

AMERADA HESS CORPORATION

Handwritten: MAG91041

732-750-6000
732-750-6105 (FAX)

1 HESS PLAZA
WOODBIDGE, NJ 07095-0961

October 21, 2005

United States Environmental Protection Agency
RGP-NOC Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Stamp: OCT 24 2005

VIA: OVERNIGHT MAIL

**RE: Notice of Intent for the Remediation General Permit
Amerada Hess Station #21507
615 Broadway Street, Lawrence, Massachusetts
MADEP RTN # 3-3387**

To Whom It May Concern:

Amerada Hess Corporation (Hess) is pleased to submit this Notice of Intent (NOI) for the Remediation General Permit (RGP) (MAG910000) for the above referenced site. This submittal was prepared by Shaw Environmental & Infrastructure (Shaw), on behalf of Hess.

Should you have any questions or require additional information, please do not hesitate to contact the undersigned at (732) 750-7068 or Mr. James Collins of Shaw, at (978) 691-2108.

Sincerely,



Dawn M. Coughlin
Manager, Marketing & Refining Remediation

Attachment

cc: J. Collins, Shaw (w/o Attachment)
S. Ross, Williams & Ross (w/attachment)
H. Goldman, AHC (w/attachment)
R. Pazdro, Quantum Mgmt. Group (w/o Attachment)



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: Hess Station #21507		Facility/site address:	
Location of facility/site: longitude: -71 10' 40" latitude: 42 43' 01"	Facility SIC code(s): 5541	Street: 615 Broadway Street (Route 28)	
b) Name of facility/site owner: Amerada Hess Corporation		Town: Lawrence	
Email address of owner: dcoughlin@hess.com	State: MA	Zip: 01841	County: USA
Telephone no. of facility/site owner: (732) 750-7068			
Fax no. of facility/site owner: (732) 750-6105		Owner is (check one): 1. Federal ___ 2. State/Tribal ___ 3. Private ☒ 4. other, if so, describe:	
Address of owner (if different from site):			
Street: One Hess Plaza			
Town: Woodbridge	State: NJ	Zip: 07095-0961	County: USA
c) Legal name of operator: Amerada Hess Corporation	Operator telephone no: (732) 750-7068		
	Operator fax no.: (732) 750-6105		Operator email:
Operator contact name and title: Dawn Coughlin, Manager, Refining and Marketing Remediation			
Address of operator (if different from owner):		Street:	
Town:	State:	Zip:	County:
d) Check "yes" or "no" for the following:			
1. Has a prior NPDES permit exclusion been granted for the discharge? Yes ☒ No __, if "yes," number: MA-05I-009			
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes __ No ☒ , if "yes," date and tracking #:			
3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Yes ☒ No ☒			
4. For sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting? Yes ☒ No __			

e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes ☒ No ☐ If "yes," please list: 1. site identification # assigned by the state of NH or MA: RTN #3-3387 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number: MADEP, BWSC, NERO, One Winter Street, Boston, MA	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:
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2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage: Discharge of treated groundwater from remediation system to City of Lawrence Storm Water System.		
b) Provide the following information about each discharge:	1) Number of discharge points: 1	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft³/s)? Max. flow <u>0.022</u> Average flow <u>0.0005</u> Is maximum flow a design value? Y ☒ N ☐ For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.
3) Latitude and longitude of each discharge within 100 feet: pt. 1: long. -71 10' 36" lat. 42 42' 55"		
4) If hydrostatic testing, total volume of the discharge (gals):		5) Is the discharge intermittent <u>No</u> or seasonal <u>No</u>? Is discharge ongoing Yes ☒ No ☐?
c) Expected dates of discharge (mm/dd/yy): start <u>3/30/2005</u> end <u>6/30/2008</u>		
d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).		

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

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

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

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids	✓		1	Grab	160.2	4 mg/l	<4000	0	<4000	0
2. Total Residual Chlorine	✓		1	Grab	330.5	50 ug/l	<50	0	<50	0
3. Total Petroleum Hydrocarbons	✓		11	Grab	418.1	0.61 mg/l	<610	0	<610	0
4. Cyanide	✓		1	Grab	335.3	10 ug/l	0	0	0	0
5. Benzene		✓	11	Grab	8260B/ 624	0.5 ug/l	53	0.0029	14	0.00002
6. Toluene		✓	11	Grab	8260B/ 624	1 ug/l	217	0.0118	78	0.0001
7. Ethylbenzene		✓	11	Grab	8260B/ 624	1 ug/l	15	0.001	7	0.00001
8. (m,p,o) Xylenes		✓	11	Grab	8260B/ 624	1 ug/l	284	0.015	86	0.0001
9. Total BTEX ⁴		✓	11	Grab	8260B/ 624	1 ug/l	397	0.022	185	0.0002

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide ⁵ (1,2- Dibromo-methane)	✓		1	Grab	8260B	2 ug/L	<2	0	<2	0
11. Methyl-tert-Butyl Ether (MtBE)		✓	11	Grab	8260B/624	1 ug/L	3,830	0.209	426	0.0006
12. tert-Butyl Alcohol (TBA)		✓	1	Grab	8260B	100 ug/L	1,210	0.066	1210	0.0016
13. tert-Amyl Methyl Ether (TAME)		✓	1	Grab	8260B	2 ug/L	64.7	0.0035	64.7	0.0001
14. Naphthalene		✓	11	Grab	8270C/624	5.2 ug/L	13.4	0.0007	2.2	0.00001
15. Carbon Tetra-chloride	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
16. 1,4 Dichlorobenzene	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
17. 1,2 Dichlorobenzene	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
18. 1,3 Dichlorobenzene	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
19. 1,1 Dichloroethane	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
20. 1,2 Dichloroethane	✓		1	Grab	8260B	2 ug/L	<2	0	<2	0
21. 1,1 Dichloroethylene	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
22. cis-1,2 Dichloro-ethylene	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
23. Dichloromethane (Methylene Chloride)	✓		1	Grab	8260B	2 ug/L	<2	0	<2	0
24. Tetrachloroethylene	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
26. 1,1,2 Trichloroethane	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
27. Trichloroethylene	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
28. Vinyl Chloride	✓		1	Grab	8260B	1 ug/L	<1	0	<1	0
29. Acetone		✓	1	Grab	8260B	5 ug/L	23.7	0.0013	23.7	0.000003
30. 1,4 Dioxane	✓		1	Grab	8260B	25 ug/L	<25	0	<25	0
31. Total Phenols		✓	1	Grab	8270C	21 ug/L	92.3	0.005	92.3	0.0001
32. Pentachlorophenol	✓		1	Grab	8270C	5.2 ug/L	<5.2	0	<5.2	0
33. Total Phthalates ⁶ (Phthalate esthers)	✓		1	Grab	8270C	10 ug/l	<10	0	<10	0
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓		1	Grab	8270C	5.2 ug/L	<5.2	0	<5.2	0
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		✓	1	Grab	8270CSIM	0.1 ug/L	0.15	0.00001	0.15	0.000001
a. Benzo(a) Anthracene		✓	1	Grab	8270CSIM	0.052 ug/L	0.084	0.00001	0.084	0.000001
b. Benzo(a) Pyrene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
c. Benzo(b)Fluoranthene		✓	1	Grab	8270C SIM	0.052 ug/L	0.067	0.00001	0.067	0.00001
d. Benzo(k) Fluoranthene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
e. Chrysene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.2	0

⁶The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
g. Indeno(1,2,3-cd) Pyrene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		✓	1	Grab	8270CSIM	0.1 ug/L	2.2	0.0001	2.2	0.00001
h. Acenaphthene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
i. Acenaphthylene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
j. Anthracene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
k. Benzo(ghi) Perylene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
l. Fluoranthene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
m. Fluorene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
n. Naphthalene-		✓	1	Grab	8270CSIM	0.1 ug/L	2.2	0.0001	2.2	0.00001
o. Phenanthrene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
p. Pyrene	✓		1	Grab	8270CSIM	0.1 ug/L	<0.1	0	<0.1	0
37. Total Polychlorinated Biphenyls (PCBs)	✓		1	Grab	608	0.52 ug/L	<0.52	0	<0.52	0
38. Antimony	✓		1	Grab	6010B	6 ug/l	<6	0	<6	0
39. Arsenic		✓	1	Grab	6010B	5 ug/l	30.8	0.0017	30.8	0.00004
40. Cadmium	✓		1	Grab	6010B	4 ug/l	<4	0	<4	0
41. Chromium III	✓		1	Grab	6010B	10 ug/l	<10	0	<10	0
42. Chromium VI	✓		1	Grab	6010B	10 ug/l	<10	0	<10	0

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper		✓	1	Grab	6010B	25 ug/L	206	0.0112	206	0.0003
44. Lead		✓	1	Grab	6010B	5 ug/L	11.3	0.0006	11.3	0.00002
45. Mercury	✓		1	Grab	6010B	0.2 ug/L	<0.2	0	<0.2	0
46. Nickel	✓		1	Grab	6010B	40 ug/L	<40	0	<40	0
47. Selenium	✓		1	Grab	6010B	10 ug/L	<10	0	<10	0
48. Silver	✓		1	Grab	6010B	5 ug/L	<5	0	<5	0
49. Zinc	✓		1	Grab	6010B	20 ug/L	<20	0	<20	0
50. Iron		✓	1	Grab	6010B	100 ug/L	1480	0.081	1480	0.0019
Other (describe): See Attached										

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

<i>Step 1:</i> 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? As, Cu, Fe, and Pb (based on ML Sb, Cd, Ni, Se, Ag)
<i>Step 2:</i> 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: <u>Ag, As, Cd, Cu, Fe, Pb, Ni, Se, and Sb</u> DF: <u>55</u>	Look up the limit calculated at the corresponding dilution factor in Appendix IV. Do any of the metals in the influent have the potential to exceed the corresponding effluent limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ☐ N ☒ If "Yes," list which metals:

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

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:						
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): 800 lb clay adsorber			
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 <u>0.24</u> Maximum flow rate of treatment system <u>10</u> Design flow rate of treatment system <u>10</u>						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): NA						

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: System effluent is discharged into the municipal storm water system located on Broadway Street. Storm water then flows southward underneath Broadway Street until it is discharged into the Spicket River.						
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 discharges, 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 <u>B</u> ,						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water <u>1.2</u> 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)? metals, nutrients, pathogens Is there a TMDL? Yes ☒ No ☐ If yes, for which pollutant(s)? metals, nutrients, pathogens						

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

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes ___ No ☒
Has any consultation with the federal services been completed? No ☒ or is consultation underway? Yes ___ No ☒
What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one): a "no jeopardy" opinion? ___ or written concurrence ___ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?
b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge? Yes ___ No ☒ Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes ___ No ☒

7. Supplemental information. :

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

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: Hess Station # 21507

Operator signature: 

Title: Manager, Refining and Marketing Remediation

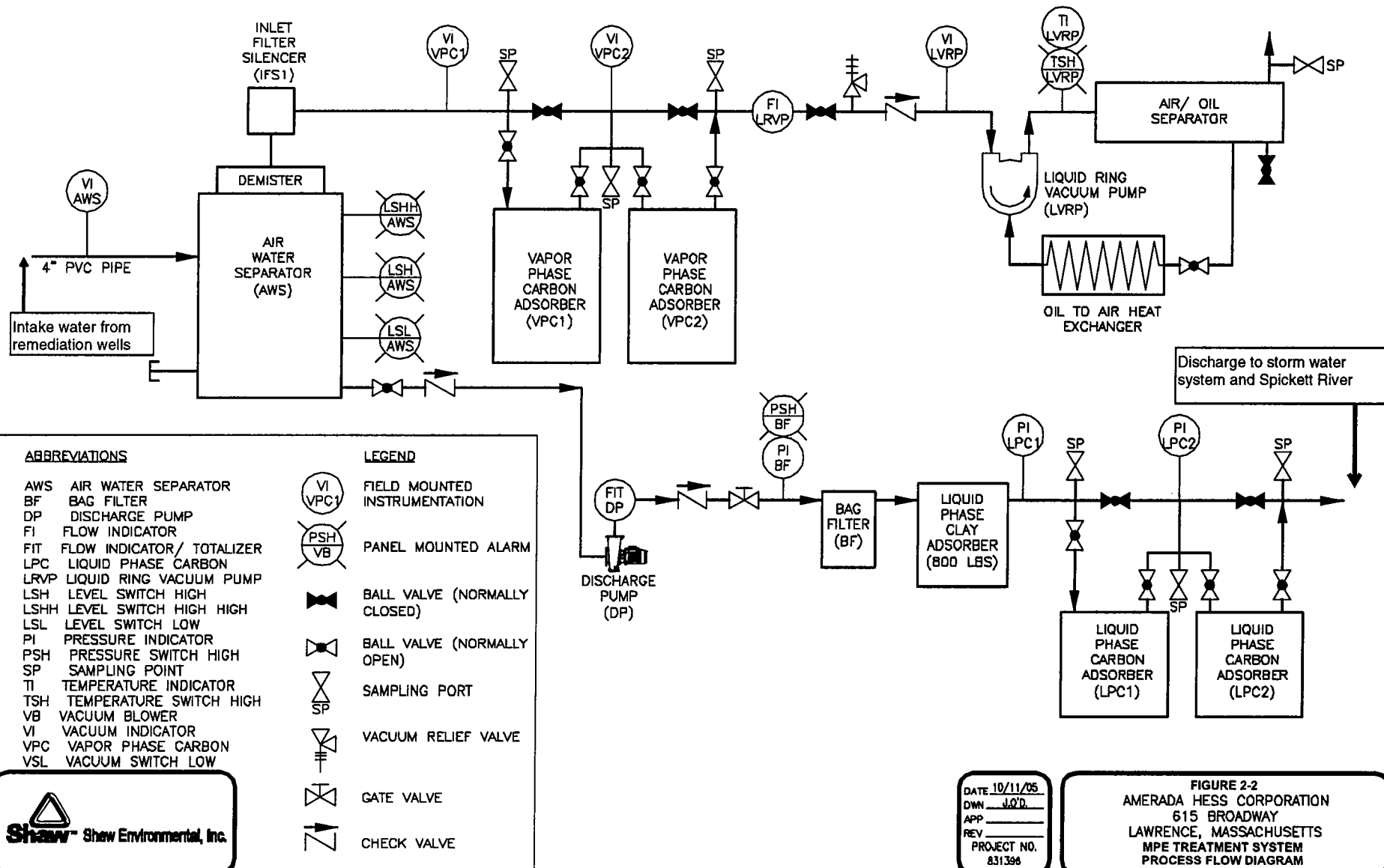
Date: October 21, 2005

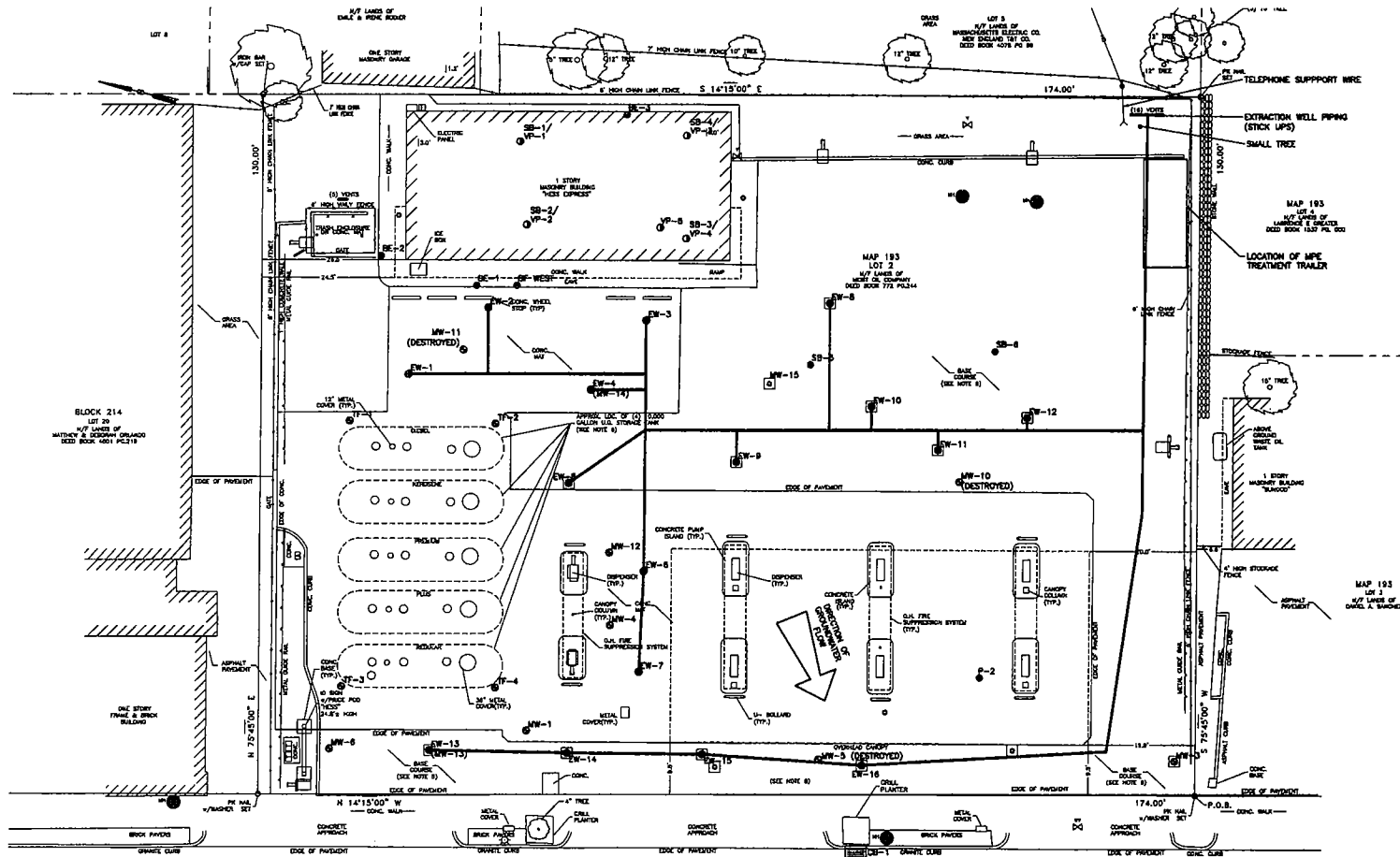
QUESTION 2 (D) FLOW DIAGRAM
Amerada Hess Corporation
Station #21507, 615 Broadway Street, Lawrence, MA

