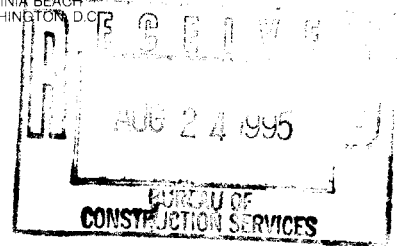


August 21, 1995

**URS CONSULTANTS, INC.**  
282 DELAWARE AVENUE  
BUFFALO, NEW YORK 14202-1805  
(716) 856-5636  
FAX: (716) 856-2545

ATLANTA  
BOSTON  
BUFFALO  
CLEVELAND  
COLUMBUS  
DENVER  
NEW YORK  
PARAMUS, NJ  
NEW ORLEANS  
SAN FRANCISCO  
SAN MATEO  
SEATTLE  
VIRGINIA BEACH  
WASHINGTON, D.C.

Mr. Joseph Yavondetti  
Project Manager  
Division of Hazardous Waste Remediation  
New York State Department of  
Environmental Conservation  
50 Wolf Road  
Albany, New York 12233-7010



**RE: RAMAPO LANDFILL REMEDIATION  
RESULTS OF SECOND QUARTER MONITORING FOR 1995**

Dear Mr. Yavondetti:

Attached are the results of the second quarter monitoring event for 1995. This sampling is the sixth of eight rounds of sampling included as part of the Remedial Action phase of the Ramapo Landfill Remediation Project. This document provides the validated analytical data for this sampling event as well as historical analytical data tables for the four target compounds, i.e., benzene, chromium, iron, and manganese. Locations sampled are shown in Figure 1. Samples were collected the week of June 19, 1995, and were analyzed for the routine parameters.

The third quarter monitoring event for 1995 is planned for late September. Please feel free to call if you have any questions or if you wish to discuss.

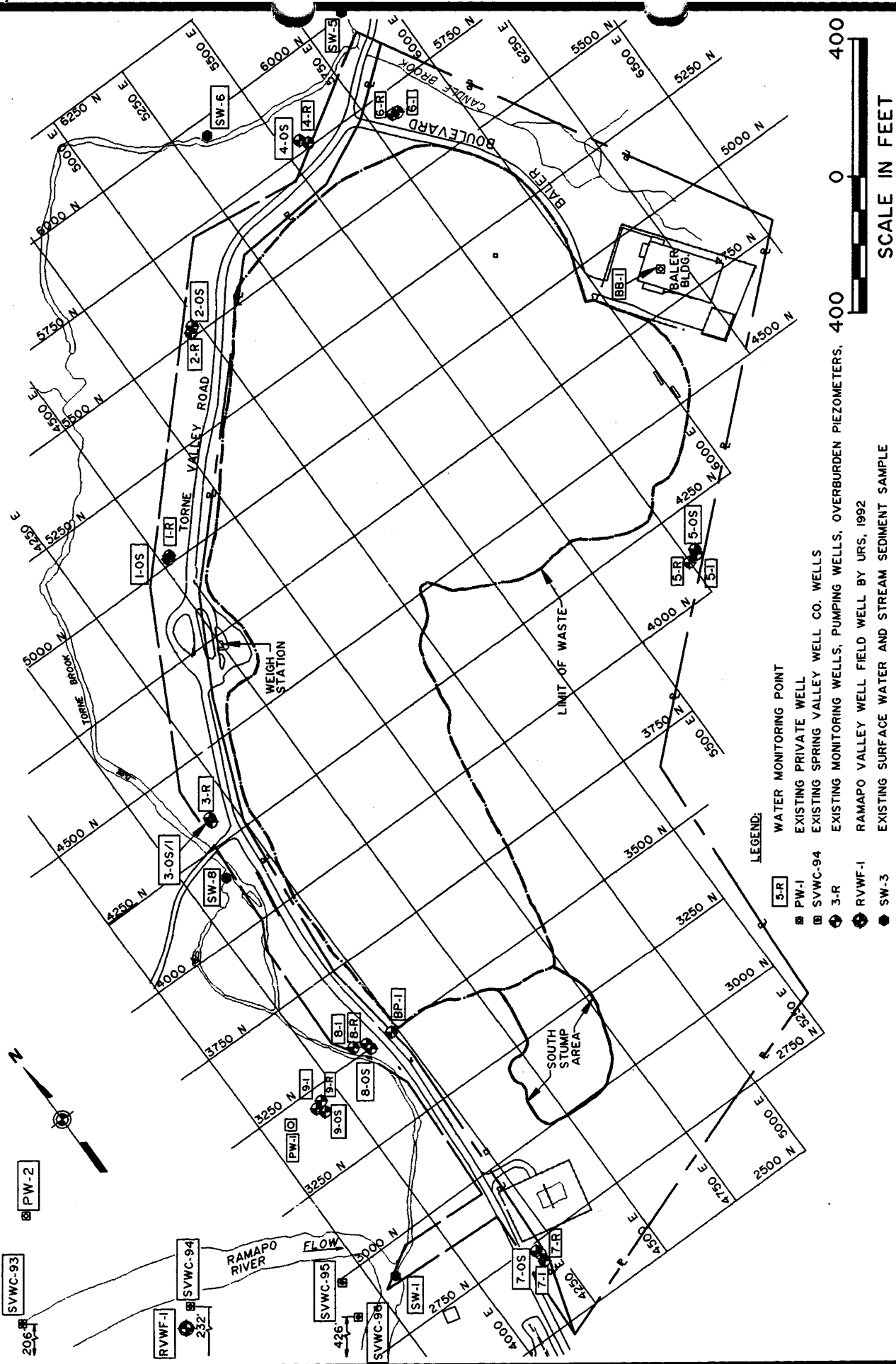
Sincerely,

**URS CONSULTANTS, INC.**

  
James Lanzo  
Project Manager

Enc.

cc: Supervisor Reisman - Town of Ramapo  
Mr. Gene Ostertag - Town of Ramapo  
Mr. Alan Simon - Town of Ramapo  
Mr. Robert Nunes - USEPA  
Mr. Thomas Micelli - Rockland County Department of Health  
Ms. Judy Hunderfund - Rockland County Department of Health  
Mr. John Olm - NYSDOH  
Ms. Arlene Lapidus - Ramapo Land Company, Inc.  
Mr. George Demas - Torne Brook Farm  
Mr. Raymond Cywinski - Hackensack Water Company  
Mr. Tanyo Parashkevov - Hackensack Water Company  
Mr. Michael Barnes, Director of Operations - Spring Valley Water Company  
Mr. Craig Flanagan  
File: 35314.50



