RIZZO
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A TETRA TECH COMPANY

ENGINEERS • SCIENTISTS • PLANNERS

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FACSIMILE COVER SHEET

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Date: October 24, 2005 **Project:** 1279746001

To: RGP-NOC Processing

Company: USEPA-NE

Fax: 617-918-0505

From: Ian Cannan **Direct Telephone:** 508-903-2000

Notes:

CC Destinations:

Name	Company	Fax Number
Anne Reiter	Biogen Idec, Inc	617-679-3519

Hard copy to be mailed: Yes ☐ No ☒

DOCUMENT2

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October 21, 2005

U.S. Environmental Protection Agency
EPA-NE
RGP-NOC Processing
Municipal Assistance Unit (CMU)
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Re: Notice of Intent
NPDES - Remediation General Permit
12 Cambridge Center
Cambridge, Massachusetts
DEP RTN 3-1988

Dear Sir or Madam:

On behalf of Biogen Idec, Inc. (BI), the owner of the above referenced property, and Rizzo Associates, the current operator of the groundwater dewatering, treatment and discharge system located within Building 6A at 12 Cambridge Center, Rizzo Associates is submitting this Notice of Intent to be covered by the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP). This Notice of Intent has been prepared in accordance with the provisions of the NPDES RGP (Federal Register Volume 70, No 174) and related guidance documentation provided by the U.S. EPA.

Site Information

BI owns and operates a pharmaceutical research and development facility (Building 6) located within the Kendall Square Urban Renewal Area in Cambridge, Massachusetts, approximately 2,100 feet north of the Charles River. The Site is located within a predominantly commercial area with mixed commercial/residential properties to the north. The southern portion of the Site was formerly a canal (Broad Canal) from the early 1800s until 1969, when the canal was filled. A portion of the Site was occupied by a petroleum storage facility from approximately 1886 until 1966. Several large above ground storage tanks (ASTs) formerly occupied a portion of the Site and were used for storage of No. 2 fuel oil and kerosene. The former structures and ASTs were demolished and removed by the Cambridge Redevelopment Authority in 1966.

BI is currently constructing a new addition (Building 6A) to their existing research and design laboratory (Building 6). The Building 6A addition will include additional research and design

laboratory space, office space, and an electrical and steam co-generation power plant. The Building 6A construction is being conducted at a Massachusetts Department of Environmental Protection (MADEP) identified Disposal Site currently covered under Massachusetts Contingency Plan (MCP), identified with MADEP Release Tracking Number (RTN) 3-1988 and located at 12 Cambridge Center in Cambridge, Massachusetts. Comprehensive Response Action (CRA) activities are currently ongoing under a MCP Phase IV Remedy Implementation Plan (RIP) dated May 24, 2004. The objective of the RIP is to manage, treat, and dispose of urban fill and petroleum contaminated soil and groundwater generated during the construction of Building 6A. BI and Rizzo Associates are requesting coverage under the NPDES RGP for discharges of treated groundwater from remediation and dewatering activities being conducted associated with Building 6A.

Prior to commencement of the MCP Phase IV RIP activities BI and Rizzo Associates received a NPDES Permit Exclusion letter (#MA-041-038) on May 27, 2004 providing interim discharge requirements for effluent discharges from the Site remedial groundwater dewatering, treatment and discharge system. Discharge under the NPDES Permit Exclusion #MA-041-038 began on October 5, 2004. Discharge has continued since October 2004 in compliance with the provisions and requirements of the NPDES Permit Exclusion letter.

Facility Permitting Information

The BI pharmaceutical research and development facility (Building 6) is currently operating under a Massachusetts Water Resources Authority (MWRA) discharge permit (MWRA Permit #09101193) for discharges of sewage and process waste water to the municipal sewer system. BI is in the process of expanding the existing MWRA Permit to cover sewage and process waste water generated from the addition to Building 6 currently under construction (Building 6A). The existing (or modified) MWRA Permit is not expected to impact the discharge of remediation groundwater under the NPDES RGP.

The construction general contractor (Skanska USA Building, Inc.) obtained and maintains an U.S. EPA Construction Storm Water General Permit (CSWGP) (Permit #MAR100000). General construction activities undertaken at the Site are covered under the CSWGP. Skanksa USA Building, Inc. is currently implementing a Storm Water Pollution Prevention Plan (SWPP) in accordance with the CSWGP. The SWPP prepared for the Site includes measures to mitigate potential impacts caused by storm water run-off at the construction site.

Discharge Background Information

Upon encountering groundwater during MCP response activities (Phase IV RIP) including soil excavation and removal, a temporary dewatering and treatment system was activated on October

5, 2004, discharge began under the NPDES Exclusion letter on October 6, 2004, and the system remained operational from October 6, 2004 until March 30, 2005, excluding brief periods of down time for system maintenance. Petroleum-contaminated groundwater was pumped from two well locations installed within the excavation footprint for the basement of the Biogen Building 6A building located at 12 Cambridge Center. The groundwater was pumped to the on-site treatment system prior to discharge to a storm drain, eventually discharging to the Charles River. The treatment system design is described in detail in the Treatment System Information section below. A schematic diagram of the treatment system is included as an attachment to this NOI letter.

