CUMMINGS RITER CONSULTANTS, INC.

April 26, 2002
Project No. 93126.50

Mr. Stephen B. Myers
New Jersey Department of Environmental Protection
401 East State Street, Fifth Floor
Post Office Box 432
Trenton, NJ 08625

RE: TRANSMITTAL - PROGRESS REPORT, PHASE IIA ACTIVITIES
GROUNDWATER REMEDIAL INVESTIGATION
ISRA CASE NO. E86070 - BLOOMFIELD, NEW JERSEY

Dear Mr. Myers:

On behalf of Viacom Inc., enclosed are three copies of the Progress Report for Phase IIA Activities at the former Westinghouse Electric Corporation facility located in Bloomfield, New Jersey. In accordance with New Jersey Department of Environmental Protection requirements, only one copy contains the laboratory data packages. The compact disk in Appendix F contains the laboratory data reports (non-radiological). The radiological laboratory data reports are provided as a separate paper copy. Electronic data will be submitted under separate cover.

If you have any questions regarding this report, please contact us at (412) 373-5240.

Respectfully submitted,
Cummings/Riter Consultants, Inc.

Kenneth J. Bird, C.I.H.
Vice President

MJV/KJB/dmw
Enclosures

pc: Mr. Mark Roberts – U.S. Nuclear Regulatory Commission (with radiological data)
Mr. Richard Smith – Viacom Inc.
Mr. James Moran – Viacom Inc. (without laboratory data)
Mr. William Wall – Viacom Inc. (without enclosures)
Mr. Don Varner – Advanced Environmental Solutions (without laboratory data)

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CUMMINGS RITER CONSULTANTS, INC.

PROGRESS REPORT
GROUNDWATER REMEDIAL INVESTIGATION
PHASE IIA ACTIVITIES
ISRA CASE NO. E86070
FORMER WESTINGHOUSE BLOOMFIELD FACILITY
BLOOMFIELD, NEW JERSEY

PREPARED FOR:
VIACOM INC.
11 STANWIX STREET
PITTSBURGH, PA 15222

PROJECT NO. 93126.60/06
APRIL 26, 2002

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ISRA CASE NO. E86070
FORMER WESTINGHOUSE BLOOMFIELD FACILITY
BLOOMFIELD, NEW JERSEY

1.0 INTRODUCTION

On behalf of Viacom Inc. (Viacom), Cummings/Riter Consultants, Inc. (Cummings/Riter) has completed Phase IIA activities as part of the Groundwater Remedial Investigation at the former Westinghouse Electric Corporation (Westinghouse) facility located in Bloomfield, New Jersey. The investigation was conducted in accordance with the "Groundwater Remedial Investigation Work Plan - Phase II Investigation" (Work Plan) (Cummings/Riter, 2001), as revised based on comments received from the New Jersey Department of Environmental Protection (NJDEP) and the *New Jersey Field Sampling Procedures Manual* (FSPM; NJDEP, 1992). The Phase IIA Activities included the following tasks:

- Task 1 - Aquifer Characteristic Testing,
- Task 2 - Drilling/Monitoring Well Installation,
- Task 3 - Monitoring Well Abandonment, and
- Task 4 - Groundwater Sampling and Analysis.

The objective of the Phase IIA Activities was to obtain hydrogeological data for the previously identified groundwater units at the site, provide additional delineation (both horizontally and vertically) of potentially impacted groundwater at the site, and assist in selection of monitoring well locations and analytes to be analyzed during future sampling events. This Progress Report includes a summary of the field investigation activities, an evaluation of the analytical results and proposed Phase IIB tasks and schedule.

2.0 BACKGROUND

The background information for the Bloomfield site was previously presented in the Groundwater Remedial Investigation (GRI) Report (Cummings/Riter, 1996) and GRI Report, Addendum No. 1 (Cummings/Riter, 2000).

2.1 SITE DESCRIPTION

The Bloomfield site is approximately 14 acres and was formerly comprised of 11 primary buildings which were constructed between 1907 and 1922. All of the buildings, including the former powerhouse, have been razed. The surrounding area (within 1,000 feet of the property) is a mixture of residential, commercial, and industrial properties. The adjacent properties are classified as follows:

- North - residential (across MacArthur Avenue) and commercial,
- East - manufacturing facility,
- West - commuter rail line, and
- South - manufacturing facility.

Approximately 75 percent of the facility is covered by impervious surfaces (i.e., asphalt and concrete). Surface water is collected via a storm sewer system and eventually discharged into the Second River. Soils, geological, and hydrogeological information is summarized in the "Groundwater Remedial Action Work Plan" (Cummings/Riter, 1994a) previously submitted to the NJDEP. Chemicals used during plant operation and the areas of use were provided to the NJDEP in the "Summary Report" (BCM, 1992a).

2.2 PHYSICAL SETTING

A detailed description of the physical setting (including physiography, topography, regional and local geology, and hydrogeology) for the site area is presented in Section 4.0 of the GRI Report.

2.3 SUMMARY OF PREVIOUS INVESTIGATIONS

A detailed description of previous groundwater investigations for the site is presented in Section 2.0 of the GRI Report and GRI Report, Addendum No.1. No additional major groundwater investigations have taken place at the site other than the current investigation described in this report.

3.0 SUMMARY OF FIELD ACTIVITIES

3.1 AQUIFER CHARACTERISTIC TESTING

Aquifer characteristic testing was performed to provide site-specific data for use in future contaminant fate and transport modeling. Aquifer characteristic testing in the form of slug tests was performed at each existing site monitoring well location, except Monitoring Wells DTW-1R, GTW-1, HOW-1, HOW-2, HOW-3, PW-1, and PW-3, to develop site-specific hydraulic conductivity (K) values. Slug testing was not performed in Monitoring Wells GTW-1, DTW-1R, and HOW-1 through HOW-3 because these wells monitor the perched groundwater zone which is of limited extent at the site; Well PW-1 is the on-site recovery well which at the time of testing was equipped with a pump, wiring, and piping making it inaccessible for slug testing; and Well PW-3 was damaged by building demolition activities and was inaccessible for slug testing due to the presence of an inoperable pump which was wedged in the well. Slug testing activities were performed in accordance with the Work Plan which describes the specific procedures to be used during aquifer testing.

Cummings/Riter and Advanced Environmental Solutions (AES) personnel performed rising and falling head slug tests at each monitoring well location from November 5 through 7, 2001. AES prepared a report summarizing the field activities and findings of the aquifer testing, which is provided as Appendix A to this report.

3.2 DRILLING/MONITORING WELL INSTALLATION

Six bedrock monitoring wells (MW-4A, MW-9A, MW-15A, MW-15B, P-9, and P-1D) were drilled and installed to further delineate groundwater potentially impacted by volatile organic compounds (VOCs), select metals (including arsenic, cadmium, chromium, lead, and mercury), and radiological parameters (including gross alpha, gross beta, radium-226/228, and total uranium). Additionally, a replacement well for Well PW-3 (PW-3R) was also drilled and installed as part of this investigation. Well PW-3 formerly served as a groundwater recovery well, and was damaged during building demolition activities. The abandonment of Well PW-3 is discussed below. A site location map is provided as Figure 1 and shows the locations of the recently installed wells. The rationale for each monitoring well location is summarized in the Work Plan.

The borings for the proposed (and replacement) monitoring well(s) were advanced into bedrock using air-rotary drilling techniques employing a six-inch diameter downhole percussion bit. The borehole was advanced until encountering the water-bearing zone at the approximate target depth.

The boring for Monitoring Well P-1D (installed to vertically delineate groundwater impacts detected in the deep bedrock groundwater zone) was also advanced using air-rotary drilling. However, a 10-inch diameter percussion bit was used to a depth of 380 feet below ground surface (bgs) where a six-inch inside diameter (I.D.) steel casing was installed in the boring. The annular space between the borehole and the six-inch steel casing was grouted using a cement-bentonite mixture via the tremie method. The grout was permitted to cure a minimum of 24 hours prior to advancing the boring below the bottom of the casing. In addition, standing water in the casing was evacuated and the borehole was flushed with potable water prior to advancing the boring. A six-inch diameter percussion bit was used to advance the boring below the casing to a depth of 522 feet bgs. Boring logs are provided in Appendix B.

Well yield testing, geophysical logging, and packer testing were performed to determine the depth of appropriate water-bearing zones in the new monitoring wells. During drilling, the bottom 20 feet of each borehole were typically tested (at five-foot intervals) for yield by injecting air through the drill stem and into the borehole for a period of approximately 10 to 15 minutes. The volume of water produced by the wells was measured by diverting water from the borehole into a single channel which was then collected in a calibrated container. The volume of water was estimated using the time-volume method.

Borehole geophysical logs were obtained from Monitoring Wells P-1D and P-9 to aid in stratigraphic correlation and for use as additional input for well screen interval selection. The following geophysical techniques were used:

- Natural gamma,
- Caliper,

- Single point resistance,
- Spontaneous potential, and
- Temperature.

Sonic logging was originally proposed for inclusion in the suite of geophysical logs. However, due to mechanical problems the sonic tool was not operational and could not be used. Aqua Terra Geophysical, Inc. of Bellport, New York was retained to provide borehole geophysical logging services. Specific water-bearing zones could not be identified by drilling observations, yield testing, or geophysical logging at Monitoring Well P-1D. Therefore, pump-out packer testing was also performed at this location.

A straddle packer (with a ten-foot communication interval) was assembled and lowered into Boring P-1D. The assembly included an upper and lower packer (each approximately four feet long), a two-inch steel pipe (which was perforated between the packers), and a submersible pump. A pressure transducer and Hermit 3000® datalogger were used to monitor the zone below the lower packer and a water level meter was used to monitor the zone above the upper packer to ensure that the packers were not leaking.

Geophysical logging at Boring P-1D indicated a temperature change at 430 feet bgs, while possible fractures were observed at 423.5 feet and 426 feet bgs on the caliper log. The packers were installed to straddle this zone and inflated to isolate and test a possible water-bearing zone at a depth of 422 and 432 feet bgs. Once the packers were inflated, a Grundfos Redi-Flo 2® submersible pump was used to evacuate the water from the isolated zone. The water level inside the steel pipe was monitored to determine if the isolated zone was producing water. This process was repeated several times to ensure that water was being produced from this zone. Once it was determined that the zone was producing water, packer testing was stopped and the packer assembly was removed and disassembled. Monitoring Well P-1D was then installed in the borehole with the well screen installed at a depth of 422 and 432 feet bgs. A description of packer testing methods and data is provided below.

After installing and inflating the straddle packer assembly, an initial water level was measured in the zone above the upper packer and an initial pressure reading was measured (from the datalogger) for the zone below the lower packer. The submersible

pump was lowered into the steel pipe, which was in communication with the isolated zone, and water was evacuated at a rate of approximately one gallon per minute. The water level in the zone above the upper packer, the pressure below the lower packer, and the pump discharge rate were continuously monitored during pumping to ensure that the packers were correctly seated and water was not leaking into or out of the isolated zone. Pumping was discontinued when the water level inside the steel pipe was near the level of the pump intake and a recovery test was performed. The water level inside the steel pipe was observed to recover at a rate of 0.1 foot in approximately 14 seconds (or 0.4 foot per minute). Recovery rates were measured several times with similar results. Pumping and measurement of recovery rates were conducted several times to ensure that the isolated zone was producing water. The water level above the upper packer and the pressure below the lower packer remained relatively constant throughout packer testing, indicating the packers were correctly seated and water was not leaking into the isolated zone.

Monitoring wells were constructed using two-inch I.D., threaded, flush-joint, polyvinyl chloride (PVC) casing and machine cut well screen (0.01-inch slots). Maximum 10-foot screen lengths were used for each well. A two-inch threaded bottom plug and pressure cap were installed at the bottom and top of the monitoring well, respectively. The monitoring wells were completed in accordance with the FSPM. Monitoring wells were completed by installing a locking steel or flush-mount protective casing, set in concrete to protect the wells from damage and surface water infiltration. The surface finish was also installed in accordance with the FSPM. Well installation details are shown on the boring logs provided in Appendix B.

The drilling rig and associated equipment used for well installation were decontaminated at an on-site decontamination pad before and after each well installation using high-pressure steam-cleaning techniques. Monitoring well screen and casing were contained in individual plastic sleeves as provided by the manufacturer and were stored in a clean, dry, on-site location until use.

Wells were developed using a submersible pump attached to dedicated polyethylene tubing or alternating surging and air-lifting techniques. Alternating surging and air-lifting techniques were used at Wells P-1D and P-9 due to the depths of the wells

(432 feet bgs and 359 feet bgs, respectively). Air lifting involved installing one-inch I.D. PVC pipe with a surge block attached to the bottom section of pipe and an approximate one-quarter inch polyethylene air line inserted in the pipe into the monitoring well. After the well was surged, compressed nitrogen gas was introduced through the air line lifting water out of the pipe. The nitrogen gas discharge pressure and a valve connected to the top of the PVC pipe were adjusted to maintain a steady flow of water from the well. The pH, specific conductance, temperature, and turbidity were recorded for each well volume removed. Well development continued until a minimum of five well casing volumes were removed and the discharge water from the well reached stable pH, specific conductance and temperature readings (i.e., plus or minus 10 percent) for three consecutive casing volumes. Field forms, including well development forms, are provided in Appendix C.

Drilling fluids, development water, and decontamination water were collected and temporarily contained on site for disposal through the existing on-site groundwater treatment facility. Soil and drill cuttings were contained and transported to a designated storage area for subsequent distribution on site.

The monitoring wells were drilled and installed by Eichelbergers, Inc. of Mechanicsburg, Pennsylvania, a New Jersey licensed well driller. James M. Stewart, Inc. of Philadelphia, Pennsylvania, a licensed surveyor registered in the state of New Jersey, surveyed the wells. The surveyor located the horizontal position of each well with reference to the New Jersey Coordinate System. The elevation of the top of the protective casing, top of PVC riser, and ground surface for each well were also surveyed to the nearest 0.01 foot by the surveyor. New Jersey Forms A and B were completed for each monitoring well recently installed at the site and were transmitted to the NJDEP under separate cover.

3.3 MONITORING WELL AND FORMER ELEVATOR SHAFT ABANDONMENT

Monitoring Well GTW-1, Recovery Well PW-3, and the elevator shaft in former Building 9 were abandoned as part of this task. Figure 1 shows the locations of the abandoned wells and shaft. Well abandonment reports are included in Appendix D.

Monitoring Well GTW-1 was to be abandoned by overdrilling and backfilling with grout using the tremie method. However, due to access issues (the drilling rig was unable to be set up over the well due to the proximity of power lines), overdrilling could not be performed. The surface casing was removed manually and the well was tremie grouted to the ground surface in accordance with the NJDEP FSPM and NJDEP Bureau of Water Allocation (BWA) procedures. Well abandonment forms are included in Appendix C.

Former Recovery Well PW-3 was damaged during the demolition of nearby buildings. Due to damage in the well, difficulties were encountered during abandonment. The NJDEP requires the removal of all obstructions in a well prior to abandonment. Numerous attempts were made to retrieve the submersible pump that was wedged in Recovery Well PW-3. Additionally, a video inspection was attempted to determine the situation in Well PW-3; however, because of the piping and wiring inside the well, the video camera was unable to provide usable information. The piping and wiring were able to be removed, but the pump was not. The pump, however, was pushed to the bottom of the well (within the well sump). Discussions were held with the NJDEP BWA and documentation was provided regarding the abandonment procedures proposed for Recovery Well PW-3. On January 11, 2002, NJDEP BWA (Mr. Michael Miller) provided verbal approval of our proposed abandonment method and concurred that all obstructions were removed from the well. Subsequently, Recovery Well PW-3 was abandoned by tremie grouting the well to the ground surface in accordance with the NJDEP FSPM.

The NJDEP requires former elevator shafts to be abandoned in accordance with NJDEP's well abandonment procedures. The elevator shaft was to be abandoned by pumping out the standing water in the shaft and backfilling with grout to the base of the floor of the tunnel under Arlington Avenue. Discussions were held with the NJDEP BWA and documentation was provided to them regarding the abandonment procedures proposed for the elevator shaft. Verbal approval was granted by the NJDEP on December 12, 2001 and written approval was provided on December 17, 2001 for the proposed abandonment method, and the shaft was abandoned by backfilling with grout to the base of the floor of the tunnel. A copy of the NJDEP BWA approval letter is provided in Appendix D.

3.4 GROUNDWATER SAMPLING AND ANALYSIS

For the Phase IIA program, groundwater samples were collected from the seven new monitoring wells (MW-4A, MW-9A, MW-15A, MW-15B, P-9, P-1D, and PW-3R) and analyzed for VOCs, five metals (arsenic, chromium, cadmium, lead, and mercury), and radiological parameters (gross alpha and beta, radium-226, radium-228, and uranium). For the seven new monitoring wells and Monitoring Wells HOW-1, HOW-2, HOW-3, MW-14, SVE-A and SVE-B (which have 10 feet of well screen), only one groundwater sample was collected from the mid-screen (or water column mid-point if the entire screened interval was not submerged) location.

For some monitoring wells installed prior to 2001 with well screen lengths exceeding 10 feet, discrete depth groundwater samples were collected within the well screen. These groundwater samples were obtained using either low-flow purging and sampling techniques or passive diffusion bag (PDB) sampling techniques.

Groundwater samples were collected at 10-foot intervals within the well screen from wells utilizing low-flow purging and sampling techniques. PDB samplers were used at five-foot intervals within the well screen to collect groundwater samples for VOC analysis as specified in the Work Plan. Table 1 summarizes the methods and the sampling intervals for monitoring wells sampled during Phase IIA.

A total of 21 PDB samplers were installed in six monitoring wells (Wells CC-4S, CC-5DR, MW-1S, MW-2D, MW-6S, and P-3R). Several PDBs were installed in each well as summarized in Table 1. The PDB samplers were installed on January 24, 2002 in accordance with the procedures detailed in the guidance document, *Users Guide for Polyethylene-Based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells* (U.S. Geological Survey, 2001). PDB samplers were obtained from Eon Products of Snellville, Georgia.

The PDB samplers were retrieved and groundwater samples for VOCs were collected on February 18, 2002. The samples were identified by monitoring well location and a letter designation (A, B, C, D, or E). Samples designated with "A" were the shallow interval with "E" being the deepest interval.

Low-flow purging and sampling for analysis of select metals and radiological parameters were conducted from February 19 through 21, 2002 from pre-selected intervals in Monitoring Wells BW-1DR, CC-3D, CC-3RR, HOW-1, MW-11, MW-13, MW-14, MW-15A, MW-15B, MW-3S, P-1D, P-2R, P-5, P-6, P-7, P-8, P-9, PW-1, PW-3R, SVE-A, and SVE-B. A summary of the sampling intervals is provided in Table 1. The deepest interval was purged and sampled first. Upon completion, the bladder pump was slowly raised to the next interval. Care was taken to minimize disturbance of the water column within each well. The letter designation (A, B, or C) was also used for samples collected using low-flow procedures within each well. The letter designation for sample depth was consistent with the letter designation for the PDB samplers. Appendix C includes monitoring well purging forms, water sample collection forms, and chain-of-custody forms.

The water levels were below the interval to be sampled in Monitoring Wells MW-1S (Sample A) and MW-13 (Sample A). Groundwater samples were not collected at these intervals. Also, Well MW-9A did not provide sufficient yield to collect a sample for analysis of some radiochemistry parameters.

In addition, samples from CC-3RR, MW-11 and MW-13 were analyzed for dissolved (filtered) and total radiochemistry parameters. The samples were filtered at the time of sample collection using a 0.45 micron filter. MW-11 was additionally analyzed for uranium isotopes.

Quality control (QC) samples, including field duplicates, matrix spike/matrix spike duplicates, equipment rinsate blanks, and trip blanks, were also collected in accordance with the New Jersey FSPM during the Phase IIA Activities. With the exception of trip blanks (which were sent with each cooler of VOC samples), the QC samples were collected and analyzed at a frequency of 1 per 20 samples.

The duplicates are identified as follows:

- Dup 1 – MW-6S (Sample A),
- Dup 2 – P-2R (Sample C),

- Dup 3 – CC-3D, and
- Dup 4 – HOW-1.

The NJDEP certified laboratories were:

- Accutest Laboratories of Dayton, New Jersey (metals and VOCs);
- Sanford, Cohen & Associates of Montgomery, Alabama (gross alpha, gross beta, radium 226/228); and
- General Engineering Laboratories of Charleston, South Carolina (uranium).

4.0 SUMMARY OF RESULTS

4.1 WATER LEVEL MEASUREMENTS

Synoptic water levels were obtained at each of the site wells, including the seven new monitoring wells, on January 24, 2002 and February 18, 2002. The measured water levels were converted to elevations (in feet above mean sea level [MSL]) to assess groundwater flow directions in the hydrostratigraphic units previously identified at the site. As discussed at the July 12, 2001 meeting between Viacom and NJDEP, the groundwater recovery system was turned off on August 30, 2001 and therefore, these water levels are representative of background (or static) conditions. Table 2 summarizes the results of the recent and historical groundwater level measurements.

Four hydrostratigraphic zones have been identified at the Bloomfield site and include the perched, shallow bedrock, intermediate bedrock, and deep bedrock groundwater zones. The GRI Report, Addendum No. 1 provides a discussion of these zones including a list of the wells that monitor each zone. Six of the new wells installed during the Phase IIA Activities monitor the following zones:

- Shallow bedrock groundwater zone (Wells MW-4A and MW-9A);
- Intermediate bedrock groundwater zone (Wells MW-15A, MW-15B, and PW-3R); and
- Deep bedrock groundwater zone (Well P-9).

It is noted that Monitoring Well P-1D was installed to monitor the first water-bearing zone encountered below the deep bedrock groundwater zone.

The three bedrock groundwater zones are known to be fractured (based on observations during drilling and interpretation of the geophysical logs) and are believed to be hydraulically interconnected. With the exception of the perched zone (which is limited in areal extent), potentiometric maps were constructed for each of the hydrostratigraphic zones for the January 24 and February 18, 2002 water level measurement events. The maps constructed from the water levels measured on January 24, 2002 are presented in this report because they are believed to represent static conditions and are consistent with previous findings. Overall, water elevations are generally consistent between the two

measurement events, however, several water levels measured during the February event are inconsistent with past results. These levels may be affected by the current drought conditions in the site area. A third planned groundwater level measurement event was not performed during Phase IIA.