Question 2 (d) requests a line diagram or flow schematic showing water flow through the facility including:

1. source of intake water;
2. contributing flow from the operation;
3. treatment units; and,
4. discharge points and receiving water(s)

The attached process and instrumentation diagram indicates that the contributing flow is from 16 groundwater multiphase extraction wells and that the discharge is to the Spickett River via storm water system.





BROADWAY
(A.K.A. MASSACHUSETTS STATE HIGHWAY ROUTE 28)
(SAY HIGH R.O.W.)
(ASPHALT ROADWAY)

NOTES:

1. LOCUS KNOWN AS LOT 2, MAP 183 AS SHOWN ON THE OFFICIAL TAX MAP, CITY OF LAWRENCE, ESSEX COUNTY, COMMONWEALTH OF MASSACHUSETTS.
2. AREA = 22,820 S.F. OR 0.518 ACRES
3. THE LOCATION OF UNDERGROUND UTILITIES HAVE NOT BEEN SHOWN BEFORE ANY EXCAVATION IS TO BEGIN. ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES.
4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT.
5. THIS PROPERTY MAY BE SUBJECT TO RESTRICTIONS, COVENANTS AND/OR EASEMENTS, WRITTEN OR IMPLIED.
6. UNDERGROUND TANK SIZES WERE OBTAINED FROM INFORMATION RECEIVED FROM STATION MANAGER OR EMPLOYEE. ALL SIZES AND LOCATIONS ARE APPROXIMATE & ARE SUBJECT TO FIELD VERIFICATION.
7. LOCUS IS LOCATED IN FLOOD HAZARD ZONE C (AREAS OF MINIMAL FLOODING) PER REG. # 2.
8. AS THE TIME OF FIELD SURVEY FINISHED PAVEMENT AND STRIPING HAD NOT BEEN COMPLETED.

REFERENCES:

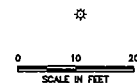
1. THE OFFICIAL TAX MAPS NO. 183 & 214, CITY OF LAWRENCE, ESSEX COUNTY, MASSACHUSETTS.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, CITY OF LAWRENCE, MASSACHUSETTS, ESSEX COUNTY," PANEL 2 OF 4, COMMUNITY PANEL NUMBER 250087 0002 B, EFFECTIVE DATE AUGUST 2, 1982.
3. MAP ENTITLED "PLAN OF LAND OF THE HEIRS OF JAMES A. TREAT SITUATED IN LAWRENCE AND METHUEN," RECORDED IN THE ESSEX REGISTRY BOOK 103, PG. 34A, DATED NOV. 18, 1980.
4. MAP ENTITLED "SITE PLAN, AMERADA HESS CORPORATION, PROPOSED HESS EXPRESS FACILITY, LOT #2, MAP #183, 827 BROADWAY, CITY OF LAWRENCE, ESSEX COUNTY, MASSACHUSETTS," PREPARED BY BOHLER ENGINEERING, P.C., DATE 2/21/02, LAST REVISED 7/29/02, SHEET 3 OF 11.
5. MAP ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY, AMERADA HESS CORPORATION, 827 BROADWAY, LOT #2, MAP #183, CITY OF LAWRENCE, ESSEX COUNTY, COMMONWEALTH OF MASSACHUSETTS," PREPARED BY CONTROL POINT ASSOCIATES, DATE 11-19-01.

LEGEND

- ⊗ EXTRACTION WELL
- ⊗ REMEDIATION TRENCH
- ⊗ VP-3 SOIL BORING/VAPOR EXTRACTION WELL
- ⊗ SB-3 SOIL BORING
- ⊗ GW-4 GROUNDWATER MONITORING WELL
- ⊗ CB-2 CATCH BASIN
- OVERHEAD WARES
- HYDRANT
- VALVE
- WATER VALVE
- GUY WIRE
- UTILITY POLE
- ⊗ MONITORING WELL
- ⊗ ELECTRIC METER
- U-BOLLARD
- METAL GUIDE RAIL
- ⊗ AREA LIGHT
- ⊗ PAY PHONE
- ⊗ AIR STATION

NOTE

1. THIS PLAN WAS TAKEN FROM A PLAN ENTITLED "AS BUILT SURVEY," BY BOHLER ENGINEERING, P.C., DATED 1-8-03, DRAWING NUMBER 1 OF 1, FOR AMERADA HESS CORPORATION. THE INFORMATION CONTAINED HEREIN WAS NOT VERIFIED BY SHAW ENVIRONMENTAL, INC.



REV	DATE	DESCRIPTION	DES BY	CHK BY	APP BY
1	12/17/02				



AMERADA HESS CORPORATION
HESS STATION #21507
615 BROADWAY, LAWRENCE, MASSACHUSETTS

SITE DETAIL

DRAWING NO.
2-1
PROJECT NO.
831386

QUESTION 3B – OTHER PARAMETERS BELIEVED PRESENT

***Amerada Hess Corporation
Station #21507, 615 Broadway Street, Lawrence, MA***

Question 3b requests an indication of other parameters believed present in the system influent. Based on the sampling conducted on September 26, 2005, the following additional parameters were detected and believed present:

Parameter	Concentration (µg/l)
n-Butylbenzene	5.1
1,2,4-Trimethylbenzene	100
1,3,5-Trimethylbenzene	32.2
2-Methylnaphthalene	0.4

The presence of these parameters is consistent with gasoline and No. 2 fuel oil releases (NOI permit category of Petroleum with other contaminants) that have previously occurred at the Site.

QUESTION 3C - DILUTION FACTOR ESTIMATION

Amerada Hess Corporation

Station #21507, 615 Broadway Street, Lawrence, MA

Question 3c of the *Notice of Intent for the General Remediation Permit* indicates that a dilution factor (DF) must be calculated for untreated influents that have metal concentrations that exceed the Appendix III effluent limitations. Arsenic, copper, iron, and lead exceed the limitation. For the following metals, the minimum level (ML) of the test method was above the effluent limitation: antimony, cadmium, nickel, selenium, and silver. The formula for calculating the DF in Massachusetts is:

$$DF = \frac{Q_d + Q_s}{Q_d}$$

where:

Q_d = Maximum flow rate of the discharge (cubic feet per second [cfs])

Q_s = Receiving water 7Q10 flow (cfs)

7Q10 = Minimum flow for 7 consecutive days with a recurrence interval of 10 years

The maximum flow rate of the discharge is 10 gpm or 0.022 cfs. The treatment system discharges to the Spicket River. According to published data (Wandle, S.W., Jr., and Fontaine, R.A., 1984 *Gazetteer of Hydrologic Characteristics of Streams in Massachusetts—Merrimack River Basin*: U.S. Geological Survey Water-Resources Investigation Report 84-4284.) the 7 day 10 year low flow (7Q10) is 1.2 cubic feet per second (cfs).

Using a maximum discharge flow rate of 0.022 cfs and receiving water 7Q10 of 1.2 cfs, the dilution factor is approximately 55. Based on Appendix IV for a DF of 55, the effluent limitations for the metals discussed above are:

Metal	Technology Based Effluent Limitation (µg/l)	Maximum Influent Concentration (µg/l)	Influent Concentration Source	Potential to Exceed Technology Based Effluent Limitation
Antimony	141	6	ML	No
Arsenic	500	30.8	Measured	No
Cadmium	10	4	ML	No
Copper	260	206	Measure	No
Lead	66	11	Measured	No
Nickel	1451	40	ML	No
Selenium	250	10	ML	No
Silver	57	5	ML	No
Iron	5,000	1,480	Measured	No

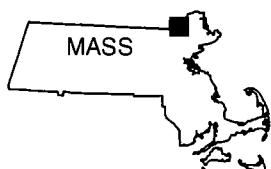
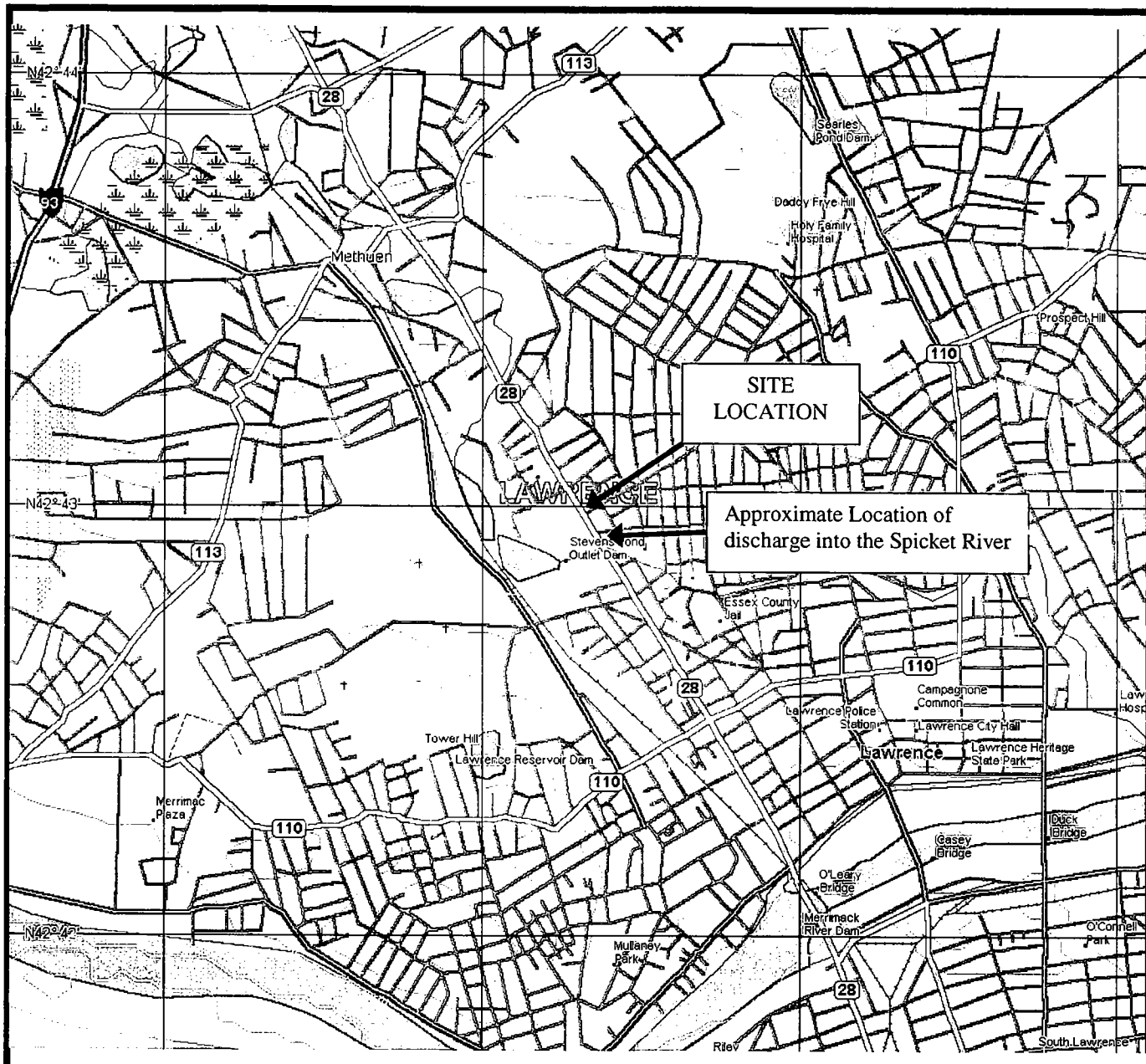
Based on the dilution factor, none of the metals have a potential to exceed the technology based effluent limitation.

QUESTION 5 (C) SITE LOCATION MAP

Amerada Hess Corporation

Station #21507, 615 Broadway Street, Lawrence, MA

Question 5(c) requests a detailed map indicating the site location and location of the outfall to the receiving stream. The map is to include nearby sensitive receptors (e.g., surface waters, drinking water supplies, and wetland areas). The attached site location map shows the location of the site and the outfall. The attached DEP Priority Resource Map shows that there are no drinking water supplies or wetland areas near the site. Wetlands are located where the storm water system discharge enters the Spicket River.



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SCALE IN MILES

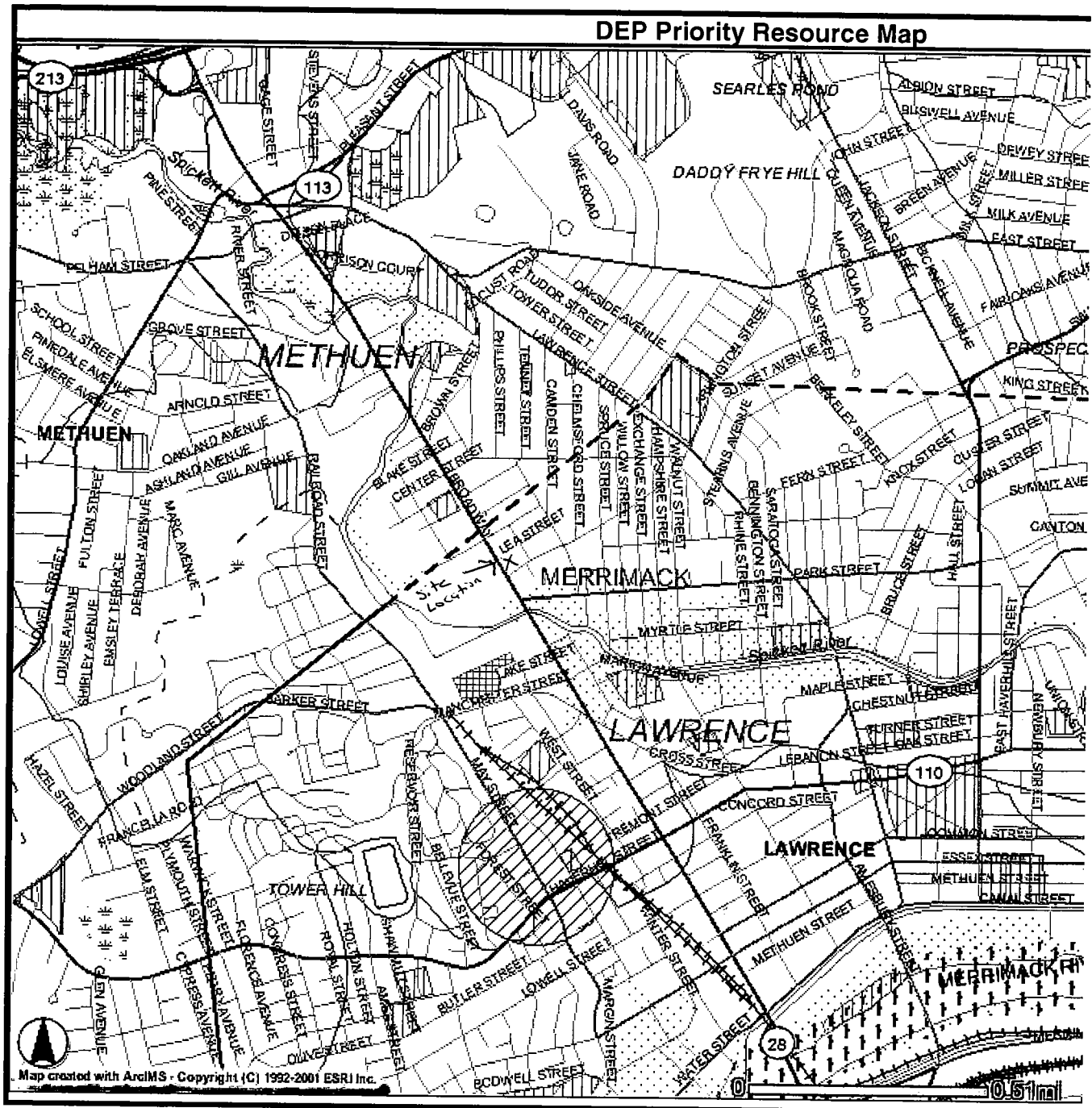


Shaw Environmental & Infrastructure, Inc.