In March 2005 soil excavation and removal activities within the Building 6A footprint were completed. Due to groundwater infiltration through the building foundation slurry wall and from the underlying soils, continued groundwater dewatering and remediation was required. A stone lined underdrain piping network was installed in trenches excavated below the final grade of the basement floor. Following construction of the underdrain system a polyethylene vapor barrier and 6-inch poured concrete floor slab were installed. The underdrain system directs infiltrated groundwater through the piping network to a collection sump within the basement of Building 6A. Upon activation of the underdrain dewatering system steady state conditions were estabilished and groundwater infiltration flows stabilized. Following establishment of steady state conditions on March 30, 2005 concentrations of total nickel, total petroleum hydrocarbons (TPH), and total suspended solids (TSS) in the groundwater influent stream were observed to have stabilized at levels below the applicable NPDES Exclusion discharge limits. As such, on March 30, 2005 the groundwater treatment system was taken off-line (stand-by) and groundwater discharge was directed from the basement sumps directly to the storm drain system, bypassing the treatment system. Groundwater dewatering and direct discharge activities are expected to continue during construction activities associated with Biogen Building 6A. In the event that an exceedance of the NPDES discharge limits is detected in the monthly discharge samples, the groundwater dewatering system will be immediately shut down and the temporary groundwater treatment system will be put back in-line and discharge will be directed from the basement sumps through the treatment system.

The flow rate of the treatment system was between approximately 0.07 and 0.10 cubic feet per second (CFS) during the period of groundwater treatment system discharge, and since removal of the treatment system, flow rates have remained between 0.06 and 0.07 CFS. A total of approximately 1,002,604 cubic feet of groundwater were treated and discharged to the storm drain system and the Charles River between October 6, 2004 and March 30, 2005. In addition, a total of approximately 1,210,212 cubic feet of groundwater have been dewatered and discharged to the storm drain system and the Charles River without treatment between March 30, 2005 and October 6, 2005. Table 1 summarizes effluent flow rates from the treatment system for the discharge through October of 2005.

Current Discharge Information

This NPDES Remediation General Permit will cover discharges from the underslab dewatering system installed within the basement of Building 6A located at 12 Cambridge Center. The underdrain dewatering system includes a stone lined underdrain piping network installed in trenches excavated below the final grade of the 6-inch concrete basement floor slab (approximately 30 feet below the ground surface). The underdrain system directs infiltrated groundwater through the piping network to a collection sump within the basement of Building 6A. Upon accumulation of groundwater in the collection sump to a pre-set level, groundwater is pumped by two, 2-inch electric pumps through discharge piping to a single discharge point at a City of Cambridge storm water drainage manhole located on the eastern portion of the Site. Although this discharge could be considered intermittent, observations of the system have indicated that discharge is generally constant at an average flow rate of approximately 0.07 CFS. The groundwater discharge enters the City of Cambridge storm water drainage system at a drainage manhole which is connected to a 24-inch storm drain pipe where it combines with flows from storm water runoff generated from neighboring properties and impermeable surfaces in this area of Cambridge. The 24-inch storm drain pipe then directs the discharge water to a 54-inch storm drain pipe located along Broadway Street. The 54-inch storm drain pipe directs water for eventual discharge to the Charles River. The discharge flow schematic (included as an attachment to this NOI letter) shows the flow of the discharge from the Site to the Charles River.

Sources of intake water include groundwater infiltration through the building slurry wall foundation and from coarse grained soils underlying the buildings concrete floor slab. No process waste water or other sources of intake water will contribute to inflows to the groundwater dewatering and treatment system discharging to the City of Cambridge storm water drainage system and the Charles River.

It is anticipated that future operations will likely include the on-site recharge of groundwater to a stone lined recharge gallery installed at the Site. Groundwater from the Building 6A underdrain system would be pumped directly to the recharge gallery. Discharge under the NPDES RGP would be maintained as a backup measure.

Contaminant Information

Since groundwater dewatering, treatment and discharge operations have been conducted under a NPDES Permit Exclusion Letter since October 2004, some of the contaminant information used in this NOI was generated using data collected during treatment system monitoring under the NPDES Permit Exclusion Letter. As a supplement to these data, one additional influent sample was collected and submitted for laboratory analysis for parameters not required to be monitored under the NPDES Permit Exclusion Letter. The results of laboratory analysis of inflow samples from the remedial wastewater indicate that the following compounds may be present in the

remedial discharge water: total suspended solids (TSS), total petroleum hydrocarbons (TPH), total BTEX, acetone, antimony, copper, nickel, zinc, and iron. Concentrations of certain metals (copper, zinc and iron) identified as believed present in the discharge water have the potential to exceed the NPDES RGP effluent limits at a zero dilution factor. In accordance with the guidance documentation, the dilution factor was calculated for discharge to the Charles River. Following determination of the appropriate dilution factor none of these metals have the potential to exceed the NPDES RGP effluent limits at the calculated dilution factor.

Treatment System Information

The original treatment system design under the NPDES Permit Exclusion included two 20,000-gallon frac tanks in series followed by two parallel bag filters, followed by two parallel filter systems each including one 500 lb organoclay filter and two 1000 lb granular activated carbon filters. Provisions in the system design included bypassing the organoclay filters if TPH in the influent water is less than 10 ppm, using only one of the two parallel filter systems when the system throughput is less than 50 gallons per minute and adding additional bag filters to the system if turbid flows clog the down-gradient filters. The design flow of the treatment system was approximately 300 gallons per minute (0.67 cubic feet per second). A schematic of the groundwater treatment system has been included as an attachment to this NOI letter. If treatment of the discharge is required based on established contaminant limits, appropriate treatment will be performed to remove contaminant concentrations to below permitted values.

