34-12

11-29-01

Fac/Perm/Co ID #	Date	Doc ID#
6c	8/13/04	DIN

December 14, 2001

HDR

Mr. Larry Rose
North Carolina Department of Environment
and Natural Resources
Division of Solid Waste Management
Solid Waste Section
P. O. Box 27687
Raleigh, North Carolina 27611-7687

DEC 2001
Received
Solid Waste
Section

Re: Fall 2001 Semi-Annual Ground-Water Sampling Analytical
and Landfill Gas Monitoring Results
Winston-Salem Construction and Demolition (C&D) Landfill (No. 34-12)
Forsyth County, North Carolina
HDR Project No. 00162-128-018

Dear Mr. Rose:

HDR Engineering, Inc. of the Carolinas (HDR), on behalf of the Winston-Salem City/County Utilities Commission (the City), is hereby submitting the ground-water analytical and landfill gas monitoring results for the Fall 2001 monitoring period (July through December 2001) at the C&D Landfill (the Landfill) located in Forsyth County, North Carolina.

Ground-water samples were collected from on-site detection monitoring wells MW-1R, MW-2R, MW-3R, MW-4R, MW-5R, MW-6R, MW-7, and MW-8 on November 29, 2001, for the eight Resource Conservation and Recovery Act (RCRA) metals and Appendix I volatile organic compound (VOC) analysis. A trip blank was also included for Quality Assurance/Quality Control (QA/QC) purposes. Field measurements of pH, specific conductance, and temperature were also recorded during pre-sampling well purging. These measurements were recorded on field forms, which have been attached to the Report of Laboratory Analysis. Monitoring well construction record drawings for each monitoring well sampled are also attached. Based on past ground-water flow characteristics for the site, ground-water monitoring well MW-1R is hydraulically upgradient of the Landfill and, therefore, is considered as "background" for the site.

In addition, landfill gas monitoring was performed from the six permanent methane gas monitoring stations (MM-1 through MM-6) located around the perimeter of Phase I of the Landfill. Methane stations MM-2 and MM-4 are nested monitoring stations, while all other stations are constructed as a single monitoring point. Methane gas probe monitoring construction record drawings for each station are attached to this submittal.

The metal concentrations detected are reflective of the naturally-occurring trace metals typically present in the saprolite of this region. In addition, all of the trace metal concentrations for this period were below their respective 2L ground-water standards, with the exception of chromium, lead, and nickel in various wells. Chromium was detected slightly above its 2L ground-water standard in monitoring wells MW-4R, MW-5R, MW-6R, MW-7, and MW-8. Lead was detected slightly above its 2L ground-water standard in monitoring wells MW-3R, MW-4R, MW-6R, MW-7, and MW-8. Nickel was detected slightly above its 2L ground-water standard in monitoring well MW-7. As reflected by the Pre-sampling Well Purging forms, the presence of these trace metal detections is due to the slight lingering well turbidity in each well.

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No VOCs were detected this period in any of the ground-water monitoring wells with the exception of toluene in monitoring well MW-1R, which detected well below its respective 2L ground-water standard of 1,000 parts per billion. The detection of toluene in monitoring well MW-1R is probably an anomalous reading that will be resampled to confirm. There were no VOCs detected in the trip blank.

The Report of Laboratory Analysis, for this sampling event at the Landfill, is attached to this letter (including the Chain-of-Custody Record and field purging forms). Table 1 is also attached to this report and summarizes the results of all sampling events performed to date at the Landfill. The results of this recent sampling event indicate that the existing ground-water monitoring well network at the Landfill is adequate to provide representative ground-water quality data and release detection determination for the Landfill.

No trace of methane was detected in the on-site methane monitoring stations. A copy of the Perimeter Gas Probe Monitoring Field Data Form is attached to this submittal.

The Phase III Construction Certification Report was submitted by HDR to the North Carolina Department of Environment and Natural Resources (NCDENR), Solid Waste Section on February 1, 2001. This submittal was approved by NCDENR in a letter dated April 25, 2001, and filling of the new cell near MW-8 began in August 2001. One-year of background samples were collected before filling began.

If you have any questions or comments concerning the information summarized in this letter or in the attached analytical data report, please do not hesitate to contact me at (704) 338-6700.

Sincerely,

HDR Engineering, Inc. of the Carolinas

John R. Isham, PG
Senior Hydrogeologist

JRI/jvd

Attachments: Table 1, Summary of Ground-Water Analytical Results
Report of Laboratory Analysis (w/Chain-of-Custody Record)
Perimeter Gas Probe Monitoring Field Data Form
Pre-Sampling Well Purging Forms
Monitoring Well Construction Record Drawings
Methane Gas Monitoring Construction Record Drawings
Ground-Water and Methane Gas Monitoring Well Locations

cc: Edward Gibson, PE, Winston-Salem City/County Utility Commission
Danny Hockett, Winston-Salem City/County Utility Commission

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-1R

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/5/98	6/2/99	11/19/99	6/5/00	12/14/00	7/31/01	11/29/01
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0058
Barium	0.224	0.18	0.10	0.29	0.10	0.16	0.15	0.13	0.11	0.15	0.087	0.28
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	<0.010	0.006	0.003	0.011	0.049	0.012	0.0078	0.0052	<0.002	0.0066	0.0066	0.022
Lead	0.006	<0.005	<0.005	0.012	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.010
Mercury	0.0018	0.0002	<00002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002	NA
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005
Methyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10
Acetone	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methyl Iodide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Dichloromethane	<5	<5	<5	<5	<5	<5	13	<5	<5	<5	<5	<5
Carbon Disulfide	23	<5	<5	<5	<5	28	<5	<5	<5	<5	<5	<5
Trans-1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Methyl Ethyl Ketone	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-1R (continued)

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/5/98	6/2/99	11/19/99	6/5/00	12/14/00	7/31/01	11/29/01
1,2-Dichloroporpane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	21
Trans-1,3-Dichloro-1-Propene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes (total)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,4-Dichloro-2-Butene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-2R

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/5/98	6/2/99	11/20/99	6/5/00	12/14/00	7/31/01	11/29/01
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	0.35	0.16	0.20	0.34	0.19	1.1	0.15	0.12	0.18	0.061	0.28	0.16
Cadmium	<0.010	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	0.012	0.009	0.004	0.043	0.034	0.21	0.0078	0.014	0.003	0.0039	0.016	0.016
Lead	0.026	0.008	0.014	0.031	0.019	0.068	<0.005	0.0069	0.0065	<0.005	0.0089	0.007
Mercury	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002	NA
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.005	<0.005	0.006	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10
Acetone	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methyl Iodide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Dichloromethane	<5	<5	<5	<5	<5	<5	13	<5	<5	<5	<5	<5
Carbon Disulfide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Methyl Ethyl Ketone	86	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-2R (continued)

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/5/98	6/2/99	11/20/99	6/5/00	12/14/00	7/31/01	11/29/01
1,2-Dichloroporpane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,3-Dichloro-1-Propene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes (total)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,4-Dichloro-2-Butene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-3R

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/5/98	6/2/99	11/20/99	6/5/00	12/15/00	7/31/01	11/29/01
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-----	0.0059	<0.005	0.031	0.018	0.0084
Barium	1.23	0.79	0.80	0.62	0.86	1.4	-----	0.052	0.30	1.5	0.95	0.40
Cadmium	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	-----	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	0.009	0.020	0.028	0.016	0.025	0.077	-----	0.024	<0.002	0.10	0.050	0.019
Lead	0.015	0.015	0.027	0.026	0.032	0.039	-----	0.040	<0.005	0.08	0.053	0.035
Mercury	0.0007	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	-----	<0.0002	<0.0002	NA	<0.0002	NA
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-----	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	-----	<0.002	<0.002	<0.002	<0.002	<0.002
Methyl Chloride	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5	-----	<10	<10	<10	<10	<10
Acetone	<100	<100	<100	<100	<100	<100	-----	<100	<100	<100	<100	<100
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Methyl Iodide	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Acrylonitrile	<100	<100	<100	<100	<100	<100	-----	<100	<100	<100	<100	<100
Dichloromethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Carbon Disulfide	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Trans-1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Vinyl Acetate	<50	<50	<50	<50	<50	<50	-----	<50	<50	<50	<50	<50
Methyl Ethyl Ketone	<100	<100	<100	<100	<100	<100	-----	<100	<100	<100	<100	<100
Cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Bromochloromethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Benzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-3R (continued)

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/5/98	6/2/99	11/20/99	6/5/00	12/15/00	7/31/01	11/29/01
1,2-Dichloroporpane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone	<50	<50	<50	<50	<50	<50	-----	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Trans-1,3-Dichloro-1-Propene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
2-Hexanone	<50	<50	<50	<50	<50	<50	-----	<50	<50	<50	<50	<50
Dibromochloromethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Tetrachloroethylene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Xylenes (total)	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Styrene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Trans-1,4-Dichloro-2-Butene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-4R

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/6/98	6/2/99	11/20/99	6/5/00	12/15/00	7/31/01	11/29/01
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0075	<0.005	<0.005	0.0056	0.012
Barium	0.595	0.72	0.28	0.65	0.85	2.0	0.95	0.86	0.57	0.35	0.55	0.90
Cadmium	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	0.021	0.047	<0.002	0.055	0.13	0.30	0.11	0.06	<0.002	0.028	0.038	0.095
Lead	0.017	0.016	0.012	0.029	0.043	0.076	0.050	0.04	0.0095	0.0081	0.014	0.036
Mercury	0.0017	0.0003	<0.0002	<0.0002	<0.0002	0.00021	<0.0002	0.00036	<0.0002	NA	<0.0002	NA
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.001	<0.005	0.006	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10
Acetone	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methyl Iodide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Dichloromethane	<5	<5	<5	<5	<5	<5	10	<5	<5	<5	<5	<5
Carbon Disulfide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Methyl Ethyl Ketone	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-4R (continued)

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/6/98	6/2/99	11/20/99	6/5/00	12/15/00	7/31/01	11/29/01
1,2-Dichloroporpane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,3-Dichloro-1-Propene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes (total)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,4-Dichloro-2-Butene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-5R

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/6/98	6/2/99	11/20/99	6/5/00	12/14/00	7/31/01	11/29/01
Arsenic	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	0.0070
Barium	1.00	0.62	0.33	0.61	0.82	0.48	0.24	0.20	0.20	0.40	0.27	0.61
Cadmium	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	0.096	0.043	0.070	0.016	0.17	0.096	0.038	0.029	0.0081	0.082	0.049	0.14
Lead	0.019	0.020	0.014	0.031	0.069	0.029	0.016	0.0082	<0.005	0.0076	0.0076	0.013
Mercury	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002	NA
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10
Acetone	<100	<100	<100	<100	<100	150	<100	<100	<100	<100	<100	<100
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methyl Iodide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Dichloromethane	<5	<5	<5	<5	<5	<5	10	<5	<5	<5	<5	<5
Carbon Disulfide	<5	<5	<5	<5	<5	25	<5	<5	<5	<5	<5	<5
Trans-1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Methyl Ethyl Ketone	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-5R (continued)

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/6/98	6/2/99	11/20/99	6/5/00	12/14/00	7/31/01	11/29/01
1,2-Dichloroporpane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,3-Dichloro-1-Propene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes (total)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,4-Dichloro-2-Butene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-6R

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/5/98	6/2/99	11/19/99	6/5/00	12/14/00	7/31/01	11/29/01
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-----	<0.005	<0.005	<0.005	<0.005	0.016
Barium	1.40	0.59	0.30	0.26	0.36	0.16	-----	0.059	0.082	0.041	0.062	0.53
Cadmium	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	-----	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	0.012	0.010	0.021	0.014	0.033	0.012	-----	0.0028	<0.002	0.0026	0.0041	0.095
Lead	0.018	0.011	0.014	0.014	0.020	<0.005	-----	<0.005	0.0058	<0.005	<0.005	0.038
Mercury	0.0014	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-----	<0.0002	<0.0002	NA	<0.0002	NA
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-----	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	-----	<0.002	<0.002	<0.002	<0.002	<0.002
Methyl Chloride	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	-----	<10	<10	<10	<10	<10
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5	-----	<10	<10	<10	<10	<10
Acetone	<100	<100	<100	<100	<100	<100	-----	<100	<100	<100	<100	<100
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Methyl Iodide	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Acrylonitrile	<100	<100	<100	<100	<100	<100	-----	<100	<100	<100	<100	<100
Dichloromethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Carbon Disulfide	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Trans-1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Vinyl Acetate	<50	<50	<50	<50	<50	<50	-----	<50	<50	<50	<50	<50
Methyl Ethyl Ketone	<100	<100	<100	<100	<100	<100	-----	<100	<100	<100	<100	<100
Cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Bromochloromethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Benzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-6R (continued)

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/5/98	6/2/99	11/19/99	6/5/00	12/14/00	7/31/01	11/29/01
1,2-Dichloroporpane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone	<50	<50	<50	<50	<50	<50	-----	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Trans-1,3-Dichloro-1-Propene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
2-Hexanone	<50	<50	<50	<50	<50	<50	-----	<50	<50	<50	<50	<50
Dibromochloromethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Tetrachloroethylene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Xylenes (total)	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Styrene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
Trans-1,4-Dichloro-2-Butene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	<5	<5	<5	<5	<5	<5	-----	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-7

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/6/98	6/2/99	11/20/99	6/5/00	12/15/00	7/31/01	11/29/01
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0098	<0.005	<0.005	0.045	0.016	0.017
Barium	1.93	0.97	0.75	1.8	1.2	1.3	0.96	0.39	0.36	2.6	1.3	1.3
Cadmium	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	0.028	0.021	0.18	0.41	0.43	0.35	0.19	0.062	0.0025	0.58	0.21	0.27
Lead	0.017	0.006	0.023	0.053	0.038	0.036	0.03	0.012	0.0087	0.065	0.026	0.036
Mercury	0.0014	0.0004	<0.0002	0.0002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	NA	<0.0002	NA
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.001	<0.005	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10
Acetone	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methyl Iodide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acrylonitrile	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Dichloromethane	<5	<5	<5	<5	<5	<5	10	<5	<5	<5	<5	<5
Carbon Disulfide	<5	<5	<5	<5	<5	9	<5	<5	<5	<5	<5	<5
Trans-1,1-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Acetate	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Methyl Ethyl Ketone	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-7 (continued)

Parameter	1/17/96	10/24/96	5/13/97	10/30/97	5/5/98	11/6/98	6/2/99	11/20/99	6/5/00	12/15/00	7/31/01	11/29/01
1,2-Dichloroporpane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Methyl-2-Pentanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,3-Dichloro-1-Propene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethylene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Xylenes (total)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Styrene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trans-1,4-Dichloro-2-Butene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-8

Parameter	12/15/00	7/31/01	11/29/01								
Arsenic	0.089	0.046	0.036								
Barium	4.2	2.6	2.7								
Cadmium	<0.001	<0.001	<0.001								
Chromium	0.24	0.092	0.094								
Lead	0.40	0.21	0.15								
Mercury	NA	<0.0002	NA								
Selenium	<0.005	<0.005	<0.005								
Silver	<0.002	<0.002	<0.002								
Methyl Chloride	<10	<10	<10								
Vinyl Chloride	<10	<10	<10								
Bromomethane	<10	<10	<10								
Chloroethane	<10	<10	<10								
Trichlorofluoromethane	<5	<5	<5								
Acetone	<100	<100	<100								
1,1-Dichloroethene	<5	<5	<5								
Methyl Iodide	<5	<5	<5								
Acrylonitrile	<100	<100	<100								
Dichloromethane	<5	<5	<5								
Carbon Disulfide	<5	<5	<5								
Trans-1,1-Dichloroethene	<5	<5	<5								
1,1-Dichloroethane	<5	<5	<5								
Vinyl Acetate	<50	<50	<50								
Methyl Ethyl Ketone	<100	<100	<100								
Cis-1,2-Dichloroethene	<5	<5	<5								
Chloroform	<5	<5	<5								
Bromochloromethane	<5	<5	<5								
1,1,1-Trichloroethane	<5	<5	<5								
1,2-Dichloroethane	<5	<5	<5								
Carbon Tetrachloride	<5	<5	<5								
Benzene	<5	<5	<5								
Trichloroethene	<5	<5	<5								

TABLE 1
Summary of Ground-Water Analytical Results
Winston-Salem C&D Landfill
MW-8 (continued)

Parameter	12/15/00	7/31/01	11/29/01								
1,2-Dichloroporpane	<5	<5	<5								
Dibromomethane	<5	<5	<5								
Bromodichloromethane	<5	<5	<5								
4-Methyl-2-Pentanone	<50	<50	<50								
Cis-1,3-Dichloropropene	<5	<5	<5								
Toluene	<5	<5	<5								
Trans-1,3-Dichloro-1-Propene	<5	<5	<5								
1,1,2-Trichloroethane	<5	<5	<5								
2-Hexanone	<50	<50	<50								
Dibromochloromethane	<5	<5	<5								
Tetrachloroethylene	<5	<5	<5								
1,2-Dibromoethane	<5	<5	<5								
Chlorobenzene	<5	<5	<5								
1,1,1,2-Tetrachloroethane	<5	<5	<5								
Ethylbenzene	<5	<5	<5								
Xylenes (total)	<5	<5	<5								
Styrene	<5	<5	<5								
Bromoform	<5	<5	<5								
1,1,2,2-Tetrachloroethane	<5	<5	<5								
1,2,3-Trichloropropane	<5	<5	<5								
Trans-1,4-Dichloro-2-Butene	<5	<5	<5								
1,4-Dichlorobenzene	<5	<5	<5								
1,2-Dichlorobenzene	<5	<5	<5								
1,2-Dibromo-3-Chloropropane	<5	<5	<5								

NA – Not available
Less than symbol (<) indicates compound analyzed for, but not detected at indicated quantitation limit.