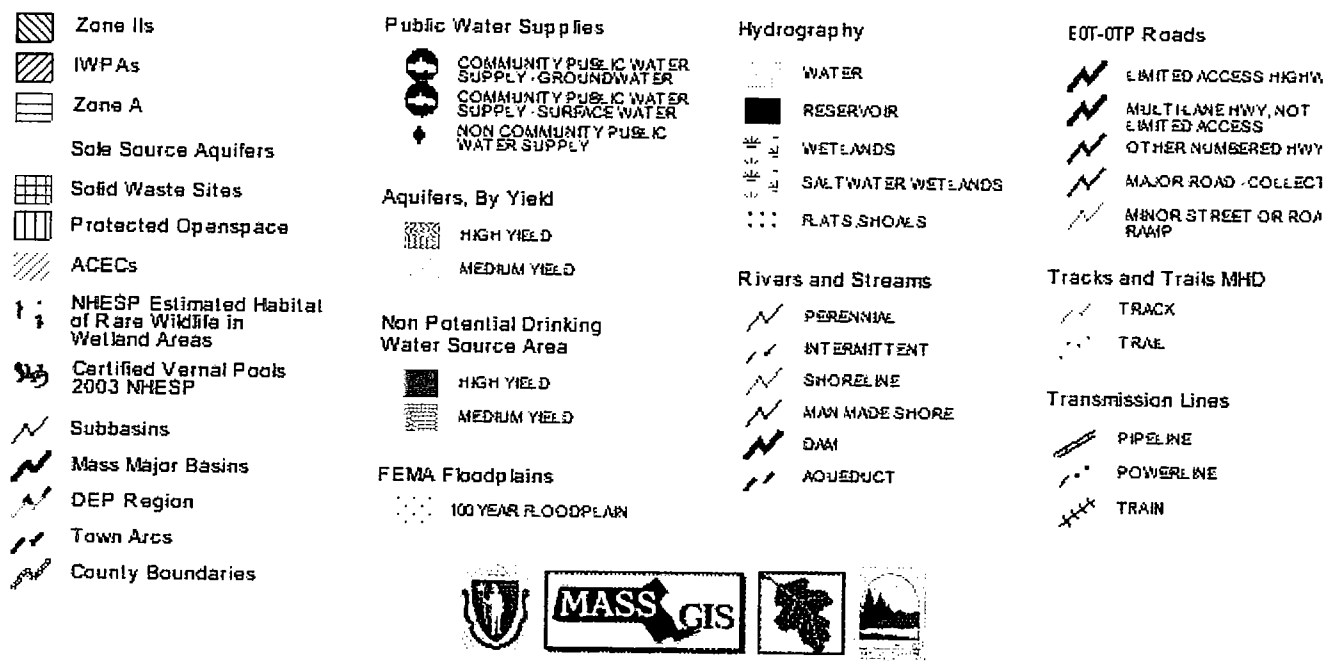
DATE 10-3-01
DWN cjh
REV
PROJECT #831396

Figure 1-1
AMERADA HESS CORPORATION
615 BROADWAY
LAWRENCE, MASSACHUSETTS

SITE LOCATION MAP



DEP MCP 21e Map Legend



QUESTION 6 - CONSULTATION WITH FEDERAL SERVICES

Amerada Hess Corporation Station #21507, 615 Broadway Street, Lawrence, MA

With regards to the area in the proximity of the facility or the discharge, Question 6 requests information concerning the presence of:

1. Threatened or endangered species;
2. Designated critical habitats;
3. Historic properties listed or eligible for listing on the National Register of Historic Places

The facility and discharge are located in Lawrence, Essex County, Massachusetts.

Threatened & Endangered Species

Appendix VII of the Remediation General Permit indicates that there are four species of concern to facilities seeking coverage for permit coverage, namely the shortnose sturgeon (*acipenser brevirostrum*), the bog turtle (*clemmys mulenbergii*), the dwarf wedge mussel (*alasmidonta heterodon*), and the northern redbelly cooter (*pseudemys rubriventris*). The Massachusetts Division of Fisheries and Wildlife (MDFW) provides rare species lists by county and town. Although there are threatened and endangered species within Essex County, only two (shortnose sturgeon and dwarf wedge mussel) of the four species of concern are listed (<http://www.mass.gov/dfwele/dfw/nhsp/esse.htm>). In addition, no threatened or endangered species are listed in the City of Lawrence (<http://www.mass.gov/dfwele/dfw/nhsp/townl.htm>). A printout of the listings is attached.

Designated Critical Habitats

Per 50 CFR §17.94 (critical habitat – fish and wildlife) and §17.95 (plants), Massachusetts has only one critical habitat. This critical habitat is in Plymouth County for the Plymouth Red-Bellied Turtle. Therefore, the Hess facility and discharge are not located in the proximity of any critical habitats.

Since there are no threatened species, endangered species, or critical habitats in the proximity to the point where the authorized discharge reaches the receiving stream, the facility meets Criterion A and the Endangered Species Act (ESA) eligibility provisions of the general permit. Therefore, no consultation is required with the United States Fish & Wildlife Service.

Historical Properties

The National Park Service maintains an electronic listing of “National Register of Historic Places” (<http://www.nr.nps.gov/nrloc1.htm>). Ten sites or districts are listed in the City of Lawrence: American Woolen Mill Housing District, Arlington-Basswood Historic District, Bellvue Cemetery, Buildings at 24-34 Summer Street, Downtown Lawrence Historic District, Engine House No. 6, Essex Company Machine Shop, Essex Company Offices and yard, Gleason Building, and Grace Episcopal Church. A printout of the list is attached. The attached map indicates that these historic sites are not located along the path of the system discharge line.

LANESBOROUGH	*	Vascular Plant	Clematis occidentalis	Purple Clematis	SC	
LANESBOROUGH	*	Vascular Plant	Eleocharis intermedia	Intermediate Spike-Sedge	T	
LANESBOROUGH	*	Vascular Plant	Equisetum scirpoides	Dwarf Scouring-Rush	SC	
LANESBOROUGH	*	Vascular Plant	Myriophyllum verticillatum	Comb Water-Milfoil	E	
LANESBOROUGH	*	Vascular Plant	Ophioglossum pusillum	Adder's-Tongue Fern	T	
LANESBOROUGH		Vascular Plant	Panicum gattingeri	Gattinger's Panic-Grass	SC	
LANESBOROUGH		Vascular Plant	Platanthera dilatata	Leafy White Orchis	T	
LANESBOROUGH		Vascular Plant	Ranunculus pensylvanicus	Bristly Buttercup	T	
LANESBOROUGH	*	Vascular Plant	Rosa acicularis	Northern Prickly Rose	E	
LANESBOROUGH	*	Vascular Plant	Sagittaria cuneata	Wapato	T	
LANESBOROUGH	*	Vascular Plant	Sanicula odorata	Long-Styled Sanicle	T	
LANESBOROUGH		Vascular Plant	Symphyotrichum prenanthoides	Crooked-Stem Aster	T	
LANESBOROUGH	*	Vascular Plant	Waldsteinia fragarioides	Barren Strawberry	SC	
Town		Taxonomic Group	Scientific Name	Common Name	State Rank	Federal Rank
LAWRENCE	*	Bird	Haliaeetus leucocephalus	Bald Eagle	E	(PS:LT,PDL)
LAWRENCE		Mussel	Alasmidonta varicosa	Brook Floater (Swollen Wedgemussel)	E	
LAWRENCE		Beetle	Cicindela purpurea	Purple Tiger Beetle	SC	
LAWRENCE		Vascular Plant	Bolboschoenus fluviatilis	River Bulrush	SC	
LAWRENCE		Vascular Plant	Gentiana andrewsii	Andrews' Bottle Gentian	E	

LAWRENCE		Vascular Plant	Juncus filiformis	Thread Rush	E		1
LAWRENCE		Vascular Plant	Ranunculus pensylvanicus	Bristly Buttercup	T		1
Town		Taxonomic Group	Scientific Name	Common Name	State Rank	Federal Rank	Town Rank
LEE	*	Fish	Catostomus catostomus	Longnose Sucker	SC		1
LEE	*	Amphibian	Gyrinophilus porphyriticus	Spring Salamander	SC		1
LEE	*	Reptile	Clemmys insculpta	Wood Turtle	SC		1
LEE	*	Bird	Botaurus lentiginosus	American Bittern	E		1
LEE		Dragonfly/Damselfly	Enallagma carunculatum	Tule Bluet	SC		1
LEE	*	Vascular Plant	Acer nigrum	Black Maple	SC		1
LEE	*	Vascular Plant	Carex tetanica	Fen Sedge	SC		1
LEE	*	Vascular Plant	Conioselinum chinense	Hemlock Parsley	SC		1
LEE	*	Vascular Plant	Eleocharis intermedia	Intermediate Spike-Sedge	T		1
LEE		Vascular Plant	Equisetum scirpoides	Dwarf Scouring-Rush	SC		1
LEE	*	Vascular Plant	Eragrostis frankii	Frank's Lovegrass	SC		1
LEE	*	Vascular Plant	Galium labradoricum	Labrador Bedstraw	T		1
LEE	*	Vascular Plant	Gentiana andrewsii	Andrews' Bottle Gentian	E		1
LEE	*	Vascular Plant	Lonicera hirsuta	Hairy Honeysuckle	E		1
LEE		Vascular Plant	Petasites frigidus var palmatus	Sweet Coltsfoot	E		1
LEE	*	Vascular Plant	Platanthera flava var herbiola	Pale Green Orchis	T		1
LEE	*	Vascular Plant	Quercus macrocarpa	Mossy-Cup Oak	SC		1
			Sisyrinchium	Slender Blue-			

Index by State and City

National Register Information System

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No filter

Include filter in navigation ☐

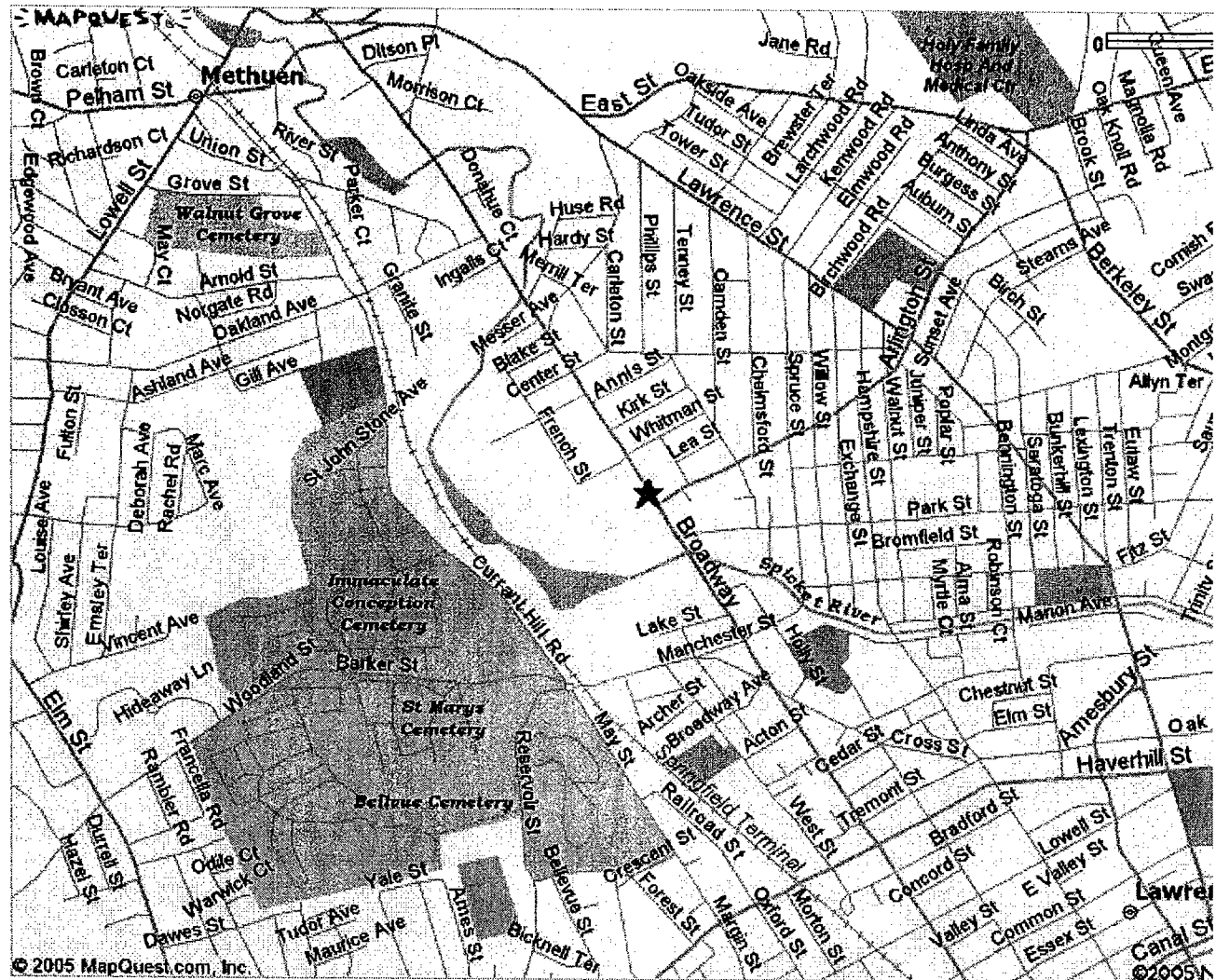
Row	STATE ▾	COUNTY ▾	RESOURCE NAME ▾	ADDRESS ▾	CITY ▾	LISTED ▾	MULTIPLE ▾
1	MA	Essex	American Woolen Mill Housing District	300-328 Market St.	Lawrence	1982-04-08	
2	MA	Essex	Arlington- Basswood Historic District	Roughly bounded by Lawrence, Alder, Arlington, and Juniper Sts.	Lawrence	1984-11-13	
3	MA	Essex	Bellvue Cemetery	170 May St.	Lawrence	2003-10-03	
4	MA	Essex	Buildings at 24--30 Summer St.	24--30 Summer St.	Lawrence	1985-12-05	
5	MA	Essex	Downtown Lawrence Historic District	Roughly bounded by MA 110, Methuen, Lawrence and Jackson Sts.	Lawrence	1979-11-01	
6	MA	Essex	Engine House No. 6	480 Howard St.	Lawrence	2004-06-02	
7	MA	Essex	Essex Company Machine Shop	Union St.	Lawrence	1972-11-09	
8	MA	Essex	Essex Company Offices and Yard	6 Essex St.	Lawrence	1979-04-26	
9	MA	Essex	Gleason Building	349-351 Essex St.	Lawrence	1982-04-15	
10	MA	Essex	Grace Episcopal Church	Common and Jackson Sts.	Lawrence	1976-11-07	

Page 1





★ 615 Broadway Lawrence, MA 01841-2404, US



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QUESTION 7 SUPPLEMENTAL INFORMATION

Amerada Hess Corporation

Station #21507, 615 Broadway Street, Lawrence, MA

Question 7 requests that analytical data used to support the application to be attached. The attached analytical data report addresses the sampling conducted on September 26 and October 3, 2005. For benzene, toluene, ethylbenzene, (m, o, p) xylenes, methyl-tert-butyl ether (MTBE), total BTEX, total petroleum hydrocarbons, and Polynuclear Aromatic Hydrocarbons (PAH) group I and group II total isomers the analytical results from March 2005 through August 2005 (sampling under NPDES Permit Exclusion MA-051-009) were used to supplement the September 26 and October 3, 2005 results.



