tin	0.0955	0.0367
Titanium	0.0159	0.00612
Vanadium	0.0628	0.0518
Zinc	0.657	0.252
Organic Parameters		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268

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n-Octadecane	0.589	0.302

1 mg/L (ppm).
2 Within the range 6 to 9.

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily1	Maximum monthly avg.1
Cyanide	500	178

1 1 mg/L (ppm).

(d) Combined waste receipts from subparts A and C of this part. (1) As provided in Sec. 437.45(a), any new source subject to this paragraph must achieve the following performance standards:

Performance Standards

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Conventional Parameters		
BOD5	163	53.0
O&G	205	50.2
pH	(2)	(2)
TSS	29.6	11.3
Metal Parameters		
Antimony	0.111	0.0312
Arsenic	0.0993	0.0199
Cadmium	0.782	0.163
Chromium	0.167	0.0522
Cobalt	0.182	0.0703
Copper	0.659	0.216
Lead	1.32	0.283
Mercury	0.000641	0.000246
Molybdenum	1.01	0.965
Nickel	0.794	0.309
Selenium	0.176	0.0698
Silver	0.0318	0.0122
Tin	0.0955	0.0367
Titanium	0.0159	0.00612
Vanadium	0.0628	0.0518
Zinc	0.657	0.252
Organic Parameters		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Aniline	0.0333	0.0164
2-Butanone	4.81	1.85
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,3-Dichloroaniline	0.0731	0.0361
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

\1\ mg/L (ppm).
\2\ Within the range 6 to 9.

(2) The following in-plant limitations apply to metal-bearing

wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Cyanide	500	178

\1\ mg/L (ppm).

(e) Combined waste receipts from subparts B and C of this part. As provided in Sec. 437.45(a), any new source subject to this paragraph must achieve the following performance standards:

Performance Standards

Regulated parameter	Maximum daily 1	Maximum monthly avg. 1
Conventional Parameters		
BOD5	163	53.0
O&G	127	38.0
pH	(2)	(2)
TSS	74.1	30.6
Metal Parameters		
Antimony	0.237	0.141
Arsenic	2.95	1.33
Barium	0.427	0.281
Cadmium	0.0172	0.0102
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.0172	0.00647
Molybdenum	1.01	0.965
Tin	0.335	0.165
Titanium	0.0510	0.0299
Zinc	0.497	0.420
Organic Parameters		
Acetone	30.2	7.97
Acetophenone	0.114	0.0562
Aniline	0.0333	0.0164
Bis(2-ethylhexyl) phthalate	0.215	0.101
2-Butanone	4.81	1.85
Butylbenzyl phthalate	0.188	0.0887
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
2,3-Dichloroaniline	0.0731	0.0361
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
Phenol	3.65	1.08
Pyridine	0.370	0.182
2,4,6-Trichlorophenol	0.155	0.106

1 mg/L (ppm).
2 Within the range 6 to 9.

Sec. 437.46 Pretreatment standards for existing sources (PSES)

(a) Except as provided in 40 CFR 403.7, 403.13 or 437.40(b), any new source subject to this subpart which combines treated or untreated wastes from subparts A, B, or C of this part may be subject to Multiple Wastestream Subcategory pretreatment standards representing the application of PSES set forth in paragraphs (b), (c), (d), or (e) of this section if the discharger agrees to the following conditions in its permit:

(1) The discharger will meet the applicable Multiple Wastestream Subcategory standards set forth in paragraphs (b), (c), (d) or (e) of this section;

(2) The discharger will notify its local control authority of its desire to be subject to the Multiple Waste Subcategory by submitting to the local control authority an initial certification statement as described in Sec. 437.41(a);

(3) The discharger will submit to its local control authority a periodic certification statement as described in Sec. 437.41(b) once a year; and

(4) The discharger will maintain at the office of the facility and make available for inspection the on-site compliance paperwork as described in Sec. 437.41(c).

(b) Combined waste receipts from subparts A, B and C of this part. (1) As provided in Sec. 437.46(a), and no later than [Insert date--three years after publication], any existing source subject to this paragraph must achieve the following pretreatment standards:

Pretreatment Standards (PSES)

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Metal Parameters		
Antimony	0.237	0.141
Arsenic	0.162	0.104
Barium	0.427	0.281
Cadmium	0.474	0.0962
[[Page 81311]]		
Chromium	0.947	0.487
Cobalt	0.192	0.124
Copper	0.405	0.301
Lead	0.222	0.172
Mercury	0.00234	0.000739
Molybdenum	1.01	0.965
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
Organic Parameters		
Bis(2-ethylhexyl) phthalate	0.267	0.158

Carbazole	0.392	0.233
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	5.79	3.31
2,3-Dichloroaniline	0.0731	0.0361
Fluoranthene	0.787	0.393
n-Octadecane	1.22	0.925
2,4,6-Trichlorophenol	0.155	0.106

\1\ mg/L (ppm).

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Cyanide	500	178

\1\ mg/L (ppm).

(c) Combined waste receipts from subparts A and B of this part. (1) As provided in Sec. 437.46(a), and no later than December 22, 2003, any existing source subject to this paragraph must achieve the following pretreatment standards:

Pretreatment Standards (PSES)

Regulated parameter	Maximum daily\1\	Maximum monthly avg.\1\
Metal Parameters		
Antimony	0.237	0.141
Arsenic	0.162	0.104
Barium	0.427	0.281
Cadmium	0.474	0.0962
Chromium	0.947	0.487
Cobalt	0.192	0.124
Copper	0.405	0.301
Lead	0.222	0.172
Mercury	0.00234	0.000739
Molybdenum	3.50	2.09
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
Organic Parameters		
Bis(2-ethylhexyl) phthalate	0.267	0.158
Carbazole	0.392	0.233
n-Decane	5.79	3.31
Fluoranthene	0.787	0.393
n-Octadecane	1.22	0.925

\1\ mg/L (ppm).

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily\1\	Maximum monthly avg.\1\
Cyanide	500	178

\1\ mg/L (ppm).

(d) Combined waste receipts from subparts A and C of this part. (1) As provided in Sec. 437.46(a), and no later than December 22, 2003, any existing source subject to this paragraph must achieve the following pretreatment standards:

Pretreatment Standards (PSES)

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Metal Parameters		
Antimony	0.249	0.206
Arsenic	0.162	0.104
Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Molybdenum	1.01	0.965
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
Organic Parameters		
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,3-Dichloroaniline	0.0731	0.0361
2,4,6-Trichlorophenol	0.155	0.106

\1\ mg/L (ppm).

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\

Cyanide	500	178

\1\ mg/L (ppm).

(e) Combined waste receipts from subparts B and C of this part. As provided in Sec. 437.46(a), and no later than December 22, 2003, any existing source subject to this paragraph must achieve the following pretreatment standards:

Pretreatment Standards (PSES)

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Metal Parameters		
Antimony	0.237	0.141
Barium	0.427	0.281
Chromium	0.947	0.487
Cobalt	56.4	18.8
Copper	0.405	0.301
Lead	0.222	0.172
Molybdenum	1.01	0.965
Tin	0.249	0.146
Zinc	6.95	4.46
Organic Parameters		
Bis (2-ethylhexyl) phthalate	0.267	0.158
Carbazole	0.392	0.233
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	5.79	3.31
2,3-Dichloroaniline	0.0731	0.0361
Fluoranthene	0.787	0.393
n-Octadecane	1.22	0.925
2,4,6-Trichlorophenol	0.155	0.106

\1\ mg/L (ppm).

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Sec. 437.47 Pretreatment standards for new sources (PSNS).

(a) Except as provided in 40 CFR 403.7 or 437.40(b), any new source subject to this subpart which combines treated or untreated wastes from subparts A, B, or C of this part may be subject to Multiple Wastestream Subcategory pretreatment standards representing the application of PSNS set forth in paragraphs (b), (c), (d), or (e) of this section if the discharger agrees to the following conditions in its permit:

(1) The discharger will meet the applicable Multiple Wastestream Subcategory standards set forth in paragraphs (b), (c), (d) or (e) of this section;

(2) The discharger will notify its local control authority at the time of submitting its application for an individual control mechanism or pretreatment agreement of its desire to be subject to Multiple Waste Subcategory by submitting to the local control authority an initial certification statement as described in Sec. 437.41(a);

(3) The discharger will submit to its local control authority a periodic certification statements as described in Sec. 437.41(b) once a year; and

(4) The discharger will maintain at the office of the facility and

make available for inspection the on-site compliance paperwork as described in Sec. 437.41(c).

(b) Combined waste receipts from subparts A, B and C of this part. (1) As provided in Sec. 437.47(a), any new source subject to this paragraph must achieve the following pretreatment standards:

Pretreatment Standards (PSNS)

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Metal Parameters		
Antimony	0.237	0.141
Arsenic	0.162	0.104
Barium	0.427	0.281
Cadmium	0.474	0.0962
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Molybdenum	1.01	0.965
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
Organic Parameters		
Bis(2-ethylhexyl) phthalate	0.215	0.101
Carbazole	0.598	0.276
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
n-Decane	0.948	0.437
2,3-Dichloroaniline	0.0731	0.0361
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302
2,4,6-Trichlorophenol	0.155	0.106

\1\ mg/L (ppm).

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Cyanide	500	178

\1\ mg/L (ppm).

(c) Combined waste receipts from subparts A and B of this part. (1) As provided in Sec. 437.47(a), any new source subject to this paragraph must achieve the following pretreatment standards:

Pretreatment Standards (PSNS)

Regulated parameter	Maximum daily \1\	Maximum monthly avg.\1\
Metal Paratmeters		
Antimony	0.237	0.141
Arsenic	0.162	0.104
Barium	0.427	0.281
Cadmium	0.474	0.0962
Chromium	0.746	0.323
Cobalt	0.192	0.124
Copper	0.500	0.242
Lead	0.350	0.160
Mercury	0.00234	0.000739
Molybdenum	3.50	2.09
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
Organic Parameters		
Bis (2-ethylhexyl) phthalate	0.215	0.101
Carbazole	0.598	0.276
n-Decane	0.948	0.437
Fluoranthene	0.0537	0.0268
n-Octadecane	0.589	0.302

\1\ mg/L (ppm).

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Cyanide	500	178

1 mg/L (ppm).

(d) Combined waste receipts from subparts A and C of this part. (1) As provided in Sec. 437.47(a), any new source subject to this paragraph must achieve the following pretreatment standards:

Pretreatment Standards (PSNS)

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Metal Parameters		
Antimony	0.249	0.206
Arsenic	0.162	0.104

Cadmium	0.474	0.0962
Chromium	15.5	3.07
Cobalt	0.192	0.124
Copper	4.14	1.06
Lead	1.32	0.283
Mercury	0.00234	0.000739
Molybdenum	1.01	0.965
Nickel	3.95	1.45
Selenium	1.64	0.408
Silver	0.120	0.0351
Tin	0.409	0.120
Titanium	0.0947	0.0618
Vanadium	0.218	0.0662
Zinc	2.87	0.641
Organic Parameters		
o-Cresol	1.92	0.561
p-Cresol	0.698	0.205
2,3-Dichloroaniline	0.0731	0.0361
2,4,6-Trichlorophenol	0.155	0.106

1 mg/L (ppm).

(2) The following in-plant limitations apply to metal-bearing wastewater containing cyanide:

In-Plant Limitations

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Cyanide	500	178

1 mg/L (ppm).

(e) Combined waste receipts from subparts B and C of this part. As provided in Sec. 437.47(a), any new source subject to this paragraph must achieve the following pretreatment standards:

[[Page 81313]]

Pretreatment Standards (PSNS)

Regulated parameter	Maximum daily 1	Maximum monthly avg.1
Metal Parameters		
Antimony	0.237	0.141
Barium	0.427	0.281
Chromium	0.746	0.323
Cobalt	56.4	18.8
Copper	0.500	0.242
Lead	0.350	0.160
Molybdenum	1.01	0.965
Tin	0.335	0.165
Zinc	8.26	4.50
Organic Parameters		

Bis(2-ethylhexyl) phthalate.....	0.215	0.101
Carbazole.....	0.598	0.276
o-Cresol.....	1.92	0.561
p-Cresol.....	0.698	0.205
n-Decane.....	0.948	0.437
2,3-Dichloroaniline.....	0.0731	0.0361
Fluoranthene.....	0.0537	0.0268
n-Octadecane.....	0.589	0.302
2,4,6-Trichlorophenol.....	0.155	0.106

\1\ mg/L (ppm).

[FR Doc. 00-24565 Filed 12-21-00; 8:45 am]
BILLING CODE 6560-50-U

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APPENDIX 3

REPRESENTATIVE ANALYSIS – METAL-BEARING WASTE RECEIPT

COMMONWEALTH LABORATORIES OF S.C., Inc.

P.O. BOX 16387
209 WEST ANTRIM DRIVE
GREENVILLE, SOUTH CAROLINA 29606-6387

TELEPHONE: 864-271-3256
FAX: 864-235-8340

South Carolina
Identification No. 23101

CERTIFICATE OF ANALYSIS

May 15, 2000

John S. Cox & Associates, Inc.
Attn: Buddy Cox
P.O. Box 856
Pickens, SC 29671

Program Area: **Wastewater**
Date Received: **4/17/00**
Sample No: **00-19-1492**

Parameter	Result	Date/Time/Analyst	Method Reference
*Metals		4/21/00 2246 KAR	200.7
Arsenic	0.0159		
Chromium	0.00837		
Copper	6.57		
Lead	0.0235		
Nickel	2.50		
Zinc	14.7		
Oil & Grease	176	5/01/00 1035 KB	413.1
[1] Cyanide	<0.02	5/01/00 0830 BH	335.2

Sample Markings

Location:	Sani Tech #1
Date:	4/17/00
Time:	Not Received
Collected by:	Not Received
Type Sample:	Not Received

APPENDIX 4

POLLUTANT CONCENTRATION IN METALS SUBCATEGORY WASTE RECEIPTS (RAW TREATMENT) BY CWT FACILITIES

Table 12.1 Metals Subcategory Pollutant Concentration Profiles for Current Loadings

Pollutant of Concern	Raw Treatment	Primary Precipitation	Secondary Precipitation	BAT Option Technology	Selective Metals Precipitation
CLASSICAL OR CONVENTIONAL PARAMETERS (mg/L)					
Ammonia as nitrogen	184.34	347.65	112.71	15.63	9.12
Biochem. oxygen demand	1,326.82	5,043.83	670.17	159.60	28.33
Chemical oxygen demand	10,889.83	12,696.25	2,362.67	1,333.33	198.56
Chloride	17,570.78	35,966.67	33,966.67	18,000.00	2,243.75
Fluoride	1,416.38	49.72	82.85	66.27	2.35
Hexavalent chromium	1,364.96	4.02	0.36	0.80	0.03
Nitrate/nitrite	3,243.72	3,102.17	974.93	531.67	12.61
Oil and grease	29.67	75.86	12.11	34.34	34.34
Total cyanide	8.00	1.29	3.64	0.17	N/A[1]
Total dissolved solids	60,992.86	52,040.00	48,400.00	42,566.67	18,112.50
Total organic carbon	1,938.79	3,598.17	451.55	236.33	19.64
Total phenols	1.65	5.57	3.16	N/A[1]	N/A[1]
Total phosphorus	690.21	43.10	39.63	31.68	29.32
Total sulfide	58.17	29.21	17.57	N/A[1]	24.95
Total suspended olids	31,587.34	494.85	673.81	16.80	9.25
METAL PARAMETERS (ug/L)					
Aluminum	362,855	28,264	27,628	856	73
Antimony	80,937	4,152	679	170	21
Arsenic	56,873	181	246	84	11
Beryllium	39	3	8	N/A[1]	1
Boron	119,394	35,047	23,811	8,403	7,290
Cadmium	549,749	254	6,792	58	82
Calcium	1,132,699	4,163,233	308,935	20,000	407,167
Chromium	851,525	3,986	19,125	1,675	40
Cobalt	362,914	214	223	115	57
Copper	2,514,805	1,796	419	744	169
Gallium	5,045	2,473	2,600	N/A[1]	N/A[1]
Indium	11,839	3,820	5,250	N/A[1]	500
Iodine	95,940	15,075	1,000	N/A[1]	N/A[1]
Iridium	51,823	4,554	5,250	500	N/A[1]
Iron	1,210,265	16,076	11,533	5,752	387
Lanthanum	779	413	550	N/A[1]	100
Lead	167,649	1,909	281	177	55
Lithium	67,827	35,757	2,495	1,927	N/A[1]
Magnesium	209,520	6,107	5,035	N/A[1]	753
Manganese	182,587	1,551	1,360	49	12
Mercury	276	21	2	1	0
Molybdenum	51,575	5,833	3,053	1,747	528
Nickel	430,971	20,083	1,668	1,161	255
Osmium	1,917	440	550	N/A[1]	100
Phosphorus	347,146	36,543	1,152,950	27,529	544
Potassium	2,003,938	2,361,444	748,817	410,000	54,175
Selenium	561	277	577	280	56
Silicon	212,884	4,378	2,752	1,447	356
Silver	1,172	223	87	26	5
Sodium	21,329,820	16,662,444	18,921,667	15,100,000	5,776,250

Pollutant of Concern	Raw Treatment	Primary Precipitation	Secondary Precipitation	BAT Option Technology	Selective Metals Precipitation
Strontium	4,818	5,759	1,831	100	N/A[1]
Sulfur	10,754,912	1,802,233	2,203,333	1,214,000	2,820,000
Tantalum	4,924	2,000	2,750	N/A[1]	N/A[1]
Tellurium	16,939	4,000	5,500	N/A[1]	N/A[1]
Thallium	7,556	103	144	N/A[1]	21
Tin	903,260	2,397	434	90	28
Titanium	532,387	152	51	57	4
Vanadium	30,258	45	83	12	11
Yttrium	144	30	43	5	4
Zinc	2,007,752	3,625	2,052	413	206
Zirconium	1,256	1,270	1,330	1,287	N/A[1]
ORGANIC PARAMETERS (ug/L)					
Benzoic acid	1,939	N/A[1]	9,716	3,522	N/A[1]
Benzyl alcohol	1,648	N/A[1]	745	N/A[1]	N/A[1]
Bis(2-ethylhexyl) phthalate	292	645	10	N/A[1]	N/A[1]
Carbon Disulfide	187	N/A[1]	83	N/A[1]	10
Chloroform	64	332	1,418	149	N/A[1]
Dibromochloromethane	64	108	10	50	N/A[1]
Hexanoic acid	215	N/A[1]	23	N/A[1]	N/A[1]
M-xylene	64	N/A[1]	10	N/A[1]	N/A[1]
Methylene chloride	264	165	23	N/A[1]	N/A[1]
N,n-dimethylformamide	131	N/A[1]	76	68	N/A[1]
Phenol	166	6,869	45	N/A[1]	N/A[1]
Pyridine	82	N/A[1]	10	87	N/A[1]
Toluene	166	420	10	N/A[1]	N/A[1]
Trichloroethene	114	108	10	442	N/A[1]
1,1,1-trichloroethane	64	135	10	N/A[1]	N/A[1]
1,1-dichloroethene	64	170	10	N/A[1]	N/A[1]
1,4-dioxane	64	N/A[1]	10	N/A[1]	N/A[1]
2-butanone	323	N/A[1]	61	1,272	N/A[1]
2-propanone	3,712	N/A[1]	246	13,081	N/A[1]
4-methyl-2-pentanone	320	N/A[1]	50	N/A[1]	N/A[1]

[1]Concentration values for certain pollutants were not available for some classifications.

APPENDIX 5

REPRESENTATIVE ANALYSIS – BILGE WATER RECEIPT

COMMONWEALTH LABORATORIES OF S.C., Inc.

P.O. BOX 16387
209 WEST ANTRIM DRIVE
GREENVILLE, SOUTH CAROLINA 29606-6387

TELEPHONE: 864-271-3256
FAX: 864-235-8340

South Carolina
Identification No. 23101

CERTIFICATE OF ANALYSIS

John S. Cox & Associates, Inc.

Sample No: 00-19-1493

Parameter	Result	Date/Time/Analyst	Method Reference
*Metals		4/21/00 2252 KAR	200.7
Arsenic	<0.005		
Chromium	0.00685		
Copper	0.0606		
Lead	0.0142		
Nickel	0.0226		
Zinc	1.08		
Oil & Grease	105	5/01/00 1035 KB	413.1
Cyanide	<0.01	5/01/00 0830 BH	335.2

Sample Markings

Location: Sani Tech #2
Date: 4/17/00
Time: Not Received
Collected by: Not Received
Type Sample: Not Received

APPENDIX 6

POLLUTANT CONCENTRATION IN OILS SUBCATEGORY WASTE RECEIPTS (LTA FOR NON-RCRA FACILITIES WITHOUT REPLACEMENT) BY CWT FACILITIES

Table 12-7. Long-Term Average Concentrations For Emulsion Breaking/Gravity Separation Effluent

Pollutant	CAS Number	LTA for RCRA Facilities		LTA for Non-RCRA Facilities	
		Without Replacement	With Replacement	Without Replacement	With Replacement
CLASSICAL OR CONVENTIONAL PARAMETERS (mg/L)					
Ammonia as nitrogen	7664-41-7	135.37	135.37	111.02	111.02
Biochem. oxygen demand	C-003	7,826.66	7,826.66	14,160.55	14,160.55
Chemical oxygen demand	C-004	44,683.32	44,683.32	75,458.21	75,458.21
Chloride	16887-00-6	2,635.01	2,635.01	31.91	31.91
Fluoride	16984-48-8	69.73	69.73	26.85	26.85
Nitrate/nitrite	C-005	25.69	25.69	6.90	6.90
Oil and grease	C-007	18,690.42	18,690.42	6,130.09	6,130.09
SGT-HEM	C-037	1,442.70	1,442.70	3,467.85	3,467.85
Total cyanide	57-12-5	0.24	0.24	0.02	0.02
Total dissolved solids	C-010	16,363.93	16,363.93	11,124.49	11,124.49
Total organic carbon	C-012	6,243.59	6,243.59	15,661.45	15,661.45
Total phenols	C-020	14.63	14.63	40.85	40.85
Total phosphorus	14265-44-2	1,264.87	1,264.87	3,724.63	3,724.63
Total suspended solids	C-009	6,531.56	6,531.56	5,167.65	5,167.65
METAL PARAMETERS (ug/L)					
Aluminum	7429-90-5	36,941	36,941	49,641	49,641
Antimony	7440-36-0	978	243	774	261
Arsenic	7440-38-2	1,328	1,328	102	80
Barium	7440-39-3	2,491	2,491	664	664
Boron	7440-42-8	156,850	156,850	122,998	122,998
Cadmium	7440-43-9	175	161	43	27
Calcium	7440-70-2	224,357	224,357	183,129	183,129
Chromium	7440-47-3	2,023	2,023	218	218
Cobalt	7440-48-4	6,074	6,074	2,077	2,077
Copper	7440-50-8	10,697	10,697	837	837
Germanium	7440-56-4	12,845	4,349	20,888	20,888
Iron	7439-89-6	219,497	219,497	56,564	56,564
Lead	7439-92-1	6,085	6,085	975	975
Lutetium	7439-94-3	2,385	589	4,178	4,178
Magnesium	7439-95-4	75,066	75,066	131,463	131,463
Manganese	7439-96-5	8,237	8,237	2,758	2,758
Mercury	7439-97-6	7	7	20	20
Molybdenum	7439-98-7	2,725	2,725	4,640	4,640
Nickel	7440-02-0	20,512	20,512	1,228	1,180
Phosphorus	7723-14-0	81,096	81,096	22,987	22,987
Potassium	7440-09-7	670,251	670,251	660,839	660,839
Selenium	7782-49-2	123	112	30	18
Silicon	7440-21-3	41,939	41,939	15,861	15,861
Silver	7440-22-4	563	503	52	8
Sodium	7440-23-5	2,808,044	2,808,044	2,376,236	2,376,236
Strontium	7440-24-6	3,408	1,654	4,181	114
Sulfur	7704-34-9	2,048,228	2,048,228	151,420	151,420
Tantalum	7440-25-7	12,923	4,349	20,888	20,888
Tin	7440-31-5	1,672	1,264	494	151
Titanium	7440-32-6	353	353	71	59
Zinc	7440-66-6	30,887	30,887	14,488	14,488
ORGANIC PARAMETERS (ug/L)					
Acenaphthene	83-32-9	2,109	1,364	325	83
Alpha-terpineol	98-55-5	1,739	1,031	476	304
Aniline	62-53-3	1,209	201	334	108

Pollutant	CAS Number	LTA for RCRA Facilities		LTA for Non-RCRA Facilities	
		Without Replacement	With Replacement	Without Replacement	With Replacement
Anthracene	120-12-7	2,348	1,591	370	182
Benzene	71-43-2	4,572	4,572	520	520
Benzo(a)anthracene	56-55-3	1,563	551	363	167
Benzoic acid	65-85-0	15,419	14,689	15,851	15,851
Benzyl alcohol	100-51-6	1,276	334	1,354	1,329
Biphenyl	92-52-4	1,788	889	1,158	1,158
Bis(2-ethylhexyl)phthalate	117-81-7	51,495	51,495	1,472	1,472
Butyl benzyl phthalate	85-68-7	4,886	4,886	2,370	2,370
Carbazole	86-74-8	2,500	552	629	109
Carbon disulfide	75-15-0	371	257	240	240
Chlorobenzene	108-90-7	283	126	10	10
Chloroform	67-66-3	558	482	10	10
Chrysene	218-01-9	1,708	710	401	252
Dibenzofuran	132-64-9	2,060	1,263	319	66
Dibenzothiophene	132-65-0	1,513	544	416	282
Diethyl phthalate	84-66-2	2,228	1,658	355	206
Diphenyl ether	101-84-8	1,205	122	1,590	1,590
Ethylbenzene	100-41-4	4,964	4,964	403	403
Fluoranthene	206-44-0	3,138	2,433	335	96
Fluorene	86-73-7	2,257	1,513	366	154
Hexanoic acid	142-62-1	5,295	5,254	54,805	54,805
m+p xylene	179601-23-1	1,043	1,043	.	.
m-xylene	108-38-3	7,008	7,008	432	432
Methylene chloride	75-09-2	2,965	2,965	133	133
n,n-dimethylformamide	68-12-2	1,229	407	343	104
n-decane	124-18-5	71,555	71,555	1,969	1,969
n-docosane	629-97-0	2,434	1,712	4,789	4,789
n-dodecane	112-40-3	58,682	58,682	11,095	11,095
n-eicosane	112-95-8	28,807	28,807	1,626	1,588
n-hexacosane	630-01-3	1,892	1,288	557	427
n-hexadecane	544-76-3	106,817	106,817	85,199	85,199
n-octacosane	630-02-4	2,036	1,995	316	94
n-octadecane	593-45-3	66,771	66,771	6,854	6,854
n-tetracosane	646-31-1	2,174	1,771	546	529
n-tetradecane	629-59-4	194,564	194,564	50,390	50,390
Naphthalene	91-20-3	11,560	11,560	3,065	3,065
o+p xylene	136777-61-2	4,660	4,660	494	494
o-cresol	95-48-7	1,695	1,091	1,357	1,327
o-toluidine	95-53-4	1,211	158	322	67
o-xylene	95-47-6	700	700	.	.
p-cresol	106-44-5	1,145	939	1,018	1,018
p-cymene	99-87-6	1,536	824	878	878
Pentamethylbenzene	700-12-9	2,303	1,717	309	309
Phenanthrene	85-01-8	5,654	5,241	937	937
Phenol	108-95-2	6,406	6,345	16,610	16,610
Pyrene	129-00-0	2,719	1,994	1,512	1,512
Pyridine	110-86-1	1,371	483	313	34
Styrene	100-42-5	1,299	329	377	190
Tetrachloroethene	127-18-4	2,238	2,238	1,779	1,779
Toluene	108-88-3	22,758	22,758	1,952	1,952
Trichloroethene	79-01-6	876	876	22	22
Tripropyleneglycol methyl ether	20324-33-8	44,553	43,295	5,008	4,785
1,1,1-trichloroethane	71-55-6	2,078	2,078	54	54

Pollutant	CAS Number	LTA for RCRA Facilities		LTA for Non-RCRA Facilities	
		Without Replacement	With Replacement	Without Replacement	With Replacement
1,1-dichloroethene	75-35-4	370	275	10	10
1,2,4-trichlorobenzene	120-82-1	3,283	2,921	309	309
1,2-dichlorobenzene	95-50-1	1,438	389	309	309
1,2-dichloroethane	107-06-2	352	215	10	10
1,4-diehlorobenzene	106-46-7	1,503	762	309	309
1,4-dioxane	123-91-1	349	312	32	32
1-methylfluorene	1730-37-6	1,529	553	370	220
1-methylphenanthrene	832-69-9	1,557	666	597	561
2,3-benzofluorene	243-17-4	1,218	1,218	415	301
2,4-dimethylphenol	105-67-9	1,266	314	482	369
2-butanone	78-93-3	17,599	17,599	1,081	1,081
2-isopropylnaphthalene	2027-17-0	8,649	8,649	414	296
2-methylnaphthalene	91-57-6	6,955	6,605	2,013	2,013
2-propanone	67-64-1	158,534	158,534	8,453	8,453
3,6-dimethylphenanthrene	1576-67-6	1,194	1,194	418	309
4-chloro-3-methylphenol	59-50-7	12,407	12,407	1,245	1,245
4-methyl-2-pentanone	108-10-1	6,496	6,496	642	642

Estimation of Emulsion Breaking/ Gravity Separation Loadings *12.3.2.2*

For the 1999 proposal, EPA randomly assigned one of the seven emulsion breaking/gravity separation data sets to each oils facility for which EPA needed to estimate current performance; however, the SBREFA Panel raised the concern that this approach may not have resulted in a representative assignment of loadings. For the final rule, EPA has developed another procedure to obtain average concentrations using all seven data sets and the characterization sampling described in Chapter 2.

The following explains EPA's final procedure. To obtain estimates of current pollutant loadings associated with emulsion breaking/gravity separation, EPA developed estimates of the pollutant loadings at each of the 84 facilities identified as having wastestreams in the oils subcategory. To obtain estimates of pollutant loadings, EPA needed concentration and flow information for all facilities. EPA had flow information from all facilities, but had varied data on pollutant concentrations from only nineteen facilities where EPA had sampled the emulsion breaking/gravity separation operations. Section 12.3.2.1 describes these nineteen concentration data sets. For each facility in EPA's oils subcategory database, EPA assigned either the RCRA or non-RCRA long-term average to the facility depending on its RCRA status. Then, EPA estimated each facility's pollutant loadings as the product of the total oils wastewater flow at the facility and the pollutant concentrations in its assigned data set.

Organics Subcategory Current Loadings *12.3.3*

EPA had limited available data from the organics subcategory and very little data which represent organic subcategory CWT wastewater only. The vast majority of organic facilities commingle large quantities of non-CWT wastewater prior to the point of discharge. Therefore, EPA estimated current loadings based on the treatment technologies in place except for the two facilities for which EPA has analytical data representing organic subcategory wastewater only.

Based on a review of technologies currently used at organic subcategory facilities, EPA placed in-place treatment for this subcategory in

APPENDIX 7

POLLUTANT CONCENTRATION IN ORGANICS SUBCATEGORY WASTE RECEIPTS (RAW) BY CWT FACILITIES

Table 12-8: Organics Subcategory Baseline Long-Term Averages

Pollutant	Raw	Filtration Only	Carbon Adsorption	Biological Treatment	Biological Treatment and Multimedia Filtration
CLASSICAL OR CONVENTIONAL PARAMETERS (mg/L)					
Ammonia as nitrogen	5,680	5,680	5,680	1,060	616.0
Biochem. oxygen demand	24,224	21,802	24,224	2,440	1,564.0
Chemical oxygen demand	75,730	75,730	75,730	3,560	2,940.0
Fluoride	7	7	7	8	2.3
Nitrate/nitrite	93	93	93	2	0.2
Total cyanide	3	3	3	2	2.1
Total organic carbon	31,804	31,804	31,804	1,006	968.0
Total sulfide	4	4	4	3	1.8
Total suspended solids	1,319	725	1,319	480	399.2
METAL PARAMETERS (ug/L)					
Aluminum	4,808	1,442	4,808	2,474	291.0
Antimony	687	206	687	569	92.0
Arsenic	74	22	74	74	80.0
Barium	28,343	8,503	28,343	2,766	1,120.0
Boron	3,490	1,047	3,490	3,490	3,090.0
Calcium	1,249,000	374,700	1,249,000	286,000	641,000.0
Chromium	109	33	109	109	54.0
Cobalt	425	128	425	425	170.0
Copper	910	273	910	704	171.0
Iodine	6,270	1,881	6,270	6,270	5,800.0
Iron	3,833	1,150	3,833	3,833	2,040.0
Lead	340	102	340	314	66.0
Lithium	9,730	2,919	9,730	9,730	9,400.0
Manganese	292	88	292	227	360.0
Molybdenum	1,765	529	1,765	943	253.0
Nickel	1,632	490	1,632	1,632	1,850.0
Phosphorus	5,740	1,722	5,740	5,740	1,700.0
Potassium	973,600	292,080	973,600	973,600	971,000.0
Silicon	2,590	777	2,590	2,590	1,600.0
Sodium	4,459,000	1,337,700	4,459,000	4,459,000	5,310,000.0
Strontium	6,870	2,061	6,870	2,060	6,000.0
Sulfur	1,283,960	385,188	1,283,960	1,283,960	563,000.0
Tin	670	201	670	670	789.0
Titanium	27	8	27	27	19.0
Zinc	781	234	781	382	127.0
ORGANIC PARAMETERS (ug/L)					
Acetophenone	1,481	1,481	741	36	35.9
Aniline	1,350	1,350	675	11	10.5
Benzene	2,765	2,765	1,382	10	10.0
Benzoic acid	9,914	9,914	4,957	320	320.0
Bromodichloromethane	542	542	271	10	10.0
Carbon disulfide	626	626	313	16	16.5
Chlorobenzene	535	535	267	10	10.0
Chloroform	7,039	7,039	3,519	73	72.6
Dimethyl sulfone	1,449	1,449	724	158	157.7
Ethylenethiourea	4,383	4,383	2,192	4,400	4,400.2
Hexachloroethane	1,311	1,311	656	11	10.5
Hexanoic acid	2,051	2,051	1,026	64	64.0
Isophorone	2,006	2,006	1,003	14	13.9

Pollutant	Raw	Filtration Only	Carbon Adsorption	Biological Treatment	Biological Treatment and Multimedia Filtration
M-xylene	1,197	1,197	599	10	10.0
Methylene chloride	1,958,967	1,958,967	979,483	204	204.5
N,n-dimethylformamide	34,838	34,838	17,419	11	10.5
O+p xylene	705	705	352	10	10.0
O-cresol	6,195	6,195	3,098	185	184.8
P-cresol	3,322	3,322	1,661	66	66.2
Pentachlorophenol	6,870	6,870	3,435	791	791.1
Phenol	6,616	6,616	3,308	362	362.0
Pyridine	3,853	3,853	1,927	116	116.5
Tetrachloroethene	3,955	3,955	1,978	112	112.1
Tetrachloromethane	3,087	3,087	1,544	14	14.4
Toluene	746,077	746,077	373,039	10	10.0
Trans-1,2-dichloroethene	1,597	1,597	799	22	21.5
Trichloroethene	6,439	6,439	3,220	69	69.4
Vinyl chloride	775	775	388	10	10.0
1,1,1,2-tetrachloroethane	939	939	469	10	10.0
1,1,1-trichloroethane	1,429	1,429	714	10	10.0
1,1,2,2-tetrachloroethane	1,364	1,364	682	10	10.0
1,1,2-trichloroethane	1,731	1,731	865	13	13.3
1,1-dichloroethane	538	538	269	10	10.0
1,1-dichloroethene	610	610	305	10	10.0
1,2,3-trichloropropane	644	644	322	10	10.0
1,2-dibromoethane	2,406	2,406	1,203	10	10.1
1,2-dichlorobenzene	2,237	2,237	1,118	15	15.1
1,2-dichloroethane	4,478	4,478	2,239	10	10.0
1,3-dichloropropane	533	533	266	10	10.0
2,3,4,6-tetrachlorophenol	3,728	3,728	1,864	629	629.0
2,3-dichloroaniline	1,401	1,401	701	23	23.0
2,4,5-trichlorophenol	1,411	1,411	706	97	96.8
2,4,6-trichlorophenol	1,462	1,462	731	86	85.8
2,4-dimethylphenol	1,402	1,402	701	11	10.5
2-butanone	59,796	59,796	29,898	878	878.1
2-propanone	6,848,786	6,848,786	3,424,393	2,061	2,061.3
3,4,5-trichlorocatechol	10	10	5	1	0.8
3,4,6-trichloroguaiacol	4	4	2	1	0.8
3,4-dichlorophenol	144	144	72	30	30.4
3,5-dichlorophenol	69	69	35	1	0.8
3,6-dichlorocatechol	3	3	2	1	0.8
4,5,6-trichloroguaiacol	14	14	7	1	0.8
4,5-dichloroguaiacol	2	2	1	13	12.9
4-chloro-3-methylphenol	1,342	1,342	671	64	64.0
4-chlorophenol	3,770	3,770	1,885	243	242.5
4-methyl-2-pentanone	3,312	3,312	1,656	146	146.2
5-chloroguaiacol	598	598	299	1,595	1,595.0
6-chlorovanillin	8	8	4	1	0.8

APPENDIX 8

NORTH CHARLESTON SEWER DISTRICT DISCHARGE PERMIT APPLICATION WASTEWATER SURVEY QUESTIONNAIRE

NORTH CHARLESTON SEWER DISTRICT

DISCHARGE PERMIT APPLICATION

WASTEWATER SURVEY QUESTIONNAIRE

SECTION A - GENERAL INFORMATION

A.1. Company name, mailing address, and telephone number:

Sani Tech Environment L.L.C.

2051 Bainbridge - PO Box 71619

No. Charleston, South Carolina

Zip Code 29415 Telephone No. (843) 744-0406

A.2. Address of production or manufacturing facility. (If same as above, check No.)

We are a different name for CIE and address on the Naval Base

Zip Code 29405 Telephone No. (843) 744-0406

Note to Signing Official: In accordance with Title 40 of the Code of Federal Regulations Part 403 Section 403.14, information and data provided in this questionnaire which identifies the nature and frequency of discharge shall be available to the public without restriction. Requests for confidential treatment of other information shall be governed by procedures specified in 40 CFR Part 2. Should a discharge permit be required for your facility, the information in this questionnaire will be used to issue the permit.

This is to be signed by an authorized official of your firm after adequate completion of this form and review of the information by the signing official.

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 gathered and evaluated the information submitted. Based on my inquiry of the 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 fines and imprisonment for knowing violations.

Authorized Representative:

Paul Goodsell
Type or Print Name

05/04/01
Date

Paul Goodsell
Signature

A.3. Chief Company Executive at this location:

Name Paul Goodsell Title President

Telephone No. (843)744-0406

A.4. Company representative to serve as contact person:

Name Paul Goodsell Title President

Telephone No. (843)744-0406

A.5. Identify the type of business conducted (auto repair, machine shop, electroplating, warehousing, painting, printing, meat packing, food processing, etc.)

Waste water processing

A.6. Provide a brief narrative description of the manufacturing, production, or service activities your firm conducts.

The facility will receive oily water from tank cleaning, bilge water from sea vessels, contaminated ground water and other liquid wastes. A Batch Filter Press System will treat the water to acceptable limits prior to discharging to sanitary sewer.

A.7. Standard Industrial Classification Number(s) (SIC Code) for your facilities:

4959

A.8 This facility generates the following type of wastes (check all that apply):

			Average Gallons Per Day	
1.	[ ]	Domestic Wastes (restrooms, employee showers, etc.)		[ ] estimated [ ] measured
2.	[ ]	Cooling Water, Non-Contact		[ ] estimated [ ] measured
3.	[ ]	Boiler/Tower Blowdown		[ ] estimated [ ] measured
4.	[ ]	Cooling Water, Contact		[ ] estimated [ ] measured
5.	[ ]	PROCESS		[ ] estimated [ ] measured
6.	[X]	Equipment/ Facility Washdown	200	[X] estimated [ ] measured
7.	[ ]	Air Pollution Control Unit		[ ] estimated [ ] measured

8.	[ ]	Storm Water Runoff to Sewer	_____	[ ] estimated [ ] measured
9.	[ ]	Contaminated Ground Water Recovery	_____	[ ] estimated [ ] measured
10.	[ ]	Medical Wastewater	_____	[ ] estimated [ ] measured
11.	[X]	Other (describe)	9,800	[X] estimated [ ] measured

Total A.8.1-A.8.11 10,000

A.9. Wastes are discharged to (check all that apply):

		Average Gallons Per Day	
[X]	Sanitary Sewer	10,000	[X] estimated [ ] measured
[ ]	Storm Sewer	_____	[ ] estimated [ ] measured
[ ]	Surface Water	_____	[ ] estimated [ ] measured
[ ]	Ground Water	_____	[ ] estimated [ ] measured
[ ]	Waste Haulers	_____	[ ] estimated [ ] measured
[ ]	Evaporation	_____	[ ] estimated [ ] measured
[ ]	Other (describe)	_____	[ ] estimated [ ] measured

Provide name and address of waste hauler(s), if used.

Sani Tech Environment LLC will haul any generated waste.

A.10. Is a Spill Prevention Control and Countermeasure Plan prepared for the facility?

[X] yes * [ ] no

A.11. List any environmental control permits issued to the facility and any discharge limits associated with those permits.

No other permits at this time.

Note: If your facility did not check one or more of the items listed in A.8.4 through A.8.11 above, skip to page 13 and complete Section E.3.b, E.3.c and all of Section E.4. If any items A.8.4 through A.8.11 were checked, complete the remainder of this survey/application.

* To be completed prior to startup.

SECTION B - FACILITY OPERATION CHARACTERISTICS

1. Number of employee shifts worked per 24-hour day is 1.

Average number of employees per shift is 3.

B.2. Starting times of each shift:

1st 7:30 am pm 2nd _____ am pm 3rd _____ am pm

Note: The following information in this section must be completed for each product line.

B.3. Principal product produced: Treated Wastewater.

B.4 Raw materials and process additives used: (Use separate sheet if needed)
#/Day or Gal/Day Aluminum chloride, lime solution, polymer additive.

B.5. Production Process is:
[ ] Batch [ ] Continuous [X] Both % batch 72%
%continuous/Intermittent 28%

Average number of batches per 24-hour day 1

B.6. Hours of operation: 7:30 am to 5:30 pm [ ]continuous

B.7. Is production subject to seasonal variation? [ ] yes [X] no
If yes, briefly describe seasonal production cycle.

B.8. Are any process changes or expansions planned during the next three years. [ ] yes [X] no

If yes, attached a separate sheet to this form describing the nature of planned changes or expansions.

B.9 Average monthly water usage:

1800 Gals.

SECTION C - WASTEWATER INFORMATION

C.1 If your facility employs processes in any of the industrial categories or business activities listed below and any of these processes generate wastewater or waste sludge, place a check beside the category or business activity (check all that apply).

Industrial Categories

1. [ ] Adhesives
2. [ ] Aluminum Forming
3. [ ] Auto and Other Laundries
4. [ ] Battery Manufacturing
5. [ ] Coal Mining
6. [ ] Coil Coating
7. [ ] Copper Forming
8. [ ] Electric and Electronic Components
9. [ ] Electroplating
10. [ ] Explosives Manufacturing
11. [ ] Foundries
12. [ ] Gun and Wood Chemicals
13. [ ] Inorganic Chemicals
14. [ ] Iron and Steel
15. [ ] Leather Tanning and Finishing
16. [ ] Mechanical Products
17. [ ] Nonferrous Metals
18. [ ] Ore Mining
19. [ ] Organic Chemicals
20. [ ] Paint and Ink
21. [ ] Pesticides
22. [ ] Petroleum Refining
23. [ ] Pharmaceuticals
24. [ ] Photographic Supplies
25. [ ] Plastic and Synthetic Materials
26. [ ] Plastics Processing
27. [ ] Porcelain Enamel
28. [ ] Printing and Publishing
29. [ ] Pulp and Paper
30. [ ] Rubber
31. [ ] Soaps and Detergents
32. [ ] Steam Electric
33. [ ] Textile Mills
34. [ ] Timber
35. [X] Other (Identify) Wastewater Treatment

C.2. Describe any wastewater pretreatment system including the name of the operator and location of the testing laboratory.

Sani Tech Environment,LLC will provide the necessary grade of certified wastewater operator necessary to operate this plant. The company will pretreat waste water prior to discharging to the sanitary sewer.

C.3. If any wastewater analysis have been performed on the wastewater discharge(s) from your facilities, attach a copy of the most recent data to this questionnaire. Be sure to include the date of analysis, name of laboratory performing the analysis, and location(s) from which sample(s) were taken (attach sketches, plans, etc., as necessary).

See attached. This data is from various sources representing the predicted worst case wastewater. This waste was run through the Batch Filter Press System to determine its effectiveness. Results for the effluent are shown.

C.4. Priority Pollutant Information: Please indicate by placing an "X" in the appropriate box by each listed chemical whether it is "Suspected to be Absent", "Known to be Absent", "Suspected to be Present" or "Known to be Present" in your manufacturing or service activity or generated as a by-product.

	Chemical Compound	Known Present	Suspected Present	Known Absent	Suspected Absent
I.	METALS AND INORGANICS				
1.	Antimony	[X]	[ ]	[ ]	[ ]
2.	Arsenic	[ ]	[X]	[ ]	[ ]
3.	Asbestos	[ ]	[ ]	[X]	[ ]
4.	Beryllium	[ ]	[ ]	[ ]	[X]
5.	Cadmium	[X]	[ ]	[ ]	[ ]
6.	Chromium	[X]	[ ]	[ ]	[ ]
7.	Copper	[X]	[ ]	[ ]	[ ]
8.	Cyanide	[ ]	[ ]	[ ]	[X]
9.	Lead	[X]	[ ]	[ ]	[ ]
10.	Mercury	[ ]	[ ]	[ ]	[X]
11.	Nickel	[X]	[ ]	[ ]	[ ]
12.	Selenium	[ ]	[ ]	[ ]	[X]
13.	Silver	[ ]	[ ]	[ ]	[X]
14.	Thallium	[ ]	[ ]	[ ]	[X]
15.	Zinc	[X]	[ ]	[ ]	[ ]
II.	PHENOLS AND CRESOLS				
16.	Phenol(s)	[X]	[ ]	[ ]	[ ]
17.	Phenol, 2-chloro	[ ]	[ ]	[ ]	[X]
18.	Phenol, 2, 4-dichloro	[ ]	[ ]	[ ]	[X]
19.	Phenol,2,4, 6-trichloro	[ ]	[X]	[ ]	[ ]
20.	Phenol, pentachloro	[ ]	[ ]	[ ]	[X]
21.	Phenol,2-nitro	[ ]	[ ]	[ ]	[X]
22.	Phenol,4-nitro	[ ]	[ ]	[ ]	[X]
23.	Phenol,2,4-dinitro	[ ]	[ ]	[ ]	[X]
24.	Phenol,2,4-dimethyl	[ ]	[ ]	[ ]	[ ]
25.	m-Cresol,p-chloro	[ ]	[X]	[ ]	[ ]
26.	o-Cresol,4, 6-dinitro	[ ]	[ ]	[ ]	[X]

	Chemical Compound	Known Present	Suspected Present	Known Absent	Suspected Absent
III.	MONOCYCLIC AROMATICS (Excluding Phenols, Cresols and Phtalates)				
27.	Benzene	[X]	[ ]	[ ]	[ ]
28.	Benzene, chloro	[ ]	[X]	[ ]	[ ]
29.	Benzene, 1,2-dichloro	[ ]	[X]	[ ]	[ ]
30.	Benzene,1,3-dichloro	[ ]	[ ]	[ ]	[X]
31.	Benzene 1,4 dichloro	[ ]	[ ]	[ ]	[X]
32.	Benzene, 1,2, 4-trichloro	[ ]	[ ]	[ ]	[X]
33.	Benzene, hexachloro	[ ]	[ ]	[ ]	[X]
34.	Benzene, ethyl	[X]	[ ]	[ ]	[ ]
35.	Benzene,nitro	[ ]	[ ]	[ ]	[X]
36.	Toluene	[X]	[ ]	[ ]	[ ]
37.	Toluene,2,4-dinitro	[ ]	[ ]	[ ]	[X]
38.	Toluene,2,6-dinitro	[ ]	[ ]	[ ]	[X]
IV.	PCBs AND RELATED COMPOUNDS				
39.	PCB-1016	[ ]	[ ]	[X]	[ ]
40.	PCB-1221	[ ]	[ ]	[X]	[ ]
41.	PCB-1232	[ ]	[ ]	[X]	[ ]
42.	PCB-1242	[ ]	[ ]	[X]	[ ]
43.	PCB-1248	[ ]	[ ]	[X]	[ ]
44.	PCB-1254	[ ]	[ ]	[X]	[ ]
45.	PCB-1260	[ ]	[ ]	[X]	[ ]
46.	2-Chloronaphthalene	[ ]	[ ]	[X]	[ ]
V.	ETHERS				
47.	Ether, bis (chloromethyl)	[ ]	[ ]	[ ]	[X]
48.	Ether, bis (2-Chloromethyl)	[ ]	[ ]	[ ]	[X]
49.	Ether, bis (2-chlorosoprophyl)	[ ]	[ ]	[ ]	[X]
50.	Ether, vinyl (2-chloroethyl)	[ ]	[ ]	[ ]	[X]
51.	Ether, phenyl (4-bromophenyl)	[ ]	[ ]	[ ]	[X]
52.	Ether,phenyl (4-chlorophenyl)	[ ]	[ ]	[ ]	[X]
53.	Bis, methane (4-chloroethoxy)	[ ]	[ ]	[ ]	[X]

	Chemical Compound	Known Present	Suspected Present	Known Absent	Suspected Absent
VI.	NITROSAMINES AND OTHER NITROGEN-CONTAINING COMPOUNDS				
54.	Nitrosamine, dimethyl	[ ]	[ ]	[ ]	[X]
55.	Nitrosamine, diphenyl	[ ]	[ ]	[ ]	[X]
56.	Nitrosamine, di-n-propyl	[ ]	[ ]	[ ]	[X]
57.	Benzidine	[ ]	[ ]	[X]	[ ]
58.	Benzidine, 3,3'-dichloro	[ ]	[ ]	[X]	[ ]
59.	Hydrazine 1,2-diphenyl	[ ]	[ ]	[X]	[ ]
60.	Acrylonitrile	[ ]	[ ]	[X]	[ ]
VII.	HALOGENATED ALIPHALTICS				
61.	Methane, bromo	[ ]	[ ]	[X]	[ ]
62.	Methane, chloro	[ ]	[ ]	[X]	[ ]
63.	Methane, dichloro	[ ]	[ ]	[ ]	[X]
64.	Methane, chlorodibromo-	[ ]	[ ]	[X]	[ ]
65.	Methane, dichlorodibromo-	[ ]	[ ]	[ ]	[X]
66.	Methane,tribromo-	[ ]	[ ]	[ ]	[X]
67.	Methane,trichloro	[ ]	[ ]	[ ]	[X]
68.	Methane, tetrachloro	[ ]	[X]	[ ]	[ ]
69.	Methane, trichlorofluoro	[ ]	[X]	[ ]	[ ]
70.	Methane, dichlorodifluoro	[ ]	[ ]	[ ]	[X]
71.	Ethane,1,1-dichloro	[ ]	[X]	[ ]	[ ]
72.	Ethane, 1,2-dichloro	[ ]	[X]	[ ]	[ ]
73.	Ethane, 1,1 1-trichloro	[ ]	[X]	[ ]	[ ]
74.	Ethane, 1,1, 2-trichloro	[ ]	[ ]	[X]	[ ]
75.	Ethane, 1,1,2 1-tetrachloro	[ ]	[ ]	[X]	[ ]
76.	Ethane, hexachloro	[ ]	[ ]	[X]	[ ]
77.	Ethene, chloro	[ ]	[ ]	[ ]	[X]
78.	Ethene,1,1-dichloro	[ ]	[X]	[ ]	[ ]
79.	Ethene, trans-dichloro	[ ]	[X]	[ ]	[ ]

	Chemical Compound	Known Present	Suspected Present	Known Absent	Suspected Absent
80.	Ethene,trichloro	[ ]	[X]	[ ]	[ ]
81.	Ethene, tetrachloro	[ ]	[X]	[ ]	[ ]
82.	Propane, 1,2-dichloro	[ ]	[ ]	[ ]	[X]
83.	Propene, 1,2-dichloro	[ ]	[ ]	[ ]	[X]
84.	Butadiene, hexachloro	[ ]	[ ]	[ ]	[X]
85.	Cyclopentadiene hexachloro	[ ]	[ ]	[ ]	[X]
VIII.	PHTHALATE ESTERS				
86.	Phtalate, di-α-methyl	[ ]	[X]	[ ]	[ ]
87.	Phtalate, di-n-ethyl	[ ]	[X]	[ ]	[ ]
88.	Phtalate, di-n-butyl	[ ]	[ ]	[ ]	[X]
89.	Phtalate, di-n-octyl	[ ]	[ ]	[ ]	[X]
90.	Phtalate, bis (2-ethylhexyl)	[ ]	[X]	[ ]	[ ]
91.	Phtalate (butyl benzyl)	[ ]	[X]	[ ]	[ ]
IX.	POLYCYCLIC AROMATIC HYDROCARBONS				
92.	Acenaphthene	[ ]	[X]	[ ]	[ ]
93.	Acenaphthylene	[ ]	[X]	[ ]	[ ]
94.	Benzo (a) anthracene	[ ]	[X]	[ ]	[ ]
95.	Benzo (b) fluoranthene	[ ]	[X]	[ ]	[ ]
96.	Benzo (k) fluroanthene	[ ]	[X]	[ ]	[ ]
97.	Benzo (ghi) perylene	[ ]	[X]	[ ]	[ ]
98.	Benzo (a) pyrene	[ ]	[X]	[ ]	[ ]
99.	Chrysene	[ ]	[X]	[ ]	[ ]
100.	Dibenzo (a,n,) anthracene	[ ]	[X]	[ ]	[ ]
101.	Fluoranthene	[ ]	[X]	[ ]	[ ]
102.	Fluorene	[ ]	[X]	[ ]	[ ]
103.	Indeno (1,2,3-cd) pyrene	[ ]	[X]	[ ]	[ ]
104.	Naphthalene	[X]	[X]	[ ]	[ ]
105.	Phenanthrene	[ ]	[X]	[ ]	[ ]
106.	Pyrene	[ ]	[X]	[ ]	[ ]

Chemical Compound	Known Present	Suspected Present	Known Absent	Suspected Absent
X. PESTICIDES				
107. Acrolein	[ ]	[ ]	[X]	[ ]
108. Aldrin	[ ]	[ ]	[X]	[ ]
109. BHC (Alpha)	[ ]	[ ]	[X]	[ ]
110. BHC (Beta)	[ ]	[ ]	[X]	[ ]
111. BHC (Gamma) or Lindane	[ ]	[ ]	[X]	[ ]
112. BHC (Delta)	[ ]	[ ]	[X]	[ ]
113. Chlordane	[ ]	[ ]	[X]	[ ]
114. DDD	[ ]	[ ]	[X]	[ ]
115. DDE	[ ]	[ ]	[X]	[ ]
116. DDT	[ ]	[ ]	[X]	[ ]
117. Dieldrin	[ ]	[ ]	[X]	[ ]
118. Endosulfan (Alpha)	[ ]	[ ]	[X]	[ ]
119. Endosulfan (Beta)	[ ]	[ ]	[X]	[ ]
120. Endosulfan Sulfate	[ ]	[ ]	[X]	[ ]
121. Endrin	[ ]	[ ]	[X]	[ ]
122. Endrin Aldehyde	[ ]	[ ]	[X]	[ ]
123. Heptachlor	[ ]	[ ]	[X]	[ ]
124. Heptachlor epoxide	[ ]	[ ]	[X]	[ ]
125. Isophorone	[ ]	[ ]	[X]	[ ]
126. TCDD (or Dioxin)	[ ]	[ ]	[ ]	[X]
127. Toxaphene	[ ]	[ ]	[X]	[ ]

C.5. If you are unable to identify the chemical constituents of products you use that are discharged in your wastewater, attach copies of the materials safety data sheets for such products.

SECTION D - OTHER WASTES

D.1. Are any liquid wastes or sludges from this firm disposed of by means other than discharge to the sewer system?

[X] yes [ ] no

if "no" skip remainder of Section D.
if "yes", complete the following items.

D.2. These wastes may be best described as:

	Estimated Gallons or Pounds/Year
[ ] Acids and Alkalies	
[ ] Heavy Metal Sludges	
[ ] Inks/Dyes	
[ ] Oil and/or Grease	
[ ] Paints	
[ ] Pesticides	
[ ] Plating Wastes	
[ ] Pretreatment Sludges	
[ ] Solvents/Thinners	
[ ] Other Hazardous Wastes (specify)	
[X] Other Wastes (specify)	
Sludge from Filter Press	4,010 Cu.Ft./Yr.
Oil & Grease from Oil/Water Separator	Waste Dependent

D.3. For the above checked wastes, does your company practice:

[ ] On-site storage
[ ] Off-site storage
[ ] On-site disposal
[X] Off-site disposal

Briefly describe the method(s) of storage or disposal checked above.

The waste will be hauled by Sani Tech Environment,LLC to an approved landfill.

SECTION E - WASTESTREAM CHARACTERISTICS

E.1. Number of discharges from regulated processes (those with an existing or proposed categorical limit) to sanitary sewer system and their locations.

Two (2)

E.2. Provide a schematic drawing showing the regulated process wastestreams, domestic wastewater flows, cooling water, boiler blowdown, etc.

Enclosed

E.3. Wastewater characteristics

a. Identify the discharge from each regulated process and give flow for each type of discharge.

PROCESS	FLOW(GPD)		
	CONTINUOUS	INTERMITTENT	BATCH
Beckart System			7,000
Washdown			200
Organics Equalization		2,800	

b. Daily Flow: **Average Daily Flow (GPD)** 10,000
Average Maximum Daily Flow (GPD) 21,200*

c. Waste characteristics at point of discharge:

BOD 7,621** **mg/l** **pH** 6.5-10.5

COD 20,490** **mg/l** **NH3-N** 97**

TSS 25** **mg/l** **TKN** No Data

Oil & Grease 28** **mg/l**

* Based on an equivalent of three (3) batches @ 7,000 gallons per batch.

