

**ISLIP
RESOURCE
RECOVERY
AGENCY**

ISLIP, NEW YORK



June 2004

**Sonia Road Landfill
Town of Islip, New York**

**Post Closure Baseline
Groundwater Quality Report**



DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS

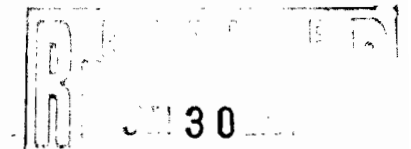
A DIVISION OF WILLIAM F. CORLICH ASSOCIATES, P.C.

POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

**SONIA ROAD LANDFILL
WEST BRENTWOOD, NEW YORK**

PREPARED FOR

**ISLIP RESOURCE RECOVERY AGENCY
TOWN OF ISLIP, NEW YORK**



BY

**DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
WOODBURY, NEW YORK**

JUNE 2004



**ISLIP RESOURCES RECOVERY AGENCY
SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT**

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	INTRODUCTION.....	1-1
1.1	Purpose.....	1-3
2.0	GROUNDWATER SAMPLING LOCATIONS, PROCEDURES AND ANALYSES	2-1
3.0	PREVIOUS WATER QUALITY INVESTIGATIONS AND FINDINGS	3-1
3.1	Prior Studies.....	3-1
3.2	1998 Remedial Investigation Results.....	3-1
3.2.1	Round 1 Groundwater Sampling (October/November 1997)	3-2
3.2.2	Round 2 Groundwater Sampling (January/February 1998).....	3-9
4.0	POST-CLOSURE BASELINE GROUNDWATER QUALITY SAMPLING RESULTS	4-1
4.1	Field Parameters.....	4-34
4.2	Detected Volatile Organic Compounds	4-34
4.2.1	Distally Upgradient Monitoring Wells	4-36
4.2.2	Perimeter and Distally Downgradient Monitoring Wells	4-36
4.3	Inorganic Constituents (Metals).....	4-43
4.4	Leachate Parameters	4-48
4.5	Interpretive Discussion of Groundwater Quality	4-52
4.5.1	General	4-52
4.5.2	Discussion of Volatile Organic Compounds in Groundwater	4-53
4.5.3	Discussion of Inorganic Parameters in Groundwater	4-59
4.5.4	Discussion of Leachate Parameters in Groundwater	4-61
5.0	DATA VALIDATION AND USABILITY.....	5-1
5.1	Baseline Monitoring.....	5-1

TABLE OF CONTENTS (continued)

<u>Section</u>	<u>Title</u>	<u>Page</u>
6.0	GROUNDWATER FLOW	6-1
6.1	Groundwater Flow Patterns	6-3
6.1.1	Water Table.....	6-3
6.1.2	Intermediate Zone of Upper Glacial Aquifer.....	6-11
6.1.3	Deep Zone of the Upper Glacial Aquifer.....	6-11
6.1.4	Vertical Gradients	6-11
6.2	Groundwater Velocity.....	6-16
7.0	CONCLUSIONS	7-1
8.0	RECOMMENDATIONS.....	8-1

List of Appendices

Record of Decision, Sonia Road Landfill, Town of Islip Site Number 1-52-013, July 1998	A
External Chains of Custody for November/December 2000 and January/February 2001 Sampling Rounds	B
Groundwater Monitoring Well Results for Volatile Organic Compounds, Inorganic Constituents and Leachate Parameters from 1998 Remedial Investigation Report	C
Groundwater Monitoring Well Results for 2000-2001 Baseline Groundwater Quality Monitoring Program	D
Data Validation for 2000-2001 Baseline Groundwater Quality Monitoring Program Results.....	E
Water Level Elevations for Monitoring Wells from 1998 Remedial Investigation	F
Grain Size Distribution Analyses.....	G

TABLE OF CONTENTS (continued)

List of Figures

1-1	Site Location Map.....	1-2
2-1	Map Showing Locations of Monitoring Wells	2-2
3-1	Map Showing Locations of Monitoring Wells	3-3
3-2	Concentrations of Volatile Organic Compounds Exceeding Groundwater Standards in Monitoring Wells During 1998 Remedial Investigation	3-4
3-3	Concentrations of Select Leachate Parameters Detected in Monitoring Wells During 1998 Remedial Investigation	3-5
4-1	Concentrations of Volatile Organic Compounds Exceeding Groundwater Standards in Monitoring Wells	4-29
4-2	Concentrations of Metals Exceeding Groundwater Standards in Monitoring Wells	4-30
4-3	Concentrations of Leachate Parameters and Leachate Constituents Exceeding Groundwater Standards in Monitoring Wells	4-31
4-4	Contour Map Showing Concentrations of Total Volatile Organic Compounds in Shallow Groundwater, January/February 2001	4-55
4-5	Contour Map Showing Concentrations of Total Volatile Organic Compounds in Intermediate Depth Groundwater, January/February 2001	4-57
4-6	Contour Map Showing Concentrations of Total Volatile Organic Compounds in Deep Groundwater, January/February 2001	4-60
6-1	Geological Cross Section of Study Area	6-2
6-2	Regional Water Table Contour Map.....	6-4
6-3	Water Table Contour Map, November 4, 1997	6-5
6-4	Intermediate Well Potentiometric Surface Map, November 4, 1997.....	6-6
6-5	Deep Well Potentiometric Surface Map, November 4, 1997	6-7
6-6	Water Table Contour Map, November 18, 1997	6-8
6-7	Intermediate Well Potentiometric Surface Map, November 18, 1997.....	6-9
6-8	Deep Well Potentiometric Surface Map, November 18, 1997	6-10
8-1	Shallow Monitoring Wells Proposed for Long-Term Monitoring.....	8-4

TABLE OF CONTENTS (continued)

List of Tables

2-1	NYSDEC Part 360 Baseline Parameter List.....	2-4
4-1	Summary of Monitoring Well Construction Details.....	4-2
4-2	Field Parameters for Groundwater Samples, November/December 2000 ..	4-5
4-3	Field Parameters for Groundwater Samples, January/February 2001	4-7
4-4	Groundwater Sampling Results - Volatile Organic Compounds Detected	4-9
4-5	Inorganic (Metals) Constituents in Groundwater.....	4-13
4-6	Leachate Indicators Detected in Groundwater	4-21
4-7	Locations of Monitoring Well Clusters Relative to Groundwater Flow Direction Through the Landfill.....	4-33
6-1	Summary of Vertical Gradients from the Remedial Investigation	6-13
8-1	Monitoring Wells to be Sampled Quarterly for 6 NYCRR Part 360 Routine and Baseline Parameters	8-2

Section 1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

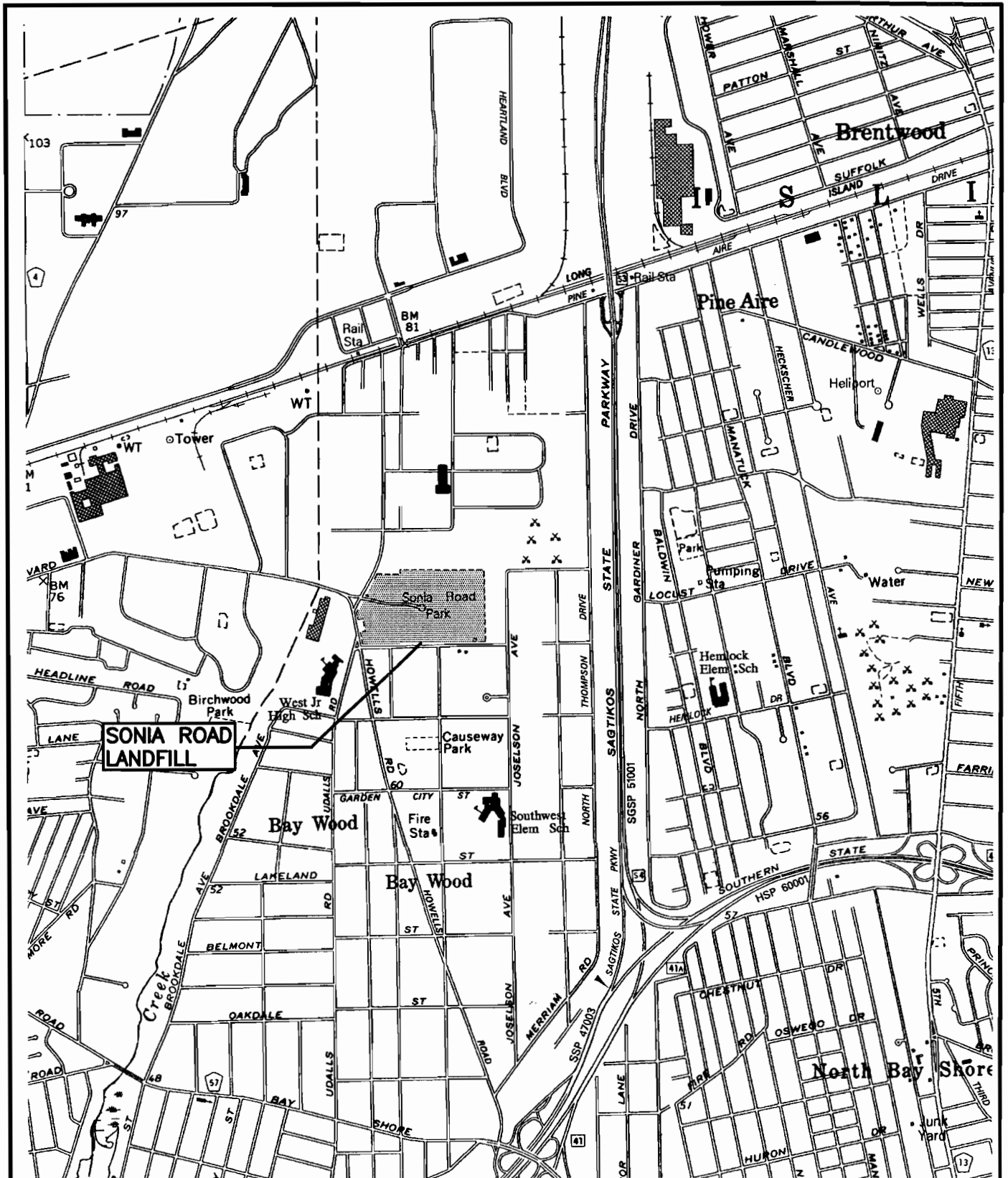
1.0 INTRODUCTION

This report presents the results of the Post-Closure Baseline Groundwater Quality Report performed by Dvirka and Bartilucci Consulting Engineers (D&B) at the closed Sonia Road Landfill, which is operated by the Town of Islip. The Sonia Road Landfill is located in Bay Shore, Suffolk County, New York (see Figure 1-1). The Sonia Road Landfill was listed as a Class 2 site on the New York State Department of Environmental Conservation (NYSDEC) registry of inactive hazardous waste sites (Site No. 1-52-013). As a result of a Record of Decision (July 1998) following a Remedial Investigation/Feasibility Study of the Sonia Road Landfill, a selected remedial action was chosen in accordance with New York State Environmental Conservation Law (ECL).

The selected remedy consisted of the construction of a 6 NYCRR Part 360 landfill cap as described in the Record of Decision for the Site (Appendix A). Because the remedy results in municipal solid waste remaining at the site, a long-term groundwater monitoring program is required. The purpose of the monitoring program is to monitor the effectiveness of the selected remedy.

The construction of the landfill capping system was essentially completed in the fall of 2000. In order to document the groundwater quality coinciding with the completion of the landfill capping system, two rounds of groundwater sampling and analysis were performed. The first round of sampling was performed in late November and early December 2000. The second round of sampling was performed in late January and early February 2001.

For the purpose of this report, the two rounds of groundwater sampling shall serve to document the baseline groundwater quality for the post-closure monitoring and maintenance program. This data shall be used for comparison to future groundwater sampling events in an effort to gauge the impact of the landfill capping system.



SOURCE: US.G.S. GREENLAWN, N.Y. AND BAY SHORE WEST, N.Y. QUADRANGLES

SCALE: 1"=2000'

ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

SITE LOCATION MAP



Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 1-1

1.1 Purpose

The purpose of the Post-Closure Baseline Groundwater Quality Report is to establish existing groundwater quality conditions immediately subsequent to the construction of the landfill capping system.

The Post-Closure Baseline Groundwater Quality Report includes discussions of sampling locations, procedures, laboratory analyses performed, analytical results, and data validation and usability. In addition, this report includes discussions comparing the levels of total volatile organic compounds (VOCs) detected in the recent sampling events with the results obtained during previous sampling events and discusses site hydrologic conditions.

This report also includes recommendations for the Long-Term Groundwater Monitoring Program, including identification of monitoring wells to be included in the monitoring program, as well as the recommended groundwater sample analyses and frequency of sampling.

Section 2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

2.0 GROUNDWATER SAMPLING LOCATIONS, PROCEDURES AND ANALYSES

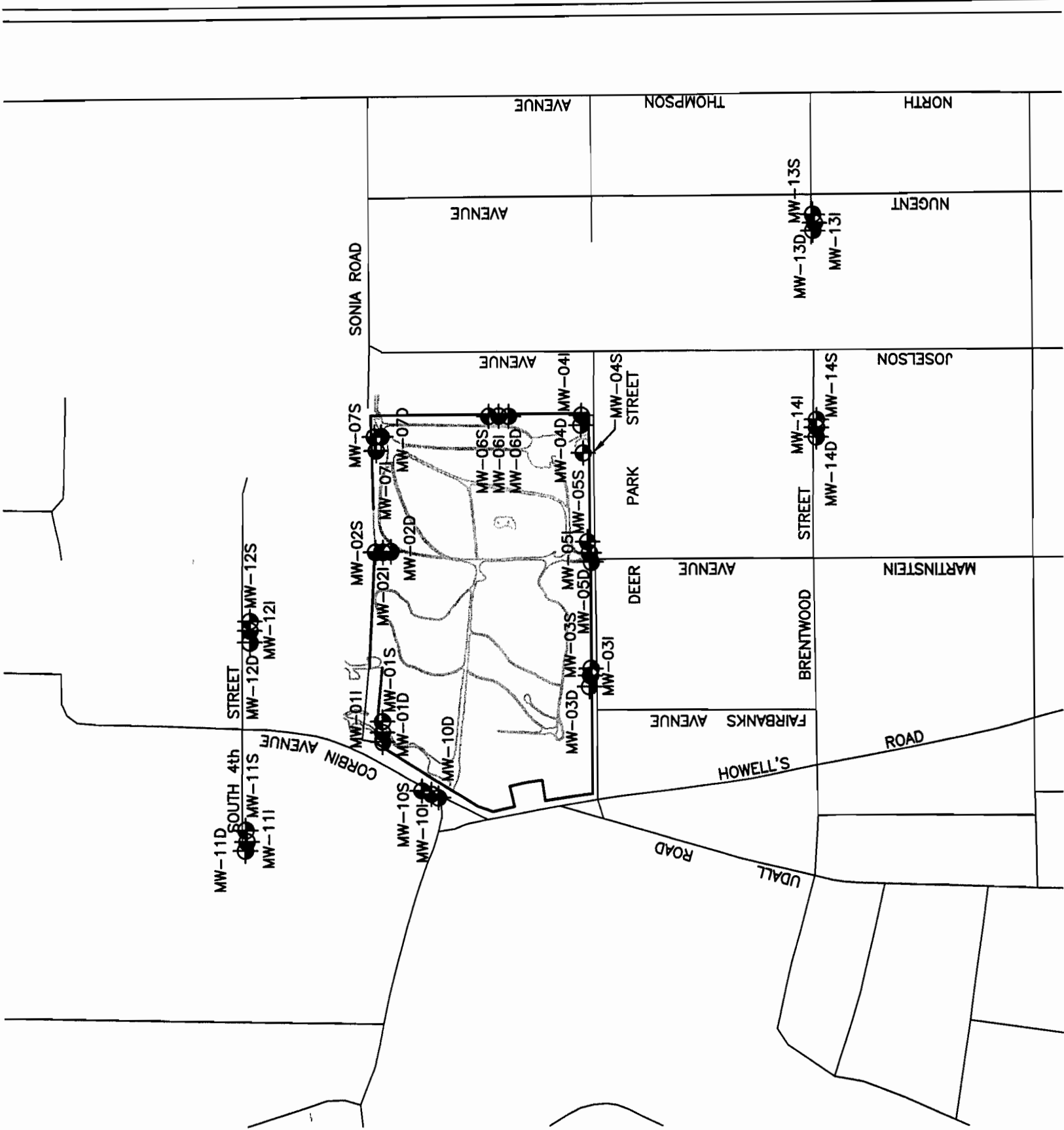
Groundwater Level Measurements

Groundwater level measurements were obtained from 36 existing monitoring wells and also from an existing Suffolk County Department of Health Services (SCDHS) downgradient well (S-62720) on November 29, 2000 and January 29, 2001. Each round of water level elevations was collected within an 8-hour period. The static water levels were measured to the nearest hundredth (0.01) foot with a decontaminated electronic water level indicator. All static water levels were obtained from the top of the PVC well casing (a surveyed reference point). The water level meter was decontaminated between use in each well. Figure 2-1 illustrates the general locations of monitoring wells that were measured and sampled during the course of this investigation.

Groundwater Sampling

Two rounds of groundwater samples were collected from a total of 36 monitoring wells; the first round was collected between November 30 and December 12, 2000, and the second round was collected between January 29 and February 8, 2001. The wells sampled were the on-site monitoring well MW-01 through MW-07 cluster wells, and the off-site monitoring well MW-10 through MW-14 cluster wells.

The wells were purged until a minimum of three to five well volumes were removed. The number of well volumes purged was a function of the stabilization of the pH, Eh, temperature, specific conductivity, dissolved oxygen and turbidity measurements. A 3-inch submersible pump and disposable tubing was used to purge each well. The pump was decontaminated prior to use in each well by manually scrubbing with a solution of potable water/alconox detergent, followed by pumping approximately 10 gallons of potable water/alconox detergent through the pump. Subsequently, an additional 10 gallons of potable water was pumped through the system followed by rinsing the pump with distilled water.



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
MAP SHOWING LOCATIONS OF MONITORING WELLS

Once the well was sufficiently purged, groundwater samples were collected with disposable polyethylene bailers and disposable polypropylene rope. All groundwater samples were analyzed for Target Compound List (TCL) VOCs, Target Analyte List (TAL) metals and leachate indicators, as listed in the Part 360 Baseline Parameters List (Table 2-1). A discussion of data usability, based on data validation performed by D&B, is presented in Section 5 of this report.

All groundwater samples were stored on ice in laboratory supplied coolers immediately after collection. Trip blanks accompanied all laboratory sample coolers in which the VOC samples were placed. Trip blank samples were analyzed for TCL VOCs. Chain-of-custody forms were completed prior to each delivery and accompanied each shipment. The chain-of-custody forms are contained in Appendix B.

During the first round of sampling, purge water from off-site monitoring well clusters MW-13 (S,I,D) and MW-14 (S,I,D) was contained in a tank truck, and transported and disposed in Recharge Basin 1 on-site. Purge water from on-site and upgradient wells was discharged onto the ground. For wells located alongside and just beyond the landfill fence, purge water discharge piping was directed through the fence and discharged into the landfill drainage swales.

During the second sampling round, purge water was discharged in a similar manner to the first round with the exception of purge water from monitoring well MW-11I. Purge water from this well was contained in a tank truck and disposed in the on-site Recharge Basin 1.