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Pace Analytical Services, Inc.
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HDR ENGINEERING, INC
OF THE CAROLINAS

December 06, 2001

Mr. Chris Randazzo
HDR Engineering
128 S. Tryon St. Suite 1400
Charlotte, NC 28202

RE: Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Dear Mr. Randazzo:

Enclosed are the analytical results for sample(s) received by the laboratory on November 21, 2001. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Bonnie Kamla

Bonnie Kamla
Bonnie.Kamla@pacelabs.com
Project Manager

Enclosures

Pace Analytical™
www.pacelabs.com

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HDR Engineering
128 S. Tryon St. Suite 1400
Charlotte, NC 28202

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Attn: Mr. Chris Randazzo
Phone: (704)338-1800

Lab Sample No: 921945671 | Project Sample Number: 9227973-001 | Date Collected: 11/20/01 09:30
Client Sample ID: MW-1R | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	0.0054	mg/l	0.0050	11/29/01 21:40	RWF	7440-36-0		
Arsenic	0.0058	mg/l	0.0050	11/29/01 21:40	RWF	7440-38-2		
Barium	0.28	mg/l	0.0050	11/29/01 21:40	RWF	7440-39-3		
Beryllium	0.0025	mg/l	0.0010	11/29/01 21:40	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 21:40	RWF	7440-43-9		
Chromium	0.022	mg/l	0.0020	11/29/01 21:40	RWF	7440-47-3		
Cobalt	0.0064	mg/l	0.0050	11/29/01 21:40	RWF	7440-48-4		
Copper	0.023	mg/l	0.0020	11/29/01 21:40	RWF	7440-50-8		
Lead	0.010	mg/l	0.0030	11/29/01 21:40	RWF	7439-92-1		
Nickel	0.011	mg/l	0.0050	11/29/01 21:40	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 21:40	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 21:40	RWF	7440-22-4		
Vanadium	0.042	mg/l	0.0050	11/29/01 21:40	RWF	7440-62-2		
Zinc	0.079	mg/l	0.010	11/29/01 21:40	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	ND	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 02:21	YLJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 02:21	YLJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 02:21	YLJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 02:21	YLJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 02:21	YLJ	74-83-9		

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

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Laboratory Certification IDs
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VA Drinking Water 213
FL NELAP E87627

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Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945671 | Project Sample Number: 9227973-001 | Date Collected: 11/20/01 09:30
Client Sample ID: MW-1R | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
2-Butanone (MEK)	ND	ug/l	100	12/01/01 02:21	YLJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 02:21	YLJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 02:21	YLJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 02:21	YLJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 02:21	YLJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 02:21	YLJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 02:21	YLJ	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 02:21	YLJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 02:21	YLJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 02:21	YLJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 02:21	YLJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 02:21	YLJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 02:21	YLJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 02:21	YLJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 02:21	YLJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 02:21	YLJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 02:21	YLJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 02:21	YLJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 02:21	YLJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 02:21	YLJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 02:21	YLJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 02:21	YLJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 02:21	YLJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 02:21	YLJ	127-18-4		
Toluene	21.	ug/l	5.0	12/01/01 02:21	YLJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 02:21	YLJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 02:21	YLJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 02:21	YLJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 02:21	YLJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 02:21	YLJ	108-05-4		

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Phone: 704.875.9092
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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945671 | Project Sample Number: 9227973-001 | Date Collected: 11/20/01 09:30
Client Sample ID: MW-1R | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Vinyl chloride	ND	ug/l	10.	12/01/01 02:21	YLJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 02:21	YLJ			
o-Xylene	ND	ug/l	5.0	12/01/01 02:21	YLJ	95-47-6		
Toluene-d8 (S)	98	%		12/01/01 02:21	YLJ	2037-26-5		
4-Bromofluorobenzene (S)	90	%		12/01/01 02:21	YLJ	460-00-4		
Dibromofluoromethane (S)	104	%		12/01/01 02:21	YLJ			
1,2-Dichloroethane-d4 (S)	105	%		12/01/01 02:21	YLJ	17060-07-0		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945689 | Project Sample Number: 9227973-002 | Date Collected: 11/20/01 14:40
Client Sample ID: MW-2R | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	ND	mg/l	0.0050	11/29/01 22:17	RWF	7440-36-0		
Arsenic	ND	mg/l	0.0050	11/29/01 22:17	RWF	7440-38-2		
Barium	0.16	mg/l	0.0050	11/29/01 22:17	RWF	7440-39-3		
Beryllium	0.0012	mg/l	0.0010	11/29/01 22:17	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 22:17	RWF	7440-43-9		
Chromium	0.016	mg/l	0.0020	11/29/01 22:17	RWF	7440-47-3		
Cobalt	0.0059	mg/l	0.0050	11/29/01 22:17	RWF	7440-48-4		
Copper	0.026	mg/l	0.0020	11/29/01 22:17	RWF	7440-50-8		
Lead	0.0070	mg/l	0.0030	11/29/01 22:17	RWF	7439-92-1		
Nickel	0.0084	mg/l	0.0050	11/29/01 22:17	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 22:17	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 22:17	RWF	7440-22-4		
Vanadium	0.039	mg/l	0.0050	11/29/01 22:17	RWF	7440-62-2		
Zinc	0.083	mg/l	0.010	11/29/01 22:17	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	ND	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 03:19	YLJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 03:19	YLJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 03:19	YLJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 03:19	YLJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 03:19	YLJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 03:19	YLJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 03:19	YLJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 03:19	YLJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 03:19	YLJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 03:19	YLJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 03:19	YLJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 03:19	YLJ	74-87-3		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945689 | Project Sample Number: 9227973-002 | Date Collected: 11/20/01 14:40
Client Sample ID: MW-2R | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 03:19	YLJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 03:19	YLJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 03:19	YLJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 03:19	YLJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 03:19	YLJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 03:19	YLJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 03:19	YLJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 03:19	YLJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 03:19	YLJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 03:19	YLJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 03:19	YLJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 03:19	YLJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 03:19	YLJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 03:19	YLJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 03:19	YLJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 03:19	YLJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 03:19	YLJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 03:19	YLJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 03:19	YLJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 03:19	YLJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 03:19	YLJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 03:19	YLJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 03:19	YLJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 03:19	YLJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 03:19	YLJ			
o-Xylene	ND	ug/l	5.0	12/01/01 03:19	YLJ	95-47-6		
Toluene-d8 (S)	90	%		12/01/01 03:19	YLJ	2037-26-5		
4-Bromofluorobenzene (S)	92	%		12/01/01 03:19	YLJ	460-00-4		
Dibromofluoromethane (S)	101	%		12/01/01 03:19	YLJ			
1,2-Dichloroethane-d4 (S)	94	%		12/01/01 03:19	YLJ	17060-07-0		

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Fax: 704.875.9091

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945705 | Project Sample Number: 9227973-003 | Date Collected: 11/20/01 10:15
Client Sample ID: MW-3R | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	ND	mg/l	0.0050	11/29/01 22:22	RWF	7440-36-0		
Arsenic	0.0084	mg/l	0.0050	11/29/01 22:22	RWF	7440-38-2		
Barium	0.40	mg/l	0.0050	11/29/01 22:22	RWF	7440-39-3		
Beryllium	0.0042	mg/l	0.0010	11/29/01 22:22	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 22:22	RWF	7440-43-9		
Chromium	0.019	mg/l	0.0020	11/29/01 22:22	RWF	7440-47-3		
Cobalt	0.013	mg/l	0.0050	11/29/01 22:22	RWF	7440-48-4		
Copper	0.014	mg/l	0.0020	11/29/01 22:22	RWF	7440-50-8		
Lead	0.035	mg/l	0.0030	11/29/01 22:22	RWF	7439-92-1		
Nickel	0.010	mg/l	0.0050	11/29/01 22:22	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 22:22	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 22:22	RWF	7440-22-4		
Vanadium	0.047	mg/l	0.0050	11/29/01 22:22	RWF	7440-62-2		
Zinc	0.080	mg/l	0.010	11/29/01 22:22	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	ND	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 03:48	YLJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 03:48	YLJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 03:48	YLJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 03:48	YLJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 03:48	YLJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 03:48	YLJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 03:48	YLJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 03:48	YLJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 03:48	YLJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 03:48	YLJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 03:48	YLJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 03:48	YLJ	74-87-3		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945705 Project Sample Number: 9227973-003 Date Collected: 11/20/01 10:15
Client Sample ID: MW-3R Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 03:48	YLJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 03:48	YLJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 03:48	YLJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 03:48	YLJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 03:48	YLJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 03:48	YLJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 03:48	YLJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 03:48	YLJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 03:48	YLJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 03:48	YLJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 03:48	YLJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 03:48	YLJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 03:48	YLJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 03:48	YLJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 03:48	YLJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 03:48	YLJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 03:48	YLJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 03:48	YLJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 03:48	YLJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 03:48	YLJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 03:48	YLJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 03:48	YLJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 03:48	YLJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 03:48	YLJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 03:48	YLJ			
o-Xylene	ND	ug/l	5.0	12/01/01 03:48	YLJ	95-47-6		
Toluene-d8 (S)	92	%		12/01/01 03:48	YLJ	2037-26-5		
4-Bromofluorobenzene (S)	96	%		12/01/01 03:48	YLJ	460-00-4		
Dibromofluoromethane (S)	103	%		12/01/01 03:48	YLJ			
1,2-Dichloroethane-d4 (S)	95	%		12/01/01 03:48	YLJ	17060-07-0		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945713 Project Sample Number: 9227973-004 Date Collected: 11/20/01 13:00
Client Sample ID: MW-4R Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	0.0059	mg/l	0.0050	11/29/01 22:27	RWF	7440-36-0		
Arsenic	0.012	mg/l	0.0050	11/29/01 22:27	RWF	7440-38-2		
Barium	0.90	mg/l	0.0050	11/29/01 22:27	RWF	7440-39-3		
Beryllium	0.0054	mg/l	0.0010	11/29/01 22:27	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 22:27	RWF	7440-43-9		
Chromium	0.095	mg/l	0.0020	11/29/01 22:27	RWF	7440-47-3		
Cobalt	0.018	mg/l	0.0050	11/29/01 22:27	RWF	7440-48-4		
Copper	0.053	mg/l	0.0020	11/29/01 22:27	RWF	7440-50-8		
Lead	0.036	mg/l	0.0030	11/29/01 22:27	RWF	7439-92-1		
Nickel	0.032	mg/l	0.0050	11/29/01 22:27	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 22:27	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 22:27	RWF	7440-22-4		
Vanadium	0.15	mg/l	0.0050	11/29/01 22:27	RWF	7440-62-2		
Zinc	0.24	mg/l	0.010	11/29/01 22:27	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	0.0021	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 04:17	YLJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 04:17	YLJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 04:17	YLJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 04:17	YLJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 04:17	YLJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 04:17	YLJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 04:17	YLJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 04:17	YLJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 04:17	YLJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 04:17	YLJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 04:17	YLJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 04:17	YLJ	74-87-3		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945713 Project Sample Number: 9227973-004 Date Collected: 11/20/01 13:00
Client Sample ID: MW-4R Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Req Limit
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 04:17	YLJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 04:17	YLJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 04:17	YLJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 04:17	YLJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 04:17	YLJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 04:17	YLJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 04:17	YLJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 04:17	YLJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 04:17	YLJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 04:17	YLJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 04:17	YLJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 04:17	YLJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 04:17	YLJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 04:17	YLJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 04:17	YLJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 04:17	YLJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 04:17	YLJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 04:17	YLJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 04:17	YLJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 04:17	YLJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 04:17	YLJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 04:17	YLJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 04:17	YLJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 04:17	YLJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 04:17	YLJ			
o-Xylene	ND	ug/l	5.0	12/01/01 04:17	YLJ	95-47-6		
Toluene-d8 (S)	92	%		12/01/01 04:17	YLJ	2037-26-5		
4-Bromofluorobenzene (S)	96	%		12/01/01 04:17	YLJ	460-00-4		
Dibromofluoromethane (S)	104	%		12/01/01 04:17	YLJ			
1,2-Dichloroethane-d4 (S)	97	%		12/01/01 04:17	YLJ	17060-07-0		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945721 | Project Sample Number: 9227973-005 | Date Collected: 11/20/01 14:00
Client Sample ID: MW-5R | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	0.0060	mg/l	0.0050	11/29/01 22:45	RWF	7440-36-0		
Arsenic	0.0070	mg/l	0.0050	11/29/01 22:45	RWF	7440-38-2		
Barium	0.61	mg/l	0.0050	11/29/01 22:45	RWF	7440-39-3		
Beryllium	0.0033	mg/l	0.0010	11/29/01 22:45	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 22:45	RWF	7440-43-9		
Chromium	0.14	mg/l	0.0020	11/29/01 22:45	RWF	7440-47-3		
Cobalt	0.020	mg/l	0.0050	11/29/01 22:45	RWF	7440-48-4		
Copper	0.044	mg/l	0.0020	11/29/01 22:45	RWF	7440-50-8		
Lead	0.013	mg/l	0.0030	11/29/01 22:45	RWF	7439-92-1		
Nickel	0.046	mg/l	0.0050	11/29/01 22:45	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 22:45	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 22:45	RWF	7440-22-4		
Vanadium	0.15	mg/l	0.0050	11/29/01 22:45	RWF	7440-62-2		
Zinc	0.20	mg/l	0.010	11/29/01 22:45	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	ND	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 04:46	YLJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 04:46	YLJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 04:46	YLJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 04:46	YLJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 04:46	YLJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 04:46	YLJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 04:46	YLJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 04:46	YLJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 04:46	YLJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 04:46	YLJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 04:46	YLJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 04:46	YLJ	74-87-3		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945721 Project Sample Number: 9227973-005 Date Collected: 11/20/01 14:00
Client Sample ID: MW-5R Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 04:46	YLJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 04:46	YLJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 04:46	YLJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 04:46	YLJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 04:46	YLJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 04:46	YLJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 04:46	YLJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 04:46	YLJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 04:46	YLJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 04:46	YLJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 04:46	YLJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 04:46	YLJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 04:46	YLJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 04:46	YLJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 04:46	YLJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 04:46	YLJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 04:46	YLJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 04:46	YLJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 04:46	YLJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 04:46	YLJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 04:46	YLJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 04:46	YLJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 04:46	YLJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 04:46	YLJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 04:46	YLJ			
o-Xylene	ND	ug/l	5.0	12/01/01 04:46	YLJ	95-47-6		
Toluene-d8 (S)	89	%		12/01/01 04:46	YLJ	2037-26-5		
4-Bromofluorobenzene (S)	92	%		12/01/01 04:46	YLJ	460-00-4		
Dibromofluoromethane (S)	103	%		12/01/01 04:46	YLJ			
1,2-Dichloroethane-d4 (S)	97	%		12/01/01 04:46	YLJ	17060-07-0		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945747 Project Sample Number: 9227973-006 Date Collected: 11/20/01 09:00
Client Sample ID: MW-6R Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	0.0065	mg/l	0.0050	11/29/01 22:50	RWF	7440-36-0		
Arsenic	0.016	mg/l	0.0050	11/29/01 22:50	RWF	7440-38-2		
Barium	0.53	mg/l	0.0050	11/29/01 22:50	RWF	7440-39-3		
Beryllium	0.0046	mg/l	0.0010	11/29/01 22:50	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 22:50	RWF	7440-43-9		
Chromium	0.095	mg/l	0.0020	11/29/01 22:50	RWF	7440-47-3		
Cobalt	0.013	mg/l	0.0050	11/29/01 22:50	RWF	7440-48-4		
Copper	0.033	mg/l	0.0020	11/29/01 22:50	RWF	7440-50-8		
Lead	0.038	mg/l	0.0030	11/29/01 22:50	RWF	7439-92-1		
Nickel	0.022	mg/l	0.0050	11/29/01 22:50	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 22:50	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 22:50	RWF	7440-22-4		
Vanadium	0.098	mg/l	0.0050	11/29/01 22:50	RWF	7440-62-2		
Zinc	0.19	mg/l	0.010	11/29/01 22:50	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	0.0020	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 05:15	YLJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 05:15	YLJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 05:15	YLJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 05:15	YLJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 05:15	YLJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 05:15	YLJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 05:15	YLJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 05:15	YLJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 05:15	YLJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 05:15	YLJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 05:15	YLJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 05:15	YLJ	74-87-3		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945747 Project Sample Number: 9227973-006 Date Collected: 11/20/01 09:00
Client Sample ID: MW-6R Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 05:15	YLJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 05:15	YLJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 05:15	YLJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 05:15	YLJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 05:15	YLJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 05:15	YLJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 05:15	YLJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 05:15	YLJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 05:15	YLJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 05:15	YLJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 05:15	YLJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 05:15	YLJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 05:15	YLJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 05:15	YLJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 05:15	YLJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 05:15	YLJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 05:15	YLJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 05:15	YLJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 05:15	YLJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 05:15	YLJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 05:15	YLJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 05:15	YLJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 05:15	YLJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 05:15	YLJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 05:15	YLJ			
o-Xylene	ND	ug/l	5.0	12/01/01 05:15	YLJ	95-47-6		
Toluene-d8 (S)	95	%		12/01/01 05:15	YLJ	2037-26-5		
4-Bromofluorobenzene (S)	94	%		12/01/01 05:15	YLJ	460-00-4		
Dibromofluoromethane (S)	102	%		12/01/01 05:15	YLJ			
1,2-Dichloroethane-d4 (S)	94	%		12/01/01 05:15	YLJ	17060-07-0		

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Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945762 | Project Sample Number: 9227973-007 | Date Collected: 11/20/01 11:30
Client Sample ID: MW-7 | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	ND	mg/l	0.0050	11/29/01 22:54	RWF	7440-36-0		
Arsenic	0.017	mg/l	0.0050	11/29/01 22:54	RWF	7440-38-2		
Barium	1.3	mg/l	0.0050	11/29/01 22:54	RWF	7440-39-3		
Beryllium	0.012	mg/l	0.0010	11/29/01 22:54	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 22:54	RWF	7440-43-9		
Chromium	0.27	mg/l	0.0020	11/29/01 22:54	RWF	7440-47-3		
Cobalt	0.045	mg/l	0.0050	11/29/01 22:54	RWF	7440-48-4		
Copper	0.072	mg/l	0.0020	11/29/01 22:54	RWF	7440-50-8		
Lead	0.036	mg/l	0.0030	11/29/01 22:54	RWF	7439-92-1		
Nickel	0.11	mg/l	0.0050	11/29/01 22:54	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 22:54	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 22:54	RWF	7440-22-4		
Vanadium	0.23	mg/l	0.0050	11/29/01 22:54	RWF	7440-62-2		
Zinc	0.37	mg/l	0.010	11/29/01 22:54	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	0.0041	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 16:14	RPJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 16:14	RPJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 16:14	RPJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 16:14	RPJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 16:14	RPJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 16:14	RPJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 16:14	RPJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 16:14	RPJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 16:14	RPJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 16:14	RPJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 16:14	RPJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 16:14	RPJ	74-87-3		