Receiving Surface Water Information

Effluent from the remedial system discharge is directed to the Charles River through underground storm drainage piping owned and maintained by the City of Cambridge. The storm drainage system discharges to the Charles River near the intersection of the Charles River and Main Street in Cambridge, Massachusetts. The Charles River is classified as a Class B surface water feature.

Request for Coverage under NPDES RGP

On behalf of BI, Rizzo Associates requests coverage under the NPDES Remediation General Permit for discharges of remedial waste water to the Charles River, through the City of Cambridge storm water drainage system. Sampling and laboratory analysis of the remedial influent waters has indicated the likely presence of the following compounds in the remedial waste waters: TSS, TPH, total BTEX, acetone, antimony, copper, nickel, zinc, and iron. The attached NOI form provides additional information pertaining to this NOI letter and appropriate signatures of the owner of the facility (BI) and the operator of the remedial system (BI and Rizzo

Associates). Discharge of remedial waste water has been conducted since October 2004 under a NPDES Permit Exclusion Letter. Upon receipt of notification from EPA, discharge will continue under the NPDES RGP in accordance with sampling and monitoring requirements determined by the EPA.

Please contact the undersigned should you have any questions regarding this matter.

Very truly yours,

Robert J. Ankstitus, P.E., L.S.P.
Senior Project Manager

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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:** Biogen Idec, Inc. (Building 6A)			**Facility/site** address: 12 Cambridge Center Cambridge, MA 02142	
Location of **facility/site:** longitude: 71°05'13" latitude: 42°21'54"	Facility SIC code(s): 2836		Street: Cambridge Center	
b) Name of **facility/site owner:** Biogen Idec, Inc.			Town: Cambridge	
Email address of owner: Anne.Reiter@biogenidec.com			State: MA	Zip: 02142	County: Middlesex
Telephone no. of facility/site **owner:** (617) 679-3240					
Fax no. of facility/site **owner:** (617) 679-3519			**Owner** is (check one): 1. Federal___ 2. State/Tribal___ 3. Private__X__ 4. other, if so, describe:	
Address of **owner** (if different from site):				
Street: 14 Cambridge Center				
Town: Cambridge	State: MA	Zip: 02142	County: Middlesex	
c) Legal name of **operator:** Biogen Idec, Inc./Rizzo Associates Inc		**Operator** telephone no: (508) 903-2000		
		Operator fax no.: (508) 903-2001	**Operator** email: rankstitus@rizzo.com	
Operator contact name and title: Robert J. Ankstitus, P.E., L.S.P.				

Address of **operator** (if different from owner): Biogen Idec, Inc or Rizzo Associates, Inc.	Street: 1 Grant Street and 14 Cambridge Center		
Town: Framingham and Cambridge	State: MA	Zip: 01701-9005	County: Middlesex

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

e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes___ No X If "yes," please list: 1. site identification # assigned by the state of NH or MA: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number:	f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y___ N X, if Y, number: 2. phase I or II construction storm water general permit? Y X N___, if Y, number: 3. individual NPDES permit? Y___ N X, if Y, number: 4. any other water quality related permit? Y X N___, if Y, number: MWRA # 09101193

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:
*See attached NOI Letter

b) Provide the following information about each discharge:	1) Number of discharge points:	2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)? Max. flow 0.10 Average flow 0.07 Is maximum flow a **design value**? Y___ N X For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.
	one	Design max flow rate = 0.67 CFS

3) Latitude and longitude of each discharge within 100 feet: pt.1:long. 71° 05' 12" lat. 42° 21' 35"; 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): N/A	5) Is the discharge intermittent No or seasonal No ? Is discharge ongoing Yes X No ?
c) Expected dates of discharge (mm/dd/yy): start 10/2004 end 12/2006	
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).	

* See attached

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 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)
1. Total Suspended Solids		X	16	grab	160.2	4 mg/L	132,000	32	37,000	6.3
2. Total Residual Chlorine	X		1			0.05 mg/L	0	0	0	0
3. Total Petroleum Hydrocarbons		X	16		8100M	0.2 mg/L	213	0.05	69	0.012
4. Cyanide	X					0.01 mg/L	0	0	0	0
5. Benzene		X	3		8260B	5 Mg/L	45.4	0.011	34.5	0.0059
6. Toluene	X		3				0	0	0	0
7. Ethylbenzene		X	3				18.2	0.0045	11.5	0.00197
8. (m,p,o) Xylenes		X	3				15.2	0.0037	7.8	0.0013
9. Total BTEX[4]		X	3				76.8	0.019	53.8	0.0092

[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)	X		3	grab	8260B	5 ug/L	0	0	0	0
11. Methyl-tert-Butyl Ether (MtBE)	X					↓				
12. tert-Butyl Alcohol (TBA)	X					10 ug/L				
13. tert-Amyl Methyl Ether (TAME)	X					5 ug/L				
14. Naphthalene	X					20 ug/L				
15. Carbon Tetra-chloride	X					5 ug/L				
16. 1,4 Dichlorobenzene	X									
17. 1,2 Dichlorobenzene	X									
18. 1,3 Dichlorobenzene	X									
19. 1,1 Dichloroethane	X									
20. 1,2 Dichloroethane	X					↓				
21. 1,1 Dichloroethylene	X					0.96 ug/L				
22. cis-1,2 Dichloro-ethylene	X					5 ug/L				
23. Dichloromethane (Methylene Chloride)	X					10 ug/L				
24. Tetrachloroethylene	X		↓	↓	↓	5 ug/L	↓	↓	↓	↓