Table 2-1

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
NYSDEC PART 360 BASELINE PARAMETER LIST**

Parameter	Method
Leachate Indicators	
Total Kjeldahl Nitrogen, as N	351.3
Ammonia, as N	350.1
Nitrate	9200
Chemical Oxygen Demand (COD)	410.1
Biochemical Oxygen Demand (BOD ⁵)	405.1
Total Organic Carbon	9060
Total Dissolved Solids (TDS)	160.1
Sulfate	9035
Alkalinity	310.1
Total Phenols	8040
Chloride	9250
Bromide	320.1
Total Hardness as CaCO ₃	130.1
Color (Color Units)	110.1
Boron	6010
Inorganics	
Aluminum	6010
Antimony	6010
Arsenic	7060
Barium	6010
Beryllium	6010
Cadmium	6010
Calcium	6010
Chromium	6010
Chromium, Hexavalent	7196
Cobalt	6010
Copper	6010
Cyanide	9010

Table 2-1 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
NYSDEC PART 360 BASELINE PARAMETER LIST**

Parameter	Method
Inorganics (continued)	
Iron	6010
Lead	7420
Magnesium	6010
Manganese	6010
Mercury	7470
Nickel	6010
Potassium	6010
Selenium	7740
Silver	6010
Sodium	6010
Thallium	7840
Vanadium	6010
Zinc	6010
Volatiles	
Acetone	8260
Acrylonitrile	8260
Benzene	8260
Bromochloromethane	8260
Bromodichloromethane	8260
Bromoform	8260
Bromomethane	8260
2-Butanone (Methyl ethyl ketone)	8260
Carbon disulfide	8260
Carbon tetrachloride	8260
Chlorobenzene	8260
Chloroethane	8260
Chloroform	8260
Chloromethane	8260
Dibromochloromethane	8260

Table 2-1 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
NYSDEC PART 360 BASELINE PARAMETER LIST**

Parameter	Method
Volatiles (continued)	
1,2-Dibromo-3-chloropropane	8260
1,2-Dibromomethane	8260
Dibromoethane	8260
trans-1,4-Dichloro-2-butene	8260
1,2-Dichlorobenzene	8260
1,4-Dichlorobenzene	8260
Dichlorodifluoromethane	8260
1,1-Dichloroethane	8260
1,2-Dichloroethane	8260
1,1-Dichloroethene	8260
1,2-Dichloroethene	8260
cis-1,2-Dichloroethene	8260
trans-1,2-Dichloroethene	8260
Dichloromethane	8260
1,2-Dichloropropane	8260
1,1-Dichloropropene	8260
cis-1,3-Dichloropropene	8260
trans-1,3-Dichloropropene	8260
Ethylbenzene	8260
2-Hexanone	8260
Iodomethane	8260
4-Methyl-2-pentanone (Methyl isobutyl ketone; MIBK)	8260
Styrene	8260
1,1,1,2-Tetrachloroethane	8260
1,1,2,2-Tetrachloroethane	8260
Tetrachloroethene	8260
Toluene	8260
1,1,1-Trichloroethane	8260
1,1,2-Trichloroethane	8260

Table 2-1 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
NYSDEC PART 360 BASELINE PARAMETER LIST**

Parameter	Method
Volatiles (continued)	
Trichloroethene	8260
Trichlorofluoromethane	8260
1,2,3-Trichloropropane	8260
Vinyl acetate	8260
Vinyl chloride	8260
Xylene	8260

Section 3

3.0 PREVIOUS WATER QUALITY INVESTIGATIONS AND FINDINGS

3.1 Prior Studies

A number of studies have been conducted on and in the vicinity of the Sonia Road Landfill prior to the construction of the low permeability landfill cap. The landfill cap was selected as the Presumptive Remedy in order to mitigate the generation of leachate and impacts on groundwater and to provide closure of the waste mass underlying site soils. Provided below is a listing of these previous studies which provide historical information pertinent to the site. These reports are summarized in the Remedial Investigation (RI) report and are on file with the Town of Islip and the NYSDEC.

- a) 1975 Holzmacher, McLendon and Murrell Study
- b) 1979 Suffolk County Department of Health Services Study
- c) 1982 Suffolk County Department of Health Services Study
- d) 1981-1983 Suffolk County Department of Health Services Monitoring Program
- e) 1983 NYSDEC Phase I Investigation
- f) 1993 NYSDEC Sampling Program
- g) 1994 NYSDEC Immediate Investigation Study
- h) 1995 Golder Associates Study

3.2 1998 Remedial Investigation Results

For the purpose of this discussion, the 1998 Remedial Investigation (RI) shall serve as a point of reference for groundwater conditions prior to the construction of the landfill capping system. The RI is on file with the Town of Islip and the NYSDEC. An abbreviated discussion of the RI is presented below for convenience.

Site groundwater was investigated in three phases as part of the RI performed by Dvirka and Bartilucci Consulting Engineers in 1997 and 1998. Hydropunch groundwater screening was performed in August and September of 1997. Two rounds of groundwater sampling from newly constructed and existing monitoring wells were conducted during October/November 1997 (Round 1) and during January/February 1998 (Round 2). This was the last site investigation conducted prior to capping of the landfill.

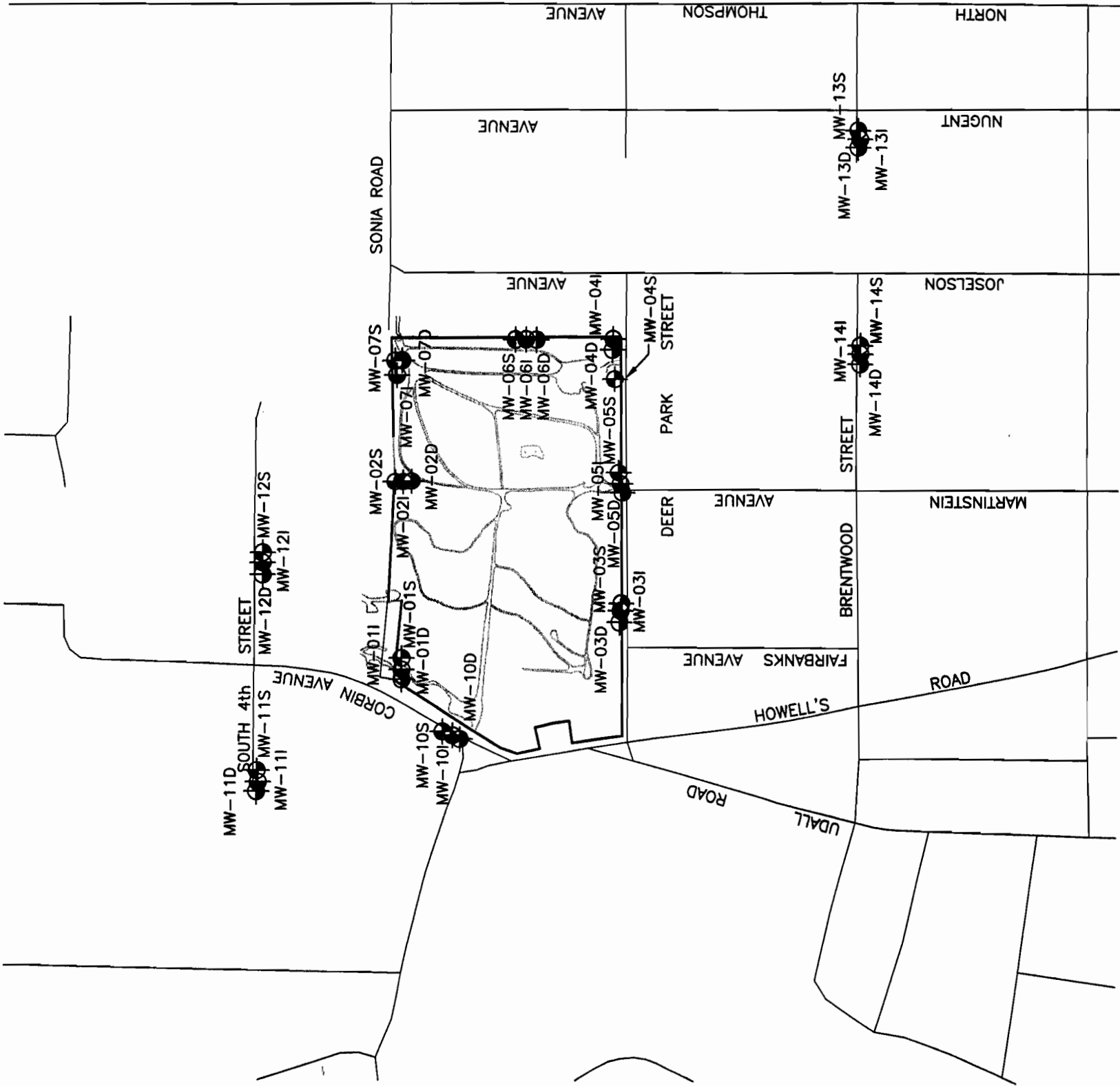
During the RI, 2 rounds of groundwater samples were collected from 31 newly installed and 5 existing monitoring wells. These constituted 12 monitoring well clusters, each consisting of 3 monitoring wells screened in the shallow, intermediate and deep zones of the Upper Glacial aquifer. Figure 3-1 illustrates the locations of the monitoring wells sampled. Groundwater samples were analyzed for full Target Compound List +30 (TCL +30), Target Analyte List (TAL) parameters and leachate parameters for the first round of sample collection and for TCL VOCs +10 for the second round. Analytical results for groundwater monitoring well samples were presented in the 1998 RI and tables of detected constituents are included in this report as Appendix C. Figures 3-2 and 3-3 are excerpted from the RI report (Figures 4-2 and 4-3, respectively) and summarize exceedances of VOCs and concentrations of selected leachate parameters in groundwater during the RI.

The following discussion of the two rounds of groundwater sampling performed as part of the RI is excerpted from sections 4.2.5.1 and 4.2.5.2 of the RI report. Editorial changes have been made to present this discussion in the proper tense.

3.2.1 Round 1 Groundwater Sampling (October/November 1997)

Shallow Groundwater Quality

Analytical results for groundwater samples collected from the on-site shallow monitoring wells reported chloroethane concentrations above the groundwater standards in two wells along the downgradient southern perimeter of the landfill. Monitoring wells MW-05S and MW-04S exhibited respective chloroethane concentrations of 9 ug/l and 8 ug/l.





MW-12				
COMPOUND	S	I	D	
NO EXCEEDANCES				

MW-11				
COMPOUND	S	I	D	
1,1-DCA	-/7.2	7/-	-/-	
TCE	12/6.5	-/-	-/-	
1,2-DCE	24/16	-/-	-/-	

MW-01				
COMPOUND	S	I	D	
1,1-DCA	8/12	14/13	13/22	
1,1,1-TCA	-/-	22/5.1	66/170	
1,2-DCE	-/-	-/-	-/15	
CT	-/-	-/-	-/20	

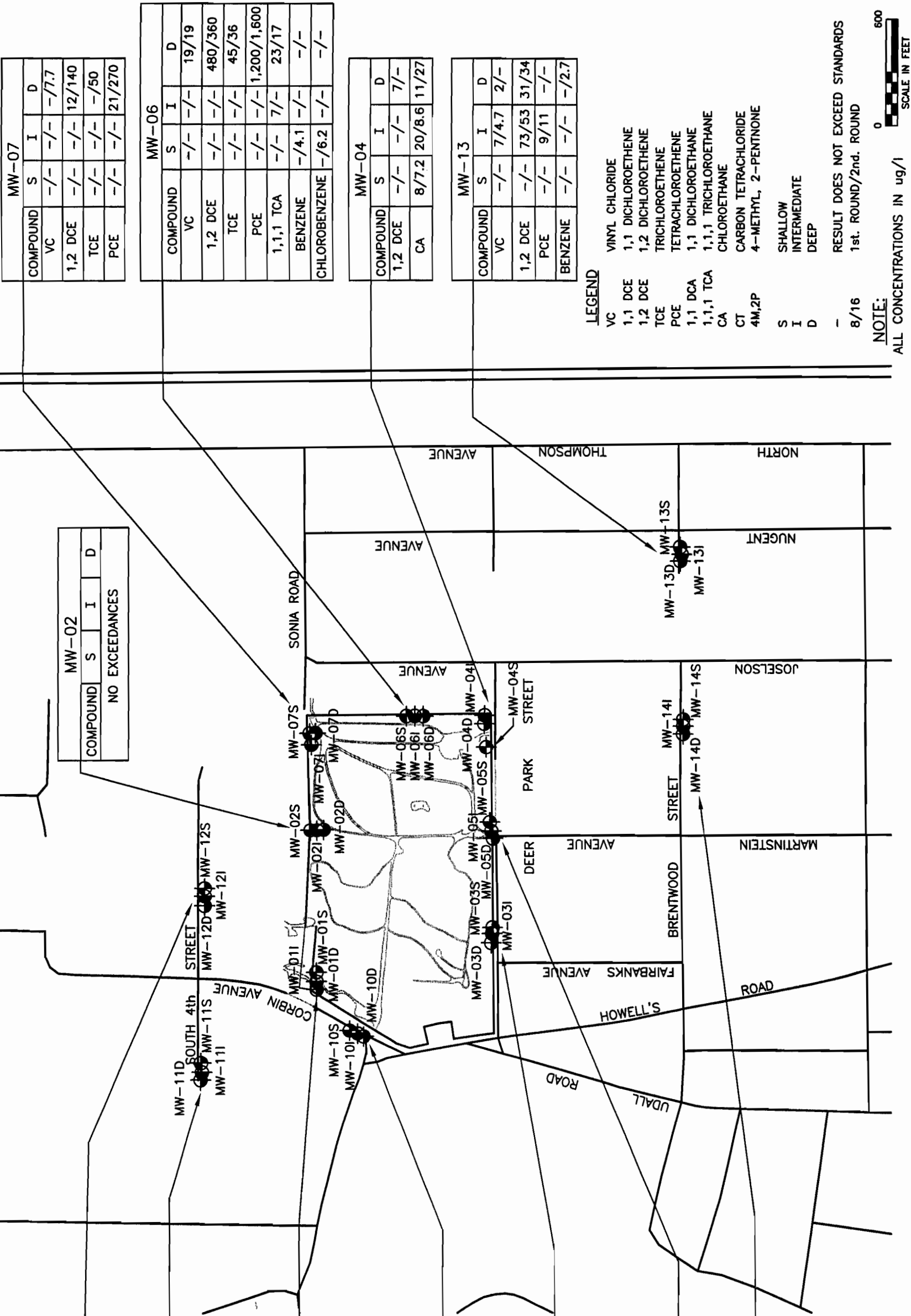
MW-10				
COMPOUND	S	I	D	
1,1-DCA	24/-	11/-	8/-	
4M, 2P	-/-	-/-	-/6.5	

MW-03				
COMPOUND	S	I	D	
1,1 DCE	-/-	-/-	9/-	
1,1 DCA	-/-	46/36	10/-	
1,1,1 TCA	-/-	16/9.8	61/18	

MW-05				
COMPOUND	S	I	D	
CA	9/5.1	-/-	-/-	

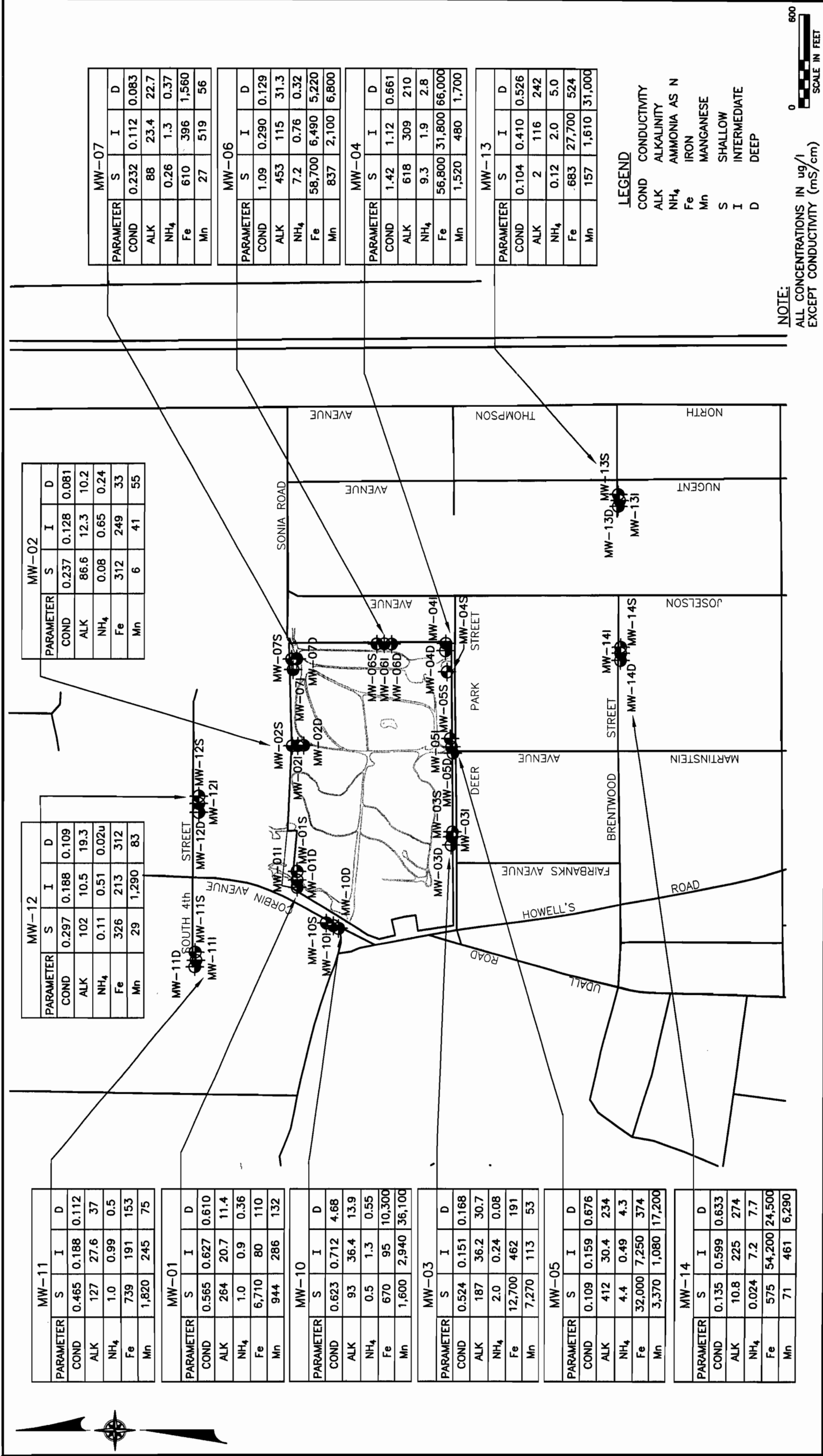
MW-14				
COMPOUND	S	I	D	
VC	-/-	-/-	14/-	
1,2 DCE	-/-	-/-	21/-	
CA	-/-	8/6.9	-/-	

MW-02				
COMPOUND	S	I	D	
NO EXCEEDANCES				



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS EXCEEDING GROUNDWATER STANDARDS IN MONITORING WELLS DURING 1998 REMEDIAL INVESTIGATION



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

**CONCENTRATIONS OF SELECT LEACHATE PARAMETERS DETECTED IN
MONITORING WELLS DURING 1998 REMEDIAL INVESTIGATION**

In upgradient groundwater samples collected from monitoring wells along the northern perimeter of the landfill, 1,1-dichloroethane exceeded groundwater standard in MW-10S and MW-01S, where it was detected at concentrations of 24 ug/l and 8 ug/l, respectively. Trichloroethene (12 ug/l) and 1,2-dichloroethene (24 ug/l) were detected in a further upgradient sample from monitoring MW-11S. Benzene was detected above the standard in MW-06S (at a concentration of 4 ug/l) immediately adjacent to the landfill.