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Phone: 704.875.9092
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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945762 | Project Sample Number: 9227973-007 | Date Collected: 11/20/01 11:30
Client Sample ID: MW-7 | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 16:14	RPJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 16:14	RPJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 16:14	RPJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 16:14	RPJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 16:14	RPJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 16:14	RPJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 16:14	RPJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 16:14	RPJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 16:14	RPJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 16:14	RPJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 16:14	RPJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 16:14	RPJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 16:14	RPJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 16:14	RPJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 16:14	RPJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 16:14	RPJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 16:14	RPJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 16:14	RPJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 16:14	RPJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 16:14	RPJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 16:14	RPJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 16:14	RPJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 16:14	RPJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 16:14	RPJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 16:14	RPJ			
o-Xylene	ND	ug/l	5.0	12/01/01 16:14	RPJ	95-47-6		
Toluene-d8 (S)	98	%		12/01/01 16:14	RPJ	2037-26-5		
4-Bromofluorobenzene (S)	88	%		12/01/01 16:14	RPJ	460-00-4		
Dibromofluoromethane (S)	101	%		12/01/01 16:14	RPJ			
1,2-Dichloroethane-d4 (S)	105	%		12/01/01 16:14	RPJ	17060-07-0		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945770 Project Sample Number: 9227973-008 Date Collected: 11/20/01 09:45
Client Sample ID: MW-8 Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	ND	mg/l	0.0050	11/29/01 22:59	RWF	7440-36-0		
Arsenic	0.036	mg/l	0.0050	11/29/01 22:59	RWF	7440-38-2		
Barium	2.7	mg/l	0.0050	11/29/01 22:59	RWF	7440-39-3		
Beryllium	0.036	mg/l	0.0010	11/29/01 22:59	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 22:59	RWF	7440-43-9		
Chromium	0.094	mg/l	0.0020	11/29/01 22:59	RWF	7440-47-3		
Cobalt	0.090	mg/l	0.0050	11/29/01 22:59	RWF	7440-48-4		
Copper	0.017	mg/l	0.0020	11/29/01 22:59	RWF	7440-50-8		
Lead	0.15	mg/l	0.0030	11/29/01 22:59	RWF	7439-92-1		
Nickel	0.055	mg/l	0.0050	11/29/01 22:59	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 22:59	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 22:59	RWF	7440-22-4		
Vanadium	0.22	mg/l	0.0050	11/29/01 22:59	RWF	7440-62-2		
Zinc	0.60	mg/l	0.010	11/29/01 22:59	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	ND	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 16:46	RPJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 16:46	RPJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 16:46	RPJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 16:46	RPJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 16:46	RPJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 16:46	RPJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 16:46	RPJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 16:46	RPJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 16:46	RPJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 16:46	RPJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 16:46	RPJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 16:46	RPJ	74-87-3		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945770 Project Sample Number: 9227973-008 Date Collected: 11/20/01 09:45
Client Sample ID: MW-8 Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Req Limit
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 16:46	RPJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 16:46	RPJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 16:46	RPJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 16:46	RPJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 16:46	RPJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 16:46	RPJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 16:46	RPJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 16:46	RPJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 16:46	RPJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 16:46	RPJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 16:46	RPJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 16:46	RPJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 16:46	RPJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 16:46	RPJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 16:46	RPJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 16:46	RPJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 16:46	RPJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 16:46	RPJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 16:46	RPJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 16:46	RPJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 16:46	RPJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 16:46	RPJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 16:46	RPJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 16:46	RPJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 16:46	RPJ			
o-Xylene	ND	ug/l	5.0	12/01/01 16:46	RPJ	95-47-6		
Toluene-d8 (S)	99	%		12/01/01 16:46	RPJ	2037-26-5		
4-Bromofluorobenzene (S)	78	%		12/01/01 16:46	RPJ	460-00-4	1	
Dibromofluoromethane (S)	104	%		12/01/01 16:46	RPJ			
1,2-Dichloroethane-d4 (S)	103	%		12/01/01 16:46	RPJ	17060-07-0		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945796 Project Sample Number: 9227973-009 Date Collected: 11/20/01 00:00
Client Sample ID: FIELD BLANK Matrix: Water Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
Metals								
Metals by Trace ICP	Prep/Method: EPA 3010 / EPA 6010							
Antimony	ND	mg/l	0.0050	11/29/01 23:05	RWF	7440-36-0		
Arsenic	ND	mg/l	0.0050	11/29/01 23:05	RWF	7440-38-2		
Barium	ND	mg/l	0.0050	11/29/01 23:05	RWF	7440-39-3		
Beryllium	ND	mg/l	0.0010	11/29/01 23:05	RWF	7440-41-7		
Cadmium	ND	mg/l	0.0010	11/29/01 23:05	RWF	7440-43-9		
Chromium	ND	mg/l	0.0020	11/29/01 23:05	RWF	7440-47-3		
Cobalt	ND	mg/l	0.0050	11/29/01 23:05	RWF	7440-48-4		
Copper	ND	mg/l	0.0020	11/29/01 23:05	RWF	7440-50-8		
Lead	ND	mg/l	0.0030	11/29/01 23:05	RWF	7439-92-1		
Nickel	ND	mg/l	0.0050	11/29/01 23:05	RWF	7440-02-0		
Selenium	ND	mg/l	0.0050	11/29/01 23:05	RWF	7782-49-2		
Silver	ND	mg/l	0.0020	11/29/01 23:05	RWF	7440-22-4		
Vanadium	ND	mg/l	0.0050	11/29/01 23:05	RWF	7440-62-2		
Zinc	ND	mg/l	0.010	11/29/01 23:05	RWF	7440-66-6		
Date Digested				11/27/01				
Thallium, AAS Furnace	Prep/Method: EPA 3020 / EPA 7841							
Thallium	ND	mg/l	0.0020	11/30/01	RWF	7440-28-0		
Date Digested				11/28/01				
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 15:42	RPJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 15:42	RPJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 15:42	RPJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 15:42	RPJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 15:42	RPJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 15:42	RPJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 15:42	RPJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 15:42	RPJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 15:42	RPJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 15:42	RPJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 15:42	RPJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 15:42	RPJ	74-87-3		

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Phone: 704.875.9092
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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945796 | Project Sample Number: 9227973-009 | Date Collected: 11/20/01 00:00
Client Sample ID: FIELD BLANK | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 15:42	RPJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 15:42	RPJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 15:42	RPJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 15:42	RPJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 15:42	RPJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 15:42	RPJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 15:42	RPJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 15:42	RPJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 15:42	RPJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 15:42	RPJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 15:42	RPJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 15:42	RPJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 15:42	RPJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 15:42	RPJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 15:42	RPJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 15:42	RPJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	630-20-6		
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 15:42	RPJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 15:42	RPJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 15:42	RPJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 15:42	RPJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 15:42	RPJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 15:42	RPJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 15:42	RPJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 15:42	RPJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 15:42	RPJ			
o-Xylene	ND	ug/l	5.0	12/01/01 15:42	RPJ	95-47-6		
Toluene-d8 (S)	100	%		12/01/01 15:42	RPJ	2037-26-5		
4-Bromofluorobenzene (S)	101	%		12/01/01 15:42	RPJ	460-00-4		
Dibromofluoromethane (S)	101	%		12/01/01 15:42	RPJ			
1,2-Dichloroethane-d4 (S)	104	%		12/01/01 15:42	RPJ	17060-07-0		

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Fax: 704.875.9091

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945812 | Project Sample Number: 9227973-010 | Date Collected: 11/20/01 15:00
Client Sample ID: TRIP BLANK | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
GC/MS Volatiles								
GC/MS VOCs by 8260	Prep/Method: EPA 8260 / EPA 8260							
Acetone	ND	ug/l	100	12/01/01 15:11	RPJ	67-64-1		
Acrylonitrile	ND	ug/l	100	12/01/01 15:11	RPJ	107-13-1		
Benzene	ND	ug/l	5.0	12/01/01 15:11	RPJ	71-43-2		
Bromochloromethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	74-97-5		
Bromodichloromethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	75-27-4		
Bromoform	ND	ug/l	5.0	12/01/01 15:11	RPJ	75-25-2		
Bromomethane	ND	ug/l	10.	12/01/01 15:11	RPJ	74-83-9		
2-Butanone (MEK)	ND	ug/l	100	12/01/01 15:11	RPJ	78-93-3		
Carbon disulfide	ND	ug/l	5.0	12/01/01 15:11	RPJ	75-15-0		
Carbon tetrachloride	ND	ug/l	5.0	12/01/01 15:11	RPJ	56-23-5		
Chlorobenzene	ND	ug/l	5.0	12/01/01 15:11	RPJ	108-90-7		
Chloroethane	ND	ug/l	10.	12/01/01 15:11	RPJ	75-00-3		
Chloroform	ND	ug/l	5.0	12/01/01 15:11	RPJ	67-66-3		
Chloromethane	ND	ug/l	10.	12/01/01 15:11	RPJ	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0	12/01/01 15:11	RPJ	96-12-8		
Dibromochloromethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/l	5.0	12/01/01 15:11	RPJ	106-93-4		
Dibromomethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	74-95-3		
1,2-Dichlorobenzene	ND	ug/l	5.0	12/01/01 15:11	RPJ	95-50-1		
1,4-Dichlorobenzene	ND	ug/l	5.0	12/01/01 15:11	RPJ	106-46-7		
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0	12/01/01 15:11	RPJ	110-57-6		
1,1-Dichloroethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	75-34-3		
1,2-Dichloroethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	107-06-2		
1,1-Dichloroethene	ND	ug/l	5.0	12/01/01 15:11	RPJ	75-35-4		
cis-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 15:11	RPJ	156-59-2		
trans-1,2-Dichloroethene	ND	ug/l	5.0	12/01/01 15:11	RPJ	156-60-5		
1,2-Dichloropropane	ND	ug/l	5.0	12/01/01 15:11	RPJ	78-87-5		
cis-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 15:11	RPJ	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/l	5.0	12/01/01 15:11	RPJ	10061-02-6		
Ethylbenzene	ND	ug/l	5.0	12/01/01 15:11	RPJ	100-41-4		
2-Hexanone	ND	ug/l	50.	12/01/01 15:11	RPJ	591-78-6		
Iodomethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	74-88-4		
Methylene chloride	ND	ug/l	5.0	12/01/01 15:11	RPJ	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/l	50.	12/01/01 15:11	RPJ	108-10-1		
Styrene	ND	ug/l	5.0	12/01/01 15:11	RPJ	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	630-20-6		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

Lab Sample No: 921945812 | Project Sample Number: 9227973-010 | Date Collected: 11/20/01 15:00
Client Sample ID: TRIP BLANK | Matrix: Water | Date Received: 11/21/01 16:30

Parameters	Results	Units	Report Limit	Analyzed		CAS No.	Ftnote	Reg Limit
1,1,2,2-Tetrachloroethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	79-34-5		
Tetrachloroethene	ND	ug/l	5.0	12/01/01 15:11	RPJ	127-18-4		
Toluene	ND	ug/l	5.0	12/01/01 15:11	RPJ	108-88-3		
1,1,1-Trichloroethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	71-55-6		
1,1,2-Trichloroethane	ND	ug/l	5.0	12/01/01 15:11	RPJ	79-00-5		
Trichloroethene	ND	ug/l	5.0	12/01/01 15:11	RPJ	79-01-6		
Trichlorofluoromethane	ND	ug/l	10.	12/01/01 15:11	RPJ	75-69-4		
1,2,3-Trichloropropane	ND	ug/l	5.0	12/01/01 15:11	RPJ	96-18-4		
Vinyl acetate	ND	ug/l	50.	12/01/01 15:11	RPJ	108-05-4		
Vinyl chloride	ND	ug/l	10.	12/01/01 15:11	RPJ	75-01-4		
m&p-Xylene	ND	ug/l	10.	12/01/01 15:11	RPJ			
o-Xylene	ND	ug/l	5.0	12/01/01 15:11	RPJ	95-47-6		
Toluene-d8 (S)	98	%		12/01/01 15:11	RPJ	2037-26-5		
4-Bromofluorobenzene (S)	88	%		12/01/01 15:11	RPJ	460-00-4		
Dibromofluoromethane (S)	98	%		12/01/01 15:11	RPJ			
1,2-Dichloroethane-d4 (S)	102	%		12/01/01 15:11	RPJ	17060-07-0		

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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

PARAMETER FOOTNOTES

ND Not Detected
NC Not Calculable
(S) Surrogate
[1] The surrogate and/or spike recovery was outside acceptance limits.

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NC Wastewater	12
NC Drinking Water	37706
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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

QC Batch: 50138 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: GC/MS VOCs by 8260
Associated Lab Samples: 921945671 921945689 921945705 921945713 921945721 921945747

METHOD BLANK: 921957817
Associated Lab Samples: 921945671 921945689 921945705 921945713 921945721 921945747

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Acetone	ug/l	ND	100	
Acrylonitrile	ug/l	ND	100	
Benzene	ug/l	ND	5.0	
Bromochloromethane	ug/l	ND	5.0	
Bromodichloromethane	ug/l	ND	5.0	
Bromoform	ug/l	ND	5.0	
Bromomethane	ug/l	ND	10.	
2-Butanone (MEK)	ug/l	ND	100	
Carbon disulfide	ug/l	ND	5.0	
Carbon tetrachloride	ug/l	ND	5.0	
Chlorobenzene	ug/l	ND	5.0	
Chloroethane	ug/l	ND	10.	
Chloroform	ug/l	ND	5.0	
Chloromethane	ug/l	ND	10.	
1,2-Dibromo-3-chloropropane	ug/l	ND	5.0	
Dibromochloromethane	ug/l	ND	5.0	
1,2-Dibromoethane (EDB)	ug/l	ND	5.0	
Dibromomethane	ug/l	ND	5.0	
1,2-Dichlorobenzene	ug/l	ND	5.0	
1,4-Dichlorobenzene	ug/l	ND	5.0	
trans-1,4-Dichloro-2-butene	ug/l	ND	5.0	
1,1-Dichloroethane	ug/l	ND	5.0	
1,2-Dichloroethane	ug/l	ND	5.0	
1,1-Dichloroethene	ug/l	ND	5.0	
cis-1,2-Dichloroethene	ug/l	ND	5.0	
trans-1,2-Dichloroethene	ug/l	ND	5.0	
1,2-Dichloropropane	ug/l	ND	5.0	
cis-1,3-Dichloropropene	ug/l	ND	5.0	
trans-1,3-Dichloropropene	ug/l	ND	5.0	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

METHOD BLANK: 921957817
Associated Lab Samples: 921945671 921945689 921945705 921945713 921945721 921945747

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Ethylbenzene	ug/l	ND	5.0	
2-Hexanone	ug/l	ND	50.	
Iodomethane	ug/l	ND	5.0	
Methylene chloride	ug/l	ND	5.0	
4-Methyl-2-pentanone (MIBK)	ug/l	ND	50.	
Styrene	ug/l	ND	5.0	
1,1,1,2-Tetrachloroethane	ug/l	ND	5.0	
1,1,2,2-Tetrachloroethane	ug/l	ND	5.0	
Tetrachloroethene	ug/l	ND	5.0	
Toluene	ug/l	ND	5.0	
1,1,1-Trichloroethane	ug/l	ND	5.0	
1,1,2-Trichloroethane	ug/l	ND	5.0	
Trichloroethene	ug/l	ND	5.0	
Trichlorofluoromethane	ug/l	ND	10.	
1,2,3-Trichloropropane	ug/l	ND	5.0	
Vinyl acetate	ug/l	ND	50.	
Vinyl chloride	ug/l	ND	10.	
m&p-Xylene	ug/l	ND	10.	
o-Xylene	ug/l	ND	5.0	
Toluene-d8 (S)	%	99		
4-Bromofluorobenzene (S)	%	94		
Dibromofluoromethane (S)	%	101		
1,2-Dichloroethane-d4 (S)	%	103		

LABORATORY CONTROL SAMPLE: 921957825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Acetone	ug/l	100	80.20	80	
Acrylonitrile	ug/l	250	184.8	74	
Benzene	ug/l	50	44.68	89	
Bromochloromethane	ug/l	50	42.39	85	
Bromodichloromethane	ug/l	50	48.18	96	
Bromoform	ug/l	50	45.24	90	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

LABORATORY CONTROL SAMPLE: 921957825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Bromomethane	ug/l	50	49.28	99	
2-Butanone (MEK)	ug/l	100	77.54	78	
Carbon disulfide	ug/l	100	115.5	115	
Carbon tetrachloride	ug/l	50	49.96	100	
Chlorobenzene	ug/l	50	42.84	86	
Chloroethane	ug/l	50	41.76	84	
Chloroform	ug/l	50	45.48	91	
Chloromethane	ug/l	50	36.17	72	
1,2-Dibromo-3-chloropropane	ug/l	50	40.30	81	
Dibromochloromethane	ug/l	50	45.12	90	
1,2-Dibromoethane (EDB)	ug/l	50	42.48	85	
Dibromomethane	ug/l	50	43.55	87	
1,2-Dichlorobenzene	ug/l	50	43.91	88	
1,4-Dichlorobenzene	ug/l	50	42.92	86	
trans-1,4-Dichloro-2-butene	ug/l	50	49.28	99	
1,1-Dichloroethane	ug/l	50	43.37	87	
1,2-Dichloroethane	ug/l	50	44.53	89	
1,1-Dichloroethene	ug/l	50	46.17	92	
cis-1,2-Dichloroethene	ug/l	50	44.77	90	
trans-1,2-Dichloroethene	ug/l	50	46.06	92	
1,2-Dichloropropane	ug/l	50	45.23	90	
cis-1,3-Dichloropropene	ug/l	50	47.68	95	
trans-1,3-Dichloropropene	ug/l	50	49.77	100	
Ethylbenzene	ug/l	50	43.57	87	
2-Hexanone	ug/l	100	78.60	79	
Iodomethane	ug/l	100	87.95	88	
Methylene chloride	ug/l	50	43.70	87	
4-Methyl-2-pentanone (MIBK)	ug/l	100	78.23	78	
Styrene	ug/l	50	42.51	85	
1,1,1,2-Tetrachloroethane	ug/l	50	43.59	87	
1,1,2,2-Tetrachloroethane	ug/l	50	41.00	82	
Tetrachloroethene	ug/l	50	46.43	93	
Toluene	ug/l	50	45.27	90	
1,1,1-Trichloroethane	ug/l	50	47.08	94	
1,1,2-Trichloroethane	ug/l	50	44.33	89	
Trichloroethene	ug/l	50	44.09	88	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

LABORATORY CONTROL SAMPLE: 921957825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Trichlorofluoromethane	ug/l	50	43.53	87	
1,2,3-Trichloropropane	ug/l	50	41.20	82	
Vinyl acetate	ug/l	100	67.03	67	
Vinyl chloride	ug/l	50	39.30	79	
m&p-Xylene	ug/l	100	86.41	86	
o-Xylene	ug/l	50	40.25	80	
Toluene-d8 (S)				101	
4-Bromofluorobenzene (S)				98	
Dibromofluoromethane (S)				100	
1,2-Dichloroethane-d4 (S)				100	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 921957841 921957858

Parameter	Units	921945747 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/l	0	50.00	45.29	46.63	91	93	3	
Chlorobenzene	ug/l	0	50.00	43.80	45.73	88	92	4	
1,1-Dichloroethene	ug/l	0	50.00	45.68	46.71	91	93	2	
Toluene	ug/l	0	50.00	43.17	44.62	86	89	3	
Trichloroethene	ug/l	0	50.00	45.61	47.33	91	95	4	
Toluene-d8 (S)						98	98		
4-Bromofluorobenzene (S)						100	101		
Dibromofluoromethane (S)						102	102		
1,2-Dichloroethane-d4 (S)						102	100		

SAMPLE DUPLICATE: 921957833

Parameter	Units	921945671 Result	DUP Result	RPD	Footnotes
Acetone	ug/l	ND	ND	NC	
Acrylonitrile	ug/l	ND	ND	NC	
Benzene	ug/l	ND	ND	NC	
Bromochloromethane	ug/l	ND	ND	NC	
Bromodichloromethane	ug/l	ND	ND	NC	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

SAMPLE DUPLICATE: 921957833

Parameter	Units	921945671 Result	DUP Result	RPD	Footnotes
Bromoform	ug/l	ND	ND	NC	
Bromomethane	ug/l	ND	ND	NC	
2-Butanone (MEK)	ug/l	ND	ND	NC	
Carbon disulfide	ug/l	ND	ND	NC	
Carbon tetrachloride	ug/l	ND	ND	NC	
Chlorobenzene	ug/l	ND	ND	NC	
Chloroethane	ug/l	ND	ND	NC	
Chloroform	ug/l	ND	ND	NC	
Chloromethane	ug/l	ND	ND	NC	
1,2-Dibromo-3-chloropropane	ug/l	ND	ND	NC	
Dibromochloromethane	ug/l	ND	ND	NC	
1,2-Dibromoethane (EDB)	ug/l	ND	ND	NC	
Dibromomethane	ug/l	ND	ND	NC	
1,2-Dichlorobenzene	ug/l	ND	ND	NC	
1,4-Dichlorobenzene	ug/l	ND	ND	NC	
trans-1,4-Dichloro-2-butene	ug/l	ND	ND	NC	
1,1-Dichloroethane	ug/l	ND	ND	NC	
1,2-Dichloroethane	ug/l	ND	ND	NC	
1,1-Dichloroethene	ug/l	ND	ND	NC	
cis-1,2-Dichloroethene	ug/l	ND	ND	NC	
trans-1,2-Dichloroethene	ug/l	ND	ND	NC	
1,2-Dichloropropane	ug/l	ND	ND	NC	
cis-1,3-Dichloropropene	ug/l	ND	ND	NC	
trans-1,3-Dichloropropene	ug/l	ND	ND	NC	
Ethylbenzene	ug/l	ND	ND	NC	
2-Hexanone	ug/l	ND	ND	NC	
Iodomethane	ug/l	ND	ND	NC	
Methylene chloride	ug/l	ND	ND	NC	
4-Methyl-2-pentanone (MIBK)	ug/l	ND	ND	NC	
Styrene	ug/l	ND	ND	NC	
1,1,1,2-Tetrachloroethane	ug/l	ND	ND	NC	
1,1,2,2-Tetrachloroethane	ug/l	ND	ND	NC	
Tetrachloroethene	ug/l	ND	ND	NC	
Toluene	ug/l	21.00	7.500	94	
1,1,1-Trichloroethane	ug/l	ND	ND	NC	
1,1,2-Trichloroethane	ug/l	ND	ND	NC	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

