need info on

DC
MAG910116

Clean Harbors
OF BRAINTREE, INC.
1 Hill Avenue, Braintree, MA. 02184
(781) 849-1800 • Fax (781) 356-1574

Via FedEx: 7906 7123 7889

October 7, 2005

US Environmental Protection Agency
RGP-NOC Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, MA. 02114-2023

OCT 11 2005

RE: Notice of Intent – Remediation General Permit (RGP)

Dear Sir or Madam:

Clean Harbors of Braintree, Inc. (CHBI) of One Hill Avenue in Braintree Massachusetts, discharges treated groundwater effluent pursuant to NPDES permit exclusion Reference # 99-070. Enclosed please find the RGP application. Also included with this application is drawing 156-F-03 Groundwater Treatment System.

Pursuant to M.G.L. c. 21 C Form BRPWM 12 is not required as the site cleanup is covered under US EPA Region 1 HSWA Consent order RCRA Section 3008(h)

Should you have any questions or concerns regarding this information, please do not hesitate to contact me at (781) 849-1800 ext.3342. Thank you for your assistance in this matter.

"I certify under penalty of law that this document and all attachments were prepared under my supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,
Clean Harbors of Braintree, Inc.

David S. Medina
Facility Compliance Manager

CC: Massachusetts Department of Environmental Protection Via FedEx 7924 0534 3313

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General site information. Please provide the following information about the site:

a) Name of **facility/site**: Clean Harbors of Braintree, Inc.		**Facility/site** address: 1 Hill Avenue Braintree, MA. 02184		
Location of **facility/site**: longitude:_70 58' 04"_ latitude:_42 13' 057"_	Facility SIC code(s): 4226	Street: 1 Hill Avenue		
b) Name of **facility/site owner:** Clean Harbors of Braintree, Inc.		Town: Braintree		
Email address of owner: mckima@cleanharbors.com		State: MA	Zip: 02184	County: Norfolk
Telephone no.of facility/site **owner**: (781) 849-1807				
Fax no. of facility/site **owner**: (781) 356-1574		**Owner** is (check one): 1. Federal____ 2. State/Tribal____ 3. Private_✓___ 4. other, if so, describe:		
Address of **owner** (if different from site):				
Street:				
Town:	State:	Zip:	County:	
c) Legal name of **operator**: Clean Harbors of Braintree, Inc,	**Operator** telephone no: (781) 849-1807			
	Operator fax no.: (781) 356-1574	**Operator** email: mattsonj@cleanharbors.com		
Operator contact name and title: John Mattson, General Manager				

Address of **operator** (if different from owner):	Street:		
Town:	State:	Zip:	County:

d) Check "yes" or "no" for the following:
1. Has a prior NPDES permit exclusion been granted for the discharge? Yes ✓ No___, if "yes," number: 99-070
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes___ No ✓, if "yes," date and tracking #:
3. Is the discharge a "new discharge"as defined by 40 CFR 122.2? Yes___ No ✓
4. For sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting? Yes__ No ✓

e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes___ No ✓
If "yes," please list:
1. site identification # assigned by the state of NH or MA:
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

f) Is the site/facility covered by any other EPA permit, including:
1. multi-sector storm water general permit? Y___ N ✓, if Y, number:
2. phase I or II construction storm water general permit? Y___ N ✓, if Y, number:
3. individual NPDES permit? Y ✓ N___, if Y, number: MA0031551
4. any other water quality related permit? Y___ N ✓, if Y, number:

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage:

Pump and Treat gourndwater remediation system designed to contain groundwater contamination at the site as part of a HWSA Consent Order Project (RCRA Docket 1-89-1050).

b) Provide the following information about each discharge:	1) Number of discharge points: 1	2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)? Max. flow 0.07 Average flow .008 Is maximum flow a **design value**? Y ✓ N___ For average flow, include the units and appropriate notation if this value is a design value or estimate if not available. Average flow is in cubic feet per second, based upon 3.5 gpm average operation value

3) Latitude and longitude of each discharge within 100 feet: pt.1:long._____ lat._____; pt.2: long._____ lat._____; pt.3: long._____ lat._____; pt.4:long._____ lat._____; pt.5: long._____ lat._____; pt.6:long._____ lat._____; pt.7: long._____ lat._____; pt.8:long._____ lat._____; etc.

3. Contaminant information. In order to complete this section, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for **all** of the parameters listed in Appendix III. Historical data, (i.e., data taken no more than 2 years prior to the effective date of the permit) may be used if obtained pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, provided the data was analyzed with test methods that meet the requirements of this permit. Otherwise, a new sample shall be taken and analyzed.

a) Based on the analysis of the sample(s) of the untreated influent, the applicant must check the box of the sub-categories that the potential discharge falls within.

Gasoline Only	VOC Only	Primarily Metals	Urban Fill Sites	Contaminated Sumps	Mixed Contaminants	Aquifer Testing
Fuel Oils (and Other Oils) only	VOC with Other Contaminants	Petroleum with Other Contaminants	Listed Contaminated Sites	Contaminated Dredge Condensates	Hydrostatic Testing of Pipelines/Tanks	Well Development or Rehabilitation

b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids										
2. Total Residual Chlorine										
3. Total Petroleum Hydrocarbons		✓	4	grab	418.1	1 mg/l	2500		1100	
4. Cyanide	✓									
5. Benzene		✓	4	grab	8260B	5 ug/l	<500		<500	
6. Toluene		✓	4	grab	8260B	5 ug/l	<500		<500	
7. Ethylbenzene		✓	4	grab	8260B	5 ug/l	<500		<500	
8. (m,p,o) Xylenes		✓	4	grab	8260B	5 ug/l	<500		<500	
9. Total BTEX[4]		✓	4	grab	8260B	5 ug/l	<500		<500	

[4]BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide (1,2- Dibromo-methane)	✓									
11. Methyl-tert-Butyl Ether (MtBE)		✓	4	grab	8260B	5 ug/L	<500		<500	
12. tert-Butyl Alcohol (TBA)	✓									
13. tert-Amyl Methyl Ether (TAME)	✓									
14. Naphthalene		✓	4	grab	8260B	5 ug/L	<500		<500	
15. Carbon Tetra-chloride		✓	4	grab	8260B	5 ug/L	1,600		<500	
16. 1,4 Dichlorobenzene	✓		4	grab	8260B	5 ug/L				
17. 1,2 Dichlorobenzene	✓		4	grab	8260B	5 ug/L				
18. 1,3 Dichlorobenzene	✓		4	grab	8260B	5 ug/L				
19. 1,1 Dichloroethane		✓	4	grab	8260B	5 ug/L	2940		2330	
20. 1,2 Dichloroethane		✓	4	grab	8260B	5 ug/L	<500		<500	
21. 1,1 Dichloroethylene		✓	4	grab	8260B	5 ug/L	<500		<500	
22. cis-1,2 Dichloro-ethylene		✓	4	grab	8260B	5 ug/L	14000		11750	
23. Dichloromethane (Methylene Chloride)		✓	4	grab	8260B	5 ug/L	<500		<500	
24. Tetrachloroethylene		✓	4	grab	8260B	5 ug/L	4,300		3,035	

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane		✓	4	grab	8260B	5 ug/L	12200		8.810	
26. 1,1,2 Trichloroethane	✓									
27. Trichloroethylene		✓	4	grab	8260B	5ug/L	7,610		5,540	
28. Vinyl Chloride		✓	4	grab	8260B	5 ug/L	<500		<500	
29. Acetone		✓	4	grab	8260B	5 ug/L	<500		<500	
30. 1,4 Dioxane	✓									
31. Total Phenols	✓									
32. Pentachlorophenol	✓									
33. Total Phthalates [5] (Phthalate esthers)	✓									
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓									
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)										
a. Benzo(a) Anthracene	✓									
b. Benzo(a) Pyrene	✓									
c. Benzo(b)Fluoranthene	✓									
d. Benzo(k) Fluoranthene	✓									
e. Chrysene	✓									

[5] The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✓									
g. Indeno(1,2,3-cd) Pyrene	✓									
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	✓									
h. Acenaphthene	✓									
i. Acenaphthylene	✓									
j. Anthracene	✓									
k. Benzo(ghi) Perylene	✓									
l. Fluoranthene	✓									
m. Fluorene	✓									
n. Naphthalene-		✓								
o. Phenanthrene	✓									
p. Pyrene	✓									
37. Total Polychlorinated Biphenyls (PCBs)										
38. Antimony										
39. Arsenic										
40. Cadmium										
41. Chromium III										
42. Chromium VI										

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper										
44. Lead										
45. Mercury										
46. Nickel										
47. Selenium										
48. Silver										
49. Zinc										
50. Iron		✓	4	grab	6010B	0.1 mg/	14800		7,590	
Other (describe):										

c) For discharges where **metals** are believed present, please fill out the following:

Step 1: Do any of the metals in the influent have a **reasonable potential** to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y____ N ✓	If yes, which metals?
Step 2: For any metals which have **reasonable potential** to exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metals:_____ DF: _____	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y____ N ✓ If "Yes," list which metals:

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:

Groundwater treatemtn system is a pump and treat system utlilizing and oil water separator, metals removal system, bag filter unit, air stripper, and activated carbon units (see attached process drawing).

b) Identify each applicable treatment unit (check all that apply):	Frac. tank	Air stripper ✓	Oil/water separator ✓	Equalization tanks ✓	Bag filter ✓	GAC filter ✓
	Chlorination	Dechlorination	Other (please describe):			

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:
Average flow rate of discharge 3.5 Maximum flow rate of treatment system 30 Design flow rate of treatment system 30

d) A description of chemical additives being used or planned to be used (attach MSDS sheets):

Sodium Hydroxide & Sulfuric Acid - pH adjustment
Nalclear 7767 floculant - metals removal/flocculation

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:	Direct____	Within facility__	Storm drain ✓	River/brook____	Wetlands____	Other (describe):

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:

Treatment system dicharge is connected to neighboring 48" stormwater drain via 12" SDR underground piping. Strom drain empties into the Weymouth Fore River. (see attached site drawing).