Samples collected from other shallow wells did not detect any VOCs above the standards.

Semivolatile organic compounds (SVOCs) and pesticides/PCBs were not detected above the groundwater standards in any of the shallow groundwater monitoring wells.

Metals analyses reported elevated concentrations of iron in samples collected from all of the shallow wells, with some wells also exhibiting elevated levels of manganese and sodium. For the four wells (MW-03S, MW-04S, MW-05S and MW-06S) located immediately adjacent to and downgradient of the landfill, iron concentration ranged from 12,700 ug/l to 58,700 ug/l, manganese ranged from 837 ug/l to 7,270 ug/l, and sodium from 18,200 ug/l to 40,400 ug/l.

Monitoring wells located immediately upgradient of the landfill (MW-01S, MW-02S, MW-07S, MW-10S), and further upgradient (MW-11S and MW-12S), exhibited significantly lower concentrations of iron and manganese, with concentrations ranging from 312 ug/l to 6,710 ug/l and 5.6 ug/l to 1,820 ug/l, respectively. Sodium levels were comparable to or higher upgradient than downgradient, with concentrations ranging from 8,170 ug/l to 98,100 ug/l.

The leachate parameter analyses reported elevated levels of ammonia (as nitrogen) and alkalinity in each of the shallow wells located immediately downgradient of the landfill. Alkalinity in the upgradient wells ranged from 86.6 mg/l to 264 mg/l and from 187 mg/l to 618 mg/l in the four downgradient wells. None of the upgradient monitoring wells exhibited elevated concentrations of ammonia (as N) (1.0 mg/l or less); however, ammonia concentration ranged from 2.0 to 9.3 mg/l in the downgradient wells.

Based upon the elevated levels of iron, manganese, conductivity, ammonia (as N) and alkalinity, the shallow wells located immediately adjacent to and downgradient of the landfill were interpreted as impacted by leachate.

Downgradient wells MW-13S and MW-14S, indicated levels of iron and manganese consistent with the wells upgradient of the landfill. No exceedances of groundwater standards/guidelines were detected with regard to leachate parameters and levels of alkalinity were lower than the wells upgradient of the landfill. Therefore, the shallow downgradient wells MW-13S and MW-14S did not appear to be impacted by leachate contamination.

Intermediate Groundwater Quality

Elevated concentrations of 1,1,1-trichloroethane and 1,1-dichloroethane were detected in intermediate depth groundwater samples collected upgradient of the landfill. Chloroethane, along with 1,1,1-trichloroethane and 1,1-dichloroethane, were detected at elevated levels downgradient of the landfill.

Tetrachloroethene, 1,2-dichloroethene and vinyl chloride were detected above groundwater standards in MW-13I, located approximately 1,500 feet downgradient of the landfill. However, these compounds were not detected in concentrations exceeding the groundwater standards in any of the intermediate samples collected from the groundwater monitoring wells immediately downgradient of the landfill.

SVOCs and pesticides/PCBs were not detected above the groundwater standards in any of the intermediate groundwater monitoring wells.

Elevated concentrations of iron, manganese and sodium were also detected in several of the intermediate wells. Iron and manganese concentrations detected in the wells located immediately downgradient of the landfill, although in lower concentrations than in the shallow wells, were significantly higher than concentrations from wells located immediately upgradient of the landfill. None of the intermediate wells exhibited ammonia (as N) greater than the

groundwater standard. Two of the downgradient wells, MW-04I and MW-06I, exhibited much higher alkalinity values as compared to the upgradient wells. It was determined that the intermediate wells located immediately downgradient of the landfill appeared to be impacted by leachate emanating from the landfill.

Deep Groundwater Quality

Elevated VOCs were reported for groundwater samples collected from the deep groundwater monitoring wells just south of and downgradient of the landfill. The analysis for groundwater sample MW-03D reported 1,1-dichloroethene, 1,1-dichloroethane and 1,1,1-trichloroethane above standards. Chloroethane and 1,2-dichloroethene was detected above standards in the groundwater sample collected from monitoring well MW-04D.

Upgradient groundwater samples collected from MW-1D and MW-10D also indicated the presence of elevated levels of VOCs. 1,1,1-Trichloroethane and 1,1-dichloroethane were detected at concentrations above groundwater standards in monitoring well MW-01D and 1,1-dichloroethane was detected above the standard in MW-10D.

Significantly elevated levels of VOCs were reported in MW-06D. Tetrachloroethene was detected at 1,200 ug/l and 1,2 dichloroethene was detected at 480 ug/l. 1,1,1-Trichloroethane, trichloroethene, and vinyl chloride were also detected in this sample. An upgradient sample collected from MW-07D also exhibited elevated concentrations of tetrachloroethene and 1,2-dichloroethene.

Samples collected from the deep monitoring wells further downgradient from the landfill also exhibited several of these compounds. Analytical results for MW-13D and MW-14D reported that concentrations of vinyl chloride and 1,2-dichloroethene exceeded groundwater standards.

The only SVOC detected above the groundwater standards/guidelines was phenol at 4 ug/l at MW-04D. Pesticides and PCBs were not detected above the groundwater standards/guidelines in any of the deep monitoring wells.

The results of the metals analysis indicated elevated levels of manganese and sodium in upgradient well MW-10D (36,100 ug/l and 628,000 ug/l, respectively). This well also exhibited an elevated conductivity value of 4.68 mS/cm. This value was higher than the conductivity readings obtained from the shallow and intermediate wells in the MW-10 cluster. Monitoring well MW-05D, which is downgradient of MW-10D, also exhibited elevated manganese (17,200 ug/l) and a conductivity value of 0.676 mS/cm.

Although elevated concentrations of VOCs and select leachate parameters, including iron and manganese, were detected in MW-06D, other leachate parameters such as ammonia (as N) and alkalinity were detected at low levels. Additionally, conductivity for this well was very low and comparable to background. Since this well did not appear to be significantly impacted by leachate from the landfill, the VOCs detected in this well were attributed to an upgradient source. With the exception of well MW-04D, which exhibited elevated levels of iron, manganese and conductivity, it was concluded that the deep monitoring wells immediately downgradient of the landfill did not appear to be impacted by leachate migrating from the landfill.

Similar to the discussion presented above for intermediate groundwater quality, with regard to the two wells further downgradient from the landfill, the deep wells in clusters MW-13 and MW-14 were determined to be impacted by upgradient sources and landfill leachate as evidenced by elevated levels of conductivity, alkalinity, iron, manganese, and ammonia (as N).

3.2.2 Round 2 Groundwater Sampling (January/February 1998)

The second round of groundwater samples were analyzed only for volatile organic compounds, identified as the contaminants of concern based on the initial round of groundwater sampling. Analytical results indicated fairly similar results as compared to the first round, except for the deep monitoring wells at locations MW-01 and MW-07.

For monitoring well MW-01D, located in the northwest corner of the landfill, the first round results reported a total VOC concentration of 84 ug/l as compared to the second round results of 227 ug/l, with the greatest increase attributed to 1,1,1-trichloroethane (66 ug/l as compared to 170 ug/l). For well MW-07D, located in the northeast corner of the landfill, the first round results reported a total VOC concentration of 38 ug/l as compared to the second round results of 468 ug/l, with the greatest increases attributed to tetrachloroethene (21 ug/l as compared to 270 ug/l), trichloroethene (nondetected as compared to 50 ug/l) and 1,2-dichloroethene (12 ug/l as compared to 140 ug/l). Since elevated levels of leachate parameters were not detected in these two wells, it was concluded that the second round of VOC results further indicated the presence of sources of groundwater contamination upgradient of the landfill.

Section 4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

4.0 POST-CLOSURE BASELINE GROUNDWATER QUALITY SAMPLING RESULTS

All groundwater samples collected for the purpose of establishing post-closure baseline groundwater quality were analyzed for baseline parameters identified in 6 NYCRR Part 360 as discussed in Section 2 of this report. In addition, all samples were monitored in the field for pH, Eh, temperature, specific conductance, turbidity and dissolved oxygen.

Table 4-1 summarizes well construction details for the monitoring wells sampled during this program. The information provided in Table 4-1 reflects the physical attributes of the monitoring wells following the construction of the landfill capping/closure system. In general, monitoring wells located on the landfill site were modified by extending the well casings to accommodate the thickness of grading and capping materials. In addition, monitoring well cluster MW-11 was modified subsequent to initial construction to accommodate changes in grade which occurred in the area of the wells. In some instances, the monitoring wells were modified a second time after the taking of these baseline samples. The information contained in Table 4-1 reflects the final conditions of the monitoring wells. Intermediate data for wells which were modified twice is not available. The baseline sampling was performed during this intermediate period. In order to avoid confusion, the original details of construction for these monitoring wells is not repeated in this document. The reader is referred to the RI Report, Table 2-2 for information regarding the original construction of these monitoring wells.

Field parameters measured during each sampling round are presented in Tables 4-2 and 4-3. Analytical results for all groundwater samples are presented in Appendix D. Constituents detected in groundwater samples are presented in Tables 4-4 through 4-6. The parameters that exceed New York State Department of Environmental Conservation (NYSDEC) Class GA groundwater standards/guidelines for VOCs and metals are highlighted on the tables, are summarized in Figures 4-1 and 4-2, and are discussed below. Selected leachate parameter results are tabulated in Figure 4-3 and discussed below.

Table 4-1

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS**

MONITORING WELLS									
Well Designation	Date Completed	Well Diameter (inches)	Screen Type	Total Depth (feet)	Screen Setting		Surface Treatment	Elevation of Measuring Point (feet above mean sea level)	
					feet below Measurement Point	feet above mean sea level (AMSL)			
MW-1S*	1/5/95	4	PVC	29	19 - 29	47 - 37	FM	66.01	
MW-1I*	10/6/97	4	SS	78	68 - 78	(-2) - (-12)	FM	65.36	
MW-1D*	10/14/97	4	SS	106	96 - 106	(-32) - (-42)	FM	64.53	
MW-2S*	1/4/95	4	PVC	43	33 - 43	45 - 35	FM	77.98	
MW-2I*	10/1/97	4	SS	72	62 - 72	16 - 7	FM	78.75	
MW-2D*	10/13/97	4	SS	116	106 - 116	(-27) - (-37)	FM	79.01	
MW-3S*	1/6/95	4	PVC	32	22 - 32	49 - 39	FM	70.76	
MW-3I*	1/9/95	4	PVC	84	79 - 84	(-8) - (-13)	FM	70.77	
MW-3D*	9/30/97	4	SS	107	97 - 107	(-26) - (-36)	FM	70.50	
MW-4S*	1/6/95	4	PVC	34	24 - 34	48 - 38	FM	71.10	
MW-4I*	9/29/97	4	SS	71	61 - 71	8 - (-2)	FM	69.31	
MW-4D*	10/6/97	4	SS	114	104 - 114	(-35) - (-45)	FM	69.03	
MW-5S*	10/4/97	4	SS	34	19 - 34	52 - 37	FM	70.28	
MW-5I*	10/2/97	4	SS	70	60 - 70	11 - 1	FM	70.26	
MW-5D*	10/10/97	4	SS	116	106 - 116	(-35) - (-45)	FM	70.96	

Table 4-1 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS**

MONITORING WELLS

Well Designation	Date Completed	Well Diameter (inches)	Screen Type	Total Depth (feet)	Screen Setting		Surface Treatment	Elevation of Measuring Point (feet above mean sea level)
					feet below Measurement Point	feet above mean sea level (AMSL)		
MW-6S*	9/24/97	4	SS	37	22 - 37	53 - 38	FM	74.45
MW-6I*	9/25/97	4	SS	76	66 - 76	9 - (-1)	FM	74.53
MW-6D*	10/1/97	4	SS	117	107 - 117	(-32) - (-42)	FM	75.03
MW-7S*	9/28/97	4	SS	34	19 - 34	54 - 39	FM	72.83
MW-7I*	9/26/97	4	SS	74	64 - 74	9 - (-1)	FM	73.45
MW-7D*	10/8/97	4	SS	122	112 - 122	(-37) - (-47)	FM	75.04
MW-10S**	10/8/97	4	SS	19	4 - 19	53 - 38	FM	56.65
MW-10I**	10/7/97	4	SS	69	59 - 69	(-3) - (-13)	FM	56.16
MW-10D**	10/15/97	4	SS	96	86 - 96	(-29) - (-39)	FM	56.34
MW-11S*	10/13/97	4	SS	19	4 - 19	56 - 41	FM	59.87
MW-11I*	10/11/97	4	SS	71	61 - 71	(-1) - (-11)	FM	60.38
MW-11D*	10/16/97	4	SS	94	84 - 94	(-24) - (-34)	FM	60.19
MW-12S*	10/13/97	4	SS	19	4 - 19	55 - 40	FM	58.79
MW-12I*	10/10/97	4	SS	70	60 - 70	(-1) - (-11)	FM	58.92
MW-12D*	10/15/97	4	SS	98	88 - 98	(-29) - (-39)	FM	58.61

Table 4-1 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS

Well Designation		Date Completed	Well Diameter (inches)	Screen Type	Total Depth (feet)	Screen Setting		Surface Treatment	Elevation of Measuring Point (feet above mean sea level)
						feet below Measurement Point	feet above mean sea level (AMSL)		
MW-13S***	PVC	10/8/97	4	SS	37	22 - 37	49 - 34	FM	70.51
MW-13I***	SS	10/7/97	4	SS	71	61 - 71	9 - (-1)	FM	70.30
MW-13D***	FM	10/16/97	4	SS	119	109 - 119	(-38) - (-48)	FM	70.37
MW-14S***	PVC	10/14/97	4	SS	30	15 - 30	50 - 35	FM	64.55
MW-14I***	SS	10/9/97	4	SS	71	61 - 71	4 - (-6)	FM	64.57
MW-14D***	FM	10/17/97	4	SS	105	95 - 105	(-30) - (-40)	FM	64.58

PVC Polyvinyl chloride
SS Stainless steel
FM Flush mount

*Monitoring wells surveyed by Municipal Land Survey, P.C., August 2001.

**Monitoring wells surveyed by YEC, Inc., November 1997.

***Monitoring wells surveyed by YEC, Inc., September 2000.

Wells identified in **bold type** were modified during the construction of the landfill capping system to adjust the top of the well (reference point) to accommodate the thickness of the capping system. Wells MW-11S, MW-11I and MW-11D were modified to address changes in grade at well locations.

SOURCE: Dvirka and Bartilucci Remedial Investigation (RI) dated April 1998 and surveys noted above.

Table 4-2

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
FIELD PARAMETERS FOR GROUNDWATER SAMPLES
NOVEMBER/DECEMBER 2000**

Monitoring Well No.	pH (standard units)	Temperature °C	Specific Conductance mS/sec	Turbidity (NTU)	DO (mg/l)	eH (MV)
MW-01S	6.77	15.2	0.493	3.0	3.82	-51
MW-01I	7.04	12.7	0.247	2.0	2.75	64
MW-01D	6.28	12.5	2.570	1.0	3.53	151
MW-02S	6.61	15.4	0.281	1.0	3.74	91
MW-02I	5.61	12.8	0.144	3.0	3.24	229
MW-02D	5.89	13.1	0.099	1.7	10.45	193
MW-03S	6.63	13.9	0.475	1.0	3.85	-32
MW-03I	5.93	12.2	0.270	5.1	4.00	301
MW-03D	6.05	11.4	1.280	3.5	3.54	236
MW-04S	6.62	10.8	1.040	11.0	2.63	-65
MW-04I	6.60	10.9	1.040	0.9	3.38	-51
MW-04D	6.81	12.2	0.801	7.0	3.29	-97
MW-05S	6.44	12.7	0.676	12.1	4.45	-41
MW-05I	6.72	10.4	0.355	10.0	4.07	-64
MW-05D	6.58	10.3	0.931	11.0	3.41	272
MW-06S	6.54	14.7	0.513	3.0	2.62	-70
MW-06I	6.58	13.6	0.333	10.0	2.44	-29
MW-06D	6.20	14.1	0.177	10.0	0.50	-23
MW-07S	6.54	14.7	0.399	1.0	4.51	265
MW-07I	5.99	14.1	0.287	2.0	3.14	157
MW-07D	6.46	13.0	0.104	1.0	2.98	149
MW-10S	6.61	12.0	0.561	3.0	3.04	145
MW-10I	5.63	12.7	0.241	0.3	2.83	145
MW-10D	6.13	12.0	0.318	1.7	2.37	61
MW-11S	6.76	12.2	0.563	7.7	2.78	148
MW-11I	6.00	10.1	0.155	1.0	3.15	263

Table 4-2 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
FIELD PARAMETERS FOR GROUNDWATER SAMPLES
NOVEMBER/DECEMBER 2000**

Monitoring Well No.	pH (standard units)	Temperature °C	Specific Conductance mS/sec	Turbidity (NTU)	DO (mg/l)	eH (MV)
MW-11D	5.35	10.6	0.109	3.0	8.16	369
MW-12S	6.60	12.9	0.328	20.0	3.45	221
MW-12I	5.41	12.9	0.266	1.0	3.20	228
MW-12D	5.87	12.5	0.074	19.2	13.88	203
MW-13S	4.79	11.7	0.110	13.0	8.49	244
MW-13I	6.65	12.3	0.596	4.8	2.46	-91
MW-13D	6.45	11.3	0.588	1.0	2.03	48
MW-14S	5.27	13.7	0.117	2.4	7.02	143
MW-14I	6.69	12.5	0.704	1.8	2.83	-85
MW-14D	6.78	12.5	0.721	1.0	3.25	-96

°C - Degrees Celsius

mS/cm - Millisiemens per centimeter

NTU - Nephelometric Turbidity Units

mV - Millivolt

Eh - Redox potential

DO - Dissolved Oxygen

Table 4-3

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
FIELD PARAMETERS FOR GROUNDWATER SAMPLES
JANUARY/FEBRUARY 2001**

Monitoring Well No.	pH (standard units)	Temperature °C	Specific Conductance mS/cm	Turbidity (NTU)	DO (mg/l)	eH (MV)
MW-01S	4.86	16.2	0.579	21.1	0.74	55
MW-01I	5.76	14.4	0.364	0.5	1.37	327
MW-01D	5.51	13.8	2.260	3.1	2.13	392
MW-02S	5.80	19.2	0.285	1.0	1.85	299
MW-02I	4.59	15.1	0.142	7.2	1.38	483
MW-02D	4.82	14.1	0.100	7.6	9.19	486
MW-03S	6.02	16.8	0.462	6.8	0.27	38
MW-03I	5.35	14.7	0.234	0.8	1.15	134
MW-03D	5.55	14.2	0.785	0.3	0.90	170
MW-04S	5.99	15.2	1.120	5.0	1.33	4
MW-04I	6.07	14.6	0.702	5.3	0.56	-29
MW-04D	6.24	14.2	0.826	5.7	0.37	-69
MW-05S	5.86	15.6	0.783	4.6	0.31	50
MW-05I	6.15	14.7	0.509	5.7	0.99	3
MW-05D	6.14	14.1	1.130	5.6	0.49	77
MW-06S	5.90	15.9	0.600	1.0	0.49	1
MW-06I	5.82	14.7	0.386	1.0	0.53	51
MW-06D	5.93	14.2	0.174	1.1	0.70	47
MW-07S	6.28	15.3	0.505	1.0	5.25	363
MW-07I	5.14	15.1	0.269	1.0	0.91	327
MW-07D	5.40	14.2	0.117	1.2	0.90	291
MW-10S	6.12	10.6	0.699	23.7	0.00	361
MW-10I	5.02	15.1	0.248	3.4	0.87	386
MW-10D	5.46	14.5	0.297	0.4	0.00	347
MW-11S	6.30	10.9	0.497	0.7	0.59	105
MW-11I	5.82	13.8	0.150	1.0	3.65	72