** Based on Table 12-9 of EPA's Development Document for the CWT Point Source Category. Actual Sani-Tech concentrations excpected to be significantly less, i.e. for BOD and COD.

Priority Pollutants shown in Section C.4.

Pollutants	Concentration (mg/l)
See Enclosed EPA Table 12-9 from Development Document for the CWT Point Source Category	

Flow at time sample collected _____ MGD

d. Priority Pollutants at each regulated process:

Process #	Pollutants	Concentration (mg/l)
Beckart System	See Cover Letter	
Organics Equalization	See Cover Letter	

E.4. Does the wastewater discharged:

a) Create a fire or explosion hazard? [ ] Yes [X] No

b) Have a pH lower than 5.0? [ ] Yes [X] No

c) Contain a substance that can obstruct the flow in the collection system? [ ] Yes [X] No

d) Have a temperature of greater than 140°F? [ ] Yes [X] No

e) Contain petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin? [X] Yes [ ] No

f) Contain pollutants which may create toxic gases, vapors, or fumes? [ ] Yes [X] No

g) Consist of trucked or hauled wastes? [X] Yes [ ] No

APPENDIX 9

LETTER OF ACCEPTANCE FROM NORTH CHARLESTON SEWER DISTRICT

North Charleston Sewer District

7225 STALL ROAD / P.O. BOX 63009 NORTH CHARLESTON, SC 29419

Telephone (843) 764-3072
Fax (843) 764-2655

May 7, 2001

Mr. Paul Goodsell
Sani Tech Environment LLC
P.O. Box 71619
N. Charleston, SC 29415

RE: Proposed Centralized Waste Treatment Facility
Wastewater Acceptance Letter

Dear Mr. Goodsell:

The North Charleston Sewer District will accept the discharge of wastewater from the proposed centralized waste treatment facility per 40 CFR Part 437. You may proceed with the SCDHEC permitting process to install treatment equipment. A draft pretreatment permit will be issued for review in the near future.

If you have any questions or need additional information, please call me at (843) 764-3072. You may forward this letter to the appropriate SCDHEC personnel.

Sincerely,

Kelly Singer
Industrial Pretreatment Supervisor

cc: Kendall Johnson
Jimmy Green

APPENDIX 10

LISTING OF METALS OPTION 4 DATA FOR EPA' USE FOR PERCENT REMOVAL AND LONG TERM AVERAGE

Appendix

C

LISTING OF DAILY INFLUENT AND EFFLUENT MEASUREMENTS

Column Heading	Definition
Subcategory	The subcategories are listed in the following order: 'METALS' = metals subcategory 'OILS' = oils subcategory 'ORGANICS' = organics subcategory
Option	The options are listed in the following order: Cyanide subset: options 1 and 2 Metals subcategory: options 1A (arsenic data only), 3, 4, cyanide 2(cyanide subset of the metals subcategory) Oils subcategory: options 8 and 9 Organics subcategory: option 4
Analyte Name	Pollutant (or analyte) name.
Cas_No	Chemical Abstract Service (CAS) registry number for the analyte.
Baseline value	Baseline value described in Chapter 15 and used in LTA test (see section 10.4.3.1).
Fac. ID	Identification number of the facility where the sample was collected. The identification numbers that start with 'E' indicate that the data were obtained from the EPA sampling episodes. The identification numbers that have only three digits (e.g., 602) indicate that the facility provided the data.
Sample Date	Date that the sample was collected.
Effl Samp Pt	Effluent Sample Point.
Effl Amount	If 'Effl Meas type' is 'NC', this value is the measured (detected) pollutant concentration at the effluent sample point. Otherwise, if 'Effl Meas type' is 'ND,' this value is the sample-specific detection limit for the non-detected measurement.
Effl Meas type	Identifies whether the 'Effl Amount' was detected (non-censored ('NC')) or non-detected ('ND').
Infl Samp Pt(s)	Influent Sample Point(s). The data for multiple influent points are aggregated as described in section 10.4.2.3.
Infl Amount	If 'Infl Meas type' is 'NC', this value is the measured (detected) pollutant concentration at the influent sample point. Otherwise, if 'Infl Meas type' is 'ND', this value is the sample-specific detection limit for the non-detected measurement, after any modifications specified in section 15.1.1.
Infl Meas type	Identifies whether the 'Infl Amount' was detected (non-censored ('NC')) or non-detected ('ND').
Facility Effl Mean	The effluent long-term average calculated as described in Chapter 10.
Facility Inf Mean	The influent long-term average calculated as described in Chapter 10.

Subcategory=Metals Option=3 (continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type
PHENOL	108-95-2	10.0	2-BUTANONE	78-93-3	50.00	4803	12JUN96	16	50.00	ND	12	50.00	ND
PHENOL	108-95-2	10.0	2-BUTANONE	78-93-3	50.00	4803	13JUN96	16	50.00	ND	12	50.00	ND
PHENOL	108-95-2	10.0	2-BUTANONE	78-93-3	50.00	4803	14JUN96	16	50.00	ND	12	50.00	ND
PHENOL	108-95-2	10.0	2-PROPANONE	67-64-1	50.00	4378	14MAY92	09	1,625.50	NC	08	50.00	ND
PYRENE	129-00-0	10.0	2-PROPANONE	67-64-1	50.00	4803	11JUN96	16	162.61	NC	12	130.84	NC
PYRENE	129-00-0	10.0	2-PROPANONE	67-64-1	50.00	4803	12JUN96	16	156.96	NC	12	135.19	NC
PYRENE	129-00-0	10.0	2-PROPANONE	67-64-1	50.00	4803	13JUN96	16	123.94	NC	12	136.99	NC
PYRENE	129-00-0	10.0	2-PROPANONE	67-64-1	50.00	4803	14JUN96	16	118.18	NC	12	92.53	NC
PYRENE	129-00-0	10.0	4-METHYL-2-PENTANONE	108-10-1	50.00	4378	14MAY92	09	50.00	ND	08	50.00	ND
PYRENE	129-00-0	10.0	4-METHYL-2-PENTANONE	108-10-1	50.00	4803	11JUN96	16	50.00	ND	12	50.00	ND
PYRENE	129-00-0	10.0	4-METHYL-2-PENTANONE	108-10-1	50.00	4803	12JUN96	16	50.00	ND	12	50.00	ND
PYRENE	129-00-0	10.0	4-METHYL-2-PENTANONE	108-10-1	50.00	4803	13JUN96	16	50.00	ND	12	50.00	ND
PYRENE	129-00-0	10.0	4-METHYL-2-PENTANONE	108-10-1	50.00	4803	14JUN96	16	50.00	ND	12	50.00	ND
PYRENE	129-00-0	10.0											
PYRENE	129-00-0	10.0											
PYRENE	129-00-0	10.0											
PYRENE	129-00-0	10.0											
PYRENE	129-00-0	10.0											

Subcategory=Metals Option=4

Analyte Name	Cas_No	Baseline Value (ug/l)	Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type
PYRIDINE	110-86-1	10.0											
PYRIDINE	110-86-1	10.0	AMMONIA AS NITROGEN	7664-41-7	50.00	4798	23APR96	05	16,900.00	NC	02	49,400.00	NC
PYRIDINE	110-86-1	10.0	AMMONIA AS NITROGEN	7664-41-7	50.00	4798	24APR96	05	20,800.00	NC	02	29,200.00	NC
PYRIDINE	110-86-1	10.0	AMMONIA AS NITROGEN	7664-41-7	50.00	4798	25APR96	05	9,190.00	NC	02	28,700.00	NC
PYRIDINE	110-86-1	10.0											
PYRIDINE	110-86-1	10.0	BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	4798	23APR96	05	120,000.00	NC	02	132,000.00	NC
PYRIDINE	110-86-1	10.0	BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	4798	24APR96	05	204,000.00	NC	02	180,000.00	NC
PYRIDINE	110-86-1	10.0	BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	4798	25APR96	05	174,000.00	NC	02	225,000.00	NC
PYRIDINE	110-86-1	10.0											
PYRIDINE	110-86-1	10.0	BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	650	08JAN96	01	110,000.00	NC			
PYRIDINE	110-86-1	10.0	BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	650	19DEC96	01	190,000.00	NC			

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
CHEMICAL OXYGEN DEMAND (COD)	C-004	5,000.00	4798	23APR96	05	880,000.00	NC	02	8,200,000.00	NC		
CHEMICAL OXYGEN DEMAND (COD)	C-004	5,000.00	4798	24APR96	05	2,000,000.00	NC	02	4,400,000.00	NC		
CHEMICAL OXYGEN DEMAND (COD)	C-004	5,000.00	4798	25APR96	05	1,120,000.00	NC	02	3,200,000.00	NC	1,333,333.33	5,266,666.67
CHLORIDE	16887-00-6	1,000.00	4798	23APR96	05	19,100,000.00	NC	02	39,900,000.00	NC		
CHLORIDE	16887-00-6	1,000.00	4798	24APR96	05	20,900,000.00	NC	02	38,050,000.00	NC		
CHLORIDE	16887-00-6	1,000.00	4798	25APR96	05	14,000,000.00	NC	02	32,000,000.00	NC	18,000,000.00	36,650,000.00
D-CHEMICAL OXYGEN DEMAND	C-004D	5,000.00	650	31JAN96	01	210,000.00	NC				210,000.00	
FLUORIDE	16984-48-8	100.00	4798	23APR96	05	56,500.00	NC	02	510,000.00	NC		
FLUORIDE	16984-48-8	100.00	4798	24APR96	05	84,500.00	NC	02	369,000.00	NC		
FLUORIDE	16984-48-8	100.00	4798	25APR96	05	57,800.00	NC	02	317,000.00	NC	66,266.67	398,666.67
HEXAVALENT CHROMIUM	18540-29-9	10.00	4798	23APR96	05	500.00	ND	02	24,000.00	NC		
HEXAVALENT CHROMIUM	18540-29-9	10.00	4798	24APR96	05	820.00	NC	02	47,500.00	NC		
HEXAVALENT CHROMIUM	18540-29-9	10.00	4798	25APR96	05	1,080.00	NC	02	49,000.00	NC	800.00	40,166.67
NITRATE/NITRITE	C-005	50.00	4798	23APR96	05	321,000.00	NC	02	721,000.00	NC		
NITRATE/NITRITE	C-005	50.00	4798	24APR96	05	935,000.00	NC	02	856,000.00	NC		
NITRATE/NITRITE	C-005	50.00	4798	25APR96	05	339,000.00	NC	02	925,000.00	NC	531,666.67	834,000.00
OIL & GREASE	C-007	5,000.00	4798	23APR96	05	5,125.00	NC	02	76,625.00	NC		
OIL & GREASE	C-007	5,000.00	4798	24APR96	05	11,886.67	NC	02	127,450.00	NC		
OIL & GREASE	C-007	5,000.00	4798	25APR96	05	5,182.50	NC	02	87,100.00	NC	7,398.06	97,058.33
OIL & GREASE	C-007	5,000.00	650	09JAN96	01	5,000.00	ND					
OIL & GREASE	C-007	5,000.00	650	12JAN96	01	5,000.00	ND					
OIL & GREASE	C-007	5,000.00	650	12FEB96	01	23,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	13FEB96	01	77,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	14FEB96	01	18,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	15FEB96	01	19,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	19FEB96	01	8,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	07MAR96	01	12,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	20MAR96	01	5,000.00	ND					
OIL & GREASE	C-007	5,000.00	650	11APR96	01	36,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	12APR96	01	28,000.00	NC					

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
OIL & GREASE	C-007	5,000.00	650	30APR96	01	95,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	15MAY96	01	45,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	16MAY96	01	69,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	12JUN96	01	44,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	13JUN96	01	61,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	15JUL96	01	6,600.00	NC					
OIL & GREASE	C-007	5,000.00	650	17JUL96	01	68,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	18JUL96	01	59,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	23JUL96	01	24,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	26JUL96	01	60,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	30JUL96	01	93,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	31JUL96	01	83,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	07AUG96	01	19,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	21AUG96	01	390,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	22AUG96	01	12,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	26AUG96	01	120,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	27AUG96	01	270,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	04SEP96	01	5,000.00	ND					
OIL & GREASE	C-007	5,000.00	650	05SEP96	01	25,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	23SEP96	01	1,000,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	24SEP96	01	200,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	25SEP96	01	660,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	26SEP96	01	770,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	22OCT96	01	26,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	23OCT96	01	52,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	06NOV96	01	76,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	07NOV96	01	240,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	19NOV96	01	17,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	20NOV96	01	16,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	21NOV96	01	17,000.00	NC					
OIL & GREASE	C-007	5,000.00	650	04DEC96	01	9,200.00	NC					
OIL & GREASE	C-007	5,000.00	650	06DEC96	01	6,800.00	NC					
OIL & GREASE	C-007	5,000.00	650	11DEC96	01	6,800.00	NC				110,940.91	
TOTAL CYANIDE	57-12-5	20.00	4798	23APR96	05	20.00	ND	02	6,120.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4798	24APR96	05	20.00	ND	02	2,575.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4798	25APR96	05	20.00	ND	02	20.00	ND	20.00	2,905.00

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL CYANIDE	57-12-5	20.00	650	09JAN96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	12JAN96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	12FEB96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	13FEB96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	14FEB96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	15FEB96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	19FEB96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	21FEB96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	07MAR96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	14MAR96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	18MAR96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	11APR96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	12APR96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	24APR96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	25APR96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	30APR96	01	510.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	14MAY96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	15MAY96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	12JUN96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	13JUN96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	15JUL96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	17JUL96	01	400.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	18JUL96	01	320.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	23JUL96	01	290.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	26JUL96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	30JUL96	01	910.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	31JUL96	01	430.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	04SEP96	01	210.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	05SEP96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	23SEP96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	24SEP96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	25SEP96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	26SEP96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	22OCT96	01	440.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	23OCT96	01	440.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	24OCT96	01	880.00	NC					

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL CYANIDE	57-12-5	20.00	650	06NOV96	01	1,300.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	07NOV96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	19NOV96	01	400.00	NC					
TOTAL CYANIDE	57-12-5	20.00	650	20NOV96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	21NOV96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	04DEC96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	06DEC96	01	10.00	ND					
TOTAL CYANIDE	57-12-5	20.00	650	11DEC96	01	10.00	ND				155.68	.
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4798	23APR96	05	42,700,000.00	NC	02	81,000,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4798	24APR96	05	51,500,000.00	NC	02	76,900,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4798	25APR96	05	33,500,000.00	NC	02	74,700,000.00	NC	42,566,666.67	77,533,333.33
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4798	23APR96	05	280,000.00	NC	02	627,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4798	24APR96	05	212,000.00	NC	02	1,107,500.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4798	25APR96	05	217,000.00	NC	02	1,040,000.00	NC	236,333.33	924,833.33
TOTAL PHENOLS	C-020	50.00	4798	23APR96	05	39.00	NC	02	190.00	NC		
TOTAL PHENOLS	C-020	50.00	4798	24APR96	05	110.00	NC	02	210.00	NC		
TOTAL PHENOLS	C-020	50.00	4798	25APR96	05	94.00	NC	02	220.00	NC	81.00	206.67
TOTAL PHENOLS	C-020	50.00	650	04SEP96	01	110.00	NC					
TOTAL PHENOLS	C-020	50.00	650	05SEP96	01	1,300.00	NC				705.00	.
TOTAL PHOSPHORUS	14265-44-2	10.00	4798	23APR96	05	25,000.00	NC	02	542,000.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4798	24APR96	05	33,200.00	NC	02	522,500.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4798	25APR96	05	19,100.00	NC	02	499,000.00	NC	25,766.67	521,166.67
TOTAL PHOSPHORUS	14265-44-2	10.00	650	31JAN96	01	77,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	13FEB96	01	30,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	14FEB96	01	30,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	16FEB96	01	29,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	20FEB96	01	10,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	21FEB96	01	16,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	22FEB96	01	23,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	07MAR96	01	49,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	08MAR96	01	340,000.00	NC					

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL PHOSPHORUS	14265-44-2	10.00	650	20MAR96	01	15,400.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	25APR96	01	30,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	26APR96	01	18,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	30APR96	01	23,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	13JUN96	01	19,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	14JUN96	01	14,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	16JUL96	01	54,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	17JUL96	01	47,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	18JUL96	01	48,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	19JUL96	01	51,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	23JUL96	01	33,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	24JUL96	01	37,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	26JUL96	01	14,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	30JUL96	01	41,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	31JUL96	01	31,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	22AUG96	01	16,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	23AUG96	01	2,400.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	27AUG96	01	36,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	28AUG96	01	38,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	05SEP96	01	11,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	06SEP96	01	25,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	24SEP96	01	11,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	25SEP96	01	8,400.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	26SEP96	01	7,400.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	27SEP96	01	15,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	21OCT96	01	11,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	22OCT96	01	14,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	23OCT96	01	17,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	07NOV96	01	23,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	08NOV96	01	19,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	20NOV96	01	8,700.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	21NOV96	01	9,200.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	22NOV96	01	8,300.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	04DEC96	01	10,000.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	05DEC96	01	8,600.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	06DEC96	01	8,200.00	NC					
TOTAL PHOSPHORUS	14265-44-2	10.00	650	11DEC96	01	8,900.00	NC				30,336.96	

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL SULFIDE	18496-25-8	1,000.00	4798	23APR96	05	20,000.00	ND	02	20,000.00	ND		
TOTAL SULFIDE	18496-25-8	1,000.00	4798	24APR96	05	20,000.00	ND	02	20,000.00	ND		
TOTAL SULFIDE	18496-25-8	1,000.00	4798	25APR96	05	20,000.00	ND	02	20,000.00	ND	20,000.00	20,000.00
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4798	23APR96	05	152,000.00	NC	02	36,000,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4798	24APR96	05	224,000.00	NC	02	31,250,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4798	25APR96	05	124,000.00	NC	02	24,200,000.00	NC	166,666.67	30,483,333.33
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	08JAN96	01	18,400.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	11JAN96	01	4,800.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	30JAN96	01	20,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	31JAN96	01	180,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	12FEB96	01	24,400.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	13FEB96	01	29,600.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	15FEB96	01	34,400.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	19FEB96	01	156,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	20FEB96	01	48,800.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	21FEB96	01	63,600.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	06MAR96	01	22,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	07MAR96	01	42,800.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	19MAR96	01	46,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	26MAR96	01	37,200.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	11APR96	01	153,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	12APR96	01	56,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	23APR96	01	18,800.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	24APR96	01	26,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	25APR96	01	19,600.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	29APR96	01	49,600.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	13MAY96	01	18,800.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	14MAY96	01	25,200.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	12JUN96	01	11,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	13JUN96	01	12,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	15JUL96	01	38,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	17JUL96	01	70,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	18JUL96	01	81,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	19JUL96	01	64,000.00	NC					

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	23JUL96	01	58,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	24JUL96	01	48,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	26JUL96	01	210,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	30JUL96	01	70,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	31JUL96	01	124,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	05SEP96	01	69,600.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	23SEP96	01	43,200.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	24SEP96	01	15,600.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	25SEP96	01	36,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	26SEP96	01	24,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	22OCT96	01	58,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	23OCT96	01	83,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	24OCT96	01	72,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	06NOV96	01	14,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	07NOV96	01	28,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	19NOV96	01	294,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	20NOV96	01	65,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	21NOV96	01	112,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	04DEC96	01	40,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	05DEC96	01	33,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	06DEC96	01	44,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	650	11DEC96	01	74,000.00	NC				59,728.00	.
ALUMINUM	7429-90-5	200.00	4798	23APR96	05	568.00	NC	02	744,000.00	NC		
ALUMINUM	7429-90-5	200.00	4798	24APR96	05	721.00	NC	02	462,000.00	NC		
ALUMINUM	7429-90-5	200.00	4798	25APR96	05	1,280.00	NC	02	442,000.00	NC	856.33	549,333.33
ANTIMONY	7440-36-0	20.00	4798	23APR96	05	237.00	NC	02	3,400.00	NC		
ANTIMONY	7440-36-0	20.00	4798	24APR96	05	243.00	NC	02	2,270.00	NC		
ANTIMONY	7440-36-0	20.00	4798	25APR96	05	30.00	ND	02	3,270.00	NC	170.00	2,980.00
ARSENIC	7440-38-2	10.00	4798	23APR96	05	110.00	NC	02	84.10	NC		
ARSENIC	7440-38-2	10.00	4798	24APR96	05	183.00	NC	02	68.45	NC		
ARSENIC	7440-38-2	10.00	4798	25APR96	05	130.00	NC	02	57.20	NC	141.00	69.92
ARSENIC	7440-38-2	10.00	650	08JAN96	01	200.00	NC					
ARSENIC	7440-38-2	10.00	650	11JAN96	01	250.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(Continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ARSENIC	7440-38-2	10.00	650	30JAN96	01	70.00	NC					
ARSENIC	7440-38-2	10.00	650	31JAN96	01	300.00	NC					
ARSENIC	7440-38-2	10.00	650	12FEB96	01	10.00	NC					
ARSENIC	7440-38-2	10.00	650	13FEB96	01	280.00	NC					
ARSENIC	7440-38-2	10.00	650	15FEB96	01	500.00	NC					
ARSENIC	7440-38-2	10.00	650	19FEB96	01	200.00	NC					
ARSENIC	7440-38-2	10.00	650	20FEB96	01	10.00	ND					
ARSENIC	7440-38-2	10.00	650	21FEB96	01	230.00	NC					
ARSENIC	7440-38-2	10.00	650	06MAR96	01	210.00	NC					
ARSENIC	7440-38-2	10.00	650	07MAR96	01	10.00	ND					
ARSENIC	7440-38-2	10.00	650	18MAR96	01	30.00	NC					
ARSENIC	7440-38-2	10.00	650	19MAR96	01	210.00	NC					
ARSENIC	7440-38-2	10.00	650	26MAR96	01	20.00	NC					
ARSENIC	7440-38-2	10.00	650	11APR96	01	10.00	ND					
ARSENIC	7440-38-2	10.00	650	12APR96	01	120.00	NC					
ARSENIC	7440-38-2	10.00	650	23APR96	01	110.00	NC					
ARSENIC	7440-38-2	10.00	650	24APR96	01	310.00	NC					
ARSENIC	7440-38-2	10.00	650	25APR96	01	70.00	NC					
ARSENIC	7440-38-2	10.00	650	29APR96	01	260.00	NC					
ARSENIC	7440-38-2	10.00	650	13MAY96	01	10.00	ND					
ARSENIC	7440-38-2	10.00	650	14MAY96	01	480.00	NC					
ARSENIC	7440-38-2	10.00	650	12JUN96	01	100.00	NC					
ARSENIC	7440-38-2	10.00	650	13JUN96	01	220.00	NC					
ARSENIC	7440-38-2	10.00	650	15JUL96	01	190.00	NC					
ARSENIC	7440-38-2	10.00	650	17JUL96	01	20.00	NC					
ARSENIC	7440-38-2	10.00	650	18JUL96	01	150.00	NC					
ARSENIC	7440-38-2	10.00	650	19JUL96	01	130.00	NC					
ARSENIC	7440-38-2	10.00	650	23JUL96	01	20.00	NC					
ARSENIC	7440-38-2	10.00	650	24JUL96	01	380.00	NC					
ARSENIC	7440-38-2	10.00	650	26JUL96	01	160.00	NC					
ARSENIC	7440-38-2	10.00	650	30JUL96	01	130.00	NC					
ARSENIC	7440-38-2	10.00	650	31JUL96	01	130.00	NC					
ARSENIC	7440-38-2	10.00	650	04SEP96	01	70.00	NC					
ARSENIC	7440-38-2	10.00	650	05SEP96	01	70.00	NC					
ARSENIC	7440-38-2	10.00	650	23SEP96	01	260.00	NC					
ARSENIC	7440-38-2	10.00	650	24SEP96	01	60.00	NC					
ARSENIC	7440-38-2	10.00	650	25SEP96	01	10.00	ND					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ARSENIC	7440-38-2	10.00	650	26SEP96	01	10.00	ND					
ARSENIC	7440-38-2	10.00	650	22OCT96	01	360.00	NC					
ARSENIC	7440-38-2	10.00	650	23OCT96	01	440.00	NC					
ARSENIC	7440-38-2	10.00	650	24OCT96	01	40.00	NC					
ARSENIC	7440-38-2	10.00	650	06NOV96	01	150.00	NC					
ARSENIC	7440-38-2	10.00	650	07NOV96	01	10.00	ND					
ARSENIC	7440-38-2	10.00	650	19NOV96	01	270.00	NC					
ARSENIC	7440-38-2	10.00	650	20NOV96	01	10.00	NC					
ARSENIC	7440-38-2	10.00	650	21NOV96	01	60.00	NC					
ARSENIC	7440-38-2	10.00	650	04DEC96	01	30.00	NC					
ARSENIC	7440-38-2	10.00	650	05DEC96	01	20.00	NC					
ARSENIC	7440-38-2	10.00	650	06DEC96	01	10.00	ND					
ARSENIC	7440-38-2	10.00	650	11DEC96	01	20.00	NC				142.88	.
BERYLLIUM	7440-41-7	5.00	4798	23APR96	05	1.00	ND	02	39.50	NC		
BERYLLIUM	7440-41-7	5.00	4798	24APR96	05	1.00	ND	02	35.50	NC		
BERYLLIUM	7440-41-7	5.00	4798	25APR96	05	1.00	ND	02	33.40	NC	1.00	36.13
BORON	7440-42-8	100.00	4798	23APR96	05	8,470.00	NC	02	20,100.00	NC		
BORON	7440-42-8	100.00	4798	24APR96	05	9,900.00	NC	02	18,250.00	NC		
BORON	7440-42-8	100.00	4798	25APR96	05	6,840.00	NC	02	17,300.00	NC	8,403.33	18,550.00
CADMIUM	7440-43-9	5.00	4798	23APR96	05	4.00	ND	02	112,000.00	NC		
CADMIUM	7440-43-9	5.00	4798	24APR96	05	22.10	NC	02	80,050.00	NC		
CADMIUM	7440-43-9	5.00	4798	25APR96	05	63.10	NC	02	86,000.00	NC	29.73	92,683.33
CADMIUM	7440-43-9	5.00	650	08JAN96	01	20.00	NC					
CADMIUM	7440-43-9	5.00	650	11JAN96	01	60.00	NC					
CADMIUM	7440-43-9	5.00	650	30JAN96	01	40.00	NC					
CADMIUM	7440-43-9	5.00	650	31JAN96	01	63.00	NC					
CADMIUM	7440-43-9	5.00	650	12FEB96	01	20.00	NC					
CADMIUM	7440-43-9	5.00	650	13FEB96	01	10.00	NC					
CADMIUM	7440-43-9	5.00	650	15FEB96	01	10.00	NC					
CADMIUM	7440-43-9	5.00	650	19FEB96	01	90.00	NC					
CADMIUM	7440-43-9	5.00	650	20FEB96	01	70.00	NC					
CADMIUM	7440-43-9	5.00	650	21FEB96	01	70.00	NC					
CADMIUM	7440-43-9	5.00	650	06MAR96	01	20.00	ND					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
CADMIUM	7440-43-9	5.00	650	07MAR96	01	120.00	NC					
CADMIUM	7440-43-9	5.00	650	18MAR96	01	80.00	NC					
CADMIUM	7440-43-9	5.00	650	19MAR96	01	170.00	NC					
CADMIUM	7440-43-9	5.00	650	26MAR96	01	300.00	NC					
CADMIUM	7440-43-9	5.00	650	11APR96	01	500.00	NC					
CADMIUM	7440-43-9	5.00	650	12APR96	01	330.00	NC					
CADMIUM	7440-43-9	5.00	650	23APR96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	24APR96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	25APR96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	29APR96	01	60.00	NC					
CADMIUM	7440-43-9	5.00	650	13MAY96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	14MAY96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	12JUN96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	13JUN96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	15JUL96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	17JUL96	01	20.00	NC					
CADMIUM	7440-43-9	5.00	650	18JUL96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	19JUL96	01	10.00	NC					
CADMIUM	7440-43-9	5.00	650	23JUL96	01	20.00	NC					
CADMIUM	7440-43-9	5.00	650	24JUL96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	26JUL96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	30JUL96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	31JUL96	01	20.00	NC					
CADMIUM	7440-43-9	5.00	650	04SEP96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	05SEP96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	23SEP96	01	80.00	NC					
CADMIUM	7440-43-9	5.00	650	24SEP96	01	70.00	NC					
CADMIUM	7440-43-9	5.00	650	25SEP96	01	120.00	NC					
CADMIUM	7440-43-9	5.00	650	26SEP96	01	90.00	NC					
CADMIUM	7440-43-9	5.00	650	22OCT96	01	60.00	NC					
CADMIUM	7440-43-9	5.00	650	23OCT96	01	60.00	NC					
CADMIUM	7440-43-9	5.00	650	24OCT96	01	10.00	NC					
CADMIUM	7440-43-9	5.00	650	06NOV96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	07NOV96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	19NOV96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	20NOV96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	21NOV96	01	20.00	ND					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
CADMIUM	7440-43-9	5.00	650	04DEC96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	05DEC96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	06DEC96	01	20.00	ND					
CADMIUM	7440-43-9	5.00	650	11DEC96	01	60.00	NC				59.48	
CALCIUM	7440-70-2	5,000.00	4798	23APR96	05	26,200.00	NC	02	905,000.00	NC		
CALCIUM	7440-70-2	5,000.00	4798	24APR96	05	15,000.00	NC	02	526,000.00	NC		
CALCIUM	7440-70-2	5,000.00	4798	25APR96	05	18,800.00	NC	02	494,000.00	NC	20,000.00	641,666.67
CHROMIUM	7440-47-3	10.00	4798	23APR96	05	211.00	NC	02	926,000.00	NC		
CHROMIUM	7440-47-3	10.00	4798	24APR96	05	472.00	NC	02	661,500.00	NC		
CHROMIUM	7440-47-3	10.00	4798	25APR96	05	1,300.00	NC	02	702,000.00	NC	661.00	763,166.67
CHROMIUM	7440-47-3	10.00	650	08JAN96	01	1,220.00	NC					
CHROMIUM	7440-47-3	10.00	650	11JAN96	01	1,290.00	NC					
CHROMIUM	7440-47-3	10.00	650	30JAN96	01	2,590.00	NC					
CHROMIUM	7440-47-3	10.00	650	31JAN96	01	3,700.00	NC					
CHROMIUM	7440-47-3	10.00	650	12FEB96	01	1,600.00	NC					
CHROMIUM	7440-47-3	10.00	650	13FEB96	01	1,110.00	NC					
CHROMIUM	7440-47-3	10.00	650	15FEB96	01	2,170.00	NC					
CHROMIUM	7440-47-3	10.00	650	19FEB96	01	5,710.00	NC					
CHROMIUM	7440-47-3	10.00	650	20FEB96	01	4,090.00	NC					
CHROMIUM	7440-47-3	10.00	650	21FEB96	01	3,330.00	NC					
CHROMIUM	7440-47-3	10.00	650	06MAR96	01	1,160.00	NC					
CHROMIUM	7440-47-3	10.00	650	07MAR96	01	1,540.00	NC					
CHROMIUM	7440-47-3	10.00	650	18MAR96	01	730.00	NC					
CHROMIUM	7440-47-3	10.00	650	19MAR96	01	1,390.00	NC					
CHROMIUM	7440-47-3	10.00	650	26MAR96	01	1,680.00	NC					
CHROMIUM	7440-47-3	10.00	650	11APR96	01	3,290.00	NC					
CHROMIUM	7440-47-3	10.00	650	12APR96	01	1,240.00	NC					
CHROMIUM	7440-47-3	10.00	650	23APR96	01	120.00	NC					
CHROMIUM	7440-47-3	10.00	650	24APR96	01	330.00	NC					
CHROMIUM	7440-47-3	10.00	650	25APR96	01	710.00	NC					
CHROMIUM	7440-47-3	10.00	650	29APR96	01	4,120.00	NC					
CHROMIUM	7440-47-3	10.00	650	13MAY96	01	120.00	NC					
CHROMIUM	7440-47-3	10.00	650	14MAY96	01	110.00	NC					
CHROMIUM	7440-47-3	10.00	650	12JUN96	01	640.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
CHROMIUM	7440-47-3	10.00	650	13JUN96	01	2,150.00	NC					
CHROMIUM	7440-47-3	10.00	650	15JUL96	01	180.00	NC					
CHROMIUM	7440-47-3	10.00	650	17JUL96	01	140.00	NC					
CHROMIUM	7440-47-3	10.00	650	18JUL96	01	70.00	NC					
CHROMIUM	7440-47-3	10.00	650	19JUL96	01	70.00	NC					
CHROMIUM	7440-47-3	10.00	650	23JUL96	01	190.00	NC					
CHROMIUM	7440-47-3	10.00	650	24JUL96	01	140.00	NC					
CHROMIUM	7440-47-3	10.00	650	26JUL96	01	220.00	NC					
CHROMIUM	7440-47-3	10.00	650	30JUL96	01	910.00	NC					
CHROMIUM	7440-47-3	10.00	650	31JUL96	01	2,710.00	NC					
CHROMIUM	7440-47-3	10.00	650	04SEP96	01	70.00	NC					
CHROMIUM	7440-47-3	10.00	650	05SEP96	01	320.00	NC					
CHROMIUM	7440-47-3	10.00	650	23SEP96	01	2,990.00	NC					
CHROMIUM	7440-47-3	10.00	650	24SEP96	01	1,020.00	NC					
CHROMIUM	7440-47-3	10.00	650	25SEP96	01	2,460.00	NC					
CHROMIUM	7440-47-3	10.00	650	26SEP96	01	2,110.00	NC					
CHROMIUM	7440-47-3	10.00	650	22OCT96	01	240.00	NC					
CHROMIUM	7440-47-3	10.00	650	23OCT96	01	630.00	NC					
CHROMIUM	7440-47-3	10.00	650	24OCT96	01	320.00	NC					
CHROMIUM	7440-47-3	10.00	650	06NOV96	01	230.00	NC					
CHROMIUM	7440-47-3	10.00	650	07NOV96	01	1,180.00	NC					
CHROMIUM	7440-47-3	10.00	650	19NOV96	01	7,980.00	NC					
CHROMIUM	7440-47-3	10.00	650	20NOV96	01	1,840.00	NC					
CHROMIUM	7440-47-3	10.00	650	21NOV96	01	3,400.00	NC					
CHROMIUM	7440-47-3	10.00	650	04DEC96	01	2,170.00	NC					
CHROMIUM	7440-47-3	10.00	650	05DEC96	01	2,150.00	NC					
CHROMIUM	7440-47-3	10.00	650	06DEC96	01	2,980.00	NC					
CHROMIUM	7440-47-3	10.00	650	11DEC96	01	5,190.00	NC				1,693.27	
COBALT	7440-48-4	50.00	4798	23APR96	05	86.50	NC	02	3,750.00	NC		
COBALT	7440-48-4	50.00	4798	24APR96	05	122.00	NC	02	7,930.00	NC		
COBALT	7440-48-4	50.00	4798	25APR96	05	135.00	NC	02	10,700.00	NC	114.50	7,460.00
COPPER	7440-50-8	25.00	4798	23APR96	05	458.00	NC	02	522,000.00	NC		
COPPER	7440-50-8	25.00	4798	24APR96	05	306.00	NC	02	393,500.00	NC		
COPPER	7440-50-8	25.00	4798	25APR96	05	477.00	NC	02	458,000.00	NC	413.67	457,833.33

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
COPPER	7440-50-8	25.00	650	08JAN96	01	160.00	NC					
COPPER	7440-50-8	25.00	650	11JAN96	01	170.00	NC					
COPPER	7440-50-8	25.00	650	30JAN96	01	660.00	NC					
COPPER	7440-50-8	25.00	650	31JAN96	01	810.00	NC					
COPPER	7440-50-8	25.00	650	12FEB96	01	350.00	NC					
COPPER	7440-50-8	25.00	650	13FEB96	01	200.00	NC					
COPPER	7440-50-8	25.00	650	15FEB96	01	300.00	NC					
COPPER	7440-50-8	25.00	650	19FEB96	01	1,280.00	NC					
COPPER	7440-50-8	25.00	650	20FEB96	01	840.00	NC					
COPPER	7440-50-8	25.00	650	21FEB96	01	460.00	NC					
COPPER	7440-50-8	25.00	650	06MAR96	01	130.00	NC					
COPPER	7440-50-8	25.00	650	07MAR96	01	270.00	NC					
COPPER	7440-50-8	25.00	650	18MAR96	01	410.00	NC					
COPPER	7440-50-8	25.00	650	19MAR96	01	640.00	NC					
COPPER	7440-50-8	25.00	650	26MAR96	01	770.00	NC					
COPPER	7440-50-8	25.00	650	11APR96	01	2,590.00	NC					
COPPER	7440-50-8	25.00	650	12APR96	01	2,320.00	NC					
COPPER	7440-50-8	25.00	650	23APR96	01	220.00	NC					
COPPER	7440-50-8	25.00	650	24APR96	01	240.00	NC					
COPPER	7440-50-8	25.00	650	25APR96	01	330.00	NC					
COPPER	7440-50-8	25.00	650	29APR96	01	1,280.00	NC					
COPPER	7440-50-8	25.00	650	13MAY96	01	110.00	NC					
COPPER	7440-50-8	25.00	650	14MAY96	01	100.00	NC					
COPPER	7440-50-8	25.00	650	12JUN96	01	240.00	NC					
COPPER	7440-50-8	25.00	650	13JUN96	01	210.00	NC					
COPPER	7440-50-8	25.00	650	15JUL96	01	830.00	NC					
COPPER	7440-50-8	25.00	650	17JUL96	01	1,490.00	NC					
COPPER	7440-50-8	25.00	650	18JUL96	01	1,770.00	NC					
COPPER	7440-50-8	25.00	650	19JUL96	01	1,050.00	NC					
COPPER	7440-50-8	25.00	650	23JUL96	01	2,270.00	NC					
COPPER	7440-50-8	25.00	650	24JUL96	01	1,110.00	NC					
COPPER	7440-50-8	25.00	650	26JUL96	01	730.00	NC					
COPPER	7440-50-8	25.00	650	30JUL96	01	1,930.00	NC					
COPPER	7440-50-8	25.00	650	31JUL96	01	2,540.00	NC					
COPPER	7440-50-8	25.00	650	04SEP96	01	450.00	NC					
COPPER	7440-50-8	25.00	650	05SEP96	01	600.00	NC					
COPPER	7440-50-8	25.00	650	23SEP96	01	1,660.00	NC					

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
COPPER	7440-50-8	25.00	650	24SEP96	01	570.00	NC					
COPPER	7440-50-8	25.00	650	25SEP96	01	1,030.00	NC					
COPPER	7440-50-8	25.00	650	26SEP96	01	860.00	NC					
COPPER	7440-50-8	25.00	650	22OCT96	01	530.00	NC					
COPPER	7440-50-8	25.00	650	23OCT96	01	660.00	NC					
COPPER	7440-50-8	25.00	650	24OCT96	01	1,470.00	NC					
COPPER	7440-50-8	25.00	650	06NOV96	01	20.00	ND					
COPPER	7440-50-8	25.00	650	07NOV96	01	90.00	NC					
COPPER	7440-50-8	25.00	650	19NOV96	01	20.00	ND					
COPPER	7440-50-8	25.00	650	20NOV96	01	20.00	ND					
COPPER	7440-50-8	25.00	650	21NOV96	01	370.00	NC					
COPPER	7440-50-8	25.00	650	04DEC96	01	280.00	NC					
COPPER	7440-50-8	25.00	650	05DEC96	01	250.00	NC					
COPPER	7440-50-8	25.00	650	06DEC96	01	280.00	NC					
COPPER	7440-50-8	25.00	650	11DEC96	01	990.00	NC				749.23	.
GALLIUM	7440-55-3	500.00	4798	23APR96	05	200.00	ND	02	1,440.00	NC		
GALLIUM	7440-55-3	500.00	4798	24APR96	05	200.00	ND	02	1,125.00	NC		
GALLIUM	7440-55-3	500.00	4798	25APR96	05	200.00	ND	02	1,240.00	NC	200.00	1,268.33
INDIUM	7440-74-6	1,000.00	4798	23APR96	05	500.00	ND	02	500.00	ND		
INDIUM	7440-74-6	1,000.00	4798	24APR96	05	500.00	ND	02	500.00	ND		
INDIUM	7440-74-6	1,000.00	4798	25APR96	05	500.00	ND	02	500.00	ND	500.00	500.00
IODINE	7553-56-2	1,000.00	4798	23APR96	05	1,000.00	ND	02	1,000.00	ND		
IODINE	7553-56-2	1,000.00	4798	24APR96	05	1,000.00	ND	02	1,000.00	ND		
IODINE	7553-56-2	1,000.00	4798	25APR96	05	1,000.00	ND	02	1,000.00	ND	1,000.00	1,000.00
IRIDIUM	7439-88-5	1,000.00	4798	23APR96	05	500.00	ND	02	175,000.00	NC		
IRIDIUM	7439-88-5	1,000.00	4798	24APR96	05	500.00	ND	02	143,500.00	NC		
IRIDIUM	7439-88-5	1,000.00	4798	25APR96	05	500.00	ND	02	169,000.00	NC	500.00	162,500.00
IRON	7439-89-6	100.00	4798	23APR96	05	4,610.00	NC	02	4,970,000.00	NC		
IRON	7439-89-6	100.00	4798	24APR96	05	5,760.00	NC	02	3,385,000.00	NC		
IRON	7439-89-6	100.00	4798	25APR96	05	14,300.00	NC	02	3,510,000.00	NC	8,223.33	3,955,000.00
IRON	7439-89-6	100.00	650	08JAN96	01	2,410.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
IRON	7439-89-6	100.00	650	11JAN96	01	2,630.00	NC					
IRON	7439-89-6	100.00	650	30JAN96	01	8,280.00	NC					
IRON	7439-89-6	100.00	650	31JAN96	01	11,000.00	NC					
IRON	7439-89-6	100.00	650	12FEB96	01	5,760.00	NC					
IRON	7439-89-6	100.00	650	13FEB96	01	4,250.00	NC					
IRON	7439-89-6	100.00	650	15FEB96	01	13,210.00	NC					
IRON	7439-89-6	100.00	650	19FEB96	01	13,740.00	NC					
IRON	7439-89-6	100.00	650	20FEB96	01	11,570.00	NC					
IRON	7439-89-6	100.00	650	21FEB96	01	9,110.00	NC					
IRON	7439-89-6	100.00	650	06MAR96	01	2,540.00	NC					
IRON	7439-89-6	100.00	650	07MAR96	01	4,780.00	NC					
IRON	7439-89-6	100.00	650	18MAR96	01	4,540.00	NC					
IRON	7439-89-6	100.00	650	19MAR96	01	8,380.00	NC					
IRON	7439-89-6	100.00	650	26MAR96	01	10,020.00	NC					
IRON	7439-89-6	100.00	650	11APR96	01	18,700.00	NC					
IRON	7439-89-6	100.00	650	12APR96	01	11,910.00	NC					
IRON	7439-89-6	100.00	650	23APR96	01	2,440.00	NC					
IRON	7439-89-6	100.00	650	24APR96	01	4,980.00	NC					
IRON	7439-89-6	100.00	650	25APR96	01	10,130.00	NC					
IRON	7439-89-6	100.00	650	29APR96	01	19,840.00	NC					
IRON	7439-89-6	100.00	650	13MAY96	01	2,510.00	NC					
IRON	7439-89-6	100.00	650	14MAY96	01	1,360.00	NC					
IRON	7439-89-6	100.00	650	12JUN96	01	3,130.00	NC					
IRON	7439-89-6	100.00	650	13JUN96	01	1,760.00	NC					
IRON	7439-89-6	100.00	650	15JUL96	01	2,060.00	NC					
IRON	7439-89-6	100.00	650	17JUL96	01	1,920.00	NC					
IRON	7439-89-6	100.00	650	18JUL96	01	1,600.00	NC					
IRON	7439-89-6	100.00	650	19JUL96	01	2,080.00	NC					
IRON	7439-89-6	100.00	650	23JUL96	01	6,570.00	NC					
IRON	7439-89-6	100.00	650	24JUL96	01	3,450.00	NC					
IRON	7439-89-6	100.00	650	26JUL96	01	2,030.00	NC					
IRON	7439-89-6	100.00	650	30JUL96	01	2,480.00	NC					
IRON	7439-89-6	100.00	650	31JUL96	01	6,320.00	NC					
IRON	7439-89-6	100.00	650	04SEP96	01	770.00	NC					
IRON	7439-89-6	100.00	650	05SEP96	01	1,800.00	NC					
IRON	7439-89-6	100.00	650	23SEP96	01	1,540.00	NC					
IRON	7439-89-6	100.00	650	24SEP96	01	1,220.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averagea

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
IRON	7439-89-6	100.00	650	25SEP96	01	1,290.00	NC					
IRON	7439-89-6	100.00	650	26SEP96	01	1,660.00	NC					
IRON	7439-89-6	100.00	650	22OCT96	01	2,460.00	NC					
IRON	7439-89-6	100.00	650	23OCT96	01	2,890.00	NC					
IRON	7439-89-6	100.00	650	24OCT96	01	2,410.00	NC					
IRON	7439-89-6	100.00	650	06NOV96	01	4,190.00	NC					
IRON	7439-89-6	100.00	650	07NOV96	01	7,380.00	NC					
IRON	7439-89-6	100.00	650	19NOV96	01	8,190.00	NC					
IRON	7439-89-6	100.00	650	20NOV96	01	6,080.00	NC					
IRON	7439-89-6	100.00	650	21NOV96	01	7,710.00	NC					
IRON	7439-89-6	100.00	650	04DEC96	01	2,190.00	NC					
IRON	7439-89-6	100.00	650	05DEC96	01	2,020.00	NC					
IRON	7439-89-6	100.00	650	06DEC96	01	3,360.00	NC					
IRON	7439-89-6	100.00	650	11DEC96	01	5,240.00	NC				5,382.50	.
LANTHANUM	7439-91-0	100.00	4798	23APR96	05	100.00	ND	02	100.00	ND		
LANTHANUM	7439-91-0	100.00	4798	24APR96	05	100.00	ND	02	100.00	ND		
LANTHANUM	7439-91-0	100.00	4798	25APR96	05	100.00	ND	02	100.00	ND	100.00	100.00
LEAD	7439-92-1	50.00	4798	23APR96	05	43.00	ND	02	144,000.00	NC		
LEAD	7439-92-1	50.00	4798	24APR96	05	43.00	ND	02	98,600.00	NC		
LEAD	7439-92-1	50.00	4798	25APR96	05	78.10	NC	02	109,000.00	NC	54.70	117,200.00
LEAD	7439-92-1	50.00	650	08JAN96	01	140.00	NC					
LEAD	7439-92-1	50.00	650	11JAN96	01	130.00	NC					
LEAD	7439-92-1	50.00	650	30JAN96	01	220.00	NC					
LEAD	7439-92-1	50.00	650	31JAN96	01	190.00	NC					
LEAD	7439-92-1	50.00	650	12FEB96	01	180.00	NC					
LEAD	7439-92-1	50.00	650	13FEB96	01	90.00	NC					
LEAD	7439-92-1	50.00	650	15FEB96	01	50.00	NC					
LEAD	7439-92-1	50.00	650	19FEB96	01	360.00	NC					
LEAD	7439-92-1	50.00	650	20FEB96	01	300.00	NC					
LEAD	7439-92-1	50.00	650	21FEB96	01	120.00	NC					
LEAD	7439-92-1	50.00	650	06MAR96	01	10.00	NC					
LEAD	7439-92-1	50.00	650	07MAR96	01	320.00	NC					
LEAD	7439-92-1	50.00	650	18MAR96	01	380.00	NC					
LEAD	7439-92-1	50.00	650	19MAR96	01	210.00	NC					

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
LEAD	7439-92-1	50.00	650	26MAR96	01	390.00	NC					
LEAD	7439-92-1	50.00	650	11APR96	01	280.00	NC					
LEAD	7439-92-1	50.00	650	12APR96	01	430.00	NC					
LEAD	7439-92-1	50.00	650	23APR96	01	180.00	NC					
LEAD	7439-92-1	50.00	650	24APR96	01	150.00	NC					
LEAD	7439-92-1	50.00	650	25APR96	01	20.00	NC					
LEAD	7439-92-1	50.00	650	29APR96	01	280.00	NC					
LEAD	7439-92-1	50.00	650	13MAY96	01	190.00	NC					
LEAD	7439-92-1	50.00	650	14MAY96	01	40.00	NC					
LEAD	7439-92-1	50.00	650	12JUN96	01	70.00	NC					
LEAD	7439-92-1	50.00	650	13JUN96	01	250.00	NC					
LEAD	7439-92-1	50.00	650	15JUL96	01	10.00	NC					
LEAD	7439-92-1	50.00	650	17JUL96	01	80.00	NC					
LEAD	7439-92-1	50.00	650	18JUL96	01	150.00	NC					
LEAD	7439-92-1	50.00	650	19JUL96	01	10.00	NC					
LEAD	7439-92-1	50.00	650	23JUL96	01	10.00	NC					
LEAD	7439-92-1	50.00	650	24JUL96	01	40.00	ND					
LEAD	7439-92-1	50.00	650	26JUL96	01	40.00	ND					
LEAD	7439-92-1	50.00	650	30JUL96	01	90.00	NC					
LEAD	7439-92-1	50.00	650	31JUL96	01	250.00	NC					
LEAD	7439-92-1	50.00	650	04SEP96	01	30.00	NC					
LEAD	7439-92-1	50.00	650	05SEP96	01	10.00	NC					
LEAD	7439-92-1	50.00	650	23SEP96	01	150.00	NC					
LEAD	7439-92-1	50.00	650	24SEP96	01	220.00	NC					
LEAD	7439-92-1	50.00	650	25SEP96	01	270.00	NC					
LEAD	7439-92-1	50.00	650	26SEP96	01	220.00	NC					
LEAD	7439-92-1	50.00	650	22OCT96	01	250.00	NC					
LEAD	7439-92-1	50.00	650	23OCT96	01	250.00	NC					
LEAD	7439-92-1	50.00	650	24OCT96	01	190.00	NC					
LEAD	7439-92-1	50.00	650	06NOV96	01	100.00	NC					
LEAD	7439-92-1	50.00	650	07NOV96	01	40.00	ND					
LEAD	7439-92-1	50.00	650	19NOV96	01	190.00	NC					
LEAD	7439-92-1	50.00	650	20NOV96	01	40.00	ND					
LEAD	7439-92-1	50.00	650	21NOV96	01	330.00	NC					
LEAD	7439-92-1	50.00	650	04DEC96	01	170.00	NC					
LEAD	7439-92-1	50.00	650	05DEC96	01	280.00	NC					
LEAD	7439-92-1	50.00	650	06DEC96	01	320.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
LEAD	7439-92-1	50.00	650	11DEC96	01	580.00	NC				178.85	.
LITHIUM	7439-93-2	100.00	4798	23APR96	05	2,010.00	NC	02	7,250.00	NC		
LITHIUM	7439-93-2	100.00	4798	24APR96	05	2,370.00	NC	02	5,285.00	NC		
LITHIUM	7439-93-2	100.00	4798	25APR96	05	1,400.00	NC	02	4,890.00	NC	1,926.67	5,808.33
MAGNESIUM	7439-95-4	5,000.00	4798	23APR96	05	8,210.00	NC	02	53,300.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4798	24APR96	05	4,000.00	NC	02	42,200.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4798	25APR96	05	5,050.00	NC	02	41,800.00	NC	5,753.33	45,766.67
MANGANESE	7439-96-5	15.00	4798	23APR96	05	49.40	NC	02	48,300.00	NC		
MANGANESE	7439-96-5	15.00	4798	24APR96	05	37.50	NC	02	33,550.00	NC		
MANGANESE	7439-96-5	15.00	4798	25APR96	05	59.20	NC	02	31,400.00	NC	48.70	37,750.00
MERCURY	7439-97-6	0.20	4798	23APR96	05	1.63	NC	02	129.00	NC		
MERCURY	7439-97-6	0.20	4798	24APR96	05	1.60	NC	02	96.70	NC		
MERCURY	7439-97-6	0.20	4798	25APR96	05	1.77	NC	02	82.00	NC	1.67	102.57
MERCURY	7439-97-6	0.20	650	08JAN96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	12JAN96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	31JAN96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	12FEB96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	13FEB96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	15FEB96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	19FEB96	01	0.40	NC					
MERCURY	7439-97-6	0.20	650	21FEB96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	22FEB96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	07MAR96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	08MAR96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	20MAR96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	12APR96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	25APR96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	26APR96	01	0.40	NC					
MERCURY	7439-97-6	0.20	650	30APR96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	15MAY96	01	0.20	NC					
MERCURY	7439-97-6	0.20	650	16MAY96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	17MAY96	01	0.30	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