For the shallow bedrock groundwater zone, a groundwater "high" is observed in the general vicinity and parallel to Arlington Avenue. Based on the available historic data points, this was not previously observed in the area. Two new monitoring wells (MW-9A and MW-4A) provided further delineation. Horizontal groundwater gradient in the shallow bedrock unit east of Arlington Avenue is east-southeast and northwest of Arlington Avenue. It is noted that groundwater levels in this area (Monitoring Wells CC-3RR, CC-5A, MW-1S, MW-11, and MW-13) are 4.73 to 12.05 feet lower (when comparing the most recent water levels to the July 12, 2001 event) than have historically been observed in this area. This observance may be related to the current drought conditions in the site area. The groundwater high does not mimic surface topography as expected. Based on the topography of the site, the high would be expected to the east along the Bloomfield site/Hartz property line boundary. Figure 2 is the potentiometric map for the shallow bedrock groundwater unit, as measured on January 24, 2002.

Horizontal groundwater gradient in the intermediate bedrock groundwater zone is to the east and southeast as has been observed during previous monitoring events. New Monitoring Wells MW-15A and MW-15B are upgradient, intermediate zone wells. Figure 3 presents the potentiometric map for the intermediate zone. It is noted that monitoring wells used in the construction of this map have screened interval elevations ranging from 10 to 62 feet MSL (similar to the map presented in the GRI Report Addendum No. 1).

Flow in the deep bedrock groundwater zone is to the east and southeast, consistent with past monitoring events. New Monitoring Well P-9 represents an upgradient, deep zone well. Figure 4 presents the January 24, 2002 potentiometric map for the deep zone. Copies of the NJDEP Contour Map Reporting Forms are provided with Figures 2 through 4.

The deep zone groundwater elevations exceed the intermediate zone groundwater elevations across the southern portion of the site. Thus, in the southern area an upward vertical hydraulic gradient exists between the deep and intermediate bedrock zones. Elsewhere, a downward vertical hydraulic gradient was observed between the shallow and intermediate zones and between the intermediate and deep zones.

Monitoring Well P-1D has a screened elevation of -278 to -288 feet MSL which is approximately 70 to 110 feet deeper than the screened elevations of the wells that monitor the deep bedrock groundwater zone. The groundwater elevation measured in Well P-1D on February 18, 2002 was 119.35 feet MSL, which is approximately two feet higher than the groundwater elevations measured in the wells monitoring the deep bedrock groundwater zone. This finding indicates that an upward vertical hydraulic gradient may exist between the groundwater monitored by Well P-1D and the deep bedrock groundwater zone.

4.2 AQUIFER CHARACTERISTIC TEST DATA

Appendix A provides the findings of the slug tests. The table below summarizes the range of rising head test hydraulic conductivity values for each bedrock zone.

RANGE OF HYDRAULIC CONDUCTIVITY VALUES BY BEDROCK ZONE		
Bedrock Zone	**Range of Confined Solutions (feet/day)**	**Range of Unconfined Solutions (feet/day)**
Shallow	3.827 - 296.26	3.507 - 100.643
Intermediate	0.000187 - 20.795	0.000187 - 33.226
Deep	0.1968 - 25.943	0.179 - 18.922

The aquifer slug test findings are summarized as follows:

- The estimated bedrock hydraulic conductivity values are variable, indicating the fractured bedrock is heterogeneous.
- The shallow bedrock zone had the highest measured hydraulic conductivities, which ranged up to 296.26 feet/day.
- The range of hydraulic conductivity values was greatest in the intermediate bedrock zone, which also had the lowest measured hydraulic conductivity value of 0.00187 feet/day.

- The deep bedrock interval had the narrowest range of hydraulic conductivities.

4.3 SAMPLE INTERVAL SELECTION RESULTS

As previously discussed, low-flow purging and sampling techniques and PDB samplers were used to sample wells with screen intervals exceeding 10 feet in length during Phase IIA Activities to help select sample intervals from which future groundwater samples will be collected and to identify stratification in monitoring wells with a screen length greater than 10 feet. Table 7 presents a summary of the intervals sampled during Phase IIA Activities and the intervals selected for future sampling programs. The future sample intervals were selected based on the highest VOC, metals, and radiological concentrations reported in each well for the most recent sampling event.

Variations in analytical parameters with depth (stratification) within each well screen interval were considered significant if concentrations varied by more than 10 percent. Stratification of VOCs, metals, and radiological concentrations was observed in some monitoring wells. For VOCs, Wells CC-4S, MW-1S, and MW-6S did not show evidence of stratification, as total VOC concentrations from the sampled intervals were within 10 percent of each other. However, total VOC concentrations from different intervals from Wells CC-5DR, MW-2D, and P-3R indicated stratification with the highest concentrations typically observed in the shallowest intervals.

Based on the analytical results from this investigation, no obvious stratification pattern of metals and radiological parameters is apparent. Stratification was not observed for the metals or the radiological parameters in Wells BW-1DR, CC-3RR, CC-3D, MW-3S, P-2R, P-5, and P-7. Stratification of specific metals was observed in Wells PW-1 (arsenic) and P-8 (arsenic and lead), while stratification of radiological parameters was observed in Wells MW-11 and P-6.

Appendix E provides summary tables for individual monitoring wells where multiple samples were collected to determine appropriate sample intervals.

4.4 GROUNDWATER ANALYTICAL RESULTS

As previously discussed, a total of 42 groundwater samples were collected from select intervals at 25 monitoring wells (including seven newly installed wells) utilizing low-flow purging and sampling techniques, bailers, and/or PDB samplers. The water samples were analyzed for VOCs, select metals, and radiological parameters. The methods are listed in Appendix F.

Hard copies of the laboratory data sheets and laboratory data packages on compact disk are provided in Appendix F. Copies of chain-of-custody forms are provided in Appendix C. Electronic deliverables per N.J.A.C. 7:26E-3.13 were provided to the NJDEP separately.

Analytical results for water samples collected from more than one interval within a monitoring well were evaluated. The sample interval with the highest concentrations (multiple intervals) were transposed into Tables 3 through 6. These tables present summaries of analytical results for the four hydrostratigraphic units at the site (perched, shallow, intermediate, and deep bedrock groundwater zones, respectively).

Analytical results for VOCs and metals were compared to the NJDEP Groundwater Quality Standards as defined in N.J.A.C. Title 7, Chapter 9. The VOC and metals standard used was the higher of practical quantitation limits and NJDEP groundwater quality criteria. Analytical results for radiological parameters were compared to the Federal and New Jersey State Primary Drinking Water Standards. Figures 2 through 4 show the parameters that exceeded corresponding regulatory standards for the wells sampled during Phase IIA Activities for the shallow, intermediate, and deep bedrock groundwater zones, respectively. The analytical results of the groundwater sampling program are discussed in this section by hydrostratigraphic zone.

4.4.1 Perched Groundwater Zone

Groundwater samples from monitoring wells installed in the perched zone were not analyzed for VOCs during Phase IIA Activities. However, three monitoring wells installed in this zone (HOW-1, HOW-2, and HOW-3) were sampled for metals and radiological parameters. Metal concentrations were generally consistent with historical results. The exceedances of NJDEP metals criteria are as follows:

- Monitoring Well HOW-1
  - Arsenic (57.3 micrograms per liter [µg/l])
- Monitoring Well HOW-2
  - Arsenic (401 µg/l)
  - Cadmium (14.9 µg/l)
  - Lead (38.4 µg/l)
- Monitoring Well HOW-3
  - Arsenic (34.9 µg/l)
  - Chromium (2,570 µg/l)
  - Lead (210 µg/l)
  - Mercury (10.5 µg/l)

Wells HOW-1, HOW-2 and SVE-A reported concentrations and activity of radiological parameters similar to past results (below NJDEP criteria). Well SVE-B showed a decreased gross alpha activity to below NJDEP criteria. Well HOW-3 displayed an increased gross alpha activity.

4.4.2 Shallow Bedrock Groundwater Zone

During Phase IIA Activities, groundwater from four wells that monitor the shallow bedrock groundwater zone was sampled for VOCs (Wells CC-4S, MW-1S, MW-4A, and MW-9A). Five wells (Wells CC-3RR, MW-4A, MW-9A, MW-11, and MW-13) were analyzed for metals and radiological parameters. Analytical parameters exceeding the NJDEP criteria for the shallow bedrock groundwater monitoring wells are highlighted in Table 4 and shown on Figure 2.

VOC analytical results for Wells CC-4S and MW-1S were generally lower than the analytical results detected in samples collected from these wells in 2000. With the exception of acetone (6 µg/l), there were no VOCs reported above method detection limits from the sample collected at Well MW-4A. The sample collected from Well MW-9A reported chloroform (8 µg/l), tetrachloroethene (PCE- 5 µg/l), and trichloroethene (TCE 5.4 µg/l) above corresponding regulatory standard.

The analytical results for metals from samples collected at Wells CC-3RR, MW-11, and MW-13 were generally consistent with or lower than historical results from these wells.

Concentrations of metals were not detected above method detection limits, except for mercury reported in samples collected from Monitoring Wells CC-3RR, MW-4A, MW-9A, MW-11, and MW-13 and arsenic in the sample collected from Well MW-11. No metal concentrations exceeded NJDEP groundwater criteria.

Shallow Wells CC-3RR, CC-5A and MW-2 indicated radiological activity and uranium concentrations consistent with historical results. Well MW-11 reported decreased radiological activities and uranium concentrations when compared to historical concentrations. A decrease in gross alpha activity was observed in Well MW-13 with an increase in uranium concentration.

4.4.3 Intermediate Bedrock Groundwater Zone

During Phase IIA Activities, six wells that monitor the intermediate bedrock groundwater zone were sampled and analyzed for VOCs (CC-5DR, MW-2D, MW-6S, MW-15A, MW-15B, and PW-3R) while eight monitoring wells (BW-1DR, CC-3D, MW-3S, MW-14, MW-15A, MW-15B, PW-1, and PW-3R) were sampled and analyzed for metals and radiological parameters. Analytical parameters exceeding the NJDEP criteria for the intermediate bedrock groundwater monitoring wells are summarized in Table 5 and shown on Figure 3.

VOC analytical results for water samples collected from Monitoring Wells CC-5DR, MW-2D, and MW-6S were generally consistent with the analytical results detected in samples collected from these wells in 2000. Analytical results for VOCs from samples collected at Wells MW-15A and MW-15B detected carbon tetrachloride (4.8J and 3.3 µg/l, respectively) and TCE (505 and 182 µg/l, respectively) above corresponding regulatory standard. The groundwater sample collected from Well PW-3R detected six VOCs (carbon tetrachloride 8.9 µg/l; chloroform 10.3 µg/l; 1,1-dichloroethane 128 µg/l; 1,1-dichloroethene 17.9 µg/l; tetrachloroethene [PCE] 4.8 µg/l; and TCE 1,220 µg/l) at concentrations above corresponding regulatory standards (Figure 3).

The analytical results for metals from samples collected at Monitoring Wells BW-1DR, CC-3D, MW-3S, MW-14, and PW-1 were generally lower than concentrations reported in historical samples. The only metals exceedance was reported in the sample from

PW-1 for arsenic at a concentration of 11.3 µg/l. Concentrations of metals were not reported above method detection limits (except for low detections of mercury) in the three new intermediate bedrock zone wells (MW-15A, MW-15B, and PW-3R).

The radiological activities and concentrations in Wells BW-1DR, CC-5SR, MW-3S, MW-14 and PW-1 are consistent with historical results and are below USEPA and NJDEP criteria. Well CC-3D radiological results are consistent with historical results with gross alpha activity exceeding 15 pCi/L. Radiological activities and uranium concentrations in new Well PW-3R are consistent with historical analytical results for the well it replaced (PW-3).

4.4.4 Deep Bedrock Groundwater Zone

During Phase IIA Activities, three wells that monitor the deep bedrock groundwater zone were sampled and analyzed for VOCs (P-3R, P-1D, and P-9) while seven monitoring wells (P-1D, P-2R, P-5, P-6, P-7, P-8, and P-9) were sampled and analyzed for metals and radiological parameters. It is noted that although Monitoring Well P-1D was installed in the first water-bearing zone below the deep bedrock groundwater zone, it is included in this discussion. Monitoring Wells P-1D and P-9 are new wells. Analytical parameters exceeding the NJDEP criteria for the deep bedrock groundwater monitoring wells are highlighted in Table 6 and shown on Figure 4.

VOC analytical results for Well P-3R were generally consistent with the results reported in samples collected from this well in 2000. However, while the concentration of TCE decreased (from 1,300 to 890 µg/l), the concentration of *cis*-1,2-dichloroethene (*cis*-1,2-DCE) increased (from 20 to 226 µg/l). This data, along with the presence of other TCE degradation products, indicates that the reductive dechlorination process may be occurring at the Bloomfield site.

Analytical results for VOCs from the sample collected at Well P-1D detected the following parameters (and concentrations) above the corresponding regulatory standard:

- Chloroform (8.3 µg/l),
- 1,1-Dichloroethane (64 µg/l),
- PCE (10.4 µg/l),

- TCE (3,420 µg/l),
- Vinyl chloride (126 µg/l), and
- *cis*-1,2-DCE (271 µg/l).

Analytical results for VOCs from the sample collected at Well P-9 detected TCE at a concentration of 450 µg/l which exceeds its corresponding regulatory standard. There were no other VOC exceedances detected from the groundwater samples collected from Wells P-1D and P-9.

The analytical results for metals from samples collected at Monitoring Wells P-2R, P-5, P-6, P-7, and P-8 were generally consistent with historical samples from these wells. The only metal exceedances were reported for arsenic in the samples from Well P-5 at a concentration of 8.3 µg/l and from Well P-8 (11 µg/l). Lead was also reported in the sample from Well P-8 at a concentration of 84.4 µg/l which exceeds its corresponding regulatory standard. Metals were not reported above method detection limits (except for low detections of mercury in Wells P-1D and P-9).

The radiological results of samples from deep Wells P-5 and P-8 are consistent with previous results. Well P-6 exhibited a decrease in gross alpha and radium-226 activities compared to historical activities. Upgradient Well P-9 did not report radiological activities or uranium concentrations above NJDEP criteria. Groundwater samples from Wells P-2R and P-8 reported an increase in uranium concentrations. A decrease in gross alpha activity was measured in Well P-7. New Well P-1D did not contain radiological parameters above NJDEP criteria.

4.4.5 Dissolved and Isotopic Uranium Results

In addition to total radiological analyses, samples from three monitoring wells (MW-11, MW-13, and CC-3RR) were filtered for radiological analyses. The results of the total and filtered radiochemistry parameters are summarized in Table 4. Also, samples from Well MW-11 were analyzed for uranium isotopic analyses. Well MW-11 has historically had the highest concentrations of uranium.

Generally, the dissolved radiological analyses are consistent with the unfiltered samples with a few exceptions. The dissolved uranium concentration (56.9 µg/l) in Well MW-13 was less than total uranium concentrations (320 µg/l). In Wells CC-3RR and MW-11,

dissolved uranium concentrations were within 10 percent of total uranium concentrations. The dissolved gross alpha activity (175 pCi/L) reported in samples collected from Well MW-11 were higher than the total activity (79.5 pCi/L).

An evaluation of the relative activities of the uranium isotopes indicates that the uranium in MW-11 is a natural form and not the result of a uranium enrichment or other process. Natural uranium (U) contains approximately 0.7 percent U-235, 99.3 percent U-238 and a very small fraction is U-234, by weight. When converted to units of radioactive decay (activity), naturally occurring uranium contains approximately 2 to 3 percent of U-235. The remaining activity is approximately equally divided between U-238 and U-234, two progeny of the uranium decay chain in secular equilibrium. An increasing concentration of U-235 indicates enriched uranium.

As shown in Appendix E, Sample MW-11A has a total U activity of 197.7 pCi/L. Using the range of 2 to 3 percent, natural uranium would be expected to have an activity of 4 to 5.9 pCi/L for U-235 in MW-11A. The reported activity is 5.01 pCi/L, which is in the expected range. The remaining activity (192.7 pCi/L) is approximately equally divided between U-234 and U-238. The groundwater results concerning this form of U are consistent with soil results previously submitted to the NJDEP and NRC (Building 7 sewer remedial action). The isotopic uranium results are provided in Appendix E.

5.0 FINDINGS

Based on the results of Phase IIA Activities, the following conclusions can be made:

- Horizontal groundwater gradient directions are generally consistent with past findings. One exception is that the recently installed wells in the shallow bedrock groundwater zone (Wells MW-4A and MW-9A) have identified the presence and location of a possible groundwater high in the vicinity of Arlington Avenue. It is uncertain what effect the current drought emergency has on these water levels.

- Slug testing conducted in site monitoring wells has provided an estimated range of hydraulic conductivity values to be used during future modeling efforts for the three primary bedrock groundwater zones (shallow, intermediate, and deep).

- Stratification of VOCs, metals, and radiological parameters is not prevalent, but was observed to occur in some monitoring wells. Intervals for future groundwater samples were selected based on the highest concentrations (of specific parameters) observed in the wells where samples were collected from multiple zones.

- Groundwater analytical results for VOCs, metals, and radiological parameters from samples collected at site wells are generally consistent with past results. Several wells show a decrease in metals concentrations which may be the result of using low-flow purging and sampling techniques allowing more representative groundwater samples to be collected.

- Analytical results from samples collected from wells monitoring the shallow bedrock groundwater zone indicate that VOC concentrations were generally lower than previous results while metal concentrations were generally consistent (and possibly somewhat lower) than previous results.

- The majority of existing wells sampled displayed consistent or decreased radiological activities and concentrations. Uranium concentrations have decreased in Well MW-11, but increased in MW-13.

- Analytical results from samples collected from wells monitoring the intermediate bedrock groundwater zone indicate that impacted

groundwater was detected at locations upgradient from the site (Monitoring Wells MW-15A and MW-15B). Samples from these monitoring wells indicate that concentrations of TCE and carbon tetrachloride in groundwater entering the site exceed regulatory standards. Concentrations of select metals and radiological parameters from the upgradient locations do not exceed regulatory standards.

- Analytical results from water samples collected from wells monitoring the deep bedrock groundwater zone indicate that impacted groundwater was detected at locations upgradient from the site (Monitoring Well P-9). The sample from this monitoring well indicates that the concentration of TCE in groundwater entering the site exceeds regulatory standards. Concentrations of select metals and radiological parameters from Monitoring Well P-9 do not exceed regulatory standards.

- The well with the highest concentrations of uranium in 2000 (MW-11) was analyzed for uranium isotopes. The results indicate that the uranium is a natural form and not a form of processed uranium.

- Analytical results from the sample collected from the monitoring well installed in the first water-bearing zone encountered below the deep bedrock groundwater zone (Well P-1D) indicate that impacted groundwater is present. Six VOC parameters, including chloroform; 1,1-dichloroethene; PCE; TCE; vinyl chloride; and *cis*-1,2-DCE were detected at concentrations above corresponding regulatory standards. No metals or radiological exceedances were detected in Well P-1D.

6.0 PROPOSED PHASE IIB ACTIVITIES AND SCHEDULE

6.1 PROPOSED PHASE IIB ACTIVITIES

Results of Phase IIA Activities have provided additional groundwater delineation which were used to design the Phase IIB Activities. During Phase IIB Activities, additional water levels will be measured from site wells to confirm groundwater flow directions and gradients. Groundwater samples will be collected from specified monitoring wells and analyzed for VOCs, select metals, radiological parameters, and natural attenuation parameters (as described in the Work Plan). Phase IIB parameters have been modified based upon historical results. Table 8 summarizes the proposed Phase IIB analytical program.

Groundwater samples from Well HOW-1 have not detected VOCs in previous samples. Therefore, with the exception of Well HOW-1, groundwater samples for VOC analysis will be collected from each of the existing monitoring wells at the site. However, based on a review of recent and historical analytical results (since 1995), groundwater samples from several monitoring wells have not detected metals or radiological parameters above appropriate NJDEP regulatory limits. As part of the Phase IIB sampling program, Viacom is proposing a reduction in the number of parameters and monitoring wells (Table 8).

For metals, historical groundwater samples collected from a total of 22 monitoring wells have not observed exceedances of appropriate regulatory limits. These wells include: BW-1A, BW-1SR, CC-1R, CC-1D, CC-4R, CC-4D, CC-5A, CC-5SR, CC-5DR, MW-1D, MW-2S, MW-2D, MW-6S, MW-6D, MW-7D, MW-8D, MW-9, MW-14, MW-14S, P-1R, P2-R, and P-7. As part of Phase IIB Activities, Viacom is proposing that samples from only nine of these wells (in addition to the remaining wells) be collected for metals analysis, as shown in Table 8.

Additionally, groundwater samples from a total of 18 monitoring wells have indicated impacts from radiological parameters. These wells include: BW-1DR, CC-2R, CC-3D, CC-3RR, CC-4R, HOW-2, HOW-3, MW-10, MW-11, MW-13, MW-14, P-2R, P-3R,

P-5, P-6, P-7, P-8, and SVE-B. As part of Phase IIB Activities, Viacom is proposing that radiological parameters be analyzed for groundwater samples collected from these wells.

Newer wells (Wells MW-4A, MW-4S, MW-5, MW-6D, MW-6S, MW-7D, MW-8D, MW-9, MW-9A, MW-10, MW-12, MW-13, MW-14S, MW-15A, MW-15B, PW-3R, P-1D, and P-9) (less than three sampling events since 1995) are included in the Phase IIB program regardless of previous analytical results.

PDB samplers and low-flow sampling procedures will be used to evaluate VOC stratification in monitoring wells (with screen lengths exceeding 10 feet) that were not evaluated during Phase IIA Activities. These analytical results will be used to identify specific zones to be monitored during future sampling events.

Wells with greater than 10 feet of screen not sampled in Phase IIA will have interval samples collected for metals and radiochemistry parameters. Intervals will be sampled using low-flow techniques. Table 9 summarizes the wells, parameters, and specified intervals to be included in the Phase IIB sampling program.

After the completion of the Phase IIB sampling program, specific sample intervals will be identified for each well to be monitored during future sampling events (as was done for the wells sampled during the Phase IIA program). Furthermore, it is understood that the groundwater samples analyzed for VOCs may be collected from a different zone than samples analyzed for metals or radiological parameters.

In addition, three shallow wells along Arlington Avenue (MW-1S, MW-11, and CC-3RR) will be analyzed for fluoride. Fluoride data will be used in evaluating the possibility of a broken (or leaking) potable water line potentially causing the shallow groundwater high observed under Arlington Avenue.

The analytical methods will be the same as followed for the Phase IIA samples. Fluoride will be analyzed via U.S. Environmental Protection Agency Method 300.

6.2 SCHEDULE

Viacom is proposing to perform Phase IIB tasks in July 2002. This assumes NJDEP approval of Phase IIB is received by June 20, 2002. Following evaluation of the data, a remedial investigation report will be provided to NJDEP by October 11, 2002.