Table 4-3 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
FIELD PARAMETERS FOR GROUNDWATER SAMPLES
JANUARY/FEBRUARY 2001**

Monitoring Well No.	pH (standard units)	Temperature °C	Specific Conductance mS/cm	Turbidity (NTU)	DO (mg/l)	eH (MV)
MW-11D	4.52	13.8	0.110	0.3	5.15	224
MW-12S	6.27	12.9	0.428	3.6	2.50	352
MW-12I	5.08	14.6	0.166	8.4	1.82	335
MW-12D	5.12	14.2	0.087	27.5	7.20	276
MW-13S	4.87	13.4	0.127	2.0	5.65	368
MW-13I	6.51	13.4	0.566	3.2	4.40	-5
MW-13D	6.27	13.1	0.543	1.5	3.10	54
MW-14S	5.10	13.6	0.154	0.4	11.04	247
MW-14I	6.53	13.6	0.769	0.5	2.68	-19
MW-14D	6.54	13.8	0.876	1.1	2.50	-41

°C - Degrees Celsius

mS/cm - Millisiemens per centimeter

NTU - Nephelometric Turbidity Units

mV - Millivolt

Eh - Redox potential

DO - Dissolved Oxygen

Table 4-4

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
VOLATILE ORGANIC COMPOUNDS (VOCs) DETECTED**

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-01D 11/30/2000	MW-01D 01/30/2001	MW-01I 11/30/2000	MW-01I 01/30/2001	MW-01S 11/30/2000	MW-01S 01/29/2001
1,1-Dichloroethene	5 ST	(ug/l)	-	-	2 J	-	-	-
1,1-Dichloroethane	5 ST	(ug/l)	3 J	3.3 J			3 J	2.2 J
1,1,1-Trichloroethane	5 ST	(ug/l)	-	1.1 J			-	-
Trichloroethene	5 ST	(ug/l)	4 J	3.7 J	-	-	2 J	3.3 J
cis-1,2-Dichloroethene	5 ST	(ug/l)		5	-	-		
TOTAL VOCs			15	13.1	29	16.5	12	13.5

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-02D 12/01/2000	MW-02D 01/30/2001	MW-02I 12/01/2000	MW-02I 01/30/2001	MW-02S 11/30/2000	MW-02S 01/31/2001
Trichloroethene	5 ST	(ug/l)	-	-	-	1.8 J	-	-
TOTAL VOCs			U	U	U	1.8	U	U

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-03D 12/07/2000	MW-03D 02/02/2001	MW-03I 12/07/2000	MW-03I 02/02/2001	MW-03S 12/06/2000	MW-03S 02/02/2001
Chloroethane	5 ST	(ug/l)	-	-	-	-	3 J	2.8 J
1,1-Dichloroethane	5 ST	(ug/l)	4 J	3.5 J	2 J	2.4 J	-	-
1,1,1-Trichloroethane	5 ST	(ug/l)	2 J	2.1 J	2 J	1.9 J	-	-
Trichloroethene	5 ST	(ug/l)	-	1.1 J	-	1.0 J	-	-
1,2,3-Trichloropropane	0.04 ST	(ug/l)	-		-		-	-
TOTAL VOCs			6	8.8	4	6.8	3	2.8

Table 4-4 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
VOLATILE ORGANIC COMPOUNDS (VOCs) DETECTED**

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-04D 12/06/2000	MW-04D 02/01/2001	MW-04I 12/06/2000	MW-04I 02/01/2001	MW-04S 12/06/2000	MW-04S 02/01/2001
Chloroethane	5 ST	(ug/l)	4 J	2.5 J			5 J	3.8 J
Chlorobenzene	5 ST	(ug/l)	-	-	2 J	1.4 J	3 J	2.9 J
TOTAL VOCs			4	2.5	65	30.4	8	6.7

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-05D 12/08/2000	MW-05D 02/02/2001	MW-05I 12/08/2000	MW-05I 02/02/2001	MW-05S 12/08/2000	MW-05S 02/02/2001
Chloroethane	5 ST	(ug/l)	-	-	-	-	3 J	
Acetone	50 GV	(ug/l)	-	-	-	-	-	2 J
Tetrachloroethene	5 ST	(ug/l)	-	1.2 J	-	-	-	-
Chlorobenzene	5 ST	(ug/l)	2 J	3.4 J	-	-	3 J	4.9 J
1,4-Dichlorobenzene	3	(ug/l)	1 J	2.4 J	-	-	-	1.2 J
TOTAL VOCs			3	7	U	U	6	13.3

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-06D 12/05/2000	MW-06D 01/31/2001	MW-06I 12/05/2000	MW-06I 02/01/2001	MW-06S 12/05/2000	MW-06S 02/01/2001
Vinyl chloride	2 ST	(ug/l)	-	-	-	-	-	
Trichloroethene	5 ST	(ug/l)	2 J	-		3.1 J	-	-
Tetrachloroethene	5 ST	(ug/l)			2 J	-	-	-
Chlorobenzene	5 ST	(ug/l)	-	-	-	-	-	1.1 J
cis-1,2-Dichloroethene	5 ST	(ug/l)	1 J	1	4 J	-	1 J	
TOTAL VOCs			18	12	29	3.1	1	9.7

Table 4-4 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
VOLATILE ORGANIC COMPOUNDS (VOCs) DETECTED**

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-07D 12/01/2000	MW-07D 01/31/2001	MW-07I 12/01/2000	MW-07I 01/31/2001	MW-07S 12/05/2000	MW-07S 01/31/2001
1,1,1-Trichloroethane	5 ST	(ug/l)	-	-	6	2.6 J	-	-
Tetrachloroethene	5 ST	(ug/l)	4 J	3.5 J	-	-	-	-
TOTAL VOCs			4	3.5	6	2.6	U	U

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-10D 12/01/2000	MW-10D 02/05/2001	MW-10I 12/01/2000	MW-10I 02/05/2001	MW-10S 12/01/2000	MW-10S 02/05/2001
1,1-Dichloroethane	5 ST	(ug/l)	1 J	1.7 J	1 J	1.0 J	6	4.2 J
1,1,1-Trichloroethane	5 ST	(ug/l)	-	1.2 J	1 J	-	-	-
TOTAL VOCs			1	2.9	2	1	6	4.2

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-11D 12/13/2000	MW-11D 02/07/2001	MW-11I 12/13/2000	MW-11I 02/07/2001	MW-11S 12/13/2000	MW-11S 02/07/2001
1,1-Dichloroethene	5 ST	(ug/l)	-	-	-	1.6 J	-	-
1,1-Dichloroethane	5 ST	(ug/l)	-	-	6	1.0 J	-	2.0 J
1,1,1-Trichloroethane	5 ST	(ug/l)	-	-	10	1.8	-	-
Trichloroethene	5 ST	(ug/l)	-	-	-	-	9	2.2 J
cis-1,2-Dichloroethene	5 ST	(ug/l)	-	-	-	-	22	5 J
TOTAL VOCs			U	U	62	120.6	31	9.2

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-12D 12/8/00	MW-12D 2/7/01	MW-12I 12/7/00	MW-12I 2/8/01	MW-12S 12/7/00	MW-12S 2/5/01
TOTAL VOCs			U	U	U	U	U	U

Table 4-4 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
VOLATILE ORGANIC COMPOUNDS (VOCs) DETECTED**

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-13D 12/12/2000	MW-13D 02/06/2001	MW-13I 12/12/2000	MW-13I 02/06/2001	MW-13S 12/11/2000	MW-13S 02/06/2001
Vinyl chloride	2 ST	(ug/l)	8	1.1	12	16	-	-
Chloroethane	5 ST	(ug/l)	2 J	2.6 J	-	1.4 J	-	-
1,1-Dichloroethene	5 ST	(ug/l)	2 J	1.8 J	-	3.7 J	-	-
1,1-Dichloroethane	5 ST	(ug/l)	6	9.1 J	16	29	-	-
1,1,1-Trichloroethane	5 ST	(ug/l)	-	1.2 J	-	-	-	-
Trichloroethene	5 ST	(ug/l)	48	68	100	140	-	-
Benzene	1 ST	(ug/l)	-	1.0 J	-	1.9 J	-	-
Tetrachloroethene	5 ST	(ug/l)	600 E	900 E	730 E	800 E	-	-
Chlorobenzene	5 ST	(ug/l)	-	1.7 J	-	2.6 J	-	-
cis-1,2-Dichloroethene	5 ST	(ug/l)	140	210	170	100 E	-	-
trans-1,2-Dichloroethene	5 ST	(ug/l)	-	1 J	-	2 J	-	-
1,4-Dichlorobenzene	3 ST	(ug/l)	-	1.3 J	-	1.5 J	-	-
TOTAL VOCs			896	1208.7	1068	1608.1	U	U

CONSTITUENT	NYSDEC ST/GV ug/l	SITE DATE	MW-14D 12/11/2000	MW-14D 02/07/2001	MW-14I 12/11/2000	MW-14I 02/06/2001	MW-14S 12/11/2000	MW-14S 02/06/2001
Vinyl chloride	2 ST	(ug/l)	2 J	3.0 J	-	-	-	-
Chloroethane	5 ST	(ug/l)	6	3.1	3 J	4.3 J	-	-
Acetone	50 GV	(ug/l)	-	-	-	2 J	-	-
Chlorobenzene	5 ST	(ug/l)	2 J	2.4 J	-	2.8 J	-	-
cis-1,2-Dichloroethene	5 ST	(ug/l)	2 J	4 J	-	-	-	-
TOTAL VOCs			12	15.3	3	9.1	U	U

ST - Standard

GV - Guidance Value
ug/l - micrograms/liter

- Concentration exceeds ST/GV

J - Compound present below detection limit, concentration estimated

E - Concentration exceeds instrument calibration range, concentration estimated

D - Diluted

- / U - Not detected (U for totals)

Table 4-5

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
INORGANIC (METALS) CONSTITUENTS IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Standard/Guideline	SITE: DATE: UNITS:	MW-01D 11/30/00 (ug/l)	MW-01D 1/30/01 (ug/l)	MW-01I 11/30/00 (ug/l)	MW-01I 1/30/01 (ug/l)	MW-01I 11/30/00 (ug/l)	MW-01S 11/30/00 (ug/l)	MW-01S 1/29/01 (ug/l)	MW-02D 12/1/00 (ug/l)	MW-02D 1/30/01 (ug/l)	MW-02I 12/1/00 (ug/l)
Aluminum	-	ug/l	59.6 B	79.6 B	12.5 B	27.7	21 B	32.1	15.3 B	16	16	26.4 B
Antimony	3	ug/l	U	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U	U	U
Arsenic	25	ug/l	U	1.9 U	U	1.9 U	U	5.9	U	1.9 U	U	U
Barium	1000	ug/l	124 B	87.6	4.3 B	7.8	52.7 B	58	5.2 B	5	5	39.9 B
Beryllium	3	ug/l	U	0.21	U	0.1 U	U	0.1 U	U	0.1 U	0.1 U	U
Boron	1000	ug/l	102	161	65.8 B	94.3	622	553	5.1 B	32.9	32.9	126
Cadmium	5	ug/l	U	0.2 U	U	0.2 U	U	0.2 U	U	0.2 U	U	U
Calcium	-	-	19500	15200	723 B	1350	53000	63900	6070	5720	5720	10700
Chromium	50	ug/l	U	0.6 U	U	0.6 U	U	1.5	U	0.6 U	U	U
Cobalt	-	-	2.1 B	1.7 U	2.2 B	1.7 U	2.8 B	4.8	U	1.7 U	U	U
Copper	200	ug/l	2 B	2.1	2.1 B	1.7	U	2.4	U	1.5 U	1.5 U	U
Iron	300	ug/l	32 B	34.2	13.3 B	22.8	13.6 B	23.70	4.2 B	12.3	12.3	6.9 B
Lead	25	ug/l	U	1.1 U	U	1.1 U	U	6.5	U	1.1 U	1.1 U	U
Magnesium	35000	ug/l	6010	4800	154 B	266	6010	7240	2840 B	2680	2680	2670 B
Manganese	300	ug/l	9.9 B	7.3	1.3 B	3.9	1.2 B	2.2 U	1.6 B	1.1 U	1.1 U	U
Mercury	0.7	ug/l	U	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U	0.1 U	U
Nickel	100	ug/l	U	1.4 U	U	1.4 U	U	1.4 U	U	1.4 U	1.4 U	U
Potassium	-	-	10400	9240	951 B	1510	16200	15700	740 B	806	806	1630 B
Selenium	10	ug/l	U	1.5 U	U	1.5 U	U	5.5 N	U	1.5 U	1.5 U	U
Silver	50	ug/l	0.77 B	1.6 U	U	2.6	0.58 B	1.6 U	U	1.6 U	1.6 U	1 B
Sodium	20000	ug/l	19000	19000	50600	58000	35400	35700	8460	7560	7560	8700
Thallium	0.5	ug/l	U	2.8 U	U	[2.8] U	U	[2.8] U	U	[2.8] U	[2.8] U	U
Vanadium	-	-	U	1.7 U	U	1.7	U	1.7 U	U	1.7 U	1.7 U	U
Zinc	2000	ug/l	3.8 B	5.1	U	8.6	U	22.4	3.6 B	5.3	5.3	U
Cyanide	200	ug/l	17	20.4	U	5 U	U	5 U	U	5 U	5 U	U

Table 4-5 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
INORGANIC (METALS) CONSTITUENTS IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Standard/Guideline	SITE: DATE: UNITS:	MW-02I 1/30/01 (ug/l)	MW-02S 11/30/00 (ug/l)	MW-02S 1/31/01 (ug/l)	MW-03D 12/7/00 (ug/l)	MW-03D 2/2/01 (ug/l)	MW-03I 12/7/00 (ug/l)	MW-03I 2/2/01 (ug/l)	MW-03S 12/6/00 (ug/l)	MW-03S 2/2/01 (ug/l)
Aluminum	-	ug/l	11.8 U	15.8 B	11.8 U	18.3 B	22.3	16.7 B	20.1	16.5 B	53.7
Antimony	3	ug/l	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U
Arsenic	25	ug/l	1.9 U	U	1.9 U	U	1.9 U	U	1.9 U	U	1.9 U
Barium	1000	ug/l	36.9	34.1 B	31.9	58.5 B	22.6	19.4 B	15.4	125 B	125
Beryllium	3	ug/l	0.1 U	U	0.14	U	0.11	U	0.1 U	U	0.24
Boron	1000	ug/l	97.2	59.7 B	87.8	77.8 B	90.6 E	84.3 B	103 E	128	153 E
Cadmium	5	ug/l	0.2 U	U	0.2 U	U	0.2 U	U	0.2 U	U	0.22
Calcium	-	-	10500	30300	33100	29400	11800	2560 B	2080	51200	57700
Chromium	50	ug/l	0.6 U	U	0.6 U	18.3	2.2	U	0.6 U	U	0.6
Cobalt	-	-	1.7 U	U	1.7 U	U	1.7 U	U	1.7 U	U	1.7 U
Copper	200	ug/l	1.5 U	2.6 B	1.5 U	2.6 B	1.5 U	2.9 B	1.5 U	2.6 B	1.5 U
Iron	300	ug/l	5.4	18.7 B	13.8	93.8 B	41.1	16.4 B	21.8	10200	7390
Lead	25	ug/l	1.1 U	U	1.1 U	U	1.1 U	U	1.1 U	U	1.1 U
Magnesium	35000	ug/l	2600	2360 B	2750	12800	5060	1140 B	925	7620	8320
Manganese	300	ug/l	1.0 U	61.1	68.4	24.1	12.2	26.9	31.1	3120	3500
Mercury	0.7	ug/l	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U
Nickel	100	ug/l	1.4 U	U	1.4 U	16.7 B	7.9	U	1.4 U	U	1.4 U
Potassium	-	-	1680	7850	7600	3670 B	2350	1650 B	1530	8310	9590
Selenium	10	ug/l	1.5 U	4 B	1.5 U	U	1.5 U	U	1.5 U	2.8 B	2 N
Silver	50	ug/l	1.6 U	0.93 B	1.6 U	U	1.6 U	U	1.6 U	1.7 B	1.6 U
Sodium	20000	ug/l	7580	12900	13100	197000	119000	16900	39200	26500	21500
Thallium	0.5	ug/l	[2.8] U	2.5 B	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U
Vanadium	-	-	1.7 U	U	1.7 U	U	1.7 U	U	1.7 U	U	1.7 U
Zinc	2000	ug/l	3.6 U	2.8 B	3.6 U	2.9 B	3.6 U	3.1 B	3.6 U	3.5 B	3.6 U
Cyanide	200	ug/l	5 U	U	5 U	U	5 U	U	5 U	U	5 U

Table 4-5 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
INORGANIC (METALS) CONSTITUENTS IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Standard/Guideline	SITE: DATE:	MW-04D 12/6/00 (ug/l)	MW-04D 2/1/01 (ug/l)	MW-04I 12/6/00 (ug/l)	MW-04I 2/1/01 (ug/l)	MW-04S 12/6/00 (ug/l)	MW-04S 2/1/01 (ug/l)	MW-05D 12/8/00 (ug/l)	MW-05D 2/2/01 (ug/l)	MW-05I 12/8/00 (ug/l)
Aluminum	-	ug/l	17.7 B	15.7	19.9 B	18.7	28.8 B	32.4	U	11.8 U	U
Antimony	3	ug/l	U	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U	U
Arsenic	25	ug/l	11.9	14.4	14.6	17.1	3.7 B	7.8	U	1.9 U	3.5
Barium	1000	ug/l	249	224	175 B	107	278	285	206	190	50.4
Beryllium	3	ug/l	U	0.16	U	0.14	0.12 B	0.18	U	0.17	U
Boron	1000	ug/l	291	326	300	285	263	296	324 E	292 E	176 E
Cadmium	5	ug/l	U	0.37	U	0.2 U	U	0.2 U	0.77	0.69	U
Calcium	-	-	60000	59100	92000	62200	99400	109000	107000	99900	39200
Chromium	50	ug/l	U	0.6 U	U	0.6 U	U	0.6 U	U	0.85	U
Cobalt	-	-	17.7 B	14.4	1.7 B	1.7 U	U	1.7 U	5.3	4.6	U
Copper	200	ug/l	U	1.5 U	U	1.5 U	U	2.2	6.3	4.6	U
Iron	300	ug/l	U	3.6	1.9 B	1.9	U	2.8	101	23.2	U
Lead	25	ug/l	4	3.6	1.9 B	1.9	U	2.8	2.1	1.1 U	U
Magnesium	35000	ug/l	11500	11100	15700	9960	14400	15300	26200	23300	6780
Manganese	300	ug/l	U	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U	U
Mercury	0.7	ug/l	U	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U	U
Nickel	100	ug/l	7.1 B	5.4	U	1.4 U	U	1.4 U	7.7	6.7	U
Potassium	-	-	14900	16200	21700	19400	19800	21800	33100	33000	14900
Selenium	10	ug/l	2.2 B	1.5 U	U	1.5 U	U	1.5 U	9.3 *N	7.4 N	2.1 *N
Silver	50	ug/l	1.3 B	1.6 U	U	1.6 U	1.3 B	1.6 U	5.5	2.9	1.1
Sodium	20000	ug/l	U	1.6	32500	2700	32500	3300	32500	3300	32500
Thallium	0.5	ug/l	U	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U	U
Vanadium	-	-	U	1.7 U	U	1.7 U	1.1 B	1.7 U	U	1.7 U	U
Zinc	2000	ug/l	5.9 B	3.6 U	6.8 B	3.6 U	U	3.6 U	18.7	6	4.6
Cyanide	200	ug/l	U	5 U	U	5 U	U	5 U	U	5 U	U