10/19/05

Technical Report for

Shaw Environmental & Infrastructure

HESS: #21507 615 Broadway, Lawrence, MA

Accutest Job Number: M51172

Sampling Date: 09/26/05

Report to:

Shaw Environmental & Infrastructure

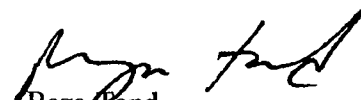
james.collins@shawgrp.com

ATTN: Jim Collins

Total number of pages in report: 78



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.


Reza Fand
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250204) RI (00071) ME (MA136) FL (E87579)
NY (23346) NJ (MA926) NAVY USACE

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Sample Summary

Shaw Environmental & Infrastructure

Job No: M51172

HESS: #21507 615 Broadway, Lawrence, MA

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
M51172-1	09/26/05	09:15 PP	09/28/05	AQ	Influent	INF-010
M51172-1A	09/26/05	09:15 PP	09/28/05	AQ	Influent	INF-010
M51172-2	09/26/05	09:30 PP	09/28/05	AQ	Ground Water	MID-010
M51172-3	09/26/05	09:31 PP	09/28/05	AQ	Effluent	EFF-010
M51172-4	09/26/05	00:00 PP	09/28/05	AQ	Trip Blank Water	TRIP BLANK

Report of Analysis

Client Sample ID:	INF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-1	Date Received:	09/28/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N4266.D	1	10/05/05	ZW	n/a	n/a	MSN152
Run #2	N4268.D	5	10/05/05	ZW	n/a	n/a	MSN152

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	23.7	5.0	ug/l	
71-43-2	Benzene	5.3	0.50	ug/l	
108-86-1	Bromobenzene	ND	5.0	ug/l	
74-97-5	Bromochloromethane	ND	5.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/l	
104-51-8	n-Butylbenzene	5.1	5.0	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	ug/l	
75-15-0	Carbon disulfide	ND	5.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	2.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	2.0	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INF-010		
Lab Sample ID:	M51172-1	Date Sampled:	09/26/05
Matrix:	AQ - Influent	Date Received:	09/28/05
Method:	SW846 8260B	Percent Solids:	n/a
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
123-91-1	1,4-Dioxane	ND	25	ug/l	
60-29-7	Ethyl Ether	ND	5.0	ug/l	
100-41-4	Ethylbenzene	11.7	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	585 a	5.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	19.0	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	ug/l	
100-42-5	Styrene	ND	5.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	64.7	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	1210	100	ug/l	
637-92-3	tert-Butyl Ethyl Ether	3.8	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	69.1	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	100	5.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	32.2	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	182	1.0	ug/l	
95-47-6	o-Xylene	102	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-1	Date Received:	09/28/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
1330-20-7	Xylene (total)	284	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%	105%	82-127%
2037-26-5	Toluene-D8	101%	99%	88-112%
460-00-4	4-Bromofluorobenzene	103%	99%	80-118%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-1	Date Received:	09/28/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E24567.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
Run #2							

Run #	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.2	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.2	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.2	ug/l	
105-67-9	2,4-Dimethylphenol	92.3	5.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	5.2	ug/l	
88-75-5	2-Nitrophenol	ND	5.2	ug/l	
100-02-7	4-Nitrophenol	ND	5.2	ug/l	
87-86-5	Pentachlorophenol	ND	5.2	ug/l	
108-95-2	Phenol	ND	5.2	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.2	ug/l	
83-32-9	Acenaphthene	ND	5.2	ug/l	
208-96-8	Acenaphthylene	ND	5.2	ug/l	
120-12-7	Anthracene	ND	5.2	ug/l	
92-87-5	Benzidine	ND	21	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.2	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.2	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.2	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.2	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.2	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	ug/l	
85-68-7	Butyl benzyl phthalate	ND	10	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	ug/l	
106-47-8	4-Chloroaniline	ND	10	ug/l	
218-01-9	Chrysene	ND	5.2	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	5.2	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.2	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	5.2	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-1	Date Received:	09/28/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

ABN PPL List

CAS No.	Compound	Result	RL	Units	Q
106-46-7	1,4-Dichlorobenzene	ND	5.2	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.2	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.2	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.2	ug/l	
84-66-2	Diethyl phthalate	ND	5.2	ug/l	
131-11-3	Dimethyl phthalate	ND	5.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.2	ug/l	
206-44-0	Fluoranthene	ND	5.2	ug/l	
86-73-7	Fluorene	ND	5.2	ug/l	
118-74-1	Hexachlorobenzene	ND	5.2	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.2	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	ug/l	
67-72-1	Hexachloroethane	ND	5.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.2	ug/l	
78-59-1	Isophorone	ND	5.2	ug/l	
91-20-3	Naphthalene	ND	5.2	ug/l	
98-95-3	Nitrobenzene	ND	5.2	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.2	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	ug/l	
85-01-8	Phenanthrene	ND	5.2	ug/l	
129-00-0	Pyrene	ND	5.2	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	52%		10-120%
4165-62-2	Phenol-d5	39%		10-120%
118-79-6	2,4,6-Tribromophenol	93%		31-123%
4165-60-0	Nitrobenzene-d5	67%		32-120%
321-60-8	2-Fluorobiphenyl	66%		32-120%
1718-51-0	Terphenyl-d14	58%		33-123%

ND = Not detected

RL = Reporting Limit

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J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	INF-010		
Lab Sample ID:	M51172-1	Date Sampled:	09/26/05
Matrix:	AQ - Influent	Date Received:	09/28/05
Method:	EPA 504 EPA 504	Percent Solids:	n/a
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ28766.D	1	10/03/05	CZ	10/01/05	OP9741	GYZ1197
Run #2							

Run #	Initial Volume	Final Volume
Run #1	35.0 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.015	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	Bromofluorobenzene (S)	135%		26-158%
460-00-4	Bromofluorobenzene (S)	70%		26-158%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-1	Date Received:	09/28/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Method:	EPA 608 EPA 608		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	YZ28723.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195
Run #2							

Run #	Initial Volume	Final Volume
Run #1	970 ml	5.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.52	ug/l	
11104-28-2	Aroclor 1221	ND	0.52	ug/l	
11141-16-5	Aroclor 1232	ND	0.52	ug/l	
53469-21-9	Aroclor 1242	ND	0.52	ug/l	
12672-29-6	Aroclor 1248	ND	0.52	ug/l	
11097-69-1	Aroclor 1254	ND	0.52	ug/l	
11096-82-5	Aroclor 1260	ND	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		44-132%
877-09-8	Tetrachloro-m-xylene	103%		44-132%
2051-24-3	Decachlorobiphenyl	86%		12-151%
2051-24-3	Decachlorobiphenyl	101%		12-151%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	INF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-1	Date Received:	09/28/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Antimony	< 6.0	6.0	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Arsenic	30.8	5.0	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Cadmium-	< 4.0	4.0	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Chromium	< 10	10	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Copper	206	25	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Iron	1480	100	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Lead	11.3	5.0	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Mercury	< 0.20	0.20	ug/l	1	09/29/05	10/03/05 MA	SW846 7470A ¹	SW846 7470A ³
Nickel	< 40	40	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Selenium	< 10	10	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Silver	< 5.0	5.0	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴
Zinc	< 20	20	ug/l	1	10/03/05	10/05/05 AC	SW846 6010B ²	SW846 3010A ⁴

(1) Instrument QC Batch: MA6303

(2) Instrument QC Batch: MA6310

(3) Prep QC Batch: MP7690

(4) Prep QC Batch: MP7699

RL = Reporting Limit

Report of Analysis

Client Sample ID:	INF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-1	Date Received:	09/28/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Cyanide	<0.010	0.010	mg/l	1	10/01/05 12:09	MA	EPA 335.3
Oil And Grease, Gravimetric	<4.1	4.1	mg/l	1	09/30/05	BF	EPA 1664
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	09/29/05	BF	EPA 418.1
Solids, Total Suspended	<4.0	4.0	mg/l	1	09/30/05	BF	EPA 160.2
Total Residual Chlorine	<0.050	0.050	mg/l	1	09/28/05 14:40	MA	EPA 330.4

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	INF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-1A	Date Received:	09/28/05
Matrix:	AQ - Influent	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F16116.D	1	10/04/05	PB	09/29/05	OP9727	MSF879
Run #2							

Run #	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol	ND	1.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	1.0	ug/l	
83-32-9	Acenaphthene	ND	0.10	ug/l	
208-96-8	Acenaphthylene	ND	0.10	ug/l	
120-12-7	Anthracene	ND	0.10	ug/l	
56-55-3	Benzo(a)anthracene	0.084	0.052	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	0.067	0.052	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	ug/l	
218-01-9	Chrysene	ND	0.10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	ug/l	
206-44-0	Fluoranthene	ND	0.10	ug/l	
86-73-7	Fluorene	ND	0.10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	ug/l	
91-57-6	2-Methylnaphthalene	0.40	0.21	ug/l	
91-20-3	Naphthalene	2.2	0.10	ug/l	
85-01-8	Phenanthrene	ND	0.10	ug/l	
129-00-0	Pyrene	ND	0.10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	50%		10-120%
4165-62-2	Phenol-d5	40%		10-120%
118-79-6	2,4,6-Tribromophenol	84%		23-135%
4165-60-0	Nitrobenzene-d5	55%		30-120%
321-60-8	2-Fluorobiphenyl	66%		25-120%
1718-51-0	Terphenyl-d14	49%		24-132%

ND = Not detected

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E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	MID-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-2	Date Received:	09/28/05
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 602		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB23903.D	1	09/29/05	CH	n/a	n/a	GAB1229
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	72%		61-124%

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	EFF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-3	Date Received:	09/28/05
Matrix:	AQ - Effluent	Percent Solids:	n/a
Method:	EPA 625 EPA 625		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E24602.D	1	10/06/05	PB	09/29/05	OP9726	MSE1287
Run #2							

Run #	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	5.3	ug/l	
208-96-8	Acenaphthylene	ND	5.3	ug/l	
120-12-7	Anthracene	ND	5.3	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	ug/l	
218-01-9	Chrysene	ND	5.3	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	ug/l	
206-44-0	Fluoranthene	ND	5.3	ug/l	
86-73-7	Fluorene	ND	5.3	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	ug/l	
91-57-6	2-Methylnaphthalene	ND	11	ug/l	
91-20-3	Naphthalene	ND	5.3	ug/l	
85-01-8	Phenanthrene	ND	5.3	ug/l	
129-00-0	Pyrene	ND	5.3	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	77%		22-126%
321-60-8	2-Fluorobiphenyl	74%		21-124%
1718-51-0	Terphenyl-d14	55%		24-133%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	EFF-010	Date Sampled:	09/26/05
Lab Sample ID:	M51172-3	Date Received:	09/28/05
Matrix:	AQ - Effluent	Percent Solids:	n/a
Method:	EPA 602		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AB23902.D	1	09/29/05	CH	n/a	n/a	GAB1229
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
	2,3,4-Trifluorotoluene	72%		61-124%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: EFF-010
Lab Sample ID: M51172-3
Matrix: AQ - Effluent

Date Sampled: 09/26/05
Date Received: 09/28/05
Percent Solids: n/a

Project: HESS: #21507 615 Broadway, Lawrence, MA

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Petroleum Hydrocarbons	<0.61	0.61	mg/l	1	09/29/05	BF	EPA 418.1

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	09/26/05
Lab Sample ID:	M51172-4	Date Received:	09/28/05
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N4264.D	1	10/05/05	ZW	n/a	n/a	MSN152
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	5.0	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	5.0	ug/l	
74-97-5	Bromochloromethane	ND	5.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	ug/l	
75-15-0	Carbon disulfide	ND	5.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	2.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	2.0	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	09/26/05
Lab Sample ID:	M51172-4	Date Received:	09/28/05
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
123-91-1	1,4-Dioxane	ND	25	ug/l	
60-29-7	Ethyl Ether	ND	5.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	ug/l	
100-42-5	Styrene	ND	5.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	100	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	09/26/05
Lab Sample ID:	M51172-4	Date Received:	09/28/05
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		82-127%
2037-26-5	Toluene-D8	101%		88-112%
460-00-4	4-Bromofluorobenzene	110%		80-118%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

495 TECHNOLOGY CENTER WEST - BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: **M51172**
ACCUTEST QUOTE #:

CLIENT INFORMATION			FACILITY INFORMATION			ANALYTICAL INFORMATION										MATRIX CODES									
NAME Shaw ADDRESS 3 Riverside Dr. CITY Andover STATE MA ZIP 01810 SEND REPORT TO: Jim Collins PHONE # 978-691-2108			PROJECT NAME Hess Station # 21507 LOCATION 615 Broadway MA PROJECT NO. 831396 FAX # 978-691-2101			100 70 60 50 40 30 20 10 0 100 70 60 50 40 30 20 10 0										DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE LIQ - OTHER LIQUID SOL - OTHER SOLID									
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION		SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION						LAB USE ONLY												
		DATE	TIME				HC1	HC2	HC3	HC4	HC5														
-1	INF-010	9-26-05	9:15 am	JP	GW	2	X																		
-2	MID-010	9-28-05	9:30 am	JP	GW	2	X																		
-3	BFF-010	9-28-05	9:31 am	JP	GW	6	X																		
<table border="1"> <thead> <tr> <th colspan="2">DATA TURNAROUND INFORMATION</th> <th colspan="2">DATA DELIVERABLE INFORMATION</th> <th colspan="2">COMMENTS/REMARKS</th> </tr> </thead> <tbody> <tr> <td> ☐ 14 DAYS STANDARD ☒ 7 DAYS RUSH ☐ 48 HOUR EMERGENCY ☐ OTHER </td> <td>APPROVED BY: _____</td> <td> ☐ STANDARD ☐ COMMERCIAL "B" ☐ DISK DELIVERABLE ☐ STATE FORMS ☐ OTHER (SPECIFY) _____ </td> <td colspan="3"> Loc. 4B2, 4F, 5E, 7A, 12D </td> </tr> </tbody> </table>														DATA TURNAROUND INFORMATION		DATA DELIVERABLE INFORMATION		COMMENTS/REMARKS		☐ 14 DAYS STANDARD ☒ 7 DAYS RUSH ☐ 48 HOUR EMERGENCY ☐ OTHER	APPROVED BY: _____	☐ STANDARD ☐ COMMERCIAL "B" ☐ DISK DELIVERABLE ☐ STATE FORMS ☐ OTHER (SPECIFY) _____	Loc. 4B2, 4F, 5E, 7A, 12D		
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SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																									
RELINQUISHED BY: 1. Shaw	DATE TIME: 9-28-05	RECEIVED BY: 1. Shaw	DATE TIME: 9-28-05	RELINQUISHED BY: 2. Shaw	DATE TIME: 11:50	RECEIVED BY: 2. Shaw	DATE TIME: 9-28-05	RELINQUISHED BY: 3. Shaw	DATE TIME: 9-28-05	RECEIVED BY: 3. Shaw	DATE TIME: 9-28-05	RELINQUISHED BY: 4. Shaw	DATE TIME: 9-28-05	RECEIVED BY: 4. Shaw											
RELINQUISHED BY: 5. Shaw	DATE TIME: 9-28-05	RECEIVED BY: 5. Shaw	DATE TIME: 9-28-05	RELINQUISHED BY: 6. Shaw	DATE TIME: 9-28-05	RECEIVED BY: 6. Shaw	DATE TIME: 9-28-05	RELINQUISHED BY: 7. Shaw	DATE TIME: 9-28-05	RECEIVED BY: 7. Shaw	DATE TIME: 9-28-05	RELINQUISHED BY: 8. Shaw	DATE TIME: 9-28-05	RECEIVED BY: 8. Shaw											
SEAL # _____ PRESERVE WHERE APPLICABLE ☐ ON ICE ☒ TEMPERATURE 5.0°C																									