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water_____,

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water_____cfs
Please attach any calculation sheets used to support stream flow and dilution calculations.

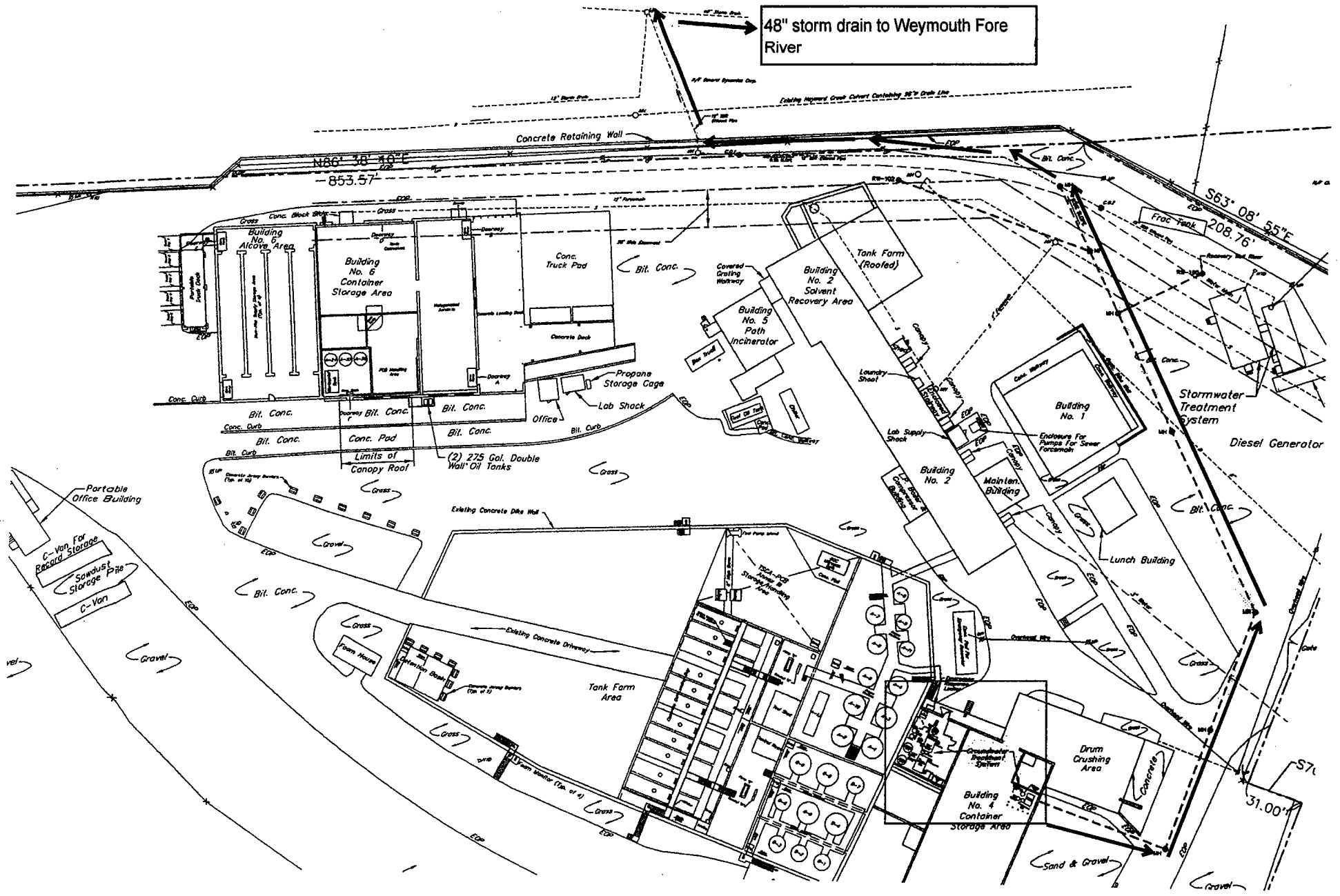
f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes____ No____ If yes, for which pollutant(s)?

Is there a TMDL? Yes____ No____ If yes, for which pollutant(s)?

6. Results of Consultation with Federal Services: Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes____No____
Has any consultation with the federal services been completed ? No___ or is consultation underway? Yes____ No____
What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (~~check~~ one):
a "no jeopardy" opinion? _____or written concurrence____ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?

b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?
Yes_____ No_____ Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes_____ No_____


48" storm drain to Weymouth Fore River
Concrete Retaining Wall
N86° 38' 40"E
853.57'
S63° 08' 55"E
208.76'
Frac Tank
Building No. 6 Alcove Area
Building No. 6 Container Storage Area
Conc. Truck Pad
Tank Farm (Roofed)
Building No. 2 Solvent Recovery Area
Building No. 5 Path Incinerator
Propane Storage Cage
Lab Shack
Office
Conc. Pad
Limits of Canopy Roof
(2) 275 Gal. Double Wall Oil Tanks
Stormwater Treatment System
Diesel Generator
Building No. 1
Building No. 2
Maintan. Building
Lunch Building
Portable Office Building
C-Van For Record Storage
Sawdust Storage Pile
C-Van
Existing Concrete Dike Wall
Existing Concrete Driveway
Tank Farm Area
Foam House
Foam Monitor (Typ. of 4)
Groundwater Treatment System
Drum Crushing Area
Building No. 4 Container Storage Area
Sand & Gravel
Gravel
31.00'

7. Supplemental information. :

Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

Original EPA Exclusion letter and MSDS for added chemicals are attached.

Process water has been sampled on a monthly basis since operation began in 1999. Four most recent analyical results were used for average and maximum values.

Collection of additional required parameters will be reported as soon as available.

EPA Project Manager is Edgar A. Davis of the Office of Site Remediation and Restoration.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

January 11, 1999

Mr. Paul Godding
Clean Harbors of Branintree, Inc.
385 Quincy Avenue
Braintree, MA 02184

Re: NPDES Permit Exclusion for groundwater remediation at 385 Quincy Avenue in Braintree, MA.
NPDES Permit Exclusion Reference #99-070

Dear Mr. Godding:

Based on information provided by Mr. Jim Fenstermacher of Clean Harbors Environmental Services, Inc., (CHES), I grant you, pursuant to Title 40 of the Code of Federal Regulations, Part 122.3(d), exclusion from the requirement for a permit under the National Pollutant Discharge Elimination System (NPDES), in order that groundwater remediation may begin in a timely fashion at the referenced location.

Subject to other controls that may be established by the State of Massachusetts, and the Town of Sheffield, you are authorized to discharge up to 30 gallons of treated water per minute, through a system consisting of groundwater depression leading to an oil/water separator, equalization tank, bag filter, air stripper and granular activated carbon filtration system (sized appropriately for the anticipated flow), prior to discharge into a storm water drainage system leading to the Weymouth Fore River. The discharge must be done in accordance with the following provisions:

1. No discharge of oil, sufficient to cause a sheen (as defined in 40 CFR 110), occurs to the drainage system. The discharge of a sheen of oil, or gasoline, constitutes an oil spill and must be reported, immediately, to the National Response Center (NRC) at (800) 424-8802.

2. Security provisions are maintained to assure that system failure, vandalism, or other incident will be addressed in a timely fashion, preventing the loss of oil or contaminated water to the storm water drainage system.

3. Sampling and analysis, in accordance with EPA Methods, must be performed for the following chemicals with the listed limits being applicable:

Total Petroleum Hydrocarbons	5 ppm
Benzene	5 ppb
Toluene	*
Ethyl Benzene	*
Xylenes	*
The total for Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX)	----- 100 ppb
Methyl Tertiary Butyl Ether	70 ppb

Trichloroethylene (ene)	5 ppb
Tetrachloroethylene (perc)	5 ppb
Dichloromethane (Methylene Chloride)	5 ppb
1,1-Dichloroethylene	7 ppb
cis 1,2-Dichloroethylene	70 ppb
1,1,1-Trichloroethane	200 ppb
Trans 1,2-Dichloroethylene (DCE)	100 ppb
1,1-Dichloroethane	100 ppb
Chloroethane	100 ppb
Trichloromethane (Chloroform)	100 ppb
Vinyl Chloride	2 ppb

Laboratory samples must be obtained from the influent to treatment, and to the effluent to the drainage system on the first and every other day of discharge during the first week of operations. During the balance of the first month, sampling must be at least weekly. After the first month, monthly sampling must be performed.

