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HALEY & ALDRICH

25 March 2010
File No. 10666-641

US Environmental Protection Agency
Industrial NPDES Permits (CIP)
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Attention: Ms. Shelly Puleo

Subject: Notice of Intent (NOI)
Temporary Construction Dewatering
Boston Medical Center
Boston, Massachusetts

Ladies and Gentlemen:

In accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000, this letter submits a Notice of Intent (NOI) and the applicable documentation as required by the US Environmental Protection Agency (EPA) for construction site dewatering under the RGP. Temporary dewatering is planned in support of new utility construction activities proposed at the Boston Medical Center site, located in Boston, Massachusetts, as shown on Figure 1 – Project Locus.

The Boston Medical Center has proposed the construction of a below-grade Pneumatic Tube (P-Tube) conduit to be constructed between 670 Albany Street and 710 Albany Street (Talbot Building). The P-Tube alignment is approximately 500 linear feet in length and traverses property owned by Boston University and Boston Medical Center (BMC). The alignment also crosses Albany Street and a portion of East Stoughton Street. The P-Tube and its associated structures will be constructed at depths ranging from 5 to 11 feet below existing grades.

Existing Site Conditions

The alignment will be located beneath existing paved areas and a small landscaped area. The area is developed with medical office and medical research buildings.

Site History

The Site is located within the former South Bay tidelands. During colonial times, the shoreline, defined by the Roxbury Creek and South Bay, extended northwest to southeast along Albany Street. Wharves and warehouses lined the shoreline that gradually changed by gradual sequence of filling that began in the late eighteenth century along the neck (present day Washington Street) and east toward Albany Street. The Albany Street area was filled in by the City of Boston, the Front Street Corporation, and individual property owners beginning in the early 1850's originally for maritime and warehouse uses. The Roxbury

Canal was constructed westward from South Bay along the southern site boundary in the mid 1800's. Following construction of the Roxbury Canal conduit, the canal was filled during the 1960's and early 1970's. The Boston Medical Center area was developed with new medical office and medical research buildings beginning in the early 1990's.

Regulatory Background

The portion of the proposed P-Tube south of Albany Street is located within the area of two DEP disposal sites that have achieved regulatory closure with a Class A-2 Response Action Outcome (RAO) under the Massachusetts Contingency Plan (MCP):

- 710 Albany Street, Parking Garage, RTN 3-4159, Class A-2 RAO in September 2007 and
- 650 – 670 Albany Street, Parcel D, RTN 3-23572, Class A-2 RAO in March 2006.

Releases at these sites consisted of concentrations of petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs) and metals in soil related to historical site filling and usage at concentrations that exceeded the applicable reportable concentrations. Contaminated soil at these sites was managed under the MCP during construction of the new buildings. The construction of the P-Tube is planned to be conducted under a Utility Related Abatement Measure (URAM).

Temporary Construction Dewatering Notice of Intent

In support of the NOI, groundwater samples were collected from one observation well (HA-09-2(OW)), located within the project site, on 13 January 2010. The results of water quality testing conducted for this NOI are summarized in Table I. The location of the observation well is shown on Figure 3.

Dewatering is planned to be conducted as necessary from sumps or well points located inside the trench excavations. Dewatering will likely be necessary to control groundwater, seepage, precipitation, surface water runoff and construction-generated water to enable construction in-the-dry. Construction and construction dewatering is currently anticipated to begin in April 2010 and continue through October 2010.

Prior to discharge, collected dewatering effluent will be routed through a sedimentation tank and a bag filter, at a minimum, to remove suspended solids and undissolved chemical constituents (metals), as shown in the Proposed Treatment System Schematic included as Figure 2 herein. Construction dewatering under this RGP NOI will include piping and discharging to storm drains located within and near the site. The storm drains travel a short distance to the Roxbury Canal located southeast of the site and eventually discharge into the Fort Point Channel. The proposed discharge route is shown on Figure 3, Proposed Dewatering Discharge Route.

Appendices

The completed "Suggested Notice of Intent" (NOI) form, as provided in the RGP is enclosed in Appendix A. The site operator is Jones Lang LaSalle Construction (JLL). JLL is the general Contractor and will hire a subcontractor to conduct the Site work, including the dewatering activities. Haley & Aldrich, Inc. (Haley & Aldrich) will monitor the Contractor's dewatering activities on behalf of Boston Medical Center (BMC). In accordance with the requirements for this NOI submission, BMC as the

potential future owner and JLL as the construction manager are listed as co-permittees for this NPDES RGP, and therefore both have signed the NOI form.

Appendix B provides Material Data Safety Sheets (MSDS) and fact sheets for possible chemical additives or treatments to be used in the treatment system. A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, is included in Appendix C. Appendices D and E include National Register of Historic Places and Endangered Species Act Documentation, respectively. Appendix F provides the BWSC Permit Application to be submitted separately to the Boston Water and Sewer Commission. A copy of the groundwater testing laboratory results are provided in Appendix G.

Closing

Thank you for your consideration of this NOI. Please feel free to contact us should you wish to discuss the information contained herein or if you need additional information.

Sincerely yours,
HALEY & ALDRICH, INC

Lee S. Vanzler
Staff Engineer

Rebecca B. Higgins
Senior Engineer

Mark X. Haley, P.E.
Senior Vice President

Attachments:

Table I - Summary of Groundwater Quality Data
Figure 1 - Site Locus
Figure 2 - Proposed Treatment System Schematic
Figure 3 - Proposed Dewatering Discharge Routes
Appendix A - Notice of Intent (NOI) for Remediation General Permit (RGP)
Appendix B - MSDS and Fact Sheets
Appendix C - Best Management Practices Plan (BMPP)
Appendix D - National Register of Historic Places and Massachusetts Historical Commission Documentation
Appendix E - Endangered Species Act Documentation
Appendix F – BWSC Permit Application
Appendix G – Laboratory Data Reports

c: Boston Medical Center; Attn: Deborah Hearl
Jones Lang LaSalle; Attn: Peter Stankiewicz
Oak Engineers; Attn: Sean Malone
Tsoi/Kobus & Associates; Attn: Stephen Palumbo
Boston Water and Sewer Commission; Attn: Francis McLaughlin
Massachusetts Department of Environmental Protection, Division of Watershed Management

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TABLE I
SUMMARY OF GROUNDWATER QUALITY DATA
BOSTON MEDICAL CENTER
670 ALBANY STREET
BOSTON, MASSACHUSETTS
FILE NO. 10666-641

SAMPLE DESIGNATION	**MA RCGW-2**	NPDES	**HA-09-2**
SAMPLING DATE	(ug/L)	RGP	1/13/2010
LAB SAMPLE ID		Effluent Limits	130627
VOCs (ug/L)			
Dichlorodifluoromethane	100000	NA	ND(2.5)
Chloromethane	10000	NA	ND(2.5)
Vinyl Chloride	2	2	**ND(2.5)**
Bromomethane	7	NA	ND(2.5)
Chloroethane	10000	NA	ND(2.5)
1,2-Dibromoethane (EDB)	2	0.05	ND(0.01)
1,2-Dibromo-3-chloropropane	1000	NA	ND(0.01)
Trichlorofluoromethane	100000	NA	ND(2.5)
Acrolein	1000	NA	ND(10)
1,1-Dichloroethene	80	3.2	ND(2.5)
Acetone	50000	NA	ND(10)
Carbon Disulfide	10000	NA	ND(10)
Methylene Chloride	10000	4.6	ND(2.5)
Acrylonitrile	10000	NA	ND(10)
trans-1,2-Dichloroethene	90	NA	ND(2.5)
Methyl tert-butyl Ether (MTBE)	5000	70	ND(2.5)
1,1-Dichloroethane	1000	70	ND(2.5)
Vinyl Acetate	NA	NA	ND(2.5)
cis-1,2-Dichloroethene	100	70	ND(2.5)
2-Butanone (MEK)	50000	NA	ND(10)
Chloroform	50	NA	ND(2.5)
1,1,1-Trichloroethane	4000	200	ND(2.5)
Carbon Tetrachloride	2	4.4	**ND(2.5)**
Benzene	2000	100	ND(2.5)
1,2-Dichloroethane	5	5	**ND(2.5)**
Trichloroethene	30	5	ND(2.5)
1,2-Dichloropropane	3	NA	**ND(2.5)**
Bromodichloromethane	6	NA	ND(2.5)
2-Chloroethyl Vinyl Ether	50000	NA	ND(10)
cis-1,3-Dichloropropene	10	NA	ND(2.5)
4-Methyl-2-Pentanone (MIBK)	50000	NA	ND(10)
Toluene	40000	100	ND(2.5)
trans-1,3-Dichloropropene	10	NA	ND(2.5)
1,1,2-Trichloroethane	900	5	ND(2.5)
Tetrachloroethene	50	5	ND(2.5)
2-Hexanone	10000	NA	ND(10)
Dibromochloromethane	20	NA	ND(2.5)
Chlorobenzene	200	NA	ND(2.5)
Ethylbenzene	5000	100	ND(2.5)
meta-Xylene and para-Xylene	5000	100	ND(2.5)
ortho-Xylene	5000	100	ND(2.5)
Styrene	100	NA	ND(2.5)
Bromoform	700	NA	ND(2.5)
1,1,2,2-Tetrachloroethane	9	320	ND(2.5)
1,3-Dichlorobenzene	2000	NA	ND(2.5)
1,4-Dichlorobenzene	200	5	ND(2.5)
1,2-Dichlorobenzene	2000	600	ND(2.5)
Total VOCs	NA	NA	ND
SVOCs (ug/L)			
N-Nitrosodimethylamine	5000	NA	ND(2.5)
Pyridine	50000	NA	ND(2.5)
Phenol	2000	300	ND(2.5)
Aniline	100000	NA	ND(2.5)
bis(2-Chloroethyl)ether	30	NA	ND(2.5)
2-Chlorophenol	7000	NA	ND(2.5)
1,3-Dichlorobenzene	2000	NA	ND(2.5)
1,4-Dichlorobenzene	200	NA	ND(2.5)
Benzyl Alcohol	NA	NA	ND(2.5)

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BOSTON, MASSACHUSETTS
FILE NO. 10666-641

SAMPLE DESIGNATION	**MA RCGW-2**	NPDES	**HA-09-2**
SAMPLING DATE	(ug/L)	RGP	1/13/2010
LAB SAMPLE ID		Effluent Limits	130627
1,2-Dichlorobenzene	2000	NA	ND(2.5)
2-Methylphenol	50000	NA	ND(2.5)
bis(2-Chloroisopropyl)ether	100	NA	ND(2.5)
3 and 4-Methylphenol	50000	NA	ND(2.5)
N-Nitrosodi-n-propylamine	5000	NA	ND(2.5)
Acetophenone	100000	NA	ND(2.5)
Hexachloroethane	100	NA	ND(2.5)
Nitrobenzene	50000	NA	ND(2.5)
Isophorone	10000	NA	ND(2.5)
2-Nitrophenol	10000	NA	ND(2.5)
2,4-Dimethylphenol	40000	NA	ND(2.5)
bis(2-Chloroethoxy)methane	50000	NA	ND(2.5)
2,4-Dichlorophenol	2000	NA	ND(2.5)
1,2,4-Trichlorobenzene	2000	NA	ND(2.5)
4-Chloroaniline	300	NA	ND(2.5)
Hexachlorobutadiene	1	NA	ND(2.5)
4-Chloro-3-methylphenol	100000	NA	ND(2.5)
Hexachlorocyclopentadiene	5000	NA	ND(2.5)
2,4,6-Trichlorophenol	500	NA	ND(2.5)
2,4,5-Trichlorophenol	3000	NA	ND(2.5)
2-Chloronaphthalene	100000	NA	ND(2.5)
2-Nitroaniline	NA	NA	ND(2.5)
1,4-Dinitrobenzene	10000	NA	ND(2.5)
Dimethylphthalate	50000	NA	ND(2.5)
1,3-Dinitrobenzene	10000	NA	ND(2.5)
2,6-Dinitrotoluene	10000	NA	ND(2.5)
1,2-Dinitrobenzene	10000	NA	ND(2.5)
3-Nitroaniline	NA	NA	ND(2.5)
2,4-Dinitrophenol	20000	NA	ND(5)
4-Nitrophenol	10000	NA	ND(2.5)
Dibenzofuran	10000	NA	ND(2.5)
2,4-Dinitrotoluene	20000	NA	ND(2.5)
Diethylphthalate	9000	NA	ND(2.5)
4-Chlorophenyl phenyl ether	100000	NA	ND(2.5)
4-Nitroaniline	100000	NA	ND(2.5)
4,6-Dinitro-2-methylphenol	5000	NA	ND(2.5)
N-Nitrosodiphenylamine	10000	NA	ND(2.5)
1,2-Diphenylhydrazine	5000	NA	ND(2.5)
4-Bromophenyl phenyl ether	10000	NA	ND(2.5)
Carbazole	NA	NA	ND(2.5)
Di-n-butylphthalate	5000	NA	ND(2.5)
Butylbenzylphthalate	10000	NA	ND(2.5)
3,3-Dichlorobenzidine	2000	NA	ND(2.5)
bis(2-Ethylhexyl)phthalate	50000	6	ND(2.5)
Di-n-octylphthalate	100000	NA	ND(2.5)
Total SVOCs	NA	NA	ND
PAHs (ug/L)			
Naphthalene	1000	20	ND(0.25)
2-Methylnaphthalene	2000	NA	0.8
Acenaphthylene	40	100	ND(0.25)
Acenaphthene	6000	100	ND(0.25)
Fluorene	40	100	0.7
Phenanthrene	10000	100	1.8
Anthracene	30	100	ND(0.25)
Fluoranthene	200	100	ND(0.25)
Pyrene	20	100	ND(0.25)
Benzo[a]anthracene	1000	ND	ND(0.05)
Chrysene	70	ND	ND(0.05)
Benzo[b]fluoranthene	400	ND	ND(0.05)

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670 ALBANY STREET
BOSTON, MASSACHUSETTS
FILE NO. 10666-641

SAMPLE DESIGNATION	**MA RCGW-2**	NPDES	**HA-09-2**
SAMPLING DATE	(ug/L)	RGP	1/13/2010
LAB SAMPLE ID		Effluent Limits	130627
Benzo[k]fluoranthene	100	ND	ND(0.05)
Benzo[a]pyrene	500	ND	ND(0.05)
Indeno[1,2,3-c,d]pyrene	100	ND	ND(0.05)
Dibenzo[a,h]anthracene	40	ND	ND(0.05)
Benzo[g,h,i]perylene	20	100	ND(0.05)
Hexachlorobutadiene	1	NA	ND(0.25)
Hexachlorobenzene	1	NA	ND(0.25)
Pentachlorophenol	200	1	ND(0.5)
Total PAHs	NA	NA	3.3
Total Metals (ug/L)			
Antimony, Total	8000	5.6	ND(1.5)
Arsenic, Total	900	36	ND(2.5)
Cadmium, Total	4	8.9	ND(2)
Chromium, Total	300	100	ND(5)
Chromium, Hexavalent	300	50.3	ND(5)
Copper, Total	100000	3.7	54
Iron, Total	NA	1000	300
Lead, Total	10	8.5	39
Lead, Dissolved	10	8.5	ND (2.5)
Mercury, Total	20	1.1	ND(0.1)
Nickel, Total	200	8.2	ND(20)
Selenium, Total	100	71	ND(2.5)
Silver, Total	7	2.2	ND(3.5)
Zinc, Total	900	85.6	ND(100)
PCBs (ug/L)			
Aroclor 1016	5	ND	ND(0.1)
Aroclor 1221	5	ND	ND(0.1)
Aroclor 1232	5	ND	ND(0.1)
Aroclor 1242	5	ND	ND(0.1)
Aroclor 1248	5	ND	ND(0.1)
Aroclor 1254	5	ND	ND(0.1)
Aroclor 1260	5	ND	ND(0.1)
Total PCBs	5	ND	ND
General Chemisty			
Oil and Grease, Total	NA	5,000	ND(2500)
Solids, Total Suspended	NA	30,000	25000
Cyanide, Total	30	1	ND(5)
Phenolics, Total	NA	NA	ND(100)
Chlorine, Total Residual	NA	7.5	ND(10)

Abbreviations:
NA : Not applicable
ND(2.5): Not detected; number in parentheses is one-half the laboratory detection limit

Notes:
1. NPDES Effluent Limits taken from Appendix III of the EPA Remediation & Miscellaneous Contaminated Sites General Permit (RGP)

SITE COORDINATES:42°20'6"N 71°4'13"W

U.S.G.S. QUADRANGLE: BOSTON SOUTH, MA

HALEY & ALDRICH

BOSTON MEDICAL CENTER
670 ALBANY STREET
BOSTON, MASSACHUSETTS

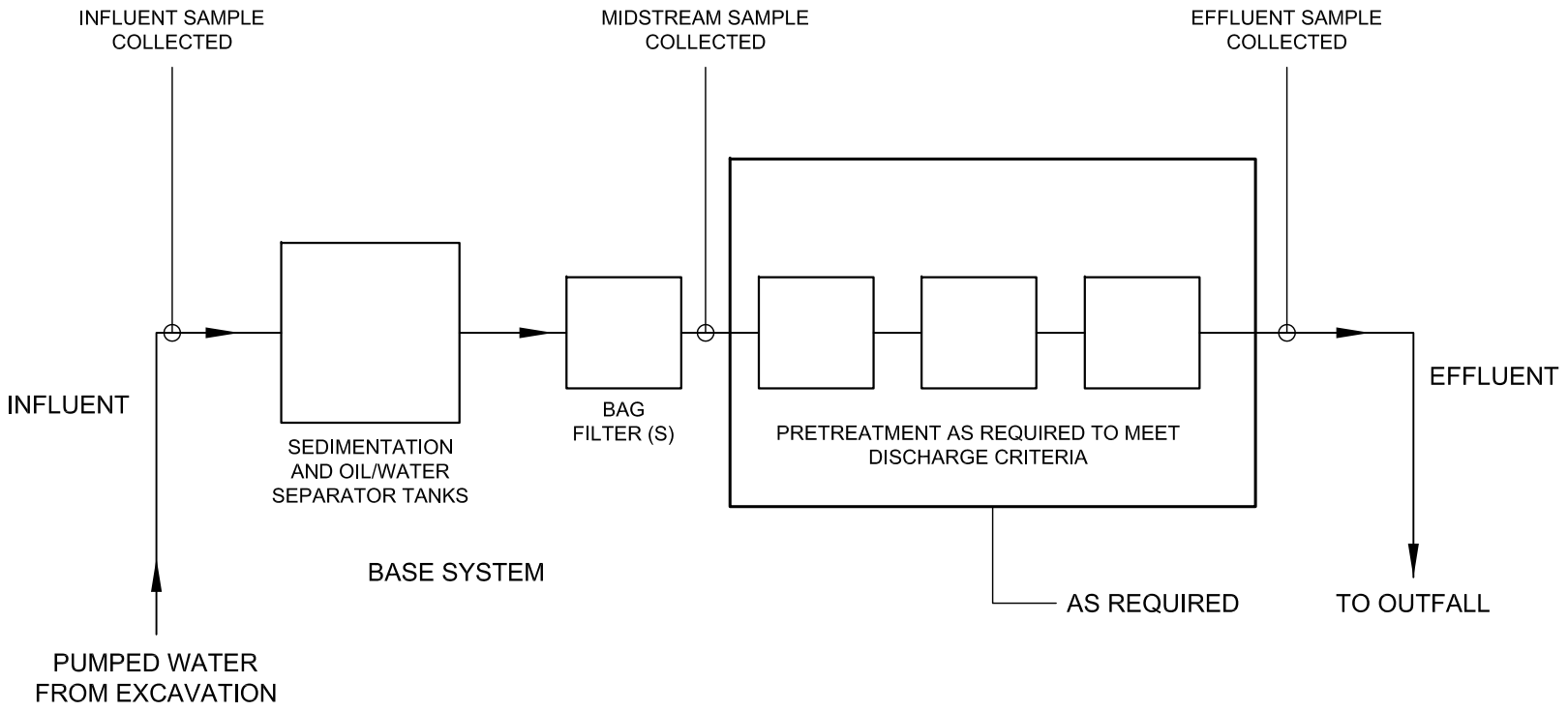
PROJECT LOCUS

SCALE: 1:24,000
MARCH 2010

FIGURE 1

10666-600 1.PDF

G:\10666\600\NPDES RGP\FIGURES\A142.DWG



LEGEND:

DIRECTION OF FLOW

NOTE:

1. DETAILS OF TREATMENT SYSTEM MAY VARY FROM SYSTEM INDICATED ABOVE. SPECIFIC MEANS AND METHODS OF TREATMENT TO BE SELECTED BY CONTRACTOR. WATER WILL BE TREATED TO MEET REQUIRED EFFLUENT STANDARDS.