---------- Subcategory=Metals Option=4 (continued) ----------

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
MERCURY	7439-97-6	0.20	650	13JUN96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	14JUN96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	16JUL96	01	0.50	NC					
MERCURY	7439-97-6	0.20	650	17JUL96	01	0.80	NC					
MERCURY	7439-97-6	0.20	650	18JUL96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	19JUL96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	23JUL96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	24JUL96	01	0.80	NC					
MERCURY	7439-97-6	0.20	650	26JUL96	01	0.80	NC					
MERCURY	7439-97-6	0.20	650	30JUL96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	31JUL96	01	0.50	NC					
MERCURY	7439-97-6	0.20	650	01AUG96	01	0.50	NC					
MERCURY	7439-97-6	0.20	650	22AUG96	01	0.30	NC					
MERCURY	7439-97-6	0.20	650	23AUG96	01	0.20	NC					
MERCURY	7439-97-6	0.20	650	27AUG96	01	0.20	NC					
MERCURY	7439-97-6	0.20	650	28AUG96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	05SEP96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	06SEP96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	24SEP96	01	0.80	NC					
MERCURY	7439-97-6	0.20	650	25SEP96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	26SEP96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	27SEP96	01	0.80	NC					
MERCURY	7439-97-6	0.20	650	21OCT96	01	0.30	NC					
MERCURY	7439-97-6	0.20	650	22OCT96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	23OCT96	01	0.50	NC					
MERCURY	7439-97-6	0.20	650	07NOV96	01	0.70	NC					
MERCURY	7439-97-6	0.20	650	08NOV96	01	0.60	NC					
MERCURY	7439-97-6	0.20	650	20NOV96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	21NOV96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	22NOV96	01	0.20	ND					
MERCURY	7439-97-6	0.20	650	04DEC96	01	2.50	NC					
MERCURY	7439-97-6	0.20	650	05DEC96	01	2.20	NC					
MERCURY	7439-97-6	0.20	650	06DEC96	01	1.50	NC					
MERCURY	7439-97-6	0.20	650	11DEC96	01	0.70	NC				0.51	
MOLYBDENUM	7439-98-7	10.00	4798	23APR96	05	1,910.00	NC	02	3,120.00	NC		
MOLYBDENUM	7439-98-7	10.00	4798	24APR96	05	2,040.00	NC	02	2,040.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
MOLYBDENUM	7439-98-7	10.00	4798	25APR96	05	1,290.00	NC	02	1,960.00	NC	1,746.67	2,373.33
NICKEL	7440-02-0	40.00	4798	23APR96	05	1,130.00	NC	02	317,000.00	NC		
NICKEL	7440-02-0	40.00	4798	24APR96	05	1,150.00	NC	02	208,000.00	NC		
NICKEL	7440-02-0	40.00	4798	25APR96	05	760.00	NC	02	218,000.00	NC	1,013.33	247,666.67
NICKEL	7440-02-0	40.00	650	08JAN96	01	3,300.00	NC					
NICKEL	7440-02-0	40.00	650	11JAN96	01	1,630.00	NC					
NICKEL	7440-02-0	40.00	650	30JAN96	01	1,770.00	NC					
NICKEL	7440-02-0	40.00	650	31JAN96	01	1,200.00	NC					
NICKEL	7440-02-0	40.00	650	12FEB96	01	1,830.00	NC					
NICKEL	7440-02-0	40.00	650	13FEB96	01	1,780.00	NC					
NICKEL	7440-02-0	40.00	650	15FEB96	01	1,500.00	NC					
NICKEL	7440-02-0	40.00	650	19FEB96	01	860.00	NC					
NICKEL	7440-02-0	40.00	650	20FEB96	01	1,070.00	NC					
NICKEL	7440-02-0	40.00	650	21FEB96	01	3,140.00	NC					
NICKEL	7440-02-0	40.00	650	06MAR96	01	350.00	NC					
NICKEL	7440-02-0	40.00	650	07MAR96	01	2,320.00	NC					
NICKEL	7440-02-0	40.00	650	18MAR96	01	530.00	NC					
NICKEL	7440-02-0	40.00	650	19MAR96	01	550.00	NC					
NICKEL	7440-02-0	40.00	650	26MAR96	01	1,210.00	NC					
NICKEL	7440-02-0	40.00	650	11APR96	01	3,030.00	NC					
NICKEL	7440-02-0	40.00	650	12APR96	01	2,660.00	NC					
NICKEL	7440-02-0	40.00	650	23APR96	01	860.00	NC					
NICKEL	7440-02-0	40.00	650	24APR96	01	980.00	NC					
NICKEL	7440-02-0	40.00	650	25APR96	01	740.00	NC					
NICKEL	7440-02-0	40.00	650	29APR96	01	670.00	NC					
NICKEL	7440-02-0	40.00	650	13MAY96	01	2,200.00	NC					
NICKEL	7440-02-0	40.00	650	14MAY96	01	1,240.00	NC					
NICKEL	7440-02-0	40.00	650	12JUN96	01	850.00	NC					
NICKEL	7440-02-0	40.00	650	13JUN96	01	780.00	NC					
NICKEL	7440-02-0	40.00	650	15JUL96	01	630.00	NC					
NICKEL	7440-02-0	40.00	650	17JUL96	01	610.00	NC					
NICKEL	7440-02-0	40.00	650	18JUL96	01	670.00	NC					
NICKEL	7440-02-0	40.00	650	19JUL96	01	590.00	NC					
NICKEL	7440-02-0	40.00	650	23JUL96	01	550.00	NC					
NICKEL	7440-02-0	40.00	650	24JUL96	01	680.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
NICKEL	7440-02-0	40.00	650	26JUL96	01	340.00	NC					
NICKEL	7440-02-0	40.00	650	30JUL96	01	760.00	NC					
NICKEL	7440-02-0	40.00	650	31JUL96	01	590.00	NC					
NICKEL	7440-02-0	40.00	650	04SEP96	01	580.00	NC					
NICKEL	7440-02-0	40.00	650	05SEP96	01	710.00	NC					
NICKEL	7440-02-0	40.00	650	23SEP96	01	640.00	NC					
NICKEL	7440-02-0	40.00	650	24SEP96	01	800.00	NC					
NICKEL	7440-02-0	40.00	650	25SEP96	01	1,060.00	NC					
NICKEL	7440-02-0	40.00	650	26SEP96	01	1,030.00	NC					
NICKEL	7440-02-0	40.00	650	22OCT96	01	1,520.00	NC					
NICKEL	7440-02-0	40.00	650	23OCT96	01	800.00	NC					
NICKEL	7440-02-0	40.00	650	24OCT96	01	2,460.00	NC					
NICKEL	7440-02-0	40.00	650	06NOV96	01	1,340.00	NC					
NICKEL	7440-02-0	40.00	650	07NOV96	01	720.00	NC					
NICKEL	7440-02-0	40.00	650	19NOV96	01	690.00	NC					
NICKEL	7440-02-0	40.00	650	20NOV96	01	650.00	NC					
NICKEL	7440-02-0	40.00	650	21NOV96	01	920.00	NC					
NICKEL	7440-02-0	40.00	650	04DEC96	01	440.00	NC					
NICKEL	7440-02-0	40.00	650	05DEC96	01	370.00	NC					
NICKEL	7440-02-0	40.00	650	06DEC96	01	520.00	NC					
NICKEL	7440-02-0	40.00	650	11DEC96	01	890.00	NC				1,127.12	
OSMIUM	7440-04-2	100.00	4798	23APR96	05	100.00	ND	02	149.00	NC		
OSMIUM	7440-04-2	100.00	4798	24APR96	05	100.00	ND	02	181.00	NC		
OSMIUM	7440-04-2	100.00	4798	25APR96	05	100.00	ND	02	239.00	NC	100.00	189.67
PHOSPHORUS	7723-14-0	1,000.00	4798	23APR96	05	25,800.00	NC	02	822,000.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4798	24APR96	05	28,600.00	NC	02	596,000.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4798	25APR96	05	18,200.00	NC	02	659,000.00	NC	24,200.00	692,333.33
PHOSPHORUS	7723-14-0	1,000.00	650	12APR96	01	170,000.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	15MAY96	01	21,000.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	16MAY96	01	15,000.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	17MAY96	01	20,000.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	13JUN96	01	19,000.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	14JUN96	01	14,000.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	15JUL96	01	50,080.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4 (continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
PHOSPHORUS	7723-14-0	1,000.00	650	17JUL96	01	54,030.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	18JUL96	01	61,230.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	19JUL96	01	56,590.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	23JUL96	01	28,130.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	24JUL96	01	32,560.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	26JUL96	01	14,320.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	30JUL96	01	38,470.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	31JUL96	01	30,750.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	04SEP96	01	8,550.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	05SEP96	01	20,660.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	23SEP96	01	9,580.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	24SEP96	01	7,480.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	25SEP96	01	7,500.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	26SEP96	01	14,640.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	22OCT96	01	7,530.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	23OCT96	01	11,580.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	24OCT96	01	12,450.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	06NOV96	01	19,280.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	07NOV96	01	16,300.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	19NOV96	01	16,240.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	20NOV96	01	8,780.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	21NOV96	01	11,150.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	04DEC96	01	9,750.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	05DEC96	01	8,700.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	06DEC96	01	8,870.00	NC					
PHOSPHORUS	7723-14-0	1,000.00	650	11DEC96	01	12,100.00	NC				25,342.42	
POTASSIUM	7440-09-7	1,000.00	4798	23APR96	05	415,000.00	NC	02	876,000.00	NC		
POTASSIUM	7440-09-7	1,000.00	4798	24APR96	05	505,000.00	NC	02	736,500.00	NC		
POTASSIUM	7440-09-7	1,000.00	4798	25APR96	05	310,000.00	NC	02	695,000.00	NC	410,000.00	769,166.67
SELENIUM	7782-49-2	5.00	4798	23APR96	05	40.00	ND	02	297.00	NC		
SELENIUM	7782-49-2	5.00	4798	24APR96	05	285.00	NC	02	155.50	NC		
SELENIUM	7782-49-2	5.00	4798	25APR96	05	20.00	ND	02	360.00	NC	115.00	270.83
SELENIUM	7782-49-2	5.00	650	15JUL96	01	280.00	NC					
SELENIUM	7782-49-2	5.00	650	17JUL96	01	100.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
SELENIUM	7782-49-2	5.00	650	18JUL96	01	380.00	NC					
SELENIUM	7782-49-2	5.00	650	19JUL96	01	370.00	NC					
SELENIUM	7782-49-2	5.00	650	23JUL96	01	170.00	NC					
SELENIUM	7782-49-2	5.00	650	24JUL96	01	200.00	NC					
SELENIUM	7782-49-2	5.00	650	26JUL96	01	10.00	ND					
SELENIUM	7782-49-2	5.00	650	30JUL96	01	50.00	NC					
SELENIUM	7782-49-2	5.00	650	31JUL96	01	110.00	NC					
SELENIUM	7782-49-2	5.00	650	04SEP96	01	50.00	NC					
SELENIUM	7782-49-2	5.00	650	05SEP96	01	190.00	NC					
SELENIUM	7782-49-2	5.00	650	23SEP96	01	2,480.00	NC					
SELENIUM	7782-49-2	5.00	650	24SEP96	01	1,840.00	NC					
SELENIUM	7782-49-2	5.00	650	25SEP96	01	2,570.00	NC					
SELENIUM	7782-49-2	5.00	650	26SEP96	01	1,980.00	NC					
SELENIUM	7782-49-2	5.00	650	22OCT96	01	1,650.00	NC					
SELENIUM	7782-49-2	5.00	650	23OCT96	01	280.00	NC					
SELENIUM	7782-49-2	5.00	650	24OCT96	01	500.00	NC					
SELENIUM	7782-49-2	5.00	650	06NOV96	01	720.00	NC					
SELENIUM	7782-49-2	5.00	650	07NOV96	01	130.00	NC					
SELENIUM	7782-49-2	5.00	650	19NOV96	01	10.00	ND					
SELENIUM	7782-49-2	5.00	650	20NOV96	01	210.00	NC					
SELENIUM	7782-49-2	5.00	650	21NOV96	01	530.00	NC					
SELENIUM	7782-49-2	5.00	650	04DEC96	01	160.00	NC					
SELENIUM	7782-49-2	5.00	650	05DEC96	01	170.00	NC					
SELENIUM	7782-49-2	5.00	650	06DEC96	01	60.00	NC					
SELENIUM	7782-49-2	5.00	650	11DEC96	01	450.00	NC				579.63	
SILICON	7440-21-3	100.00	4798	23APR96	05	1,290.00	NC	02	134,000.00	NC		
SILICON	7440-21-3	100.00	4798	24APR96	05	1,480.00	NC	02	81,600.00	NC		
SILICON	7440-21-3	100.00	4798	25APR96	05	1,570.00	NC	02	89,700.00	NC	1,446.67	101,766.67
SILVER	7440-22-4	10.00	4798	23APR96	05	5.00	ND	02	5,760.00	NC		
SILVER	7440-22-4	10.00	4798	24APR96	05	12.70	NC	02	4,490.00	NC		
SILVER	7440-22-4	10.00	4798	25APR96	05	38.10	NC	02	4,370.00	NC	18.60	4,873.33
SILVER	7440-22-4	10.00	650	08JAN96	01	30.00	NC					
SILVER	7440-22-4	10.00	650	11JAN96	01	50.00	NC					
SILVER	7440-22-4	10.00	650	30JAN96	01	20.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

---------- Subcategory=Metals Option=4 ----------
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
SILVER	7440-22-4	10.00	650	31JAN96	01	30.00	NC					
SILVER	7440-22-4	10.00	650	12FEB96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	13FEB96	01	10.00	ND					
SILVER	7440-22-4	10.00	650	15FEB96	01	10.00	ND					
SILVER	7440-22-4	10.00	650	19FEB96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	20FEB96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	21FEB96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	06MAR96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	07MAR96	01	10.00	ND					
SILVER	7440-22-4	10.00	650	18MAR96	01	10.00	ND					
SILVER	7440-22-4	10.00	650	19MAR96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	26MAR96	01	50.00	NC					
SILVER	7440-22-4	10.00	650	11APR96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	12APR96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	23APR96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	24APR96	01	10.00	ND					
SILVER	7440-22-4	10.00	650	25APR96	01	30.00	NC					
SILVER	7440-22-4	10.00	650	29APR96	01	100.00	NC					
SILVER	7440-22-4	10.00	650	13MAY96	01	100.00	NC					
SILVER	7440-22-4	10.00	650	14MAY96	01	10.00	ND					
SILVER	7440-22-4	10.00	650	12JUN96	01	60.00	NC					
SILVER	7440-22-4	10.00	650	13JUN96	01	50.00	NC					
SILVER	7440-22-4	10.00	650	15JUL96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	17JUL96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	18JUL96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	19JUL96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	23JUL96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	24JUL96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	26JUL96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	30JUL96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	31JUL96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	04SEP96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	05SEP96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	23SEP96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	24SEP96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	25SEP96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	26SEP96	01	20.00	ND					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
SILVER	7440-22-4	10.00	650	22OCT96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	23OCT96	01	10.00	NC					
SILVER	7440-22-4	10.00	650	24OCT96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	06NOV96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	07NOV96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	19NOV96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	20NOV96	01	70.00	NC					
SILVER	7440-22-4	10.00	650	21NOV96	01	50.00	NC					
SILVER	7440-22-4	10.00	650	04DEC96	01	20.00	ND					
SILVER	7440-22-4	10.00	650	05DEC96	01	20.00	NC					
SILVER	7440-22-4	10.00	650	06DEC96	01	40.00	NC					
SILVER	7440-22-4	10.00	650	11DEC96	01	60.00	NC				25.77	.
SODIUM	7440-23-5	5,000.00	4798	23APR96	05	15,000,000.00	NC	02	30,600,000.00	NC		
SODIUM	7440-23-5	5,000.00	4798	24APR96	05	18,400,000.00	NC	02	30,700,000.00	NC		
SODIUM	7440-23-5	5,000.00	4798	25APR96	05	11,900,000.00	NC	02	28,100,000.00	NC	15,100,000.00	29,800,000.00
STRONTIUM	7440-24-6	100.00	4798	23APR96	05	100.00	ND	02	2,200.00	NC		
STRONTIUM	7440-24-6	100.00	4798	24APR96	05	100.00	ND	02	2,305.00	NC		
STRONTIUM	7440-24-6	100.00	4798	25APR96	05	100.00	ND	02	2,800.00	NC	100.00	2,435.00
SULFUR	7704-34-9	1,000.00	4798	23APR96	05	1,310,000.00	NC	02	1,880,000.00	NC		
SULFUR	7704-34-9	1,000.00	4798	24APR96	05	1,450,000.00	NC	02	1,720,000.00	NC		
SULFUR	7704-34-9	1,000.00	4798	25APR96	05	882,000.00	NC	02	1,720,000.00	NC	1,214,000.00	1,773,333.33
TANTALUM	7440-25-7	500.00	4798	23APR96	05	500.00	ND	02	1,600.00	NC		
TANTALUM	7440-25-7	500.00	4798	24APR96	05	500.00	ND	02	1,270.00	NC		
TANTALUM	7440-25-7	500.00	4798	25APR96	05	500.00	ND	02	1,370.00	NC	500.00	1,413.33
TELLURIUM	13494-80-9	1,000.00	4798	23APR96	05	1,000.00	ND	02	1,000.00	ND		
TELLURIUM	13494-80-9	1,000.00	4798	24APR96	05	1,000.00	ND	02	1,000.00	ND		
TELLURIUM	13494-80-9	1,000.00	4798	25APR96	05	1,000.00	ND	02	1,000.00	ND	1,000.00	1,000.00
THALLIUM	7440-28-0	10.00	4798	23APR96	05	10.00	ND	02	20.00	ND		
THALLIUM	7440-28-0	10.00	4798	24APR96	05	20.00	ND	02	20.00	ND		
THALLIUM	7440-28-0	10.00	4798	25APR96	05	10.00	ND	02	20.00	ND	13.33	20.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TIN	7440-31-5	30.00	4798	23APR96	05	34.50	NC	02	171,000.00	NC		
TIN	7440-31-5	30.00	4798	24APR96	05	69.80	NC	02	114,400.00	NC		
TIN	7440-31-5	30.00	4798	25APR96	05	165.00	NC	02	146,000.00	NC	89.77	143,800.00
TITANIUM	7440-32-6	5.00	4798	23APR96	05	55.50	NC	02	46,800.00	NC		
TITANIUM	7440-32-6	5.00	4798	24APR96	05	44.50	NC	02	30,650.00	NC		
TITANIUM	7440-32-6	5.00	4798	25APR96	05	70.60	NC	02	28,600.00	NC	56.87	35,350.00
VANADIUM	7440-62-2	50.00	4798	23APR96	05	17.80	NC	02	3,020.00	NC		
VANADIUM	7440-62-2	50.00	4798	24APR96	05	9.00	ND	02	1,825.00	NC		
VANADIUM	7440-62-2	50.00	4798	25APR96	05	9.00	ND	02	1,800.00	NC	11.93	2,215.00
YTTRIUM	7440-65-5	5.00	4798	23APR96	05	5.00	ND	02	148.00	NC		
YTTRIUM	7440-65-5	5.00	4798	24APR96	05	5.00	ND	02	88.00	NC		
YTTRIUM	7440-65-5	5.00	4798	25APR96	05	5.00	ND	02	89.20	NC	5.00	108.40
ZINC	7440-66-6	20.00	4798	23APR96	05	122.00	NC	02	680,000.00	NC		
ZINC	7440-66-6	20.00	4798	24APR96	05	215.00	NC	02	575,500.00	NC		
ZINC	7440-66-6	20.00	4798	25APR96	05	1,050.00	NC	02	670,000.00	NC	462.33	641,833.33
ZINC	7440-66-6	20.00	650	08JAN96	01	120.00	NC					
ZINC	7440-66-6	20.00	650	11JAN96	01	100.00	NC					
ZINC	7440-66-6	20.00	650	30JAN96	01	230.00	NC					
ZINC	7440-66-6	20.00	650	31JAN96	01	280.00	NC					
ZINC	7440-66-6	20.00	650	12FEB96	01	220.00	NC					
ZINC	7440-66-6	20.00	650	13FEB96	01	140.00	NC					
ZINC	7440-66-6	20.00	650	15FEB96	01	230.00	NC					
ZINC	7440-66-6	20.00	650	19FEB96	01	1,390.00	NC					
ZINC	7440-66-6	20.00	650	20FEB96	01	980.00	NC					
ZINC	7440-66-6	20.00	650	21FEB96	01	640.00	NC					
ZINC	7440-66-6	20.00	650	06MAR96	01	290.00	NC					
ZINC	7440-66-6	20.00	650	07MAR96	01	210.00	NC					
ZINC	7440-66-6	20.00	650	18MAR96	01	270.00	NC					
ZINC	7440-66-6	20.00	650	19MAR96	01	500.00	NC					
ZINC	7440-66-6	20.00	650	26MAR96	01	1,150.00	NC					
ZINC	7440-66-6	20.00	650	11APR96	01	2,950.00	NC					
ZINC	7440-66-6	20.00	650	12APR96	01	1,290.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ZINC	7440-66-6	20.00	650	23APR96	01	50.00	NC					
ZINC	7440-66-6	20.00	650	24APR96	01	120.00	NC					
ZINC	7440-66-6	20.00	650	25APR96	01	350.00	NC					
ZINC	7440-66-6	20.00	650	29APR96	01	700.00	NC					
ZINC	7440-66-6	20.00	650	13MAY96	01	50.00	NC					
ZINC	7440-66-6	20.00	650	14MAY96	01	20.00	NC					
ZINC	7440-66-6	20.00	650	12JUN96	01	60.00	NC					
ZINC	7440-66-6	20.00	650	13JUN96	01	60.00	NC					
ZINC	7440-66-6	20.00	650	15JUL96	01	120.00	NC					
ZINC	7440-66-6	20.00	650	17JUL96	01	190.00	NC					
ZINC	7440-66-6	20.00	650	18JUL96	01	120.00	NC					
ZINC	7440-66-6	20.00	650	19JUL96	01	130.00	NC					
ZINC	7440-66-6	20.00	650	23JUL96	01	310.00	NC					
ZINC	7440-66-6	20.00	650	24JUL96	01	210.00	NC					
ZINC	7440-66-6	20.00	650	26JUL96	01	140.00	NC					
ZINC	7440-66-6	20.00	650	30JUL96	01	320.00	NC					
ZINC	7440-66-6	20.00	650	31JUL96	01	650.00	NC					
ZINC	7440-66-6	20.00	650	04SEP96	01	20.00	NC					
ZINC	7440-66-6	20.00	650	05SEP96	01	150.00	NC					
ZINC	7440-66-6	20.00	650	23SEP96	01	280.00	NC					
ZINC	7440-66-6	20.00	650	24SEP96	01	150.00	NC					
ZINC	7440-66-6	20.00	650	25SEP96	01	230.00	NC					
ZINC	7440-66-6	20.00	650	26SEP96	01	160.00	NC					
ZINC	7440-66-6	20.00	650	22OCT96	01	240.00	NC					
ZINC	7440-66-6	20.00	650	23OCT96	01	330.00	NC					
ZINC	7440-66-6	20.00	650	24OCT96	01	140.00	NC					
ZINC	7440-66-6	20.00	650	06NOV96	01	10.00	ND					
ZINC	7440-66-6	20.00	650	07NOV96	01	10.00	ND					
ZINC	7440-66-6	20.00	650	19NOV96	01	370.00	NC					
ZINC	7440-66-6	20.00	650	20NOV96	01	10.00	ND					
ZINC	7440-66-6	20.00	650	21NOV96	01	930.00	NC					
ZINC	7440-66-6	20.00	650	04DEC96	01	420.00	NC					
ZINC	7440-66-6	20.00	650	05DEC96	01	360.00	NC					
ZINC	7440-66-6	20.00	650	06DEC96	01	420.00	NC					
ZINC	7440-66-6	20.00	650	11DEC96	01	1,000.00	NC				381.15	
ZIRCONIUM	7440-67-7	100.00	4798	23APR96	05	1,340.00	NC	02	4,860.00	NC		

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ZIRCONIUM	7440-67-7	100.00	4798	24APR96	05	1,550.00	NC	02	1,122.00	NC		
ZIRCONIUM	7440-67-7	100.00	4798	25APR96	05	970.00	NC	02	688.00	NC	1,286.67	2,223.33
BENZOIC ACID	65-85-0	50.00	4798	23APR96	05	451.56	NC	02	23,362.20	NC		
BENZOIC ACID	65-85-0	50.00	4798	24APR96	05	104.34	NC	02	18,454.45	NC		
BENZOIC ACID	65-85-0	50.00	4798	25APR96	05	10,009.10	NC	02	20,299.10	NC	3,521.67	20,705.25
BENZYL ALCOHOL	100-51-6	10.00	4798	23APR96	05	10.00	ND	02	10.00	ND		
BENZYL ALCOHOL	100-51-6	10.00	4798	24APR96	05	10.00	ND	02	13.33	NC		
BENZYL ALCOHOL	100-51-6	10.00	4798	25APR96	05	10.00	ND	02	10.00	ND	10.00	11.11
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4798	23APR96	05	10.00	ND	02	17.58	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4798	24APR96	05	10.00	ND	02	10.00	ND		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4798	25APR96	05	10.00	ND	02	10.00	ND	10.00	12.53
CARBON DISULFIDE	75-15-0	10.00	4798	23APR96	05	10.00	ND	02	10.00	ND		
CARBON DISULFIDE	75-15-0	10.00	4798	24APR96	05	10.00	ND	02	10.00	ND		
CARBON DISULFIDE	75-15-0	10.00	4798	25APR96	05	10.00	ND	02	10.00	ND	10.00	10.00
CHLOROFORM	67-66-3	10.00	4798	23APR96	05	181.26	NC	02	330.50	NC		
CHLOROFORM	67-66-3	10.00	4798	24APR96	05	201.30	NC	02	599.90	NC		
CHLOROFORM	67-66-3	10.00	4798	25APR96	05	263.50	NC	02	730.60	NC	215.35	553.67
CHLOROFORM	67-66-3	10.00	650	09JAN96	01	390.00	NC					
CHLOROFORM	67-66-3	10.00	650	11APR96	01	79.00	NC					
CHLOROFORM	67-66-3	10.00	650	12APR96	01	130.00	NC					
CHLOROFORM	67-66-3	10.00	650	13JUN96	01	32.00	NC					
CHLOROFORM	67-66-3	10.00	650	14JUN96	01	16.00	NC					
CHLOROFORM	67-66-3	10.00	650	04SEP96	01	63.00	NC					
CHLOROFORM	67-66-3	10.00	650	05SEP96	01	130.00	NC				120.00	.
DIBROMOCHLOROMETHANE	124-48-1	10.00	4798	23APR96	05	22.92	NC	02	104.69	NC		
DIBROMOCHLOROMETHANE	124-48-1	10.00	4798	24APR96	05	72.64	NC	02	565.30	NC		
DIBROMOCHLOROMETHANE	124-48-1	10.00	4798	25APR96	05	210.60	NC	02	722.70	NC	102.05	464.23
DIBROMOCHLOROMETHANE	124-48-1	10.00	650	11APR96	01	10.00	ND					
DIBROMOCHLOROMETHANE	124-48-1	10.00	650	12APR96	01	25.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
DIBROMOCHLOROMETHANE	124-48-1	10.00	650	13JUN96	01	9.00	NC					
DIBROMOCHLOROMETHANE	124-48-1	10.00	650	14JUN96	01	3.00	NC				11.75	.
HEXANOIC ACID	142-62-1	10.00	4798	23APR96	05	10.00	ND	02	10.00	ND		
HEXANOIC ACID	142-62-1	10.00	4798	24APR96	05	10.00	ND	02	10.00	ND		
HEXANOIC ACID	142-62-1	10.00	4798	25APR96	05	59.74	NC	02	98.91	NC	26.58	39.64
M-XYLENE	108-38-3	10.00	4798	23APR96	05	10.00	ND	02	32.43	NC		
M-XYLENE	108-38-3	10.00	4798	24APR96	05	12.68	NC	02	28.89	NC		
M-XYLENE	108-38-3	10.00	4798	25APR96	05	10.00	ND	02	24.60	NC	10.89	28.64
METHYLENE CHLORIDE	75-09-2	10.00	4798	23APR96	05	10.00	ND	02	10.98	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4798	24APR96	05	10.00	ND	02	14.98	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4798	25APR96	05	10.00	ND	02	13.69	NC	10.00	13.22
METHYLENE CHLORIDE	75-09-2	10.00	650	09JAN96	01	5.00	ND					
METHYLENE CHLORIDE	75-09-2	10.00	650	11APR96	01	10.00	ND					
METHYLENE CHLORIDE	75-09-2	10.00	650	12APR96	01	10.00	ND					
METHYLENE CHLORIDE	75-09-2	10.00	650	13JUN96	01	1.00	ND					
METHYLENE CHLORIDE	75-09-2	10.00	650	14JUN96	01	1.00	ND					
METHYLENE CHLORIDE	75-09-2	10.00	650	04SEP96	01	1.00	ND					
METHYLENE CHLORIDE	75-09-2	10.00	650	05SEP96	01	1.00	ND				4.14	.
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4798	23APR96	05	99.34	NC	02	142.70	NC		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4798	24APR96	05	47.42	NC	02	183.76	NC		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4798	25APR96	05	57.64	NC	02	125.84	NC	68.13	150.77
PHENOL	108-95-2	10.00	4798	23APR96	05	12.40	NC	02	65.02	NC		
PHENOL	108-95-2	10.00	4798	24APR96	05	10.00	ND	02	10.00	ND		
PHENOL	108-95-2	10.00	4798	25APR96	05	10.00	ND	02	10.00	ND	10.80	28.34
PYRIDINE	110-86-1	10.00	4798	23APR96	05	117.44	NC	02	175.43	NC		
PYRIDINE	110-86-1	10.00	4798	24APR96	05	78.40	NC	02	191.56	NC		
PYRIDINE	110-86-1	10.00	4798	25APR96	05	65.07	NC	02	139.53	NC	86.97	168.84
TOLUENE	108-88-3	10.00	4798	23APR96	05	12.77	NC	02	50.21	NC		
TOLUENE	108-88-3	10.00	4798	24APR96	05	26.11	NC	02	80.33	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOLUENE	108-88-3	10.00	4798	25APR96	05	16.27	NC	02	60.00	NC	18.38	63.51
TOLUENE	108-88-3	10.00	650	09JAN96	01	1.00	ND					
TOLUENE	108-88-3	10.00	650	11APR96	01	32.00	NC					
TOLUENE	108-88-3	10.00	650	12APR96	01	26.00	NC					
TOLUENE	108-88-3	10.00	650	13JUN96	01	14.00	NC					
TOLUENE	108-88-3	10.00	650	14JUN96	01	10.00	NC					
TOLUENE	108-88-3	10.00	650	04SEP96	01	120.00	NC					
TOLUENE	108-88-3	10.00	650	05SEP96	01	540.00	NC				106.14	.
TRICHLOROETHENE	79-01-6	10.00	4798	23APR96	05	118.60	NC	02	359.90	NC		
TRICHLOROETHENE	79-01-6	10.00	4798	24APR96	05	130.71	NC	02	122.20	NC		
TRICHLOROETHENE	79-01-6	10.00	4798	25APR96	05	53.96	NC	02	185.80	NC	101.09	222.63
TRICHLOROETHENE	79-01-6	10.00	650	09JAN96	01	1.00	ND					
TRICHLOROETHENE	79-01-6	10.00	650	11APR96	01	10.00	ND					
TRICHLOROETHENE	79-01-6	10.00	650	12APR96	01	10.00	ND					
TRICHLOROETHENE	79-01-6	10.00	650	13JUN96	01	2.00	NC					
TRICHLOROETHENE	79-01-6	10.00	650	14JUN96	01	2.00	NC					
TRICHLOROETHENE	79-01-6	10.00	650	04SEP96	01	988.00	NC					
TRICHLOROETHENE	79-01-6	10.00	650	05SEP96	01	3,100.00	NC				587.57	.
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4798	23APR96	05	10.00	ND	02	10.00	ND		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4798	24APR96	05	10.00	ND	02	10.00	ND		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4798	25APR96	05	10.00	ND	02	10.00	ND	10.00	10.00
1,1,1-TRICHLOROETHANE	71-55-6	10.00	650	09JAN96	01	1.00	ND					
1,1,1-TRICHLOROETHANE	71-55-6	10.00	650	11APR96	01	10.00	ND					
1,1,1-TRICHLOROETHANE	71-55-6	10.00	650	12APR96	01	10.00	ND					
1,1,1-TRICHLOROETHANE	71-55-6	10.00	650	13JUN96	01	1.00	ND					
1,1,1-TRICHLOROETHANE	71-55-6	10.00	650	14JUN96	01	1.00	ND					
1,1,1-TRICHLOROETHANE	71-55-6	10.00	650	04SEP96	01	3.00	NC					
1,1,1-TRICHLOROETHANE	71-55-6	10.00	650	05SEP96	01	10.00	NC				5.14	.
1,1-DICHLOROETHENE	75-35-4	10.00	4798	23APR96	05	10.00	ND	02	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4798	24APR96	05	10.00	ND	02	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4798	25APR96	05	10.00	ND	02	10.00	ND	10.00	10.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Metals Option=4
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
1,1-DICHLOROETHENE	75-35-4	10.00	650	09JAN96	01	1.00	ND					
1,1-DICHLOROETHENE	75-35-4	10.00	650	11APR96	01	10.00	ND					
1,1-DICHLOROETHENE	75-35-4	10.00	650	12APR96	01	10.00	ND					
1,1-DICHLOROETHENE	75-35-4	10.00	650	13JUN96	01	1.00	ND					
1,1-DICHLOROETHENE	75-35-4	10.00	650	14JUN96	01	1.00	ND					
1,1-DICHLOROETHENE	75-35-4	10.00	650	04SEP96	01	1.00	ND					
1,1-DICHLOROETHENE	75-35-4	10.00	650	05SEP96	01	1.00	ND				3.57	.
1,4-DIOXANE	123-91-1	10.00	4798	23APR96	05	10.00	ND	02	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4798	24APR96	05	10.00	ND	02	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4798	25APR96	05	10.00	ND	02	10.00	ND	10.00	10.00
2-BUTANONE	78-93-3	50.00	4798	23APR96	05	57.93	NC	02	1,620.40	NC		
2-BUTANONE	78-93-3	50.00	4798	24APR96	05	1,918.70	NC	02	7,826.30	NC		
2-BUTANONE	78-93-3	50.00	4798	25APR96	05	1,840.80	NC	02	5,654.40	NC	1,272.48	5,033.70
2-PROPANONE	67-64-1	50.00	4798	23APR96	05	1,721.40	NC	02	23,489.00	NC		
2-PROPANONE	67-64-1	50.00	4798	24APR96	05	20,248.00	NC	02	54,082.50	NC		
2-PROPANONE	67-64-1	50.00	4798	25APR96	05	17,275.00	NC	02	36,585.00	NC	13,081.47	38,052.17
4-METHYL-2-PENTANONE	108-10-1	50.00	4798	23APR96	05	50.00	ND	02	78.99	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4798	24APR96	05	50.00	ND	02	73.47	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4798	25APR96	05	50.00	ND	02	50.00	ND	50.00	67.49

Subcategory=Metals Option=cyanide 2

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL CYANIDE	57-12-5	20.00	4055	10JUN91				02	2,143,000.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4055	11JUN91	03	136,833.33	NC	02	7,965,000.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4055	12JUN91				02	8,400,000.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4055	13JUN91	03	150.00	ND	02	1,940,000.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4055	14JUN91	03	270,000.00	NC	02	1,880,000.00	NC	135,661.11	4,465,600.00

APPENDIX 11

LISTING OF OILS OPTION 9 DATA FOR EPA' USE FOR PERCENT REMOVAL AND LONG TERM AVERAGE

Appendix

C

LISTING OF DAILY INFLUENT AND EFFLUENT MEASUREMENTS

Column Heading	Definition
Subcategory	The subcategories are listed in the following order: 'METALS' = metals subcategory 'OILS' = oils subcategory 'ORGANICS' = organics subcategory
Option	The options are listed in the following order: Cyanide subset: options 1 and 2 Metals subcategory: options 1A (arsenic data only), 3, 4, cyanide 2(cyanide subset of the metals subcategory) Oils subcategory: options 8 and 9 Organics subcategory: option 4
Analyte Name	Pollutant (or analyte) name.
Cas_No	Chemical Abstract Service (CAS) registry number for the analyte.
Baseline value	Baseline value described in Chapter 15 and used in LTA test (see section 10.4.3.1).
Fac. ID	Identification number of the facility where the sample was collected. The identification numbers that start with 'E' indicate that the data were obtained from the EPA sampling episodes. The identification numbers that have only three digits (e.g., 602) indicate that the facility provided the data.
Sample Date	Date that the sample was collected.
Effl Samp Pt	Effluent Sample Point.
Effl Amount	If 'Effl Meas type' is 'NC', this value is the measured (detected) pollutant concentration at the effluent sample point. Otherwise, if 'Effl Meas type' is 'ND,' this value is the sample-specific detection limit for the non-detected measurement.
Effl Meas type	Identifies whether the 'Effl Amount' was detected (non-censored ('NC')) or non-detected ('ND').
Infl Samp Pt(s)	Influent Sample Point(s). The data for multiple influent points are aggregated as described in section 10.4.2.3.
Infl Amount	If 'Infl Meas type' is 'NC', this value is the measured (detected) pollutant concentration at the influent sample point. Otherwise, if 'Infl Meas type' is 'ND', this value is the sample-specific detection limit for the non-detected measurement, after any modifications specified in section 15.1.1.
Infl Meas type	Identifies whether the 'Infl Amount' was detected (non-censored ('NC')) or non-detected ('ND').
Facility Effl Mean	The effluent long-term average calculated as described in Chapter 10.
Facility Inf Mean	The influent long-term average calculated as described in Chapter 10.

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
FLUORIDE	16984-48-8	100.00	4814B	17SEP96				08	17,500.00	NC		
FLUORIDE	16984-48-8	100.00	4814B	18SEP96	10	390,000.00	NC	08	330,000.00	NC		
FLUORIDE	16984-48-8	100.00	4814B	19SEP96	10	33,000.00	NC	08	66,000.00	NC	148,000.00	124,375.00
NITRATE/NITRITE	C-005	50.00	4813	04AUG96	07	690.00	NC	05	730.00	NC		
NITRATE/NITRITE	C-005	50.00	4813	05AUG96	07	555.00	NC	05	2,420.00	NC		
NITRATE/NITRITE	C-005	50.00	4813	06AUG96	07	1,000.00	NC	05	1,370.00	NC		
NITRATE/NITRITE	C-005	50.00	4813	07AUG96	07	590.00	NC	05	1,620.00	NC		
NITRATE/NITRITE	C-005	50.00	4813	08AUG96	07	680.00	NC	05	2,270.00	NC	703.00	1,682.00
NITRATE/NITRITE	C-005	50.00	4814A	16SEP96	09	13,000.00	NC	07	21,000.00	NC		
NITRATE/NITRITE	C-005	50.00	4814A	17SEP96				07	29,500.00	NC		
NITRATE/NITRITE	C-005	50.00	4814A	18SEP96	09	30,000.00	NC	07	58,000.00	NC		
NITRATE/NITRITE	C-005	50.00	4814A	19SEP96	09	20,000.00	NC	07	48,000.00	NC		
NITRATE/NITRITE	C-005	50.00	4814A	20SEP96	09	20,000.00	NC	07	25,000.00	NC	20,750.00	36,300.00
NITRATE/NITRITE	C-005	50.00	4814B	16SEP96	10	99,000.00	NC	08	103,000.00	NC		
NITRATE/NITRITE	C-005	50.00	4814B	17SEP96				08	51,500.00	NC		
NITRATE/NITRITE	C-005	50.00	4814B	18SEP96	10	41,000.00	NC	08	103,000.00	NC		
NITRATE/NITRITE	C-005	50.00	4814B	19SEP96	10	75,000.00	NC	08	58,000.00	NC	71,666.67	78,875.00
OIL & GREASE	C-007	5,000.00	4813	04AUG96	07	222,450.00	NC	05	867,916.67	NC		
OIL & GREASE	C-007	5,000.00	4813	05AUG96	07	93,583.33	NC	05	679,000.00	NC		
OIL & GREASE	C-007	5,000.00	4813	06AUG96	07	71,883.33	NC	05	1,070,000.00	NC		
OIL & GREASE	C-007	5,000.00	4813	07AUG96	07	71,066.67	NC	05	3,902,166.67	NC		
OIL & GREASE	C-007	5,000.00	4813	08AUG96	07	213,000.00	NC	05	2,210,333.33	NC	134,396.67	1,745,883.33
OIL & GREASE	C-007	5,000.00	4814A	16SEP96	09	190,000.00	NC	07	3,364,000.00	NC		
OIL & GREASE	C-007	5,000.00	4814A	17SEP96				07	2,182,500.00	NC		
OIL & GREASE	C-007	5,000.00	4814A	18SEP96	09	147,916.67	NC	07	2,652,333.33	NC		
OIL & GREASE	C-007	5,000.00	4814A	19SEP96	09	306,200.00	NC	07	9,274,400.00	NC		
OIL & GREASE	C-007	5,000.00	4814A	20SEP96	09	263,200.00	NC	07	12,168,000.00	NC	226,829.17	5,928,246.67
OIL & GREASE	C-007	5,000.00	4814B	16SEP96	10	946,000.00	NC	08	3,080,000.00	NC		
OIL & GREASE	C-007	5,000.00	4814B	17SEP96				08	2,062,500.00	NC		
OIL & GREASE	C-007	5,000.00	4814B	18SEP96	10	494,000.00	NC	08	2,650,000.00	NC		
OIL & GREASE	C-007	5,000.00	4814B	19SEP96	10	1,027,000.00	NC	08	4,025,000.00	NC	822,333.33	2,954,375.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
OIL & GREASE	C-007	5,000.00	651	01JUL97	01	52,000.00	NC					
OIL & GREASE	C-007	5,000.00	651	10JUL97	01	74,000.00	NC					
OIL & GREASE	C-007	5,000.00	651	11JUL97	01	5,000.00	ND					
OIL & GREASE	C-007	5,000.00	651	01AUG97	01	9,900.00	NC					
OIL & GREASE	C-007	5,000.00	651	01SEP97	01	74,000.00	NC					
OIL & GREASE	C-007	5,000.00	651	01OCT97	01	5,000.00	ND					
OIL & GREASE	C-007	5,000.00	651	01NOV97	01	12,000.00	NC					
OIL & GREASE	C-007	5,000.00	651	01DEC97	01	19,000.00	NC					
OIL & GREASE	C-007	5,000.00	651	02JAN98	01	28,000.00	NC					
OIL & GREASE	C-007	5,000.00	651	01FEB98	01	22,000.00	NC					
OIL & GREASE	C-007	5,000.00	651	01MAR98	01	19,000.00	NC					
OIL & GREASE	C-007	5,000.00	651	03MAR98				01	1,375,000.00	NC		
OIL & GREASE	C-007	5,000.00	651	01APR98	01	20,000.00	NC				28,325.00	1,375,000.00
SGT-HEM	C-037	5,000.00	4813	04AUG96	07	74,400.00	NC	05	525,275.00	NC		
SGT-HEM	C-037	5,000.00	4813	05AUG96	07	27,858.33	NC	05	354,066.67	NC		
SGT-HEM	C-037	5,000.00	4813	06AUG96	07	28,100.00	NC	05	362,000.00	NC		
SGT-HEM	C-037	5,000.00	4813	07AUG96	07	7,633.33	NC	05	1,662,166.67	NC		
SGT-HEM	C-037	5,000.00	4813	08AUG96	07	74,650.00	NC	05	1,341,666.67	NC	42,528.33	849,035.00
SGT-HEM	C-037	5,000.00	4814A	16SEP96	09	18,400.00	NC	07	1,070,600.00	NC		
SGT-HEM	C-037	5,000.00	4814A	17SEP96				07	921,500.00	NC		
SGT-HEM	C-037	5,000.00	4814A	18SEP96	09	61,166.67	NC	07	1,175,833.33	NC		
SGT-HEM	C-037	5,000.00	4814A	19SEP96	09	41,400.00	NC	07	3,723,000.00	NC		
SGT-HEM	C-037	5,000.00	4814A	20SEP96	09	47,000.00	NC	07	1,264,000.00	NC	41,991.67	1,630,986.67
SGT-HEM	C-037	5,000.00	4814B	16SEP96	10	196,600.00	NC	08	1,075,000.00	NC		
SGT-HEM	C-037	5,000.00	4814B	17SEP96				08	882,750.00	NC		
SGT-HEM	C-037	5,000.00	4814B	18SEP96	10	218,000.00	NC	08	1,818,000.00	NC		
SGT-HEM	C-037	5,000.00	4814B	19SEP96	10	316,250.00	NC	08	1,153,000.00	NC	243,616.67	1,232,187.50
SGT-HEM	C-037	5,000.00	651	03MAR98				01	215,000.00	NC	.	215,000.00
TOTAL CYANIDE	57-12-5	20.00	4813	04AUG96	07	20.00	ND	06	20.00	ND		
TOTAL CYANIDE	57-12-5	20.00	4813	05AUG96	07	20.00	ND	06	20.00	ND		
TOTAL CYANIDE	57-12-5	20.00	4813	06AUG96	07	20.00	ND	06	20.00	ND		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL CYANIDE	57-12-5	20.00	4813	07AUG96	07	20.00	ND	06	20.00	ND		
TOTAL CYANIDE	57-12-5	20.00	4813	08AUG96	07	20.00	ND	06	20.00	ND	20.00	20.00
TOTAL CYANIDE	57-12-5	20.00	4814A	16SEP96	09	10.00	ND	07	74.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4814A	17SEP96				07	467.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4814A	18SEP96	09	209.00	NC	07	380.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4814A	19SEP96	09	96.00	NC	07	258.00	NC	105.00	294.75
TOTAL CYANIDE	57-12-5	20.00	4814B	16SEP96	10	288.00	NC	08	474.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4814B	17SEP96				08	10.00	ND		
TOTAL CYANIDE	57-12-5	20.00	4814B	18SEP96	10	245.00	NC	08	980.00	NC		
TOTAL CYANIDE	57-12-5	20.00	4814B	19SEP96	10	620.00	NC	08	41.00	NC	384.33	376.25
TOTAL CYANIDE	57-12-5	20.00	651	01JUL97	01	50.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	10JUL97	01	5.00	ND					
TOTAL CYANIDE	57-12-5	20.00	651	11JUL97	01	10.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	01AUG97	01	50.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	01SEP97	01	180.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	01OCT97	01	50.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	01NOV97	01	50.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	01DEC97	01	210.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	02JAN98	01	140.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	01FEB98	01	170.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	01MAR98	01	50.00	NC					
TOTAL CYANIDE	57-12-5	20.00	651	01APR98	01	100.00	NC				88.75	
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4813	04AUG96	07	3,290,000.00	NC	05	1,765,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4813	05AUG96	07	3,120,000.00	NC	05	2,150,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4813	06AUG96	07	3,280,000.00	NC	05	1,270,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4813	07AUG96	07	3,840,000.00	NC	05	2,020,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4813	08AUG96	07	3,850,000.00	NC	05	1,680,000.00	NC	3,476,000.00	1,777,000.00
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814A	16SEP96	09	19,800,000.00	NC	07	19,000,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814A	17SEP96				07	8,950,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814A	18SEP96	09	12,650,000.00	NC	07	12,100,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814A	19SEP96	09	11,500,000.00	NC	07	13,300,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814A	20SEP96	09	12,400,000.00	NC	07	12,600,000.00	NC	14,087,500.00	13,190,000.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814B	16SEP96	10	18,700,000.00	NC	08	19,200,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814B	17SEP96				08	12,450,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814B	18SEP96	10	23,450,000.00	NC	08	32,700,000.00	NC		
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	4814B	19SEP96	10	69,000,000.00	NC	08	15,300,000.00	NC	37,050,000.00	19,912,500.00
TOTAL DISSOLVED SOLIDS	C-010	10,000.00	651	03MAR98				01	4,590,000.00	NC	.	4,590,000.00
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4813	04AUG96	07	5,650,000.00	NC	05	7,755,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4813	05AUG96	07	9,970,000.00	NC	05	10,600,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4813	06AUG96	07	7,430,000.00	NC	05	7,450,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4813	07AUG96	07	4,770,000.00	NC	05	157,000,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4813	08AUG96	07	10,800,000.00	NC	05	7,470,000.00	NC	7,724,000.00	38,055,000.00
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814A	16SEP96	09	3,030,000.00	NC	07	4,030,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814A	17SEP96				07	3,400,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814A	18SEP96	09	3,885,000.00	NC	07	4,960,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814A	19SEP96	09	3,850,000.00	NC	07	4,790,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814A	20SEP96	09	2,970,000.00	NC	07	3,910,000.00	NC	3,433,750.00	4,218,000.00
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814B	16SEP96	10	3,720,000.00	NC	08	3,690,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814B	17SEP96				08	3,285,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814B	18SEP96	10	5,060,000.00	NC	08	6,580,000.00	NC		
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	4814B	19SEP96	10	9,260,000.00	NC	08	3,130,000.00	NC	6,013,333.33	4,171,250.00
TOTAL ORGANIC CARBON (TOC)	C-012	1,000.00	651	03MAR98				01	6,705,000.00	NC	.	6,705,000.00
TOTAL PHENOLS	C-020	50.00	4813	04AUG96	07	27,500.00	NC	05	22,300.00	NC		
TOTAL PHENOLS	C-020	50.00	4813	05AUG96	07	47,500.00	NC	05	10,300.00	NC		
TOTAL PHENOLS	C-020	50.00	4813	06AUG96	07	102,000.00	NC	05	185,000.00	NC		
TOTAL PHENOLS	C-020	50.00	4813	07AUG96	07	1,780.00	NC	05	49,400.00	NC		
TOTAL PHENOLS	C-020	50.00	4813	08AUG96	07	21,600.00	NC	05	27,300.00	NC	40,076.00	58,860.00
TOTAL PHENOLS	C-020	50.00	4814A	16SEP96	09	15,000.00	NC	07	18,700.00	NC		
TOTAL PHENOLS	C-020	50.00	4814A	17SEP96				07	13,900.00	NC		
TOTAL PHENOLS	C-020	50.00	4814A	18SEP96	09	11,190.00	NC	07	18,600.00	NC		
TOTAL PHENOLS	C-020	50.00	4814A	19SEP96	09	17,300.00	NC	07	20,500.00	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL PHENOLS	C-020	50.00	4814A	20SEP96	09	18,600.00	NC	07	71,700.00	NC	15,522.50	28,680.00
TOTAL PHENOLS	C-020	50.00	4814B	16SEP96	10	13,600.00	NC	08	15,000.00	NC		
TOTAL PHENOLS	C-020	50.00	4814B	17SEP96				08	18,750.00	NC		
TOTAL PHENOLS	C-020	50.00	4814B	18SEP96	10	4,380.00	NC	08	8,200.00	NC		
TOTAL PHENOLS	C-020	50.00	4814B	19SEP96	10	42,500.00	NC	08	89,500.00	NC	20,160.00	32,862.50
TOTAL PHENOLS	C-020	50.00	651	01JUL97	01	3,200.00	NC					
TOTAL PHENOLS	C-020	50.00	651	08JUL97	01	6,800.00	NC					
TOTAL PHENOLS	C-020	50.00	651	09JUL97	01	6,000.00	NC					
TOTAL PHENOLS	C-020	50.00	651	01AUG97	01	800.00	NC					
TOTAL PHENOLS	C-020	50.00	651	01SEP97	01	3,900.00	NC					
TOTAL PHENOLS	C-020	50.00	651	01OCT97	01	110.00	NC					
TOTAL PHENOLS	C-020	50.00	651	01NOV97	01	2,800.00	NC					
TOTAL PHENOLS	C-020	50.00	651	01DEC97	01	2,200.00	NC					
TOTAL PHENOLS	C-020	50.00	651	02JAN98	01	1,900.00	NC					
TOTAL PHENOLS	C-020	50.00	651	01FEB98	01	3,500.00	NC					
TOTAL PHENOLS	C-020	50.00	651	01MAR98	01	7,200.00	NC					
TOTAL PHENOLS	C-020	50.00	651	01APR98	01	6,600.00	NC				3,750.83	.
TOTAL PHOSPHORUS	14265-44-2	10.00	4813	04AUG96	07	5,970.00	NC	05	6,015.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4813	05AUG96	07	2,405.00	NC	05	2,660.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4813	06AUG96	07	2,400.00	NC	05	11,800.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4813	07AUG96	07	1,870.00	NC	05	18,000.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4813	08AUG96	07	4,140.00	NC	05	17,800.00	NC	3,357.00	11,255.00
TOTAL PHOSPHORUS	14265-44-2	10.00	4814A	16SEP96	09	350.00	NC	07	650.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4814A	17SEP96				07	8,000.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4814A	18SEP96	09	45.00	NC	07	13,000.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4814A	19SEP96	09	400.00	NC	07	6,700.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4814A	20SEP96	09	170,000.00	NC	07	350,000.00	NC	42,698.75	75,670.00
TOTAL PHOSPHORUS	14265-44-2	10.00	4814B	16SEP96	10	70.00	NC	08	8,100.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4814B	17SEP96				08	13,500.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4814B	18SEP96	10	89,500.00	NC	08	250,000.00	NC		
TOTAL PHOSPHORUS	14265-44-2	10.00	4814B	19SEP96	10	4,500.00	NC	08	3,000.00	NC	31,356.67	68,650.00

---------- Subcategory=Oils Option=9 ----------
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4813	04AUG96	07	350,000.00	NC	05	636,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4813	05AUG96	07	163,000.00	NC	05	172,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4813	06AUG96	07	240,000.00	NC	05	493,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4813	07AUG96	07	150,000.00	NC	05	1,820,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4813	08AUG96	07	5,230,000.00	NC	05	1,360,000.00	NC	1,226,600.00	896,200.00
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814A	16SEP96	09	765,000.00	NC	07	5,210,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814A	17SEP96				07	3,470,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814A	18SEP96	09	527,500.00	NC	07	5,660,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814A	19SEP96	09	195,000.00	NC	07	8,480,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814A	20SEP96	09	710,000.00	NC	07	7,700,000.00	NC	549,375.00	6,104,000.00
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814B	16SEP96	10	756,000.00	NC	08	5,420,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814B	17SEP96				08	8,310,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814B	18SEP96	10	695,000.00	NC	08	1,250,000.00	NC		
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	4814B	19SEP96	10	375,000.00	NC	08	3,060,000.00	NC	608,666.67	4,510,000.00
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	651	08JUL97	01	41,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	651	09JUL97	01	10,000.00	NC					
TOTAL SUSPENDED SOLIDS	C-009	4,000.00	651	03MAR98				01	1,515,000.00	NC	25,500.00	1,515,000.00
ALUMINUM	7429-90-5	200.00	4813	04AUG96	07	44,300.00	NC	05	25,000.00	NC		
ALUMINUM	7429-90-5	200.00	4813	05AUG96	07	18,700.00	NC	05	5,250.00	NC		
ALUMINUM	7429-90-5	200.00	4813	06AUG96	07	42,900.00	NC	05	11,500.00	NC		
ALUMINUM	7429-90-5	200.00	4813	07AUG96	07	23,400.00	NC	05	13,900.00	NC		
ALUMINUM	7429-90-5	200.00	4813	08AUG96	07	154,000.00	NC	05	15,000.00	NC	56,660.00	14,130.00
ALUMINUM	7429-90-5	200.00	4814A	16SEP96	09	21,000.00	NC	07	29,200.00	NC		
ALUMINUM	7429-90-5	200.00	4814A	17SEP96				07	20,550.00	NC		
ALUMINUM	7429-90-5	200.00	4814A	18SEP96	09	18,000.00	NC	07	66,200.00	NC		
ALUMINUM	7429-90-5	200.00	4814A	19SEP96	09	9,770.00	NC	07	45,200.00	NC		
ALUMINUM	7429-90-5	200.00	4814A	20SEP96	09	7,520.00	NC	07	44,400.00	NC	14,072.50	41,110.00
ALUMINUM	7429-90-5	200.00	4814B	16SEP96	10	20,600.00	NC	08	12,500.00	NC		
ALUMINUM	7429-90-5	200.00	4814B	17SEP96				08	26,200.00	NC		
ALUMINUM	7429-90-5	200.00	4814B	18SEP96	10	41,000.00	NC	08	11,500.00	NC		
ALUMINUM	7429-90-5	200.00	4814B	19SEP96	10	17,700.00	NC	08	22,600.00	NC	26,433.33	18,200.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ALUMINUM	7429-90-5	200.00	651	03MAR98				01	9,400.00	NC	.	9,400.00
ANTIMONY	7440-36-0	20.00	4813	04AUG96	07	56.80	NC	05	28.80	NC		
ANTIMONY	7440-36-0	20.00	4813	05AUG96	07	139.00	NC	05	206.00	NC		
ANTIMONY	7440-36-0	20.00	4813	06AUG96	07	223.00	NC	05	64.10	NC		
ANTIMONY	7440-36-0	20.00	4813	07AUG96	07	100.00	NC	05	94.50	NC		
ANTIMONY	7440-36-0	20.00	4813	08AUG96	07	78.20	NC	05	185.00	NC	119.40	115.68
ANTIMONY	7440-36-0	20.00	4814A	16SEP96	09	62.60	NC	07	223.00	NC		
ANTIMONY	7440-36-0	20.00	4814A	17SEP96				07	1,522.00	NC		
ANTIMONY	7440-36-0	20.00	4814A	18SEP96	09	94.85	NC	07	1,670.00	NC		
ANTIMONY	7440-36-0	20.00	4814A	19SEP96	09	162.00	NC	07	857.00	NC		
ANTIMONY	7440-36-0	20.00	4814A	20SEP96	09	92.80	NC	07	20.00	ND	103.06	858.40
ANTIMONY	7440-36-0	20.00	4814B	16SEP96	10	32.10	NC	08	83.00	NC		
ANTIMONY	7440-36-0	20.00	4814B	17SEP96				08	68.75	NC		
ANTIMONY	7440-36-0	20.00	4814B	18SEP96	10	39.65	NC	08	20.00	ND		
ANTIMONY	7440-36-0	20.00	4814B	19SEP96	10	152.00	NC	08	240.00	NC	74.58	102.94
ANTIMONY	7440-36-0	20.00	651	03MAR98				01	46.95	NC	.	46.95
ARSENIC	7440-38-2	10.00	4813	04AUG96	07	20.00	ND	05	46.00	NC		
ARSENIC	7440-38-2	10.00	4813	05AUG96	07	20.00	ND	05	69.10	NC		
ARSENIC	7440-38-2	10.00	4813	06AUG96	07	2.00	ND	05	58.60	NC		
ARSENIC	7440-38-2	10.00	4813	07AUG96	07	2.00	ND	05	50.10	NC		
ARSENIC	7440-38-2	10.00	4813	08AUG96	07	20.00	ND	05	2.00	ND	12.80	45.16
ARSENIC	7440-38-2	10.00	4814A	16SEP96	09	2,590.00	NC	07	8,830.00	NC		
ARSENIC	7440-38-2	10.00	4814A	17SEP96				07	8,550.00	NC		
ARSENIC	7440-38-2	10.00	4814A	18SEP96	09	1,465.00	NC	07	9,170.00	NC		
ARSENIC	7440-38-2	10.00	4814A	19SEP96	09	572.00	NC	07	1,930.00	NC		
ARSENIC	7440-38-2	10.00	4814A	20SEP96	09	737.00	NC	07	1,230.00	NC	1,341.00	5,942.00
ARSENIC	7440-38-2	10.00	4814B	16SEP96	10	402.00	NC	08	649.00	NC		
ARSENIC	7440-38-2	10.00	4814B	17SEP96				08	469.50	NC		
ARSENIC	7440-38-2	10.00	4814B	18SEP96	10	198.00	NC	08	248.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ARSENIC	7440-38-2	10.00	4814B	19SEP96	10	113.00	NC	08	163.00	NC	237.67	382.38
ARSENIC	7440-38-2	10.00	651	03MAR98				01	83.80	NC	.	83.80
BARIUM	7440-39-3	200.00	4813	04AUG96	07	27.50	NC	05	103.00	NC		
BARIUM	7440-39-3	200.00	4813	05AUG96	07	42.95	NC	05	67.10	NC		
BARIUM	7440-39-3	200.00	4813	06AUG96	07	35.00	NC	05	127.00	NC		
BARIUM	7440-39-3	200.00	4813	07AUG96	07	12.90	NC	05	122.00	NC		
BARIUM	7440-39-3	200.00	4813	08AUG96	07	37.90	NC	05	158.00	NC	31.25	115.42
BARIUM	7440-39-3	200.00	4814A	16SEP96	09	136.00	NC	07	1,720.00	NC		
BARIUM	7440-39-3	200.00	4814A	17SEP96				07	1,350.00	NC		
BARIUM	7440-39-3	200.00	4814A	18SEP96	09	234.00	NC	07	3,620.00	NC		
BARIUM	7440-39-3	200.00	4814A	19SEP96	09	253.00	NC	07	4,310.00	NC		
BARIUM	7440-39-3	200.00	4814A	20SEP96	09	259.00	NC	07	2,630.00	NC	220.50	2,726.00
BARIUM	7440-39-3	200.00	4814B	16SEP96	10	316.00	NC	08	1,270.00	NC		
BARIUM	7440-39-3	200.00	4814B	17SEP96				08	1,180.00	NC		
BARIUM	7440-39-3	200.00	4814B	18SEP96	10	198.00	NC	08	474.00	NC		
BARIUM	7440-39-3	200.00	4814B	19SEP96	10	580.00	NC	08	4,990.00	NC	364.67	1,978.50
BARIUM	7440-39-3	200.00	651	03MAR98				01	470.50	NC	.	470.50
BORON	7440-42-8	100.00	4813	04AUG96	07	9,200.00	NC	05	6,040.00	NC		
BORON	7440-42-8	100.00	4813	05AUG96	07	9,260.00	NC	05	9,790.00	NC		
BORON	7440-42-8	100.00	4813	06AUG96	07	9,050.00	NC	05	9,130.00	NC		
BORON	7440-42-8	100.00	4813	07AUG96	07	12,200.00	NC	05	9,710.00	NC		
BORON	7440-42-8	100.00	4813	08AUG96	07	10,800.00	NC	05	9,670.00	NC	10,102.00	8,868.00
BORON	7440-42-8	100.00	4814A	16SEP96	09	20,100.00	NC	07	26,800.00	NC		
BORON	7440-42-8	100.00	4814A	17SEP96				07	39,550.00	NC		
BORON	7440-42-8	100.00	4814A	18SEP96	09	29,550.00	NC	07	49,100.00	NC		
BORON	7440-42-8	100.00	4814A	19SEP96	09	22,200.00	NC	07	27,300.00	NC		
BORON	7440-42-8	100.00	4814A	20SEP96	09	18,000.00	NC	07	24,900.00	NC	22,462.50	33,530.00
BORON	7440-42-8	100.00	4814B	16SEP96	10	95,000.00	NC	08	86,500.00	NC		
BORON	7440-42-8	100.00	4814B	17SEP96				08	24,100.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