**RAMAPO LANDFILL  
SAMPLE LOCATIONS**

**FIGURE 1**

**TABLE 1**  
**RAMAPO LANDFILL - JUNE 1995 SAMPLING**  
**GROUNDWATER SAMPLES**

| Analyte        | Concentration (µg/l)* |        |       |       |        |       |       |       |       |       |       |
|----------------|-----------------------|--------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
|                | 1-OS                  | 1-R    | 2-OS  | 2-R   | 3-OS/l | 3-R   | 4-OS  | 4-R   | 5-OS  | 5-R   | 6-I   |
| Vinyl Chloride | —                     | —      | —     | —     | —      | —     | —     | —     | —     | —     | —     |
| Chlorobenzene  | —                     | —      | —     | —     | —      | —     | —     | —     | —     | —     | —     |
| Benzene        | —                     | —      | —     | —     | —      | —     | —     | —     | —     | —     | —     |
| Antimony       | 10.7                  | —      | —     | —     | —      | —     | —     | —     | —     | —     | —     |
| Arsenic        | —                     | —      | —     | —     | —      | —     | —     | 43.5  | 6.8   | 4.8   | —     |
| Cadmium        | —                     | —      | —     | —     | —      | —     | —     | —     | —     | —     | —     |
| Calcium        | 80300                 | 101000 | 71400 | 52100 | 61600  | 71900 | 54600 | 50700 | 8000  | 13300 | 21100 |
| Chromium       | 17                    | 49.5   | 34.1  | —     | 406    | 2.0   | —     | —     | 39.0  | 7.9   | 9.1   |
| Copper         | 5.8                   | 9.4    | 6.0   | 3.5   | 15.8   | 12.7  | 5.0   | —     | 26.2  | 5.9   | 4.4   |
| Iron           | 2820                  | 1080   | 1730  | 369   | 16600  | 1450  | 3010  | 5590  | 17100 | 2260  | 565   |
| Lead           | —                     | —      | 3.0   | —     | —      | —     | —     | —     | 2.4   | —     | —     |
| Magnesium      | 21400                 | 21500  | 16100 | 10900 | 19600  | 26200 | 20500 | 20000 | 6000  | 5550  | 6120  |
| Manganese      | 2010                  | 153    | 982   | 70.2  | 3270   | 10900 | 2860  | 1120  | 248   | 21.6  | 31.3  |
| Mercury        | 0.21                  | 0.25   | —     | —     | —      | —     | —     | 0.28  | —     | —     | —     |
| Nickel         | 34.3                  | 75.7   | 19.9  | —     | 288    | 18.3  | —     | —     | 21.7  | —     | —     |
| Potassium      | 2900                  | 2810   | 1400  | 1070  | 6040   | 2030  | 1580  | 1580  | 2300  | 959   | 1110  |
| Sodium         | 46000                 | 23000  | 9310  | 5570  | 66400  | 45800 | 26500 | 12300 | 3790  | 3610  | 5010  |
| Zinc           | 7.1                   | 14.1   | 49.4  | 10.7  | 20.9   | 11.3  | 5.3   | 18.2  | 36.6  | 67.9  | 9.3   |

Only detected results reported. \* - All concentrations given in µg/l unless otherwise noted.

MADE BY JSM DATE 8/21/95  
CHKD BY AN DATE 8/21/95

**TABLE 1**  
**RAMAPO LANDFILL - JUNE 1995 SAMPLING**  
**GROUNDWATER SAMPLES**

| Analyte        | Concentration (µg/l)* |       |       |       |       |        |      |      |       |       | RWVF-1 |
|----------------|-----------------------|-------|-------|-------|-------|--------|------|------|-------|-------|--------|
|                | 6-R                   | 7-I   | 7-R   | 8-OS  | 8-I   | 8-R    | 9-OS | 9-I  | 9-R   | BB-1  |        |
| Vinyl Chloride | —                     | —     | —     | —     | —     | —      | 0.9  | —    | 0.6   | —     | —      |
| Chlorobenzene  | —                     | —     | —     | —     | 1.8   | 4.3    | —    | —    | —     | —     | —      |
| Benzene        | 0.5                   | —     | —     | —     | —     | 0.9    | —    | —    | —     | —     | —      |
| Antimony       | —                     | —     | —     | —     | —     | —      | —    | —    | —     | —     | —      |
| Arsenic        | —                     | 4.4   | —     | 7.3   | —     | 37.5   | —    | —    | 4.8   | —     | —      |
| Cadmium        | —                     | —     | —     | —     | —     | —      | —    | 1.4  | 4.4   | —     | —      |
| Calcium        | 28100                 | 11400 | 39400 | 41600 | 35500 | 49800  | 6310 | 5510 | 17900 | 20600 | 27500  |
| Chromium       | 8.4                   | 34.8  | 12.4  | 40.4  | 3.4   | 10.1   | 7.6  | 8.0  | 26.5  | —     | —      |
| Copper         | 5.1                   | 9.3   | 3.2   | 4.0   | —     | 11.4   | —    | 7.1  | 10.2  | 43.1  | 12.8   |
| Iron           | 625                   | 4280  | 886   | 5760  | 21100 | 25700  | 294  | 468  | 2230  | 608   | 816    |
| Lead           | —                     | 3.0   | —     | —     | —     | —      | —    | —    | —     | —     | —      |
| Magnesium      | 7690                  | 5400  | 18000 | 14300 | 12700 | 22500  | 1600 | 1460 | 5310  | 5070  | 7980   |
| Manganese      | 33.4                  | 3500  | 48.8  | 2690  | 1110  | 1300   | 3.9  | 10.9 | 1790  | 11.2  | 3070   |
| Mercury        | 0.22                  | 0.25  | 0.28  | 0.21  | 0.35  | 0.39   | —    | —    | —     | 0.42  | —      |
| Nickel         | —                     | 46.2  | 6.7   | —     | —     | 19.0   | —    | —    | 11.7  | —     | —      |
| Potassium      | 1460                  | 1520  | 2100  | 18700 | 24600 | 55200  | 480  | 500  | 6280  | 942   | 4450   |
| Sodium         | 5710                  | 8720  | 26900 | 44400 | 58700 | 127000 | 2020 | 2310 | 21500 | 5240  | 35500  |
| Zinc           | 5.1                   | 14.3  | 14.7  | 11.3  | 4.8   | 7.2    | —    | 10.9 | 12.2  | 316   | 5.3    |

Only detected results reported. \* - All concentrations given in µg/l unless otherwise noted.

**TABLE 1**  
**RAMAPO LANDFILL - JUNE 1995 SAMPLING**  
**DRINKING WATER SAMPLES**

| Analyte        | Concentration (µg/l)* |       |         |         |         |         | ARARs**<br>(µg/l) |
|----------------|-----------------------|-------|---------|---------|---------|---------|-------------------|
|                | PW-1                  | PW-2  | SWWC-93 | SWWC-94 | SWWC-95 | SWWC-96 |                   |
| Vinyl Chloride | —                     | —     | —       | —       | —       | —       | 2                 |
| Chlorobenzene  | —                     | —     | —       | —       | —       | —       | 5 (2)             |
| Benzene        | —                     | 0.5   | —       | —       | —       | —       | 0.7               |
| Antimony       | —                     | —     | —       | —       | —       | —       | 3                 |
| Arsenic        | —                     | 6.1   | 4.8     | 5.5     | 6.9     | —       | 25                |
| Cadmium        | —                     | —     | —       | —       | —       | —       | 10                |
| Calcium        | 8960                  | 46300 | 23000   | 26400   | 22300   | 16800   | —                 |
| Chromium       | —                     | —     | —       | —       | —       | 1.7     | 50                |
| Copper         | 168                   | 25.2  | 48.5    | 9.3     | 98.0    | 4.7     | 200               |
| Iron           | 400                   | 253   | 154     | 143     | 161     | 173     | 300               |
| Lead           | 3.8                   | 3.6   | —       | —       | —       | —       | 15 (1)            |
| Magnesium      | 2920                  | 5730  | 5670    | 7030    | 6200    | 5560    | 35000             |
| Manganese      | 5.2                   | 6.1   | 0.95    | 11.4    | 49.7    | —       | 300               |
| Mercury        | —                     | 0.27  | —       | —       | —       | —       | 2                 |
| Nickel         | —                     | —     | —       | —       | 5.9     | —       | —                 |
| Potassium      | 804                   | 1350  | 1960    | 1620    | 2370    | 1320    | —                 |
| Sodium         | 3430                  | 8570  | 42500   | 37500   | 36500   | 25800   | 20000             |
| Zinc           | 190                   | 113   | 23.9    | 21.6    | 55.5    | 6.7     | 300               |

Only detected results reported.

