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**: Duffy Brothers Construction, Inc.		**Facility/site** address:		
Location of **facility/site**: longitude: -71 latitude: 42	Facility SIC code(s): 5900	Street: 411 Waverly Oaks Road		
b) Name of **facility/site owner:** Kevin P Duffy		Town: Waltham		
Email address of owner: kevinduffy@duffyproperties.com		State: MA	Zip: 02452	County: Middlesex
Telephone no.of facility/site **owner**: (781) 647-5775				
Fax no. of facility/site **owner**: (781) 893-6623		**Owner** is (check one): 1. Federal____ 2. State/Tribal_____ 3. Private ✓ 4. other, if so, describe:		
Address of **owner** (if different from site):				
Street: 411 Waverly Oaks Road Suite 340				
Town: Waltham	State: MA	Zip: 02452	County: Middlesex	
c) Legal name of **operator**: Kevin P, Duffy	**Operator** telephone no:			
	Operator fax no.:		**Operator** email:	
Operator contact name and title:				

OCT 26 2005

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: November 9, 1994
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes ✓ No___, if "yes," date and tracking #: August 18, 1995
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: MA RTN 3-0454
2. permit or license # assigned: Tier 1B Permit No 83005
3. state agency contact information: name, location, and telephone number:
Mass DEP: 1 Winter St, Boston, MA 02108 617-292-5500

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:
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:
Discharge of treated groundwater granted by MCP response action to on-site pond which serves as tributary to Beaver Brook.

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 0.2 Average flow 0.07 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.

3) Latitude and longitude of each discharge within 100 feet: pt.1:long. -71 lat.42; 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.

4) If hydrostatic testing, total volume of the discharge (gals): No	5) Is the discharge intermittent ✓ or seasonal_____? Is discharge ongoing Yes ✓ No_____?
c) Expected dates of discharge (mm/dd/yy): start_____ end_____	
d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).	

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		✓	22	grab	160.2		140	0.08	68	0.04
2. Total Residual Chlorine		✓	1	grab	330.5		520	0.28	520	0.28
3. Total Petroleum Hydrocarbons		✓	14	grab	1664		52	0.03	15	0.01
4. Cyanide	✓		1	grab	335.4	0.01				
5. Benzene		✓	13	grab	8260	2.5	180	0.10	118	0.06
6. Toluene		✓	13	grab	8260	2.5	400	0.22	183	0.10
7. Ethylbenzene		✓	13	grab	8260	2.5	260	0.14	94	0.05
8. (m,p,o) Xylenes		✓	13	grab	8260	2.5	280	0.26	303	0.17
9. Total BTEX[4]		✓	13	grab	8260	2	1130	0.62	698	0.38

[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)	✓		1	grab	8260	1.0				
11. Methyl-tert-Butyl Ether (MtBE)	✓		13	grab	8260	1.0				
12. tert-Butyl Alcohol (TBA)	✓		1	grab	8260	25				
13. tert-Amyl Methyl Ether (TAME)	✓		1	grab	8260	25				
14. Naphthalene		✓	1	grab	8260	1.0	930	0.51	930	0.51
15. Carbon Tetra-chloride	✓		1	grab	8260	1.0				
16. 1,4 Dichlorobenzene		✓	13	grab	8260	10	660	0.36	59	0.03
17. 1,2 Dichlorobenzene		✓	13	grab	8260	.10	36	0.02	10	0.01
18. 1,3 Dichlorobenzene	✓		13	grab	8260	10				
19. 1,1 Dichloroethane		✓	13	grab	8260	1.0	41	0.02	24	0.01
20. 1,2 Dichloroethane	✓		13	grab	8260	1.0				
21. 1,1 Dichloroethylene	✓		1	grab	8260	1.0				
22. cis-1,2 Dichloro-ethylene		✓	1	grab	8260	1.0	51	0.03	51	0.03
23. Dichloromethane (Methylene Chloride)	✓		1	grab	8260	1.0				
24. Tetrachloroethylene	✓		1	grab	8260	1.0				

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	✓		13	grab	8260	1.0				
26. 1,1,2 Trichloroethane	✓		13	grab	8260	1.0				
27. Trichloroethylene	✓		1	grab	8260	1.0				
28. Vinyl Chloride		✓	13	grab	8260	1.0	4.1	0.00+	20	0.01
29. Acetone	✓		1	grab	8260	25				
30. 1,4 Dioxane	✓		1	grab	8260	250				
31. Total Phenols	✓		1	grab	8260	10				
32. Pentachlorophenol	✓		1	grab	8270	50				
33. Total Phthalates [5] (Phthalate esthers)	✓		1	grab	8270					
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓		1	grab	8270	10				
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✓		1	grab	8270					
a. Benzo(a) Anthracene	✓		1	grab	8270	2.0				
b. Benzo(a) Pyrene	✓		1	grab	8270	2.0				
c. Benzo(b)Fluoranthene	✓		1	grab	8270	2.0				
d. Benzo(k) Fluoranthene	✓		1	grab	8270	2.0				
e. Chrysene	✓		1	grab	8270	2.0				

[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	✓		1	grab	8270	2.0				
g. Indeno(1,2,3-cd) Pyrene	✓		1	grab	8270	2.0				
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		✓	1	grab	8270					
h. Acenaphthene		✓	1	grab	8270	2.0	17	0.01	17	0.01
i. Acenaphthylene	✓		1	grab	8270	2.0				
j. Anthracene		✓	1	grab	8270	2.0	2.0	0.00+	2.0	0.00+
k. Benzo(ghi) Perylene	✓		1	grab	8270	2.0				
l. Fluoranthene	✓		1	grab	8270	2.0				
m. Fluorene		✓	1	grab	8270	2.0	6.5	0.01	6.5	0.01
n. Naphthalene-		✓	1	grab	8270	1.0	400	0.22	400	0.22
o. Phenanthrene		✓	1	grab	8270	2.0	8.3	0.01	8.3	0.01
p. Pyrene	✓		1	grab	8270	2.0				
37. Total Polychlorinated Biphenyls (PCBs)		✓	12	grab		0.4	6.0	0.01	0.71	0.00+
38. Antimony	✓		1	grab	6010	25				
39. Arsenic	✓		1	grab	6010	10				
40. Cadmium	✓		1	grab	6010	5.0				
41. Chromium III	✓		1	grab	6010	5.0				
42. Chromium VI	✓		1	grab	6010	5.0				

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	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	✓		1	grab	6010	15				
44. Lead		✓	13	grab	6010	10	43	0.02	7	0.00+
45. Mercury	✓		1	grab	7470	0.5				
46. Nickel	✓		1	grab	6010	10				
47. Selenium	✓		1	grab	6010	25				
48. Silver	✓		1	grab	6010	50				
49. Zinc	✓		1	grab	6010	10				
50. Iron		✓	1	grab	6010	25	40500	22.2	40500	22.2
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? Iron, Lead
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: Iron, Lead DF: 1.63	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: Iron, Lead

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:

GW extracted from the individual recovery wells is piped to the treatment system via an underground piping network. The flow is injected with FeRemede, to sequester metal, and then routed to a equalization tank. The groundwater is discharged into two parallel bag filters, to a ShallowTray air stripper, to a second set of filters and two liquid phase activated carbon canisters before being discharged to the on Site pond. SPH is recovered by total fluid recovery pumps and discharged into the oil/water separator and into a storage tank. Air stripper off-gases are treated with an air/water separator, a duct heater and carbon before being discharged via a roofline stack.

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): SPH Storage Tank, air/water seperator			

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 30 Maximum flow rate of treatment system 100 Design flow rate of treatment system _____

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

FeRemede - For sequestering Iron. See attachment #10 for MSDS and product information from vendor.

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:

Discharge via existing on-site storm drain system to Beaver Brook.

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 B,

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.14 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)?
Cause Unknown, Nutrients, Siltation, Organic Enrichment/Low DO, Pathogens, Taste, odor and color, and Turbidity.

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 ✓

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.

Attachment #1- Locus Plan
Attachment #2- EPA Form 1
Attachment #3- EPA Form 2C and Attachments
Attachment #4- Original NPDES Permit Application
Attachment #5- NPDES Permit Exclusion granted by EPA
Attachment #6- TMDL for Beaver Brook from 2004 Integrated List of Waters
Attachment #7- 7Q10 information for Beaver Brook from Streamstat
Attachment #8- Historical Analytical Data from Oct 2003 to May 2005
Attachment #9- Analytical Data from Oct 2005
Attachment #10- Chemical Additives Information
Attachment #11- Process and Instrumentation Diagram

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:	
Operator signature:	
Title:	MGR
Date:	10/21/05

Attachment #1
Locus Plan

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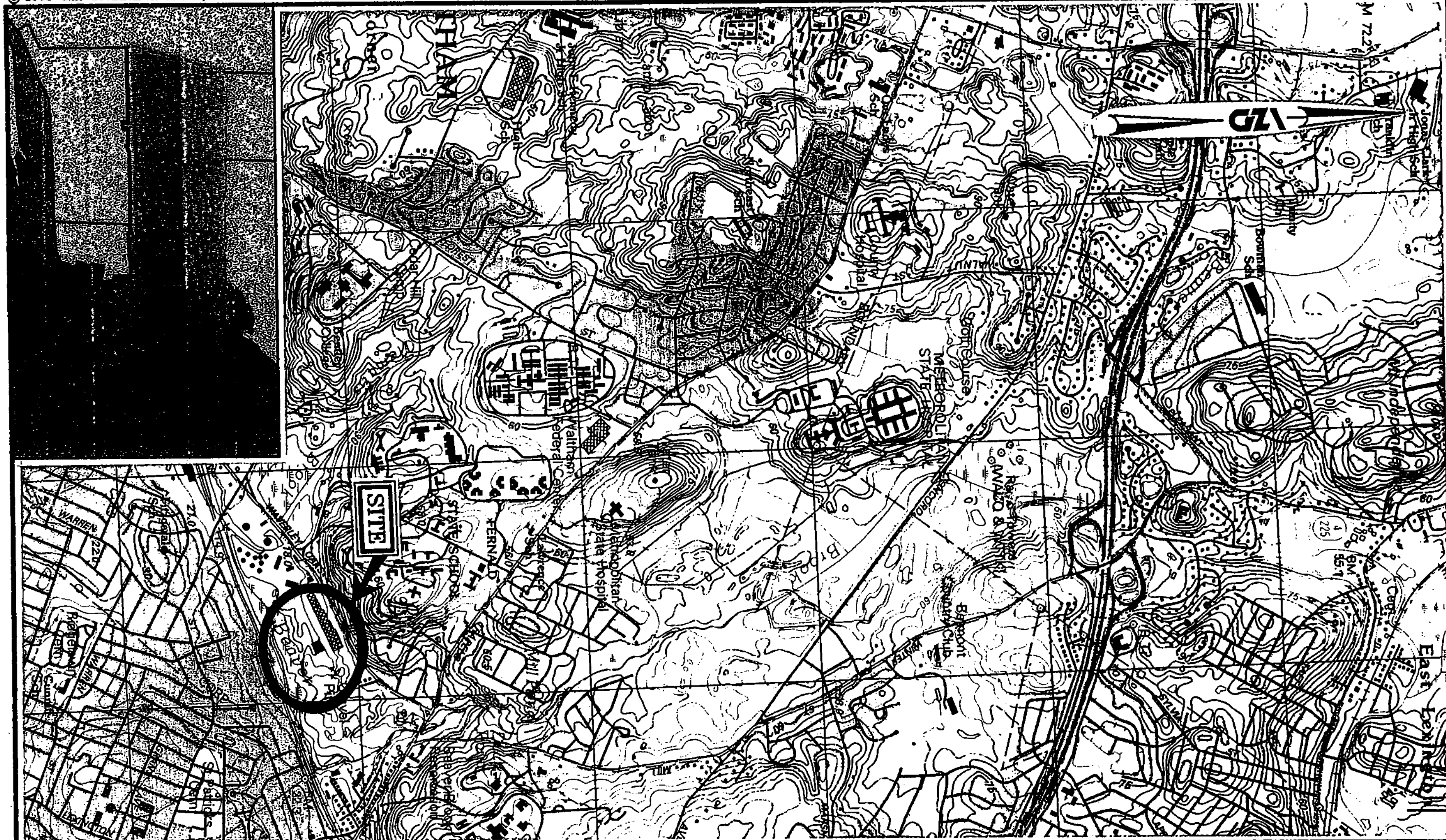

SHORT TERM MEASURE WAVERLY OAKS PARK WALTHAM, MASSACHUSETTS	REV. NO.	DESCRIPTION	BY	DATE

LOCUS PLAN

SCALE: 1"=2083'±

0 1042' 2083' 4167'

SOURCE U.S.G.S BOSTON, MA QUADRANGLE MAP 1983

PROJ MGR: PFS
DESIGNED BY: PFS
REVIEWED BY: GLH
DRAWN BY: NBF
DATE: 4/21/95

GZA GeoEnvironmental, Inc.