---------- Subcategory=Oils Option=9 ----------
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
BORON	7440-42-8	100.00	4814B	18SEP96	10	7,415.00	NC	08	9,670.00	NC		
BORON	7440-42-8	100.00	4814B	19SEP96	10	39,400.00	NC	08	34,600.00	NC	47,271.67	38,717.50
BORON	7440-42-8	100.00	651	03MAR98				01	21,450.00	NC	.	21,450.00
CADMIUM	7440-43-9	5.00	4813	04AUG96	07	5.00	ND	05	5.00	ND		
CADMIUM	7440-43-9	5.00	4813	05AUG96	07	5.00	ND	05	5.00	ND		
CADMIUM	7440-43-9	5.00	4813	06AUG96	07	5.00	ND	05	5.00	ND		
CADMIUM	7440-43-9	5.00	4813	07AUG96	07	5.00	ND	05	5.00	ND		
CADMIUM	7440-43-9	5.00	4813	08AUG96	07	5.00	ND	05	8.60	NC	5.00	5.72
CADMIUM	7440-43-9	5.00	4814A	16SEP96	09	9.77	NC	07	68.20	NC		
CADMIUM	7440-43-9	5.00	4814A	17SEP96				07	53.05	NC		
CADMIUM	7440-43-9	5.00	4814A	18SEP96	09	9.40	NC	07	121.00	NC		
CADMIUM	7440-43-9	5.00	4814A	19SEP96	09	5.00	ND	07	96.50	NC		
CADMIUM	7440-43-9	5.00	4814A	20SEP96	09	5.15	NC	07	57.70	NC	7.33	79.29
CADMIUM	7440-43-9	5.00	4814B	16SEP96	10	8.90	NC	08	52.60	NC		
CADMIUM	7440-43-9	5.00	4814B	17SEP96				08	71.75	NC		
CADMIUM	7440-43-9	5.00	4814B	18SEP96	10	8.87	NC	08	25.50	NC		
CADMIUM	7440-43-9	5.00	4814B	19SEP96	10	5.00	ND	08	57.90	NC	7.59	51.94
CADMIUM	7440-43-9	5.00	651	01JUL97	01	4.00	NC					
CADMIUM	7440-43-9	5.00	651	08JUL97	01	1.00	ND					
CADMIUM	7440-43-9	5.00	651	09JUL97	01	1.00	ND					
CADMIUM	7440-43-9	5.00	651	01AUG97	01	4.00	NC					
CADMIUM	7440-43-9	5.00	651	01SEP97	01	4.00	NC					
CADMIUM	7440-43-9	5.00	651	01OCT97	01	7.00	NC					
CADMIUM	7440-43-9	5.00	651	01NOV97	01	4.00	NC					
CADMIUM	7440-43-9	5.00	651	01DEC97	01	4.00	NC					
CADMIUM	7440-43-9	5.00	651	02JAN98	01	4.00	NC					
CADMIUM	7440-43-9	5.00	651	01FEB98	01	4.00	NC					
CADMIUM	7440-43-9	5.00	651	01MAR98	01	4.00	NC					
CADMIUM	7440-43-9	5.00	651	03MAR98				01	20.80	NC		
CADMIUM	7440-43-9	5.00	651	01APR98	01	4.00	NC				3.75	20.80
CALCIUM	7440-70-2	5,000.00	4813	04AUG96	07	19,600.00	NC	05	27,700.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
CALCIUM	7440-70-2	5,000.00	4813	05AUG96	07	30,100.00	NC	05	33,900.00	NC		
CALCIUM	7440-70-2	5,000.00	4813	06AUG96	07	35,900.00	NC	05	32,500.00	NC		
CALCIUM	7440-70-2	5,000.00	4813	07AUG96	07	20,500.00	NC	05	29,500.00	NC		
CALCIUM	7440-70-2	5,000.00	4813	08AUG96	07	17,900.00	NC	05	41,400.00	NC	24,800.00	33,000.00
CALCIUM	7440-70-2	5,000.00	4814A	16SEP96	09	204,000.00	NC	07	406,000.00	NC		
CALCIUM	7440-70-2	5,000.00	4814A	17SEP96				07	290,500.00	NC		
CALCIUM	7440-70-2	5,000.00	4814A	18SEP96	09	168,500.00	NC	07	242,000.00	NC		
CALCIUM	7440-70-2	5,000.00	4814A	19SEP96	09	194,000.00	NC	07	276,000.00	NC		
CALCIUM	7440-70-2	5,000.00	4814A	20SEP96	09	127,000.00	NC	07	346,000.00	NC	173,375.00	312,100.00
CALCIUM	7440-70-2	5,000.00	4814B	16SEP96	10	110,000.00	NC	08	162,000.00	NC		
CALCIUM	7440-70-2	5,000.00	4814B	17SEP96				08	126,500.00	NC		
CALCIUM	7440-70-2	5,000.00	4814B	18SEP96	10	71,600.00	NC	08	95,900.00	NC		
CALCIUM	7440-70-2	5,000.00	4814B	19SEP96	10	335,000.00	NC	08	409,000.00	NC	172,200.00	198,350.00
CALCIUM	7440-70-2	5,000.00	651	03MAR98				01	185,500.00	NC	.	185,500.00
CHROMIUM	7440-47-3	10.00	4813	04AUG96	07	8.70	NC	05	23.80	NC		
CHROMIUM	7440-47-3	10.00	4813	05AUG96	07	8.00	ND	05	9.20	NC		
CHROMIUM	7440-47-3	10.00	4813	06AUG96	07	8.00	ND	05	90.00	NC		
CHROMIUM	7440-47-3	10.00	4813	07AUG96	07	8.00	ND	05	59.50	NC		
CHROMIUM	7440-47-3	10.00	4813	08AUG96	07	8.00	ND	05	41.70	NC	8.14	44.84
CHROMIUM	7440-47-3	10.00	4814A	16SEP96	09	252.00	NC	07	3,000.00	NC		
CHROMIUM	7440-47-3	10.00	4814A	17SEP96				07	1,615.00	NC		
CHROMIUM	7440-47-3	10.00	4814A	18SEP96	09	232.50	NC	07	3,610.00	NC		
CHROMIUM	7440-47-3	10.00	4814A	19SEP96	09	128.00	NC	07	2,740.00	NC		
CHROMIUM	7440-47-3	10.00	4814A	20SEP96	09	120.00	NC	07	1,570.00	NC	183.13	2,507.00
CHROMIUM	7440-47-3	10.00	4814B	16SEP96	10	791.00	NC	08	2,280.00	NC		
CHROMIUM	7440-47-3	10.00	4814B	17SEP96				08	1,295.00	NC		
CHROMIUM	7440-47-3	10.00	4814B	18SEP96	10	375.00	NC	08	913.00	NC		
CHROMIUM	7440-47-3	10.00	4814B	19SEP96	10	225.00	NC	08	1,380.00	NC	463.67	1,467.00
CHROMIUM	7440-47-3	10.00	651	01JUL97	01	34.00	NC					
CHROMIUM	7440-47-3	10.00	651	08JUL97	01	7.00	NC					

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
CHROMIUM	7440-47-3	10.00	651	09JUL97	01	20.00	NC					
CHROMIUM	7440-47-3	10.00	651	01AUG97	01	26.00	NC					
CHROMIUM	7440-47-3	10.00	651	01SEP97	01	5.00	NC					
CHROMIUM	7440-47-3	10.00	651	01OCT97	01	45.00	NC					
CHROMIUM	7440-47-3	10.00	651	01NOV97	01	5.00	NC					
CHROMIUM	7440-47-3	10.00	651	01DEC97	01	65.00	NC					
CHROMIUM	7440-47-3	10.00	651	02JAN98	01	5.00	NC					
CHROMIUM	7440-47-3	10.00	651	01FEB98	01	5.00	NC					
CHROMIUM	7440-47-3	10.00	651	01MAR98	01	5.00	NC					
CHROMIUM	7440-47-3	10.00	651	03MAR98				01	137.50	NC		
CHROMIUM	7440-47-3	10.00	651	01APR98	01	5.00	NC				18.92	137.50
COBALT	7440-48-4	50.00	4813	04AUG96	07	10.00	ND	05	10.00	ND		
COBALT	7440-48-4	50.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
COBALT	7440-48-4	50.00	4813	06AUG96	07	10.00	ND	05	10.00	ND		
COBALT	7440-48-4	50.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
COBALT	7440-48-4	50.00	4813	08AUG96	07	10.00	ND	05	53.80	NC	10.00	18.76
COBALT	7440-48-4	50.00	4814A	16SEP96	09	1,040.00	NC	07	3,240.00	NC		
COBALT	7440-48-4	50.00	4814A	17SEP96				07	1,825.00	NC		
COBALT	7440-48-4	50.00	4814A	18SEP96	09	1,330.00	NC	07	2,880.00	NC		
COBALT	7440-48-4	50.00	4814A	19SEP96	09	1,350.00	NC	07	1,450.00	NC		
COBALT	7440-48-4	50.00	4814A	20SEP96	09	643.00	NC	07	1,270.00	NC	1,090.75	2,133.00
COBALT	7440-48-4	50.00	4814B	16SEP96	10	2,520.00	NC	08	4,030.00	NC		
COBALT	7440-48-4	50.00	4814B	17SEP96				08	1,845.00	NC		
COBALT	7440-48-4	50.00	4814B	18SEP96	10	1,210.00	NC	08	1,740.00	NC		
COBALT	7440-48-4	50.00	4814B	19SEP96	10	37,500.00	NC	08	116,000.00	NC	13,743.33	30,903.75
COBALT	7440-48-4	50.00	651	03MAR98				01	48.55	NC	.	48.55
COPPER	7440-50-8	25.00	4813	04AUG96	07	9.50	NC	05	107.50	NC		
COPPER	7440-50-8	25.00	4813	05AUG96	07	9.35	NC	05	70.70	NC		
COPPER	7440-50-8	25.00	4813	06AUG96	07	8.50	NC	05	112.00	NC		
COPPER	7440-50-8	25.00	4813	07AUG96	07	26.30	NC	05	1,750.00	NC		
COPPER	7440-50-8	25.00	4813	08AUG96	07	57.60	NC	05	2,740.00	NC	22.25	956.04

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
COPPER	7440-50-8	25.00	4814A	16SEP96	09	68.60	NC	07	1,940.00	NC		
COPPER	7440-50-8	25.00	4814A	17SEP96				07	2,240.00	NC		
COPPER	7440-50-8	25.00	4814A	18SEP96	09	99.55	NC	07	3,830.00	NC		
COPPER	7440-50-8	25.00	4814A	19SEP96	09	52.40	NC	07	4,780.00	NC		
COPPER	7440-50-8	25.00	4814A	20SEP96	09	54.10	NC	07	3,050.00	NC	68.66	3,168.00
COPPER	7440-50-8	25.00	4814B	16SEP96	10	466.00	NC	08	2,770.00	NC		
COPPER	7440-50-8	25.00	4814B	17SEP96				08	2,655.00	NC		
COPPER	7440-50-8	25.00	4814B	18SEP96	10	396.00	NC	08	1,600.00	NC		
COPPER	7440-50-8	25.00	4814B	19SEP96	10	472.00	NC	08	4,340.00	NC	444.67	2,841.25
COPPER	7440-50-8	25.00	651	01JUL97	01	96.00	NC					
COPPER	7440-50-8	25.00	651	08JUL97	01	70.00	NC					
COPPER	7440-50-8	25.00	651	09JUL97	01	80.00	NC					
COPPER	7440-50-8	25.00	651	01AUG97	01	70.00	NC					
COPPER	7440-50-8	25.00	651	01SEP97	01	130.00	NC					
COPPER	7440-50-8	25.00	651	01OCT97	01	220.00	NC					
COPPER	7440-50-8	25.00	651	01NOV97	01	170.00	NC					
COPPER	7440-50-8	25.00	651	01DEC97	01	25.00	NC					
COPPER	7440-50-8	25.00	651	02JAN98	01	20.00	NC					
COPPER	7440-50-8	25.00	651	01FEB98	01	520.00	NC					
COPPER	7440-50-8	25.00	651	01MAR98	01	440.00	NC					
COPPER	7440-50-8	25.00	651	03MAR98				01	1,570.00	NC		
COPPER	7440-50-8	25.00	651	01APR98	01	40.00	NC				156.75	1,570.00
GERMANIUM	7440-56-4	500.00	4813	04AUG96	07	500.00	ND	05	500.00	ND		
GERMANIUM	7440-56-4	500.00	4813	05AUG96	07	500.00	ND	05	500.00	ND		
GERMANIUM	7440-56-4	500.00	4813	06AUG96	07	500.00	ND	05	500.00	ND		
GERMANIUM	7440-56-4	500.00	4813	07AUG96	07	500.00	ND	05	500.00	ND		
GERMANIUM	7440-56-4	500.00	4813	08AUG96	07	500.00	ND	05	500.00	ND	500.00	500.00
GERMANIUM	7440-56-4	500.00	4814A	16SEP96	09	500.00	ND	07	500.00	ND		
GERMANIUM	7440-56-4	500.00	4814A	17SEP96				07	500.00	ND		
GERMANIUM	7440-56-4	500.00	4814A	18SEP96	09	500.00	ND	07	500.00	ND		
GERMANIUM	7440-56-4	500.00	4814A	19SEP96	09	500.00	ND	07	500.00	ND		
GERMANIUM	7440-56-4	500.00	4814A	20SEP96	09	500.00	ND	07	500.00	ND	500.00	500.00

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
GERMANIUM	7440-56-4	500.00	4814B	16SEP96	10	500.00	ND	08	500.00	ND		
GERMANIUM	7440-56-4	500.00	4814B	17SEP96				08	500.00	ND		
GERMANIUM	7440-56-4	500.00	4814B	18SEP96	10	500.00	ND	08	500.00	ND		
GERMANIUM	7440-56-4	500.00	4814B	19SEP96	10	500.00	ND	08	500.00	ND	500.00	500.00
IRON	7439-89-6	100.00	4813	04AUG96	07	1,950.00	NC	05	5,425.00	NC		
IRON	7439-89-6	100.00	4813	05AUG96	07	1,640.00	NC	05	3,750.00	NC		
IRON	7439-89-6	100.00	4813	06AUG96	07	1,890.00	NC	05	10,500.00	NC		
IRON	7439-89-6	100.00	4813	07AUG96	07	1,620.00	NC	05	11,200.00	NC		
IRON	7439-89-6	100.00	4813	08AUG96	07	6,950.00	NC	05	12,000.00	NC	2,810.00	8,575.00
IRON	7439-89-6	100.00	4814A	16SEP96	09	122,000.00	NC	07	630,000.00	NC		
IRON	7439-89-6	100.00	4814A	17SEP96				07	256,500.00	NC		
IRON	7439-89-6	100.00	4814A	18SEP96	09	123,000.00	NC	07	53,400.00	NC		
IRON	7439-89-6	100.00	4814A	19SEP96	09	49,700.00	NC	07	249,000.00	NC		
IRON	7439-89-6	100.00	4814A	20SEP96	09	39,100.00	NC	07	564,000.00	NC	83,450.00	350,580.00
IRON	7439-89-6	100.00	4814B	16SEP96	10	53,900.00	NC	08	97,100.00	NC		
IRON	7439-89-6	100.00	4814B	17SEP96				08	91,700.00	NC		
IRON	7439-89-6	100.00	4814B	18SEP96	10	4,750.00	NC	08	23,700.00	NC		
IRON	7439-89-6	100.00	4814B	19SEP96	10	11,200.00	NC	08	96,300.00	NC	23,283.33	77,200.00
IRON	7439-89-6	100.00	651	03MAR98				01	138,000.00	NC	.	138,000.00
LEAD	7439-92-1	50.00	4813	04AUG96	07	44.00	ND	05	142.00	NC		
LEAD	7439-92-1	50.00	4813	05AUG96	07	302.00	NC	05	223.00	NC		
LEAD	7439-92-1	50.00	4813	06AUG96	07	64.40	NC	05	154.00	NC		
LEAD	7439-92-1	50.00	4813	07AUG96	07	44.00	ND	05	136.00	NC		
LEAD	7439-92-1	50.00	4813	08AUG96	07	221.00	NC	05	233.00	NC	135.08	177.60
LEAD	7439-92-1	50.00	4814A	16SEP96	09	53.80	NC	07	1,790.00	NC		
LEAD	7439-92-1	50.00	4814A	17SEP96				07	2,270.00	NC		
LEAD	7439-92-1	50.00	4814A	18SEP96	09	46.80	NC	07	2,720.00	NC		
LEAD	7439-92-1	50.00	4814A	19SEP96	09	63.90	NC	07	2,710.00	NC		
LEAD	7439-92-1	50.00	4814A	20SEP96	09	74.40	NC	07	1,680.00	NC	59.73	2,234.00
LEAD	7439-92-1	50.00	4814B	16SEP96	10	279.00	NC	08	1,350.00	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
LEAD	7439-92-1	50.00	4814B	17SEP96				08	2,180.00	NC		
LEAD	7439-92-1	50.00	4814B	18SEP96	10	206.00	NC	08	737.00	NC		
LEAD	7439-92-1	50.00	4814B	19SEP96	10	228.00	NC	08	3,630.00	NC	237.67	1,974.25
LEAD	7439-92-1	50.00	651	01JUL97	01	270.00	NC					
LEAD	7439-92-1	50.00	651	08JUL97	01	15.00	NC					
LEAD	7439-92-1	50.00	651	09JUL97	01	50.00	NC					
LEAD	7439-92-1	50.00	651	01AUG97	01	18.00	NC					
LEAD	7439-92-1	50.00	651	01SEP97	01	98.00	NC					
LEAD	7439-92-1	50.00	651	01OCT97	01	35.00	NC					
LEAD	7439-92-1	50.00	651	01NOV97	01	20.00	NC					
LEAD	7439-92-1	50.00	651	01DEC97	01	320.00	NC					
LEAD	7439-92-1	50.00	651	02JAN98	01	97.00	NC					
LEAD	7439-92-1	50.00	651	01FEB98	01	10.00	NC					
LEAD	7439-92-1	50.00	651	01MAR98	01	200.00	NC					
LEAD	7439-92-1	50.00	651	03MAR98				01	839.50	NC		
LEAD	7439-92-1	50.00	651	01APR98	01	50.00	NC				98.58	839.50
LUTETIUM	7439-94-3	100.00	4813	04AUG96	07	100.00	ND	05	100.00	ND		
LUTETIUM	7439-94-3	100.00	4813	05AUG96	07	100.00	ND	05	100.00	ND		
LUTETIUM	7439-94-3	100.00	4813	06AUG96	07	100.00	ND	05	100.00	ND		
LUTETIUM	7439-94-3	100.00	4813	07AUG96	07	100.00	ND	05	100.00	ND		
LUTETIUM	7439-94-3	100.00	4813	08AUG96	07	100.00	ND	05	100.00	ND	100.00	100.00
LUTETIUM	7439-94-3	100.00	4814A	16SEP96	09	100.00	ND	07	100.00	ND		
LUTETIUM	7439-94-3	100.00	4814A	17SEP96				07	100.00	ND		
LUTETIUM	7439-94-3	100.00	4814A	18SEP96	09	100.00	ND	07	100.00	ND		
LUTETIUM	7439-94-3	100.00	4814A	19SEP96	09	100.00	ND	07	100.00	ND		
LUTETIUM	7439-94-3	100.00	4814A	20SEP96	09	100.00	ND	07	100.00	ND	100.00	100.00
LUTETIUM	7439-94-3	100.00	4814B	16SEP96	10	100.00	ND	08	100.00	ND		
LUTETIUM	7439-94-3	100.00	4814B	17SEP96				08	100.00	ND		
LUTETIUM	7439-94-3	100.00	4814B	18SEP96	10	100.00	ND	08	100.00	ND		
LUTETIUM	7439-94-3	100.00	4814B	19SEP96	10	100.00	ND	08	100.00	ND	100.00	100.00
MAGNESIUM	7439-95-4	5,000.00	4813	04AUG96	07	5,050.00	NC	05	6,075.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4813	05AUG96	07	5,055.00	NC	05	4,910.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
MAGNESIUM	7439-95-4	5,000.00	4813	06AUG96	07	4,400.00	NC	05	6,310.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4813	07AUG96	07	1,790.00	NC	05	6,890.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4813	08AUG96	07	4,870.00	NC	05	7,460.00	NC	4,233.00	6,329.00
MAGNESIUM	7439-95-4	5,000.00	4814A	16SEP96	09	51,500.00	NC	07	110,000.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4814A	17SEP96				07	109,000.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4814A	18SEP96	09	67,500.00	NC	07	78,800.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4814A	19SEP96	09	76,400.00	NC	07	96,600.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4814A	20SEP96	09	56,200.00	NC	07	118,000.00	NC	62,900.00	102,480.00
MAGNESIUM	7439-95-4	5,000.00	4814B	16SEP96	10	53,500.00	NC	08	59,300.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4814B	17SEP96				08	26,150.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4814B	18SEP96	10	19,550.00	NC	08	22,100.00	NC		
MAGNESIUM	7439-95-4	5,000.00	4814B	19SEP96	10	142,000.00	NC	08	131,000.00	NC	71,683.33	59,637.50
MAGNESIUM	7439-95-4	5,000.00	651	03MAR98				01	55,450.00	NC	.	55,450.00
MANGANESE	7439-96-5	15.00	4813	04AUG96	07	650.00	NC	05	628.00	NC		
MANGANESE	7439-96-5	15.00	4813	05AUG96	07	787.50	NC	05	535.00	NC		
MANGANESE	7439-96-5	15.00	4813	06AUG96	07	547.00	NC	05	641.00	NC		
MANGANESE	7439-96-5	15.00	4813	07AUG96	07	284.00	NC	05	673.00	NC		
MANGANESE	7439-96-5	15.00	4813	08AUG96	07	1,020.00	NC	05	1,270.00	NC	657.70	749.40
MANGANESE	7439-96-5	15.00	4814A	16SEP96	09	5,120.00	NC	07	13,800.00	NC		
MANGANESE	7439-96-5	15.00	4814A	17SEP96				07	6,690.00	NC		
MANGANESE	7439-96-5	15.00	4814A	18SEP96	09	4,345.00	NC	07	10,100.00	NC		
MANGANESE	7439-96-5	15.00	4814A	19SEP96	09	3,400.00	NC	07	6,140.00	NC		
MANGANESE	7439-96-5	15.00	4814A	20SEP96	09	2,380.00	NC	07	9,970.00	NC	3,811.25	9,340.00
MANGANESE	7439-96-5	15.00	4814B	16SEP96	10	2,930.00	NC	08	3,220.00	NC		
MANGANESE	7439-96-5	15.00	4814B	17SEP96				08	1,790.00	NC		
MANGANESE	7439-96-5	15.00	4814B	18SEP96	10	1,375.00	NC	08	2,380.00	NC		
MANGANESE	7439-96-5	15.00	4814B	19SEP96	10	16,700.00	NC	08	44,500.00	NC	7,001.67	12,972.50
MANGANESE	7439-96-5	15.00	651	03MAR98				01	5,560.00	NC	.	5,560.00
MERCURY	7439-97-6	0.20	4813	04AUG96	07	0.20	ND	05	0.20	ND		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
MERCURY	7439-97-6	0.20	4813	05AUG96	07	0.20	ND	05	0.20	ND		
MERCURY	7439-97-6	0.20	4813	06AUG96	07	0.20	ND	05	0.20	ND		
MERCURY	7439-97-6	0.20	4813	07AUG96	07	0.20	ND	05	0.34	NC		
MERCURY	7439-97-6	0.20	4813	08AUG96	07	0.20	ND	05	0.33	NC	0.20	0.25
MERCURY	7439-97-6	0.20	4814A	16SEP96	09	0.20	ND	07	0.39	NC		
MERCURY	7439-97-6	0.20	4814A	17SEP96				07	0.53	NC		
MERCURY	7439-97-6	0.20	4814A	18SEP96	09	4.00	ND	07	28.60	NC		
MERCURY	7439-97-6	0.20	4814A	19SEP96	09	4.00	ND	07	10.00	NC		
MERCURY	7439-97-6	0.20	4814A	20SEP96	09	4.00	ND	07	12.40	NC	3.05	10.38
MERCURY	7439-97-6	0.20	4814B	16SEP96	10	0.97	NC	08	6.60	NC		
MERCURY	7439-97-6	0.20	4814B	17SEP96				08	2.64	NC		
MERCURY	7439-97-6	0.20	4814B	18SEP96	10	4.00	ND	08	14.40	NC		
MERCURY	7439-97-6	0.20	4814B	19SEP96	10	4.40	NC	08	55.60	NC	3.12	19.81
MERCURY	7439-97-6	0.20	651	01JUL97	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	08JUL97	01	0.50	ND					
MERCURY	7439-97-6	0.20	651	09JUL97	01	0.50	ND					
MERCURY	7439-97-6	0.20	651	01AUG97	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	01SEP97	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	01OCT97	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	01NOV97	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	01DEC97	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	02JAN98	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	01FEB98	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	01MAR98	01	0.50	NC					
MERCURY	7439-97-6	0.20	651	03MAR98				01	0.73	NC		
MERCURY	7439-97-6	0.20	651	01APR98	01	0.50	NC				0.50	0.73
MOLYBDENUM	7439-98-7	10.00	4813	04AUG96	07	951.00	NC	05	454.00	NC		
MOLYBDENUM	7439-98-7	10.00	4813	05AUG96	07	495.50	NC	05	806.00	NC		
MOLYBDENUM	7439-98-7	10.00	4813	06AUG96	07	735.00	NC	05	598.00	NC		
MOLYBDENUM	7439-98-7	10.00	4813	07AUG96	07	563.00	NC	05	504.00	NC		
MOLYBDENUM	7439-98-7	10.00	4813	08AUG96	07	825.00	NC	05	775.00	NC	713.90	627.40
MOLYBDENUM	7439-98-7	10.00	4814A	16SEP96	09	2,200.00	NC	07	3,680.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Snbcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
MOLYBDENUM	7439-98-7	10.00	4814A	17SEP96				07	3,920.00	NC		
MOLYBDENUM	7439-98-7	10.00	4814A	18SEP96	09	1,695.00	NC	07	4,570.00	NC		
MOLYBDENUM	7439-98-7	10.00	4814A	19SEP96	09	1,390.00	NC	07	2,470.00	NC		
MOLYBDENUM	7439-98-7	10.00	4814A	20SEP96	09	886.00	NC	07	2,030.00	NC	1,542.75	3,334.00
MOLYBDENUM	7439-98-7	10.00	4814B	16SEP96	10	645.00	NC	08	1,200.00	NC		
MOLYBDENUM	7439-98-7	10.00	4814B	17SEP96				08	617.50	NC		
MOLYBDENUM	7439-98-7	10.00	4814B	18SEP96	10	277.00	NC	08	436.00	NC		
MOLYBDENUM	7439-98-7	10.00	4814B	19SEP96	10	3,970.00	NC	08	3,370.00	NC	1,630.67	1,405.88
MOLYBDENUM	7439-98-7	10.00	651	03MAR98				01	902.50	NC	.	902.50
PHOSPHORUS	7723-14-0	1,000.00	4813	04AUG96	07	3,550.00	NC	05	4,033.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4813	05AUG96	07	3,470.00	NC	05	10,200.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4813	06AUG96	07	4,290.00	NC	05	29,100.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4813	07AUG96	07	3,030.00	NC	05	31,900.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4813	08AUG96	07	13,500.00	NC	05	39,700.00	NC	5,568.00	22,986.60
PHOSPHORUS	7723-14-0	1,000.00	4814A	16SEP96	09	4,780.00	NC	07	40,000.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4814A	17SEP96				07	35,350.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4814A	18SEP96	09	6,450.00	NC	07	63,800.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4814A	19SEP96	09	6,400.00	NC	07	40,700.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4814A	20SEP96	09	105,000.00	NC	07	239,000.00	NC	30,657.50	83,770.00
PHOSPHORUS	7723-14-0	1,000.00	4814B	16SEP96	10	13,700.00	NC	08	32,900.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4814B	17SEP96				08	18,800.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4814B	18SEP96	10	79,400.00	NC	08	179,000.00	NC		
PHOSPHORUS	7723-14-0	1,000.00	4814B	19SEP96	10	84,700.00	NC	08	45,400.00	NC	59,266.67	69,025.00
POTASSIUM	7440-09-7	1,000.00	4813	04AUG96	07	39,000.00	NC	05	23,550.00	NC		
POTASSIUM	7440-09-7	1,000.00	4813	05AUG96	07	41,000.00	NC	05	38,000.00	NC		
POTASSIUM	7440-09-7	1,000.00	4813	06AUG96	07	44,200.00	NC	05	36,500.00	NC		
POTASSIUM	7440-09-7	1,000.00	4813	07AUG96	07	33,200.00	NC	05	29,700.00	NC		
POTASSIUM	7440-09-7	1,000.00	4813	08AUG96	07	55,600.00	NC	05	43,700.00	NC	42,600.00	34,290.00
POTASSIUM	7440-09-7	1,000.00	4814A	16SEP96	09	316,000.00	NC	07	562,000.00	NC		
POTASSIUM	7440-09-7	1,000.00	4814A	17SEP96				07	612,500.00	NC		

Subcategory=Oils Option=9 (continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
POTASSIUM	7440-09-7	1,000.00	4814A	18SEP96	09	475,000.00	NC	07	939,000.00	NC		
POTASSIUM	7440-09-7	1,000.00	4814A	19SEP96	09	287,000.00	NC	07	379,000.00	NC		
POTASSIUM	7440-09-7	1,000.00	4814A	20SEP96	09	866,000.00	NC	07	962,000.00	NC	486,000.00	690,900.00
POTASSIUM	7440-09-7	1,000.00	4814B	16SEP96	10	167,000.00	NC	08	140,000.00	NC		
POTASSIUM	7440-09-7	1,000.00	4814B	17SEP96				08	128,500.00	NC		
POTASSIUM	7440-09-7	1,000.00	4814B	18SEP96	10	275,500.00	NC	08	452,000.00	NC		
POTASSIUM	7440-09-7	1,000.00	4814B	19SEP96	10	570,000.00	NC	08	806,000.00	NC	337,500.00	381,625.00
SELENIUM	7782-49-2	5.00	4813	04AUG96	07	20.00	ND	05	20.00	ND		
SELENIUM	7782-49-2	5.00	4813	05AUG96	07	20.00	ND	05	20.00	ND		
SELENIUM	7782-49-2	5.00	4813	06AUG96	07	20.00	ND	05	20.00	ND		
SELENIUM	7782-49-2	5.00	4813	07AUG96	07	20.00	ND	05	20.00	ND		
SELENIUM	7782-49-2	5.00	4813	08AUG96	07	20.00	ND	05	20.00	ND	20.00	20.00
SELENIUM	7782-49-2	5.00	4814A	16SEP96	09	241.00	NC	07	460.00	NC		
SELENIUM	7782-49-2	5.00	4814A	17SEP96				07	208.50	NC		
SELENIUM	7782-49-2	5.00	4814A	18SEP96	09	104.65	NC	07	81.20	NC		
SELENIUM	7782-49-2	5.00	4814A	19SEP96	09	30.30	NC	07	66.70	NC		
SELENIUM	7782-49-2	5.00	4814A	20SEP96	09	54.00	NC	07	35.90	NC	107.49	170.46
SELENIUM	7782-49-2	5.00	4814B	16SEP96	10	255.00	NC	08	245.00	NC		
SELENIUM	7782-49-2	5.00	4814B	17SEP96				08	66.60	NC		
SELENIUM	7782-49-2	5.00	4814B	18SEP96	10	927.00	NC	08	1,000.00	NC		
SELENIUM	7782-49-2	5.00	4814B	19SEP96	10	58.10	NC	08	73.50	NC	413.37	346.28
SELENIUM	7782-49-2	5.00	651	03MAR98				01	21.70	NC	.	21.70
SILICON	7440-21-3	100.00	4813	04AUG96	07	3,060.00	NC	05	4,355.00	NC		
SILICON	7440-21-3	100.00	4813	05AUG96	07	2,950.00	NC	05	4,860.00	NC		
SILICON	7440-21-3	100.00	4813	06AUG96	07	4,810.00	NC	05	6,730.00	NC		
SILICON	7440-21-3	100.00	4813	07AUG96	07	2,700.00	NC	05	7,250.00	NC		
SILICON	7440-21-3	100.00	4813	08AUG96	07	5,900.00	NC	05	7,130.00	NC	3,884.00	6,065.00
SILICON	7440-21-3	100.00	4814A	16SEP96	09	18,800.00	NC	07	63,700.00	NC		
SILICON	7440-21-3	100.00	4814A	17SEP96				07	51,150.00	NC		
SILICON	7440-21-3	100.00	4814A	18SEP96	09	23,500.00	NC	07	78,900.00	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
SILICON	7440-21-3	100.00	4814A	19SEP96	09	22,500.00	NC	07	41,000.00	NC		
SILICON	7440-21-3	100.00	4814A	20SEP96	09	19,800.00	NC	07	78,600.00	NC	21,150.00	62,670.00
SILICON	7440-21-3	100.00	4814B	16SEP96	10	13,600.00	NC	08	28,200.00	NC		
SILICON	7440-21-3	100.00	4814B	17SEP96				08	14,650.00	NC		
SILICON	7440-21-3	100.00	4814B	18SEP96	10	25,250.00	NC	08	56,800.00	NC		
SILICON	7440-21-3	100.00	4814B	19SEP96	10	11,700.00	NC	08	16,700.00	NC	16,850.00	29,087.50
SILVER	7440-22-4	10.00	4813	04AUG96	07	5.00	ND	05	5.00	ND		
SILVER	7440-22-4	10.00	4813	05AUG96	07	5.00	ND	05	5.00	ND		
SILVER	7440-22-4	10.00	4813	06AUG96	07	5.00	ND	05	5.00	ND		
SILVER	7440-22-4	10.00	4813	07AUG96	07	5.00	ND	05	5.00	ND		
SILVER	7440-22-4	10.00	4813	08AUG96	07	5.00	ND	05	5.00	ND	5.00	5.00
SILVER	7440-22-4	10.00	4814A	16SEP96	09	5.00	ND	07	17.90	NC		
SILVER	7440-22-4	10.00	4814A	17SEP96				07	10.60	NC		
SILVER	7440-22-4	10.00	4814A	18SEP96	09	5.00	ND	07	31.50	NC		
SILVER	7440-22-4	10.00	4814A	19SEP96	09	5.00	ND	07	25.20	NC		
SILVER	7440-22-4	10.00	4814A	20SEP96	09	5.00	ND	07	11.50	NC	5.00	19.34
SILVER	7440-22-4	10.00	4814B	16SEP96	10	5.48	NC	08	7.75	NC		
SILVER	7440-22-4	10.00	4814B	17SEP96				08	20.10	NC		
SILVER	7440-22-4	10.00	4814B	18SEP96	10	5.30	NC	08	8.85	NC		
SILVER	7440-22-4	10.00	4814B	19SEP96	10	5.00	ND	08	15.60	NC	5.26	13.08
SILVER	7440-22-4	10.00	651	03MAR98				01	8.00	ND	.	8.00
SODIUM	7440-23-5	5,000.00	4813	04AUG96	07	971,000.00	NC	05	448,500.00	NC		
SODIUM	7440-23-5	5,000.00	4813	05AUG96	07	980,500.00	NC	05	533,000.00	NC		
SODIUM	7440-23-5	5,000.00	4813	06AUG96	07	885,000.00	NC	05	253,000.00	NC		
SODIUM	7440-23-5	5,000.00	4813	07AUG96	07	853,000.00	NC	05	265,000.00	NC		
SODIUM	7440-23-5	5,000.00	4813	08AUG96	07	1,100,000.00	NC	05	219,000.00	NC	957,900.00	343,700.00
SODIUM	7440-23-5	5,000.00	4814A	16SEP96	09	3,700,000.00	NC	07	4,330,000.00	NC		
SODIUM	7440-23-5	5,000.00	4814A	17SEP96				07	2,245,000.00	NC		
SODIUM	7440-23-5	5,000.00	4814A	18SEP96	09	3,295,000.00	NC	07	2,270,000.00	NC		
SODIUM	7440-23-5	5,000.00	4814A	19SEP96	09	2,820,000.00	NC	07	3,150,000.00	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
SODIUM	7440-23-5	5,000.00	4814A	20SEP96	09	2,980,000.00	NC	07	2,960,000.00	NC	3,198,750.00	2,991,000.00
SODIUM	7440-23-5	5,000.00	4814B	16SEP96	10	5,280,000.00	NC	08	5,160,000.00	NC		
SODIUM	7440-23-5	5,000.00	4814B	17SEP96				08	4,410,000.00	NC		
SODIUM	7440-23-5	5,000.00	4814B	18SEP96	10	9,980,000.00	NC	08	11,100,000.00	NC		
SODIUM	7440-23-5	5,000.00	4814B	19SEP96	10	4,700,000.00	NC	08	3,330,000.00	NC	6,653,333.33	6,000,000.00
SODIUM	7440-23-5	5,000.00	651	03MAR98				01	555,500.00	NC	.	555,500.00
STRONTIUM	7440-24-6	100.00	4813	04AUG96	07	100.00	ND	05	100.00	ND		
STRONTIUM	7440-24-6	100.00	4813	05AUG96	07	100.00	ND	05	100.00	ND		
STRONTIUM	7440-24-6	100.00	4813	06AUG96	07	100.00	ND	05	100.00	ND		
STRONTIUM	7440-24-6	100.00	4813	07AUG96	07	100.00	ND	05	100.00	ND		
STRONTIUM	7440-24-6	100.00	4813	08AUG96	07	100.00	ND	05	128.00	NC	100.00	105.60
STRONTIUM	7440-24-6	100.00	4814A	16SEP96	09	1,150.00	NC	07	2,450.00	NC		
STRONTIUM	7440-24-6	100.00	4814A	17SEP96				07	1,405.00	NC		
STRONTIUM	7440-24-6	100.00	4814A	18SEP96	09	672.00	NC	07	1,360.00	NC		
STRONTIUM	7440-24-6	100.00	4814A	19SEP96	09	853.00	NC	07	1,580.00	NC		
STRONTIUM	7440-24-6	100.00	4814A	20SEP96	09	574.00	NC	07	1,750.00	NC	812.25	1,709.00
STRONTIUM	7440-24-6	100.00	4814B	16SEP96	10	585.00	NC	08	996.00	NC		
STRONTIUM	7440-24-6	100.00	4814B	17SEP96				08	755.50	NC		
STRONTIUM	7440-24-6	100.00	4814B	18SEP96	10	306.00	NC	08	546.00	NC		
STRONTIUM	7440-24-6	100.00	4814B	19SEP96	10	1,320.00	NC	08	3,470.00	NC	737.00	1,441.88
SULFUR	7704-34-9	1,000.00	4813	04AUG96	07	550,000.00	NC	05	226,500.00	NC		
SULFUR	7704-34-9	1,000.00	4813	05AUG96	07	368,000.00	NC	05	193,000.00	NC		
SULFUR	7704-34-9	1,000.00	4813	06AUG96	07	381,000.00	NC	05	120,000.00	NC		
SULFUR	7704-34-9	1,000.00	4813	07AUG96	07	336,000.00	NC	05	127,000.00	NC		
SULFUR	7704-34-9	1,000.00	4813	08AUG96	07	558,000.00	NC	05	90,600.00	NC	438,600.00	151,420.00
SULFUR	7704-34-9	1,000.00	4814A	16SEP96	09	1,840,000.00	NC	07	2,260,000.00	NC		
SULFUR	7704-34-9	1,000.00	4814A	17SEP96				07	1,150,000.00	NC		
SULFUR	7704-34-9	1,000.00	4814A	18SEP96	09	1,765,000.00	NC	07	1,510,000.00	NC		
SULFUR	7704-34-9	1,000.00	4814A	19SEP96	09	1,940,000.00	NC	07	1,950,000.00	NC		
SULFUR	7704-34-9	1,000.00	4814A	20SEP96	09	1,720,000.00	NC	07	2,140,000.00	NC	1,816,250.00	1,802,000.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
SULFUR	7704-34-9	1,000.00	4814B	16SEP96	10	1,770,000.00	NC	08	2,180,000.00	NC		
SULFUR	7704-34-9	1,000.00	4814B	17SEP96				08	1,775,000.00	NC		
SULFUR	7704-34-9	1,000.00	4814B	18SEP96	10	3,450,000.00	NC	08	3,620,000.00	NC		
SULFUR	7704-34-9	1,000.00	4814B	19SEP96	10	2,760,000.00	NC	08	2,050,000.00	NC	2,660,000.00	2,406,250.00
TANTALUM	7440-25-7	500.00	4813	04AUG96	07	500.00	ND	05	500.00	ND		
TANTALUM	7440-25-7	500.00	4813	05AUG96	07	500.00	ND	05	500.00	ND		
TANTALUM	7440-25-7	500.00	4813	06AUG96	07	500.00	ND	05	500.00	ND		
TANTALUM	7440-25-7	500.00	4813	07AUG96	07	500.00	ND	05	500.00	ND		
TANTALUM	7440-25-7	500.00	4813	08AUG96	07	500.00	ND	05	500.00	ND	500.00	500.00
TANTALUM	7440-25-7	500.00	4814A	16SEP96	09	500.00	ND	07	500.00	ND		
TANTALUM	7440-25-7	500.00	4814A	17SEP96				07	500.00	ND		
TANTALUM	7440-25-7	500.00	4814A	18SEP96	09	500.00	ND	07	500.00	ND		
TANTALUM	7440-25-7	500.00	4814A	19SEP96	09	500.00	ND	07	500.00	ND		
TANTALUM	7440-25-7	500.00	4814A	20SEP96	09	500.00	ND	07	500.00	ND	500.00	500.00
TANTALUM	7440-25-7	500.00	4814B	16SEP96	10	500.00	ND	08	500.00	ND		
TANTALUM	7440-25-7	500.00	4814B	17SEP96				08	500.00	ND		
TANTALUM	7440-25-7	500.00	4814B	18SEP96	10	500.00	ND	08	500.00	ND		
TANTALUM	7440-25-7	500.00	4814B	19SEP96	10	500.00	ND	08	500.00	ND	500.00	500.00
TIN	7440-31-5	30.00	4813	04AUG96	07	28.00	ND	05	28.00	ND		
TIN	7440-31-5	30.00	4813	05AUG96	07	28.00	ND	05	28.00	ND		
TIN	7440-31-5	30.00	4813	06AUG96	07	28.00	ND	05	28.00	ND		
TIN	7440-31-5	30.00	4813	07AUG96	07	28.00	ND	05	28.00	ND		
TIN	7440-31-5	30.00	4813	08AUG96	07	28.00	ND	05	28.00	ND	28.00	28.00
TIN	7440-31-5	30.00	4814A	16SEP96	09	29.00	ND	07	898.00	NC		
TIN	7440-31-5	30.00	4814A	17SEP96				07	874.50	NC		
TIN	7440-31-5	30.00	4814A	18SEP96	09	36.10	NC	07	2,160.00	NC		
TIN	7440-31-5	30.00	4814A	19SEP96	09	29.00	ND	07	2,100.00	NC		
TIN	7440-31-5	30.00	4814A	20SEP96	09	29.00	ND	07	712.00	NC	30.78	1,348.90
TIN	7440-31-5	30.00	4814B	16SEP96	10	29.00	ND	08	29.00	ND		
TIN	7440-31-5	30.00	4814B	17SEP96				08	912.00	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TIN	7440-31-5	30.00	4814B	18SEP96	10	491.50	NC	08	2,680.00	NC		
TIN	7440-31-5	30.00	4814B	19SEP96	10	29.00	ND	08	910.00	NC	183.17	1,132.75
TIN	7440-31-5	30.00	651	03MAR98				01	128.00	NC	.	128.00
TITANIUM	7440-32-6	5.00	4813	04AUG96	07	4.00	ND	05	4.00	ND		
TITANIUM	7440-32-6	5.00	4813	05AUG96	07	4.00	ND	05	4.00	ND		
TITANIUM	7440-32-6	5.00	4813	06AUG96	07	4.00	ND	05	4.00	ND		
TITANIUM	7440-32-6	5.00	4813	07AUG96	07	4.00	ND	05	4.00	ND		
TITANIUM	7440-32-6	5.00	4813	08AUG96	07	4.00	ND	05	28.80	NC	4.00	8.96
TITANIUM	7440-32-6	5.00	4814A	16SEP96	09	14.70	NC	07	166.00	NC		
TITANIUM	7440-32-6	5.00	4814A	17SEP96				07	138.00	NC		
TITANIUM	7440-32-6	5.00	4814A	18SEP96	09	20.05	NC	07	771.00	NC		
TITANIUM	7440-32-6	5.00	4814A	19SEP96	09	8.51	NC	07	745.00	NC		
TITANIUM	7440-32-6	5.00	4814A	20SEP96	09	11.30	NC	07	315.00	NC	13.64	427.00
TITANIUM	7440-32-6	5.00	4814B	16SEP96	10	23.60	NC	08	143.00	NC		
TITANIUM	7440-32-6	5.00	4814B	17SEP96				08	136.50	NC		
TITANIUM	7440-32-6	5.00	4814B	18SEP96	10	45.75	NC	08	158.00	NC		
TITANIUM	7440-32-6	5.00	4814B	19SEP96	10	20.10	NC	08	271.00	NC	29.82	177.13
TITANIUM	7440-32-6	5.00	651	03MAR98				01	133.00	NC	.	133.00
ZINC	7440-66-6	20.00	4813	04AUG96	07	319.00	NC	05	623.00	NC		
ZINC	7440-66-6	20.00	4813	05AUG96	07	528.50	NC	05	591.00	NC		
ZINC	7440-66-6	20.00	4813	06AUG96	07	325.00	NC	05	653.00	NC		
ZINC	7440-66-6	20.00	4813	07AUG96	07	159.00	NC	05	967.00	NC		
ZINC	7440-66-6	20.00	4813	08AUG96	07	694.00	NC	05	1,850.00	NC	405.10	936.80
ZINC	7440-66-6	20.00	4814A	16SEP96	09	3,240.00	NC	07	33,300.00	NC		
ZINC	7440-66-6	20.00	4814A	17SEP96				07	22,800.00	NC		
ZINC	7440-66-6	20.00	4814A	18SEP96	09	4,535.00	NC	07	6,020.00	NC		
ZINC	7440-66-6	20.00	4814A	19SEP96	09	2,530.00	NC	07	28,600.00	NC		
ZINC	7440-66-6	20.00	4814A	20SEP96	09	2,250.00	NC	07	36,400.00	NC	3,138.75	25,424.00
ZINC	7440-66-6	20.00	4814B	16SEP96	10	2,460.00	NC	08	12,900.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ZINC	7440-66-6	20.00	4814B	17SEP96				08	14,900.00	NC		
ZINC	7440-66-6	20.00	4814B	18SEP96	10	4,495.00	NC	08	11,100.00	NC		
ZINC	7440-66-6	20.00	4814B	19SEP96	10	4,320.00	NC	08	16,800.00	NC	3,758.33	13,925.00
ZINC	7440-66-6	20.00	651	01JUL97	01	290.00	NC					
ZINC	7440-66-6	20.00	651	08JUL97	01	440.00	NC					
ZINC	7440-66-6	20.00	651	09JUL97	01	1,100.00	NC					
ZINC	7440-66-6	20.00	651	01AUG97	01	560.00	NC					
ZINC	7440-66-6	20.00	651	01SEP97	01	1,000.00	NC					
ZINC	7440-66-6	20.00	651	01OCT97	01	2,800.00	NC					
ZINC	7440-66-6	20.00	651	01NOV97	01	450.00	NC					
ZINC	7440-66-6	20.00	651	01DEC97	01	2,200.00	NC					
ZINC	7440-66-6	20.00	651	02JAN98	01	450.00	NC					
ZINC	7440-66-6	20.00	651	01FEB98	01	540.00	NC					
ZINC	7440-66-6	20.00	651	01MAR98	01	630.00	NC					
ZINC	7440-66-6	20.00	651	03MAR98				01	5,575.00	NC		
ZINC	7440-66-6	20.00	651	01APR98	01	590.00	NC				920.83	5,575.00
ACENAPHTHENE	83-32-9	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
ACENAPHTHENE	83-32-9	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
ACENAPHTHENE	83-32-9	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
ACENAPHTHENE	83-32-9	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
ACENAPHTHENE	83-32-9	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
ACENAPHTHENE	83-32-9	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
ACENAPHTHENE	83-32-9	10.00	4814A	17SEP96				07	104.90	NC		
ACENAPHTHENE	83-32-9	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
ACENAPHTHENE	83-32-9	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
ACENAPHTHENE	83-32-9	10.00	4814A	20SEP96	09	20.00	ND	07	1,640.13	NC	16.25	593.01
ACENAPHTHENE	83-32-9	10.00	4814B	16SEP96	10	192.10	NC	08	13,417.86	NC		
ACENAPHTHENE	83-32-9	10.00	4814B	17SEP96				08	279.50	NC		
ACENAPHTHENE	83-32-9	10.00	4814B	18SEP96	10	35.00	ND	08	731.95	NC		
ACENAPHTHENE	83-32-9	10.00	4814B	19SEP96	10	184.70	NC	08	2,472.36	NC	137.27	4,225.42
ACENAPHTHENE	83-32-9	10.00	651	03MAR98				01	237.90	NC	.	237.90

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ALPHA-TERPINEOL	98-55-5	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
ALPHA-TERPINEOL	98-55-5	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
ALPHA-TERPINEOL	98-55-5	10.00	4813	06AUG96	07	135.80	NC	05	20.00	ND		
ALPHA-TERPINEOL	98-55-5	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
ALPHA-TERPINEOL	98-55-5	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	35.16	26.00
ALPHA-TERPINEOL	98-55-5	10.00	4814A	16SEP96	09	213.60	NC	07	20.00	ND		
ALPHA-TERPINEOL	98-55-5	10.00	4814A	17SEP96				07	842.95	NC		
ALPHA-TERPINEOL	98-55-5	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
ALPHA-TERPINEOL	98-55-5	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
ALPHA-TERPINEOL	98-55-5	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	67.15	472.59
ALPHA-TERPINEOL	98-55-5	10.00	4814B	16SEP96	10	10.00	ND	08	2,210.37	NC		
ALPHA-TERPINEOL	98-55-5	10.00	4814B	17SEP96				08	983.50	NC		
ALPHA-TERPINEOL	98-55-5	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
ALPHA-TERPINEOL	98-55-5	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	923.47
ALPHA-TERPINEOL	98-55-5	10.00	651	03MAR98				01	855.90	NC	.	855.90
ANILINE	62-53-3	10.00	4813	04AUG96	07	137.03	NC	05	20.00	ND		
ANILINE	62-53-3	10.00	4813	05AUG96	07	96.05	NC	05	10.00	ND		
ANILINE	62-53-3	10.00	4813	06AUG96	07	179.40	NC	05	20.00	ND		
ANILINE	62-53-3	10.00	4813	07AUG96	07	594.60	NC	05	40.00	ND		
ANILINE	62-53-3	10.00	4813	08AUG96	07	209.90	NC	05	40.00	ND	243.40	26.00
ANILINE	62-53-3	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
ANILINE	62-53-3	10.00	4814A	17SEP96				07	70.00	ND		
ANILINE	62-53-3	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
ANILINE	62-53-3	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
ANILINE	62-53-3	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	318.00
ANILINE	62-53-3	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
ANILINE	62-53-3	10.00	4814B	17SEP96				08	306.30	NC		
ANILINE	62-53-3	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
ANILINE	62-53-3	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	204.08
ANILINE	62-53-3	10.00	651	03MAR98				01	20.00	ND	.	20.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ANTHRACENE	120-12-7	10.00	4813	04AUG96	07	36.49	NC	05	400.50	NC		
ANTHRACENE	120-12-7	10.00	4813	05AUG96	07	10.00	ND	05	109.73	NC		
ANTHRACENE	120-12-7	10.00	4813	06AUG96	07	10.00	ND	05	1,444.80	NC		
ANTHRACENE	120-12-7	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
ANTHRACENE	120-12-7	10.00	4813	08AUG96	07	19.26	NC	05	302.30	NC	17.15	459.47
ANTHRACENE	120-12-7	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
ANTHRACENE	120-12-7	10.00	4814A	17SEP96				07	83.20	NC		
ANTHRACENE	120-12-7	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
ANTHRACENE	120-12-7	10.00	4814A	19SEP96	09	20.00	ND	07	1,288.00	NC		
ANTHRACENE	120-12-7	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	378.24
ANTHRACENE	120-12-7	10.00	4814B	16SEP96	10	170.40	NC	08	18,950.59	NC		
ANTHRACENE	120-12-7	10.00	4814B	17SEP96				08	266.95	NC		
ANTHRACENE	120-12-7	10.00	4814B	18SEP96	10	139.70	NC	08	731.37	NC		
ANTHRACENE	120-12-7	10.00	4814B	19SEP96	10	182.72	NC	08	2,505.60	NC	164.27	5,613.63
ANTHRACENE	120-12-7	10.00	651	03MAR98				01	64.70	NC	.	64.70
BENZENE	71-43-2	10.00	4813	04AUG96	07	789.80	NC	05	522.90	NC		
BENZENE	71-43-2	10.00	4813	05AUG96	07	1,722.90	NC	05	914.00	NC		
BENZENE	71-43-2	10.00	4813	06AUG96	07	1,425.10	NC	05	426.50	NC		
BENZENE	71-43-2	10.00	4813	07AUG96	07	1,445.50	NC	05	597.80	NC		
BENZENE	71-43-2	10.00	4813	08AUG96	07	1,389.10	NC	05	1,945.20	NC	1,354.48	881.28
BENZENE	71-43-2	10.00	4814A	16SEP96	09	480.90	NC	07	957.90	NC		
BENZENE	71-43-2	10.00	4814A	17SEP96				07	1,525.10	NC		
BENZENE	71-43-2	10.00	4814A	18SEP96	09	690.78	NC	07	1,400.83	NC		
BENZENE	71-43-2	10.00	4814A	19SEP96	09	401.63	NC	07	603.67	NC		
BENZENE	71-43-2	10.00	4814A	20SEP96	09	472.27	NC	07	778.35	NC	511.39	1,053.17
BENZENE	71-43-2	10.00	4814B	16SEP96	10	1,889.00	NC	08	2,349.00	NC		
BENZENE	71-43-2	10.00	4814B	17SEP96				08	1,840.30	NC		
BENZENE	71-43-2	10.00	4814B	18SEP96	10	1,292.53	NC	08	1,581.12	NC		
BENZENE	71-43-2	10.00	4814B	19SEP96	10	1,637.16	NC	08	3,478.20	NC	1,606.23	2,312.16

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
BENZENE	71-43-2	10.00	651	10JUL97	01	200.00	NC				200.00	.
BENZO(A)ANTHRACENE	56-55-3	10.00	4813	04AUG96	07	20.80	NC	05	220.75	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4813	05AUG96	07	10.00	ND	05	92.90	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4813	06AUG96	07	10.00	ND	05	793.50	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4813	07AUG96	07	10.00	ND	05	565.10	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4813	08AUG96	07	12.50	NC	05	443.70	NC	12.66	423.19
BENZO(A)ANTHRACENE	56-55-3	10.00	4814A	16SEP96	09	10.00	ND	07	33.64	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4814A	17SEP96				07	88.60	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
BENZO(A)ANTHRACENE	56-55-3	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
BENZO(A)ANTHRACENE	56-55-3	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	324.45
BENZO(A)ANTHRACENE	56-55-3	10.00	4814B	16SEP96	10	179.99	NC	08	6,303.36	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4814B	17SEP96				08	137.05	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4814B	18SEP96	10	35.00	ND	08	249.09	NC		
BENZO(A)ANTHRACENE	56-55-3	10.00	4814B	19SEP96	10	105.30	NC	08	909.04	NC	106.76	1,899.64
BENZO(A)ANTHRACENE	56-55-3	10.00	651	03MAR98				01	24.70	NC	.	24.70
BENZOIC ACID	65-85-0	50.00	4813	04AUG96	07	224.16	NC	05	7,491.00	NC		
BENZOIC ACID	65-85-0	50.00	4813	05AUG96	07	3,546.00	NC	05	15,902.00	NC		
BENZOIC ACID	65-85-0	50.00	4813	06AUG96	07	15,427.00	NC	05	98,398.00	NC		
BENZOIC ACID	65-85-0	50.00	4813	07AUG96	07	115,952.00	NC	05	76,798.00	NC		
BENZOIC ACID	65-85-0	50.00	4813	08AUG96	07	110,440.00	NC	05	163,050.00	NC	49,117.83	72,327.80
BENZOIC ACID	65-85-0	50.00	4814A	16SEP96	09	13,316.00	NC	07	10,075.50	NC		
BENZOIC ACID	65-85-0	50.00	4814A	17SEP96				07	11,490.35	NC		
BENZOIC ACID	65-85-0	50.00	4814A	18SEP96	09	14,704.88	NC	07	20,474.22	NC		
BENZOIC ACID	65-85-0	50.00	4814A	19SEP96	09	54,280.90	NC	07	81,574.40	NC		
BENZOIC ACID	65-85-0	50.00	4814A	20SEP96	09	20,023.91	NC	07	13,249.30	NC	25,581.42	27,372.75
BENZOIC ACID	65-85-0	50.00	4814B	16SEP96	10	6,732.30	NC	08	10,150.88	NC		
BENZOIC ACID	65-85-0	50.00	4814B	17SEP96				08	3,514.25	NC		
BENZOIC ACID	65-85-0	50.00	4814B	18SEP96	10	9,414.46	NC	08	5,860.34	NC		
BENZOIC ACID	65-85-0	50.00	4814B	19SEP96	10	22,759.32	NC	08	6,151.52	NC	12,968.69	6,419.25