\* - All concentrations given in µg/l unless otherwise noted.

\*\* - Values obtained from Water Quality Regulations for Surface Waters and Groundwaters 6 NYCRR Parts 700-705, September 1, 1991, unless otherwise indicated.

(1) - USEPA action level.

(2) - Value obtained from Chapter 1-New York State Sanitary Code, Subpart 5-1, Principal Organic Contaminants.

**TABLE 1**  
**RAMAPO LANDFILL - JUNE 1995 SAMPLING**  
**SURFACE WATER SAMPLES**

| Analyte        | Concentration (µg/l)* |      |      |       | ARARs**<br>(µg/l) |
|----------------|-----------------------|------|------|-------|-------------------|
|                | SW-1                  | SW-5 | SW-6 | SW-8  |                   |
| Vinyl Chloride | —                     | —    | —    | —     | 0.3               |
| Chlorobenzene  | —                     | —    | —    | —     | 20                |
| Benzene        | —                     | —    | —    | —     | 0.7               |
| Antimony       | —                     | —    | —    | —     | 3                 |
| Arsenic        | —                     | —    | —    | 5.8   | 50                |
| Cadmium        | —                     | —    | —    | —     | 10                |
| Calcium        | 6050                  | 6510 | 7150 | 27400 | —                 |
| Chromium       | —                     | —    | —    | —     | 50                |
| Copper         | 4.7                   | 7.7  | 3.3  | 3.8   | 200               |
| Iron           | 396                   | 324  | 551  | 315   | 300               |
| Lead           | —                     | —    | —    | —     | 50                |
| Magnesium      | 1690                  | 1970 | 2040 | 7930  | 35000             |
| Manganese      | 71.6                  | 18.3 | 51.9 | 80.1  | 300               |
| Mercury        | —                     | —    | —    | —     | 0.012 ***         |
| Nickel         | —                     | —    | —    | —     | 1.3E-07 ***       |
| Potassium      | 415                   | 455  | 523  | 3050  | —                 |
| Sodium         | 2440                  | 2520 | 2560 | 45200 | —                 |
| Zinc           | 5.9                   | 5.2  | 7.6  | 32.8  | 300               |

Only detected results reported.

\* - All concentrations given in µg/l unless otherwise noted.

\*\* - Values obtained from Water Quality Regulations for Surface Waters and Groundwaters 6 NYCRR Parts 700-705, September 1, 1991, unless otherwise indicated.

\*\*\* - Values obtained from the Clean Water Act.

**TABLE 2**  
**RAMAPO LANDFILL - JUNE 1995 SAMPLING**  
**GROUNDWATER SAMPLES**

| Analyte                | Concentration (mg/l)* |        |        |        |        |        |        |        |        |        |        |
|------------------------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | 1-OS                  | 1-R    | 2-OS   | 2-R    | 3-OS/I | 3-R    | 4-OS   | 4-R    | 5-OS   | 5-R    | 6-I    |
| Chloride               | 44                    | 58     | 21     | 23     | 69     | 43     | 87     | 35     | 8      | 5      | 25     |
| COD                    | < 5                   | 8      | < 5    | < 5    | < 5    | 8      | < 5    | < 5    | < 5    | < 5    | < 5    |
| Total Hardness         | 289                   | 340    | 245    | 175    | 235    | 288    | 221    | 209    | 44.7   | 56.0   | 77.9   |
| Ammonia                | 0.05                  | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.06   | 0.07   | < 0.05 | < 0.05 | < 0.05 |
| Nitrate                | 0.03                  | 0.49   | 0.08   | 0.02   | 0.70   | < 0.02 | 0.05   | < 0.02 | 0.09   | 0.24   | 0.02   |
| Total Phenols          | < 0.02                | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | 0.79   |
| Sulfate                | 38.0                  | 31.3   | 19.6   | 19.6   | 15.0   | 26.9   | 33.7   | 21.9   | 9.2    | 12.2   | 13.7   |
| Total Alkalinity       | 298                   | 280    | 234    | 144    | 261    | 298    | 122    | 162    | 20     | 42     | 42     |
| Total Dissolved Solids | 429                   | 483    | 311    | 214    | 400    | 429    | 320    | 275    | 82     | 89     | 128    |
| Total Organic Carbon   | 2                     | 3      | 3      | 1      | 5      | 5      | 2      | 1      | < 1    | < 1    | 1      |
| Turbidity (units)      | 32.0                  | 4.2    | 17.5   | 3.2    | 270    | 9.1    | 12.1   | 31.0   | 42.0   | 21.0   | 0.98   |

Only detected results reported. \* - All concentrations given in mg/l unless otherwise noted.

MADE BY ISM DATE 8/21/95  
CHKD BY SW DATE 8/21/95

**TABLE 2**  
**RAMAPO LANDFILL - JUNE 1995 SAMPLING**  
**GROUNDWATER SAMPLES**

| Analyte                | Concentration (mg/l)* |        |        |        |        |        |        |        |        |        |        |
|------------------------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | 6-R                   | 7-I    | 7-R    | 8-OS   | 8-I    | 8-R    | 9-OS   | 9-I    | 9-R    | BB-1   | RWVF-1 |
| Chloride               | 27                    | 9      | 41     | 78     | 75     | 75     | 5      | 5      | 27     | 7      | 55     |
| COD                    | < 5                   | 6      | < 5    | 79     | 21     | 66     | < 5    | < 5    | 6      | < 5    | 8      |
| Total Hardness         | 102                   | 50.7   | 172    | 163    | 141    | 217    | 22.3   | 19.8   | 66.5   | 72.2   | 101    |
| Ammonia                | < 0.05                | < 0.05 | < 0.05 | 29.3   | 15.6   | 34.9   | 0.08   | 0.06   | 4.46   | < 0.05 | 3.87   |
| Nitrate                | 0.02                  | 0.63   | 3.04   | 3.06   | 0.66   | 2.9    | 0.54   | 0.14   | 1.24   | < 0.02 | 0.17   |
| Total Phenols          | < 0.02                | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Sulfate                | 20.9                  | 16.4   | 33.2   | 30.2   | 27.3   | 30.8   | 11.7   | 10.6   | 12.6   | 15.0   | 13.9   |
| Total Alkalinity       | 79                    | 50     | 150    | 167    | 222    | 162    | 14     | 16     | 91     | 52     | 121    |
| Total Dissolved Solids | 122                   | 111    | 321    | 364    | 392    | 359    | 74     | 35     | 157    | 90     | 220    |
| Total Organic Carbon   | 1                     | 2      | 3      | 5      | 6      | 22     | 1      | 1      | 3      | 1      | 4      |
| Turbidity (units)      | 1.87                  | 65.0   | 3.5    | 4.6    | 93.0   | 98.0   | 1.3    | 1.6    | 5.6    | 1.22   | 4.2    |

Only detected results reported. \* - All concentrations given in mg/l unless otherwise noted.

