TETRA TECH RIZZO

November 19, 2007

US Environmental Protection Agency
RGP-NOI Processing
Municipal Assistance Unit (CMU)
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Re: Notice of Intent
NPDES Remediation General Permit
868 Highland Avenue
Needham, MA

Dear Sir or Madam:

On behalf of our client, 868 Highland Ave., LLC, the owner of the above property and R.W. Hyde Construction, Inc., the proposed operator, Tetra Tech Rizzo, Inc. has prepared this Notice of Intent (NOI) for coverage under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP), Massachusetts General Permit (MAG910000). This NOI was prepared in accordance with the general requirements of the NPDES RGP under Federal Register, Volume 70, No. 147 and related guidance documentation provided by the U.S. Environmental Protection Agency (EPA).

Site Information

This NOI has been prepared for the management of construction-related dewatering operations (Standard Industrial Code (SIC) 1541 for General Construction) that will be undertaken at the property located at 868 Highland Avenue in Needham, Massachusetts (the Site). The Site location is shown on a United States Geological Survey (USGS) Site Location Map included as Figure 1 and a detailed Site Plan is provided as Figure 2. Construction activities will be undertaken at the Site during re-development to construct a commercial/residential building structure at the Site.

The Site is identified as a "disposal site" as defined by Massachusetts General Law (MGL) 21E and the 310 Code of Massachusetts Regulations (CMR) 40.0000, the Massachusetts Contingency Plan (MCP) since detectable concentrations of oil and hazardous materials have been identified at the Site. The Site was a former automobile

One Grant Street
Framingham, MA 01701
Tel 508.903.2000 Fax 508.903.2001

service station and past uses included the underground storage of petroleum products (fuel oil and gasoline). The detected concentrations of petroleum products related compounds required reporting to the Massachusetts Department of Environmental Protection (DEP) and have since achieved regulatory closure under a Class A-3 Response Action Outcome (RAO) Statement with an Activity and Use Limitation (AUL). The Release Tracking Number (RTN) 3-20191 was assigned to the Site by the Massachusetts Department of Environmental Protection (DEP). Remedial activities that are to be undertaken at the Site will be conducted under the applicable provisions of the MCP as a Release Abatement Measure (RAM).

Discharge and Receiving Surface Water Information

The water recovered during construction dewatering activities is expected to contain various petroleum-related VOCs in addition to naturally occurring metals based on releases from former petroleum storage activities at the Site. In order to evaluate the proposed influent, a composite groundwater sample was collected from two monitoring wells at the Site and analyzed for the parameters required under the NPDES RGP. In addition, the pH of the proposed influent was monitored to evaluate existing conditions. The analytical results confirmed the presence of VOCs, metals and Group II PAHs as detailed in the attached NOI. In addition to the compounds listed under the NPDES RGP, the following compound was detected in the proposed influent:

- 2-Methylnaphthalene 16.9 µg/L

The measured pH of the groundwater at the Site ranges from 6.5 to 6.7 standard units. This is close to the NPDES RGP effluent range for Massachusetts waters of 6.5 to 8.3. Therefore we request an expanded effluent range due to naturally low pH in groundwater at the Site.

The recovered water will be treated to remove VOCs (and to a lesser extent metals) prior to discharge via the treatment system shown in the schematic included in the NOI as Figure 3. The treated water will be discharged via a gravity discharge line to one or more of the stormwater drop inlets in the vicinity of the Site with subsequent discharge to Rosemary Brook at the West Street outfall. The stormwater drainage system that will receive the discharge is owned and operated by the Town of Needham and is subject to the EPA Phase I and II Municipal Separate Storm Sewer System (MS4) general permits. Consultation with the Town of Needham Engineering Department and Sewer Department was conducted regarding specific requirements for discharge to the Needham MS4. The Town of Needham requires a drain connection permit for discharge to the Needham MS4. The discharge is not subject to any additional monitoring or reporting requirements of the Town of Needham, however the Needham Conservation Commission requested a copy of

the NOI. The location of the discharge to Rosemary Brook is shown on the attached Site Locus Map (Figure 1). Additional information regarding the receiving water is provided in the NOI.

Consultation with State/Federal Services

The listed Areas of Critical Environmental Concern in Massachusetts, and the Endangered Species list provided in Appendix I and Appendix II of the NPDES RGP, were reviewed to determine whether listed endangered or threatened species or critical habitats are present at the Site or in the vicinity of the discharge. The results were compared with the requirements identified in Appendix VII of the NPDES RGP. The results of this review indicate that no Areas of Critical Environmental Concern are located in the path of the discharge via the Needham MS4 collection system. In addition, two Endangered Species (Kemp's Turtle and the Ridley Sea Turtle) and one Threatened Specie (Loggerhead Sea Turtle) were identified in Norfolk County, Massachusetts. However, these species are not listed in Appendix VII as a concern to facilities covered under the NPDES RGP, and are not located at the Site or in the path of the discharge to the Dedham MS4 collection system. Pursuant to Appendix VII of the NPDES RGP, this facility meets the permit eligibility criteria under Criteria A for coverage under the NPDES RGP since no Endangered or Threatened or Areas of Critical Environmental Concern are located in proximity to the point where the proposed discharge reaches the receiving surface water body, and consultation with federal and/or state officials is not necessary at this time.

The listed National Historic Places in proximity to the discharge were reviewed using the electronic data base provided by the U.S. National Parks Service (NPS) website. Although there are ten properties listed by the NPS in the Town of Needham, none are located in the path of the discharge or in an area that will be impacted by the construction activities at the Site. The discharge of treated water Rosemary Brook will be directed through the existing subsurface Needham MS4 collection system and will not cause damage, deterioration, alteration or destruction of any historic property listed by the NPS or eligible for listing. The Town of Needham has authorized discharge described herein to their MS4 collection system that discharges to the outfall to Rosemary Brook and it is therefore implied that the additional flows from the discharge can be managed by the MS4 system and will not adversely impact any historic properties. Pursuant to Appendix VII of the NPDES RGP, this facility meets the permit eligibility criteria for coverage under the NPDES RGP and consultation with federal and/or state officials is not necessary at this time.

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Request for Coverage Under NPDES RGP

In consideration of the particulars of this discharge and the requirements of the NPDES RGP, it is our opinion that the subject discharge is eligible for coverage under the NPDES RGP. On behalf of our client 868 Highland Ave., LLC, Tetra Tech Rizzo, Inc. hereby requests coverage under the NPDES RGP for the discharge of recovered water during construction activities to the surface waters of Rosemary Brook.

The attached NOI form provides the requisite information pertaining to this NOI and the appropriate signature of the facility Operator (R.W. Hyde Construction, Inc.). For this project, 868 Highland Ave., LLC is the Owner and has operational control over the construction plans and specifications, including the ability to make modifications to those plans and specifications. R.W. Hyde Construction, Inc. has been contracted by 868 Highland Ave., LLC and will direct the personnel responsible for the implementation and day-to-day operations and activities that are necessary to ensure compliance with the NPDES RGP, including proper operation, inspection, monitoring and reporting. The Owner/Operator shall be responsible for any enforcement action taken or imposed by federal, state or local agencies.

Pending authorization from the EPA, discharge of treated water is scheduled for December 3, 2007 and may be conducted through February 2008.

Questions or correspondence regarding the subject discharge should be directed through Mr. Adam Riemer, of 868 Highland Ave., LLC who may be contacted at (781) 444-2911 or through the operator, Mr. Dick Hyde, of R.W. Hyde Construction, Inc. at (617) 489-6470. Please contact the undersigned at (508) 903-2000 if you have any questions regarding this NOI.

Very truly yours,

Ian S. Cannan
Project Scientist

William C. Phelps
Project Manager

CC: Massachusetts Department of Environmental Protection, Division of Watershed Management and Bureau of Waste Site Cleanup

Town of Needham, Conservation Commission

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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**: Construction Dewatering - Needham		**Facility/site** address:		
Location of **facility/site**: longitude: -71.235295 latitude: 42.293735	Facility SIC code(s): 1541	Street: 868 Highland Ave.		
b) Name of **facility/site owner:** 868 Highland Ave, LLC		Town: Needham		
Email address of owner: adam@adamriemer.com		State: MA	Zip: 02494	County: Norfolk
Telephone no.of facility/site **owner**: (781) 444-2911				
Fax no. of facility/site **owner**:		**Owner** is (check one): 1. Federal____ 2. State/Tribal_____ 3. Private__✓___ 4. other, if so, describe:		
Address of **owner** (if different from site):				
Street: 66 Crescent Street				
Town: Needham	State: MA	Zip: 02494	County: Norfolk	
c) Legal name of **operator**: R.W. Hyde Construction, Inc.	**Operator** telephone no: 617-489-6470			
	Operator fax no.: 617-489-3484		**Operator** email: dickhyde@rwhyde.com	
Operator contact name and title: Dick Hyde				
Address of **operator** (if different from owner):	Street: 556 Trapelo Rd.			
Town: Belmont	State: MA	Zip: 02478	County: Middlesex	

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

e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes_✓_ No___ If "yes," please list: 1. site identification # assigned by the state of NH or MA: RTN 3-20191 2. permit or license # assigned: Class A-3 RAO, post RAO Release Abatement Measure 3. state agency contact information: name, location, and telephone number: MADEP, NERO; Wilmington, MA; (978) 694-3200	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 water recovered during construction-related dewatering

b) Provide the following information about each discharge:	1) Number of discharge points: one	2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft3/s)? Max. flow 0.069 Average flow 0.069 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. -71.2413 lat. 42.2936; 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): NA	5) Is the discharge intermittent_✓_or seasonal_____? Is discharge ongoing Yes ____ No_✓_?

c) Expected dates of discharge (mm/dd/yy): start 12/03/07 end 02/03/08

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).