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)
25. 1,1,1 Trichloroethane	X		3	Grab	8260B	5 ug/L	0	0	0	0
26. 1,1,2 Trichloroethane	X		↓	↓	↓	↓	↓	↓	↓	↓
27. Trichloroethylene	X		↓	↓	↓	↓	↓	↓	↓	↓
28. Vinyl Chloride	X		↓	↓	↓	↓	↓	↓	↓	↓
29. Acetone		X	3	↓	↓	250 ug/L	358	0.09	167	0.029
30. 1,4 Dioxane	X		↓	↓	↓	5 ug/L	0	0	0	0
31. Total Phenols	X		1	↓	625	17 ug/L	↓	↓	↓	↓
32. Pentachlorophenol	X		↓	↓	↓	83 ug/L	↓	↓	↓	↓
33. Total Phthalates [5] (Phthalate esthers)	X		↓	↓	↓	↓	↓	↓	↓	↓
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	X		↓	↓	↓	17 ug/L	↓	↓	↓	↓
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	X		↓	↓	↓	↓	↓	↓	↓	↓
a. Benzo(a) Anthracene	X		↓	↓	↓	17 ug/L	↓	↓	↓	↓
b. Benzo(a) Pyrene	X		↓	↓	↓	↓	↓	↓	↓	↓
c. Benzo(b)Fluoranthene	X		↓	↓	↓	↓	↓	↓	↓	↓
d. Benzo(k) Fluoranthene	X		↓	↓	↓	↓	↓	↓	↓	↓
e. Chrysene	X		↓	↓	↓	↓	↓	↓	↓	↓

[5] The sum of individual phthalate compounds.

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		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	X		1	Grab	625	17ug/L	0	0	0	0
g. Indeno(1,2,3-cd) Pyrene	X									
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	X									
h. Acenaphthene	X									
i. Acenaphthylene	X									
j. Anthracene	X									
k. Benzo(ghi) Perylene	X									
l. Fluoranthene	X									
m. Fluorene	X									
n. Naphthalene-	X									
o. Phenanthrene	X									
p. Pyrene	X									
37. Total Polychlorinated Biphenyls (PCBs)	X		1	Grab	608	1.6ug/L				
38. Antimony		X	1	Grab	6010B	0.0005ug/L	0.0005	0.000000 12	0.0005 ug/L	0.000000 12
39. Arsenic			1	Grab	200.7	5 ug/L	0	0	0	0
40. Cadmium	X					5 ug/L				
41. Chromium III	X					10 ug/L				
42. Chromium VI	X				218.6	10 ug/L				

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		X	1	grab	200.7	5ug/L	52	0.013	52	0.013
44. Lead	X		1			0	0	0	0	0
45. Mercury	X		1		245.1	0	0	0	0	0
46. Nickel		X	17			10 ug/L	0.014	0.0000034	0.0059	0.0000014
47. Selenium	X		1			0	0	0	0	0
48. Silver	X		1			0	0	0	0	0
49. Zinc		X	1			10 ug/L	240	0.0587	240	0.0411
50. Iron		X	1	↓	↓	50 ug/L	1,500	0.367	1,500	0.257
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_X_ N___	If yes, which metals? Copper, Zinc, and Iron
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: Copper, Zinc, Iron DF: 411	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_X_ If "Yes," list which metals:

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

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

* See NOI letter

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): * As needed to treat contaminants, See NOI Letter			

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 30.25 Maximum flow rate of treatment system 46.08 Design flow rate of treatment system 300

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

None

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_X_	River/brook____	Wetlands_____	Other (describe):

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

* See NOI Letter

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 Class B

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 275 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 X No____ If yes, for which pollutant(s)?

Is there a TMDL? Yes X No____ If yes, for which pollutant(s)? priority organics, metals, nutrients, organic enrichment/low DO, pathogens, oil + grease, taste, odor + color, noxious aquatic plants, turbidity

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 X
Has any consultation with the federal services been completed ? No X 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 X Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes_____ No X

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.

4 See NOI Letter

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:

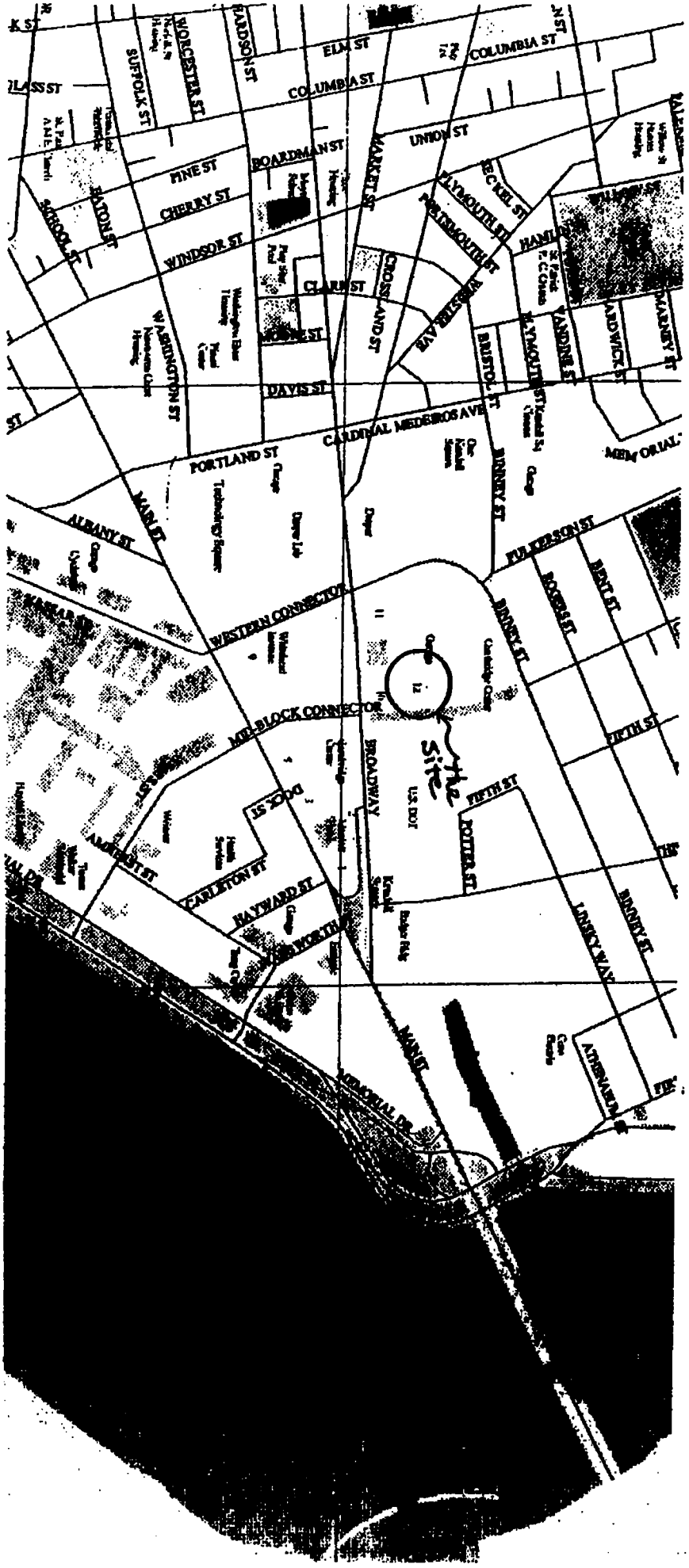
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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.

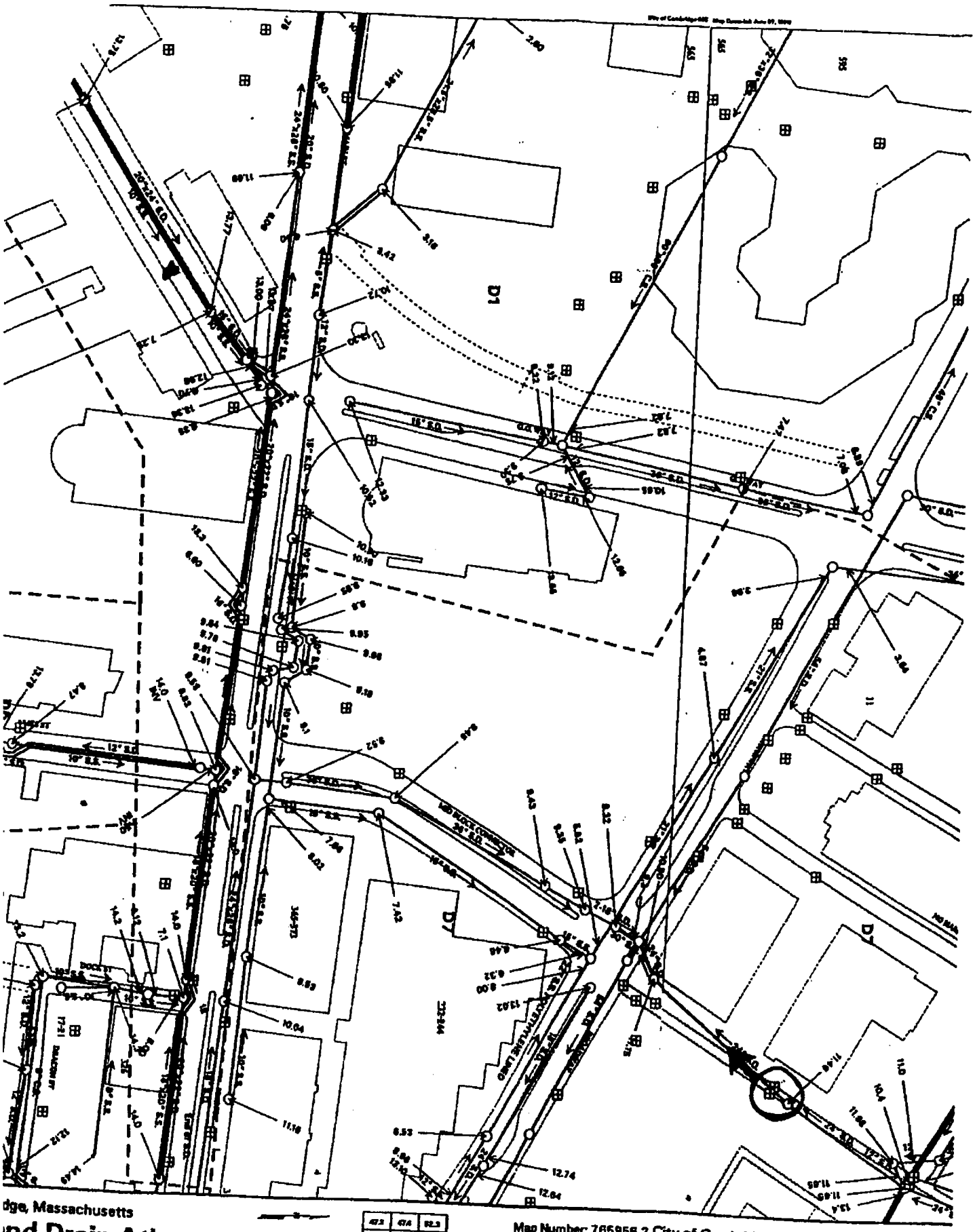
Facility/Site Name: Biogen Idec, Inc. (Building 6A)