Based upon historical and new Phase IIB data, Viacom believes that sufficient information will be available to complete the remedial investigation and delineate the horizontal and vertical extent of impacted groundwater related to the site, identify migration pathways, and evaluate remedial action alternatives. It is understood that additional monitoring wells may be required for delineation at Well P-1D. A remedial action work plan will be submitted 45 days after approval of the remedial investigation report. The remedial action work plan will address:

- Deed notice,
- Classification Exception Area, and
- Groundwater remedial action, if any.

The remedial action work plan will be prepared in accordance with N.J.A.C. 7:26E-6.2.

TABLES

TABLE 1
SUMMARY OF SAMPLED WELLS AND INTERVALS
GROUNDWATER REMEDIAL INVESTIGATION- PHASE IIA
BLOOMFIELD, NEW JERSEY

Well ID	Sample Interval(s)[a] (ft., TOR)	Analytical Parameters
I. Low-Flow Purging and Sampling		
BW-1DR	117.5, 127.5	Select Metals, Radiological
CC-3D	115.5, 125.5	Select Metals, Radiological
CC-3RR	51.5, 61.5	Select Metals, Radiological
HOW-1	WC mid-point[b]	Select Metals, Radiological
HOW-2	Bailer[c]	Select Metals, Radiological
HOW-3	Bailer	Select Metals, Radiological
MW-11	29.5, 39.5	Select Metals, Radiological
MW-13	45.5	Select Metals, Radiological
MW-14	80	Select Metals, Radiological
MW-15A	69	VOCs, Select Metals, Radiological
MW-15B	105	VOCs, Select Metals, Radiological
MW-3S	53.5, 63.5	Select Metals, Radiological
MW-4A	Bailer	VOCs, Select Metals, Radiological
MW-9A	Bailer	VOCs, Select Metals, Radiological
P-1D	430	VOCs, Select Metals, Radiological
P-2R	326.5, 336.5, 347.5	Select Metals, Radiological
P-5	355.5, 365.5	Select Metals, Radiological
P-6	339.5, 349.5, 358.5	Select Metals, Radiological
P-7	294.5, 304.5, 313.5	Select Metals, Radiological
P-8	300.5, 310.5, 319.5	Select Metals, Radiological
P-9	354	VOCs, Select Metals, Radiological
PW-1	51, 61, 69	Select Metals, Radiological
PW-3R	70	VOCs, Select Metals, Radiological
SVE-A[d]	WC mid-point	Select Metals, Radiological
SVE-B[d]	WC mid-point	Select Metals, Radiological
II. Passive Diffusion Bag Samplers		
CC-4S	22.5, 27.5	VOCs
CC-5DR	112.5, 117.5, 122.5, 127.5	VOCs
MW-1S	24.5, 29.5, 34.5, 39.5	VOCs
MW-2D	106.5, 111.5, 116.5, 121.5	VOCs
MW-6S	47.5, 52.5	VOCs
P-3R	312.5, 317.5, 322.5, 327.5, 332.5	VOCs

NOTES:

(a) Sample Interval(s) indicate the approximate depth(s) at which the pump intake will be set during purging and sampling. Monitoring well screened intervals are provided in Table 2 of the Groundwater Remedial Investigation Work Plan (Cummings/Riter, August 2001).

(b) WC mid-point indicates that the sample interval for these wells will be the mid-point of the water column (between the water level and the bottom of the well).

(c) Bailer indicates that the well was purged and sampled with a disposable bailer due to limited water in the well.

(d) Wells SVE-A and SVE-B were not included in Table 2 of the Groundwater Remediation Investigation Work Plan. Well SVE-A is screened from 7.7 to 12.7 feet below ground surface, Well SVE-B is screened from 4 to 14 feet below ground surface.

CUMMINGS RITER

TABLE 2
GROUNDWATER ELEVATIONS
BLOOMFIELD, NEW JERSEY FACILITY

Well Number	Top of Riser (TOR) Elevation (feet MSL) [a]	3/22/99		4/28/99		1/11/00	
		Water Level (feet, TOR)	Water Elevation (feet, MSL)	Water Level (feet, TOR)	Water Elevation (feet, MSL)	Water Level (feet, TOR)	Water Elevation (feet, MSL)
BW-1A	139.89	19.42	120.47	20.35	119.54	22.20	117.69
BW-1SR	139.94	17.68	122.26	19.71	120.23	18.65	121.29
BW-1DR	139.67	17.77 [b]	121.90	18.81	120.86	18.73	120.94
CC-1R	160.36	38.04	122.32	39.89	120.47	39.43	120.93
CC-1D	158.28	37.08	121.20	38.41	119.87	38.16	120.12
CC-2R	161.80	37.26	124.54	37.70	124.10	38.80	123.00
CC-2D	161.66	39.13	122.53	40.29	121.37	40.15	121.51
CC-3RR	152.24	16.08	136.16	20.87	131.37	19.08	133.16
CC-3D	152.62	31.10	121.52	32.51	120.11	32.19	120.43
CC-4S	142.42	15.21	127.21	17.71	124.71	16.65	125.77
CC-4R	144.30	22.77	121.53	21.35	122.95	23.05	121.25
CC-4D	142.28	20.51	121.77	23.20	119.08	21.25	121.03
CC-5A	158.45	21.41	137.04	29.05	129.40	26.67	131.78
CC-5SR	159.45	32.75	126.70	35.02	124.43	34.90	124.55
CC-5DR	159.17	37.36	121.81	38.61	120.56	38.33	120.84
DTW-1R	140.32	15.52 [b]	124.80	17.01	123.31	16.02	124.30
GTW-1	139.90	18.19	121.71	19.02	120.88	18.94	120.96
HOW-1	140.41	9.28 [b]	131.13	11.14	129.27	10.18	130.23
HOW-2	140.42	12.75 [b]	127.67	13.74	126.68	13.06	127.36
HOW-3	140.63	18.65 [b]	121.98	15.10	125.53	14.78	125.85
MW-1S	152.43	16.05	136.38	21.11	131.32	19.35	133.08
MW-1D	152.04	29.95	122.09	31.32	120.72	31.69	120.35
MW-2S	149.75	24.25	125.50	26.83	122.92	26.23	123.52
MW-2D	149.05	27.78	121.27	27.77	121.28	28.02	121.03
MW-3S	145.75	24.44	121.31	24.57	121.18	24.36	121.39
MW-3D	143.86	22.08	121.78	23.00	120.86	22.82	121.04
MW-4A	137.57	--- [c]	---	---	---	---	---
MW-4S	154.11	---	---	---	---	35.48	118.6
MW-5	147.98	---	---	26.35	121.63	26.37	121.61
MW-6S	140.02	---	---	18.95	121.07	19.30	120.72
MW-6D	139.62	---	---	18.75	120.87	18.61	121.01
MW-7D	150.36	---	---	30.07	120.29	30.91	119.45
MW-8D	147.50	---	---	28.26	119.24	28.17	119.33
MW-9	163.96	---	---	43.63	120.33	43.71	120.25
MW-9A	163.85	---	---	---	---	---	---
MW-10	161.61	---	---	---	---	32.81	128.8
MW-11	153.56	---	---	---	---	18.74	134.8
MW-12	153.22	---	---	---	---	26.13	127.1
MW-13	161.45	---	---	---	---	---	--
MW-14	143.19	---	---	21.30	121.89	21.48	121.71
MW-14S	143.48	---	---	23.25	120.23	22.62	120.86
MW-15A	140.43	---	---	---	---	---	---
MW-15B	140.61	---	---	---	---	---	---
P-1D	145.37	---	---	---	---	---	---
P-1R	143.50	22.47 [d]	121.03	22.32	121.18	22.79	120.71
P-2R	158.37	38.12	120.25	39.07	119.30	38.87	119.50
P-3R	146.27	25.62	120.65	26.07	120.20	26.05	120.22
P-4R	161.30	41.34	119.96	42.19	119.11	42.01	119.29
P-5	160.16	---	---	47.07	113.09	40.95	119.21
P-6	144.98	---	---	25.03	119.95	25.09	119.89
P-7	146.88	---	---	27.48	119.40	27.61	119.27
P-8	140.18	---	---	20.70	119.48	20.59	119.59
P-9	140.55	---	---	---	---	---	---
PW-1	142.78	44.94	97.84	21.58	121.20	21.34	121.44
PW-3	143.21	20.31	122.90	22.12	121.09	22.06	121.15
PW-3R	143.53	---	---	---	---	---	---

CUMMINGS RITER

TABLE 2
GROUNDWATER ELEVATIONS
BLOOMFIELD, NEW JERSEY FACILITY

Well Number	Top of Riser (TOR) Elevation (feet MSL) [a]	8/14/00		9/27/00		7/12/01	
		Water Level (feet, TOR)	Water Elevation (feet, MSL)	Water Level (feet, TOR)	Water Elevation (feet, MSL)	Water Level (feet, TOR)	Water Elevation (feet, MSL)
BW-1A	139.89	20.14	119.75	20.31	119.58	20.41	119.48
BW-1SR	139.94	18.30	121.64	18.91	121.03	19.18	120.76
BW-1DR	139.67	18.46	121.21	18.99	120.68	19.13	120.54
CC-1R	160.36	39.45	120.91	40.03	120.33	39.87	120.49
CC-1D	158.28	37.99	120.29	38.52	119.76	38.35	119.93
CC-2R	161.80	40.91	120.89	41.77	120.03	41.18	120.62
CC-2D	161.66	41.14	120.52	41.59	120.07	41.44	120.22
CC-3RR	152.24	29.70	122.54	21.99	130.25	22.80	129.44
CC-3D	152.62	32.11	120.51	32.65	119.97	32.45	120.17
CC-4S	142.42	16.99	125.43	17.78	124.64	18.53	123.89
CC-4R	144.30	23.12	121.18	23.39	120.91	24.14	120.16
CC-4D	142.28	21.06	121.22	21.56	120.72	21.73	120.55
CC-5A	158.45	28.89	129.56	29.67	128.78	29.55	128.90
CC-5SR	159.45	36.21	123.24	35.29	124.16	35.30	124.15
CC-5DR	159.17	38.36	120.81	38.70	120.47	38.84	120.33
DTW-1R	140.32	17.36	122.96	16.51	123.81	17.44	122.88
GTW-1	139.90	(f)	(f)	19.58	120.32	18.69	121.21
HOW-1	140.41	12.12	128.29	12.66	127.75	13.08	127.33
HOW-2	140.42	13.97	126.45	14.32	126.10	15.14	125.28
HOW-3	140.63	19.71	120.92	19.90	120.73	20.17	120.46
MW-1S	152.43	20.13	132.30	21.74	130.69	21.10	131.33
MW-1D	152.04	31.23	120.81	32.05	119.99	31.88	120.16
MW-2S	149.75	25.66	124.09	26.75	123.00	26.95	122.80
MW-2D	149.05	27.77	121.28	28.28	120.77	28.41	120.64
MW-3S	145.75	24.23	121.52	24.74	121.01	23.02	122.73
MW-3D	143.86	22.68	121.18	23.13	120.73	23.31	120.55
MW-4A	137.57	---	---	---	---	---	---
MW-4S	154.11	33.48	120.63	34.10	120.01	33.85	120.26
MW-5	147.98	23.78	124.20	26.55	121.43	26.63	121.35
MW-6S	140.02	19.08	120.94	19.07	120.95	19.75	120.27
MW-6D	139.62	18.43	121.19	18.92	120.70	19.10	120.52
MW-7D	150.36	29.48	120.88	30.10	120.26	29.74	120.62
MW-8D	147.50	27.37	120.13	28.06	119.44	28.11	119.39
MW-9	163.96	43.05	120.91	43.76	120.20	43.35	120.61
MW-9A	163.85	---	---	---	---	---	---
MW-10	161.61	35.18	126.43	36.16	125.45	35.82	125.79
MW-11	153.56	20.29	133.27	21.93	131.63	21.24	132.32
MW-12	153.22	26.90	126.32	27.85	125.37	27.45	125.77
MW-13	161.45	27.17	134.28	28.87	132.58	28.05	133.40
MW-14	143.19	22.25	120.94	21.49	121.70	21.91	121.28
MW-14S	143.48	22.23	121.25	22.80	120.68	22.92	120.56
MW-15A	140.43	---	---	---	---	---	---
MW-15B	140.61	---	---	---	---	---	---
P-1D	145.37	---	---	---	---	---	---
P-1R	143.50	22.01	121.49	60.45	83.05	23.58	119.92
P-2R	158.37	38.53	119.84	39.08	119.29	38.98	119.39
P-3R	146.27	25.99	120.28	26.47	119.80	26.37	119.90
P-4R	161.30	41.45	119.85	42.15	119.15	42.11	119.19
P-5	160.16	40.56	119.60	40.97	119.19	41.00	119.16
P-6	144.98	24.82	120.16	25.31	119.67	25.15	119.83
P-7	146.88	28.05	118.83	27.63	119.25	27.65	119.23
P-8	140.18	19.80	120.38	20.78	119.40	20.63	119.55
P-9	140.55	---	---	---	---	---	---
PW-1	142.78	NM [e]	NM	23.78	119.00	45.95	96.83
PW-3	143.21	NM	NM	22.31	120.90	22.59	120.62
PW-3R	143.53	---	---	---	---	---	---

CUMMINGS RITER

TABLE 2
GROUNDWATER ELEVATIONS
BLOOMFIELD, NEW JERSEY FACILITY

Well Number	Top of Riser (TOR) Elevation (feet MSL) [a]	1/24/02		2/18/02	
		Water Level (feet, TOR)	Water Elevation (feet, MSL)	Water Level (feet, TOR)	Water Elevation (feet, MSL)
BW-1A	139.89	21.14	118.75	21.29	118.60
BW-1SR	139.94	20.85	119.09	21.08	118.86
BW-1DR	139.67	20.93	118.74	21.10	118.57
CC-1R	160.36	42.68	117.68	42.95	117.41
CC-1D	158.28	40.88	117.40	41.16	117.12
CC-2R	161.80	44.55	117.25	44.44	117.36
CC-2D	161.66	44.45	117.21	44.78	116.88
CC-3RR	152.24	27.29	124.95	27.53	124.71
CC-3D	152.62	35.17	117.45	35.50	117.12
CC-4S	142.42	19.29	123.13	20.05	122.37
CC-4R	144.30	25.16	119.14	23.52	120.78
CC-4D	142.28	23.32	118.96	25.00	117.28
CC-5A	158.45	34.40	124.05	34.35	124.10
CC-5SR	159.45	38.84	120.61	38.95	120.50
CC-5DR	159.17	40.60	118.57	40.78	118.39
DTW-1R	140.32	19.57	120.75	18.78	121.54
GTW-1	139.90	---	---	---	---
HOW-1	140.41	14.10	126.31	14.29	126.12
HOW-2	140.42	15.81	124.61	15.74	124.68
HOW-3	140.63	21.24	119.39	21.53	119.10
MW-1S	152.43	27.46	124.97	27.80	124.63
MW-1D	152.04	34.45	117.59	34.44	117.60
MW-2S	149.75	29.79	119.96	30.04	119.71
MW-2D	149.05	30.56	118.49	30.46	118.59
MW-3S	145.75	26.48	119.27	26.70	119.05
MW-3D	143.86	24.92	118.94	26.82	117.04
MW-4A	137.57	20.12	117.45	20.38	117.19
MW-4S	154.11	36.91	117.20	36.74	117.37
MW-5	147.98	28.85	119.13	29.03	118.95
MW-6S	140.02	20.81	119.21	20.95	119.07
MW-6D	139.62	20.60	119.02	20.78	118.84
MW-7D	150.36	33.20	117.16	33.43	116.93
MW-8D	147.50	30.03	117.47	30.25	117.25
MW-9	163.96	46.80	117.16	47.07	116.89
MW-9A	163.85	47.08	116.77	46.85	117.00
MW-10	161.61	40.44	121.17	40.62	120.99
MW-11	153.56	28.75	124.81	28.99	124.57
MW-12	153.22	32.08	121.14	32.23	120.99
MW-13	161.45	39.99	121.46	40.10	121.35
MW-14	143.19	23.66	119.53	25.00	118.19
MW-14S	143.48	24.54	118.94	24.02	119.46
MW-15A	140.43	21.36	119.07	21.58	118.85
MW-15B	140.61	21.61	119.00	21.82	118.79
P-1D	145.37	74.02	71.35	26.02	119.35
P-1R	143.50	34.77	108.73	29.91	113.59
P-2R	158.37	41.20	117.17	41.37	117.00
P-3R	146.27	28.28	117.99	28.65	117.62
P-4R	161.30	44.27	117.03	44.37	116.93
P-5	160.16	43.09	117.07	43.47	116.69
P-6	144.98	27.09	117.89	27.47	117.51
P-7	146.88	29.50	117.38	28.18	118.70
P-8	140.18	22.64	117.54	22.85	117.33
P-9	140.55	22.61	117.94	22.94	117.61
PW-1	142.78	23.49	119.29	23.72	119.06
PW-3	143.21	---	---	---	---
PW-3R	143.53	24.53	119.00	24.66	118.87

NOTES:

a. All elevations are in feet above mean sea level.
b. Water level measured on 3/23/99.
c. "---" indicates well not yet installed or has been abandoned.
d. Measured from ground surface.
e. "NM" indicates water level was not measured.
f. Obstruction in well - water level could not be measured.

CUMMINGS RITER

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
PERCHED GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	DTW-1R			HOW-1			
		11/95	1/00	8/14/00	11/95	1/00	8/14/00	2/21/02
Volatile Organic Compounds (ug/l)[b]								
Carbon Tetrachloride	2	1.5	1 | 0.6[c]	2	<1	<0.5	< 0.5 | < 0.5	--
Chloroethane	100	<1[d]	<1 | <1	< 1	<1	<1	< 1 | < 1	--
Chloroform	6	3.5	2 | 2	3	<1	<0.5	< 0.5 | < 0.5	--
1,1-Dichloroethane	50	<1	<0.5 | <0.5	< 0.5	<1	<0.5	< 0.5 | < 0.5	--
1,2-Dichloroethane	2	<1	<0.5 | <0.5	< 0.5	<1	<0.5	< 0.5 | < 0.5	--
1,1-Dichloroethene	2	<1	<0.5 | <0.5	< 0.5	<1	<0.5	< 0.5 | < 0.5	--
Methylene Chloride	3	7.1[e]	<1B[f] | <1B	< 1	<1	<1B	< 1 | < 1	--
1,1,1-Trichloroethane	30	<1	<0.5 | <0.5	< 0.5	<1	<0.5	< 0.5 | < 0.5	--
1,1,2-Trichloroethane	3	<1	<0.5 | <0.5	< 0.5	<1	<0.5	< 0.5 | < 0.5	--
1,1,2,2-Tetrachloroethane	1	<1	<0.5 | <0.5	< 0.5	<1	<0.5	< 0.5 | < 0.5	--
Tetrachloroethene	1	<1	<0.5 | <0.5	< 0.5	<1	<0.5	< 0.5 | < 0.5	--
Trichloroethene	1	<1	**2 | 2**	1	<1	<0.5	< 0.5 | < 0.5	--
Vinyl Chloride	5	<1	<1 | <1	< 1	<1	<1	< 1 | < 1	--
1,2-Dichloropropane	1	--[g]	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
2-Butanone	300	--	<5 | <5	< 5	--	<5	< 5 | < 5	--
2-Hexanone	100	--	<5 | <5	< 5	--	<5	< 5 | < 5	--
4-Methyl-2-Pentanone	400	--	<5 | <5	< 5	--	<5	< 5 | < 5	--
Acetone	700	--	<5 | <5	< 5	--	<5	< 5 | < 5	--
Benzene	1	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Bromodichloromethane	1	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Bromoform	4	--	<1 | <1	< 1	--	<1	< 1 | < 1	--
Bromomethane	10	--	<1 | <1	< 1	--	<1	< 1 | < 1	--
Carbon Disulfide	800	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Chlorobenzene	50	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Chloromethane	30	--	<1 | <1	< 1	--	<1	< 1 | < 1	--
Dibromochloromethane	10	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Ethylbenzene	700	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Methyl-t-butyl Ether	70	--	0.5J[h] | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Styrene	100	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Toluene	1000	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Xylenes- Meta & Para	1000[i]	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
Xylenes- Ortho	1000[i]	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
cis-1,2-Dichloroethene	70	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
cis-1,3-Dichloropropene	NA[j]	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
trans-1,2-Dichloroethene	100	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--
trans-1,3-Dichloropropene	NA	--	<0.5 | <0.5	< 0.5	--	<0.5	< 0.5 | < 0.5	--

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
PERCHED GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	DTW-1R			HOW-1			
		11/95	1/00	8/14/00	11/95	1/00	8/14/00	2/21/02
Inorganics (ug/l)								
Antimony	20	<5/<5[k]	-- | --	--	<5/<5	--	-- | --	--
Arsenic	8	<5/<5	<5 | <5	< 5	**9.9/11**	**18**	**48 | 63**	**57.1 | 57.3**
Beryllium	20	<2/<2	-- | --	--	<2/<2	--	-- | --	--
Cadmium	4	<5/<5	<4 | **5**	< 4	<5/<5	**7**	**5 | 6**	<4 | <4
Chromium	100	<10/<10	63 | **390**	100	<10/<10	<5	< 5 | < 5	<10 | <10
Copper	1000	<10/<10	-- | --	--	<10/<10	--	-- | --	--
Lead	10	2.6/<2	<5 | **18**	10	2.6/<2	<5	< 5 | 5	<3 | <3
Mercury	2	<0.3/<0.3	<0.5 | <0.5	< 0.5	<0.3/<0.3	<0.5	< 0.5 | < 0.5	0.27 | 0.39
Nickel	100	<20/<20	-- | --	--	<20/<20	--	-- | --	--
Selenium	50	<5/<5	-- | --	--	<5/<5	--	-- | --	--
Silver	30	<5/<5	-- | --	--	<5/<5	--	-- | --	--
Thallium	10	<5/<5	-- | --	--	<5/<5	--	-- | --	--
Zinc	5000	<50/<50	-- | --	--	60/<50	--	-- | --	--
Radiochemistry								
Gross Alpha (pCi/L)[l]	15	<4	-- | --	<4.88	<5	--	<5.50 | <3.99	< 1.22 | <1.98
Gross Beta (pCi/L)	NA	7.1±2.4	-- | --	9.21±3.67	11±4	--	12.3±4.15 | 15.7±4.28	1.38 ± 0.996 | <1.35
Radium-228 (pCi/L)	5[m]	<1	-- | --	<1.55	<1	--	<1.76 | <2.08	0.466 ± 0.588 | <0.968
Radium-226 (pCi/L)	5[m]	0.18±0.07	-- | --	<0.921	<0.3	--	<0.902 | 0.999±0.475	<0.827 | 4.05±0.260
Total Uranium (ug/L)	30	0.11±0.02	-- | --	1.49±0.0318	<0.05	--	0.376±0.0088|0.327±0.011	0.254±0.0166 | 0.286±0.0186