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9 (continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
BENZOIC ACID	65-85-0	50.00	651	03MAR98				01	100.00	ND	.	100.00
BENZYL ALCOHOL	100-51-6	10.00	4813	04AUG96	07	10.00	ND	05	528.00	NC		
BENZYL ALCOHOL	100-51-6	10.00	4813	05AUG96	07	126.65	NC	05	540.00	NC		
BENZYL ALCOHOL	100-51-6	10.00	4813	06AUG96	07	246.60	NC	05	558.00	NC		
BENZYL ALCOHOL	100-51-6	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
BENZYL ALCOHOL	100-51-6	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	80.65	341.20
BENZYL ALCOHOL	100-51-6	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
BENZYL ALCOHOL	100-51-6	10.00	4814A	17SEP96				07	502.20	NC		
BENZYL ALCOHOL	100-51-6	10.00	4814A	18SEP96	09	734.62	NC	07	200.00	ND		
BENZYL ALCOHOL	100-51-6	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
BENZYL ALCOHOL	100-51-6	10.00	4814A	20SEP96	09	470.82	NC	07	300.00	ND	308.86	404.44
BENZYL ALCOHOL	100-51-6	10.00	4814B	16SEP96	10	10.00	ND	08	782.66	NC		
BENZYL ALCOHOL	100-51-6	10.00	4814B	17SEP96				08	20.00	ND		
BENZYL ALCOHOL	100-51-6	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
BENZYL ALCOHOL	100-51-6	10.00	4814B	19SEP96	10	2,850.25	NC	08	400.00	ND	965.08	325.66
BENZYL ALCOHOL	100-51-6	10.00	651	03MAR98				01	1,137.20	NC	.	1,137.20
BIPHENYL	92-52-4	10.00	4813	04AUG96	07	584.20	NC	05	5,604.50	NC		
BIPHENYL	92-52-4	10.00	4813	05AUG96	07	576.95	NC	05	1,686.00	NC		
BIPHENYL	92-52-4	10.00	4813	06AUG96	07	234.20	NC	05	2,299.00	NC		
BIPHENYL	92-52-4	10.00	4813	07AUG96	07	112.70	NC	05	2,934.00	NC		
BIPHENYL	92-52-4	10.00	4813	08AUG96	07	361.90	NC	05	1,586.10	NC	373.99	2,821.92
BIPHENYL	92-52-4	10.00	4814A	16SEP96	09	11.84	NC	07	240.10	NC		
BIPHENYL	92-52-4	10.00	4814A	17SEP96				07	292.85	NC		
BIPHENYL	92-52-4	10.00	4814A	18SEP96	09	15.00	ND	07	298.12	NC		
BIPHENYL	92-52-4	10.00	4814A	19SEP96	09	20.00	ND	07	1,486.40	NC		
BIPHENYL	92-52-4	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.71	523.49
BIPHENYL	92-52-4	10.00	4814B	16SEP96	10	149.80	NC	08	10,171.33	NC		
BIPHENYL	92-52-4	10.00	4814B	17SEP96				08	349.05	NC		
BIPHENYL	92-52-4	10.00	4814B	18SEP96	10	157.34	NC	08	100.00	ND		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
BIPHENYL	92-52-4	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	135.71	2,755.09
BIPHENYL	92-52-4	10.00	651	03MAR98				01	889.70	NC	.	889.70
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	04AUG96	07	10.00	ND	05	75.06	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	05AUG96	07	10.00	ND	05	32.51	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	06AUG96	07	10.00	ND	05	69.91	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	07AUG96	07	10.00	ND	05	403.50	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	08AUG96	07	10.00	ND	05	265.10	NC	10.00	169.22
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	16SEP96	09	17.30	NC	07	388.90	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	17SEP96				07	561.20	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	18.08	490.02
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814B	16SEP96	10	212.21	NC	08	6,004.61	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814B	17SEP96				08	325.00	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	115.74	1,707.40
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	651	03MAR98				01	494.55	NC	.	494.55
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	16SEP96	09	10.00	ND	07	117.60	NC		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	17SEP96				07	183.15	NC		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	360.15
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814B	16SEP96	10	29.93	NC	08	2,123.75	NC		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814B	17SEP96				08	192.50	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
BIPHENYL	92-52-4	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	135.71	2,755.09
BIPHENYL	92-52-4	10.00	651	03MAR98				01	889.70	NC	.	889.70
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	04AUG96	07	10.00	ND	05	75.06	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	05AUG96	07	10.00	ND	05	32.51	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	06AUG96	07	10.00	ND	05	69.91	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	07AUG96	07	10.00	ND	05	403.50	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4813	08AUG96	07	10.00	ND	05	265.10	NC	10.00	169.22
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	16SEP96	09	17.30	NC	07	388.90	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	17SEP96				07	561.20	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	18.08	490.02
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814B	16SEP96	10	212.21	NC	08	6,004.51	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814B	17SEP96				08	325.00	NC		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	115.74	1,707.40
BIS(2-ETHYLHEXYL) PHTHALATE	117-81-7	10.00	651	03MAR98				01	494.55	NC	.	494.55
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	16SEP96	09	10.00	ND	07	117.60	NC		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	17SEP96				07	183.15	NC		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	360.15
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814B	16SEP96	10	29.93	NC	08	2,123.75	NC		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814B	17SEP96				08	192.50	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
BUTYL BENZYL PHTHALATE	85-68-7	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	54.98	704.06
BUTYL BENZYL PHTHALATE	85-68-7	10.00	651	03MAR98				01	63.79	NC	.	63.79
CARBAZOLE	86-74-8	20.00	4813	04AUG96	07	64.50	NC	05	136.65	NC		
CARBAZOLE	86-74-8	20.00	4813	05AUG96	07	34.30	NC	05	81.43	NC		
CARBAZOLE	86-74-8	20.00	4813	06AUG96	07	47.51	NC	05	289.60	NC		
CARBAZOLE	86-74-8	20.00	4813	07AUG96	07	40.77	NC	05	80.00	ND		
CARBAZOLE	86-74-8	20.00	4813	08AUG96	07	44.56	NC	05	80.00	ND	46.33	133.54
CARBAZOLE	86-74-8	20.00	4814A	16SEP96	09	20.00	ND	07	40.00	ND		
CARBAZOLE	86-74-8	20.00	4814A	17SEP96				07	140.00	ND		
CARBAZOLE	86-74-8	20.00	4814A	18SEP96	09	30.00	ND	07	400.00	ND		
CARBAZOLE	86-74-8	20.00	4814A	19SEP96	09	40.00	ND	07	2,000.00	ND		
CARBAZOLE	86-74-8	20.00	4814A	20SEP96	09	40.00	ND	07	600.00	ND	32.50	636.00
CARBAZOLE	86-74-8	20.00	4814B	16SEP96	10	184.34	NC	08	1,458.66	NC		
CARBAZOLE	86-74-8	20.00	4814B	17SEP96				08	378.60	NC		
CARBAZOLE	86-74-8	20.00	4814B	18SEP96	10	70.00	ND	08	200.00	ND		
CARBAZOLE	86-74-8	20.00	4814B	19SEP96	10	200.00	ND	08	1,165.52	NC	151.45	800.69
CARBAZOLE	86-74-8	20.00	651	03MAR98				01	40.00	ND	.	40.00
CARBON DISULFIDE	75-15-0	10.00	4813	04AUG96	07	10.00	ND	05	10.46	NC		
CARBON DISULFIDE	75-15-0	10.00	4813	05AUG96	07	10.00	ND	05	15.49	NC		
CARBON DISULFIDE	75-15-0	10.00	4813	06AUG96	07	10.00	ND	05	21.12	NC		
CARBON DISULFIDE	75-15-0	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
CARBON DISULFIDE	75-15-0	10.00	4813	08AUG96	07	10.00	ND	05	20.29	NC	10.00	15.47
CARBON DISULFIDE	75-15-0	10.00	4814A	16SEP96	09	82.44	NC	07	137.16	NC		
CARBON DISULFIDE	75-15-0	10.00	4814A	17SEP96				07	143.99	NC		
CARBON DISULFIDE	75-15-0	10.00	4814A	18SEP96	09	10.00	ND	07	10.00	ND		
CARBON DISULFIDE	75-15-0	10.00	4814A	19SEP96	09	10.00	ND	07	10.00	ND		
CARBON DISULFIDE	75-15-0	10.00	4814A	20SEP96	09	10.00	ND	07	2,335.20	NC	28.11	527.27
CARBON DISULFIDE	75-15-0	10.00	4814B	16SEP96	10	30.02	NC	08	22.30	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
CARBON DISULFIDE	75-15-0	10.00	4814B	17SEP96				08	66.64	NC		
CARBON DISULFIDE	75-15-0	10.00	4814B	18SEP96	10	10.00	ND	08	10.00	ND		
CARBON DISULFIDE	75-15-0	10.00	4814B	19SEP96	10	10.00	ND	08	10.00	ND	16.67	27.24
CHLOROBENZENE	108-90-7	10.00	4813	04AUG96	07	10.00	ND	05	10.00	ND		
CHLOROBENZENE	108-90-7	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
CHLOROBENZENE	108-90-7	10.00	4813	06AUG96	07	10.00	ND	05	10.00	ND		
CHLOROBENZENE	108-90-7	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
CHLOROBENZENE	108-90-7	10.00	4813	08AUG96	07	10.00	ND	05	10.00	ND	10.00	10.00
CHLOROBENZENE	108-90-7	10.00	4814A	16SEP96	09	51.10	NC	07	89.11	NC		
CHLOROBENZENE	108-90-7	10.00	4814A	17SEP96				07	237.85	NC		
CHLOROBENZENE	108-90-7	10.00	4814A	18SEP96	09	60.00	NC	07	254.68	NC		
CHLOROBENZENE	108-90-7	10.00	4814A	19SEP96	09	43.96	NC	07	91.32	NC		
CHLOROBENZENE	108-90-7	10.00	4814A	20SEP96	09	54.17	NC	07	97.57	NC	52.31	154.11
CHLOROBENZENE	108-90-7	10.00	4814B	16SEP96	10	240.20	NC	08	191.22	NC		
CHLOROBENZENE	108-90-7	10.00	4814B	17SEP96				08	326.30	NC		
CHLOROBENZENE	108-90-7	10.00	4814B	18SEP96	10	61.20	NC	08	76.80	NC		
CHLOROBENZENE	108-90-7	10.00	4814B	19SEP96	10	66.57	NC	08	200.00	NC	122.66	198.58
CHLOROFORM	67-66-3	10.00	4813	04AUG96	07	10.00	ND	05	10.00	ND		
CHLOROFORM	67-66-3	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
CHLOROFORM	67-66-3	10.00	4813	06AUG96	07	10.00	ND	05	10.00	ND		
CHLOROFORM	67-66-3	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
CHLOROFORM	67-66-3	10.00	4813	08AUG96	07	10.00	ND	05	10.00	ND	10.00	10.00
CHLOROFORM	67-66-3	10.00	4814A	16SEP96	09	186.00	NC	07	305.80	NC		
CHLOROFORM	67-66-3	10.00	4814A	17SEP96				07	692.40	NC		
CHLOROFORM	67-66-3	10.00	4814A	18SEP96	09	305.49	NC	07	592.56	NC		
CHLOROFORM	67-66-3	10.00	4814A	19SEP96	09	140.80	NC	07	181.46	NC		
CHLOROFORM	67-66-3	10.00	4814A	20SEP96	09	233.08	NC	07	336.18	NC	216.34	421.68
CHLOROFORM	67-66-3	10.00	4814B	16SEP96	10	432.40	NC	08	522.10	NC		
CHLOROFORM	67-66-3	10.00	4814B	17SEP96				08	1,027.45	NC		
CHLOROFORM	67-66-3	10.00	4814B	18SEP96	10	556.64	NC	08	653.68	NC		
CHLOROFORM	67-66-3	10.00	4814B	19SEP96	10	636.49	NC	08	1,827.80	NC	541.84	1,007.76

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
CHRYSENE	218-01-9	10.00	4813	04AUG96	07	38.92	NC	05	431.80	NC		
CHRYSENE	218-01-9	10.00	4813	05AUG96	07	10.00	ND	05	176.34	NC		
CHRYSENE	218-01-9	10.00	4813	06AUG96	07	10.00	ND	05	1,634.50	NC		
CHRYSENE	218-01-9	10.00	4813	07AUG96	07	10.00	ND	05	837.60	NC		
CHRYSENE	218-01-9	10.00	4813	08AUG96	07	18.67	NC	05	425.70	NC	17.52	701.19
CHRYSENE	218-01-9	10.00	4814A	16SEP96	09	10.00	ND	07	43.76	NC		
CHRYSENE	218-01-9	10.00	4814A	17SEP96				07	107.56	NC		
CHRYSENE	218-01-9	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
CHRYSENE	218-01-9	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
CHRYSENE	218-01-9	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	330.26
CHRYSENE	218-01-9	10.00	4814B	16SEP96	10	103.30	NC	08	8,879.30	NC		
CHRYSENE	218-01-9	10.00	4814B	17SEP96				08	123.65	NC		
CHRYSENE	218-01-9	10.00	4814B	18SEP96	10	35.00	ND	08	402.74	NC		
CHRYSENE	218-01-9	10.00	4814B	19SEP96	10	100.00	ND	08	938.68	NC	79.43	2,586.09
CHRYSENE	218-01-9	10.00	651	03MAR98				01	38.73	NC	.	38.73
DIBENZOFURAN	132-64-9	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
DIBENZOFURAN	132-64-9	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
DIBENZOFURAN	132-64-9	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
DIBENZOFURAN	132-64-9	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
DIBENZOFURAN	132-64-9	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
DIBENZOFURAN	132-64-9	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
DIBENZOFURAN	132-64-9	10.00	4814A	17SEP96				07	117.30	NC		
DIBENZOFURAN	132-64-9	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
DIBENZOFURAN	132-64-9	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
DIBENZOFURAN	132-64-9	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	327.46
DIBENZOFURAN	132-64-9	10.00	4814B	16SEP96	10	191.70	NC	08	13,786.46	NC		
DIBENZOFURAN	132-64-9	10.00	4814B	17SEP96				08	286.70	NC		
DIBENZOFURAN	132-64-9	10.00	4814B	18SEP96	10	114.06	NC	08	715.45	NC		
DIBENZOFURAN	132-64-9	10.00	4814B	19SEP96	10	100.00	ND	08	2,355.40	NC	135.25	4,286.00

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
DIBENZOFURAN	132-64-9	10.00	651	03MAR98				01	171.70	NC	.	171.70
DIBENZOTHIOPHENE	132-65-0	10.00	4813	04AUG96	07	55.16	NC	05	638.75	NC		
DIBENZOTHIOPHENE	132-65-0	10.00	4813	05AUG96	07	10.00	ND	05	213.10	NC		
DIBENZOTHIOPHENE	132-65-0	10.00	4813	06AUG96	07	10.00	ND	05	1,752.50	NC		
DIBENZOTHIOPHENE	132-65-0	10.00	4813	07AUG96	07	10.00	ND	05	811.90	NC		
DIBENZOTHIOPHENE	132-65-0	10.00	4813	08AUG96	07	30.39	NC	05	660.50	NC	23.11	815.35
DIBENZOTHIOPHENE	132-65-0	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
DIBENZOTHIOPHENE	132-65-0	10.00	4814A	17SEP96				07	70.00	ND		
DIBENZOTHIOPHENE	132-65-0	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
DIBENZOTHIOPHENE	132-65-0	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
DIBENZOTHIOPHENE	132-65-0	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	318.00
DIBENZOTHIOPHENE	132-65-0	10.00	4814B	16SEP96	10	152.29	NC	08	5,447.62	NC		
DIBENZOTHIOPHENE	132-65-0	10.00	4814B	17SEP96				08	127.90	NC		
DIBENZOTHIOPHENE	132-65-0	10.00	4814B	18SEP96	10	35.00	ND	08	262.10	NC		
DIBENZOTHIOPHENE	132-65-0	10.00	4814B	19SEP96	10	100.00	ND	08	811.88	NC	95.76	1,662.37
DIBENZOTHIOPHENE	132-65-0	10.00	651	03MAR98				01	38.35	NC	.	38.35
DIETHYL PHTHALATE	84-66-2	10.00	4813	04AUG96	07	638.80	NC	05	575.75	NC		
DIETHYL PHTHALATE	84-66-2	10.00	4813	05AUG96	07	562.95	NC	05	10.00	ND		
DIETHYL PHTHALATE	84-66-2	10.00	4813	06AUG96	07	145.40	NC	05	746.00	NC		
DIETHYL PHTHALATE	84-66-2	10.00	4813	07AUG96	07	366.00	NC	05	40.00	ND		
DIETHYL PHTHALATE	84-66-2	10.00	4813	08AUG96	07	116.50	NC	05	459.60	NC	365.93	366.27
DIETHYL PHTHALATE	84-66-2	10.00	4814A	16SEP96	09	873.90	NC	07	3,162.00	NC		
DIETHYL PHTHALATE	84-66-2	10.00	4814A	17SEP96				07	3,534.00	NC		
DIETHYL PHTHALATE	84-66-2	10.00	4814A	18SEP96	09	2,250.46	NC	07	9,309.20	NC		
DIETHYL PHTHALATE	84-66-2	10.00	4814A	19SEP96	09	1,320.87	NC	07	1,000.00	ND		
DIETHYL PHTHALATE	84-66-2	10.00	4814A	20SEP96	09	1,198.65	NC	07	2,577.93	NC	1,410.97	3,916.63
DIETHYL PHTHALATE	84-66-2	10.00	4814B	16SEP96	10	186.90	NC	08	3,565.66	NC		
DIETHYL PHTHALATE	84-66-2	10.00	4814B	17SEP96				08	145.25	NC		
DIETHYL PHTHALATE	84-66-2	10.00	4814B	18SEP96	10	35.00	ND	08	204.32	NC		
DIETHYL PHTHALATE	84-66-2	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	107.30	1,078.81

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
DIETHYL PHTHALATE	84-66-2	10.00	651	03MAR98				01	20.00	ND	.	20.00
DIPHENYL ETHER	101-84-8	10.00	4813	04AUG96	07	1,217.50	NC	05	13,750.50	NC		
DIPHENYL ETHER	101-84-8	10.00	4813	05AUG96	07	1,675.60	NC	05	4,768.00	NC		
DIPHENYL ETHER	101-84-8	10.00	4813	06AUG96	07	671.70	NC	05	7,478.00	NC		
DIPHENYL ETHER	101-84-8	10.00	4813	07AUG96	07	424.20	NC	05	9,481.00	NC		
DIPHENYL ETHER	101-84-8	10.00	4813	08AUG96	07	918.70	NC	05	10,671.00	NC	981.54	9,229.70
DIPHENYL ETHER	101-84-8	10.00	4814A	16SEP96	09	31.60	NC	07	20.00	ND		
DIPHENYL ETHER	101-84-8	10.00	4814A	17SEP96				07	149.30	NC		
DIPHENYL ETHER	101-84-8	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
DIPHENYL ETHER	101-84-8	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
DIPHENYL ETHER	101-84-8	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	21.65	333.86
DIPHENYL ETHER	101-84-8	10.00	4814B	16SEP96	10	82.76	NC	08	10.00	ND		
DIPHENYL ETHER	101-84-8	10.00	4814B	17SEP96				08	151.80	NC		
DIPHENYL ETHER	101-84-8	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
DIPHENYL ETHER	101-84-8	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	72.59	165.45
DIPHENYL ETHER	101-84-8	10.00	651	03MAR98				01	20.00	ND	.	20.00
ETHYLBENZENE	100-41-4	10.00	4813	04AUG96	07	450.10	NC	05	453.90	NC		
ETHYLBENZENE	100-41-4	10.00	4813	05AUG96	07	539.80	NC	05	1,131.70	NC		
ETHYLBENZENE	100-41-4	10.00	4813	06AUG96	07	433.10	NC	05	658.60	NC		
ETHYLBENZENE	100-41-4	10.00	4813	07AUG96	07	296.30	NC	05	701.70	NC		
ETHYLBENZENE	100-41-4	10.00	4813	08AUG96	07	397.20	NC	05	1,024.80	NC	423.30	794.14
ETHYLBENZENE	100-41-4	10.00	4814A	16SEP96	09	253.00	NC	07	2,573.00	NC		
ETHYLBENZENE	100-41-4	10.00	4814A	17SEP96				07	1,557.70	NC		
ETHYLBENZENE	100-41-4	10.00	4814A	18SEP96	09	367.63	NC	07	1,889.70	NC		
ETHYLBENZENE	100-41-4	10.00	4814A	19SEP96	09	216.34	NC	07	1,327.98	NC		
ETHYLBENZENE	100-41-4	10.00	4814A	20SEP96	09	258.13	NC	07	577.23	NC	273.78	1,585.12
ETHYLBENZENE	100-41-4	10.00	4814B	16SEP96	10	2,193.00	NC	08	4,979.00	NC		
ETHYLBENZENE	100-41-4	10.00	4814B	17SEP96				08	3,947.00	NC		
ETHYLBENZENE	100-41-4	10.00	4814B	18SEP96	10	956.42	NC	08	1,443.35	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
ETHYLBENZENE	100-41-4	10.00	4814B	19SEP96	10	1,857.01	NC	08	18,015.10	NC	1,668.81	7,096.11
ETHYLBENZENE	100-41-4	10.00	651	10JUL97	01	120.00	NC				120.00	.
FLUORANTHENE	206-44-0	10.00	4813	04AUG96	07	10.00	ND	05	166.42	NC		
FLUORANTHENE	206-44-0	10.00	4813	05AUG96	07	10.00	ND	05	46.87	NC		
FLUORANTHENE	206-44-0	10.00	4813	06AUG96	07	10.00	ND	05	436.90	NC		
FLUORANTHENE	206-44-0	10.00	4813	07AUG96	07	10.00	ND	05	330.00	NC		
FLUORANTHENE	206-44-0	10.00	4813	08AUG96	07	10.00	ND	05	63.01	NC	10.00	208.64
FLUORANTHENE	206-44-0	10.00	4814A	16SEP96	09	10.00	ND	07	142.04	NC		
FLUORANTHENE	206-44-0	10.00	4814A	17SEP96				07	111.65	NC		
FLUORANTHENE	206-44-0	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
FLUORANTHENE	206-44-0	10.00	4814A	19SEP96	09	20.00	ND	07	2,179.70	NC		
FLUORANTHENE	206-44-0	10.00	4814A	20SEP96	09	24.14	NC	07	1,689.09	NC	17.29	864.50
FLUORANTHENE	206-44-0	10.00	4814B	16SEP96	10	293.30	NC	08	28,872.67	NC		
FLUORANTHENE	206-44-0	10.00	4814B	17SEP96				08	514.65	NC		
FLUORANTHENE	206-44-0	10.00	4814B	18SEP96	10	350.50	NC	08	1,678.15	NC		
FLUORANTHENE	206-44-0	10.00	4814B	19SEP96	10	824.56	NC	08	4,403.84	NC	489.45	8,867.33
FLUORANTHENE	206-44-0	10.00	651	03MAR98				01	40.95	NC	.	40.95
FLUORENE	86-73-7	10.00	4813	04AUG96	07	31.30	NC	05	263.80	NC		
FLUORENE	86-73-7	10.00	4813	05AUG96	07	11.95	NC	05	72.68	NC		
FLUORENE	86-73-7	10.00	4813	06AUG96	07	10.00	ND	05	421.90	NC		
FLUORENE	86-73-7	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
FLUORENE	86-73-7	10.00	4813	08AUG96	07	17.20	NC	05	40.00	ND	16.09	167.68
FLUORENE	86-73-7	10.00	4814A	16SEP96	09	10.00	ND	07	118.30	NC		
FLUORENE	86-73-7	10.00	4814A	17SEP96				07	165.05	NC		
FLUORENE	86-73-7	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
FLUORENE	86-73-7	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
FLUORENE	86-73-7	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	356.67
FLUORENE	86-73-7	10.00	4814B	16SEP96	10	269.40	NC	08	15,755.94	NC		
FLUORENE	86-73-7	10.00	4814B	17SEP96				08	457.30	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
FLUORENE	86-73-7	10.00	4814B	18SEP96	10	175.95	NC	08	808.15	NC		
FLUORENE	86-73-7	10.00	4814B	19SEP96	10	283.99	NC	08	3,777.40	NC	243.11	5,199.70
FLUORENE	86-73-7	10.00	651	03MAR98				01	487.20	NC	.	487.20
HEXANOIC ACID	142-62-1	10.00	4813	04AUG96	07	18,430.00	NC	05	13,952.50	NC		
HEXANOIC ACID	142-62-1	10.00	4813	05AUG96	07	16,998.00	NC	05	15,211.00	NC		
HEXANOIC ACID	142-62-1	10.00	4813	06AUG96	07	22,825.20	NC	05	71,609.00	NC		
HEXANOIC ACID	142-62-1	10.00	4813	07AUG96	07	71,993.00	NC	05	16,950.30	NC		
HEXANOIC ACID	142-62-1	10.00	4813	08AUG96	07	83,050.00	NC	05	90,080.00	NC	42,659.24	41,560.56
HEXANOIC ACID	142-62-1	10.00	4814A	16SEP96	09	7,069.50	NC	07	7,784.10	NC		
HEXANOIC ACID	142-62-1	10.00	4814A	17SEP96				07	6,586.80	NC		
HEXANOIC ACID	142-62-1	10.00	4814A	18SEP96	09	7,405.62	NC	07	8,402.72	NC		
HEXANOIC ACID	142-62-1	10.00	4814A	19SEP96	09	13,425.82	NC	07	23,524.60	NC		
HEXANOIC ACID	142-62-1	10.00	4814A	20SEP96	09	9,113.55	NC	07	8,646.20	NC	9,253.62	10,988.88
HEXANOIC ACID	142-62-1	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
HEXANOIC ACID	142-62-1	10.00	4814B	17SEP96				08	10.00	ND		
HEXANOIC ACID	142-62-1	10.00	4814B	18SEP96	10	10,801.52	NC	08	1,640.37	NC		
HEXANOIC ACID	142-62-1	10.00	4814B	19SEP96	10	100.00	ND	08	100.00	ND	3,637.17	440.09
HEXANOIC ACID	142-62-1	10.00	651	03MAR98				01	33,215.05	NC	.	33,215.05
M+P XYLENE	179601-23-1	10.00	4814A	18SEP96	09	419.10	NC	07	1,659.58	NC		
M+P XYLENE	179601-23-1	10.00	4814A	19SEP96	09	298.36	NC	07	938.14	NC		
M+P XYLENE	179601-23-1	10.00	4814A	20SEP96	09	551.38	NC	07	928.96	NC	422.95	1,175.56
M+P XYLENE	179601-23-1	10.00	4814B	18SEP96	10	890.14	NC	08	838.43	NC		
M+P XYLENE	179601-23-1	10.00	4814B	19SEP96	10	1,092.16	NC	08	922.50	NC	991.15	880.46
M-XYLENE	108-38-3	10.00	4813	04AUG96	07	275.20	NC	05	275.26	NC		
M-XYLENE	108-38-3	10.00	4813	05AUG96	07	532.34	NC	05	1,107.80	NC		
M-XYLENE	108-38-3	10.00	4813	06AUG96	07	284.53	NC	05	477.36	NC		
M-XYLENE	108-38-3	10.00	4813	07AUG96	07	235.32	NC	05	828.01	NC		
M-XYLENE	108-38-3	10.00	4813	08AUG96	07	480.50	NC	05	1,266.60	NC	361.58	791.01

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
M-XYLENE	108-38-3	10.00	4814A	16SEP96	09	1,086.00	NC	07	6,353.00	NC		
M-XYLENE	108-38-3	10.00	4814A	17SEP96				07	3,472.00	NC		
M-XYLENE	108-38-3	10.00	4814A	18SEP96	09	10.00	ND	07	10.00	ND		
M-XYLENE	108-38-3	10.00	4814A	19SEP96	09	10.00	ND	07	10.00	ND		
M-XYLENE	108-38-3	10.00	4814A	20SEP96	09	10.00	ND	07	10.00	ND	279.00	1,971.00
M-XYLENE	108-38-3	10.00	4814B	16SEP96	10	4,541.00	NC	08	13,342.00	NC		
M-XYLENE	108-38-3	10.00	4814B	17SEP96				08	8,218.50	NC		
M-XYLENE	108-38-3	10.00	4814B	18SEP96	10	10.00	ND	08	10.00	ND		
M-XYLENE	108-38-3	10.00	4814B	19SEP96	10	10.00	ND	08	10.00	ND	1,520.33	5,395.13
METHYLENE CHLORIDE	75-09-2	10.00	4813	04AUG96	07	97.97	NC	05	54.59	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4813	05AUG96	07	100.02	NC	05	71.22	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4813	06AUG96	07	78.47	NC	05	48.55	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4813	07AUG96	07	58.52	NC	05	21.72	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4813	08AUG96	07	71.14	NC	05	89.33	NC	81.22	57.08
METHYLENE CHLORIDE	75-09-2	10.00	4814A	16SEP96	09	3,343.00	NC	07	10.00	ND		
METHYLENE CHLORIDE	75-09-2	10.00	4814A	17SEP96				07	4,600.50	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4814A	18SEP96	09	4,808.40	NC	07	10,524.10	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4814A	19SEP96	09	1,802.75	NC	07	3,492.90	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4814A	20SEP96	09	3,055.80	NC	07	3,875.60	NC	3,252.49	4,500.62
METHYLENE CHLORIDE	75-09-2	10.00	4814B	16SEP96	10	4,575.00	NC	08	4,665.00	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4814B	17SEP96				08	5,317.50	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4814B	18SEP96	10	6,169.60	NC	08	7,576.60	NC		
METHYLENE CHLORIDE	75-09-2	10.00	4814B	19SEP96	10	4,950.10	NC	08	5,594.00	NC	5,231.57	5,788.28
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4813	05AUG96	07	29.28	NC	05	10.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	13.86	26.00
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814A	16SEP96	09	1,214.50	NC	07	20.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814A	17SEP96				07	802.75	NC		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	317.38	464.55
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814B	17SEP96				08	20.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	132.50
N,N-DIMETHYLFORMAMIDE	68-12-2	10.00	651	03MAR98				01	283.78	NC	.	283.78
N-DECANE	124-18-5	10.00	4813	04AUG96	07	767.90	NC	05	4,118.50	NC		
N-DECANE	124-18-5	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
N-DECANE	124-18-5	10.00	4813	06AUG96	07	10.00	ND	05	2,158.00	NC		
N-DECANE	124-18-5	10.00	4813	07AUG96	07	10.00	ND	05	2,571.00	NC		
N-DECANE	124-18-5	10.00	4813	08AUG96	07	392.90	NC	05	7,901.00	NC	238.16	3,351.70
N-DECANE	124-18-5	10.00	4814A	16SEP96	09	10.00	ND	07	3,203.00	NC		
N-DECANE	124-18-5	10.00	4814A	17SEP96				07	4,473.00	NC		
N-DECANE	124-18-5	10.00	4814A	18SEP96	09	15.00	ND	07	4,762.20	NC		
N-DECANE	124-18-5	10.00	4814A	19SEP96	09	20.00	ND	07	18,048.60	NC		
N-DECANE	124-18-5	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	6,157.36
N-DECANE	124-18-5	10.00	4814B	16SEP96	10	3,191.00	NC	08	223,466.88	NC		
N-DECANE	124-18-5	10.00	4814B	17SEP96				08	8,556.00	NC		
N-DECANE	124-18-5	10.00	4814B	18SEP96	10	3,834.95	NC	08	6,610.80	NC		
N-DECANE	124-18-5	10.00	4814B	19SEP96	10	7,145.10	NC	08	137,756.00	NC	4,723.68	94,097.42
N-DECANE	124-18-5	10.00	651	03MAR98				01	4,325.00	NC	.	4,325.00
N-DOCOSANE	629-97-0	10.00	4813	04AUG96	07	40.32	NC	05	140.09	NC		
N-DOCOSANE	629-97-0	10.00	4813	05AUG96	07	28.90	NC	05	103.05	NC		
N-DOCOSANE	629-97-0	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
N-DOCOSANE	629-97-0	10.00	4813	07AUG96	07	10.00	ND	05	1,950.00	NC		
N-DOCOSANE	629-97-0	10.00	4813	08AUG96	07	10.00	ND	05	179.30	NC	19.84	478.49
N-DOCOSANE	629-97-0	10.00	4814A	16SEP96	09	28.08	NC	07	639.20	NC		
N-DOCOSANE	629-97-0	10.00	4814A	17SEP96				07	500.15	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
N-DOCOSANE	629-97-0	10.00	4814A	18SEP96	09	15.00	ND	07	1,924.00	NC		
N-DOCOSANE	629-97-0	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
N-DOCOSANE	629-97-0	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	20.77	872.67
N-DOCOSANE	629-97-0	10.00	4814B	16SEP96	10	40.25	NC	08	15,353.74	NC		
N-DOCOSANE	629-97-0	10.00	4814B	17SEP96				08	761.55	NC		
N-DOCOSANE	629-97-0	10.00	4814B	18SEP96	10	249.40	NC	08	100.00	ND		
N-DOCOSANE	629-97-0	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	129.88	4,153.82
N-DOCOSANE	629-97-0	10.00	651	03MAR98				01	6,686.50	NC	.	6,686.50
N-DODECANE	112-40-3	10.00	4813	04AUG96	07	10.00	ND	05	13,430.00	NC		
N-DODECANE	112-40-3	10.00	4813	05AUG96	07	10.00	ND	05	4,450.00	NC		
N-DODECANE	112-40-3	10.00	4813	06AUG96	07	10.00	ND	05	5,397.00	NC		
N-DODECANE	112-40-3	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
N-DODECANE	112-40-3	10.00	4813	08AUG96	07	1,129.00	NC	05	10,064.00	NC	233.80	6,676.20
N-DODECANE	112-40-3	10.00	4814A	16SEP96	09	10.00	ND	07	20,000.00	NC		
N-DODECANE	112-40-3	10.00	4814A	17SEP96				07	5,023.00	NC		
N-DODECANE	112-40-3	10.00	4814A	18SEP96	09	15.00	ND	07	11,167.60	NC		
N-DODECANE	112-40-3	10.00	4814A	19SEP96	09	20.00	ND	07	45,621.00	NC		
N-DODECANE	112-40-3	10.00	4814A	20SEP96	09	20.00	ND	07	36,016.20	NC	16.25	23,565.56
N-DODECANE	112-40-3	10.00	4814B	16SEP96	10	1,731.00	NC	08	148,971.52	NC		
N-DODECANE	112-40-3	10.00	4814B	17SEP96				08	5,308.50	NC		
N-DODECANE	112-40-3	10.00	4814B	18SEP96	10	1,229.30	NC	08	100.00	ND		
N-DODECANE	112-40-3	10.00	4814B	19SEP96	10	20,000.00	NC	08	108,578.00	NC	7,653.43	65,739.51
N-DODECANE	112-40-3	10.00	651	03MAR98				01	18,194.00	NC	.	18,194.00
N-EICOSANE	112-95-8	10.00	4813	04AUG96	07	82.97	NC	05	792.85	NC		
N-EICOSANE	112-95-8	10.00	4813	05AUG96	07	28.98	NC	05	1,064.90	NC		
N-EICOSANE	112-95-8	10.00	4813	06AUG96	07	20.79	NC	05	1,656.70	NC		
N-EICOSANE	112-95-8	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
N-EICOSANE	112-95-8	10.00	4813	08AUG96	07	83.46	NC	05	1,515.10	NC	45.24	1,013.91
N-EICOSANE	112-95-8	10.00	4814A	16SEP96	09	89.72	NC	07	1,870.60	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
N-EICOSANE	112-95-8	10.00	4814A	17SEP96				07	1,557.60	NC		
N-EICOSANE	112-95-8	10.00	4814A	18SEP96	09	15.00	ND	07	3,275.00	NC		
N-EICOSANE	112-95-8	10.00	4814A	19SEP96	09	20.00	ND	07	16,667.00	NC		
N-EICOSANE	112-95-8	10.00	4814A	20SEP96	09	82.32	NC	07	300.00	ND	51.76	4,734.04
N-EICOSANE	112-95-8	10.00	4814B	16SEP96	10	558.10	NC	08	36,688.64	NC		
N-EICOSANE	112-95-8	10.00	4814B	17SEP96				08	1,914.80	NC		
N-EICOSANE	112-95-8	10.00	4814B	18SEP96	10	1,226.17	NC	08	1,608.50	NC		
N-EICOSANE	112-95-8	10.00	4814B	19SEP96	10	1,755.00	NC	08	25,822.00	NC	1,179.76	16,508.49
N-EICOSANE	112-95-8	10.00	651	03MAR98				01	10,159.00	NC	.	10,159.00
N-HEXACOSANE	630-01-3	10.00	4813	04AUG96	07	10.00	ND	05	30.92	NC		
N-HEXACOSANE	630-01-3	10.00	4813	05AUG96	07	28.22	NC	05	10.00	ND		
N-HEXACOSANE	630-01-3	10.00	4813	06AUG96	07	22.93	NC	05	20.00	ND		
N-HEXACOSANE	630-01-3	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
N-HEXACOSANE	630-01-3	10.00	4813	08AUG96	07	23.24	NC	05	40.00	ND	18.88	28.18
N-HEXACOSANE	630-01-3	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
N-HEXACOSANE	630-01-3	10.00	4814A	17SEP96				07	70.00	ND		
N-HEXACOSANE	630-01-3	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
N-HEXACOSANE	630-01-3	10.00	4814A	19SEP96	09	20.00	ND	07	9,561.00	NC		
N-HEXACOSANE	630-01-3	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	2,030.20
N-HEXACOSANE	630-01-3	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
N-HEXACOSANE	630-01-3	10.00	4814B	17SEP96				08	20.00	ND		
N-HEXACOSANE	630-01-3	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
N-HEXACOSANE	630-01-3	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	132.50
N-HEXACOSANE	630-01-3	10.00	651	03MAR98				01	68.83	NC	.	68.83
N-HEXADECANE	544-76-3	10.00	4813	04AUG96	07	4,422.00	NC	05	18,360.00	NC		
N-HEXADECANE	544-76-3	10.00	4813	05AUG96	07	1,156.30	NC	05	38,260.00	NC		
N-HEXADECANE	544-76-3	10.00	4813	06AUG96	07	1,928.50	NC	05	111,340.00	NC		
N-HEXADECANE	544-76-3	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
N-HEXADECANE	544-76-3	10.00	4813	08AUG96	07	5,240.00	NC	05	200,000.00	NC	2,551.36	73,600.00

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
N-HEXADECANE	544-76-3	10.00	4814A	16SEP96	09	200.56	NC	07	3,619.00	NC		
N-HEXADECANE	544-76-3	10.00	4814A	17SEP96				07	3,448.00	NC		
N-HEXADECANE	544-76-3	10.00	4814A	18SEP96	09	15.00	ND	07	6,456.60	NC		
N-HEXADECANE	544-76-3	10.00	4814A	19SEP96	09	176.56	NC	07	31,304.00	NC		
N-HEXADECANE	544-76-3	10.00	4814A	20SEP96	09	150.81	NC	07	10,355.10	NC	135.73	11,036.54
N-HEXADECANE	544-76-3	10.00	4814B	16SEP96	10	1,830.80	NC	08	168,587.84	NC		
N-HEXADECANE	544-76-3	10.00	4814B	17SEP96				08	3,902.50	NC		
N-HEXADECANE	544-76-3	10.00	4814B	18SEP96	10	2,464.40	NC	08	4,428.60	NC		
N-HEXADECANE	544-76-3	10.00	4814B	19SEP96	10	3,617.80	NC	08	85,787.00	NC	2,637.67	65,676.49
N-HEXADECANE	544-76-3	10.00	651	03MAR98				01	32,335.00	NC	.	32,335.00
N-OCTACOSANE	630-02-4	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
N-OCTACOSANE	630-02-4	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
N-OCTACOSANE	630-02-4	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
N-OCTACOSANE	630-02-4	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
N-OCTACOSANE	630-02-4	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
N-OCTACOSANE	630-02-4	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
N-OCTACOSANE	630-02-4	10.00	4814A	17SEP96				07	70.00	ND		
N-OCTACOSANE	630-02-4	10.00	4814A	18SEP96	09	15.00	ND	07	1,863.80	NC		
N-OCTACOSANE	630-02-4	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
N-OCTACOSANE	630-02-4	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	650.76
N-OCTACOSANE	630-02-4	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
N-OCTACOSANE	630-02-4	10.00	4814B	17SEP96				08	20.00	ND		
N-OCTACOSANE	630-02-4	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
N-OCTACOSANE	630-02-4	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	132.50
N-OCTACOSANE	630-02-4	10.00	651	03MAR98				01	20.00	ND	.	20.00
N-OCTADECANE	593-45-3	10.00	4813	04AUG96	07	481.70	NC	05	160.85	NC		
N-OCTADECANE	593-45-3	10.00	4813	05AUG96	07	102.42	NC	05	1,593.90	NC		
N-OCTADECANE	593-45-3	10.00	4813	06AUG96	07	91.86	NC	05	5,440.00	NC		
N-OCTADECANE	593-45-3	10.00	4813	07AUG96	07	10.00	ND	05	14,707.00	NC		
N-OCTADECANE	593-45-3	10.00	4813	08AUG96	07	327.30	NC	05	14,275.00	NC	202.66	7,235.35

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
N-OCTADECANE	593-45-3	10.00	4814A	16SEP96	09	88.93	NC	07	2,351.00	NC		
N-OCTADECANE	593-45-3	10.00	4814A	17SEP96				07	1,889.70	NC		
N-OCTADECANE	593-45-3	10.00	4814A	18SEP96	09	96.70	NC	07	4,220.40	NC		
N-OCTADECANE	593-45-3	10.00	4814A	19SEP96	09	118.51	NC	07	16,544.00	NC		
N-OCTADECANE	593-45-3	10.00	4814A	20SEP96	09	151.41	NC	07	9,528.30	NC	113.89	6,906.68
N-OCTADECANE	593-45-3	10.00	4814B	16SEP96	10	1,586.00	NC	08	100,760.32	NC		
N-OCTADECANE	593-45-3	10.00	4814B	17SEP96				08	2,838.50	NC		
N-OCTADECANE	593-45-3	10.00	4814B	18SEP96	10	1,235.31	NC	08	3,033.20	NC		
N-OCTADECANE	593-45-3	10.00	4814B	19SEP96	10	1,592.76	NC	08	51,797.00	NC	1,471.36	39,607.26
N-OCTADECANE	593-45-3	10.00	651	03MAR98				01	24,408.50	NC	.	24,408.50
N-TETRACOSANE	646-31-1	10.00	4813	04AUG96	07	18.49	NC	05	154.85	NC		
N-TETRACOSANE	646-31-1	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
N-TETRACOSANE	646-31-1	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
N-TETRACOSANE	646-31-1	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
N-TETRACOSANE	646-31-1	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	11.70	52.97
N-TETRACOSANE	646-31-1	10.00	4814A	16SEP96	09	31.64	NC	07	20.00	ND		
N-TETRACOSANE	646-31-1	10.00	4814A	17SEP96				07	70.00	ND		
N-TETRACOSANE	646-31-1	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
N-TETRACOSANE	646-31-1	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
N-TETRACOSANE	646-31-1	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	21.66	318.00
N-TETRACOSANE	646-31-1	10.00	4814B	16SEP96	10	10.00	ND	08	6,359.14	NC		
N-TETRACOSANE	646-31-1	10.00	4814B	17SEP96				08	20.00	ND		
N-TETRACOSANE	646-31-1	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
N-TETRACOSANE	646-31-1	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	1,719.78
N-TETRACOSANE	646-31-1	10.00	651	03MAR98				01	1,523.05	NC	.	1,523.05
N-TETRADECANE	629-59-4	10.00	4813	04AUG96	07	6,977.00	NC	05	57,590.00	NC		
N-TETRADECANE	629-59-4	10.00	4813	05AUG96	07	1,477.60	NC	05	48,030.00	NC		
N-TETRADECANE	629-59-4	10.00	4813	06AUG96	07	3,459.00	NC	05	122,910.00	NC		
N-TETRADECANE	629-59-4	10.00	4813	07AUG96	07	162.60	NC	05	178,690.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
N-TETRADECANE	629-59-4	10.00	4813	08AUG96	07	6,846.00	NC	05	193,130.00	NC	3,784.44	120,070.00
N-TETRADECANE	629-59-4	10.00	4814A	16SEP96	09	186.42	NC	07	6,660.00	NC		
N-TETRADECANE	629-59-4	10.00	4814A	17SEP96				07	7,125.00	NC		
N-TETRADECANE	629-59-4	10.00	4814A	18SEP96	09	202.07	NC	07	15,584.00	NC		
N-TETRADECANE	629-59-4	10.00	4814A	19SEP96	09	379.62	NC	07	70,206.00	NC		
N-TETRADECANE	629-59-4	10.00	4814A	20SEP96	09	580.27	NC	07	3,542.60	NC	337.09	20,623.52
N-TETRADECANE	629-59-4	10.00	4814B	16SEP96	10	1,694.00	NC	08	208,249.60	NC		
N-TETRADECANE	629-59-4	10.00	4814B	17SEP96				08	5,247.00	NC		
N-TETRADECANE	629-59-4	10.00	4814B	18SEP96	10	3,243.10	NC	08	5,423.50	NC		
N-TETRADECANE	629-59-4	10.00	4814B	19SEP96	10	4,974.60	NC	08	124,678.00	NC	3,303.90	85,899.53
N-TETRADECANE	629-59-4	10.00	651	03MAR98				01	63,235.00	NC	.	63,235.00
NAPHTHALENE	91-20-3	10.00	4813	04AUG96	07	194.60	NC	05	1,304.90	NC		
NAPHTHALENE	91-20-3	10.00	4813	05AUG96	07	328.85	NC	05	302.80	NC		
NAPHTHALENE	91-20-3	10.00	4813	06AUG96	07	232.00	NC	05	1,150.40	NC		
NAPHTHALENE	91-20-3	10.00	4813	07AUG96	07	200.40	NC	05	2,481.00	NC		
NAPHTHALENE	91-20-3	10.00	4813	08AUG96	07	287.80	NC	05	4,019.00	NC	248.73	1,851.62
NAPHTHALENE	91-20-3	10.00	4814A	16SEP96	09	205.50	NC	07	1,495.00	NC		
NAPHTHALENE	91-20-3	10.00	4814A	17SEP96				07	1,658.00	NC		
NAPHTHALENE	91-20-3	10.00	4814A	18SEP96	09	85.28	NC	07	2,180.84	NC		
NAPHTHALENE	91-20-3	10.00	4814A	19SEP96	09	74.06	NC	07	9,636.50	NC		
NAPHTHALENE	91-20-3	10.00	4814A	20SEP96	09	437.76	NC	07	18,090.30	NC	200.65	6,612.13
NAPHTHALENE	91-20-3	10.00	4814B	16SEP96	10	1,945.00	NC	08	49,077.12	NC		
NAPHTHALENE	91-20-3	10.00	4814B	17SEP96				08	3,094.50	NC		
NAPHTHALENE	91-20-3	10.00	4814B	18SEP96	10	1,658.76	NC	08	2,433.80	NC		
NAPHTHALENE	91-20-3	10.00	4814B	19SEP96	10	1,879.70	NC	08	47,308.00	NC	1,827.82	25,478.36
NAPHTHALENE	91-20-3	10.00	651	03MAR98				01	4,638.00	NC	.	4,638.00
O+P XYLENE	136777-61-2	10.00	4813	04AUG96	07	430.90	NC	05	437.18	NC		
O+P XYLENE	136777-61-2	10.00	4813	05AUG96	07	816.05	NC	05	1,540.10	NC		
O+P XYLENE	136777-61-2	10.00	4813	06AUG96	07	451.92	NC	05	699.60	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
O+P XYLENE	136777-61-2	10.00	4813	07AUG96	07	377.48	NC	05	899.98	NC		
O+P XYLENE	136777-61-2	10.00	4813	08AUG96	07	743.96	NC	05	1,862.40	NC	564.06	1,087.85
O+P XYLENE	136777-61-2	10.00	4814A	16SEP96	09	2,524.00	NC	07	11,470.00	NC		
O+P XYLENE	136777-61-2	10.00	4814A	17SEP96				07	4,768.50	NC		
O+P XYLENE	136777-61-2	10.00	4814A	18SEP96	09	10.00	ND	07	10.00	ND		
O+P XYLENE	136777-61-2	10.00	4814A	19SEP96	09	10.00	ND	07	10.00	ND		
O+P XYLENE	136777-61-2	10.00	4814A	20SEP96	09	10.00	ND	07	10.00	ND	638.50	3,253.70
O+P XYLENE	136777-61-2	10.00	4814B	16SEP96	10	5,599.00	NC	08	16,584.00	NC		
O+P XYLENE	136777-61-2	10.00	4814B	17SEP96				08	10,662.00	NC		
O+P XYLENE	136777-61-2	10.00	4814B	18SEP96	10	10.00	ND	08	10.00	ND		
O+P XYLENE	136777-61-2	10.00	4814B	19SEP96	10	10.00	ND	08	10.00	ND	1,873.00	6,816.50
O-CRESOL	95-48-7	10.00	4813	04AUG96	07	225.79	NC	05	696.00	NC		
O-CRESOL	95-48-7	10.00	4813	05AUG96	07	358.91	NC	05	144.83	NC		
O-CRESOL	95-48-7	10.00	4813	06AUG96	07	1,250.90	NC	05	8,273.00	NC		
O-CRESOL	95-48-7	10.00	4813	07AUG96	07	5,341.00	NC	05	2,059.00	NC		
O-CRESOL	95-48-7	10.00	4813	08AUG96	07	1,672.70	NC	05	40.00	ND	1,769.86	2,242.57
O-CRESOL	95-48-7	10.00	4814A	16SEP96	09	362.50	NC	07	281.22	NC		
O-CRESOL	95-48-7	10.00	4814A	17SEP96				07	70.00	ND		
O-CRESOL	95-48-7	10.00	4814A	18SEP96	09	189.66	NC	07	200.00	ND		
O-CRESOL	95-48-7	10.00	4814A	19SEP96	09	367.73	NC	07	1,000.00	ND		
O-CRESOL	95-48-7	10.00	4814A	20SEP96	09	692.54	NC	07	300.00	ND	403.11	370.24
O-CRESOL	95-48-7	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
O-CRESOL	95-48-7	10.00	4814B	17SEP96				08	20.00	ND		
O-CRESOL	95-48-7	10.00	4814B	18SEP96	10	535.29	NC	08	854.41	NC		
O-CRESOL	95-48-7	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	215.10	321.10
O-CRESOL	95-48-7	10.00	651	03MAR98				01	727.45	NC	.	727.45
O-TOLUIDINE	95-53-4	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
O-TOLUIDINE	95-53-4	10.00	4813	05AUG96	07	84.85	NC	05	10.00	ND		
O-TOLUIDINE	95-53-4	10.00	4813	06AUG96	07	116.60	NC	05	20.00	ND		
O-TOLUIDINE	95-53-4	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
O-TOLUIDINE	95-53-4	10.00	4813	08AUG96	07	126.10	NC	05	40.00	ND	69.51	26.00
O-TOLUIDINE	95-53-4	10.00	4814A	16SEP96	09	311.10	NC	07	20.00	ND		
O-TOLUIDINE	95-53-4	10.00	4814A	17SEP96				07	247.80	NC		
O-TOLUIDINE	95-53-4	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
O-TOLUIDINE	95-53-4	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
O-TOLUIDINE	95-53-4	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	91.53	353.56
O-TOLUIDINE	95-53-4	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
O-TOLUIDINE	95-53-4	10.00	4814B	17SEP96				08	173.25	NC		
O-TOLUIDINE	95-53-4	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
O-TOLUIDINE	95-53-4	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	170.81
O-TOLUIDINE	95-53-4	10.00	651	03MAR98				01	20.00	ND	.	20.00
O-XYLENE	95-47-6	10.00	4814A	18SEP96	09	272.49	NC	07	1,140.55	NC		
O-XYLENE	95-47-6	10.00	4814A	19SEP96	09	185.67	NC	07	561.31	NC		
O-XYLENE	95-47-6	10.00	4814A	20SEP96	09	347.40	NC	07	573.07	NC	268.52	758.31
O-XYLENE	95-47-6	10.00	4814B	18SEP96	10	632.94	NC	08	602.89	NC		
O-XYLENE	95-47-6	10.00	4814B	19SEP96	10	696.38	NC	08	654.46	NC	664.66	628.67
P-CRESOL	106-44-5	10.00	4813	04AUG96	07	10.00	ND	05	1,076.60	NC		
P-CRESOL	106-44-5	10.00	4813	05AUG96	07	1,874.45	NC	05	1,296.00	NC		
P-CRESOL	106-44-5	10.00	4813	06AUG96	07	1,831.80	NC	05	1,276.00	NC		
P-CRESOL	106-44-5	10.00	4813	07AUG96	07	1,506.30	NC	05	1,662.80	NC		
P-CRESOL	106-44-5	10.00	4813	08AUG96	07	1,193.40	NC	05	2,334.10	NC	1,283.19	1,529.10
P-CRESOL	106-44-5	10.00	4814A	16SEP96	09	246.00	NC	07	221.28	NC		
P-CRESOL	106-44-5	10.00	4814A	17SEP96				07	220.45	NC		
P-CRESOL	106-44-5	10.00	4814A	18SEP96	09	839.76	NC	07	100.00	ND		
P-CRESOL	106-44-5	10.00	4814A	19SEP96	09	885.79	NC	07	1,000.00	ND		
P-CRESOL	106-44-5	10.00	4814A	20SEP96	09	1,871.27	NC	07	2,382.40	NC	960.71	784.83
P-CRESOL	106-44-5	10.00	4814B	16SEP96	10	399.40	NC	08	2,119.84	NC		
P-CRESOL	106-44-5	10.00	4814B	17SEP96				08	1,838.00	NC		
P-CRESOL	106-44-5	10.00	4814B	18SEP96	10	1,392.06	NC	08	1,386.46	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

---------- Subcategory=Oils Option=9 ----------
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
P-CRESOL	106-44-5	10.00	4814B	19SEP96	10	100.00	ND	08	100.00	ND	630.49	1,361.08
P-CRESOL	106-44-5	10.00	651	03MAR98				01	1,588.37	NC	.	1,588.37
P-CYMENE	99-87-6	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
P-CYMENE	99-87-6	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
P-CYMENE	99-87-6	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
P-CYMENE	99-87-6	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
P-CYMENE	99-87-6	10.00	4813	08AUG96	07	12.85	NC	05	40.00	ND	10.57	26.00
P-CYMENE	99-87-6	10.00	4814A	16SEP96	09	10.00	ND	07	231.70	NC		
P-CYMENE	99-87-6	10.00	4814A	17SEP96				07	265.60	NC		
P-CYMENE	99-87-6	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
P-CYMENE	99-87-6	10.00	4814A	19SEP96	09	20.00	ND	07	1,903.90	NC		
P-CYMENE	99-87-6	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	580.24
P-CYMENE	99-87-6	10.00	4814B	16SEP96	10	149.80	NC	08	939.23	NC		
P-CYMENE	99-87-6	10.00	4814B	17SEP96				08	427.25	NC		
P-CYMENE	99-87-6	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
P-CYMENE	99-87-6	10.00	4814B	19SEP96	10	100.00	ND	08	4,452.12	NC	94.93	1,479.65
P-CYMENE	99-87-6	10.00	651	03MAR98				01	1,268.75	NC	.	1,268.75
PENTAMETHYLBENZENE	700-12-9	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
PENTAMETHYLBENZENE	700-12-9	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
PENTAMETHYLBENZENE	700-12-9	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
PENTAMETHYLBENZENE	700-12-9	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
PENTAMETHYLBENZENE	700-12-9	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
PENTAMETHYLBENZENE	700-12-9	10.00	4814A	16SEP96	09	10.00	ND	07	115.70	NC		
PENTAMETHYLBENZENE	700-12-9	10.00	4814A	17SEP96				07	136.65	NC		
PENTAMETHYLBENZENE	700-12-9	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
PENTAMETHYLBENZENE	700-12-9	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
PENTAMETHYLBENZENE	700-12-9	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	350.47
PENTAMETHYLBENZENE	700-12-9	10.00	4814B	16SEP96	10	10.00	ND	08	6,320.77	NC		
PENTAMETHYLBENZENE	700-12-9	10.00	4814B	17SEP96				08	237.95	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
PENTAMETHYLBENZENE	700-12-9	10.00	4814B	18SEP96	10	35.00	ND	08	920.58	NC		
PENTAMETHYLBENZENE	700-12-9	10.00	4814B	19SEP96	10	100.00	ND	08	5,126.04	NC	48.33	3,151.33
PENTAMETHYLBENZENE	700-12-9	10.00	651	03MAR98				01	20.00	ND	.	20.00
PHENANTHRENE	85-01-8	10.00	4813	04AUG96	07	175.49	NC	05	2,704.00	NC		
PHENANTHRENE	85-01-8	10.00	4813	05AUG96	07	62.96	NC	05	841.60	NC		
PHENANTHRENE	85-01-8	10.00	4813	06AUG96	07	52.93	NC	05	6,704.00	NC		
PHENANTHRENE	85-01-8	10.00	4813	07AUG96	07	13.52	NC	05	4,699.00	NC		
PHENANTHRENE	85-01-8	10.00	4813	08AUG96	07	103.90	NC	05	3,828.00	NC	81.76	3,755.32
PHENANTHRENE	85-01-8	10.00	4814A	16SEP96	09	20.79	NC	07	338.70	NC		
PHENANTHRENE	85-01-8	10.00	4814A	17SEP96				07	405.75	NC		
PHENANTHRENE	85-01-8	10.00	4814A	18SEP96	09	15.00	ND	07	430.82	NC		
PHENANTHRENE	85-01-8	10.00	4814A	19SEP96	09	26.22	NC	07	5,213.30	NC		
PHENANTHRENE	85-01-8	10.00	4814A	20SEP96	09	167.56	NC	07	9,107.10	NC	57.39	3,099.13
PHENANTHRENE	85-01-8	10.00	4814B	16SEP96	10	799.90	NC	08	49,015.68	NC		
PHENANTHRENE	85-01-8	10.00	4814B	17SEP96				08	1,509.45	NC		
PHENANTHRENE	85-01-8	10.00	4814B	18SEP96	10	1,086.42	NC	08	1,234.10	NC		
PHENANTHRENE	85-01-8	10.00	4814B	19SEP96	10	1,839.82	NC	08	22,114.00	NC	1,242.05	18,468.31
PHENANTHRENE	85-01-8	10.00	651	03MAR98				01	1,324.85	NC	.	1,324.85
PHENOL	108-95-2	10.00	4813	04AUG96	07	30,170.00	NC	05	19,410.00	NC		
PHENOL	108-95-2	10.00	4813	05AUG96	07	27,405.00	NC	05	41,850.00	NC		
PHENOL	108-95-2	10.00	4813	06AUG96	07	32,270.00	NC	05	34,150.00	NC		
PHENOL	108-95-2	10.00	4813	07AUG96	07	36,790.00	NC	05	36,180.00	NC		
PHENOL	108-95-2	10.00	4813	08AUG96	07	26,770.00	NC	05	48,640.00	NC	30,681.00	36,046.00
PHENOL	108-95-2	10.00	4814A	16SEP96	09	2,613.00	NC	07	2,641.00	NC		
PHENOL	108-95-2	10.00	4814A	17SEP96				07	3,700.50	NC		
PHENOL	108-95-2	10.00	4814A	18SEP96	09	6,382.90	NC	07	6,535.40	NC		
PHENOL	108-95-2	10.00	4814A	19SEP96	09	16,329.90	NC	07	20,000.00	NC		
PHENOL	108-95-2	10.00	4814A	20SEP96	09	18,717.70	NC	07	20,000.00	NC	11,010.88	10,575.38
PHENOL	108-95-2	10.00	4814B	16SEP96	10	2,483.00	NC	08	3,184.00	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
PHENOL	108-95-2	10.00	4814B	17SEP96				08	4,583.00	NC		
PHENOL	108-95-2	10.00	4814B	18SEP96	10	5,149.90	NC	08	11,806.60	NC		
PHENOL	108-95-2	10.00	4814B	19SEP96	10	42,594.00	NC	08	7,694.40	NC	16,742.30	6,817.00
PHENOL	108-95-2	10.00	651	03MAR98				01	30,195.00	NC	.	30,195.00
PYRENE	129-00-0	10.00	4813	04AUG96	07	107.81	NC	05	1,312.85	NC		
PYRENE	129-00-0	10.00	4813	05AUG96	07	68.95	NC	05	642.40	NC		
PYRENE	129-00-0	10.00	4813	06AUG96	07	28.89	NC	05	4,275.00	NC		
PYRENE	129-00-0	10.00	4813	07AUG96	07	10.00	ND	05	3,299.00	NC		
PYRENE	129-00-0	10.00	4813	08AUG96	07	74.37	NC	05	2,711.00	NC	58.00	2,448.05
PYRENE	129-00-0	10.00	4814A	16SEP96	09	10.00	ND	07	158.65	NC		
PYRENE	129-00-0	10.00	4814A	17SEP96				07	113.35	NC		
PYRENE	129-00-0	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
PYRENE	129-00-0	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
PYRENE	129-00-0	10.00	4814A	20SEP96	09	27.12	NC	07	2,522.70	NC	18.03	798.94
PYRENE	129-00-0	10.00	4814B	16SEP96	10	228.10	NC	08	22,763.39	NC		
PYRENE	129-00-0	10.00	4814B	17SEP96				08	437.10	NC		
PYRENE	129-00-0	10.00	4814B	18SEP96	10	238.50	NC	08	1,137.25	NC		
PYRENE	129-00-0	10.00	4814B	19SEP96	10	269.94	NC	08	3,368.60	NC	245.51	6,926.59
PYRENE	129-00-0	10.00	651	03MAR98				01	129.24	NC	.	129.24
PYRIDINE	110-86-1	10.00	4813	04AUG96	07	28.58	NC	05	77.45	NC		
PYRIDINE	110-86-1	10.00	4813	05AUG96	07	98.62	NC	05	13.59	NC		
PYRIDINE	110-86-1	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
PYRIDINE	110-86-1	10.00	4813	07AUG96	07	248.80	NC	05	40.00	ND		
PYRIDINE	110-86-1	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	79.20	38.21
PYRIDINE	110-86-1	10.00	4814A	16SEP96	09	1,408.50	NC	07	838.20	NC		
PYRIDINE	110-86-1	10.00	4814A	17SEP96				07	558.50	NC		
PYRIDINE	110-86-1	10.00	4814A	18SEP96	09	760.99	NC	07	1,280.12	NC		
PYRIDINE	110-86-1	10.00	4814A	19SEP96	09	309.61	NC	07	1,000.00	ND		
PYRIDINE	110-86-1	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	624.78	795.36