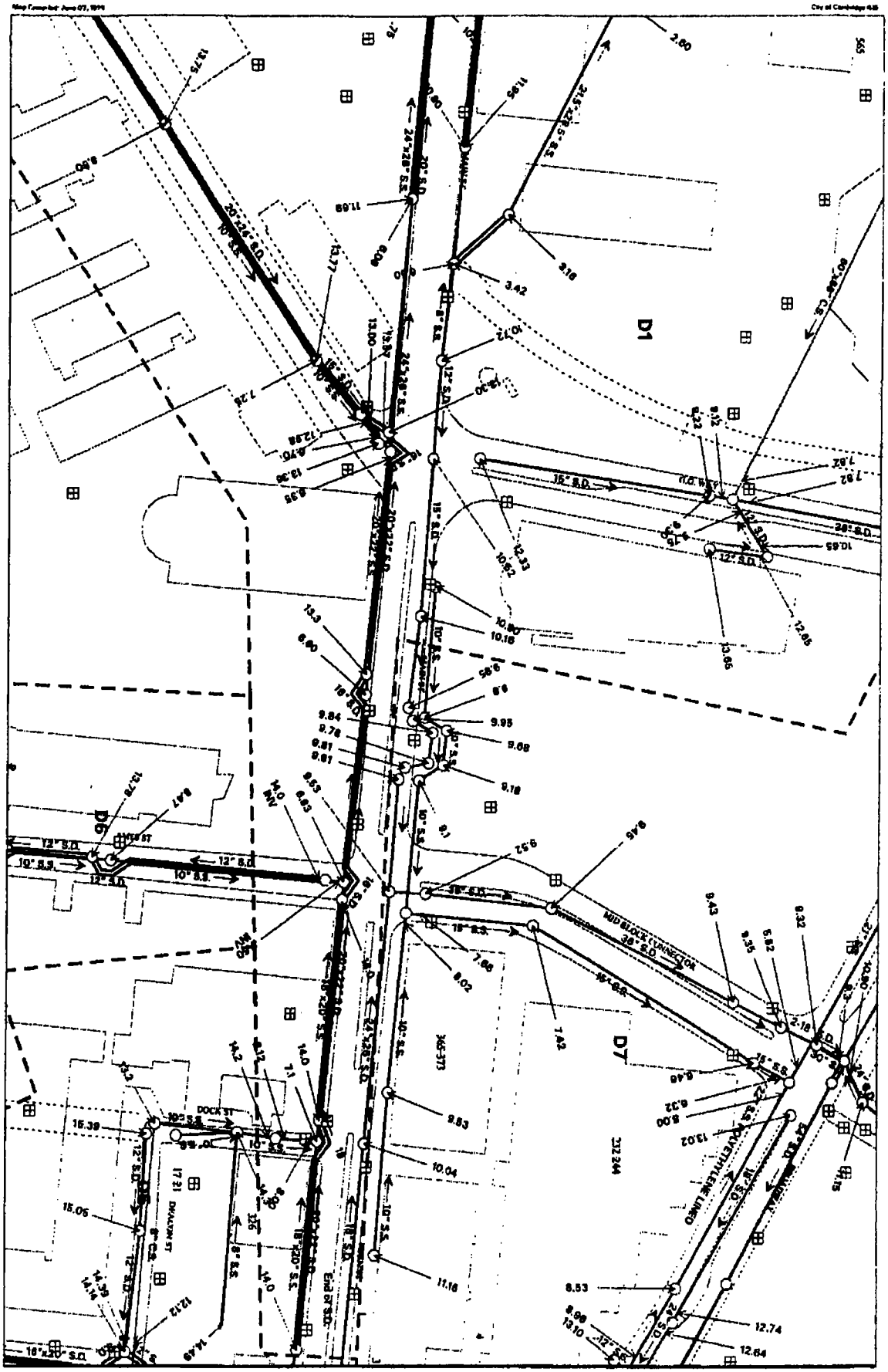
Operator signature: Anne J Reiter

Title: Staff Associate, EHS

Date: 10/21/05


ELM ST
COLUMBIA ST
SUFFOLK ST
WORCESTER ST
HARDSON ST
BOARDMAN ST
UNION ST
MARKET ST
PINE ST
CHERRY ST
WINDSOR ST
CLARK ST
CROSS AVE ST
PLYMOUTH ST
BRISTOL ST
DAVIS ST
CARDINAL MEDEIROS AVE
PORTLAND ST
ALBANY ST
WESTERN CONNECTOR
MID-BLOCK CONNECTOR
BROADWAY
FIFTH ST
POTTER ST
CARLETON ST
HAYWARD ST
BINNEY ST
LANDSIDE RD
the Site


dge, Massachusetts
nd Drain Atlas
Map Number: 765956.2 City of Cambridge, Massachusetts