Table 4-5 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
INORGANIC (METALS) CONSTITUENTS IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Standard/Guideline	SITE: DATE: UNITS:	MW-05I 2/2/01 (ug/l)	MW-05S 12/8/00 (ug/l)	MW-05S 2/2/01 (ug/l)	MW-06D 12/5/00 (ug/l)	MW-06D 1/31/01 (ug/l)	MW-06I 12/5/00 (ug/l)	MW-06I 2/1/01 (ug/l)	MW-06S 12/5/00 (ug/l)	MW-06S 2/1/01 (ug/l)
Aluminum	-	ug/l	15.8	234	313	U	14.9	17.6 B	16.4	45.5 B	12.1
Antimony	3	ug/l	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U
Arsenic	25	ug/l	5.5	U	1.9 U	U	1.9 U	U	2.6	3.2 B	8
Barium	1000	ug/l	57.7	214	206	23.8 B	20.1	88.4 B	91.4	121 B	101
Beryllium	3	ug/l	0.1 U	0.23	0.3	U	0.1 U	U	0.14	U	0.1 U
Boron	1000	ug/l	138 E	254 E	226 E	44.7 B	63.6	149	186	162	183
Cadmium	5	ug/l	0.36	U	0.2 U	U	0.2 U	U	0.2 U	U	0.2 U
Calcium	-	-	43300	93500	90500	4640 B	4290	36900	36000	64500	53100
Chromium	50	ug/l	0.6 U	U	1.7	U	0.6 U	U	0.6 U	U	0.6 U
Cobalt	-	ug/l	1.7 U	U	1.7 U	5.7 B	5.3	3 B	2.3	U	1.7 U
Copper	200	ug/l	1.5 U	U	1.5 U	2.1 B	1.5 U	2.6 B	1.5 U	U	1.5 U
Iron	300	ug/l	1.4 U	28300	29300	630	2000	5150	3660	4800	20000
Lead	25	ug/l	1.1 U	2.9	2.5	U	1.1 U	U	1.1 U	1.4 B	1.9
Magnesium	35000	ug/l	8460	13300	12900	1930 B	1800	4020 B	3680	6280	4680
Manganese	300	ug/l	1.6 U	360	940	3160	280	80	307	307	30
Mercury	0.7	ug/l	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U
Nickel	100	ug/l	1.4 U	U	1.4 U	2.3 B	2	U	1.4 U	U	1.4 U
Potassium	-	-	15300	14000	14300	1220 B	1260	8540	9670	8250	8050
Selenium	10	ug/l	1.6 N	3.1 *N	2.4 N	4.3 B	2.9 N	U	1.5 U	U	1.5 U
Silver	50	ug/l	1.6 U	2.1	1.6 U	2.4 B	1.8	0.75 B	1.6 U	0.63 B	1.6 U
Sodium	20000	ug/l	24400	28500	29300	20400	17700	19600	17400	12800	13200
Thallium	0.5	ug/l	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U
Vanadium	-	-	1.7 U	2.5	2.6	U	1.7 U	U	1.7 U	U	1.7 U
Zinc	2000	ug/l	3.6 U	U	3.6 U	3.8 B	3.6 U	5 B	3.6 U	U	3.6 U
Cyanide	200	ug/l	5 U	U	5 U	U	5 U	U	5 U	U	5 U

Table 4-5 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
INORGANIC (METALS) CONSTITUENTS IN GROUNDWATER**

CONSTITUENT	NYSDEC Class GA Groundwater Standard/Guideline	SITE: DATE: UNITS:	MW-07D 12/1/00 (ug/l)	MW-07D 1/31/01 (ug/l)	MW-07I 12/1/00 (ug/l)	MW-07I 1/31/01 (ug/l)	MW-07S 12/5/00 (ug/l)	MW-07S 1/31/01 (ug/l)	MW-10D 12/12/00 (ug/l)	MW-10D 2/5/01 (ug/l)	MW-10I 12/12/00 (ug/l)
Aluminum	-	ug/l	55.6 B	28.4	16 B	23.6	23 B	105	66.4	33.9	12.9
Antimony	3	ug/l	U	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U	U
Arsenic	25	ug/l	U	1.9 U	U	1.9 U	U	1.9 U	U	1.9 U	U
Barium	1000	ug/l	2.5 B	2.9 U	39.6 B	29.3	35.3 B	26.1	17.4	18.8	17.7
Beryllium	3	ug/l	U	0.11	U	0.1 U	U	0.19	U	0.54	U
Boron	1000	ug/l	43.2 B	71.4	33 B	45.4	92.5 B	65.7	130 E	121 E	119 E
Cadmium	5	ug/l	U	0.2 U	U	0.2 U	U	0.2 U	U	0.27	0.48
Calcium	-	-	544 B	465	20000	14700	51000	45900	3800	4230	10300
Chromium	50	ug/l	U	0.6 U	U	0.6 U	U	U	U	0.6 U	U
Cobalt	-	-	U	1.7 U	U	1.7 U	U	1.7 U	1.2	1.7 U	U
Copper	200	ug/l	2.3 B	1.5 U	U	1.5 U	3.2 B	9.4	2.1	1.5 U	1.6
Iron	300	ug/l	34.5 B	12.4	26.2 B	35.2	43.9 B	1500	1240	1350	12.8
Lead	25	ug/l	U	1.1 U	U	1.1 U	U	1.4	U	1.1 U	U
Magnesium	35000	ug/l	276 B	269	4310 B	3080	9390	5340	1390	1460	3050
Manganese	300	ug/l	3 B	1.9	U	U	148	58.9	U	U	U
Mercury	0.7	ug/l	U	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U	U
Nickel	100	ug/l	U	1.4 U	U	1.4 U	U	10.6	2.1	1.4 U	U
Potassium	-	-	458 B	497	2590 B	2460	9250	8070	1530	1580	1880
Selenium	10	ug/l	U	1.5 U	U	1.8 N	U	1.5 U	2.6 *N	8.1 N	2 *N
Silver	50	ug/l	U	1.6 U	1 B	1.6 U	U	1.6 U	2.3	1.6 U	2
Sodium	20000	ug/l	U	U	U	19600	16200	12400	U	U	U
Thallium	0.5	ug/l	U	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U	U
Vanadium	-	-	U	1.7 U	U	1.7 U	U	1.7 U	U	1.7 U	U
Zinc	2000	ug/l	9.8 B	3.6 U	3.8 B	3.6 U	U	6.9	2.9	8.2	9.5
Cyanide	200	ug/l	U	5 U	U	5 U	U	5 U	U	5 U	U

Table 4-5 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
INORGANIC (METALS) CONSTITUENTS IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Standard/Guideline	SITE: DATE: UNITS:	MW-10I 2/5/01 (ug/l)	MW-10S 12/12/00 (ug/l)	MW-10S 2/5/01 (ug/l)	MW-11D 12/13/00 (ug/l)	MW-11D 2/7/01 (ug/l)	MW-11I 12/13/00 (ug/l)	MW-11I 2/7/01 (ug/l)	MW-11S 12/13/00 (ug/l)	MW-11S 2/7/01 (ug/l)
Aluminum	-	ug/l	20.2	18.8	171	578	581	22.3	11.8 U	31.7	47.7
Antimony	3	ug/l	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U
Arsenic	25	ug/l	1.9 U	U	1.9 U	U	1.9 U	U	1.9 U	U	1.9 U
Barium	1000	ug/l	17.5	23.1	27.2	34	31.9	13.1	10.3	27.3	24.1
Beryllium	3	ug/l	0.1 U	U	0.11	0.22	0.13	U	0.1 U	U	0.1 U
Boron	1000	ug/l	122	102 E	87.8	42.2 E	32.6 E	98.2 E	84 E	635 E	630 E
Cadmium	5	ug/l	0.34	U	0.2 U	U	0.22	U	0.23	U	0.2 U
Calcium	-	-	11000	62700	68800	4290	5130	9570	9150	58600	53800
Chromium	50	ug/l	0.6 U	U	1.7	U	1.6	U	0.6 U	U	9.8
Cobalt	-	-	1.7 U	U	1.7 U	U	1.7 U	4	3.2	1.4	1.8
Copper	200	ug/l	1.5 U	3.1	2.5	2.3	1.5 U	2.4	1.5 U	3.2	3
Iron	300	ug/l	7.5	190	133	16.7	30.6	24.1	10.2	45.6	65.1
Lead	25	ug/l	1.1 U	U	1.1 U	U	1.1 U	U	1.1 U	U	1.1 U
Magnesium	35000	ug/l	3170	8560	9210	1340	1440	2670	2670	6250	5770
Manganese	300	ug/l	0.1 U	U	0.1 U	76.7	83.5	U	0.1 U	U	0.1 U
Mercury	0.7	ug/l	1.4 U	U	3	5.3	5.8	3.5	2.5	3.1	3.3
Nickel	100	ug/l	1970	13400	16900	6950	7120	2690	2270	9070	7980
Potassium	-	-	1.5 U	3.8 *N	3.1 N	UN	2 N	UN	1.5 U	3 *N	3 N
Selenium	10	ug/l	2.7	2.7	1.6 U	1.2	1.6 U	1.7	1.6 U	3.6	1.6 U
Silver	50	ug/l	2.7	2.7	1.6 U	1.2	1.6 U	1.7	1.6 U	3.6	1.6 U
Sodium	20000	ug/l	2.7	3.5	4.5	7840	7610	13200	10400	2690	2690
Thallium	0.5	ug/l	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U
Vanadium	-	-	1.7 U	0.78	1.7 U	U	1.7 U	0.95	1.7 U	0.98	1.7 U
Zinc	2000	ug/l	3.6 U	U	3.6 U	2.8	13.6	5.4	4.1	U	3.6 U
Cyanide	200	ug/l	5 U	U	5 U	U	5 U	U	5 U	U	5 U

Table 4-5 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
INORGANIC (METALS) CONSTITUENTS IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Standard/Guideline	SITE: DATE: UNITS:	MW-12D 12/8/00 (ug/l)	MW-12D 2/7/01 (ug/l)	MW-12I 12/7/00 (ug/l)	MW-12I 2/8/01 (ug/l)	MW-12S 12/7/00 (ug/l)	MW-12S 2/5/01 (ug/l)	MW-13D 12/12/00 (ug/l)	MW-13D 2/6/01 (ug/l)	MW-13I 12/12/00 (ug/l)
Aluminum	-	ug/l	14.9	18.6	38.1 B	13.5	135 B	109	U	11.8 U	13.6
Antimony	3	ug/l	U	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U	U
Arsenic	25	ug/l	U	1.9 U	U	1.9 U	U	1.9 U	U	1.9 U	U
Barium	1000	ug/l	1.5	2.9 U	20.2 B	12.6	35.5 B	32.6	74.9	73.9	453
Beryllium	3	ug/l	U	0.1 U	U	0.1 U	U	0.1 U	U	0.16	U
Boron	1000	ug/l	29.4 E	25.2 E	865	423 E	102	108	183 E	175 E	221 E
Cadmium	5	ug/l	U	0.2 U	U	0.2 U	U	0.2 U	U	0.38	U
Calcium	-	-	3180	3660	13500	9680	33500	38700	59000	58700	58100
Chromium	50	ug/l	U	1	U	0.6 U	8.7 B	3	3.6	1.2	U
Cobalt	-	ug/l	U	1.7 U	U	1.7 U	U	1.7 U	6.8	6.5	52.7
Copper	200	ug/l	U	1.5 U	2.4 B	1.5 U	3.2 B	1.5 U	2.1	1.5 U	U
Iron	300	ug/l	20.9	16.5	20.9 B	12.4	170	88.4	53.5	47.3	60800
Lead	25	ug/l	U	1.1 U	U	1.1 U	U	1.1 U	2.5	1.5	4
Magnesium	35000	ug/l	1520	1760	3600 B	2400	1990 B	2280	8170	8180	6750
Manganese	300	ug/l	1.8	1.4	1300	1070	45	14.1	27100	25800	2150
Mercury	0.7	ug/l	U	0.1 U	NA	0.1 U	U	0.1 U	U	0.1 U	U
Nickel	100	ug/l	U	1.4 U	U	1.4 U	3.5 B	1.4 U	4.1	3.9	2.5
Potassium	-	-	554	673	2110 B	1810	14900	15400	12400	13400	12500
Selenium	10	ug/l	UN	1.5 U	U	1.5 U	U	1.5 U	12.6 N	10.5 N	2.3 *N
Silver	50	ug/l	1.4	1.6 U	0.65 B	1.6 U	U	1.6 U	6.3	4.6	1.7
Sodium	20000	ug/l	8610	9340	22500	13900	18000	2100	23100	22100	17900
Thallium	0.5	ug/l	U	[2.8] U	U	[2.8] U	U	[2.8] U	U	[5.6] U	15.6
Vanadium	-	-	U	1.7 U	U	1.7 U	0.98 B	1.7 U	U	1.7 U	U
Zinc	2000	ug/l	U	3.6 U	13.7 B	9	U	3.6 U	2.2	3.6 U	U
Cyanide	200	ug/l	U	5 U	U	5 U	U	5 U	U	5 U	U

Table 4-5 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
INORGANIC (METALS) CONSTITUENTS IN GROUNDWATER**

CONSTITUENT	NYSDEC Class GA Groundwater Standard/Guideline	SITE: DATE: UNITS:	MW-13I 2/6/01 (ug/l)	MW-13S 12/11/00 (ug/l)	MW-13S 2/6/01 (ug/l)	MW-14D 12/11/00 (ug/l)	MW-14D 2/7/01 (ug/l)	MW-14I 12/11/00 (ug/l)	MW-14I 2/6/01 (ug/l)	MW-14S 12/11/00 (ug/l)	MW-14S 2/6/01 (ug/l)
Aluminum	-	ug/l	11.8 U	303	931	U	17.6	20.2	18.1	94	685
Antimony	3	ug/l	[12.3] U	U	[12.3] U	U	[12.3] U	U	[12.3] U	59.8	[12.3] U
Arsenic	25	ug/l	1.9 U	U	1.9 U	U	1.9 U	11.2	10.7	U	1.9 U
Barium	1000	ug/l	391	46.4	52.9	325	307	164	147	20.3	28.8
Beryllium	3	ug/l	0.1 U	0.26	0.46	0.14	0.1 U	U	0.1 U	U	0.1 U
Boron	1000	ug/l	190 E	42.4 E	29.5 E	279 E	254 E	295 E	277 E	74 E	55.8 E
Cadmium	5	ug/l	0.41	U	0.36	U	0.44	U	0.45	U	0.71
Calcium	-	-	49800	9750	5950	76500	74500	77900	72900	11400	12100
Chromium	50	ug/l	0.6 U	U	2.2	U	0.6 U	U	0.6 U	U	2
Cobalt	-	ug/l	44.3	U	1.7 U	20.7	19.3	7.3	6	U	1.7 U
Copper	200	ug/l	1.5 U	1.8	1.5 U	U	1.5 U	U	1.5 U	2.3	4.4
Iron	300	ug/l	5300	100	175	50400	49000	49600	46000	26	340
Lead	25	ug/l	2.5	1.6	1.1 U	3.9	3.6	3.9	2.5	U	1.1 U
Magnesium	35000	ug/l	5970	1870	1710	17000	17000	14200	13200	2480	2740
Manganese	300	ug/l	3.5 (B)	61.5	152	10200	12400	6100	542	94.9	87.4
Mercury	0.7	ug/l	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U	U	0.1 U
Nickel	100	ug/l	2.1	U	2.4	6.2	6.1	U	1.4 U	5.6	3.3
Potassium	-	-	11600	2970	2130	30400	30300	23500	24000	2510	2740
Selenium	10	ug/l	1.5 U	5.1 *N	1.5 U	5.5 *N	5.7 N	UN	1.5 U	UN	1.5 U
Silver	50	ug/l	1.6 U	1	1.6 U	4.1	2	1.3	1.6 U	0.94	1.6 U
Sodium	20000	ug/l	14600	8870	5300	29000	27100	31800	30100	7930	8420
Thallium	0.5	ug/l	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U	U	[2.8] U
Vanadium	-	-	1.7 U	0.78	1.7 U	U	1.7 U	U	1.7 U	U	1.7 U
Zinc	2000	ug/l	3.6 U	U	3.6 U	8.7	10.3	2.6	3.6 U	62.9	191
Cyanide	200	ug/l	5 U	U	5 U	U	7.4 J	U	5 U	U	5 U
Sum of Constituents:			137844.81	24023.84	16770.62	216653.24	205354.44	198107.50	187257.95	24760.74	27428.21

[]: Detection limit greater than Groundwater Standard/Guideline

NA: Not analyzed

: Concentration exceeds Groundwater Standard/Guideline

B: Compound detected above instrument detection limit but below contract required detection limit

U: Analyzed for but not detected

Table 4-6

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
LEACHATE INDICATORS DETECTED IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Std's/Guidelines	SITE : DATE : UNITS:	MW-01D 11/30/2000 (mg/l)	MW-01D 01/30/2001 (mg/l)	MW-01I 11/30/2000 (mg/l)	MW-01I 01/30/2001 (mg/l)	MW-01S 11/30/2000 (mg/l)	MW-01S 01/29/2001 (mg/l)	MW-02D 12/01/2000 (mg/l)	MW-02D 01/30/2001 (mg/l)	MW-02I 12/01/2000 (mg/l)
Color (APHA Units)		(mg/l)	5 U	5 U	5 U	5 U	50	50	5 U	5 U	5 U
Alkalinity (as CaCO ₃)		(mg/l)	37	43	65.6	50	183	180	13.8	14	9
Ammonia (as N)	2	(mg/l)	0.46	0.49	0.24	0.63			0.2	0.22	9.1
Biochemical Oxygen Demand		(mg/l)	2 U	2 U	2	2 U	2 U	6.00	2 U	2 U	2 U
Bromide	2	(mg/l)	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Chemical Oxygen Demand		(mg/l)	21.5	10.7	10 U	10 U	29.6	10.7	73	10 U	56.7
Chloride	250	(mg/l)	737	570	34.6	72	28.4	42	5.2	5.5	12.8
Hardness (as CaCO ₃)		(mg/l)	74	80	5	30	140	200	30	68	34
Nitrate (as N)	10	(mg/l)	0.42	1.0	0.53	1.3	0.1 U	0.080 J	1.2	1.0	2.2
Phenols, total	0.001	(mg/l)	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U
Sulfate	250	(mg/l)	19.8	33.2	10.2	5 U	50	42.5	5 U	8.20	5.4
Total Organic Carbon		(mg/l)	2.3	2.4	1.7	0.99 J	6	9.1	1 U	0.88 J	1.5
TDS		(mg/l)	1060	1500	179	310	259	310	96	80	88
Total Kjeldahl Nitrogen (as N)		(mg/l)	0.59	0.660	0.35	1.16	(1.9)	3.30	(0.19)	0.340	9