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
PERCHED GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	HOW-2				HOW-3				SVE-A			SVE-B		
		11/95	1/00	8/14/00	2/21/02	11/95	1/00	8/14/00	2/21/02	1/00	9/28/00	2/21/02	1/00	9/28/00	2/20/02
Volatile Organic Compounds (ug/l)[b]															
Carbon Tetrachloride	2	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	<0.5	0.5 J	--	2	1	--
Chloroethane	100	<1	<1	< 1	--	<1	<1	< 1	--	<1	< 1	--	<1	< 1	--
Chloroform	6	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	0.6	0.7	--	3	2	--
1,1-Dichloroethane	50	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
1,2-Dichloroethane	2	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
1,1-Dichloroethene	2	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Methylene Chloride	3	2B	0.6JB	< 1	--	2.8B	<1B	< 1	--	<1 B	< 1 B	--	<1 B	< 1 B	--
1,1,1-Trichloroethane	30	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
1,1,2-Trichloroethane	3	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
1,1,2,2-Tetrachloroethane	1	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Tetrachloroethene	1	<1	<0.5	< 0.5	--	<1	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Trichloroethene	1	**3.2**	1	1	--	**9**	**9**	**8**	--	**4**	**7**	--	0.7	1	--
Vinyl Chloride	5	<1	<1	< 1	--	<1	<1	< 1	--	<1	< 1	--	<1	< 1	--
1,2-Dichloropropane	1	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
2-Butanone	300	--	<5	< 5	--	--	<5	< 5	--	<5	< 5	--	<5	< 5	--
2-Hexanone	100	--	<5	< 5	--	--	<5	< 5	--	<5	< 5	--	<5	< 5	--
4-Methyl-2-Pentanone	400	--	<5	< 5	--	--	<5	< 5	--	<5	< 5	--	<5	< 5	--
Acetone	700	--	<5	< 5	--	--	<5	< 5	--	<5	< 5	--	11	< 5	--
Benzene	1	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Bromodichloromethane	1	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Bromoform	4	--	<1	< 1	--	--	<1	< 1	--	<1	< 1	--	<1	< 1	--
Bromomethane	10	--	<1	< 1	--	--	<1	< 1	--	<1	< 1	--	<1	< 1	--
Carbon Disulfide	800	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Chlorobenzene	50	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Chloromethane	30	--	<1	< 1	--	--	<1	< 1	--	<1	< 1	--	<1	< 1	--
Dibromochloromethane	10	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Ethylbenzene	700	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Methyl-t-butyl Ether	70	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Styrene	100	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Toluene	1000	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Xylenes- Meta & Para	1000[i]	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
Xylenes- Ortho	1000[i]	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
cis-1,2-Dichloroethene	70	--	<0.5	< 0.5	--	--	0.8	< 0.5	--	<0.5	0.6	--	<0.5	0.9	--
cis-1,3-Dichloropropene	NA[j]	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
trans-1,2-Dichloroethene	100	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--
trans-1,3-Dichloropropene	NA	--	<0.5	< 0.5	--	--	<0.5	< 0.5	--	<0.5	< 0.5	--	<0.5	< 0.5	--

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
PERCHED GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

	NJDEP	HOW-2				HOW-3				SVE-A			SVE-B		
Date:	Groundwater Quality Standard [a]	11/95	1/00	8/14/00	2/21/02	11/95	1/00	8/14/00	2/21/02	1/00	9/28/00	2/21/02	1/00	9/28/00	2/20/02
Inorganics (ug/l)															
Antimony	20	<5/<5	--	--	--	<5/<5	--	--	--	--	--	--	--	--	--
Arsenic	8	**17/14**	**62**	**48**	**401**	<5/<5	**10**	7	**34.9**	5	< 5	<5	**34**	**23**	<5
Beryllium	20	<2/<2	--	--	--	<2/<2	--	--	--	--	--	--	--	--	--
Cadmium	4	<5/<5	**19**	**18**	**14.9**	<5/<5	<10/<10	**7**	<4	<4	**6**	<4	<4	**6**	<4
Chromium	100	<10/<10	8	6	11.2	<10/<10	**460**	**250**	**2570**	69	79	<10	**380**	**480**	<10
Copper	1000	<10/<10	--	--	--	<10/<10	--	--	--	--	--	--	--	--	--
Lead	10	<2/<2	<5	**29**	**38.4**	3.5/<2	<5	**33**	**210**	<5	**26**	<3	<5	**28**	<3
Mercury	2	<0.3/<0.3	0.6	< 0.5	0.53	<0.3/<0.3	**3**	1.5	**10.5**	<0.5	< 0.5	0.21	0.6	0.6	<.20
Nickel	100	<20/<20	--	--	--	<20/<20	--	--	--	--	--	--	--	--	--
Selenium	50	<5/<5	--	--	--	<5/<5	--	--	--	--	--	--	--	--	--
Silver	30	<5/<5	--	--	--	<5/<5	--	--	--	--	--	--	--	--	--
Thallium	10	<5/<5	--	--	--	<5/<5	--	--	--	--	--	--	--	--	--
Zinc	5000	<50/<50	--	--	--	<50/<50	--	--	--	--	--	--	--	--	--
Radiochemistry															
Gross Alpha (pCi/L)[l]	15	<4	--	<4.92	< 34.1	<5	--	12.7±4.74	**162 ± 88.4**	--	14±3.91	<2.94	--	**22.8±6.84**	11.3±6.28
Gross Beta (pCi/L)	NA	5.1±2.9	--	8.22±3.61	13.1 ± 8.16	12±3	--	19.7±4.61	83.4 ± 26.1	--	13.4±2.49	<2.35	--	22.7±4.78	13.5±4.49
Radium-228 (pCi/L)	5[m]	<0.6	--	<2.05	1.38 ± 0.841	<1	--	3.73±1.03	2.19 ± 1.03	--	< 2.81	<1.06	--	< 2.69	1.33±0.789
Radium-226 (pCi/L)	5[m]	0.23±0.07	--	<1.22	< 0.312	0.39±0.07	--	0.787±0.445	1.27 ± 0.699	--	< 0.444	<0.658	--	0.853±0.455	<0.379
Total Uranium (ug/L)	30	0.21±0.03	--	1.18±0.0236	7.02±0.350	<0.05	--	1.19±0.0499	6.72±0.323	--	5.88±0.261	24.1±0.874	--	12.8±0.699	16.9±0.593

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
PERCHED GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

NOTES:

a. NJDEP Groundwater Quality Standards (as per N.J.A.C. Title 7, Chapter 9) reported in ug/l unless noted. Standards for VOCs are the higher of Practical Quantitation Limits and NJDEP Groundwater Quality Criteria. Standards for radiochemistry are the Federal and New Jersey State Primary Drinking Water Standards.
b. "ug/l" is micrograms per liter or parts per billion (ppb).
c. y | z represents a duplicate sample was collected at this well location (y equals the sample result from the original well sample while z equals the sample result from the duplicate sample).
d. <x indicates that the parameter was not detected above method detection limits (x).
e. Bold indicates value exceeds NJDEP Groundwater Quality Standards. N.J.A.C. Title 7, Chapter 9.
f. "B" indicates not detected substantially above the level reported in laboratory or field blanks.
g. "--" indicates the sample was not analyzed for this parameter.
h. "J" indicates sample result is below method detection limit.
i. Value is for total Xylenes.
j. "NA" indicates that there is currently no groundwater quality standard for this parameter.
k. x/x represents total (unfiltered)/dissolved (filtered) analytical result.
l. "pCi/L" is picoCuries per liter plus/minus total error.
m. Value is for combined radium-226 and radium-228.

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SHALLOW BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard[a]	BW-1A			CC-3RR					CC-4S			
		Nov-95	Jan-00	Aug-00	Nov-95	May-96	Jan-00	Aug-00	Feb-02	Nov-95	Jan-00	Aug-00	Feb-02
Volatile Organic Compounds (ug/l)[b]													
Carbon Tetrachloride	2	<1[c]	<0.5	0.8 J[d]	<1	--	<0.5	0.7	--	2.7	0.6	4	<1
Chloroethane	100	<1	<1	< 2	<1	--	<1	< 1	--	<1	<1	< 2	<5
Chloroform	6	2.4	1	3	<1	--	3	8	--	1.4	0.6	1 J	<5
1,1-Dichloroethane	50	<1	<0.5	< 0.8	22	--	2	2	--	5.1	2	< 1	0.99J
1,2-Dichloroethane	2	<1	<0.5	< 0.8	<1	--	<0.5	< 0.5	--	<1	<0.5	< 1	<2
1,1-Dichloroethene	2	<1	<0.5	< 0.8	<1	--	0.7	0.5 J	--	<1	<0.5	< 1	<2
Methylene Chloride	3	<1	<1 B[e]	< 2	1.4B	--	<1 B	< 1	--	1B	0.5JB	4	<2
1,1,1-Trichloroethane	30	<1	2	6	2.3	--	6	10	--	<1	<0.5	< 1	<5
1,1,2-Trichloroethane	3	<1	<0.5	< 0.8	<1	--	<0.5	< 0.5	--	<1	<0.5	< 1	<3
1,1,2,2-Tetrachloroethane	1	<1	<0.5	< 0.8	<1	--	<0.5	< 0.5	--	<1	<0.5	< 1	<2
Tetrachloroethene	1	**1.6**[f]	0.6	< 0.8	<1	--	<0.5	< 0.5	--	<1	<0.5	< 1	<1
Trichloroethene	1	**5.5**	**16**	**47**	**8.7**	--	**30**	**34**	--	**25**	**19**	**55**	**4.6**
Vinyl Chloride	5	<1	<1	< 2	<1	--	<1	< 1	--	<1	0.5J	< 2	<1
1,2-Dichloropropane	1	--[g]	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<1
2-Butanone	300	--	<5	< 8	--	--	<5	< 5	--	--	<5	< 12	<5
2-Hexanone	100	--	<5	< 8	--	--	<5	< 5	--	--	<5	< 12	<5
4-Methyl-2-Pentanone	400	--	<5	< 8	--	--	<5	< 5	--	--	<5	< 12	<5
Acetone	700	--	<5	< 8	--	--	<5	< 5	--	--	<5	< 12	<5
Benzene	1	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	2	2	**2.9**
Bromodichloromethane	1	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<1
Bromoform	4	--	<1	< 2	--	--	<1	< 1	--	--	<1	< 2	<4
Bromomethane	10	--	<1	< 2	--	--	<1	< 1	--	--	<1	< 2	<5
Carbon Disulfide	800	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<5
Chlorobenzene	50	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<2
Chloromethane	30	--	<1	< 2	--	--	<1	< 1	--	--	<1	1 J	<5
Dibromochloromethane	10	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<5
Ethylbenzene	700	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<1
Methyl-t-butyl Ether	70	--	0.6	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	--
Styrene	100	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<5
Toluene	1000	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	1	< 1	<1
Xylenes- Meta & Para	1000[h]	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	--
Xylenes- Ortho	1000[h]	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	--
cis-1,2-Dichloroethene	70	--	1	5	--	--	1	1	--	--	4	4	4.8J
cis-1,3-Dichloropropene	NA[i]	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<1
trans-1,2-Dichloroethene	100	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	0.5J	< 1	0.66J
trans-1,3-Dichloropropene	NA	--	<0.5	< 0.8	--	--	<0.5	< 0.5	--	--	<0.5	< 1	<1

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SHALLOW BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard[a]	BW-1A			CC-3RR					CC-4S			
		Nov-95	Jan-00	Aug-00	Nov-95	May-96	Jan-00	Aug-00	Feb-02	Nov-95	Jan-00	Aug-00	Feb-02
Inorganics (ug/l)													
Antimony	20	<5/<5[j]	--	--	<5/ --	--	--	--	--	<5 | <5[m]	--	--	--
Arsenic	8	<5/11	<5	< 5	<5/<5	--	<5	< 5	<5	**8.7** | <5	<5	< 5	--
Beryllium	20	<2/<2	--	--	<2/<2	--	--	--	--	<2 | <2	--	--	--
Cadmium	4	<5/<5	<4	< 4	<5/<5	--	<4	**5**	<4	<5 | <5	<4	**5**	--
Chromium	100	<10/<10	6	< 5	<10/<10	--	5	< 5	<10	100 | <10	16	61	--
Copper	1000	<10/<10	--	--	<10/<10	--	--	--	--	10 | <10	--	--	--
Lead	10	**12**/<2	<5	8	**14**/<2	--	<5	< 5	<3	2.3 | <2	<5	< 5	--
Mercury	2	0.84/<0.3	0.6	1.9	<0.3/<0.3	--	0.5	< 0.5	0.22	<0.5 | <0.5	7.5	< 0.5	--
Nickel	100	<20/<20	--	--	<20/<20	--	--	--	--	<20 | <20	--	--	--
Selenium	50	<5/<5	--	--	<5/<5	--	--	--	--	12 | <5	--	--	--
Silver	30	<5/<5	--	--	<5/<5	--	--	--	--	<5 | <5	--	--	--
Thallium	10	<5/<5	--	--	<5/ --	--	--	--	--	<5 | <5	--	--	--
Vanadium	NA	--/ --	--	--	--/ --	--	--	--	--	-- | --	--	--	--
Zinc	5000	<50/<50	--	--	80/<50	--	--	--	--	<50 | <50	--	--	--
Radiochemistry													
Gross Alpha (pCi/L)[k]	15	<4	--	<2.84	<5	<6/<6	--	**23.9±6.82**	**25.6 ± 16.1/22.5±14.3**[j]	<5	--	<4.56	--
Gross Beta (pCi/L)	NA	8.9±3.0	--	6.55±1.82	7.4±3.2	8.2±2.8/7.6±2.8	--	12.6±5.78	14.2 ± 5.23/8.87±3.80	15±4	--	8.05±2.79	--
Radium-228 (pCi/L)	5[l]	<1	--	<2.68	NA	<0.6	--	<2.84	1.10 ± 0.657/0.828±0.625	<1	--	<1.41	--
Radium-226 (pCi/L)	5[l]	0.56±0.12	--	0.974±0.491	NA	<0.2	--	1.88±0.577	<0.493/<0.231	0.26±0.11	--	1.29±0.648	--
Total Uranium (ug/L)	30	1.1±0.2	--	1.58±0.0285	13±2	11±2/11±2	--	**38.0±1.59**	**32.4±1.07 / 35.5±1.16**	0.46±0.07	--	10.1+0.189	--
Thorium-232 (pCi/L)	NA	--	--	--	--	--	--	< 0.0459	--	--	--	--	--

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SHALLOW BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard[a]	CC-5A			MW-1S			
		Nov-95	Jan-00	Aug-00	Nov-95	Jan-00	Aug-00	Feb-02
Volatile Organic Compounds (ug/l)[b]								
Carbon Tetrachloride	2	<1	<0.5	< 0.5	<1 | <1	<1	< 1	<1
Chloroethane	100	<1	<1	< 1	<2 | <2	<2	< 2	<5
Chloroform	6	<1	<0.5	< 0.5	**9 | 8.4**	<1	< 1	<5
1,1-Dichloroethane	50	<1	<0.5	< 0.5	**16 | 15**	30	30	15.2
1,2-Dichloroethane	2	<1	<0.5	< 0.5	<1 | <1	<1	< 1	<2
1,1-Dichloroethene	2	<1	<0.5	< 0.5	**130 | 130**	**50**	**60**	**23.9**
Methylene Chloride	3	<1B	<1 B	< 1	<1 | <1	2JB	< 2	<2
1,1,1-Trichloroethane	30	<1	<0.5	< 0.5	**280 | 280**	**110**	**110**	25.6
1,1,2-Trichloroethane	3	<1	<0.5	< 0.5	<1 | <1	<1	< 1	<2
1,1,2,2-Tetrachloroethane	1	<1	<0.5	< 0.5	<1 | <1	<1	< 1	<2
Tetrachloroethene	1	<1	<0.5	< 0.5	**2.9 | 3**	**2**	1 J	0.64J
Trichloroethene	1	<1	<0.5	< 0.5	**100 | 99**	**30**	**31**	**18.6**
Vinyl Chloride	5	<1	<1	< 1	<2 | <2	**11**	**14**	**8**
1,2-Dichloropropane	1	--	<0.5	< 0.5	-- | --	<1	< 1	<1
2-Butanone	300	--	<5	< 5	-- | --	<12	< 12	<5
2-Hexanone	100	--	<5	< 5	-- | --	<12	< 12	<5
4-Methyl-2-Pentanone	400	--	<5	< 5	-- | --	<12	< 12	<5
Acetone	700	--	<5	< 5	-- | --	<12	< 12	<5
Benzene	1	--	<0.5	< 0.5	-- | --	<1	< 1	<1
Bromodichloromethane	1	--	<0.5	< 0.5	-- | --	<1	< 1	<1
Bromoform	4	--	<1	< 1	-- | --	<2	< 2	<4
Bromomethane	10	--	<1	< 1	-- | --	<2	< 2	<5
Carbon Disulfide	800	--	<0.5	< 0.5	-- | --	<1	< 1	<5
Chlorobenzene	50	--	<0.5	< 0.5	-- | --	<1	< 1	<2
Chloromethane	30	--	<1	< 1	-- | --	<2	< 2	<5
Dibromochloromethane	10	--	<0.5	< 0.5	-- | --	<1	< 1	<5
Ethylbenzene	700	--	<0.5	< 0.5	-- | --	<1	< 1	<1
Methyl-t-butyl Ether	70	--	<0.5	< 0.5	-- | --	<1	< 1	--
Styrene	100	--	<0.5	< 0.5	-- | --	<1	< 1	<5
Toluene	1000	--	<0.5	< 0.5	-- | --	<1	< 1	<1
Xylenes- Meta & Para	1000[h]	--	<0.5	< 0.5	-- | --	<1	< 1	--
Xylenes- Ortho	1000[h]	--	<0.5	< 0.5	-- | --	<1	< 1	--
cis-1,2-Dichloroethene	70	--	<0.5	< 0.5	-- | --	31	30	14.2
cis-1,3-Dichloropropene	NA[i]	--	<0.5	< 0.5	-- | --	<1	< 1	<1
trans-1,2-Dichloroethene	100	--	<0.5	< 0.5	-- | --	<1	< 1	<5
trans-1,3-Dichloropropene	NA	--	<0.5	< 0.5	-- | --	<1	< 1	<1

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SHALLOW BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard[a]	CC-5A			MW-1S			
		Nov-95	Jan-00	Aug-00	Nov-95	Jan-00	Aug-00	Feb-02
Inorganics (ug/l)								
Antimony	20	<10/<10	--	--	<10/<10 | <10/<10	--	--	--
Arsenic	8	<5/<5	<5	< 5	<5/<5 | <5/<5	13	6	--
Beryllium	20	<2/<2	--	--	<2/<2 | <2/<2	--	--	--
Cadmium	4	<5/<5	<4	< 4	<5/<5 | <5/<5	<4	4	--
Chromium	100	<10/<10	<5	< 5	<10/<10 | <10/<10	<5	< 5	--
Copper	1000	<10/<10	--	--	<10/<10 | <10/<10	--	--	--
Lead	10	3/<3.0	<5	< 5	4.4/3.1 | 7.9/<3	<5	< 5	--
Mercury	2	1/<0.3	<0.5	< 0.5	4.7/<0.3 | 6.4/<0.3	1	< 0.5	--
Nickel	100	<20/<20	--	--	<20/<20 | <20/<20	--	--	--
Selenium	50	<5/<5	--	--	<5/<5 | <5/<5	--	--	--
Silver	30	<5/<5	--	--	<5/<5 | <5/<5	--	--	--
Thallium	10	<5/<5	--	--	<5/<5 | <5/<5	--	--	--
Vanadium	NA	--/ --	--	--	<10/<10 | <10/<10	--	--	--
Zinc	5000	<50/<50	--	--	<50/<50 | <50/<50	--	--	--
Radiochemistry								
Gross Alpha (pCi/L)[k]	15	<4	--	2.66±1.47	<5 | <4	--	12.9±5.43	--
Gross Beta (pCi/L)	NA	33±5	--	30.7±3.13	65±7 | 30±5	--	47.1±6.13	--
Radium-228 (pCi/L)	5[l]	<1	--	<2.68	<1 | <1	--	<1.74	--
Radium-226 (pCi/L)	5[l]	0.47±0.15	--	<0.932	<0.2 | 0.65±0.19	--	0.882±0.508	--
Total Uranium (ug/L)	30	0.17±0.03	--	0.322±0.0087	5.4±0.8 | 5.1±0.8	--	26.9+1.57	--
Thorium-232 (pCi/L)	NA	--	--	--	-- | --	--	--	--