SAMPLE DUPLICATE: 921957833

Parameter	Units	921945671 Result	DUP Result	RPD	Footnotes
Trichloroethene	ug/l	ND	ND	NC	
Trichlorofluoromethane	ug/l	ND	ND	NC	
1,2,3-Trichloropropane	ug/l	ND	ND	NC	
Vinyl acetate	ug/l	ND	ND	NC	
Vinyl chloride	ug/l	ND	ND	NC	
m&p-Xylene	ug/l	ND	ND	NC	
o-Xylene	ug/l	ND	ND	NC	
Toluene-d8 (S)	%	98	99		
4-Bromofluorobenzene (S)	%	90	89		
Dibromofluoromethane (S)	%	104	102		
1,2-Dichloroethane-d4 (S)	%	105	102		

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

QC Batch: 50233 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: GC/MS VOCs by 8260
Associated Lab Samples: 921945762 921945770 921945796 921945812

METHOD BLANK: 921963252
Associated Lab Samples: 921945762 921945770 921945796 921945812

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Acetone	ug/l	ND	100	
Acrylonitrile	ug/l	ND	100	
Benzene	ug/l	ND	5.0	
Bromochloromethane	ug/l	ND	5.0	
Bromodichloromethane	ug/l	ND	5.0	
Bromoform	ug/l	ND	5.0	
Bromomethane	ug/l	ND	10.	
2-Butanone (MEK)	ug/l	ND	100	
Carbon disulfide	ug/l	ND	5.0	
Carbon tetrachloride	ug/l	ND	5.0	
Chlorobenzene	ug/l	ND	5.0	
Chloroethane	ug/l	ND	10.	
Chloroform	ug/l	ND	5.0	
Chloromethane	ug/l	ND	10.	
1,2-Dibromo-3-chloropropane	ug/l	ND	5.0	
Dibromochloromethane	ug/l	ND	5.0	
1,2-Dibromoethane (EDB)	ug/l	ND	5.0	
Dibromomethane	ug/l	ND	5.0	
1,2-Dichlorobenzene	ug/l	ND	5.0	
1,4-Dichlorobenzene	ug/l	ND	5.0	
trans-1,4-Dichloro-2-butene	ug/l	ND	5.0	
1,1-Dichloroethane	ug/l	ND	5.0	
1,2-Dichloroethane	ug/l	ND	5.0	
1,1-Dichloroethene	ug/l	ND	5.0	
cis-1,2-Dichloroethene	ug/l	ND	5.0	
trans-1,2-Dichloroethene	ug/l	ND	5.0	
1,2-Dichloropropane	ug/l	ND	5.0	
cis-1,3-Dichloropropene	ug/l	ND	5.0	
trans-1,3-Dichloropropene	ug/l	ND	5.0	
Ethylbenzene	ug/l	ND	5.0	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

METHOD BLANK: 921963252
Associated Lab Samples: 921945762 921945770 921945796 921945812

Parameter	Units	Blank Result	Reporting Limit	Footnotes
2-Hexanone	ug/l	ND	50.	
Iodomethane	ug/l	ND	5.0	
Methylene chloride	ug/l	ND	5.0	
4-Methyl-2-pentanone (MIBK)	ug/l	ND	50.	
Styrene	ug/l	ND	5.0	
1,1,1,2-Tetrachloroethane	ug/l	ND	5.0	
1,1,2,2-Tetrachloroethane	ug/l	ND	5.0	
Tetrachloroethene	ug/l	ND	5.0	
Toluene	ug/l	ND	5.0	
1,1,1-Trichloroethane	ug/l	ND	5.0	
1,1,2-Trichloroethane	ug/l	ND	5.0	
Trichloroethene	ug/l	ND	5.0	
Trichlorofluoromethane	ug/l	ND	10.	
1,2,3-Trichloropropane	ug/l	ND	5.0	
Vinyl acetate	ug/l	ND	50.	
Vinyl chloride	ug/l	ND	10.	
m&p-Xylene	ug/l	ND	10.	
o-Xylene	ug/l	ND	5.0	
Toluene-d8 (S)	%	99		
4-Bromofluorobenzene (S)	%	95		
Dibromofluoromethane (S)	%	101		
1,2-Dichloroethane-d4 (S)	%	101		

LABORATORY CONTROL SAMPLE: 921963260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Acetone	ug/l	100	92.19	92	
Acrylonitrile	ug/l	250	215.5	86	
Benzene	ug/l	50	51.50	103	
Bromochloromethane	ug/l	50	50.17	100	
Bromodichloromethane	ug/l	50	53.03	106	
Bromoform	ug/l	50	48.21	96	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

LABORATORY CONTROL SAMPLE: 921963260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Bromomethane	ug/l	50	50.08	100	
2-Butanone (MEK)	ug/l	100	91.39	91	
Carbon disulfide	ug/l	100	127.3	127	
Carbon tetrachloride	ug/l	50	54.02	108	
Chlorobenzene	ug/l	50	49.96	100	
Chloroethane	ug/l	50	61.54	123	
Chloroform	ug/l	50	50.58	101	
Chloromethane	ug/l	50	43.80	88	
1,2-Dibromo-3-chloropropane	ug/l	50	48.40	97	
Dibromochloromethane	ug/l	50	50.21	100	
1,2-Dibromoethane (EDB)	ug/l	50	50.04	100	
Dibromomethane	ug/l	50	48.21	96	
1,2-Dichlorobenzene	ug/l	50	48.41	97	
1,4-Dichlorobenzene	ug/l	50	48.30	97	
trans-1,4-Dichloro-2-butene	ug/l	50	46.17	92	
1,1-Dichloroethane	ug/l	50	50.51	101	
1,2-Dichloroethane	ug/l	50	47.84	96	
1,1-Dichloroethene	ug/l	50	54.25	108	
cis-1,2-Dichloroethene	ug/l	50	35.24	70	
trans-1,2-Dichloroethene	ug/l	50	52.94	106	
1,2-Dichloropropane	ug/l	50	51.52	103	
cis-1,3-Dichloropropene	ug/l	50	51.02	102	
trans-1,3-Dichloropropene	ug/l	50	53.17	106	
Ethylbenzene	ug/l	50	50.89	102	
2-Hexanone	ug/l	100	85.08	85	
Iodomethane	ug/l	100	106.1	106	
Methylene chloride	ug/l	50	53.48	107	
4-Methyl-2-pentanone (MIBK)	ug/l	100	92.27	92	
Styrene	ug/l	50	50.74	101	
1,1,1,2-Tetrachloroethane	ug/l	50	47.99	96	
1,1,2,2-Tetrachloroethane	ug/l	50	45.97	92	
Tetrachloroethene	ug/l	50	60.77	122	
Toluene	ug/l	50	52.49	105	
1,1,1-Trichloroethane	ug/l	50	52.48	105	
1,1,2-Trichloroethane	ug/l	50	51.91	104	
Trichloroethene	ug/l	50	51.35	103	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

LABORATORY CONTROL SAMPLE: 921963260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Trichlorofluoromethane	ug/l	50	49.66	99	
1,2,3-Trichloropropane	ug/l	50	45.78	92	
Vinyl acetate	ug/l	100	69.53	70	
Vinyl chloride	ug/l	50	45.51	91	
m&p-Xylene	ug/l	100	102.2	102	
o-Xylene	ug/l	50	48.38	97	
Toluene-d8 (S)				100	
4-Bromofluorobenzene (S)				94	
Dibromofluoromethane (S)				102	
1,2-Dichloroethane-d4 (S)				100	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 921963278 921963286

Parameter	Units	921945374 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/l	0	100.00	109.3	106.3	109	106	3	
Chlorobenzene	ug/l	0	100.00	96.74	107.8	97	108	11	
1,1-Dichloroethene	ug/l	0	100.00	113.8	117.5	114	118	3	
Toluene	ug/l	0	100.00	104.3	104.5	104	104	0	
Trichloroethene	ug/l	1.252	100.00	107.0	107.7	106	106	1	
Toluene-d8 (S)						99	101		
4-Bromofluorobenzene (S)						87	98		
Dibromofluoromethane (S)						100	105		
1,2-Dichloroethane-d4 (S)						104	106		

SAMPLE DUPLICATE: 921963294

Parameter	Units	921945382 Result	DUP Result	RPD	Footnotes
Acetone	ug/l	ND	ND	NC	
Acrylonitrile	ug/l	ND	ND	NC	
Benzene	ug/l	ND	ND	NC	
Bromochloromethane	ug/l	ND	ND	NC	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

SAMPLE DUPLICATE: 921963294

Parameter	Units	921945382 Result	DUP Result	RPD	Footnotes
Bromodichloromethane	ug/l	ND	ND	NC	
Bromoform	ug/l	ND	ND	NC	
Bromomethane	ug/l	ND	ND	NC	
2-Butanone (MEK)	ug/l	ND	ND	NC	
Carbon disulfide	ug/l	ND	ND	NC	
Carbon tetrachloride	ug/l	ND	ND	NC	
Chlorobenzene	ug/l	ND	ND	NC	
Chloroethane	ug/l	ND	ND	NC	
Chloroform	ug/l	ND	ND	NC	
Chloromethane	ug/l	ND	ND	NC	
1,2-Dibromo-3-chloropropane	ug/l	ND	ND	NC	
Dibromochloromethane	ug/l	ND	ND	NC	
1,2-Dibromoethane (EDB)	ug/l	ND	ND	NC	
Dibromomethane	ug/l	ND	ND	NC	
1,2-Dichlorobenzene	ug/l	ND	ND	NC	
1,4-Dichlorobenzene	ug/l	ND	ND	NC	
trans-1,4-Dichloro-2-butene	ug/l	ND	ND	NC	
1,1-Dichloroethane	ug/l	ND	ND	NC	
1,2-Dichloroethane	ug/l	ND	ND	NC	
1,1-Dichloroethene	ug/l	ND	ND	NC	
cis-1,2-Dichloroethene	ug/l	6.100	6.300	4	
trans-1,2-Dichloroethene	ug/l	ND	ND	NC	
1,2-Dichloropropane	ug/l	ND	ND	NC	
cis-1,3-Dichloropropene	ug/l	ND	ND	NC	
trans-1,3-Dichloropropene	ug/l	ND	ND	NC	
Ethylbenzene	ug/l	ND	ND	NC	
2-Hexanone	ug/l	ND	ND	NC	
Iodomethane	ug/l	ND	ND	NC	
Methylene chloride	ug/l	ND	ND	NC	
4-Methyl-2-pentanone (MIBK)	ug/l	ND	ND	NC	
Styrene	ug/l	ND	ND	NC	
1,1,1,2-Tetrachloroethane	ug/l	ND	ND	NC	
1,1,2,2-Tetrachloroethane	ug/l	ND	ND	NC	
Tetrachloroethene	ug/l	16.00	17.00	5	
Toluene	ug/l	ND	ND	NC	
1,1,1-Trichloroethane	ug/l	ND	ND	NC	

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

SAMPLE DUPLICATE: 921963294

Parameter	Units	921945382 Result	DUP Result	RPD	Footnotes
1,1,2-Trichloroethane	ug/l	ND	ND	NC	
Trichloroethene	ug/l	9.800	10.00	4	
Trichlorofluoromethane	ug/l	ND	ND	NC	
1,2,3-Trichloropropane	ug/l	ND	ND	NC	
Vinyl acetate	ug/l	ND	ND	NC	
Vinyl chloride	ug/l	ND	ND	NC	
m&p-Xylene	ug/l	ND	ND	NC	
o-Xylene	ug/l	ND	ND	NC	
Toluene-d8 (S)	%	98	97		
4-Bromofluorobenzene (S)	%	88	78		1
Dibromofluoromethane (S)	%	100	99		
1,2-Dichloroethane-d4 (S)	%	104	109		

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

QC Batch: 49904 — Analysis Method: EPA 6010
QC Batch Method: EPA 3010 — Analysis Description: Metals by Trace ICP
Associated Lab Samples: 921945671 921945689 921945705 921945713 921945721 921945747 921945762 921945770 921945796

METHOD BLANK: 921948923
Associated Lab Samples: 921945671 921945689 921945705 921945713 921945721 921945747 921945762 921945770 921945796

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Antimony	mg/l	ND	0.0050	
Arsenic	mg/l	ND	0.0050	
Barium	mg/l	ND	0.0050	
Beryllium	mg/l	ND	0.0010	
Cadmium	mg/l	ND	0.0010	
Chromium	mg/l	ND	0.0020	
Cobalt	mg/l	ND	0.0050	
Copper	mg/l	ND	0.0020	
Lead	mg/l	ND	0.0030	
Nickel	mg/l	ND	0.0050	
Selenium	mg/l	ND	0.0050	
Silver	mg/l	ND	0.0020	
Vanadium	mg/l	ND	0.0050	
Zinc	mg/l	ND	0.010	

LABORATORY CONTROL SAMPLE: 921948964

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Antimony	mg/l	0.2500	0.2360	94	
Arsenic	mg/l	0.2500	0.2400	96	
Barium	mg/l	0.2500	0.2300	92	
Beryllium	mg/l	0.2500	0.2370	95	
Cadmium	mg/l	0.2500	0.2390	96	
Chromium	mg/l	0.2500	0.2340	94	
Cobalt	mg/l	0.2500	0.2320	93	
Copper	mg/l	0.2500	0.2410	96	

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www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

LABORATORY CONTROL SAMPLE: 921948964

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Lead	mg/l	0.2500	0.2390	96	
Nickel	mg/l	0.2500	0.2280	91	
Selenium	mg/l	0.2500	0.2290	92	
Silver	mg/l	0.2500	0.2320	93	
Vanadium	mg/l	0.2500	0.2410	96	
Zinc	mg/l	0.2500	0.2230	89	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 921948931 921948949

Parameter	Units	921946695 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Antimony	mg/l	0.00590	0.2500	0.2320	0.2310	90	90	0	
Arsenic	mg/l	0.00327	0.2500	0.2340	0.2390	92	94	2	
Barium	mg/l	0.08440	0.2500	0.3210	0.3180	95	93	1	
Beryllium	mg/l	0.00006	0.2500	0.2310	0.2320	92	93	0	
Cadmium	mg/l	0	0.2500	0.2290	0.2310	92	92	1	
Chromium	mg/l	0.00022	0.2500	0.2290	0.2280	92	91	0	
Cobalt	mg/l	0.00056	0.2500	0.2220	0.2230	89	89	0	
Copper	mg/l	0	0.2500	0.2440	0.2420	98	97	1	
Lead	mg/l	0	0.2500	0.2270	0.2280	91	91	0	
Nickel	mg/l	0.00586	0.2500	0.2220	0.2240	86	87	1	
Selenium	mg/l	0	0.2500	0.2290	0.2240	92	90	2	
Silver	mg/l	0	0.2500	0.2310	0.2310	92	92	0	
Vanadium	mg/l	0.00011	0.2500	0.2380	0.2370	95	95	0	
Zinc	mg/l	0.00539	0.2500	0.2230	0.2230	87	87	0	

SAMPLE DUPLICATE: 921948956

Parameter	Units	921945671 Result	DUP Result	RPD	Footnotes
Antimony	mg/l	0.00540	ND	NC	
Arsenic	mg/l	0.00580	ND	NC	
Barium	mg/l	0.2800	0.2700	3	
Beryllium	mg/l	0.00250	0.00230	9	

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

REPORT OF LABORATORY ANALYSIS
This report shall not be reproduced, except in full,
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Laboratory Certification IDs
KY Drinking Water 90090
VA Drinking Water 213
FL NELAP E87627

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

SAMPLE DUPLICATE: 921948956

Parameter	Units	921945671 Result	DUP Result	RPD	Footnotes
Cadmium	mg/l	ND	ND	NC	
Chromium	mg/l	0.02200	0.02000	8	
Cobalt	mg/l	0.00640	0.00590	8	
Copper	mg/l	0.02300	0.02200	7	
Lead	mg/l	0.01000	0.01100	6	
Nickel	mg/l	0.01100	0.01000	3	
Selenium	mg/l	ND	ND	NC	
Silver	mg/l	ND	ND	NC	
Vanadium	mg/l	0.04200	0.04000	3	
Zinc	mg/l	0.07900	0.07600	4	

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NC Wastewater 12
NC Drinking Water 37706
SC 99006

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QUALITY CONTROL DATA

Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

QC Batch: 49961 — Analysis Method: EPA 7841
QC Batch Method: EPA 3020 — Analysis Description: Thallium, AAS Furnace
Associated Lab Samples: 921945671 921945689 921945705 921945713 921945721 921945747 921945762 921945770 921945796

METHOD BLANK: 921950747
Associated Lab Samples: 921945671 921945689 921945705 921945713 921945721 921945747 921945762 921945770 921945796

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Thallium	mg/l	ND	0.0020	

LABORATORY CONTROL SAMPLE: 921950788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Thallium	mg/l	0.0250	0.0256	102	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 921950754 921950762

Parameter	Units	921945671 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Thallium	mg/l	0.00074	0.0250	0.0219	0.0241	84	94	10	

SAMPLE DUPLICATE: 921950770

Parameter	Units	921945689 Result	DUP Result	RPD	Footnotes
Thallium	mg/l	ND	ND	NC	

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

REPORT OF LABORATORY ANALYSIS
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Lab Project Number: 9227973
Client Project ID: OSR/00162-128-018

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)Laboratory Control Sample (Duplicate)
MS(D)Matrix Spike (Duplicate)
DUP Sample Duplicate
ND Not Detected
NC Not Calculable
RPD Relative Percent Difference
(S) Surrogate
[1] The surrogate and/or spike recovery was outside acceptance limits.

Laboratory Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006

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Laboratory Certification IDs
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VA Drinking Water 213
FL NELAP E87627

CHAIN OF CUSTODY / Analytical Request Document

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

619215

Page: 1 of 1

Required Client Information: Section A

Company: HDR Engineering Inc.
Address: 126 S. Tryon Street Suite 1400
Charlotte, NC 28202
Phone: 704-338-1000
Fax: 704-[illegible]

Required Client Information: Section B

Report To: Chris Randazzo
Copy To:
Invoice To: (left)
P.O.
Project Name: OSR
Project Number: 00162.128-018-

Client Information (Check quote/contract):
Requested Due Date:
*TAT: Norm

* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calendar days.

To Be Completed by Pace Analytical and Client: Section C

Quote Reference:
Project Manager:
Project #: 922973
Profile #:
Requested Analysis:

Section D Required Client Information:

SAMPLE ID
One character per box.
(A–Z, 0–9 / .–)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
WATER	WT
SOIL	SL
OIL	OL
WIPE	WP
AIR	AR
TISSUE	TS
OTHER	OT

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED (mm / dd / yy)	TIME COLLECTED (hh:mm a/p)	# Containers	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis: App I WC	App I Metals	Remarks / Lab ID
1	MW-1R	WT	11/20/01	0930	5			1	4					X	X	921945671
2	MW-2R	WT	11/20/01	1440	5			1	4					X	X	689
3	MW-3R	WT	11/20/01	1015	5			1	4					X	X	705
4	MW-4R	WT	11/20/01	1300	5			1	4					X	X	713
5	MW-5R	WT	11/20/01	1400	5			1	4					X	X	721
6	MW-6R	WT	11/20/01	0900	5			1	4					X	X	747
7	MW-7	WT	11/20/01	1130	5			1	4					X	X	762
8	MW-8	WT	11/20/01	0945	5			1	4					X	X	770
9	FIELD BLANK	WT	—	—	8			1	4					X	X	796
10	TRIP BLANK	WT	11/20/01	1500	2				2					X	X	812
11																
12																

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NO. OF COOLERS

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
1-10	[signature] HDR	11/21/01	1630	[signature]	11/21	1630

SAMPLE CONDITION

Temp in °C	4
Received on Ice	Y/N
Sealed Cooler	Y/N
Samples Intact	Y/N

SAMPLE NOTES

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chris Randazzo
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM / DD / YY): 11/21/01

SEE REVERSE SIDE FOR INSTRUCTIONS

Form COC01 Rev. 0601

HDR
HDR Engineering, Inc.