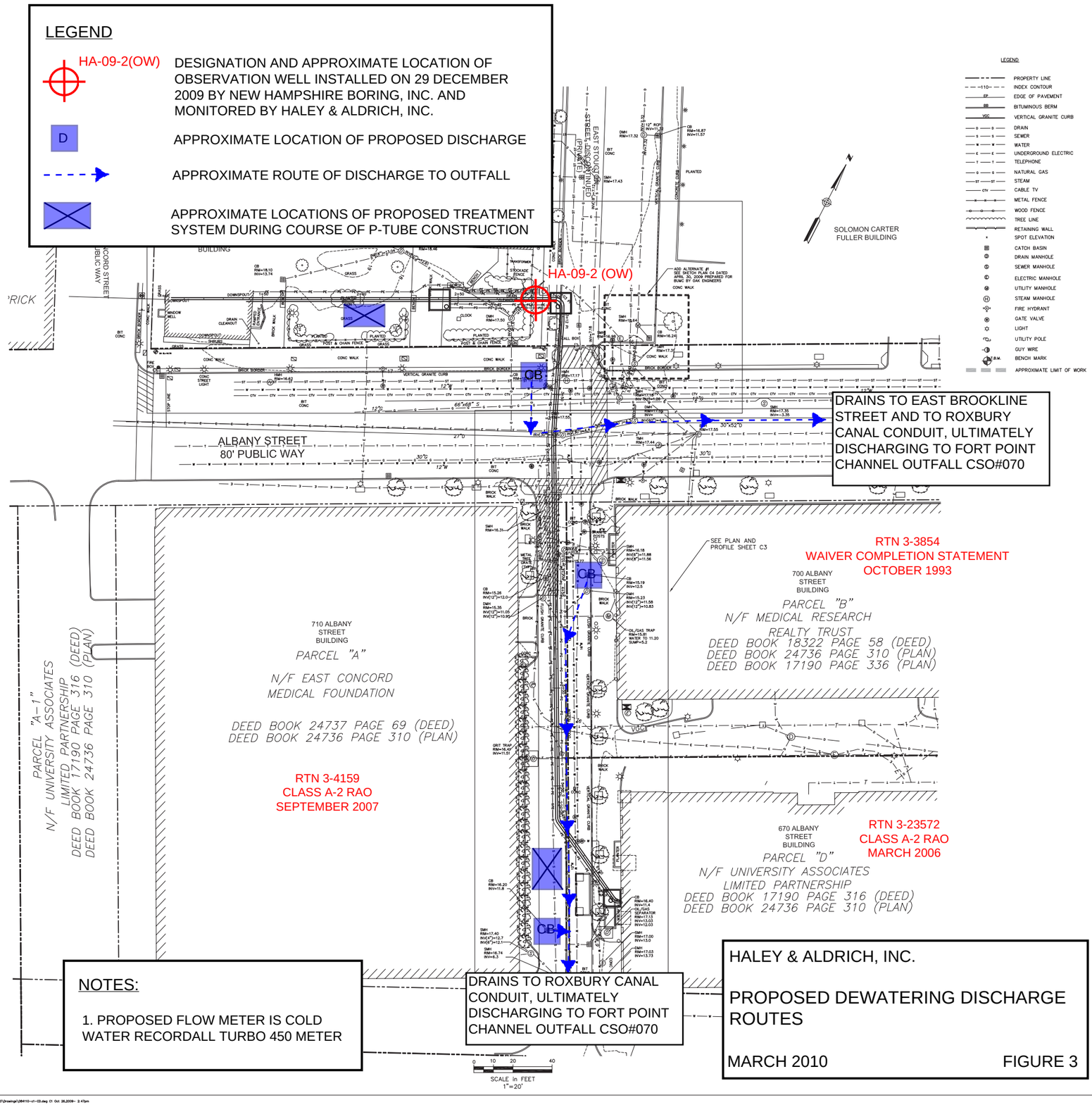
HALEY & ALDRICH

BOSTON MEDICAL CENTER
670 ALBANY STREET
BOSTON, MASSACHUSETTS

PROPOSED TREATMENT SYSTEM SCHEMATIC

SCALE: NONE
MARCH 2010

FIGURE 2



LEGEND

- PROPERTY LINE
- INDEX CONTOUR
- EP EDGE OF PAVEMENT
- BB BITUMINOUS BERM
- VGC VERTICAL GRANITE CURB
- D DRAIN
- S SEWER
- W WATER
- E UNDERGROUND ELECTRIC
- T TELEPHONE
- G NATURAL GAS
- ST STEAM
- CTV CABLE TV
- METAL FENCE
- WOOD FENCE
- TREE LINE
- RETAINING WALL
- SPOT ELEVATION
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- ELECTRIC MANHOLE
- UTILITY MANHOLE
- STEAM MANHOLE
- FIRE HYDRANT
- GATE VALVE
- LIGHT
- UTILITY POLE
- GUY WIRE
- B.M. BENCH MARK
- APPROXIMATE LIMIT OF WORK

EXISTING CONDITIONS NOTE:

1. EXISTING CONDITIONS SHOWN FROM FIELD SURVEY BY OAK ENGINEERS IN THE SPRING OF 2009 AND EXISTING RECORD PLANS AND INFORMATION PROVIDED BY BOSTON MEDICAL CENTER, BOSTON UNIVERSITY MEDICAL CENTER, BOSTON WATER AND SEWER COMMISSION, TRIGEN, NSTAR, COMCAST AND KEYSPAN.

SITE PREPARATION/DEMOLITION NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. CONTRACTOR SHALL CONDUCT TEST PITS OR VACUUM EXCAVATION TEST HOLES AT THE LOCATIONS OF P-TUBE CROSSING OF EXISTING WATER AND GAS LINES TO VERIFY ELEVATIONS PRIOR TO BEGINNING WORK. CONTRACTOR SHALL IMMEDIATELY SUBMIT LOGS FOR EACH TEST HOLE TO THE ENGINEER FOR REVIEW AND SHALL NOT BEGIN WORK UNTIL THIS INFORMATION HAS BEEN REVIEWED AND APPROVED BY THE ENGINEER.
3. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.
4. INSTALL EROSION CONTROL MEASURES AS FIRST ORDER OF WORK.
5. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND NOTIFY DIGSAFE 72 HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL PERMIT APPROVALS.
9. ALL LOAM STRIPPED FROM THE SITE AND EXCAVATED MATERIAL NOT RE-USED ONSITE SHALL BECOME THE PROPERTY OF THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROMPTLY REMOVE AND PROPERLY DISPOSE OF ANY EXCESS MATERIAL PER ALL APPLICABLE REGULATIONS.
10. SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVE OR EXISTING CURBLINE IN ALL AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.

SITE NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE LOCAL, STATE, AND FEDERAL CODES.
2. EXISTING PAINTED AREAS SUCH AS PARKING SPACES AND PAINTED ISLANDS THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RECONSTRUCTED IN KIND USING WHITE TRAFFIC PAINT. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248, TYPE IV.
3. EXISTING CROSS WALKS DISTURBED BY CONSTRUCTION SHALL BE RECONSTRUCTED IN-KIND USING THERMOPLASTIC PER THE CITY OF BOSTON STANDARDS.
4. CLEAN AND COAT VERTICAL FACE OF PAVEMENT AT SAWCUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
5. ALL UNDERGROUND ELECTRIC AND COMMUNICATIONS CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING WIRES.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
7. UNDERGROUND ELECTRICAL CONDUIT MATERIAL AND INSTALLATION SHALL CONFORM TO THE NATIONAL ELECTRIC CODE AND THE CITY OF BOSTON BUILDING CODE. THE CONTRACTOR SHALL EMPLOY A LICENSED ELECTRICIAN AND COORDINATE WITH THE OWNER FOR ALL ELECTRIC WORK.
8. THE CONTRACTOR SHALL COORDINATE WORK WITH THE RELOCATION OF THE EXISTING GAS MAIN WITH THE GAS COMPANY. THE EXISTING GAS LINE SHALL REMAIN OPERATIONAL UNTIL THE NEW GAS LINE IS INSTALLED AND SHUT DOWN OF GAS SERVICE SHALL BE MINIMAL AND COORDINATED WITH BOSTON MEDICAL CENTER. THE NEW GAS LINE WILL BE INSTALLED BY THE GAS COMPANY AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STREET OPENING, EXCAVATION AND BACKFILL, AND TRENCH PATCHING.
9. COORDINATE ALL WORK WITHIN THE ALBANY STREET RIGHT OF WAY WITH THE CITY OF BOSTON.
10. CONTRACTOR SHALL PROVIDE CERTIFIED AS-BUILT PLANS IN AUTOCAD FORMAT TO THE ENGINEER.
11. CONTRACTOR SHALL SURVEY AND INVENTORY ALL TREES, SHRUBS AND BUSHES TO BE DISTURBED PRIOR TO COMMENCING WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ALL VEGETATION DISTURBED BY CONSTRUCTION ACTIVITIES IN-KIND TO MATCH PRECONSTRUCTION CONDITION.
12. CONTRACTOR SHALL WARRANTY ALL VEGETATION PLANTED FOR A PERIOD OF ONE YEAR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF ANY OF THIS VEGETATION WHICH DIES OR IS DEEMED UNACCEPTABLE TO THE OWNER WITHIN THIS PERIOD.

GRADING, DRAINAGE & EROSION CONTROL NOTES:

1. ALL DISTURBED GRASSED AREAS SHALL RECEIVE 4" SCREENED LOAM, AND SOD GRADED AND INSTALLED TO MATCH EXISTING PRECONSTRUCTION CONDITIONS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND UPKEEP OF EROSION CONTROL MEASURES.
3. ADJUST ALL FRAMES AND COVERS OF MANHOLES, CATCHBASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
4. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND EXIT RAMPS ADJACENT TO THE BUILDING.
5. ALL CATCHBASINS AND DRAIN LINES WITHIN AND IMMEDIATELY ADJACENT TO THE LIMIT OF WORK SHALL BE THOROUGHLY CLEANED OF ALL SEDIMENT AND DEBRIS AFTER THE UPSTREAM AREA IS STABILIZED.
6. COMPACTION DENSITY REQUIREMENTS:

LOCATION	MINIMUM DENSITY*
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL BELOW LOAM AND SEED AREAS	95% 90%

*ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T-191, T-204, OR T-238 AND T-239.

7. PROVIDE INLET PROTECTION BARRIERS FOR ALL STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND IN CLOSE PROXIMITY TO WORK AREAS. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
8. THE CONTRACTOR SHALL BE FAMILIAR WITH WORKING IN THE CITY OF BOSTON AND THE VARIOUS LOCAL PERMITS THAT APPLY TO THIS PROJECT. THE CONTRACTOR SHALL BE SOLEY RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL CONSTRUCTION PERMITS AND INSPECTIONS REQUIRED BY THE CITY AND WITH ALL OTHER REGULATORY AGENCIES AND UTILITY COMPANIES.

P-TUBE CONSTRUCTION NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATION, SHORING, PUMPING, BACKFILL, PAVEMENT REPLACEMENT, SITE RESTORATION, TRAFFIC CONTROL, BARRICADES, AND DEWATERING, TO ENSURE A SAFE INSTALLATION. ALL TRENCHES, VAULT LOCATIONS, BELL HOLES, ETC., MUST BE WATER-FREE AT THE START TIME OF EACH DAY OF P-TUBE PROVIDER'S WORK WEEK. ALL TRENCH WORK SHALL BE PER OSHA STANDARDS.
2. THE CONTRACTOR TO PROVIDE BELL HOLES EVERY 20 FEET TO FACILITATE JOINING THE TUBES.
3. CONTRACTOR TO MAINTAIN A MINIMUM 12" SEPARATION BETWEEN P-TUBE ENCASEMENT AND EXISTING WATER, SEWER AND DRAIN PIPES.
4. THE MAXIMUM PERMISSIBLE DEFLECTION FOR THE CASING IS 0.5% OR 6" PER 100 FEET. THE CONTRACTOR SHALL ENSURE THAT THE FINISHED GRADE ON WHICH THE ENCASEMENT RESTS MEETS THIS CRITERIA. BUMPS OR DIPS ARE NOT ACCEPTABLE.
5. THE CONTRACTOR SHALL REVIEW, PRIOR TO CONSTRUCTION, THE SIZES OF THE PROPOSED VAULTS WITH THE P-TUBE PROVIDER TO CONFIRM THE REQUIRED BENDS CAN BE ACCOMMODATED.
6. THE P-TUBE PROVIDER SHALL SUPPLY AND INSTALL ALL PNEUMATIC TUBING AND RELATED HARDWARE.
7. THE CONTRACTOR SHALL PROVIDE VAULTS PER THE PLANS.
8. VAULTS SHALL SET ON 12" OF 3/4" CRUSHED STONE. THE BASE MUST BE 100% COMPACTED TO PREVENT VAULTS FROM SETTLING. OTHER MEASURES, SUCH AS PILES, MAY BE NECESSARY, DUE TO SOIL AND GROUND WATER CONDITIONS.
9. HOLES THROUGH VAULT WALLS TO BE CLEANLY SAW CUT, CORE DRILLED, OR PRECAST. JAGGED HOLES ARE UNACCEPTABLE.
10. UNKNOWN CONDITIONS THAT REQUIRE RAPID ELEVATION OR DIRECTION CHANGES, MAY REQUIRE ADDITIONAL VAULTS NOT SHOWN ON THE DRAWINGS. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND P-TUBE PROVIDER IF UNKNOWN CONDITIONS REQUIRING ALIGNMENT CHANGES ARE UNCOVERED.
11. VAULTS TO BE FABRICATED TO H-20 TRAFFIC LOADING STANDARDS.
12. THE CONTRACTOR SHALL SEAL THE P-TUBE SECTIONS TO THE VAULTS AND TO THE BUILDING FOUNDATION WALLS.
13. THE CONTRACTOR SHALL SEAL ALL VAULTS AND BUILDING FOUNDATION PENETRATIONS WATER TIGHT. CONSEAL OR SIMILAR PRODUCT IS ACCEPTABLE.
14. THE CONTRACTOR SHALL PROVIDE MANHOLES WITH RISERS FOR VAULT ACCESS AND SEAL MANHOLES WATER TIGHT. MANHOLE FRAME AND COVERS SHALL HAVE H-20 LOADING AND BE SET FLUSH TO FINISH GRADE.
15. THE CONTRACTOR SHALL PROVIDE A SUMP PUMP IN EACH VAULT TO ELIMINATE FLOODING OF VAULTS AND EXPOSING TUBES TO WATER. SUMP PUMP CAPACITY TO BE DETERMINED BY LOCAL GROUND WATER CONDITIONS. THE CONTRACTOR SHALL SUPPLY POWER, CONDUIT, ETC., FOR THE PUMPS. SUMPS ARE RECOMMENDED.
16. THE CONTRACTOR SHALL PROTECT INSTALLED TUBES IN AREAS WHERE NEW CONSTRUCTION WILL OCCUR AFTER TUBES ARE INSTALLED.
17. ALL BENDS ARE FORMED USING 16 GAUGE GALVANIZED STEEL TUBING, WITH A 50" CENTERLINE RADIUS.
18. THE P-TUBE PROVIDER WILL WRAP THE TUBES WITH TAPE COAT 20, HOT APPLIED, BITUMINOUS WRAP.
19. THE P-TUBE PROVIDER WILL WELD THE TUBE JOINTS USING A CONTINUOUS FEED WIRE MIG WELDER. ALL WELDED JOINTS WILL BE CONTINUOUS AROUND THE CIRCUMFERENCE OF THE TUBING JOINT.
20. THE P-TUBE PROVIDER WILL APPLY RAYCHEM CPSM 195/102-500-87 SHRINK SLEEVES (OR EQUAL) TO ALL WELDED TUBING JOINTS.
21. THE CONTRACTOR SHALL BACKFILL THE TRENCH WORK UNDER THE DIRECT SUPERVISION OF AN EMPLOYEE OF THE P-TUBE PROVIDER.

TK&A
TSOI/KOBUS & ASSOCIATES
ARCHITECTS

One Brattle Square P.O. Box 9114
Cambridge, MA 02238-9114
Tel: 617 475 4000 Fax: 617 475 4445
www.tka-architects.com

BOSTON MEDICAL CENTER

670 Albany Street
7th Floor Clinical Lab Fit-Out
670 Albany Street
Boston, MA 02118

Civil — **Oak Engineers**, Brown's Wharf, Newburyport, MA 01950, (978) 465-9977, (978) 465-2986 Fax
M/E/P/FP — **Cosentini Associates**, One Broadway, Cambridge, MA 02142, (617) 494-9200, (617) 494-9292 Fax
Lab Equipment — **C/W Design Group**, 4 Militia Drive, Suite 12, Lexington, MA 02421, (781) 274-7225, (781) 541-6359 Fax
Pneumatic Tube — **Swisslog Healthcare Solutions**, 1 East Broad Street, Suite 12, Bethlehem, PA 18018, (610) 694-0996, (866) 694-5557 Fax
Construction Mgr — **Jones Lang LaSalle**, 1 Post Office Square, Boston, MA 02109, (617) 523-8000, (312) 698-7783 Fax

Stamp

Revisions

No.	Description	Date

Consultant

OAK ENGINEERS
Brown's Wharf
Newburyport, MA 01950
Tel. (978) 465-9977
Fax (978) 465-2986
www.oakengineers.com

Drawing Title
PROPOSED P-TUBE OVERALL SITE PLAN

Job Number	28031-00
Drawn by	SPM
Checked	PFA
Date	10/30/2009
Plot scale	See Plan

Drawing No. **C1**

APPENDIX A

Notice of Intent (NOI) for Remediation General Permit (RGP)

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**: Boston Medical Center P Tube		**Facility/site** address:		
Location of **facility/site**: longitude: 42.335350 latitude: -71.070600	Facility SIC code(s):	Street: Between 670 and 710 Albany Street		
b) Name of **facility/site owner:** Boston Medical Center		Town: Boston		
Email address of owner: Deborah.Hearl@bmc.org		State: MA	Zip: 02118	County: Suffolk
Telephone no.of facility/site **owner**: 617-638-5635				
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: 750 Albany Street				
Town: Boston	State: MA	Zip: 02118	County: Suffolk	
c) Legal name of **operator**: Jones Lang LaSalle Construction	**Operator** telephone no: 617-531-4100			
	Operator fax no.: 312-416-5251	**Operator** email: Peter.Stankiewicz@am.jll.com		
Operator contact name and title: Peter Stankiewicz				
Address of **operator** (if different from owner):	Street: One Post Office Square			
Town: Boston	State: MA	Zip: 02109	County: Suffolk	
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: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number:	f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y___ N✔__, if Y, number: 2. phase I or II construction storm water general permit? Y___ N✔__, if Y, number: 3. individual NPDES permit? Y___ N✔__, if Y, number: 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:

Temporary construction dewatering in support of new below grade construction.

b) Provide the following information about each discharge:	1) Number of discharge points: 3	2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft3/s)? Max. flow 0.111 Average flow 0.111 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. 42.335350 lat. -71.070600; 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):	5) Is the discharge intermittent ✔ or seasonal ____? Is discharge ongoing Yes____ No ✔ ?__

c) Expected dates of discharge (mm/dd/yy): start 04/01/10 end 04/01/11

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 Figures 2 (Proposed Treatment System Schematic) and 3
(Proposed Dewatering Discharge Route).