M51172: Chain of Custody

Page 1 of 3

CHAIN OF CUSTODY

495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: **M51172**
ACCUTEST QUOTE #:

CLIENT INFORMATION			FACILITY INFORMATION			ANALYTICAL INFORMATION												MATRIX CODES																																																																																																																																													
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3.1
3

M51172: Chain of Custody

Page 2 of 3

INTERNAL MEMO
SAMPLE MANAGEMENT

Client: Shaw Point of contact: Jim C. Time of contact: pm
Tel # _____ Fax # _____ Job #: MS1172

Sample status: Cancel: ☐ Add: ☐ Change: ☐
Turn Around: ☐

Supply status: Bottles: ☐ COC: ☐ Preservative: ☐

Sample #	Detailed comments/request
MS1172-1	SAMPLE "INF-010" APPEARS ON 9/26/05 9:15
	BOTH PAGES BUT LOOKS LIKE IT SHOULD BE SAME LAB # (Style #)
	CORRECT JUST ONE SAMPLE # SHOULD BE USED
	Hex CR Recd. PAST HOLD TIME. PROCEED W/ANAL. ?
	NO DO NOT ANAL FOR Hex CR UNLESS FURTHER NOTIFIED
	AP AP J.C. 9/28/05
	DATE _____

MS1172: Chain of Custody
Page 3 of 3

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Page 1 of 3

Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN152-MB	N4262.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1, M51172-4

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	5.0	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	5.0	ug/l	
74-97-5	Bromochloromethane	ND	5.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	ug/l	
75-15-0	Carbon disulfide	ND	5.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	2.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	2.0	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	ug/l	

Method Blank Summary

Page 2 of 3

Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN152-MB	N4262.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1, M51172-4

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	ug/l	
123-91-1	1,4-Dioxane	ND	25	ug/l	
60-29-7	Ethyl Ether	ND	5.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	ug/l	
100-42-5	Styrene	ND	5.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	100	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	

Method Blank Summary

Page 3 of 3

Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN152-MB	N4262.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1, M51172-4

CAS No.	Compound	Result	RL	Units	Q
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	105% 82-127%
2037-26-5	Toluene-D8	103% 88-112%
460-00-4	4-Bromofluorobenzene	106% 80-118%

Blank Spike/Blank Spike Duplicate Summary

Page 1 of 3

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN152-BS	N4259.D	1	10/05/05	ZW	n/a	n/a	MSN152
MSN152-BSD	N4260.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1, M51172-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	30.6	61	28.8	58	6	31-150/25
71-43-2	Benzene	50	45.0	90	45.9	92	2	73-127/25
108-86-1	Bromobenzene	50	44.8	90	42.7	85	5	76-124/25
74-97-5	Bromochloromethane	50	47.6	95	50.6	101	6	75-130/25
75-27-4	Bromodichloromethane	50	48.8	98	49.5	99	1	72-136/25
75-25-2	Bromoform	50	44.9	90	48.5	97	8	67-136/25
74-83-9	Bromomethane	50	51.6	103	59.0	118	13	47-133/25
78-93-3	2-Butanone (MEK)	50	38.1	76	41.8	84	9	36-150/25
104-51-8	n-Butylbenzene	50	44.5	89	45.0	90	1	73-130/25
135-98-8	sec-Butylbenzene	50	43.6	87	43.9	88	1	76-129/25
98-06-6	tert-Butylbenzene	50	45.2	90	45.6	91	1	73-130/25
75-15-0	Carbon disulfide	50	48.5	97	53.2	106	9	50-139/25
56-23-5	Carbon tetrachloride	50	66.3	133	68.7	137	4	70-141/25
108-90-7	Chlorobenzene	50	42.6	85	45.6	91	7	74-129/25
75-00-3	Chloroethane	50	47.3	95	48.1	96	2	57-134/25
67-66-3	Chloroform	50	47.8	96	50.2	100	5	70-134/25
74-87-3	Chloromethane	50	56.7	113	61.1	122	7	30-151/25
95-49-8	o-Chlorotoluene	50	43.4	87	43.5	87	0	71-130/25
106-43-4	p-Chlorotoluene	50	45.2	90	45.2	90	0	70-133/25
108-20-3	Di-Isopropyl ether	50	49.6	99	55.0	110	10	64-139/25
96-12-8	1,2-Dibromo-3-chloropropane	50	49.7	99	47.9	96	4	51-140/25
124-48-1	Dibromochloromethane	50	45.6	91	46.8	94	3	78-135/25
106-93-4	1,2-Dibromoethane	50	45.9	92	46.6	93	2	74-129/25
95-50-1	1,2-Dichlorobenzene	50	42.4	85	43.0	86	1	75-125/25
541-73-1	1,3-Dichlorobenzene	50	42.3	85	39.2	78	8	76-124/25
106-46-7	1,4-Dichlorobenzene	50	41.1	82	41.1	82	0	76-127/25
75-71-8	Dichlorodifluoromethane	50	48.5	97	54.0	108	11	30-150/25
75-34-3	1,1-Dichloroethane	50	46.3	93	50.3	101	8	70-136/25
107-06-2	1,2-Dichloroethane	50	56.8	114	56.5	113	1	68-137/25
75-35-4	1,1-Dichloroethene	50	42.8	86	46.2	92	8	65-142/25
156-59-2	cis-1,2-Dichloroethene	50	46.8	94	52.9	106	12	72-130/25
156-60-5	trans-1,2-Dichloroethene	50	41.8	84	49.2	98	16	70-134/25
78-87-5	1,2-Dichloropropane	50	44.6	89	44.2	88	1	72-131/25
142-28-9	1,3-Dichloropropane	50	45.1	90	47.0	94	4	73-131/25
594-20-7	2,2-Dichloropropane	50	87.0	174* a	95.8	192* a	10	57-150/25
563-58-6	1,1-Dichloropropene	50	46.4	93	48.1	96	4	72-136/25

Blank Spike/Blank Spike Duplicate Summary

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Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN152-BS	N4259.D	1	10/05/05	ZW	n/a	n/a	MSN152
MSN152-BSD	N4260.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1, M51172-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	49.7	99	48.9	98	2	71-133/25
10061-02-6	trans-1,3-Dichloropropene	50	48.7	97	47.1	94	3	66-135/25
123-91-1	1,4-Dioxane	250	254	102	209	84	19	50-140/25
60-29-7	Ethyl Ether	50	58.2	116	59.2	118	2	59-136/25
100-41-4	Ethylbenzene	50	45.0	90	48.4	97	7	77-126/25
87-68-3	Hexachlorobutadiene	50	42.9	86	42.3	85	1	63-135/25
591-78-6	2-Hexanone	50	42.2	84	44.4	89	5	39-157/25
98-82-8	Isopropylbenzene	50	42.1	84	42.9	86	2	74-135/25
99-87-6	p-Isopropyltoluene	50	44.5	89	45.3	91	2	76-129/25
1634-04-4	Methyl Tert Butyl Ether	50	49.3	99	51.2	102	4	65-135/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	47.1	94	47.2	94	0	55-150/25
74-95-3	Methylene bromide	50	55.3	111	56.3	113	2	77-130/25
75-09-2	Methylene chloride	50	45.3	91	49.1	98	8	67-136/25
91-20-3	Naphthalene	50	43.2	86	42.2	84	2	51-144/25
103-65-1	n-Propylbenzene	50	44.1	88	44.1	88	0	75-129/25
100-42-5	Styrene	50	46.3	93	47.9	96	3	76-130/25
994-05-8	tert-Amyl Methyl Ether	50	49.9	100	50.1	100	0	61-139/25
75-65-0	Tert Butyl Alcohol	500	485	97	484	97	0	42-161/25
637-92-3	tert-Butyl Ethyl Ether	50	51.7	103	56.0	112	8	62-138/25
630-20-6	1,1,1,2-Tetrachloroethane	50	46.2	92	50.1	100	8	73-131/25
79-34-5	1,1,2,2-Tetrachloroethane	50	43.7	87	43.7	87	0	62-144/25
127-18-4	Tetrachloroethene	50	44.5	89	47.9	96	7	66-142/25
109-99-9	Tetrahydrofuran	50	46.2	92	47.5	95	3	49-149/25
108-88-3	Toluene	50	45.5	91	44.2	88	3	76-124/25
87-61-6	1,2,3-Trichlorobenzene	50	44.2	88	43.1	86	3	60-137/25
120-82-1	1,2,4-Trichlorobenzene	50	42.6	85	42.3	85	1	63-133/25
71-55-6	1,1,1-Trichloroethane	50	50.4	101	55.7	111	10	71-137/25
79-00-5	1,1,2-Trichloroethane	50	49.1	98	48.7	97	1	68-134/25
79-01-6	Trichloroethene	50	42.0	84	44.3	89	5	71-130/25
75-69-4	Trichlorofluoromethane	50	47.9	96	52.5	105	9	59-144/25
96-18-4	1,2,3-Trichloropropane	50	48.3	97	46.9	94	3	60-135/25
95-63-6	1,2,4-Trimethylbenzene	50	42.8	86	43.2	86	1	74-129/25
108-67-8	1,3,5-Trimethylbenzene	50	44.1	88	45.2	90	2	76-128/25
75-01-4	Vinyl chloride	50	51.4	103	57.3	115	11	46-151/25
	m,p-Xylene	100	96.3	96	102	102	6	77-130/25
95-47-6	o-Xylene	50	43.0	86	44.1	88	3	79-128/25

Blank Spike/Blank Spike Duplicate Summary

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Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN152-BS	N4259.D	1	10/05/05	ZW	n/a	n/a	MSN152
MSN152-BSD	N4260.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1; M51172-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
1330-20-7	Xylene (total)	150	139	93	146	97	5	78-129/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	110%	82-127%
2037-26-5	Toluene-D8	102%	101%	88-112%
460-00-4	4-Bromofluorobenzene	99%	94%	80-118%

(a) Outside control limits. Associated samples are non-detect for this compound.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M51137-5MS	N4279.D	5	10/05/05	ZW	n/a	n/a	MSN152
M51137-5MSD	N4280.D	5	10/05/05	ZW	n/a	n/a	MSN152
M51137-5	N4272.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1, M51172-4

CAS No.	Compound	M51137-5 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	250	145	58	132	53	9	30-150/35
71-43-2	Benzene	ND	250	249	100	232	93	7	67-132/20
108-86-1	Bromobenzene	ND	250	229	92	235	94	3	75-123/20
74-97-5	Bromochloromethane	ND	250	238	95	238	95	0	72-133/20
75-27-4	Bromodichloromethane	ND	250	306	122	288	115	6	67-137/20
75-25-2	Bromoform	ND	250	236	94	238	95	1	48-138/20
74-83-9	Bromomethane	ND	250	240	96	255	102	6	43-136/21
78-93-3	2-Butanone (MEK)	ND	250	222	89	195	78	13	30-150/48
104-51-8	n-Butylbenzene	ND	250	251	100	245	98	2	68-132/20
135-98-8	sec-Butylbenzene	ND	250	231	92	233	93	1	71-131/20
98-06-6	tert-Butylbenzene	ND	250	258	103	254	102	2	69-133/22
75-15-0	Carbon disulfide	ND	250	276	110	235	94	16	38-138/26
56-23-5	Carbon tetrachloride	ND	250	401	160* a	375	150* a	7	63-144/20
108-90-7	Chlorobenzene	ND	250	215	86	214	86	0	77-124/20
75-00-3	Chloroethane	ND	250	240	96	231	92	4	52-139/22
67-66-3	Chloroform	ND	250	295	118	258	103	13	66-141/20
74-87-3	Chloromethane	ND	250	279	112	313	125	11	30-150/23
95-49-8	o-Chlorotoluene	ND	250	234	94	233	93	0	68-134/23
106-43-4	p-Chlorotoluene	ND	250	234	94	240	96	3	65-139/21
108-20-3	Di-Isopropyl ether	ND	250	296	118	262	105	12	60-144/20
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	289	116	285	114	1	42-144/25
124-48-1	Dibromochloromethane	ND	250	230	92	236	94	3	68-133/20
106-93-4	1,2-Dibromoethane	ND	250	224	90	226	90	1	69-132/20
95-50-1	1,2-Dichlorobenzene	ND	250	221	88	229	92	4	75-123/20
541-73-1	1,3-Dichlorobenzene	ND	250	216	86	217	87	0	75-122/20
106-46-7	1,4-Dichlorobenzene	ND	250	211	84	226	90	7	77-125/20
75-71-8	Dichlorodifluoromethane	ND	250	328	131	317	127	3	30-150/24
75-34-3	1,1-Dichloroethane	ND	250	263	105	233	93	12	66-141/20
107-06-2	1,2-Dichloroethane	ND	250	352	141	333	133	6	61-144/20
75-35-4	1,1-Dichloroethene	ND	250	226	90	210	84	7	57-150/20
156-59-2	cis-1,2-Dichloroethene	ND	250	260	104	241	96	8	69-133/20
156-60-5	trans-1,2-Dichloroethene	ND	250	235	94	213	85	10	65-138/20
78-87-5	1,2-Dichloropropane	ND	250	242	97	233	93	4	69-135/20
142-28-9	1,3-Dichloropropane	ND	250	233	93	233	93	0	71-131/20
594-20-7	2,2-Dichloropropane	ND	250	546	218*	459	184*	17	43-147/20
563-58-6	1,1-Dichloropropene	ND	250	268	107	239	96	11	63-143/20

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M51137-5MS	N4279.D	5	10/05/05	ZW	n/a	n/a	MSN152
M51137-5MSD	N4280.D	5	10/05/05	ZW	n/a	n/a	MSN152
M51137-5	N4272.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1, M51172-4

CAS No.	Compound	M51137-5 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND	250	269	108	265	106	1	61-134/20
10061-02-6	trans-1,3-Dichloropropene	ND	250	277	111	272	109	2	55-137/20
123-91-1	1,4-Dioxane	ND	1250	1360	109	1130	90	18	43-141/32
60-29-7	Ethyl Ether	ND	250	301	120	264	106	13	56-139/22
100-41-4	Ethylbenzene	ND	250	240	96	233	93	3	72-129/20
87-68-3	Hexachlorobutadiene	ND	250	231	92	222	89	4	60-125/20
591-78-6	2-Hexanone	ND	250	222	89	230	92	4	28-153/23
98-82-8	Isopropylbenzene	ND	250	217	87	224	90	3	70-137/20
99-87-6	p-Isopropyltoluene	ND	250	235	94	240	96	2	73-128/20
1634-04-4	Methyl Tert Butyl Ether	ND	250	280	112	259	104	8	61-137/20
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	265	106	264	106	0	38-161/22
74-95-3	Methylene bromide	ND	250	327	131	324	130	1	72-134/20
75-09-2	Methylene chloride	ND	250	250	100	239	96	4	64-143/20
91-20-3	Naphthalene	ND	250	209	84	217	87	4	37-146/28
103-65-1	n-Propylbenzene	ND	250	235	94	237	95	1	68-135/20
100-42-5	Styrene	ND	250	237	95	234	94	1	60-135/20
994-05-8	tert-Amyl Methyl Ether	ND	250	273	109	266	106	3	54-144/20
75-65-0	Tert Butyl Alcohol	ND	2500	2590	104	2440	98	6	31-170/29
637-92-3	tert-Butyl Ethyl Ether	ND	250	306	122	282	113	8	59-142/20
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	239	96	236	94	1	66-136/20
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	224	90	234	94	4	56-154/20
127-18-4	Tetrachloroethene	ND	250	231	92	216	86	7	57-145/20
109-99-9	Tetrahydrofuran	ND	250	247	99	234	94	5	44-157/25
108-88-3	Toluene	ND	250	248	99	240	96	3	69-129/20
87-61-6	1,2,3-Trichlorobenzene	ND	250	217	87	230	92	6	37-140/27
120-82-1	1,2,4-Trichlorobenzene	ND	250	217	87	219	88	1	56-128/20
71-55-6	1,1,1-Trichloroethane	ND	250	317	127	276	110	14	65-144/20
79-00-5	1,1,2-Trichloroethane	ND	250	285	114	276	110	3	63-138/20
79-01-6	Trichloroethene	ND	250	262	105	242	97	8	67-132/20
75-69-4	Trichlorofluoromethane	ND	250	304	122	260	104	16	52-148/26
96-18-4	1,2,3-Trichloropropane	ND	250	234	94	246	98	5	51-132/23
95-63-6	1,2,4-Trimethylbenzene	ND	250	228	91	230	92	1	64-133/20
108-67-8	1,3,5-Trimethylbenzene	ND	250	242	97	248	99	2	66-132/20
75-01-4	Vinyl chloride	ND	250	258	103	280	112	8	39-150/23
	m,p-Xylene	ND	500	501	100	497	99	1	70-135/20
95-47-6	o-Xylene	ND	250	224	90	218	87	3	73-132/20