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TETRA TECH RIZZO

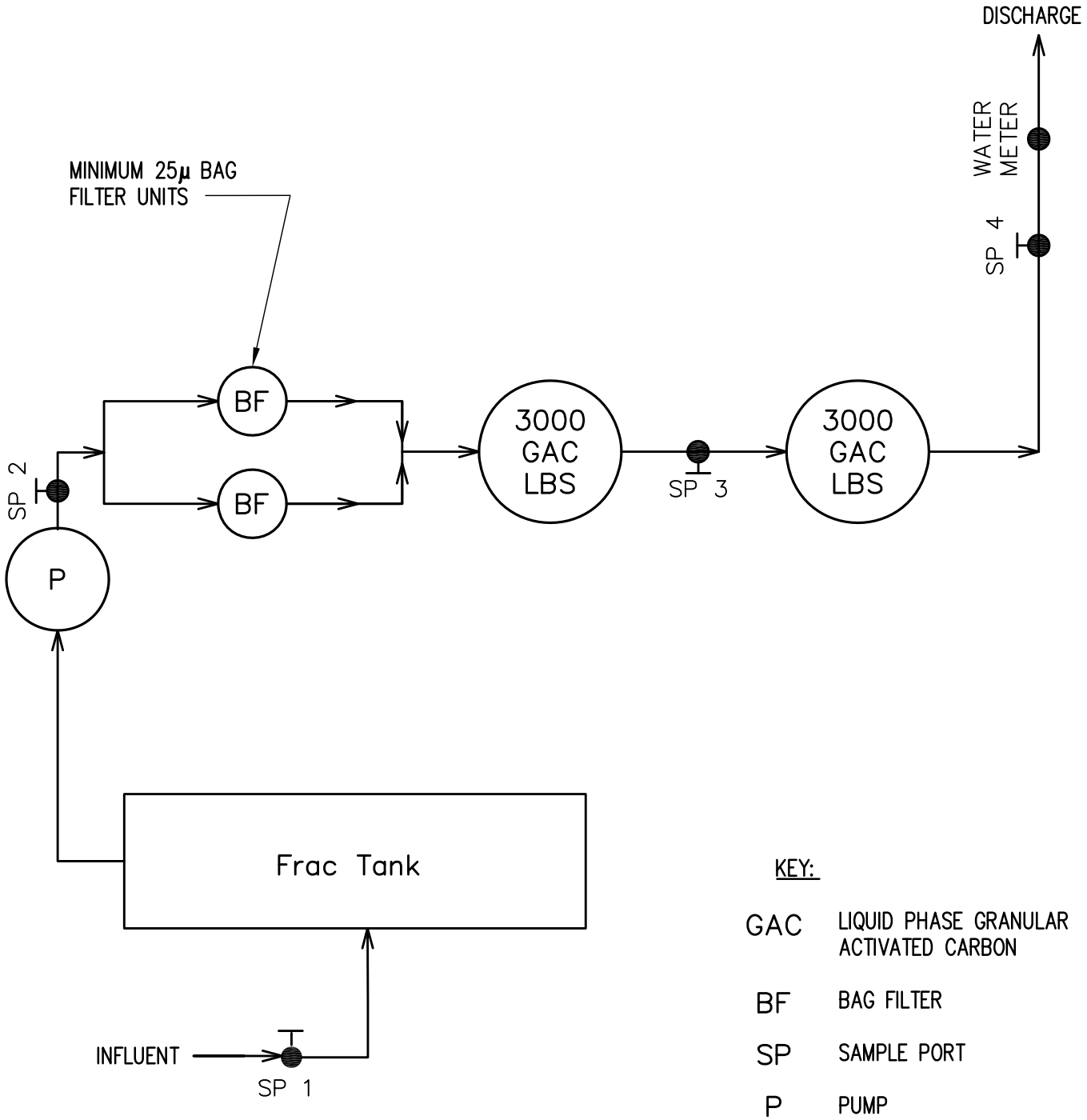
One Grant Street
Framingham, MA 01701-9005
508.903.2000
www.tetratechrizzo.com

868 Highland Avenue
Needham, Massachusetts

Base Map: MA USGS
Topographic Maps 7/1/91

Project Locus Map

Figure 1



J:\Project\12701044\Graphic\Figure_3-GW TREATMENT DIAGRAM_2

0 NTS Feet

Information obtained from

TETRA TECH RIZZO

Figure 3

Recovered Groundwater Treatment System Diagram

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		✓	1	comp.	2540D	2 mg/L	1150	188	1150	188
2. Total Residual Chlorine	✓		1	comp.	4500CL	0.01 mg/L	0	0	0	0
3. Total Petroleum Hydrocarbons	✓		1	comp.	1664A	2 mg/L	0	0	0	0
4. Cyanide	✓		1	comp.	4500CN	0.002 mg/L	0	0	0	0
5. Benzene		✓	1	comp.	8260B	4.0 ug/L	1980	3.24E-1	1980	3.24E-1
6. Toluene		✓	1	comp.	8260B	0.07 ug/L	13.2	2.16E-3	13.2	2.16E-3
7. Ethylbenzene		✓	1	comp.	8260B	4.0 ug/L	702	1.15E-1	702	1.15E-1
8. (m,p,o) Xylenes		✓	1	comp.	8260B	0.2 ug/L	17.2	2.81E-3	17.2	2.81E-3
9. Total BTEX[4]		✓	1	comp.	8260B		2712	4.43E-1	2712	4.43E-1

[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 [5] (1,2- Dibromo-methane)	✓		1	comp.	504.1	0.02 ug/L	0	0	0	0
11. Methyl-tert-Butyl Ether (MtBE)		✓	1	comp.	8260B	50.0 ug/L	161	2.63E-2	161	2.63E-2
12. tert-Butyl Alcohol (TBA)		✓	1	comp.	8260B	0.07 ug/L	221	3.61E-2	221	3.61E-2
13. tert-Amyl Methyl Ether (TAME)		✓	1	comp.	8260B	0.2 ug/L	20.8	3.40E-3	20.8	3.40E-3
14. Naphthalene		✓	1	comp.	8260B	10.0 ug/L	96.5	1.58E-2	96.5	1.58E-2
15. Carbon Tetra-chloride	✓		1	comp.	8260B	0.08 ug/L	0	0	0	0
16. 1,4 Dichlorobenzene	✓		1	comp.	8260B	0.07 ug/L	0	0	0	0
17. 1,2 Dichlorobenzene	✓		1	comp.	8260B	0.1 ug/L	0	0	0	0
18. 1,3 Dichlorobenzene	✓		1	comp.	8260B	0.09 ug/L	0	0	0	0
19. 1,1 Dichloroethane	✓		1	comp.	8260B	0.1 ug/L	0	0	0	0
20. 1,2 Dichloroethane	✓		1	comp.	8260B	0.1 ug/L	0	0	0	0
21. 1,1 Dichloroethylene	✓		1	comp.	8260B	0.1 ug/L	0	0	0	0
22. cis-1,2 Dichloro-ethylene	✓		1	comp.	8260B	0.1 ug/L	0	0	0	0
23. Dichloromethane (Methylene Chloride)	✓		1	comp.	8260B	0.09 ug/L	0	0	0	0
24. Tetrachloroethylene	✓		1	comp.	8260B	0.07 ug/L	0	0	0	0

[5] EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

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	✓		1	comp.	8260B	0.1 ug/L	0	0	0	0
26. 1,1,2 Trichloroethane	✓		1	comp.	8260B	0.2 ug/L	0	0	0	0
27. Trichloroethylene	✓		1	comp.	8260B	0.09 ug/L	0	0	0	0
28. Vinyl Chloride	✓		1	comp.	8260B	0.08 ug/L	0	0	0	0
29. Acetone	✓		1	comp.	8260B	5.0 ug/L	0	0	0	0
30. 1,4 Dioxane	✓		1	comp.	8260B	250 ug/L	0	0	0	0
31. Total Phenols			1	comp.	8270C		0	0	0	0
32. Pentachlorophenol	✓		1	comp.	8270C	0.06 ug/L	0	0	0	0
33. Total Phthalates [6] (Phthalate esthers)	✓		1	comp.	8270C		0	0	0	0
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓		1	comp.	8270C	1.8 ug/L	0	0	0	0
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✓		1	comp.	8270C		0	0	0	0
a. Benzo(a) Anthracene	✓		1	comp.	8270C	0.05 ug/L	0	0	0	0
b. Benzo(a) Pyrene	✓		1	comp.	8270C	0.05 ug/L	0	0	0	0
c. Benzo(b)Fluoranthene	✓		1	comp.	8270C	0.05 ug/L	0	0	0	0
d. Benzo(k) Fluoranthene	✓		1	comp.	8270C	0.05 ug/L	0	0	0	0
e. Chrysene	✓		1	comp.	8270C	0.05 ug/L	0	0	0	0

[6] 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	comp.	8270C	0.05 ug/L	0	0	0	0
g. Indeno(1,2,3-cd) Pyrene	✓		1	comp.	8270C	0.05 ug/L	0	0	0	0
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		✓	1	comp.	8270C		112	1.83E-2	112	1.83E-2
h. Acenaphthene		✓	1	comp.	8270C	0.05 ug/L	0.22	3.60E-5	0.22	3.60E-5
i. Acenaphthylene		✓	1	comp.	8270C	0.05 ug/L	0.09	1.47E-5	0.06	1.47E-5
j. Anthracene		✓	1	comp.	8270C	0.05 ug/L	0.05	8.17E-6	0.05	8.17E-6
k. Benzo(ghi) Perylene	✓		1	comp.	8270C	0.05 ug/L	0	0	0	0
l. Fluoranthene		✓	1	comp.	8270C	0.05 ug/L	0.09	1.47E-5	0.09	1.47E-5
m. Fluorene		✓	1	comp.	8270C	0.06 ug/L	0.25	4.09E-5	0.25	4.09E-5
n. Naphthalene-		✓	1	comp.	8270C	2.00 ug/L	111	1.81E-2	111	1.81E-2
o. Phenanthrene		✓	1	comp.	8270C	0.05 ug/L	0.25	4.09E-5	0.25	4.09E-5
p. Pyrene		✓	1	comp.	8270C	0.05 ug/L	0.05	8.17E-6	0.05	8.16E-6
37. Total Polychlorinated Biphenyls (PCBs)	✓		1	comp.	608	0.10 ug/L	0	0	0	0
***3*8. Antimony**	✓		1	comp.	6020	0.5 ug/L	0	0	0	0
39. Arsenic		✓	1	comp.	6020	0.5 ug/L	0.5	8.17E-5	0.5	8.17E-5
40. Cadmium		✓	1	comp.	6020	0.2 ug/L	0.3	4.9E-5	0.3	4.9E-5
41. Chromium III	✓		1	comp.	6020	0.5 ug/L	0	0	0	0
42. Chromium VI	✓		1	comp.	6020	0.5 ug/L	0	0	0	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)
43. Copper		✓	1	comp.	6020	0.5 ug/L	1.6	2.61E-4	1.6	2.61E-4
44. Lead	✓		1	comp.	6020	0.5 ug/L	0	0	0	0
45. Mercury	✓		1	comp.	245.1	0.2 ug/L	0	0	0	0
46. Nickel		✓	1	comp.	6020	0.5 ug/L	2.8	4.58E-4	2.8	4.58E-4
47. Selenium		✓	1	comp.	6020	1 ug/L	2	3.27E-4	2	3.27E-4
48. Silver	✓		1	comp.	6020	0.4 ug/L	0	0	0	0
49. Zinc		✓	1	comp.	6020	5.0 ug/L	45.2	7.39E-3	45.2	7.39E-3
50. Iron		✓	1	comp.	200.7	50 ug/L	140	2.29E-2	140	2.29E-2
Other (describe):		✓	1	comp.	8270C	2.00 ug/L	16.9	2.76E-3	16.9	2.76E-3