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	GRAB	2540D	5000	25,000			
2. Total Residual Chlorine	✔		1	GRAB	4500CL-D	20	ND			
3. Total Petroleum Hydrocarbons	✔		1	GRAB	1664	5000	ND			
4. Cyanide	✔		1	GRAB	335.3	10	ND			
5. Benzene	✔		1	GRAB	624	5	ND			
6. Toluene	✔		1	GRAB	624	5	ND			
7. Ethylbenzene	✔		1	GRAB	624	5	ND			
8. (m,p,o) Xylenes	✔		1	GRAB	624	5	ND			
9. Total BTEX[4]	✔		1	GRAB	624	5	ND			

[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	GRAB	504.1	0.02	ND			
11. Methyl-tert-Butyl Ether (MtBE)	✔		1	GRAB	624	5	ND			
12. tert-Butyl Alcohol (TBA)										
13. tert-Amyl Methyl Ether (TAME)										
14. Naphthalene	✔		1	GRAB	8270 C	0.5	ND			
15. Carbon Tetra-chloride	✔		1	GRAB	624	5	ND			
16. 1,4 Dichlorobenzene	✔		1	GRAB	624	5	ND			
17. 1,2 Dichlorobenzene	✔		1	GRAB	624	5	ND			
18. 1,3 Dichlorobenzene	✔		1	GRAB	624	5	ND			
19. 1,1 Dichloroethane	✔		1	GRAB	624	5	ND			
20. 1,2 Dichloroethane	✔		1	GRAB	624	5	ND			
21. 1,1 Dichloroethylene	✔		1	GRAB	624	5	ND			
22. cis-1,2 Dichloro-ethylene	✔		1	GRAB	624	5	ND			
23. Dichloromethane (Methylene Chloride)	✔		1	GRAB	624	5	ND			
24. Tetrachloroethylene	✔		1	GRAB	624	5	ND			

[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	GRAB	624	5	ND			
26. 1,1,2 Trichloroethane	✔		1	GRAB	624	5	ND			
27. Trichloroethylene	✔		1	GRAB	624	5	ND			
28. Vinyl Chloride	✔		1	GRAB	624	5	ND			
29. Acetone	✔		1	GRAB	624	20	ND			
30. 1,4 Dioxane										
31. Total Phenols	✔		1	GRAB	420.2	200	ND			
32. Pentachlorophenol	✔		1	GRAB	624	1	ND			
33. Total Phthalates [6] (Phthalate esthers)	✔		1	GRAB	624	5	ND			
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✔		1	GRAB	624	5	ND			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)										
a. Benzo(a) Anthracene	✔		1	GRAB	8270 C	0.1	ND			
b. Benzo(a) Pyrene	✔		1	GRAB	8270 C	0.1	ND			
c. Benzo(b)Fluoranthene	✔		1	GRAB	8270 C	0.1	ND			
d. Benzo(k) Fluoranthene	✔		1	GRAB	8270 C	0.1	ND			
e. Chrysene	✔		1	GRAB	8270 C	0.1	ND			

[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	GRAB	8270 C	0.1	ND			
g. Indeno(1,2,3-cd) Pyrene	✔		1	GRAB	8270 C	0.1	ND			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)										
h. Acenaphthene	✔		1	GRAB	8270 C	0.5	ND			
i. Acenaphthylene	✔		1	GRAB	8270 C	0.5	ND			
j. Anthracene	✔		1	GRAB	8270 C	0.5	ND			
k. Benzo(ghi) Perylene	✔		1	GRAB	8270 C	0.1	ND			
l. Fluoranthene	✔		1	GRAB	8270 C	0.5	ND			
m. Fluorene		✔	1	GRAB	8270 C	0.5	.7			
n. Naphthalene-	✔		1	GRAB	8270 C	0.5	ND			
o. Phenanthrene		✔	1	GRAB	8270 C	0.5	1.8			
p. Pyrene	✔		1	GRAB	8270 C	0.5	ND			
37. Total Polychlorinated Biphenyls (PCBs)	✔		1	GRAB	608	0.2	ND			
***3*8. Antimony**	✔		1	GRAB	200.8	3	ND			
39. Arsenic	✔		1	GRAB	200.8	5	ND			
40. Cadmium	✔		1	GRAB	200.7	4	ND			
41. Chromium III	✔		1	GRAB	200.7	10	ND			
42. Chromium VI	✔		1	GRAB	3500 CR-D	10	ND			

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	GRAB	200.7	50	54			
44. Lead		✔	1	GRAB	200.8	2	39			
45. Mercury	✔		1	GRAB	245.1	0.2	ND			
46. Nickel	✔		1	GRAB	200.7	40	ND			
47. Selenium	✔		1	GRAB	200.8	5	ND			
48. Silver	✔		1	GRAB	200.7	7	ND			
49. Zinc	✔		1	GRAB	200.7	200	ND			
50. Iron		✔	1	GRAB	200.7	100	300			
Other (describe): See Table I attached										

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? Copper, Lead
Step 2: For any metals which have **reasonable potential** to exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metals: (Saltwater Discharge) DF: N/A	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: Not applicable for saltwater

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: Please see attached						
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 50 Maximum flow rate of treatment system 50 Design flow rate of treatment system Not applicable						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): Please see attached						

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: Effluent will be discharged to a storm drain located within or near the site, which discharges through the Roxbury Conduit, into the Fort Point Channel						
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 SB,						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water (Saltwater Discharge) 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)? Priority Organics, Pathogens Is there a TMDL? Yes No If yes, for which pollutant(s)? listed under Cat. 5 Waters, Waters Requiring a TMDL						

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: Boston Medical Center P Tube

Operator signature: 

Title: Jones Lang LaSalle - Senior Vice President

Date: 03/23/10

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: Boston Medical Center

Owner Signature: DWHearl

Title: Project Manager

Date: 3.24.10

APPENDIX B

MSDS and Fact Sheets

USFILTER WESTATES CARBON

AQUACARB® 830 AND 1240

Coal based granular activated carbon

(Formerly KG-401 and KG-502)

FOR MUNICIPAL, INDUSTRIAL AND REMEDIAL WATER TREATMENT

Description & Applications

AquaCarb® 830 and AquaCarb® 1240 are high activity granular activated carbons manufactured from selected grades of bituminous coal. Manufactured by direct activation, they exhibit exceptional hardness and attrition resistance and have become a cost effective choice for use in municipal, industrial and remedial water treatment applications. These high surface area microporous carbons have been specifically developed for the removal of a broad range of organic contaminants from potable, waste and process waters.

- ANSI/NSF Standard 61 classified for use in potable water applications
- Fully conforms to physical, performance and leachability requirements established by the current ANSI/AWWA B604 (which includes the Food Chemical Codex requirements)
- A detailed quality assurance program guarantees consistent quality from lot to lot and shipment to shipment

Quality Control

All AquaCarb® activated carbons are extensively quality checked at our State of California certified environmental and carbon testing laboratory located in Los Angeles, CA. USFilter's laboratory is fully equipped to provide complete quality control analyses using ASTM standard test methods in order to assure the consistent quality of all AquaCarb® carbons.

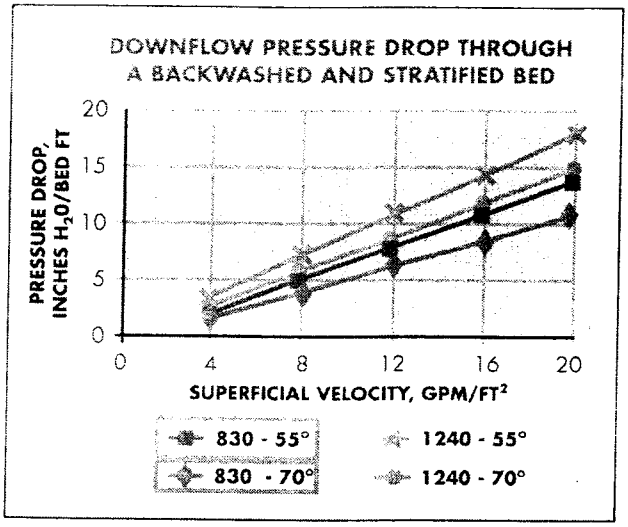
Our technical staff offers hands-on guidance in selecting the most appropriate system, operating conditions and carbon to meet your needs. For more information, contact your nearest USFilter representative.

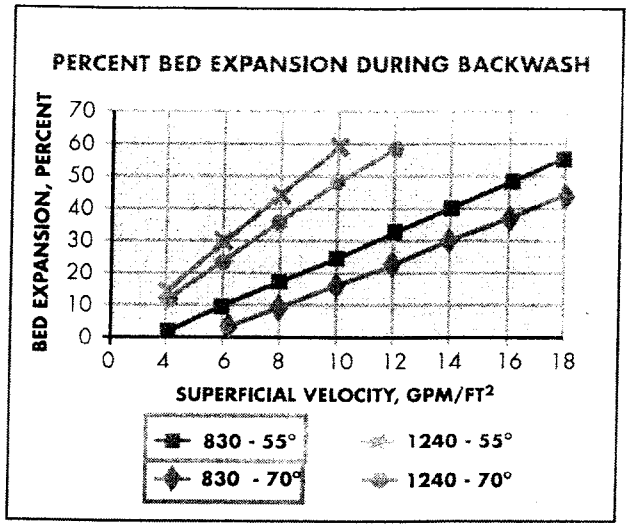
USFilter

AQUACARB® 830
AQUACARB® 1240

Coal based granular activated carbon

(Formerly KG-401 and KG-502)





Safety Note: Wet activated carbon depletes oxygen from the air and therefore dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the vessel's oxygen content should be determined and work procedures for potentially low oxygen areas should be followed. Read Material Safety Data Sheet (MSDS) before using this product.

All information presented herein is believed reliable and in accordance with accepted engineering practices. USFilter makes no warranties as to the completeness of this information. Users are responsible for evaluating individual product suitability for specific applications. USFilter assumes no liability whatsoever for any special, indirect or consequential damages arising from the sale, resale or misuse of its products.

SPECIFICATIONS/TYPICAL PROPERTIES

Specification	AquaCarb® 830	AquaCarb® 1240
Carbon Type	Bituminous Coal	Bituminous Coal
Mesh Size, U.S. Sieve	8 x 30	12 x 40
Effective Size, mm	0.8 - 1.1	0.55 - 0.75
Uniformity Coefficient (max)	2.1	1.9
Iodine No., mgI_2/g (min.)	900	1000
Abrasion No., Wt. % (min.)	80	80
Apparent Density, g/cc	0.46 - 0.54	0.46 - 0.54

USFilter reserves the right to change the specifications referred to in this literature at any time without prior notice. AquaCarb is a trademark of United States Filter Corporation or its affiliates.

USFilter

Westates
Customer and
Technical Service Network:

Gulf Coast Region 800.659.1723
(Louisiana) 225.744.3153
Western Region 800.659.1771
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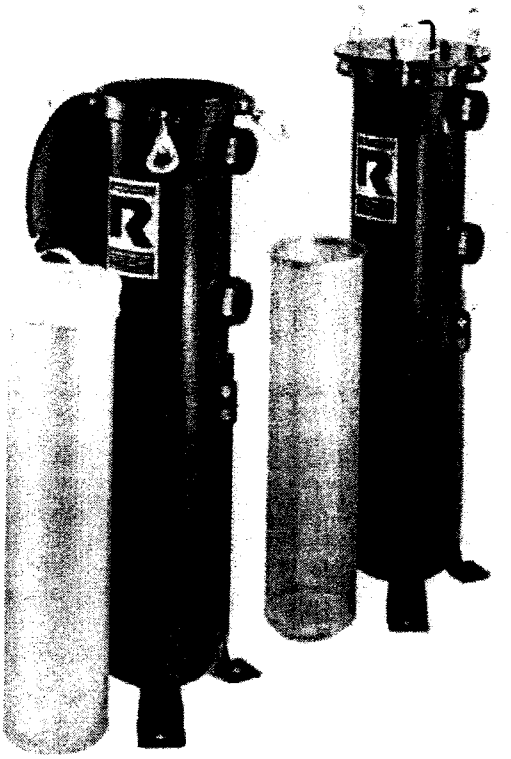
Midwest Region 708.345.7290
Northwest Region 800.659.1718
Southeast Region 225.744.3153
New England Region 800.659.1717

www.usfilter.com

Model NCO Bag or Cartridge Filter Housings

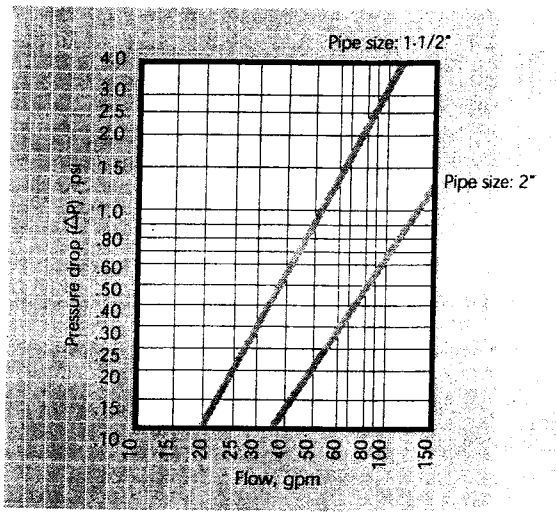
Low cost filter housings for flow rates to 100 gpm*



NCO high-capacity filters offer an exceptional value in basic filtration applications. Offered in a size 2 and size 12 bag housing, the NCO is also available with our Platinum 700 cartridge series.

NCO housings provide large dirt-holding capacity combined with a rugged design rated to 150 psi. The housings incorporate a newly designed hinged, eyenut cover that is easily removed, reducing time spent on bag or cartridge change-out. The NCO bag housing offers versatility for any piping arrangement, utilizing our unistyle design (side and bottom outlet). Two connection sizes are available for both bag and cartridge filters.

The NCO housings are electropolished creating a smooth, easy-to-clean surface. Customize them with several options including, gauges and switches. A variety of filter bags or cartridges (rated 0.5µ absolute to 100µ nominal) can be utilized in this housing. Keep your filtration process cost effective without sacrificing quality.



* Based on housing only. Fluid viscosity, filter bag used, and expected dirt loading should be considered when sizing a filter.

Permanently piped housings are opened without special tools

Carbon or stainless steel housings

Covers are O-ring sealed

O-ring seals: Buna N, EPR and Viton®

150 psi rated housing

Heavy-duty basket, over 50% open area

Uses standard number 1, 2 or 12 size bags and 500 or 700 series cartridges

Filter selection surface area is:
2.3 square feet (number 1 size bag),
4.4 square feet (number 2 size bag),
5.6 square feet (number 12 size bag)
85 square feet (500 series cartridge)
125 square feet (700 series cartridge)

1-1/2-inch or 2-inch NPT inlet and outlet

1/4-inch NPT vent connection

Adjustable leg assembly

How To Order

Build an ordering code as shown in the example.

NSF QUALITY SYSTEM REGISTERED TO ISO 9001: 1994

Example : Housing: **NCO8-30 - 2P - * - 150** Options: **- C - B - PB**

MODEL
NCO8 (#1, #2 bag & 500 cartridge)
NLCO8 (#12 bag)
NCO8135 (700 cartridge)
NCO8135 convertible

BASKET SIZE
15-inch (NCO only) = **15**
30-inch (NCO or NLCO) = **30**
NCO8135 = **No Symbol**

PIPE SIZE
1-1/2-inch female NPT = **1-1/2P**
2-inch female NPT = **2P**

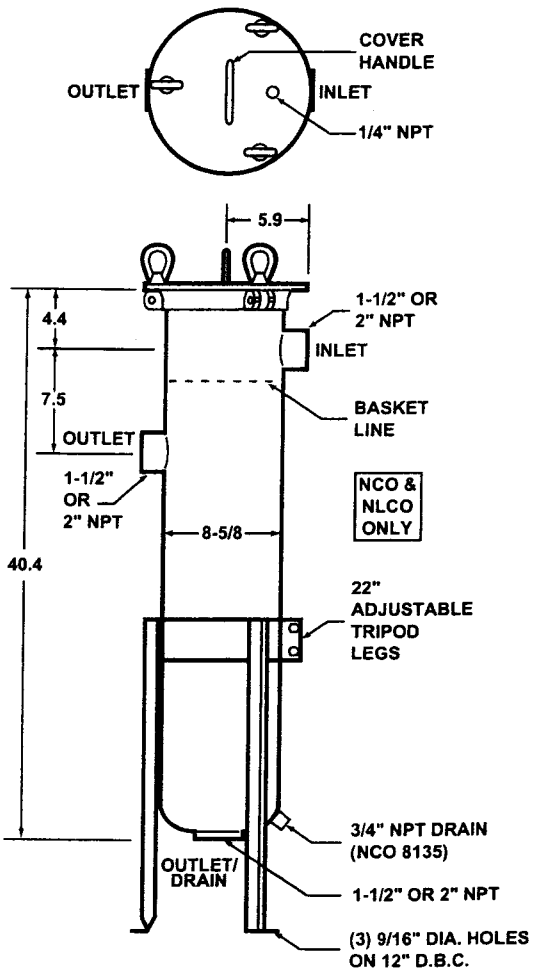
OUTLET STYLE
Side/Bottom Unistyle (NCO or NLCO) = *****
Bottom = **1**

PRESSURE RATING
150 psi = **150**

HOUSING MATERIAL
Carbon steel = **C**
304 Stainless steel = **S**

COVER SEAL
Buna N = **B**
Ethylene propylene = **E**
Viton® Fluoroelastomer = **V**

BASKET TYPE
Filter bag basket (NCO or NLCO) = **PB**
700 Cartridge (NCO8135) = **700**
Convertible (NCO8135) = **700PB**



1. Filter bags are specified separately. See Rosedale Master Catalog 3rd edition.
2. Basket material is compatible with housing.
3. Weight (approximately): 70 lbs.

Rosedale Products, Inc.
3730 W. Liberty Rd, Ann Arbor, MI 48103
Tel: 800-821-5373 or 734-665-8201
Fax: 734-665-2214
http://www.rosedaleproducts.com/
E-mail: filters@rosedaleproducts.com

Call us today for our complete catalog or visit our web site to see our entire product line.

Sheet NCO-100 5M605 Printed in USA

RESINTECH ASM-10-HP

ANION EXCHANGE RESIN
ARSENIC SELECTIVE

RESINTECH ASM-10-HP is a strongly basic hybrid anion exchange resin specially formulated to selectively remove arsenic. It is supplied in the salt form as clean, moist, tough, uniform, spherical beads.

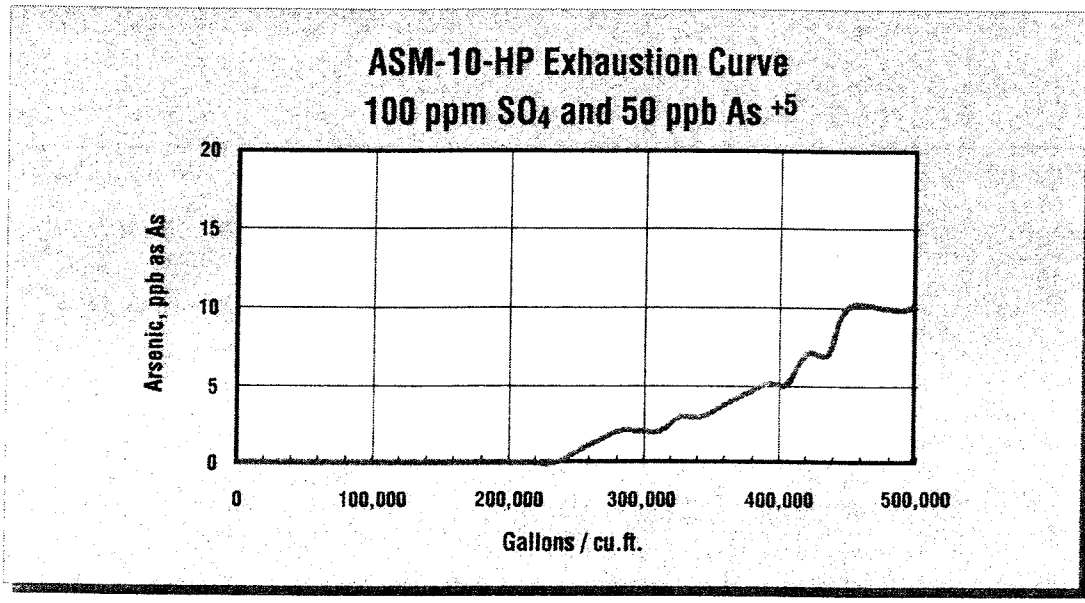
RESINTECH ASM-10-HP exhibits extraordinary throughput capacity in arsenic removal service on potable water supplies. Its performance is virtually unaffected by common anions, such as chlorides, bicarbonates or sulfates. It is effective over the entire pH range of potable water.

RESINTECH ASM-10-HP is also available in organic trap, perchlorate selective and nitrate selective configured resins. These resins are fully selective for arsenic, but still retain their original ion exchange selectivity.

FEATURES & BENEFITS

- **TREMENDOUS AFFINITY FOR ARSENIC OVER OTHER ANIONS**
  Highest arsenic removal capacity of organic based arsenic removal media
- **MADE FROM NSF/ANSI-61 VALIDATED ANION EXCHANGE RESIN**
- **NO ARSENIC DUMPING**
  Effluent arsenic levels will not exceed influent levels if resin is operated past exhaustion point
- **EFFECTIVE ACROSS THE ENTIRE POTABLE WATER pH RANGE**
- **SINGLE USE OR REGENERABLE APPLICATIONS**
- **SUPERIOR PHYSICAL STABILITY**
  Spherical and uniform particle size provide low pressure drop and greater resistance to bed compaction. Unlike granular, coated medias, ASM-10-HP will not shed particles.

Exhaustion Curve



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RESINTECH® ASM-10-HP

PHYSICAL PROPERTIES (Cl form)

Polymer Structure	Styrene with DVB
Functional Group	R-N-R$^+$Cl$^-$
Ionic Form, as shipped	Chloride
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50 Nominal
- 50 mesh (U.S. Std)	Less than 1 Percent
pH Range	4 to 10
Water Retention	35 to 55 Percent
Solubility	Insoluble
Approximate Shipping Weight	44 lbs./ft^3
Total Capacity	>1.0 meq / mL
Sphericity	> 93 Percent

WATER QUALITY GUIDELINES

Feedwater quality (aside from arsenic) should generally be of potable quality. Please consult your ResinTech technical salesman for recommendations outside the following guidelines:

Conductivity	1000 micromhos/cm
Chloride	250 ppm
Sulfate	250 ppm
pH	5.5 to 9.5
Phosphate	5 ppm
Silica	10 ppm
Turbidity	5 NTU
Chlorine	0.3 ppm

SUGGESTED OPERATING CONDITIONS

Flow Rate	2 to 10 gpm/cu. ft.
	1 to 20 gpm/sq. ft.
Pressure Loss	25 psi max.
Temperature	170°F max.