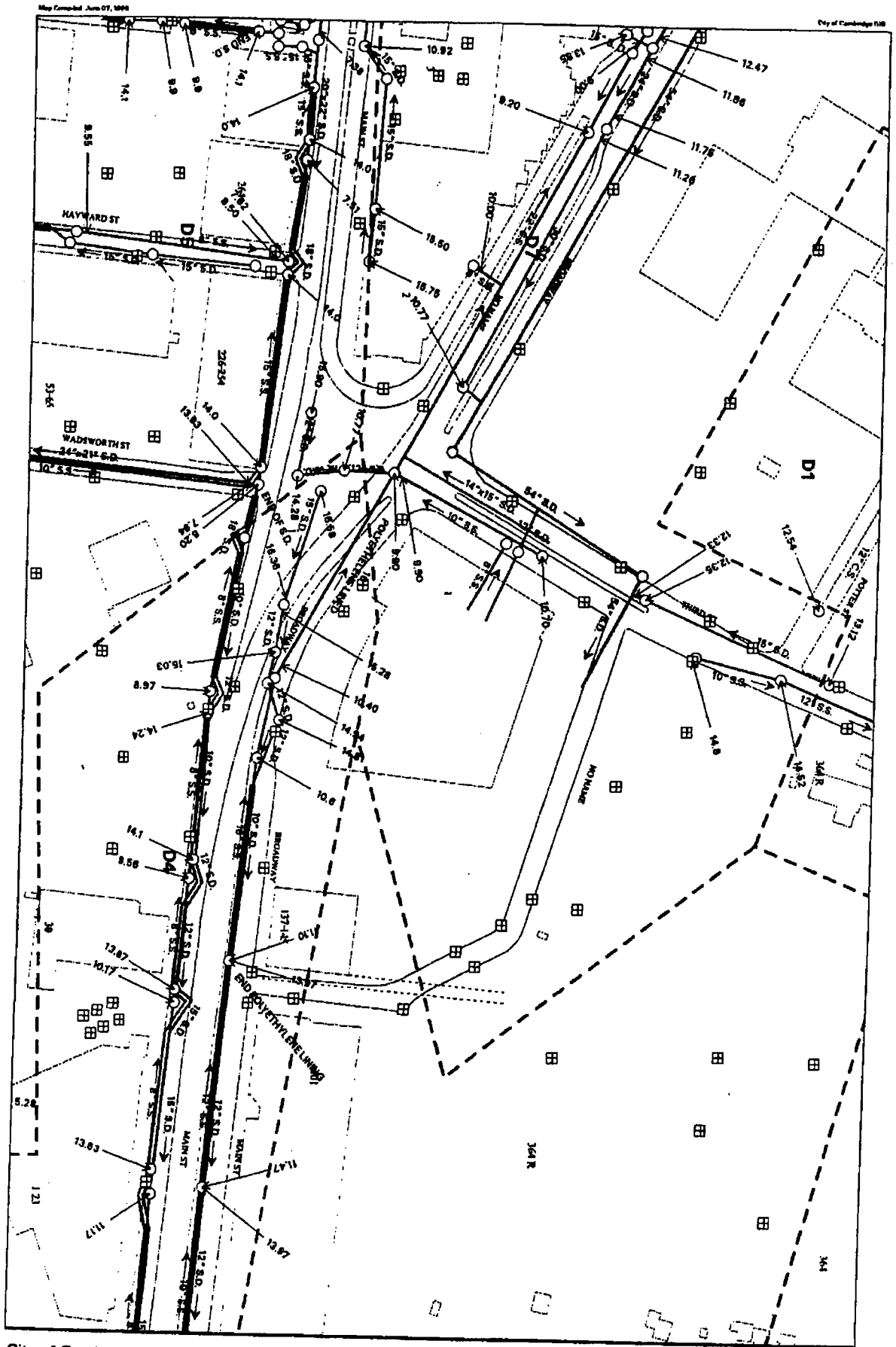
City of Cambridge, Massachusetts

Sewer and Drain Atlas

47.3	47A	52.3
48.1	48.2	53.1
48.3	48.4	53.3

Map Number: 765956.2

Tile Number: 48.2



City of Cambridge, Massachusetts

Sewer and Drain Atlas

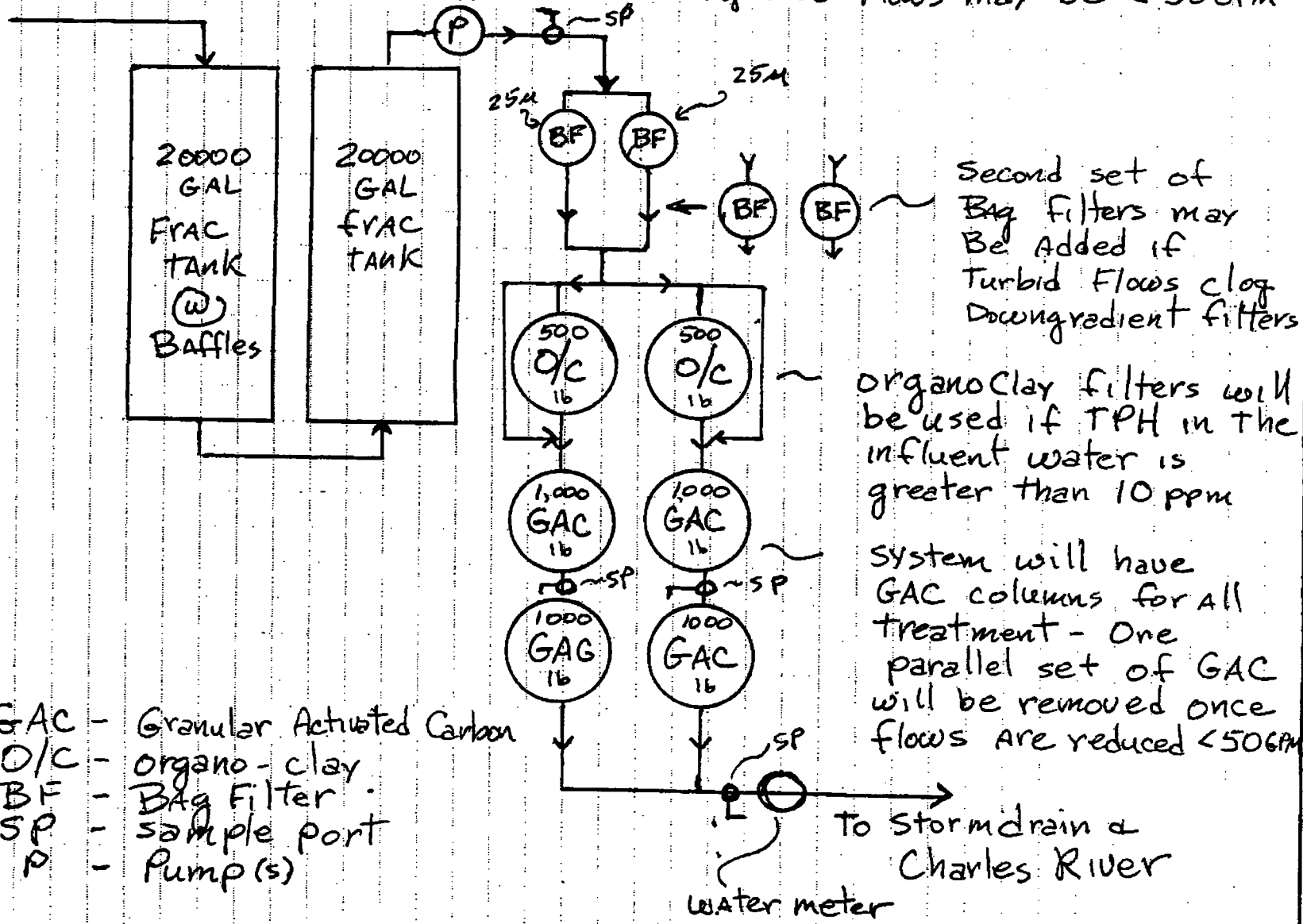
Map Number: 768956.1

Tile Number: 53.1

JOB Building 6A
SHEET NO 1 OF 1
CALCULATED BY KJA DATE 5/6/04
CHECKED BY DATE
SCALE Not to scale

RIZZO ASSOCIATES, INC.
ENGINEERS AND ENVIRONMENTAL SCIENTISTS
235 West Central Street, Natick, MA 01760 (508) 653-3401

Initial flows may be up to 300 GPM - Once Slurry walls are completed Flows may be < 50 GPM



Second set of Bag filters may Be Added if Turbid Flows clog Downgradient filters

organoClay filters will be used if TPH in the influent water is greater than 10 ppm

System will have GAC columns for all treatment - One parallel set of GAC will be removed once flows Are reduced < 50 GPM

GAC - Granular Activated Carbon
O/C - organo-clay
BF - Bag Filter
SP - sample port
P - Pump(s)

RIZZO ASSOCIATES
A TETRA TECH COMPANY
One Grant Street
Framingham, MA 01701-9005
(508) 903-2000
(508) 903-2001 fax
www.rizzo.com

JOB
SHEET NO. 1 OF 2
CALCULATED BY Connie Blair DATE 10/24/05
CHECKED BY DATE
SCALE

data source: Waterdata.usgs.gov