Analytical Reports, with quality control information, are to be reported to the DEP Project Manager, and to the undersigned NPDES permit exclusion writer of this office, by the 28th of April, July, October, and January, for the preceding three-month period, using the NPDES exclusion reference number assigned above.

4. You, or your representative, provide 24 hours notice of the anticipated start-up of discharge, if start-up occurs after January 15, 1999.

5. You, or your contractor, maintain copies of all analytical reports, and quality control information for a period of 3 years from the date of the report.

Because the purpose of this exclusion from the regulations is to allow for remediation of contaminated groundwater, the exclusion will be in effect for four (4) months from system start-up. This exclusion may also be adjusted verbally if operational conditions require (ie; equipment failure or weather).

After four months of discharge, it is expected that an application for a permanent NPDES wastewater permit will be submitted. Permanent NPDES permit application materials may be obtained from Ms. Olga Vergara of EPA's Boston office. She may be contacted at (617) 918-1519.

If any questions should arise, please contact me at (617) 918-1235.

Sincerely,

Scott R. Pellerin
On-Scene Coordinator
Emergency Response Section

cc: J. Downing
B. Kubit
Data Base Unit
J. Fenstermacher
EPA-MA Permits
MA DEP-OWM
MA DEP-BWSC-Northeast Region
CHES

TOXIKON CORPORATION
15 WIGGINS AVENUE
BEDFORD, MA 01730
TEL: (781) 275-3330

March 08, 2005

Jason Bierly
Clean Harbors
1501 Washington Street
BRAINTREE, MA 02185
TEL: (781) 849-1800
FAX (781) 794-1760

RE: Braintree

Order No.: 0503009

Dear Jason Bierly:

Toxikon received 7 samples on 3/1/2005 for the analyses presented in the following report.

Unless noted in the report, there were no problems with the analyses and all data for associated QC met EPA or laboratory specifications.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Tammy Beaulieu

Certifications: MA: MA 064, NH: 204099D and 204099E, ME: MA064, RI: 55, VT: MA064, TN: MA064
NY: 10778, FL: E87143 and 87394, NC: 286, PA 68-461, CT: PH 0563, NJ: 59538, MD:

Toxikon

Date: *08-Mar-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W Sep
Lab Order:	0503009	**Tag Number:**	
Project:	Braintree	**Collection Date:**	2/28/2005 4:00:00 PM
Lab ID:	0503009-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS, TOTAL		**SW6010B**				Analyst: AI
Iron	7.7	0.10		mg/L	1	3/3/2005 11:22:00 AM
Manganese	5.7	0.010		mg/L	1	3/3/2005 11:22:00 AM
VOLATILES BY GC/MS		**SW8260B**				Analyst: XL
1,1,1,2-Tetrachloroethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,1,1-Trichloroethane	7500	500		µg/L	100	3/3/2005 5:24:00 PM
1,1,2,2-Tetrachloroethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,1,2-Trichloroethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,1-Dichloroethane	2100	500		µg/L	100	3/3/2005 5:24:00 PM
1,1-Dichloroethene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,1-Dichloropropene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2,3-Trichlorobenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2,3-Trichloropropane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2,4-Trichlorobenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2,4-Trimethylbenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2-Dibromo-3-chloropropane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2-Dibromoethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2-Dichlorobenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2-Dichloroethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,2-Dichloropropane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,3,5-Trimethylbenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,3-Dichlorobenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,3-Dichloropropane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
1,4-Dichlorobenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
2,2-Dichloropropane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
2-Butanone	ND	5000		µg/L	100	3/3/2005 5:24:00 PM
2-Chloroethyl vinyl ether	ND	500		µg/L	100	3/3/2005 5:24:00 PM
2-Chlorotoluene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
2-Hexanone	ND	1000		µg/L	100	3/3/2005 5:24:00 PM
4-Chlorotoluene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
4-Isopropyltoluene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
4-Methyl-2-pentanone	ND	1000		µg/L	100	3/3/2005 5:24:00 PM
Acetone	ND	5000		µg/L	100	3/3/2005 5:24:00 PM
Acrolein	ND	10000		µg/L	100	3/3/2005 5:24:00 PM
Benzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Bromobenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Bromochloromethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Bromodichloromethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Bromoform	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Bromomethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
DF -Dilution Factor
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon

Date: *08-Mar-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W Sep
Lab Order:	0503009	**Tag Number:**	
Project:	Braintree	**Collection Date:**	2/28/2005 4:00:00 PM
Lab ID:	0503009-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
Carbon disulfide	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Carbon tetrachloride	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Chlorobenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Chloroethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Chloroform	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Chloromethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
cis-1,2-Dichloroethene	12000	500		µg/L	100	3/3/2005 5:24:00 PM
cis-1,3-Dichloropropene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Dibromochloromethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Dibromomethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Dichlorodifluoromethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Diethyl Ether	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Ethylbenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Hexachlorobutadiene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Iodomethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Isopropylbenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
m,p-Xylene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Methyl tert-butyl-ether	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Methylene chloride	ND	500		µg/L	100	3/3/2005 5:24:00 PM
n-Butylbenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
n-Propylbenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Naphthalene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
o-Xylene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
sec-Butylbenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Styrene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
tert-Butylbenzene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Tetrachloroethene	3500	500		µg/L	100	3/3/2005 5:24:00 PM
Tetrahydrofuran	ND	1000		µg/L	100	3/3/2005 5:24:00 PM
Toluene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
trans-1,2-Dichloroethene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
trans-1,3-Dichloropropene	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Trichloroethene	5000	500		µg/L	100	3/3/2005 5:24:00 PM
Trichlorofluoromethane	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Vinyl acetate	ND	500		µg/L	100	3/3/2005 5:24:00 PM
Vinyl chloride	ND	500		µg/L	100	3/3/2005 5:24:00 PM
PETROLEUM HYDROCARBONS, T/R		**E418.1**				Analyst: **AB**
Petroleum Hydrocarbons, TR	1.8	1.0		mg/L	1	3/3/2005

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	DF -Dilution Factor	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	RL - Reporting Limit

TOXIKON CORPORATION
15 WIGGINS AVENUE
BEDFORD, MA 01730
TEL: (781) 275-3330

April 11, 2005

Jason Bierly
Clean Harbors
1501 Washington Street
BRAINTREE, MA 02185
TEL: (781) 849-1800
FAX: (781) 794-1760

RE: Braintree

Order No.: 0504006

Dear Jason Bierly:

Toxikon Corporation received 7 samples on 4/1/2005 for the analyses presented in the following report.

Unless noted in the report, there were no problems with the analyses and all data for associated QC met EPA or laboratory specifications.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Tammy Beaulieu

Certifications: MA: MA 064, NH: 204099D and 204099E, ME: MA064, RI: 55, VT: MA064, TN: MA064
NY: 10778, FL: E87143 and 87394, NC: 286, PA 68-461, CT: PH 0563, NJ: 59538, MD: 185

Toxikon Corporation

Date: *11-Apr-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W Sep
Lab Order:	0504006	**Tag Number:**	
Project:	Braintree	**Collection Date:**	3/31/2005 9:00:00 AM
Lab ID:	0504006-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS, TOTAL		**SW6010B**				Analyst: **AI**
Iron	14.8	0.100		mg/L	1	4/8/2005 12:17:00 PM
Manganese	3.99	0.0100		mg/L	1	4/8/2005 12:17:00 PM
VOLATILES BY GC/MS		**SW8260B**				Analyst: **SP**
1,1,1,2-Tetrachloroethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,1,1-Trichloroethane	12200	500		µg/L	100	4/6/2005 3:22:00 PM
1,1,2,2-Tetrachloroethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,1,2-Trichloroethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,1-Dichloroethane	2940	500		µg/L	100	4/6/2005 3:22:00 PM
1,1-Dichloroethene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,1-Dichloropropene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2,3-Trichlorobenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2,3-Trichloropropane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2,4-Trichlorobenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2,4-Trimethylbenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2-Dibromo-3-chloropropane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2-Dibromoethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2-Dichlorobenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2-Dichloroethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,2-Dichloropropane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,3,5-Trimethylbenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,3-Dichlorobenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,3-Dichloropropane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
1,4-Dichlorobenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
2,2-Dichloropropane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
2-Butanone	ND	5000		µg/L	100	4/6/2005 3:22:00 PM
2-Chloroethyl vinyl ether	ND	500		µg/L	100	4/6/2005 3:22:00 PM
2-Chlorotoluene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
2-Hexanone	ND	1000		µg/L	100	4/6/2005 3:22:00 PM
4-Chlorotoluene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
4-Isopropyltoluene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
4-Methyl-2-pentanone	ND	1000		µg/L	100	4/6/2005 3:22:00 PM
Acetone	ND	5000		µg/L	100	4/6/2005 3:22:00 PM
Acrolein	ND	20000		µg/L	100	4/6/2005 3:22:00 PM
Benzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Bromobenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Bromochloromethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Bromodichloromethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Bromoform	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Bromomethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM

Qualifiers

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *11-Apr-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W Sep
Lab Order:	0504006	**Tag Number:**	
Project:	Braintree	**Collection Date:**	3/31/2005 9:00:00 AM
Lab ID:	0504006-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **SP**
Carbon disulfide	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Carbon tetrachloride	1600	500		µg/L	100	4/6/2005 3:22:00 PM
Chlorobenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Chloroethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Chloroform	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Chloromethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
cis-1,2-Dichloroethene	14000	500		µg/L	100	4/6/2005 3:22:00 PM
cis-1,3-Dichloropropene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Dibromochloromethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Dibromomethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Dichlorodifluoromethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Diethyl Ether	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Ethylbenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Hexachlorobutadiene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Iodomethane	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Isopropylbenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
m,p-Xylene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Methyl tert-butyl-ether	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Methylene chloride	ND	500		µg/L	100	4/6/2005 3:22:00 PM
n-Butylbenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
n-Propylbenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Naphthalene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
o-Xylene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
sec-Butylbenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Styrene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
tert-Butylbenzene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Tetrachloroethene	4300	500		µg/L	100	4/6/2005 3:22:00 PM
Tetrahydrofuran	ND	1000		µg/L	100	4/6/2005 3:22:00 PM
Toluene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
trans-1,2-Dichloroethene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
trans-1,3-Dichloropropene	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Trichloroethene	7610	500		µg/L	100	4/6/2005 3:22:00 PM
Trichlorofluoromethane	2390	500		µg/L	100	4/6/2005 3:22:00 PM
Vinyl acetate	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Vinyl chloride	ND	500		µg/L	100	4/6/2005 3:22:00 PM
Surr: 4-Bromofluorobenzene	90.8	86-115		%REC	100	4/6/2005 3:22:00 PM
Surr: Dibromofluoromethane	105	86-118		%REC	100	4/6/2005 3:22:00 PM
Surr: Toluene-d8	95.6	88-110		%REC	100	4/6/2005 3:22:00 PM
PETROLEUM HYDROCARBONS, T/R		**E418.1**				Analyst: **AB**

Qualifiers

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *11-Apr-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W Sep
Lab Order:	0504006	**Tag Number:**	
Project:	Braintree	**Collection Date:**	3/31/2005 9:00:00 AM
Lab ID:	0504006-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PETROLEUM HYDROCARBONS, T/R		**E418.1**				Analyst: **AB**
Petroleum Hydrocarbons, TR	ND	1.00		mg/L	1	4/7/2005

Qualifiers

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

TOXIKON CORPORATION
15 WIGGINS AVENUE
BEDFORD, MA 01730
TEL: (781) 275-3330

May 06, 2005

Jason Bierly
Clean Harbors
1501 Washington Street
BRAINTREE, MA 02185
TEL: (781) 849-1800
FAX: (781) 794-1760

RE: Braintree

Order No.: 0504248

Dear Jason Bierly:

Toxikon Corporation received 7 samples on 4/29/2005 for the analyses presented in the following report.

Unless noted in the report, there were no problems with the analyses and all data for associated QC met EPA or laboratory specifications.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Tammy Beaulieu

Certifications: MA: MA 064, NH: 204099D and 204099E, ME: MA064, RI: 55, VT: MA064, TN: MA064
NY: 10778, FL: E87143 and 87394, NC: 286, PA 68-461, CT: PH 0563, NJ: 59538, MD: 185

Toxikon Corporation

Date: *06-May-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W Sep
Lab Order:	0504248	**Tag Number:**	
Project:	Braintree	**Collection Date:**	4/28/2005 3:00:00 PM
Lab ID:	0504248-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS, TOTAL		**SW6010B**				Analyst: **AI**
Iron	11.1	0.100		mg/L	1	5/4/2005 9:40:00 AM
Manganese	5.50	0.0100		mg/L	1	5/4/2005 9:40:00 AM
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,1,2-Tetrachloroethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,1,1-Trichloroethane	8590	500		µg/L	100	5/2/2005 1:55:00 PM
1,1,2,2-Tetrachloroethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,1,2-Trichloroethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,1-Dichloroethane	2330	500		µg/L	100	5/2/2005 1:55:00 PM
1,1-Dichloroethene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,1-Dichloropropene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2,3-Trichlorobenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2,3-Trichloropropane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2,4-Trichlorobenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2,4-Trimethylbenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2-Dibromo-3-chloropropane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2-Dibromoethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2-Dichlorobenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2-Dichloroethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,2-Dichloropropane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,3,5-Trimethylbenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,3-Dichlorobenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,3-Dichloropropane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
1,4-Dichlorobenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
2,2-Dichloropropane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
2-Butanone	ND	5000		µg/L	100	5/2/2005 1:55:00 PM
2-Chloroethyl vinyl ether	ND	500		µg/L	100	5/2/2005 1:55:00 PM
2-Chlorotoluene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
2-Hexanone	ND	1000		µg/L	100	5/2/2005 1:55:00 PM
4-Chlorotoluene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
4-Isopropyltoluene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
4-Methyl-2-pentanone	ND	1000		µg/L	100	5/2/2005 1:55:00 PM
Acetone	ND	5000		µg/L	100	5/2/2005 1:55:00 PM
Acrolein	ND	20000		µg/L	100	5/2/2005 1:55:00 PM
Benzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Bromobenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Bromochloromethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Bromodichloromethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Bromoform	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Bromomethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM

Qualifiers

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *06-May-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W Sep
Lab Order:	0504248	**Tag Number:**	
Project:	Braintree	**Collection Date:**	4/28/2005 3:00:00 PM
Lab ID:	0504248-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
Carbon disulfide	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Carbon tetrachloride	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Chlorobenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Chloroethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Chloroform	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Chloromethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
cis-1,2-Dichloroethene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
cis-1,3-Dichloropropene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Dibromochloromethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Dibromomethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Dichlorodifluoromethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Diethyl Ether	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Ethylbenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Hexachlorobutadiene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Iodomethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Isopropylbenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
m,p-Xylene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Methyl tert-butyl-ether	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Methylene chloride	ND	500		µg/L	100	5/2/2005 1:55:00 PM
n-Butylbenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
n-Propylbenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Naphthalene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
o-Xylene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
sec-Butylbenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Styrene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
tert-Butylbenzene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Tetrachloroethene	3170	500		µg/L	100	5/2/2005 1:55:00 PM
Tetrahydrofuran	ND	1000		µg/L	100	5/2/2005 1:55:00 PM
Toluene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
trans-1,2-Dichloroethene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
trans-1,3-Dichloropropene	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Trichloroethene	5190	500		µg/L	100	5/2/2005 1:55:00 PM
Trichlorofluoromethane	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Vinyl acetate	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Vinyl chloride	ND	500		µg/L	100	5/2/2005 1:55:00 PM
Surr: 4-Bromofluorobenzene	97.9	86-115		%REC	100	5/2/2005 1:55:00 PM
Surr: Dibromofluoromethane	107	86-118		%REC	100	5/2/2005 1:55:00 PM
Surr: Toluene-d8	98.6	88-110		%REC	100	5/2/2005 1:55:00 PM
PETROLEUM HYDROCARBONS, T/R		**E418.1**				Analyst: **AB**

Qualifiers

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *06-May-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W Sep
Lab Order:	0504248	**Tag Number:**	
Project:	Braintree	**Collection Date:**	4/28/2005 3:00:00 PM
Lab ID:	0504248-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PETROLEUM HYDROCARBONS, T/R		**E418.1**				Analyst: **AB**
Petroleum Hydrocarbons, TR	ND	1.00		mg/L	1	5/3/2005

Qualifiers

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

TOXIKON CORPORATION
15 WIGGINS AVENUE
BEDFORD, MA 01730
TEL: (781) 275-3330

September 15, 2005

Jason Bierly
Clean Harbors
1501 Washington Street
BRAINTREE, MA 02185
TEL: (781) 849-1800
FAX (781) 794-1760

RE: Braintree Order No.: 0508211

Dear Jason Bierly:

Toxikon Corporation received 7 samples on 8/19/2005 for the analyses presented in the following report.