OPERATING CAPACITY

Under ideal conditions, the 1st cycle throughput capacity for arsenic removal with approximately 50 ppb As^{+5} in the inlet is greater than 500,000 gallons per cu. ft., while producing less than 10 ppb of effluent arsenic. The throughput capacity varies inversely with changes in the influent arsenic levels.

RESINTECH ASM-10-HP has modest capacity for arsenite (As^{+3}). It is suggested that if the arsenite concentration exceeds 20% of the total arsenic present, the feedwater should be pre-chlorinated to ensure conversion to arsenate (As^{+5}).

ASM-10-HP is also selective for other oxy-anions, such as selenate. It will remove modest amounts of both phosphate and silica.

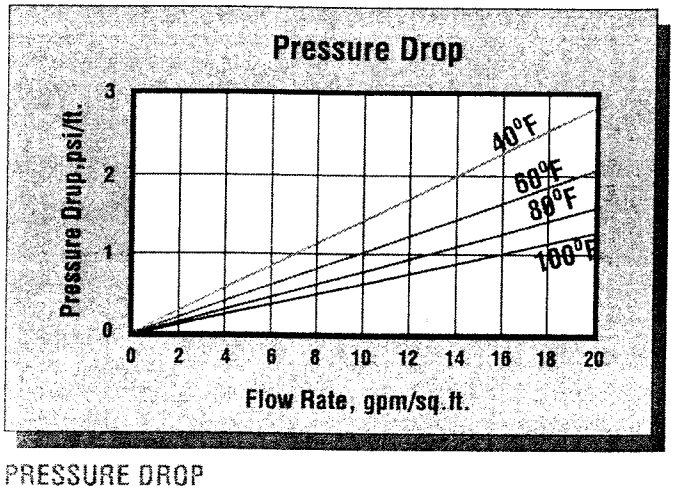
REGENERATION

ResinTech ASM-10-HP can be partially regenerated in the field with alkaline brine. For additional information contact your local ResinTech representative.

DISPOSAL

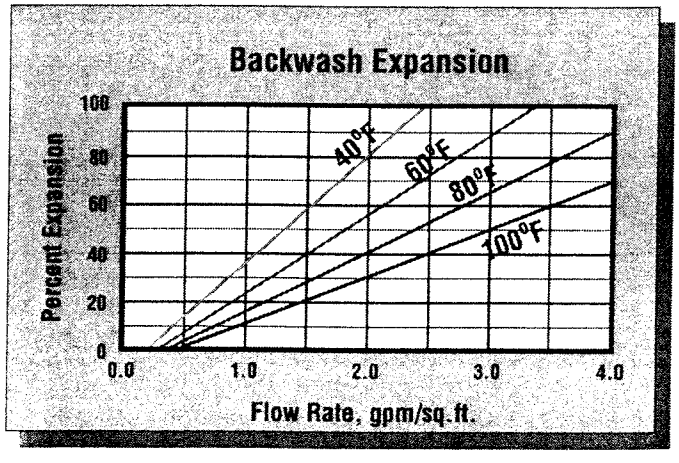
It is recommended that users review local regulations and consult with local authorities on the best method of disposal.

HYDRAULIC PROPERTIES



PRESSURE DROP

The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate at various water temperatures.



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed.

RESINTECH

CGS

CATION EXCHANGE RESIN
SOFTENING GRADE
Na FORM

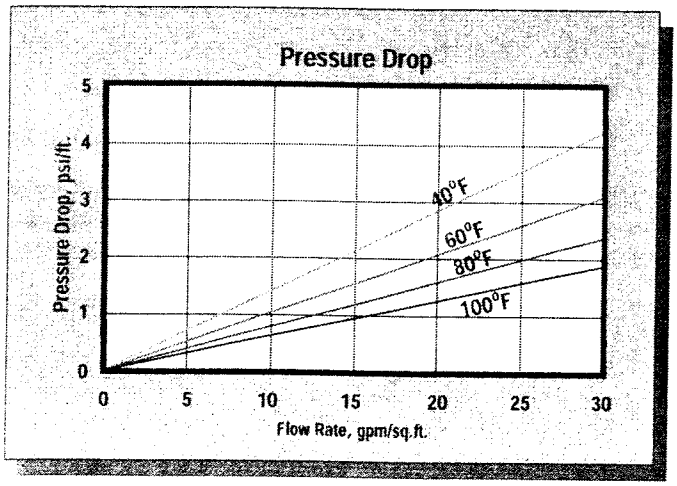
RESINTECH CGS is a high purity, light colored, high capacity, gel type sulfonated polystyrene cation resin supplied in the sodium form as moist, tough uniform spherical beads. *ResinTech CGS* specifically is intended for use in all water softening applications,including beverages, potable water and water used for food processing. It's high capacity and high DVB content provide long life and good chlorine resistance in all potable water applications. (It is also available as a dark colored product *RESINTECH CGS-BL* with identical properties.)

FEATURES & BENEFITS

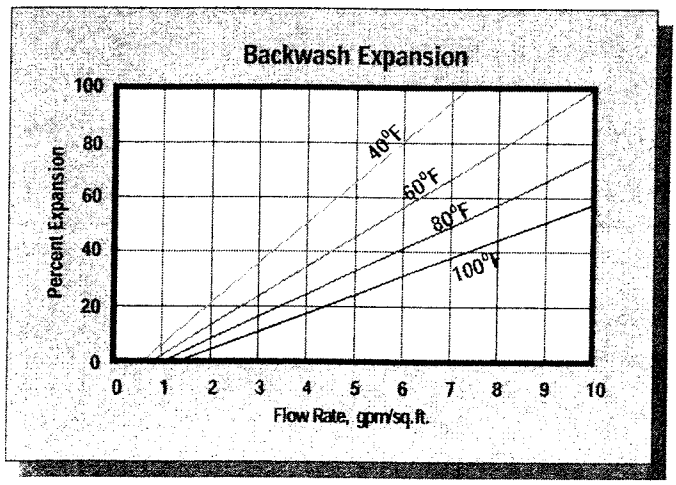
- **COMPLIES WITH FDA REGULATIONS FOR POTABLE WATER APPLICATIONS**
  Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the F.D.A.*
- **EXCELLENT REGENERATION EFFICIENCY**
  Virtually the same operating capacity as premium grade *ResinTech CG8-BL*
- **NSF/ANSI-61 VALIDATED**
- **UNIFORM PARTICLE SIZE**
  16 to plus 50 mesh range; gives a LOWER PRESSURE DROP while maintaining SUPERIOR KINETICS.
- **SUPERIOR PHYSICAL STABILITY**
  90% plus sphericity and high crush strengths together with a very uniform particle size provide greater resistance to bead breakage while maintaining low pressure drops.
- **LOW COLOR THROW**

*For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to insure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP - The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate, at various temperatures.



BACKWASH - After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *RESINTECH CGS* in the sodium form.

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RESINTECH® CGS

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	$R\text{-}(SO_3)^-M^+$
Ionic Form, as shipped	Sodium
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std)	< 5 percent
-50 mesh (U.S. Std)	< 1 percent
pH Range	0 to 14
Sphericity	90+ percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Sodium Form	48 to 54 percent
Solubility	Insoluble
Shipping Weight	
Sodium Form	48 lbs./cu.ft.
Total Capacity	
Sodium Form	1.8 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Temperature	
Sodium Form	250^0 F
Minimum Bed Depth	24 inches
Backwash Rate	50 to 75% Bed Expansion
Regenerant (NaCl or KCl)	
Concentration	10 to 15 percent
Flow Rate	0.5 to 1.5 gpm/cu.ft.
Contact Time	> 20 minutes
Level	4 to 15 pounds/cu.ft.
Displacement Rate	Same as Regen Flow Rate
Volume	10 to 15 gallons/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Volume	35 to 60 gallons/cu.ft.
Service Flow Rate	2 to 10 gpm/cu.ft.

OPERATING CAPACITY

Sodium Chloride (NaCl) Regeneration

The sodium cycle operating capacity of *RESINTECH CGS* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as $CaCO_3$, is shown in the following table:

Pounds NaOH/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

Potassium Chloride (KCl) Regeneration

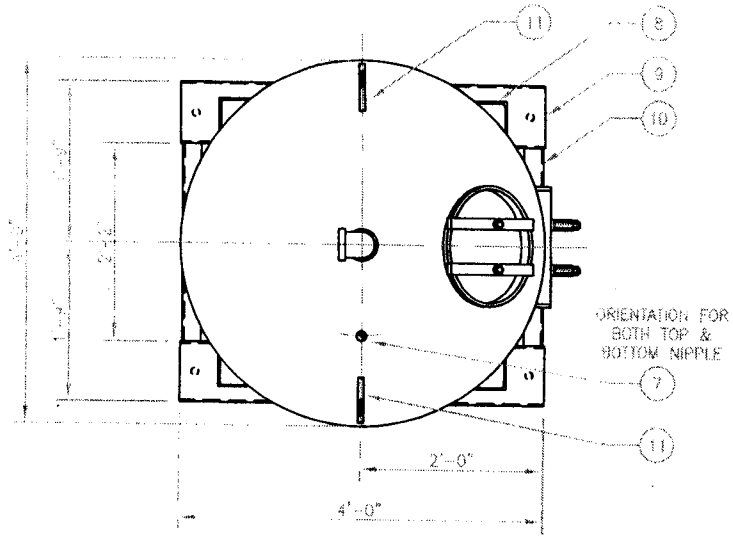
The potassium cycle operating capacity of *RESINTECH CGS* for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as $CaCO_3$, is shown in the following table:

Pounds NaOH/cu.ft.	Capacity Kilograins/cu.ft.
5	16.6
7.5	21.8
10	26.6
15	31.2

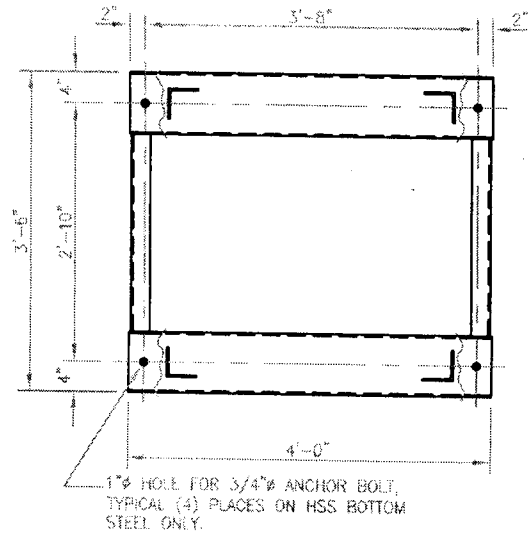
APPLICATIONS

Softening

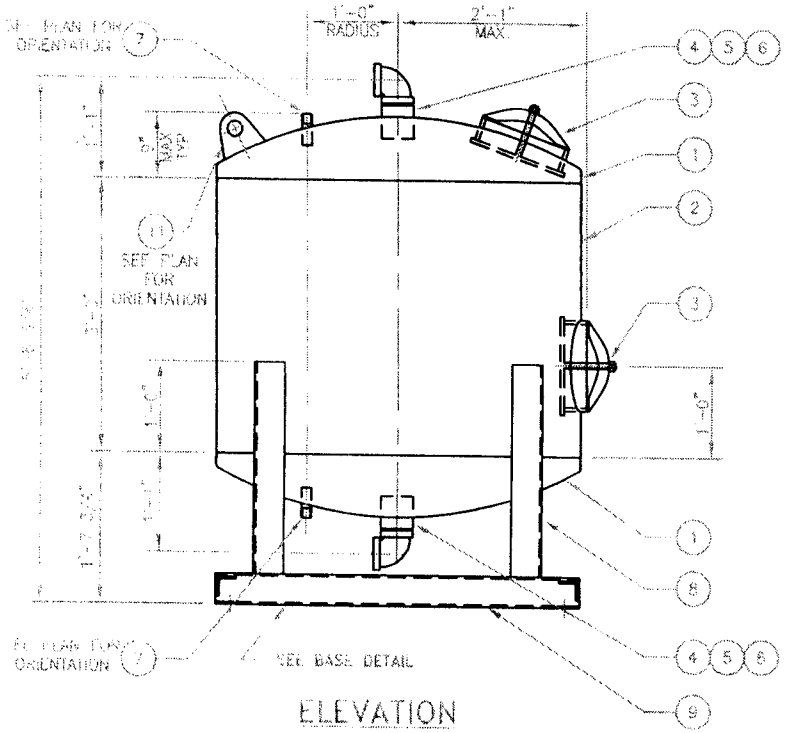
RESINTECH CGS is ideally suited for industrial, commercial, or residential softening applications where free chlorine is not present because of its high capacity, uniform particle size and good physical stability.



PLAN



BASE DETAIL



ELEVATION

#	QTY.	DESCRIPTION
1	2	C.S. STD. Flanged&Dished Non-Code tank head 3/16" THK.
2	1	C.S. 3/16" THK. x 48" OD x 36" Long
3	2	C.S. Elliptical Non-Code Manway Assembly 12"x16" w/ 2 yoke
4	2	3"ø, 150 LBS, C.S. Black Pipe Threaded Coupling
5	2	3"ø, SCH 40, C.S. Close Threaded Nipple
6	2	3"ø, 150 LBS, C.S. Black Pipe 90° Elbow
7	2	1"ø, SCH 40, C.S. 4" Long Threaded Nipple
8	4	Angle 4" x 4" x 1/4" Support Leg
9	2	HSS 8" x 4" x 1/4" Base
10	2	Angle 2 1/2" x 2 1/2" x 1/4" Cross Tie
11	2	Lifting Lug (Design by Fabricator, See Note 2)

GENERAL NOTES

1) MATERIAL SHALL BE CARBON STEEL GRADE A 36 UNLESS NOTED OTHERWISE.

2) FABRICATOR TO DESIGN LIFTING LUGS TO MEET 4000 LBS LIFTING REQUIREMENT.

3) TANK INTERIOR SHALL BE SANDBLASTED TO SSPC-SP-5 WHITE METAL FINISH, PAINTING BY OTHERS.

4) TANK EXTERIOR SANDBLASTING AND PAINTING BY OTHERS.

5) TANK SHALL BE LEVEL +/- ONE DEGREE.

6) FABRICATION TOLERANCE SHALL BE +/- (1/4) INCH.

7) UNLESS NOTED OTHERWISE, ALL WELDS SHALL BE SEAL WELD, ALL JOINTS SHALL BE WELDED BOTH SIDE WHERE APPLICABLE.

8) STEEL PLATES JOINING METHOD SHOWN ARE INTENDED FOR REFERENCES ONLY, FINAL STEEL JOINING METHOD SHALL BE DETERMINE BY FABRICATOR TO SUIT THEIR SHOP PREFERENCES.

9) THE TANK SHALL BE PRESSURE TESTED TO HOLD WATER AT FULL CAPACITY AT 75 PSI PRIOR SHIPMENT.

10) THIS DRAWINGS IS THE PROPERTY OF GROUND/WATER TREATMENT & TECHNOLOGY, INC

NO.	REVISIONS	DATE
A	FOR QUOTATION	06/28/05

1000 LBS LIQUID PHASE ADSORPTION TANK GENERAL ARRANGEMENT & DETAILS

SCALE:	NONE	APPROVED:	DRAWN BY: TLo
DATE:	06/27/05		

GROUNDWATER TREATMENT & TECHNOLOGY
P.O. BOX 1174
DENVILLE, NJ 07834

FILE: 11-1181 DRAWING NUMBER: M-01

SBG1

ANION EXCHANGE RESIN
TYPE ONE GEL
Cl OR OH FORM

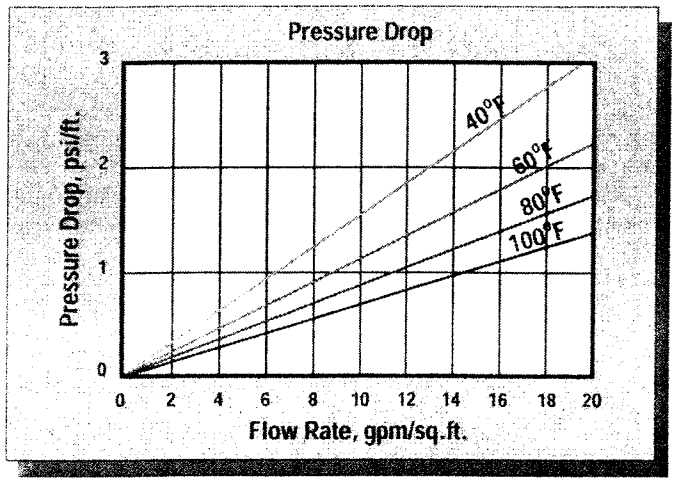
ResinTech SBG1 is a high capacity, shock resistant, gelular, Type 1, strongly basic anion exchange resin supplied in the chloride or hydroxide form as moist, tough, uniform, spherical beads. *ResinTech SBG1* is intended for use in all types of deionization systems and chemical processing applications. It is similar to *ResinTech SBG1P* but has a higher volumetric capacity and exhibits lower TOC leach rates. This makes it the better performer in single use applications such as in cartridge deionization and when high levels of regeneration are used such as in polishing mixed beds. On the other hand, *ResinTech SBG1P* is more resistant to organic fouling and gives higher operating capacities at low regeneration levels such as those used in make up demineralizers.

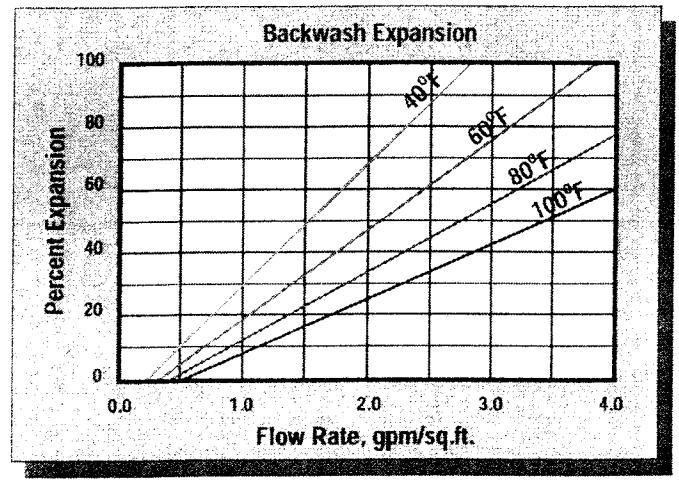
FEATURES & BENEFITS

- **COMPLIES WITH FDA REGULATIONS FOR POTABLE WATER APPLICATIONS.**
  Conforms to paragraph 21CFR173.125 of the Food Additives Regulations of the F.D.A.*
- **HIGH TOTAL CAPACITY**
  Provides longer run lengths in single use applications or where high levels of regeneration are used such as in mixed bed polishers, cartridge demineralizers.
- **UNIFORM PARTICLE SIZE**
  16 to plus 50 mesh range; gives a LOWER PRESSURE DROP while maintaining SUPERIOR KINETICS.
- **SUPERIOR PHYSICAL STABILITY**
- **LOWER TOC LEACH RATE**
  Makes it ideal for polishing mixed beds in wafer washing and other high purity water polishing applications.

*For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to ensure compliance with extractable levels.

HYDRAULIC PROPERTIES





PRESSURE DROP

The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate, at various temperatures.

BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *ResinTech SBG1* in the sodium form.

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RESINTECH® SBG1

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-N-$(CH_3)_3{}^+Cl^-$
Ionic Form, as shipped	Chloride or Hydroxide
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std)	< 5 percent
-50 mesh (U.S. Std)	< 1 percent
pH Range	0 to14
Sphericity	> 93 percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Chloride Form	43 to 50 percent
Hydroxide Form	Approx. 53 to 60 percent
Solubility	Insoluble
Approximate Shipping Weight	
Cl Form	44 lbs/cu.ft.
OH Form	41 lbs/cu.ft.
Swelling Cl- to OH-	18 to 25 percent
Total Capacity	
Cl Form	1.45 meq/ml min
OH Form	1.15 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Continuous Temperature	
Hydroxide Form	140°F
alt Form	170°F
Minimum Bed Depth	24 inches
Backwash Rate	50 to 75 percent Bed Expansion
Regenerant Concentration*	2 to 6 percent
Regenerant Flow Rate	0.25 to 1.0 gpm/cu.ft.
Regenerant Contact Time	At least 40 Minutes
Regenerant Level	4 to 10 pounds/cu.ft.
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 gals/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gals/cu.ft.
Service Flow Rates	
Polishing Mixed Beds	3 to 15 gpm/cu.ft.
Non-Polishing Apps.	2 to 4 gpm/cu.ft.