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
PYRIDINE	110-86-1	10.00	4814B	16SEP96	10	1,531.60	NC	08	953.92	NC		
PYRIDINE	110-86-1	10.00	4814B	17SEP96				08	248.65	NC		
PYRIDINE	110-86-1	10.00	4814B	18SEP96	10	653.81	NC	08	100.00	ND		
PYRIDINE	110-86-1	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	761.80	425.64
PYRIDINE	110-86-1	10.00	651	03MAR98				01	52.17	NC	.	52.17
STYRENE	100-42-5	10.00	4813	04AUG96	07	93.34	NC	05	20.00	ND		
STYRENE	100-42-5	10.00	4813	05AUG96	07	93.06	NC	05	10.00	ND		
STYRENE	100-42-5	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
STYRENE	100-42-5	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
STYRENE	100-42-5	10.00	4813	08AUG96	07	94.81	NC	05	40.00	ND	60.24	26.00
STYRENE	100-42-5	10.00	4814A	16SEP96	09	10.00	ND	07	288.50	NC		
STYRENE	100-42-5	10.00	4814A	17SEP96				07	552.20	NC		
STYRENE	100-42-5	10.00	4814A	18SEP96	09	15.00	ND	07	314.54	NC		
STYRENE	100-42-5	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
STYRENE	100-42-5	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	491.05
STYRENE	100-42-5	10.00	4814B	16SEP96	10	158.20	NC	08	842.56	NC		
STYRENE	100-42-5	10.00	4814B	17SEP96				08	432.20	NC		
STYRENE	100-42-5	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
STYRENE	100-42-5	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	97.73	443.69
STYRENE	100-42-5	10.00	651	03MAR98				01	140.70	NC	.	140.70
TETRACHLOROETHENE	127-18-4	10.00	4813	04AUG96	07	22.09	NC	05	23.54	NC		
TETRACHLOROETHENE	127-18-4	10.00	4813	05AUG96	07	15.52	NC	05	117.71	NC		
TETRACHLOROETHENE	127-18-4	10.00	4813	06AUG96	07	10.00	ND	05	10.00	ND		
TETRACHLOROETHENE	127-18-4	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
TETRACHLOROETHENE	127-18-4	10.00	4813	08AUG96	07	10.00	ND	05	10.00	ND	13.52	34.25
TETRACHLOROETHENE	127-18-4	10.00	4814A	16SEP96	09	140.16	NC	07	1,783.70	NC		
TETRACHLOROETHENE	127-18-4	10.00	4814A	17SEP96				07	773.50	NC		
TETRACHLOROETHENE	127-18-4	10.00	4814A	18SEP96	09	717.57	NC	07	1,750.76	NC		
TETRACHLOROETHENE	127-18-4	10.00	4814A	19SEP96	09	108.54	NC	07	1,119.53	NC		
TETRACHLOROETHENE	127-18-4	10.00	4814A	20SEP96	09	155.10	NC	07	687.62	NC	280.34	1,223.02

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TETRACHLOROETHENE	127-18-4	10.00	4814B	16SEP96	10	1,037.60	NC	08	2,747.00	NC		
TETRACHLOROETHENE	127-18-4	10.00	4814B	17SEP96				08	2,810.50	NC		
TETRACHLOROETHENE	127-18-4	10.00	4814B	18SEP96	10	486.42	NC	08	764.33	NC		
TETRACHLOROETHENE	127-18-4	10.00	4814B	19SEP96	10	487.68	NC	08	4,140.00	NC	670.57	2,615.46
TOLUENE	108-88-3	10.00	4813	04AUG96	07	2,018.00	NC	05	1,410.15	NC		
TOLUENE	108-88-3	10.00	4813	05AUG96	07	4,348.00	NC	05	3,802.00	NC		
TOLUENE	108-88-3	10.00	4813	06AUG96	07	3,500.00	NC	05	1,927.20	NC		
TOLUENE	108-88-3	10.00	4813	07AUG96	07	2,950.00	NC	05	3,624.00	NC		
TOLUENE	108-88-3	10.00	4813	08AUG96	07	3,383.00	NC	05	9,391.00	NC	3,239.80	4,030.87
TOLUENE	108-88-3	10.00	4814A	16SEP96	09	3,111.00	NC	07	9,633.00	NC		
TOLUENE	108-88-3	10.00	4814A	17SEP96				07	8,192.00	NC		
TOLUENE	108-88-3	10.00	4814A	18SEP96	09	4,961.20	NC	07	14,831.00	NC		
TOLUENE	108-88-3	10.00	4814A	19SEP96	09	2,622.60	NC	07	4,367.60	NC		
TOLUENE	108-88-3	10.00	4814A	20SEP96	09	3,757.90	NC	07	10,013.50	NC	3,613.18	9,407.42
TOLUENE	108-88-3	10.00	4814B	16SEP96	10	9,432.00	NC	08	17,007.00	NC		
TOLUENE	108-88-3	10.00	4814B	17SEP96				08	18,412.50	NC		
TOLUENE	108-88-3	10.00	4814B	18SEP96	10	8,245.15	NC	08	13,071.10	NC		
TOLUENE	108-88-3	10.00	4814B	19SEP96	10	8,111.40	NC	08	41,507.00	NC	8,596.18	22,499.40
TOLUENE	108-88-3	10.00	651	10JUL97	01	1,500.00	NC				1,500.00	.
TRICHLOROETHENE	79-01-6	10.00	4813	04AUG96	07	10.00	ND	05	10.00	ND		
TRICHLOROETHENE	79-01-6	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
TRICHLOROETHENE	79-01-6	10.00	4813	06AUG96	07	10.00	ND	05	10.00	ND		
TRICHLOROETHENE	79-01-6	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
TRICHLOROETHENE	79-01-6	10.00	4813	08AUG96	07	10.00	ND	05	10.00	ND	10.00	10.00
TRICHLOROETHENE	79-01-6	10.00	4814A	16SEP96	09	145.35	NC	07	428.20	NC		
TRICHLOROETHENE	79-01-6	10.00	4814A	17SEP96				07	511.90	NC		
TRICHLOROETHENE	79-01-6	10.00	4814A	18SEP96	09	270.79	NC	07	968.14	NC		
TRICHLOROETHENE	79-01-6	10.00	4814A	19SEP96	09	170.96	NC	07	490.89	NC		
TRICHLOROETHENE	79-01-6	10.00	4814A	20SEP96	09	191.29	NC	07	396.29	NC	194.60	559.08

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
TRICHLOROETHENE	79-01-6	10.00	4814B	16SEP96	10	454.90	NC	08	983.00	NC		
TRICHLOROETHENE	79-01-6	10.00	4814B	17SEP96				08	784.40	NC		
TRICHLOROETHENE	79-01-6	10.00	4814B	18SEP96	10	1,103.17	NC	08	1,533.16	NC		
TRICHLOROETHENE	79-01-6	10.00	4814B	19SEP96	10	1,875.83	NC	08	7,125.30	NC	1,144.63	2,606.47
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4813	04AUG96	07	99.00	ND	05	198.00	ND		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4813	05AUG96	07	5,499.50	NC	05	99.00	ND		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4813	06AUG96	07	11,663.00	NC	05	198.00	ND		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4813	07AUG96	07	35,270.00	NC	05	396.00	ND		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4813	08AUG96	07	103,984.00	NC	05	47,535.00	NC	31,303.10	9,685.20
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814A	16SEP96	09	8,054.90	NC	07	2,301.04	NC		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814A	17SEP96				07	6,382.55	NC		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814A	18SEP96	09	148.50	ND	07	1,980.00	ND		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814A	19SEP96	09	198.00	ND	07	9,900.00	ND		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814A	20SEP96	09	198.00	ND	07	2,970.00	ND	2,149.85	4,706.72
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814B	16SEP96	10	99.00	ND	08	5,187.26	NC		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814B	17SEP96				08	1,495.25	NC		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814B	18SEP96	10	346.50	ND	08	990.00	ND		
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	4814B	19SEP96	10	990.00	ND	08	3,960.00	ND	478.50	2,908.13
TRIPROPYLENEGLYCOL METHYL ET	20324-33-8	99.00	651	03MAR98				01	6,428.70	NC	.	6,428.70
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4813	04AUG96	07	33.76	NC	05	10.23	NC		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4813	05AUG96	07	24.78	NC	05	10.00	ND		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4813	06AUG96	07	19.03	NC	05	10.41	NC		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4813	08AUG96	07	15.72	NC	05	10.00	ND	20.66	10.13
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814A	16SEP96	09	105.69	NC	07	324.20	NC		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814A	17SEP96				07	444.80	NC		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814A	18SEP96	09	136.41	NC	07	544.84	NC		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814A	19SEP96	09	73.82	NC	07	146.84	NC		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814A	20SEP96	09	113.26	NC	07	194.20	NC	107.30	330.98
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814B	16SEP96	10	192.50	NC	08	320.40	NC		

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814B	17SEP96				08	592.70	NC		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814B	18SEP96	10	263.14	NC	08	356.34	NC		
1,1,1-TRICHLOROETHANE	71-55-6	10.00	4814B	19SEP96	10	199.17	NC	08	200.00	NC	218.27	367.36
1,1-DICHLOROETHENE	75-35-4	10.00	4813	04AUG96	07	10.00	ND	05	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4813	06AUG96	07	10.00	ND	05	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4813	08AUG96	07	10.00	ND	05	10.00	ND	10.00	10.00
1,1-DICHLOROETHENE	75-35-4	10.00	4814A	16SEP96	09	10.00	ND	07	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4814A	17SEP96				07	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4814A	18SEP96	09	73.58	NC	07	274.96	NC		
1,1-DICHLOROETHENE	75-35-4	10.00	4814A	19SEP96	09	54.94	NC	07	101.34	NC		
1,1-DICHLOROETHENE	75-35-4	10.00	4814A	20SEP96	09	98.13	NC	07	163.73	NC	59.16	112.01
1,1-DICHLOROETHENE	75-35-4	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
1,1-DICHLOROETHENE	75-35-4	10.00	4814B	17SEP96				08	10.57	NC		
1,1-DICHLOROETHENE	75-35-4	10.00	4814B	18SEP96	10	484.76	NC	08	754.45	NC		
1,1-DICHLOROETHENE	75-35-4	10.00	4814B	19SEP96	10	644.65	NC	08	1,967.90	NC	379.80	685.73
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814A	16SEP96	09	187.09	NC	07	2,119.00	NC		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814A	17SEP96				07	4,834.50	NC		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814A	18SEP96	09	105.31	NC	07	8,155.60	NC		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814A	19SEP96	09	20.00	ND	07	18,899.10	NC		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814A	20SEP96	09	207.90	NC	07	4,736.61	NC	130.07	7,748.96
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814B	16SEP96	10	179.50	NC	08	6,272.32	NC		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814B	17SEP96				08	359.15	NC		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814B	18SEP96	10	35.00	ND	08	440.26	NC		
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	104.83	1,867.93

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
1,2,4-TRICHLOROBENZENE	120-82-1	10.00	651	03MAR98				01	20.00	ND	.	20.00
1,2-DICHLOROBENZENE	95-50-1	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
1,2-DICHLOROBENZENE	95-50-1	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
1,2-DICHLOROBENZENE	95-50-1	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
1,2-DICHLOROBENZENE	95-50-1	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
1,2-DICHLOROBENZENE	95-50-1	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
1,2-DICHLOROBENZENE	95-50-1	10.00	4814A	16SEP96	09	29.58	NC	07	180.70	NC		
1,2-DICHLOROBENZENE	95-50-1	10.00	4814A	17SEP96				07	301.75	NC		
1,2-DICHLOROBENZENE	95-50-1	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
1,2-DICHLOROBENZENE	95-50-1	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
1,2-DICHLOROBENZENE	95-50-1	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	21.15	396.49
1,2-DICHLOROBENZENE	95-50-1	10.00	4814B	16SEP96	10	10.00	ND	08	4,185.62	NC		
1,2-DICHLOROBENZENE	95-50-1	10.00	4814B	17SEP96				08	170.96	NC		
1,2-DICHLOROBENZENE	95-50-1	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
1,2-DICHLOROBENZENE	95-50-1	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	1,214.14
1,2-DICHLOROBENZENE	95-50-1	10.00	651	03MAR98				01	20.00	ND	.	20.00
1,2-DICHLOROETHANE	107-06-2	10.00	4813	04AUG96	07	10.00	ND	05	10.00	ND		
1,2-DICHLOROETHANE	107-06-2	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
1,2-DICHLOROETHANE	107-06-2	10.00	4813	06AUG96	07	10.00	ND	05	10.00	ND		
1,2-DICHLOROETHANE	107-06-2	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
1,2-DICHLOROETHANE	107-06-2	10.00	4813	08AUG96	07	10.00	ND	05	10.00	ND	10.00	10.00
1,2-DICHLOROETHANE	107-06-2	10.00	4814A	16SEP96	09	161.60	NC	07	223.30	NC		
1,2-DICHLOROETHANE	107-06-2	10.00	4814A	17SEP96				07	376.71	NC		
1,2-DICHLOROETHANE	107-06-2	10.00	4814A	18SEP96	09	233.15	NC	07	349.54	NC		
1,2-DICHLOROETHANE	107-06-2	10.00	4814A	19SEP96	09	165.42	NC	07	147.33	NC		
1,2-DICHLOROETHANE	107-06-2	10.00	4814A	20SEP96	09	182.51	NC	07	279.70	NC	185.67	275.31
1,2-DICHLOROETHANE	107-06-2	10.00	4814B	16SEP96	10	165.16	NC	08	137.04	NC		
1,2-DICHLOROETHANE	107-06-2	10.00	4814B	17SEP96				08	569.35	NC		
1,2-DICHLOROETHANE	107-06-2	10.00	4814B	18SEP96	10	566.13	NC	08	713.39	NC		

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

---------- Subcategory=Oils Option=9 ----------
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
1,2-DICHLOROETHANE	107-06-2	10.00	4814B	19SEP96	10	347.10	NC	08	200.00	NC	359.46	404.95
1,4-DICHLOROBENZENE	106-46-7	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
1,4-DICHLOROBENZENE	106-46-7	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
1,4-DICHLOROBENZENE	106-46-7	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
1,4-DICHLOROBENZENE	106-46-7	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
1,4-DICHLOROBENZENE	106-46-7	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
1,4-DICHLOROBENZENE	106-46-7	10.00	4814A	16SEP96	09	83.63	NC	07	622.70	NC		
1,4-DICHLOROBENZENE	106-46-7	10.00	4814A	17SEP96				07	949.90	NC		
1,4-DICHLOROBENZENE	106-46-7	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
1,4-DICHLOROBENZENE	106-46-7	10.00	4814A	19SEP96	09	20.00	ND	07	2,333.60	NC		
1,4-DICHLOROBENZENE	106-46-7	10.00	4814A	20SEP96	09	20.00	ND	07	1,472.82	NC	34.66	1,115.80
1,4-DICHLOROBENZENE	106-46-7	10.00	4814B	16SEP96	10	285.10	NC	08	1,261.98	NC		
1,4-DICHLOROBENZENE	106-46-7	10.00	4814B	17SEP96				08	454.35	NC		
1,4-DICHLOROBENZENE	106-46-7	10.00	4814B	18SEP96	10	35.00	ND	08	786.40	NC		
1,4-DICHLOROBENZENE	106-46-7	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	140.03	725.68
1,4-DICHLOROBENZENE	106-46-7	10.00	651	03MAR98				01	20.00	ND	.	20.00
1,4-DIOXANE	123-91-1	10.00	4813	04AUG96	07	10.00	ND	05	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4813	06AUG96	07	10.00	ND	05	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4813	07AUG96	07	10.00	ND	05	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4813	08AUG96	07	10.00	ND	05	10.00	ND	10.00	10.00
1,4-DIOXANE	123-91-1	10.00	4814A	16SEP96	09	10.00	ND	07	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4814A	17SEP96				07	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4814A	18SEP96	09	10.00	ND	07	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4814A	19SEP96	09	10.00	ND	07	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4814A	20SEP96	09	10.00	ND	07	10.00	ND	10.00	10.00
1,4-DIOXANE	123-91-1	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4814B	17SEP96				08	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4814B	18SEP96	10	10.00	ND	08	10.00	ND		
1,4-DIOXANE	123-91-1	10.00	4814B	19SEP96	10	10.00	ND	08	10.00	ND	10.00	10.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
1-METHYLFLUORENE	1730-37-6	10.00	4813	04AUG96	07	54.83	NC	05	136.41	NC		
1-METHYLFLUORENE	1730-37-6	10.00	4813	05AUG96	07	10.00	ND	05	42.06	NC		
1-METHYLFLUORENE	1730-37-6	10.00	4813	06AUG96	07	10.00	ND	05	1,066.00	NC		
1-METHYLFLUORENE	1730-37-6	10.00	4813	07AUG96	07	10.00	ND	05	1,103.00	NC		
1-METHYLFLUORENE	1730-37-6	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	18.97	477.49
1-METHYLFLUORENE	1730-37-6	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
1-METHYLFLUORENE	1730-37-6	10.00	4814A	17SEP96				07	111.35	NC		
1-METHYLFLUORENE	1730-37-6	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
1-METHYLFLUORENE	1730-37-6	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
1-METHYLFLUORENE	1730-37-6	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	326.27
1-METHYLFLUORENE	1730-37-6	10.00	4814B	16SEP96	10	10.00	ND	08	5,802.82	NC		
1-METHYLFLUORENE	1730-37-6	10.00	4814B	17SEP96				08	152.35	NC		
1-METHYLFLUORENE	1730-37-6	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
1-METHYLFLUORENE	1730-37-6	10.00	4814B	19SEP96	10	100.00	ND	08	877.72	NC	48.33	1,733.22
1-METHYLFLUORENE	1730-37-6	10.00	651	03MAR98				01	20.00	ND	.	20.00
1-METHYLPHENANTHRENE	832-69-9	10.00	4813	04AUG96	07	123.11	NC	05	230.97	NC		
1-METHYLPHENANTHRENE	832-69-9	10.00	4813	05AUG96	07	10.00	ND	05	95.91	NC		
1-METHYLPHENANTHRENE	832-69-9	10.00	4813	06AUG96	07	10.00	ND	05	7,111.00	NC		
1-METHYLPHENANTHRENE	832-69-9	10.00	4813	07AUG96	07	10.00	ND	05	1,247.00	NC		
1-METHYLPHENANTHRENE	832-69-9	10.00	4813	08AUG96	07	10.00	ND	05	1,805.10	NC	32.62	2,098.00
1-METHYLPHENANTHRENE	832-69-9	10.00	4814A	16SEP96	09	10.00	ND	07	91.72	NC		
1-METHYLPHENANTHRENE	832-69-9	10.00	4814A	17SEP96				07	70.00	ND		
1-METHYLPHENANTHRENE	832-69-9	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
1-METHYLPHENANTHRENE	832-69-9	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
1-METHYLPHENANTHRENE	832-69-9	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	332.34
1-METHYLPHENANTHRENE	832-69-9	10.00	4814B	16SEP96	10	10.00	ND	08	5,063.10	NC		
1-METHYLPHENANTHRENE	832-69-9	10.00	4814B	17SEP96				08	132.35	NC		
1-METHYLPHENANTHRENE	832-69-9	10.00	4814B	18SEP96	10	118.97	NC	08	454.15	NC		
1-METHYLPHENANTHRENE	832-69-9	10.00	4814B	19SEP96	10	100.00	ND	08	1,783.32	NC	76.32	1,858.23

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
1-METHYLPHENANTHRENE	832-69-9	10.00	651	03MAR98				01	186.72	NC	.	186.72
2,3-BENZOFLUORENE	243-17-4	10.00	4813	04AUG96	07	227.76	NC	05	367.00	NC		
2,3-BENZOFLUORENE	243-17-4	10.00	4813	05AUG96	07	17.13	NC	05	164.17	NC		
2,3-BENZOFLUORENE	243-17-4	10.00	4813	06AUG96	07	10.00	ND	05	608.00	NC		
2,3-BENZOFLUORENE	243-17-4	10.00	4813	07AUG96	07	10.00	ND	05	2,755.00	NC		
2,3-BENZOFLUORENE	243-17-4	10.00	4813	08AUG96	07	10.00	ND	05	161.80	NC	54.98	811.19
2,3-BENZOFLUORENE	243-17-4	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
2,3-BENZOFLUORENE	243-17-4	10.00	4814A	17SEP96				07	70.00	ND		
2,3-BENZOFLUORENE	243-17-4	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
2,3-BENZOFLUORENE	243-17-4	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
2,3-BENZOFLUORENE	243-17-4	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	318.00
2,3-BENZOFLUORENE	243-17-4	10.00	4814B	16SEP96	10	25.41	NC	08	461.22	NC		
2,3-BENZOFLUORENE	243-17-4	10.00	4814B	17SEP96				08	20.00	ND		
2,3-BENZOFLUORENE	243-17-4	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
2,3-BENZOFLUORENE	243-17-4	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	53.47	245.30
2,3-BENZOFLUORENE	243-17-4	10.00	651	03MAR98				01	20.00	ND	.	20.00
2,4-DIMETHYLPHENOL	105-67-9	10.00	4813	04AUG96	07	1,031.70	NC	05	1,310.95	NC		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4813	05AUG96	07	1,392.80	NC	05	807.50	NC		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4813	06AUG96	07	920.90	NC	05	2,171.00	NC		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4813	07AUG96	07	1,810.40	NC	05	1,415.00	NC		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4813	08AUG96	07	1,509.00	NC	05	40.00	ND	1,332.96	1,148.89
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814A	16SEP96	09	195.07	NC	07	20.00	ND		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814A	17SEP96				07	76.15	NC		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	62.52	319.23
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814B	16SEP96	10	165.10	NC	08	565.63	NC		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814B	17SEP96				08	20.00	ND		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
2,4-DIMETHYLPHENOL	105-67-9	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	100.03	271.41

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
2,4-DIMETHYLPHENOL	105-67-9	10.00	651	03MAR98				01	20.00	ND	.	20.00
2-BUTANONE	78-93-3	50.00	4813	04AUG96	07	1,971.00	NC	05	1,677.50	NC		
2-BUTANONE	78-93-3	50.00	4813	05AUG96	07	2,495.00	NC	05	2,045.50	NC		
2-BUTANONE	78-93-3	50.00	4813	06AUG96	07	2,536.80	NC	05	1,958.90	NC		
2-BUTANONE	78-93-3	50.00	4813	07AUG96	07	1,291.20	NC	05	568.00	NC		
2-BUTANONE	78-93-3	50.00	4813	08AUG96	07	922.20	NC	05	752.11	NC	1,843.24	1,400.40
2-BUTANONE	78-93-3	50.00	4814A	16SEP96	09	12,517.00	NC	07	9,409.50	NC		
2-BUTANONE	78-93-3	50.00	4814A	17SEP96				07	10,014.75	NC		
2-BUTANONE	78-93-3	50.00	4814A	18SEP96	09	14,239.75	NC	07	24,073.10	NC		
2-BUTANONE	78-93-3	50.00	4814A	19SEP96	09	10,974.10	NC	07	7,922.42	NC		
2-BUTANONE	78-93-3	50.00	4814A	20SEP96	09	7,830.93	NC	07	15,908.50	NC	11,390.45	13,465.65
2-BUTANONE	78-93-3	50.00	4814B	16SEP96	10	18,821.00	NC	08	16,941.00	NC		
2-BUTANONE	78-93-3	50.00	4814B	17SEP96				08	8,489.45	NC		
2-BUTANONE	78-93-3	50.00	4814B	18SEP96	10	22,391.35	NC	08	29,965.20	NC		
2-BUTANONE	78-93-3	50.00	4814B	19SEP96	10	32,832.90	NC	08	41,713.20	NC	24,681.75	24,277.21
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4813	04AUG96	07	10.00	ND	05	20.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4813	05AUG96	07	10.00	ND	05	10.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4813	06AUG96	07	10.00	ND	05	20.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4813	07AUG96	07	10.00	ND	05	40.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4813	08AUG96	07	10.00	ND	05	40.00	ND	10.00	26.00
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814A	17SEP96				07	70.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	318.00
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814B	17SEP96				08	20.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	132.50

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
2-ISOPROPYLNAPHTHALENE	2027-17-0	10.00	651	03MAR98				01	20.00	ND	.	20.00
2-METHYLNAPHTHALENE	91-57-6	10.00	4813	04AUG96	07	204.82	NC	05	486.92	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4813	05AUG96	07	127.04	NC	05	147.66	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4813	06AUG96	07	129.70	NC	05	1,309.60	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4813	07AUG96	07	10.00	ND	05	3,912.00	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4813	08AUG96	07	286.60	NC	05	1,997.80	NC	151.63	1,570.80
2-METHYLNAPHTHALENE	91-57-6	10.00	4814A	16SEP96	09	10.00	ND	07	245.78	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4814A	17SEP96				07	1,517.95	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4814A	18SEP96	09	15.00	ND	07	3,262.32	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4814A	19SEP96	09	242.06	NC	07	11,672.10	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4814A	20SEP96	09	375.25	NC	07	10,554.18	NC	160.58	5,450.47
2-METHYLNAPHTHALENE	91-57-6	10.00	4814B	16SEP96	10	565.10	NC	08	46,108.35	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4814B	17SEP96				08	2,236.10	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4814B	18SEP96	10	6,044.74	NC	08	3,768.78	NC		
2-METHYLNAPHTHALENE	91-57-6	10.00	4814B	19SEP96	10	2,148.52	NC	08	17,493.24	NC	2,919.45	17,401.62
2-METHYLNAPHTHALENE	91-57-6	10.00	651	03MAR98				01	3,259.30	NC	.	3,259.30
2-PROPANONE	67-64-1	50.00	4813	04AUG96	07	16,850.00	NC	05	9,921.90	NC		
2-PROPANONE	67-64-1	50.00	4813	05AUG96	07	19,953.00	NC	05	19,677.00	NC		
2-PROPANONE	67-64-1	50.00	4813	06AUG96	07	26,234.00	NC	05	22,446.00	NC		
2-PROPANONE	67-64-1	50.00	4813	07AUG96	07	21,557.00	NC	05	17,384.00	NC		
2-PROPANONE	67-64-1	50.00	4813	08AUG96	07	14,801.00	NC	05	8,999.70	NC	19,879.00	15,685.72
2-PROPANONE	67-64-1	50.00	4814A	16SEP96	09	78,550.00	NC	07	50.00	ND		
2-PROPANONE	67-64-1	50.00	4814A	17SEP96				07	54,524.00	NC		
2-PROPANONE	67-64-1	50.00	4814A	18SEP96	09	98,102.45	NC	07	128,750.00	NC		
2-PROPANONE	67-64-1	50.00	4814A	19SEP96	09	91,761.70	NC	07	98,965.40	NC		
2-PROPANONE	67-64-1	50.00	4814A	20SEP96	09	77,859.20	NC	07	100,000.00	NC	86,568.34	76,457.88
2-PROPANONE	67-64-1	50.00	4814B	16SEP96	10	129,610.00	NC	08	69,310.00	NC		
2-PROPANONE	67-64-1	50.00	4814B	17SEP96				08	50,852.00	NC		
2-PROPANONE	67-64-1	50.00	4814B	18SEP96	10	235,806.00	NC	08	292,399.00	NC		
2-PROPANONE	67-64-1	50.00	4814B	19SEP96	10	303,963.00	NC	08	306,491.00	NC	223,126.33	179,763.00

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4813	04AUG96	07	215.49	NC	05	375.71	NC		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4813	05AUG96	07	16.16	NC	05	114.04	NC		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4813	06AUG96	07	10.00	ND	05	506.00	NC		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4813	07AUG96	07	10.00	ND	05	2,762.00	NC		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4813	08AUG96	07	10.00	ND	05	428.30	NC	52.33	837.21
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814A	16SEP96	09	10.00	ND	07	20.00	ND		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814A	17SEP96				07	70.00	ND		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814A	18SEP96	09	15.00	ND	07	200.00	ND		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814A	19SEP96	09	20.00	ND	07	1,000.00	ND		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814A	20SEP96	09	20.00	ND	07	300.00	ND	16.25	318.00
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814B	17SEP96				08	20.00	ND		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814B	18SEP96	10	35.00	ND	08	100.00	ND		
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	4814B	19SEP96	10	100.00	ND	08	400.00	ND	48.33	132.50
3,6-DIMETHYLPHENANTHRENE	1576-67-6	10.00	651	03MAR98				01	20.00	ND	.	20.00
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4813	04AUG96	07	596.90	NC	05	1,221.05	NC		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4813	05AUG96	07	1,029.65	NC	05	1,257.80	NC		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4813	06AUG96	07	1,308.40	NC	05	1,570.10	NC		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4813	07AUG96	07	332.00	NC	05	460.00	NC		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4813	08AUG96	07	10.00	ND	05	10.00	ND	655.39	903.79
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814A	16SEP96	09	863.50	NC	07	1,128.90	NC		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814A	17SEP96				07	1,030.05	NC		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814A	18SEP96	09	541.22	NC	07	100.00	ND		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814A	19SEP96	09	684.84	NC	07	1,000.00	ND		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814A	20SEP96	09	100.00	ND	07	1,000.00	ND	547.39	851.79
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814B	16SEP96	10	10.00	ND	08	10.00	ND		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814B	17SEP96				08	10.00	ND		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814B	18SEP96	10	55.00	ND	08	10.00	ND		
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	4814B	19SEP96	10	100.00	ND	08	100.00	ND	55.00	32.50

Appendix C: Listing of Data used for the Percent Removal Test and Long Term Averages

Subcategory=Oils Option=9
(continued)

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
4-CHLORO-3-METHYLPHENOL	59-50-7	10.00	651	03MAR98				01	443.90	NC	.	443.90
4-METHYL-2-PENTANONE	108-10-1	50.00	4813	04AUG96	07	586.08	NC	05	664.41	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4813	05AUG96	07	1,507.73	NC	05	1,228.42	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4813	06AUG96	07	889.57	NC	05	627.18	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4813	07AUG96	07	611.44	NC	05	430.83	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4813	08AUG96	07	1,181.47	NC	05	2,238.88	NC	955.26	1,037.94
4-METHYL-2-PENTANONE	108-10-1	50.00	4814A	16SEP96	09	8,828.00	NC	07	20,489.00	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4814A	17SEP96				07	17,153.00	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4814A	18SEP96	09	5,262.31	NC	07	10,142.92	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4814A	19SEP96	09	7,026.06	NC	07	11,121.62	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4814A	20SEP96	09	15,168.14	NC	07	18,383.03	NC	9,071.13	15,457.91
4-METHYL-2-PENTANONE	108-10-1	50.00	4814B	16SEP96	10	8,258.00	NC	08	9,404.60	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4814B	17SEP96				08	15,807.50	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4814B	18SEP96	10	6,316.73	NC	08	5,965.35	NC		
4-METHYL-2-PENTANONE	108-10-1	50.00	4814B	19SEP96	10	5,299.88	NC	08	3,821.82	NC	6,624.87	8,749.82

Subcategory=Organics Option=4

Analyte Name	Cas_No	Baseline Value (ug/l)	Fac. ID	Sample Date	Effl Samp Pt	Effl Amount (ug/l)	Effl Meas Type	Infl Samp Pt(s)	Infl Amount (ug/l)	Infl Meas Type	Facility Effl Mean	Facility Infl Mean
AMMONIA AS NITROGEN	7664-41-7	50.00	1987	16JUL90	12	1,100,000.00	NC	07B	1,900,000.00	NC		
AMMONIA AS NITROGEN	7664-41-7	50.00	1987	17JUL90	12	1,100,000.00	NC					
AMMONIA AS NITROGEN	7664-41-7	50.00	1987	18JUL90	12	1,100,000.00	NC	07B	2,400,000.00	NC		
AMMONIA AS NITROGEN	7664-41-7	50.00	1987	19JUL90	12	1,000,000.00	NC	07B	880,000.00	NC		
AMMONIA AS NITROGEN	7664-41-7	50.00	1987	20JUL90	12	1,000,000.00	NC	07B	1,400,000.00	NC	1,060,000.00	1,645,000.00
BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	1987	16JUL90	12	5,200,000.00	NC	07B	5,800,000.00	NC		
BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	1987	17JUL90	12	400,000.00	NC					
BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	1987	18JUL90	12	4,000,000.00	NC	07B	7,550,000.00	NC		
BIOCHEMICAL OXYGEN DEMAND	C-003	2,000.00	1987	19JUL90	12	1,100,000.00	NC	07B	4,100,000.00	NC		

APPENDIX 12

BECKART ENVIRONMENTAL INC.'S LAB TESTING OF METAL-BEARING AND OILY WASTE

FAX MEMO

DATE: April 18, 2000

COMPANY: Beckart Environmental, Inc.

ATTN: Dan Fedrigon

FAX NO: 262-656-7699

FROM: Buddy Cox
JOHN S. COX & ASSOCIATES, INC.
PO BOX 856 / 418 JOHNSON STREET
PICKENS, SC 29671 PHONE: 864- 878-2045 FAX: 864- 878-8683

TOTAL PAGES SENT INCLUDING THIS PAGE: 5

Enclosed you will find the beaker test results done by Mitch on the Sani-Tech samples. In the first set of samples, the bilge water ended up being straight oil off the tank top. The J. W Metals m sample varied in solids content and concentration for each set of samples. I used his testing procedure and treated a combined sample (80% bilge water; 20% J. Metals water). I am having the permit parameters run on the combined treated sample....oil/grease, metals, CN on each individual raw sample.....and metals on the treated J Metals m sample (1:1 dilution). Results will be back in two weeks.

Need a budgetary proposal worked up for this project based on a present treatment volume of 1.0 MG/year and a future volume of 1.5 MG/year (in 2 years). Based on 1.5 MG/year and 50 weeks treatment, they will treat 30,000 gallons/week. Mitch feels that a batch filter press system is preferred due to the variability of the wastewater hauled in. At the present time, bilge water and Metals vater make up the majority of volume. The enclosed rough flow schematic gives you a preliminary idea as to how we will have an oil/water separator system ahead of a series of E. Q. tanks. Separate wastewaters will be stored in separate tanks and then combined in the Beckart treatment tank. Filter press sizing is up for discussion.....however if a 10% wet sludge volume is used for the combined wastewater, a 10,000 gallon batch tank will produce 1,000 gallons wet sludge. If the worst Metals n wastewater is diluted 1:1 (25% to 12.5%) and treated, a 10,000 gallon batch tank will produce 1250 gallons wet sludge. Recommendation on size batch system and press? Give me a call to discuss.

Regards,

Buddy

1ST SET OF SAMPLE

BECKART ENVIRONMENTAL, INC.

BECKART ENVIRONMENTAL LAB REPORT(tm)

(for internal use only)

Date Received:	3-15-2000	Sample #:	00181-00182
Date Treated:	3-16-2000	Doc. Name:	San1SC30
	Preliminary Report		
Sales Engineer:	Willy Blanco/Dan Fedrigon		
Sales Rep.:	Buddy Cox		
	Following results found based on the sample received.		
Client:	Sani-Tech		
Location:	Charleston, SC		
Reason for testing:	Feasibility study for Capital Sales: New Sample		
Industry / Type of wastewater:	Hauls wastewater and cleans out tank systems, bilge water Samples are from two sources.		
Volume:	Requesting 100 gal/min continuous. But with diverse nature of wastewater batch system may be better option.		
Discharge Requirements:			
Appearance:	#00181 - Bilge water; black Init pH 7.2. Sample was almost completely all free oil. Floated on water. Could not treat. Buddy will see if sample was taken from top of tank and send another sample if it was. BILGE WATER #00182 Metals Black with light oil film on top. Init. pH 2.8		
Initial pH:			

CHEMISTRY REQUIRED FOR 100 ML SAMPLE

Dilution Required: Sample # 00182 - no dilution

Chemical used-	*Volume(ml) per 100ml sample*	*pH*	*COMMENTS*
Polyal 201	0.25	2.2	
Hydrated lime @ 10%*	1.75	5.9	
Polymer B-8 @ 0.4%	1.5		
Final pH	5.9		
Appearance of Treated Water:	Clear and colorless. **Clarity 9.75		
Testing on effluent			
% Sludge Generation (by volume):	11% wet sludge as filtered. Settles well. Did not float even with Alka Seltzer.		

Comments:

*Cloudy effluent when caustic is used.

** Clarity is based on a 0 to 10 scale. 0 represents opaque and 10 represents completely clear.

Post-It® Fax Note 7671	Date 3-21-00	# of pages ▶ 1
To Buddy	From Mitch	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

2ND SET OF SAMPLES

BECKART ENVIRONMENTAL, INC.

BECKART ENVIRONMENTAL LAB REPORT(tm)

(for internal use only)

Date Received:	3-29-2000	Sample #:	00199-00200
Date Treated:	3-29/30-2000	Doc. Name:	San2SC30
	Revised 3-29-00		
Sales Engineer:	Willy Blanco/Dan Fedrigon		
Sales Rep.:	Buddy Cox		
	Following results found based on the sample received.		
Client:	Sani-Tech		
Location:	Charleston, SC		
Reason for testing:	Feasibility study for Capital Sales: 2nd sample Metals a; 3rd sample Bilge water		
Industry / Type of wastewater:	Hauls wastewater and cleans out tank systems, bilge water Samples are from two sources.		
Volume:	Requesting 100 gal/min continuous. But with diverse nature of wastewater batch system may be better option.		
Discharge Requirements:	Parameter / Limit (mg/l)	Parameter / Limit (mg/l)	
	TTO 2.13	O&G 100	
	Chromium 0.15	Copper 0.075	
	Arsenic 0.075	Lead 0.4	
	Nickel 0.4	Zinc 0.4	
	Cyanide 0.07		
Appearance:	#00199 - Bilge water; yellowish-gold color with particles. Slight oil film on top. Init. pH 7.1 #00200 m;		
Initial pH:			

CHEMISTRY REQUIRED FOR 100 ML SAMPLE

Dilution Required: Sample # 00199 - no dilution — BILGE WATER

Chemical used-	Total Volume Per 100ml Sample	pH	Comments
Polyal 201	0.15	4.9	
Hydrated lime @ 10%	0.5	7.8	
Polymer B-40 @ 0.4%	0.5		
Final pH	7.8		
Appearance of Treated Water:	Clear with very light yellow tint. *Clarity 9.75		
Testing on effluent			
% Sludge Generation (by volume):	4% wet sludge as filtered.		

Comments:

Effluent set overnight and oil floated to surface of liquid. I filtered this effluent through DE. Raw sample also showed oil floating on top after setting overnight.

Issued By: Naomi Levy

Approved By: Tom Fedrigon

Page

Post-it® Fax Note 7671	Date 4-13-00	# of pages ▸ 2
To Buddy Cox	From Mitch	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

Sani-Tech
Charleston, SC
Samples # 00199-00200

2ND SET OF SAMPLES

CHEMISTRY REQUIRED FOR 100 ML SAMPLE			
Dilution Required: Sample # 00200 - no dilution			
Chemical used-	Volume ml per 100ml sample	pH	COMMENTS
Polyal 201	0.25	3.2	
Hydrated lime @ 10%	0.95	8.0	
Polymer B-40 @ 0.4%	1.00		
Final pH	8.0		
Appearance of Treated Water:	Slight bleed-through of fines. Precoat recommended.		
Testing on effluent			
% Sludge Generation (by volume):	25% wet sludge as filtered		

— J.W. ALUMINUM

Comments:

* Clarity is based on a 0 to 10 scale. 0 represents opaque and 10 represents completely clear.

APPENDIX 13

JOHN S. COX & ASSOCIATES, INC. LAB TESTING OF METAL-BEARING AND OILY WASTE

JSC

John S. Cox and Associates, Inc.

P.O. Box 856, 418 Johnson St., Pickens, SC 29671 • (864) 878-2045 • FAX (864) 878-8683

May 18, 2000

Mr. Paul Goodsell
Sani-Tech Environmental
Post Office Box 71619
Charleston, South Carolina 29415

Dear Paul:

Enclosed you will find the official test results on the samples analyzed by Commonwealth Laboratories. The sample numbers correspond to the following samples taken to the lab:

Sample #	Description
00-19-1492	Raw wastewater from . **Metal Bearing**
00-19-1493	Raw wastewater - bilge water
00-19-1494	Combined treated sample - physical/chemical treatment
00-19-1495	**Metal Bearing** sample treated

The combined treated sample (00-19-1494) will be the wastewater discharged to the City sewer after treatment. The following is a summary of the main parameters compared to permit limits for a local haul & treat facility in the area:

Parameter	Combined treated	Permit limit (assumed)
Oil & Grease	51.0	100.0
Chromium	<0.005	0.15
Copper	0.00975	0.075
Arsenic	<0.005	0.075
Lead	<0.005	0.40
Nickel	0.0492	0.40
Zinc	0.0348	0.40
Cyanide	<0.01	0.07
Volatiles		
Benzene	0.00806	
Ethyl benzene	0.0373	
Toluene	0.049	

Note: concentration in mg/l

I have listed only the volatiles that showed any level of concentration: benzene, ethyl benzene, toluene. These parameters are listed out in the lab report as ug/l (micro-grams/liter) and not mg/l. If these levels are too high for discharge to the City, we will install an air stripper and/or carbon unit to polish off the volatiles.

Based upon this treatability information, I feel that installation of the Beckart system with a polishing step will provide discharge concentrations well below the City's limits. Please review and give me a call at 864-878-2045 should you have any questions.

Very truly yours,
JOHN S. COX AND ASSOCIATES, INC.

John. S. Cox, P.E.
President

COMMONWEALTH LABORATORIES OF S.C., Inc.

P.O. BOX 16387
209 WEST ANTRIM DRIVE
GREENVILLE, SOUTH CAROLINA 29606-6387

TELEPHONE: 864-271-3256
FAX: 864-235-8340

South Carolina
Identification No. 23101

CERTIFICATE OF ANALYSIS

Page 3
John S. Cox & Associates, Inc.
Sample No: 00-19-1494

Parameter	Result	Date/Time/Analyst	Method Reference
*Metals		4/21/00 2258 KAR	200.7
Arsenic	<0.005		
Chromium	<0.005		
Copper	0.00975		
Lead	<0.005		
Nickel	0.0492		
Zinc	0.0348		
Oil & Grease	51	5/01/00 1035 KB	413.1
Cyanide	<0.01	4/19/00 1230 BH	335.2
*Appendix IX Acid Compounds, ug/l		4/22/00 1705 LOF	625
Dilution Factor: 10			
2,4,6-Trichlorophenol	<700		
2,4-Dichlorophenol	<700		
2,4-Dimethylphenol	<700		
2,4-Dinitrophenol	<1400		
2,4-Dinitrotoluene	<700		
2-Chlorophenol	<700		
2-Nitrophenol	<700		
4,6-Dinitro-2-methylphenol	<700		
4-Nitrophenol	<700		
4-chloro-3-methyl phenol	<700		
Pentachlorophenol	<700		
Phenol	<700		
*Appendix IX Base/Neutral Compounds, ug/l		4/22/00 1705 LOF	625
1,2,4-Trichlorobenzene	<700		
1,2-Dichlorobenzene	<700		
1,2-Diphenylhydrazine	<700		
1,3-Dichlorobenzene	<700		
1,4-Dichlorobenzene	<700		
2,4,6-Trichlorophenol	<700		

Continued

COMMONWEALTH LABORATORIES OF S.C., Inc.

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South Carolina
Identification No. 23101

CERTIFICATE OF ANALYSIS

John S. Cox & Associates, Inc.
Sample No: 00-19-1494

Parameter	Result	Date/Time/Analyst	Method Reference
*Appendix IX Base/Neutral Compounds, ug/l		4/22/00 1705 LOF	625
2,6-Dinitrotoluene	<700		
2-Chloronaphthalene	<70.0		
3,3'-Dichlorobenzidine	<700		
4-Bromophenyl phenyl ether	<700		
4-Chlorophenyl phenyl ether	<700		
Acenaphthene	<70.0		
Acenaphthylene	<70.0		
Anthracene	<70.0		
Benzo (a) anthracene	<70.0		
Benzo (a) pyrene	<70.0		
Benzo (b) fluoranthene	<70.0		
Benzo(ghi) perylene	<70.0		
Benzo (k) fluoranthene	<70.0		
Butyl benzyl phthalate	<700		
Chrysene	<70.0		
Di-n-butyl phthalate	<700		
Di-n-octyl phthalate	<700		
Dibenzo (a,h)anthracene	<70.0		
Dibenzofuran	<700		
Diethyl phthalate	<700		
Dimethyl phthalate	<700		
Diphenylamine	<700		
Fluoranthene	<70.0		
Fluorene	<70.0		
Hexachlorobenzene	<700		
Hexachlorobutadiene	<700		
Hexachlorocyclopentadiene	<700		
Hexachloroethane	<700		
Indeno (1,2,3-c,d)pyrene	<70.0		
Isophorone	<700		
N-Nitrosodimethylamine	<700		

Continued

COMMONWEALTH LABORATORIES OF S.C., Inc.

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South Carolina
Identification No. 23101

CERTIFICATE OF ANALYSIS

John S. Cox & Associates, Inc.
Sample No: 00-19-1494

Parameter	Result	Date/Time/Analyst	Method Reference
*Appendix IX Base/Neutral Compounds, ug/l		4/22/00 1705 LOF	625
Naphthalene	<70.0		
Nitrobenzene	<700		
Phenanthrene	<70.0		
Pyrene	<70.0		
bis(2-Chloroethoxy)methane	<700		
bis(2-Chloroethyl) ether	<700		
bis(2-Ethylhexyl)phthalate	<70.0		
bis 2-chloroisopropyl ether	<700		
benzidine	<3500		
*TTO Volatiles, ug/l		4/26/00 0308 JEB	624
1,1,1-Trichloroethane	<2.00		
1,1,2,2-Tetrachloroethane	<2.00		
1,1,2-Trichloroethane	<2.00		
1,1-Dichloroethane	<2.00		
1,2-Dichloroethane	<2.00		
2-Chloroethylvinyl ether	<10.0		
Acrolein	<20.0		
Acrylonitrile	<20.0		
Benzene	8.06		
Bromodichloromethane	<2.00		
Bromoform	<2.00		
Bromomethane	<2.00		
Carbon Tetrachloride	<2.00		
Chlorobenzene	<2.00		
Chloroethane	<2.00		
Chloroform	<2.00		
Chloromethane	<2.00		
Dichlorobromomethane	<2.00		
Ethylbenzene	37.3		
Methylene Chloride	<5.00		
Tetrachloroethylene	<2.00		
1,1-Dichloroethylene	<2.00		
1,2-Dichloropropane	<2.00		

COMMONWEALTH LABORATORIES OF S.C., Inc.

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FAX: 864-235-8340

South Carolina
Identification No. 23101

CERTIFICATE OF ANALYSIS

John S. Cox & Associates, Inc.

Sample No: 00-19-1494

Parameter	Result	Date/Time/Analyst	Method Reference
*Appendix IX Base/Neutral Compounds, ug/l		4/22/00 1705 LOF	625
Toluene	49.0		
Trichloroethylene	<2.00		
Vinyl chloride	<2.00		
cis-1,3-Dichloropropylene	<2.00		
trans-1,2-Dichloroethylene	<2.00		
trans-1,3-Dichloropropylene	<2.00		

Sample Markings

Location:	Sani Tech #3
Date:	4/17/00
Time:	Not Received
Collected By:	Not Received
Type Sample:	Not Received

COMMONWEALTH LABORATORIES OF S.C., Inc.

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GREENVILLE, SOUTH CAROLINA 29606-6387

TELEPHONE: 864-271-3256
FAX: 864-235-8340

South Carolina
Identification No. 23101

CERTIFICATE OF ANALYSIS

John S. Cox & Associates, Inc.

Sample No: 00-19-1495

Parameter	Result	Date/Time/Analyst	Method Reference
*Metals		4/21/00 2304 KAR	200.7
Arsenic	0.00534		
Chromium	<0.005		
Copper	0.0646		
Lead	<0.005		
Nickel	0.0338		
Zinc	0.00896		

Sample Markings

Location:	Sani Tech #4
Date:	4/17/00
Time:	Not Received
Collected by:	Not Received
Type Sample:	Not Received

Results are in mg/l, unless otherwise stated. Holding times comply with 40 CFR Part 136.

*Outside Laboratory Certification No. 10120

[1] – Diluted 1:2 due to nature of sample.

Respectfully submitted,

Cindy Wright

APPENDIX 14

WASTE/MATERIAL PROFILE SHEET

SANI-TECH ENVIRONMENT, LLC

Waste/Material Profile **Profile Number:** _____

CUSTOMER INFORMATION

Generator Name: _____

Address: _____

_____

Phone: _____ Contact/Title: _____

Total estimated Gallons: _____ Type and Number of containers: _____

WASTE DESCRIPTION

Flash Point: _____ Single Phased: _____ Phenolics (ppm): _____ Physical State: _____

PH: _____ Odor: _____ % Free Liquids: _____ % Solids: _____

Reactive Sulfides (ppm) _____ Cyanides (ppm): _____ Color: _____

Process of Waste Generation: _____

_____

HAZARDOUS CHARACTERISTICS

	Total (ppm)	TCLP (ppm) as requested		Total (ppm)	TCLP (ppm)
Arsenic			PCB		
Barium			THP		
Cadmium			BTEX		
Chromium			Benzene		
Lead			TOX		
Mercury					
Selenium					
Silver					
Chromium +6					

I certify that, to the best of my knowledge, the information herein presented is true and accurate and that I am an authorized representative of the generator of the waste/material. I also certify by the best of my knowledge and ability to determine that the waste/material listed above is non-hazardous as defined by all state, local and federal regulations.

_____ _____

Certified Signature Date

APPENDIX 15

CWT REGULATORY COMPLIANCE PLAN[1]

SANI-TECH ENVIRONMENT, INC.

EPA has developed different limitations and standards for the CWT operations depending on the type of waste received for treatment or recovery. EPA has determined that there are four subcategories appropriate for the CWT industry:

Subcategory A: Facilities that treat or recover metal from metal-bearing waste, wastewater, or used material received from off-site (``metals subcategory");

Subcategory B: Facilities that treat or recover oil from oily waste, wastewater, or used material received from off-site (``oils subcategory");

Subcategory C: Facilities that treat or recover organics from organic waste, wastewater, or used material received from off-site (``organics subcategory"); and

Subcategory D: Facilities that treat or recover some combination of metal-bearing, oily, or organic waste, wastewater, or used material received from off-site ("multiple wastestream subcategory").

The following waste streams are planned for acceptance by Sani-Tech.

Metals Subcategory:
Air pollution control blow down water and sludges
Cleaning, rinsing, and surface preparation solutions from electroplating or phosphating operations
Vibratory deburring wastewater
Alkaline and acid solutions used to clean metal parts or equipment

Oils Subcategory:
Used oils
Oil-water emulsions or mixtures
Lubricants
Coolants
Contaminated groundwater clean-up from petroleum sources
Used petroleum products
Oil spill clean-up
Bilge water
Rinse/wash waters from petroleum sources
Interceptor wastes
Off-specification fuels
Underground storage remediation waste
Tank clean-out from petroleum or oily sources
Non-contact used glycols
Aqueous and oil mixtures from parts cleaning operations

[1] Excerpts taken from the Federal Register dated 12/20/00 (40 CFR 437-Final CWT Regulations.) Page 81267.

Wastewater from oil bearing paint washes

Organics Subcategory:

Contaminated groundwater clean-up from non-petroleum sources
Still bottoms
Wastewater from paint washes
Wastewater from adhesives and/or epoxies formulation
Tank clean-out from organic, non-petroleum sources

Sani-Tech plans to process both Metals Subcategory and Oils Subcategory wastewaters via Beckart's Batch/Filter Press Wastewater Treatment System (Beckart System). As for the five groups of (5) "Organics Subcategory" wastes, these raw wastewaters will be screened such that all receipts upon equalization and pH neutralization meet CWT and the local authority's (North Charleston Sewer District/NCSD) discharge specifications or, if not suitable for pretreatment at Sani-Tech, be received and stored for consolidation and shipping off site to another CWT facility for biological treatment.

When Sani-Tech receives the wastes listed above, the subcategory determination may be made solely from the above listings. If, however, the wastes are unknown or not listed above, the facility will use the following hierarchy to determine how to characterize the wastes it is treating, so as to identify the appropriate regulatory subcategory.

(1) If the waste receipt contains oil and grease at or in excess of 100 mg/L, the waste receipt will be classified in the oils subcategory;

(2) If the waste receipt contains oil and grease less than 100 mg/L, and has any of the pollutants listed below are in concentrations in excess of the values listed below, the waste receipt should be classified in the metals subcategory.

Cadmium: 0.2 mg/L
Chromium: 8.9 mg/L
Copper: 4.9 mg/L
Nickel: 37.5 mg/L

(3) If the waste receipt contains organic pollutants but oil and grease less than 100 mg/L, and does not have concentrations of cadmium, chromium, copper, or nickel above any of the values listed above, the waste receipts will typically be classified in the organics subcategory. However, there will be an exception for receipts that would be suitable for equalization and discharge to the NCSD via the Subcategory C discharge but for elevated concentrations of metals, metals amenable to treatment via the Beckart System. These receipts will be received into the Subcategory D system, pretreated and the resulting wastewater discharged accordingly.

Sani-Tech has made its estimate of the percentage of waste receipts expected in each subcategory. It will repeat this determination annually thereafter. In addition, it will revisit this determination when it alters its operation to accept wastes from another subcategory (or to no longer accept waste from a subcategory). At this time Sani-Tech will notify the NCSD. Sani-Tech will also revisit the subcategory determination whenever its permit is reissued, though this would not require complete characterization of a subsequent year's waste receipts if there were no indication that the make-up of the facility's receipts had significantly changed.

Subcategory D / Proposed Metal-Bearing and Oily Waste Treatment and Recovery Compliance Requirements[2]

As for metal-bearing and oils subcategory wastes, Sani-Tech will certify equivalent treatment and comply with the set of limitations or standards for the multiple waste stream Subcategory D/Metals-Bearing and Oily Waste. Sani-tech will submit an initial request to the NCSD certifying that their treatment train includes all applicable equivalent treatment systems. This initial certification would includes the applicable subcategories (i.e., metals and oils), a listing of and descriptions of the treatment technologies and operating conditions used to treat wastes in each subcategory, and the justification for making an equivalent treatment determination (see Sec. 437.40 of the final rule). In this certification it will show that the pretreatment system is demonstrated in literature, treatability tests, or self-monitoring data to remove a similar level of the appropriate pollutants as the applicable treatment technology selected as the basis for the applicable regulations.

Finally, Sani-Tech shall maintain on-site compliance paperwork. The on-site compliance paperwork will include information from the initial and periodic certifications, as well as: (1) The supporting documentation for any modifications that have been made to the treatment system; (2) a method for demonstrating that the treatment system is well operated and maintained; and (3) a discussion of the rationale for choosing the method of demonstration.
Proper operation and maintenance of a system includes a qualified person to operate the system, use of correct treatment chemicals in appropriate quantities, and operation of the system within the stated design parameters. This will include maintaining records on the temperature and pH, the chemicals added (including quantity), the duration of treatment, recycle ratio, and physical characteristics of the wastewater before and after treatment. Also, the facility could monitor for selected parameters for the purpose of demonstrating effective treatment. This will include analysis for silica-gel treated hexane extractable materials (SGT-HEM) as well as a combination of other pollutants.

Both NCSD and DHEC authorities have the authority at any time after issuing the construction permit to inspect the Sani-Tech facility to confirm that the listed practices are being employed, that the treatment system is well operated and maintained, and that the necessary paperwork provides sufficient justification for any modifications of these options. Also because of Sani-Tech designation as a multiple subcategory facility, DHEC or the NCSD may visit Sani-Tech to verify that Sani-Tech has the appropriate waste management program, i.e. the facility is identifying and segregating waste streams appropriately since segregation of similar waste streams is the first step in obtaining optimal mass removals of pollutants from industrial wastes and that the CWT facility is employing treatment technologies designed to treat all off-site metal-bearing and oily waste receipts effectively.

Sani-Tech will design and implement compliance monitoring programs for both the Subcategory D and Subcategory C discharges. These programs must be acceptable to DHEC and the NCSD and will not allow Sani-Tech to commingle these two waste streams prior to monitoring for compliance with each subcategory's limitations or standards.