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M51137-5MS	N4279.D	5	10/05/05	ZW	n/a	n/a	MSN152
M51137-5MSD	N4280.D	5	10/05/05	ZW	n/a	n/a	MSN152
M51137-5	N4272.D	1	10/05/05	ZW	n/a	n/a	MSN152

The QC reported here applies to the following samples:

Method: SW846 8260B

M51172-1, M51172-4

CAS No.	Compound	M51137-5 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1330-20-7	Xylene (total)	ND	750	725	97	715	95	1	72-133/20

CAS No.	Surrogate Recoveries	MS	MSD	M51137-5	Limits
1868-53-7	Dibromofluoromethane	115%	102%	111%	82-127%
2037-26-5	Toluene-D8	104%	102%	99%	88-112%
460-00-4	4-Bromofluorobenzene	98%	101%	107%	80-118%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

Volatile Surrogate Recovery Summary

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Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Method: SW846 8260B

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
M51172-1	N4268.D	105.0	99.0	99.0
M51172-1	N4266.D	105.0	101.0	103.0
M51172-4	N4264.D	113.0	101.0	110.0
M51137-5MS	N4279.D	115.0	104.0	98.0
M51137-5MSD	N4280.D	102.0	102.0	101.0
MSN152-BS	N4259.D	105.0	102.0	99.0
MSN152-BSD	N4260.D	110.0	101.0	94.0
MSN152-MB	N4262.D	105.0	103.0	106.0

Surrogate Compounds	Recovery Limits
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S1 = Dibromofluoromethane	82-127%
S2 = Toluene-D8	88-112%
S3 = 4-Bromofluorobenzene	80-118%

GC/MS Semi-volatiles



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9726-MB	E24561.D	1	10/04/05	PB	09/29/05	OP9726	MSE1286

The QC reported here applies to the following samples:

Method: EPA 625

M51172-3

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	10	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	69%	22-126%
321-60-8	2-Fluorobiphenyl	69%	21-124%
1718-51-0	Terphenyl-d14	76%	24-133%

Method Blank Summary

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Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-MB	E24561.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51172-1

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	5.0	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	ug/l	
100-02-7	4-Nitrophenol	ND	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	5.0	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	5.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	ug/l	
120-12-7	Anthracene	ND	5.0	ug/l	
92-87-5	Benzidine	ND	20	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	ug/l	
85-68-7	Butyl benzyl phthalate	ND	10	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	10	ug/l	
218-01-9	Chrysene	ND	5.0	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	5.0	ug/l	
122-66-7	1,2-Diphenylhydrazine	ND	5.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	5.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	ug/l	

Method Blank Summary

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Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-MB	E24561.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51172-1

CAS No.	Compound	Result	RL	Units	Q
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	ug/l	
86-73-7	Fluorene	ND	5.0	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	ug/l	
67-72-1	Hexachloroethane	ND	5.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
62-75-9	n-Nitrosodimethylamine	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	ug/l	
129-00-0	Pyrene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	45% 10-120%
4165-62-2	Phenol-d5	31% 10-120%
118-79-6	2,4,6-Tribromophenol	82% 31-123%
4165-60-0	Nitrobenzene-d5	65% 32-120%
321-60-8	2-Fluorobiphenyl	69% 32-120%
1718-51-0	Terphenyl-d14	77% 33-123%

Method Blank Summary

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Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9727-MB	F16108.D	1	10/04/05	PB	09/29/05	OP9727	MSF879

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

M51172-1A

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol	ND	1.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	1.0	ug/l	
83-32-9	Acenaphthene	ND	0.10	ug/l	
208-96-8	Acenaphthylene	ND	0.10	ug/l	
120-12-7	Anthracene	ND	0.10	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	ug/l	
218-01-9	Chrysene	ND	0.10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	ug/l	
206-44-0	Fluoranthene	ND	0.10	ug/l	
86-73-7	Fluorene	ND	0.10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	0.10	ug/l	
85-01-8	Phenanthrene	ND	0.10	ug/l	
129-00-0	Pyrene	ND	0.10	ug/l	

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	47% 10-120%
4165-62-2	Phenol-d5	32% 10-120%
118-79-6	2,4,6-Tribromophenol	83% 23-135%
4165-60-0	Nitrobenzene-d5	58% 30-120%
321-60-8	2-Fluorobiphenyl	70% 25-120%
1718-51-0	Terphenyl-d14	74% 24-132%

Blank Spike Summary

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Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9726-BS	E24562.D	1	10/04/05	PB	09/29/05	OP9726	MSE1286

The QC reported here applies to the following samples:

Method: EPA 625

M51172-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	40.6	81	47-145
208-96-8	Acenaphthylene	50	37.6	75	33-145
120-12-7	Anthracene	50	44.2	88	27-133
56-55-3	Benzo(a)anthracene	50	45.5	91	33-143
50-32-8	Benzo(a)pyrene	50	43.2	86	17-163
205-99-2	Benzo(b)fluoranthene	50	41.9	84	24-159
191-24-2	Benzo(g,h,i)perylene	50	45.4	91	1-219
207-08-9	Benzo(k)fluoranthene	50	45.7	91	11-162
218-01-9	Chrysene	50	44.1	88	17-168
53-70-3	Dibenzo(a,h)anthracene	50	46.5	93	1-227
206-44-0	Fluoranthene	50	42.7	85	26-137
86-73-7	Fluorene	50	41.8	84	59-121
193-39-5	Indeno(1,2,3-cd)pyrene	50	43.6	87	1-171
91-57-6	2-Methylnaphthalene	50	33.1	66	50-150 ^a
91-20-3	Naphthalene	50	36.7	73	21-133
85-01-8	Phenanthrene	50	44.0	88	54-120
129-00-0	Pyrene	50	44.8	90	52-115

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	79%	22-126%
321-60-8	2-Fluorobiphenyl	85%	21-124%
1718-51-0	Terphenyl-d14	86%	24-133%

(a) Advisory control limits.

Blank Spike/Blank Spike Duplicate Summary

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Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-BS	E24562.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
OP9725-BSD	E24563.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51172-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	100	73.0	73	76.8	77	5	50-120/20
59-50-7	4-Chloro-3-methyl phenol	100	71.3	71	78.3	78	9	56-120/20
120-83-2	2,4-Dichlorophenol	100	77.0	77	88.0	88	13	56-120/20
105-67-9	2,4-Dimethylphenol	100	72.6	73	68.7	69	6	37-120/20
51-28-5	2,4-Dinitrophenol	100	56.3	56	66.6	67	17	27-120/20
534-52-1	4,6-Dinitro-o-cresol	100	78.1	78	91.5	92	16	36-125/20
88-75-5	2-Nitrophenol	100	74.6	75	77.5	78	4	54-120/20
100-02-7	4-Nitrophenol	100	43.3	43	46.2	46	6	7-120/20
87-86-5	Pentachlorophenol	100	82.2	82	94.9	95	14	40-126/20
108-95-2	Phenol	100	39.6	40	38.1	38	4	17-120/20
88-06-2	2,4,6-Trichlorophenol	100	77.9	78	90.2	90	15	53-120/20
83-32-9	Acenaphthene	50	39.0	78	39.9	80	2	55-120/20
208-96-8	Acenaphthylene	50	35.9	72	37.0	74	3	53-120/20
120-12-7	Anthracene	50	44.7	89	43.8	88	2	59-120/20
92-87-5	Benzidine	50	14.6	29	18.0	36	21* a	1-120/20
56-55-3	Benzo(a)anthracene	50	44.5	89	44.5	89	0	59-120/20
50-32-8	Benzo(a)pyrene	50	41.4	83	41.7	83	1	58-120/20
205-99-2	Benzo(b)fluoranthene	50	39.3	79	38.5	77	2	54-120/20
191-24-2	Benzo(g,h,i)perylene	50	45.0	90	46.9	94	4	58-120/20
207-08-9	Benzo(k)fluoranthene	50	43.6	87	49.0	98	12	47-124/20
101-55-3	4-Bromophenyl phenyl ether	50	48.5	97	49.2	98	1	57-120/20
85-68-7	Butyl benzyl phthalate	50	36.3	73	36.9	74	2	27-120/20
91-58-7	2-Chloronaphthalene	50	38.4	77	38.0	76	1	50-120/20
106-47-8	4-Chloroaniline	50	25.3	51	35.2	70	33* a	19-120/20
218-01-9	Chrysene	50	44.5	89	45.6	91	2	62-120/20
111-91-1	bis(2-Chloroethoxy)methane	50	43.4	87	39.9	80	8	52-120/20
111-44-4	bis(2-Chloroethyl)ether	50	39.6	79	37.7	75	5	52-120/20
108-60-1	bis(2-Chloroisopropyl)ether	50	39.5	79	40.6	81	3	44-120/20
7005-72-3	4-Chlorophenyl phenyl ether	50	45.0	90	44.4	89	1	56-120/20
95-50-1	1,2-Dichlorobenzene	50	34.9	70	36.3	73	4	37-120/20
122-66-7	1,2-Diphenylhydrazine	50	43.5	87	44.0	88	1	52-120/20
541-73-1	1,3-Dichlorobenzene	50	33.5	67	33.4	67	0	34-120/20
106-46-7	1,4-Dichlorobenzene	50	34.9	70	33.7	67	3	35-120/20
121-14-2	2,4-Dinitrotoluene	50	43.6	87	42.7	85	2	59-120/20
606-20-2	2,6-Dinitrotoluene	50	43.6	87	41.2	82	6	59-120/20
91-94-1	3,3'-Dichlorobenzidine	50	39.4	79	39.8	80	1	28-120/20

Blank Spike/Blank Spike Duplicate Summary

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Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-BS	E24562.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
OP9725-BSD	E24563.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51172-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
53-70-3	Dibenzo(a,h)anthracene	50	45.1	90	46.9	94	4	55-124/20
84-74-2	Di-n-butyl phthalate	50	41.6	83	41.6	83	0	47-120/20
117-84-0	Di-n-octyl phthalate	50	38.5	77	39.4	79	2	60-123/20
84-66-2	Diethyl phthalate	50	33.1	66	32.2	64	3	8-120/20
131-11-3	Dimethyl phthalate	50	18.4	37	17.6	35	4	1-120/20
117-81-7	bis(2-Ethylhexyl)phthalate	50	41.1	82	42.0	84	2	61-120/20
206-44-0	Fluoranthene	50	45.4	91	46.5	93	2	59-120/20
86-73-7	Fluorene	50	42.0	84	41.9	84	0	58-120/20
118-74-1	Hexachlorobenzene	50	53.1	106	52.2	104	2	59-120/20
87-68-3	Hexachlorobutadiene	50	37.0	74	38.9	78	5	30-120/20
77-47-4	Hexachlorocyclopentadiene	50	30.7	61	31.0	62	1	4-120/20
67-72-1	Hexachloroethane	50	32.4	65	32.4	65	0	25-120/20
193-39-5	Indeno(1,2,3-cd)pyrene	50	42.3	85	44.4	89	5	53-120/20
78-59-1	Isophorone	50	46.4	93	46.5	93	0	58-120/20
91-20-3	Naphthalene	50	36.2	72	37.2	74	3	44-120/20
98-95-3	Nitrobenzene	50	33.5	67	40.0	80	18	48-120/20
62-75-9	n-Nitrosodimethylamine	50	16.8	34	18.1	36	7	1-120/20
621-64-7	N-Nitroso-di-n-propylamine	50	43.7	87	42.9	86	2	55-120/20
86-30-6	N-Nitrosodiphenylamine	50	49.9	100	48.2	96	3	45-121/20
85-01-8	Phenanthrene	50	43.8	88	43.9	88	0	56-120/20
129-00-0	Pyrene	50	43.0	86	43.8	88	2	58-120/20
120-82-1	1,2,4-Trichlorobenzene	50	35.3	71	36.7	73	4	38-120/20

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	54%	59%	10-120%
4165-62-2	Phenol-d5	39%	40%	10-120%
118-79-6	2,4,6-Tribromophenol	92%	99%	31-123%
4165-60-0	Nitrobenzene-d5	74%	78%	32-120%
321-60-8	2-Fluorobiphenyl	86%	83%	32-120%
1718-51-0	Terphenyl-d14	87%	89%	33-123%

(a) Outside control limits. Associated samples are non-detect for this compound.

Blank Spike/Blank Spike Duplicate Summary

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Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9727-BS	F16109.D	1	10/04/05	PB	09/29/05	OP9727	MSF879
OP9727-BSD	F16110.D	1	10/04/05	PB	09/29/05	OP9727	MSF879

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

M51172-1A

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-86-5	Pentachlorophenol	100	75.5	76	86.7	87	14	53-111/30
95-95-4	2,4,5-Trichlorophenol	100	76.3	76	84.7	85	10	53-120/30
83-32-9	Acenaphthene	50	37.5	75	38.9	78	4	47-120/30
208-96-8	Acenaphthylene	50	31.3	63	32.4	65	3	49-120/30
120-12-7	Anthracene	50	42.6	85	44.5	89	4	55-120/30
56-55-3	Benzo(a)anthracene	50	45.6	91	47.0	94	3	50-129/30
50-32-8	Benzo(a)pyrene	50	40.8	82	42.3	85	4	57-120/30
205-99-2	Benzo(b)fluoranthene	50	37.4	75	40.7	81	8	62-120/30
191-24-2	Benzo(g,h,i)perylene	50	40.9	82	42.2	84	3	57-127/30
207-08-9	Benzo(k)fluoranthene	50	40.1	80	39.3	79	2	51-120/30
218-01-9	Chrysene	50	48.5	97	50.0	100	3	54-120/30
53-70-3	Dibenzo(a,h)anthracene	50	49.0	98	51.1	102	4	45-144/30
206-44-0	Fluoranthene	50	43.5	87	45.7	91	5	51-121/30
86-73-7	Fluorene	50	38.1	76	39.2	78	3	56-120/30
193-39-5	Indeno(1,2,3-cd)pyrene	50	41.8	84	43.5	87	4	54-121/30
91-57-6	2-Methylnaphthalene	50	33.4	67	35.1	70	5	40-120/30
91-20-3	Naphthalene	50	32.5	65	34.6	69	6	37-120/30
85-01-8	Phenanthrene	50	41.1	82	42.8	86	4	51-120/30
129-00-0	Pyrene	50	40.8	82	41.3	83	1	45-120/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	52%	61%	10-120%
4165-62-2	Phenol-d5	38%	44%	10-120%
118-79-6	2,4,6-Tribromophenol	82%	94%	23-135%
4165-60-0	Nitrobenzene-d5	67%	71%	30-120%
321-60-8	2-Fluorobiphenyl	77%	80%	25-120%
1718-51-0	Terphenyl-d14	79%	81%	24-132%

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9726-MS	E24564.D	1	10/04/05	PB	09/29/05	OP9726	MSE1286
OP9726-MSD	E24565.D	1	10/04/05	PB	09/29/05	OP9726	MSE1286
M51342-1	E24566.D	1	10/04/05	PB	09/29/05	OP9726	MSE1286

The QC reported here applies to the following samples:

Method: EPA 625

M51172-3

CAS No.	Compound	M51342-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	50	43.0	86	43.3	87	1	47-145/30
208-96-8	Acenaphthylene	ND	50	39.3	79	41.3	83	5	33-145/30
120-12-7	Anthracene	ND	50	43.4	87	44.0	88	1	27-133/30
56-55-3	Benzo(a)anthracene	ND	50	45.1	90	45.7	91	1	33-143/30
50-32-8	Benzo(a)pyrene	ND	50	43.3	87	44.4	89	3	17-163/30
205-99-2	Benzo(b)fluoranthene	ND	50	42.3	85	39.9	80	6	24-159/30
191-24-2	Benzo(g,h,i)perylene	ND	50	47.2	94	46.9	94	1	1-219/30
207-08-9	Benzo(k)fluoranthene	ND	50	49.2	98	53.1	106	8	11-162/30
218-01-9	Chrysene	ND	50	45.3	91	45.0	90	1	17-168/30
53-70-3	Dibenzo(a,h)anthracene	ND	50	47.5	95	48.3	97	2	1-227/30
206-44-0	Fluoranthene	ND	50	42.8	86	43.5	87	2	26-137/30
86-73-7	Fluorene	ND	50	43.8	88	43.4	87	1	59-121/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	43.5	87	46.5	93	7	1-171/30
91-57-6	2-Methylnaphthalene	ND	50	37.5	75	39.8	80	6	50-150/30 ^a
91-20-3	Naphthalene	ND	50	40.6	81	39.0	78	4	21-133/30
85-01-8	Phenanthrene	ND	50	43.6	87	45.5	91	4	54-120/30
129-00-0	Pyrene	ND	50	45.0	90	46.0	92	2	52-115/30

CAS No.	Surrogate Recoveries	MS	MSD	M51342-1	Limits
4165-60-0	Nitrobenzene-d5	80%	84%	75%	22-126%
321-60-8	2-Fluorobiphenyl	84%	90%	79%	21-124%
1718-51-0	Terphenyl-d14	86%	88%	84%	24-133%

(a) Advisory control limits.