OPERATING CAPACITY

The operating capacity of *RESINTECH SBG1* for a variety of acids at various regeneration levels when treating an influent with a concentration 500 ppm, expressed as $CaCO_3$ is shown in the following table:

Pounds NaOH/ft³	Capacity Kilograms per cubic foot			
	HCl	H_2SO_4	H_2SiO_3	H_2CO_3
4	11.3	14.0	14.7	18.6
6	12.8	16.3	17.3	19.8
8	14.3	13.3	19.5	21.6
10	15.5	20.0	22.2	22.2

APPLICATIONS

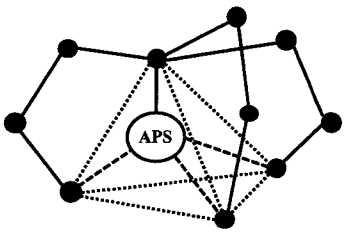
DEMINERALIZATION – *RESINTECH SBG1* is highly recommended for use in mixed bed demineralizers, wherever complete ion removal; superior physical and osmotic stability and low TOC leachables are required such as in wafer fabrication and other ultrapure applications.

RESINTECH SBG1 has high total capacity and low swelling on regeneration and provides maximum operating capacity in cartridge deionization applications. It is ideal for single use applications such as precious metal recovery, radwaste disposal and purification of toxic waste streams.

Highly crosslinked Type 1, styrenic anion exchangers have greater thermal and oxidation resistance than other types of strong base resins. They can be operated and regenerated at higher temperatures. The combination of lower porosity, high total capacity and Type 1 functionality make *RESINTECH SBG1* the resin of choice when water temperatures exceed 85°F and where the combination of carbon dioxide, borate and silica exceed 40% of the total anions.

RESINTECH SBG1P and *RESINTECH SBG1* are quite similar; the difference between them is the degree of porosity. *RESINTECH SBG1P* has greater porosity that gives it faster kinetics, and greater ability to reversibly sorb slow moving ions such as Naturally occurring Organic Matter (NOM). At lower regeneration levels and where chlorides make up a substantial portion of the anion load, or where the removal and elution of naturally occurring organics is of concern *RESINTECH SBG1P*, SBACR or SBG2 should be considered. At the higher regeneration levels used in mixed bed polishers *RESINTECH SBG1* provides higher capacity, and the lowest possible TOC leach rates.

Applied Polymer Systems, Inc.



Material Safety Data Sheet

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name: APS 702aa Floc Log

Supplied:
Applied Polymer Systems, Inc.
519 Industrial Drive
Woodstock, GA 30189
www.siltstop.com
Tel. 678-494-5998
Fax. 678-494-5298

2. COMPOSITION/INFORMATION ON INGREDIENTS

Identification of the preparation: Anionic water-soluble Co-polymer gel

3. HAZARD IDENTIFICATION

Placement of these materials on wet walking surface will create extreme slipping hazard.

4. FIRST AID MEASURES

Inhalation: None

Skin contact: Contact with wet skin could cause dryness and chapping. Wash with soap and water. Use of rubber gloves required.

Eye contact: Rinse thoroughly with plenty of water, also under the eyelids, seek medical attention in case of persistent irritation.

Ingestion: Consult a physician

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water, water spray, foam, carbon dioxide, dry powder.

Special fire-fighting precautions: Floc Logs that become wet render surfaces extremely slippery.

Protective equipment for firefighters: No special equipment required.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: No special precautions required.

Methods for cleaning up: Dry wipe as well as possible. Keep in suitable and closed containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Wash hands after handling.

Storage: Keep in a cool, dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: Use dry handling areas only.

Personal protection equipment

Respiratory Protection:	None
Hand protection:	Dry cloth, leather or rubber gloves.
Eye Protection:	Safety glasses with side shields. Do not wear contact lenses.
Skin protection:	No special protective clothing required.
Hygiene measures:	Wash hands before breaks and at end of work day.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Granular semi-solid gel
Color:	White to Brown
Odor:	None
pH:	7.89
Melting point:	N/A
Flash point:	N/A
Vapor density:	N/A

10. STABILITY AND REACTIVITY

Stability: Product is stable, no hazardous polymerization will occur.

Materials to avoid: Oxidizing agents may cause exothermic reactions.

Hazardous decomposition products: Thermal decomposition may produce nitrogen oxides (NOx), carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral:

LC 50/*Daphnia Magna*/48h/>420mg/L

Inhalation: None

12. ECOLOGICAL INFORMATION

Water Flea: LC 50/*Daphnia Magna*/48h/>420mg/l

Algae: EC 50/*Selenastrum capricornutum*/96h>500mg/l

Bioaccumulation: The product is not expected to bioaccumulate.

Persistence / degradability: Not readily biodegradable: (~85% after 180 days).

13. TRANSPORT AND REGULATORY INFORMATION

Not regulated by DOT, **RCRA status-Not a hazardous waste**

NFPA and HMIS ratings:

NFPA	**Health:**	**3**	**Flammability:**	**0**	**Reactivity:**	**1**
HMIS	**Health**	**2**	**Flammability**	**0**	**Reactivity**	**1**

Back

Floc Log Specifications:

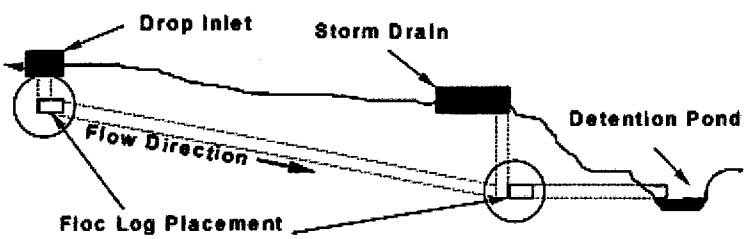
Floc Log Specifications:
ANSI/NSF Standard Drinking Water Treatment Chemical Additives
EPA/600/R-98/182 168 Hr. Chronic Toxicity Test (Pimephales promelas)
EPA/600/4-90/027F 48Hr. Acute Static Screen Toxicity Test (Daphnia Magna)

APS, Inc. currently has over (40) types of Floc Log ®. Each are designed for specific soils or lithologies. Each Floc Log ® is tailored for the specific requirement of water chemistry and soil within your geographical area. Most soils within EPA Region 4 have been classified and will not require a soil and water sample. Areas outside EPA Region 4 will require a soil and water sample. There is no charge for this analysis.

Floc Log ® is available in two forms, clarifier and particle. Clarifier Floc Log ® is used for colloidal water and very fine suspended particles. Particle Floc Log ® is used for heavily particle laden water in areas before sediment traps and sediment ponds.

Enhancement tools and Engineering designs are available on request:
APS Particle Curtain, APS Soft Armor,
APS Floc Log Mix Tank, APS Byron Box

Consult your local distributor or Applied Polymer Systems, Inc. for proper Floc Log © type, correct application and other Silt Stop products.



Applied Polymer Systems, Inc.
519 Industrial Drive • Woodstock, GA 30189
678.494.5998
info@siltstop.com

APPENDIX C

Best Management Practices Plan (BMPP)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
REMEDIATION GENERAL PERMIT
BOSTON MEDICAL CENTER
BOSTON, MASSACHUSETTS

Best Management Practices Plan

A Notice of Intent for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the US Environmental Protection Agency (EPA) in anticipation of temporary construction dewatering planned at the Boston Medical Center project site located in Boston, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Water Treatment and Management

Construction dewatering effluent is anticipated to be pumped from well points installed in sump pits within the excavation, through hoses, and directly into a tank for sedimentation control. The effluent will then flow through any necessary treatment systems and discharge through hoses to catch basins on site through storm drains which discharge to the Roxbury Canal Conduit and ultimately flows to the Fort Point Channel. Dewatering effluent treatment may consist of bag filters, granular activated carbon (GAC), ion exchange, or precipitation, as required.

Discharge Monitoring and Compliance

Regular sampling and testing will be conducted at the influent to the system and the treated effluent as required by the RGP. This includes chemical testing required within the first month of discharging, and the monthly testing to be conducted through the end of the scheduled discharge.

Monitoring will include checking the condition of the treatment system, assessing the need for treatment system adjustments based on monitoring data, observing and recording daily flow rates and discharge quantities, and verifying the flow path of the discharged effluent.

The total monthly flow will be monitored by checking and documenting the flow through the flow meter to be installed on the system. Flow will be maintained below the “system design flow” by regularly monitoring flow and adjusting the amount of construction dewatering as needed.

Monthly monitoring reports will be compiled and maintained at the site.

System Maintenance

A number of methods will be used to minimize the potential for violations for the term of this permit. Scheduled regular maintenance of the treatment system will be conducted to verify proper operation. Regular maintenance will include checking the condition of the treatment system equipment such as the fractionization tanks, filters, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues or unscheduled maintenance requirements.

Employees who have direct or indirect responsibility for ensuring compliance with the RGP will be trained by the Operator.

Miscellaneous Items

It is anticipated that the excavation support system, erosion control measures, and the nature of the site and surrounding infrastructure will minimize potential runoff to or from the site. The project specifications also include requirements for erosion control. Site security for the treatment system will be covered within the overall site security plan.

No adverse affects on designated uses of surrounding surface water bodies is anticipated. The nearest surface water body is the Fort Point Channel / Boston Harbor located northeast of the site. Dewatering effluent will be pumped to a sedimentation tank and bag filter, at a minimum, prior to discharge to the storm drains.

Management of Treatment System Materials

Dewatering effluent will be pumped directly to the treatment system from the excavation with use of hoses and sumps to minimize handling. The Contractor will establish staging areas for equipment or materials storage that may be possible sources of pollution away from any dewatering activities, to the extent practicable.

Sediment from the fractionization tank used in the treatment system will be characterized and removed from the site to an appropriate receiving facility, in accordance with applicable laws and regulations. If used, granular activated carbon and/or ion exchange resin may be recycled and/or removed from the site to an appropriate receiving facility. Bag filters, if used, will be disposed of as necessary.

Appendix D

National Register of Historic Places and
Massachusetts Historical Commission Documentation

Massachusetts Historical Commission

William Francis Galvin, Secretary of the Commonwealth

Massachusetts Historic Rehabilitation Tax Credit Program
Click here for links to a Brief Description, Round 17 Awards and additional information.

March 9, 2010

Most requested:

Preservation Awards

Massachusetts Preservation Projects Fund (MPPF)

Review and Compliance FAQ

About the MHC

MHC Forms

Publications Available

National Register of Historic Places

Related pages:

Commonwealth Museum

Massachusetts Archives

Massachusetts Historical Commission Links:

New at the MHC:

Massachusetts Historic Rehabilitation Tax Credit

2010 Preservation Awards Nomination Form (*1.3 mb, pdf*)
Deadline March 1, 2010

New! MPPF Round 16 Grant Information

2009 Survey & Planning Grant Information

State Reconnaissance Survey Reports now available online

MHC Programs:

Preservation Planning

Technical Services

Grants

National Register of Historic Places

On the Road Program

Search MACRIS Database

MHC Events & Activities:

Fence Replacement at the Teddy Ebersol's Red Sox Fields

Preservation Awards

Massachusetts Archaeology Month

Monthly Commission Meeting Schedule

Archaeology of the Central Artery Project

Publications:

Massachusetts State Historic Preservation Plan 2006-2010 (*3.39MB* pdf)

Economic Impacts of Historic Preservation in Massachusetts--Executive Summary (*400kb pdf*)

There's a Difference: Understanding National Register Districts and Local Historic Districts (*1.35MB pdf*)

Other Publications

MHC Forms

Information:

About the MHC

Press Releases

MHC Address, Location, and Hours

MHC Related Legislative Citations

Massachusetts Historical Commission

William Francis Galvin, Secretary of the Commonwealth

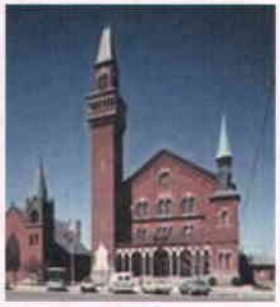
Massachusetts Cultural Resource Information System

MACRIS

The Massachusetts Cultural Resource Information System (MACRIS) allows you to search the Massachusetts Historical Commission database for information on historic properties and areas in the Commonwealth.

Users of the database should keep in mind that it does not include information on all historic properties and areas in Massachusetts, nor does it reflect all the information on file on historic properties and areas at the Massachusetts Historical Commission.

Click here to begin your search of the MACRIS database.



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Massachusetts Cultural Resource Information System
MACRIS

MHC Home | MACRIS Home

Inventory No:	BOS.1458
Historic Name:	Massachusetts Homeopathic Hospital
Common Name:	University Hospital
Address:	685 Albany St
City/Town:	Boston
Village/Neighborhood:	South End
Local No:	
Year Constructed:	1876
Architect(s):	Allen and Kenway; Emerson, William Ralph
Architectural Style(s):	High Victorian Gothic
Use(s):	Hospital
Significance:	Architecture; Health Medicine
Area(s):	BOS.AD: South End Landmark District Protection Area
Designation(s):	

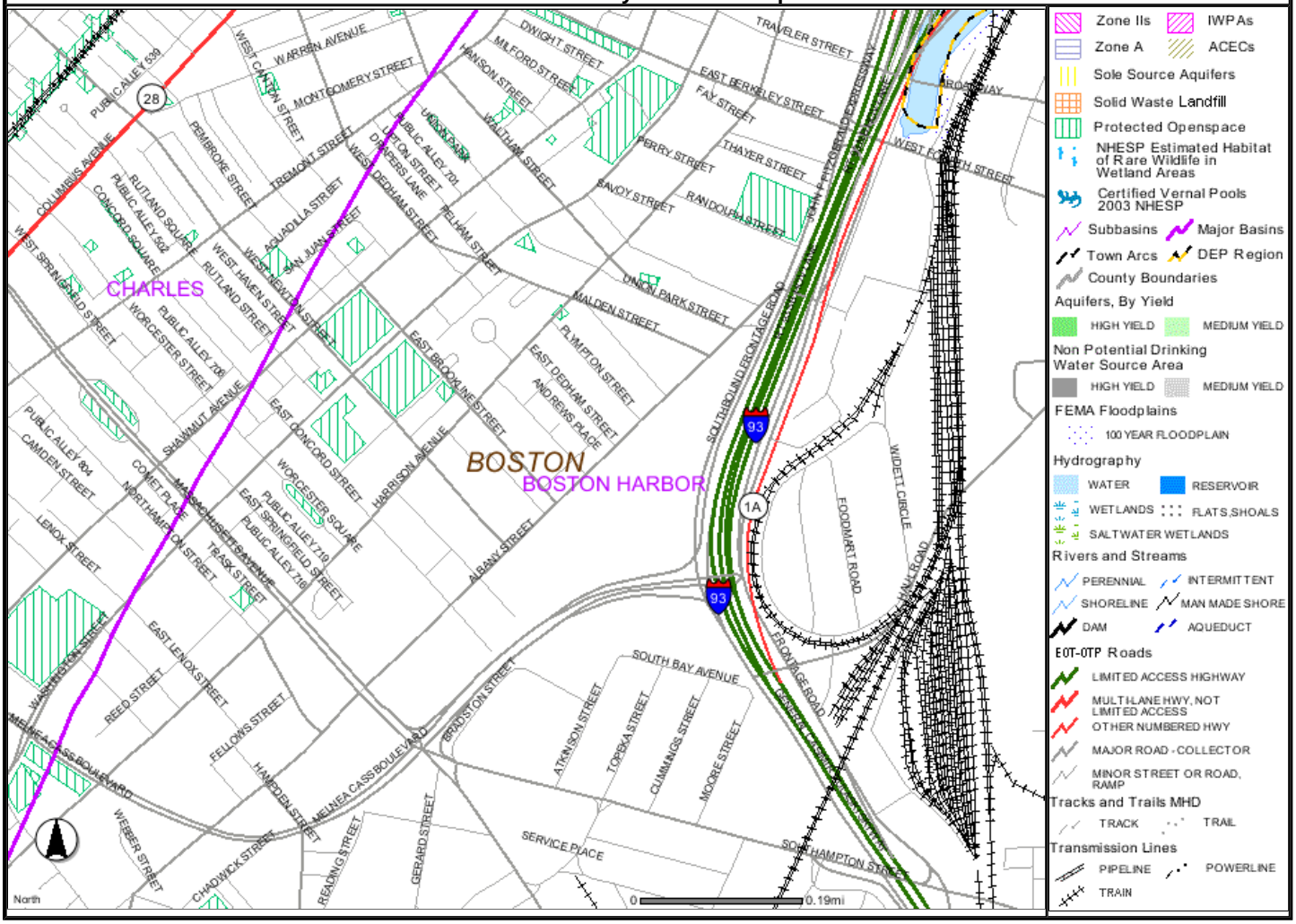
New Search Previous

MHC Home | MACRIS Home

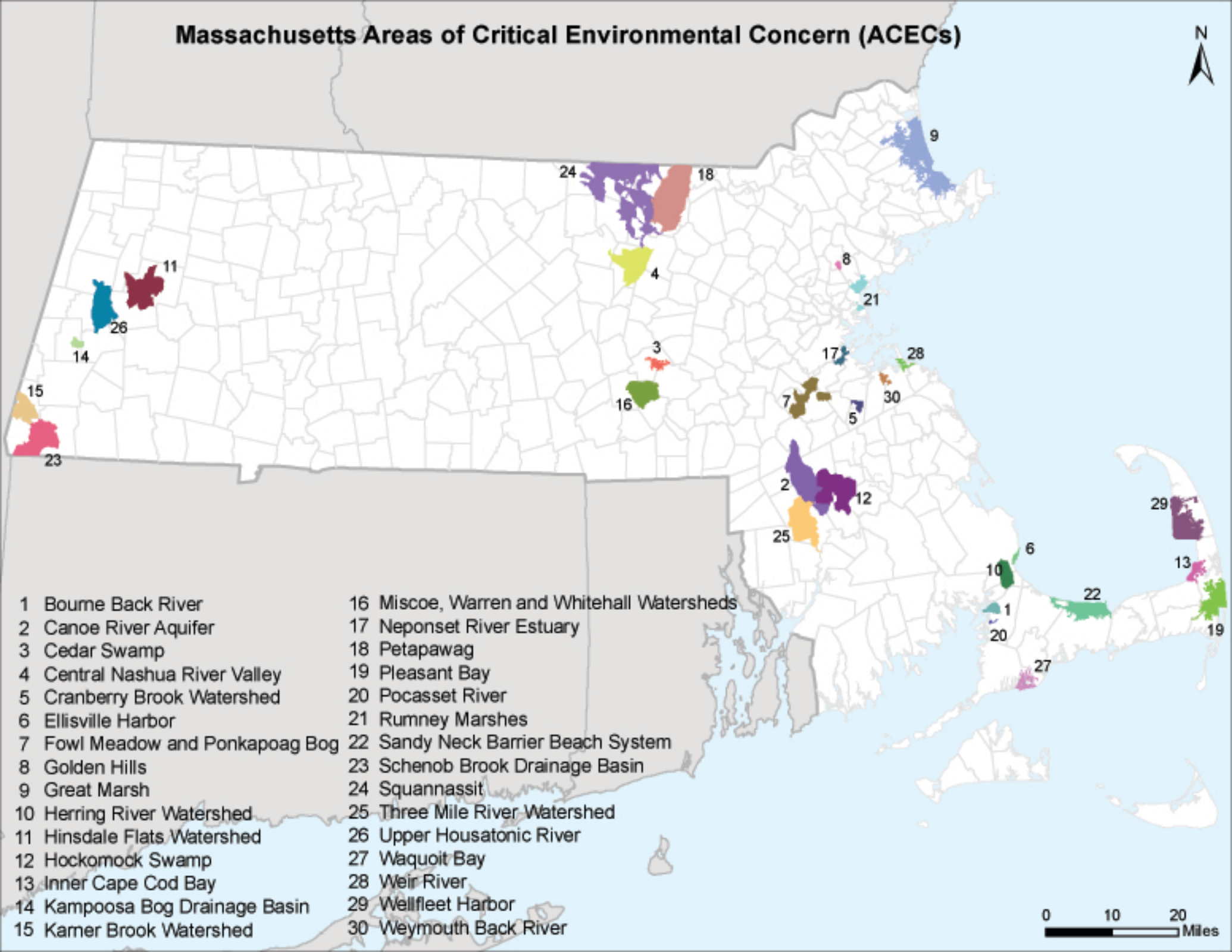
APPENDIX E

Endangered Species Act Documentation

DEP Priority Resource Map



Massachusetts Areas of Critical Environmental Concern (ACECs)



1 Bourne Back River
2 Canoe River Aquifer
3 Cedar Swamp
4 Central Nashua River Valley
5 Cranberry Brook Watershed
6 Ellisville Harbor
7 Fowl Meadow and Ponkapoag Bog
8 Golden Hills
9 Great Marsh
10 Herring River Watershed
11 Hinsdale Flats Watershed
12 Hockomock Swamp
13 Inner Cape Cod Bay
14 Kampoosa Bog Drainage Basin
15 Karner Brook Watershed
16 Miscoe, Warren and Whitehall Watersheds
17 Neponset River Estuary
18 Petapawag
19 Pleasant Bay
20 Pocasset River
21 Rumney Marshes
22 Sandy Neck Barrier Beach System
23 Schenob Brook Drainage Basin
24 Squannassit
25 Three Mile River Watershed
26 Upper Housatonic River
27 Waquoit Bay
28 Weir River
29 Wellfleet Harbor
30 Weymouth Back River