MADE BY TSP DATE 8/21/95  
CHKD BY SP DATE 8/21/95



**TABLE 2**  
**RAMAPO LANDFILL - JUNE 1995 SAMPLING**  
**DRINKING WATER SAMPLES**

| Analyte                | Concentration (mg/l)* |        |         |         |         |         | ARARs**<br>(mg/l) |
|------------------------|-----------------------|--------|---------|---------|---------|---------|-------------------|
|                        | PW-1                  | PW-2   | SWWC-93 | SWWC-94 | SWWC-95 | SWWC-96 |                   |
| Chloride               | 7                     | 62     | 85      | 85      | 85      | 53      | 250               |
| COD                    | < 5                   | < 5    | < 5     | < 5     | < 5     | < 5     | —                 |
| Total Hardness         | 34.4                  | 139    | 80.7    | 94.8    | 81.3    | 64.8    | —                 |
| Ammonia                | 0.08                  | 0.06   | 0.05    | < 0.05  | < 0.05  | < 0.05  | 2                 |
| Nitrate                | 0.55                  | 1.57   | 0.83    | 0.78    | 1.32    | 0.59    | 10                |
| Total Phenols          | < 0.02                | < 0.02 | < 0.02  | < 0.02  | < 0.02  | < 0.02  | —                 |
| Sulfate                | 13.0                  | 20.5   | 18.2    | 18.5    | 19.8    | 17.3    | 250               |
| Total Alkalinity       | 24                    | 62     | 38      | 57      | 53      | 39      | —                 |
| Total Dissolved Solids | 55                    | 258    | 211     | 211     | 228     | 116     | 500               |
| Total Organic Carbon   | < 1                   | 1      | 1       | 1       | 2       | < 1     | —                 |
| Turbidity (units)      | 0.54                  | 0.04   | 0.01    | < 0.01  | 0.06    | 0.09    | —                 |

Only detected results reported \* - All concentrations given in mg/l unless otherwise noted.

\*\* - NYSDEC Water Quality Standards and Guidance Values, TOGS 1.1.1, October 1993, Table 1.

MADE BY JSP DATE 8/21/95  
CHKD BY SW DATE 8/24/95

**TABLE 2**  
**RAMAPO LANDFILL - JUNE 1995 SAMPLING**  
**SURFACE WATER SAMPLES**

| Analyte                | Concentration (mg/l)* |        |        |        | ARARs**<br>(mg/l) |
|------------------------|-----------------------|--------|--------|--------|-------------------|
|                        | SW-1                  | SW-5   | SW-6   | SW-8   |                   |
| Chloride               | 12                    | 11     | 9      | 99     | 250               |
| COD                    | < 5                   | < 5    | < 5    | < 5    | —                 |
| Total Hardness         | 22.0                  | 24.3   | 26.3   | 101    | —                 |
| Ammonia                | < 0.05                | < 0.05 | < 0.05 | < 0.05 | 2                 |
| Nitrate                | 0.12                  | 0.11   | 5.07   | 0.87   | 10                |
| Total Phenols (µg/l)   | < 0.02                | < 0.02 | < 0.02 | < 0.02 | —                 |
| Sulfate                | 9.6                   | 9.6    | 10.2   | 22.5   | 250               |
| Total Alkalinity       | 16                    | 18     | 20     | 39     | —                 |
| Total Dissolved Solids | 42                    | 47     | 50     | 282    | 500               |
| Total Organic Carbon   | 2                     | 2      | 2      | 3      | —                 |
| Turbidity (units)      | 0.09                  | 0.40   | 1.12   | 1.15   | —                 |

Only detected results reported.

\* - All concentrations given in mg/l unless otherwise noted.

\*\* - NYSDEC Water Quality Standards and Guidance Values, TOGS 1.1.1, October 1993, Table 1.

MADE BY: SSW DATE: 8/21/95  
CHKD BY: SW DATE: 8/21/95

**TABLE 3**  
**RAMAPO LANDFILL**  
**GROUNDWATER AND SURFACE WATER**  
**MONITORING DATA**  
**COMPOUND: Benzene**

| Sample ID            | Date of Sampling Event        |             |             |             |             |              |             |             |             |              |
|----------------------|-------------------------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|--------------|
|                      | 1/90                          | 9/90        | 1/93        | 4/93        | 9/93        | 12/93        | 3/94        | 6/94        | 9/94        | 12/94        |
| 1-OS                 | ND                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 1-R                  | ND                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 2-OS                 | ND                            | ND          | NA          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 2-R                  | ND                            | ND          | NA          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 3-OS/I               | ND                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 3-R                  | ND                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 4-OS                 | ND                            | 0.3         | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 4-R                  | 1.0                           | 1.0         | ND          | 0.7         | ND          | ND           | ND          | ND          | ND          | ND           |
| 5-OS                 | 2.0                           | ND          | ND          | ND          | NA          | NA           | NA          | ND          | NA          | NA           |
| 5-I                  | NA                            | NA          | NA          | NA          | NA          | ND           | ND          | ND          | ND          | ND           |
| 5-R                  | ND                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 6-I                  | NA                            | 0.2         | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 6-R                  | NA                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 7-OS                 | ND                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 7-R                  | ND                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 8-OS                 | 2.0                           | 0.3         | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| 8-I                  | 2.0                           | 2.9         | NA          | ND          | ND          | ND           | ND          | ND          | ND          | 2.0          |
| 8-R                  | 3.0                           | 0.4         | ND          | 0.9         | ND          | ND           | ND          | ND          | ND          | ND           |
| 9-OS                 | NA                            | ND          | ND          | ND          | ND          | NA           | ND          | ND          | ND          | ND           |
| 9-I                  | NA                            | 0.2         | NA          | NA          | NA          | NA           | ND          | ND          | ND          | ND           |
| 9-R                  | NA                            | 0.9         | ND          | ND          | ND          | NA           | ND          | ND          | ND          | 1.0          |
| PW-1                 | NA                            | ND          | ND          | ND          | ND          | NA           | ND          | ND          | ND          | ND           |
| PW-2                 | NA                            | NA *        | ND          | ND          | ND          | NA           | NA          | NA          | ND          | ND           |
| PW-3                 | NA                            | NA          | NA          | NA          | NA          | NA           | NA          | ND          | NA          | NA           |
| BP-1                 | NA                            | NA          | ND          | NA          | NA          | NA           | NA          | NA          | NA          | NA           |
| BB-1                 | NA                            | NA          | ND          | ND          | ND          | NA           | ND          | ND          | ND          | ND           |
| RWWF-1               | NA                            | NA          | ND          | ND          | ND          | NA           | ND          | ND          | ND          | ND           |
| SVWC-93              | NA                            | NA          | ND          | ND          | NA          | NA           | ND          | ND          | ND          | ND           |
| SVWC-94              | NA                            | NA          | ND          | ND          | NA          | NA           | ND          | ND          | ND          | 1.0          |
| SVWC-95              | NA                            | NA          | ND          | ND          | ND          | NA           | ND          | ND          | ND          | ND           |
| SVWC-96              | NA                            | NA          | ND          | ND          | NA          | NA           | ND          | ND          | ND          | ND           |
| <b>Surface Water</b> | <b>Date of Sampling Event</b> |             |             |             |             |              |             |             |             |              |
| <b>Sample ID</b>     | <b>10/89</b>                  | <b>7/90</b> | <b>1/93</b> | <b>4/93</b> | <b>9/93</b> | <b>12/93</b> | <b>3/94</b> | <b>6/94</b> | <b>9/94</b> | <b>12/94</b> |
| SW-1                 | ND                            | NA          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| SW-5                 | ND                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| SW-6                 | NA                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |
| SW-8                 | NA                            | ND          | ND          | ND          | ND          | ND           | ND          | ND          | ND          | ND           |

Notes: Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

\* NYSDOH results from 3/92 sampling.