PROJECT NO. 12820.40

FIGURE NO. 1

Attachment #2
EPA Form 1

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

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

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

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

II. POLLUTANT CHARACTERISTICS

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

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

III. NAME OF FACILITY

1 SKIP WAVERLY OAKS PARK

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*: 2 MR KEVIN DUFFY

B. PHONE *(area code & no.)*: 617 647 5775

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX: 3 411 WAVERLY OAKS RD

B. CITY OR TOWN: 4 WALTHAM

C. STATE: MA

D. ZIP CODE: 02154

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: 5 411 WAVERLY OAKS RD

B. COUNTY NAME: MIDDLESEX

C. CITY OR TOWN: 6 WALTHAM

D. STATE: MA

E. ZIP CODE: 02154

F. COUNTY CODE *(if known)*:

CONTINUE ON REVERSE

FORM 1 GENERAL
XIII. NATURE OF BUSINESS (CONTINUED)

As part of a Short Term Measure (STM), and as required by the Massachusetts Department of Environmental Protection, an upgraded groundwater extraction, treatment, and discharge system has been installed at the site. As part of this system, up to approximately 100 gallons per minute (gpm) of groundwater is extracted from the site, treated, and discharged to the on-site pond via a discharge pipe which is connected to the secondary side of the existing underground oil/water separator. This discharge is currently being performed under an NPDES Permit Exclusion which was received on November 9, 1994. Discharge began on February 27, 1995.

Attachment #3

EPA Form 2C and Attachments

Please print or type in the unshaded areas only.

Approval expires 7-31-88

FORM 2C NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

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

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
01	42°	23'	06"	71°	12'	09"	Beaver Brook/Charles River

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

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

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

1. OUTFALL NO. (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
01	Groundwater extraction	100 gpm	Groundwater will pass through		
	system		Oil/Water Separator		
			Equilization Tank		
			Air Stripper		
			Granular Activated Carbon		

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

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

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

V. INTAKE AND EFFLUENT CHARACTERISTICS

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

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

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

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

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

CONTINUE ON REVERS

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

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

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

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

OUTFALL NO. 01

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

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS *(specify if blank)* a. CONCENTRATION	b. MASS	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*												
b. Chemical Oxygen Demand *(COD)*												
c. Total Organic Carbon *(TOC)*												
d. Total Suspended Solids *(TSS)*	Mg/1	30										
e. Ammonia *(as N)*												
f. Flow	VALUE 100 gpm		VALUE 100 gpm		VALUE					VALUE		
g. Temperature *(winter)*	VALUE 40 F		VALUE 40 F		VALUE			°C		VALUE		
h. Temperature *(summer)*	VALUE 52 F		VALUE 52 F		VALUE			°C		VALUE		
i. pH	MINIMUM 6	MAXIMUM 8	MINIMUM 6	MAXIMUM 8				STANDARD UNITS				

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

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

CONTINUE ON REVERSE

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
	01

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Approval expires 7-31-88

CONTINUED FROM PAGE 3 OF FORM 2-C

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

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X												
2M. Arsenic, Total (7440-38-2)			X												
3M. Beryllium, Total, 7440-41-7)			X												
4M. Cadmium, Total (7440-43-9)			X												
5M. Chromium, Total (7440-47-3)			X												
6M. Copper, Total (7440-50-8)			X												
7M. Lead, Total (7439-92-1)		X		0.015	0.018					7	ppm	lb/day			
8M. Mercury, Total (7439-97-6)			X												
9M. Nickel, Total (7440-02-0)			X												
10M. Selenium, Total (7782-49-2)			X												
11M. Silver, Total (7440-22-4)			X												
12M. Thallium, Total (7440-28-0)			X												
13M. Zinc, Total (7440-66-6)			X												
14M. Cyanide, Total (57-12-5)			X												
15M. Phenols, Total			X												
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUE ON REVERSE

CONTINUED FROM PAGE V-4

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

CONTINUE ON REVERSE

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EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
	01

CONTINUED FROM PAGE V-6

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

CONTINUED FROM PAGE V-8

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

☆U.S. GOVERNMENT PRINTING OFFICE : 1986 O - 491-191 (46116)

Attachment #4

Original NPDES Permit Application

GZA
GeoEnvironmental, Inc.

Engineers and Scientists

August 18, 1995
File No. 12820.40-CPC

Ms. Olga Vargara
Environmental Specialist
U.S. Environmental Protection Agency
John F. Kennedy Building
Government Center
Boston, Massachusetts 02118

Re: NPDES Permit Application
Waverly Oaks Park
Waltham, Massachusetts

320 Needham Street
Newton Upper Falls
Massachusetts 02164
617-969-0050
FAX 617-965-7769

Dear Ms. Vargara:

GZA GeoEnvironmental, Inc. (GZA), on behalf of Duffy Brothers Construction, Inc. (Duffy Brothers Construction), is submitting an application for a National Pollutant Discharge Elimination System (NPDES) surface water discharge permit for a groundwater extraction and treatment system. The permit application was prepared by GZA using forms and instructions provided by the EPA.

Duffy Brothers Construction, seeks approval for the discharge of treated groundwater to an on-site pond at the above-referenced site. The on-site pond eventually discharges to the Charles River via an unnamed brook and Beaver Brook. The groundwater extraction and treatment activities are being conducted as part of a Short Term Measure (STM) which is required by the Massachusetts Department of Environmental Protection (MADEP) in accordance with the Massachusetts Contingency Plan (MCP 310 CMR 40.0000). Discharge to the on-site pond is currently being performed under an Emergency NPDES Permit Exclusion granted by the EPA on November 9, 1994.

In accordance with the requirements of the NPDES Program, GZA has completed and attached EPA Forms 1 (General Information) and 2C (Application To Discharge Wastewater), including the required supporting documentation.

Below is a summary of the pertinent site information:

A Subsidiary of GZA GeoEnvironmental Technologies, Inc.

Site Contact: Mr. Kevin Duffy
Duffy Brothers Construction, Inc.
411 Waverly Oaks Road
Waltham, Massachusetts 02154
(617) 647-5775

Site Location: Waverly Oaks Park
411 Waverly Oaks Road
Waltham, Massachusetts

BACKGROUND

Waverly Oaks Park is located at 411 Waverly Oaks Road in a mixed commercial and residential neighborhood. The site is currently used as a retail, commercial and office park. Tenants reside in the three main buildings (Building A, B, and C, Buildings D and E, and the office building). Several radio towers are located in the southeast portion of the site. The site is abutted to the north by Waverly Oaks Road, to the

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south by Beaver Brook and the adjoining flood plain wetlands, to the west by a former Shell Oil Company petroleum storage facility, and to the east by private residences and the Beaver Brook Reservation.

The topography generally slopes downward approximately thirty vertical feet from Waverly Oaks Road to the north to an on-site pond and wetland areas to the south. Most of the site is covered with either buildings or paved roadway and parking areas; notable exceptions are: (1) the area south of the recovery trench (south of Building D and E - See Figure 2) which consists of grassed areas, (2) the on-site pond, (3) the adjoining wetland areas, and (4) the tributary which discharges to Beaver Brook. Surface drainage is collected in an on-site stormwater sewer system which is processed through an underground oil/water separator in the southern portion of the property (See Figure 2) prior to being discharged to the on-site pond.

Prior to 1973, the site was occupied by Pierce Brothers, Inc., a company who operated greenhouses, and collected and reprocessed waste oil. Pierce Brothers, Inc. collected waste oil from various sources. Due to the storage and handling practices of Pierce Brothers, Inc., large volumes of waste oil were historically released to the ground at various locations throughout the site. A portion of this waste oil has been recovered in the form of separate phase hydrocarbons (SPH) during various response activities conducted since 1973. As part of these previously performed activities, a recovery trench was installed along the southern portion of the property north of the on-site pond to assist in the collection of SPH. Water and SPH is manually recovered by periodically pumping the fluids via a vacuum truck from a connecting wet well located in the southeastern portion of the property. As part of other previously performed response activities, a groundwater extraction well (RW-1) was installed in the eastern portion of the site. Groundwater was extracted from this well via a submersible pump and discharged to an infiltration trench located directly east of Buildings D and E; this discharge activity was performed under an existing approval provided by the MADEP's Division of Water Pollution Control. SPH was recovered via a dedicated SPH recovery pump and discharged to a storage tank.

As part of a STM, and as required by the MADEP, an upgraded groundwater extraction, treatment, and discharge system has been installed at the site[1]. As part of this system, approximately 100 gallons per minute (gpm) of groundwater is extracted from the site, treated, and discharged. Due to the hydraulic limitations of the current infiltration trench (the capacity of the trench has decreased over time due to iron fouling), treated groundwater is currently being discharged to the on-site pond via a discharge pipe which is connected to the secondary side of the existing underground oil/water separator. Per the requirements of the Exclusion Permit, we are submitting this request for approval to conduct these discharge activities under a NPDES Permit.

EXTRACTION, TREATMENT, AND DISCHARGE SYSTEM

To enhance SPH recovery operations, and begin capturing and remediating impacted groundwater, GZA has installed the following extraction, treatment, and discharge system at the site:

- Extraction - Groundwater and SPH is extracted from five recovery wells at the site (three existing wells - RW-2, RW-4, and RW-5; two new wells - RW-1 and RW-3) at a total rate of 100 gpm. Extraction is performed through the use of both separate and duel phase groundwater and SPH recovery pumps.

- Treatment - Extracted groundwater and SPH is pumped via underground piping to a treatment system installed in a dedicated building at the site:

  - Recovered SPH is pumped to an oil/water separator where product is removed and stored in an aboveground storage tank. Separated water is pumped to the equalization tank along

[1]The design basis for this system is outlined in the report entitled "Hydrogeologic and Remedial Investigations Report, Waverly Oaks Park, 411 Waverly Oaks Road, Waltham, Massachusetts", dated May, 1993 (MADEP Site No. 3-0454).

with the groundwater extracted from the recovery wells in which dedicated groundwater extraction pumps are installed.

- Recovered groundwater is first pumped to an equalization tank to enhance solids removal and then mixed with an iron sequestering agent, FeREMEDE®which is injected in-line to reduce iron-fouling of the unit processes.[2] The process stream is then treated via a tray aerator air stripper to remove VOCs and is then filtered through bag filters and treated via liquid phase activated carbon prior to discharge.

- Discharge - Treated groundwater is pumped via underground piping to the secondary side of the existing underground oil/water separator. This outfall pipe discharges to the northeast corner of the on-site pond. The total discharge flow rate is expected to be a maximum of 100 gpm.

REQUEST FOR WAIVER OF CERTAIN CONVENTIONAL ANALYSES

As previously mentioned, form 2C has been completed and is attached. However some of the effluent information requested on form 2C (specifically, some of that required in Section V, Part A) is currently unavailable. The effluent parameters for which data is currently unavailable includes: biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), and ammonia.

Duffy Brothers Construction is requesting a waiver from the requirements of supplying effluent data for the above-listed parameters. We believe this request is appropriate given the anticipated influent (groundwater) characteristics and the type of treatment that the water will receive. We anticipate that COD, BOD, and TOC removal percentages will be sufficiently high such that these parameters will not be of concern. We also do not anticipated that ammonia concentrations in the groundwater (influent) will be significant, as ammonia concentration are typically low in groundwater.

We trust that the enclosed application is complete and satisfactory. Should you have and questions or require additional information to issue the requested permit, please contact any of the undersigned at (617) 965-0050.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Patrick F. Sheehan
Project Manager

Peter H. Baril
Consultant/Reviewer

Albert J. Ricciardelli
Associate Principal

PFS/AJR:idm
Attachments: Attachment A - EPA Form 1
Attachment B - EPA Form 2C and Attachments
Attachment C - Laboratory Data and Methodologies
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[2]FeREMEDE® was selected for use as the sequestering agent because (1) the Manufacturer has reported that it does not promote eutrophication, and (2) it has reportedly historically been approved by the EPA for use in surface water discharge systems.

Attachment #5
NPDES Permit Exclusion
granted by EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
ENVIRONMENTAL SERVICES DIVISION
60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

November 9, 1994

Mr. Kevin Duffy
Duffy Brothers Construction, Inc.
411 Waverly Oaks Road
Waltham, MA 02154

Re: NPDES Permit Exclusion for groundwater treatment at the above-referenced location.

Dear Mr. Duffy:

Based on information provided by Mr. Patrick Sheehan, of GZA GeoEnvironmental, Inc., (GZA), 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 treatment may be performed, in a timely fashion, at the referenced facility.