PRE-SAMPLING WELL PURGING

PROJECT OSR
WELL NUMBER MW-8
WELL INSIDE DIAMETER 2 INCHES
DEPTH OF BOTTOM 30.00 FEET
LENGTH OF GRAVEL PACK _____ FEET
DIAMETER OF GRAVEL PACK _____ INCHES

PROJECT NUMBER 00162-128-018-04
DATE 11/20/01 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 65
WEATHER CONDITIONS Clear
HNU/OVA READING _____
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
Disposable Bailer

WITHDRAWAL OF WELL VOLUMES

	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME
FLUSHING					
WATER LEVEL BEFORE	23.72				
WATER LEVEL AFTER					
TIME BEGIN FLUSHING					
TIME END FLUSHING					
ESTIMATED VOLUME FLUSHING (gal)	0	1.1	2.2	3.3	
WELL VOLUMES REMOVED	0	1	2	3	
FIELD ANALYSIS					
WATER TEMPERATURE (°C)	14.5	14.6	14.5	14.6	
SAMPLE (pH)	6.45	6.09	6.01	6.00	
SAMPLE CONDUCTIVITY (umhos/cm)	534.5	47	46	49	
BUFFER BEFORE					
BUFFER AFTER					
ODOR	None	None	None	None	
COLOR	Tan	Tan	Tan	Brown	
OTHER					

COMMENTS

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN FT^3
π = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM FT^3 TO GALLONS = 7.48 gal/ft^3

WELL RADIUS = 1 IN/12 = 0.083 FT
h = 30.00 (WELL DEPTH) − 23.72 (DEPTH TO WATER) = 6.28 FT = h
3.14 x 0.0069 (r^2) x h = 0.14 FT^3 x 7.48 gal/FT^3 = 1 WELL VOLUME IN GAL = 1.1

WELLPURG.DWG

HDR
HDR Engineering, Inc.

PRE-SAMPLING WELL PURGING

PROJECT OSR
WELL NUMBER MW-7
WELL INSIDE DIAMETER 2 INCHES
DEPTH OF BOTTOM 49.60 FEET
LENGTH OF GRAVEL PACK _____ FEET
DIAMETER OF GRAVEL PACK _____ INCHES

PROJECT NUMBER 00162-128-018-04
DATE 11/20/01 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 65
WEATHER CONDITIONS Clear
HNU/OVA READING _____
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
Disposable Bailer

WITHDRAWAL OF WELL VOLUMES

FLUSHING	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME
WATER LEVEL BEFORE	39.29				
WATER LEVEL AFTER					
TIME BEGIN FLUSHING					
TIME END FLUSHING					
ESTIMATED VOLUME FLUSHING (gal)	0	1.7	3.3	DRY	
WELL VOLUMES REMOVED	0	1	2	3	

FIELD ANALYSIS					
WATER TEMPERATURE (°C)	14.5	14.2	14.1		
SAMPLE (pH)	7.10	6.06	5.62		
SAMPLE CONDUCTIVITY (umhos/cm)	74	74	73		
BUFFER BEFORE					
BUFFER AFTER					
ODOR	None	None	None		
COLOR	Clear	Cloudy	Cloudy		
OTHER					

COMMENTS

WELL VOLUME CALCULATIONS (1 cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN FT^3
$\pi = 3.14$

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM FT^3 TO GALLONS = 7.48 gal/ft^3

WELL RADIUS = 1 IN/12 = 0.083 FT
h = 49.60 (WELL DEPTH) − 39.29 (DEPTH TO WATER) = 10.31 FT = h
3.14 × 0.0069 (r^2) × h = 0.22 FT^3 × 7.48 gal/FT^3 = 1 WELL VOLUME IN GAL = 1.7

WELLPURG.DWG

HDR
HDR Engineering, Inc.

PRE-SAMPLING WELL PURGING

PROJECT OSR
WELL NUMBER MW-6R
WELL INSIDE DIAMETER 2 INCHES
DEPTH OF BOTTOM 62.60 FEET
LENGTH OF GRAVEL PACK _____ FEET
DIAMETER OF GRAVEL PACK _____ INCHES

PROJECT NUMBER 00162-128-018-04
DATE 11/20/01 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 65
WEATHER CONDITIONS Clear
HNU/OVA READING _____
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
Disposable Bailer

WITHDRAWAL OF WELL VOLUMES

	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME
FLUSHING					
WATER LEVEL BEFORE	52.17				
WATER LEVEL AFTER					
TIME BEGIN FLUSHING					
TIME END FLUSHING					
ESTIMATED VOLUME FLUSHING (gal)	0	1.7	3.4	5.1	
WELL VOLUMES REMOVED	0	1	2	3	
FIELD ANALYSIS					
WATER TEMPERATURE (°C)	13.7	14	13.9	14.0	
SAMPLE (pH)	7.87	7.45	7.15	7.19	
SAMPLE CONDUCTIVITY (umhos/cm)	121 µS	85	68	70	
BUFFER BEFORE					
BUFFER AFTER					
ODOR	None	None	None	None	
COLOR	Cloudy	Cloudy	Cloudy	Cloudy	
OTHER					

COMMENTS

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN FT^3
π = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM FT^3 TO GALLONS = 7.48 gal/ft^3

WELL RADIUS = 1 IN/12 = 0.083 FT
h = 62.60 (WELL DEPTH) − 52.17 (DEPTH TO WATER) = 10.43 FT = h
3.14 x 0.0069 (r^2) x h = 0.23 FT^3 x 7.48 gal/FT^3 = 1 WELL VOLUME IN GAL = 1.7

WELLPURG.DWG

HDR
HDR Engineering, Inc.

PRE-SAMPLING WELL PURGING

PROJECT OSR
WELL NUMBER MW-5R
WELL INSIDE DIAMETER 2 INCHES
DEPTH OF BOTTOM 32.10 FEET
LENGTH OF GRAVEL PACK _____ FEET
DIAMETER OF GRAVEL PACK _____ INCHES

PROJECT NUMBER 00162-128-018-04
DATE 11/20/01 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 65
WEATHER CONDITIONS Clear
HNU/OVA READING _____
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
Disposable Bailer

WITHDRAWAL OF WELL VOLUMES

FLUSHING	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME
WATER LEVEL BEFORE	13.70				
WATER LEVEL AFTER					
TIME BEGIN FLUSHING					
TIME END FLUSHING					
ESTIMATED VOLUME FLUSHING (gal)	0	3	6	9	
WELL VOLUMES REMOVED	0	1	2	3	

FIELD ANALYSIS					
WATER TEMPERATURE (°C)	15.0	15.3	15.3	15.3	
SAMPLE (pH)	6.18	6.16	6.15	6.14	
SAMPLE CONDUCTIVITY (umhos/cm)	145	143	144	144	
BUFFER BEFORE					
BUFFER AFTER					
ODOR	None	None	None	None	
COLOR	Clear	Cloudy	Cloudy	Cloudy	
OTHER					

COMMENTS

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN FT^3
π = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM FT^3 TO GALLONS = 7.48 gal/ft^3

WELL RADIUS = 1 IN/12 = 0.083 FT
h = 32.10 (WELL DEPTH) − 13.70 (DEPTH TO WATER) = 18.4 FT = h
3.14 x 0.0069 (r^2) x h = 0.4 FT^3 x 7.48 gal/FT^3 = 1 WELL VOLUME IN GAL = 3.0

WELLPURC.DWG

HDR
HDR Engineering, Inc.

PRE-SAMPLING WELL PURGING

PROJECT OSR
WELL NUMBER MW-4R
WELL INSIDE DIAMETER 2 INCHES
DEPTH OF BOTTOM 22.30 FEET
LENGTH OF GRAVEL PACK _____ FEET
DIAMETER OF GRAVEL PACK _____ INCHES

PROJECT NUMBER 00162-128-018-04
DATE 11/20/01 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 65
WEATHER CONDITIONS Clear
HNU/OVA READING _____
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
Disposable Bailer

WITHDRAWAL OF WELL VOLUMES

	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME
FLUSHING					
WATER LEVEL BEFORE	11.95				
WATER LEVEL AFTER					
TIME BEGIN FLUSHING					
TIME END FLUSHING					
ESTIMATED VOLUME FLUSHING (gal)	0	1.7	3.4	5.0	
WELL VOLUMES REMOVED	0	1	2	3	
FIELD ANALYSIS					
WATER TEMPERATURE (°C)	16.0	15.3	15.3	15.4	
SAMPLE (pH)	6.00	5.94	5.90	5.85	
SAMPLE CONDUCTIVITY (umhos/cm)	155uS	163	165	165	
BUFFER BEFORE					
BUFFER AFTER					
ODOR	No	None	None	None	
COLOR	Clear	Cloudy	Cloudy	Cloudy	
OTHER					

COMMENTS

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN FT^3
π = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM FT^3 TO GALLONS = 7.48 gal/ft^3

WELL RADIUS = 1 IN/12 = 0.083 FT
h = 22.30 (WELL DEPTH) − 11.95 (DEPTH TO WATER) = 10.35 FT = h
3.14 x 0.0069 (r^2) x h = 0.22 FT^3 x 7.48 gal/FT^3 = 1 WELL VOLUME IN GAL = 1.7

WELLPURG.DWG

HDR
HDR Engineering, Inc.

PRE-SAMPLING WELL PURGING

PROJECT OSR
WELL NUMBER MW-3R
WELL INSIDE DIAMETER 2 INCHES
DEPTH OF BOTTOM 30.70 FEET
LENGTH OF GRAVEL PACK _____ FEET
DIAMETER OF GRAVEL PACK _____ INCHES

PROJECT NUMBER 00162-128-018-04
DATE 11/20/01 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 65
WEATHER CONDITIONS Clear
HNU/OVA READING _____
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
Disposable Bailer

WITHDRAWAL OF WELL VOLUMES

FLUSHING	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME
WATER LEVEL BEFORE	26.18				
WATER LEVEL AFTER					
TIME BEGIN FLUSHING					
TIME END FLUSHING					
ESTIMATED VOLUME FLUSHING (gal)	0	1	2	DRY	
WELL VOLUMES REMOVED	0	1	2	3	

FIELD ANALYSIS					
WATER TEMPERATURE (°C)	14.7	14.5	14.6		
SAMPLE (pH)	7.66	7.65	7.70		
SAMPLE CONDUCTIVITY (umhos/cm)	78	80	69		
BUFFER BEFORE					
BUFFER AFTER					
ODOR	None	None	None		
COLOR	Tan	Brown	Brown		
OTHER					

COMMENTS

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN FT^3
$\pi = 3.14$

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM FT^3 TO GALLONS = 7.48 gal/ft^3

WELL RADIUS = 1 IN/12 = 0.083 FT
h = 30.70 (WELL DEPTH) − 26.18 (DEPTH TO WATER) = 3.99 FT = h
3.14 × 0.0069 (r^2) × h = 0.09 FT^3 × 7.48 gal/FT^3 = 1 WELL VOLUME IN GAL = 0.7

WELLPURG.DWG

HDR
HDR Engineering, Inc.

PRE-SAMPLING WELL PURGING

PROJECT OSR
WELL NUMBER MW-2R
WELL INSIDE DIAMETER 2 INCHES
DEPTH OF BOTTOM 24.70 FEET
LENGTH OF GRAVEL PACK ____ FEET
DIAMETER OF GRAVEL PACK ____ INCHES

PROJECT NUMBER 00162-128-018-04
DATE 11/20/01 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 65
WEATHER CONDITIONS Clear
HNU/OVA READING ____
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
Disposable Bailer

WITHDRAWAL OF WELL VOLUMES

FLUSHING	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME
WATER LEVEL BEFORE	11.16				
WATER LEVEL AFTER					
TIME BEGIN FLUSHING					
TIME END FLUSHING					
ESTIMATED VOLUME FLUSHING (gal)	0	2.2	4.4	6.6	
WELL VOLUMES REMOVED	0	1	2	3	

FIELD ANALYSIS					
WATER TEMPERATURE (°C)	14.8	15.0	15.0	14.9	
SAMPLE (pH)	6.09	6.03	6.00	5.99	
SAMPLE CONDUCTIVITY (umhos/cm)	92	91	89	90	
BUFFER BEFORE					
BUFFER AFTER					
ODOR	None	None	None	None	
COLOR	Clear	Cloudy	Cloudy	Cloudy	
OTHER					

COMMENTS

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN FT^3
π = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM FT^3 TO GALLONS = 7.48 gal/ft^3

WELL RADIUS = 1 IN/12 = 0.083 FT
h = 24.70 (WELL DEPTH) − 11.16 (DEPTH TO WATER) = 13.54 FT = h
3.14 x 0.0069 (r^2) x h = 0.29 FT^3 x 7.48 gal/FT^3 = 1 WELL VOLUME IN GAL = 2.2

WELLPURG.DWG

HDR

HDR Engineering, Inc.

PRE-SAMPLING WELL PURGING

PROJECT OSR

WELL NUMBER MW-1R

WELL INSIDE DIAMETER 2 INCHES

DEPTH OF BOTTOM 62.30 FEET

LENGTH OF GRAVEL PACK _____ FEET

DIAMETER OF GRAVEL PACK _____ INCHES

PROJECT NUMBER 00162-128-018-04

DATE 11/20/01 PAGE 1 OF 1

AIR TEMPERATURE (FAHRENHEIT) 65

WEATHER CONDITIONS Clear

HNU/OVA READING _____

METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED Disposable Bailer

WITHDRAWAL OF WELL VOLUMES

FLUSHING	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME	WELL VOLUME
WATER LEVEL BEFORE	41.80				
WATER LEVEL AFTER					
TIME BEGIN FLUSHING					
TIME END FLUSHING					
ESTIMATED VOLUME FLUSHING (gal)	0	3.3	6.6	9.9	
WELL VOLUMES REMOVED	0	1	2	3	

FIELD ANALYSIS					
WATER TEMPERATURE (°C)	15.0	15.1	15.0	15.2	
SAMPLE (pH)	6.00	5.95	5.86	5.80	
SAMPLE CONDUCTIVITY (umhos/cm)	79.5	80	78	78	
BUFFER BEFORE					
BUFFER AFTER					
ODOR	None	None	None	None	
COLOR	Clear	Cloudy	Cloudy	Cloudy	
OTHER					

COMMENTS

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)

$\pi r^2 \times h$ = WELL VOLUME IN FT^3

$\pi = 3.14$

r = RADIUS IN INCHES/12 = RADIUS IN FEET

h = HEIGHT OF WATER COLUMN IN WELL IN FEET

CONVERSION FROM FT^3 TO GALLONS = 7.48 gal/ft^3

WELL RADIUS = 1 IN/12 = 0.083 FT

h = 62.30 (WELL DEPTH) − 41.80 (DEPTH TO WATER) = 20.5 FT = h

3.14 × 0.0069 (r^2) × h = 0.44 FT^3 × 7.48 gal/FT^3 = 1 WELL VOLUME IN GAL = 3.3

WELLPURG.DWG

PERIMETER GAS PROBE MONITORING

FIELD DATA FORM

FORM 1

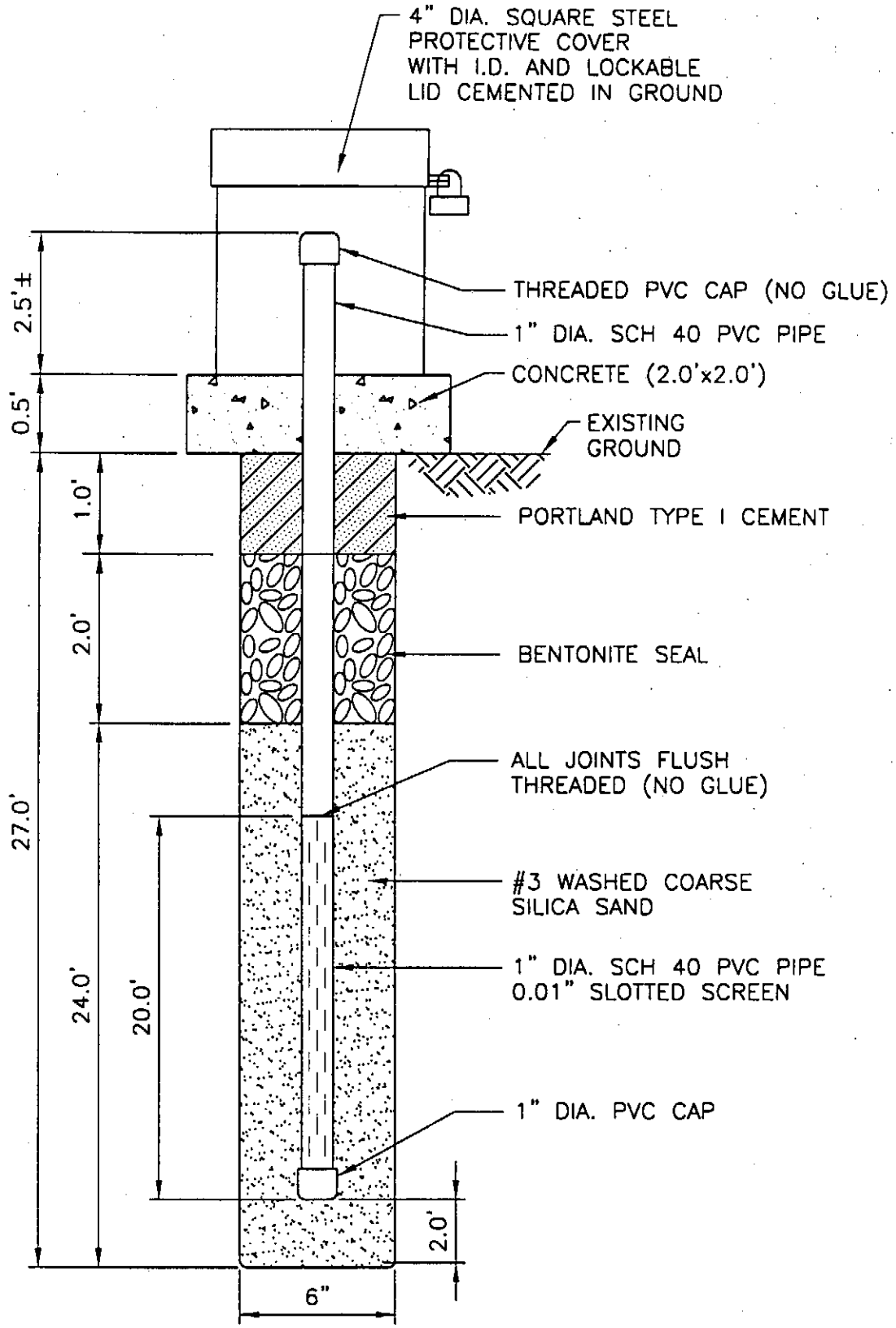
Date: 11/21/01	Inspector: C.Randazzo	Site Name: Old Salisbury Road C&D Landfill	Instrument (%)-S/No.: Gem-500 Instrument (%)-M/No.:

Temperature @ Start: 64 °F Weather: Clear

Temperature @ End: 67 °F Barometric Pressure: NA

Legend: T = Trace CO = Carbon monoxide
W = Water NA = No reading taken
ppm = Parts per million
LEL = Lower explosive limit

MM #	Time	Static Pressure	Methane (%/ppm)	Oxygen (%)	CO_2 (%)	Remarks
1	1430	NA	0 / 0.0	20.9	1.0	
2S	1400	NA	0 / 0.0	21.0	0.0	
2D	1402	NA	0 / 0.0	21.4	0.0	
3	1345	NA	0 / 0.0	21.0	0.0	Peak CO_2 : 1.8
4S	1330	NA	0 / 0.0	17.5	3.7	
4D	1335	NA	0 / 0.0	21.3	0.0	
5	1300	NA	0 / 0.0	21.3	0.3	
6	1000	NA	0 / 0.0	21.2	0.2	