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

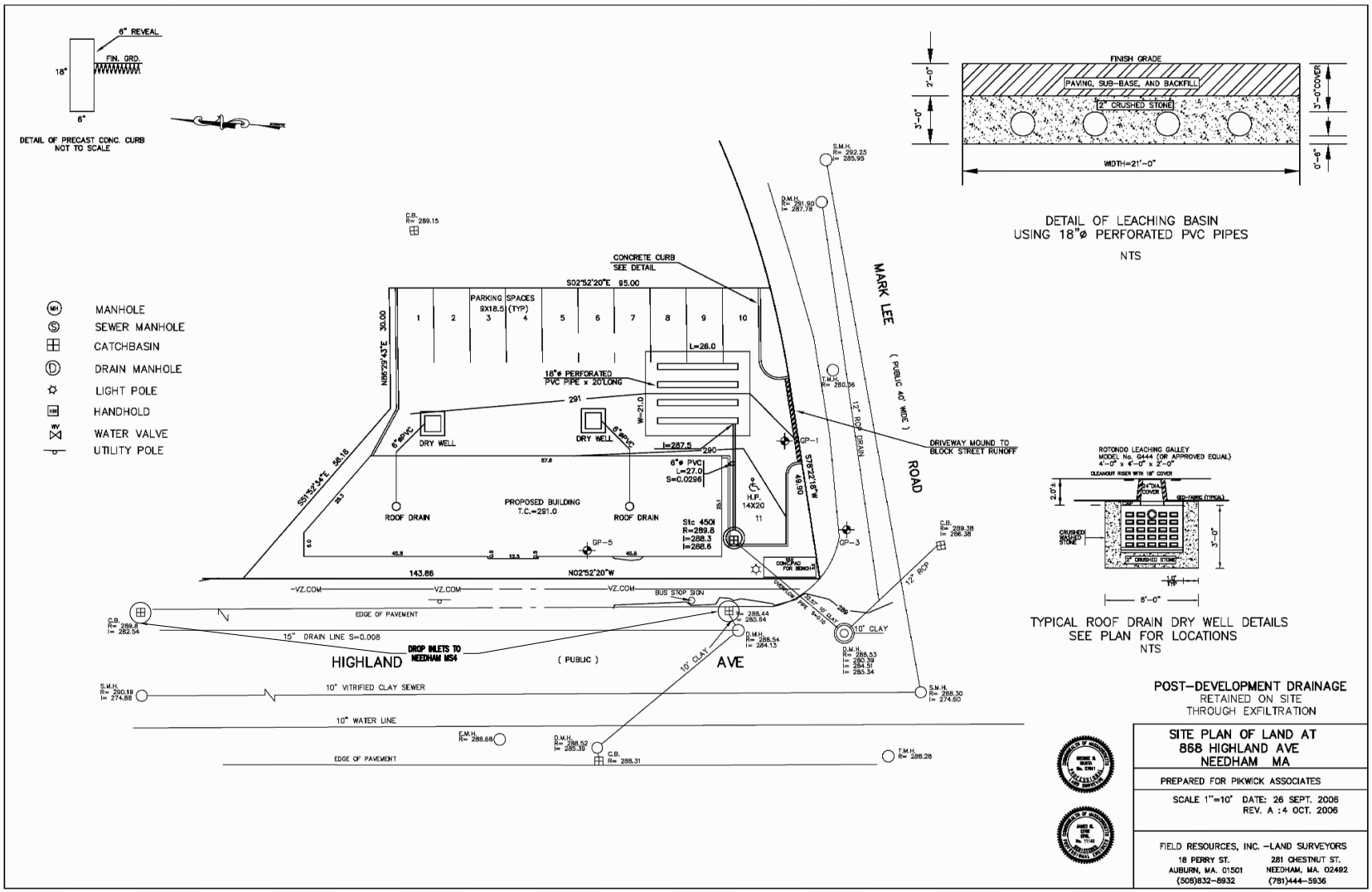
Step 1: Do any of the metals in the influent have a **reasonable potential** to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y[✓] N[ ]	If yes, which metals? cadmium
Step 2: For any metals which have **reasonable potential** to exceed the **Appendix III** 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: cadmium DF: 1.98	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: cadmium

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 attached treatment system schematic						
b) Identify each applicable treatment unit (check all that apply):	Frac. tank ✓	Air stripper	Oil/water separator	Equalization tanks	Bag filter ✓	GAC filter ✓
	Chlorination	Dechlorination	Other (please describe):			
c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system: Average flow rate of discharge 30 Maximum flow rate of treatment system 30 Design flow rate of treatment system 30						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets):						

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 drop inlets to Needham MS4 then directed to Rosemary 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 Class B,						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.0676 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)? noxious aquatic plants, nutrients, organic enrichment, pathogens, priority organics, turbi Is there a TMDL? Yes ✓ No____ If yes, for which pollutant(s)? pathogens						



J:\Project\12701044\Graphics\site_development_plan

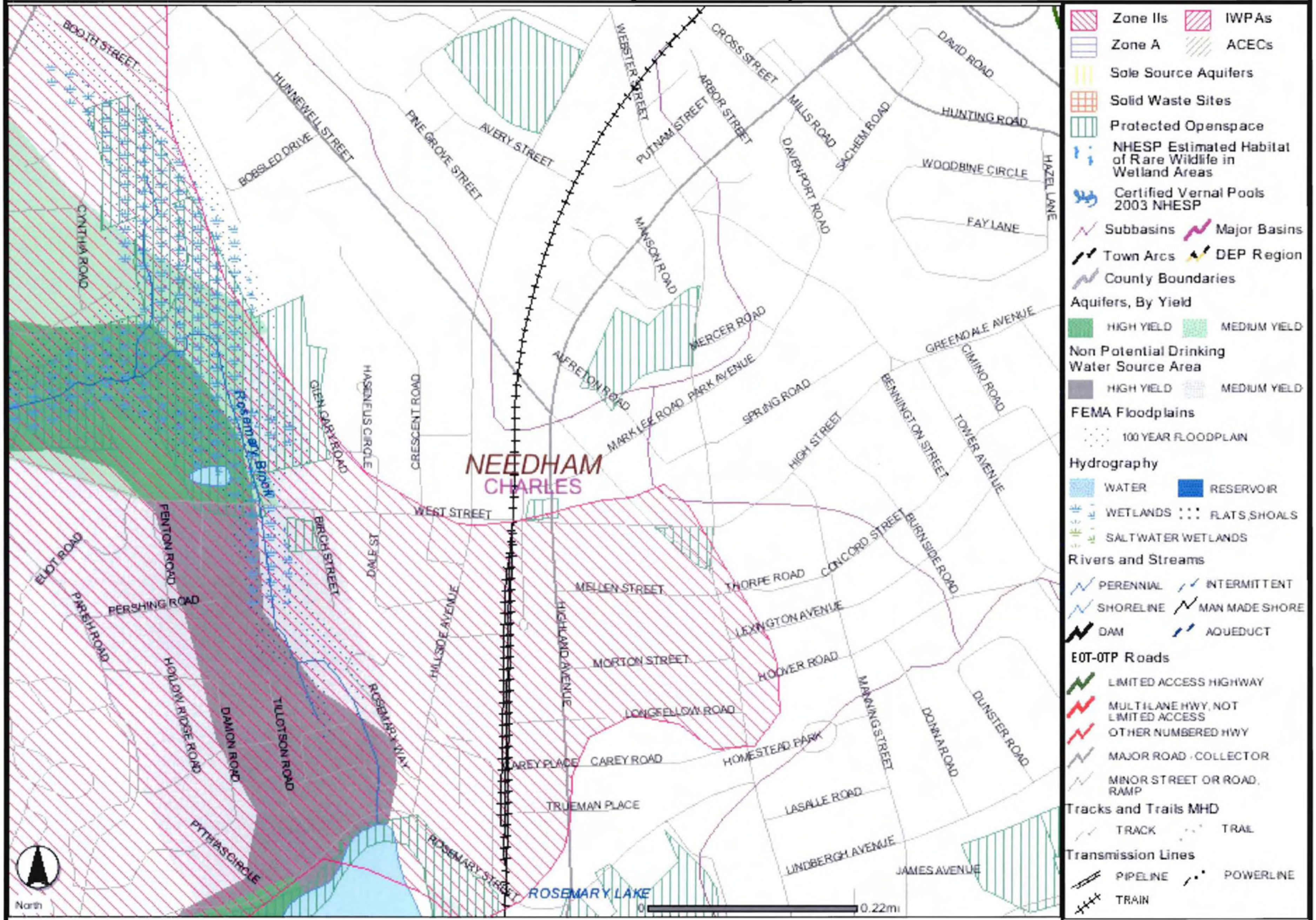
0 NTS
Scale in Feet

TETRA TECH RIZZO

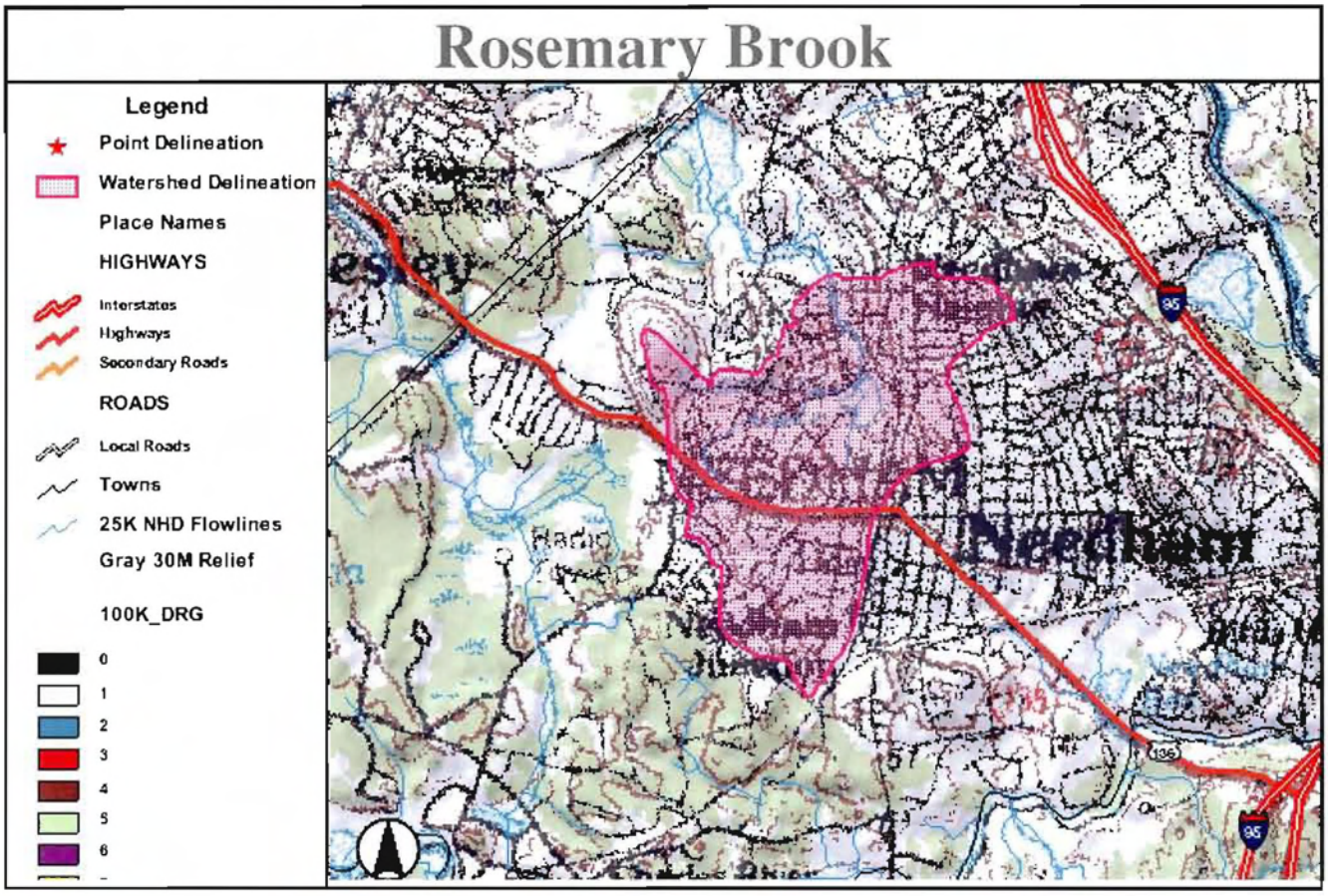
Site Plan
868 Highland Avenue
Needham, MA