Subject to other controls that may be established by the State of Massachusetts, and the City of Waltham , you are authorized to discharge up to 100 gallons of treated water per minute, through a treatment system consisting of groundwater depression, groundwater will be pumped via underground piping to an oil/water separator, to an equalization tank, to an iron sequestering agent injection, to an air stripper, then leading to a granular activated carbon filtration system (sized appropriately for the anticipated flow), prior to discharge into an on-site pond, tributary to an unnamed brook and Beaver Brook, which eventually discharges to the Charles 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
Total Suspended Solids (TSS)	15 PPM
pH level	6.5 - 8.0

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Benzene	5 PPB
Toluene	*
Ethyl Benzene	*
Xylenes	*
The Total For Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX)	----- 100 ppb
Polychlorinated biphenyls (PCB's)	0.5 PPB
Vinyl Chloride	2 PPB
1,2-Dichloroethane (ene)	5 PPB
(cis)1,2-Dichloroethylene	70 PPB
(trans)1,2-Dichloroethylene	100 PPB
1,1,1,-Trichloroethane	200 PPB
Lead	

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

Analytical Reports, with quality control information, are to be reported to the DEP Project Manager, and to this office, by the 28th of the following month.

4. You, or your representative, provide 24 hours notice of the anticipated start-up of discharge.

Because the purpose of this exclusion from the regulations is to allow for remediation of contaminated groundwater, the exclusion will be in effect for six months. The exclusion may be adjusted verbally if operational conditions require (ie; equipment failure or weather).

After six months of discharge, it is expected that an application for a permanent NPDES wastewater permit will be submitted. NPDES permit application forms may be obtained from Ms. Shelly Puleo of EPA's Boston office. She can be contacted at (617) 565-3528.

If any questions should arise, please do not hesitate to contact me at (617) 860-4362.

Sincerely,

for

David W. Tordoff
On-Scene Coordinator
Emergency Response Section

cc: T. Landry — EPA
K. Keohane — Mass DEP-DWPC
J. Barber — Mass DEP-DSHW-Northeast
P. Sheehan — GZA

Attachment #6
TMDL for Beaver Brook
From 2004 Integrated List of Waters

Massachusetts Category 5 Waters
"Waters requiring a TMDL"

NAME	SEGMENT ID	DESCRIPTION	SIZE	POLLUTANT NEEDING TMDL [EPA APPROVAL DATE/DOCUMENT CONTROL NUMBER]
Beaver Brook (7239125)	MA72-28_2004	Headwaters, south of Route 2, Lexington through culverting to Charles River, Waltham.	5.8 miles	-Cause Unknown -Nutrients -Siltation -Organic enrichment/Low DO -(Flow alteration*) -(Other habitat alterations*) -Pathogens -Taste, odor and color -Turbidity
Bogastow Brook (7239775)	MA72-16_2004	Outlet Factory Pond, Holliston to inlet South End Pond, Millis.	10.1 miles	-Pathogens
Box Pond (72008)	MA72008_2004	Bellingham/Mendon	40.7 acres	-Nutrients -Siltation -Noxious aquatic plants
Bulloughs Pond (72011)	MA72011_2004	Newton	6.9 acres	-Nutrients -Noxious aquatic plants
Cambridge Reservoir, Upper Basin (72156)	MA72156_2004	Lincoln/Lexington	44.0 acres	-Noxious aquatic plants -Turbidity
Cedar Swamp Pond (72016)	MA72016_2004	Milford	98.9 acres	-Metals -(Flow alteration*) -Noxious aquatic plants
Chandler Pond (72017)	MA72017_2004	Boston	11.4 acres	-Nutrients -Organic enrichment/Low DO -Noxious aquatic plants
Charles River (7239050)	MA72-01_2004	Source, outlet Echo Lake, Hopkinton to Dilla Street, Milford.	2.5 miles	-Nutrients -Pathogens
Charles River (7239050)	MA72-02_2004	Dilla Street, Milford to Milford WWTP, Hopedale.	3.0 miles	-Metals -Nutrients -Organic enrichment/Low DO -(Other habitat alterations*) -Pathogens -Noxious aquatic plants
Charles River (7239050)	MA72-03_2004	Milford WWTP, Hopedale to outlet Box Pond, Bellingham.	3.4 miles	-Cause Unknown -Nutrients -Organic enrichment/Low DO -(Other habitat alterations*) -Pathogens -Noxious aquatic plants
Charles River (7239050)	MA72-04_2004	Outlet Box Pond, Bellingham to outlet Populatic Pond, Norfolk/Medway.	11.4 miles	-Metals -Pathogens
Charles River (7239050)	MA72-05_2004	Outlet Populatic Pond, Norfolk/Medway to South Natick Dam, Natick.	17.9 miles	-Unknown toxicity -Metals -Nutrients -Organic enrichment/Low DO -(Other habitat alterations*) -Pathogens -Noxious aquatic plants -Turbidity

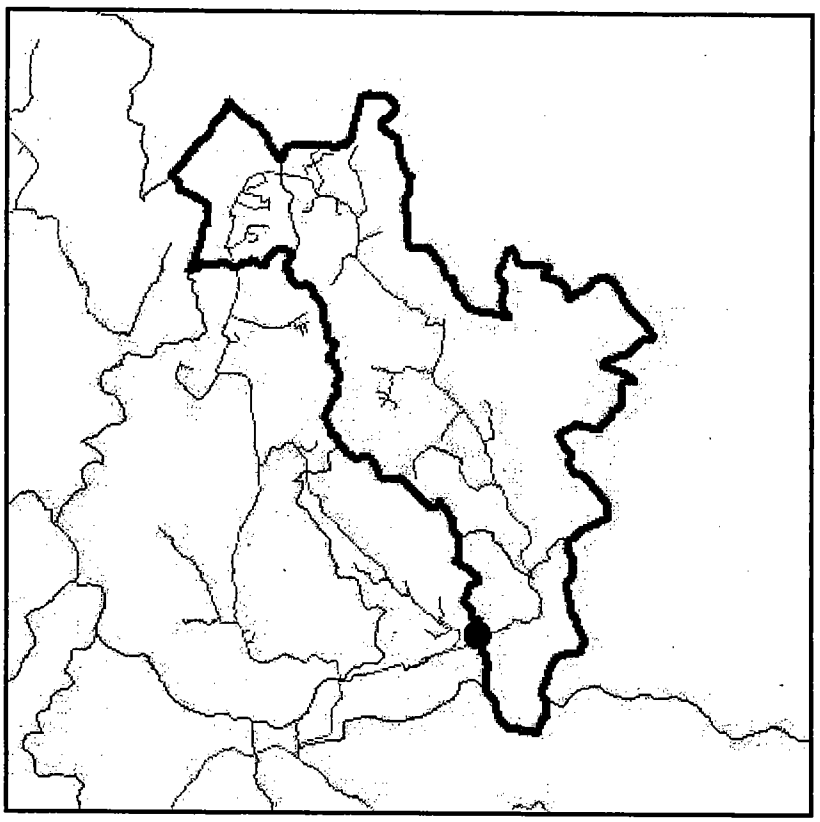
*-non Pollutant

Massachusetts Category 3 Waters
"No Uses Assessed"

NAME	SEGMENT ID	DESCRIPTION	SIZE
Clapps Pond (96035)	MA96035_2004	Provincetown	39.9 acres
Cliff Pond (96039)	MA96039_2004	Brewster	192 acres
Depot Pond (96061)	MA96061_2004	Eastham	25.4 acres
Lake Elizabeth (96080)	MA96080_2004	Barnstable	5.8 acres
Flax Pond (96087)	MA96087_2004	Bourne	20.1 acres
Flax Pond (96090)	MA96090_2004	Dennis	15.1 acres
Goose Pond (96106)	MA96106_2004	Chatham	35.4 acres
Great Pond (96114)	MA96114_2004	Truro	17.0 acres
Gull Pond (96123)	MA96123_2004	Wellfleet	103 acres
Herring Pond (96133)	MA96133_2004	Eastham	42.3 acres
Hinckleys Pond (96140)	MA96140_2004	Harwich	163 acres
Hoxie Pond (96146)	MA96146_2004	Sandwich	7.7 acres
Long Pond (96179)	MA96179_2004	Wellfleet	34.3 acres
Long Pond (96180)	MA96180_2004	Yarmouth	54.2 acres
Miss Thachers Pond (96258)	MA96258_2004	Yarmouth	6.4 acres
Nye Pond (96228)	MA96228_2004	Sandwich	5.8 acres
Pilgrim Lake (96246)	MA96246_2004	Orleans	38.1 acres
Scargo Lake (96279)	MA96279_2004	Dennis	54.7 acres
Schoolhouse Pond (96281)	MA96281_2004	Chatham	20.1 acres
Shallow Pond (96285)	MA96285_2004	Barnstable	76.1 acres
Shawme Lake Lower (96288)	MA96288_2004	Sandwich	24.3 acres
Shubael Pond (96293)	MA96293_2004	Barnstable	54.8 acres
Upper Shawme Lake (96326)	MA96326_2004	Sandwich	21.0 acres
Village Pond (96329)	MA96329_2004	Truro	2.7 acres
Charles			
Beaver Brook (7240350)	MA72-12_2004	Outlet Beaver Pond north of Route 126 (Hartford Avenue) to confluence with Charles River, Bellingham.	1.4 miles
Beaver Pond (72004)	MA72004_2004	Bellingham/Milford	86.7 acres
Brookline Reservoir (72010)	MA72010_2004	Brookline	21.1 acres
Halls Pond (72043)	MA72043_2004	Brookline	0.57 acres
Hammond Pond (72044)	MA72044_2004	Newton	22.4 acres
Highland Lake (72047)	MA72047_2004	Norfolk	15.3 acres
Little Farm Pond (72064)	MA72064_2004	Sherborn	23.6 acres
Louisa Lake (72068)	MA72068_2004	Milford	7.7 acres
Lake Pearl (72092)	MA72092_2004	Wrentham	237 acres
South End Pond (72109)	MA72109_2004	Millis	29.5 acres
Todd Pond (72117)	MA72117_2004	Lincoln	9.3 acres
Uncas Pond (72122)	MA72122_2004	Franklin	17.3 acres
Walker Pond (72126)	MA72126_2004	Millis	9.0 acres
Waseeka Sanctuary Pond (72155)	MA72155_2004	Holliston	17.1 acres
Weld Pond (72131)	MA72131_2004	Dedham	26.8 acres
Weston Station Pond (72135)	MA72135_2004	Weston	37.5 acres
Chicopee			
Adams Pond (36001)	MA36001_2004	Oakham	30.0 acres
Bemis Road Pond (36012)	MA36012_2004	Hubbardston	16.4 acres
Bennett Street Pond (36014)	MA36014_2004	Palmer	6.0 acres

Attachment #7
7Q10 information for Beaver Brook
from Streamstat

Streamflow Statistics Report



Date: Thu Oct 13 10:34:07 2005
Latitude: 42.3846
Longitude: -71.2035
Measured Basin Characteristics:
Drainage Area (square miles): 5.31
Stratified Drift Area (square miles): 1.42
Stream Length (miles): 11.94
Slope (percent): 2.30
Region: 0

Statistic	Estimated streamflow, ft^3/s	90% Prediction interval	
		Minimum	Maximum
99-percent duration flow	0.15	0.04	0.49
98-percent duration flow	0.23	0.07	0.65
95-percent duration flow	0.36	0.13	0.90

90-percent duration flow	0.62	0.26	1.44
85-percent duration flow	0.88	0.39	1.94
80-percent duration flow	1.22	0.57	2.55
75-percent duration flow	1.60	0.76	3.32
70-percent duration flow	2.11	1.01	4.35
60-percent duration flow	3.65	1.92	6.90
50-percent duration flow	5.24	2.64	10.38
7-day, 2-year low flow	0.39	0.14	1.02
7-day, 10-year low flow	0.14	0.04	0.48
August median flow	0.95	0.42	2.10

U.S. Department of the Interior, U.S. Geological Survey
10 Bearfoot Road
Northborough, MA 01532
(508) 490-5000

Maintainer: webmaster@mass1.er.usgs.gov

Attachment #8
Historical Analytical Data
from Oct 2003 to May 2005

TABLE I
TREATMENT SYSTEM ANALYSES EXTRACTED GROUNDWATER - INFLUENT
411 Waverley Oaks Road
Waltham, Massachusetts