Table 4-6 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
LEACHATE INDICATORS DETECTED IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Std's/Guidelines	SITE : DATE : UNITS:	MW-02I 01/30/2001 (mg/l)	MW-02S 11/30/2000 (mg/l)	MW-02S 01/31/2001 (mg/l)	MW-03D 12/07/2000 (mg/l)	MW-03D 02/02/2001 (mg/l)	MW-03I 12/07/2000 (mg/l)	MW-03I 02/02/2001 (mg/l)	MW-03S 12/06/2000 (mg/l)	MW-03S 02/02/2001 (mg/l)
Color (APHA Units)		(mg/l)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	70	100
Alkalinity (as CaCO ₃)		(mg/l)	9.3	86.2	85	31.8	34.2	21	21.6	183	160
Ammonia (as N)	2	(mg/l)	0.64	1.5	1.1	0.26	0.32	0.10 U	0.1 U	2.3	1.66
Biochemical Oxygen Demand		(mg/l)	2 U	2 U	2.00	3	2 U	6	2 U	11	18.0
Bromide	2	(mg/l)	0.5 U	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.700	0.5 U	0.5 U
Chemical Oxygen Demand		(mg/l)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	32.6
Chloride	250	(mg/l)	15	9.5	10	275	96.6	34.1	32.0	28.8	26.8
Hardness (as CaCO ₃)		(mg/l)	80	88	120	140	44	16	72	180	188
Nitrate (as N)	10	(mg/l)	2.4	2.4	1.8	2.8	3.76	6.5	4.63	0.1 U	0.254
Phenols, total	0.001	(mg/l)	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U
Sulfate	250	(mg/l)	7.80	26.6	19.2	140	77.0	29.1	16.6	5.1	19.0
Total Organic Carbon		(mg/l)	1.1	1.6	2.7	1 U	1.25	1 U	1.12	4.3	4.67
TDS		(mg/l)	99	138	170	664	393	163	135	237	248
Total Kjeldahl Nitrogen (as N)		(mg/l)	1.20	(1.4)	1.10	0.7	0.710	0.10 U	0.160	2	1.70

Table 4-6 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
LEACHATE INDICATORS DETECTED IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Std's/Guidelines	SITE : DATE : UNITS:	MW-04D 12/06/2000 (mg/l)	MW-04D 02/01/2001 (mg/l)	MW-04I 12/06/2000 (mg/l)	MW-04I 02/01/2001 (mg/l)	MW-04S 12/06/2000 (mg/l)	MW-04S 02/01/2001 (mg/l)	MW-05D 12/08/2000 (mg/l)	MW-05D 02/02/2001 (mg/l)	MW-05I 12/08/2000 (mg/l)
Color (APHA Units)		(mg/l)	150	50	200	60	200	80	50	10.0	300
Alkalinity (as CaCO ₃)		(mg/l)	232	260	339	240	364	400	467	505	113
Ammonia (as N)	2	(mg/l)	5.3	5.4	9.2	8.0	7.8	7.2	14.9	16.1	3.9
Biochemical Oxygen Demand		(mg/l)	4	8.00	24	20.0	37	34.0	5	12.0	4 U
Bromide	2	(mg/l)	0.8	1.1	0.9	0.70	1.2	1.0	0.5 U	0.5 U	0.5 U
Chemical Oxygen Demand		(mg/l)	10 U	10.6	10 U	10 U	10 U	13.4	40.5	32.6	10 U
Chloride	250	(mg/l)	42.8	42	50.9	48	42.2	49	65.4	51.6	29.6
Hardness (as CaCO ₃)		(mg/l)	280	200	480	200	480	340	410	360	104
Nitrate (as N)	10	(mg/l)	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1.5	0.1 U
Phenols, total	0.001	(mg/l)	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U
Sulfate	250	(mg/l)	9.1	6.10	5 U	5 U	8.9	5.30	25.5	17.8	24.2
Total Organic Carbon		(mg/l)	6.5	6.2	7.5	7.5	8.1	11	13.6	11.1	4.7
TDS		(mg/l)	304	310	410	310	426	460	549	566	216
Total Kjeldahl Nitrogen (as N)		(mg/l)	6.6	7.00	11.4	10.1	8.9	10.7	15.3	18.0	4.4

Table 4-6 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
LEACHATE INDICATORS DETECTED IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Std's/Guidelines	SITE : DATE : UNITS:	MW-05I 02/02/2001 (mg/l)	MW-05S 12/08/2000 (mg/l)	MW-05S 02/02/2001 (mg/l)	MW-06D 12/05/2000 (mg/l)	MW-06D 01/31/2001 (mg/l)	MW-06I 12/05/2000 (mg/l)	MW-06I 02/01/2001 (mg/l)	MW-06S 12/05/2000 (mg/l)	MW-06S 02/01/2001 (mg/l)
Color (APHA Units)		(mg/l)	100	400	100	30	5 U	30	30	100	70
Alkalinity (as CaCO ₃)		(mg/l)	157	390	362	40.6	38	97.1	77	245	200
Ammonia (as N)	2	(mg/l)	9.00	25	33.0	0.10 U	0.24	1.7	1.70		
Biochemical Oxygen Demand		(mg/l)	0.5 U	0.6	0.900	0.5 U	0.60	0.5 U	0.5 U	0.7	0.5 U
Bromide	2	(mg/l)	10 U	10 U	21.8	10 U	10 U	10 U	10 U	10.7	10 U
Chemical Oxygen Demand		(mg/l)	39.9	36.4	36.6	12.6	9.3	20.1	18	14.8	20
Chloride	250	(mg/l)	140	290	276	44	68	108	120	280	140
Hardness (as CaCO ₃)		(mg/l)	1.4	0.1 U	0.29	0.2	0.14	0.1 U	0.14	0.1 U	0.1 U
Nitrate (as N)	10	(mg/l)	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U
Phenols, total	0.001	(mg/l)	17.0	5 U	5 U	23.3	17.2	47.8	50.4	5 U	8.40
Sulfate	250	(mg/l)	5.12	12	9.17	1.7	1.1	1.8	2.4	4.4	5.8
Total Organic Carbon		(mg/l)	250	385	383	130	120	211	120	270	220
TDS		(mg/l)	5.00	7.8	8.40	0.2	0.460	2	2.30	3.9	4.90
Total Kjeldahl Nitrogen (as N)		(mg/l)									

Table 4-6 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
LEACHATE INDICATORS DETECTED IN GROUNDWATER**

CONSTITUENT	NYSDEC Class GA Groundwater Stds/Guidelines	SITE : DATE : UNITS:	MW-07D 12/01/2000 (mg/l)	MW-07D 01/31/2001 (mg/l)	MW-07I 12/01/2000 (mg/l)	MW-07I 01/31/2001 (mg/l)	MW-07S 12/05/2000 (mg/l)	MW-07S 01/31/2001 (mg/l)	MW-10D 12/12/2000 (mg/l)	MW-10D 02/05/2001 (mg/l)	MW-10I 12/12/2000 (mg/l)
Color (APHA Units)		(mg/l)	5 U	5 U	5 U	5 U	5	5 U	5 U	5 U	5 U
Alkalinity (as CaCO ₃)		(mg/l)	28.3	29	22.1	23	85.3	75	21.2	20.4	8.1
Ammonia (as N)	2	(mg/l)	0.18	0.18	0.89	1.20	0.22	0.110	0.36	0.254	0.32
Biochemical Oxygen Demand		(mg/l)	5	3.00	2 U	8.00	10 U	2 U	2	2.00	2
Bromide	2	(mg/l)	1	0.80	0.6	0.90	0.5 U	0.5 U	0.5 U	0.800	1.3
Chemical Oxygen Demand		(mg/l)	13.4	10 U	10 U	10 U	16.1	10 U	10 U	10 U	10 U
Chloride	250	(mg/l)	7.1	7.1	37.6	31	44.2	36	55.1	52	30.9
Hardness (as CaCO ₃)		(mg/l)	22	56	72	88	172	160	22	40.0	44
Nitrate (as N)	10	(mg/l)	0.31	0.28	3.4	3.1	4.8	4.6	3.6	4.1	6.2
Phenols, total	0.001	(mg/l)	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U
Sulfate	250	(mg/l)	5 U	5.40	6	18.9	66.6	30.8	13.8	13.8	15.3
Total Organic Carbon		(mg/l)	1 U	1.1	1 U	1.2	6.1	7.4	1.1	1 U	1 U
TDS		(mg/l)	73	89	164	140	265	260	185	160	124
Total Kjeldahl Nitrogen (as N)		(mg/l)	0.39	0.140	0.84	1.60	0.8	0.710	0.32	0.321	0.66

Table 4-6 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
LEACHATE INDICATORS DETECTED IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Std's/Guidelines	SITE : DATE : UNITS:	MW-101 02/05/2001 (mg/l)	MW-10S 12/12/2000 (mg/l)	MW-10S 02/05/2001 (mg/l)	MW-11D 12/13/2000 (mg/l)	MW-11D 02/07/2001 (mg/l)	MW-11I 12/13/2000 (mg/l)	MW-11I 02/07/2001 (mg/l)	MW-11S 12/13/2000 (mg/l)	MW-11S 02/07/2001 (mg/l)
Color (APHA Units)		(mg/l)	5 U	5	5.0	5 U	5 U	5 U	5 U	5 U	5 U
Alkalinity (as CaCO ₃)		(mg/l)	20	182	190	3.6	6.80	34.2	27.4	134	135
Ammonia (as N)	2	(mg/l)	0.22	0.9	0.95	0.14	0.481	1.1	0.910	1.3	1.51
Biochemical Oxygen Demand		(mg/l)	2.00	4	2 U	2	2 U	2 U	2 U	2 U	2 U
Bromide	2	(mg/l)	0.60	0.6	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chemical Oxygen Demand		(mg/l)	10 U	10 U	59.4	10 U	10 U	10 U	10 U	10 U	11.0
Chloride	250	(mg/l)	39	43.1	68	7.9	10.3	17.3	17.5	50.7	36.1
Hardness (as CaCO ₃)		(mg/l)	44	210	240	17	28.0	34	40.0	210	156
Nitrate (as N)	10	(mg/l)	5.9	0.95	0.19	1.9	1.79	0.42	1.8	0.21	0.25
Phenols, total	0.001	(mg/l)	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U
Sulfate	250	(mg/l)	28.4	27.4	29.2	11.3	10.9	6.8	7.00	28.6	49.6
Total Organic Carbon		(mg/l)	0.99 J	7.3	7.9	1 U	1 U	1.3	1 U	4.6	3.53
TDS		(mg/l)	180	291	360	61	84.0	42	63.0	253	254
Total Kjeldahl Nitrogen (as N)		(mg/l)	0.320	1.2	1.60	0.1 U	0.460	1.2	0.790	1.5	7.76

Table 4-6 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
LEACHATE INDICATORS DETECTED IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Std's/Guidelines	SITE : DATE : UNITS:	MW-12D 12/08/2000 (mg/l)	MW-12D 02/07/2001 (mg/l)	MW-12I 12/07/2000 (mg/l)	MW-12I 02/08/2001 (mg/l)	MW-12S 12/07/2000 (mg/l)	MW-12S 02/05/2001 (mg/l)	MW-13D 12/12/2000 (mg/l)	MW-13D 02/06/2001 (mg/l)	MW-13I 12/12/2000 (mg/l)
Color (APHA Units)		(mg/l)	5 U	5 U	5 U	5 U	5 U	5.0	5 U	5 U	150
Alkalinity (as CaCO ₃)		(mg/l)	7.3	7.80	31.8	17.2	104	98	235	220	202
Ammonia (as N)	2	(mg/l)	0.1 U	0.1 U	0.61	0.703	0.02 U	0.070 J	28	3.15	3.2
Biochemical Oxygen Demand		(mg/l)	7	4.00	6	2 U	2	2 U	2	2.00	5
Bromide	2	(mg/l)	0.5 U	0.5 U	0.5 U	0.700	0.5 U	0.5 U	0.5 U	0.5 U	0.7
Chemical Oxygen Demand		(mg/l)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	16.4	10 U
Chloride	250	(mg/l)	4.7	5.71	14.9	13.1	16	24	33.4	34.9	20.8
Hardness (as CaCO ₃)		(mg/l)	15	28.0	52	36.0	96	100	148	5 U	180
Nitrate (as N)	10	(mg/l)	0.38	0.31	0.73	1.1	0.67	0.40	0.1 U	0.1 U	0.1 U
Phenols, total	0.001	(mg/l)	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U
Sulfate	250	(mg/l)	20.1	12.8	48.3	24.2	36.4	13.4	15	12.0	24.4
Total Organic Carbon		(mg/l)	2.1	1 U	1.2	0.0010 U	1.7	2.2	4.1	3.39	5.3
TDS		(mg/l)	77	380	143	90	175	250	311	315	229
Total Kjeldahl Nitrogen (as N)		(mg/l)	0.1 U	8.54	0.84	8.30	0.2 U	0.120	3.4	3.00	4.2

Table 4-6 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
GROUNDWATER SAMPLING RESULTS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001
LEACHATE INDICATORS DETECTED IN GROUNDWATER

CONSTITUENT	NYSDEC Class GA Groundwater Stds/Guidelines	SITE : DATE : UNITS:	MW-131 02/06/2001 (mg/l)	MW-13S 12/11/2000 (mg/l)	MW-13S 02/06/2001 (mg/l)	MW-14D 12/11/2000 (mg/l)	MW-14D 02/07/2001 (mg/l)	MW-14I 12/11/2000 (mg/l)	MW-14I 02/06/2001 (mg/l)	MW-14S 12/11/2000 (mg/l)	MW-14S 02/06/2001 (mg/l)
Color (APHA Units)		(mg/l)	250	5	5.00	200	70.0	200	300	5 U	10.0
Alkalinity (as CaCO ₃)		(mg/l)	221	3.8	1.30	352	350	342	293	6.1	5.40
Ammonia (as N)	2	(mg/l)	2.00	0.1	0.136	7.9	8.4	9.6	9.37	0.1 U	0.15
Biochemical Oxygen Demand		(mg/l)	2.00	4	2 U	10	4.00	16	10.0	2	2 U
Bromide	2	(mg/l)	1.10	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.600
Chemical Oxygen Demand		(mg/l)	10 U	10 U	10 U	10 U	21.8	10 U	35.3	10 U	10 U
Chloride	250	(mg/l)	21.5	10.2	7.90	50.5	51.4	52.2	54.7	9.7	13.0
Hardness (as CaCO ₃)		(mg/l)	128	30	32.0	320	252	250	228	40	52.0
Nitrate (as N)	10	(mg/l)	0.1 U	4.6	2.89	0.1 U	0.1 U	0.1 U	0.1 U	3.2	6.24
Phenols, total	0.001	(mg/l)	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U	[0.005] U
Sulfate	250	(mg/l)	18.6	36.5	5 U	26.1	5 U	26.9	5.40	19	11.2
Total Organic Carbon		(mg/l)	4.59	1.5	1.2	8.2	7.53	9.1	7.79	1.9	1.32
TDS		(mg/l)	250	78	60.0	351	391	349	380	96	89.0
Total Kjeldahl Nitrogen (as N)		(mg/l)	NA	(0.13)	0.150	9.1	8.58	10.7	12.7	0.1 U	0.270

[] : Detection Limit exceeds Standard/Guidance Value

() : Less than Reporting Limit.

U : Analyzed for but not detected

J : Compound found below CRDL. Value estimated.

E. Concentration exceeds instrument calibration range. Concentration estimated.

NA: Not Analyzed

: Concentration exceeds Standard/Guidance Value



MW-12				
COMPOUND	S	I	D	
NO EXCEEDANCES				

MW-11				
COMPOUND	S	I	D	
1,1-DCA	-/-	52/100	-/-	
1,1,1-TCA	-/-	10/19	-/-	
TCE	9/-	-/-	-/-	
c-1,2-DCE	22/-	-/-	-/-	

MW-01				
COMPOUND	S	I	D	
1,1-DCA	-/-	13/8.5	-/-	
1,1,1-TCA	-/-	14/8	-/-	
c-1,2-DCE	7/8	-/-	8/-	

MW-10				
COMPOUND	S	I	D	
1,1-DCA	6/-	-/-	-/-	

MW-03				
COMPOUND	S	I	D	
1,2,3-TCPA	-/-	-/1.5	-/2.1	

MW-05				
COMPOUND	S	I	D	
CA	-/5.2	-/-	-/-	

MW-14				
COMPOUND	S	I	D	
VC	-/-	-/-	-/3	
CA	-/-	-/-	6/5.9	

MW-02				
COMPOUND	S	I	D	
NO EXCEEDANCES				

MW-07				
COMPOUND	S	I	D	
1,1,1-TCA	-/-	6/-	-/-	

MW-06				
COMPOUND	S	I	D	
VC	-/2.6	-/-	-/-	
TCE	-/-	23/-	-/-	
PCE	-/-	-/-	15/11	
c-1,2-DCE	-/6	-/-	-/-	

MW-04				
COMPOUND	S	I	D	
CA	-/-	63/29	-/-	

MW-13				
COMPOUND	S	I	D	
VC	-/-	12/16	8/11	
1,1-DCA	-/-	16/29	6/9.1	
TCE	-/-	100/140	48/68	
BENZENE	-/-	-/1.9	-/-	
PCE	-/-	770/1100	690/900	
c-1,2-DCE	-/-	170/310	140/210	