- Exceeded ARAR value of 0.7 ppb for groundwater.

MADE BY JSM DATE 8/31/95  
 CHKD BY SV DATE 8/21/95

J:\35314\QPRO\MON0295.WB1/sk  
 08/21/95 14:21 (1 of 1)

TABLE 3 (Cont.)

**RAMAPO LANDFILL  
MONITORING DATA  
COMPOUND: Benzene**

| Sample ID | Sample Type    | Date of<br>Sampling Event |      |
|-----------|----------------|---------------------------|------|
|           |                | 3/95                      | 6/95 |
| 1-OS      | Groundwater    | ND                        | ND   |
| 1-R       | Groundwater    | ND                        | ND   |
| 2-OS      | Groundwater    | ND                        | ND   |
| 2-R       | Groundwater    | ND                        | ND   |
| 3-OS/I    | Groundwater    | ND                        | ND   |
| 3-R       | Groundwater    | ND                        | ND   |
| 4-OS      | Groundwater    | ND                        | ND   |
| 4-R       | Groundwater    | ND                        | ND   |
| 5-OS      | Groundwater    | NA                        | ND   |
| 5-I       | Groundwater    | ND                        | NA   |
| 5-R       | Groundwater    | ND                        | ND   |
| 6-I       | Groundwater    | ND                        | ND   |
| 6-R       | Groundwater    | ND                        | 0.5  |
| 7-OS      | Groundwater    | ND                        | NA   |
| 7-I       | Groundwater    | NA                        | ND   |
| 7-R       | Groundwater    | ND                        | ND   |
| 8-OS      | Groundwater    | ND                        | ND   |
| 8-I       | Groundwater    | ND                        | ND   |
| 8-R       | Groundwater    | 2                         | 0.9  |
| 9-OS      | Groundwater    | ND                        | ND   |
| 9-I       | Groundwater    | ND                        | ND   |
| 9-R       | Groundwater    | ND                        | ND   |
| BP-1      | Groundwater    | NA                        | NA   |
| BB-1      | Groundwater    | ND                        | ND   |
| RVWF-1    | Groundwater    | ND                        | ND   |
| PW-1      | Drinking Water | ND                        | ND   |
| PW-2      | Drinking Water | NA                        | 0.5  |
| PW-3      | Drinking Water | NA                        | NA   |
| SVWC-93   | Drinking Water | ND                        | ND   |
| SVWC-94   | Drinking Water | ND                        | ND   |
| SVWC-95   | Drinking Water | ND                        | ND   |
| SVWC-96   | Drinking Water | ND                        | ND   |
| SW-1      | Surface Water  | ND                        | ND   |
| SW-5      | Surface Water  | ND                        | ND   |
| SW-6      | Surface Water  | ND                        | ND   |
| SW-8      | Surface Water  | ND                        | ND   |

## Notes:

Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed,  
not sampled)
 - Exceeded ARAR value of 0.7 ppb for groundwater.

**TABLE 4**  
**RAMAPO LANDFILL**  
**GROUNDWATER AND SURFACE WATER**  
**MONITORING DATA**  
**COMPOUND: Chromium**

| Sample ID     | Date of Sampling Event |      |      |      |      |       |      |      |      |       |
|---------------|------------------------|------|------|------|------|-------|------|------|------|-------|
|               | 1/90                   | 9/90 | 1/93 | 4/93 | 9/93 | 12/93 | 3/94 | 6/94 | 9/94 | 12/94 |
| 1-OS          | 153                    | 57.3 | 8    | ND   | 60.0 | 257.0 | 65.5 | 7.2  | 284  | 134   |
| 1-R           | 39.7                   | 17.5 | ND   | ND   | 84.9 | 46.8  | 10.3 | ND   | 39.3 | 58.3  |
| 2-OS          | 180                    | 141  | NA   | ND   | 50.2 | 95.9  | 11.8 | 89.3 | 45.9 | 25.1  |
| 2-R           | 16.1                   | 5.5  | NA   | ND   | 14.8 | 6.1   | ND   | 5.1  | 8.3  | 4.9   |
| 3-OS/I        | 587                    | 1290 | 807  | 40.4 | 1350 | 1100  | 784  | 304  | 581  | 1020  |
| 3-R           | 28                     | 11.4 | ND   | ND   | ND   | 14.7  | 10.5 | 17.8 | 4.8  | 4.9   |
| 4-OS          | 139                    | 40.1 | 5.8  | ND   | 10.8 | 11.2  | 15.1 | 25.4 | 23.1 | 53.1  |
| 4-R           | 35.5                   | 13.1 | ND   | 8.8  | ND   | 5.9   | 4.4  | ND   | 13.3 | 2     |
| 5-OS          | 90                     | 35.6 | 48.8 | ND   | NA   | NA    | NA   | NA   | NA   | NA    |
| 5-I           | NA                     | NA   | NA   | NA   | NA   | 80    | 30.2 | 7.2  | 40   | 63.1  |
| 5-R           | 27.4                   | 29.3 | 6.8  | ND   | ND   | 8.6   | 13.8 | 6.3  | 52.3 | 105   |
| 6-I           | NA                     | 28.7 | ND   | ND   | 13.4 | 17.0  | 32.7 | 9.5  | 488  | 9.9   |
| 6-R           | NA                     | 31.1 | 24   | 34.8 | 27.7 | 67.4  | 71.3 | 27.1 | 37.7 | 13.6  |
| 7-OS          | 33.5                   | 40.1 | 24.2 | 13.0 | 1890 | 218   | 31   | 210  | 571  | 258   |
| 7-R           | 16.2                   | 16.8 | ND   | ND   | ND   | ND    | ND   | 5.3  | 8.6  | 3.4   |
| 8-OS          | 34.8                   | 16.7 | ND   | ND   | ND   | 7.6   | 86.6 | 28.7 | 13.2 | 4.2   |
| 8-I           | 215                    | 32.5 | NA   | ND   | ND   | ND    | 29   | 17   | 12.8 | 8.4   |
| 8-R           | 20                     | 23.1 | 9.9  | ND   | 17.7 | 18.2  | 7.5  | 17.0 | 10.4 | 6.8   |
| 9-OS          | NA                     | 6.8  | ND   | ND   | ND   | ND    | 22.9 | 27.1 | 14.8 | 2.9   |
| 9-I           | NA                     | 8.1  | NA   | NA   | NA   | NA    | 28   | ND   | 2.4  | 5.8   |
| 9-R           | NA                     | 8.8  | 3.9  | 16.4 | 16.7 | 11.6  | 35.4 | 48.2 | 29.9 | 10.5  |
| PW-1          | NA                     | ND   | ND   | ND   | ND   | ND    | ND   | ND   | 0.6  | ND    |
| PW-2          | NA                     | ND * | ND   | ND   | ND   | 4.9   | NA   | ND   | ND   | ND    |
| PW-3          | NA                     | NA   | NA   | NA   | NA   | NA    | NA   | ND   | NA   | NA    |
| BP-1          | NA                     | NA   | ND   | NA   | NA   | NA    | NA   | NA   | NA   | NA    |
| BB-1          | NA                     | NA   | ND   | ND   | ND   | ND    | ND   | ND   | 1.2  | ND    |
| RVWF-1        | NA                     | NA   | 25.2 | 14.7 | 13.2 | 20.5  | 8.4  | ND   | ND   | ND    |
| SVWC-93       | NA                     | NA   | ND   | ND   | NA   | ND    | ND   | ND   | ND   | ND    |
| SVWC-94       | NA                     | NA   | ND   | ND   | NA   | NA    | ND   | ND   | ND   | 0.97  |
| SVWC-95       | NA                     | NA   | ND   | ND   | ND   | NA    | ND   | ND   | ND   | ND    |
| SVWC-96       | NA                     | NA   | ND   | ND   | NA   | ND    | ND   | ND   | ND   | 0.87  |
| Surface Water |                        |      |      |      |      |       |      |      |      |       |
| Sample ID     | Date of Sampling Event |      |      |      |      |       |      |      |      |       |
|               | 10/89                  | 7/90 | 1/93 | 4/93 | 9/93 | 12/93 | 3/94 | 6/94 | 9/94 | 12/94 |
| SW-1          | ND                     | NA   | ND   | ND   | ND   | ND    | ND   | ND   | ND   | ND    |
| SW-5          | ND                     | ND   | ND   | ND   | ND   | ND    | ND   | ND   | ND   | ND    |
| SW-6          | NA                     | ND   | ND   | ND   | ND   | 5.1   | ND   | ND   | ND   | ND    |
| SW-8          | NA                     | ND   | ND   | ND   | ND   | ND    | ND   | ND   | ND   | ND    |