	Analytes																																																	
				VOCs (ppb)*(1)																																			PCB's (ppb) (1)									
Date Sampled	TPH (ppm)(1)	TSS (mg/l) 10(2)	pH (s.u.)	Chloro methane	Vinyl Chloride	Bromo methane	Chloro ethane	Trichloro fluoro methane	1,1-Dichloro ethene	Dichloro methane	trans-1,2-Dichloro ethene	1,1-Dichloro ethane	cis-1,2-Dichloro ethene	Chloroform	1,1,1-Trichloro ethane	Carbon Tetra chloride	1,2-Dichloro ethane	Trichloro ethene	1,2-Dichloro propane	Bromo dichloro methane	cis-1,3-Dichloro propene	trans-1,3-Dichloro propene	1,1,2-Trichloro ethane	Tetra chloro ethene	Dibromo chloro methane	Bromoform	1,1,2,2-Tetrachloro ethane	Methyl-Tert Butyl-Ether	Benzene	Toluene	Ethyl Benzene	m&p-Xylene	o-Xylene	Chloro benzene	1,3-Dichloro benzene	1,4-Dichloro benzene	1,2-Dichloro benzene	Total BTEX	Total VOCs	Aroclor 1262	Aroclor 1260	Aroclor 1254	Aroclor 1248	Aroclor 1242/1016	Aroclor 1232	Aroclor 1221	Total PCBs	Total Lead (mg/l)(1)
10/16/2003	5.9	65	6.61	BDL	24	BDL	86	BDL	BDL	BDL	BDL	13	36	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	110	300	37	200	120	BDL	BDL	BDL	BDL	BDL	767	926	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.010
11/19/2003	12	35	6.59	BDL	BDL	BDL	47	26	BDL	BDL	BDL	22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	96	140	49	150	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	630	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.026
12/11/2003	10	82	6.70	BDL	28	BDL	330	BDL	BDL	7.7	BDL	28	46	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	130	140	89	150	120	BDL	BDL	BDL	BDL	629	1090	BDL	6.0	BDL	BDL	BDL	BDL	BDL	6.0	BDL
1/22/2004	52	34	6.70	BDL	30	BDL	480	6.9	BDL	14	BDL	29	40	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	120	160	87	260	150	6.2	BDL	10	12	777	1405	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2/18/2004	15	83	6.68	BDL	29	BDL	98	BDL	BDL	12	BDL	17	66	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	170	160	33	310	170	BDL	BDL	7.3	11	843	1083	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
3/11/2004	25	68	6.81	BDL	13	BDL	160	BDL	BDL	6.1	BDL	20	20	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	130	150	97	240	170	BDL	BDL	9.5	13	787	1029	BDL	6.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4/14/2004	10	70	N/A	BDL	29	BDL	100	BDL	BDL	BDL	BDL	18	85	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	92	170	84	150	130	BDL	BDL	3.1	8	626	869	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5/12/2004	3.1	38	6.60	BDL	8.2	BDL	280	BDL	BDL	7.8	BDL	41	13	BDL	3.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	94	200	150	260	180	2.4	7.6	BDL	9.3	884	1257	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6/11/2004	6.0	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/23/2004	7.6	89	6.65	110	BDL	260	BDL	BDL	BDL	BDL	BDL	21	36	5.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	140	280	260	15	150	93	70	660	36	845	2137	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.043
7/15/2004	N/A	52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/13/2004	N/A	38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/20/2004	N/A	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/14/2004	11.0	52	6.65	BDL	12	BDL	75	BDL	BDL	4.7	BDL	20	11	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	110	110	40	170	85	BDL	BDL	7.7	12	515	657	BDL	0.92	BDL	BDL	BDL	BDL	BDL	0.92	BDL
10/20/2004	5.8	59	6.18	BDL	27	BDL	130	BDL	BDL	4.6	BDL	15	18	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	140	130	87	130	90	2.1	BDL	8.1	21	577	803	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11/18/2004	N/A	140	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/15/2004	N/A	120	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/4/2005	N/A	83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/3/2005	N/A	95	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/6/2005	30	130	6.83	BDL	41	BDL	210	BDL	BDL	BDL	BDL	40	63	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	180	400	160	230	160	BDL	BDL	BDL	BDL	1130	1484	BDL	0.84	0.80	BDL	BDL	BDL	BDL	1.64	BDL
5/18/2005	20	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:
1. Samples were collected by GZA personnel and analyzed by GZA's Environmental Chemistry Laboratory (ECL) located in Hopkinton, Massachusetts.
2. Samples were collected by GZA personnel and analyzed by Rhode Island Analytical Laboratories, located in Warwick, Rhode Island.
3. Total Petroleum Hydrocarbons (TPH) were analyzed via Modified ASTM Method D3328.
4. Total Suspended Solids (TSS) were analyzed via Method SM17 2540D.
5. pH analyses were performed in the field with a pH probe.
6. Volatile Organic Compounds (VOCs) were analyzed via EPA Method 8240 by Gas Chromatography/Mass Spectroscopy (GC/MS). VOC analysis from 6/97 forward via EPA Method 8021.
7. Polychlorinated Biphenyls (PCBs) were analyzed via EPA Method 8080, EPA Method 8081, or EPA Method 8082.
8. Total lead was analyzed via EPA Method 7421/6010.
9. ppm= parts per million; ppb= parts per billion; s.u.= standard unit.; BMQL= below method quantification limits; BDL= below detection limit; ND= not detected; N/A = not applicable.

Attachment #9

Analytical Data from Oct 2005

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

Laboratory Identification Numbers:
MA and ME: MA092 NH: 2028
CT: PH0579 RI: LAO00236
NELAC - NYS DOH: 11063

ANALYTICAL DATA REPORT

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
781-278-3700
John Colbert

Project No.:	01.0012820.40
Work Order No.:	0510-00069
Date Received:	10/11/05
Date Reported:	10/18/05

SAMPLE INFORMATION

Date Sampled	Matrix	Laboratory ID	Sample ID
10/11/2005	Aqueous	0510-00069 001	INFLUENT

The laboratory report shall not be reproduced except in full without the written consent of the laboratory.

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062

John Colbert

Project Name: Duffy Bros.-Waltham, MA
Project No.: 01.0012820.40

Date Received: 10/11/05
Date Reported: 10/18/05
Work Order No.: 0510-00069

PROJECT NARRATIVE:

1. Sample Receipt

The samples were received on 10/11/05 via __GZA courier, __EC, __FEDEX, or __x_hand delivered. The temperature of the _x_temperature blank/__cooler air, was 3.9 degrees C. The samples were received intact for all requested analyses.

The samples were appropriately preserved in accordance with the method they reference.

Per C. Corbitt add Iron and Residual Chlorine (KW 10/12/05).

2. Subcontracted Analyses

Analyses were subcontracted to Rhode Island Analytical (RIAL) on 10/12/05;
Certification MA: MA-RI015, NH: 253700 A&B, CT: PH-0508, ME: RI015, RI: RI-033, NY:11726,

The data is included in GZA's report for ease of electronic data transfer and is indicated by "XXX" in the tech column. The data report from the subcontractor is attached.

3. EPA Method 6010B/7470A - Metals

Attach QC 6010B 10/14/05 - Aqueous
Attach QC Mercury 10/13/05 - Aqueous

4. EPA Method 8260 - VOCs

Attach QC 8260 10/13/05 - Aqueous

5. EPA Method 8270 - SVOCs

Attach QC 8270 10/12/05 - Aqueous

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062

John Colbert

Project Name: Duffy Bros.-Waltham, MA
Project No.: 01.0012820.40

Date Received: 10/11/05
Date Reported: 10/18/05
Work Order No.: 0510-00069

Data Authorized By: _____

% R = % Recovery
DF = Dilution Factor
DFS = Dilution Factor Solids
DO = Diluted Out

Method 8260: The current version of the method is 8260B.
Method 8021: The current version of the method is 8021B.
Method 8270: The current version of the method is 8270C.
Method 6010: The current version of the method is 6010B.

Please note that the laboratory signed copy of the chain of custody record is an integral part of the data report.

The laboratory report shall not be reproduced except in full without the written consent of the laboratory.

Soil data is reported on a dry weight basis unless otherwise specified.

Matrix Spike / Matrix Spike Duplicate sets are performed as per each method and are reported at the end of the analytical report if assigned on the chain of custody.

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062

John Colbert

Project Name: Duffy Bros.-Waltham, MA
Project No.: 01.0012820.40

Date Received: 10/11/05
Date Reported: 10/18/05
Work Order No.: 0510-00069

Sample ID: INFLUENT
Sample Date: 10/11/2005

Sample No.: 001

Test Performed	Method	Results	Units	Tech	Analysis Date
SEMI-VOLATILE ORGANICS	EPA 8270			CMG	10/13/05
ACID FRACTION:	EPA 8270				
Phenol	EPA 8270	<10	ug/L	CMG	10/13/05
2-Chlorophenol	EPA 8270	<10	ug/L	CMG	10/13/05
2-Methylphenol	EPA 8270	<10	ug/L	CMG	10/13/05
3&4-Methylphenol	EPA 8270	<10	ug/L	CMG	10/13/05
2-Nitrophenol	EPA 8270	<10	ug/L	CMG	10/13/05
2,4-Dimethylphenol	EPA 8270	<10	ug/L	CMG	10/13/05
Benzoic Acid	EPA 8270	<10	ug/L	CMG	10/13/05
2,4-Dichlorophenol	EPA 8270	<10	ug/L	CMG	10/13/05
4-Chloro-3-Methylphenol	EPA 8270	<20	ug/L	CMG	10/13/05
2,4,6-Trichlorophenol	EPA 8270	<10	ug/L	CMG	10/13/05
2,4,5-Trichlorophenol	EPA 8270	<10	ug/L	CMG	10/13/05
2,4-Dinitrophenol	EPA 8270	<100	ug/L	CMG	10/13/05
4-Nitrophenol	EPA 8270	<50	ug/L	CMG	10/13/05
4,6-Dinitro-2-Methylphenol	EPA 8270	<50	ug/L	CMG	10/13/05
Pentachlorophenol	EPA 8270	<50	ug/L	CMG	10/13/05
BASE-NEUTRAL FRACTION:					
n-Nitrosodimethylamine	EPA 8270	<10	ug/L	CMG	10/13/05
bis(2-Chloroethyl)Ether	EPA 8270	<10	ug/L	CMG	10/13/05
1,3-Dichlorobenzene	EPA 8270	<10	ug/L	CMG	10/13/05
1,4-Dichlorobenzene	EPA 8270	<10	ug/L	CMG	10/13/05
Benzyl Alcohol	EPA 8270	<20	ug/L	CMG	10/13/05
1,2-Dichlorobenzene	EPA 8270	<10	ug/L	CMG	10/13/05
bis(2-Chloroisopropyl)Ether	EPA 8270	<10	ug/L	CMG	10/13/05
n-Nitrosodi-n-Propylamine	EPA 8270	<10	ug/L	CMG	10/13/05
Hexachloroethane	EPA 8270	<10	ug/L	CMG	10/13/05
Nitrobenzene	EPA 8270	<10	ug/L	CMG	10/13/05
Isophorone	EPA 8270	<10	ug/L	CMG	10/13/05
bis(2-Chloroethoxy)Methane	EPA 8270	<10	ug/L	CMG	10/13/05
1,2,4-Trichlorobenzene	EPA 8270	<10	ug/L	CMG	10/13/05
Naphthalene	EPA 8270	400	ug/L	CMG	10/17/05

GZA GeoEnvironmental, Inc.