NO SCALE

MM-1

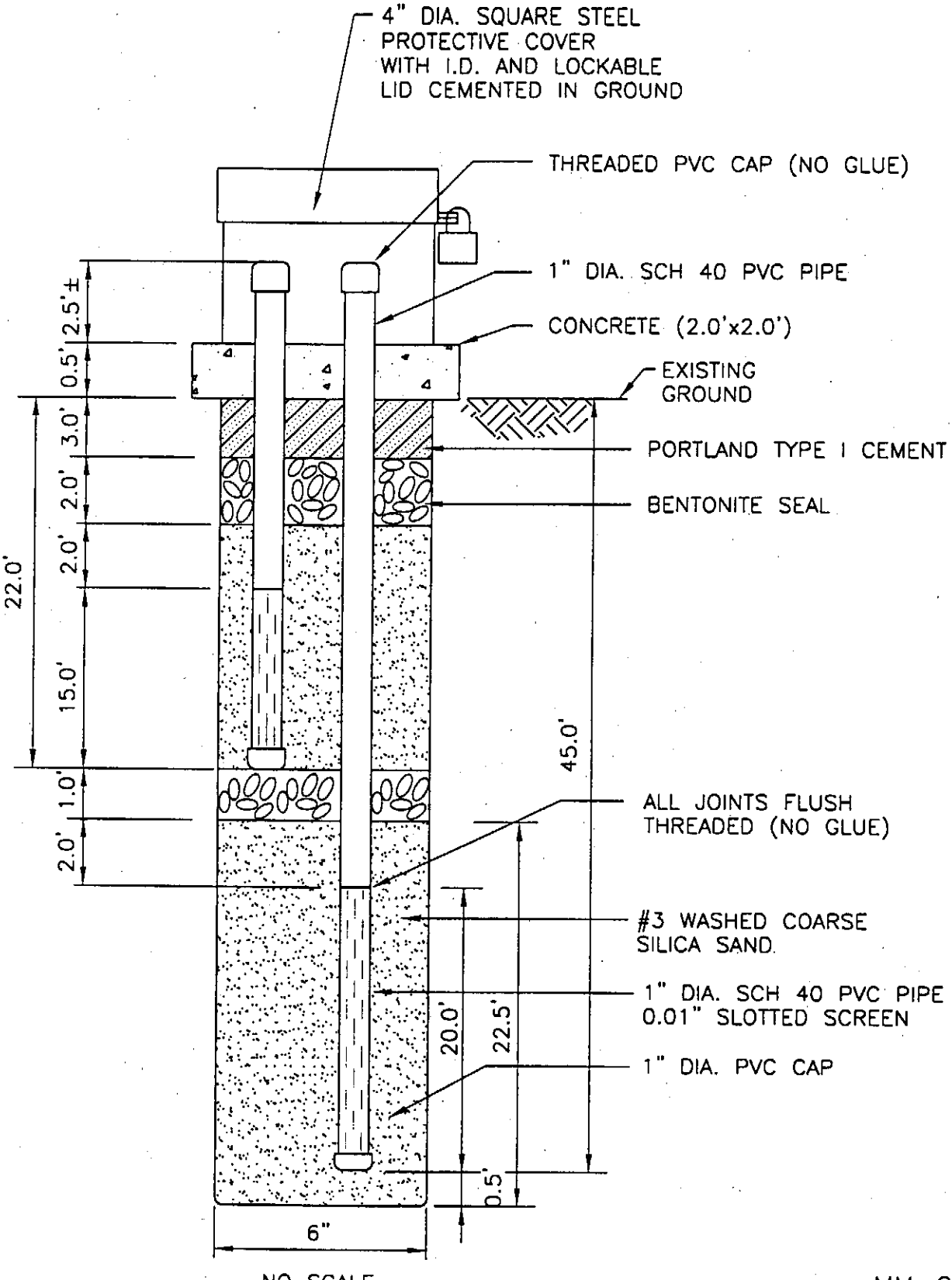
HDR Engineering, Inc. of the Carolinas
Suite 1400
128 S. Tryon Street
Charlotte, NC 28202-5001
(704) 338-1800

OLD SALISBURY ROAD C & D LANDFILL METHANE MONITORING PROBE DETAIL

Date 9/1999

Figure 1

P:\WINSLCD\METH-F1.DWG



NO SCALE

MM-2S/2D

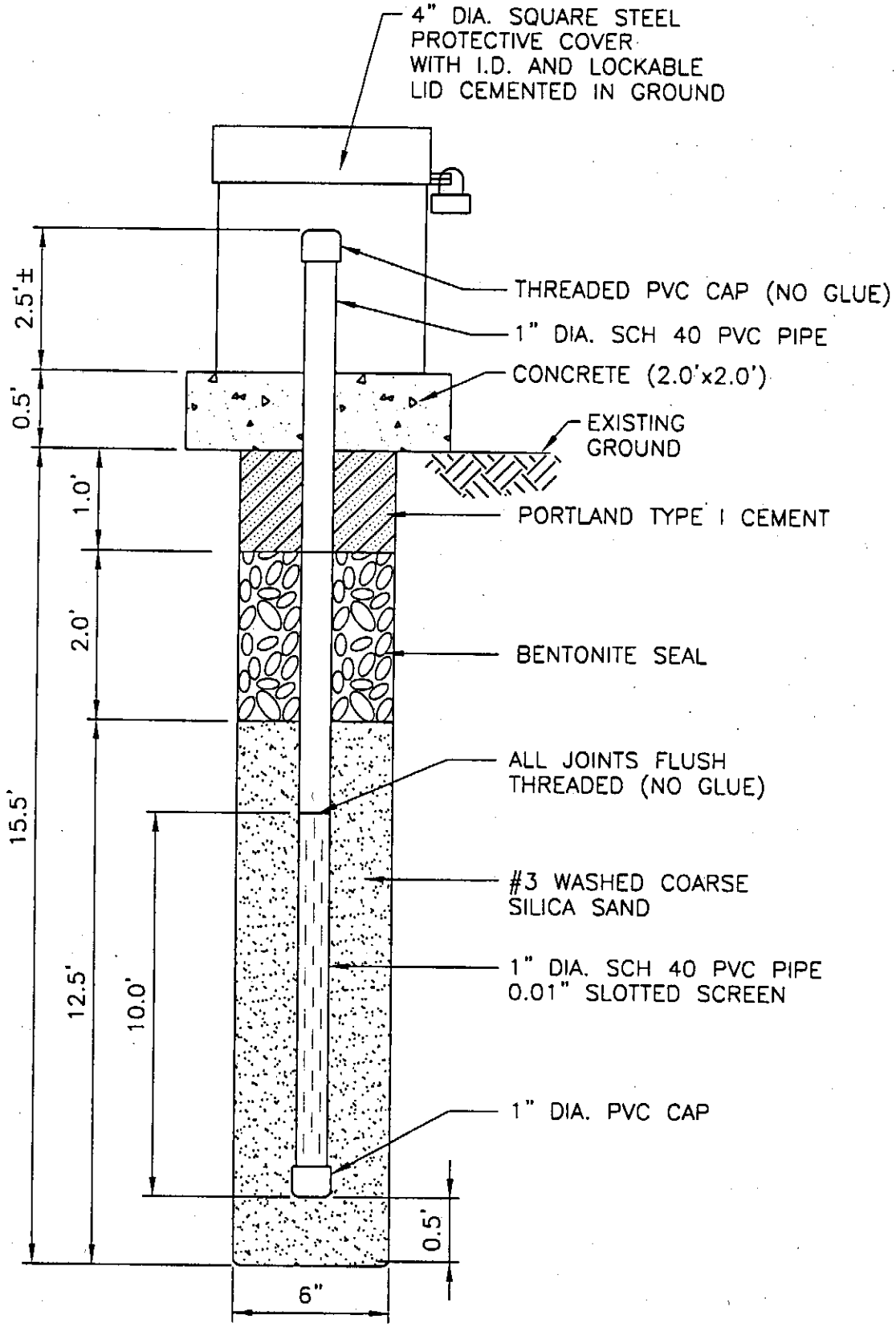
HDR Engineering, Inc. of the Carolinas
Suite 1400
128 S. Tryon Street
Charlotte, NC 28202-5001
(704) 338-1800

OLD SALISBURY ROAD C & D LANDFILL METHANE MONITORING PROBE DETAIL

Date 9/1999

Figure 2

P:\WINSL-CD\METH-F2.DWG



NO SCALE

MM-3

HDR

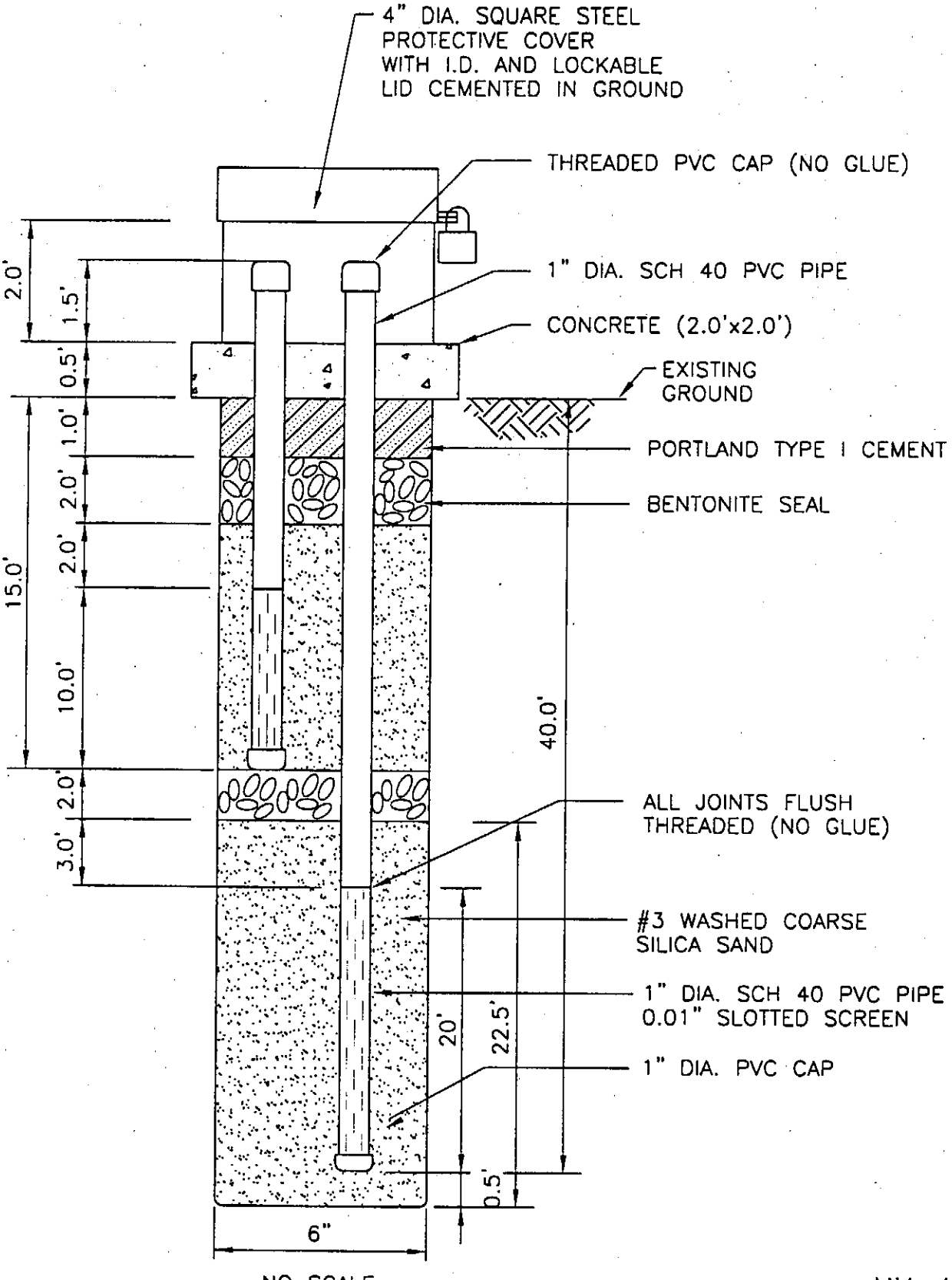
HDR Engineering, Inc. of the Carolinas
Suite 1400
128 S. Tryon Street
Charlotte, NC 28202-5001
(704) 338-1800

OLD SALISBURY ROAD C & D LANDFILL METHANE MONITORING PROBE DETAIL

Date 9/1999

Figure 3

P:\WINSLCD\METH-F3.DWG



NO SCALE

MM-4S/4D

HDR

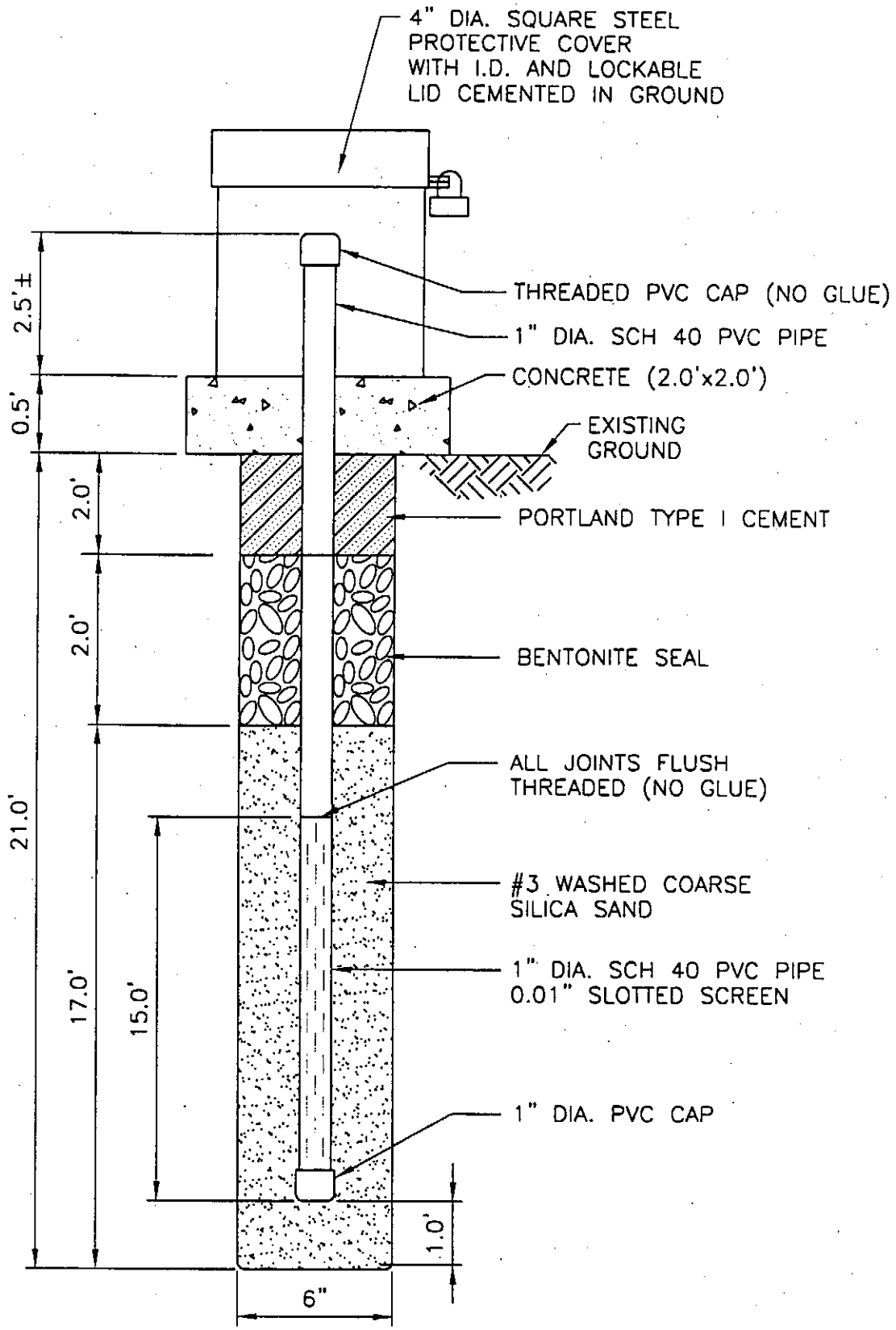
HDR Engineering, Inc. of the Carolinas
Suite 1400
128 S. Tryon Street
Charlotte, NC 28202-5001
(704) 338-1800

OLD SALISBURY ROAD C & D LANDFILL METHANE MONITORING PROBE DETAIL

Date 9/1999

Figure 4

P:\WINSL-CD\METH-F4.DWG



NO SCALE

MM-5

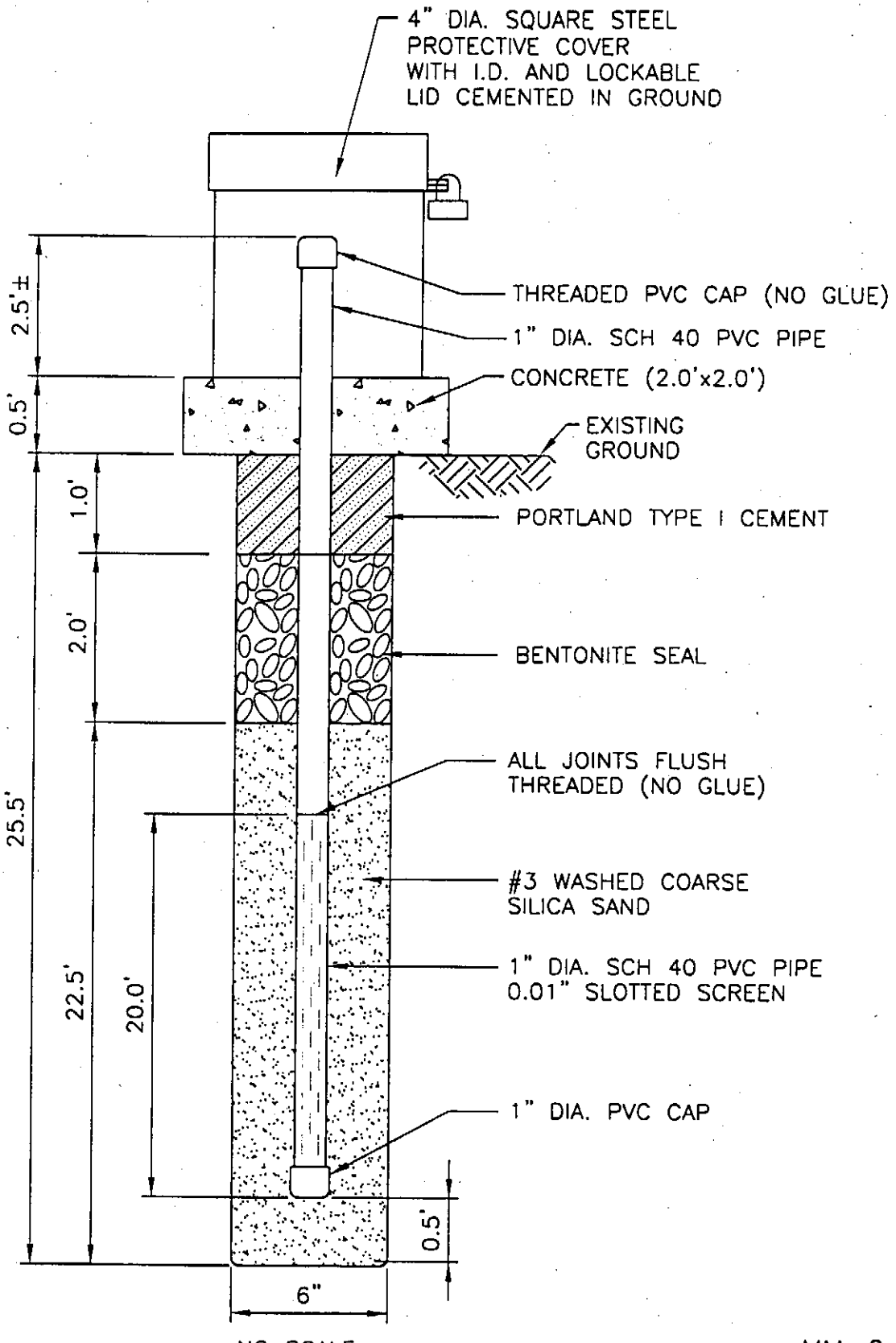
HDR Engineering, Inc. of the Carolinas
Suite 1400
128 S. Tryon Street
Charlotte, NC 28202-5001
(704) 338-1800