Subcategory C / Proposed Organic Waste Storage and Discharge Requirements

Sani-Tech proposes to comply with Limitations or Standards for Subcategory C for any Organic Subcategory Waste it handles. Sani-Tech will identify and segregate these waste streams from the Subcategory D wastes at all times. Sani-Tech will not commingle Subcategory C with Subcategory D

[2] Excerpts taken from the Federal Register Dated 12/20/00 (40 CFR 437-Final CWT Regulations.) Pages 81267-81270. Also see CFR 437.47

waste prior to monitoring either treated stream for compliance with their respective limitations and standards.

APPENDIX 16

WASTE MANIFEST

SANI-TECH ENVIRONMENT, LLC

Non-Hazardous Wastewater Manifest

Number:

1. Generator's EPA ID# (if applicable): Waste ID Number:

2. Generator's Name and Mailing Address: Phone ( )

3. Agent of Generator and Mailing Address: Phone ( )

4. Transporter Company Name: Phone ( )

Truck & Trailer License Number:

5. Transporter U.S. EPA ID#:

6. Facility Name and Site Address: Sani-Tech Environment, LLC
2051 Bainbridge Ave.
Charleston, SC 29405
Phone (843) 744-0406

7. Facility U.S. EPA ID#:

8. U.S. DOT Desciption	Container No.	Container Type	Unit	Quantity
a. Non-Hazardous, non-regulated waste water				
Meter Start: Meter End: Total Gallons:				
b.				
Meter Start: Meter End: Total Gallons:				
c.				
Meter Start: Meter End: Total Gallons:				
d.				
Meter Start: Meter End: Total Gallons:				

12. Generator's Certification: I hereby declare that the contents of this consignment are not hazardous by definition or listing and are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina. I further certify that the contents of this consignment are as represented by the description contained on the Waste Profile Form previously submitted to and approved by the Designated Facility.

Printed/Typed Name: Signature: Date:

13. Transporter Acknowledgement of Receipt of Materials

Printed/Typed Name: Signature: Date:

14. Discrepancy Indication Space:

15. Facility Owner or Operator: Certification of Receipt of Materials

Printed/Typed Name: Signature: Date:

White - Facility Yellow - Transporter Pink - Generator

APPENDIX 17

PROCESS DESCRIPTION – BECKART TREATMENT SYSTEM

GENERAL DESCRIPTION:

The Beckart Environmental Batch Filter Press Wastewater Treatment System "separates" water-based waste into two disposable waste products. The first product is a clean water stream; the second product is a dry cake **"brick"** consisting of approximately 35% to 50% (by weight) waste solids.

The Beckart Environmental Batch Filter Press Wastewater Treatment System consists of the following: chemical treatment tank, a coagulant storage and metering assembly, a polymer storage and metering assembly, a pH adjustment chemical storage and metering assembly, a re-circulation/sludge transfer pump assembly, a filtrate holding tank assembly, a filtrate submersible pump assembly, an automated electrical control system, and a Beckart Environmental Hy-Pack® filter press assembly.

The Beckart Environmental Batch Filter Press Wastewater Treatment System may also contain the following options: an equalization tank assembly, an equalization tank to chemical treatment tank transfer pumping assembly, a clean water holding tank assembly and a sand filter.

The Beckart Environmental Batch Filter Press Wastewater Treatment System operates in the following manner to produce water waste products that can be disposed of in a Publicly Operated Treatment Works (P.O.T.W.) and a solid waste product that in most cases can be disposed of in a landfill. Wastewaters from the process are collected in either a wastewater sump or an equalization tank. The PLC controlled treatment system periodically transfers a fixed volume of wastewater into the chemical treatment tank. Treatment chemicals are then automatically added in a sequential fashion to the wastewater to separate selected contaminants from the wastewater. These selected contaminants coalesce into a floc, which is separable from the water. After the chemical treatment cycle, the contents of the treatment tank are filtered through the Hy-Pack® filter press to separate the floc from the water. The filtration process produces a clean water filtrate and a dry cake. The treated water is collected in a holding tank and is either retreated (sent back to the treatment tank) or pumped through a sand filter and discharged.

SANI-TECH ENVIRONMENTAL SYSTEM OPERATION:

WASTEWATER COLLECTION AND EQUALIZATION:

The wastewater will be collected in an equalization tank. In the equalization tank, an air sparge assembly will be constructed utilizing snap cap diffuser heads in two different straight line configurations at 12 inch (30 centimeter) centers which will be perpendicular to each other and intersect at the center of the equalization tank. Any free oil must be removed prior to the equalization tank.

BATCH TREATMENT PROCESS CYCLE:

The system operator will initiate a new treatment cycle whenever there is sufficient wastewater in the equalization tank to fill the chemical treatment tank and the operator has cleared the previous cycle. The "PLC" automatic operation begins the treatment cycle by operating the air sparge system. The air sparge system will mix the contents of the equalization tank before proceeding to fill the chemical treatment tank.

With the Beckart "PLC" controlled system, wastewater to be treated will automatically be transferred to the chemical treatment tank. The chemical treatment tank mixer and re-circulation/sludge transfer pump will then be activated. The chemical treatment process begins with the addition of coagulant to break the emulsion in the water. After the addition of coagulant the pH controller will add sufficient pH adjustment fluid (Lime slurry solution) to the contents of the chemical treatment tank to adjust the pH of the tank contents to the desired pH for discharge into the P.O.T.W. The Lime slurry solution addition adjusts the pH, absorbs the oil and grease in the wastewater and conditions the sludge for processing through the Hy-Pack® filter press. The ideal pH setting for the best flocculation will be determined at the start-up. A metal precipitant may be added, if necessary.

The last step in the chemical treatment process is the addition of polymer, which enlarges the floc formation for filtration.

FILTER PRESS PROCESS CYCLE

After the chemical treatment process is completed, the "PLC" automatic control system will arrange the valve positions of the three way ball valves to transfer the contents of the chemical treatment tank into the Hy-Pack® filter press. The re-circulation/sludge transfer pump will be activated, pumping the treated water containing the enlarged floc, through the Hy-Pack® filter press. The Hy-Pack® filter press will capture the floc complex and form a filter cake. The clean treated water will flow through the forming filter cake and pass through the filter cloth. The clean treated water will flow through the collection channels in the Hy-Pack® filter press and will be collected in a filtrate holding tank. A level controlled submersible effluent pump or centrifugal transfer pump will periodically empty the contents of the filtrate holding tank into the clean water tank. The water can then be transferred back to the treatment tank for re-treatment or pumped through a sand filter and discharged to the sewer.

The "PLC" automatic control system will sequence the operating air pressure to the re-circulation/sludge transfer pump to obtain the optimal fluid flow rate through the Hy-Pack® filter press. Beckart Environmental has developed a proprietary fluid flow control scheme to minimize the passage of floc particles through the filter cloths during the initial formation of a filter cake. After the initial filter cake layer has formed on the filter cloths the control scheme progressively increases the pump pressure to minimize the time required to process a batch of treated wastewater. The automatic control system senses when the Hy-Pack® filter press is full and indicates to the operator that the air dry out phase should be initiated. The automatic control system circulates air through the filter cake to minimize the moisture content of the cake. After the air dry out cycle is completed, the Hy-Pack® filter press is ready to be emptied. The operator opens the Hy-Pack® filter press and separates the Hy-Pack® filter plates. The filter cakes will fall off the filter cloths and into a sludge cart underneath the filter press.

APPENDIX 18

SEWER DESIGN FLOW CALCULATIONS

APPENDIX 18

SEWER DESIGN FLOW CALCULATIONS

CALCULATION WORKSHEET FOR DETERMINING DESIGN FLOW RATES
SANI-TECH ENVIRONMENT, LLC
CHARLESTON, SOUTH CAROLINA

Product:	Manning Formula
Process Class:	Flow in Closed Conduit
Reaction/Process Type:	NA
Equipment:	Gravity Sewer
Mimimum Cycle Time (Hrs):	NA

********* Calculation For Flow in Closed Conduits*********

Activity:	Design Full Flow in Existing Gravity Sewers
Emissions Calculation/Model Name:	Manning Formula
Emissions Calculation/Model Reference:	Standard Handbook of Engineering Calculations, Third Edition, 1994, Tyler G. Hicks
Emissions Calculation Formula:	$V_1 = \left(\frac{1.486\ R^{2/3} s^{1/2}}{n}\right)$ $F_1 = V_1 A \times \frac{7.48\ \text{gal}}{\text{ft}^3} \times \frac{60\ \text{sec}}{1\ \text{min}}$

Calculation Input Data:	4 Inch	6 Inch
Hydraulic radius(R), ft2:	0.083	0.125
Hydraulic gradient(s), ft drop/ft run:	0.0295	0.0100
Roughness coefficient for Cast Iron/Concrete Sewer (n), dimensionless	0.013	0.013
Area of sewer (A), ft2	0.087	0.196
Design Velocity and Flow Rate		
Sewer Velocity (V1), ft/sec:	3.74	2.86
Flow Rate (F1), gal/min:	147	252
Less allowance for sanitary for Sani-Tech employees, gpm	10	10
Less allowance for sanitary for former building 673 employees, gpm	0	20
Net allowance for proposed new wastewater discharge.	137	242

********* Calculation For Flow in Closed Conduits*********

Activity:	Determining Design Flow Rates for Process and Pretreatment Discharge System System
Emissions Calculation/Model Name:	Flow Rate Design Criteria
Emissions Calculation/Model Reference:	N/A
Emissions Calculation Formula:	N/A

	Pretreatment System Influent			
Process Discharges (Pretreatment System Influent)	Design System Volume (Gallon/Cycle)	System Cycle Rate (Minutes/Cycle	Average System Discharge Flow Rate* (gpm)	System Peak Discharge Rate* (gpm)
Subcategory D Discharge	7200	205	35	35
Subcategory C Discharge	10000	222	45	45
Total Process Discharge			80	80

* Process system design flow rate is based on a maximum flow rate of 35 gpm for the Subcategory D discharge through the sand filter and a maximum flow of 45 gpm via the Subcategory C Equalization Tank .

Date of Last Revision: 5/20/01
File No. SANI0101.APP18

Completed by J. D. Honeycutt, P.E.
Signature: Date: 5/18/01

APPENDIX 19

Equipment Listing – Raw Wastewater (Subcategory D and Subcategory C) Receipt, Free Oil Removal and Storage Systems

APPENDIX 19

GENERAL SPECIFICATIONS AND EQUIPMENT LISTING [1]

1.0 General

- The Base Flood Elevation for the facility is 12 feet[2]. The elevation of the floor of the proposed Beckart System is approximately 17 feet, five (5) feet above Base Blood Elevation but outside grades may approach this elevation. Any improvements at elevations more than four (4) feet below the level of the Beckart System floor, i.e. at elevation less than 1 foot above base flood elevation, should be suitable constructed to withstand flooding conditions.

- A weather durable sign, made to South Carolina Department of Health and Environmental (SCDHEC) specifications showing a twenty four (24) hour emergency telephone number, shall be mounted on the fence gate opposite the overhead door leading to the Beckart System.

- The process control system shall be of "fail-safe" design, i.e. any power failure can not result in a tank overflow or other foreseeable emergency situation.

2.0 Concrete

- All new concrete will be 3000 PSI compressive strength at 28 days. Portland cement to conform to ASTM Designation C150 or Type 1. Reinforcing write to conform to ASTM Designation A82. Reinforcing steel to conform to ASTM Designation A61, Grade 60 deformed. Horizontal joint sealer to be Gordox by W. R. Meadows Company or equivalent.

- Any existing concrete slabs to be used for pump and tank foundations will be inspected and plans, drawings, and records of construction viewed by the engineer to determine their suitability for use. Any portions determined not to be suitable by the engineer will be removed and replaced with suitable materials under the supervision of the engineer.

2.0 Piping

3.1 Exterior Process Piping

All exterior process piping to be Schedule 40 steel and will meet the requirements of ASTM A-53 or ASTM A-120. Fitting to be welded ASTM A-53 or ASTM A-120 or 150 lb minimum threaded made to ANSI B16.3 or equivalent.

---

[1] The equipment listing does not include the "Beckart System". The equipment for this system is listed in Drawing 12

[2] As referenced to the National Geodetic Vertical Datum of 1929. This reference is within a few tenths of Means Sea Level (MSL).

3.2 Exterior Process Piping

All exterior process piping to be Schedule 40 steel and will meet the requirements of ASTM A-53 or ASTM A-120. Fitting to be welded ASTM A-53 or ASTM A-120 or 150 lb minimum threaded made to ANSI B16.3 or equivalent

3.3 Water Supply Piping

Wall hydrants at present facility are supplied by minimum ¾ inch diameter pipe. Additional hydrants shall be installed with similar supply piping as required to provide adequate water for maintenance.

3.4 Sampling Piping

The arrangement and construction of the piping for compliance sampling testing shown in Drawing 6 should be approved by the North Charleston Sewer District (NCSD) prior to construction.

4.0 Valves

4.1 Exterior Process

- Threaded forged brass ball valves with Teflon seats and stem seals and Viton o-rings.
- Check valves shall be spring loaded of bronze construction with bronze or Buna seats.

4.2 Interior Process

- Ball valves for wastewater service shall be Chemtrol CPVC/Viton or equivalent .
- Check valves for wastewater service shall be spring loaded.

4.3 Water Supply

- Potable water supply to pretreatment facility shall be equipped with a South Carolina Department of Health and Environmental (SCDHEC) approved reduced pressure backflow preventer per South Carolina Regulation R.61.67.300.F.14.
- Wall hydrants (spigots) supplied with non-potable maintenance water shall be clearly marked non-potable (non-drinking) water.

5.0 Pumps

- Switch Box Pump: 3 inch cast iron double diaphragm with Buna diaphragms and Acetal ball checks. Design flow is 150 gpm at 40 feet of head. Wilden Model M15/WAAD/WF/WF/WF or approved equivalent.

- Subcategory D Transfer Pump: 3 inch cast iron double diaphragm with Buna diaphragms and Acetal ball checks. Design flow is 150 gpm at 40 feet of head. Wilden Model M15/AAAB/WF/WF/WF or approved equivalent.

- Portable Pump for Emptying Sumps: 1 1/2 inch aluminum double diaphragm with Buna diaphragms and Acetal ball checks. Design flow is 50 gpm at 10 feet of head. Wilden Model M2/OO/BN/BN/AP or approved equivalent.

6.0 Tanks

- Beckart System Equalization/Storage Tanks 1 & 2: Vertical tank of all welded steel construction suitable for storage and aeration of wastewater. Capacity->20,000 gallons.

- Beckart System Clean Water Tank: Vertical tank of all welded steel construction suitable for storage and aeration of wastewaters. Capacity->8,000 gallons.

- Organic Subcategory Equalization/Storage Tank: Vertical tank of all welded steel construction suitable for storage and aeration of wastewaters. Capacity->10,000 gallons.

- Waste Oil Storage Tank: Horizontal tank of all welded steel construction suitable for storage of oil. Capacity->15,000 gallons.

7.0 Instrumentation

- Treated Wastewater (Subcategory D and Subcategory C) Discharge Meters: 1 ½ inch Precision Model 180 PMX meters with rated accuracy to within 0.5% at normal flow range of 5 to 100 gpm and 3.0 % at the low flow range of 0.5 to 5 gpm. Complete with integral strainer and maximum register reading of 10,000,000 gallons. (Note: The NCSD must approve this meter before its purchase.)

- See Drawing 12 for Beckart System Instrumentation

APPENDIX 20

SEWER SPECIFICATIONS

E. M. Seabrook, Jr., Inc.

S. C. Department of Health
and Environmental Control
APPROVED - WASTEWATER
Permit Number LOA Date 1-19-90
By P.E.
CONSTRUCTION ONLY

STANDARD SPECIFICATIONS

Sanitary Sewer

Sewage Force Main

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 5638 LEWIS J. CAUTHEN, JR.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR 6435 E. M. SEABROOK, III

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR 09960 LEWIS E. SEABROOK

SOUTH CAROLINA REG. PROF. ENGR. AND LAND SURVEYOR NO. 4375 E. M. SEABROOK, JR.

Engineer

E. M. Seabrook, Jr., Inc.
Engineers-Surveyors-Planners
Mount Pleasant, South Carolina
January 1990

SANITARY SEWER

SS 1 SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, appliances and materials and performing all operations in connection with the construction of the sanitary sewer, including appurtenant structures, to points to be connected, complete, in strict accordance with this section of the specifications and the applicable drawings.

SS 2 PIPE MATERIALS AND INSTALLATION

Sanitary sewer shall be ductile iron, vitrified clay sewer or PVC sewer pipe as shown on the plans. If no type is shown on the plans, the Contractor has the alternate of using vitrified clay sewer pipe or PVC sewer pipe.

A. Ductile iron pipe and fittings shall be Class 50 unless noted otherwise and must conform to ASTM A746, ANSI/AWWA C151/A21.51, latest revisions.

B. Vitrified clay sewer pipe shall conform to ASTM C700, latest revision. Joints in clay pipe shall be resilient push-on type joints conforming to ASTM C425, latest revision. Pipe shall be installed in accordance with ASTM C12, latest revision.

C. PVC sewer pipe shall conform to ASTM D3034, latest revision, Type PSM Poly (vinyl chloride) (PVC) Sewer Pipe and Fittings SDR 35, cell classification 12454-B and shall be installed according to ASTM D2321, latest revision, and the manufacturer's recommendations.

Each piece of pipe, just before being lowered into the trench, shall be inspected and cleaned. Each piece of pipe shall be solidly and evenly bedded and not simply wedged. All pipe shall be laid true to line and grade and shall be laid upgrade with the bell in the direction the installation is proceeding. All PVC pipe shall be laid on crushed stone as shown on the plans. There shall be no walking on or working over the pipe after it is laid except as may be necessary in tamping earth and backfilling until it is covered to a depth of two feet. Whenever the pipe laying is discontinued (as at night) the unfinished ends shall be securely protected

from displacement by caving of the banks or other injury, and suitable stoppers shall be inserted therein. The same procedure for laying mains shall be employed in laying house or service connections. The connections shall enter the main through 1/8 bends jointed to wyes. There shall be a connection for each lot shown. All connections shall be adequately plugged with a plug compatible with the pipe material to prevent entrance of water into the sewer. All PVC service lines shall include the installation of a continuous tape which is detectable with electronic or magnetic sensors at a depth of twelve inches below finished grade. The tape shall be at least two inches wide, colored green and boldly labeled every eighteen to thirty-two inches with the words "Caution - Sewer Line Buried Below." The tape shall have a tensile strength of not less than 4000 psi, a dart impact strength of not less than 120 grams per 1.5 mils, minimum 0.0055 inch thickness and sufficient metal content to allow easy detection at the specified depth. Tape life shall equal pipe material life, even in adverse soils.

SS 3 MANHOLES

All manholes shall be precast and shall meet or exceed the requirements of ASTM C478, latest revision, Standard Specifications for Precast Reinforced Concrete Manhole Sections, unless noted otherwise. Manholes shall be equal to the manhole series as manufactured by Tindall Concrete Products, Inc., and joints shall be sealed with mortar, asphalt mastic or butyl rubber sealings. The invert and bottom curbs of all manholes shall be neatly built and formed to facilitate the entrance and flow of sewage over them. Foundations under manholes shall be constructed as shown on the plans. If PVC sewer pipe is used, manholes shall be fitted with appropriate adaptors or manhole couplings to receive PVC sewer pipe. Adaptors and/or couplings shall be of the size and material compatible with the manufacturer's recommendation for material supplied.

Manhole covers and rings shall be of size, shape and dimensions shown on the plans. They shall be of cast iron and shall be smooth and free from blow holes and other imperfections. Rings and covers shall be at least Class 30 conforming to ASTM A48, latest revision, Standard Specification for Gray Iron Castings. Minimum frame and cover weight shall be 315 pounds.

Manhole steps shall be cast in place during the pouring of the manholes. They shall be 12-1/2 pound steps cast at a uniform 16" spacing. Any manhole steps installed on the job site shall be approved by the Engineer.

SS 4 BACKFILLING

After the trench has been cut, the pipe bedded and the joints made and cured, selected material from the excavation or borrow at a moisture content which will facilitate compaction shall be placed along the pipe in layers not exceeding six (6") inches in depth. Each layer shall be thoroughly compacted with mechanical or hand tampers. The tamping face shall not exceed 25 square inches. This method of filling and compacting shall continue until the fill has reached the top of the finished grade, subject to the depths of fill specified below. Backfill over and around all pipe and drainage structures shall be compacted to a minimum density of 95% as determined by ASTM D1557, latest revision. In place densities shall be determined by ASTM D1556 or ASTM D2922, latest revisions. Density tests shall be made at the option of the Engineer.

SS 5 REMAINDER OF TRENCH

Except for special materials for pavements the remainder of the trench shall be backfilled with material that is free of stones larger than four (4") inches or 1/2 the layered thickness, whichever is smaller, in any dimension. Backfill material shall be deposited in layers not exceeding the thickness specified below, and each layer shall be compacted to the minimum density specified as applicable to the particular area. The degree of compaction shall be as follows, expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D1557.

A. Under pavements (where open cuts are used): Six-inch layers, 90 percent maximum density for cohesive soils and 95 percent maximum density for cohesionless soils. The top 8 inches of subgrade shall <u>in every case</u> be compacted to at least 95 percent maximum density. The base course shall be compacted until the coarse aggregate is firmly set and bonded.

B. Under turfed or seeded lawn areas and sidewalks: Twelve-inch layers, 85 percent maximum density for cohesive soils and 90 percent maximum density for

cohesionless soils. In all cases the top 12 inches shall be compacted to 95 percent maximum density.

C. Under other areas: Two-foot layers, density equal to the adjacent soil.

SS 6 COMPACTION TESTING

The Contractor shall include in his price for pipelaying the costs for compaction testing at the following locations within road rights-of-way:

A. Pipes laid generally perpendicular to or otherwise crossing road alignment: One test at each open cut of road surfacing or pavement.

B. Pipes laid generally parallel to road alignment: Two tests per thousand feet of pipe installed.

All costs associated with the compaction testing are the responsibility of the Contractor until satisfactory results described under SS 5 are attained.

SS 7 INSPECTION AND COMPLETION

Upon completion of the sewers, all lines shall be tested by the Contractor with the Engineer present to determine if any displacement has occurred. The following inspections shall be performed:

A. A light will be flashed between manholes by means of a flashlight or by reflecting sunlight with a mirror. If the illuminated interior of the pipeline shows poor alignment, displaced pipe or other defect, the defect shall be remedied by the Contractor at no expense to the Owner.

B. Neither infiltration nor exfiltration shall exceed 200 gallons per day per inch diameter of pipe per mile. Any sections of the sewer which have excessive infiltration or exfiltration shall be repaired by the Contractor at no expense to the Owner.

C. Any earth, sand or other material found in the sewer before final acceptance shall be removed by the Contractor at his own expense.

Upon completion of construction, all debris and surplus materials resulting from the work shall be removed and

the work site left in a condition satisfactory to the Engineer and the Owner.

SS 8 RELATIONSHIP TO WATER LINES

Sewer lines in relation to water lines must conform to "Ten States Standards"; Section 29.3.

APPENDIX 21

VENDOR LITERATURE

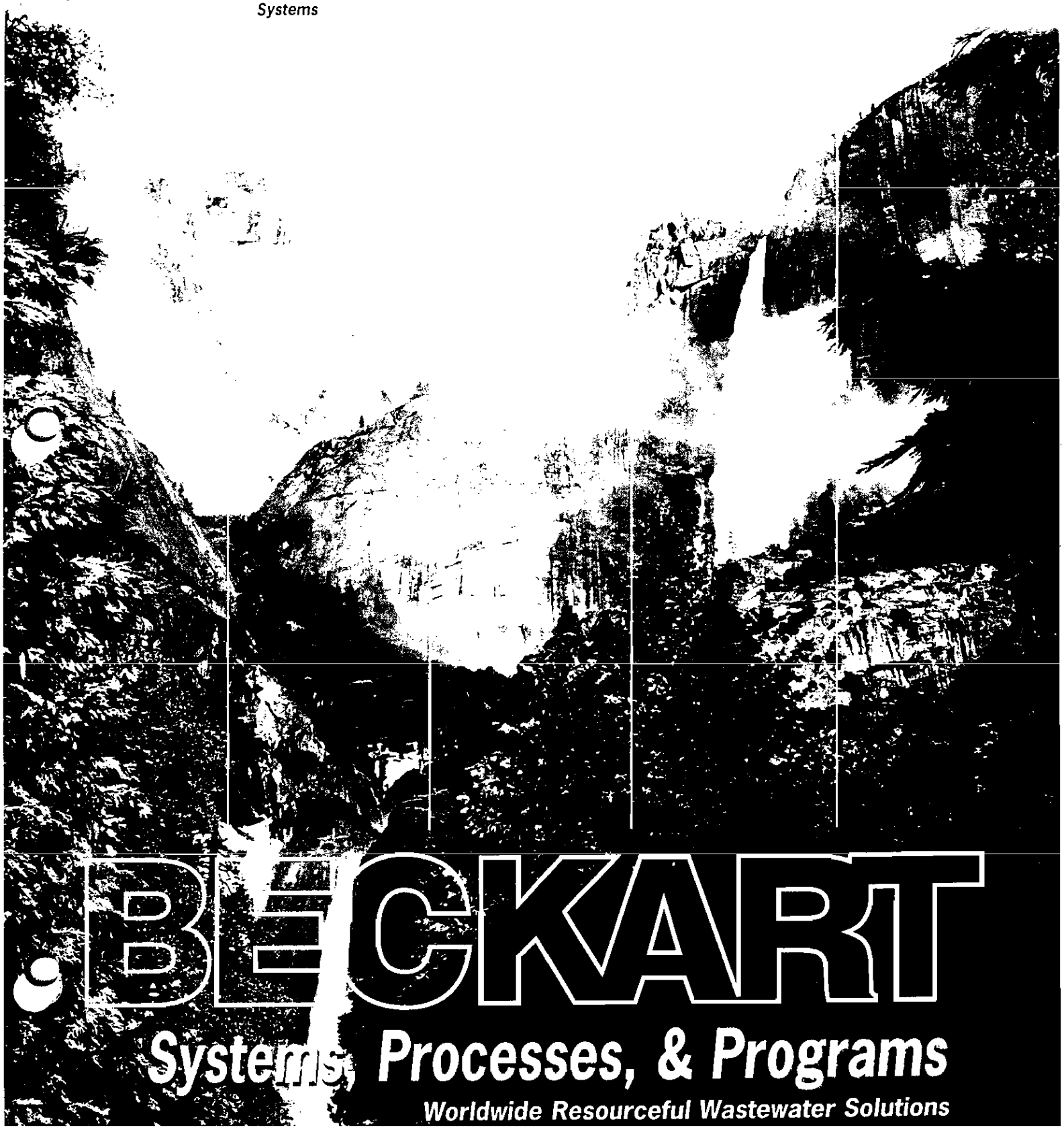
Continuous Flotation Systems

Continuous Sedimentation Systems

Batch Filter Press Systems

Biological Treatment Systems

Water Washer Systems



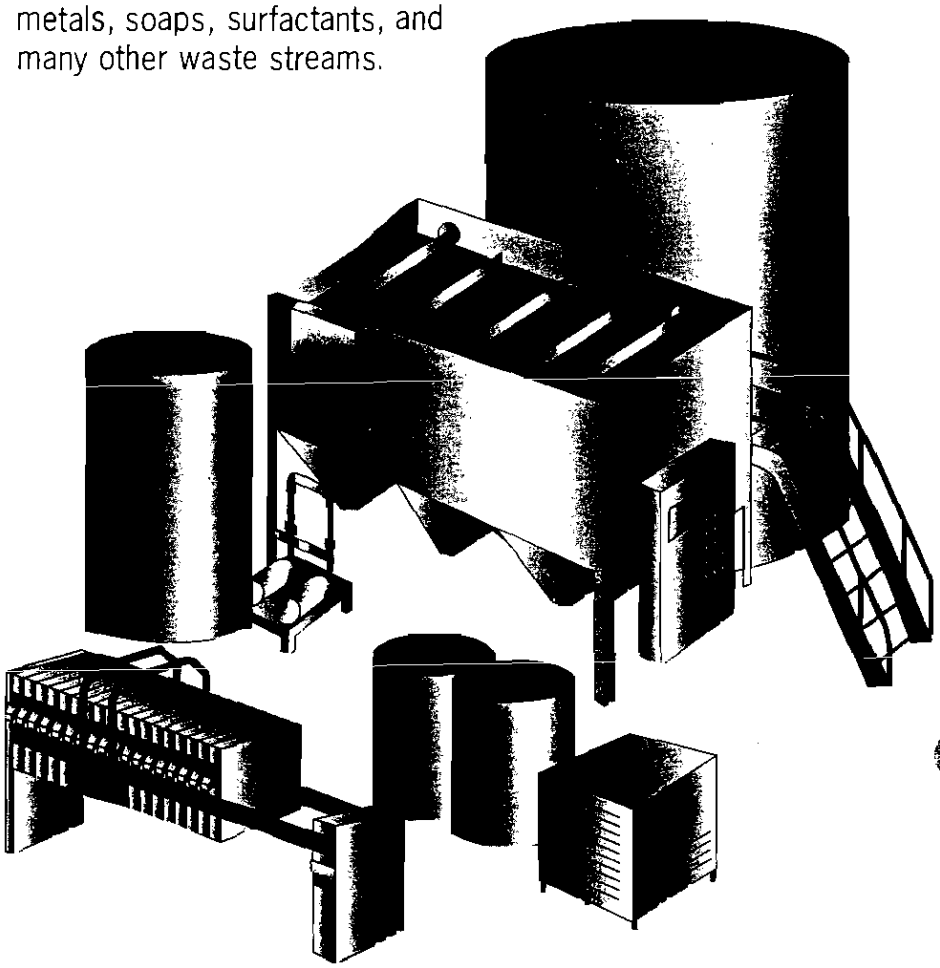
BECKART

Systems, Processes, & Programs

Worldwide Resourceful Wastewater Solutions

Continuous Flotation

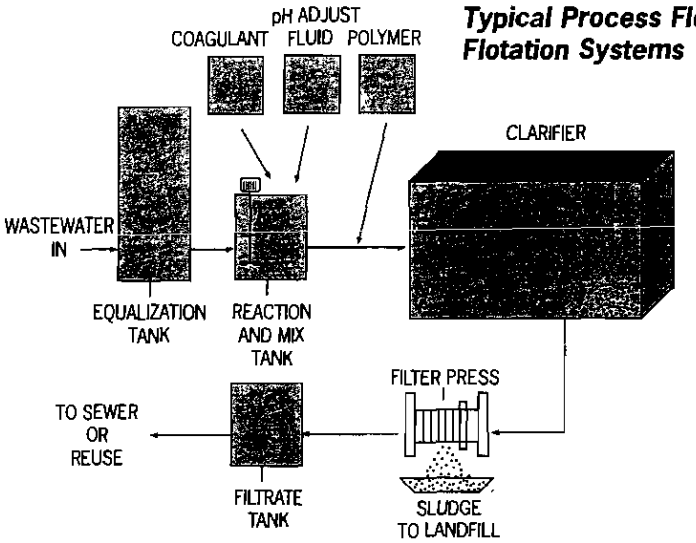
Engineered to reliably handle larger volumes of wastewater — typical flow rates of more than 5,000 gallons per day (20 m^3 per day) — Beckart's continuous flotation systems provide a highly effective solution for treating wastewaters containing free-floating or emulsified oils, dissolved heavy metals, soaps, surfactants, and many other waste streams.



For many applications, air flotation is the system of choice. Micro-bubbles are produced by inducing air into a vortex as the floc is formed. This controlled induction of air allows the micro-bubbles to permanently attach to the floc, resulting in consistent flotation in the clarifier. The clarifier has a built-in sludge-holding section.

Capacity:
5 - 1,000+ gallons per minute
(1 m^3 - 225+ m^3 per hour)

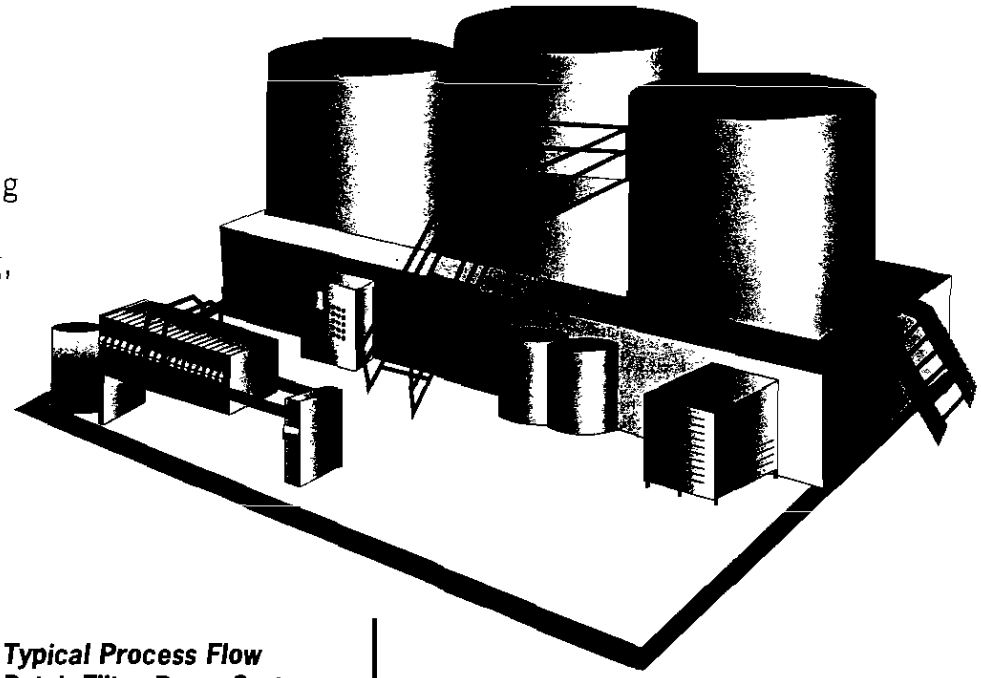
Typical Process Flow Flotation Systems



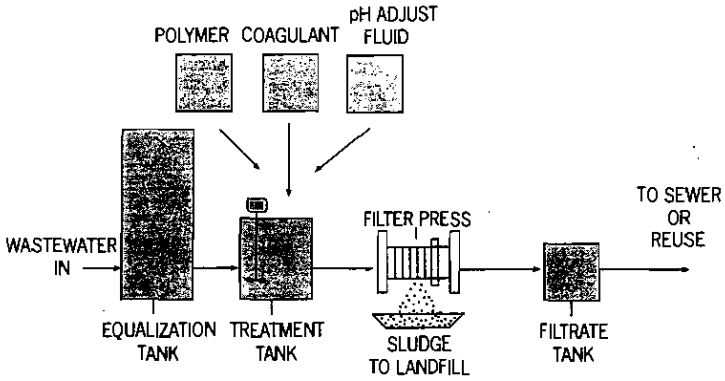
Beckart offers dishbottom (or hopper bottom) tanks and clarifiers for thorough evacuation and ease of cleaning.

Batch Filter Press Systems

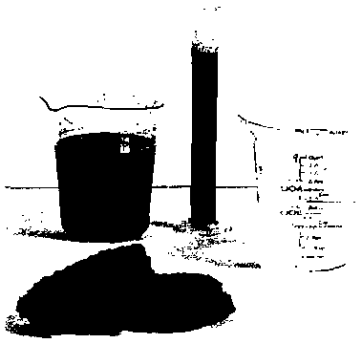
Versatile and flexible, Beckart's Batch Process Systems are particularly well-suited for wastewaters containing high solids. Typical applications include ink, paint, metal finishing, starch, plating solutions, and many others.



Typical Process Flow
Batch Filter Press Systems



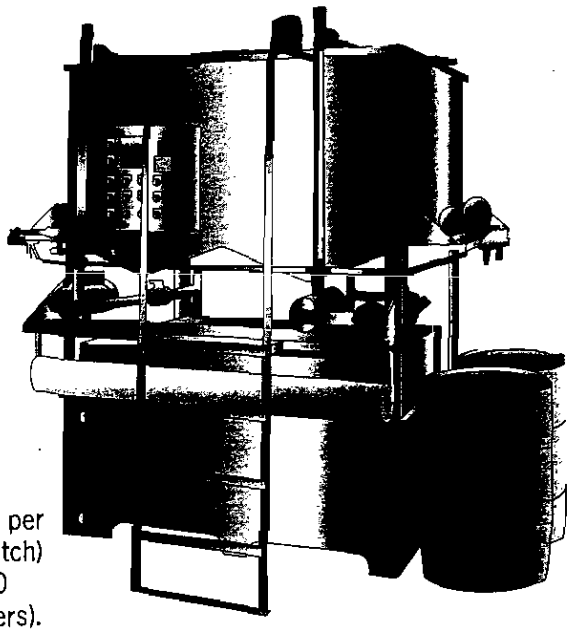
Capacity:
400 - 10,000+ gallons per batch.
(1.6 m^3 - 37+ m^3 per batch).



Water Washer Systems

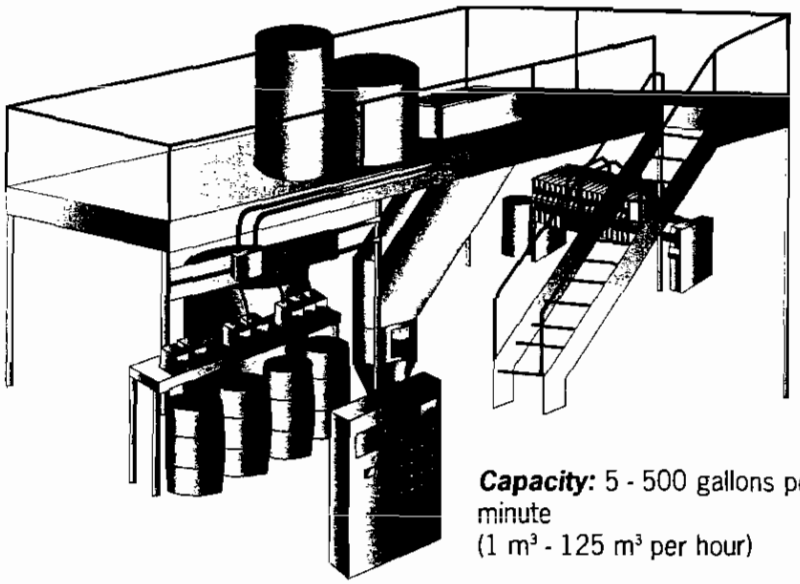
This Batch/Flotation System is perfect for lower solids waste streams. Water Washers offer a compact, self-contained process for treating oily waste and metals at the same time, including water containing coolants, cutting oils, vibratory waste, and other waste streams.

Capacity: 50 - 1,000 gallons per batch. (0.2 m^3 - 4.0 m^3 per batch)
Floor space required: 9 - 60 square feet (1 - 6 square meters).

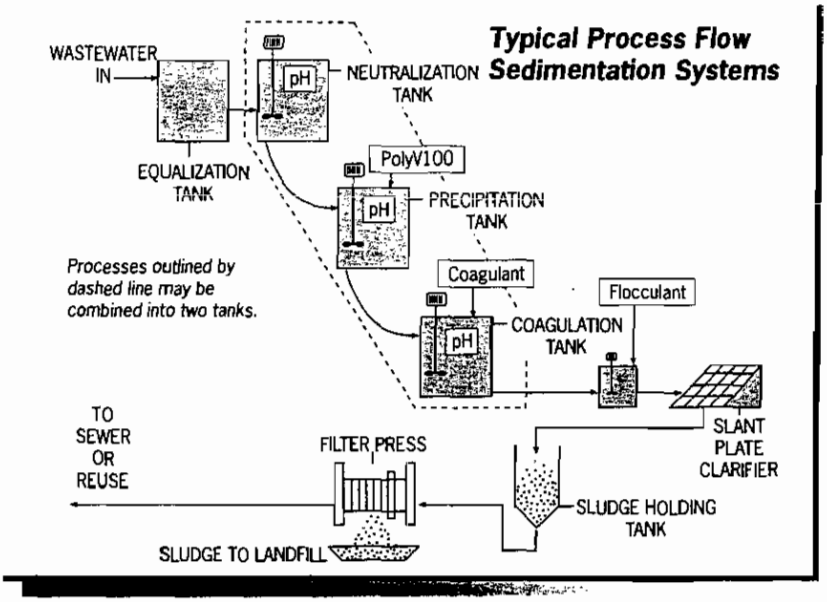


Continuous Sedimentation Systems

Many waste streams, such as those typically found in metal finishing, wire manufacturing, phosphatizing, and plating environments, can be effectively treated with our sedimentation technology. Beckart has years of experience with related processes – including concentrate bleed-in, neutralization, and chrome/ cyanide destruct – to provide total water and resource management solutions.



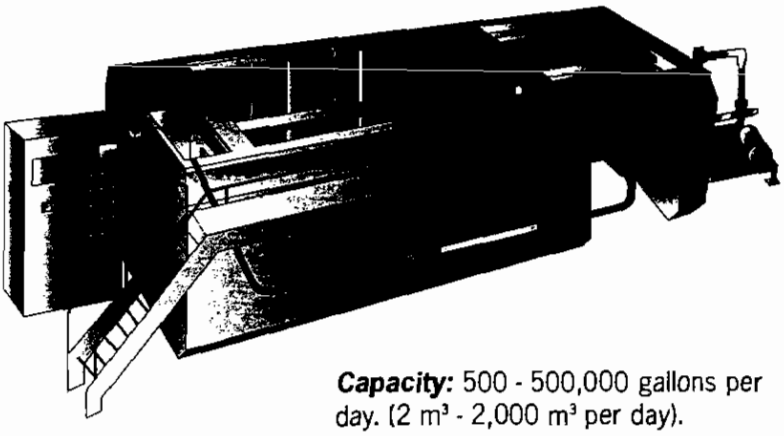
Capacity: 5 - 500 gallons per minute
(1 m^3 - 125 m^3 per hour)



Biological Treatment Systems

Available as stand-alone or secondary modules for the reduction of BOD, COD, and a wide range of dissolved organic matter, our biological treatment systems provide a comprehensive approach with applications in the food, textile, paper, and many other industries.

Because we use environmentally-friendly pretreatment chemistry that readily corresponds to the needs of biological treatment, and provide all necessary automation features and training to maximize ease of operation, our customers are assured of a seamless interface between treatment schemes.



Capacity: 500 - 500,000 gallons per day. (2 m^3 - 2,000 m^3 per day).

Resourceful Wastewater Solutions

With over 1,200 treatment systems installed worldwide since 1978, Beckart Environmental has experience with practically every challenging wastewater problem imaginable. We've learned that most can be easily and cost-effectively addressed, though no single technology offers the best single solution for everyone.

Our approach has been to develop a *complete* product line, ensuring that we can offer a system that fits your needs, rather than the other way around.

Beckart provides the ***in-house design, engineering, manufacturing, and service resources*** that guarantee optimum system cost performance, quality of water for discharge or reuse, and ease of operation.

The Beckart Advantage

Single Supplier Responsibility

- Equipment commissioning, training, chemicals, and aftermarket service – one source for your total satisfaction with start-up and long-term performance.
- Optimized formulations and engineered designs provide "system" approach for greater production and disposal efficiencies.

Total System Flexibility

- Systems easily adapt to existing plant operations and feature expandable components to respond to future changes in plant processes and discharge standards.
- UL listed control panels, programmable logic controllers, and a wide range of automation options provide versatility and exceptionally easy operator interface.

Total System Quality

- In-house engineering, manufacturing, service/chemical support, and other capabilities combine for top quality at a competitive cost.
- Operational cost savings – affordable cost-to-treat, low maintenance, limited downtime, ready supply availability, and expanded disposal options.

Markets Served

- Corrugated Containers
- Flexographic Printing
- Packaging
- Metal Finishing/Plating
- Die Casting
- Machining
- Paints/Adhesives
- Textiles/Tanneries
- Industrial Laundries
- Vehicle/Equipment Wash
- Food Processing
- Rendering/Grease Traps
- and others

Problems Solved

- Heavy Metal Reduction
- Oil & Grease Reduction
- Fluoride
- Phenols
- BOD/COD Reduction
- TSS Reduction
- VOC Reduction
- pH Neutralization
- Cyanide Destruct
- Chrome Conversion
- Surcharge Reduction
- and others

Services Offered

- Treatability Studies
- Permitting Assistance
- Project Management
- Turnkey Installations
- Start-up & Training
- Field Service
- Worldwide Chemical Support

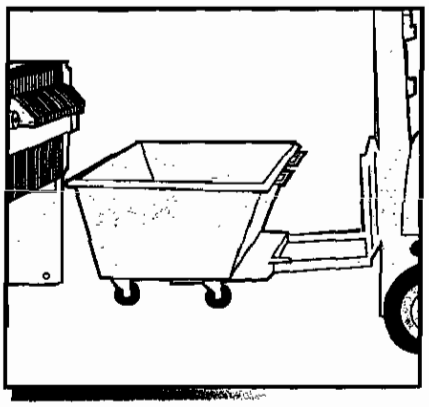
Options for PLC-equipped Systems

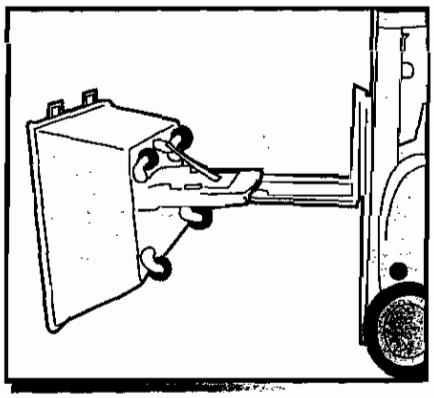
Beckart tailors every wastewater treatment system to the exact requirements of the customer, including the degree of automation desired. Systems equipped with programmable logic controllers (PLCs) provide an exceptionally user-friendly method of controlling system function; our custom software is factory installed and configured to make all necessary chemical and engineering decisions with minimal operator time requirements.

- ***Data Table Access Module (DTAM) —*** allows operator to monitor and modify timers, counters, and integer data files in the PLC program; supports multiple foreign languages.
- ***Running Light Schematic —*** provides overall view of the system status in an LED-illuminated diagram.
- ***PanelView Graphic Display —*** operator interface with graphics capability that allows system data modification and manual motor/solenoid On/Off selection.
- ***Rapid Response Support System —*** a telecommunications module which allows Beckart technicians to program, monitor, and control system operation via a telephone line.

Optional and Related Equipment

- Hy-Pack® Filter Presses (Recessed Plate)
- Infrared Sludge Dryers
- Rotary Screens
- Sludge Trays & Carts





Beckart systems feature forkliftable sludge trays & carts – material handling made easy!

Better Treatment Through Optimized Chemistry

Beckart maintains comprehensive in-house chemical research and lab facilities, as well as a worldwide network of chemical warehouses. The best chemistry for the application is always available in the most timely and cost-effective manner. Our chemical formulations ensure an optimized treatment scheme — flocs form thoroughly, filter press cycle times are decreased, cakes are drier and more compact.

- ***Coagulants (Organic and Inorganic).***
- ***Polymers (Anionic and Cationic).***
- ***pH Adjust Fluids.***
- ***Sludge Conditioners.***
- ***Metal Scavengers.***
- ***Available in drum, tote, and bulk quantities.***

Manufacturing & Corporate Headquarters
Beckart Environmental, Inc. • 6900 - 46th Street • Kenosha, WI 53144

Phone: 414-656-7680
Fax: 414-656-7699
E-mail: 76613,3464 @ compuserve.com
Visit our Website: http://ourworld.compuserve.com/homepages/Beckart
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APPENDIX 22

INITIAL CERTIFICATION STATEMENT

SANI-TECH ENVIRONMENT, INC.

May 18, 2001

Ms. Kelly Singer
Pretreatment Program Coordinator
North Charleston Sewer District
PO Box 63009
North Charleston, SC 29419

Re: Initial Certification Statement
CWT Regulations for Subcategory D Waste
Sani-Tech Environmental, Inc.

Dear Ms. Singer:

There are two purposes to this letter. First, Sani-Tech Environmental, Inc. (Sani-Tech) wishes to notify the North Charleston Sewer District (NCSD) of Sani-tech's desire for its proposed pretreatment system for metals and oily waste to be subject to "Multiple Waste Subcategory" standards as defined by the Centralized Waste Treatment (CWT) Regulation. The second purpose of this letter Sani-Tech is to submit to the NCSD the "initial certification statement" as specified in 40 CFR 437.47(a)(2), for the proposed pretreatment system. I understand that a responsible corporate officer of Sani-Tech must make this certification due to our decision to combine metal-bearing and oily waste prior to compliance monitoring by the NCSD. I am certifying with this letter that the proposed system for the treatment of metals-bearing waste will be equivalent to the Environmental Protection Agency's Option 4 and that the treatment of oily waste will be equivalent to the EPA's Option 9 for treatment of similar waste.

By equivalent treatment, I understand that the system must achieve comparable pollutant removals to the following base EPA treatment technologies.

Metal-Bearing Waste (EPA's Option 4)	Oily Waste (EPA's Option 9)
Batch Precipitation	Emulsion Breaking/Gravity Separation
Liquid Solid Separation	Secondary Gravity Separation
Secondary Precipitation	Dissolved Air Floatation
Clarification	
Sand Filtration	

I am familiar with the numerical standards based on these technologies and I am enclosing the following documents in support of my initial certification:

Post Office Box 71619 • Charleston, South Carolina 29405 • (843) 744-0406 • Fax (843) 744-0730

- A letter prepared by Albrecht, dated March 29, 2001, and submitted to John S. Cox, P.E., the local sales representative of Beckart Environmental, Inc. of Kenosha, Wisconsin (Beckart).
- A letter from Beckart to Albrecht dated April 9, 2001.
- NCSD's copy of the "Engineering Report, Plans and Specifications for An Industrial Pretreatment System" (Engineering Report).

The remainder of this letter discusses these three (3) documents and other information in support of the required certification.

Beckart is the designer of the proposed equalization, physical/chemical treatment and filter press separation system for Sani-Tech's Multiple Waste Subcategory (Subcategory D) system. Sani-Tech selected Beckart to design and fabricate this system due to Beckart's extensive experience in industrial wastewater treatment and specific expertise with similar applications to that proposed for Sani-Tech. I have personal knowledge of two such systems that are operating at other CWT facilities

I understand that Beckart originally selected the batch system design for Sani-Tech due to the anticipated variability in our accepted wastes. This design was directed primarily to treatment of our two major influent waste streams, one metals-bearing waste and one bilge water, to the NCSD requirements that existed prior to the CWT Regulation. This original design allowed for only a single physical/chemical treatment.

Beckart recently revised the design to that presented in the enclosed Engineering Report. The new batch system design includes a clean water tank, which allows treated water to be accumulated, and either discharged or returned for a second physical/chemical treatment. Waste receipts with higher levels of metals and emulsified oil and those containing chemicals interfering with the treatment process, may require two passes through the treatment system.

The change in Beckart's design was in response to communications Beckart received from Albrecht regarding the CWT Regulations. In the enclosed March 29th letter Albrecht describes to Beckart the equivalent treatment certification required by the CWT Regulations for the proposed system. Beckart's enclosed April 9th response presents it's belief that in general, Sani-Tech's Subcategory D treatment system's "design meets the EPA requirements for the treatment of wastewater", i.e. is equivalent to EPA's base technologies for metals-bearing and oily waste. However, in this letter Beckart takes exception to EPA's treatability data for molybdenum and chrome, if hexavalent.

In response to Beckart's qualification regarding treatment of molybdenum and hexavalent chrome, Albrecht performed a review of EPA data for the influent and effluent streams of the CWT facilities selected for EPA's evaluation for treatment of metal-bearing waste and oily waste. This data was obtained from Appendix C of EPA's document entitled "Technical Development Document for the CWT Point Source Category". This data shows that concentrations of molybdenum in the twenty-seven (27) influent waste samples from some six (6) sampled CWT facilities treating metal-bearing and oily waste were consistently below the "Maximum Daily" effluent limit of 3.5

milligrams per liter that we are anticipating for molybdenum. This limit was exceeded in only four (4) of the influent samples and the highest concentration was 6.1 mg/l. Treatment efficiencies for these facilities ranged from 60% at the higher influent concentrations to 0% at the lower. After being informed of these results, Mr. Dan Fedrigon, Vice-President of Marketing, of Beckart has confirmed that the designed system would perform equal to or better than the referenced EPA facilities. As for hexavalent chrome, Sani-Tech has no plans to accept any waste containing hexavalent chrome.

In addition to Beckart's representations regarding the equivalency of it's design, Beckart has performed treatability testing of the two most anticipated waste receipts of metals-bearing waste and bilge water, an oily waste. The results of this testing are presented in the enclosed Engineering Report. Based on this testing and the anticipated discharge "permit limits", Beckart has stated that it has no problem issuing Sani-Tech a warranty for its system regarding treatment of these two waste receipts. We plan on obtaining this warranty as soon as we obtain the final permit limits from the NCSD.

In closing, Sani-Tech anticipates pollutant loadings on metals-bearing and oily waste receipts to be less than portrayed by EPA's recent studies of the CWT industry and that treatability tests will show that a single physical/chemical treatment via the Beckart System will achieve equivalent treatment. However, in the event that Sani-Tech accepts waste for which treatability data show that two passes or other special procedures are required to achieve pollutant removals comparable to the technology for which the Subcategory D limits were based, Sani-Tech will process the waste accordingly. This will be done irrespective of any incidental benefit from dilution with other, less loaded waste.

Please let us know if we can be of any assistance or offer any additional information in support of this authorization.

Paul Goodsell
President

C: John S. Cox, P.E., President, John S. Cox & Associates, Inc.
Dan Fedrigon, Vice-President of Marketing, Beckart Environmental, Inc.
John Albrecht, P.E., Albrecht Environmental, Inc.

enclosures

ALBRECHT ENVIRONMENTAL

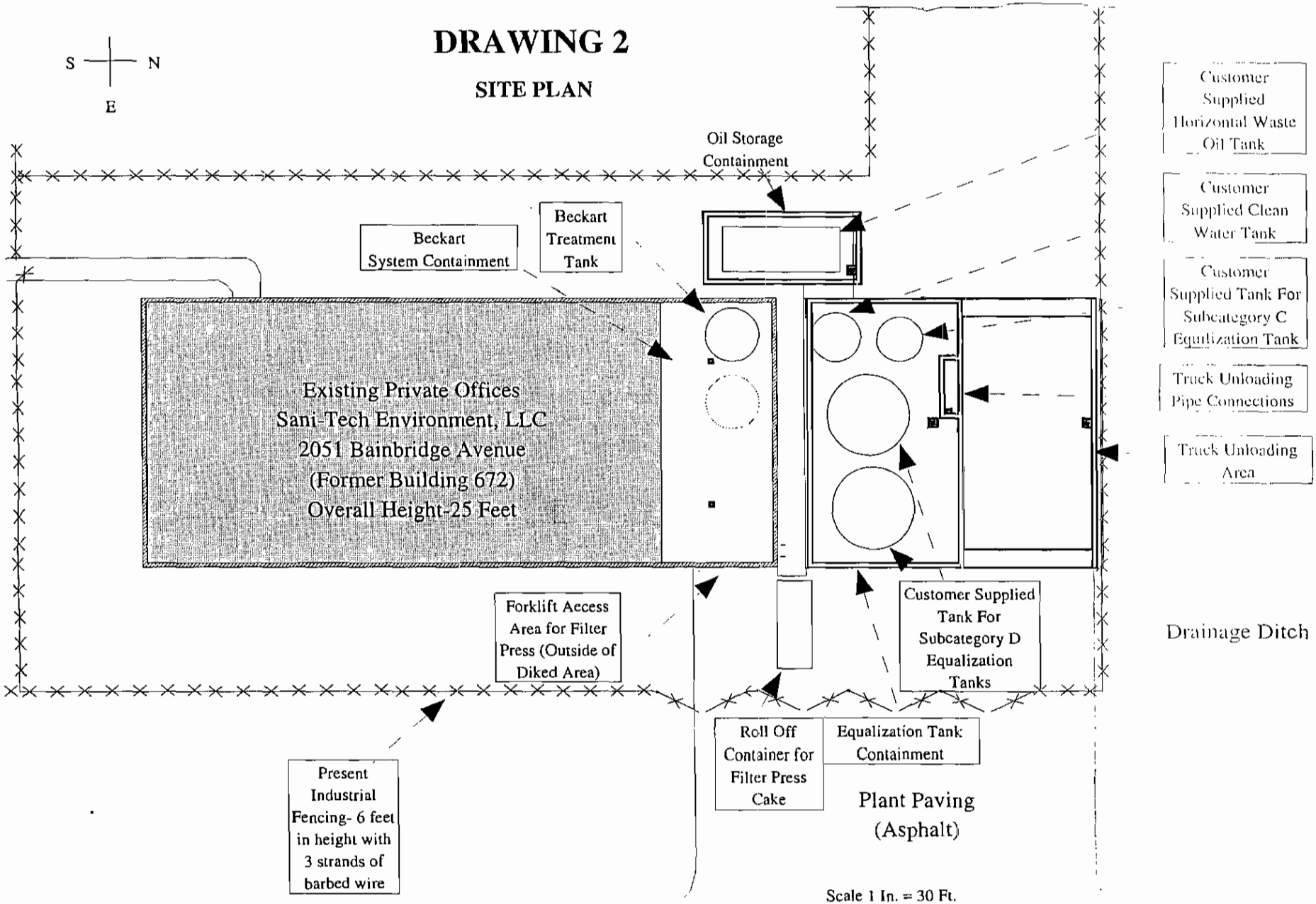
ASSESSMENT · REMEDIATION · COMPLIANCE · LAKE MANAGEMENT

DRAWING 1

General Site Location – Charleston Quadrangles
2051 Bainbridge Avenue, Sani-Tech Environment
North Charleston, South Carolina
ALBRECHT Project # 99-1414 **May 17, 2001**

DRAWING 2

SITE PLAN



Scale 1 In. = 30 Ft.