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SHALLOW BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard[a]	MW-2S			MW-4A	MW-9A	MW-11			MW-13	
		Nov-95	Jan-00	Aug-00	Feb-02	Feb-02	Jan-00	Aug-00	Feb-02	Aug-00	Feb-02
Volatile Organic Compounds (ug/l)[b]											
Carbon Tetrachloride	2	<1	1	1	<1	<1	<0.5 | <0.5	< 0.5	--	< 0.5	--
Chloroethane	100	<1	<1	< 1	<5	<5	<1 | <1	< 1	--	< 1	--
Chloroform	6	<1	1	2	<5	8	0.9 | 1	0.8	--	0.9	--
1,1-Dichloroethane	50	<1	4	2	<5	<5	<0.5 | <0.5	< 0.5	--	0.6	--
1,2-Dichloroethane	2	<1	<0.5	< 0.5	<2	<2	<0.5 | <0.5	< 0.5	--	< 0.5	--
1,1-Dichloroethene	2	<1	4	2	<2	<2	<0.5 | <0.5	< 0.5	--	< 0.5	--
Methylene Chloride	3	1.4B	<1 B	< 1	<2	<2	0.5JB | <1B	< 1	--	< 1	--
1,1,1-Trichloroethane	30	<1	7	4	<5	<5	<0.5 | <0.5	< 0.5	--	< 0.5	--
1,1,2-Trichloroethane	3	<1	<0.5	< 0.5	<3	<3	<0.5 | <0.5	< 0.5	--	< 0.5	--
1,1,2,2-Tetrachloroethane	1	<1	<0.5	< 0.5	<2	<2	<0.5 | <0.5	< 0.5	--	< 0.5	--
Tetrachloroethene	1	<1	<0.5	< 0.5	<1	5	<0.5 | <0.5	< 0.5	--	< 0.5	--
Trichloroethene	1	37	23	28	<1	5.4	4 | 4	5	--	2	--
Vinyl Chloride	5	<1	<1	< 1	<1	<1	<1 | <1	< 1	--	< 1	--
1,2-Dichloropropane	1	--	<0.5	< 0.5	<1	<1	<0.5 | <0.5	< 0.5	--	< 0.5	--
2-Butanone	300	--	<5	< 5	<5	<5	<5 | <5	< 5	--	< 5	--
2-Hexanone	100	--	<5	< 5	<5	<5	<5 | <5	< 5	--	< 5	--
4-Methyl-2-Pentanone	400	--	<5	< 5	<5	<5	<5 | <5	< 5	--	< 5	--
Acetone	700	--	<5	< 5	6	4.8J	4J | 4J	< 5	--	< 5	--
Benzene	1	--	<0.5	< 0.5	<1	<1	0.8 | 0.9	< 0.5	--	< 0.5	--
Bromodichloromethane	1	--	<0.5	< 0.5	<1	<1	<0.5 | <0.5	< 0.5	--	< 0.5	--
Bromoform	4	--	<1	< 1	<4	<4	<1 | <1	< 1	--	< 1	--
Bromomethane	10	--	<1	< 1	<5	<5	<1 | <1	< 1	--	< 1	--
Carbon Disulfide	800	--	<0.5	< 0.5	<5	<5	<0.5 | <0.5	< 0.5	--	< 0.5	--
Chlorobenzene	50	--	<0.5	< 0.5	<2	<2	<0.5 | <0.5	< 0.5	--	< 0.5	--
Chloromethane	30	--	<1	< 1	<5	<5	<1 | <1	< 1	--	< 1	--
Dibromochloromethane	10	--	<0.5	< 0.5	<5	<5	<0.5 | <0.5	< 0.5	--	< 0.5	--
Ethylbenzene	700	--	<0.5	< 0.5	<1	<1	<0.5 | <0.5	< 0.5	--	< 0.5	--
Methyl-t-butyl Ether	70	--	<0.5	< 0.5	--	--	<0.5 | <0.5	< 0.5	--	< 0.5	--
Styrene	100	--	<0.5	< 0.5	<5	<5	<0.5 | <0.5	< 0.5	--	< 0.5	--
Toluene	1000	--	0.6	< 0.5	<1	<1	<0.5 | <0.5	< 0.5	--	< 0.5	--
Xylenes- Meta & Para	1000[h]	--	<0.5	< 0.5	--	--	<0.5 | <0.5	< 0.5	--	< 0.5	--
Xylenes- Ortho	1000[h]	--	<0.5	< 0.5	--	--	<0.5 | <0.5	< 0.5	--	< 0.5	--
cis-1,2-Dichloroethene	70	--	3	2	<5	<5	0.5J | 0.5J	1	--	0.6	--
cis-1,3-Dichloropropene	NA[i]	--	<0.5	< 0.5	<1	<1	<0.5 | <0.5	< 0.5	--	< 0.5	--
trans-1,2-Dichloroethene	100	--	<0.5	< 0.5	<5	<5	<0.5 | <0.5	< 0.5	--	< 0.5	--
trans-1,3-Dichloropropene	NA	--	<0.5	< 0.5	<1	<1	<0.5 | <0.5	< 0.5	--	< 0.5	--

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SHALLOW BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard[a]	MW-2S			MW-4A	MW-9A	MW-11			MW-13	
		Nov-95	Jan-00	Aug-00	Feb-02	Feb-02	Jan-00	Aug-00	Feb-02	Aug-00	Feb-02
Inorganics (ug/l)											
Antimony	20	<5/<5	--	--	--	--	-- | --	--	--	--	--
Arsenic	8	<5/<5	<5	< 5	<5	<5	5 | 5	< 5	6.1	< 5	<5
Beryllium	20	<2/<2	--	--	--	--	-- | --	--	--	--	--
Cadmium	4	<5/<5	4	< 4	<4	<4	<4 | <4	6	<4	5	<4
Chromium	100	<10/<10	10	6	<10	<10	48 | 16	11	<10	9	<10
Copper	1000	<10/<10	--	--	--	--	-- | --	--	--	--	--
Lead	10	<2/4.1	<5	< 5	<3	<3	12 | 7	< 5	<3	< 5	<3
Mercury	2	0.85/<0.3	<0.5	< 0.5	0.21	0.21	<0.5 | <0.5	< 0.5	0.26	< 0.5	0.28
Nickel	100	<20/<20	--	--	--	--	-- | --	--	--	--	--
Selenium	50	<5/<5	--	--	--	--	-- | --	--	--	--	--
Silver	30	<5/<5	--	--	--	--	-- | --	--	--	--	--
Thallium	10	<5/<5	--	--	--	--	-- | --	--	--	--	--
Vanadium	NA	--/ --	--	--	--	--	-- | --	--	--	--	--
Zinc	5000	110/50	--	--	--	--	-- | --	--	--	--	--
Radiochemistry											
Gross Alpha (pCi/L)[k]	15	<5	--	4.44±2.07	<5.44	IS[n]	**469±16.4** | **487±16.7**	**308±17.6**	**79.5±41.2/175±90.6**	**71.0±7.89**	14.4±8.14/**17.7±10.3**
Gross Beta (pCi/L)	NA	13±3	--	11.8±2.21	6.14 ± 2.92	IS	96.7±5 | 105±4.93	74.4±5.34	68.5±21.3/37.1±12.0	24.9±3.80	14.7±5.27/8.58±3.58
Radium-228 (pCi/L)	5[l]	<1	--	<3.93	1.49 ± 0.861	IS	<3.24 | <4.21	<1.46	0.761±0.550/2.28±0.915	<2.03	0.772±0.569/1.74±0.772
Radium-226 (pCi/L)	5[l]	0.24±0.10	--	1.61±0.632	0.616 ± 0.329	IS	1.54±0.683 | 1.49±0.721	1.28±0.523	<0.266/<0.242	2.23±0.639	0.237±0.169/<0.566
Total Uranium (ug/L)	30	0.37±0.06	--	0.394±0.0091	5.95 ± 0.216	9.47±0.464	**507±16.3** | **562±18**	**472±19.3**	**318 ± 10.2/308±9.83**	**97.7±4.30**	**320 ± 10.3/56.9±1.89**
Thorium-232 (pCi/L)	NA	--	--	--	--	--	-- | --	0.166+0.109	--	0.0386+0.068	--

TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SHALLOW BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

NOTES:

a. NJDEP Groundwater Quality Standards (as per N.J.A.C. Title 7, Chapter 9) reported in ug/l unless noted. Standards for VOCs are the higher of Practical Quantitation Limits and NJDEP Groundwater Quality Criteria. Standards for radiochemistry are the Federal and New Jersey State Primary Drinking Water Standards.
b. "ug/l" is micrograms per liter or parts per billion (ppb).
c. <x indicates that the parameter was not detected above method detection limits (x).
z equals the sample result from the duplicate sample).
d. "J" indicates sample result is below method detection limit.
e. "B" indicates not detected substantially above the level reported in laboratory or field blanks.
f. Bold indicates value exceeds NJDEP Groundwater Quality Standards. N.J.A.C. Title 7, Chapter 9.
g. "--" indicates the sample was not analyzed for this parameter.
h. Value is for total Xylenes.
i. "NA" indicates that there is currently no groundwater quality standard for this parameter.
j. x/x represents total (unfiltered)/dissolved (filtered) analytical result.
k. "pCi/L" is picoCuries per liter plus/minus total error.
l. Value is for combined radium-226 and radium-228.
m. y | z represents a duplicate sample was collected at this well location (y equals the sample result from the original well sample while z equals the sample result from the duplicate sample).
n. "IS" indicates insufficient sample amount.

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	BW-1SR			BW-1DR				CC-1R		
		11/95	1/00	8/10/00	11/95	1/00	8/16/00	2/19/02	11/95	1/00	8/15/00
Volatile Organic Compounds (ug/l)[b]											
Carbon Tetrachloride	2	1.2	0.8	1	<1	<12 | <12 [c]	< 0.5	--[d]	<1 [e]	<1	< 1
Chloroethane	100	<1	<1	< 2	<1	<25 | <25	< 1	--	<1	<2	< 2
Chloroform	6	**7.1**[f]	**8**	5	<1	<12 | <12	< 0.5	--	**42**	**84**	**84**
1,1-Dichloroethane	50	<1	<0.5	< 0.8	20	32 | 20	< 0.5	--	1.9	<1	< 1
1,2-Dichloroethane	2	<1	<0.5	< 0.8	<1	<12 | <12	< 0.5	--	<1	<1	< 1
1,1-Dichloroethene	2	<1	<0.5	< 0.8	**2.2**	<12 | <12	< 0.5	--	**10**	<1	< 1
Methylene Chloride	3	<1	<1B[g]	< 2	<1	**45 B | <25B**	< 1	--	**7.4B**	2 J[h]B	< 2
1,1,1-Trichloroethane	30	1.3	<0.5	< 0.8	<1	<12 | <12	< 0.5	--	<1	<1	< 1
1,1,2-Trichloroethane	3	<1	<0.5	< 0.8	<1	<12 | <12	< 0.5	--	<1	<1	< 1
1,1,2,2-Tetrachloroethane	1	<1	<0.5	< 0.8	<1	<12 | <12	< 0.5	--	<1	<1	< 1
Tetrachloroethene	1	<1	<0.5	< 0.8	<1	<12 | <12	< 0.5	--	<1	**9**	**8**
Trichloroethene	1	**35**	**24**	**36**	**61**	**1200 | 830**	**11**	--	**12**	**7**	**5**
Vinyl Chloride	5	<1	<1	< 2	<1	<25 | <25	< 1	--	<1	<2	< 2
1,2-Dichloropropane	1	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
2-Butanone	300	--	<5	< 8	--	<120 | <120	< 5	--	--	<12	< 12
2-Hexanone	100	--	<5	< 8	--	<120 | <120	< 5	--	--	<12	< 12
4-Methyl-2-Pentanone	400	--	<5	< 8	--	<120 | <120	< 5	--	--	<12	< 12
Acetone	700	--	<5	< 8	--	<120 | <120	7	--	--	<12	< 12
Benzene	1	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Bromodichloromethane	1	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Bromoform	4	--	<1	< 2	--	<25 | <25	< 1	--	--	<2	< 2
Bromomethane	10	--	<1	< 2	--	<25 | <25	< 1	--	--	<2	< 2
Carbon Disulfide	800	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Chlorobenzene	50	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Chloromethane	30	--	<1	< 2	--	<25 | <25	< 1	--	--	<2	< 2
Dibromochloromethane	10	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Ethylbenzene	700	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Methyl-t-butyl Ether	70	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Styrene	100	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Toluene	1000	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Xylenes- Meta & Para	1000[i]	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
Xylenes- Ortho	1000[i]	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
cis-1,2-Dichloroethene	70	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	2	2
cis-1,3-Dichloropropene	NA[j]	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
trans-1,2-Dichloroethene	100	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1
trans-1,3-Dichloropropene	NA	--	<0.5	< 0.8	--	<12 | <12	< 0.5	--	--	<1	< 1

TABLE 5

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	BW-1SR			BW-1DR				CC-1R		
		11/95	1/00	8/10/00	11/95	1/00	8/16/00	2/19/02	11/95	1/00	8/15/00
Inorganics (ug/l)											
Antimony	20	<10/<10[k]	--	--	<10/<10	-- | --	--	--	5.9/7.7	--	--
Arsenic	8	<5/<5	<5	< 5	9.7/6.6	<5 | <5	23	<5	<5/<5	5	< 5
Beryllium	20	<2/<2	--	--	<2/<2	-- | --	--	--	<2/<2	--	--
Cadmium	4	8/<5	<4	< 4	26/<5	8 | 6	10	<4	<5/<5	<4	< 4
Chromium	100	<10/<10	8	< 5	<10/<10	20 | 20	43	34.3	<10/<10	6	7
Copper	1000	<10/<10	--	--	10/<10	-- | --	--	--	<10/<10	--	--
Lead	10	7.2/<3	6	< 5	28/6.1	10 | 10	410	9.6	8.2/6.3	<5	< 5
Mercury	2	0.37/<0.3	<0.5	< 0.5	1.9/<0.3	1.9 | 2	8.7	0.5	<0.3/<0.3	<0.5	< 0.5
Nickel	100	<20/<20	--	--	<20/<20	-- | --	--	--	<20/20	--	--
Selenium	50	<5/<5	--	--	<5/<5	-- | --	--	--	<5/<5	--	--
Silver	30	<5/<5	--	--	<5/<5	-- | --	--	--	<5/<5	--	--
Thallium	10	<5/<5	--	--	<5/<5	-- | --	--	--	<5/<5	--	--
Vanadium	NA	--/--	--	--	--/--	-- | --	--	--	--/--	--	--
Zinc	5000	110/<50	--	--	280/<50	-- | --	--	--	<50/<50	--	--
Radiochemistry											
Gross Alpha (pCi/L)[l]	15	<5	--	3.22±1.65	<3	-- | --	<2.50	<4.90	5±3.7	--	5.44±3.47
Gross Beta (pCi/L)	NA	<5	--	4.13±1.66	<4	-- | --	9.33±2.74	<3.03	12±3	--	19.5±4.50
Radium-228 (pCi/L)	5[m]	<1	--	<1.88	<0.5	-- | --	<1.56	5.25±1.80	<0.6	--	<1.73
Radium-226 (pCi/L)	5[m]	<0.1	--	0.729±0.497	<0.3	-- | --	0.648±0.477	0.391±0.242	<0.2	--	0.954±0.647
Total Uranium (ug/L)	30	0.7±0.11	--	0.543±0.0106	0.28±0.04	-- | --	0.869+0.0185	3.35±0.0765	19±3	--	12.4+0.755

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	CC-1D			CC-2R				CC-2D			CC-3D			
		11/95	1/00	8/15/00	11/95	5/96	1/00	8/10/00	11/95	1/00	8/8/00	11/95	1/00	8/9/00	2/20/02
Volatile Organic Compounds (ug/l)[b]															
Carbon Tetrachloride	2	<2	<2	< 2	<1	--	<1	< 1	<4	0.5J	0.5 J	5	<1	< 1	--
Chloroethane	100	<2	<5	< 5	<1	--	<2	< 2	<4	<1	< 1	<2	<2	< 2	--
Chloroform	6	**180**	**120**	**130**	**7.5**	--	**61**	**70**	**210**	**33**	**44**	**17**	5	3	--
1,1-Dichloroethane	50	<2	<2	< 2	<1	--	1J	1	<4	1	0.7	<2	4	4	--
1,2-Dichloroethane	2	<2	<2	< 2	<1	--	<1	< 1	<4	<0.5	< 0.5	**11**	<1	< 1	--
1,1-Dichloroethene	2	**7.3**	<2	< 2	<1	--	**3**	**4**	<4	1	1	<2	**5**	**9**	--
Methylene Chloride	3	2.9B	**5 JB**	< 5	2.1B	--	2JB	< 2	**6.7B**	0.8JB	< 1	**4.8B**	1 JB	< 2	--
1,1,1-Trichloroethane	30	11	<2	< 2	<1	--	<1	< 1	<4	<0.5	< 0.5	<2	<1	< 1	--
1,1,2-Trichloroethane	3	<2	<2	< 2	<1	--	<1	< 1	<4	<0.5	< 0.5	<2	<1	< 1	--
1,1,2,2-Tetrachloroethane	1	<2	<2	< 2	<1	--	<1	< 1	<4	<0.5	< 0.5	<2	<1	< 1	--
Tetrachloroethene	1	**4.6**	**10**	**4**	**7.8**	--	**31**	**45**	**22**	**5**	**7**	<2	<1	< 1	--
Trichloroethene	1	**20**	**14**	**10**	**6.2**	--	**34**	**32**	**9**	**11**	**13**	**150**	**63**	**76**	--
Vinyl Chloride	5	<2	<5	< 5	<1	--	<2	< 2	<4	<1	< 1	<2	<2	1 J	--
1,2-Dichloropropane	1	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
2-Butanone	300	--	<25	< 25	--	--	<10	< 10	--	<5	< 5	--	<10	< 10	--
2-Hexanone	100	--	<25	< 25	--	--	<10	< 10	--	<5	< 5	--	<10	< 10	--
4-Methyl-2-Pentanone	400	--	<25	< 25	--	--	<10	< 10	--	<5	< 5	--	<10	< 10	--
Acetone	700	--	<25	< 25	--	--	<10	< 10	--	<5	< 5	--	<10	< 10	--
Benzene	1	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Bromodichloromethane	1	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Bromoform	4	--	<5	< 5	--	--	<2	< 2	--	<1	< 1	--	<2	< 2	--
Bromomethane	10	--	<5	< 5	--	--	<2	< 2	--	<1	< 1	--	<2	< 2	--
Carbon Disulfide	800	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Chlorobenzene	50	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Chloromethane	30	--	<5	< 5	--	--	<2	< 2	--	<1	< 1	--	<2	< 2	--
Dibromochloromethane	10	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Ethylbenzene	700	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Methyl-t-butyl Ether	70	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Styrene	100	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Toluene	1000	--	<2	< 2	--	--	<1	< 1	--	0.6	< 0.5	--	1	< 1	--
Xylenes- Meta & Para	1000[i]	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
Xylenes- Ortho	1000[i]	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
cis-1,2-Dichloroethene	70	--	4	< 2	--	--	9	9	--	1	2	--	7	11	--
cis-1,3-Dichloropropene	NA[j]	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
trans-1,2-Dichloroethene	100	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--
trans-1,3-Dichloropropene	NA	--	<2	< 2	--	--	<1	< 1	--	<0.5	< 0.5	--	<1	< 1	--

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	CC-1D			CC-2R				CC-2D			CC-3D			
		11/95	1/00	8/15/00	11/95	5/96	1/00	8/10/00	11/95	1/00	8/8/00	11/95	1/00	8/9/00	2/20/02
Inorganics (ug/l)															
Antimony	20	5.4/<5.0	--	--	14/8	--	--	--	<5/<5	--	--	<5/<5	--	--	--
Arsenic	8	**16/15**	6	7	5.2/<5	--	<5	< 5	**17/15**	<5	< 5	<5/<5	5	7	<5 | <5
Beryllium	20	<2/<2	--	--	<2/<2	--	--	--	<2/<2	--	--	<2/<2	--	--	--
Cadmium	4	<5/<5	<4	6	**12**/<5	--	4	**5**	<5/<5	4	7	<5/<5	<4	4	<4 | <4
Chromium	100	<10/<10	7	< 5	<10/<10	--	23	15	10/<10	19	16	10/<10	30	14	<10 | <10
Copper	1000	<10/<10	--	--	20/<10	--	--	--	<10/<10	--	--	10/<10	--	--	--
Lead	10	10/5.6	<5	< 5	**35**/6.8	--	5	5	5.7/4.4	<5	< 5	4.7/5.7	**25**	**43**	<3 | 3.8
Mercury	2	<0.3/<0.3	<0.5	< 0.5	**3.5**/<0.3	--	<0.5	< 0.5	<0.3/<0.3	<0.5	< 0.5	<0.5/<0.5	**8**	**2.9**	0.32 | 0.32
Nickel	100	<20/<20	--	--	<20/<20	--	--	--	<20/<20	--	--	<20/<20	--	--	--
Selenium	50	<5/<5	--	--	<5/<5	--	--	--	<5/<5	--	--	5.1/<5	--	--	--
Silver	30	<5/<5	--	--	<5/<5	--	--	--	<5/<5	--	--	<5/<5	--	--	--
Thallium	10	<5/<5	--	--	<5/<5	--	--	--	<5/<5	--	--	<5/<5	--	--	--
Vanadium	NA	--/--	--	--	--/--	--	--	--	--/--	--	--	--/--	--	--	--
Zinc	5000	<50/<50	--	--	180/<50	--	--	--	50/<50	--	--	<50/<50	--	--	--
Radiochemistry															
Gross Alpha (pCi/L)[l]	15	5±3.8	--	<5.49	**25±5**	<6/<5	--	<2.20	<4	--	2.53±1.23	12±6	--	13.7±2.90	12.4±8.15 | **28.5±18.3**
Gross Beta (pCi/L)	NA	7.7±2.5	--	<7.01	8.3±2.2	4.1±2.4/4.7±2.5	--	2.97±1.54	6.2±2.4	--	5.59±1.49	5.9±3.1	--	19.9±2.53	6.61±3.09 | 5.70±2.89
Radium-228 (pCi/L)	5[m]	<1	--	<2.28	<1	NA	--	<2.23	<1	--	<1.53	<1	--	<1.60	<0.966 | <0.696
Radium-226 (pCi/L)	5[m]	<0.1	--	0.762±0.414	<0.2	NA	--	0.888±0.642	0.37±0.07	--	<0.619	0.82±0.12	--	<0.520	0.726±0.306 | 0.655±0.277
Total Uranium (ug/L)	30	10±2	--	9.83±0.175	**46±7**	9.6±1.4/3.4±0.5	--	2.63±0.0459	2.4±0.4	--	1.40±0.0204	7±1.1	--	12.0±0.541	14.4±0.485 | 14.8±0.488

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	CC-4R			CC-4D			CC-5SR		
		11/95	1/00	8/16/00	11/95	1/00	8/16/00	11/95	1/00	8/11/00
Volatile Organic Compounds (ug/l)[b]										
Carbon Tetrachloride	2	<2	<5	< 12 | < 12	<50 | <50 [k]	<6	< 6	<1	<0.5	< 0.5
Chloroethane	100	230	<10	< 25 | < 25	<50 | 56	19	14	<1	<1	< 1
Chloroform	6	<2	<5	< 12 | < 12	<50 | <50	<6	< 6	<1	<0.5	< 0.5
1,1-Dichloroethane	50	**240**	**230**	**270 | 320**	**750 | 870**	**370**	**370**	29	23	32
1,2-Dichloroethane	2	**4.8**	<5	< 12 | < 12	<50 | <50	<6	< 6	<1	<0.5	0.5 J
1,1-Dichloroethene	2	**61**	**29**	**42 | 50**	**100 | 110**	**46**	**42**	2	**10**	**12**
Methylene Chloride	3	**6.7B**	**9JB**	< 25 B | < 25	**140B | 130B**	**10JB**	< 12	<1	<1B	< 1
1,1,1-Trichloroethane	30	4.5	10	28 | 28	<50 | <50	<6	< 6	<1	2	3
1,1,2-Trichloroethane	3	<2	<5	< 12 | < 12	<50 | <50	<6	< 6	<1	<0.5	< 0.5
1,1,2,2-Tetrachloroethane	1	<2	<5	< 12 | < 12	<50 | <50	<6	< 6	<1	<0.5	< 0.5
Tetrachloroethene	1	<2	<5	< 12 | < 12	<50 | <50	<6	< 6	<1	<0.5	< 0.5
Trichloroethene	1	**220**	**420**	**750 | 820**	**450 | 540**	**420**	**340**	**8.5**	**25**	**33**
Vinyl Chloride	5	**190**	**9J**	**45 | 50**	**180 | 250**	**86**	**84**	2.1	5	2
1,2-Dichloropropane	1	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
2-Butanone	300	--	<50	< 120 | < 120	-- | --	<62	< 62	--	<5	< 5
2-Hexanone	100	--	<50	< 120 | < 120	-- | --	<62	< 62	--	<5	< 5
4-Methyl-2-Pentanone	400	--	<50	< 120 | < 120	-- | --	<62	< 62	--	<5	< 5
Acetone	700	--	<50	< 120 | < 120	-- | --	<62	< 62	--	<5	< 5
Benzene	1	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Bromodichloromethane	1	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Bromoform	4	--	<10	< 25 | < 25	-- | --	<12	< 12	--	<1	< 1
Bromomethane	10	--	<10	< 25 | < 25	-- | --	<12	< 12	--	<1	< 1
Carbon Disulfide	800	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Chlorobenzene	50	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Chloromethane	30	--	<10	< 25 | < 25	-- | --	<12	< 12	--	<1	< 1
Dibromochloromethane	10	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Ethylbenzene	700	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Methyl-t-butyl Ether	70	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Styrene	100	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Toluene	1000	--	<5	< 12 | < 12	-- | --	<6	< 6	--	0.5 J	< 0.5
Xylenes- Meta & Para	1000[i]	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
Xylenes- Ortho	1000[i]	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
cis-1,2-Dichloroethene	70	--	**80**	**98 | 110**	-- | --	**170**	**170**	--	8	12
cis-1,3-Dichloropropene	NA[j]	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
trans-1,2-Dichloroethene	100	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5
trans-1,3-Dichloropropene	NA	--	<5	< 12 | < 12	-- | --	<6	< 6	--	<0.5	< 0.5