Unless noted in the report, there were no problems with the analyses and all data for associated QC met EPA or laboratory specifications.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

John D. Verban

Certifications: MA: MA 064, , CT: PH 0563, MD: 185, RI: LAO00055
NELAC - NY: 10778, NJ: MA 538, NH: 2040, PA 68-461

Toxikon Corporation

Date: *15-Sep-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W SEP
Lab Order:	0508211	**Tag Number:**	
Project:	Braintree	**Collection Date:**	8/18/2005 9:30:00 AM
Lab ID:	0508211-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS, TOTAL		**SW6010B**				Analyst: **BKO**
Iron	6.76	0.100		mg/L	1	8/22/2005
Manganese	5.09	0.0100		mg/L	1	8/22/2005
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
1,1,1,2-Tetrachloroethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,1,1-Trichloroethane	6960	500		µg/L	100	9/9/2005 1:56:00 AM
1,1,2,2-Tetrachloroethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,1,2-Trichloroethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,1-Dichloroethane	1960	500		µg/L	100	9/9/2005 1:56:00 AM
1,1-Dichloroethene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,1-Dichloropropene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2,3-Trichlorobenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2,3-Trichloropropane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2,4-Trichlorobenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2,4-Trimethylbenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2-Dibromo-3-chloropropane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2-Dibromoethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2-Dichlorobenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2-Dichloroethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2-Dichloropropane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,2-Trichloroethene, Total	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,3,5-Trimethylbenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,3-Dichlorobenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,3-Dichloropropane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
1,4-Dichlorobenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
2,2-Dichloropropane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
2-Butanone	ND	5000		µg/L	100	9/9/2005 1:56:00 AM
2-Chloroethyl vinyl ether	ND	500		µg/L	100	9/9/2005 1:56:00 AM
2-Chlorotoluene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
2-Hexanone	ND	1000		µg/L	100	9/9/2005 1:56:00 AM
4-Chlorotoluene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
4-Isopropyltoluene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
4-Methyl-2-pentanone	ND	1000		µg/L	100	9/9/2005 1:56:00 AM
Acetone	ND	5000		µg/L	100	9/9/2005 1:56:00 AM
Acrolein	ND	20000		µg/L	100	9/9/2005 1:56:00 AM
Benzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Bromobenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Bromochloromethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Bromodichloromethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Bromoform	ND	500		µg/L	100	9/9/2005 1:56:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *15-Sep-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W SEP
Lab Order:	0508211	**Tag Number:**	
Project:	Braintree	**Collection Date:**	8/18/2005 9:30:00 AM
Lab ID:	0508211-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **XL**
Bromomethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Carbon disulfide	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Carbon tetrachloride	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Chlorobenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Chloroethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Chloroform	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Chloromethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
cis-1,2-Dichloroethene	9230	500		µg/L	100	9/9/2005 1:56:00 AM
cis-1,3-Dichloropropene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Dibromochloromethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Dibromomethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Dichlorodifluoromethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Diethyl Ether	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Ethylbenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Hexachlorobutadiene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Iodomethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Isopropylbenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
m,p-Xylene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Methyl tert-butyl-ether	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Methylene chloride	ND	500		µg/L	100	9/9/2005 1:56:00 AM
n-Butylbenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
n-Propylbenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Naphthalene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
o-Xylene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
sec-Butylbenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Styrene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
tert-Butylbenzene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Tetrachloroethene	1170	500		µg/L	100	9/9/2005 1:56:00 AM
Tetrahydrofuran	ND	1000		µg/L	100	9/9/2005 1:56:00 AM
Toluene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
trans-1,2-Dichloroethene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
trans-1,3-Dichloropropene	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Trichloroethene	4350	500		µg/L	100	9/9/2005 1:56:00 AM
Trichlorofluoromethane	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Vinyl acetate	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Vinyl chloride	ND	500		µg/L	100	9/9/2005 1:56:00 AM
Surr: 4-Bromofluorobenzene	96.1	86-115		%REC	100	9/9/2005 1:56:00 AM
Surr: Dibromofluoromethane	100	86-118		%REC	100	9/9/2005 1:56:00 AM
Surr: Toluene-d8	98.8	88-110		%REC	100	9/9/2005 1:56:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Toxikon Corporation

Date: *15-Sep-05*

CLIENT:	Clean Harbors	**Client Sample ID:**	Post O/W SEP
Lab Order:	0508211	**Tag Number:**	
Project:	Braintree	**Collection Date:**	8/18/2005 9:30:00 AM
Lab ID:	0508211-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PETROLEUM HYDROCARBONS, T/R		**E418.1**				Analyst: AB
Petroleum Hydrocarbons, TR	2.50	1.00		mg/L	1	8/22/2005

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Genium Publishing Corporation
1145 Catalyn Street
Schenectady, NY 12303-1836 USA
(518) 377-8854

Material Safety Data Sheets Collection:

(51)

Sheet No. 3
Sodium Hydroxide

Issued: 10/77 Revision: C, 11/91

Section 1. Material Identification

36

Sodium Hydroxide (NaOH) Description: Derived by electrolysis of sodium chloride brines, by reacting calcium chloride with sodium carbonate, or by electrolytic production using the diaphragm cell. Sodium hydroxide often contains as impurities minimal amounts of sodium chloride, sodium carbonate, sodium sulfate, sodium chlorate, iron, or nickel. Used to hydrolyze fats and form soaps; in making plastics to dissolve casein; in treating cellulose to make rayon and cellophane; in explosives, dyestuffs, electrolytic extraction of zinc, reclaiming rubber, tin plating, oxide coating, etching and electroplating, laundering and bleaching, pulp and paper manufacture; in vegetable oil refining; in peeling of fruits and vegetables in the food industry; and in veterinary medicine as a disinfectant.

R 0
I 2
S 4
K 0

NFPA

HMIS
H 3
F 0
R 1
PPG*
* Sec. 8

Other Designations: CAS No. 1310-73-2; Aetznatron; caustic soda; Collo-Grillrein; Collo-Tapette; Feurs Robp; Lewis-Red Devil Lye; soda, hydrate; soda lye; sodium hydrate.
Manufacturer: Contact your supplier or distributor. Consult latest *Chemical Week Buyers' Guide*[73] for a suppliers list.
Cautions: Sodium hydroxide is moderately toxic by ingestion and inhalation and can be seriously corrosive to eyes, skin, and mucous membranes.

Section 2. Ingredients and Occupational Exposure Limits

Sodium hydroxide, ca 100%

1990 OSHA PEL
Ceiling: 2 mg/m³

1990 DFG (Germany) MAK
2 mg/m³

1985-86 Toxicity Data*
Rabbit, oral, LD_{Lo}: 500 mg/kg; no toxic effect noted
Rabbit, skin: 500 mg applied over 24 hr causes severe irritation
Mouse, intraperitoneal, LD_{50}: 40 mg/kg; toxic effects not yet reviewed

1990 IDLH Level
250 mg/m³ (solution mists)

1990 NIOSH REL
Ceiling: 2 mg/m³

1991-92 ACGIH TLV
Ceiling: 2 mg/m³

* See NIOSH, *RTECS* (WB4900000), for additional irritation, mutation, and toxicity data.

Section 3. Physical Data

Boiling Point: 2534 °F (1390 °C)
Melting Point: 605 °F (318.4 °C)
Vapor Pressure: 1 mm Hg at 1362 °F (739 °C)
pH (0.5% solution): 13
Molecular Weight: 40.01

Specific Gravity: 2.13 at 77 °F (25 °C)
Water Solubility: 1 g/0.9 ml water, 1 g/0.3 ml boiling water
Other Solubilities: 1 g/7.2 ml alcohol, 1 g/4.2 ml methanol, soluble in glycerol; insoluble in acetone and ether

Appearance and Odor: Odorless, hydroscopic (readily absorbs water) white flakes, cake, lumps, chips, pellets, or sticks.

Section 4. Fire and Explosion Data

Flash Point: None reported	**Autoignition Temperature:** None reported	**LEL:** None reported	**UEL:** None reported

Extinguishing Media: Although noncombustible as a solid, when in contact with moisture or water sodium hydroxide can generate enough heat to ignite surrounding combustibles. If possible without risk, remove containers from area. Use extinguishing agents suitable for surrounding fire. For small fire, use dry chemical, carbon dioxide (CO_2), or regular foam. Avoid water spray since water reacts with sodium hydroxide to generate substantial heat. If you must use water, be sure it is as cold as possible. For large fires, use fog or regular foam.
Unusual Fire or Explosion Hazards: Sodium hydroxide may melt and flow when heated.
Special Fire-fighting Procedures: Since fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode. Also, wear fully protective clothing. Structural firefighters' protective clothing provides limited protection. Apply cooling water to fire-exposed sides of container until fire is well out. *Do not* splatter or splash this material. Stay away from ends of tanks. Be aware of runoff from fire control methods. Do not release to sewers or waterways.

Section 5. Reactivity Data

Stability/Polymerization: Sodium hydroxide is stable at room temperature in closed containers under normal storage and handling conditions. Hazardous polymerization cannot occur. Violent polymerization can occur when in contact with acrolein or acrylonitrile. Since sodium hydroxide readily absorbs water and carbon dioxide from air, keep containers tightly closed.
Chemical Incompatibilities: Sodium hydroxide generates large amounts of heat when in contact with water and may steam and splatter. It reacts with mineral acids to form corresponding salts; reacts with weak-acid gases like hydrogen sulfide, sulfur dioxide, and carbon dioxide; ignites when in contact with cinnamaldehyde or zinc; and has exploded when exposed to a mixture of chloroform and methane. Sodium hydroxide can be very corrosive to metals such as aluminum, tin, and zinc as well as to alloys such as steel, and may cause formation of flammable hydrogen gas. An increase in temperature and pressure occurs in closed containers when sodium hydroxide is mixed with: acetic anhydride, glacial acetic acid, chlorohydrin, chlorosulfonic acid, ethylene cyanohydrin, glyoxal, oleum, 36% hydrochloric acid, 48.7% hydrofluoric acid, 70% nitric acid, or 96% sulfuric acid.
Conditions to Avoid: Avoid generation of sodium hydroxide dusts, and contact with water, metals, and the chemicals listed above.
Hazardous Products of Decomposition: Thermal oxidative decomposition of sodium hydroxide can produce toxic sodium oxide (Na_2O) and sodium peroxide (Na_2O_2) fumes.