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-MS	E24564.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
OP9725-MSD	E24565.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
M51224-1	E24566.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51172-1

CAS No.	Compound	M51224-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	ND		100	75.0	75	75.7	76	1	43-120/24
59-50-7	4-Chloro-3-methyl phenol	ND		100	76.3	76	76.9	77	1	52-120/20
120-83-2	2,4-Dichlorophenol	ND		100	86.1	86	79.9	80	7	49-120/23
105-67-9	2,4-Dimethylphenol	ND		100	53.8	54	50.1	50	7	1-120/33
51-28-5	2,4-Dinitrophenol	ND		100	68.9	69	68.5	69	1	29-124/50
534-52-1	4,6-Dinitro-o-cresol	ND		100	86.4	86	89.1	89	3	41-126/37
88-75-5	2-Nitrophenol	ND		100	73.5	74	84.6	85	14	48-120/31
100-02-7	4-Nitrophenol	ND		100	47.9	48	48.1	48	0	7-120/22
87-86-5	Pentachlorophenol	ND		100	86.3	86	85.6	86	1	24-136/40
108-95-2	Phenol	ND		100	38.7	39	40.7	41	5	13-120/25
88-06-2	2,4,6-Trichlorophenol	ND		100	86.0	86	83.6	84	3	44-120/26
83-32-9	Acenaphthene	ND		50	41.4	83	41.6	83	0	51-120/25
208-96-8	Acenaphthylene	ND		50	37.6	75	39.4	79	5	49-120/25
120-12-7	Anthracene	ND		50	43.9	88	44.4	89	1	55-120/26
92-87-5	Benzidine	ND		50	8.7	17	9.2	18	6	1-120/50
56-55-3	Benzo(a)anthracene	ND		50	44.1	88	44.7	89	1	55-120/24
50-32-8	Benzo(a)pyrene	ND		50	41.5	83	42.5	85	2	55-120/25
205-99-2	Benzo(b)fluoranthene	ND		50	39.6	79	37.3	75	6	50-120/28
191-24-2	Benzo(g,h,i)perylene	ND		50	46.7	93	46.5	93	0	52-120/25
207-08-9	Benzo(k)fluoranthene	ND		50	47.8	96	52.6	105	10	41-129/40
101-55-3	4-Bromophenyl phenyl ether	ND		50	48.7	97	49.8	100	2	53-120/24
85-68-7	Butyl benzyl phthalate	ND		50	33.8	68	34.9	70	3	28-120/29
91-58-7	2-Chloronaphthalene	ND		50	40.4	81	42.4	85	5	44-120/27
106-47-8	4-Chloroaniline	ND		50	26.7	53	27.7	55	4	10-120/50
218-01-9	Chrysene	ND		50	45.7	91	45.4	91	1	57-120/23
111-91-1	bis(2-Chloroethoxy)methane	ND		50	41.5	83	41.5	83	0	49-120/28
111-44-4	bis(2-Chloroethyl)ether	ND		50	37.0	74	40.7	81	10	49-120/39
108-60-1	bis(2-Chloroisopropyl)ether	ND		50	40.0	80	42.6	85	6	41-120/30
7005-72-3	4-Chlorophenyl phenyl ether	ND		50	46.1	92	46.9	94	2	51-120/25
95-50-1	1,2-Dichlorobenzene	ND		50	36.8	74	40.5	81	10	36-120/31
122-66-7	1,2-Diphenylhydrazine	ND		50	43.1	86	44.7	89	4	48-120/25
541-73-1	1,3-Dichlorobenzene	ND		50	34.3	69	38.7	77	12	31-120/31
106-46-7	1,4-Dichlorobenzene	ND		50	35.3	71	38.9	78	10	33-120/30
121-14-2	2,4-Dinitrotoluene	ND		50	42.5	85	42.2	84	1	55-120/26
606-20-2	2,6-Dinitrotoluene	ND		50	42.1	84	41.4	83	2	55-120/26
91-94-1	3,3'-Dichlorobenzidine	ND		50	37.2	74	36.5	73	2	16-120/42

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 2

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9725-MS	E24564.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
OP9725-MSD	E24565.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285
M51224-1	E24566.D	1	10/04/05	PB	09/29/05	OP9725	MSE1285

The QC reported here applies to the following samples:

Method: SW846 8270C

M51172-1

CAS No.	Compound	M51224-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
53-70-3	Dibenzo(a,h)anthracene	ND	50	46.0	92	46.9	94	2	47-131/24
84-74-2	Di-n-butyl phthalate	ND	50	40.9	82	41.7	83	2	46-120/25
117-84-0	Di-n-octyl phthalate	ND	50	40.0	80	39.8	80	1	57-124/26
84-66-2	Diethyl phthalate	ND	50	32.5	65	33.1	66	2	12-120/39
131-11-3	Dimethyl phthalate	ND	50	17.5	35	18.9	38	8	1-120/50
117-81-7	bis(2-Ethylhexyl)phthalate	ND	50	41.0	82	42.1	84	3	53-125/25
206-44-0	Fluoranthene	ND	50	45.6	91	46.3	93	2	56-120/25
86-73-7	Fluorene	ND	50	44.0	88	43.6	87	1	54-120/26
118-74-1	Hexachlorobenzene	ND	50	51.5	103	53.1	106	3	53-120/25
87-68-3	Hexachlorobutadiene	ND	50	39.7	79	40.6	81	2	26-120/32
77-47-4	Hexachlorocyclopentadiene	ND	50	36.9	74	42.1	84	13	2-120/37
67-72-1	Hexachloroethane	ND	50	33.9	68	36.8	74	8	25-120/35
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	42.1	84	45.0	90	7	52-120/29
78-59-1	Isophorone	ND	50	45.7	91	46.2	92	1	54-120/27
91-20-3	Naphthalene	ND	50	40.2	80	38.5	77	4	41-120/32
98-95-3	Nitrobenzene	ND	50	38.8	78	35.4	71	9	44-120/32
62-75-9	n-Nitrosodimethylamine	ND	50	16.3	33	20.1	40	21	2-120/37
621-64-7	N-Nitroso-di-n-propylamine	ND	50	42.3	85	44.5	89	5	54-120/29
86-30-6	N-Nitrosodiphenylamine	ND	50	46.4	93	48.1	96	4	44-121/25
85-01-8	Phenanthrene	ND	50	43.4	87	45.3	91	4	51-120/24
129-00-0	Pyrene	ND	50	43.2	86	44.2	88	2	53-120/24
120-82-1	1,2,4-Trichlorobenzene	ND	50	39.0	78	40.4	81	4	34-120/29

CAS No.	Surrogate Recoveries	MS	MSD	M51224-1	Limits
367-12-4	2-Fluorophenol	59%	59%	48%	10-120%
4165-62-2	Phenol-d5	39%	43%	29%	10-120%
118-79-6	2,4,6-Tribromophenol	98%	96%	86%	31-123%
4165-60-0	Nitrobenzene-d5	75%	79%	71%	32-120%
321-60-8	2-Fluorobiphenyl	85%	91%	80%	32-120%
1718-51-0	Terphenyl-d14	88%	89%	85%	33-123%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9727-MS	F16111.D	1	10/04/05	PB	09/29/05	OP9727	MSF879
OP9727-MSD	F16112.D	1	10/04/05	PB	09/29/05	OP9727	MSF879
M51357-1	F16113.D	1	10/04/05	PB	09/29/05	OP9727	MSF879

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

M51172-1A

CAS No.	Compound	M51357-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
87-86-5	Pentachlorophenol	ND		100	80.5	81	80.1	80	0	5-137/52
95-95-4	2,4,5-Trichlorophenol	ND		100	83.9	84	81.4	81	3	40-120/26
83-32-9	Acenaphthene	ND		50	40.9	82	41.9	84	2	49-120/20
208-96-8	Acenaphthylene	ND		50	33.2	66	34.0	68	2	50-120/22
120-12-7	Anthracene	ND		50	44.8	90	44.4	89	1	58-120/20
56-55-3	Benzo(a)anthracene	ND		50	46.0	92	45.9	92	0	50-132/20
50-32-8	Benzo(a)pyrene	ND		50	41.6	83	41.6	83	0	51-120/22
205-99-2	Benzo(b)fluoranthene	ND		50	38.2	76	40.2	80	5	67-120/20
191-24-2	Benzo(g,h,i)perylene	ND		50	41.7	83	41.9	84	0	63-121/20
207-08-9	Benzo(k)fluoranthene	ND		50	41.1	82	38.7	77	6	54-120/25
218-01-9	Chrysene	ND		50	49.3	99	49.5	99	0	59-120/20
53-70-3	Dibenzo(a,h)anthracene	ND		50	47.9	96	50.3	101	5	46-146/20
206-44-0	Fluoranthene	ND		50	45.1	90	45.5	91	1	58-120/20
86-73-7	Fluorene	ND		50	39.7	79	40.3	81	1	62-120/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		50	42.6	85	42.9	86	1	52-124/20
91-57-6	2-Methylnaphthalene	ND		50	37.5	75	38.4	77	2	44-120/20
91-20-3	Naphthalene	ND		50	36.3	73	37.3	75	3	41-120/20
85-01-8	Phenanthrene	ND		50	43.4	87	43.9	88	1	51-120/21
129-00-0	Pyrene	ND		50	40.7	81	40.8	82	0	48-121/20

CAS No.	Surrogate Recoveries	MS	MSD	M51357-1	Limits
367-12-4	2-Fluorophenol	60%	57%	45%	10-120%
4165-62-2	Phenol-d5	43%	42%	27%	10-120%
118-79-6	2,4,6-Tribromophenol	94%	91%	79%	23-135%
4165-60-0	Nitrobenzene-d5	70%	71%	60%	30-120%
321-60-8	2-Fluorobiphenyl	80%	81%	86%	25-120%
1718-51-0	Terphenyl-d14	80%	78%	80%	24-132%

Semivolatile Surrogate Recovery Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Method: EPA 625

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
M51172-3	E24602.D	77.0	74.0	55.0
OP9726-BS	E24562.D	79.0	85.0	86.0
OP9726-MB	E24561.D	69.0	69.0	76.0
OP9726-MS	E24564.D	80.0	84.0	86.0
OP9726-MSD	E24565.D	84.0	90.0	88.0

Surrogate Compounds	Recovery Limits
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S1 = Nitrobenzene-d5	22-126%
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S2 = 2-Fluorobiphenyl	21-124%
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S3 = Terphenyl-d14	24-133%
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5.5

5

Semivolatile Surrogate Recovery Summary

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Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Method: SW846 8270C

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M51172-1	E24567.D	52.0	39.0	93.0	67.0	66.0	58.0
OP9725-BS	E24562.D	54.0	39.0	92.0	74.0	86.0	87.0
OP9725-BSD	E24563.D	59.0	40.0	99.0	78.0	83.0	89.0
OP9725-MB	E24561.D	45.0	31.0	82.0	65.0	69.0	77.0
OP9725-MS	E24564.D	59.0	39.0	98.0	75.0	85.0	88.0
OP9725-MSD	E24565.D	59.0	43.0	96.0	79.0	91.0	89.0

Surrogate
Compounds

Recovery
Limits

S1 = 2-Fluorophenol 10-120%
S2 = Phenol-d5 10-120%
S3 = 2,4,6-Tribromophenol 31-123%
S4 = Nitrobenzene-d5 32-120%
S5 = 2-Fluorobiphenyl 32-120%
S6 = Terphenyl-d14 33-123%

5.5

5

Semivolatile Surrogate Recovery Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Method: SW846 8270C BY SIM

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M51172-1A	F16116.D	50.0	40.0	84.0	55.0	66.0	49.0
OP9727-BS	F16109.D	52.0	38.0	82.0	67.0	77.0	79.0
OP9727-BSD	F16110.D	61.0	44.0	94.0	71.0	80.0	81.0
OP9727-MB	F16108.D	47.0	32.0	83.0	58.0	70.0	74.0
OP9727-MS	F16111.D	60.0	43.0	94.0	70.0	80.0	80.0
OP9727-MSD	F16112.D	57.0	42.0	91.0	71.0	81.0	78.0

Surrogate Compounds	Recovery Limits
------------------------	--------------------

S1 = 2-Fluorophenol	10-120%
S2 = Phenol-d5	10-120%
S3 = 2,4,6-Tribromophenol	23-135%
S4 = Nitrobenzene-d5	30-120%
S5 = 2-Fluorobiphenyl	25-120%
S6 = Terphenyl-d14	24-132%

5.5

5

GC Volatiles



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Page 1 of 1

Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9741-MB	YZ28782.D	1	10/03/05	CZ	10/01/05	OP9741	GYZ1197

The QC reported here applies to the following samples:

Method: EPA 504

M51172-1

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.015	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	Bromofluorobenzene (S)	133%	26-158%
460-00-4	Bromofluorobenzene (S)	60%	26-158%

6.1

6

Method Blank Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAB1229-MB	AB23896.D	1	09/29/05	CH	n/a	n/a	GAB1229

The QC reported here applies to the following samples:

Method: EPA 602

M51172-2, M51172-3

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
	2,3,4-Trifluorotoluene	74% 61-124%

6.1

6

Blank Spike Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9741-BS	YZ28760.D	1	10/02/05	CZ	10/01/05	OP9741	GYZ1197

The QC reported here applies to the following samples:

Method: EPA 504

M51172-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
106-93-4	1,2-Dibromoethane	0.071	0.082	115	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	Bromofluorobenzene (S)	140%	26-158%
460-00-4	Bromofluorobenzene (S)	57%	26-158%

6.2

6

Blank Spike/Blank Spike Duplicate Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAB1229-BSP	AB23897.D	1	09/29/05	CH	n/a	n/a	GAB1229
GAB1229-BSD	AB23898.D	1	09/29/05	CH	n/a	n/a	GAB1229

The QC reported here applies to the following samples:

Method: EPA 602

M51172-2, M51172-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	16.2	81	16.0	80	1	39-150/30
100-41-4	Ethylbenzene	20	16.9	85	16.8	84	1	32-160/30
1634-04-4	Methyl Tert Butyl Ether	20	14.6	73	14.8	74	1	65-122/30
108-88-3	Toluene	20	15.8	79	15.6	78	1	46-148/30
1330-20-7	Xylenes (total)	60	51.2	85	50.9	85	1	69-111/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
	2,3,4-Trifluorotoluene	76%	62%	61-124%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9741-MS	YZ28761.D	1	10/02/05	CZ	10/01/05	OP9741	GYZ1197
OP9741-MSD	YZ28762.D	1	10/02/05	CZ	10/01/05	OP9741	GYZ1197
M51307-1	YZ28763.D	1	10/03/05	CZ	10/01/05	OP9741	GYZ1197