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	CC-4R			CC-4D			CC-5SR		
		11/95	1/00	8/16/00	11/95	1/00	8/16/00	11/95	1/00	8/11/00
Inorganics (ug/l)										
Antimony	20	<5/<5	--	-- | --	<5/<5 | <5/<5	--	--	<10/<10	--	--
Arsenic	8	<5/<5	<5	9 | < 5	<5/<5 | <5/<5	<5	9	<5/<5	<5	< 5
Beryllium	20	<2/<2	--	-- | --	<2/<2 | <2/<2	--	--	<2/<2	--	--
Cadmium	4	<5/<5	4	< 4 | < 4	<5/<5 | <5/<5	<4	< 4	<5/<5	4	4
Chromium	100	<10/<10	51	43 | 46	<10/<10 | <10/<10	<5	11	<10/<10	25	< 5
Copper	1000	<10/<10	--	-- | --	<10/<10 | <10/<10	--	--	<10/<10	--	--
Lead	10	<2/<2	<5	< 5 | < 5	<2/<2 | 7.7/<2	<5	< 5	4.3/<3	<5	< 5
Mercury	2	<0.5/<0.5	<0.5	< 0.5 | < 0.5	<0.5/<0.5 | <0.5/<0.5	0.7	< 0.5	<0.3/<0.3	<0.5	< 0.5
Nickel	100	<20/<20	--	-- | --	<20/<20 | <20/<20	--	--	<20/<20	--	--
Selenium	50	<5/<5	--	-- | --	<5/<5 | <5/<5	--	--	<5/<5	--	--
Silver	30	<5/<5	--	-- | --	<5/<5 | <5/<5	--	--	<5/<5	--	--
Thallium	10	<5/<5	--	-- | --	<5/<5 | <5/<5	--	--	<5/<5	--	--
Vanadium	NA	--/ --	--	-- | --	--/ -- | --/ --	--	--	--/ --	--	--
Zinc	5000	<50/<50	--	-- | --	<50/<50 | <50/<50	--	--	50/<50	--	--
Radiochemistry										
Gross Alpha (pCi/L)[l]	15	<6	--	5.46±3.31 | 5.95±2.87	<5 | <5	--	7.50±2.83	<6	--	6.44±2.39
Gross Beta (pCi/L)	NA	<4	--	6.87±2.85 | 4.47±2.24	4.7±3.0 | 5.3±3.1	--	7.84±2.61	8.3±3.8	--	6.32±2.05
Radium-228 (pCi/L)	5[m]	<1	--	<1.97 | <1.52	<0.6 | <0.6	--	<2.17	<1	--	<1.91
Radium-226 (pCi/L)	5[m]	0.36±0.11	--	3.33±0.923 | **5.23±1.06**	0.21±0.11 | <0.2	--	<1.00	0.17±0.1	--	0.647±0.479
Total Uranium (ug/L)	30	1.1±0.2	--	2.99+0.0559|3.18+0.0585	2.3±0.3 | 2.1±0.3	--	--	1.5±0.2	--	3.21±0.0563

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	CC-5DR				MW-1D			MW-2D			
		11/95	1/00	8/15/00	2/18/02	11/95	1/00	8/15/00	11/95	1/00	8/15/00	2/18/02
Volatile Organic Compounds (ug/l)[b]												
Carbon Tetrachloride	2	<5	<5	< 5	<1	**4.6**	**3**	**3**	**9.4**	**3**	**9**	**4**
Chloroethane	100	<5	<10	< 10	<5	<2	<2	< 2	<1	<1	< 2	<5
Chloroform	6	<5	<5	**10**	2.0J	**230**	**51**	**46**	**26**	**6**	**17**	**13**
1,1-Dichloroethane	50	**370**	**210**	**300**	**186**	16	12	15	**110**	28	**51**	**61.4**
1,2-Dichloroethane	2	<5	<5	< 5	**2.6**	<1	<1	< 1	<1	<0.5	< 1	<2
1,1-Dichloroethene	2	**140**	**70**	**100**	**83**	**26**	**8**	**11**	**46**	**8**	**17**	**13.7**
Methylene Chloride	3	**7B**	**7JB**	< 10	<2	<1	1JB	2 J	**2.1**	<1 B	< 2	<2
1,1,1-Trichloroethane	30	17	6	5 J	2.8J	13	1J	2	1.9	<0.5	< 1	<5
1,1,2-Trichloroethane	3	<5	<5	< 5	<3	<1	<1	< 1	<1	<0.5	< 1	<3
1,1,2,2-Tetrachloroethane	1	<5	<5	< 5	<2	<1	<1	< 1	<1	<0.5	< 1	<2
Tetrachloroethene	1	<5	<5	< 5	<1	**15**	**6**	**4**	<1	<0.5	1 J	<1
Trichloroethene	1	**130**	**130**	**170**	**114**	**87**	**98**	**100**	**120**	**47**	**94**	**66**
Vinyl Chloride	5	**45**	**13**	**24**	**32.2**	<2	<2	< 2	2	1	2 J	<1
1,2-Dichloropropane	1	--	<5	< 5	<1	--	<1	< 1	--	<0.5	< 1	<1
2-Butanone	300	--	<50	< 50	<5	--	<12	< 12	--	<5	< 12	<5
2-Hexanone	100	--	<50	< 50	<5	--	<12	< 12	--	<5	< 12	<5
4-Methyl-2-Pentanone	400	--	<50	< 50	<5	--	<12	< 12	--	<5	< 12	<5
Acetone	700	--	<50	< 50	<5	--	<12	< 12	--	<5	< 12	<5
Benzene	1	--	<5	< 5	<1	--	<1	< 1	--	<0.5	< 1	**1.2**
Bromodichloromethane	1	--	<5	< 5	<1	--	<1	< 1	--	<0.5	< 1	<1
Bromoform	4	--	<10	< 10	<4	--	<2	< 2	--	<1	< 2	<4
Bromomethane	10	--	<10	< 10	<5	--	<2	< 2	--	<1	< 2	<5
Carbon Disulfide	800	--	<5	< 5	<5	--	<1	< 1	--	<0.5	< 1	<5
Chlorobenzene	50	--	<5	< 5	<2	--	<1	< 1	--	<0.5	< 1	<2
Chloromethane	30	--	<10	< 10	<5	--	<2	< 2	--	<1	< 2	<5
Dibromochloromethane	10	--	<5	< 5	<5	--	<1	< 1	--	<0.5	< 1	<5
Ethylbenzene	700	--	<5	< 5	<1	--	<1	< 1	--	<0.5	< 1	<1
Methyl-t-butyl Ether	70	--	<5	< 5	--	--	<1	< 1	--	<0.5	< 1	--
Styrene	100	--	<5	< 5	<5	--	<1	< 1	--	<0.5	< 1	<5
Toluene	1000	--	<5	< 5	<1	--	<1	< 1	--	3	< 1	<1
Xylenes- Meta & Para	1000[i]	--	<5	< 5	--	--	<1	< 1	--	<0.5	< 1	--
Xylenes- Ortho	1000[i]	--	<5	< 5	--	--	<1	< 1	--	<0.5	< 1	--
cis-1,2-Dichloroethene	70	--	39	61	62.9	--	18	20	--	7	12	14.2
cis-1,3-Dichloropropene	NA[j]	--	<5	< 5	<1	--	<1	< 1	--	<0.5	< 1	<1
trans-1,2-Dichloroethene	100	--	<5	< 5	<5	--	<1	< 1	--	<0.5	< 1	<5
trans-1,3-Dichloropropene	NA	--	<5	< 5	<1	--	<1	< 1	--	<0.5	< 1	<1

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	CC-5DR				MW-1D			MW-2D			
		11/95	1/00	8/15/00	2/18/02	11/95	1/00	8/15/00	11/95	1/00	8/15/00	2/18/02
Inorganics (ug/l)												
Antimony	20	<5/<5	--	--	--	<10/<10	--	--	5.9/<5	--	--	--
Arsenic	8	<5/<5	<5	< 5	--	<5/<5	<5	< 5	<5/<5	<5	< 5	--
Beryllium	20	<2/<2	--	--	--	<2/<2	--	--	<2/<2	--	--	--
Cadmium	4	<5/<5	<4	< 4	--	<5/<5	<4	< 4	<5/<5	<4	< 4	--
Chromium	100	<10/<10	14	< 5	--	<10/<10	<5	17	40/<10	80	31	--
Copper	1000	<10/<10	--	--	--	<10/<10	--	--	<10/<10	--	--	--
Lead	10	17/10	<5	< 5	--	5.0/4.6	<5	< 5	7/7	<5	< 5	--
Mercury	2	<0.3/<0.3	<0.5	< 0.5	--	<0.3/<0.3	<0.5	< 0.5	<0.3/<0.3	<0.5	< 0.5	--
Nickel	100	<20/<20	--	--	--	<20/<20	--	--	40/<20	--	--	--
Selenium	50	<5/<5	--	--	--	<5/<5	--	--	<5/<5	--	--	--
Silver	30	<5/<5	--	--	--	<5/<5	--	--	<5/<5	--	--	--
Thallium	10	<5/<5	--	--	--	<5/<5	--	--	<5/<5	--	--	--
Vanadium	NA	--/ --	--	--	--	<10/<10	--	--	--/ --	--	--	--
Zinc	5000	80/<50	--	--	--	<50/<50	--	--	<50/<50	--	--	--
Radiochemistry												
Gross Alpha (pCi/L)[l]	15	<6	--	7.37±3.82	--	<5	--	6.39±3.43	<5	--	4.57±3.03	--
Gross Beta (pCi/L)	NA	<4	--	<6.19	--	<5	--	<6.06	3.8±2.3	--	<5.95	--
Radium-228 (pCi/L)	5[m]	<1	--	<1.09	--	<1	--	<1.65	<2	--	<1.75	--
Radium-226 (pCi/L)	5[m]	0.53±0.18	--	< 0.584	--	1.6±0.2	--	<0.866	0.54±0.18	--	<0.791	--
Total Uranium (ug/L)	30	4.9±0.7	--	5.33±0.128	--	4.4±0.7	--	5.08±0.0916	3.4±0.5	--	5.41±0.124	--

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	MW-3S				MW-3D			MW-4S		MW-5	
		11/95	1/00	8/16/00	2/20/02	11/95	1/00	8/15/00	1/00	8/8/00	1/00	8/8/00
Volatile Organic Compounds (ug/l)[b]												
Carbon Tetrachloride	2	**140**	<12	< 12	--	<100	<5	< 5	<0.5	< 0.5	0.9	1
Chloroethane	100	<100	<25	12 J	--	<100	5J	< 10	<1	< 1	<1	< 1
Chloroform	6	<100	<12	< 12	--	<100	<5	< 5	2	3	5	5
1,1-Dichloroethane	50	**520**	**560**	**810**	--	**860**	**140**	**280**	<0.5	< 0.5	0.8	1
1,2-Dichloroethane	2	<100	<12	< 12	--	<100	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
1,1-Dichloroethene	2	<100	**50**	**88**	--	<100	**14**	**24**	<0.5	< 0.5	<0.5	0.6
Methylene Chloride	3	**180B**	**18JB**	< 25	--	**480B**	**8JB**	< 10	<1 B	< 1	<1B	< 1
1,1,1-Trichloroethane	30	<100	25	30	--	<100	<5	< 5	0.7	0.5 J	1	2
1,1,2-Trichloroethane	3	**1,500**	<12	< 12	--	<100	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
1,1,2,2-Tetrachloroethane	1	<100	<12	< 12	--	**100**	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Tetrachloroethene	1	<100	<12	< 12	--	<100	<5	< 5	**7**	**5**	<0.5	< 0.5
Trichloroethene	1	**2,800**	**310**	**600**	--	**210**	**140**	**160**	<0.5	< 0.5	**12**	**17**
Vinyl Chloride	5	**140**	**75**	**150**	--	<100	**7J**	< 10	<1	< 1	<1	< 1
1,2-Dichloropropane	1	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
2-Butanone	300	--	<120	< 120	--	--	<50	< 50	<5	< 5	<5	< 5
2-Hexanone	100	--	<120	< 120	--	--	<50	< 50	<5	< 5	<5	< 5
4-Methyl-2-Pentanone	400	--	<120	< 120	--	--	<50	< 50	<5	< 5	<5	< 5
Acetone	700	--	<120	< 120	--	--	<50	< 50	<5	< 5	<5	< 5
Benzene	1	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Bromodichloromethane	1	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Bromoform	4	--	<25	< 25	--	--	<10	< 10	<1	< 1	<1	< 1
Bromomethane	10	--	<25	< 25	--	--	<10	< 10	<1	< 1	<1	< 1
Carbon Disulfide	800	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Chlorobenzene	50	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Chloromethane	30	--	<25	< 25	--	--	<10	< 10	<1	< 1	<1	< 1
Dibromochloromethane	10	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Ethylbenzene	700	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Methyl-t-butyl Ether	70	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Styrene	100	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Toluene	1000	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Xylenes- Meta & Para	1000[i]	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
Xylenes- Ortho	1000[i]	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
cis-1,2-Dichloroethene	70	--	**110**	**130**	--	--	28	43	<0.5	< 0.5	<0.5	0.8
cis-1,3-Dichloropropene	NA[j]	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
trans-1,2-Dichloroethene	100	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5
trans-1,3-Dichloropropene	NA	--	<12	< 12	--	--	<5	< 5	<0.5	< 0.5	<0.5	< 0.5

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	MW-3S				MW-3D			MW-4S		MW-5	
		11/95	1/00	8/16/00	2/20/02	11/95	1/00	8/15/00	1/00	8/8/00	1/00	8/8/00
Inorganics (ug/l)												
Antimony	20	10/<5	--	--	--	8.6/<5	--	--	--	--	--	--
Arsenic	8	<5/<5	**20**	**20**	<5	<5/<5	<5	< 5	<5	< 5	<5	< 5
Beryllium	20	<2/<2	--	--	--	<2/<2	--	--	--	--	--	--
Cadmium	4	<5/<5	**8**	**5**	<4	<5/<5	**7**	< 4	<4	**5**	<4	**5**
Chromium	100	**950/1,200**	**120**	**150**	<10	<10/<10	11	< 5	19	8	11	< 5
Copper	1000	<10/<10	--	--	--	<10/<10	--	--	--	--	--	--
Lead	10	4/6.5	<5	5	<3	<2/4.7	<5	< 5	<5	**15**	<5	**11**
Mercury	2	<0.3/<0.3	<0.5	< 0.5	<0.2	<0.3/<0.3	<0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5
Nickel	100	<20/<20	--	--	--	<20/<20	--	--	--	--	--	--
Selenium	50	<5/<5	--	--	--	<5/<5	--	--	--	--	--	--
Silver	30	<5/<5	--	--	--	<5/<5	--	--	--	--	--	--
Thallium	10	<5/<5	--	--	--	<5/<5	--	--	--	--	--	--
Vanadium	NA	--/ --	--	--	--	--/ --	--	--	--	--	--	--
Zinc	5000	<50/<50	--	--	--	<50/<50	--	--	--	--	--	--
Radiochemistry												
Gross Alpha (pCi/L)[l]	15	<4	--	11.5±3.45	<4.65	<4	--	6.51±3.49	--	8.69±3.01	--	<0.856
Gross Beta (pCi/L)	NA	3.5±2.2	--	6.89±2.53	<1.45	3.5±2.2	--	<6.38	--	10.6±2.60	--	<2.11
Radium-228 (pCi/L)	5[m]	<1	--	<1.66	<0.958	<0.6	--	<1.69	--	<1.41	--	<1.57
Radium-226 (pCi/L)	5[m]	0.25±0.12	--	1.66±0.809	< 0.469	<0.3	--	<0.856	--	1.37±0.622	--	<0.701
Total Uranium (ug/L)	30	1.3±0.2	--	1.80±0.042	0.887±0.0418	3.5±0.5	--	2.94±0.0719	--	3.94±0.054	--	0.905±0.014

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	MW-6D		MW-6S			MW-7D		MW-8D		MW-9	
		1/00	8/15/00	1/00	8/15/00	2/18/02	1/00	8/8/00	1/00	8/15/00	1/00	8/8/00
Volatile Organic Compounds (ug/l)[b]												
Carbon Tetrachloride	2	<5	< 5	<25	< 25	<5 | <5	0.6	1	2	4	<0.5	< 0.5
Chloroethane	100	33	24	65	130	15.9J | 14.6J	<1	< 1	<2	< 5	<1	< 1
Chloroform	6	<5	< 5	<25	< 25	25 | 24.2J	12	18	59	71	25	12
1,1-Dichloroethane	50	150	150	1100	1,300	846 | 802	0.8	2	33	42	<0.5	< 0.5
1,2-Dichloroethane	2	<5	< 5	<25	< 25	6.9J | 6.4J	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
1,1-Dichloroethene	2	20	20	200	230	187 | 163	<0.5	2	11	15	<0.5	< 0.5
Methylene Chloride	3	7JB	< 10	50JB	< 50	<10 | <10	<1B	< 1	2 JB	< 5	<1 B	< 1
1,1,1-Trichloroethane	30	17	< 5	600	360	633 | 578	<0.5	< 0.5	2	2 J	<0.5	< 0.5
1,1,2-Trichloroethane	3	<5	< 5	<25	< 25	<15 | <15	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
1,1,2,2-Tetrachloroethane	1	<5	< 5	<25	< 25	<10 | <10	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Tetrachloroethene	1	<5	< 5	<25	< 25	<5 | <5	0.8	0.8	6	7	16	5
Trichloroethene	1	130	120	170	150	247 | 229	12	23	90	120	4	1
Vinyl Chloride	5	12	11	190	490	423 | 384	<1	< 1	<2	< 5	<1	< 1
1,2-Dichloropropane	1	<5	< 5	<25	< 25	<5 | <5	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
2-Butanone	300	<50	< 50	<250	< 250	<25 | <25	<5	< 5	<12	< 25	<5	< 5
2-Hexanone	100	<50	< 50	<250	< 250	<25 | <25	<5	< 5	<12	< 25	<5	< 5
4-Methyl-2-Pentanone	400	<50	< 50	<250	< 250	<25 | <25	<5	< 5	<12	< 25	<5	< 5
Acetone	700	<50	< 50	<250	< 250	<25 | <25	3J	< 5	<12	< 25	<5	< 5
Benzene	1	<5	< 5	<25	< 25	<5 | <5	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Bromodichloromethane	1	<5	< 5	<25	< 25	<5 | <5	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Bromoform	4	<10	< 10	<50	< 50	<20 | <20	<1	< 1	<2	< 5	<1	< 1
Bromomethane	10	<10	< 10	<50	< 50	<25 | <25	<1	< 1	<2	< 5	<1	< 1
Carbon Disulfide	800	<5	< 5	<25	< 25	<25 | <25	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Chlorobenzene	50	<5	< 5	<25	< 25	<10 | <10	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Chloromethane	30	<10	< 10	<50	< 50	<25 | <25	<1	< 1	<2	< 5	<1	< 1
Dibromochloromethane	10	<5	< 5	<25	< 25	<25 | <25	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Ethylbenzene	700	<5	< 5	<25	< 25	<5 | <5	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Methyl-t-butyl Ether	70	<5	< 5	<25	< 25	--	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Styrene	100	<5	< 5	<25	< 25	<25 | <25	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Toluene	1000	<5	< 5	<25	< 25	<5 | <5	1	< 0.5	<1	< 2	<0.5	< 0.5
Xylenes- Meta & Para	1000[i]	<5	< 5	<25	< 25	--	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
Xylenes- Ortho	1000[i]	<5	< 5	<25	< 25	--	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
cis-1,2-Dichloroethene	70	33	39	100	110	177 | 170	2	4	12	12	<0.5	< 0.5
cis-1,3-Dichloropropene	NA[j]	<5	< 5	<25	< 25	<5 | <5	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
trans-1,2-Dichloroethene	100	<5	< 5	<25	< 25	3J | <25	<0.5	< 0.5	<1	< 2	<0.5	< 0.5
trans-1,3-Dichloropropene	NA	<5	< 5	<25	< 25	<5 | <5	<0.5	< 0.5	<1	< 2	<0.5	< 0.5