Towns with ACECs within their Boundaries June 2009

TOWN	ACEC
Ashby	Squannassit
Ayer	Petapawag
	Squannassit
Barnstable	Sandy Neck Barrier Beach System
Bolton	Central Nashua River Valley
Boston	Rumney Marshes
	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Bourne	Pocasset River
	Bourne Back River
	Herring River Watershed
Braintree	Cranberry Brook Watershed
Brewster	Pleasant Bay
	Inner Cape Cod Bay
Bridgewater	Hockomock Swamp
Canton	Fowl Meadow and Ponkapoag Bog
Chatham	Pleasant Bay
Cohasset	Weir River
Dalton	Hinsdale Flats Watershed
Dedham	Fowl Meadow and Ponkapoag Bog
Dighton	Three Mile River Watershed
Dunstable	Petapawag
Eastham	Inner Cape Cod Bay
	Wellfleet Harbor
Easton	Canoe River Aquifer
	Hockomock Swamp
Egremont	Karner Brook Watershed
Essex	Great Marsh
Falmouth	Waquoit Bay
Foxborough	Canoe River Aquifer
Gloucester	Great Marsh
Grafton	Miscoe-Warren-Whitehall Watersheds
Groton	Petapawag
	Squannassit
Harvard	Central Nashua River Valley
	Squannassit
Harwich	Pleasant Bay
Hingham	Weir River
	Weymouth Back River
Hinsdale	Hinsdale Flats Watershed
Holbrook	Cranberry Brook Watershed
Hopkinton	Miscoe-Warren-Whitehall Watersheds
	Cedar Swamp
Hull	Weir River
Ipswich	Great Marsh
Lancaster	Central Nashua River Valley
	Squannassit
Lee	Kampoosa Bog Drainage Basin
	Upper Housatonic River
Lenox	Upper Housatonic River
Leominster	Central Nashua River Valley
Lunenburg	Squannassit
Lynn	Rumney Marshes
Mansfield	Canoe River Aquifer
Mashpee	Waquoit Bay
Melrose	Golden Hills
Milton	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary

TOWN	ACEC
Mt. Washington	Karner Brook Watershed
	Schenob Brook
Newbury	Great Marsh
Norton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Norwood	Fowl Meadow and Ponkapoag Bog
Orleans	Inner Cape Cod Bay
	Pleasant Bay
Pepperell	Petapawag
	Squannassit
Peru	Hinsdale Flats Watershed
Pittsfield	Upper Housatonic River
Plymouth	Herring River Watershed
	Ellisville Harbor
Quincy	Neponset River Estuary
Randolph	Fowl Meadow and Ponkapoag Bog
Raynham	Hockomock Swamp
Revere	Rumney Marshes
Rowley	Great Marsh
Sandwich	Sandy Neck Barrier Beach System
Saugus	Rumney Marshes
	Golden Hills
Sharon	Canoe River Aquifer
	Fowl Meadow and Ponkapoag Bog
Sheffield	Schenob Brook
Shirley	Squannassit
Stockbridge	Kampoosa Bog Drainage Basin
Taunton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Truro	Wellfleet Harbor
Townsend	Squannassit
Tyngsborough	Petapawag
Upton	Miscoe-Warren-Whitehall Watersheds
Wakefield	Golden Hills
Washington	Hinsdale Flats Watershed
	Upper Housatonic River
Wellfleet	Wellfleet Harbor
W Bridgewater	Hockomock Swamp
Westborough	Cedar Swamp
Westwood	Fowl Meadow and Ponkapoag Bog
Weymouth	Weymouth Back River
Winthrop	Rumney Marshes

.

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
June 2009

Total Approximate Acreage: 268,000 acres
Approximate acreage and designation date follow ACEC names below.

Bourne Back River
(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp
(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley
(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed
(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor
(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog
(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills
(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)
(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed
(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed
(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp
(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay
(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin
(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed
(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds
(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary
(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag
(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay
(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River
(160 acres, 1980) Bourne

Rumney Marshes
(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System
(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin
(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit
(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed
(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River
(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay
(2,580 acres, 1979) Falmouth and Mashpee

Weir River
(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor
(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River
(800 acres, 1982) Hingham and Weymouth

ACEC acreages above are based on MassGIS calculations and may differ from numbers originally presented in designation documents and other ACEC publications due to improvements in accuracy of GIS data and boundary clarifications. Listed acreages have been rounded to the nearest 50 or 10 depending on whether boundary clarification has occurred. For more information please see, http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm.

APPENDIX F

BWSC Permit Application

Facility/Business Name: **Boston Medical Center**

Mailing Address: **Boston Medical Center - 750 Albany Street Boston, MA 02118**

Authorized Representative concerning information provided herein:

Name: **Deborah Hearl** Title: **Project Manager**

Phone #: **617-638-5635** Beeper #: _____ Fax #: _____

Owner of property being dewatered: **Boston Medical Center**

Location of Discharge:

Street **Between 670 Albany Street and 710 Albany Street** Neighborhood **South End**

Discharge is to a : Sanitary Sewer Combined Sewer (Storm Drain) (Circle One)

BWSC Outfall #: CSO #070 Receiving Waters: **Fort Point Channel - Boston Harbor**

Note: Discharge (after sedimentation and treatment) will be to storm drain located within the site; refer to NPDES text for complete description of discharge.

Temporary Discharges: **April 2010** To **November 2010** (Provide anticipated dates of discharge)

_____	Groundwater Remediation	_____	Tank Removal/Installation	___	Foundation Excavation
_____	Utility/Manhole Pumping	_____	Test Pit	**X**	Trench Excavation
_____	Accum. Surface Water	_____	Hydrogeologic Testing	_____	Other _____

Permanent Discharges:

___	Foundation Drainage	____	Crawl Space/Footing Drain
____	Accumulated Surface Water	____	Non-contact/Uncontaminated Cooling
____	Non-contact/Uncontaminated Process	____	Other _____

---

1. Attach a Site Plan showing the source of the discharge and the location of the point of discharge (i.e. the sewer pipe or catch basin). **(Refer to NPDES Application attached)**
2. If discharging to a sanitary or combined sewer, attach a copy of MWRA's Sewer Use Discharge permit or application. Include meter number, size, make and start reading. All discharges to sanitary or combined sewer are assessed current sewer charges.
3. If discharging to a separate storm drain, attach a copy of EPA's NPDES Permit or NOI application, or NPDES Permit exclusion letter for the discharge, as well as other relevant information. **(Refer to NPDES Application attached)**
4. Dewatering Drainage Permit will be denied or revoked if applicant fails to obtain the necessary permits from MWRA or EPA.

Submit to: Mr. Francis M. McLaughlin Phone: 617-989-7000
Manager, Engineering Customer Services Fax: 617-989-7732
Boston Water and Sewer Commission
980 Harrison Avenue
Roxbury, MA 02119

BWSC Use Only

Date Received: _____ Comments:

APPENDIX G

Laboratory Data Reports

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

Telephone: (508) 759-4441
FAX: (508) 759-4475

GROUNDWATER ANALYTICAL

e-mail

To:	Rebecca Higgins	From:	e-mail reporting GWA
	Haley & Aldrich, Inc.	Pages:	35
e-mail:	rhiggins@haleyaldrich.com	Date:	01/20/2010 16:27:45
Re:	130627	CC:	

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

● Comments:

Final Project Report for Boston Medical Center/10666-641, Lab ID 130627, Received 01-13-10

Confidential

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

January 20, 2010

Mr. Steve Provencal
Haley & Aldrich, Inc.
465 Medford Street
Suite 2200
Boston, MA 02129-1400

LABORATORY REPORT

Project: **Boston Medical Center/10666-641**
Lab ID: **130627**
Received: **01-13-10**

Dear Steve:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority 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,

Eric H. Jensen
Operations Manager

EHJ/elm
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Boston Medical Center/10666-641**
Client: **Haley & Aldrich, Inc.**
Lab ID: **130627**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **01-13-10**

Temperature: **3.6ºC**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-1	HA-09-2		Aqueous	1/13/10 14:25	EPA 624 Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1215344	40 mL VOA Vial	Scientific Products	BX35328	HCL	R-5885B	12-11-09	n/a		
C1215343	40 mL VOA Vial	Scientific Products	BX35328	HCL	R-5885B	12-11-09	n/a		
C1215342	40 mL VOA Vial	Scientific Products	BX35328	HCL	R-5885B	12-11-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-2	HA-09-2		Aqueous	1/13/10 14:25	EPA 504.1 EDB and DBCP				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1244973	40 mL VOA Vial	Scientific Products	BX35324	None	n/a	n/a	n/a		
C1244963	40 mL VOA Vial	Scientific Products	BX35324	None	n/a	n/a	n/a		
C1244953	40 mL VOA Vial	Scientific Products	BX35324	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-3	HA-09-2		Aqueous	1/13/10 14:25	EPA 8270C Semivolatile Organics (Low Level)				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1225270	1 L Amber Glass	Proline	BX35524	None	n/a	n/a	n/a		
C1225266	1 L Amber Glass	Proline	BX35524	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-4	HA-09-2		Aqueous	1/13/10 14:25	EPA 608 PCBs				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1225271	1 L Amber Glass	Proline	BX35524	None	n/a	n/a	n/a		
C1225269	1 L Amber Glass	Proline	BX35524	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-5	HA-09-2		Aqueous	1/13/10 14:25	Lachat 10-210-00-1-B (EPA 420.2) Phenolics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1244423	1 L Amber Glass	Proline	BX35284	H2SO4	R-6048B	12-18-09	n/a		
C1244422	1 L Amber Glass	Proline	BX35284	H2SO4	R-6048B	12-18-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-6	HA-09-2		Aqueous	1/13/10 14:25	EPA 1664 Hexane Extractable Material				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1244421	1 L Amber Glass	Proline	BX35284	H2SO4	R-6048B	12-18-09	n/a		
C1244418	1 L Amber Glass	Proline	BX35284	H2SO4	R-6048B	12-18-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-7	HA-09-2		Aqueous	1/13/10 14:25	Lachat 10-204-00-1-A (EPA 335.3) Total Cyanide				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1240952	500 mL Plastic	Proline	BX34856	NaOH	R-5945B	10-23-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-8	HA-09-2		Aqueous	1/13/10 14:25	SM 4500-Cl G Total Residual Chlorine SM 3500-Cr D Hexavalent Chromium SM 2540 D Total Suspended Solids				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1250991	1 L Plastic	Proline	BX35348	None	n/a	n/a	n/a		
C1250988	1 L Plastic	Proline	BX35348	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project:	**Boston Medical Center/10666-641**	Delivery:	**GWA Courier**	Temperature:	**3.6ºC**
Client:	**Haley & Aldrich, Inc.**	Airbill:	**n/a**	Chain of Custody:	**Present**
Lab ID:	**130627**	Lab Receipt:	**01-13-10**	Custody Seal(s):	**n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
130627-9	HA-09-2		Aqueous	1/13/10 14:25	EPA 200.7 Ag Cd Cr Cu Fe Ni Se Zn Total EPA 200.8 As Pb Sb Total EPA 245.1 Hg Total				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1219792	250 mL Plastic	Proline	BX35233	HNO3	R-5913A	12-07-09	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project:	**Boston Medical Center/10666-641**	Lab ID:	**130627**
Client:	**Haley & Aldrich, Inc.**	Received:	**01-13-10 17:30**

MA DEP Compendium of Analytical Methods						
Project Location:	**n/a**			MA DEP RTN:	**n/a**	
This Form provides certifications for the following data set:						
EPA 8270C:	130627-3					
Sample Matrices:	Groundwater (X)	Soil/Sediment ( )	Drinking Water ( )	Other ( )		
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )	
	8270C (X)	8081A ( )	VPH ( )	6020A ( )	9012A[2] ( )	
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S[3] ( )	Other ( )	
	1. List Release Tracking Number (RTN), if known.					
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method					
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.					

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	n/a

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	No
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes

All No answers are addressed in the attached Project Narrative.

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 analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:		Position:	Operations Manager
Printed Name:	Eric H. Jensen	Date:	01-20-10

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Boston Medical Center/10666-641**	Lab ID:	**130627**
Client:	**Haley & Aldrich, Inc.**	Received:	**01-13-10 17:30**

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 . EPA 8270C Modification: Sample 130627-3. Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance.

2 . EPA 8270C Non-conformance: Laboratory control sample (LCS) analyte Hexachlorobutadiene had an RPD recovery outside recommended recovery limits for QC batch SV-2463-F.

GROUNDWATER ANALYTICAL

EPA Method 624
Volatile Organics by GC/MS

Field ID:	**HA-09-2**	Matrix:	**Aqueous**
Project:	**Boston Medical Center/10666-641**	Container:	**40 mL VOA Vial**
Client:	**Haley & Aldrich, Inc.**	Preservation:	**HCl/ Cool**
Laboratory ID:	**130627-1**	QC Batch ID:	**VM8-1302-W**
Sampled:	**01-13-10 14:25**	Instrument ID:	**MS-8 HP 6890**
Received:	**01-13-10 17:30**	Sample Volume:	**5 mL**
Analyzed:	**01-18-10 08:09**	Dilution Factor:	**1**
Analyst:	**LMG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	5
74-87-3	Chloromethane	BRL		ug/L	5
75-01-4	Vinyl Chloride	BRL		ug/L	5
74-83-9	Bromomethane	BRL		ug/L	5
75-00-3	Chloroethane	BRL		ug/L	5
75-69-4	Trichlorofluoromethane	BRL		ug/L	5
107-02-8	Acrolein†	BRL		ug/L	20
75-35-4	1,1-Dichloroethene	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	20
75-15-0	Carbon Disulfide	BRL		ug/L	20
75-09-2	Methylene Chloride	BRL		ug/L	5
107-13-1	Acrylonitrile†	BRL		ug/L	20
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	5
75-34-3	1,1-Dichloroethane	BRL		ug/L	5
108-05-4	Vinyl Acetate	BRL		ug/L	5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	5
78-93-3	2-Butanone (MEK)	BRL		ug/L	20
67-66-3	Chloroform	BRL		ug/L	5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	5
56-23-5	Carbon Tetrachloride	BRL		ug/L	5
71-43-2	Benzene	BRL		ug/L	5
107-06-2	1,2-Dichloroethane	BRL		ug/L	5
79-01-6	Trichloroethene	BRL		ug/L	5
78-87-5	1,2-Dichloropropane	BRL		ug/L	5
75-27-4	Bromodichloromethane	BRL		ug/L	5
110-75-8	2-Chloroethyl Vinyl Ether	BRL		ug/L	20
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	20
108-88-3	Toluene	BRL		ug/L	5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	5
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	5
127-18-4	Tetrachloroethene	BRL		ug/L	5
591-78-6	2-Hexanone	BRL		ug/L	20
124-48-1	Dibromochloromethane	BRL		ug/L	5
108-90-7	Chlorobenzene	BRL		ug/L	5
100-41-4	Ethylbenzene	BRL		ug/L	5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	5
95-47-6	*ortho*-Xylene	BRL		ug/L	5
100-42-5	Styrene	BRL		ug/L	5
75-25-2	Bromoform	BRL		ug/L	5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	50	49	98 %	70 - 130 %
1,2-Dichloroethane-d_4	50	47	94 %	70 - 130 %
Toluene-d_8	50	52	104 %	70 - 130 %
4-Bromofluorobenzene	50	64	127 %	70 - 130 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, 40 C.F.R. 136, Appendix A (1986).

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.

† Indicates analyte has poor purging efficiency. This is not preferred method of analysis.

GROUNDWATER ANALYTICAL

EPA Method 504.1
EDB and DBCP by GC/ECD

Field ID:	**HA-09-2**	Matrix:	**Aqueous**
Project:	**Boston Medical Center/10666-641**	Container:	**40 mL VOA Vial**
Client:	**Haley & Aldrich, Inc.**	Preservation:	**Cool**
Laboratory ID:	**130627-02**	QC Batch ID:	**PV-0978-E**
Sampled:	**01-13-10 14:25**	Instrument ID:	**GC-6 HP 5890**
Received:	**01-13-10 17:30**	Sample Volume:	**35 mL**
Extracted:	**01-19-10 15:00**	Final Volume:	**2 mL**
Analyzed:	**01-19-10 21:03**	Dilution Factor:	**1**
Analyst:	**AWG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	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

EPA Method 8270C
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**HA-09-2**	Matrix:	**Aqueous**
Project:	**Boston Medical Center/10666-641**	Container:	**1 L Amber Glass**
Client:	**Haley & Aldrich, Inc.**	Preservation:	**Cool**
Laboratory ID:	**130627-03**	QC Batch ID:	**SV-2463-F**
Sampled:	**01-13-10 14:25**	Instrument ID:	**MS-3 HP 5890**
Received:	**01-13-10 17:30**	Sample Volume:	**960 mL**
Extracted:	**01-18-10 12:00**	Final Volume:	**1 mL**
Analyzed:	**01-19-10 18:54**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5
51-28-5	2,4-Dinitrophenol	BRL		ug/L	10
100-02-7	4-Nitrophenol	BRL		ug/L	5
132-64-9	Dibenzofuran	BRL		ug/L	5
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	5
84-66-2	Diethyl phthalate	BRL		ug/L	5
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	5
100-01-6	4-Nitroaniline	BRL		ug/L	5
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5

GROUNDWATER ANALYTICAL

EPA Method 8270C (Continued)
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**HA-09-2**	Matrix:	**Aqueous**
Project:	**Boston Medical Center/10666-641**	Container:	**1 L Amber Glass**
Client:	**Haley & Aldrich, Inc.**	Preservation:	**Cool**
Laboratory ID:	**130627-03**	QC Batch ID:	**SV-2463-F**
Sampled:	**01-13-10 14:25**	Instrument ID:	**MS-3 HP 5890**
Received:	**01-13-10 17:30**	Sample Volume:	**960 mL**
Extracted:	**01-18-10 12:00**	Final Volume:	**1 mL**
Analyzed:	**01-19-10 18:54**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	21	7	**34** %	15 - 110 %
Phenol-d5	21	6	**31** %	15 - 110 %
Nitrobenzene-d5	10	5	**51** %	30 - 130 %
2-Fluorobiphenyl	10	7	**63** %	30 - 130 %
2,4,6-Tribromophenol	21	14	**68** %	15 - 110 %
Terphenyl-d14	10	7	**64** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C.

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.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS-SIM (Part 2)

Field ID:	**HA-09-2**	Matrix:	**Aqueous**
Project:	**Boston Medical Center/10666-641**	Container:	**1 L Amber Glass**
Client:	**Haley & Aldrich, Inc.**	Preservation:	**Cool**
Laboratory ID:	**130627-03**	QC Batch ID:	**SV-2463-F**
Sampled:	**01-13-10 14:25**	Instrument ID:	**MS-6 HP 6890**
Received:	**01-13-10 17:30**	Sample Volume:	**960 mL**
Extracted:	**01-18-10 12:00**	Final Volume:	**1 mL**
Analyzed:	**01-19-10 12:40**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	0.5
91-57-6	2-Methylnaphthalene	**0.8**		ug/L	0.5
208-96-8	Acenaphthylene	BRL		ug/L	0.5
83-32-9	Acenaphthene	BRL		ug/L	0.5
86-73-7	Fluorene	**0.7**		ug/L	0.5
85-01-8	Phenanthrene	**1.8**		ug/L	0.5
120-12-7	Anthracene	BRL		ug/L	0.5
206-44-0	Fluoranthene	BRL		ug/L	0.5
129-00-0	Pyrene	BRL		ug/L	0.5
56-55-3	Benzo[a]anthracene	BRL		ug/L	0.1
218-01-9	Chrysene	BRL		ug/L	0.1
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	0.1
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	0.1
50-32-8	Benzo[a]pyrene	BRL		ug/L	0.1
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	0.1
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	0.1
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	0.1
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	21	8.3	**40** %	15 - 110 %
Phenol-d5	21	7.6	**36** %	15 - 110 %
Nitrobenzene-d5	10	7.0	**67** %	30 - 130 %
2-Fluorobiphenyl	10	6.3	**60** %	30 - 130 %
2,4,6-Tribromophenol	21	17	**81** %	15 - 110 %
Terphenyl-d14	10	6.6	**63** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3510C.