LEGEND

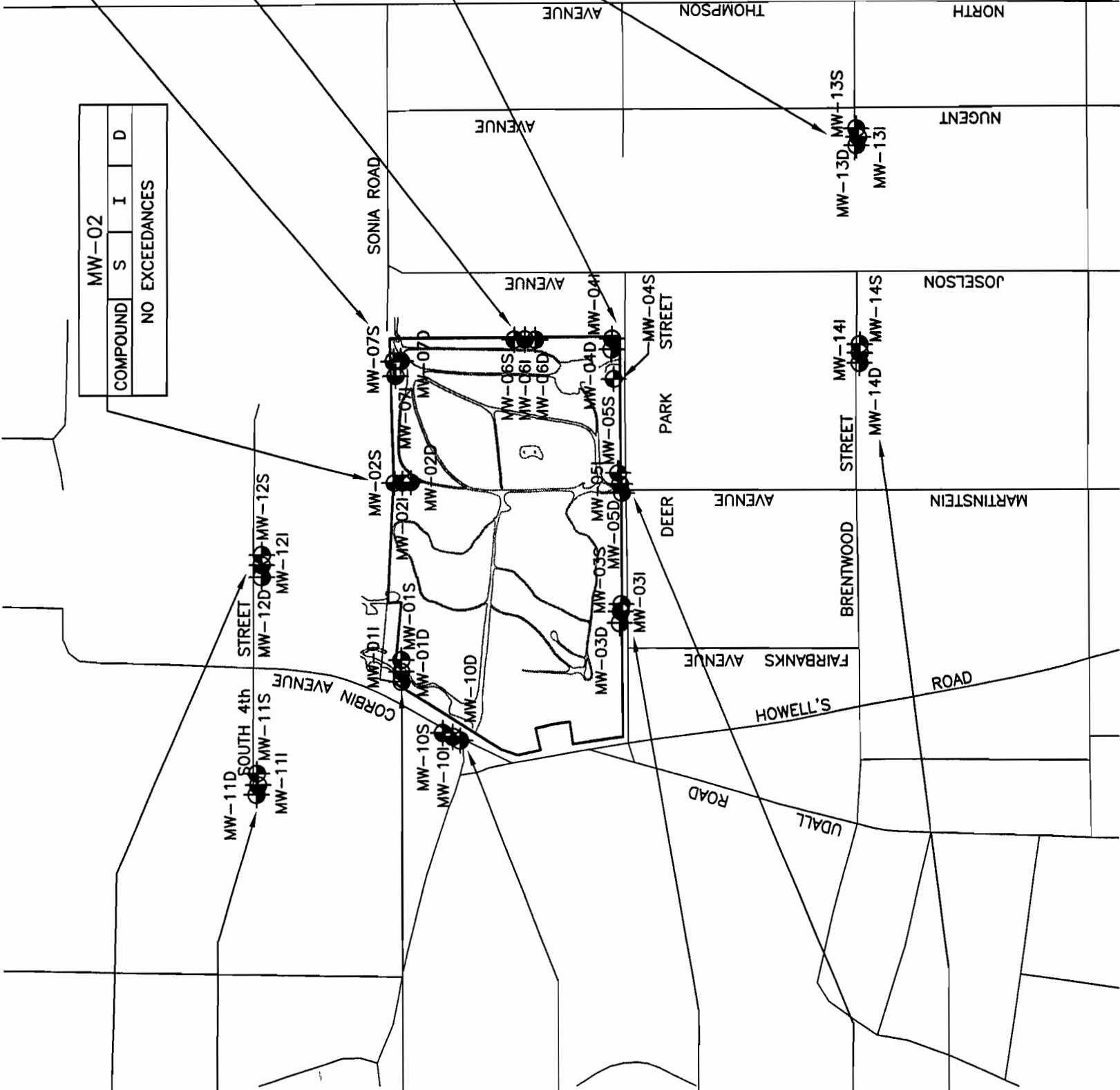
VC	VINYL CHLORIDE
1,1 DCE	1,1 DICHLOROETHENE
c-1,2-DCE	cis-1,2-DICHLOROETHYLENE
TCE	TRICHLOROETHENE
PCE	TETRACHLOROETHENE
1,1-DCA	1,1-DICHLOROETHANE
1,1,1-TCA	1,1,1-TRICHLOROETHANE
CA	CHLOROETHANE
1,2,3-TCPA	1,2,3-TRICHLOROPROPANE

S	SHALLOW
I	INTERMEDIATE
D	DEEP

RESULT DOES NOT EXCEED STANDARDS
8/11 1st. ROUND/2nd. ROUND

NOTE:

ALL CONCENTRATIONS IN ug/l



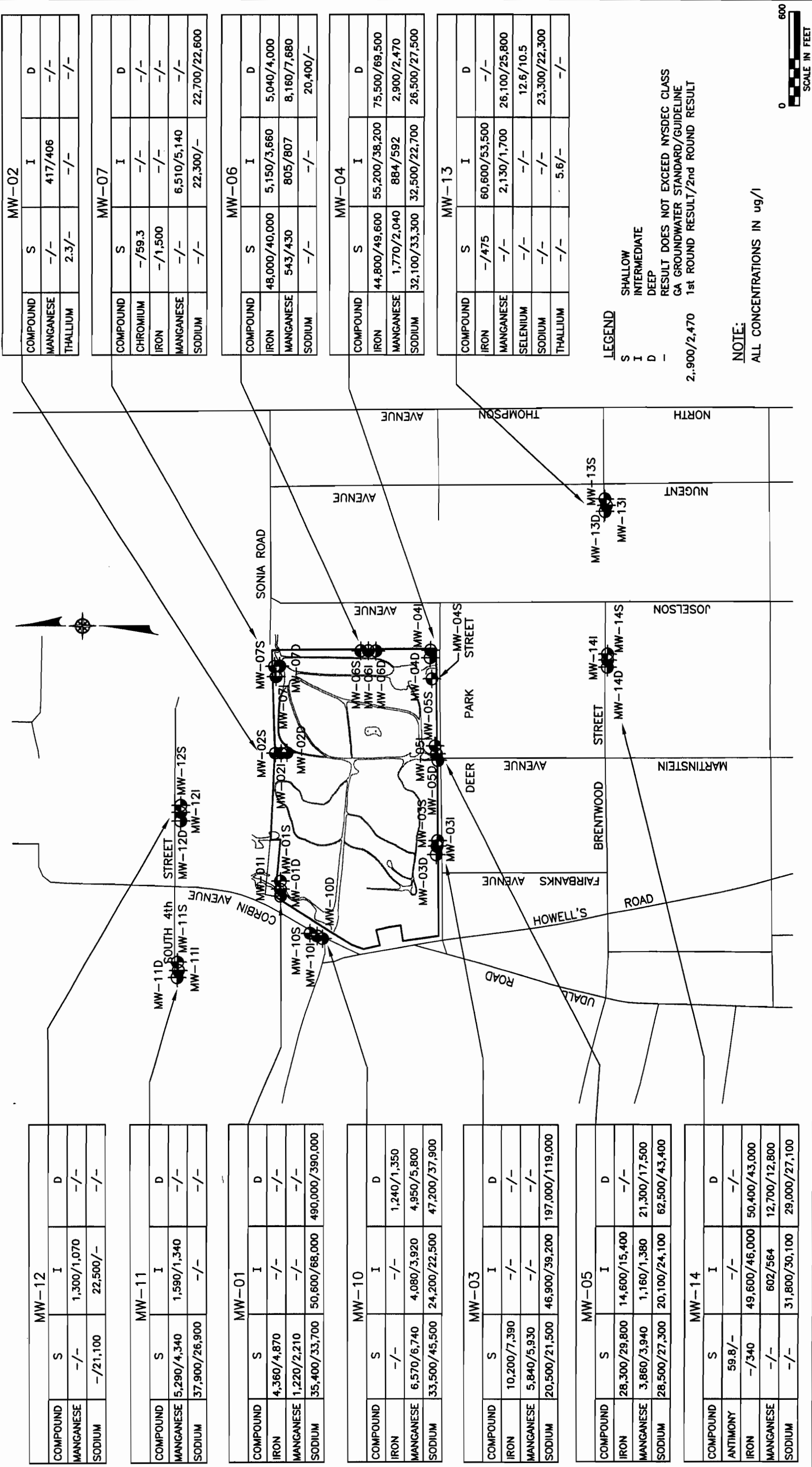
ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS EXCEEDING
GROUNDWATER STANDARDS IN MONITORING WELLS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001

=:1594111594-3.dwg, 05/05/04 03:57:10 PM, Dcorres

ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

CONCENTRATIONS OF METALS EXCEEDING GROUNDWATER STANDARDS IN MONITORING WELLS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001



MW-12			
PARA-METER	S	I	D
COND	0.328/0.428	0.266/0.166	0.074/0.087
ALK	104/98	31.8/17.2	7.3/7.8
NH ₄	-/-	-/-	-/-

MW-11			
PARA-METER	S	I	D
COND	0.563/0.497	0.155/0.150	0.109/0.110
ALK	134/135	34.2/27.4	3.6/6.8
NH ₄	-/-	-/-	-/-

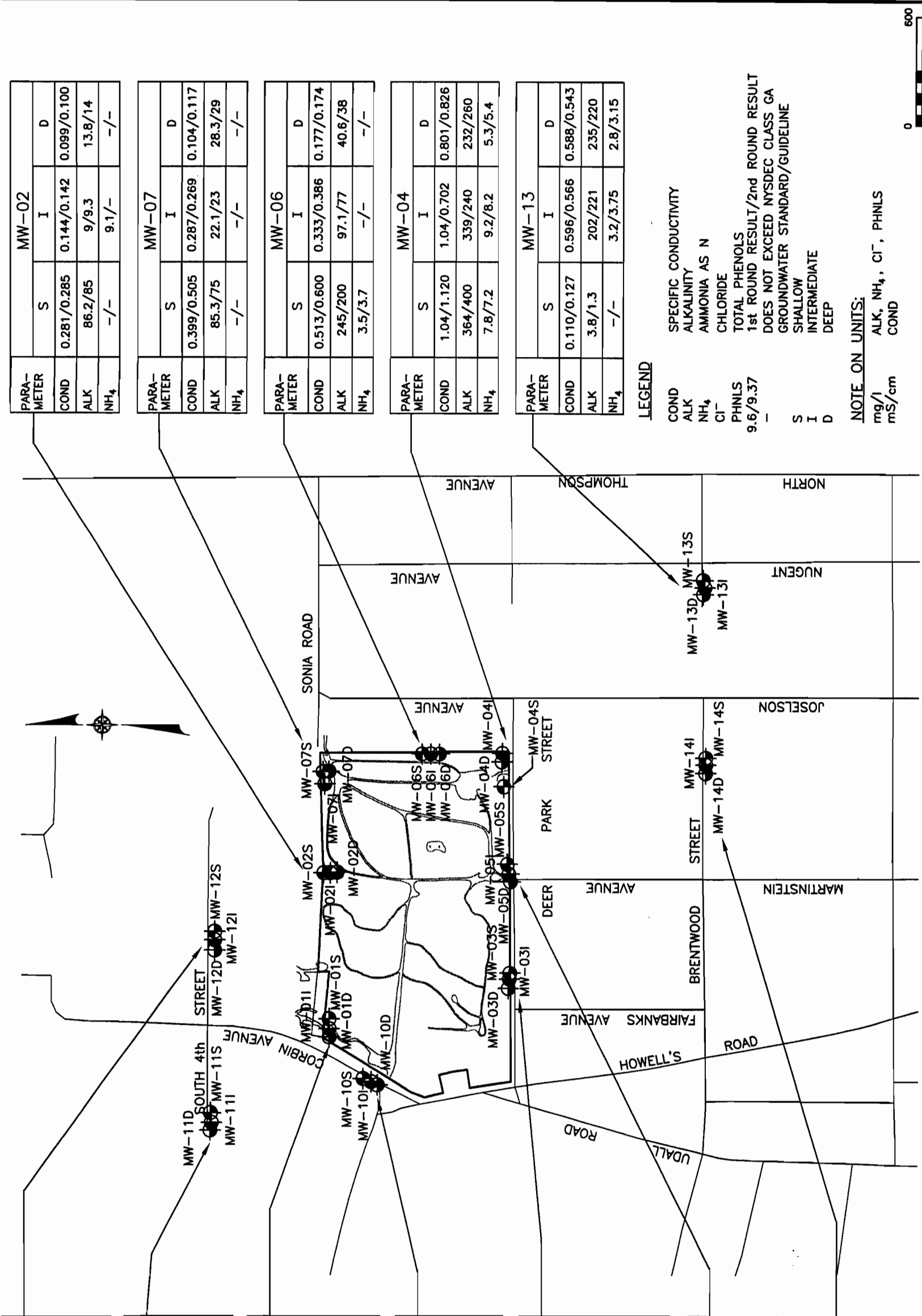
MW-01			
PARA-METER	S	I	D
COND	0.493/0.579	0.247/0.364	2.57/2.260
ALK	183/180	65.6/50	37/43
NH ₄	2.1/2.2	-/-	-/-
Cl	-/-	-/-	737/570

MW-10			
PARA-METER	S	I	D
COND	0.561/0.699	0.241/0.248	0.318/0.297
ALK	182/190	8.1/20	21.2/20.4
NH ₄	-/-	-/-	-/-

MW-03			
PARA-METER	S	I	D
COND	0.475/0.462	0.27/0.234	1.28/0.785
ALK	183/160	21/21.6	31.8/34.2
NH ₄	2.3/-	-/-	-/-
Cl ⁻	-/-	-/-	275/-
PHNLS	-/-	-/0.00173	-/-

MW-05			
PARA-METER	S	I	D
COND	0.676/0.783	0.355/0.509	0.931/1.130
ALK	390/362	113/157	467/505
NH ₄	6.1/6.55	3.9/4.19	14.9/16.1

MW-14			
PARA-METER	S	I	D
COND	0.117/0.154	0.704/0.769	0.721/0.876
ALK	6.1/5.4	342/293	352/350
NH ₄	-/-	9.6/9.37	7.9/8.4



PARA-METER	S	I	D
COND	0.281/0.285	0.144/0.142	0.099/0.100
ALK	86.2/85	9/9.3	13.8/14
NH ₄	-/-	9.1/-	-/-

PARA-METER	S	I	D
COND	0.399/0.505	0.287/0.269	0.104/0.117
ALK	85.3/75	22.1/23	28.3/29
NH ₄	-/-	-/-	-/-

PARA-METER	S	I	D
COND	0.513/0.600	0.333/0.386	0.177/0.174
ALK	245/200	97.1/77	40.6/38
NH ₄	3.5/3.7	-/-	-/-

PARA-METER	S	I	D
COND	1.04/1.120	1.04/0.702	0.801/0.826
ALK	364/400	339/240	232/260
NH ₄	7.8/7.2	9.2/8.2	5.3/5.4

PARA-METER	S	I	D
COND	0.110/0.127	0.596/0.566	0.588/0.543
ALK	3.8/1.3	202/221	235/220
NH ₄	-/-	3.2/3.75	2.8/3.15

LEGEND

COND SPECIFIC CONDUCTIVITY
ALK ALKALINITY
NH₄ AMMONIA AS N
Cl⁻ CHLORIDE
PHNLS TOTAL PHENOLS
9.6/9.37 1st ROUND RESULT/2nd ROUND RESULT
- DOES NOT EXCEED NYSDEC CLASS GA
GROUNDWATER STANDARD/GUIDELINE
S SHALLOW
I INTERMEDIATE
D DEEP

NOTE ON UNITS:
mg/l ALK, NH₄, Cl⁻, PHNLS
mS/cm COND



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

SELECTED LEACHATE PARAMETERS AND LEACHATE CONSTITUENTS EXCEEDING
GROUNDWATER STANDARDS IN MONITORING WELLS
NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001

As discussed in the 1998 Remedial Investigation (RI) Report, groundwater monitoring wells are distributed among three zones: shallow, intermediate and deep. The shallow monitoring wells sample the Upper Glacial aquifer at/near the water table. Intermediate depth monitoring wells are screened in the middle portion of the Upper Glacial aquifer, within a range of approximately 30 to 66 feet below the water table. Deep monitoring wells are screened at the base of the Upper Glacial aquifer, just above the Gardiners Clay unit. The deep wells are screened at depths ranging between approximately 73 to 96 feet below the water table. The Gardiners Clay is a low permeability unit that separates the Upper Glacial aquifer from the underlying Magothy aquifer, which supplies drinking water at and downgradient of the landfill site. The Magothy aquifer is not monitored at the landfill, as the Gardiners Clay acts as a barrier, impeding the migration of groundwater and contaminants between the two aquifers. A comprehensive discussion of site geology was presented in the remedial investigation report.

Two monitoring well clusters, MW-11 and MW-12, are located at distances of more than 600 feet upgradient of the landfill and are referred to below as distally upgradient wells. Two monitoring well clusters, MW-13 and MW-14, are located more than 1,000 feet downgradient of the landfill and are referred to in the text as distally downgradient. The remainder of the monitoring well clusters are located along or in close proximity to the landfill perimeter. Monitoring well clusters MW-01, MW-02 and MW-07 are referred to as upgradient perimeter wells and clusters. MW-10 is discussed with the upgradient perimeter wells, but is both upgradient and somewhat sidegradient to the dominant flowpath through the landfill. Monitoring well clusters MW-03, MW-04, MW-05 and MW-06 are referred to as downgradient perimeter wells. Table 4-7 identifies monitoring well clusters located upgradient, downgradient and distally up- and downgradient of the landfill.

Sections 4.1 through 4.4, below, report analyses results for field parameters, volatile organic compounds, metals and leachate parameters, respectively. Section 4.5 presents interpretive discussions of these findings. Where appropriate, comparisons are drawn to the results of the RI conducted in 1997-1998.

Table 4-7

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
LOCATIONS OF MONITORING WELL CLUSTERS
RELATIVE TO GROUNDWATER FLOW DIRECTION
THROUGH THE LANDFILL**

Monitoring Well Cluster	Distally Upgradient	Upgradient Perimeter	Downgradient Perimeter	Distally Downgradient
MW-01		X		
MW-02		X		
MW-03			X	
MW-04			X	
MW-05			X	
MW-06			X	
MW-07		X		
MW-10		X		
MW-11	X			
MW-12	X			
MW-13				X
MW-14				X

4.1 Field Parameters

As described above, field parameters monitored during well purging included pH, Eh, temperature, specific conductance, turbidity and dissolved oxygen. Tables 4-2 and 4-3 provide summaries of the final field parameter values measured at the time of sample collection for the November/December 2000 (Round 1) sampling event and the January/February 2001 (Round 2) sampling event.

pH levels ranged from 4.79 to 7.04 during the first sampling event and from 4.52 to 6.54 during the second sampling event indicating a consistent range for both sampling events. Specific conductance ranged from 0.074 to 2.570 milliSiemens per centimeter (mS/cm) in the first sampling event and from 0.087 to 2.260 mS/cm in the second sampling event. Leachate-affected groundwater generally exhibits higher specific conductance levels than native groundwater resulting from elevated concentrations of dissolved ionic species. Native Long Island groundwater generally has a specific conductance below 100 microhos per centimeter (umhos/cm) (WRIR86-4070, 1988), which is the equivalent of 1 mS/cm.

Turbidity levels during the first round of sampling ranged from 0.3 to 20.0 Nephelometric Turbidity Units (NTUs) and from 0.3 to 27.5 NTUs during the second sampling event. Dissolved oxygen content ranged from 0.50 milligrams per liter (mg/l) to 13.88 mg/l during the first round of sampling and from 0.27 mg/l to 11.04 mg/l during the second round of sampling.

4.2 Detected Volatile Organic Compounds

As discussed in Section 3.0, elevated levels of volatile organic compounds (VOCs) have been detected both upgradient and downgradient of the landfill, as well as at the landfill. The following discussion presents and discusses the results of the two rounds of sampling performed to document the post-closure baseline groundwater quality. Because previous investigations determined that upgradient sources of specific VOCs are impacting groundwater flowing through the landfill site, all detected VOC constituents are discussed, even if they were detected at

concentrations below the NYSDEC Class GA groundwater standard. Exceedances of this standard are noted in the discussion.