ANALYTICAL REPORT

Project Name: Duffy Bros.-Waltham, MA
Project No.: 01.0012820.40

Work Order No.: 0510-00069

Sample ID: INFLUENT
Sample Date: 10/11/2005

Sample No.: 001

Test Performed	Method	Results	Units	Tech	Analysis Date
4-Chloroaniline	EPA 8270	<20	ug/L	CMG	10/13/05
Hexachlorobutadiene	EPA 8270	<10	ug/L	CMG	10/13/05
2-Methylnaphthalene	EPA 8270	93	ug/L	CMG	10/13/05
Hexachlorocyclopentadiene	EPA 8270	<50	ug/L	CMG	10/13/05
2-Chloronaphthalene	EPA 8270	<10	ug/L	CMG	10/13/05
2-Nitroaniline	EPA 8270	<50	ug/L	CMG	10/13/05
Dimethylphthalate	EPA 8270	<10	ug/L	CMG	10/13/05
Acenaphthylene	EPA 8270	<2.0	ug/L	CMG	10/13/05
2,6-Dinitrotoluene	EPA 8270	<10	ug/L	CMG	10/13/05
3-Nitroaniline	EPA 8270	<50	ug/L	CMG	10/13/05
Acenaphthene	EPA 8270	17	ug/L	CMG	10/13/05
Dibenzofuran	EPA 8270	<10	ug/L	CMG	10/13/05
2,4-Dinitrotoluene	EPA 8270	<10	ug/L	CMG	10/13/05
Diethylphthalate	EPA 8270	<10	ug/L	CMG	10/13/05
Fluorene	EPA 8270	6.5	ug/L	CMG	10/13/05
4-Chlorophenyl Phenyl Ether	EPA 8270	<10	ug/L	CMG	10/13/05
4-Nitroaniline	EPA 8270	<20	ug/L	CMG	10/13/05
n-Nitrosodiphenylamine	EPA 8270	<10	ug/L	CMG	10/13/05
4-Bromophenyl Phenyl Ether	EPA 8270	<10	ug/L	CMG	10/13/05
Hexachlorobenzene	EPA 8270	<10	ug/L	CMG	10/13/05
Phenanthrene	EPA 8270	8.3	ug/L	CMG	10/13/05
Anthracene	EPA 8270	2.0	ug/L	CMG	10/13/05
Carbazole	EPA 8270	<10	ug/L	CMG	10/13/05
di-n-Butylphthalate	EPA 8270	<15	ug/L	CMG	10/13/05
Fluoranthene	EPA 8270	<2.0	ug/L	CMG	10/13/05
Pyrene	EPA 8270	<2.0	ug/L	CMG	10/13/05
Butylbenzylphthalate	EPA 8270	<10	ug/L	CMG	10/13/05
Benzo [a] Anthracene	EPA 8270	<2.0	ug/L	CMG	10/13/05
3,3'-Dichlorobenzidine	EPA 8270	<20	ug/L	CMG	10/13/05
Chrysene	EPA 8270	<2.0	ug/L	CMG	10/13/05
bis(2-Ethylhexyl)Phthalate	EPA 8270	<10	ug/L	CMG	10/13/05
di-n-Octylphthalate	EPA 8270	<10	ug/L	CMG	10/13/05
Benzo [b] Fluoranthene	EPA 8270	<2.0	ug/L	CMG	10/13/05
Benzo [k] Fluoranthene	EPA 8270	<2.0	ug/L	CMG	10/13/05
Benzo [a] Pyrene	EPA 8270	<2.0	ug/L	CMG	10/13/05
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	ug/L	CMG	10/13/05
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	ug/L	CMG	10/13/05
Benzo [g,h,i] Perylene	EPA 8270	<2.0	ug/L	CMG	10/13/05
Surrogates:	EPA 8270				
***2-Fluorophenol	EPA 8270	17.3	% R	CMG	10/13/05

GZA GeoEnvironmental, Inc.

ANALYTICAL REPORT

Project Name: Duffy Bros.-Waltham, MA
Project No.: 01.0012820.40

Work Order No.: 0510-00069

Sample ID: INFLUENT
Sample Date: 10/11/2005

Sample No.: 001

Test Performed	Method	Results	Units	Tech	Analysis Date
***Phenol-D6	EPA 8270	49.3	% R	CMG	10/13/05
***Nitrobenzene-D5	EPA 8270	44.1	% R	CMG	10/13/05
***2-Fluorobiphenyl	EPA 8270	55.1	% R	CMG	10/13/05
***2,4,6-Tribromophenol	EPA 8270	81.8	% R	CMG	10/13/05
***P-Terphenyl-D14	EPA 8270	63.1	% R	CMG	10/13/05
Extraction	EPA 3510C	1.0	DF	JEJ	10/12/05
PRIORITY POLLUTANT METALS				AJY	10/14/05
Silver	EPA 6010B	<0.0050	mg/L	AJY	10/14/05
Arsenic	EPA 6010B	<0.010	mg/L	AJY	10/14/05
Beryllium	EPA 6010B	<0.0050	mg/L	AJY	10/14/05
Cadmium	EPA 6010B	<0.0050	mg/L	AJY	10/14/05
Chromium	EPA 6010B	<0.0050	mg/L	AJY	10/14/05
Copper	EPA 6010B	<0.015	mg/L	AJY	10/14/05
Mercury	EPA 7470A	<0.00050	mg/L	AJY	10/13/05
Nickel	EPA 6010B	<0.010	mg/L	AJY	10/14/05
Lead	EPA 6010B	0.022	mg/L	AJY	10/14/05
Antimony	EPA 6010B	<0.025	mg/L	AJY	10/14/05
Selenium	EPA 6010B	<0.025	mg/L	AJY	10/14/05
Thallium	EPA 6010B	<0.025	mg/L	AJY	10/14/05
Zinc	EPA 6010B	<0.010	mg/L	AJY	10/14/05
Iron	EPA 6010B	40.5	mg/L	AJY	10/14/05
Residual Chlorine	SM4500-CL,G	0.52	mg/L	KMW	10/13/05
SUBCONTRACTED ANALYSES				XXX	10/17/05
Total Cyanide	EPA 335.2	<0.010	mg/L	XXX	10/18/05
VOLATILE ORGANICS	EPA 8260			MQS	10/13/05
Dichlorodifluoromethane	EPA 8260	<5.0	ug/L	MQS	10/13/05
Chloromethane	EPA 8260	<5.0	ug/L	MQS	10/13/05
Vinyl Chloride	EPA 8260	65	ug/L	MQS	10/13/05
Bromomethane	EPA 8260	<5.0	ug/L	MQS	10/13/05
Chloroethane	EPA 8260	6.1	ug/L	MQS	10/13/05
Trichlorofluoromethane	EPA 8260	<5.0	ug/L	MQS	10/13/05
Diethylether	EPA 8260	<13	ug/L	MQS	10/13/05
Acetone	EPA 8260	<63	ug/L	MQS	10/13/05
1,1-Dichloroethene	EPA 8260	<2.5	ug/L	MQS	10/13/05
Carbon Disulfide	EPA 8260	<130	ug/L	MQS	10/13/05
Dichloromethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
tert-Butyl alcohol (TBA)	EPA 8260	<63	ug/L	MQS	10/13/05
Methyl-Tert-Butyl-Ether	EPA 8260	<2.5	ug/L	MQS	10/13/05
trans-1,2-Dichloroethene	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,1-Dichloroethane	EPA 8260	18	ug/L	MQS	10/13/05

GZA GeoEnvironmental, Inc.

ANALYTICAL REPORT

Project Name: Duffy Bros.-Waltham, MA
Project No.: 01.0012820.40

Work Order No.: 0510-00069

Sample ID: INFLUENT
Sample Date: 10/11/2005

Sample No.: 001

Test Performed	Method	Results	Units	Tech	Analysis Date
Di-isopropyl ether (DIPE)	EPA 8260	<5.0	ug/L	MQS	10/13/05
Ethyl tert-butyl ether (ETBE)	EPA 8260	<5.0	ug/L	MQS	10/13/05
2-Butanone	EPA 8260	<63	ug/L	MQS	10/13/05
2,2-Dichloropropane	EPA 8260	<2.5	ug/L	MQS	10/13/05
cis-1,2-Dichloroethene	EPA 8260	51	ug/L	MQS	10/13/05
Chloroform	EPA 8260	<2.5	ug/L	MQS	10/13/05
Bromochloromethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
Tetrahydrofuran	EPA 8260	<25	ug/L	MQS	10/13/05
1,1,1-Trichloroethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,1-Dichloropropene	EPA 8260	<2.5	ug/L	MQS	10/13/05
Carbon Tetrachloride	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,2-Dichloroethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
Benzene	EPA 8260	180	ug/L	MQS	10/13/05
tert-Amyl methyl ether (TAME)	EPA 8260	<5.0	ug/L	MQS	10/13/05
Trichloroethene	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,4-Dioxane	EPA 8260	<250	ug/L	MQS	10/13/05
1,2-Dichloropropane	EPA 8260	<2.5	ug/L	MQS	10/13/05
Bromodichloromethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
Dibromomethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
4-Methyl-2-Pentanone	EPA 8260	<5.0	ug/L	MQS	10/13/05
cis-1,3-Dichloropropene	EPA 8260	<2.5	ug/L	MQS	10/13/05
Toluene	EPA 8260	390	ug/L	MQS	10/13/05
trans-1,3-Dichloropropene	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,1,2-Trichloroethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
2-Hexanone	EPA 8260	<5.0	ug/L	MQS	10/13/05
1,3-Dichloropropane	EPA 8260	<2.5	ug/L	MQS	10/13/05
Tetrachloroethene	EPA 8260	<2.5	ug/L	MQS	10/13/05
Dibromochloromethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,2-Dibromoethane (EDB)	EPA 8260	<5.0	ug/L	MQS	10/13/05
Chlorobenzene	EPA 8260	6.0	ug/L	MQS	10/13/05
1,1,1,2-Tetrachloroethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
Ethylbenzene	EPA 8260	190	ug/L	MQS	10/13/05
m&p-xylene	EPA 8260	180	ug/L	MQS	10/13/05
o-Xylene	EPA 8260	100	ug/L	MQS	10/13/05
Styrene	EPA 8260	<2.5	ug/L	MQS	10/13/05
Bromoform	EPA 8260	<5.0	ug/L	MQS	10/13/05
Isopropylbenzene	EPA 8260	19	ug/L	MQS	10/13/05
1,1,2,2-Tetrachloroethane	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,2,3-Trichloropropane	EPA 8260	<2.5	ug/L	MQS	10/13/05
Bromobenzene	EPA 8260	<2.5	ug/L	MQS	10/13/05

GZA GeoEnvironmental, Inc.

ANALYTICAL REPORT

Project Name: Duffy Bros.-Waltham, MA
Project No.: 01.0012820.40

Work Order No.: 0510-00069

Sample ID: INFLUENT
Sample Date: 10/11/2005

Sample No.: 001

Test Performed	Method	Results	Units	Tech	Analysis Date
N-Propylbenzene	EPA 8260	6.6	ug/L	MQS	10/13/05
2-Chlorotoluene	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,3,5-Trimethylbenzene	EPA 8260	43	ug/L	MQS	10/13/05
4-Chlorotoluene	EPA 8260	<2.5	ug/L	MQS	10/13/05
tert-Butylbenzene	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,2,4-Trimethylbenzene	EPA 8260	140	ug/L	MQS	10/13/05
sec-Butylbenzene	EPA 8260	<2.5	ug/L	MQS	10/13/05
p-Isopropyltoluene	EPA 8260	5.2	ug/L	MQS	10/13/05
1,3-Dichlorobenzene	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,4-Dichlorobenzene	EPA 8260	4.0	ug/L	MQS	10/13/05
n-Butylbenzene	EPA 8260	<2.5	ug/L	MQS	10/13/05
1,2-Dichlorobenzene	EPA 8260	12	ug/L	MQS	10/13/05
1,2-Dibromo-3-Chloropropane	EPA 8260	<13	ug/L	MQS	10/13/05
1,2,4-Trichlorobenzene	EPA 8260	<2.5	ug/L	MQS	10/13/05
Hexachlorobutadiene	EPA 8260	<2.5	ug/L	MQS	10/13/05
Naphthalene	EPA 8260	930	ug/L	MQS	10/13/05
1,2,3-Trichlorobenzene	EPA 8260	<2.5	ug/L	MQS	10/13/05
Surrogates:	EPA 8260				
***1,2-Dichloroethane-D4	EPA 8260	93.6	% R	MQS	10/13/05
***Toluene-D8	EPA 8260	98.6	% R	MQS	10/13/05
***4-Bromofluorobenzene	EPA 8260	116	% R	MQS	10/13/05
Preparation	EPA 5030B	2.5	DF	MQS	10/13/05
Hexavalent Chromium	SM3500CrD	<0.01	mg/L	AJY	10/14/05

GZA GEOENVIRONMENTAL, INC.
ENVIRONMENTAL CHEMISTRY LABORATORY
106 SOUTH ST, HOPKINTON, MA 01748
MASSACHUSETTS LABORATORY I.D. NO. MA092

EPA METHOD 6010B ANALYSIS
Metals by ICP

QUALITY CONTROL - AQUEOUS

DATE PREPARED: 10/14/2005

QC Sample	Method Blank	Lab Control Sample
Units	mg/L	% Recovery
Acceptance Limits	Results	80-120
Analyte		
Silver (Ag)	<0.005	85.3
Aluminum (Al)	NA	NA
Arsenic (As)	<0.010	95.1
Boron (B)	NA	NA
Barium (Ba)	NA	NA
Beryllium (Be)	<0.005	104.000
Calcium (Ca)	NA	NA
Cadmium (Cd)	<0.005	105
Cobalt (Co)	NA	NA
Chromium (Cr)	<0.005	91.0
Copper (Cu)	<0.015	96.0
Iron (Fe)	<0.025	93.6
Magnesium (Mg)	NA	NA
Manganese (Mn)	<0.005	102
Molybdenum (Mo)	NA	NA
Nickel (Ni)	<0.010	90.3
Lead (Pb)	<0.010	105
Antimony (Sb)	<0.025	95.8
Selenium (Se)	<0.025	102
Strontium (Sr)	NA	NA
Titanium (Ti)	NA	NA
Thallium (Tl)	NA	NA
Vanadium (V)	NA	NA
Zinc (Zn)	<0.010	103

Matrix Spike / Duplicate Spike performed as per method and reported if assigned on Chain of Custody.