gauge location 01104715 - mouth of Charles River Charles river Dam

Drainage Area : 333 mi^2

↳ no data available

Compare to gauge 01109500 - Charles River @ Waltham

DA = 227 mi^2

mean flow = 186 ft^3/sec

Estimate equivalent flood for 01104715:

$$\frac{X}{335\ mi^2} = \frac{186\ ft^3/sec}{227\ mi^2}$$

est. $X \approx 275\ ft^3/sec$

$$\text{Dilution factor} = \frac{Q001 + Q_{FD}}{Q_{FD}}$$

Where Q_{001} = Stream flow @ outfall
Q_{FD} = Facility design flow

cfs -
0.10 - avg max
0.67 - design max

avg $DF = \frac{275 + 0.10}{0.10} = 2750$

design $DF = \frac{275 + .67}{.67} = 411$

Resultant In-Stream Concentration = $\frac{\text{Discharged Concentration}}{DF}$

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JOB _____
SHEET NO. 2 OF 2
CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____
SCALE _____

Non-Diluted Metals Concentrations in Discharge:

Cu 52 ug/L
Fe 1500 µg/L
Zn 240 ug/L

Predicted In-Stream (Diluted) Concentration:

A) Assuming avg. Max flow rate; DF = 2750

$Cu: \frac{52\ ug/L}{2750} = 0.019\ ug/L$

$Fe: \frac{1500\ ug/L}{2750} = 0.55\ ug/L$

$Zn: \frac{240\ ug/L}{2750} = 0.087\ ug/L$

B) Assuming Design Max Flow rate; DF = 411

$Cu: \frac{52\ ug/L}{411} = 0.13\ \frac{ug}{L}$

$Fe: \frac{1500\ ug/L}{411} = 3.6\ \frac{ug}{L}$

$Zn: \frac{240\ ug/L}{411} = 0.58\ ug/L$