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

EPA Method 608
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	**HA-09-2**	Matrix:	**Aqueous**
Project:	**Boston Medical Center/10666-641**	Container:	**1 L Amber Glass**
Client:	**Haley & Aldrich, Inc.**	Preservation:	**Cool**
Laboratory ID:	**130627-04**	QC Batch ID:	**PB-2565-F**
Sampled:	**01-13-10 14:25**	Instrument ID:	**GC-11 Agilent 6890**
Received:	**01-13-10 17:30**	Sample Weight:	**980 mL**
Extracted:	**01-18-10 19:00**	Final Volume:	**10 mL**
Cleaned Up:	**01-18-10 22:00**	Dilution Factor:	**1**
Analyzed:	**01-19-10 14:15**		
Analyst:	**AWG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro-*m*-xylene	0.20	0.15	**76** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.16	**78** %	30 - 150 %
Second	Tetrachloro-*m*-xylene	0.20	0.16	**76** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.17	**81** %	30 - 150 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, US EPA, 40 C.F.R. 136, Appendix A, (1986). Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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

Inorganic Chemistry

Field ID: **HA-09-2** Matrix: **Aqueous**
Project: **Boston Medical Center/10666-641** Received: **01-13-10 17:30**
Client: **Haley & Aldrich, Inc.**

Lab ID: **130627-05** Sampled: **01-13-10 14:25** Container: **1 L Amber Glass** Preservation: **H2SO4/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Phenolics, Total	BRL	mg/L	0.2	1	25 mL	01-19-10 10:49	PHN-1994-W	Lachat 10-210-00-1-B (EPA 420.2)	1	JR

Lab ID: **130627-06** Sampled: **01-13-10 14:25** Container: **1 L Amber Glass** Preservation: **H2SO4/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Oil and Grease, Total	BRL	mg/L	5	1	1000 mL	01-19-10 12:00	HO-0493-W	EPA 1664	3	JR

Lab ID: **130627-07** Sampled: **01-13-10 14:25** Container: **500 mL Plastic** Preservation: **NaOH/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Cyanide, Total	BRL	mg/L	0.01	1	50 mL	01-19-10 13:18	TCN-1542-W	Lachat 10-204-00-1-A (EPA 335.3)	1	JR

Lab ID: **130627-08** Sampled: **01-13-10 14:25** Container: **1 L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	**25**	mg/L	2	1	500 mL	01-14-10 11:03	TSS-1721-W	SM 2540 D	3	JR
Chlorine, Total Residual	BRL	mg/L	0.02	1	5 mL	01-14-10 07:30	TRC-0836-W	SM 4500-Cl G	2	JR
Chromium, Hexavalent	BRL	mg/L	0.01	1	5 mL	01-14-10 12:00	HC-0174-W	SM 3500-Cr D	2	JK

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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.

RL Reporting Limit.

DF Dilution Factor.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**HA-09-2**	Matrix:	**Aqueous**
Project:	**Boston Medical Center/10666-641**	Container:	**250 mL Plastic**
Client:	**Haley & Aldrich, Inc.**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**130627-9**	Preserved:	**01-13-10 14:25**
Sampled:	**01-13-10 14:25**		
Received:	**01-13-10 17:30**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.8[1]	MB-3964-W	EPA 200.8	01-15-10 00:00	50 mL	ICPMS-1 ELAN 9000	MP
EPA 200.7[2]	MB-3964-W	EPA 200.7	01-15-10 00:00	50 mL	ICP-1 PE 3000	MP
EPA 245.1[3]	MP-2256-W	EPA 245.1	01-19-10 00:00	25 mL	CVAA-1 PE FIMS	MP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony, Total	BRL		mg/L	0.003	1	01-19-10 13:57	EPA 200.8[1]
7440-38-2	Arsenic, Total	BRL		mg/L	0.005	1	01-19-10 13:57	EPA 200.8[1]
7440-43-9	Cadmium, Total	BRL		mg/L	0.004	1	01-19-10 17:20	EPA 200.7[2]
7440-47-3	Chromium, Total	BRL		mg/L	0.01	1	01-19-10 17:20	EPA 200.7[2]
7440-50-8	Copper, Total	**0.054**		mg/L	0.025	1	01-19-10 17:20	EPA 200.7[2]
7439-89-6	Iron, Total	**0.3**		mg/L	0.1	1	01-19-10 17:20	EPA 200.7[2]
7439-92-1	Lead, Total	**0.039**		mg/L	0.001	1	01-19-10 13:57	EPA 200.8[1]
7439-97-6	Mercury, Total	BRL		mg/L	0.0002	1	01-20-10 13:24	EPA 245.1[3]
7440-02-0	Nickel, Total	BRL		mg/L	0.04	1	01-19-10 17:20	EPA 200.7[2]
7782-49-2	Selenium, Total	BRL		mg/L	0.005	1	01-19-10 13:57	EPA 200.8[1]
7440-22-4	Silver, Total	BRL		mg/L	0.007	1	01-19-10 17:20	EPA 200.7[2]
7440-66-6	Zinc, Total	BRL		mg/L	0.2	1	01-19-10 17:20	EPA 200.7[2]

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

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.

DF Dilution Factor.

CHAIN OF CUSTODY RECORD

HALEY & ALDRICH

Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1400

Phone (617) 886-7400
Fax (617) 886-7600
Page 1 of 1

H&A FILE NO.	10666-641	LABORATORY	Groundwater	DELIVERY DATE	1/13/10
PROJECT NAME	Boston Medical Center	ADDRESS	BUZZARDS BAY	TURNAROUND TIME	Standard
H&A CONTACT	Lee Vanzler	CONTACT	Eric Jensen	PROJECT MANAGER	Rebecca Higgins

Sample No.	Date	Time	Depth	Type	Number of Containers
HA-09-2	1/13/10	1425	—	Ag	19
					19 TOTAL

Analysis Requested

(1) VOA	(2) ABNs (8270 only)	(3) MCP Metals	(4) Pesticides PCBs	(5) VPH Full Suite Compounds only	(6) EPH Full Suite Compounds only	(7) TPH (specify)	(8) TCLP (circle)	(9) Reactivity Ignitability Corrosivity	(10)
X	XX	X	XX	X	X	X	X	X	

Comments (special instructions, precautions, additional method numbers, etc.)

Laboratory to use applicable DEP CAM methods, unless otherwise directed.

(1) TSS 160.2
(2) TRC 330.1, HexCr SM3500
(3) TPH 1664
(4) TCN-335.2
(5) VOC-624
(6) EDB-504.1
(7) SVOC 8270, PAH 8270SIM
(8) PCB-608
(9) TOTAL Metals Sb, As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Zn, Fe
(10) TOTAL Phenol, 420.1

Sampled and Relinquished by

Sign Matt Dobson
Print Matt Dobson
Firm Haley & Aldrich
Date 1/13/10 Time 1555

Received by

Sign Alan Maddigan
Print Alan Maddigan
Firm Groundwater A.
Date 1/13/10 Time 15:55

Relinquished by

Sign Alan Maddigan
Print Alan Maddigan
Firm GWA
Date 1/13/10 Time 17:30

Received by

Sign Kimberly Crowley
Print Kimberly Crowley
Firm GWA
Date 1/13/10 Time 1820

Relinquished by

Sign
Print
Firm
Date Time

Received by

Sign
Print
Firm
Date Time

LIQUID

	(1) VOA	(2) ABNs	(3) MCP Metals	(4) Pesticides PCBs	(5) VPH	(6) EPH	(7) TPH	(8) TCLP	(9)	(10)
VOA Vial					X	X				
Amber Glass			X				X	X		X
Plastic Bottle	XX			X					X	
Preservative	A	A	AE	AC	AF	A	A	A	AD	AE
Volume	1L	1L	1L	250	40	40	1L	1L	250	1L

SOLID

	(1) VOA	(2) ABNs	(3) MCP Metals	(4) Pesticides PCBs	(5) VPH	(6) EPH	(7) TPH	(8) TCLP	(9)	(10)
VOA Vial										
Amber Glass										
Clear Glass										
Preservative										
Volume										

PRESERVATION KEY

A Sample chilled
B Sample filtered
C NaOH
D HNO3
E H_2SO_4
F HCL
G Methanol
H Water/NaHSO4 (circle)

Sampling Comments 3.6°C

Lee Vanzler w/questions
617 886-7561

NPDES RGP

Evidence samples were tampered with? YES NO

If YES, please explain in section below.

Presumptive Certainty Data Package (Laboratory to use applicable DEP CAM methods)

If Presumptive Certainty Data Package is needed, initial all sections:

- ✓ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty.
- ✓ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein.
- ✓ This Chain of Custody Record (specify) _____ includes ✗ does not include samples defined as Drinking Water Samples.
- _____ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable) _____ analyz

Required Reporting Limits and Data Quality Objectives

☐ RC-S1 ☐ S1 ☐ GW1
☐ RC-S2 ☐ S2 ☐ GW2
☐ RC-GW1 ☐ S3 ☐ GW3
☐ RC-GW2

WHITE - Laboratory CANARY - Project Manager PINK - Haley & Aldrich Laboratory

AUGUST 2008

Form 3003

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Inorganic Chemistry**
Matrix: **Aqueous**

Analyte	Units	Spiked	Measured	Recovery	QC Limits	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	mg/L	60	62	**103 %**	80 - 120 %	01-14-10 11:03	TSS-1721-W	SM 2540 D	3	JR
Chlorine, Total Residual	mg/L	0.05	0.05	**102 %**	80 - 120 %	01-14-10 07:30	TRC-0836-W	SM 4500-Cl G	2	JR
Phenolics, Total	mg/L	4.0	4.2	**104 %**	80 - 120 %	01-19-10 10:48	PHN-1994-W	Lachat 10-210-00-1-B (EPA 420.4)	1	JR
Chromium, Hexavalent	mg/L	0.1	0.1	**100 %**	80 - 120 %	01-14-10 00:00	HC-0174-W	SM 3500-Cr D	2	JK
Oil and Grease, Total	mg/L	40	41	**102 %**	78 - 114 %	01-19-10 12:00	HO-0493-W	EPA 1664	3	JR
Cyanide, Total	mg/L	0.45	0.47	**104 %**	80 - 120 %	01-19-10 13:04	TCN-1542-W	Lachat 10-204-00-1-A (EPA 335.3)	1	JR

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Inorganic Chemistry**
Matrix: **Aqueous**

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	01-14-10 11:03	TSS-1721-W	SM 2540 D	3	JR
Chlorine, Total Residual	BRL	mg/L	0.02	01-14-10 07:30	TRC-0836-W	SM 4500-Cl G	2	JR
Phenolics, Total	BRL	mg/L	0.2	01-19-10 10:48	PHN-1994-W	Lachat 10-210-00-1-B (EPA 420.4)	1	JR
Chromium, Hexavalent	BRL	mg/L	0.01	01-14-10 00:00	HC-0174-W	SM 3500-Cr D	2	JK
Oil and Grease, Total	BRL	mg/L	5	01-19-10 12:00	HO-0493-W	EPA 1664	3	JR
Cyanide, Total	BRL	mg/L	0.01	01-19-10 13:04	TCN-1542-W	Lachat 10-204-00-1-A (EPA 335.3)	1	JR

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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.

RL Reporting Limit.

1 Instrument ID: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA Method 608 PCBs**	Instrument ID:	**GC-11 Agilent 6890**
QC Batch ID:	**PB-2565-F**	Extracted:	**01-18-10 19:00**
Matrix:	**Aqueous**	Cleaned Up:	**01-18-10 22:00**
Units:	**ug/L**	Analyzed:	**01-19-10 13:51**
		Analyst:	**AWG**

CAS Number	Analyte	Spiked	Measured		Recovery		QC Limits
			1st Column	2nd Column	1st Column	2nd Column	
12674-11-2	Aroclor 1016	5.0	4.8	5.2	**95** %	**103** %	40 - 140 %
11096-82-5	Aroclor 1260	5.0	4.6	4.7	**91** %	**95** %	40 - 140 %

QC Surrogate Compound	Spiked	Measured		Recovery		QC Limits
Tetrachloro-*m*-xylene	0.20	0.18	0.18	**89** %	**91** %	30 - 150 %
Decachlorobiphenyl	0.20	0.17	0.19	**86** %	**93** %	30 - 150 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, US EPA, 40 C.F.R. 136, Appendix A, (1986). Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 608 PCBs**	Instrument ID:	**GC-11 Agilent 6890**
QC Batch ID:	**PB-2565-F**	Extracted:	**01-18-10 19:00**
Matrix:	**Aqueous**	Cleaned Up:	**01-18-10 22:00**
		Analyzed:	**01-19-10 13:04**
		Analyst:	**AWG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.20
11104-28-2	Aroclor 1221	BRL		ug/L	0.20
11141-16-5	Aroclor 1232	BRL		ug/L	0.20
53469-21-9	Aroclor 1242	BRL		ug/L	0.20
12672-29-6	Aroclor 1248	BRL		ug/L	0.20
11097-69-1	Aroclor 1254	BRL		ug/L	0.20
11096-82-5	Aroclor 1260	BRL		ug/L	0.20

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro-*m*-xylene	0.20	0.17	**87** %	30 - 150 %
	Decachlorobiphenyl	0.20	0.16	**79** %	30 - 150 %
Second Column	Tetrachloro-*m*-xylene	0.20	0.18	**88** %	30 - 150 %
	Decachlorobiphenyl	0.20	0.17	**87** %	30 - 150 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, US EPA, 40 C.F.R. 136, Appendix A, (1986). Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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

Quality Control Report
Laboratory Control Sample

Category:	**EPA Method 504.1**	Instrument ID:	**GC-6 HP 5890**
QC Batch ID:	**PV-0978-E**	Extracted:	**01-19-10 10:00**
Matrix:	**Aqueous**	Analyzed:	**01-19-10 14:26**
Units:	**ug/L**	Analyst:	**AWG**

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	0.20	0.21	**100** %	**104** %	70 - 130 %
96-12-8	1,2-Dibromo-3-Chloropropane (DBC	0.20	0.20	0.21	**99** %	**103** %	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.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 504.1**	Instrument ID:	**GC-6 HP 5890**
QC Batch ID:	**PV-0978-E**	Extracted:	**01-19-10 10:00**
Matrix:	**Aqueous**	Analyzed:	**01-19-10 15:57**
		Analyst:	**AWG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	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

Quality Control Report
Laboratory Control Sample

Category: **Metals**
Matrix: **Aqueous**
Units: **mg/L**

Analysis Method	QC Batch ID	Prep Method	Prepared	Instrument ID	Analyst
EPA 200.8	MB-3964-WL	EPA 200.8	01-15-10 00:00	ICPMS-1 ELAN 9000	JK
EPA 200.7	MB-3964-WL	EPA 200.7	01-15-10 00:00	ICP-1 PE3000XL	JK
EPA 245.1	MP-2256-WL	EPA 245.1	01-19-10 00:00	CVAA-1 PE FIMS	MP

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits	Analyzed	Method
7440-36-0	Antimony	0.050	0.053	**106** %	85-115 %	01-19-10 00:00	EPA 200.8
7440-38-2	Arsenic	0.050	0.049	**98** %	85-115 %	01-19-10 00:00	EPA 200.8
7440-43-9	Cadmium	1.0	0.99	**99** %	85-115 %	01-19-10 15:42	EPA 200.7
7440-47-3	Chromium	1.0	0.98	**98** %	85-115 %	01-19-10 15:42	EPA 200.7
7440-50-8	Copper	1.0	1.0	**102** %	85-115 %	01-19-10 15:42	EPA 200.7
7439-89-6	Iron	5.0	4.7	**94** %	85-115 %	01-19-10 15:42	EPA 200.7
7439-92-1	Lead	0.050	0.044	**89** %	85-115 %	01-19-10 00:00	EPA 200.8
7439-97-6	Mercury	0.0010	0.0009	**92** %	85-115 %	01-20-10 11:49	EPA 245.1
7440-02-0	Nickel	1.0	1.0	**100** %	85-115 %	01-19-10 15:42	EPA 200.7
7782-49-2	Selenium	0.050	0.048	**95** %	85-115 %	01-19-10 00:00	EPA 200.8
7440-22-4	Silver	0.5	0.5	**102** %	85-115 %	01-19-10 15:42	EPA 200.7
7440-66-6	Zinc	1.0	1.0	**101** %	85-115 %	01-19-10 15:42	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

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.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Aqueous**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.8	MB-3964-WB	EPA 200.8	01-15-10 00:00	50 mL	ICPMS-1 ELAN 9000	JK
EPA 200.7	MB-3964-WB	EPA 200.7	01-15-10 00:00	50 mL	ICP-1 PE3000XL	JK
EPA 245.1	MP-2256-WB	EPA 245.1	01-19-10 00:00	25 mL	CVAA-1 PE FIMS	MP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony	BRL		mg/L	0.006	1	01-19-10 00:00	EPA 200.8
7440-38-2	Arsenic	BRL		mg/L	0.005	1	01-19-10 00:00	EPA 200.8
7440-43-9	Cadmium	BRL		mg/L	0.004	1	01-19-10 15:39	EPA 200.7
7440-47-3	Chromium	BRL		mg/L	0.01	1	01-19-10 15:38	EPA 200.7
7440-50-8	Copper	BRL		mg/L	0.025	1	01-19-10 15:38	EPA 200.7
7439-89-6	Iron	BRL		mg/L	0.1	1	01-19-10 15:39	EPA 200.7
7439-92-1	Lead	BRL		mg/L	0.005	1	01-19-10 00:00	EPA 200.8
7439-97-6	Mercury	BRL		mg/L	0.0002	1	01-20-10 11:49	EPA 245.1
7440-02-0	Nickel	BRL		mg/L	0.04	1	01-19-10 15:39	EPA 200.7
7782-49-2	Selenium	BRL		mg/L	0.005	1	01-19-10 00:00	EPA 200.8
7440-22-4	Silver	BRL		mg/L	0.007	1	01-19-10 15:38	EPA 200.7
7440-66-6	Zinc	BRL		mg/L	0.2	1	01-19-10 15:39	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

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.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA Method 624**	Instrument ID:	**MS-8 HP 6890**
QC Batch ID:	**VM8-1302-W**	Analyzed:	**01-18-10 06:52**
Matrix:	**Aqueous**	Analyst:	**LMG**
Units:	**ug/L**		

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-71-8	Dichlorodifluoromethane	20	22	**108** %	70 - 130 %
74-87-3	Chloromethane	20	22	**108** %	70 - 130 %
75-01-4	Vinyl Chloride	20	24	**119** %	70 - 130 %
74-83-9	Bromomethane	20	22	**111** %	70 - 130 %
75-00-3	Chloroethane	20	21	**107** %	70 - 130 %
75-69-4	Trichlorofluoromethane	20	20	**98** %	70 - 130 %
107-02-8	Acrolein†	20	23	**117** %	70 - 130 %
75-35-4	1,1-Dichloroethene	20	19	**96** %	70 - 130 %
67-64-1	Acetone	40	34	**85** %	70 - 130 %
75-15-0	Carbon Disulfide	40	30	**76** %	70 - 130 %
75-09-2	Methylene Chloride	20	18	**92** %	70 - 130 %
107-13-1	Acrylonitrile†	20	22	**108** %	70 - 130 %
156-60-5	*trans*-1,2-Dichloroethene	20	18	**90** %	70 - 130 %
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	20	17	**83** %	70 - 130 %
75-34-3	1,1-Dichloroethane	20	18	**92** %	70 - 130 %
108-05-4	Vinyl Acetate	40	43	**107** %	70 - 130 %
156-59-2	*cis*-1,2-Dichloroethene	20	18	**92** %	70 - 130 %
78-93-3	2-Butanone (MEK)	40	31	**77** %	70 - 130 %
67-66-3	Chloroform	20	18	**92** %	70 - 130 %
71-55-6	1,1,1-Trichloroethane	20	20	**98** %	70 - 130 %
56-23-5	Carbon Tetrachloride	20	20	**99** %	70 - 130 %
71-43-2	Benzene	20	19	**94** %	70 - 130 %
107-06-2	1,2-Dichloroethane	20	18	**89** %	70 - 130 %
79-01-6	Trichloroethene	20	19	**94** %	71 - 130 %
78-87-5	1,2-Dichloropropane	20	19	**93** %	70 - 130 %
75-27-4	Bromodichloromethane	20	19	**96** %	70 - 130 %
110-75-8	2-Chloroethyl Vinyl Ether	20	15	**73** %	70 - 130 %
10061-01-5	*cis*-1,3-Dichloropropene	20	18	**92** %	70 - 130 %
108-10-1	4-Methyl-2-Pentanone (MIBK)	40	32	**81** %	70 - 130 %
108-88-3	Toluene	20	18	**91** %	70 - 130 %
10061-02-6	*trans*-1,3-Dichloropropene	20	17	**86** %	70 - 130 %
79-00-5	1,1,2-Trichloroethane	20	19	**95** %	70 - 130 %
127-18-4	Tetrachloroethene	20	19	**97** %	70 - 130 %
591-78-6	2-Hexanone	40	34	**84** %	70 - 130 %
124-48-1	Dibromochloromethane	20	19	**94** %	70 - 130 %
108-90-7	Chlorobenzene	20	19	**97** %	70 - 130 %
100-41-4	Ethylbenzene	20	20	**100** %	70 - 130 %
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	40	39	**98** %	70 - 130 %
95-47-6	*ortho*-Xylene	20	19	**94** %	70 - 130 %
100-42-5	Styrene	20	20	**98** %	70 - 130 %
75-25-2	Bromoform	20	19	**96** %	70 - 130 %
79-34-5	1,1,2,2-Tetrachloroethane	20	20	**98** %	70 - 130 %
541-73-1	1,3-Dichlorobenzene	20	21	**103** %	70 - 130 %
106-46-7	1,4-Dichlorobenzene	20	20	**101** %	70 - 130 %
95-50-1	1,2-Dichlorobenzene	20	20	**100** %	70 - 130 %

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	50	49	**97** %	70 - 130 %
1,2-Dichloroethane-d_4	50	47	**93** %	70 - 130 %
Toluene-d_8	50	52	**105** %	70 - 130 %
4-Bromofluorobenzene	50	63	**127** %	70 - 130 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, 40 C.F.R. 136, Appendix A (1986).