Figure
2

DEP Priority Resource Map



Rosemary Brook



StreamStats

Streamflow Statistics Report

Date: Tue Oct 23 2007 10:31:35
Site Location: Massachusetts
Drainage Area: 1.23 mi2
Latitude (NAD83): 42.2936 (42 17 37)
Longitude (NAD83): -71.2413 (-71 14 28)

Low Flow Basin Characteristics			
100% Statewide Low Flow (1.23 mi2)			
Parameter	**Value**	**Min**	**Max**
Drainage Area (square miles)	1.23 (below min value 1.61)	1.61	149
Mean Basin Slope from 250K DEM (percent)	1.91	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.43	0	1.29
Massachusetts Region (dimensionless)	0	0	1

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Streamflow Statistics					
Statistic	**Flow (ft^3/s)**	**Prediction Error (percent)**	**Equivalent years of record**	**90-Percent Prediction Interval**	
				Minimum	**Maximum**
D50	1.18				
D60	0.88				
D70	0.61				
D75	0.49				
D80	0.46				
D85	0.34				
D90	0.29				
D95	0.15				
D98	0.1				
D99	0.071				
Low-Flow Statistics					
M7D2Y	0.15				
AUGD50	0.37				
M7D10Y	0.0676				

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 ? Yes ___ 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.

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: Construction Dewatering - Needham

Operator signature: Richard W. Hyde Jr.

Title: President - R.W. Hyde Construction Inc

Date: 11/13/07

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

Chris Nitchie
Tetra Tech Rizzo
One Grant Street
Framingham, MA 01701

RE: Pickwick - Needham
ESS Laboratory Work Order Number: 0710458

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this Project Narrative, the entire report has been paginated. The ESS Laboratory Certifications sheet is the final report page. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been mailed. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Date: November 07, 2007

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration may be used instead of automated integration because it produces more accurate results. All ICP Metals were analyzed using the established linear dynamic range to determine acceptable analytical results.

ESS Laboratory certifies that the test results meet the requirements of NELAC, except where noted within this project narrative.
Samples were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

Sample Receipt
The following sample(s) were received on October 24, 2007 for the analyses specified on the enclosed Chain of Custody Record.

Laboratory ID	Matrix	Client Sample ID
0710458-01	Ground Water	INF-2007-10-23
0710458-02	Ground Water	Trip Blank

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham

ESS Laboratory Work Order: 0710458

PROJECT NARRATIVE

8260B Volatile Organic Compounds

0710458-01	**pH > 2**
BJ73017-BS1	**Blank Spike recovery is above upper control limit.**
	1,4-Dioxane - Screen
BJ73017-BSD1	**Relative percent difference for duplicate is outside of criteria.**
	1,4-Dioxane - Screen
BQJ0282-CCV1	**Continuing Calibration recovery is below lower control limit.**
	1,4-Dioxane - Screen

8260B Volatile Oxygenate Compounds

0710458-01	**pH > 2**

8270C Semi-Volatile Phenolic Compounds

BK70612-BLK1	**Surrogate recovery(ies) below lower control limit.**

8270C(SIM) Polynuclear Aromatic Hydrocarbons

0710458-01	**Present in Blank.**
	Phenanthrene
BJ72629-BSD1	**Relative percent difference for duplicate is outside of criteria.**
	2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, Pentachlorophenol

No other observations noted.

End of Project Narrative.

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

November 9, 2007

Ms. Jena Paola
ESS Laboratory
185 Frances Avenue
Cranston, RI 02910-2211

LABORATORY REPORT

Project: **0710458**
Lab ID: **112089**
Received: **10-26-07**

Dear Jena:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC or NVLAP standards, except as may be specifically noted, or described in the project narrative. The analytical results relate only to the samples received. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Karyn E. Raymond

Karyn E. Raymond
Project Manager

KER/elm
Enclosures

2a.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**0710458**	Lab ID:	**112089**
Client:	**ESS Laboratory**	Received:	**10-26-07 12:38**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1. No method modifications, non-conformances or analytical issues were noted.

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham
Client Sample ID: INF-2007-10-23
Date Sampled: 10/23/07 10:30

ESS Laboratory Work Order: 0710458
ESS Laboratory Sample ID: 0710458-01
Sample Matrix: Ground Water

Dioxins

Analyte	Results	Units	MRL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V
Ethylene Dibromide	See Attached								1	1

GROUNDWATER ANALYTICAL

EPA Method 504.1
EDB by GC/ECD

Field ID:	**0710458-01**	Matrix:	**Aqueous**
Project:	**710458**	Container:	**40 mL VOA Vial**
Client:	**ESS Laboratory**	Preservation:	**Cool**
Laboratory ID:	**112089-01**	QC Batch ID:	**PV-0894-E**
Sampled:	**10-23-07 10:30**	Instrument ID:	**GC-5 HP 5890**
Received:	**10-26-07 12:38**	Sample Volume:	**35 mL**
Extracted:	**11-06-07 12:00**	Final Volume:	**1 mL**
Analyzed:	**11-06-07 15:21**	Dilution Factor:	**1**
Analyst:	**NPS**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02

Method Reference: Methods for the Determination of Organic Compounds in Drinking Water, Supplement III, US EPA, EPA-600/R-95/131 (1995). Method Revision 1.1.

Report Notations: **BRL** Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham
Client Sample ID: INF-2007-10-23
Date Sampled: 10/23/07 10:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 0710458
ESS Laboratory Sample ID: 0710458-01
Sample Matrix: Ground Water
Analyst: ML
Prepared: 10/29/07

608 Polychlorinated Biphenyls (PCB)

Analyte	Results	Units	MRL	MDL	Limit	DF	Analyzed
Aroclor 1016	ND	ug/L	0.10	0.03		1	10/29/07
Aroclor 1221	ND	ug/L	0.10	0.03		1	10/29/07
Aroclor 1232	ND	ug/L	0.10	0.03		1	10/29/07
Aroclor 1242	ND	ug/L	0.10	0.03		1	10/29/07
Aroclor 1248	ND	ug/L	0.10	0.03		1	10/29/07
Aroclor 1254	ND	ug/L	0.10	0.03		1	10/29/07
Aroclor 1260	ND	ug/L	0.10	0.03		1	10/29/07
Aroclor 1262	ND	ug/L	0.10	0.03		1	10/29/07
Aroclor 1268	ND	ug/L	0.10	0.03		1	10/29/07

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*75 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham
Client Sample ID: INF-2007-10-23
Date Sampled: 10/23/07 10:30
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0710458
ESS Laboratory Sample ID: 0710458-01
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Oxygenate Compounds

Analyte	Results	Units	MRL	MDL	Limit	DF	Analyzed
Tertiary-butyl Alcohol	221	ug/L	25.0	10.0		1	11/05/07

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*84 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*92 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*87 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham
Client Sample ID: INF-2007-10-23
Date Sampled: 10/23/07 10:30
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0710458
ESS Laboratory Sample ID: 0710458-01
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	MDL	Limit	DF	Analyzed
1,1,1-Trichloroethane	ND	ug/L	1.0	0.1		1	10/30/07
1,1,2-Trichloroethane	ND	ug/L	1.0	0.2		1	10/30/07
1,1-Dichloroethane	ND	ug/L	1.0	0.1		1	10/30/07
1,1-Dichloroethene	ND	ug/L	1.0	0.1		1	10/30/07
1,2-Dibromoethane	ND	ug/L	1.0	0.1		1	10/30/07
1,2-Dichlorobenzene	ND	ug/L	1.0	0.1		1	10/30/07
1,2-Dichloroethane	ND	ug/L	1.0	0.1		1	10/30/07
1,3-Dichlorobenzene	ND	ug/L	1.0	0.09		1	10/30/07
1,4-Dichlorobenzene	ND	ug/L	1.0	0.07		1	10/30/07
1,4-Dioxane - Screen	ND	ug/L	500	250		1	10/30/07
Acetone	ND	ug/L	25.0	5.0		1	10/30/07
Benzene	**1980**	ug/L	50.0	4.0		50	10/31/07
Carbon Tetrachloride	ND	ug/L	1.0	0.08		1	10/30/07
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.1		1	10/31/07
Ethylbenzene	**702**	ug/L	50.0	4.0		50	10/31/07
Methyl tert-Butyl Ether	**161**	ug/L	50.0	6.0		50	10/31/07
Methylene Chloride	ND	ug/L	5.0	0.09		1	10/30/07
Naphthalene	**96.5**	ug/L	50.0	10.0		50	10/31/07
Tertiary-amyl methyl ether	**20.8**	ug/L	1.0	0.2		1	10/30/07
Tetrachloroethene	ND	ug/L	1.0	0.07		1	10/30/07
Toluene	**13.2**	ug/L	1.0	0.07		1	10/30/07
Trichloroethene	ND	ug/L	1.0	0.09		1	10/30/07
Vinyl Chloride	ND	ug/L	1.0	0.08		1	10/30/07
Xylene O	**1.7**	ug/L	1.0	0.09		1	10/30/07
Xylene P,M	**15.5**	ug/L	2.0	0.2		1	10/30/07
Xylenes (Total)	**17.2**	ug/L	3.0			1	10/30/07

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*81 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*108 %*		*70-130*
Surrogate: Dibromofluoromethane	*82 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham
Client Sample ID: INF-2007-10-23
Date Sampled: 10/23/07 10:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 0710458
ESS Laboratory Sample ID: 0710458-01
Sample Matrix: Ground Water
Analyst: VSC
Prepared: 10/26/07