OLD SALISBURY ROAD C & D LANDFILL METHANE MONITORING PROBE DETAIL

Date 9/1999

Figure 5

P:\WINSLCD\METH-F5.DWG



NO SCALE

MM-6

HDR Engineering, Inc. of the Carolinas
Suite 1400
128 S. Tryon Street
Charlotte, NC 28202-5001
(704) 338-1800

OLD SALISBURY ROAD C & D LANDFILL METHANE MONITORING PROBE DETAIL

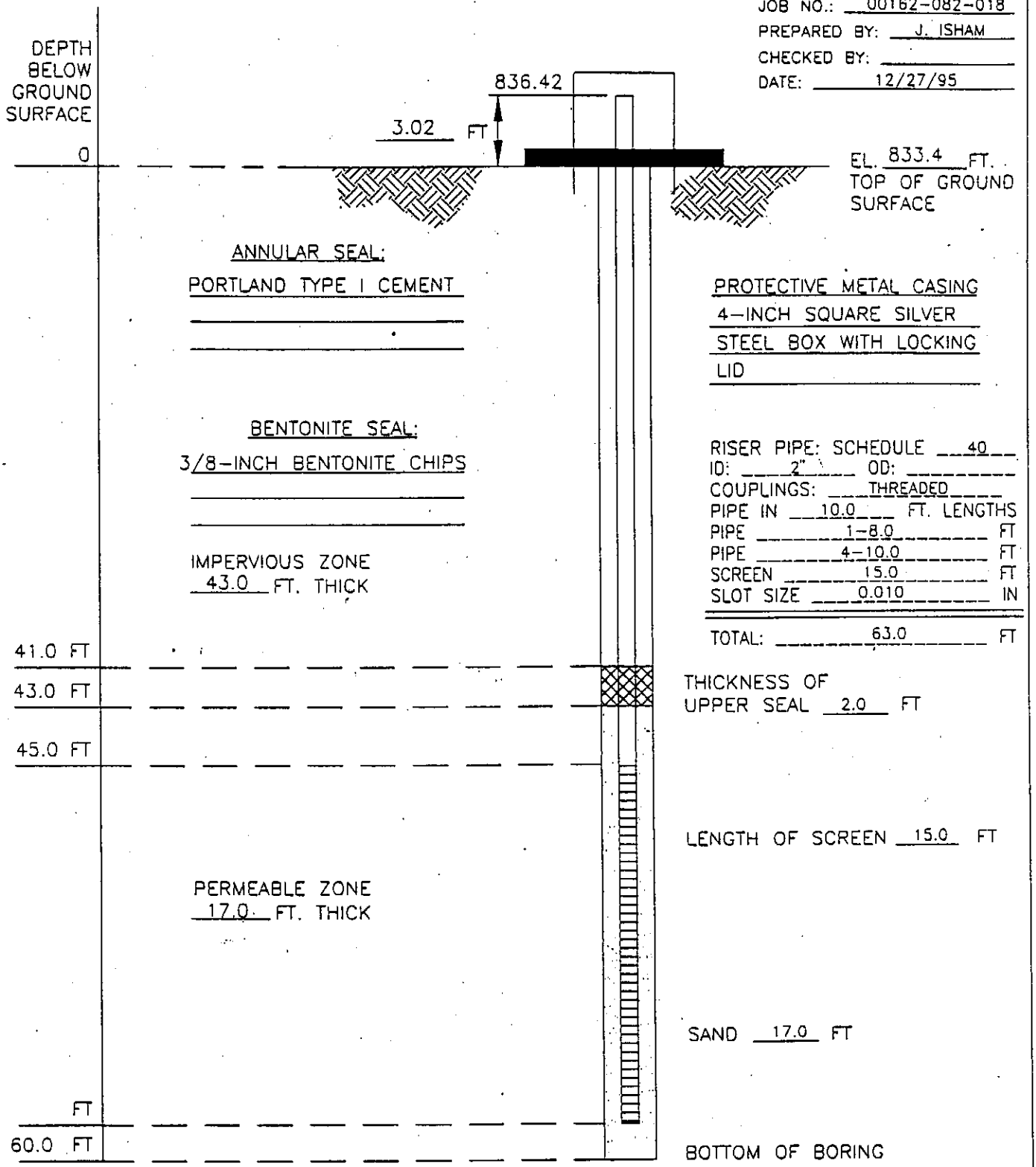
Date 9/1999

Figure 6

P:\WINSLCD\METH-F6.DWG

MONITORING WELL INSTALLATION DIAGRAM

LOCATION: WINSTON-SALEM C&D
WELL NO.: MW-1R
BORING NO.:
JOB NO.: 00162-082-018
PREPARED BY: J. ISHAM
CHECKED BY:
DATE: 12/27/95



REMARKS: ALL MEASUREMENTS TO THE NEAREST 0.1 FT.

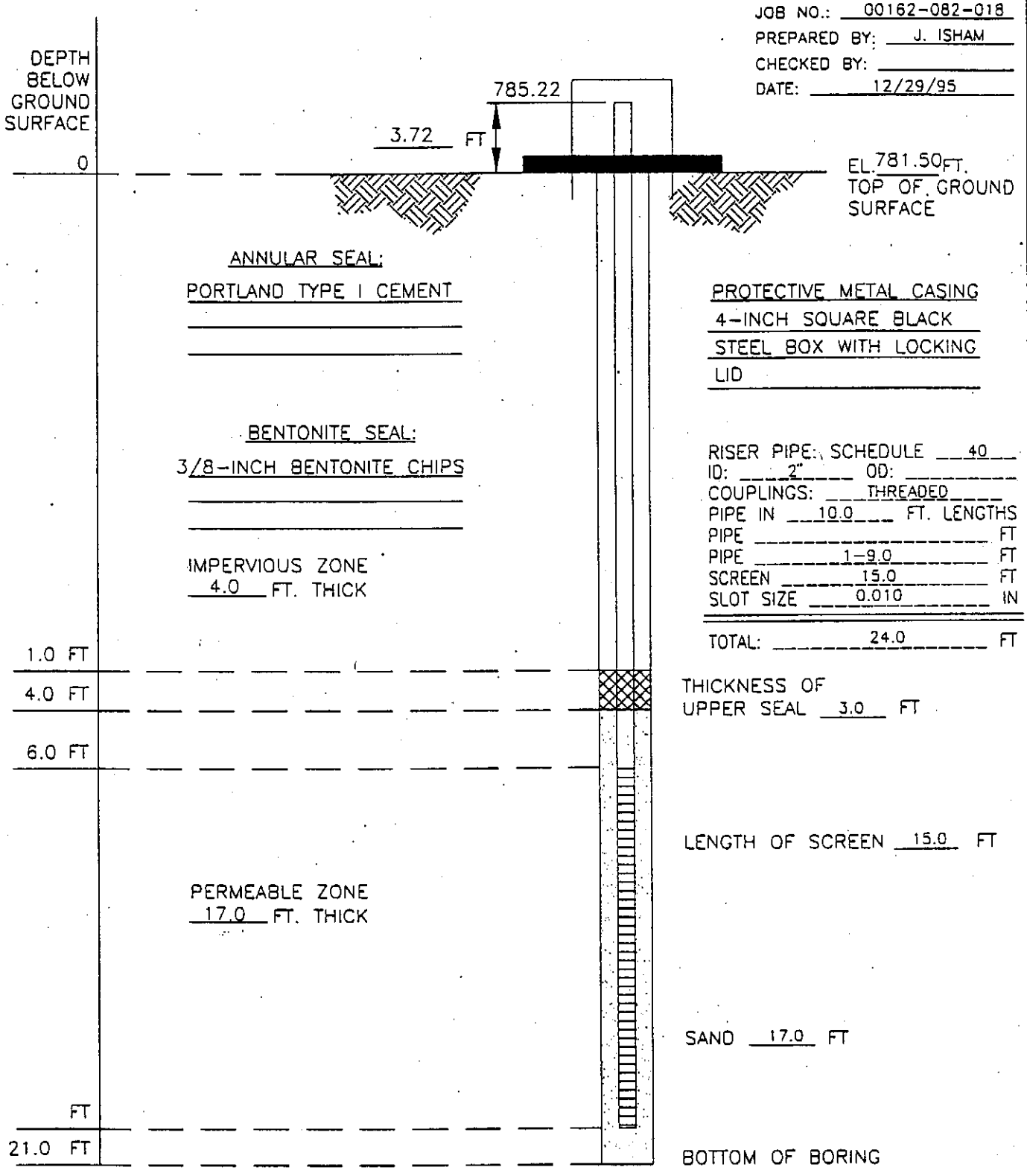
HDR

HDR Engineering, Inc.

FILENAME: MONITOR

MONITORING WELL INSTALLATION DIAGRAM

LOCATION: WINSTON-SALEM C&O
WELL NO.: MW-2R
BORING NO.:
JOB NO.: 00162-082-018
PREPARED BY: J. ISHAM
CHECKED BY:
DATE: 12/29/95



RISER PIPE: SCHEDULE 40
ID: 2" OD:
COUPLINGS: THREADED
PIPE IN 10.0 FT. LENGTHS
PIPE FT
PIPE 1-9.0 FT
SCREEN 15.0 FT
SLOT SIZE 0.010 IN
TOTAL: 24.0 FT

REMARKS: ALL MEASUREMENTS TO THE NEAREST 0.1 FT.

HDR

HDR Engineering, Inc.

FILENAME: MONITOR

Project No: 00162-090-018

Project: Winston-Salem C&D Landfill

Client: City of Winston-Salem

Location: Old Salisbury Road

Geologist Log B-3R (MW-3R)

Ground Elevation: 772.9' MSL

Geologist: John R. Isham, PG.

HDR

SUBSURFACE PROFILE				SAMPLE						
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery	Shear Strength blows/ft 20 40 60 80	Well Data	Remarks
0		Ground Surface	0							
		RESIDUUM Dark to medium brown, micaceous silty clayey sand, slightly plastic, slightly moist, organics mixed, rooted.	773 / 1 / 772							
1–2										
3–4		***CLAYEY SAND (SC)*** Orange-brown to tan, micaceous clayey sand, fine to medium-grained, some quartz granules, slightly plastic, moist.								Portland Type I Cement with 3% Bentonite
5–6				1		8	40%			
7			7 / 766							
8–9										3/8-inch Bentonite Chips
10–11		***SANDY CLAY (CL)*** Gray, soft, plastic, micaceous, mottled with orange-brown iron oxide staining, medium to coarse-grained quartz grains, very moist.		2		5	40%			Old Creek Deposits
12–14										
15–16				3		8	40%			
17			17.5 / 755							
18–19										Granitic Saprolite
20										

Drilled By: Engineering Tectonics, PA.

Drill Method: 4.25-inch ID HSA

Drill Date: July 7, 1999

HDR Engineering, Inc. of the Carolinas
128 S. Tryon Street
Suite 1400
Charlotte, NC. 28202

Hole Size 8-inch Diameter

Top-of-Casing 776.6' MSL

Project No: 00162-090-018

Project: Winston-Salem C&D Landfill

Client: City of Winston-Salem

Location: Old Salisbury Road

Geologist Log B-3R (MW-3R)

Ground Elevation: 772.9' MSL

Geologist: John R. Isham, PG.

HDR

SUBSURFACE PROFILE				SAMPLE						
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery	Shear Strength blows/ft (20 40 60 80)	Well Data	Remarks
21				4		9	50%			
22		***SILTY SAND (SM)*** Gray, white, and black, micaceous, medium-dense, fine to medium-grained, mottled with iron oxide staining, weak mineral alignment, very moist.								2-inch Diameter SCH 40 PVC 0.010-inch Slots
23										
24										
25										
26				5		18	50%			
27			27 / 746							
		End of Borehole								
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										

Drilled By: Engineering Tectonics, PA.

Drill Method: 4.25-inch ID HSA

Drill Date: July 7, 1999

HDR Engineering, Inc. of the Carolinas
128 S. Tryon Street
Suite 1400
Charlotte, NC. 28202

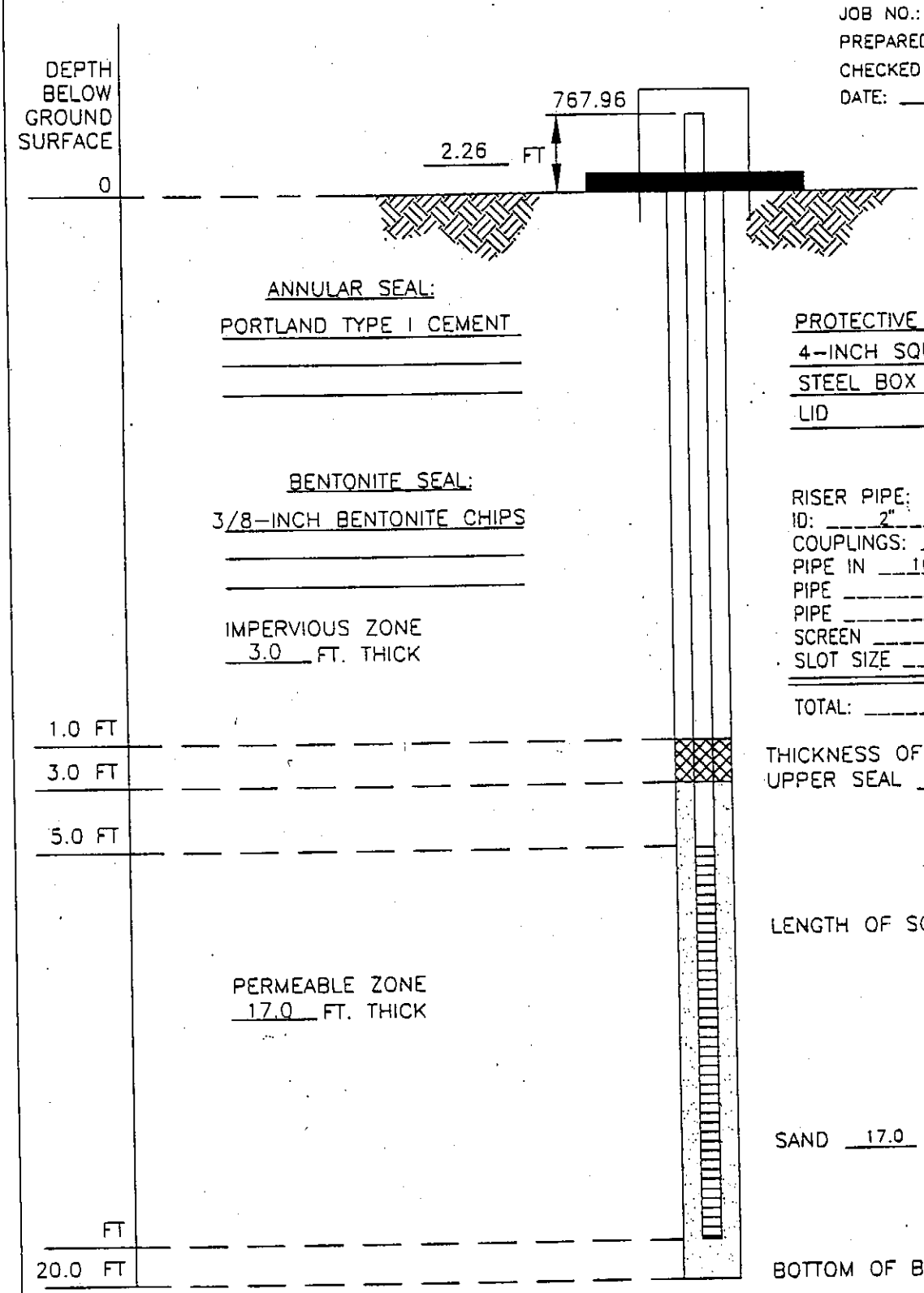
Hole Size 8-inch Diameter

Top-of-Casing 776.6' MSL

Sheet: 2 of 2

MONITORING WELL INSTALLATION DIAGRAM

LOCATION: WINSTON-SALEM C&D
WELL NO.: MW-4R
BORING NO.:
JOB NO.: 00162-082-018
PREPARED BY: J. ISHAM
CHECKED BY:
DATE: 12/28/95



PROTECTIVE METAL CASING
4-INCH SQUARE BLACK STEEL BOX WITH LOCKING LID

RISER PIPE: SCHEDULE 40
ID: 2" OD:
COUPLINGS: THREADED
PIPE IN 10.0 FT. LENGTHS
PIPE 1-7.5 FT
PIPE FT
SCREEN 15.0 FT
SLOT SIZE 0.010 IN

TOTAL: 22.5 FT

THICKNESS OF UPPER SEAL 2.0 FT

LENGTH OF SCREEN 15.0 FT

SAND 17.0 FT

BOTTOM OF BORING

REMARKS: ALL MEASUREMENTS TO THE NEAREST 0.1 FT.

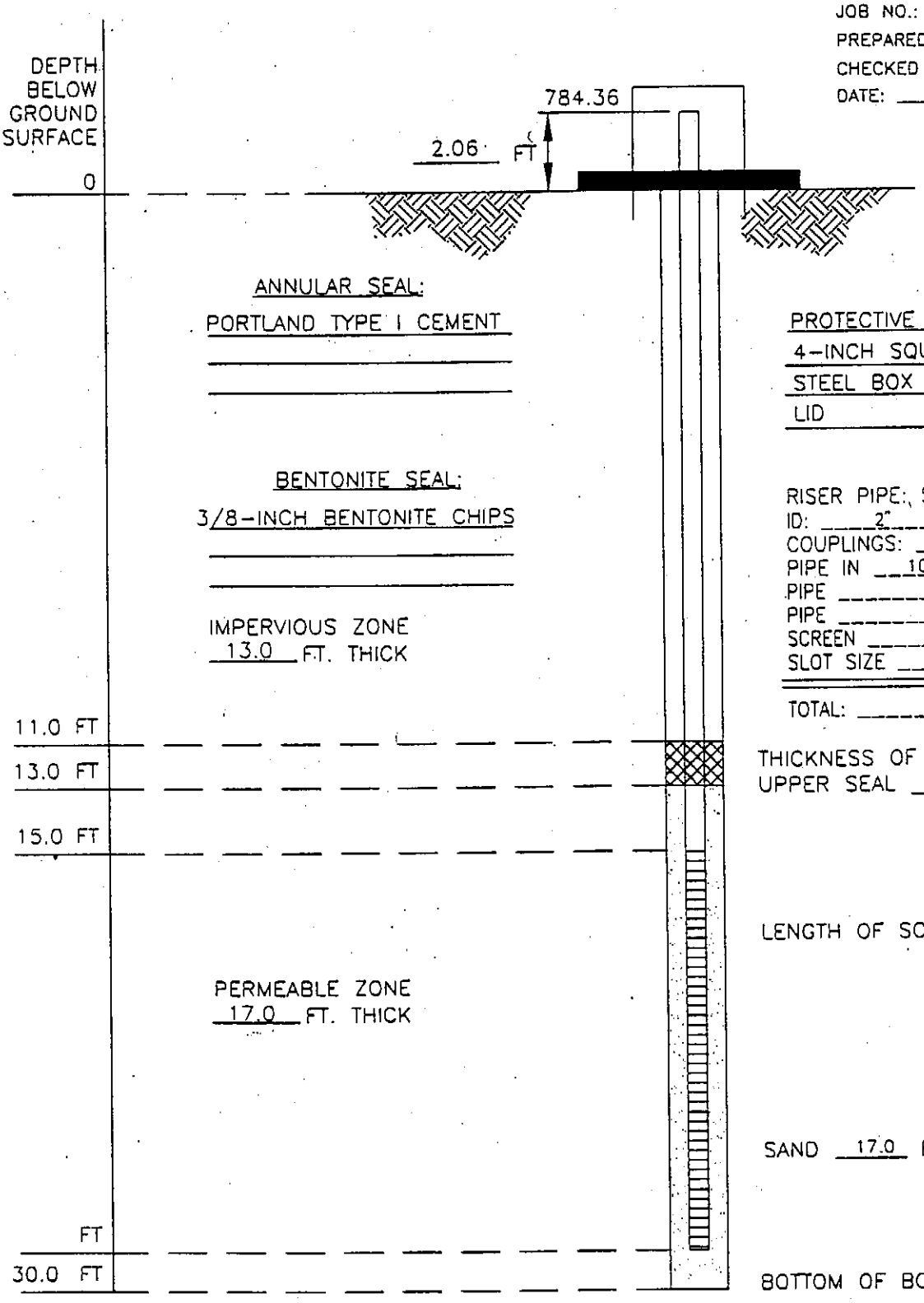
HDR

HDR Engineering, Inc.