Notes: Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

\* NYSDOH results from 3/92 sampling.



- Exceeded ARAR value of 50 ppb for groundwater.

- Exceeded ARAR value of 50 ppb for surface water.

The ARAR for SW-1 (Class A water body) is 50 ppb.

TABLE 4 (Cont.)

**RAMAPO LANDFILL  
MONITORING DATA  
COMPOUND: Chromium**

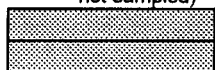
| Sample ID | Sample Type    | Date of Sampling Event |      |
|-----------|----------------|------------------------|------|
|           |                | 3/95                   | 6/95 |
| 1-OS      | Groundwater    | 727                    | 17   |
| 1-R       | Groundwater    | 146                    | 49.5 |
| 2-OS      | Groundwater    | 39.7                   | 34.1 |
| 2-R       | Groundwater    | 4.4                    | ND   |
| 3-OS/I    | Groundwater    | 144                    | 406  |
| 3-R       | Groundwater    | 3.6                    | 2.0  |
| 4-OS      | Groundwater    | 21.1                   | ND   |
| 4-R       | Groundwater    | 2.5                    | ND   |
| 5-OS      | Groundwater    | NA                     | 39.0 |
| 5-I       | Groundwater    | 109                    | NA   |
| 5-R       | Groundwater    | 19.9                   | 7.9  |
| 6-I       | Groundwater    | 6.9                    | 9.1  |
| 6-R       | Groundwater    | 11.9                   | 8.4  |
| 7-OS      | Groundwater    | 324                    | NA   |
| 7-I       | Groundwater    | NA                     | 34.8 |
| 7-R       | Groundwater    | 2.8                    | 12.4 |
| 8-OS      | Groundwater    | 129                    | 40.4 |
| 8-I       | Groundwater    | 8                      | 3.4  |
| 8-R       | Groundwater    | 6.3                    | 10.1 |
| 9-OS      | Groundwater    | 6.6                    | 7.6  |
| 9-I       | Groundwater    | 3.9                    | 8.0  |
| 9-R       | Groundwater    | 16.9                   | 26.5 |
| BP-1      | Groundwater    | NA                     | NA   |
| BB-1      | Groundwater    | ND                     | ND   |
| RVWF-1    | Groundwater    | ND                     | ND   |
| PW-1      | Drinking Water | 0.8                    | ND   |
| PW-2      | Drinking Water | NA                     | ND   |
| PW-3      | Drinking Water | NA                     | NA   |
| SVWC-93   | Drinking Water | ND                     | ND   |
| SVWC-94   | Drinking Water | ND                     | ND   |
| SVWC-95   | Drinking Water | ND                     | ND   |
| SVWC-96   | Drinking Water | ND                     | 1.7  |
| SW-1      | Surface Water  | ND                     | ND   |
| SW-5      | Surface Water  | ND                     | ND   |
| SW-6      | Surface Water  | ND                     | ND   |
| SW-8      | Surface Water  | 0.67                   | ND   |

## Notes:

Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)



- Exceeded ARAR value of 50 ppb for groundwater.

- Exceeded ARAR value of 50 ppb for surface water.