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Analyte		Results	Units	MRL	Limit	DF	Analyzed
2-Methylnaphthalene		**16.9**	ug/L	2.00		40	11/06/07
Acenaphthene		**0.22**	ug/L	0.05		1	10/31/07
Acenaphthylene		**0.09**	ug/L	0.05		1	10/31/07
Anthracene		**0.05**	ug/L	0.05		1	10/31/07
Benzo(a)anthracene		ND	ug/L	0.05		1	10/31/07
Benzo(a)pyrene		ND	ug/L	0.05		1	10/31/07
Benzo(b)fluoranthene		ND	ug/L	0.05		1	10/31/07
Benzo(g,h,i)perylene		ND	ug/L	0.05		1	10/31/07
Benzo(k)fluoranthene		ND	ug/L	0.05		1	10/31/07
Chrysene		ND	ug/L	0.05		1	10/31/07
Dibenzo(a,h)Anthracene		ND	ug/L	0.05		1	10/31/07
Fluoranthene		**0.09**	ug/L	0.05		1	10/31/07
Fluorene		**0.25**	ug/L	0.06		1	10/31/07
Indeno(1,2,3-cd)Pyrene		ND	ug/L	0.05		1	10/31/07
Naphthalene		**111**	ug/L	2.00		40	11/06/07
Pentachlorophenol		ND	ug/L	1.00		1	10/31/07
Phenanthrene	B	**0.25**	ug/L	0.05		1	10/31/07
Pyrene		**0.05**	ug/L	0.05		1	10/31/07

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*38 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*72 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*71 %*		*30-130*
Surrogate: Nitrobenzene-d5	*119 %*		*30-130*
Surrogate: p-Terphenyl-d14	*107 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham
Client Sample ID: INF-2007-10-23
Date Sampled: 10/23/07 10:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.05
Extraction Method: 3510C

ESS Laboratory Work Order: 0710458
ESS Laboratory Sample ID: 0710458-01
Sample Matrix: Ground Water
Analyst: VSC
Prepared: 10/26/07

8270C Semi-Volatile Phenolic Compounds

Analyte	Results	Units	MRL	MDL	Limit	DF	Analyzed
2,3,4,6-Tetrachlorophenol	ND	ug/L	50.0	1.6		1	11/02/07
2,4,5-Trichlorophenol	ND	ug/L	10.0	1.4		1	11/02/07
2,4,6-Trichlorophenol	ND	ug/L	10.0	2.0		1	11/02/07
2,4-Dichlorophenol	ND	ug/L	10.0	1.6		1	11/02/07
2,4-Dimethylphenol	ND	ug/L	50.0	16.5		1	11/02/07
2,4-Dinitrophenol	ND	ug/L	50.0	12.1		1	11/02/07
2-Chlorophenol	ND	ug/L	10.0	1.6		1	11/02/07
2-Methylphenol	ND	ug/L	10.0	1.9		1	11/02/07
2-Nitrophenol	ND	ug/L	10.0	3.0		1	11/02/07
3+4-Methylphenol	ND	ug/L	20.0	2.2		1	11/02/07
4,6-Dinitro-2-Methylphenol	ND	ug/L	50.0	11.7		1	11/02/07
4-Chloro-3-Methylphenol	ND	ug/L	10.0	1.3		1	11/02/07
4-Nitrophenol	ND	ug/L	50.0	2.3		1	11/02/07
bis(2-Ethylhexyl)phthalate	ND	ug/L	6.0	1.8		1	11/02/07
Butylbenzylphthalate	ND	ug/L	10.0	1.3		1	11/02/07
Diethylphthalate	ND	ug/L	10.0	1.7		1	11/02/07
Dimethylphthalate	ND	ug/L	10.0	1.5		1	11/02/07
Di-n-butylphthalate	ND	ug/L	10.0	1.7		1	11/02/07
Di-n-octylphthalate	ND	ug/L	10.0	2.1		1	11/02/07
Pentachlorophenol	ND	ug/L	50.0	7.6		1	11/02/07
Phenol	ND	ug/L	10.0	2.1		1	11/02/07

	%Recovery	Qualifier	Limits
Surrogate: 2,4,6-Tribromophenol	*58 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*44 %*		*15-110*
Surrogate: 2-Fluorophenol	*92 %*		*15-110*
Surrogate: Phenol-d6	*31 %*		*15-110*

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham
Client Sample ID: INF-2007-10-23
Date Sampled: 10/23/07 10:30
Percent Solids: N/A

ESS Laboratory Work Order: 0710458
ESS Laboratory Sample ID: 0710458-01
Sample Matrix: Ground Water

Classical Chemistry

Analyte	Results	Units	MRL	Method	Limit	DF	Analyst	Analyzed
Total Cyanide (LL)	ND	mg/L	0.005	4500 CN CE		1	EEM	10/25/07
Total Petroleum Hydrocarbon	ND	mg/L	5	1664A		1	CAA	10/29/07
Total Residual Chlorine	ND	mg/L	0.02	4500Cl G		1	EEM	10/24/07 17:53
Total Suspended Solids	**1150**	mg/L	10	2540D		1	NMT	10/25/07

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham
Client Sample ID: Trip Blank
Date Sampled: 10/23/07 00:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0710458
ESS Laboratory Sample ID: 0710458-02
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	MDL	Limit	DF	Analyzed
1,1,1-Trichloroethane	ND	ug/L	1.0	0.1		1	10/30/07
1,1,2-Trichloroethane	ND	ug/L	1.0	0.2		1	10/30/07
1,1-Dichloroethane	ND	ug/L	1.0	0.1		1	10/30/07
1,1-Dichloroethene	ND	ug/L	1.0	0.1		1	10/30/07
1,2-Dibromoethane	ND	ug/L	1.0	0.1		1	10/30/07
1,2-Dichlorobenzene	ND	ug/L	1.0	0.1		1	10/30/07
1,2-Dichloroethane	ND	ug/L	1.0	0.1		1	10/30/07
1,3-Dichlorobenzene	ND	ug/L	1.0	0.09		1	10/30/07
1,4-Dichlorobenzene	ND	ug/L	1.0	0.07		1	10/30/07
1,4-Dioxane - Screen	ND	ug/L	500	250		1	10/30/07
Acetone	ND	ug/L	25.0	5.0		1	10/30/07
Benzene	ND	ug/L	1.0	0.08		1	10/30/07
Carbon Tetrachloride	ND	ug/L	1.0	0.08		1	10/30/07
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.1		1	10/30/07
Ethylbenzene	ND	ug/L	1.0	0.08		1	10/30/07
Methyl tert-Butyl Ether	ND	ug/L	1.0	0.1		1	10/30/07
Methylene Chloride	ND	ug/L	5.0	0.09		1	10/30/07
Naphthalene	ND	ug/L	1.0	0.2		1	10/30/07
Tertiary-amyl methyl ether	ND	ug/L	1.0	0.2		1	10/30/07
Tetrachloroethene	ND	ug/L	1.0	0.07		1	10/30/07
Toluene	ND	ug/L	1.0	0.07		1	10/30/07
Trichloroethene	ND	ug/L	1.0	0.09		1	10/30/07
Vinyl Chloride	ND	ug/L	1.0	0.08		1	10/30/07
Xylene O	ND	ug/L	1.0	0.09		1	10/30/07
Xylene P,M	ND	ug/L	2.0	0.2		1	10/30/07

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*91 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*101 %*		*70-130*
Surrogate: Dibromofluoromethane	*94 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
608 Polychlorinated Biphenyls (PCB)										
Batch BJ72910 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0442*		ug/L	*0.05000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0404*		ug/L	*0.05000*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0424*		ug/L	*0.05000*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0402*		ug/L	*0.05000*		*80*	*30-150*			
LCS										
Aroclor 1016	0.72	0.10	ug/L	1.000		72	40-140			
Aroclor 1260	0.67	0.10	ug/L	1.000		67	40-140			
Surrogate: Decachlorobiphenyl	*0.0346*		ug/L	*0.05000*		*69*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0318*		ug/L	*0.05000*		*64*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0334*		ug/L	*0.05000*		*67*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0317*		ug/L	*0.05000*		*63*	*30-150*			
LCS Dup										
Aroclor 1016	0.93	0.10	ug/L	1.000		93	40-140	25	50	
Aroclor 1260	0.87	0.10	ug/L	1.000		87	40-140	25	50	
Surrogate: Decachlorobiphenyl	*0.0438*		ug/L	*0.05000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0403*		ug/L	*0.05000*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0422*		ug/L	*0.05000*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0401*		ug/L	*0.05000*		*80*	*30-150*			
8260B Volatile Oxygenate Compounds										
Batch BK70511 - 5030B										
Blank										
Di-isopropyl ether	ND	1.00	ug/L							
Ethyl tertiary-butyl ether	ND	1.00	ug/L							
Tertiary-amyl methyl ether	ND	1.00	ug/L							
Tertiary-butyl Alcohol	ND	25.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*23.5*		ug/L	*25.00*		*94*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*21.9*		ug/L	*25.00*		*87*	*70-130*			
Surrogate: Dibromofluoromethane	*29.2*		ug/L	*25.00*		*117*	*70-130*			
Surrogate: Toluene-d8	*21.0*		ug/L	*25.00*		*84*	*70-130*			
LCS										
Di-isopropyl ether	23.1		ug/L	25.00		93	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Oxygenate Compounds										
Batch BK70511 - 5030B										
Ethyl tertiary-butyl ether	24.3		ug/L	25.00		97	70-130			
Tertiary-amyl methyl ether	24.8		ug/L	25.00		99	70-130			
Tertiary-butyl Alcohol	135		ug/L	125.0		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	*22.2*		ug/L	*25.00*		*89*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*21.4*		ug/L	*25.00*		*86*	*70-130*			
Surrogate: Dibromofluoromethane	*27.8*		ug/L	*25.00*		*111*	*70-130*			
Surrogate: Toluene-d8	*21.6*		ug/L	*25.00*		*86*	*70-130*			
LCS Dup										
Di-isopropyl ether	22.6		ug/L	25.00		90	70-130	2	20	
Ethyl tertiary-butyl ether	24.4		ug/L	25.00		97	70-130	0.2	20	
Tertiary-amyl methyl ether	24.1		ug/L	25.00		97	70-130	3	20	
Tertiary-butyl Alcohol	125		ug/L	125.0		100	70-130	8	20	
Surrogate: 1,2-Dichloroethane-d4	*21.5*		ug/L	*25.00*		*86*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*21.6*		ug/L	*25.00*		*86*	*70-130*			
Surrogate: Dibromofluoromethane	*28.1*		ug/L	*25.00*		*112*	*70-130*			
Surrogate: Toluene-d8	*21.6*		ug/L	*25.00*		*86*	*70-130*			
8260B Volatile Organic Compounds										
Batch BJ73017 - 5030B										
Blank										
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dioxane - Screen	ND	500	ug/L							
Acetone	ND	25.0	ug/L							
Benzene	ND	1.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Methyl tert-Butyl Ether	ND	1.0	ug/L							
Methylene Chloride	ND	5.0	ug/L							
Naphthalene	ND	1.0	ug/L							
Tertiary-amyl methyl ether	ND	1.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BJ73017 - 5030B										
Surrogate: 1,2-Dichloroethane-d4	*22.9*		ug/L	*25.00*		*92*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.3*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*23.6*		ug/L	*25.00*		*95*	*70-130*			
Surrogate: Toluene-d8	*24.1*		ug/L	*25.00*		*96*	*70-130*			
LCS										
1,1,1-Trichloroethane	9.3		ug/L	10.00		93	70-130			
1,1,2-Trichloroethane	9.7		ug/L	10.00		97	70-130			
1,1-Dichloroethane	9.9		ug/L	10.00		99	70-130			
1,1-Dichloroethene	9.9		ug/L	10.00		99	70-130			
1,2-Dibromoethane	8.8		ug/L	10.00		88	70-130			
1,2-Dichlorobenzene	9.5		ug/L	10.00		95	70-130			
1,2-Dichloroethane	9.6		ug/L	10.00		96	70-130			
1,3-Dichlorobenzene	9.5		ug/L	10.00		95	70-130			
1,4-Dichlorobenzene	9.4		ug/L	10.00		94	70-130			
1,4-Dioxane - Screen	727		ug/L	200.0		364	0-332			B+
Acetone	60.1		ug/L	50.00		120	70-130			
Benzene	9.5		ug/L	10.00		95	70-130			
Carbon Tetrachloride	9.1		ug/L	10.00		91	70-130			
cis-1,2-Dichloroethene	9.7		ug/L	10.00		97	70-130			
Ethylbenzene	9.5		ug/L	10.00		95	70-130			
Methyl tert-Butyl Ether	9.8		ug/L	10.00		98	70-130			
Methylene Chloride	10.6		ug/L	10.00		106	70-130			
Naphthalene	10.8		ug/L	10.00		108	70-130			
Tertiary-amyl methyl ether	10.0		ug/L	10.00		100	70-130			
Tetrachloroethene	9.0		ug/L	10.00		90	70-130			
Toluene	10.2		ug/L	10.00		102	70-130			
Trichloroethene	9.2		ug/L	10.00		92	70-130			
Vinyl Chloride	9.8		ug/L	10.00		98	70-130			
Xylene O	9.6		ug/L	10.00		96	70-130			
Xylene P,M	19.1		ug/L	20.00		95	70-130			
Surrogate: 1,2-Dichloroethane-d4	*22.8*		ug/L	*25.00*		*91*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*26.0*		ug/L	*25.00*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*24.3*		ug/L	*25.00*		*97*	*70-130*			
Surrogate: Toluene-d8	*25.2*		ug/L	*25.00*		*101*	*70-130*			
LCS Dup										
1,1,1-Trichloroethane	9.2		ug/L	10.00		92	70-130	0.5	20	
1,1,2-Trichloroethane	9.4		ug/L	10.00		94	70-130	4	20	
1,1-Dichloroethane	9.8		ug/L	10.00		98	70-130	1	20	
1,1-Dichloroethene	9.5		ug/L	10.00		95	70-130	4	20	
1,2-Dibromoethane	9.0		ug/L	10.00		90	70-130	3	20	
1,2-Dichlorobenzene	9.3		ug/L	10.00		93	70-130	2	20	
1,2-Dichloroethane	9.5		ug/L	10.00		95	70-130	0.8	20	
1,3-Dichlorobenzene	9.3		ug/L	10.00		93	70-130	1	20	
1,4-Dichlorobenzene	9.1		ug/L	10.00		91	70-130	3	20	
1,4-Dioxane - Screen	372		ug/L	200.0		186	0-332	65	50	D+