Section 6. Health Hazard Data

Carcinogenicity: In 1990 reports, the IARC, NTP, and OSHA do not list sodium hydroxide as a carcinogen (see Chronic Effects).
Summary of Risks: Sodium hydroxide is toxic by inhalation of dusts or mists, ingestion, or direct skin or eye contact. Damage is immediate and without prompt medical attention can become permanent. This strong, corrosive alkali dissolves any living tissue it contacts.
Medical Conditions Aggravated by Long-Term Exposure: None reported.
Target Organs: Eyes, digestive tract, respiratory system, and skin.
Primary Entry Routes: Ingestion, inhalation, and skin and eye contact.

Continue on next page

Section 6. Health Hazard Data, *continued*

Acute Effects: Ingestion causes immediate burning of mouth, esophagus, and stomach; painful swallowing; excessive salivation; edematous (excess fluid in surrounding tissue) lips, chin, tongue, and pharynx covered with exudate (fluid oozed from swollen tissue); esophageal edema (swelling from fluid buildup in esophagus walls that can prevent all swallowing within hours); possibly edematous, gelatinous, and necrotic (localized tissue death) mucous membranes; vomiting (sometimes coffee grounds-like material due to digestive hemorrhage); and rapid, faint pulse; and cold, clammy skin. Death results commonly from shock, asphyxia (oxygen loss due to interrupted breathing), or pneumonia by the second or third day after ingestion. Dust inhalation can cause many small burns, temporary hair loss (in nasal passages since sodium hydroxide breaks down keratin), and possibly pulmonary edema (fluid in lungs). Skin contact causes slippery, soapy feeling that is not usually painful for 3 min after contact—even though skin damage begins immediately. It causes burns, keratin (hair and nails) destruction, and intracellular edema (excess fluid in skin cells), with damage progressing to severe burns, tissue corrosion, deep ulcerations, and permanent scarring if not immediately washed off. The cornea begins to corrode on contact. Disintegration and sloughing of conjunctival and corneal epithelium may progress to temporary or permanent corneal opacification (cloudiness, becoming impervious to light) or symblepharon (adhesion of lid to eyeball).
Chronic Effects: Dermatitis may result from repeated exposure to dilute solutions. Cases of squamous cell carcinoma (malignant tumors of epithelial origin) of the esophagus are reported 12 to 42 years after sodium hydroxide ingestion, although it is unclear whether the cancer results from scar formation caused by tissue destruction or directly from the chemical's possible carcinogenicity.
FIRST AID: Emergency personnel should protect against contamination.
Eyes: Gently lift the eyelids and flush immediately and continuously with flooding amounts of cold water until transported to an emergency medical facility. *Do not* allow victim to keep eyes tightly shut. *Warning!* Although splashed directly in only one eye, sodium hydroxide may affect the other eye's sight if prompt medical attention is not received. Consult a physician immediately.
Skin: *Quickly* remove contaminated clothing. Rinse with flooding amounts of water for at least 15 min. *Be aware* that this substance can become very hot when in contact with water. For reddened or blistered skin, consult a physician. Wash affected area with soap and water.
Inhalation: Remove exposed person to fresh air and support breathing as needed.
Ingestion: Never give anything by mouth to an unconscious or convulsing person. If ingested, have that *conscious and alert* person drink 1 to 2 glasses of water, followed by vinegar or fruit juice to neutralize the poison. *Do not induce vomiting!*
After first aid, get appropriate in-plant, paramedic, or community medical support.
Note to Physicians: Perform endoscopy in all suspected cases of sodium hydroxide ingestion. Perform blood analysis to determine if dehydration, acidosis, or other electrolyte imbalances have occurred.

Section 7. Spill, Leak and Disposal Procedures

Spill/Leak: Notify safety personnel, isolate hazard area, deny entry, and stay upwind of spills. Cleanup personnel should protect against vapor inhalation and skin or eye contact. Use water spray to disperse vapors, but do not spray directly on spills. For small dry spills, avoid excess dust generation by carefully scooping or vacuuming (with appropriate filter) into a suitable container (above 60 °C sodium hydroxide corrodes steel) for later disposal. For large dry spills, cover with plastic sheet or other impermeable layer and contain for later disposal. Follow applicable OSHA regulations (29 CFR 1910.120).
Environmental Transport: Sodium hydroxide is not mobile in solid form, although it absorbs moisture very easily. Once liquid, sodium hydroxide leaches rapidly into soil, possibly contaminating water sources.
Environmental Degradation: Ecotoxicity values: TLm, mosquito fish, 125 ppm/96 hr (fresh water); TLm, bluegill, 99 mg/48 hr (tap water).
Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.
EPA Designations
Listed as a RCRA Hazardous Waste (40 CFR 261.22): Characteristic of corrosivity
Listed as a CERCLA Hazardous Substance* (40 CFR 302.4), Reportable Quantity (RQ): 1000 lb (454 kg) [* per Clean Water Act, Sec. 311 (b)(4)]
SARA Extremely Hazardous Substance (40 CFR 355): Not listed
SARA Toxic Chemical (40 CFR 372.65): Not listed
OSHA Designations
Listed as an Air Contaminant (29 CFR 1910.1000, Table Z-1-A)

Section 8. Special Protection Data

Goggles: Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Since contact lens use in industry is controversial, establish your own policy.
Respirator: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. Select the respirator based on its suitability to provide adequate worker protection for the given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.*
Other: Wear impervious gloves, boots, aprons, and gauntlets to prevent any skin contact.
Ventilation: Provide general and local exhaust ventilation systems to maintain airborne concentrations below the OSHA PEL (Sec. 2). Local exhaust ventilation is preferred since it prevents contaminant dispersion into the work area by controlling it at its source.[103]
Safety Stations: Make available in the work area emergency eyewash stations, safety/quick-drench showers, and washing facilities.
Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder contaminated work clothing before wearing. Remove this material from your shoes and clean personal protective equipment.
Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9. Special Precautions and Comments

Storage Requirements: Avoid physical damage to containers. Store in dry, well-ventilated area away from water, acids, metals, flammable liquids, and organic halogens. Keep containers tightly closed since sodium hydroxide can decompose to sodium carbonate and carbon dioxide upon exposure to air. Since corrosion occurs easily above 140 °F (60 °C), do not store or transport sodium hydroxide in aluminum or steel containers at temperatures near this level. Store containers in rooms equipped with trapped floor drains, curbs, or gutters.
Engineering Controls: To reduce potential health hazards, use sufficient dilution or local exhaust ventilation to control hazardous contaminants and to maintain concentrations at the lowest practical level.
Other Precautions: Consider preplacement and periodic medical examinations of exposed workers that emphasize eyes, skin, and respiratory tract. Consider a respiratory protection program that includes regular training, maintenance, inspection, and evaluation. Inform employees of the possible hazards in using sodium hydroxide.

Transportation Data (49 CFR 172.101, .102)

DOT Shipping Name: Sodium hydroxide; dry, solid, flake, bead *or* granular
DOT Hazard Class: Corrosive material
ID No.: UN1823
DOT Label: Corrosive
DOT Packaging Exceptions: 173.244
DOT Packaging Requirements: 173.245b

IMO Shipping Name: Sodium hydroxide, solid
IMO Hazard Class: 8
ID No.: UN1823
IMO Label: Corrosive
IMDG Packaging Group: II

MSDS Collection **References:** 26, 38, 73, 89, 100, 101, 103, 124, 126, 127, 132, 133, 136, 139, 140, 143, 146, 148, 149, 153, 159, 161, 163
Prepared by: M Gannon, BA; **Industrial Hygiene Review:** DJ Wilson, CIH; **Medical Review:** W Silverman, MD; **Edited by:** ER O'Connor, MS

(60)

General Chemical

AUG 5 1997

PRODUCT SAFETY DATA SHEET — SULFURIC ACID

A. GENERAL INFORMATION

TRADE NAME (COMMON NAME)	☒ C.A.S. No. ☐ GENERAL PRODUCT CODE #
SULFURIC ACID	7664-93-9

CHEMICAL NAME AND/OR SYNONYM
SULFURIC ACID Synonym: battery acid

FORMULA	MOLECULAR WEIGHT
H_2SO_4 (Various Concentrations) in water	98.08

ADDRESS (No., STREET, CITY, STATE AND ZIP CODE)
General Chemical Corporation
90 East Halsey Road
Parsippany, NJ 07054-0389

CONTACT	PHONE NUMBER	LAST ISSUE DATE	CURRENT ISSUE DATE
Manager of Product Safety	(201) 515-1840	May, 1990	August, 1993

B. FIRST AID MEASURES

EMERGENCY PHONE NUMBER
(800) 631-8050

SKIN OR EYES: Immediately flush with plenty of water, continuing for at least 15 minutes. Remove contaminated clothing while washing. Continue flushing with water if medical attention is not immediately available.