FILENAME: MONITOR

MONITORING WELL INSTALLATION DIAGRAM

LOCATION: WINSTON-SALEM C&D
WELL NO.: MW-5R
BORING NO.:
JOB NO.: 00162-082-018
PREPARED BY: J. ISHAM
CHECKED BY:
DATE: 12/29/95



PROTECTIVE METAL CASING
4-INCH SQUARE BLACK STEEL BOX WITH LOCKING LID

RISER PIPE: SCHEDULE 40
ID: 2" OD:
COUPLINGS: THREADED
PIPE IN 10.0 FT. LENGTHS
PIPE 1-7.5 FT
PIPE 1-10.0 FT
SCREEN 15.0 FT
SLOT SIZE 0.010 IN
TOTAL: 32.5 FT

THICKNESS OF UPPER SEAL 2.0 FT

LENGTH OF SCREEN 15.0 FT

SAND 17.0 FT

BOTTOM OF BORING

REMARKS: ALL MEASUREMENTS TO THE NEAREST 0.1 FT.

HDR

HDR Engineering, Inc.

FILENAME: MONITOR

Project No: 00162-090-018

Project: Winston-Salem C&D Landfill

Client: City of Winston-Salem

Location: Old Salisbury Road

Geologist Log B-6R (MW-6R)

Ground Elevation: 817.8' MSL

Geologist: John R. Isham, PG.

HDR

SUBSURFACE PROFILE				SAMPLE						
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery	Shear Strength blows/ft 20 40 60 80	Well Data	Remarks
		Ground Surface	0							
0		***RESIDUUM*** Tan to light brown sandy loam.	818							
1										
2		***SANDY SILT (ML)*** Orange-brown, micaceous, fine-grained quartz grains, dry.								
3			3.5							
4			814							
5										
6				1		8	60%			
7										
8										
9										
10										Portland Type I Cement with 3% Bentonite
11				2		7	75%			
12		***SILTY SAND (SM)*** Tan to yellow-brown, micaceous, fine to coarse-grained quartz grains, weak mineral alignment (horizontal), iron oxide staining, mottled, dry.								
13										
14										
15										
16				3		8	75%			
17										
18										
19										
20										

Drilled By: Engineering Tectonics, PA.

Drill Method: 4.25-inch ID HSA

Drill Date: July 8, 1999

HDR Engineering, Inc. of the Carolinas
128 S. Tryon Street
Suite 1400
Charlotte, NC. 28202

Hole Size 8-inch Diameter

Top-of-Casing 820.4' MSL

Project No: 00162-090-018

Project: Winston-Salem C&D Landfill

Client: City of Winston-Salem

Location: Old Salisbury Road

Geologist Log B-6R (MW-6R)

Ground Elevation: 817.8' MSL

Geologist: John R. Isham, PG.

HDR

SUBSURFACE PROFILE				SAMPLE						
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery	Shear Strength blows/ft 20 40 60 80	Well Data	Remarks
21		***SILTY SAND (SM)*** Tan to yellow-brown, micaceous, fine to coarse-grained quartz grains, weak mineral alignment (horizontal), iron oxide staining, mottled, dry.		4		12	80%			
22										
23			23 / 795							
24										Granitic Saprolite
25										
26				5		15	75%			
27										
28		***SILTY SAND (SM)*** Same as above, becoming mixed with partially weathered rock lenses, dry.								
29										
30										Portland Type I Cement with 3% Bentonite
31				6		27	75%			
32										
33										
34		***SILTY SAND w/ GRAVEL*** White, to light gray and tan, micacous, mottled with iron oxide staining, fine to coarse-grained quartz, feldspar, mica, weak foliation as mineral alighment, dry.	34 / 784							
35										
36				7		48	85%			
37										
38										
39										
40										

Drilled By: Engineering Tectonics, PA.

Drill Method: 4.25-inch ID HSA

Drill Date: July 8, 1999

HDR Engineering, Inc. of the Carolinas
128 S. Tryon Street
Suite 1400
Charlotte, NC. 28202

Hole Size 8-inch Diameter

Top-of-Casing 820.4' MSL

Sheet: 2 of 3

Project No: 00162-090-018

Project: Winston-Salem C&D Landfill

Client: City of Winston-Salem

Location: Old Salisbury Road

Geologist Log B-6R (MW-6R)

Ground Elevation: 817.8' MSL

Geologist: John R. Isham, PG.

HDR

SUBSURFACE PROFILE				SAMPLE						
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery	Shear Strength blows/ft 20 40 60 80	Well Data	Remarks
41		*SILTY SAND w/ GRAVEL* White, to light gray and tan, micacous, mottled with iron oxide staining, fine to coarse-grained quartz, feldspar, mica, weak foliation as mineral alighment, dry.		8		84	75%			3/8-inch Bentonite Chips
42										
43										#2 Silica Sand Pack
44										
45										
46				9		90	10%			
47										
48		*PWR* Gray, white and tan, micacous granite saprolite with partially weathered rock lenses, fine to coarse-grained.	48 770							Partially Weathered Rock @ 48'
49										
50										
51			51 767	10		90	1%			Auger Refusal @ 51'
52					G					
53					G					
54					G					2-inch Diameter SCH 40 PVC 0.010-inch Slots
55		*PWR* As above, visual identification based on cuttings from air hammer drilling from 51 to 60'.		11	G					
56					G					
57					G					
58					G					
59					G					
60			60 758		G					

Drilled By: Engineering Tectonics, PA.

Drill Method: 4.25-inch ID HSA

Drill Date: July 8, 1999

HDR Engineering, Inc. of the Carolinas
128 S. Tryon Street
Suite 1400
Charlotte, NC. 28202

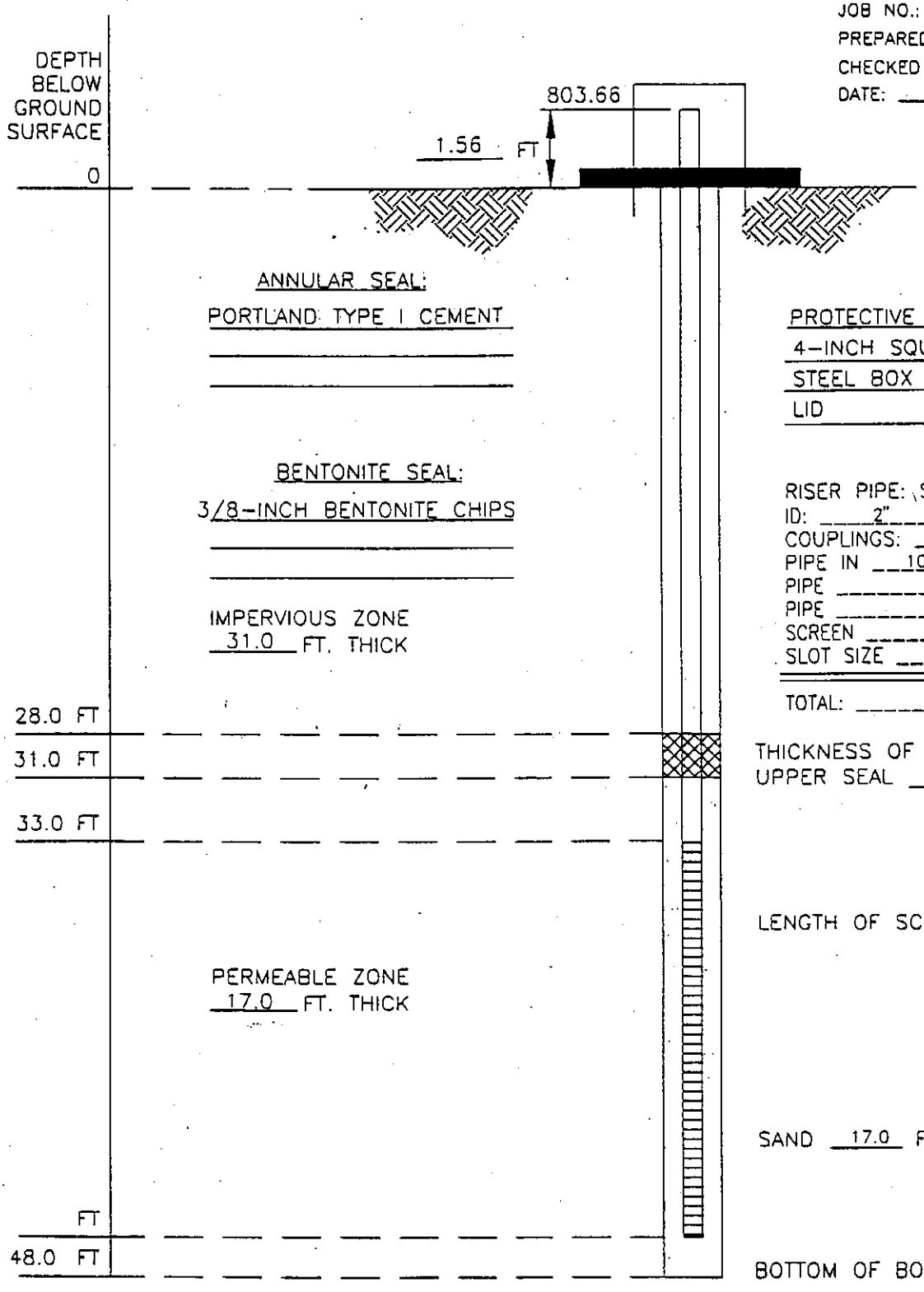
Hole Size 8-inch Diameter

Top-of-Casing 820.4' MSL

Sheet: 3 of 3

MONITORING WELL INSTALLATION DIAGRAM

LOCATION: WINSTON-SALEM C&D
WELL NO.: MW-7
BORING NO.:
JOB NO.: 00162-082-018
PREPARED BY: J. ISHAM
CHECKED BY:
DATE: 12/28/95



PROTECTIVE METAL CASING
4-INCH SQUARE BLACK STEEL BOX WITH LOCKING LID

RISER PIPE: SCHEDULE 40
ID: 2" OD:
COUPLINGS: THREADED
PIPE IN 10.0 FT. LENGTHS
PIPE 1-5.0 FT
PIPE 3-10.0 FT
SCREEN 15.0 FT
SLOT SIZE 0.010 IN

TOTAL: 50.0 FT

THICKNESS OF UPPER SEAL 3.0 FT

LENGTH OF SCREEN 15.0 FT

SAND 17.0 FT

BOTTOM OF BORING

HDR

HDR Engineering, Inc.

REMARKS: ALL MEASUREMENTS TO THE NEAREST 0.1 FT.

FILENAME: MONITOR

Project No: 00162-090-018

Project: Winston-Salem C&D Landfill

Client: City of Winston-Salem

Location: Old Salisbury Road

Geologist Log B-8 (MW-8)

Ground Elevation: 759.8' MSL

Geologist: John R. Isham, PG.

HDR

SUBSURFACE PROFILE				SAMPLE						
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery	Shear Strength blows/ft 20 40 60 80	Well Data	Remarks
0		Ground Surface	0							
		TOPSOIL Brown silty sandy loam, rooted, organic-rich.	760 / 1							
1			759							
2		*SANDY SILT (ML)* Tan to yellow-brown.								
3		*CLAYEY SAND (SC)* Yellow-brown to tan, micaceous, fine to coarse-grained quartz grains, mottled with iron oxide staining, very moist.								Portland Type I Cement with 3% Bentonite
4										
5				1		24	80%			
6										
7										
8			8 / 752							3/8-inch Bentonite Chips
9										
10		*SANDY CLAY (CL)* Gray and tan, fine to very coarse-grained quartz grains, iron oxide staining, no mica, plastic, sticky, very moist.								
11				2		12	75%			Old Creek Deposits 8-23.5'
12										
13										
14			14.5 / 745							
15										2-inch Diameter SCH 40 PVC 0.010-inch Slots
16				3		9	100%			
17		*CLAYEY SAND (SC)* Tan to yellow-brown, slightly plastic, fine to coarse-grained quartz grains, no structure, very moist to wet.								
18										
19										
20										

Drilled By: Engineering Tectonics, PA.

Drill Method: 4.25-inch ID HSA

Drill Date: July 7, 1999

HDR Engineering, Inc. of the Carolinas
128 S. Tryon Street
Suite 1400
Charlotte, NC. 28202

Hole Size 8-inch Diameter

Top-of-Casing 762.5' MSL

Sheet: 1 of 2

Project No: 00162-090-018

Project: Winston-Salem C&D Landfill

Client: City of Winston-Salem

Location: Old Salisbury Road

Geologist Log B-8 (MW-8)

Ground Elevation: 759.8' MSL

Geologist: John R. Isham, PG.

HDR

SUBSURFACE PROFILE				SAMPLE						
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery	Shear Strength blows/ft 20 40 60 80	Well Data	Remarks
21			21 / 739	4		14	100%			2-inch Diameter SCH 40 PVC 0.010-inch Slots
22		***CLAYEY GRAVEL (GM)*** Yellow-brown to tan, poorly graded, large angular quartz gravel, limonite staining, very wet.								
23			23.5 / 736							
24		***SILTY SAND (SM)*** Brown, white and tan, micaceous, fine to very coarse-grained quartz grains, weak horizontal mineral alignment, pegmatite zone at base, wet.								Granitic Saprolite @ 23.5'
25										
26				5		14	90%			
27			27 / 733							
		End of Borehole								
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										

Drilled By: Engineering Tectonics, PA.

Drill Method: 4.25-inch ID HSA

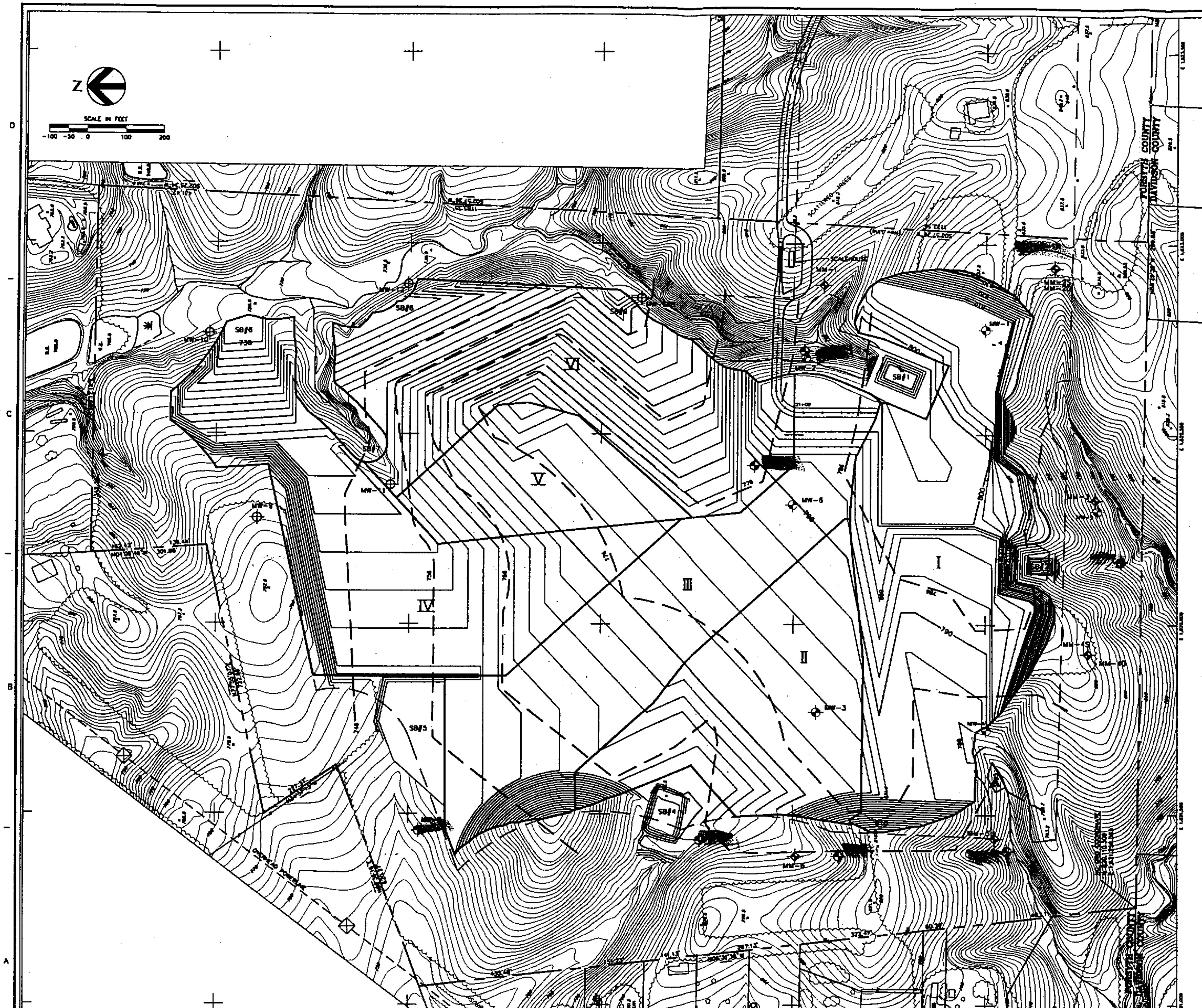
Drill Date: July 7, 1999

HDR Engineering, Inc. of the Carolinas
128 S. Tryon Street
Suite 1400
Charlotte, NC. 28202

Hole Size 8-inch Diameter

Top-of-Casing 762.5' MSL

Sheet: 2 of 2



LEGEND

——780——	PROPOSED CONTOURS
———	EXISTING CONTOURS
— — —	PROPERTY BOUNDARY
— — —	COUNTY LINE
~~	STREAM
— — —	POTENTIAL EXTENT OF WASTE
———	PROPOSED PHASING BOUNDARY
— — —	SEASONAL HIGH GROUND-WATER CONTOURS
⊕	EXISTING GROUND-WATER MONITORING WELL
◈	EXISTING METHANE GAS MONITORING PROBE
⊕	PROPOSED GROUND-WATER MONITORING WELL ("R" - DENOTES REPLACEMENT WELL)
⊕	ABANDONED MONITORING WELLS
⊗	PRIVATE WATER SUPPLY WELL
SB#2	SEDIMENTATION BASIN

NOTES

1. TOPOGRAPHIC INFORMATION PROVIDED BY CARTOGRAPHIC AERIAL MAPPING DATED NOVEMBER 12, 1993.
2. PROPERTY SURVEY TAKEN FROM DATA SUPPLIED BY BRADY SURVEYING, INC. DATED MARCH 15, 1994.
3. THIS DRAWING SHOWS ABANDONED, EXISTING AND PROPOSED MONITORING WELLS, AND METHANE GAS MONITORING PROBES.
4. S - DEPICTS SHALLOW
   D - DEPICTS DEEP

▒ = Monitoring plan well.

HDR

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128 S. Tryon Street
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(704) 338-1800

Issue No.	Description	Date				
C	ADDED METHANE GAS PROBES MM-1 TO MM-5	8/23/99	CRH			
B	ADDED MW-3R, MW-6, AND MW-6R	8/16/99	CRH			
A	ISSUED FOR APPROVAL					

Project Manager: J.C. REXOLING, P.E.
Civil: E.A. WRIGHT, P.E.
Drawn By: J. ORA

OLD SALISBURY ROAD
CONSTRUCTION AND DEMOLITION LANDFILL
PHASE I AND II
CONSTRUCTION PLAN APPLICATION
WINSTON-SALEM NORTH CAROLINA

EXIST. AND PROP. GROUND-WATER MONITORING WELL AND METHANE GAS PROBE LOCATIONS

Date	Project No.	Dwg. No.	Issue
APRIL 1999	0162-090-018	C-5	C
Scale: 1"=100'			