**TABLE 5**  
**RAMAPO LANDFILL**  
**GROUNDWATER AND SURFACE WATER**  
**MONITORING DATA**  
**COMPOUND: Iron**

| Sample ID     | Date of Sampling Event |       |       |      |        |        |       |       |       |       |
|---------------|------------------------|-------|-------|------|--------|--------|-------|-------|-------|-------|
|               | 1/90                   | 9/90  | 1/93  | 4/93 | 9/93   | 12/93  | 3/94  | 6/94  | 9/94  | 12/94 |
| 1-OS          | 45000                  | 17500 | 1870  | 884  | 32300  | 162000 | 12200 | 69.6  | 4950  | 47700 |
| 1-R           | 1180                   | 2650  | 395   | 197  | 1940   | 1210   | 186   | 70600 | 830   | 1710  |
| 2-OS          | 912                    | 41800 | NA    | 186  | 11800  | 9800   | 945   | 5080  | 14700 | 4120  |
| 2-R           | 409                    | 602   | NA    | 674  | 1120   | 1450   | 187   | 83.1  | 248   | 363   |
| 3-OS/I        | 6830                   | 9750  | 5110  | 333  | 21300  | 37900  | 19400 | 29900 | 14400 | 37500 |
| 3-R           | 1930                   | 1370  | 11500 | 2940 | 3280   | 4800   | 1970  | 2090  | 2440  | 1730  |
| 4-OS          | 15600                  | 12400 | 529   | 520  | 5560   | 10600  | 5720  | 17600 | 16900 | 15200 |
| 4-R           | 8230                   | 5290  | 3520  | 4920 | 3100   | 5290   | 4790  | 4020  | 6850  | 5100  |
| 5-OS          | 27000                  | 11200 | 11100 | 4700 | NA     | NA     | NA    | NA    | NA    | NA    |
| 5-I           | NA                     | NA    | NA    | NA   | NA     | 2030   | 2080  | 2380  | 8990  | 30700 |
| 5-R           | 658                    | 368   | 620   | 2310 | 751    | 243    | 742   | 71.2  | 21400 | 64000 |
| 6-I           | NA                     | 486   | 953   | 17.3 | 332    | 2860   | 4020  | 1360  | 1590  | 153   |
| 6-R           | NA                     | 683   | 1220  | 715  | 662    | 1710   | 698   | 379   | 501   | 332   |
| 7-OS          | 981                    | 24500 | 1250  | 521  | 619000 | 2200   | 2340  | 15600 | 14500 | 14400 |
| 7-R           | ND                     | 1940  | 31.5  | 56.6 | 989    | 600    | 762   | 226   | 681   | 270   |
| 8-OS          | 229000                 | 43800 | 3230  | 2080 | 6180   | 12000  | 20300 | 6240  | 7490  | 6740  |
| 8-I           | 15700                  | 30500 | NA    | ND   | ND     | ND     | 22300 | 41200 | 24200 | 18200 |
| 8-R           | 1360                   | 2940  | 11600 | 2590 | 9160   | 4710   | 2510  | 11100 | 22000 | 10200 |
| 9-OS          | NA                     | 249   | 50.7  | 1200 | 383    | 393    | 2210  | 1040  | 1020  | 1490  |
| 9-I           | NA                     | 145   | NA    | NA   | NA     | NA     | 2040  | 62.3  | 84    | 260   |
| 9-R           | NA                     | 20200 | 2680  | 8250 | 11500  | 10800  | 8850  | 19400 | 9110  | 2700  |
| PW-1          | NA                     | 64    | 186   | 130  | 1260   | 916    | 85.3  | 11.2  | 561   | 39.7  |
| PW-2          | NA                     | 11 *  | 41.8  | 49.5 | ND     | 22.7   | NA    | ND    | 53.5  | 13.6  |
| PW-3          | NA                     | NA    | NA    | NA   | NA     | NA     | NA    | 6.4   | NA    | NA    |
| BP-1          | NA                     | NA    | 274   | NA   | NA     | NA     | NA    | NA    | NA    | NA    |
| BB-1          | NA                     | NA    | NA    | 297  | 247    | 225    | 263   | 282   | 367   | 332   |
| RVWF-1        | NA                     | NA    | 362   | 207  | 202    | 294    | 221   | ND    | 47.7  | 58.2  |
| SVWC-93       | NA                     | NA    | 32.6  | 10.6 | NA     | 553    | 179   | ND    | 17.2  | 20.7  |
| SVWC-94       | NA                     | NA    | 40.3  | 19.1 | NA     | NA     | 49.4  | ND    | 6.1   | 13.8  |
| SVWC-95       | NA                     | NA    | 51.7  | 74.4 | ND     | NA     | 45.5  | ND    | 274   | 40.3  |
| SVWC-96       | NA                     | NA    | 22.3  | 17.3 | NA     | 22.6   | 14.9  | ND    | 61.5  | 66.8  |
| Surface Water |                        |       |       |      |        |        |       |       |       |       |
| Sample ID     | Date of Sampling Event |       |       |      |        |        |       |       |       |       |
|               | 10/89                  | 7/90  | 1/93  | 4/93 | 9/93   | 12/93  | 3/94  | 6/94  | 9/94  | 12/94 |
| SW-1          | 2630                   | NA    | 141   | 1670 | 170    | 119    | 367   | 287   | 66.2  | 242   |
| SW-5          | 93                     | 163   | 194   | 204  | 168    | 71.7   | 41.9  | 291   | 124   | 63.1  |
| SW-6          | NA                     | 177   | 82.5  | 245  | 76.7   | 55.2   | 55    | 159   | 92.4  | 42.6  |
| SW-8          | NA                     | 1290  | 109   | 341  | ND     | 26.7   | 66.2  | 187   | 92.6  | 186   |

Notes: Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

\* NYSDOH results from 3/92 sampling.

|  |                                                     |
|--|-----------------------------------------------------|
|  | - Exceeded ARAR value of 300 ppb for groundwater.   |
|  | - Exceeded ARAR value of 300 ppb for surface water. |

TABLE 5 (Cont.)

**RAMAPO LANDFILL  
MONITORING DATA  
COMPOUND: Iron**

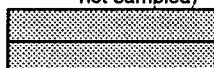
| Sample ID | Sample Type    | Date of Sampling Event |       |
|-----------|----------------|------------------------|-------|
|           |                | 3/95                   | 6/95  |
| 1-OS      | Groundwater    | 5970                   | 2820  |
| 1-R       | Groundwater    | 1430                   | 1080  |
| 2-OS      | Groundwater    | 1310                   | 1730  |
| 2-R       | Groundwater    | 259                    | 369   |
| 3-OS/I    | Groundwater    | 54600                  | 16600 |
| 3-R       | Groundwater    | 1260                   | 1450  |
| 4-OS      | Groundwater    | 6110                   | 3010  |
| 4-R       | Groundwater    | 5650                   | 5590  |
| 5-OS      | Groundwater    | NA                     | 17100 |
| 5-I       | Groundwater    | 56200                  | NA    |
| 5-R       | Groundwater    | 11300                  | 2260  |
| 6-I       | Groundwater    | 172                    | 565   |
| 6-R       | Groundwater    | 225                    | 625   |
| 7-OS      | Groundwater    | 12200                  | NA    |
| 7-I       | Groundwater    | NA                     | 4280  |
| 7-R       | Groundwater    | 465                    | 865   |
| 8-OS      | Groundwater    | 13500                  | 5760  |
| 8-I       | Groundwater    | 24300                  | 21100 |
| 8-R       | Groundwater    | 24900                  | 25700 |
| 9-OS      | Groundwater    | 1340                   | 294   |
| 9-I       | Groundwater    | 786                    | 468   |
| 9-R       | Groundwater    | 1080                   | 2230  |
| BP-1      | Groundwater    | NA                     | NA    |
| BB-1      | Groundwater    | 250                    | 608   |
| RWWF-1    | Groundwater    | ND                     | 816   |
| PW-1      | Drinking Water | 283                    | 400   |
| PW-2      | Drinking Water | NA                     | 253   |
| PW-3      | Drinking Water | NA                     | NA    |
| SVWC-93   | Drinking Water | 19                     | 154   |
| SVWC-94   | Drinking Water | ND                     | 143   |
| SVWC-95   | Drinking Water | 279                    | 161   |
| SVWC-96   | Drinking Water | ND                     | 173   |
| SW-1      | Surface Water  | 183                    | 396   |
| SW-5      | Surface Water  | 74.4                   | 324   |
| SW-6      | Surface Water  | 54                     | 551   |
| SW-8      | Surface Water  | 339                    | 315   |

## Notes:

Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)



- Exceeded ARAR value of 300 ppb for groundwater.

- Exceeded ARAR value of 300 ppb for surface water.