GZA GEOENVIRONMENTAL, INC.
ENVIRONMENTAL CHEMISTRY LABORATORY
106 SOUTH ST, HOPKINTON, MA 01748
MASSACHUSETTS LABORATORY I.D. NO. MA092

EPA METHOD 7470A ANALYSIS
Mercury by Cold Vapor Atomic Absorption

QUALITY CONTROL - Aqueous

Date Prepared: 10/13/05

QC Sample	Method Blank	Lab Control Sample
Units	mg/L	% Recovery
Acceptance Limits	Results	80-120%
Analyte		
Mercury (Hg)	<0.00050	93.2

Matrix Spike / Duplicate Spike performed as per method and reported if assigned on Chain of Custody.

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748

EPA Method 8260 / 524.2 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Analyzed:	10/13/05	
Volatile Organics	Conc. ug/L	Acceptance Limit
dichlorodifluoromethane	< 1.0	< 1.0
chloromethane	< 1.0	< 1.0
vinyl chloride	< 1.0	< 1.0
bromomethane	< 1.0	< 1.0
chloroethane	< 1.0	< 1.0
trichlorofluoromethane	< 1.0	< 1.0
diethyl ether	< 2.0	< 2.0
acetone	< 25	< 25
1,1-dichloroethene	< 0.5	< 0.5
FREON-113	< 1.0	< 1.0
carbon disulfide	< 1.0	< 1.0
dichloromethane	< 1.0	< 1.0
tert-butyl alcohol (TBA)	< 25	< 25
methyl-tert-butyl-ether	< 1.0	< 1.0
trans-1,2-dichloroethene	< 0.5	< 0.5
1,1-dichloroethane	< 0.5	< 0.5
di-isopropyl ether (DIPE)	< 1.0	< 1.0
ethyl tert-butyl ether (EtBE)	< 1.0	< 1.0
2-butanone	< 25	< 25
2,2-dichloropropane	< 0.5	< 0.5
cis-1,2-dichloroethene	< 0.5	< 0.5
chloroform	< 0.5	< 0.5
bromochloromethane	< 0.5	< 0.5
tetrahydrafuran	< 5.0	< 5.0
1,1,1-trichloroethane	< 0.5	< 0.5
1,1-dichloropropene	< 0.5	< 0.5
carbon tetrachloride	< 0.5	< 0.5
1,2-dichloroethane	< 0.5	< 0.5
benzene	< 0.5	< 0.5
tert-amyl methyl ether (TAME)	< 1.0	< 1.0
trichloroethene	< 0.5	< 0.5
1,2-dichloropropane	< 0.5	< 0.5
bromodichloromethane	< 0.5	< 0.5
1,4-Dioxane	< 50	< 50
dibromomethane	< 0.5	< 0.5
4-methyl-2-pentanone	< 1.0	< 1.0
cis-1,3-dichloropropene	< 0.5	< 0.5
toluene	< 0.5	< 0.5
trans-1,3-dichloropropene	< 0.5	< 0.5
1,1,2-trichloroethane	< 1.0	< 1.0
2-hexanone	< 1.0	< 1.0
1,3-dichloropropane	< 0.5	< 0.5
tetrachloroethene	< 0.5	< 0.5
dibromochloromethane	< 0.5	< 0.5
1,2-dibromoethane (EDB)	< 0.5	< 0.5
chlorobenzene	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5
ethylbenzene	< 0.5	< 0.5
1,1,2,2-tetrachloroethane	< 0.5	< 0.5
m&p-xylene	< 0.5	< 0.5
o-xylene	< 0.5	< 0.5
styrene	< 0.5	< 0.5
bromoform	< 0.5	< 0.5
isopropylbenzene	< 0.5	< 0.5
1,2,3-trichloropropane	< 0.5	< 0.5
bromobenzene	< 0.5	< 0.5
n-propylbenzene	< 0.5	< 0.5
2-chlorotoluene	< 0.5	< 0.5
1,3,5-trimethylbenzene	< 0.5	< 0.5
4-chlorotoluene	< 0.5	< 0.5
tert-butyl-benzene	< 0.5	< 0.5
1,2,4-trimethylbenzene	< 0.5	< 0.5
sec-butyl-benzene	< 0.5	< 0.5
p-isopropyltoluene	< 2.5	< 2.5
1,3-dichlorobenzene	< 0.5	< 0.5
1,4-dichlorobenzene	< 0.5	< 0.5
n-butylbenzene	< 0.5	< 0.5
1,2-dichlorobenzene	< 0.5	< 0.5
1,2-dibromo-3-chloropropane	< 1.0	< 1.0
1,2,4-trichlorobenzene	< 0.5	< 0.5
hexachlorobutadiene	< 0.5	< 0.5
naphthalene	< 0.5	< 0.5
1,2,3-trichlorobenzene	< 0.5	< 0.5

Surrogates:	Recovery (%)	Acceptance Limits
DIBROMOFLUOROMETHANE	97.5	70-130
1,2-DICHLOROETHANE-D4	98.4	70-130
TOLUENE-D8	101	70-130
4-BROMOFLUOROBENZENE	103	70-130
1,2-DICHLOROBENZENE-D4	97.5	70-130

Laboratory Control Sample

Date Analyzed:	10/13/05		
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits	Verdict
dichlorodifluoromethane	97.3	70-130	ok
chloromethane	94.2	70-130	ok
vinyl chloride	96.6	70-130	ok
bromomethane	103	70-130	ok
chloroethane	99.2	70-130	ok
trichlorofluoromethane	98.2	70-130	ok
diethyl ether	85.9	70-130	ok
acetone	81.5	70-130	ok
1,1-dichloroethene	97.4	70-130	ok
FREON-113	105	70-130	ok
carbon disulfide	94.0	70-130	ok
dichloromethane	86.8	70-130	ok
tert-butyl alcohol (TBA)	75.7	70-130	ok
methyl-tert-butyl-ether	91.3	70-130	ok
trans-1,2-dichloroethene	104	70-130	ok
1,1-dichloroethane	93.0	70-130	ok
di-isopropyl ether (DIPE)	86.9	70-130	ok
ethyl tert-butyl ether (EtBE)	82.7	70-130	ok
2-butanone	80.5	70-130	ok
2,2-dichloropropane	107	70-130	ok
cis-1,2-dichloroethene	95.9	70-130	ok
chloroform	91.3	70-130	ok
bromochloromethane	92.2	70-130	ok
tetrahydrafuran	78.4	70-130	ok
1,1,1-trichloroethane	98.1	70-130	ok
1,1-dichloropropene	94.4	70-130	ok
carbon tetrachloride	97.3	70-130	ok
1,2-dichloroethane	93.6	70-130	ok
benzene	98.2	70-130	ok
tert-amyl methyl ether (TAME)	73.7	70-130	ok
trichloroethene	100	70-130	ok
1,2-dichloropropane	87.5	70-130	ok
bromodichloromethane	85.8	70-130	ok
1,4-Dioxane	75.5	70-130	ok
dibromomethane	98.1	70-130	ok
4-methyl-2-pentanone	79.2	70-130	ok
cis-1,3-dichloropropene	89.9	70-130	ok
toluene	99.9	70-130	ok
trans-1,3-dichloropropene	86.3	70-130	ok
1,1,2-trichloroethane	95.7	70-130	ok
2-hexanone	89.3	70-130	ok
1,3-dichloropropane	97.9	70-130	ok
tetrachloroethene	119	70-130	ok
dibromochloromethane	98.3	70-130	ok
1,2-dibromoethane (EDB)	99.6	70-130	ok
chlorobenzene	110	70-130	ok
1,1,1,2-tetrachloroethane	105	70-130	ok
ethylbenzene	114	70-130	ok
1,1,2,2-tetrachloroethane	98.1	70-130	ok
m&p-xylene	107	70-130	ok
o-xylene	104	70-130	ok
styrene	106	70-130	ok
bromoform	101	70-130	ok
isopropylbenzene	112	70-130	ok
1,2,3-trichloropropane	91.6	70-130	ok
bromobenzene	109	70-130	ok
n-propylbenzene	108	70-130	ok
2-chlorotoluene	106	70-130	ok
1,3,5-trimethylbenzene	109	70-130	ok
4-chlorotoluene	102	70-130	ok
tert-butyl-benzene	110	70-130	ok
1,2,4-trimethylbenzene	108	70-130	ok
sec-butyl-benzene	111	70-130	ok
p-isopropyltoluene	112	70-130	ok
1,3-dichlorobenzene	107	70-130	ok
1,4-dichlorobenzene	107	70-130	ok
n-butylbenzene	106	70-130	ok
1,2-dichlorobenzene	102	70-130	ok
1,2-dibromo-3-chloropropane	81.1	70-130	ok
1,2,4-trichlorobenzene	106	70-130	ok
hexachlorobutadiene	122	70-130	ok
naphthalene	98.0	70-130	ok
1,2,3-trichlorobenzene	104	70-130	ok

SMF criteria allows 5 compounds to be outside acceptance limits

Surrogates:	Recovery (%)	Acceptance Limits	Verdict
DIBROMOFLUOROMETHANE	92.0	70-130	ok
1,2-DICHLOROETHANE-D4	95.9	70-130	ok
TOLUENE-D8	98.2	70-130	ok
4-BROMOFLUOROBENZENE	112	70-130	ok
1,2-DICHLOROBENZENE-D4	109	70-130	ok

Instrument: HP GC/MS "S"

GZA GeoEnvironmental, Inc.
105 South Street
Hopkinton, MA 01748
MA092

EPA Method 8270 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Extracted:	10/12/05	
Date Analyzed:	10/12/05	
File Name:	V5393	
Semi-Volatile Organics	**Result**	**Reporting Limit**
n-nitrosodimethylamine	ND	10
pyridine	ND	100
phenol	ND	10
bis(2-chloroethyl)ether	ND	10
2-chlorophenol	ND	10
1,3-dichlorobenzene	ND	10
1,4-dichlorobenzene	ND	10
benzyl alcohol	ND	20
1,2-dichlorobenzene	ND	10
2-methylphenol	ND	10
bis(2-chloroisopropyl)ether	ND	10
3&4-methylphenol	ND	10
n-nitrosodi-n-propylamine	ND	10
hexachloroethane	ND	10
nitrobenzene	ND	10
isophrone	ND	10
2-nitrophenol	ND	10
2,4-dimethylphenol	ND	10
benzoic acid	ND	10
bis(2-chloroethoxy)methane	ND	10
2,4-dichlorophenol	ND	10
1,2,4-trichlorobenzene	ND	10
napthalene	ND	2.0
4-chloroaniline	ND	10
hexachlorobutadiene	ND	10
4-chloro-3-methylphenol	ND	20
2-methylnapthalene	ND	2.0
aniline	ND	10
hexachlorocyclopentadiene	ND	50
2,4,6-trichlorophenol	ND	10
2,4,5-trichlorophenol	ND	10
2-chloronaphthalene	ND	10
2-nitroaniline	ND	50
dimethylphthalate	ND	10
acenapthylene	ND	2.0
2,6-dinitrotoluene	ND	10
3-nitroaniline	ND	50
acenaphthene	ND	2.0
2,4-dinitrophenol	ND	100
dibenzofuran	ND	10
4-nitrophenol	ND	50
2,4-dinitrotoluene	ND	10
diethylphthalate	ND	10
fluorene	ND	2.0
4-chlorophenyl phenyl ether	ND	10
4-nitroaniline	ND	20
4,6-dinitro-2-methylphenol	ND	50
n-nitrosodiphenylamine	ND	10
4-bromophenyl phenyl ether	ND	10
hexachlorobenzene	ND	10
pentachlorophenol	ND	50
phenanthrene	ND	2.0
anthracene	ND	2.0
carbazole	ND	10
di-n-butylphthalate	ND	15
fluoranthene	ND	2.0
benzidine	ND	10
pyrene	ND	2.0
butylbenzylphthalate	ND	10
benz [a] anthracene	ND	2.0
3,3'-dichlorobenzidine	ND	20
chrysene	ND	2.0
bis(2-ethylhexyl)phthalate	ND	10
di-n-octylphthalate	ND	10
benzo [b] fluoranthene	ND	2.0
benzo [k] fluoranthene	ND	2.0
benzo [a] pyrene	ND	2.0
indeno [1,2,3-cd] pyrene	ND	2.0
dibenz [a,h] anthracene	ND	2.0
benzo [ghi] perylene	ND	2.0

Surrogates:	**Recovery (%)**	**Acceptance Limits**
2-FLUOROPHENOL	21.2	15-110
PHENOL-D6	10.9	15-110
NITROBENZENE-D5	56.3	30-130
2-FLUOROBIPHENYL	64.6	30-130
2,4,6-TRIBROMOPHENOL	94.5	15-110
p-TERPHENYL-D14	79.2	30-130