ALBRECHT ENVIRONMENTAL, INC.
P.O. Box 189
Mt. Pleasant, SC 29465
Tel: (843) 856.8450 Fax: (843) 856.8453

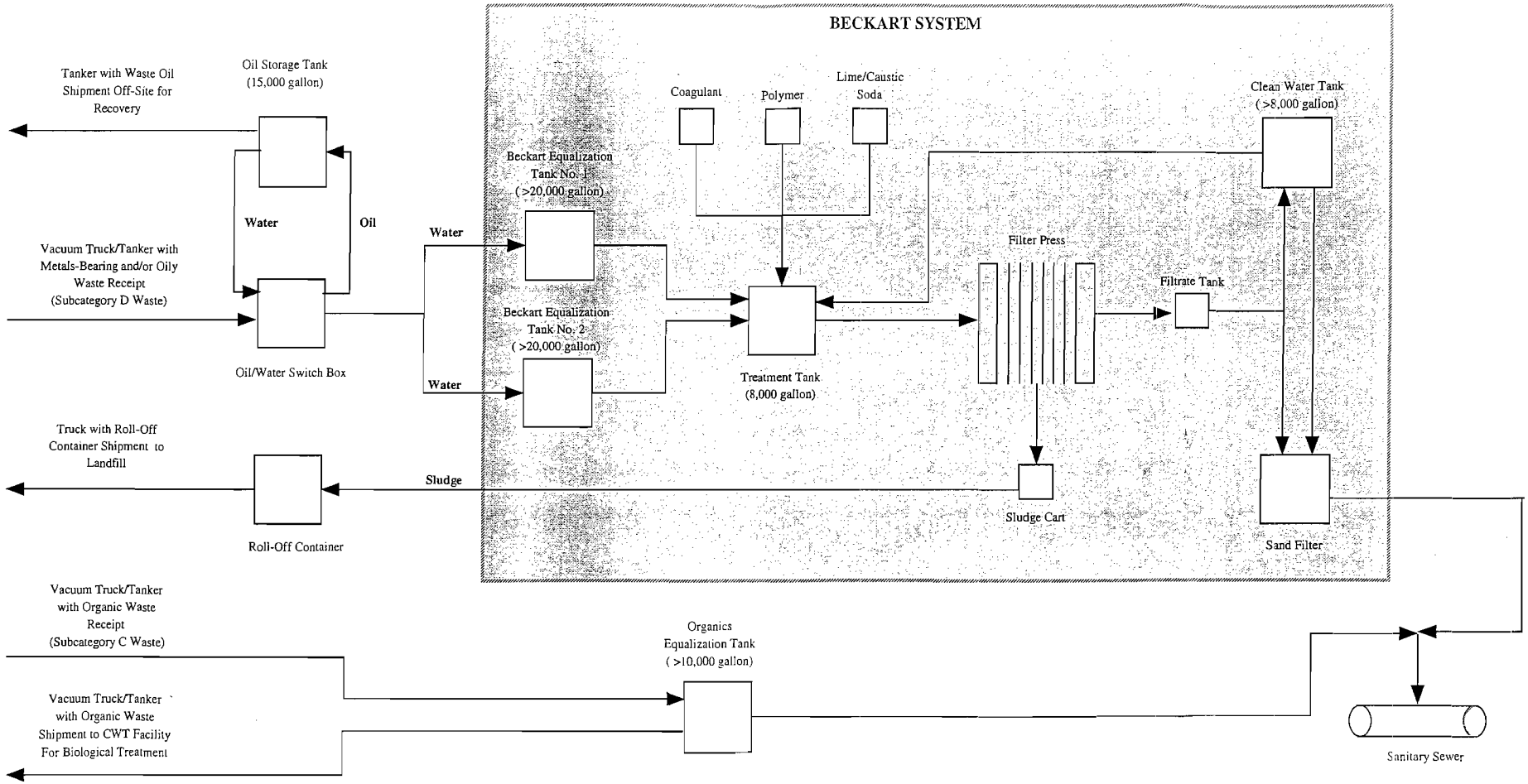
Sani-Tech Environment, LLC
2051 Bainbridge Avenue
North Charleston, South Carolina

Engineer:	Approved by:	Date:
JDH		4/20/01

Rev.:	Date:	Modifications:
1	5/09/01	Unloading Area
2	5/18/01	Sludge Handling

DRAWING 3

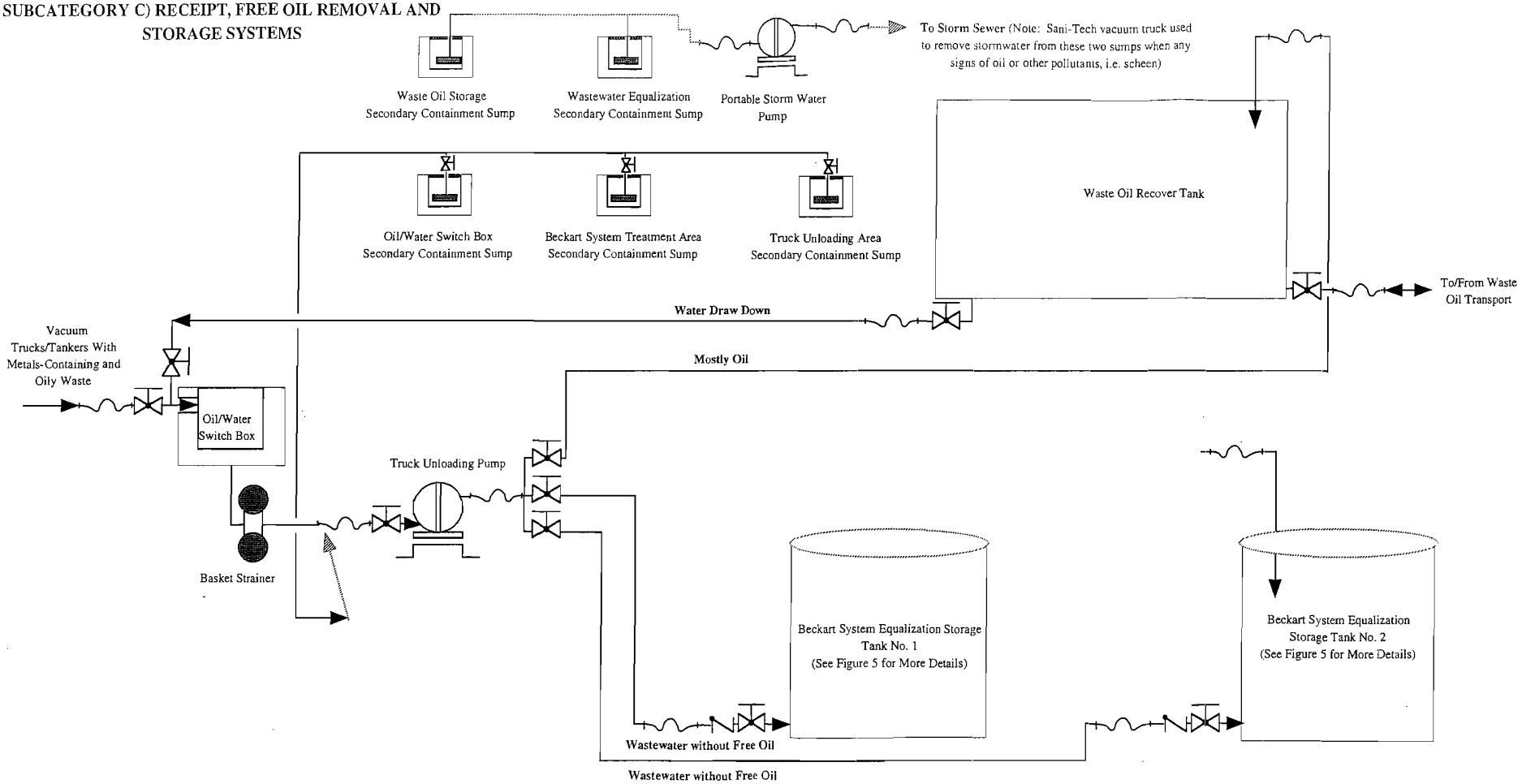
OVERALL PROCESS FLOW DIAGRAM



ALBRECHT ENVIRONMENTAL, INC. P.O. Box 189 Mt. Pleasant, SC 29465 Tel: (843) 856.8450 Fax: (843) 856.8453	**Sani-Tech Environment, LLC** 2051 Bainbridge Avenue North Charleston, South Carolina	Rev.:	Date:	Modifications:
	Engineer: JDH / Approved by: / Date: 4/26/01	1	05/18/01	Title

DRAWING 4

P&ID - RAW WASTEWATER (SUBCATEGORY D AND SUBCATEGORY C) RECEIPT, FREE OIL REMOVAL AND STORAGE SYSTEMS



P&ID LEGEND - SEE DRAWING 11

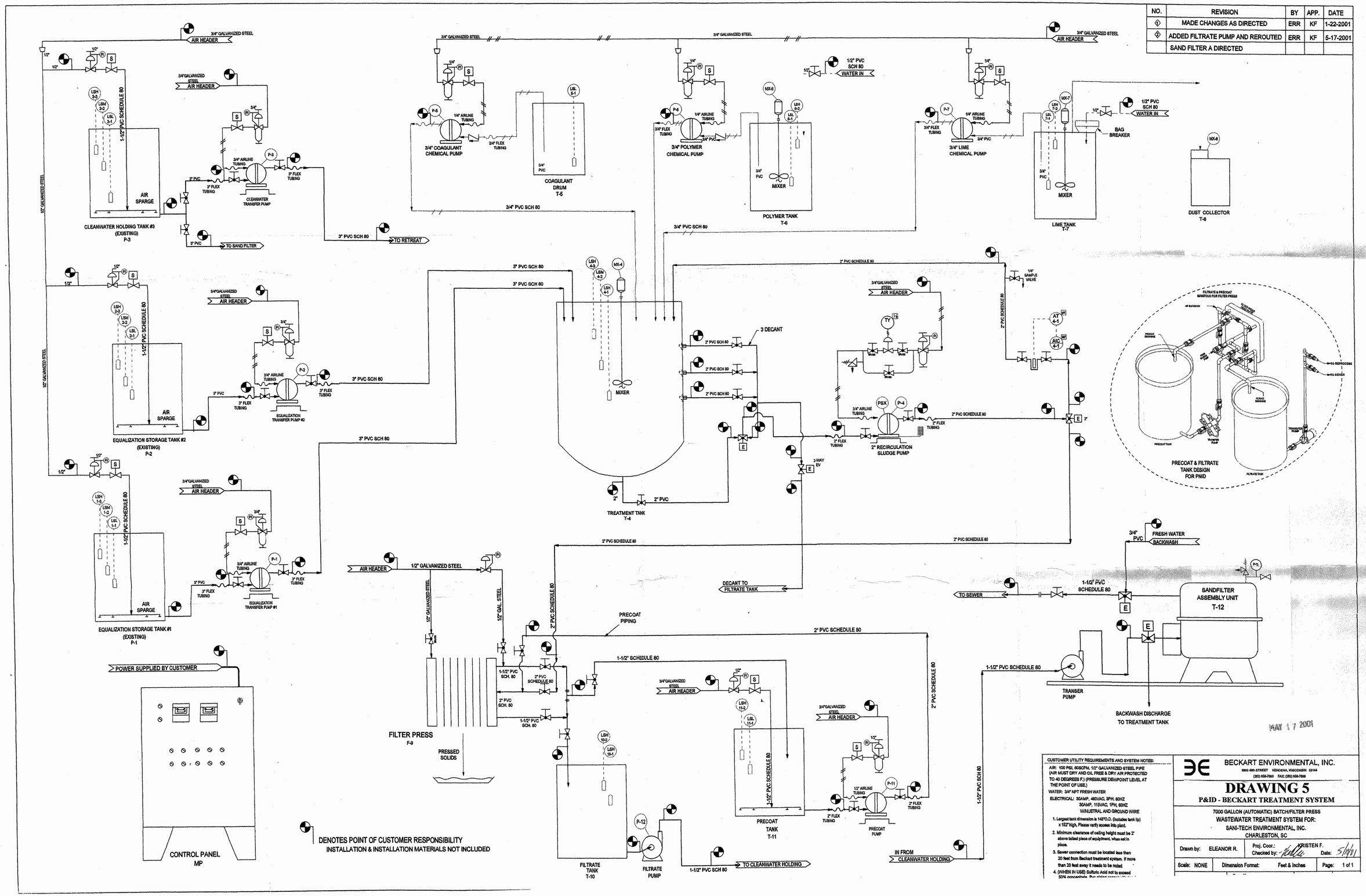
ALBRECHT ENVIRONMENTAL, INC.
P.O. Box 189
Mt. Pleasant, SC 29465
Tel: (843) 856.8450 Fax: (843) 856.8453

Sani-Tech Environment, LLC
2051 Bainbridge Avenue
North Charleston, South Carolina

Engineer:	Approved by:	Date:
JDH		4/26/01

Rev.:	Date:	Modifications:

NO.	REVISION	BY	APP.	DATE
1	MADE CHANGES AS DIRECTED	ERR	KF	1-22-2001
2	ADDED FILTRATE PUMP AND REROUTED	ERR	KF	5-17-2001
	SAND FILTER A DIRECTED			



MAY 17 2001

CUSTOMER UTILITY REQUIREMENTS AND SYSTEM NOTES:

AIR: 100 PSI, 60SCFM, 1/2" GALVANIZED STEEL PIPE (AIR MUST DRY AND OIL FREE & DRY AIR PROTECTED TO 40 DEGREES F.) (PRESSURE DEWPOINT LEVEL AT THE POINT OF USE)

WATER: 3/4" NPT FRESH WATER

ELECTRICAL: 30AMP, 460VAC, 3PH, 60HZ
30AMP, 115VAC, 1PH, 60HZ
W/NUETRAL AND GROUND WIRE

1. Largest tank dimension is 140"O.D. (includes tank lip) x 152" high. Please verify access into plant.
2. Minimum clearance of ceiling height must be 2' above tallest piece of equipment, when set in place.
3. Sewer connection must be located less than 20 feet from Beckart treatment system. If more than 20 feet away it needs to be noted.
4. (WHEN IN USE) Sulfuric Acid not to exceed 50% concentrate. Run piping [illegible]

BECKART ENVIRONMENTAL, INC.
6900 4th STREET KENOSHA, WISCONSIN 53144
(262) 658-7860 FAX: (262) 658-7899

DRAWING 5

P&ID - BECKART TREATMENT SYSTEM

7000 GALLON (AUTOMATIC) BATCH/FILTER PRESS
WASTEWATER TREATMENT SYSTEM FOR:
SANI-TECH ENVIRONMENTAL, INC.
CHARLESTON, SC

Drawn by: ELEANOR R.	Proj. Coor.: KRISTEN F. Checked by: [illegible]	Date: 5/18/01	
Scale: NONE	Dimension Format: Feet & Inches	Page: 1 of 1	

DRAWING 6

DIAGRAM - TREATED WASTEWATER (SUBCATEGORY D AND SUBCATEGORY C) DISPOSAL SYSTEM

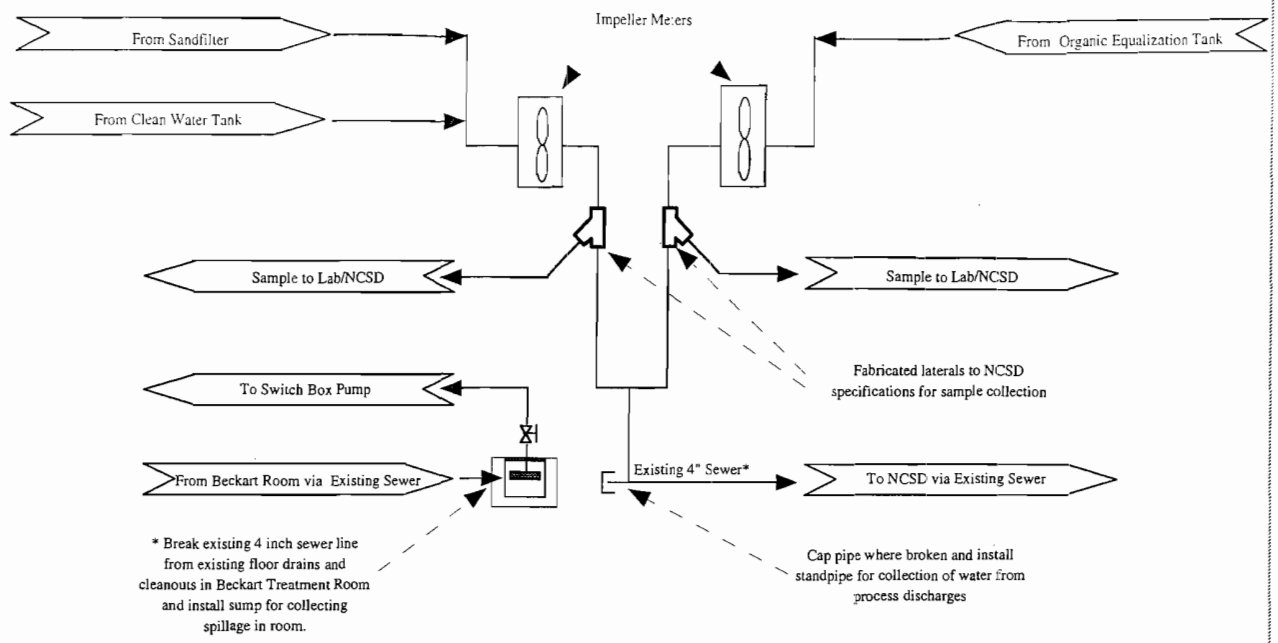
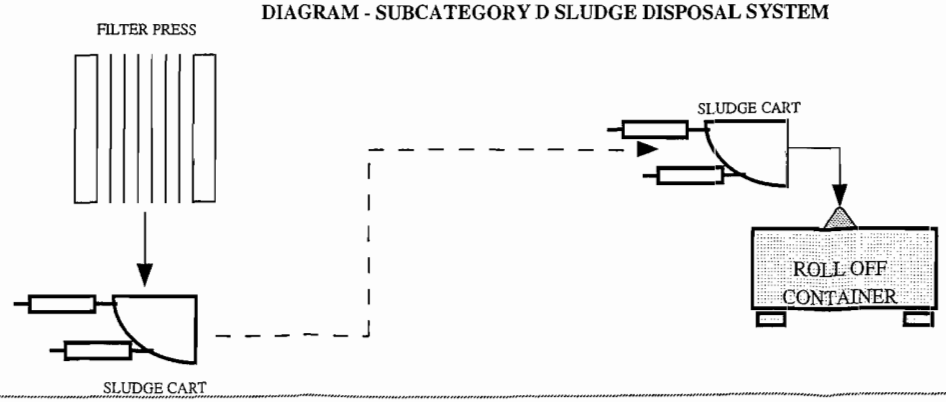


DIAGRAM - SUBCATEGORY D SLUDGE DISPOSAL SYSTEM



P&ID LEGEND - SEE DRAWING 11

ALBRECHT ENVIRONMENTAL, INC.
P.O. Box 189
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Tel: (843) 856.8450 Fax: (843) 856.8453

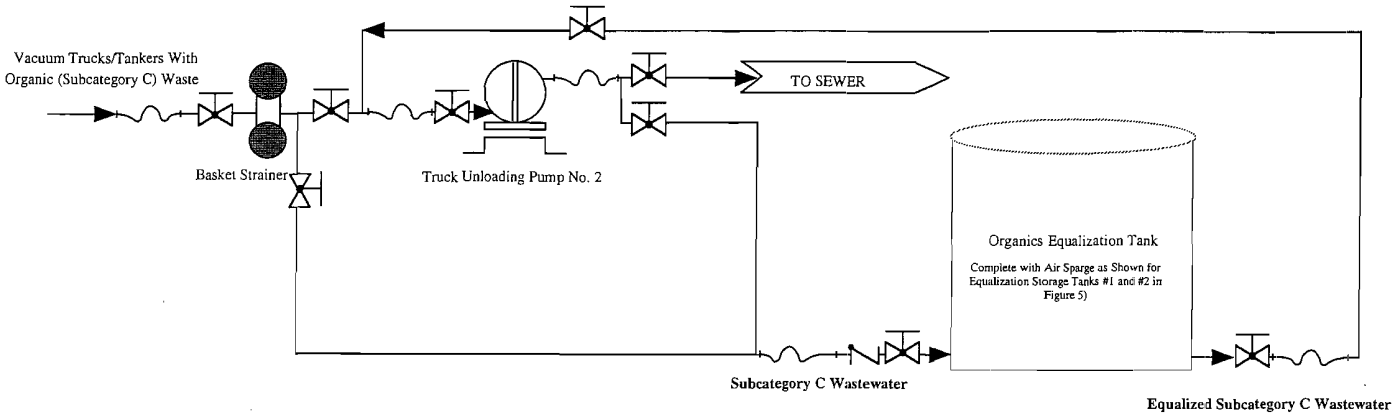
Sani-Tech Environment, LLC
2051 Bainbridge Avenue
North Charleston, South Carolina

Engineer:	Approved by:	Date:
JDH		5/14/01

Rev.:	Date:	Modifications:
1	5/22/01	Add meters

DRAWING 7

P&ID - SUBCATEGORY C WASTE SYSTEM



P&ID LEGEND - SEE DRAWING 11

ALBRECHT ENVIRONMENTAL, INC.
P.O. Box 189
Mt. Pleasant, SC 29465
Tel: (843) 856.8450 Fax: (843) 856.8453

Sani-Tech Environment, LLC
2051 Bainbridge Avenue
North Charleston, South Carolina

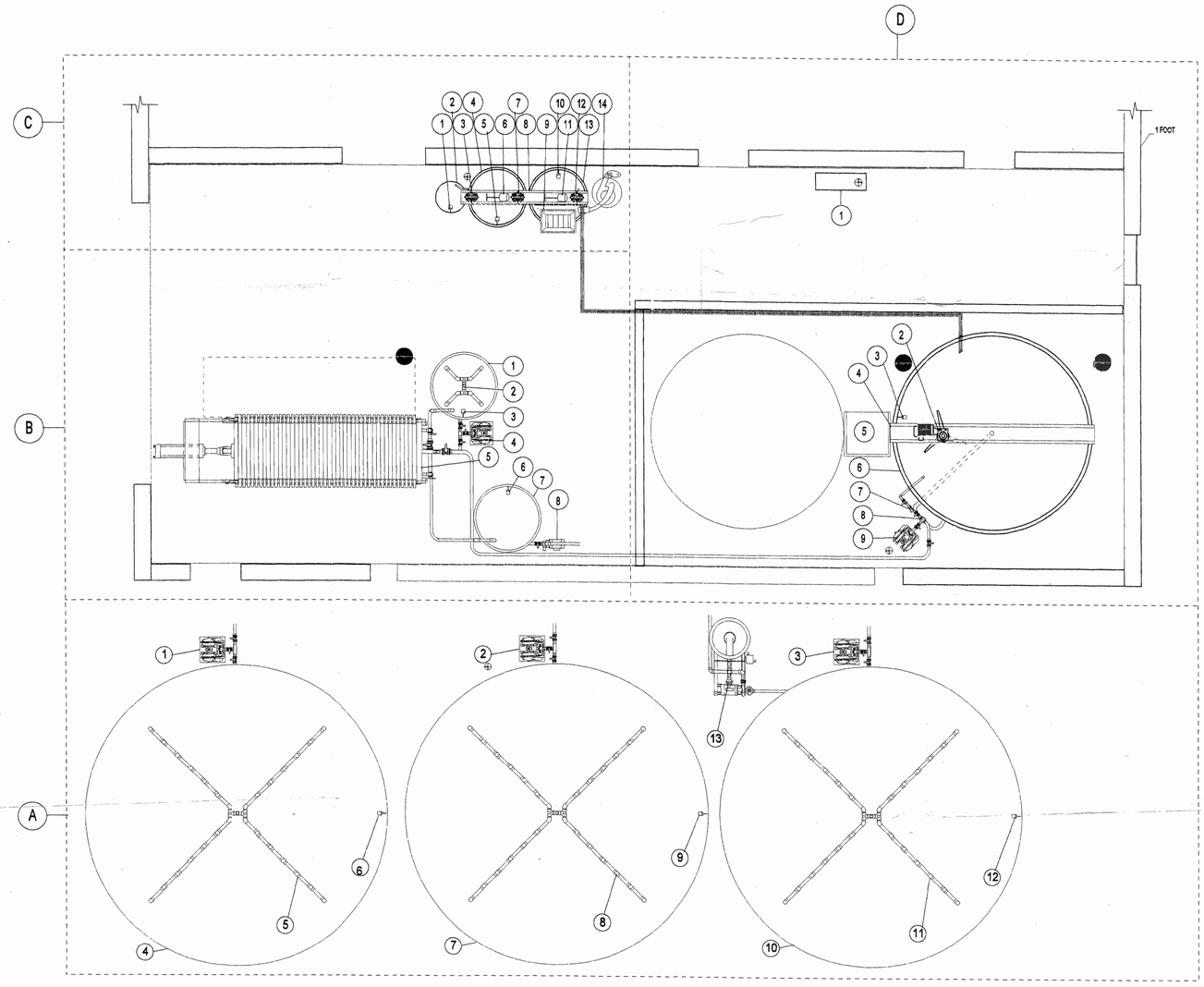
Engineer:	Approved by:	Date:
JDH		4/26/01

Rev.:	Date:	Modifications:

NO.	REVISION	BY	APP.	DATE
1	REVISED LAYOUT TO MATCH CUSTOMER'S SPACE REQUIREMENTS	ER	KF	1/22/01
2	REVISED LAYOUT TO MATCH CUSTOMER'S SPACE REQUIREMENTS	ER	KF	5/04/01
3	REARRANGED EQUIPMENT AS DIRECTED	ER	KF	5/09/01

EQUIPMENT LIST

SEC.	ITEM	EQUIPMENT DESCRIPTION	NAME	MODEL #
A	1.	3" AIR OPERATED	BECKART	3"AOD
		DOUBLE DIAPHRAGM PUMP #1		
	2.	3" AIR OPERATED	BECKART	3"AOD
		DOUBLE DIAPHRAGM PUMP #2		
	3.	3" AIR OPERATED	BECKART	3"AOD
		DOUBLE DIAPHRAGM PUMP #3		
	4.	EQUALIZATION TANK #1- EXISTING		
	5.	EQUALIZATION #1 AIR SPARGE	BECKART	
	6.	3 EQUALIZATION #1 FLOATS	S.J. ELECTRO	10MPCNO
		NORMALLY OPEN		
	7.	EQUALIZATION TANK #2 (EXISTING)		
	8.	EQUALIZATION #2 AIR SPARGE	BECKART	
	9.	3 EQUALIZATION #2 FLOATS	S.J. ELECTRO	10MPCNO
		NORMALLY OPEN		
	10.	CLEANWATER HOLDING (EXISTING)		
	11.	CLEANWATER AIR SPARGE	BECKART	
	12.	3 CLEANWATER FLOATS	S.J. ELECTRO	10MPCNO
		NORMALLY OPEN		
	13.	SAND FILTER /W AUTO BACKFLUSH (50GPM)	PEP	799-999-999
		W/ CENTRIFUGAL PUMP		
B	1.	PRECOAT TANK	CHEMTAINER	330AA31X48
		OPEN TOP, FLAT BOTTOM		
		330 GALLONS		
		45"DIA. X 48"HIGH		
	2.	PRECOAT AIR SPARGE	BECKART	
	3.	2 PRECOAT FLOATS (NORMALLY CLOSED)	SJ ELECTRO	10MPCNC
	4.	2" AIR OPERATED DOUBLE DIAPHRAGM	BECKART	2"AOD
		PRECOAT TRANSFER PUMP		
	5.	800MM (SEMI-AUTO) FILTER PRESS	BECKART	
		25CU.FT. EXPANDABLE TO 30CU.FT.		
		49.5"W.X 191"L.X58.5"HIGH		
		PLATE NO. 1-43-1		
		FILTER CLOTHS	46409-22	
		WITH 2 FORK LIFTABLE SLUDGE CARTS		
	6.	2 FILTRATE FLOAT SWITCHES	S.J. ELECTRO	10MPCNO
		NORMALLY OPEN		
	7.	FILTRATE TANK	CHEMTAINER	330AA31X48
		OPEN TOP, FLAT BOTTOM		
		330 GALLONS		
		45"DIA. X 48"HIGH		
	8.	FILTRATE TRANSFER PUMP	BECKART	
		SM51, 1HP, 3PH		
C.	1.	COAGULANT DRUM LEVEL SENSOR	BECKART	
	2.	COAGULANT DRUM	BECKART	
	3.	COAGULANT PUMP	BECKART	3/4"AOD
		W/FR ASSEMBLY	BECKART	
		3/4" AIR OPERATED		
	4.	POLYMER TANK		
		OPEN TOP, FLAT BOTTOM		
		260 GALLONS		
		39"DIA. X 53"HIGH		
	5.	POLYMER FLOATS (NORMALLY CLOSED)	SJ ELECTRO	10MPCNC
	6.	POLYMER MIXER 1/3H.P,1750RPM, 3PH	NEPTUNE	JG-2.1
	7.	POLYMER PUMP	BECKART	3/4"AOD
		W/FR ASSEMBLY	BECKART	
		3/4" AIR OPERATED		
	8.	FIBERGLASS MIXER BEAM	BECKART	
	9.	BAG BREAKER	BECKART	
	10.	2 FILTRATE FLOAT SWITCHES	S.J. ELECTRO	10MPCNO
		NORMALLY OPEN		
	11	LIME MIXER 1/3H.P,1750RPM, 3PH	NEPTUNE	JG-2.1
	12	LIME PUMP	BECKART	3/4"AOD
		W/FR ASSEMBLY	BECKART	
		3/4" AIR OPERATED		
	13.	LIME TANK	CHEMTAINER	330AA31X48
		OPEN TOP, FLAT BOTTOM		
		260 GALLONS		
		39"DIA. X 53"HIGH		
	14.	DUST COLLECTOR 230/460V,3PH,TEFC	BECKART	
		30 GALLONS	CHEMTAINER	30AA18X29
		18"DIA. X 29"HIGH		
D.	1.	CONTROL PANEL	BECKART	
		WITH PLC & PANELVIEW 600		
		42"W.X36"L.X12"DEEP		
	2.	TREATMENT MIXER 1HP,460V	PROQUIP	100JLX25P
	3.	3 TREATMENT FLOATS	S.J. ELECTRO	10MPCNO
	4.	CARBON STEEL MIXER BEAM	BECKART	
	5.	ACCESS LADDER		
		33"W.X31.5"L.X150"HIGH		
	6.	TREATMENT TANK	TBP	
		OPEN TOP, DISH BOTTOM		
		8000 GALLONS		
		138"DIA. X 152"HIGH		
	7.	2 (3-WAY) 2" ELECTRIC BALLVALVES	ASAHI	
		1 (2-WAY) 2" ELECTRIC BALLVALVE		
	8.	IN-LINE PROBE	GREAT LAKES	6051P0
	9.	TREATMENT SLUDGE/RECIRCULATION	BECKART	2" AOD
		2" AIR OPERATED		
		DOUBLE DIAPHRAGM PUMP		



MAY 17 2001

CUSTOMER UTILITY REQUIREMENTS AND SYSTEM NOTES:

AIR: 100 PSI, 60SCFM, 1/2" GALVANIZED STEEL PIPE (AIR MUST BE DRY AND OIL FREE & DRY AIR PROTECTED TO 40 DEGREES F.) (PRESSURE DEWPOINT LEVEL AT THE POINT OF USE.)

WATER: 3/4" NPT FRESH WATER

ELECTRICAL: 30AMP, 460VAC, 3PH, 60HZ
30AMP, 115VAC, 1PH, 60HZ
W/NUETRAL AND GROUND WIRE.

1. Largest tank dimension is 143" O.D. (includes tank lip) x 152" high, Please verify access into plant.
2. Minimum clearance of ceiling height must be 2' above tallest piece of equiptment, when set in place.
3. Sewer connection must be located less than 20 feet from Beckart treatment system. If more than 20 feet away it needs to be noted.
4. (WHEN IN USE) Sulfuric Acid not to exceed 50% concentrate. Pvc piping cannot withstand over 50% concentrate of sulfuric acid.

BECKART ENVIRONMENTAL, INC.
6800 46th STREET KENOSHA, WISCONSIN 53144
(262) 656-7660 FAX: (262) 656-7899

DRAWING 12

EQUIPMENT LISTING
BECKART TREATMENT SYSTEM

SANI-TECH ENVIRONMENTAL, INC.
CHARLESTON, SC

Drawn by: ELEANOR R.	Proj. Coor.: KRISTEN FUDE Checked by: Date: 5/17/01		
Scale: 1/4"=1'	Dimension Format: Feet & Inches	Page: 1 of 1	
Date: 1/22/2001	Dwg Type: Equipment Listing	Dwg No: 00053-31	Doc No: 023

ABBREVIATIONS

ATM - ATMOSPHERE
AG - ABOVE GROUND
BCFC - BROMOCHLORO-DIFLUORO-METHANE
BD - BLOWDOWN
BL - BATTERY LIMITS
C - CHEMICAL DRAIN
CA - CORROSION ALLOWANCE
CO - CHAIN OPERATED
CSC - CAR SEALED CLOSED
CSO - CAR SEALED OPEN
CW - COOLING WATER
CWR - COOLING WATER RETURN
CWS - COOLING WATER SUPPLY
(F) - VENDOR FURNISHED
(F&P) - VENDOR FURNISHED & PIPED
FC - FAIL CLOSED
FI - FAIL IN INTERMEDIATE POSITION
FL - FAIL LOCKED
FO - FAIL OPEN
FP - FULL PORT
GO - GEAR OPERATED
HIL - HIGH INTERFACE LEVEL
HLL - HIGH LEVEL LIQUID
HOA - HAND-OFF-AUTO
HP - HIGH PRESSURE
IAS - INSTRUMENT AIR SUPPLY
Ic - INSULATION (COLD)
Ih - INSULATION (HOT)
Is - INSULATION (SAFETY)
kW - KILOWATT
LC - LOCKED CLOSED
LIL - LOW INTERFACE LEVEL
LLL - LOW LIQUID LEVEL
LO - LOCKED OPEN
LP - LOW PRESSURE
NC - NORMALLY CLOSED
NIL - NORMAL INTERFACE LEVEL
NLL - NORMAL LIQUID LEVEL
NO - NORMALLY OPEN
O - OILY WATER DRAIN
OWS - OILY WATER SEWER
PO - PUMP OUT
RO - RESTRICTION ORIFICE
S - STORM WATER DRAIN
SC - SAMPLE CONNECTION
SD - SHUT DOWN
SO - STEAM OUT
SP - SET POINT
SG - SPECIFIC GRAVITY
SSV - SAFETY SHUTOFF VALVE
TSO - TIGHT SHUTOFF
T/T - TANGENT TO TANGENT
VB - VORTEX BREAKER
UG - UNDER GROUND
US - UTILITY STATION

ELECTRICAL REQUIREMENTS

XXX V → XXX VOLT, XX Hz, X PHASE POWER

example:

460 V → 460 VOLT, 60 Hz, 3 PHASE POWER

INSTRUMENT IDENTIFICATION

A - ANALYSIS
B - BURNER, COMBUSTION
C - CONDUCTIVITY
D - DENSITY
E - VOLTAGE
F - FLOW RATE
FF - FLOW RATIO
FQ - FLOW QUANTITY
G - NOT USED
H - HAND
I - CURRENT
J - POWER
K - TIME
L - LEVEL
M - NOT USED
N - NOT USED
O - NOT USED
P - PRESSURE/VACUUM
PD - DIFF. PRESSURE
Q - QUANTITY/NUMBER
R - RESTRICTION
S - SPEED/FREQUENCY
T - TEMPERATURE
TD - DIFF. TEMPERATURE
U - MULTIVARIABLE
V - VIBRATION, - MACHINERY ANALYSIS
W - WEIGHT, FORCE
WD - DIFF. WEIGHT, FORCE
X - UNCLASSIFIED
Y - EVENT, STATE, PRESENCE
Z - POSITION, DIMENSION
ZD - GAUGING, DEVIATION

(* MEANS SELECT FIRST LETTERS FROM ABOVE TABLE)

*A — * ALARM
*AH — * ALARM HIGH
*AL — * ALARM LOW
*C — * CONTROLLER (BLIND)
*CV — * CONTROL VALVE (SELF-ACTUATED)
*E — * ELEMENT
*G — * GLASS
*I — * INDICATOR
*IC — * INDICATING CONTROLLER
*J — * SCAN/MULTIPLEX
*O — * ORIFICE/RESTRICTION
*P — * POINT/TEST CONNECTION
*Q — * TOTALIZE/INTEGRATE
*R — * RECORD/PRINT
*RC — * RECORDER CONTROLLER
*S — * SWITCH (BLIND)
*SH — * SWITCH HIGH
*SL — * SWITCH LOW
*SV — * SAFETY VALVE
*T — * TRANSMITTER (BLIND)
*V — * VALVE
*W — * WELL

EXAMPLE: TE — RESISTANCE TEMPERATURE DETECTOR (RTD)

LINE & PIPING SYMBOL IDENTIFICATION

PROCESS LINE
FRESHWATER LINE
CHEMICAL LINE
INSTRUMENT AIR LINE
INSTRUMENT ELECTRICAL SIGNAL
FLEX LINE
INSTRUMENT CAPILLARY TUBING
HYDRAULIC SIGNAL
ELECTROMAGNETIC SONIC SIGNAL OR LIGHT BEAM
HEAT TRACED LINE
UNDERGROUND LINE
UTILITY LINE
UNDEFINED CONTROL SIGNAL (ELECTRONIC OR PNEUMATIC) PROCESS FLOW DIAGRAM ONLY.
DISTRIBUTED CONTROL SYSTEM SOFTWARE LINK OR MANUFACTURER'S SYSTEM CONNECTIONS BETWEEN FUNCTIONS.

VALVE ACTUATOR SYMBOLS

MANUAL
SOLONOID
HYDRAULIC
ELECTRIC
ELECTRIC W/POSITIONER
PNEUMATIC W/SOLONOID
PNEUMATIC W/POSITIONER
VALVE ACTUATOR W/ATTACHED ELECTRO-PNEUMATIC CONVERTER

CONTROL VALVES

CYLINDER ACTUATED VALVE (DOUBLE ACTING)
REGULATOR SELF-CONTAINED
REGULATOR WITH EXTERNAL PRESSURE TAP
FLOW REGULATOR, SELF CONTAINED
MANUAL PRESSURE REGULATOR W/PRESSURE GUAGE
MANUAL PRESSURE REGULATOR, W/PRESSURE GUAGE AND FILTER
LUBRICATOR

MANUALLY OPERATED VALVES

GLOBE VALVE
PVC GATE VALVE
PVC PLUG VALVE
PVC HAND CONTROL VALVE
PVC HAND CONTROL BALL VALVE
BUTTERFLY VALVE
CHECK VALVE
STOP CHECK VALVE
BRASS HAND CONTROL BALL VALVE
BLOWDOWN VALVE
ANGLE BLOWDOWN VALVE
VALVE WITH BLEED OR PURGE CONNECTION UNDER DISC
NEEDLE VALVE
TIGHT SHUTOFF
ANGLE VALVE
DIAPHRAGM VALVE
PVC 3-WAY BALL VALVE

MISCELLANEOUS SYMBOLS

BLOWER
AIR OPERATED TRANSFER PUMP
CENTRIFUGAL TRANSFER PUMP
CHEMICAL METERING PUMP
SUBMERSIBLE TRANSFER PUMP
ROTARY SCREEN
PUMP SKID
FILTER PRESS
PRESSED SOLIDS
SLUDGE CART
DISCRETE INSTRUMENTS, FIELD MOUNTED
DISCRETE INSTRUMENTS, PRIMARY LOCATION, NORMALLY ACCESSIBLE TO OPERATOR
PLC, LOCATED BEHIND-THE-PANEL
PLC OUTPUT
PLC INPUT
PILOT LIGHT
UNDEFINED INTERLOCK LOGIC
MIXER
AIR SPARGE
EXHAUST MUFFLER
DECANT PORT (FULL COUPLING)
FLOAT LEVEL SENSOR
PROBE
MAGNETIC FLOWMETER
PROPELLER OR TURBINE METER
ULTRASONIC LEVEL SENSOR
CUSTOMER RESPONSIBILITY
REDUCER
UNION
FILTER PRESS PLATE SHIFTER

BECKART ENVIRONMENTAL, INC.
6900 46th STREET KENOSHA, WISCONSIN 53144
(414) 656-7680 FAX: (414) 656-7699

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PROJ. ENGR.		DATE
DRAWN BY	TW	DATE
BUILT BY		DATE
CHECKED BY		DATE

NO.	REVISION	BY	APP.	DATE

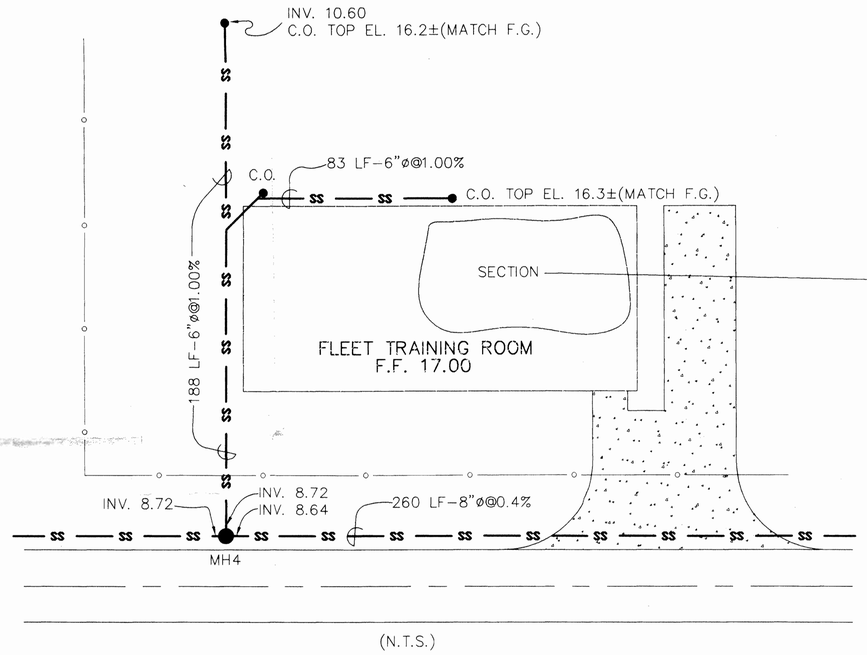
WORKING TOWARDS A CLEANER ENVIRONMENT

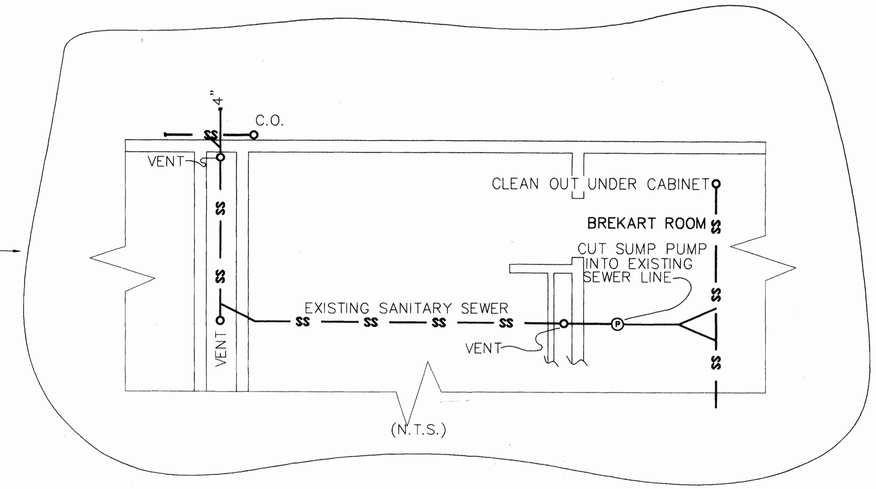
DRAWING 11

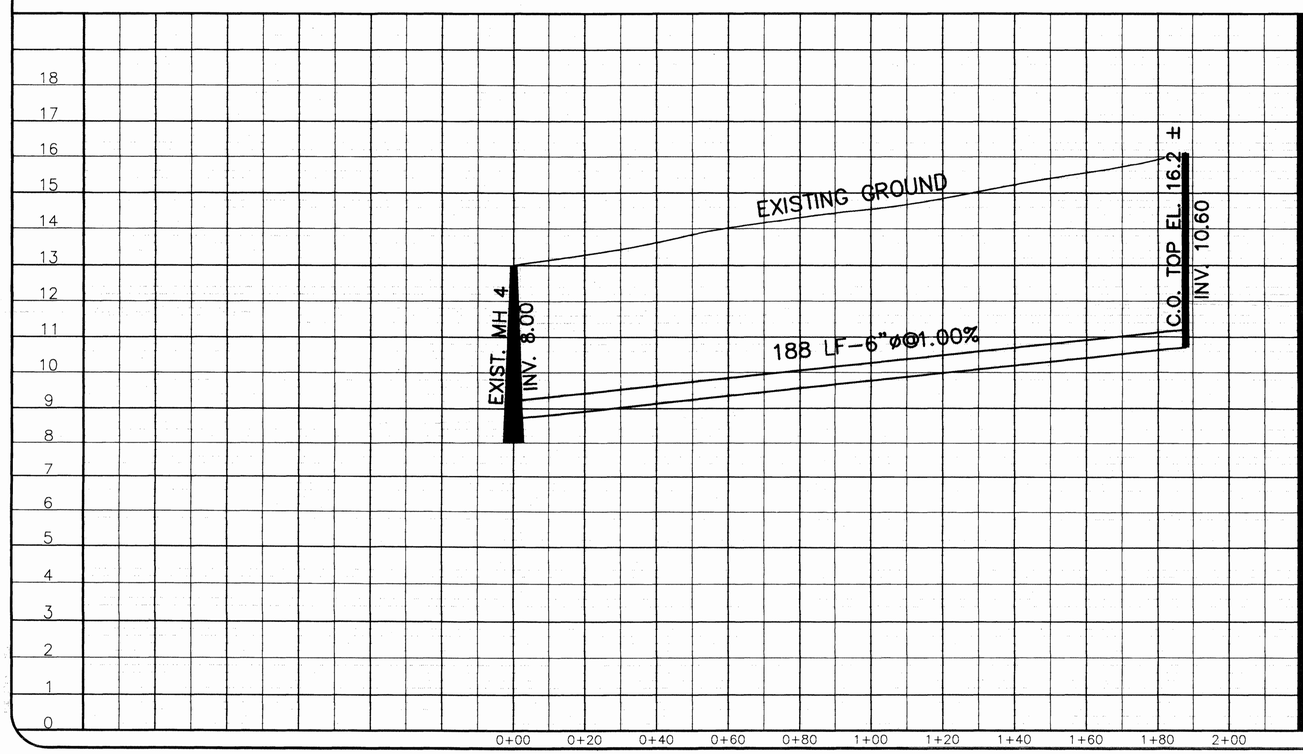
P&ID LEGEND

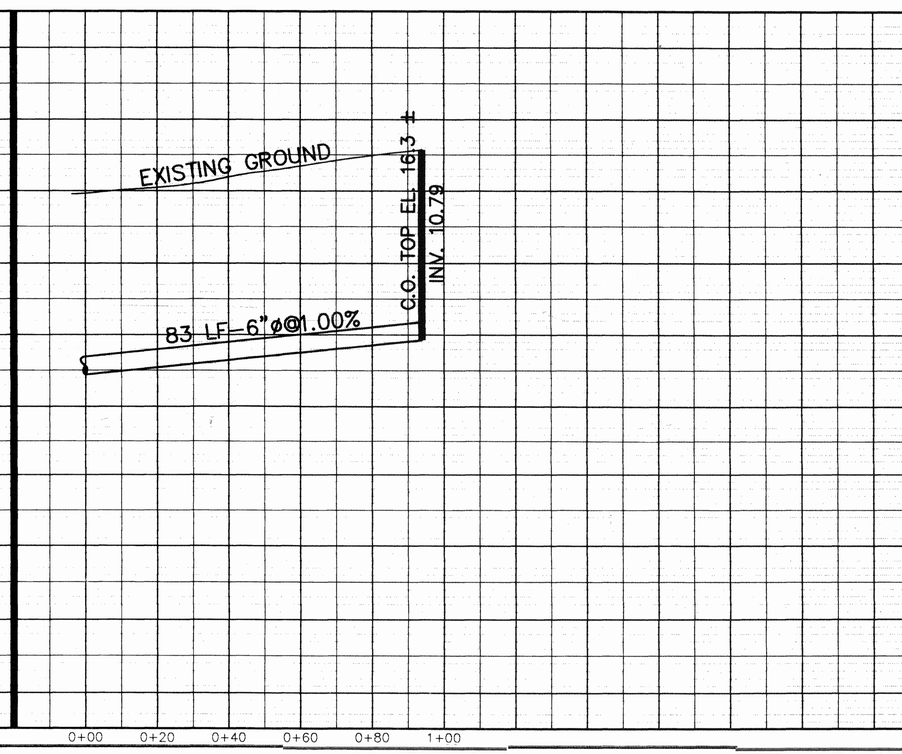
JOB NO. LEGEND
DRAWING NO. LEGEND-10
TYPE: SYMBOL LEGEND
SCALE: NONE
PAGE NO. 1 OF 1

MAY 17 2004









SEWER PROFILE & SEWER DETAILS
DRAWING NO.
SANI-TECH ENVIRON., INC.
NORTH CHARLESTON
DRAWING 10

E. M. SEABROOK, JR. INC.
ENGINEERS-SURVEYORS-PLANNERS
1081 JOHNNIE DODDS BLVD./BOX 16
MOUNT PLEASANT, SC 29465
PHONE (843) 884-4496

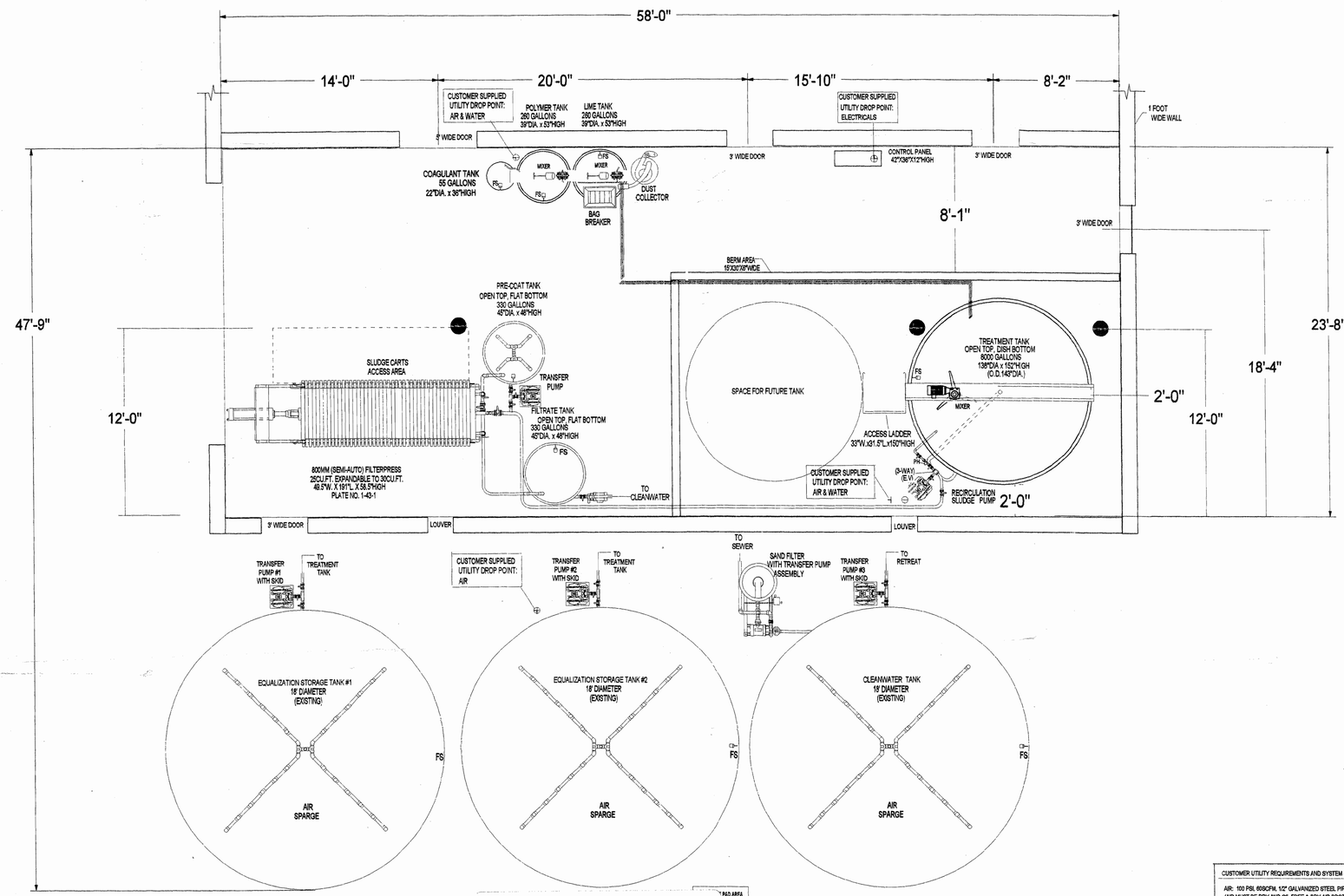
NO.	DATE	REVISIONS

DRAWN BY:	JFM
CHECKED BY:	LES
JOB NO.:	
SCALE:	1"=20'
DATE:	MAY 17, 2001

SHEET

OF

NO.	REVISION	BY	APP.	DATE
1	REVISED LAYOUT TO MATCH CUSTOMER'S SPACE REQUIREMENTS	ER	KF	1/22/01
2	REVISED LAYOUT TO MATCH CUSTOMER'S SPACE REQUIREMENTS	ER	KF	5/04/01
3	MOVED SAND/FILTER, AND ADDED A FILTRATE PUMP TO TANK AS DIRECTED.	ER	KF	5/17/01



MAY 17 2001

NOTE:

EQUALIZATION STORAGE TANKS AND CLEAN WATER TANK NOT DRAWN TO SCALE-SEE DRAWING 8

CUSTOMER UTILITY REQUIREMENTS AND SYSTEM NOTES:

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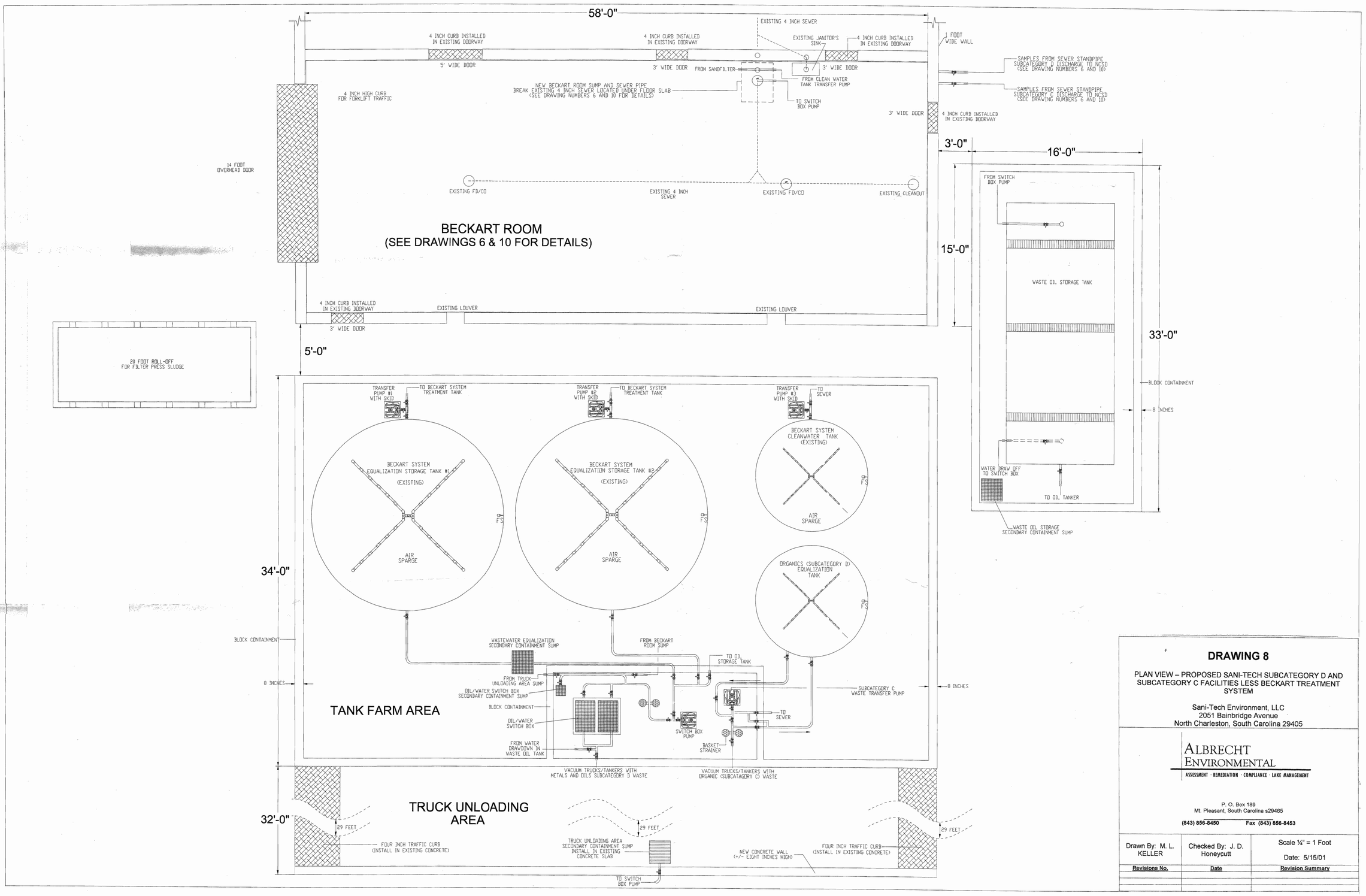
DRAWING 9
PLAN VIEW - BECKART TREATMENT SYSTEM

SANI-TECH ENVIRONMENTAL, INC.
CHARLESTON, SC

Drawn by: ELEANOR R.	Proj. Coor.: KRISTEN FUDE Checked by: Kristen Fude	Date: 5/17/01	
Scale: 1/4"=1'	Dimension Format: Feet & Inches	Page: 1 of 1	
Date: 1/22/2001	Dwg Type: Equipment Layout	Dwg No: 00053-30	Doc No: 023



DRAWING 8

PLAN VIEW – PROPOSED SANI-TECH SUBCATEGORY D AND SUBCATEGORY C FACILITIES LESS BECKART TREATMENT SYSTEM

Sani-Tech Environment, LLC
2051 Bainbridge Avenue
North Charleston, South Carolina 29405

ALBRECHT ENVIRONMENTAL
ASSESSMENT · REMEDIATION · COMPLIANCE · LAKE MANAGEMENT

P. O. Box 189
Mt. Pleasant, South Carolina s29465
(843) 856-8450 Fax (843) 856-8453

Drawn By: M. L. KELLER	Checked By: J. D. Honeycutt	Scale ¼" = 1 Foot Date: 5/15/01
Revisions No.	Date	Revision Summary