The QC reported here applies to the following samples:

Method: EPA 504

M51172-1

CAS No.	Compound	M51307-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	ND	0.071	0.095	134	0.094	132	1	65-135/30

CAS No.	Surrogate Recoveries	MS	MSD	M51307-1	Limits
460-00-4	Bromofluorobenzene (S)	141%	129%	156%	26-158%
460-00-4	Bromofluorobenzene (S)	58%	53%	60%	26-158%

6.4

6

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M51095-5MS	AB23899.D	1	09/29/05	CH	n/a	n/a	GAB1229
M51095-5MSD	AB23900.D	1	09/29/05	CH	n/a	n/a	GAB1229
M51095-5	AB23901.D	1	09/29/05	CH	n/a	n/a	GAB1229

The QC reported here applies to the following samples:

Method: EPA 602

M51172-2, M51172-3

CAS No.	Compound	M51095-5 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	16.0	80	15.9	80	1	39-150/30
100-41-4	Ethylbenzene	ND	20	16.7	84	16.8	84	1	32-160/30
1634-04-4	Methyl Tert Butyl Ether	ND	20	14.6	73	14.9	75	2	57-126/30
108-88-3	Toluene	ND	20	15.6	78	15.5	78	1	46-148/30
1330-20-7	Xylenes (total)	ND	60	50.5	84	50.5	84	0	61-113/30

CAS No.	Surrogate Recoveries	MS	MSD	M51095-5	Limits
	2,3,4-Trifluorotoluene	67%	63%	61%	61-124%

6.4

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Volatile Surrogate Recovery Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Method: EPA 504

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a	S1 ^b
M51172-1	YZ28766.D	135.0	70.0
OP9741-BS	YZ28760.D	140.0	57.0
OP9741-MB	YZ28782.D	133.0	60.0
OP9741-MS	YZ28761.D	141.0	58.0
OP9741-MSD	YZ28762.D	129.0	53.0

Surrogate Compounds	Recovery Limits
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S1 = Bromofluorobenzene (S)	26-158%
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(a) Recovery from GC signal #1

(b) Recovery from GC signal #2

6.5

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Volatile Surrogate Recovery Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Method: EPA 602

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a
M51172-2	AB23903.D	72.0
M51172-3	AB23902.D	72.0
GAB1229-BSD	AB23898.D	62.0
GAB1229-BSP	AB23897.D	76.0
GAB1229-MB	AB23896.D	74.0
M51095-5MS	AB23899.D	67.0
M51095-5MSD	AB23900.D	63.0

Surrogate Compounds	Recovery Limits
------------------------	--------------------

S1 = 2,3,4-Trifluorotoluene	61-124%
-----------------------------	---------

(a) Recovery from GC signal #2

6.5

6



GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Page 1 of 1

Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9723-MB	YZ28717.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195

The QC reported here applies to the following samples:

Method: EPA 608

M51172-1

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.50	ug/l	
11104-28-2	Aroclor 1221	ND	0.50	ug/l	
11141-16-5	Aroclor 1232	ND	0.50	ug/l	
53469-21-9	Aroclor 1242	ND	0.50	ug/l	
12672-29-6	Aroclor 1248	ND	0.50	ug/l	
11097-69-1	Aroclor 1254	ND	0.50	ug/l	
11096-82-5	Aroclor 1260	ND	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
877-09-8	Tetrachloro-m-xylene	91% 44-132%
877-09-8	Tetrachloro-m-xylene	110% 44-132%
2051-24-3	Decachlorobiphenyl	58% 12-151%
2051-24-3	Decachlorobiphenyl	70% 12-151%

Blank Spike Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9723-BS	YZ28718.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195

The QC reported here applies to the following samples:

Method: EPA 608

M51172-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
12674-11-2	Aroclor 1016	2	2.0	100	50-114
11104-28-2	Aroclor 1221		ND		15-178
11141-16-5	Aroclor 1232		ND		10-215
53469-21-9	Aroclor 1242		ND		39-150
12672-29-6	Aroclor 1248		ND		38-158
11097-69-1	Aroclor 1254		ND		29-131
11096-82-5	Aroclor 1260	2	1.8	90	8-127

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	90%	44-132%
877-09-8	Tetrachloro-m-xylene	107%	44-132%
2051-24-3	Decachlorobiphenyl	60%	12-151%
2051-24-3	Decachlorobiphenyl	70%	12-151%

7.2

7

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: M51172
Account: EMCON Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9723-MS	YZ28719.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195
OP9723-MSD	YZ28720.D	1	10/01/05	CZ	09/29/05	OP9723	GYZ1195
M51222-1	YZ28788.D	1	10/04/05	CZ	09/29/05	OP9723	GYZ1198

The QC reported here applies to the following samples:

Method: EPA 608

M51172-1

CAS No.	Compound	M51222-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		2	2.0	100	1.8	90	11	50-114/30
11104-28-2	Aroclor 1221	ND			ND		ND		nc	15-178/30
11141-16-5	Aroclor 1232	ND			ND		ND		nc	10-215/30
53469-21-9	Aroclor 1242	ND			ND		ND		nc	39-150/30
12672-29-6	Aroclor 1248	ND			ND		ND		nc	38-158/30
11097-69-1	Aroclor 1254	ND			ND		ND		nc	29-131/30
11096-82-5	Aroclor 1260	ND		2	2.0	100	1.9	95	5	8-127/30

CAS No.	Surrogate Recoveries	MS	MSD	M51222-1	Limits
877-09-8	Tetrachloro-m-xylene	91%	87%	99%	44-132%
877-09-8	Tetrachloro-m-xylene	106%	101%	55%	44-132%
2051-24-3	Decachlorobiphenyl	103%	100%	105%	12-151%
2051-24-3	Decachlorobiphenyl	122%	117%	56%	12-151%

7.3

7

Semivolatile Surrogate Recovery Summary

Page 1 of 1

Job Number: M51172

Account: EMCON Shaw Environmental & Infrastructure

Project: HESS: #21507 615 Broadway, Lawrence, MA

Method: EPA 608

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a	S1 ^b	S2 ^a	S2 ^b
M51172-1	YZ28723.D	88.0	103.0	86.0	101.0
OP9723-BS	YZ28718.D	90.0	107.0	60.0	70.0
OP9723-MB	YZ28717.D	91.0	110.0	58.0	70.0
OP9723-MS	YZ28719.D	91.0	106.0	103.0	122.0
OP9723-MSD	YZ28720.D	87.0	101.0	100.0	117.0

Surrogate Compounds	Recovery Limits
------------------------	--------------------

S1 = Tetrachloro-m-xylene	44-132%
---------------------------	---------

S2 = Decachlorobiphenyl	12-151%
-------------------------	---------

(a) Recovery from GC signal #1

(b) Recovery from GC signal #2

7.4

7

Metals Analysis

QC Data Summaries

8

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: M51172
Account: EMCON - Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

QC Batch ID: MP7690
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 09/29/05

Metal	RL	IDL	MB raw	final
Mercury	0.20	.067	-0.070	<0.20

Associated samples MP7690: M51172-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.1.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: M51172
 Account: EMCON - Shaw Environmental & Infrastructure
 Project: HESS: #21507 615 Broadway, Lawrence, MA

QC Batch ID: MP7690
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 09/29/05 09/29/05

Metal	M51126-1A Original MS	Spikelot HGRWS1	% Rec	QC Limits	M51126-1A Original DUP	RPD	QC Limits
Mercury	0.0 3.0	3	100.0	75-125	0.0 0.0	NC	0-20

Associated samples MP7690: M51172-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

8.1.2

8

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: M51172
Account: EMCON - Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

QC Batch ID: MP7690
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 09/29/05

Metal	BSP Result	Spikelot HGRWS1	% Rec	QC Limits
Mercury	3.1	3	103.3	80-120

Associated samples MP7690: M51172-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.1.3
8

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: M51172
Account: EMCON - Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

QC Batch ID: MP7699
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/03/05

Metal	RL	IDL	MB raw	final
Aluminum	200	14		
Antimony	6.0	1.6	3.3	<6.0
Arsenic	5.0	2.3	-2.2	<5.0
Barium	200	1.7	anr	
Beryllium	4.0	.18		
Boron	100	1.2		
Cadmium	4.0	.31	0.070	<4.0
Calcium	5000	4.7		
Chromium	10	.53	0.28	<10
Cobalt	50	.47		
Copper	25	2.8	-0.57	<25
Iron	100	14	9.4	<100
Lead	5.0	1.9	0.63	<5.0
Magnesium	5000	5.3		
Manganese	15	.17	anr	
Molybdenum	100	.92		
Nickel	40	.65	0.030	<40
Potassium	5000	31		
Selenium	10	2.7	1.9	<10
Silver	5.0	.53	-0.010	<5.0
Sodium	5000	110		
Strontium	10	.22		
Thallium	10	2.9		
Tin	100	9.4		
Titanium	50	1.3		
Vanadium	50	2.4		
Zinc	20	1.2	1.1	<20

Associated samples MP7699: M51172-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.2.1

8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: M51172
 Account: EMCON - Shaw Environmental & Infrastructure
 Project: HESS: #21507 615 Broadway, Lawrence, MA

QC Batch ID: MP7699
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/03/05 10/03/05

Metal	M51172-1 Original	MS	SpikeLot MP1RWS2	% Rec	QC Limits	M51172-1 Original	DUP	RPD	QC Limits
Aluminum									
Antimony	2.5	538	500	107.1	75-125	2.5	2.6	3.9	0-20
Arsenic	30.8	532	500	100.2	75-125	30.8	32.8	6.3	0-20
Barium	anr								
Beryllium									
Boron									
Cadmium	0.0	477	500	95.4	75-125	0.0	0.0	NC	0-20
Calcium									
Chromium	0.0	468	500	93.6	75-125	0.0	0.0	NC	0-20
Cobalt									
Copper	206	715	500	101.8	75-125	206	204	1.0	0-20
Iron	1480	3310	2000	91.5	75-125	1480	1470	0.7	0-20
Lead	11.3	952	1000	94.1	75-125	11.3	10.8	4.5	0-20
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	6.3	493	500	97.3	75-125	6.3	6.3	0.0	0-20
Potassium									
Selenium	0.0	502	500	100.4	75-125	0.0	4.3	200.0(a)	0-20
Silver	0.0	208	200	104.0	75-125	0.0	0.0	NC	0-20
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	11.4	465	500	90.7	75-125	11.4	11.8	3.4	0-20

Associated samples MP7699: M51172-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: M51172
Account: EMCON - Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

QC Batch ID: MP7699
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/03/05

Metal	BSP Result	SpikeLot MPIRWS2	% Rec	QC Limits
Aluminum				
Antimony	502	500	100.4	80-120
Arsenic	493	500	98.6	80-120
Barium	anr			
Beryllium				
Boron				
Cadmium	502	500	100.4	80-120
Calcium				
Chromium	470	500	94.0	80-120
Cobalt				
Copper	476	500	95.2	80-120
Iron	1900	2000	95.0	80-120
Lead	961	1000	96.1	80-120
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	517	500	103.4	80-120
Potassium				
Selenium	488	500	97.6	80-120
Silver	195	200	97.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	478	500	95.6	80-120

Associated samples MP7699: M51172-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

8.2.3

8

SERIAL DILUTION RESULTS SUMMARY

Login Number: M51172
 Account: EMCON - Shaw Environmental & Infrastructure
 Project: HESS: #21507 615 Broadway, Lawrence, MA

QC Batch ID: MP7699
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/03/05

Metal	M51172-1 Original	SDL 1:5	RPD	QC Limits
Aluminum				
Antimony	2.51	0.00	100.0(a)	0-10
Arsenic	30.8	17.0	44.9 (a)	0-10
Barium	anr			
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium	0.00	0.00	NC	0-10
Cobalt				
Copper	206	198	3.9	0-10
Iron	1480	1490	1.0	0-10
Lead	11.3	11.6	2.8	0-10
Magnesium				
Manganese	anr			
Molybdenum				
Nickel	6.34	4.51	28.9 (a)	0-10
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	11.4	11.0	3.3	0-10

Associated samples MP7699: M51172-1

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

8.2.4
8

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M51172
Account: EMCON - Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP6011/GN17989	0.010	<0.010	mg/l	0.1	0.102	102.0	90-110%
Cyanide	GP6011/GN17989			mg/l	0.2	0.206	103.0	90-110%
Oil And Grease, Gravimetric	GP6010/GN17973	4.0	<4.0	mg/l	40	39.8	100.0	80-120%
Petroleum Hydrocarbons	GP6004/GN17963	0.60	<0.60	mg/l	5	5.2	104.0	80-120%
Solids, Total Suspended	GN17969	4.0	<4.0	mg/l				
Total Residual Chlorine	GN17948	0.050	<0.050	mg/l	.5	0.45	90.0	-%

Associated Samples:

Batch GN17948: M51172-1

Batch GN17969: M51172-1

Batch GP6004: M51172-1, M51172-3

Batch GP6010: M51172-1

Batch GP6011: M51172-1

9.1

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M51172
Account: EMCON - Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Cyanide	GP6011/GN17989	M51100-2	mg/l	<0.010	<0.010	0.0	0-20%
Petroleum Hydrocarbons	GP6004/GN17963	M51172-1	mg/l	<0.61	<0.61	0.0	0-20%
Solids, Total Suspended	GN17969	M51121-1	mg/l	<4.0	<4.0	0.0	0-20%
Total Residual Chlorine	GN17948	M51172-1	mg/l	<0.050	<0.050	0.0	0-20%

Associated Samples:

Batch GN17948: M51172-1

Batch GN17969: M51172-1

Batch GP6004: M51172-1, M51172-3

Batch GP6011: M51172-1

9.2

9

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M51172
Account: EMCON - Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Cyanide	GP6011/GN17989	M51100-2	mg/l	<0.010	0.1	0.10	100.0	75-125%
Oil And Grease, Gravimetric	GP6010/GN17973	M51198-3	mg/l	<5.1	40.8	41.1	101.0	75-125%
Petroleum Hydrocarbons	GP6004/GN17963	M51172-3	mg/l	<0.61	5.1	5.4	106.0	75-125%
Total Residual Chlorine	GN17948	M51172-1	mg/l	<0.050	.5	0.55	110.0	-%

Associated Samples:
Batch GN17948: M51172-1
Batch GP6004: M51172-1, M51172-3
Batch GP6010: M51172-1
Batch GP6011: M51172-1

9.3

6

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: M51172
Account: EMCON - Shaw Environmental & Infrastructure
Project: HESS: #21507 615 Broadway, Lawrence, MA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Oil And Grease, Gravimetric	GP6010/GN17973	M51198-3	mg/l	<5.1	40.8	40.9	0.5	

Associated Samples:
Batch GP6010: M51172-1

9.4
9



New England
ACCUTEST.
Laboratories

10/19/05

Technical Report for

Shaw Environmental & Infrastructure

HESS: #21507 615 Broadway, Lawrence, MA

Accutest Job Number: M51319

Sampling Date: 10/03/05

Report to:

Shaw Environmental & Infrastructure

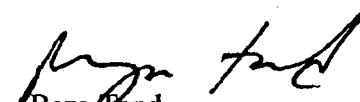
james.collins@shawgrp.com

ATTN: Jim Collins

Total number of pages in report: 6



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.


Reza Fand
Lab Director

Certifications: MA (M-MA136) CT (PH-0109) NH (250204) RI (00071) ME (MA136) FL (E87579)
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Sample Summary

Shaw Environmental & Infrastructure

Job No: M51319

HESS: #21507 615 Broadway, Lawrence, MA

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
M51319-1	10/03/05	09:30 PL	10/03/05	AQ Ground Water	INF-001

Report of Analysis

Page 1 of 1

Client Sample ID:	INF-001	Date Sampled:	10/03/05
Lab Sample ID:	M51319-1	Date Received:	10/03/05
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	HESS: #21507 615 Broadway, Lawrence, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	<0.010	0.010	mg/l	1	10/04/05 08:25	MA	SW846 7196A

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