INGESTION: Do not induce vomiting. If conscious, give several glasses of milk (preferred) or water.

INHALATION: Remove to fresh air. Observe for possible delayed reaction. If breathing has stopped, give artificial respiration. If breathing with difficulty, give oxygen, provided a qualified operator is available.

GET IMMEDIATE MEDICAL ASSISTANCE for ingestion, inhalation, eye contact, irritation, or burns.

C. HAZARDS INFORMATION

HEALTH

INHALATION
Inhalation of fumes or acid mist can cause irritation or corrosive burns to the upper respiratory system, including nose, mouth, and throat. Lung irritation and pulmonary edema can also occur. LC_{50} (mist, animals): 20-60-mg/cu.m. — Ref. (a).

INGESTION
Can cause irritation and corrosive burns to mouth, throat, and stomach. Can be fatal if swallowed.
Applicable to dilute solutions: LD_{50} (rat): 2140 mg/kg — Reference (b).

SKIN
Can cause severe burns.

EYES
Liquid contact can cause irritation, corneal burns, and conjunctivitis. Blindness may result, or severe or permanent injury. Mist contact may irritate or burn. Reference (b).

PERMISSIBLE CONCENTRATION AIR (SEE SECTION J)		BIOLOGICAL
	1 mg/m³ (as H_2SO_4) (OSHA)	
TLV: same (ACGIH)	IDLH 80 mg/m³	None.

ND = NOT DETERMINED — NA = NOT APPLICABLE

C. HAZARDS (Cont.)

UNUSUAL CHRONIC TOXICITY

(1) Erosion of teeth, (2) lesions of the skin, (3) tracheo-bronchitis, (4) mouth inflammation, (5) conjunctivitis, (6) gastritis. Reference (a).

The International Agency for Research on Cancer (IARC) classified "strong inorganic acid mists containing sulfuric acid" as a Category 1 carcinogen, a substance that is "carcinogenic to humans". This classification is for inorganic acid mists only and does not apply to sulfuric acid or sulfuric acid solutions. The basis for the IARC classification rests on several epidemiology studies which have several deficiencies. These studies did not account for exposure to other substances, some known to be animal or potential human carcinogens, social influences (smoking or alcohol consumption) and included small numbers of subjects. Based on the overall weight of evidence from all human and chronic animal studies, no definitive causal relationship between sulfuric acid mist exposure and respiratory tract cancer has been shown.

FIRE AND EXPLOSION

FLASH POINT °C	AUTO IGNITION TEMPERATURE °C	FLAMMABLE LIMITS IN AIR (% BY VOL.)	
Not flammable ☐ OPEN CUP ☐ CLOSED CUP	Not applicable	LOWER - Not applicable	UPPER - Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARDS

Flammable and potentially explosive hydrogen gas can be generated inside metal drums and storage tanks. Concentrated sulfuric acid can ignite combustible materials on contact.

D. PRECAUTIONS/PROCEDURES

FIRE EXTINGUISHING AGENTS RECOMMENDED

If involved in a fire, use water spray; avoid spraying water into containers. If only a small amount of combustibles is present, smother fire with dry chemical.

FIRE EXTINGUISHING AGENTS TO AVOID

Use water spray or other suitable agent for fires adjacent to non-leaking tanks or other containers of sulfuric acid.

SPECIAL FIRE FIGHTING PRECAUTIONS

Do not use solid water streams near ruptured tanks or spills of sulfuric acid. Acid reacts violently with water and can spatter acid onto personnel.

VENTILATION

Sufficient to reduce vapor and acid mists to permissible levels. Packaging and unloading areas and open processing equipment may require mechanical exhaust systems. Corrosion-proof construction recommended. Closed ventilation systems (e.g. vapor hoods) are frequently used in the electronics industry.

NORMAL HANDLING

Do not get in eyes, on skin, on clothing. Do not breathe vapor or mist. Use protective equipment outlined in Section E. Procedures are detailed in references listed in Section J. Do not add water to acid. When diluting, always add acid to water cautiously and with agitation. Use only with adequate ventilation.

STORAGE

Protect from physical damage. Store in a cool, well-ventilated area away from combustibles and reactive chemicals. Keep out of sun and away from heat. Keep containers upright. No smoking in storage area.

SPILL OR LEAK (ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT — SECTION E)

Dilute small spills or leaks cautiously with plenty of water. Neutralize residue with alkali such as soda ash or lime. Adequate ventilation is required for soda ash due to release of CO_2 gas. (See Section I for disposal methods). No smoking in spill area. Major spills must be handled by a predetermined plan. Diking with soda ash is recommended. Consult References, Section J. Attempt to keep out of sewer. Any release to the environment of these products may be subject to Federal and/or state reporting requirements. Check with appropriate agencies.

SPECIAL PRECAUTIONS/PROCEDURES/LABEL INSTRUCTIONS

SIGNAL WORD - DANGER!

Loosen closures carefully. For carrying glass bottles, use rubber protective enclosures. If stored in metal containers, vapors can contain explosive hydrogen gas.

E. PERSONAL PROTECTIVE EQUIPMENT

1. **HEAVY HANDLING:**
   Respiratory Protection
   Where required, use a respirator approved by NIOSH for sulfuric acid. If misting above 1 mg H_2SO_4 / wear: (a) gas mask with acid gas canister and also with high-efficiency particulate filter; (b) High efficiency particulate respirator; (c) Other choices, Reference (d).

   Eyes and Face
   As a minimum, wear hat, chemical safety goggles, and optionally full-face plastic shield. Do not wear contact lenses.

   Hands, Arms, and Body
   As a minimum, wear-resistant* apron, protective clothing, boots, and gloves for routine product use. For increased protection, include acid-resistant trousers and jacket.

2. **SPECIALIZED HANDLING: (Only applicable when using the closed ventilation system mentioned on page 2):**
   Respiratory Protection
   Generally not required. For emergency, e.g. a misting situation, use a respirator approved by NIOSH for sulfuric acid. See above, "1. HEAVY HANDLING: Respiratory Protection".

   Eyes and Face
   As a minimum, safety glasses with nonperforated sideshields. Add a face shield if pouring liquid. For leak or spill or other emergency, use chemical safety goggles and optionally, full face shield. Do not wear contact lenses.

   Hands, Arms, and Body
   As a minimum, wear acid-resistant apron and gloves*. For leak or spill or other emergency, use full protective clothing. See above, "1. HEAVY HANDLING: Hands, Arms, and Body".

   * Preferably rubber.

F. PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS):	APPEARANCE AND ODOR	
☒ LIQUID ☐ SOLID ☐ GAS ☐	Oily, colorless to slightly yellow, clear to turbid liquid. Odorless.	
BOILING POINT Approx. 310°C For 94% MELTING POINT Approx. -27°C	SPECIFIC GRAVITY (H_2O = 1) (liquid) 1.842	VAPOR DENSITY (AIR = 1) Not applicable.
SOLUBILITY IN WATER (% by Weight) Complete	pH 1% solution: pH = 0.9	VAPOR PRESSURE (mm Hg at 20°C) ☒ (PSIG) ☐ < 0.001
EVAPORATION RATE (Butyl Acetate = 1) ☐ (Ether = 1) ☐ Not applicable.	% VOLATILES BY VOLUME (at 20°C) Not applicable.	

G. REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
☐ UNSTABLE ☒ STABLE	Temperatures of 300 deg. C or higher: yields sulfur trioxide gas, which is toxic, corrosive, and an oxidizer.

INCOMPATIBILITY (MATERIALS TO AVOID)
Nitro compounds, carbides, dienes, alcohols (when heated): cause explosions — Refs. (g, h). Oxidizing agents, such as chlorates and permanganates: cause fires and possibly explosions. Allyl compounds and aldehydes: undergo polymerization, possibly violent. — Ref. (g). Alkalies, amines, water, hydrated salts, carboxylic acid anhydrides, nitriles, olefinic organics, glycols, aqueous acids: cause strong exothermic reactions. — Refs. (g, h). Carbonates, cyanides, sulfides, sulfites, metals such as copper: yield toxic gases. — Ref. (h.) Also for metals, see hydrogen generation, Section C.

HAZARDOUS DECOMPOSITION PRODUCTS
Sulfur trioxide gas: see above. Also this is a fire risk if in contact with organic materials.

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
☐ MAY OCCUR ☒ WILL NOT OCCUR	NA

(61)

H. HAZARDOUS INGREDIENTS (Mixtures Only)

MATERIAL OR COMPONENT / C.A.S. #	WT. %	HAZARD DATA (SEE SECT. J)
NOT APPLICABLE		

I. ENVIRONMENTAL

DEGRADABILITY/AQUATIC TOXICITY

Aquatic toxicity:
24.5 ppm/24 hr./bluegill/lethal/fresh water
42.5 ppm/48 hr./prawn/LC_{50}/salt water

OCTANOL/WATER PARTITION COEFFICIENT: ND

EPA HAZARDOUS SUBSTANCES? (CLEAN WATER ACT SECT. 311) [X] YES [ ] NO — IF SO, REPORTABLE QUANTITY: 1000 # (100% H_2SO_4 basis) — 40 CFR 116-117

WASTE DISPOSAL METHODS (DISPOSER MUST COMPLY WITH FEDERAL, STATE AND LOCAL DISPOSAL OR DISCHARGE LAWS)

Treatment or disposal of waste generated by use of this product should be reviewed in terms of applicable federal, state and local laws and regulations. Users are advised to consult with appropriate regulatory agencies before discharge, treatment or disposal.