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BJ73017 - 5030B										
Acetone	62.5		ug/L	50.00		125	70-130	4	20	
Benzene	9.4		ug/L	10.00		94	70-130	1	20	
Carbon Tetrachloride	9.2		ug/L	10.00		92	70-130	0.5	20	
cis-1,2-Dichloroethene	9.4		ug/L	10.00		94	70-130	3	20	
Ethylbenzene	9.4		ug/L	10.00		94	70-130	0.9	20	
Methyl tert-Butyl Ether	9.6		ug/L	10.00		96	70-130	1	20	
Methylene Chloride	10.1		ug/L	10.00		101	70-130	5	20	
Naphthalene	10.0		ug/L	10.00		100	70-130	8	20	
Tertiary-amyl methyl ether	10.1		ug/L	10.00		101	70-130	0.6	20	
Tetrachloroethene	10.1		ug/L	10.00		101	70-130	12	20	
Toluene	10.0		ug/L	10.00		100	70-130	1	20	
Trichloroethene	9.4		ug/L	10.00		94	70-130	1	20	
Vinyl Chloride	9.6		ug/L	10.00		96	70-130	2	20	
Xylene O	9.4		ug/L	10.00		94	70-130	2	20	
Xylene P,M	18.9		ug/L	20.00		94	70-130	1	20	
Surrogate: 1,2-Dichloroethane-d4	*23.2*		ug/L	*25.00*		*93*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.9*		ug/L	*25.00*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*23.9*		ug/L	*25.00*		*95*	*70-130*			
Surrogate: Toluene-d8	*25.3*		ug/L	*25.00*		*101*	*70-130*			
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch BJ72629 - 3510C										
Blank										
2-Methylnaphthalene	ND	0.05	ug/L							
Acenaphthene	ND	0.05	ug/L							
Acenaphthylene	ND	0.05	ug/L							
Anthracene	ND	0.05	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.05	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Fluoranthene	ND	0.05	ug/L							
Fluorene	ND	0.06	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.05	ug/L							
Pentachlorophenol	ND	1.00	ug/L							
Phenanthrene	0.06	0.05	ug/L							
Pyrene	ND	0.05	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.252*		ug/L	*0.6250*		*40*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.280*		ug/L	*0.9375*		*30*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.262*		ug/L	*0.6250*		*42*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.272*		ug/L	*0.6250*		*44*	*30-130*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch BJ72629 - 3510C										
Surrogate: p-Terphenyl-d14	*0.438*		ug/L	*0.6250*		*70*	*30-130*			
LCS										
2-Methylnaphthalene	0.292	0.05	ug/L	0.6250		47	40-140			
Acenaphthene	0.310	0.05	ug/L	0.6250		50	40-140			
Acenaphthylene	0.288	0.05	ug/L	0.6250		46	40-140			
Anthracene	0.368	0.05	ug/L	0.6250		59	40-140			
Benzo(a)anthracene	0.420	0.05	ug/L	0.6250		67	40-140			
Benzo(a)pyrene	0.372	0.05	ug/L	0.6250		60	40-140			
Benzo(b)fluoranthene	0.360	0.05	ug/L	0.6250		58	40-140			
Benzo(g,h,i)perylene	0.340	0.05	ug/L	0.6250		54	40-140			
Benzo(k)fluoranthene	0.358	0.05	ug/L	0.6250		57	40-140			
Chrysene	0.412	0.05	ug/L	0.6250		66	40-140			
Dibenzo(a,h)Anthracene	0.322	0.05	ug/L	0.6250		52	40-140			
Fluoranthene	0.448	0.05	ug/L	0.6250		72	40-140			
Fluorene	0.340	0.06	ug/L	0.6250		54	40-140			
Indeno(1,2,3-cd)Pyrene	0.325	0.05	ug/L	0.6250		52	40-140			
Naphthalene	0.300	0.05	ug/L	0.6250		48	40-140			
Pentachlorophenol	0.190	1.00	ug/L	0.6250		30	30-130			
Phenanthrene	0.415	0.05	ug/L	0.6250		66	40-140			
Pyrene	0.360	0.05	ug/L	0.6250		58	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.228*		ug/L	*0.6250*		*36*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.220*		ug/L	*0.9375*		*23*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.280*		ug/L	*0.6250*		*45*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.258*		ug/L	*0.6250*		*41*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.405*		ug/L	*0.6250*		*65*	*30-130*			
LCS Dup										
2-Methylnaphthalene	0.460	0.05	ug/L	0.6250		74	40-140	45	20	D+
Acenaphthene	0.445	0.05	ug/L	0.6250		71	40-140	36	20	D+
Acenaphthylene	0.422	0.05	ug/L	0.6250		68	40-140	38	20	D+
Anthracene	0.455	0.05	ug/L	0.6250		73	40-140	21	20	D+
Benzo(a)anthracene	0.460	0.05	ug/L	0.6250		74	40-140	9	20	
Benzo(a)pyrene	0.410	0.05	ug/L	0.6250		66	40-140	10	20	
Benzo(b)fluoranthene	0.415	0.05	ug/L	0.6250		66	40-140	14	20	
Benzo(g,h,i)perylene	0.365	0.05	ug/L	0.6250		58	40-140	7	20	
Benzo(k)fluoranthene	0.410	0.05	ug/L	0.6250		66	40-140	14	20	
Chrysene	0.450	0.05	ug/L	0.6250		72	40-140	9	20	
Dibenzo(a,h)Anthracene	0.358	0.05	ug/L	0.6250		57	40-140	10	20	
Fluoranthene	0.492	0.05	ug/L	0.6250		79	40-140	10	20	
Fluorene	0.455	0.06	ug/L	0.6250		73	40-140	29	20	D+
Indeno(1,2,3-cd)Pyrene	0.355	0.05	ug/L	0.6250		57	40-140	9	20	
Naphthalene	0.458	0.05	ug/L	0.6250		73	40-140	42	20	D+
Pentachlorophenol	0.492	1.00	ug/L	0.6250		79	30-130	89	20	D+
Phenanthrene	0.460	0.05	ug/L	0.6250		74	40-140	10	20	
Pyrene	0.422	0.05	ug/L	0.6250		68	40-140	16	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.302*		ug/L	*0.6250*		*48*	*30-130*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch BJ72629 - 3510C										
Surrogate: 2,4,6-Tribromophenol	*0.498*		ug/L	*0.9375*		*53*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.338*		ug/L	*0.6250*		*54*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.288*		ug/L	*0.6250*		*46*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.335*		ug/L	*0.6250*		*54*	*30-130*			
8270C Semi-Volatile Phenolic Compounds										
Batch BK70612 - 3510C										
Blank										
2,3,4,6-Tetrachlorophenol	ND	50.0	ug/L							
2,4,5-Trichlorophenol	ND	10.0	ug/L							
2,4,6-Trichlorophenol	ND	10.0	ug/L							
2,4-Dichlorophenol	ND	10.0	ug/L							
2,4-Dimethylphenol	ND	50.0	ug/L							
2,4-Dinitrophenol	ND	50.0	ug/L							
2-Chlorophenol	ND	10.0	ug/L							
2-Methylphenol	ND	10.0	ug/L							
2-Nitrophenol	ND	10.0	ug/L							
3+4-Methylphenol	ND	20.0	ug/L							
4,6-Dinitro-2-Methylphenol	ND	50.0	ug/L							
4-Chloro-3-Methylphenol	ND	10.0	ug/L							
4-Nitrophenol	ND	50.0	ug/L							
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Butylbenzylphthalate	ND	10.0	ug/L							
Diethylphthalate	ND	10.0	ug/L							
Dimethylphthalate	ND	10.0	ug/L							
Di-n-butylphthalate	ND	10.0	ug/L							
Di-n-octylphthalate	ND	10.0	ug/L							
Pentachlorophenol	ND	50.0	ug/L							
Phenol	ND	10.0	ug/L							
Surrogate: 2,4,6-Tribromophenol	*0.112*		ug/L	*0.9375*		*12*	*15-110*			*S-*
Surrogate: 2-Chlorophenol-d4	*0.208*		ug/L	*0.9375*		*22*	*15-110*			
Surrogate: 2-Fluorophenol	*0.0815*		ug/L	*0.9375*		*9*	*15-110*			*S-*
Surrogate: Phenol-d6	*0.206*		ug/L	*0.9375*		*22*	*15-110*			
LCS										
2,3,4,6-Tetrachlorophenol	0.4	2.5	ug/L	0.6250		62	40-140			J
2,4,5-Trichlorophenol	0.4	0.5	ug/L	0.6250		59	30-130			J
2,4,6-Trichlorophenol	0.4	0.5	ug/L	0.6250		56	30-130			J
2,4-Dichlorophenol	0.4	0.5	ug/L	0.6250		62	30-130			J
2,4-Dimethylphenol	0.3	2.5	ug/L	0.6250		49	30-130			J
2,4-Dinitrophenol	0.3	2.5	ug/L	0.6250		49	30-130			J
2-Chlorophenol	0.5	0.5	ug/L	0.6250		75	30-130			J
2-Methylphenol	0.4	0.5	ug/L	0.6250		70	30-130			J
2-Nitrophenol	0.4	0.5	ug/L	0.6250		56	30-130			J
3+4-Methylphenol	1.1	1.0	ug/L	1.250		84	30-130			