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.

† Indicates analyte has poor purging efficiency. This is not preferred method of analysis.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 624**
QC Batch ID: **VM8-1302-W**
Matrix: **Aqueous**
Instrument ID: **MS-8 HP 6890**
Analyzed: **01-18-10 07:23**
Analyst: **LMG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	5
74-87-3	Chloromethane	BRL		ug/L	5
75-01-4	Vinyl Chloride	BRL		ug/L	5
74-83-9	Bromomethane	BRL		ug/L	5
75-00-3	Chloroethane	BRL		ug/L	5
75-69-4	Trichlorofluoromethane	BRL		ug/L	5
107-02-8	Acrolein†	BRL		ug/L	20
75-35-4	1,1-Dichloroethene	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	20
75-15-0	Carbon Disulfide	BRL		ug/L	20
75-09-2	Methylene Chloride	BRL		ug/L	5
107-13-1	Acrylonitrile†	BRL		ug/L	20
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	5
75-34-3	1,1-Dichloroethane	BRL		ug/L	5
108-05-4	Vinyl Acetate	BRL		ug/L	5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	5
78-93-3	2-Butanone (MEK)	BRL		ug/L	20
67-66-3	Chloroform	BRL		ug/L	5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	5
56-23-5	Carbon Tetrachloride	BRL		ug/L	5
71-43-2	Benzene	BRL		ug/L	5
107-06-2	1,2-Dichloroethane	BRL		ug/L	5
79-01-6	Trichloroethene	BRL		ug/L	5
78-87-5	1,2-Dichloropropane	BRL		ug/L	5
75-27-4	Bromodichloromethane	BRL		ug/L	5
110-75-8	2-Chloroethyl Vinyl Ether	BRL		ug/L	20
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	20
108-88-3	Toluene	BRL		ug/L	5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	5
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	5
127-18-4	Tetrachloroethene	BRL		ug/L	5
591-78-6	2-Hexanone	BRL		ug/L	20
124-48-1	Dibromochloromethane	BRL		ug/L	5
108-90-7	Chlorobenzene	BRL		ug/L	5
100-41-4	Ethylbenzene	BRL		ug/L	5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	5
95-47-6	*ortho*-Xylene	BRL		ug/L	5
100-42-5	Styrene	BRL		ug/L	5
75-25-2	Bromoform	BRL		ug/L	5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	50	49	98 %	70 - 130 %
1,2-Dichloroethane-d_4	50	46	93 %	70 - 130 %
Toluene-d_8	50	52	104 %	70 - 130 %
4-Bromofluorobenzene	50	65	129 %	70 - 130 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, 40 C.F.R. 136, Appendix A (1986).

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.

† Indicates analyte has poor purging efficiency. This is not preferred method of analysis.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2463-F**	Extracted:	**01-18-10 12:00**	Extracted:	**01-18-10 12:00**
Matrix:	**Aqueous**	Analyzed:	**01-19-10 15:26**	Analyzed:	**01-19-10 16:08**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
62-75-9	N-Nitrosodimethylamine	50	23	**46** %	50	23	**46** %	**1** %	40 - 140 %	25%
110-86-1	Pyridine	50	24	**48** %	50	23	**47** %	**3** %	40 - 140 %	25%
108-95-2	Phenol	50	23	**46** %	50	23	**46** %	**0** %	30 - 130 %	25%
62-53-3	Aniline	50	36	**72** %	50	34	**69** %	**4** %	40 - 140 %	25%
111-44-4	Bis(2-chloroethyl) ether	50	32	**63** %	50	32	**64** %	**1** %	40 - 140 %	25%
95-57-8	2-Chlorophenol	50	34	**68** %	50	34	**67** %	**0** %	30 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	50	35	**69** %	50	35	**70** %	**1** %	40 - 140 %	25%
106-46-7	1,4-Dichlorobenzene	50	35	**70** %	50	35	**70** %	**1** %	40 - 140 %	25%
100-51-6	Benzyl Alcohol	50	35	**70** %	50	34	**69** %	**2** %	30 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	50	36	**71** %	50	35	**71** %	**0** %	40 - 140 %	25%
95-48-7	2-Methylphenol	50	33	**66** %	50	33	**67** %	**1** %	30 - 130 %	25%
108-60-1	Bis(2-chloroisopropyl) ether	50	31	**61** %	50	31	**61** %	**0** %	40 - 140 %	25%
106-44-5	4-Methylphenol	50	33	**67** %	50	33	**67** %	**0** %	30 - 130 %	25%
621-64-7	N-Nitrosodi-n-propylamine	50	35	**70** %	50	36	**71** %	**2** %	40 - 140 %	25%
98-86-2	Acetophenone	50	41	**81** %	50	41	**82** %	**1** %	40 - 140 %	25%
67-72-1	Hexachloroethane	50	35	**70** %	50	35	**69** %	**1** %	40 - 140 %	25%
98-95-3	Nitrobenzene	50	36	**72** %	50	36	**72** %	**0** %	40 - 140 %	25%
78-59-1	Isophorone	50	38	**75** %	50	38	**76** %	**1** %	40 - 140 %	25%
88-75-5	2-Nitrophenol	50	39	**77** %	50	39	**77** %	**0** %	30 - 130 %	25%
105-67-9	2,4-Dimethylphenol	50	31	**63** %	50	31	**63** %	**0** %	30 - 130 %	25%
111-91-1	Bis(2-chloroethoxy) methane	50	36	**73** %	50	37	**74** %	**2** %	40 - 140 %	25%
120-83-2	2,4-Dichlorophenol	50	38	**76** %	50	38	**76** %	**0** %	30 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	50	37	**75** %	50	38	**76** %	**1** %	40 - 140 %	25%
106-47-8	4-Chloroaniline	50	41	**82** %	50	40	**80** %	**3** %	40 - 140 %	25%
87-68-3	Hexachlorobutadiene	50	37	**74** %	50	36	**71** %	**4** %	40 - 140 %	25%
59-50-7	4-Chloro-3-methylphenol	50	41	**83** %	50	42	**83** %	**1** %	30 - 130 %	25%
77-47-4	Hexachlorocyclopentadiene	50	40	**79** %	50	41	**81** %	**2** %	40 - 140 %	25%
88-06-2	2,4,6-Trichlorophenol	50	40	**79** %	50	40	**79** %	**0** %	30 - 130 %	25%
95-95-4	2,4,5-Trichlorophenol	50	41	**82** %	50	41	**82** %	**1** %	30 - 130 %	25%
91-58-7	2-Chloronaphthalene	50	39	**78** %	50	40	**79** %	**1** %	40 - 140 %	25%
88-74-4	2-Nitroaniline	50	43	**86** %	50	42	**84** %	**2** %	40 - 140 %	25%
100-25-4	1,4-Dinitrobenzene	50	48	**96** %	50	48	**95** %	**0** %	40 - 140 %	25%
131-11-3	Dimethyl phthalate	50	42	**84** %	50	42	**85** %	**0** %	40 - 140 %	25%
99-65-0	1,3-Dinitrobenzene	50	46	**92** %	50	46	**92** %	**0** %	40 - 140 %	25%
606-20-2	2,6-Dinitrotoluene	50	45	**91** %	50	45	**90** %	**1** %	40 - 140 %	25%
528-29-0	1,2-Dinitrobenzene	50	45	**91** %	50	46	**91** %	**1** %	40 - 140 %	25%
99-09-2	3-Nitroaniline	50	45	**91** %	50	44	**88** %	**3** %	40 - 140 %	25%
51-28-5	2,4-Dinitrophenol	50	58	**116** %	50	58	**116** %	**0** %	30 - 130 %	25%
100-02-7	4-Nitrophenol	50	30	**61** %	50	30	**59** %	**2** %	30 - 130 %	25%
132-64-9	Dibenzofuran	50	42	**83** %	50	42	**84** %	**1** %	40 - 140 %	25%
121-14-2	2,4-Dinitrotoluene	50	49	**98** %	50	48	**96** %	**2** %	40 - 140 %	25%
84-66-2	Diethyl phthalate	50	44	**88** %	50	43	**86** %	**2** %	40 - 140 %	25%
7005-72-3	4-Chlorophenyl phenyl ether	50	42	**83** %	50	41	**83** %	**1** %	40 - 140 %	25%
100-01-6	4-Nitroaniline	50	47	**95** %	50	45	**91** %	**4** %	40 - 140 %	25%
534-52-1	4,6-Dinitro-2-methylphenol	50	51	**103** %	50	51	**101** %	**2** %	30 - 130 %	25%
86-30-6	N-Nitrosodiphenylamine †	50	43	**85** %	50	42	**85** %	**1** %	40 - 140 %	25%
122-66-7	1,2-Diphenylhydrazine à	50	42	**84** %	50	41	**83** %	**1** %	40 - 140 %	25%
101-55-3	4-Bromophenyl phenyl ether	50	37	**75** %	50	38	**75** %	**0** %	40 - 140 %	25%

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2463-F**	Extracted:	**01-18-10 12:00**	Extracted:	**01-18-10 12:00**
Matrix:	**Aqueous**	Analyzed:	**01-19-10 15:26**	Analyzed:	**01-19-10 16:08**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
86-74-8	Carbazole	50	48	**95** %	50	45	**91** %	**5** %	40 - 140 %	25%
84-74-2	Di-*n*-butyl phthalate	50	47	**93** %	50	45	**89** %	**5** %	40 - 140 %	25%
85-68-7	Butyl benzyl phthalate	50	45	**89** %	50	44	**89** %	**1** %	40 - 140 %	25%
91-94-1	3,3'-Dichlorobenzidine	50	46	**91** %	50	45	**89** %	**2** %	40 - 140 %	25%
117-81-7	Bis(2-ethylhexyl) phthalate	50	44	**89** %	50	44	**88** %	**1** %	40 - 140 %	25%
117-84-0	Di-*n*-octyl phthalate	50	47	**95** %	50	46	**92** %	**3** %	40 - 140 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	9.5	**48** %	20	9.7	**48** %		15 - 110 %
Phenol-d5	20	8.3	**41** %	20	8.3	**42** %		15 - 110 %
Nitrobenzene-d5	10	6.7	**67** %	10	6.7	**67** %		30 - 130 %
2-Fluorobiphenyl	10	7.7	**77** %	10	7.8	**78** %		30 - 130 %
2,4,6-Tribromophenol	20	18	**88** %	20	17	**85** %		15 - 110 %
Terphenyl-d14	10	8.3	**83** %	10	8.2	**82** %		30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample extraction performed by EPA Method 3510C.

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.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8270C (Part 1)**
QC Batch ID: **SV-2463-F**
Matrix: **Aqueous**

Instrument ID: **MS-3 HP 5890**
Extracted: **01-18-10 12:00**
Analyzed: **01-19-10 16:50**
Analyst: **MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5
51-28-5	2,4-Dinitrophenol	BRL		ug/L	10
100-02-7	4-Nitrophenol	BRL		ug/L	5
132-64-9	Dibenzofuran	BRL		ug/L	5
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	5
84-66-2	Diethyl phthalate	BRL		ug/L	5
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	5
100-01-6	4-Nitroaniline	BRL		ug/L	5
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2463-F**	Extracted:	**01-18-10 12:00**
Matrix:	**Aqueous**	Analyzed:	**01-19-10 16:50**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	8	**39** %	15 - 110 %
Phenol-d5	20	8	**38** %	15 - 110 %
Nitrobenzene-d5	10	7	**69** %	30 - 130 %
2-Fluorobiphenyl	10	8	**76** %	30 - 130 %
2,4,6-Tribromophenol	20	13	**66** %	15 - 110 %
Terphenyl-d14	10	7	**72** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C.

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.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 2)**	Instrument ID:	**MS-6 HP 6890**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2463-F**	Extracted:	**01-18-10 12:00**	Extracted:	**01-18-10 12:00**
Matrix:	**Aqueous**	Analyzed:	**01-19-10 10:38**	Analyzed:	**01-19-10 11:18**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	5.0	3.3	**66** %	5.0	4.0	**79** %	**18** %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	5.0	3.5	**70** %	5.0	4.2	**83** %	**18** %	40 - 140 %	20%
208-96-8	Acenaphthylene	5.0	3.8	**75** %	5.0	4.1	**81** %	**7** %	40 - 140 %	20%
83-32-9	Acenaphthene	5.0	3.6	**72** %	5.0	4.0	**81** %	**12** %	40 - 140 %	20%
86-73-7	Fluorene	5.0	3.8	**77** %	5.0	3.9	**79** %	**3** %	40 - 140 %	20%
85-01-8	Phenanthrene	5.0	3.6	**72** %	5.0	3.8	**77** %	**6** %	40 - 140 %	20%
120-12-7	Anthracene	5.0	3.9	**78** %	5.0	4.1	**83** %	**6** %	40 - 140 %	20%
206-44-0	Fluoranthene	5.0	3.8	**77** %	5.0	4.2	**84** %	**9** %	40 - 140 %	20%
129-00-0	Pyrene	5.0	4.5	**91** %	5.0	4.6	**92** %	**2** %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	5.0	4.3	**87** %	5.0	4.4	**88** %	**1** %	40 - 140 %	20%
218-01-9	Chrysene	5.0	4.2	**83** %	5.0	4.3	**85** %	**2** %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	5.0	4.5	**91** %	5.0	4.7	**94** %	**3** %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	5.0	4.4	**88** %	5.0	4.5	**91** %	**3** %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	5.0	4.6	**92** %	5.0	4.8	**96** %	**4** %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	5.0	4.6	**93** %	5.0	4.8	**96** %	**4** %	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	5.0	4.5	**91** %	5.0	4.7	**95** %	**4** %	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	5.0	4.5	**90** %	5.0	4.6	**93** %	**3** %	40 - 140 %	20%
87-68-3	Hexachlorobutadiene	5.0	3.4	**68** %	5.0	4.2	**84** %	**21** % q	40 - 140 %	20%
118-74-1	Hexachlorobenzene	5.0	4.3	**86** %	5.0	4.7	**94** %	**9** %	40 - 140 %	20%
87-86-5	Pentachlorophenol	5.0	5.3	**105** %	5.0	6.0	**120** %	**13** %	30 - 130 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	9.1	**45** %	20	11	**53** %		15 - 110 %
Phenol-d5	20	7.9	**39** %	20	9.1	**45** %		15 - 110 %
Nitrobenzene-d5	10	7.8	**78** %	10	8.6	**86** %		30 - 130 %
2-Fluorobiphenyl	10	7.4	**74** %	10	8.2	**82** %		30 - 130 %
2,4,6-Tribromophenol	20	18	**88** %	20	19	**97** %		15 - 110 %
Terphenyl-d14	10	7.0	**70** %	10	7.2	**72** %		30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C.

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.

q Surrogate recovery outside recommended limits.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Part 2)**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2463-F**	Extracted:	**01-18-10 12:00**
Matrix:	**Aqueous**	Analyzed:	**01-19-10 11:59**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	0.5
91-57-6	2-Methylnaphthalene	BRL		ug/L	0.5
208-96-8	Acenaphthylene	BRL		ug/L	0.5
83-32-9	Acenaphthene	BRL		ug/L	0.5
86-73-7	Fluorene	BRL		ug/L	0.5
85-01-8	Phenanthrene	BRL		ug/L	0.5
120-12-7	Anthracene	BRL		ug/L	0.5
206-44-0	Fluoranthene	BRL		ug/L	0.5
129-00-0	Pyrene	BRL		ug/L	0.5
56-55-3	Benzo[a]anthracene	BRL		ug/L	0.1
218-01-9	Chrysene	BRL		ug/L	0.1
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	0.1
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	0.1
50-32-8	Benzo[a]pyrene	BRL		ug/L	0.1
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	0.1
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	0.1
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	0.1
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	11	**54** %	15 - 110 %
Phenol-d5	20	9.7	**49** %	15 - 110 %
Nitrobenzene-d5	10	9.5	**95** %	30 - 130 %
2-Fluorobiphenyl	10	9.0	**90** %	30 - 130 %
2,4,6-Tribromophenol	20	19	**94** %	15 - 110 %
Terphenyl-d14	10	7.9	**79** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3510C.

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

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/Out State.pdf

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt list aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 202708 — Potable Water, Non-Potable Water, Solid and Chemical Materials
http://www4.egov.nh.gov/DES/NHELAP

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water, Solid and Hazardous Waste
http://www.wadsworth.org/labcert/elap/comm.html

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT-87643 — Potable Water
http://healthvermont.gov/enviro/ph_lab/water_test.aspx#cert

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS **Department of Environmental Protection, M-MA-103**

Groundwater Analytical maintains MassDEP environmental laboratory certification for only the methods and analytes listed below. Analyses for certified analytes are conducted in accordance with MassDEP certification standards, except as may be specifically noted in the project narrative.

Potable Water (Drinking Water)

Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Alkalinity, Total	SM 2320-B
Antimony	EPA 200.8
Arsenic	EPA 200.8
Barium	EPA 200.7
Barium	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chlorine, Residual Free	SM 4500-CL-G
Chromium	EPA 200.7
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
E. Coli (Treatment and Distribution)	EC-MUG SM 9221-F
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G
Fecal Coliform (Source Water)	MF SM 9222-D
Fluoride	EPA 300.0
Fluoride	SM 4500-F-C
Heterotrophic Plate Count	SM 9215-B
Lead	EPA 200.8
Mercury	EPA 245.1
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Nitrite-N	EPA 300.0
Nitrite-N	Lachat 10-107-04-1-C
pH	SM 4500-H-B
Selenium	EPA 200.8
Silver	EPA 200.7
Silver	EPA 200.8
Sodium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.8
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223
Total Coliform (Treatment and Distribution)	MF SM 9222-B
Total Dissolved Solids	SM 2540-C
Trihalomethanes	EPA 524.2
Turbidity	SM 2130-B
Volatile Organic Compounds	EPA 524.2

Non-Potable Water (Wastewater)

Analyte	Method
Aldrin	EPA 608
Alkalinity, Total	SM 2320-B
Alpha-BHC	EPA 608
Aluminum	EPA 200.7
Aluminum	EPA 200.8

Non-Potable Water (Wastewater)

Analyte	Method
Ammonia-N	Lachat 10-107-06-1-B
Antimony	EPA 200.7
Antimony	EPA 200.8
Arsenic	EPA 200.7
Arsenic	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Beta-BHC	EPA 608
Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chemical Oxygen Demand	SM 5220-D
Chlordane	EPA 608
Chloride	EPA 300.0
Chlorine, Total Residual	SM 4500-CL-G
Chromium	EPA 200.7
Chromium	EPA 200.8
Cobalt	EPA 200.7
Cobalt	EPA 200.8
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
Delta-BHC	EPA 608
Dieldrin	EPA 608
Endosulfan I	EPA 608
Endosulfan II	EPA 608
Endosulfan Sulfate	EPA 608
Endrin	EPA 608
Endrin Aldehyde	EPA 608
Fluoride	EPA 300.0
Gamma-BHC	EPA 608
Hardness (CaCO3), Total	EPA 200.7
Hardness (CaCO3), Total	SM 2340-B
Heptachlor	EPA 608
Heptachlor Epoxide	EPA 608
Iron	EPA 200.7
Kjeldahl-N	Lachat 10-107-06-02-D
Lead	EPA 200.7
Magnesium	EPA 200.7
Manganese	EPA 200.7
Manganese	EPA 200.8
Mercury	EPA 245.1
Molybdenum	EPA 200.7
Molybdenum	EPA 200.8
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Non-Filterable Residue	SM 2540-D
Oil and Grease	EPA 1664

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS **Department of Environmental Protection, M-MA-103**

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Non-Potable Water (Wastewater)

Analyte	Method
Orthophosphate	Lachat 10-115-01-1-A
pH	SM 4500-H-B
Phenolics, Total	EPA 420.4
Phenolics, Total	Lachat 10-210-00-1-B
Phosphorus, Total	Lachat 10-115-01-1-C
Phosphorus, Total	SM 4500-P-B,E
Polychlorinated Biphenyls (Oil)	EPA 600/4-81-045
Polychlorinated Biphenyls (Water)	EPA 608
Potassium	EPA 200.7
Selenium	EPA 200.7
Selenium	EPA 200.8
Silver	EPA 200.7
Sodium	EPA 200.7
Specific Conductivity	SM 2510-B
Strontium	EPA 200.7
Sulfate	EPA 300.0
SVOC-Acid Extractables	EPA 625
SVOC-Base/Neutral Extractables	EPA 625
Thallium	EPA 200.7
Thallium	EPA 200.8
Titanium	EPA 200.7
Total Dissolved Solids	SM 2540-C
Total Organic Carbon	SM 5310-B
Toxaphene	EPA 608
Vanadium	EPA 200.7
Vanadium	EPA 200.8
Volatile Aromatics	EPA 602
Volatile Aromatics	EPA 624
Volatile Halocarbons	EPA 624
Zinc	EPA 200.7
Zinc	EPA 200.8