RCRA STATUS OF UNUSED MATERIAL IF DISCARDED: EPA Hazardous Waste

HAZARDOUS WASTE NUMBER: (IF APPLICABLE) No. D0002 (corrosive) — 40 CFR 261.22

J. REFERENCES

PERMISSIBLE CONCENTRATION REFERENCES

(1) OSHA Z-List; 29 CFR 1910.1000 (Revised 1989)
(2) ACGIH 1993-94 List, "Threshold Limit Values for Chemical Substances...". Am. Conf. of Governmental Industrial Hygienists, Cincinnati 45202.

REGULATORY STANDARDS: D.O.T. Hazardous Materials Table 49 CFR 172.101

D.O.T. CLASSIFICATION: Corrosive material — 49 CFR 173

DOT ID Number: UN 1830

GENERAL

(a) Documentation of the Threshold Limit Values, 4th Edition, 1981, Am. Conf. of Governmental Hygienists, Cincinnati 45202.
(b) NIOSH, Registry of Toxic Effects of Chemical Substances, 1982-83, Accession #WS 556 00 000, PB81-154478, Nat. Tech. Info. Service, Springfield, VA 22161.
(c) "Criteria for a Recommended Standard...Occupational Exposure to Sulfuric Acid", NIOSH U.S. Dept of HHS, 1974, PB233098, Nat. Tech. Info. Service, Springfield, VA 22161.
(d) NIOSH/OSHA, "Pocket Guide to Chemical Hazards...", September, 1985.
(e) "NIOSH/OSHA — Occupational Health Guidelines for Chemical Hazards — Sulfuric, 1978.
(f) Allied Chemical Technical Service Report for storage and handling procedures.
(g) NFPA Manual 491M, "Manual of Hazardous Chemical Reactions, 1987 Nat. Fire Protection Assoc., Boston 02210.
(h) Bretherick, L., Handbook of Reactive Chemical Hazards, 3rd Ed., 1985 Butterworths, Boston.

K. ADDITIONAL INFORMATION

PSDS FILE No. - GC-2000

(57)

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAR 7767 FLOCCULANT

Emergency Telephone Number

MEDICAL(800)462-5378(24hours)(800)I-M-ALERT

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCLEAR 7767 FLOCCULANT
DESCRIPTION: An acrylamide/acrylate polymer in a water and oil emulsion

NFPA 704M/HMIS RATING: 1/1 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 COMPOSITION/INGREDIENT INFORMATION

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 15 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX.%
Ethoxylated alcohol	68439-50-9	1-5
Hydrotreated light distillate	64742-47-8	20-40

SECTION 3 HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes and clothing. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause mild, short-lasting irritation.
SKIN CONTACT: Can cause mild, short-lasting irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 4 FIRST AID INFORMATION

EYES: Flush with water for 15 minutes. Call a physician.
SKIN: Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION: Do not induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

NALCO/EXXON ENERGY CHEMICALS, L.P.
P.O. Box 87 • Sugar Land, Texas 77487-0087 • (281) 263-7000

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAR 7767 FLOCCULANT

Emergency Telephone Number

MEDICAL(800)462-5378(24hours)(800)I-M-ALERT

SECTION 4 FIRST AID INFORMATION (CONTINUED)

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

SECTION 5 FIRE FIGHTING

FLASH POINT: Greater than 200 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARD: May evolve NOx under fire conditions.

SECTION 6 ACCIDENTAL RELEASE MEASURES

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (800) I-M-ALERT or (800) 462-5378.

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 15.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 15.

SECTION 7 HANDLING AND STORAGE

Storage : Keep container closed when not in use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: Respiratory protection is not normally needed.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained

(57)

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAR 7767 FLOCCULANT

Emergency Telephone Number

MEDICAL(800)462-5378(24hours)(800)I-M-ALERT

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

breathing apparatus is recommended.

VENTILATION: General ventilation is recommended.

PROTECTIVE EQUIPMENT: Use impermeable gloves and chemical splash goggles when attaching feeding equipment or doing maintenance.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION: Based on Nalco's recommended product application and our recommended personal protective equipment, the potential human exposure is: MODERATE.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: White	FORM: Liquid	ODOR: Hydrocarbon
DENSITY:	8.7 lbs/gal.	
SPECIFIC GRAVITY:	1.05 @ 60 Degrees F	ASTM D-1298
BOILING POINT:	Greater than 200 Degrees F @ 760 mm Hg	ASTM D-86
FLASH POINT:	Greater than 200 Degrees F (PMCC)	ASTM D-93

NOTE: These physical properties are typical values for this product.

SECTION 10 STABILITY AND REACTIVITY

INCOMPATIBILITY: Avoid water contamination which may cause gelling.

Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2, NOx may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 11 TOXICOLOGICAL INFORMATION

TOXICITY STUDIES: No toxicity studies have been conducted on this product.

HUMAN HAZARD CHARACTERIZATION: Based on our hazard characterization, the potential human hazard is: LOW

NALCO/EXXON ENERGY CHEMICALS, L.P.
P.O. Box 87 • Sugar Land, Texas 77487-0087 • (281) 263-7000

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAR 7767 FLOCCULANT

Emergency Telephone Number

MEDICAL(800)462-5378(24 hours)(800)I-M-ALERT

SECTION 12 ECOLOGICAL INFORMATION

BIOCHEMICAL OXYGEN DEMAND (5-day BOD): 156,000 mg/L

CHEMICAL OXYGEN DEMAND (COD): 1,040,000 mg/L

If released into the environment, see CERCLA in Section 15.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION: Based on our Hazard Characterization, the potential environmental hazard is: MODERATE. Based on Nalco's recommended product application and the product's characteristics, the potential environmental exposure is: HIGH.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SECTION 14 TRANSPORTATION INFORMATION

PROPER SHIPPING NAME/HAZARD CLASS MAY VARY BY PACKAGING, PROPERTIES, AND MODE OF TRANSPORTATION. TYPICAL PROPER SHIPPING NAMES FOR THIS PRODUCT ARE:

ALL TRANSPORTATION MODES : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

SECTION 15 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

NALCO/EXXON ENERGY CHEMICALS, L.P.
P.O. Box 87 • Sugar Land, Texas 77487-0087 • (281) 263-7000

(57)

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAR 7767 FLOCCULANT

Emergency Telephone Number

MEDICAL(800)462-5378(24 hours)(800)I-M-ALERT

SECTION 15 REGULATORY INFORMATION (CONTINUED)

Ethoxylated alcohol - Eye irritant
Hydrotreated light distillate - Skin irritant

Hydrotreated light distillate = 5 mg/m3 (oil mist) ACGIH/TLV

CERCLA/SUPERFUND, 40 CFR 117, 302:
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):
This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

XX Immediate (acute) health hazard
-- Delayed (chronic) health hazard
-- Fire hazard
-- Sudden release of pressure hazard
-- Reactive hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):
This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
Consult Section 13 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 (formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAR 7767 FLOCCULANT

Emergency Telephone Number

MEDICAL(800)462-5378(24 hours)(800)I-M-ALERT

SECTION 15 REGULATORY INFORMATION (CONTINUED)

None of the ingredients are specifically listed.

CLEAN AIR ACT, Sec. 111 (40 CFR 60), Sec. 112 (40 CFR 61, 1990 Amendments), Sec. 611 (40 CFR 82, CLASS I and II Ozone depleting substances):
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
This product does not contain any chemicals which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following ingredient(s) are disclosed for compliance with State Right To Know Laws:

Acrylic polymer	Trade secret
Ethoxylated alcohol	68439-50-9
Fatty acid ester	Trade secret
Hydrotreated light distillate	64742-47-8
Water	7732-18-5

SECTION 16 OTHER INFORMATION

None

SECTION 17 RISK CHARACTERIZATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: LOW.

* The environmental risk is: MODERATE.

Any use inconsistent with Nalco's recommendations may affect our risk characterization. Our sales representative will assist you to determine if

(57)

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAR 7767 FLOCCULANT

Emergency Telephone Number

MEDICAL(800)462-5378(24 hours)(800)I-M-ALERT

SECTION 17 RISK CHARACTERIZATION (CONTINUED)

---

your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 18 REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (CD-ROM version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (CD-ROM version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, Ohio (CD-ROM version), Micromedex, Inc., Englewood, CO.

Shepard's Catalog of Teratogenic Agents (CD-ROM version), Micromedex, Inc., Englewood, CO.

Suspect Chemicals Sourcebook (a guide to industrial chemicals covered under major regulatory and advisory programs), Roytech Publications (a Division of Ariel Corporation), Bethesda, MD.

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name: Clean Harbors of Braintree, Inc.

Operator signature: David L Medina

Title: Facility Compliance Manager

Date: 10/07/05