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
MA002

EPA Method 8270 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Laboratory Control Sample

Date Extracted:	10/12/06		
Date Analyzed:	10/12/06		
File Name:	V8394		
Spike Concentration = 20ug/L	**% Recovery**	**Acceptance Limits**	**Verdict**
n-nitrosodimethylamine	29.0	40-140	out
pyridine	13.9	40-140	out
phenol	2.69	30-130	out
bis(2-chloroethyl)ether	65.3	40-140	ok
2-chlorophenol	60.3	30-130	ok
1,3-dichlorobenzene	66.2	40-140	ok
1,4-dichlorobenzene	66.5	40-140	ok
benzyl alchohol	39.9	40-140	out
1,2-dichlorobenzene	69.1	40-140	ok
2-methylphenol	63.4	30-130	ok
bis(2-chloroisopropyl)ether	47.1	40-140	ok
3&4-methylphenol	63.8	30-130	ok
n-nitrosodi-n-propylamine	57.9	40-140	ok
hexachloroethane	71.9	40-140	ok
nitrobenzene	60.7	40-140	ok
isophrone	63.8	40-140	ok
2-nitrophenol	70.2	30-130	ok
2,4-dimethylphenol	59.9	30-130	ok
benzoic acid	0.63	30-130	ok
bis(2-chloroethoxy)methane	55.5	40-140	ok
2,4-dichlorophenol	66.0	30-130	ok
1,2,4-trichlorobenzene	61.4	40-140	ok
naphthalene	72.9	40-140	ok
4-chloroaniline	72.2	40-140	ok
hexachlorobutadiene	57.8	40-140	ok
4-chloro-3-methylphenol	54.3	30-130	ok
2-methylnapthalene	58.3	40-140	ok
aniline	34.1	40-140	out
hexachlorocyclopentadiene	35.3	40-140	out
2,4,6-trichlorophenol	58.1	30-130	ok
2,4,5-trichlorophenol	57.7	30-130	ok
2-chloronapthalene	67.5	40-140	ok
2-nitroaniline	62.9	40-140	ok
dimethylphthalate	70.3	40-140	ok
acenapthylene	69.2	40-140	ok
2,6-dinitrotoluene	72.5	40-140	ok
3-nitroaniline	72.4	40-140	ok
acenaphthene	75.6	40-140	ok
2,4-dinitrophenol	42.9	30-130	ok
dibenzofuran	70.8	40-140	ok
4-nitrophenol	14.1	30-130	out
2,4-dinitrotoluene	74.5	40-140	ok
diethylphthalate	80.9	40-140	ok
fluorene	75.5	40-140	ok
4-chlorophenyl phenyl ether	64.4	40-140	ok
4-nitroaniline	79.3	40-140	ok
4,6-dinitro-2-methylphenol	60.8	30-130	ok
n-nitrosodiphenylamine	71.8	40-140	ok
4-bromophenyl phenyl ether	69.7	40-140	ok
hexachlorobenzene	78.8	40-140	ok
pentachlorophenol	54.1	30-130	ok
phenanthrene	84.6	40-140	ok
anthracene	84.3	40-140	ok
carbazole	87.8	40-140	ok
di-n-butylphthalate	89.6	40-140	ok
fluoranthene	75.5	40-140	ok
benzidine	0.00	40-140	out
pyrene	75.6	40-140	ok
butylbenzylphthalate	86.5	40-140	ok
benz [a] anthracene	75.3	40-140	ok
3,3'-dichlorobenzidine	95.1	40-140	ok
chrysene	72.2	40-140	ok
bis(2-ethylhexyl)phthalate	88.5	40-140	ok
di-n-octylphthalate	84.0	40-140	ok
benzo [b] fluoranthene	85.0	40-140	ok
benzo [k] fluoranthene	84.1	40-140	ok
benzo [a] pyrene	85.7	40-140	ok
indeno [1,2,3-cd] pyrene	75.1	40-140	ok
dibenz [a,h] anthracene	76.7	40-140	ok
benzo [ghi] perylene	77.4	40-140	ok

CAM criteria allows 15% of analytes to exceed criteria.

Surrogates:	**Recovery (%)**	**Acceptance Limits**	**Verdict**
2-FLUOROPHENOL	23.4	15-110	ok
PHENOL-D6	12.1	15-110	out
NITROBENZENE-D5	58.8	30-130	ok
2-FLUOROBIPHENYL	66.5	30-130	ok
2,4,6-TRIBROMOPHENOL	91.3	15-110	ok
p-TERPHENYL-D14	74.5	30-130	ok

WHITE COPY - Original YELLOW COPY - Lab Files PINK COPY - Project Manager

W.O. # 0510-00069 (for lab use only)

CHAIN-OF-CUSTODY RECORD

Sample I.D.	Date/Time Sampled (Very Important)	Matrix (A=Air, S=Soil, GW=Ground W., SW=Surface W., WW=Waste W., DW=Drinking W., Other (specify))	Dph1 ☐Cond.	GC Screen (VOA)	☐602.2 ☐602.2	WW ONLY: 624	☐601 ☐602	625	Formaldehyde	ANALYSIS REQUIRED: 8260	8021	8021 - "8010" List	8021 "8020" List	8270 (SVOA) CBNA CBN	8082-PCB Only	8081 - Pest Only	TPH-GC (Mod. 8100)	TPH-GC w/FRNG	EPH (MA DEP)	VPH (MA DEP)	TCLP (Spec. Below)	Filtering (✓ if required)	Metals (SPR4-13 ☐ R-5)	Metals (List Below)	Cyanide				Total # of Cont.	Note #
Influent	10/11/05 10:28a	GW								✓				✓									✓		✓				8	A

PRESERVATIVE (Cl - HCl, M=MeOH, N - HNO3, S - H2SO4, Na - NaOH, O - Other)*

CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, O-Other)*

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Paula Corbett	10/11	10/11/05 17:05
	10/11/05 17:05	Walk in
Walk in		10/12/05 0800

NOTES: Preservatives, special reporting limits, known contamination, additional testing parameters, etc.:

(A) # of containers
3- 8260
2- 8270
1- PP13
1- cyanide
1- Temp Blank

MCP Field Presumptive Certainty
N/A Y N
( ) ( ) ( ) Metals/Cyanide assigned 1 Matrix Spike per 20
( ) ( ) ( ) DW QC Required
( ) ( ) ( ) Short (Metals/VOA's) List OK

PROJECT MANAGER: John Colbert EXT: 5892

DATA REPORT ☑ PDF (Adobe) ☐ ASCII ☐ EXCEL Specify State

TURNAROUND TIME: Standard Rush ✓ Days, Approved by:

LAB USE: TB TEMP. OF COOLER 3.9 °C

GZA FILE NO: 12820.40 P.O. NO.

PROJECT Duffys

LOCATION 411 Waverly Oaks Rd Waltham

COLLECTOR(S) CC

SHEET 1 OF 1

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS
106 South Street
Hopkinton, MA 01748
(508) 435-9244
FAX (508) 435-9912

GZAP003

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs
Attn: Ms. Michelle Mirenda
Engineers and Scientists
106 South Street
Hopkinton, MA 01748

Date Received: 10/12/05
Date Reported: 10/19/05
P.O. #: 8-28426
Work Order #: 0510-17341

DESCRIPTION: GZA FILE# 01.0012820.40 DUFFY'S - WALTHAM, MA

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies and all NELAC requirements were met. The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we may be of further assistance, please contact us.

Approved by:

Data Reporting

enc: Chain of Custody

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

ACCREDITED IN ACCORDANCE WITH

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs
Date Received: 10/12/05
Work Order #: 0510-17341

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: INFLUENT
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 10/11/2005 @ 10:28

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOTAL CYANIDE	<0.01	0.01	mg/l	EPA 335.2	10/18/05	EC

WHITE COPY - Original YELLOW COPY - Lab Files PINK COPY - Project Manager

Rial

W.O. # 05 10 - 60069
(for lab use only)

CHAIN-OF-CUSTODY RECORD

Sample I.D.	Date/Time Sampled (Very Important)	Matrix A=Air S=Soil GW=Ground W. SW=Surface W. WW=Waste W. DW=Drinking W. Other (specify)	Dpt. DOand.	GC Screen (VOA)	D624 or D8010	624	D401	D402	625	Formaldehyde	8260	8021	8021 - "10/10" List	8021 "10/20" List	8270 (Semi-Vol OPH-H DBN)	8082-PCBs Only	8081 - Pest Only	TPH-GC (MA-ETH)	TPH-GC w/FNG	EPH (MA DEP)	VPH (MA DEP)	TCLP (Spec. Select)	Filtering (✓ if requested)	Metals CPPM-20 Cl Fe-B	Metals (List Below)	Complete			Total # of Cont.	Note #
Influent	10/11/05 1028	GW																								✓				
PRESERVATIVE (Cl - HCl, M=MeOH, N - HNO3, S - H2SO4, Na - NaOH, O - Other)*																										NA				
CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, O-Other)*																										P				

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
[illegible]	10/12/05 0900	Bill Mitchell 10-12-5 1405
Bill Mitchell 10-12-5 1610		EASTERN CONNECTION 10-12-5 1605
EASTERN CONNECTION	10/12/05 1830	LR Ray

NOTES: Preservatives, special reporting limits, known contamination, additional testing parameters, etc.:

0510-17341

PROJECT MANAGER: Michelle Miranda EXT. 4710

DATA REPORT ☑ PDF (Adobe) ☐ ASCII ☐ EXCEL Specify State _____

TURNAROUND TIME: Standard Rush ___ Days, Approved by: _____

LAB USE: TEMP. OF COOLER _____ °C

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS
106 South Street
Hopkinton, MA 01748
(508) 435-9244
FAX (508) 435-9912

Use 0510-17299 for pickup code

GZA FILE NO: 01.0012820.40 P.O. NO. 8-28426

PROJECT Duffy's

LOCATION Waltham, MA

COLLECTOR(S) C.C. SHEET 1 OF 1

GZAP003

Attachment #10

Chemical Additives Information

PRODUCT DATA

FeREMEDE®

DEPOSIT CONTROL AGENT

PRODUCT APPLICATION:

FeREMEDE is a concentrated blend of chelants, sequestering agents and polymers specifically designed to prevent the precipitation and deposition of iron and other metallic oxides and hardness salts such as calcium carbonate in a wide variety of water handling systems. The product is particularly effective in preventing the deposition of iron, manganese and calcium contaminants in ground water remediation systems utilizing air stripping towers. By maintaining clean packing surfaces, use of FeREMDE helps to increase water circulation rates, minimize pressure drops, reduce liquid hold-up and improve the mass transfer efficiency of the unit. When used on a continuous basis the product can also help to remove existing deposits from the system, thereby enabling a facility to reduce traditional chemical and manpower clean-up expenses.

FeREMEDE is easy to use in that the product is environmentally-safe, does not promote microbiological contamination, is active over a broad pH range and is compatible with all other water treatment compounds. The product is also chlorine-stable, does not contribute to foaming problems and is non-corrosive to metal surfaces.

PRODUCT DESCRIPTION:

Appearance:	Clear, pale yellow to light brown liquid
Specific Gravity:	1.12 - 1.18 @ 25 degrees C
Density:	9.5 pounds per gallon
pH:	Approximately 5.0
Freeze Point:	Less than 32 degrees F

PRODUCT DOSAGE:

As product feed rates are highly dependent upon makeup water characteristics and system operating conditions, your sales representative should be consulted for specific dosage recommendations. Typically , however, FeREMEDE is dosed to the system at a rate of 25-100 ppm (as product). The recommended feed method is by continuous injection of the product into the system influent line

PRODUCT SAFETY:

As with any industrial chemical, FeREMEDE should be handled with appropriate care. Therefore, please have all supervisory personnel and operating employees review the Material Safety Data Sheet (MSDS) to obtain recommended application, storage and disposal procedures before using the product in your facility.

PRODUCT PACKAGING:

FeREMEDE is available in 55 and 30 gallon drums, 15 gallon containers. 5 gallon pails and bulk.

Redux™ Technology

Summary of FeREMEDE™ Toxicity Testing

Laboratory: Environmental Risk Limited, Bloomfield, CT

Test Objective: Identify LD50 (Lethal Dose to 50% of Test Population) and NOAEL (No Observed Acute Effect Level) for use in discharge permitting

Tests Completed:

1. Acute Toxicity Testing (at concentrations of typical recommended usage rates): This involved 48 hour bioassay testing using fathead minnows and daphnia at concentrations of 10 ppm, 20 ppm, 30 ppm, 40 ppm, 50 ppm and a control (0 ppm).