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

	NJDEP	MW-6D		MW-6S			MW-7D		MW-8D		MW-9	
Date:	Groundwater Quality Standard [a]	1/00	8/15/00	1/00	8/15/00	2/18/02	1/00	8/8/00	1/00	8/15/00	1/00	8/8/00
Inorganics (ug/l)												
Antimony	20	--	--	--	--	--	--	--	--	--	--	--
Arsenic	8	<5	< 5	<5	5	--	<5	< 5	<5	< 5	<5	< 5
Beryllium	20	--	--	--	--	--	--	--	--	--	--	--
Cadmium	4	<4	< 4	<4	< 4	--	<4	< 4	<4	< 4	<4	< 4
Chromium	100	9	7	<5	< 5	--	16	6	41	22	14	14
Copper	1000	--	--	--	--	--	--	--	--	--	--	--
Lead	10	<5	9	<5	< 5	--	5	< 5	<5	< 5	<5	9
Mercury	2	<0.5	< 0.5	<0.5	< 0.5	--	<0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5
Nickel	100	--	--	--	--	--	--	--	--	--	--	--
Selenium	50	--	--	--	--	--	--	--	--	--	--	--
Silver	30	--	--	--	--	--	--	--	--	--	--	--
Thallium	10	--	--	--	--	--	--	--	--	--	--	--
Vanadium	NA	--	--	--	--	--	--	--	--	--	--	--
Zinc	5000	--	--	--	--	--	--	--	--	--	--	--
Radiochemistry												
Gross Alpha (pCi/L)[l]	15	--	<3.74	--	8.08±3.89	--	--	13.5±2.67	--	10.7±4.39	--	<3.72
Gross Beta (pCi/L)	NA	--	<5.91	--	6.21±3.19	--	--	7.42±1.50	--	6.19±3.14	--	21.4±3.72
Radium-228 (pCi/L)	5[m]	--	<2.71	--	<1.65	--	--	<1.71	--	<1.94	--	<1.85
Radium-226 (pCi/L)	5[m]	--	0.878±0.430	--	0.974±0.463	--	--	0.912±0.523	--	<0.600	--	<0.656
Total Uranium (ug/L)	30	--	2.35±0.0575	--	7.25±0.176	--	--	20.0±0.835	--	8.84±0.214	--	0.942±0.017

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	MW-10		MW-12		MW-14			MW-14S	
		1/00	8/7/00	1/00	8/15/00	1/00	8/10/00	2/19/02	1/00	8/10/00
Volatile Organic Compounds (ug/l)[b]										
Carbon Tetrachloride	2	<0.5	< 0.5	1	< 1	<1	< 1	--	<2	< 2
Chloroethane	100	<1	< 1	<1	< 2	<2	< 2	--	5J	4 J
Chloroform	6	**16**	**13**	**27**	**24**	<1	< 1	--	<2	< 2
1,1-Dichloroethane	50	<0.5	< 0.5	<0.5	< 1	47	30	--	**75**	**76**
1,2-Dichloroethane	2	<0.5	< 0.5	0.8	< 1	<1	< 1	--	<2	< 2
1,1-Dichloroethene	2	<0.5	< 0.5	0.9	1 J	**23**	**21**	--	**7**	**6**
Methylene Chloride	3	<1B	< 1	<1B	< 2	1JB	< 2	--	**7B**	< 5
1,1,1-Trichloroethane	30	<0.5	< 0.5	<0.5	< 1	15	10	--	<2	< 2
1,1,2-Trichloroethane	3	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
1,1,2,2-Tetrachloroethane	1	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Tetrachloroethene	1	**1**	**2**	**1**	**2**	<1	< 1	--	<2	< 2
Trichloroethene	1	**1**	**0.4 J**	**13**	**21**	**71**	**74**	--	**84**	**56**
Vinyl Chloride	5	<1	< 1	<1	< 2	3	1 J	--	<5	< 5
1,2-Dichloropropane	1	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
2-Butanone	300	<5	< 5	<5	< 12	<10	< 10	--	<25	< 25
2-Hexanone	100	<5	< 5	<5	< 12	<10	< 10	--	<25	< 25
4-Methyl-2-Pentanone	400	<5	< 5	<5	< 12	<10	< 10	--	<25	< 25
Acetone	700	<5	< 5	10	14	<10	< 10	--	<25	< 25
Benzene	1	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Bromodichloromethane	1	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Bromoform	4	<1	< 1	<1	< 2	<2	< 2	--	<5	< 5
Bromomethane	10	<1	< 1	<1	< 2	<2	< 2	--	<5	< 5
Carbon Disulfide	800	<0.5	< 0.5	<0.5	68	<1	< 1	--	<2	< 2
Chlorobenzene	50	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Chloromethane	30	<1	< 1	<1	< 2	<2	< 2	--	<5	< 5
Dibromochloromethane	10	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Ethylbenzene	700	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Methyl-t-butyl Ether	70	<0.5	< 0.5	0.6	< 1	<1	< 1	--	<2	< 2
Styrene	100	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Toluene	1000	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Xylenes- Meta & Para	1000[i]	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
Xylenes- Ortho	1000[i]	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
cis-1,2-Dichloroethene	70	<0.5	< 0.5	3	6	11	8	--	10	10
cis-1,3-Dichloropropene	NA[j]	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
trans-1,2-Dichloroethene	100	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2
trans-1,3-Dichloropropene	NA	<0.5	< 0.5	<0.5	< 1	<1	< 1	--	<2	< 2

TABLE 5

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

	NJDEP	MW-10		MW-12		MW-14			MW-14S	
Date:	Groundwater Quality Standard [a]	1/00	8/7/00	1/00	8/15/00	1/00	8/10/00	2/19/02	1/00	8/10/00
Inorganics (ug/l)										
Antimony	20	--	--	--	--	--	--	--	--	--
Arsenic	8	<5	< 5	<5	< 5	<5	< 5	<5	<5	< 5
Beryllium	20	--	--	--	--	--	--	--	--	--
Cadmium	4	<4	4	<4	< 4	<4	< 4	<4	<4	< 4
Chromium	100	11	11	**140**	35	8	< 5	<10	10	< 5
Copper	1000	--	--	--	--	--	--	--	--	--
Lead	10	**12**	8	8	10	<5	< 5	<3	<5	< 5
Mercury	2	<0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	0.23	<0.5	0.6
Nickel	100	--	--	--	--	--	--	--	--	--
Selenium	50	--	--	--	--	--	--	--	--	--
Silver	30	--	--	--	--	--	--	--	--	--
Thallium	10	--	--	--	--	--	--	--	--	--
Vanadium	NA	--	--	--	--	--	--	--	--	--
Zinc	5000	--	--	--	--	--	--	--	--	--
Radiochemistry										
Gross Alpha (pCi/L)[l]	15	**62.6±6.13**	7.87±2.04	7.72±1.98	6.40±3.92	<3.0	7.35±3.68	<4.95	5.97±2.04	4.44±1.93
Gross Beta (pCi/L)	NA	145±5.26	10.7±1.77	123±3.56	131±9.70	3.33±1.44	<8.30	2.95 ± 2.14	6.31±1.43	6.49±1.78
Radium-228 (pCi/L)	5[m]	3.93±1.22	<2.03	1.21±1.93	<1.71	<5.05	<2.41	1.46 ± 0.805	<4.01	<2.18
Radium-226 (pCi/L)	5[m]	<0.978	0.735±0.552	<0.737	0.919±0.509	<1.03	**5.45±1.04**	<0.318	<1.01	2.71±0.703
Total Uranium (ug/L)	30	**88.9±2.76**	12.3±0.537	6.28±0.0825	10.8±0.247	3.56±0.0464	4.55±0.0801	4.95±0.109	5.14±0.0666	5.48±0.0944

TABLE 5

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	MW-15A 2/19/02	MW-15B 2/19/02	PW-1 11/95	PW-1 1/00	PW-1 9/27/00	PW-1 2/20/02	PW-3 11/95	PW-3R 2/19/02
Volatile Organic Compounds (ug/l)[b]									
Carbon Tetrachloride	2	**4.8J**	**3.3**	<2	<5	< 5	--	<100	**8.9**
Chloroethane	100	<25	<10	100	<10	< 10	--	<100	<25
Chloroform	6	3.9J	3.6J	<2	<5	< 5	--	<100	**10.3J**
1,1-Dichloroethane	50	<25	1.7J	**130**	**110**	**89**	--	**340**	**128**
1,2-Dichloroethane	2	<10	<4	**2.4**	<5	< 5	--	<100	<10
1,1-Dichloroethene	2	<10	<4	**32**	**34**	**31**	--	<100	**17.9**
Methylene Chloride	3	<10	<4	<2	**8JB**	**14 B**	--	<100	<10
1,1,1-Trichloroethane	30	<25	<10	4.3	**46**	22	--	<100	<25
1,1,2-Trichloroethane	3	<15	<6	<2	<5	< 5	--	<100	<15
1,1,2,2-Tetrachloroethane	1	<10	<4	<2	<5	< 5	--	<100	<10
Tetrachloroethene	1	<5	<2	<2	<5	< 5	--	<100	**4.8J**
Trichloroethene	1	**505**	**182**	**110**	**430**	**260**	--	**2,300**	**1,220**
Vinyl Chloride	5	<5	<2	**100**	**35**	**44**	--	<100	<5
1,2-Dichloropropane	1	<5	<2	--	<5	< 5	--	--	<5
2-Butanone	300	<25	<10	--	<50	< 50	--	--	<25
2-Hexanone	100	<25	<10	--	<50	< 50	--	--	<25
4-Methyl-2-Pentanone	400	<25	<10	--	<50	< 50	--	--	<25
Acetone	700	<25	<10	--	<50	< 50	--	--	<25
Benzene	1	<5	<2	--	<5	< 5	--	--	<5
Bromodichloromethane	1	<5	<2	--	<5	< 5	--	--	<5
Bromoform	4	<20	<8	--	<10	< 10	--	--	<20
Bromomethane	10	<25	<10	--	<10	< 10	--	--	<25
Carbon Disulfide	800	<25	<10	--	<5	< 5	--	--	<25
Chlorobenzene	50	<10	<4	--	<5	< 5	--	--	<10
Chloromethane	30	<25	<10	--	<10	< 10	--	--	<25
Dibromochloromethane	10	<25	<10	--	<5	< 5	--	--	<25
Ethylbenzene	700	<5	<2	--	<5	< 5	--	--	<5
Methyl-t-butyl Ether	70	--	--	--	<5	< 5	--	--	--
Styrene	100	<25	<10	--	<5	< 5	--	--	<25
Toluene	1000	<5	<2	--	<5	< 5	--	--	<5
Xylenes- Meta & Para	1000[i]	--	--	--	<5	< 5	--	--	--
Xylenes- Ortho	1000[i]	--	--	--	<5	< 5	--	--	--
cis-1,2-Dichloroethene	70	<25	<10	--	43	46	--	--	22J
cis-1,3-Dichloropropene	NA[j]	<5	<2	--	<5	< 5	--	--	<5
trans-1,2-Dichloroethene	100	<25	<10	--	<5	< 5	--	--	<25
trans-1,3-Dichloropropene	NA	<5	<2	--	<5	< 5	--	--	<5

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	MW-15A 2/19/02	MW-15B 2/19/02	PW-1 11/95	PW-1 1/00	PW-1 9/27/00	PW-1 2/20/02	PW-3 11/95	PW-3R 2/19/02
Inorganics (ug/l)									
Antimony	20	--	--	<10/<10	--	--	--	<10/<10	--
Arsenic	8	<5	<5	7/<5	<5	< 5	11.3	<5/<5	<5
Beryllium	20	--	--	<2/<2	--	--	--	<2/<2	--
Cadmium	4	<4	<4	<5/<5	5	4	<4	<5/<5	<4
Chromium	100	<10	<10	150/<10	9	33	<10	40/<10	<10
Copper	1000	--	--	30/<10	--	--	--	40/10	--
Lead	10	<3	<3	38/<3	<5	37	<3	6.1/<3	<3
Mercury	2	<0.20	0.23	1.1/<0.3	<0.5	< 0.5	0.24	<0.3/<0.3	0.26
Nickel	100	--	--	100/<20	--	--	--	<20/<20	--
Selenium	50	--	--	<5/<5	--	--	--	<5/<5	--
Silver	30	--	--	<5/<5	--	--	--	<5/<5	--
Thallium	10	--	--	<5/<5	--	--	--	<5/<5	--
Vanadium	NA	--	--	--/--	--	--	--	--/--	--
Zinc	5000	--	--	60/<50	--	--	--	<50/<50	--
Radiochemistry									
Gross Alpha (pCi/L)[f]	15	<5.5	<4.64	<5	--	8.58±3.26	3.10 ± 2.81	<5	<6.74
Gross Beta (pCi/L)	NA	<3.06	<2.62	15±4	--	6.74±2.03	4.47 ± 1.88	<5	<3.00
Radium-228 (pCi/L)	5[m]	1.82 ± 0.825	<0.732	<0.6	--	< 2.69	< 1.92	<1	<0.684
Radium-226 (pCi/L)	5[m]	<0.654	0.277 ± 0.19	0.97±0.12	--	1.50±0.596	1.52 ± 0.628	<0.2	0.537 ± 0.323
Total Uranium (ug/L)	30	6.36±0.139	1.99±0.0453	4.3±0.6	--	2.42±0.092	0.975 ± 0.053	1.6±0.2	4.94±0.108

TABLE 5
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
INTERMEDIATE BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

NOTES:

a. NJDEP Groundwater Quality Standards (as per N.J.A.C. Title 7, Chapter 9) reported in ug/l unless noted. Standards for VOCs are the higher of Practical Quantitation Limits and NJDEP Groundwater Quality Criteria. Standards for radiochemistry are the Federal and New Jersey State Primary Drinking Water Standar
b. "ug/l" is micrograms per liter or parts per billion (ppb).
c. y | z represents a duplicate sample was collected at this well location (y equals the sample result from the original well sample while z equals the sample result from the duplicate sample).
d. "--" indicates the sample was not analyzed for this parameter.
e. <x indicates that the parameter was not detected above method detection limits (x).
f. Bold indicates value exceeds NJDEP Groundwater Quality Standards. N.J.A.C. Title 7, Chapter 9.
g. "B" indicates not detected substantially above the level reported in laboratory or field blanks.
h. "J" indicates sample result is below method detection limit.
i. Value is for total Xylenes.
j. "NA" indicates that there is currently no groundwater quality standard for this parameter.
k. x/x represents total (unfiltered)/dissolved (filtered) analytical result.
l. "pCi/L" is picoCuries per liter plus/minus total error.
m. Value is for combined radium-226 and radium-228.

TABLE 6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DEEP BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	P-1R			P-1D	P-2R				P-3R			
		11/95	1/00	8/17/00	2/19/02	11/95	1/00	8/9/00	2/20/02	11/95	1/00	8/10/00	2/18/02
Volatile Organic Compounds (ug/l)[b]													
Carbon Tetrachloride	2	<100[c]	<25	< 50	<10	<2	<0.5	< 0.5	--[d]	<50	<1	< 25	<5
Chloroethane	100	<100	<50	< 100	<50	<2	<1	< 1	--	<50	<2	< 50	<25
Chloroform	6	<100	<25	< 50	**8.3J**[e]	**130**	**22**	< 0.5	--	<50	<1	< 25	4.8J
1,1-Dichloroethane	50	<100	<25	< 50	<50	<2	1	0.5 J	--	<50	<1	35	32.1
1,2-Dichloroethane	2	<100	<25	< 50	<20	<2	<0.5	< 0.5	--	<50	<1	< 25	<10
1,1-Dichloroethene	2	<100	<25	< 50	**64**	**9.7**	1	0.7	--	<50	<1	**25J**	**20.3**
Methylene Chloride	3	**230B**[f]	**45JB**	< 100	<20	**4.7B**	<1 B	< 1	--	**56B**	2JB	< 50	<10
1,1,1-Trichloroethane	30	<100	<25	< 50	<50	9.5	0.8	< 0.5	--	**55**	<1	< 25	5J
1,1,2-Trichloroethane	3	<100	<25	< 50	<30	<2	<0.5	< 0.5	--	<50	<1	< 25	<15
1,1,2,2-Tetrachloroethane	1	<100	<25	< 50	<20	<2	<0.5	< 0.5	--	<50	<1	< 25	<10
Tetrachloroethene	1	<100	<25	< 50	**10.4**	**9.7**	1	0.8	--	<50	<1	< 25	<5
Trichloroethene	1	**1,300**	**1,400**	**3,000**	**3,420**	**42**	**7**	**4**	--	**1,100**	**84**	**1,300**	**890**
Vinyl Chloride	5	<100	**25J**	**60 J**	**126**	<2	<1	< 1	--	<50	<2	< 50	<5
1,2-Dichloropropane	1	--	<25	< 50	<10	--	<0.5	< 0.5	--	--	<1	< 25	<5
2-Butanone	300	--	<250	< 500	<50	--	<5	< 5	--	--	<12	< 250	<25
2-Hexanone	100	--	<250	< 500	<50	--	<5	< 5	--	--	<12	< 250	<25
4-Methyl-2-Pentanone	400	--	<250	< 500	<50	--	<5	< 5	--	--	<12	< 250	<25
Acetone	700	--	<250	< 500	<50	--	<5	< 5	--	--	<12	< 250	<25
Benzene	1	--	<25	< 50	<10	--	<0.5	< 0.5	--	--	<1	< 25	<5
Bromodichloromethane	1	--	<25	< 50	<10	--	<0.5	< 0.5	--	--	<1	< 25	<5
Bromoform	4	--	<50	< 100	<40	--	<1	< 1	--	--	<2	< 50	<20
Bromomethane	10	--	<50	< 100	<50	--	<1	< 1	--	--	<2	< 50	<25
Carbon Disulfide	800	--	<25	< 50	<50	--	<0.5	< 0.5	--	--	<1	< 25	<25
Chlorobenzene	50	--	<25	< 50	<20	--	<0.5	< 0.5	--	--	<1	< 25	<10
Chloromethane	30	--	<50	< 100	<50	--	<1	< 1	--	--	<2	< 50	<25
Dibromochloromethane	10	--	<25	< 50	<50	--	<0.5	< 0.5	--	--	<1	< 25	<25
Ethylbenzene	700	--	<25	< 50	<10	--	<0.5	< 0.5	--	--	<1	< 25	<5
Methyl-t-butyl Ether	70	--	<25	< 50	--	--	<0.5	< 0.5	--	--	<1	< 25	--
Styrene	100	--	<25	< 50	<50	--	<0.5	< 0.5	--	--	<1	< 25	<25
Toluene	1000	--	<25	< 50	<10	--	<0.5	< 0.5	--	--	<1	< 25	<5
Xylenes- Meta & Para	1000[g]	--	<25	< 50	--	--	<0.5	< 0.5	--	--	<1	< 25	--
Xylenes- Ortho	1000[g]	--	<25	< 50	--	--	<0.5	< 0.5	--	--	<1	< 25	--
cis-1,2-Dichloroethene	70	--	**790**	**400**	**271**	--	2	0.6	--	--	2	20 J	**226**
cis-1,3-Dichloropropene	NA[h]	--	<25	< 50	<10	--	<0.5	< 0.5	--	--	<1	< 25	<5
trans-1,2-Dichloroethene	100	--	<25	< 50	<50	--	<0.5	< 0.5	--	--	<1	< 25	<25
trans-1,3-Dichloropropene	NA	--	<25	< 50	<10	--	<0.5	< 0.5	--	--	<1	< 25	<5

TABLE 6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DEEP BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [e]	P-1R 11/95	P-1R 1/00	P-1R 8/17/00	P-1D 2/19/02	P-2R 11/95	P-2R 1/00	P-2R 8/9/00	P-2R 2/20/02	P-3R 11/95	P-3R 1/00	P-3R 8/10/00	P-3R 2/18/02
Inorganics (ug/l)													
Antimony	20	<5/<5[i]	--	--	--	<5/<5	--	--	--	<5/<5	--	--	--
Arsenic	8	6.3/**8.8**	<5	< 5	<5	<5/<5	<5	< 5	<5 | <5[j]	**9.2**/6.9	<5	6	--
Beryllium	20	<2/<2	--	--	--	<2/<2	--	--	--	<2/<2	--	--	--
Cadmium	4	<5/<5	<4	4	<4	<5/<5	<4	< 4	<4 | <4	<5/<5	<4	4	--
Chromium	100	<130/<130	24	10	<10	<10/<10	<5	< 5	<10 | <10	**470**/70	**150**	7	--
Copper	1000	70/<10	--	--	--	<10/<10	--	--	--	<10/<10	--	--	--
Lead	10	**18**/<2	6	7	<3	4.6/<2	<5	< 5	4.9 | <3	3.2/<2	**160**	9	--
Mercury	2	<0.5/<0.5	0.6	< 0.5	0.29	<0.5/<0.5	<0.5	0.7	0.37 | 0.25	<0.3/<0.3	**23**	0.5	--
Nickel	100	<20/<20	--	--	--	<20/<20	--	--	--	<20/<20	--	--	--
Selenium	50	<5/<5	--	--	--	<5/<5	--	--	--	<5/<5	--	--	--
Silver	30	<5/<5	--	--	--	<5/<5	--	--	--	<5/<5	--	--	--
Thallium	10	<5/<5	--	--	--	<5/<5	--	--	--	<5/<5	--	--	--
Zinc	5000	120/<50	--	--	--	<50/<50	--	--	--	<50/<50	--	--	--
Radiochemistry													
Gross Alpha (pCi/L)[k]	15	<6	--	9.84±4.04	<9.44	6.5±5.3	<2.93	**20.8±3.59**	**24.9±14.8 | 37.2±23.7**	<5	--	14.4±5.25	--
Gross Beta (pCi/L)	NA	11±4	--	6.23±2.63	5.08 ± 2.62	10±4	25.2±2.43	11.1±2.14	12.4 ± 4.73 | 10.5±4.18	11±3	--	<8.74	--
Radium-228 (pCi/L)	5[l]	<1	--	<2.09	< 2.43	<1	<2.80	<1.36	0.795 ± 0.559 | <0.697	<1	--	<2.17	--
Radium-226 (pCi/L)	5[l]	<0.3	--	<0.775	<0.442	0.2±0.08	0.918±0.624	4.49±1.03	<0.518 | 0.402±0.217	0.15±0.07	--	0.957±0.650	--
Total Uranium (ug/L)	30	3.3±0.5	--	6.38±0.118	0.645±0.0186	13±2	2.55±0.0335	26.4±1.13	**56.0±1.81 | 34.2±1.12**	2.8±0.4	--	12.7±0.565	--
Thorium-232 (pCi/L)	NA	--	--	--	--	--	--	< 0.0409	--	--	--	< 0.140	--