**TABLE 6**  
**RAMAPO LANDFILL**  
**GROUNDWATER AND SURFACE WATER**  
**MONITORING DATA**  
**COMPOUND: Manganese**

| Sample ID     | Date of Sampling Event |       |       |       |       |       |       |        |       |       |
|---------------|------------------------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
|               | 1/90                   | 9/90  | 1/93  | 4/93  | 9/93  | 12/93 | 3/94  | 6/94   | 9/94  | 12/94 |
| 1-OS          | 3790                   | 3700  | 809   | 1410  | 4010  | 5590  | 3510  | 26.8   | 5150  | 4770  |
| 1-R           | 144                    | 98.5  | 61.4  | 38.7  | 143   | 62    | 29.3  | 6020   | 67    | 97.6  |
| 2-OS          | 298                    | 4770  | NA    | 27.0  | 4850  | 1580  | 92.5  | 985    | 2450  | 827   |
| 2-R           | 197                    | 135   | NA    | 118   | 126   | 116   | 99.5  | 91.1   | 92.9  | 88.8  |
| 3-OS/I        | 8700                   | 18100 | 3450  | 1690  | 9590  | 8780  | 5640  | 10300  | 2240  | 5540  |
| 3-R           | 7230                   | 12400 | 10700 | 12900 | 11000 | 12000 | 11800 | 112800 | 10600 | 11300 |
| 4-OS          | 4210                   | 5020  | 547   | 506   | 2060  | 995   | 598   | 2850   | 3050  | 1130  |
| 4-R           | 1730                   | 1520  | 1660  | 1890  | 1160  | 1230  | 1460  | 1350   | 1210  | 1190  |
| 5-OS          | 981                    | 530   | 192   | 43.2  | NA    | NA    | NA    | NA     | NA    | NA    |
| 5-I           | NA                     | NA    | NA    | NA    | NA    | 52.8  | 40.6  | 215    | 221   | 474   |
| 5-R           | 22.3                   | 9.3   | 9.6   | 21.9  | 11.4  | 8.2   | 9.6   | 2.5    | 232   | 624   |
| 6-I           | NA                     | 33.1  | 151   | 1.3   | 34.4  | 84.7  | 1060  | 275    | 156   | 13.2  |
| 6-R           | NA                     | 14.3  | 100   | 57.5  | 60.7  | 195   | 59.8  | 72.6   | 56    | 45.8  |
| 7-OS          | 1240                   | 3260  | 48.3  | 46.1  | 45100 | 122   | 67.4  | 1580   | 9820  | 992   |
| 7-R           | 51.9                   | 102   | 46.1  | 51.8  | 114   | 81.6  | 99.8  | 186    | 126   | 80.9  |
| 8-OS          | 2830                   | 2750  | 1680  | 1640  | 3330  | 1910  | 4090  | 1790   | 3230  | 1840  |
| 8-I           | 4230                   | 1110  | NA    | ND    | ND    | ND    | 877   | 1180   | 692   | 862   |
| 8-R           | 872                    | 181   | 1660  | 2600  | 2440  | 2650  | 2220  | 1890   | 1740  | 1980  |
| 9-OS          | NA                     | 14.6  | ND    | 21.1  | 9.6   | 8.7   | 74.8  | 34.7   | 26.2  | 40.8  |
| 9-I           | NA                     | 377   | NA    | NA    | NA    | NA    | 40.6  | 3.2    | 21.7  | 9.8   |
| 9-R           | NA                     | 3270  | 2320  | 2280  | 2540  | 1890  | 1660  | 1830   | 1650  | 1460  |
| PW-1          | NA                     | ND    | 1.2   | 1.8   | ND    | 3.6   | 5.4   | ND     | 5.1   | 15.3  |
| PW-2          | NA                     | ND *  | 4.7   | 7.5   | 6.3   | 6.6   | NA    | 2.4    | 8.7   | 6.1   |
| PW-3          | NA                     | NA    | NA    | NA    | NA    | NA    | NA    | ND     | NA    | NA    |
| BP-1          | NA                     | NA    | 4630  | NA    | NA    | NA    | NA    | NA     | NA    | NA    |
| BB-1          | NA                     | NA    | 7.9   | 11.7  | 11.1  | 10.3  | 8.9   | 12.5   | 20.1  | 12.5  |
| RVWF-1        | NA                     | NA    | 839   | 40.2  | 1710  | 111   | 46.5  | 767    | 2170  | 3810  |
| SWWC-93       | NA                     | NA    | ND    | 1.7   | NA    | 72.2  | ND    | ND     | 2     | 0.37  |
| SWWC-94       | NA                     | NA    | 7.3   | ND    | NA    | NA    | 6.3   | ND     | 10.4  | 11.9  |
| SWWC-95       | NA                     | NA    | 56.4  | 1.8   | ND    | NA    | 91.6  | 108    | 273   | 85.9  |
| SWWC-96       | NA                     | NA    | ND    | ND    | NA    | ND    | ND    | ND     | 2.1   | 11.9  |
| Surface Water |                        |       |       |       |       |       |       |        |       |       |
| Sample ID     | Date of Sampling Event |       |       |       |       |       |       |        |       |       |
|               | 1/90                   | 9/90  | 1/93  | 4/93  | 9/93  | 12/93 | 3/94  | 6/94   | 9/94  | 12/94 |
| SW-1          | 1120                   | NA    | 16.6  | 107   | 50.4  | 29.6  | 63    | 83.8   | 27.4  | 27    |
| SW-5          | 19.5                   | 44.5  | 19.3  | 27.9  | 70.8  | 20.5  | 23    | 50.3   | 65.1  | 16.4  |
| SW-6          | NA                     | 31.9  | 14.5  | 23.9  | 14.4  | 16.9  | 19.6  | 23.5   | 20.7  | 12.9  |
| SW-8          | NA                     | 153   | 10.9  | 28.5  | 8.6   | 9.9   | 17.6  | 64.3   | 19.4  | 25.4  |

Notes: Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed, not sampled)

\* NYSDOH results from 3/92 sampling.

- Exceeded ARAR value of 300 ppb for groundwater.

TABLE 6 (Cont.)

**RAMAPO LANDFILL  
MONITORING DATA  
COMPOUND: Manganese**

| Sample ID | Sample Type    | Date of Sampling Event |       |
|-----------|----------------|------------------------|-------|
|           |                | 3/95                   | 6/95  |
| 1-OS      | Groundwater    | 2950                   | 2010  |
| 1-R       | Groundwater    | 96.9                   | 153   |
| 2-OS      | Groundwater    | 221                    | 982   |
| 2-R       | Groundwater    | 94.8                   | 70.2  |
| 3-OS/I    | Groundwater    | 3590                   | 3270  |
| 3-R       | Groundwater    | 11900                  | 10900 |
| 4-OS      | Groundwater    | 602                    | 2860  |
| 4-R       | Groundwater    | 1430                   | 1120  |
| 5-I       | Groundwater    | 1410                   | NA    |
| 5-OS      | Groundwater    | NA                     | 248   |
| 5-R       | Groundwater    | 116                    | 21.6  |
| 6-I       | Groundwater    | 19.9                   | 31.3  |
| 6-R       | Groundwater    | 17.4                   | 33.4  |
| 7-OS      | Groundwater    | 1180                   | NA    |
| 7-I       | Groundwater    | NA                     | 3500  |
| 7-R       | Groundwater    | 69.1                   | 48.8  |
| 8-OS      | Groundwater    | 2050                   | 2690  |
| 8-I       | Groundwater    | 1480                   | 1110  |
| 8-R       | Groundwater    | 3290                   | 1300  |
| 9-OS      | Groundwater    | 32.9                   | 3.9   |
| 9-I       | Groundwater    | 40.5                   | 10.9  |
| 9-R       | Groundwater    | 1590                   | 1790  |
| BP-1      | Groundwater    | NA                     | NA    |
| BB-1      | Groundwater    | 10.7                   | 11.2  |
| RVWF-1    | Groundwater    | 2880                   | 3070  |
| PW-1      | Drinking Water | 18.1                   | 5.2   |
| PW-2      | Drinking Water | NA                     | 6.1   |
| PW-3      | Drinking Water | NA                     | NA    |
| SVWC-93   | Drinking Water | 9.6                    | 0.95  |
| SVWC-94   | Drinking Water | 6.7                    | 11.4  |
| SVWC-95   | Drinking Water | 29                     | 49.7  |
| SVWC-96   | Drinking Water | 1.3                    | ND    |
| SW-1      | Surface Water  | 39.8                   | 71.6  |
| SW-5      | Surface Water  | 15.4                   | 18.3  |
| SW-6      | Surface Water  | 12.8                   | 51.9  |
| SW-8      | Surface Water  | 25.8                   | 80.1  |

## Notes:

Concentration reported in µg/L (ppb).

ND - Not detected

NA - Not applicable (e.g. well not installed by this date or if installed,  
not sampled)
 - Exceeded ARAR value of 300 ppb for groundwater.