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham

ESS Laboratory Work Order: 0710458

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Phenolic Compounds										
Batch BK70612 - 3510C										
4,6-Dinitro-2-Methylphenol	0.3	2.5	ug/L	0.6250		55	30-130			J
4-Chloro-3-Methylphenol	0.4	0.5	ug/L	0.6250		62	30-130			J
4-Nitrophenol	0.3	2.5	ug/L	0.6250		55	30-130			J
bis(2-Ethylhexyl)phthalate	0.4	0.3	ug/L	0.6250		68	40-140			
Butylbenzylphthalate	0.4	0.5	ug/L	0.6250		66	40-140			J
Diethylphthalate	0.5	0.5	ug/L	0.6250		76	40-140			J
Dimethylphthalate	0.4	0.5	ug/L	0.6250		71	40-140			J
Di-n-butylphthalate	0.4	0.5	ug/L	0.6250		70	40-140			J
Di-n-octylphthalate	0.5	0.5	ug/L	0.6250		73	40-140			J
Pentachlorophenol	0.4	2.5	ug/L	0.6250		62	30-130			J
Phenol	0.4	0.5	ug/L	0.6250		67	30-130			J
Surrogate: 2,4,6-Tribromophenol	*0.414*		ug/L	*0.9375*		*44*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.468*		ug/L	*0.9375*		*50*	*15-110*			
Surrogate: 2-Fluorophenol	*0.414*		ug/L	*0.9375*		*44*	*15-110*			
Surrogate: Phenol-d6	*0.535*		ug/L	*0.9375*		*57*	*15-110*			
Classical Chemistry										
Batch BJ72446 - General Preparation										
Blank										
Total Residual Chlorine	ND	0.02	mg/L							
LCS										
Total Residual Chlorine	0.66		mg/L	0.6610		100	80-120			
Duplicate **Source: 0710458-01**										
Total Residual Chlorine	ND	0.02	mg/L		ND				20	
Batch BJ72505 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	26		mg/L	28.80		90	80-120			
Batch BJ72514 - TCN Prep										
Blank										
Total Cyanide (LL)	ND	0.005	mg/L							
LCS										
Total Cyanide (LL)	0.098	0.005	mg/L	0.1003		97	90-110			
LCS										
Total Cyanide (LL)	0.397	0.005	mg/L	0.4012		99	90-110			
LCS Dup										
Total Cyanide (LL)	0.395	0.005	mg/L	0.4012		99	90-110	0.3	20	
Batch BJ72918 - General Preparation										
Blank										
Total Petroleum Hydrocarbon	ND	5	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham

ESS Laboratory Work Order: 0710458

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch BJ72918 - General Preparation										
LCS										
Total Petroleum Hydrocarbon	14	5	mg/L	20.00		70	66-114			

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA Method 504.1**	Instrument ID:	**GC-5 HP 5890**
QC Batch ID:	**PV-0894-E**	Extracted:	**11-06-07 07:00**
Matrix:	**Aqueous**	Analyzed:	**11-06-07 12:28**
Units:	**ug/L**	Analyst:	**NPS**

CAS Number	Analyte	Spiked	Measured		Recovery		QC Limits
			1st Column	2nd Column	1st Column	2nd Column	
106-93-4	1,2-Dibromoethane (EDB)	0.20	0.22	0.21	**108 %**	**105 %**	70 - 130 %

Method Reference: Methods for the Determination of Organic Compounds in Drinking Water, Supplement III, US EPA, EPA-600/R-95/131 (1995). Method Revision 1.1.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

1 8a

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 504.1**	Instrument ID:	**GC-5 HP 5890**
QC Batch ID:	**PV-0894-E**	Extracted:	**11-06-07 07:00**
Matrix:	**Aqueous**	Analyzed:	**11-06-07 14:12**
		Analyst:	**NPS**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02

Method Reference: Methods for the Determination of Organic Compounds in Drinking Water, Supplement III, US EPA, EPA-600/R-95/131 (1995). Method Revision 1.1.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

11 & B

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham ESS Laboratory Work Order: 0710458

Notes and Definitions

Z-08	See Attached
U	Analyte included in the analysis, but not detected
S-	Surrogate recovery(ies) below lower control limit.
PH+	pH > 2
J	Reported between MDL and MRL; Estimated value.
D+	Relative percent difference for duplicate is outside of criteria.
D	Diluted.
C-	Continuing Calibration recovery is below lower control limit.
B+	Blank Spike recovery is above upper control limit.
B	Present in Blank.
ND	Analyte NOT DETECTED above the detection limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.

CERTIFICATE OF ANALYSIS

Client Name: Tetra Tech Rizzo
Client Project ID: Pickwick - Needham

ESS Laboratory Work Order: 0710458

ESS LABORATORY CERTIFICATIONS

U.S. Army Corps of Engineers
Soil and Water

Navy Installation Restoration QA Program
Soil and Water

Rhode Island: A-179

Connecticut: PH-0750

Maine: RI002

Massachusetts: M-RI002

New Hampshire (NELAP accredited): 242405
Potable Water
Non Potable Water

New York (NELAP accredited): 11313
Potable Water
Non Potable Water
Solid and Hazardous Waste

United States Department of Agriculture
Soil Permit: S-54210

New Jersey (NELAP accredited): RI002
Potable Water
Non Potable Water
Soil and Hazardous Waste

Maryland: 301
Potable Water

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 1

Turn Time: Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____
State where samples were collected from: MA RI CT NH NJ NY ME Other
Is this project for any of the following: MA-MCP Navy USACE Other NPDES

Reporting Limits: NPDES-RIPDES
ESS LAB PROJECT ID: 0710458
Electronic Deliverable: ____ Yes ____ No
Format: Excel Access PDF Other ____

Co. Name | Project # | Project Name (20 Char. or less)

Contact Person: Jena Paola | Address

City | State | Zip | PO#

Telephone # | Fax # | Email Address

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Container	Write Required Analysis
01	10/23/07	10:30	X		DW	0710458-01	3	3	V	EPA 524.2

Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ____ Yes ____ No Internal Use Only
Seals Intact ____ Yes ____ No NA: ____ [ ] Pickup
Cooler Temp: 5.9 [ ] Technicians ____

Preservation Codes: 1- NP, 2- HCl, 3- H~~2SO4~~, 4- ~~HNO3~~, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____
Sampled by:
Comments: Please Report below 0.05 ug/L

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	10/24/07 1238	[signature]	10/24/07 12:38				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 2

Turn Time: X Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from: (MA) RI CT NH NJ NY ME Other ____

Is this project for any of the following: MA-MCP Navy USACE Other NPDES

Reporting Limits: NPDES-RGP

ESS LAB PROJECT ID: 0710458

Electronic Deliverable: X Yes ___ No

Format: Excel X Access ___ PDF X Other ___

Co. Name	Project #	Project Name (20 Char. or less)
Tetra Tech Rizzo, Inc.	12701044	Pickwick - Needham

Contact Person	Address
Bill Phelps	One Grant St.

City	State	Zip	PO#
Framingham	MA	01701	12701044

Telephone #	Fax #	Email Address
(508) 903-2000	(508) 903-2001	bill.phelps@tetratech.com

Circle and/or Write Required Analysis:

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 624 524.2	8021 MTBE/BTEX VPH w/targets	8015 GRO	8015 DRO	EPH 4 Diesel	8082 Pesticides 608 PCB	8270 SVOA PAH 625 (610)	RCRA8 PP13 TAL23 NPDES metals	TCLP/RCRA8 Hex Chrom NPDES	MCP-METALS (13) w/Hg	MCP-METALS (13)	VOCs (601/602)	TKN (350.1) TSS (160.2)	Cyanide (335.4)	EDB (504) Acetone (524.2)	1,4 Dioxane (1624)
1	10-23-2007	1030	X		GW	INF-2007-10-23	1	1	P				TPH 1664 8100									7			
1							2	2	G				X												
1							5	1	P														4		
1							1	3	V	X											X			X	X
1							2	3	V	X											X			X	X
1							3	1	G	X															
1							1	~~2~~	G						X	X									
1							1	2	G							X									
1							4	1	P								X								
1	10-24-07	0655	X		GW	INF-2007-10-24	1	1	P									X							

Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: X Yes ___ No — Internal Use Only

Seals Intact: ___ Yes ___ No NA: / — X Pickup

Cooler Temp: 3.5°C — [ ] Technicians ____

Preservation Code: 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: IAN CANNAN

Comments: refer to Appendix VI of NPDES RGP for minimum levels & analysis

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
T. Phelps	10/24/2007	Pat Sylvia	10/24/07 1420	Pat Sylvia	10/24/07 1525	J. Davis	10/24/07 17:15
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time: X Standard Other _____
If faster than 5 days, prior approval by laboratory is required # _____
State where samples were collected from: (MA) RI CT NH NJ NY ME Other _____
Is this project for any of the following: MA-MCP Navy USACE Other NPDES

Reporting Limits: NPDESR6P
ESS LAB PROJECT ID: 0710458
Electronic Deliverable ___ Yes ___ No
Format: Excel__ Access__ PDF__ Other_____

Co. Name	Project #	Project Name (20 Char. or less)
Contact Person	Address	
City / State / Zip		PO#
Telephone #	Fax #	Email Address