TABLE 6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DEEP BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	P-4R			P-5			P-6		
		11/95	1/00	8/9/00	1/00	8/8/00	2/19/02	1/00	8/10/00	2/21/02
Volatile Organic Compounds (ug/l)[b]										
Carbon Tetrachloride	2	<100	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Chloroethane	100	<100	<2	< 1	<1	< 1	--	<2	< 2	--
Chloroform	6	**1,100**	**53**	**27**	1	0.8	--	<1	< 1	--
1,1-Dichloroethane	50	<100	<1	0.6	2	4	--	<1	1 J	--
1,2-Dichloroethane	2	<100	<1	< 0.5	<0.5	< 0.5	--	**4**	**5**	--
1,1-Dichloroethene	2	<100	<1	0.5 J	1	**3**	--	<1	< 1	--
Methylene Chloride	3	**290B**	1JB	< 1	<1 B	< 1	--	2JB	< 2	--
1,1,1-Trichloroethane	30	<100	<1	< 0.5	0.6	1	--	<1	< 1	--
1,1,2-Trichloroethane	3	<100	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
1,1,2,2-Tetrachloroethane	1	<100	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Tetrachloroethene	1	<100	1	0.6	**2**	**4**	--	<1	< 1	--
Trichloroethene	1	<100	**6**	**3**	**14**	**19**	--	**52**	**59**	--
Vinyl Chloride	5	<100	<2	< 1	<1	< 1	--	<2	< 2	--
1,2-Dichloropropane	1	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
2-Butanone	300	--	<10	< 5	<5	< 5	--	<12	< 12	--
2-Hexanone	100	--	<10	< 5	<5	< 5	--	<12	< 12	--
4-Methyl-2-Pentanone	400	--	<10	< 5	<5	< 5	--	<12	< 12	--
Acetone	700	--	<10	< 5	2J	< 5	--	<12	< 12	--
Benzene	1	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Bromodichloromethane	1	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Bromoform	4	--	<2	< 1	<1	< 1	--	<2	< 2	--
Bromomethane	10	--	<2	< 1	<1	< 1	--	<2	< 2	--
Carbon Disulfide	800	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Chlorobenzene	50	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Chloromethane	30	--	<2	< 1	<1	< 1	--	<2	< 2	--
Dibromochloromethane	10	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Ethylbenzene	700	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Methyl-t-butyl Ether	70	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Styrene	100	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Toluene	1000	--	<1	< 0.5	0.7	< 0.5	--	<1	< 1	--
Xylenes- Meta & Para	1000[g]	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
Xylenes- Ortho	1000[g]	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
cis-1,2-Dichloroethene	70	--	1J	0.7	2	2	--	2	2	--
cis-1,3-Dichloropropene	NA[h]	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
trans-1,2-Dichloroethene	100	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--
trans-1,3-Dichloropropene	NA	--	<1	< 0.5	<0.5	< 0.5	--	<1	< 1	--

TABLE 6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DEEP BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

	NJDEP	P-4R			P-5			P-6		
Date:	Groundwater Quality Standard [a]	11/95	1/00	8/9/00	1/00	8/8/00	2/19/02	1/00	8/10/00	2/21/02
Inorganics (ug/l)										
Antimony	20	<5/<5	--	--	--	--	--	--	--	--
Arsenic	8	<5/<5	<5	< 5	**21**	**13**	**8.3**	6	< 5	<5
Beryllium	20	<2/<2	--	--	--	--	--	--	--	--
Cadmium	4	<5/<5	<4	4	<4	< 4	<4	<4	**5**	<4
Chromium	100	<10/<10	16	< 5	18	5	<10	36	32	24.8
Copper	1000	10/<10	--	--	--	--	--	--	--	--
Lead	10	<2/<2	**18**	< 5	<5	< 5	<3	9	< 5	<3
Mercury	2	<0.5/<0.5	<0.5	< 0.5	<0.5	< 0.5	0.24	<0.5	0.7	0.24
Nickel	100	<20/<20	--	--	--	--	--	--	--	--
Selenium	50	<5/<5	--	--	--	--	--	--	--	--
Silver	30	<5/<5	--	--	--	--	--	--	--	--
Thallium	10	<5/<5	--	--	--	--	--	--	--	--
Zinc	5000	<50/<50	--	--	--	--	--	--	--	--
Radiochemistry										
Gross Alpha (pCi/L)[k]	15	<7	--	3.73±1.52	**56.9±5.86**	**21.9±3.38**	**29.2 + 16.3**	14.1±3.11	**26.3±6.69**	<1.43
Gross Beta (pCi/L)	NA	5.6±3.4	--	4.77±1.70	47.9±3.59	10.2±1.63	4.44 + 2.44	9.89±2.57	11.1±4.50	1.43 ± 1.0
Radium-228 (pCi/L)	5[l]	<0.6	--	<2.30	<4.02	<2.01	1.35 + 0.680	<3.52	<2.38	1.12 ± 0.809
Radium-226 (pCi/L)	5[l]	<0.2	--	<0.583	2.93±1.09	<0.682	<0.623	1.03±0.557	**8.71±1.27**	< 0.389
Total Uranium (ug/L)	30	2.8±0.4	--	5.82±0.0821	21.4±0.281	23.3±1.02	22.9±0.759	8.79±0.113	6.63±0.0897	18.3±0.697
Thorium-232 (pCi/L)	NA	--	--	--	--	< 0.118	--	--	< 0.0522	--

TABLE 6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DEEP BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	P-7			P-8			P-9
		1/00	8/11/00	2/19/02	1/00	8/8/00	2/19/02	2/19/02
Volatile Organic Compounds (ug/l)[b]								
Carbon Tetrachloride	2	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<5
Chloroethane	100	<5	< 5	--	<1	< 1 | < 1	--	<25
Chloroform	6	<2	< 2	--	1	< 0.5 | < 0.5	--	<25
1,1-Dichloroethane	50	4	4	--	2	1 | 1	--	11.7J
1,2-Dichloroethane	2	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<10
1,1-Dichloroethene	2	2 J	3	--	2	1 | 1	--	<10
Methylene Chloride	3	4 JB	< 5	--	<1B	< 1 | < 1	--	<10
1,1,1-Trichloroethane	30	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<25
1,1,2-Trichloroethane	3	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<15
1,1,2,2-Tetrachloroethane	1	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<10
Tetrachloroethene	1	<2	< 2	--	4	2 | 3	--	<5
Trichloroethene	1	120	120	--	23	13 | 14	--	450
Vinyl Chloride	5	<5	< 5	--	<1	< 1 | < 1	--	<5
1,2-Dichloropropane	1	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<5
2-Butanone	300	<25	< 25	--	<5	< 5 | < 5	--	<25
2-Hexanone	100	<25	< 25	--	<5	< 5 | < 5	--	<25
4-Methyl-2-Pentanone	400	<25	< 25	--	<5	< 5 | < 5	--	<25
Acetone	700	<25	< 25	--	<5	< 5 | < 5	--	<25
Benzene	1	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<5
Bromodichloromethane	1	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<5
Bromoform	4	<5	< 5	--	<1	< 1 | < 1	--	<20
Bromomethane	10	<5	< 5	--	<1	< 1 | < 1	--	<25
Carbon Disulfide	800	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<25
Chlorobenzene	50	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<10
Chloromethane	30	<5	< 5	--	<1	< 1 | < 1	--	<25
Dibromochloromethane	10	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<25
Ethylbenzene	700	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<5
Methyl-t-butyl Ether	70	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	--
Styrene	100	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<25
Toluene	1000	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<5
Xylenes- Meta & Para	1000[g]	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	--
Xylenes- Ortho	1000[g]	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	--
cis-1,2-Dichloroethene	70	5	6	--	2	1 | 1	--	3.5J
cis-1,3-Dichloropropene	NA[h]	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<5
trans-1,2-Dichloroethene	100	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<25
trans-1,3-Dichloropropene	NA	<2	< 2	--	<0.5	< 0.5 | < 0.5	--	<5

TABLE 6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DEEP BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

Date:	NJDEP Groundwater Quality Standard [a]	P-7			P-8			P-9
		1/00	8/11/00	2/19/02	1/00	8/8/00	2/19/02	2/19/02
Inorganics (ug/l)								
Antimony	20	--	--	--	--	-- | --	--	--
Arsenic	8	8	< 5	<5	**13**	**13 | 12**	**11**	<5
Beryllium	20	--	--	--	--	-- | --	--	--
Cadmium	4	<4	< 4	<4	<4	< 4 | < 4	<4	<4
Chromium	100	13	< 5	<10	21	< 5 | 7	16.2	<10
Copper	1000	--	--	--	--	-- | --	--	--
Lead	10	<5	< 5	4.7	<5	**21 | 24**	**84.4**	<3
Mercury	2	<0.5	< 0.5	0.23	<0.5	< 0.5 | < 0.5	0.49	0.33
Nickel	100	--	--	--	--	-- | --	--	--
Selenium	50	--	--	--	--	-- | --	--	--
Silver	30	--	--	--	--	-- | --	--	--
Thallium	10	--	--	--	--	-- | --	--	--
Zinc	5000	--	--	--	--	-- | --	--	--
Radiochemistry								
Gross Alpha (pCi/L)[k]	15		**34.5±7.49**	**25.3 ± 9.36**	**44.3±5.11**	**15.6±2.64 | 21.2±3.12**	**41.0 ± 23.2**	<9.56
Gross Beta (pCi/L)	NA	20.2±1.7	<9.40	10.2 ± 4.09	13.2±1.75	5.68±1.36 | 7.32±1.45	22.4 ± 7.67	<3.00
Radium-228 (pCi/L)	5[l]	<3.63	<1.86	1.21 ± 0.543	<2.03	<1.75 | <1.02	<0.758	<0.654
Radium-226 (pCi/L)	5[l]	<0.616	0.620±0.496	0.257 ± 0.160	<0.949	1.97±0.701 | 4.35±0.922	0.663 ± 0.302	<0.262
Total Uranium (ug/L)	30	18.1±0.234	18.2±0.792	14.6 ± 0.488	**39±1.21**	14.7±0.721 | 23.8±1.04	**45.0 ± 1.47**	10.4±0.360
Thorium-232 (pCi/L)	NA	--	< 0.0962	--	--	0.200±.132 | 0.0955±.0803	--	--

TABLE 6
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DEEP BEDROCK GROUNDWATER ZONE
BLOOMFIELD, NEW JERSEY

NOTES:

a. NJDEP Groundwater Quality Standards (as per N.J.A.C. Title 7, Chapter 9) reported in ug/l unless noted. Standards for VOCs are the higher of Practical Quantitation Limits and NJDEP Groundwater Quality Criteria. Standards for radiochemistry are the Federal and New Jersey State Primary Drinking Water Standar
b. "ug/l" is micrograms per liter or parts per billion (ppb).
c. <x indicates that the parameter was not detected above method detection limits (x).
d. "--" indicates the sample was not analyzed for this parameter.
e. "J" indicates sample result is below method detection limit. Bold indicates value exceeds NJDEP Groundwater Quality Standards. N.J.A.C. Title 7, Chapter 9.
f. "B" indicates not detected substantially above the level reported in laboratory or field blanks.
g. Value is for total Xylenes.
h. "NA" indicates that there is currently no groundwater quality standard for this parameter.
i. x/x represents total (unfiltered)/dissolved (filtered) analytical result.
j. y | z represents a duplicate sample was collected at this well location (y equals the sample result from the original well sample while z equals the sample result from the duplicate sample).
k. "pCi/L" is picoCuries per liter plus/minus total error.
l. Value is for combined radium-226 and radium-228.

TABLE 7
SUMMARY OF SELECTED GROUNDWATER SAMPLING INTERVALS
PHASE IIA ACTIVITIES
BLOOMFIELD, NEW JERSEY

Well ID	Sampled Interval(s) (ft., TOR)	Selected Sampling Interval[a] (ft., TOR)		
		VOCs	Select Metals	Radiological
BW-1DR	117.5, 127.5	--	117.5	117.5
CC-3D	115.5, 125.5	--	125.5	125.5
CC-3RR	51.5, 61.5	--	61.5	61.5
CC-4S	22.5, 27.5[b]	22.5	--	--
CC-5DR	112.5, 117.5, 122.5, 127.5[b]	117.5	--	--
HOW-1	17.1	--	WC mid-point[c]	WC mid-point
HOW-2	--[e]	--	Bailer[d]	Bailer
HOW-3	--	--	Bailer	Bailer
MW-1S	29.5, 34.5, 39.5[b]	29.5	--	--
MW-2D	106.5, 111.5, 116.5, 121.5[b]	106.5	--	--
MW-3S	53.5, 63.5	--	63.5	63.5
MW-4A	--	Bailer	Bailer	Bailer
MW-6S	47.5, 52.5[b]	47.5	--	--
MW-9A	--	Bailer	Bailer	Bailer
MW-11	29.5, 39.5	--	29.5	29.5
MW-13	35.5, 45.5	--	45.5	45.5
MW-14	80	--	80	80
MW-15A	69	69	69	69
MW-15B	105	105	105	105
P-1D	430	430	430	430
P-2R	326.5, 336.5, 347.5	--	347.5	347.5
P-3R	312.5, 317.5, 322.5, 327.5, 332.5[b]	312.5	--	--
P-5	355.5, 365.5	--	355.5	355.5
P-6	339.5, 349.5, 358.5	--	349.5	349.5
P-7	294.5, 304.5, 313.5	--	313.5	313.5
P-8	300.5, 310.5, 319.5	--	310.5	310.5
P-9	354	354	354	354
PW-1	51, 61, 69	--	51	51
PW-3R	70	70	70	70
SVE-A	10.3	--	WC mid-point	WC mid-point
SVE-B	11.6	--	WC mid-point	WC mid-point

(a) Selected Sample Interval indicate the depth at which the pump intake (or PDB sampler) will be set for future sampling.
(b) Samples were collected with passive diffusion bag (PDB) samplers.
(c) WC mid-point indicates that the sample interval for these wells will be the mid-point of the water column (between the water level and the bottom of the well).
(d) Bailer indicates that the well was purged and sampled with a disposable bailer due to limited water in the well.
(e) -- Interval not sampled in Phase IIA or interval not selected.

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TABLE 8

PROPOSED PHASE IIB GROUNDWATER ANALYTICAL PROGRAM
BLOOMFIELD, NEW JERSEY

Well I.D.[a]	Zone[b]	VOCs[c]	Arsenic	Cadmium	Chromium	Lead	Mercury	U[d]	Alpha[e]	Radium[f]	NA[g]
BW-1A	S	X[h]	--[i]	--	--	--	--	--	--	--	--
BW-1DR	I	X	X	X	--	X	X	--	--	X	--
BW-1SR	I	X	--	--	--	--	--	--	--	--	--
CC-1D	I	X	X	--	--	--	--	--	--	--	--
CC-1R	I	X	--	--	--	--	--	--	--	--	--
CC-2D	I	X	X	X	--	--	--	--	--	--	--
CC-2R	I	X	--	X	--	X	X	X	X	--	--
CC-3D	I	X	--	--	--	X	X	--	X	--	--
CC-3RR	S	X	--	X	--	--	--	X	X	--	X
CC-4D	I	X	X	--	--	--	--	--	--	--	X
CC-4R	I	X	--	--	--	--	--	--	--	X	X
CC-4S	S	X	--	X	--	--	X	--	--	--	X
CC-5A	S	X	--	--	--	--	--	--	--	--	--
CC-5DR	I	X	--	--	--	X	--	--	--	--	X
CC-5SR	I	X	--	--	--	--	--	--	--	--	--
DTW-1R	P	X	--	X	X	X	--	--	--	--	--
HOW-1	P	--	X	X	--	--	--	--	--	--	--
HOW-2	P	X	X	X	--	X	--	--	X	--	--
HOW-3	P	X	X	X	X	X	X	--	X	--	--
MW-1D	I	X	--	--	--	--	--	--	--	--	--
MW-1S	S	X	X	--	--	--	X	--	--	--	X
MW-2D	I	X	--	--	--	--	--	--	--	--	--
MW-2S	S	X	--	--	--	--	--	--	--	--	--
MW-3D	I	X	--	X	--	--	--	--	--	--	--
MW-3S	I	X	X	X	X	--	--	--	--	--	X
MW-4A	S	X	X	X	X	X	X	X	X	X	--
MW-4S	I	X	X	X	X	X	X	X	X	X	X
MW-5	I	X	X	X	X	X	X	X	X	X	X
MW-6D	I	X	X	X	X	X	X	X	X	X	X
MW-6S	I	X	X	X	X	X	X	X	X	X	X
MW-7D	I	X	X	X	X	X	X	X	X	X	X
MW-8D	I	X	X	X	X	X	X	X	X	X	X
MW-9	I	X	X	X	X	X	X	X	X	X	--
MW-9A	S	X	X	X	X	X	X	X	X	X	--
MW-10	I	X	X	X	X	X	X	X	X	X	--
MW-11	S	X	--	X	--	X	--	X	X	X	--
MW-12	I	X	X	X	X	X	X	X	X	X	X
MW-13	S	X	X	X	X	X	X	X	X	X	X
MW-14	I	X	--	--	--	--	--	X	X	X	--
MW-14S	I	X	X	X	X	X	X	X	X	X	--
MW-15A	I	X	X	X	X	X	X	X	X	X	--
MW-15B	I	X	X	X	X	X	X	X	X	X	X

TABLE 8

PROPOSED PHASE IIB GROUNDWATER ANALYTICAL PROGRAM
BLOOMFIELD, NEW JERSEY

Well I.D.[a]	Zone[b]	VOCs[c]	Arsenic	Cadmium	Chromium	Lead	Mercury	U[d]	Alpha[e]	Radium[f]	NA[g]
P-1D	D	X	X	X	X	X	X	X	X	X	X
P-1R	D	X	--	--	--	--	--	--	--	--	--
P-2R	D	X	--	--	--	--	--	X	X	--	X
P-3R	D	X	X	--	X	X	X	--	X	--	X
P-4R	D	X	--	--	--	X	--	--	--	--	--
P-5	D	X	X	--	--	--	--	X	X	--	X
P-6	D	X	--	X	--	--	--	X	X	X	--
P-7	D	X	--	--	--	--	--	X	X	--	X
P-8	D	X	X	--	--	X	--	X	X	--	X
P-9	D	X	X	X	X	X	X	X	X	X	--
PW-1	I	X	X	X	X	X	--	--	--	--	--
PW-3R	I	X	X	X	X	X	X	X	X	X	--
SVE-A	P	X	--	X	--	X	--	--	--	--	--
SVE-B	P	X	X	X	X	X	--	--	X	--	--

NOTES:

(a) [ ] - pump installed in well

(b) Groundwater Zones:
- P = perched
- S = shallow bedrock
- I = intermediate bedrock
- D = deep bedrock

(c) VOCs = volatile organic compounds

(d) U = total uranium

(e) Alpha = gross alpha and beta activities

(f) Ra = Radium-226 and Radium-228

(g) NA = Natural attention parameters

(h) X = Phase IIB parameter

(i) "--" = parameter not being analyzed

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TABLE 9
SUMMARY OF GROUNDWATER SAMPLING INTERVALS
PHASE IIB ACTIVITIES
BLOOMFIELD, NEW JERSEY

Well ID	Sampling Method[a]	Selected Sampling Interval[b] (ft., TOR)			
		VOCs	Select Metals	Radiological	NA[c]
BW-1A	PDBs	13, 23	---[d]	---	---
BW-1DR	Pump	117.5, 125	117.5	117.5	---
BW-1SR	PDBs	55, 65	---	---	---
CC-1D	Pump	107, 117	107, 117	---	---
CC-1R	PDBs	53	---	---	---
CC-2D	Pump	105, 115	105, 115	---	---
CC-2R	Pump	69	69	69	---
CC-3D	Pump	112, 125.5	125.5	125.5	---
CC-3RR	Pump	49, 61.5	61.5	61.5	61.5
CC-4D	Pump	86, 96	86, 96	---	86
CC-4R	Pump	60, 70	---	60, 70	60
CC-4S	Pump	22.5	22.5	---	22.5
CC-5A	PDBs	23, 33	---	---	---
CC-5DR	Pump	117.5	117.5, 125	---	117.5
CC-5SR	PDBs	59, 66	---	---	---
DTW-1R	Peristaltic	WC mid-point[e]	WC mid-point	---	---
HOW-1	Peristaltic	---	WC mid-point	---	---
HOW-2	Peristaltic/Bailer	WC mid-point	WC mid-point	WC mid-point	---
HOW-3	Peristaltic/Bailer	WC mid-point	WC mid-point	WC mid-point	---
MW-1D	PDBs	107	---	---	---
MW-1S	Pump	29.5	29.5, 37	---	29.5
MW-2D	PDBs	106.5	---	---	---
MW-2S	PDBs	44	---	---	---
MW-3D	Pump	94.5, 104.5	94.5, 104.5	---	---
MW-3S	Pump	51.5, 63.5	63.5	---	63.5
MW-4A	Bailer	Bailer	Bailer	Bailer	---
MW-4S	Pump	55, 65	55, 65	55, 65	55
MW-5	Pump	75, 85	75, 85	75, 85	75
MW-6D	Pump	95	95	95	95
MW-6S	Pump	47.5	47.5	47.5	47.5
MW-7D	Pump	95, 105	95, 105	95, 105	95
MW-8D	Pump	95, 105	95, 105	95, 105	95
MW-9	Pump	80, 90	80, 90	80, 90	---
MW-9A	Bailer	Bailer	Bailer	Bailer	---
MW-10	Pump	60, 70	60, 70	60, 70	---
MW-11	Pump	29.5, 37	29.5	29.5	---
MW-12	Pump	55, 65	55, 65	55, 65	55
MW-13	Pump	33, 45.5	45.5	45.5	45.5
MW-14	Pump	80	---	80	---
MW-14S	Pump	45.5	45.5	45.5	---
MW-15A	Pump	69	69	69	---
MW-15B	Pump	105	105	105	105

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TABLE 9
SUMMARY OF GROUNDWATER SAMPLING INTERVALS
PHASE IIB ACTIVITIES
BLOOMFIELD, NEW JERSEY

Well ID	Sampling Method[a]	Selected Sampling Interval[b] (ft., TOR)			
		VOCs	Select Metals	Radiological	NA[c]
P-1D	Pump	430	430	430	430
P-1R	PDBs	330, 337, 343	---	---	---
P-2R	Pump	331, 338, 347.5	---	347.5	347.5
P-3R	Pump	312.5	312.5, 320, 330	312.5, 320, 330	312.5
P-4R	Pump	331, 338, 345	331, 338, 345	---	---
P-5	Pump	355.5, 363	355.5	355.5	355.5
P-6	Pump	341, 349.5, 356	349.5	349.5	---
P-7	Pump	294.5, 305, 313	---	294.5	294.5
P-8	Pump	303, 313.5, 318	313.5	313.5	313.5
P-9	Pump	354	354	354	---
PW-1	Pump	51, 58, 66	51	---	---
PW-3R	Pump	70	70	70	---
SVE-A	Peristaltic	WC mid-point	WC mid-point	---	---
SVE-B	Peristaltic	WC mid-point	WC mid-point	WC mid-point	---

NOTES:

(a) Sampling Method as follows:

PDBs = passive diffusion bag samplers

Pump = bladder or submersible pump

Peristaltic = peristaltic pump

Bailer = disposable bailer (used because of limited water in the well)

(b) Selected sample interval indicates the approximate depth at which the pump intake (or PDB sampler) will be set for sampling.

(c) NA = natural attenuation parameters.

(d) "---" = indicates samples will not be collected for specified parameters.

(e) WC mid-point indicates the sample interval for these wells will be the mid-point of the water column.