   Results: No observed toxicity effect on either organism

2. LD50 Rangefinder Test: Due to low toxicity found in initial Acute Toxicity Testing, this test would identify an approximate range where the LD50 might be found. This involved 24 hour bioassay testing using daphnia at concentrations of 2,000 ppm, 4,000 ppm, 6,000 ppm, 8,000 ppm and a control (0 ppm) as well as 24 hour bioassay testing using minnows at concentrations of 6,000 ppm, 8,000 ppm, 10,000 ppm, 25,000 ppm and a control (0 ppm)

   Results: recommended concentrations used in LD50 Tests below

3. Duplicate LD50 Tests: This involved 48 hour bioassay testing using daphnia at concentrations of 1,000 ppm, 2,000 ppm, 3,000 ppm, 4,000 ppm, 5,000 ppm and a control (0 ppm) as well as 96 hour bioassay testing using minnows at concentrations of 2,000 ppm, 4,000 ppm, 6,000 ppm, 7,000, 8,000 ppm and a control (0 ppm)

   Results: Average LD50 (for daphnia) - 3918.48 ppm
   Average NOAEL (for daphnia) - 2,500 ppm
   Average LD50 (for minnows) - 7,650.97 ppm
   Average NOAEL (for minnows) - 7,000 ppm

All tests were completed per EPA protocol (EPA/600/4-85/013). Detailed test results and protocol information available upon request.

550 Vermont Route 30, P.O. Box 331, Newfane, Vermont 05345
Phone: 802-365-7200 Fax: 802-365-4652 www.reduxtech.com

Redux™ Technology

MATERIAL SAFETY DATA SHEET

IDENTITY - FeREMEDE

SECTION I - PRODUCT INFORMATION

MANUFACTURER'S NAME -

JAMESTOWN CHEMICAL CO., INC.
280 CALLEGARI DRIVE
PO BOX 489
WEST HAVEN, CT 06516

TELEPHONE NUMBER FOR INFORMATION - 802-365-7200

EMERGENCY TELEPHONE NUMBER - CHEMTREC 800/424-9300

DATE PREPARED - December 20, 2001

PREPARED BY -

TECHNICAL MANAGER
JAMESTOWN CHEMICAL CO., INC.
WEST HAVEN, CT 06516

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

COMPONENT	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Organic acid	NDA	NDA	-
Organic phosphorus compound	NDA	NDA	-
Tetrasodium ethylene-diaminetetraacetic acid	NDA	NDA	-
Sulfonated styrene copolymer	NDA	NDA	-
Carboxylated polymer	NDA	NDA	-

N/A = NOT APPLICABLE NDA = NO DATA AVAILABLE

550 Vermont Route 30, P.O. Box 331, Newfane, Vermont 05345
Phone: 802-365-7200 Fax: 802-365-4652 www.reduxtech.com

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point, (°F):	212 - 220
Specific Gravity, (water=1):	1.12 - 1.16
Vapor Pressure, (mm Hg.):	Similar to water
pH:	~5.0
Density:	9.5
Melting Point, (°F):	N/A
Freeze Point, (°F):	<32
Vapor Density, (air=1):	Similar to water
Evaporation Rate, (Butyl Acetate=1):	Similar to water
Solubility in Water:	Complete
Appearance and Odor:	Clear, pale yellow liquid with slight odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point, (Method Used): Non-flammable/aqueous solution.

Flammable Limits:

LEL: N/A

UEL: N/A

Extinguishing Media:

N/A

Special Fire Fighting Procedures:

Firefighters should wear self-contained breathing apparatus and body covering protective clothing.

Unusual Fire and Explosion Hazards:

None

SECTION V - REACTIVITY DATA

Stability:

Stable: X Unstable:

Conditions to Avoid: None

Incompatibility (Materials to Avoid):

Quaternary amines, acids, sulfides and strong oxidizers.

Hazardous Decomposition or By-products:

Carbon dioxide, carbon monoxide and sulfur oxides.

Hazardous Polymerization:

May Occur ____ Will Not Occur X

Conditions to Avoid: NONE

SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry:

Inhalation? YES Skin? YES Ingestion? YES

Health Hazards (Acute and Chronic):

Mild irritant. May be harmful or fatal if swallowed.

Carcinogenicity:

NTP? NO IARC Monographs? NO OSHA Regulated? NO

Signs and Symptoms of Exposure:

Eye and skin irritant. Material may cause burns on exposed tissues with corneal injury which may result in permanent impairment of vision, or even blindness.

SECTION VI - HEALTH HAZARD DATA (cont'd)

Medical Conditions Generally Aggravated by Exposure:

Skin conditions.

Emergency and First Aid Procedures:

Ingestion:

NEVER give anything by mouth to an unconscious person. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give several glasses of milk. If vomiting occurs spontaneously, keep airway clear. Seek medical attention immediately.

Inhalation:

Remove person to fresh air. If breathing has stopped, resuscitate and give oxygen if readily available. Seek medical attention immediately.

Eye Contact:

Immediately flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within 1 minute is essential to achieve maximum effectiveness. Seek medical attention immediately.

Skin Contact:

Immediately wash contaminated areas with plenty of water. Remove contaminated clothing and footwear and wash clothing before re-use. Discard footwear which cannot be decontaminated. Seek medical attention immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE:

Steps to be Taken in Case Material is Released or Spilled:

Wear protective equipment outlined below. Absorb with inert ingredients such as sand or vermiculite, shovel into closeable container for disposal. Thoroughly flush residual with water.

Waste Disposal Method:

By methods consistent with applicable federal, state and local regulations.

Precautions to be Taken in Handling and Storing:

Wear recommended protective equipment when handling. Store in a cool, dry and well ventilated area.

Other Precautions:

None

SECTION VIII - CONTROL MEASURES:

Respiratory Protection:

Not normally required

Ventilation:

Local Exhaust: None

Mechanical: None

Special: None

Other: General Dilution

SECTION VIII - CONTROL MEASURES (cont'd):

Protective Gloves:

RUBBER or NEOPRENE gloves.

Eye Protection:

Safety goggles or full face shield.

Other Protective Equipment:

Protective clothing or rubber apron.

Work/Hygienic Practices:

Wash hands thoroughly after handling.

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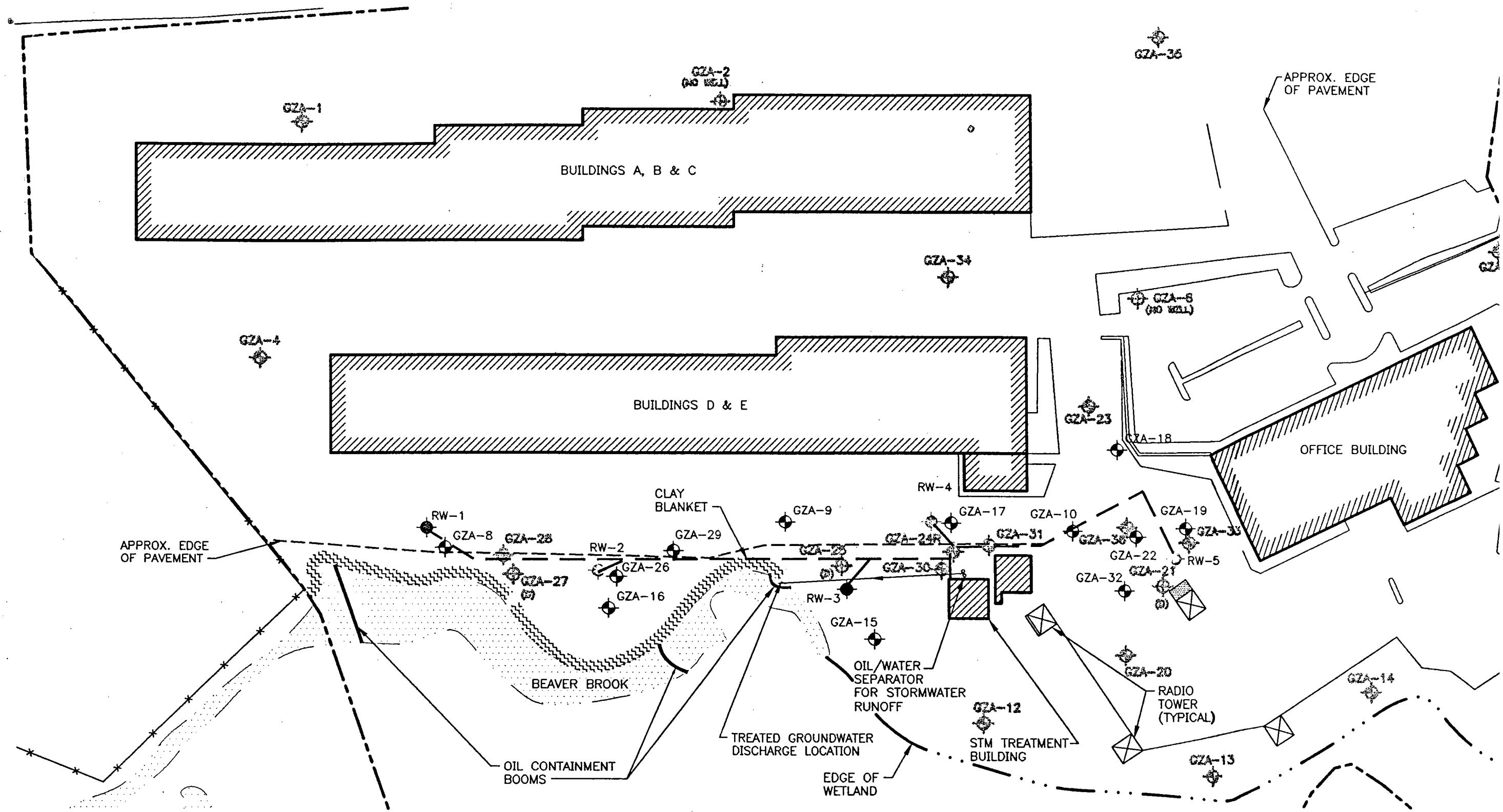
Attachment #11

Process and Instrumentation Diagram

Attachment #12
STM Components Figure



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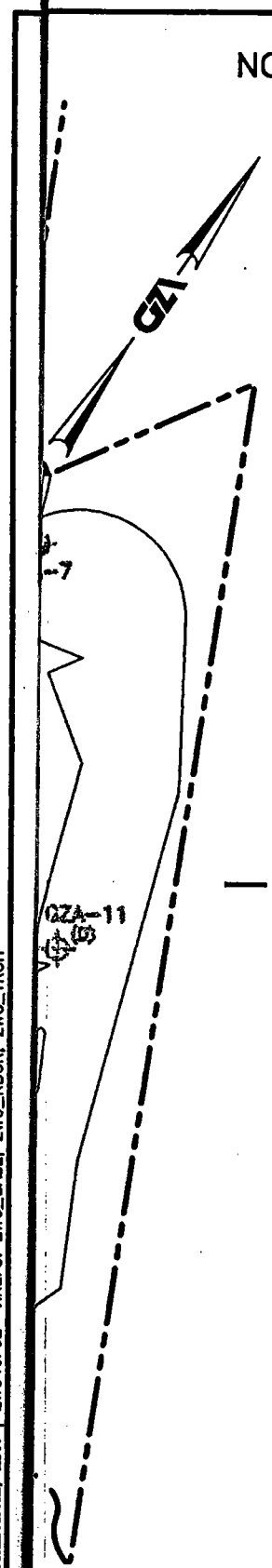
NBF, 4/20/1995, 12:03:24



NOTES:

1. THE BASE MAP WAS DEVELOPED FROM A PLAN PROVIDED BY DUFFY ASSOCIATES DATED AUGUST 29, 1983, AND PREPARED BY RUSSEL STEARNS.
2. THE LOCATIONS OF THE EXPLORATIONS WERE DETERMINED BY TAPE MEASUREMENTS FROM EXISTING STRUCTURES. THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND:

GZA-8	BORING LOCATION WITH MONITORING WELL INSTALLATION
GZA-2	BORING LOCATION
RW-2	EXISTING RECOVERY WELL LOCATION
RW-2	NEW RECOVERY WELL LOCATION
GZA-8	WELL NOT MONITORED AS PART OF STM ACTIVITIES
— — —	APPROXIMATE LIMITS OF UNDERGROUND UTILITIES INSTALLED AS PART OF STM ACTIVITIES

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REV. NO.	DESCRIPTION	BY	DATE

PROJ MGR: PFS
DESIGNED BY: PFS
REVIEWED BY: GLH
DRAWN BY: NBF
DATE: 4/21/95

GZA GeoEnvironmental, Inc.

1"=100'

0 50' 100' 200'

SHORT TERM MEASURE
WAVERLY OAKS PARK
WALTHAM, MASSACHUSETTS

STM COMPONENTS

PROJECT NO.
12820.40

FIGURE NO.
2