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 VOA	624	524.2	8021 MTBE/BTEX	8015 GRO	VPH w/targets	8100 TPH	8015 DRO	EPH w/o PAHs	EPH w/PAHs	EPH 4 Diesel	8081 Pesticides	8082 PCB	608 Pesticides	608 PCB	8270 SVOA	625	PAH 8270	RCRA5	RCRA8	PP13	TAL23	TCLP-RCRA8	NBC7	MCP-METALS (13)	MCP-METALS (13) w/Hg	VOCs
2	10-23-07	1030		X	Blank	Trip Blank	2	1	V																											X

Circle and/or Write Required Analysis

Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ✓ Yes ___ No
Seals Intact ___ Yes ___ No NA: ✓
Cooler Temp: 3.5°

Internal Use Only
[✓] Pickup
[ ] Technicians ____

Preservation Code: 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: IAN CANNAN

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	10-24-2007		10/24/07 4:00		10/24/07 5:15		10-24-07 17:15
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com
MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: Tetra Tech Rizzo

Address: 1 Grant Street
Framingham, MA 01701-9005

Attn: Mr. Bill Phelps

Project Number: 12701044

Laboratory Job Number: L0716112

Date Received: 29-OCT-2007

Date Reported: 05-NOV-2007

Delivery Method: Client

Site: PICKWICK-NEEDHAM

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0716112-01	INF-2007-10-23	NEEDHAM, MA

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: Michelle M. Morris
Technical Representative

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0716112

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0716112-01
INF-2007-10-23
Sample Matrix: WATER

Date Collected: 23-OCT-2007 10:30
Date Received : 29-OCT-2007
Date Reported : 05-NOV-2007

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Plastic

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Total Metals								
Antimony, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 20:04	BM
Arsenic, Total	0.0005	mg/l	0.0005	1	6020	1030 17:00	1031 20:04	BM
Cadmium, Total	0.0003	mg/l	0.0002	1	6020	1030 17:00	1031 20:04	BM
Chromium, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 20:04	BM
Copper, Total	0.0016	mg/l	0.0005	1	6020	1030 17:00	1031 20:04	BM
Iron, Total	0.14	mg/l	0.05	19	200.7	1102 16:30	1105 11:09	AI
Lead, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 20:04	BM
Mercury, Total	ND	mg/l	0.0002	3	245.1	1101 19:00	1102 12:31	RC
Nickel, Total	0.0028	mg/l	0.0005	1	6020	1030 17:00	1031 20:04	BM
Selenium, Total	0.002	mg/l	0.001	1	6020	1030 17:00	1031 20:04	BM
Silver, Total	ND	mg/l	0.0004	1	6020	1030 17:00	1031 20:04	BM
Zinc, Total	0.0452	mg/l	0.0050	1	6020	1030 17:00	1031 20:04	BM

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0716112

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Total Metals for sample(s) 01 (L0716042-02, WG300297-1)					
Lead, Total	ND	ND	mg/l	NC	20
Total Metals for sample(s) 01 (L0716260-01, WG300624-3)					
Mercury, Total	ND	ND	mg/l	NC	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0716112

Parameter	% Recovery	QC Criteria
Total Metals LCS for sample(s) 01 (WG300790-4)		
Iron, Total	98	
Total Metals LCS for sample(s) 01 (WG300297-4)		
Antimony, Total	100	80-120
Arsenic, Total	100	80-120
Cadmium, Total	107	80-120
Chromium, Total	100	80-120
Copper, Total	99	80-120
Lead, Total	102	80-120
Nickel, Total	102	80-120
Selenium, Total	102	80-120
Silver, Total	95	80-120
Zinc, Total	102	80-120
Total Metals LCS for sample(s) 01 (WG300624-1)		
Mercury, Total	110	
Total Metals SPIKE for sample(s) 01 (L0715871-07, WG300790-2)		
Iron, Total	91	
Total Metals SPIKE for sample(s) 01 (L0716042-02, WG300297-2)		
Antimony, Total	102	80-120
Arsenic, Total	109	80-120
Cadmium, Total	106	80-120
Chromium, Total	96	80-120
Copper, Total	88	80-120
Lead, Total	103	80-120
Nickel, Total	92	80-120
Selenium, Total	107	80-120
Silver, Total	88	80-120
Zinc, Total	97	80-120
Total Metals SPIKE for sample(s) 01 (L0716260-01, WG300624-2)		
Mercury, Total	112	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0716112

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG300790-3)								
Total Metals				19	200.7			
Iron, Total	ND	mg/l	0.05	19	200.7	1102 16:30	1105 10:52	AI
Blank Analysis for sample(s) 01 (WG300297-3)								
Total Metals								
Antimony, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 19:14	BM
Arsenic, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 19:14	BM
Cadmium, Total	ND	mg/l	0.0002	1	6020	1030 17:00	1031 19:14	BM
Chromium, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 19:14	BM
Copper, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 19:14	BM
Lead, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 19:14	BM
Nickel, Total	ND	mg/l	0.0005	1	6020	1030 17:00	1031 19:14	BM
Selenium, Total	ND	mg/l	0.001	1	6020	1030 17:00	1031 19:14	BM
Silver, Total	ND	mg/l	0.0004	1	6020	1030 17:00	1031 19:14	BM
Zinc, Total	ND	mg/l	0.0050	1	6020	1030 17:00	1031 19:14	BM
Blank Analysis for sample(s) 01 (WG300624-4)								
Total Metals								
Mercury, Total	ND	mg/l	0.0002	3	245.1	1101 19:00	1102 12:24	RC

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

3. Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

19. Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

GLOSSARY OF TERMS AND SYMBOLS

REF	Reference number in which test method may be found.
METHOD	Method number by which analysis was performed.
ID	Initials of the analyst.
ND	Not detected in comparison to the reported detection limit.
NI	Not Ignitable.
ug/cart	Micrograms per Cartridge.
H	The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 10/29/07

ALPHA Job #: L0716112

Client Information

Client: Tetra Tech Rizzo
Address: One Grant St
Framingham, MA
Phone: (508) 903-2000 (2039)
Fax: (508) 903-2001
Email: ian.cannan@tetratech.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Pickwick - Needham
Project Location: Needham, MA
Project #: 12701044
Project Manager: William C. Phelps
ALPHA Quote #:

Turn-Around Time

☒ Standard 5 Day ☐ RUSH (only confirmed if pre-approved!)

Date Due: 11/5/07 Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:
C/O AP

Regulatory Requirements/Report Limits

State/Fed Program: NPDES RGP
Criteria: Min. Levels - App III and/or VI

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Need to meet NPDES RGP Limits
See Appendix III + VI of RGP
call w/ any questions

ANALYSIS: Metals (total) * ICP AES

SAMPLE HANDLING
Filtration
☐ Done
☒ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Metals (total) ICP AES	Sample Specific Comments	TOTAL # BOTTLES
16112.1	INF-2007-10-23	10-23-07	1030	GW	ISC	X	* antimony, arsenic, cadmium, total Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Zinc, Iron	

Container Type: P
Preservative: N

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-29-07 845	T. Flury	10/29/07 0845

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

Discharge to Rosemary Brook

Dilution Factor (DF) = $(Q_d + Q_s) / Q_d$

Q_d = max flow of Discharge (cfs) say 30 gpm (0.067 cfs)

Q_s = receiving water 7Q10 Flow (cfs) = 0.0676 cfs = (0.506 gal/sec.) = (30.4 gal/min)

$DF = (0.067 + 0.0676) / 0.067$

$DF = 1.98$

TETRA TECH RIZZO	JOB 127010444
	SHEET NO. 1 OF 1
	CALCULATED BY ISC DATE 11-6-07
	CHECKED BY _____ DATE _____
	SCALE NTS

Mass Calculations:

$$\text{Mass}_{(Kg)} = \left(\text{Concentration}(mg/Kg) \cdot \text{flow}(MGD) \cdot 8.34\ lbs/gal.\right) \cdot {}^{1\ lbs}/_{0.453592\ Kg}$$

$$TSS = \left(1{,}150\ mg/Kg \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right) \cdot {}^{1\ lbs}/_{0.453592} = 188\ Kg/day$$

$$Benzene = \left[\left(1980\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/day\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 3.24\ E\text{-}1\ Kg/day$$

$$Toluene = \left[\left(13.2\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 2.16\ E\text{-}3\ Kg/day$$

$$Ethylbenzene = \left[\left(702\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043 \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 1.15\ E\text{-}1\ Kg/day$$

$$Xylene = \left[\left(17.2\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 2.81\ E\text{-}3\ Kg/day$$

$$BTEX = \left[\left(2712\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 4.43\ E\text{-}1\ Kg/day$$

$$MTBE = \left[\left(161\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 2.63\ E\text{-}2\ Kg/day$$

$$TBA = \left[\left(221\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 3.61\ E\text{-}2\ Kg/day$$

$$TAME = \left[\left(20.8\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 3.40\ E\text{-}3\ Kg/day$$

$$Naphthalene = \left[\left(96.5\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 1.58\ E\text{-}2\ Kg/day$$

$$Group\ II\ PAHs = \left[\left(112\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 1.83\ E\text{-}2\ Kg/day$$

$$Acenaphthene = \left[\left(0.22\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 3.60\ E\text{-}5\ Kg/day$$

$$Acenaphthylene = \left[\left(0.09\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 1.47\ E\text{-}5\ Kg/day$$

$$Anthracene = \left[\left(0.05\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 8.17\ E\text{-}6\ Kg/day$$

$$Fluoranthene = \left[\left(0.09\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 1.47\ E\text{-}5\ Kg/day$$

~~Fluoranthene~~ ISC = $\left[\left(0.25\ ug/L \cdot {}^{1\ mg}/_{1000\ ug}\right) \cdot 0.043\ MGD \cdot 8.34\ lbs/gal\right] \cdot {}^{1\ lbs}/_{0.453592\ Kg} = 4.09\ E\text{-}5\ Kg/day$

Fluorene

TETRA TECH RIZZO

JOB 12701044

SHEET NO. 1 OF 2

CALCULATED BY ISC DATE 11-12-07

CHECKED BY _____ DATE _____

SCALE NTS

Mass Calculations (cont.)

Naphthalene = [(111 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 1.81 E-2 kg/day

Phenanthrene = [(0.25 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 4.09 E-5 kg/day

Pyrene = [(0.05 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 8.17 E-6 kg/day

Arsenic = [(0.5 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 8.17 E-5 kg/day

Cadmium = [(0.3 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 4.90 E-5 kg/day

Copper = [(1.6 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 2.61 E-4 kg/day

Nickel = [(2.8 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 4.58 E-4 kg/day

Selenium = [(2 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 3.27 E-4 kg/day

Zinc = [(45.2 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal] · 1 lbs/0.453592 kg = 7.39 E-3 kg/day

Iron = [(140 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal) · 1 lbs/0.453592 kg = 2.29 E-2 kg/day

Methyl-2-Naphthalene = [(16.7 mg/L · 1 mg/1000 mg) · 0.043 MGD · 8.34 lbs/gal) 1 lbs/0.453592 kg

= 2.76 E-3 kg/day

TETRA TECH RIZZO

JOB 127010M4

SHEET NO. 2 OF 2

CALCULATED BY ISC DATE 11-12-07

CHECKED BY _____ DATE _____

SCALE NTS