Constituents detected through VOC analyses are presented in Table 4-4. Nondetectable levels of VOCs were reported for groundwater samples collected from 11 of the 36 wells sampled during the initial round of sampling. Although 13 out of 36 wells sampled during the initial round of sampling exhibited the presence of VOCs at concentrations exceeding the NYSDEC Class GA groundwater standard for one or more individual compounds, levels of total VOCs above 50 micrograms per liter (ug/l) were identified in only 4 wells. During the first round of sampling, one of the four wells exhibited a total VOC concentration above 1,000 ug/l.

Ten out of 36 wells sampled during the second sampling event had nondetectable levels of VOCs. Similarly, 12 out of 36 wells sampled during the second round of sampling exhibited the presence of one or more compounds at concentrations above the NYSDEC groundwater standard and 3 wells exhibited total VOC concentrations above 50 ug/l. During the second round of sampling, two of the three wells exhibited total VOC concentrations above 1,000 ug/l.

The four wells that exhibited concentrations of total VOCs above 50 ug/l during both sampling events were intermediate depth, downgradient perimeter well MW-04I, distally upgradient intermediate well MW-11I, and distally downgradient intermediate and deep monitoring wells MW-13I and MW-13D. During the first sampling round, total VOCs exceeded 1,000 ug/l in monitoring well MW-13I. During the second round of sampling, total VOC concentrations exceeded 1,000 ug/l in monitoring wells MW-13I and MW-13D.

VOC results for all wells are discussed below, according to the groundwater zones sampled (shallow, intermediate or deep) and the locations of the monitoring wells along the upgradient or downgradient perimeters of the landfill, or distally downgradient from the landfill. The distally upgradient groundwater results are discussed separately in the same subsection and precede the discussions of perimeter, and distally downgradient groundwater quality.

4.2.1 Distally Upgradient Monitoring Wells

Groundwater samples collected from monitoring wells located distally upgradient of the facility (MW-11S, MW-11I, MW-11D, MW-12S, MW-12I and MW-12D) were nondetect with respect to VOCs in well cluster MW-12 and in well MW-11D during both rounds of sampling. Total VOCs for MW-11S during the first sampling round was 31 ug/l and consisted of 9 ug/l of trichloroethene and 22 ug/l of cis-1,2-dichloroethene, with concentrations of both compounds exceeding the NYSDEC Class GA groundwater standards. During the first sampling round, VOCs detected in MW-11I totaled 62 ug/l and consisted of 52 ug/l of 1,1-dichloroethane and 10 ug/l of 1,1,1-trichloroethane, with both compounds exceeding the standard. During the second round of sampling, distally upgradient monitoring well MW-11S had total VOCs of 9.2 ug/l and exhibited 2.0 ug/l 1,1-dichloroethane, 2.2 ug/l trichloroethene and 5 ug/l cis-1,2-dichloroethylene, all at or below the standard. Second round sampling results for MW-11I reported a total VOC concentration of 120.6 ug/l, which consisted of 100 ug/l of 1,1-dichloroethane, 19 ug/l of 1,1,1-trichloroethane and 1.6 ug/l of 1,1-dichloroethene, with the first two of these compounds exceeding the standard.

Elevated VOCs in distally upgradient monitoring wells MW-11S and MW-11I are indicative of local VOC contamination in groundwater emanating from an upgradient source(s).

4.2.2 Perimeter and Distally Downgradient Monitoring Wells

Shallow Upper Glacial (Water Table) Groundwater

Several of the shallow (water table) wells installed in the Upper Glacial aquifer had nondetectable levels of VOCs during both the first and second rounds of sampling. These included MW-02S, MW-07S, MW-13S and MW-14S. All other shallow monitoring wells exhibited detectable levels of VOCs, with total VOCs ranging in concentration from 1 ug/l (MW-06S) to 31 ug/l (distally upgradient MW-11S).

Shallow wells located along the upgradient perimeter of the landfill include monitoring wells MW-01S, MW-02S, MW-07S and MW-10S. Of these, VOCs were detected in wells MW-01S and MW-10S. During the first sampling round, MW-01S, located at the extreme northwest and most upgradient corner of the landfill, exhibited a total VOC concentration of 12 ug/l, consisting of concentrations of 7 ug/l of cis-1,2-dichloroethene, 3 ug/l of 1,1-dichloroethane and 2 ug/l of trichloroethene. During the second round of sampling, these same constituents comprised a total VOC concentration in this well of 13.5 ug/l, with individual concentrations of 8 ug/l for cis-1,2-dichloroethene, 3.3 ug/l for 1,1-dichloroethane and 2.2 ug/l for trichloroethene. Of these constituents, only cis-1,1-dichloroethene exceeded the NYSDEC Class GA groundwater standard of 5 ug/l. During the first round of sampling, 1,1-dichloroethane was detected in monitoring well MW-10S at a concentration of 6 ug/l, which exceeded the standard. The same compound was detected below the standard during the second sampling round, at a concentration of 4.2 ug/l.

Shallow wells located along the landfill's downgradient perimeter include MW-03S, MW-04S, MW-05S and MW-06S. VOCs were detected in groundwater samples collected from all downgradient perimeter wells. MW-03S exhibited total VOC concentration of 3 ug/l (first sampling round) and 2.8 ug/l (second sampling round), with chloroethane as the only detected VOC in each sample. During the first sampling round, monitoring well MW-04S exhibited 5 ug/l chloroethane and 3 ug/l chlorobenzene. These same constituents were detected during the second sampling round, at concentrations of 3.8 ug/l for chloroethane and 2.9 ug/l for chlorobenzene. Total VOCs during each sampling round in MW-04S were 8 and 6.7 ug/l, respectively. No VOC constituents were detected above the NYSDEC Class GA standard during either round of sampling in wells MW-03S and MW-04S.

Monitoring well MW-05S exhibited 6 ug/l total VOCs during the first sampling round, with chloroethane and chlorobenzene each detected at concentrations of 3 ug/l. During the second sampling round, MW-05S exhibited 5.2 ug/l chloroethane, 2 ug/l acetone, 4.9 ug/l chlorobenzene and 1.2 ug/l 1,4-dichlorobenzene, with total VOCs amounting to 13.3 ug/l. The only individual constituent to exceed the NYSDEC Class GA standard in this well was chloroethane, which exceeded the standard during the second sampling event.

Monitoring well MW-06S exhibited 1 ug/l cis-1,2-dichloroethene during the first round of sampling. During the second sampling round, cis-1,2-dichloroethene was detected in this well at 6 ug/l, which exceeds the NYSDEC standard. Additionally, chlorobenzene was detected at a concentration of 1.1 ug/l, and vinyl chloride was detected at a concentration of 2.6 ug/l and exceeded the NYSDEC Class GA standard, with total VOCs present at a concentration of 9.7 ug/l during the second round of sampling at MW-06S.

No VOCs were detected in groundwater samples collected from the two distally downgradient shallow monitoring wells MW-13S and MW-14S.

Intermediate Depth Upper Glacial Groundwater

Intermediate depth monitoring wells located along the upgradient perimeter of the landfill include monitoring wells MW-01I, MW-02I, MW-07I and MW-10I. MW-01I, located at the extreme northwest and most upgradient corner of the landfill, exhibited 29 ug/l total VOCs during the first sampling event. These consisted of 2 ug/l of 1,1-dichloroethene, 13 ug/l of 1,1-dichloroethane and 14 ug/l of 1,1,1-trichloroethane, with the latter two constituents exceeding the NYSDEC Class GA standards. During the second sampling event, 16.5 ug/l total VOCs were detected in MW-01I and consisted of 8.5 ug/l of 1,1-dichloroethane and 8 ug/l of 1,1,1-trichloroethane with both constituents again exceeding the standard in this well. No VOCs were detected in monitoring well MW-02I during the initial sampling event. Groundwater samples collected from MW-02I during the second sampling event exhibited concentrations of chloroethene at 1.8 ug/l, which is below the standard. 1,1,1-Trichloroethane was detected in monitoring well MW-07I during the first and second sampling event at 6 ug/l and 2.6 ug/l, respectively. The concentration detected in the first round exceeded the standard for this compound. Groundwater samples collected from MW-10I exhibited concentrations of 1.0 ug/l of 1,1-dichloroethane and 1 ug/l of 1,1,1-trichloroethane during the first sampling round, and 1.0 ug/l of 1,1-dichloroethane during the second round of sampling. No concentrations of VOCs exceeded the standard in this well.

Intermediate depth monitoring wells located along the landfill's downgradient perimeter include MW-03I, MW-04I, MW-05I and MW-06I. During the first round of sampling, total VOCs were detected in MW-03I at a concentration of 4 ug/l and consisted of 2 ug/l of 1,1-dichloroethane and 2 ug/l of 1,1,1-trichloroethane. These constituents were detected during the second sampling event at this well at respective concentrations of 2.4 and 1.9 ug/l. In addition, trichloroethene was detected at a concentration of 1 ug/l, and 1,2,3-trichloropropane was detected at a concentration of 1.5 ug/l, which exceeded the NYSDEC Class GA standard for 1,2,3-trichloropropane of 0.04 ug/l. The second round sample from MW-03I exhibited a total VOC concentration of 6.8 ug/l.

During the first round of sampling, MW-04I exhibited a concentration of 65 ug/l total VOCs. These consisted of 63 ug/l chloroethane (above the State standard) and 2 ug/l chlorobenzene. Both constituents were also detected during the second sampling event in this well, with chloroethane detected at a concentration of 29 ug/l (above the standard) and chlorobenzene present at a concentration of 1.4 ug/l, with total VOCs present at a concentration of 30.4 ug/l.

No VOCs were detected in intermediate depth groundwater sampled from monitoring well MW-05I for either sampling event.

Monitoring well MW-06I exhibited 29 ug/l total VOCs during the first round of sampling. These consisted of 23 ug/l of trichloroethene (which exceeded the NYSDEC Class GA standard), 2 ug/l of tetrachloroethene and 4 ug/l of cis-1,2-dichloroethene. During the second round of sampling, the only VOC detected in MW-06I was trichloroethene, which was detected at a concentration of 3.1 ug/l, which is below the standard.

Distally downgradient intermediate depth monitoring wells include MW-13I and MW-14I. The first round of sampling in monitoring well MW-13I reported a total VOC concentration of 1,068 ug/l. Tetrachloroethene was detected at a concentration of 770 ug/l, which is significantly above the NYSDEC Class GA groundwater standard of 5 ug/l. The second most prevalent constituent significantly exceeding the standard in this well was cis-1,2-dichloroethene,

detected at a concentration of 170 ug/l. Trichloroethene exceeded the standard and was detected at a concentration of 100 ug/l; 1,1-dichloroethane was detected above the standard, at a concentration of 16 ug/l; and vinyl chloride was detected above the standard at a concentration of 12 ug/l. Total VOC concentration in groundwater sampled from this well increased to 1,608.1 ug/l during the second sampling round. The second round sample collected from MW-13I exhibited the following constituents at concentrations exceeding the NYSDEC Class GA standard: 1,100 ug/l of tetrachloroethene, 310 ug/l of cis-1,2-dichloroethene, 140 ug/l of trichloroethene, 29 ug/l of 1,1-dichloroethane, 16 ug/l of vinyl chloride and 1.9 ug/l of benzene. Other constituents detected in this sample at concentrations below the standards included 3.7 ug/l of 1,1-dichloroethene, 2.6 ug/l of chlorobenzene, 2 ug/l of trans-1,2-dichloroethene, 1.5 ug/l of 1,4-dichlorobenzene and 1.4 ug/l of chloroethane.

No exceedances of the NYSDEC Class GA standards were detected during either sampling event in groundwater collected from off-site, distally downgradient monitoring well MW-14I. In this well, the only VOC detected during the first round of sampling was chloroethane, which was detected at a concentration of 3 ug/l. During the second sampling round, a total of 9.1 ug/l of VOCs were reported for well MW-14I and consisted of 4.3 ug/l of chloroethane, 2 ug/l of acetone and 2.8 ug/l of chlorobenzene.

Deep Upper Glacial Groundwater

Deep monitoring wells located along the upgradient perimeter of the landfill include monitoring wells MW-01D, MW-02D, MW-07D and MW-10D. MW-01D, located at the extreme northwest, most upgradient corner of the landfill exhibited 15 ug/l total VOCs during the first sampling event. In this well, cis-1,2-dichloroethene was detected at a concentration of 8 ug/l and was the only constituent to exceed the NYSDEC Class GA groundwater standard. Trichloroethene and 1,1-dichloroethane were also detected at respective concentrations of 4 and 3 ug/l during the first sampling round. During the second sampling round in well MW-01D, total VOCs were detected at a concentration of 13.1 ug/l. Detected constituents and their concentrations during the second sampling event at MW-01D included 5 ug/l of cis-1,2-

dichloroethene, 3.7 ug/l of trichloroethene, 3.3 ug/l of 1,1-dichloroethane and 1.1 ug/l of 1,1,1-trichloroethane, none of which exceeded the standard.

No VOCs were detected in groundwater collected from monitoring well MW-02D during either round of sampling.

Tetrachloroethene was detected below the NYSDEC standard in groundwater collected from monitoring well MW-07D during both rounds of sampling where it exhibited concentrations of 4 ug/l during the first sampling event and 3.5 ug/l during the second event. No other VOCs were detected in well MW-07D during either sampling round.

1,1-Dichloroethane was the only VOC detected in monitoring well MW-10D during the first round of sampling, where it was detected at a concentration of 1.0 ug/l, which is below the standard. VOCs detected in this well during the second round of sampling totaled 2.9 ug/l and consisted of 1.7 ug/l of 1,1-dichloroethane and 1.2 ug/l of 1,1,1-trichloroethane, with concentrations of both constituents below the standard.

Deep monitoring wells located along the landfill's downgradient perimeter include MW-03D, MW-04D, MW-05D and MW-06D. During the first round of sampling, total VOCs were detected in MW-03D at a concentration of 6 ug/l and consisted of 4 ug/l of 1,1-dichloroethane and 2 ug/l of 1,1,1-trichloroethane, with neither constituent exceeding the NYSDEC Class GA groundwater standard. During the second round of sampling, total VOCs were detected in MW-03D at a concentration of 8.8 ug/l. 1,2,3-Trichloropropane was detected at a concentration in of 2.1 ug/l which is above the NYSDEC standard of 0.04 ug/l. 1,1,-Dichloroethene, 1,1,1-trichloroethane and trichloroethene were also detected in this well at levels below the NYSDEC standard at 3.5 ug/l, 2.1 ug/l and 1.1 ug/l, respectively.

Chloroethane was the only VOC detected in groundwater collected from MW-04D during both rounds of sampling. Chloroethane was detected at a concentration of 4 ug/l during the first sampling event and at a concentration of 2.5 ug/l during the second event; both concentrations were below the standard.

No exceedances of the NYSDEC standard were detected in groundwater collected from monitoring well MW-05D during either round of sampling. During the first round of sampling, MW-05D exhibited 3 ug/l of total VOCs, which consisted of 2 ug/l of chlorobenzene and 1 ug/l of 1,4-dichlorobenzene. During the second round of sampling, total VOCs in MW-05D were 7.0 ug/l and consisted of 3.4 ug/l of chlorobenzene, 2.4 ug/l of 1,4-dichlorobenzene and 1.2 ug/l of tetrachloroethene.

During the first round of sampling in monitoring well MW-06D, 18 ug/l of total VOCs were reported. The only constituent to exceed the NYSDEC Class GA groundwater standard in this first round sample from MW-06D was tetrachloroethene, which was detected at a concentration of 15 ug/l. Additional constituents included 2 ug/l of trichloroethene and 1 ug/l of cis-1,2-dichloroethene. During the second sampling event in monitoring well MW-06D, tetrachloroethene exceeded the standard and was detected at a concentration of 11 ug/l. The only other constituent detected during the second sampling event in MW-06D was cis-1,2-dichloroethene, detected below the standard, at a concentration of 1 ug/l.

Distally downgradient deep monitoring wells include MW-13D and MW-14D. The first round of sampling in monitoring well MW-13D reported a total VOC concentration of 896 ug/l. At that time, tetrachloroethene was detected at a concentration of 690 ug/l, cis-1,2-dichloroethene was detected at a concentration of 140 ug/l, and trichloroethene was detected at a concentration of 48 ug/l. These constituents significantly exceeded the NYSDEC Class GA groundwater standard of 5 ug/l. Other constituents with concentrations above the standard were vinyl chloride and 1,1-dichloroethane which were detected at respective concentrations of 8 ug/l and 6 ug/l. Additional VOCs detected at concentrations below the standard included 2 ug/l of chloroethane and 2 ug/l of 1,1-dichloroethene. During the second sampling event at MW-13D, total VOCs increased to 1,208.7 ug/l. Constituents significantly exceeding the NYSDEC standard included tetrachloroethene (900 ug/l), cis-1,2-dichloroethene (210 ug/l) and trichloroethene (68 ug/l). Other VOCs exceeding the standard included vinyl chloride (11 ug/l) and 1,1-dichloroethane (9.1 ug/l). Additionally, constituents detected below the standard during the second sampling event at well MW-13D consisted of 2.6 ug/l of chloroethane, 1.8 ug/l of

1,1-dichloroethene, 1.7 ug/l of chlorobenzene, 1.3 ug/l of 1,4-dichlorobenzene, 1.2 ug/l of 1,1,1-trichloroethane, and 1 ug/l each of benzene and trans-1,2-dichloroethene.

During the first round of sampling at monitoring well MW-14D, chloroethane was detected at a concentration of 6 ug/l and was the only constituent detected above the NYSDEC Class GA groundwater standard. Other constituents contributing to the 12 ug/l total VOCs reported for the first round of groundwater sampling from this well consisted of 2 ug/l each of vinyl chloride, chlorobenzene and cis-1,2-dichloroethene. Total VOCs in MW-14D were detected at a concentration of 15.3 ug/l in the second round sample. These included 5.9 ug/l chloroethane and 3 ug/l vinyl chloride, which both exceeded the NYSDEC standard. Additional constituents detected below the standard in MW-14D during the second round of sampling consisted of 4 ug/l of cis-1,2-dichloroethene and 2.4 ug/l of chlorobenzene.

4.3 Inorganic Constituents (Metals)

The results of the inorganic analysis for both sampling events are presented on Table 4-5. As shown by the results of the analyses, a majority of the wells exceeded NYSDEC Class GA groundwater standards for iron and manganese. Several of the wells also exceeded the standard/guideline for sodium. Inorganic constituents exceeding standards are reported and discussed below. While the majority of groundwater samples exceeded the standard for iron and manganese, the highest concentrations of these constituents were detected in samples collected from wells located immediately downgradient of the landfill.

Iron

Iron did not exceed the NYSDEC Class GA groundwater standard in any of the distally upgradient monitoring wells (well clusters MW-11 and MW-12).

Iron exceeded the standard in upgradient perimeter well MW-01S during both sampling events, where it was detected at concentrations of 4,360 ug/l and 4,870 ug/l. Iron was detected at a concentration of 1,500 ug/l and exceeded the standard during the second round of sampling in

upgradient perimeter well MW-07S. Downgradient shallow perimeter monitoring wells MW-03S, MW-04S, MW-05S and MW-06S all exhibited high concentrations of iron and exceeded the standard during both rounds of sampling. Iron concentrations in these wells ranged between 7,390 ug/l (MW-03S) to 49,600 ug/l for MW-04S. Iron concentrations were below the standard in distally downgradient shallow monitoring wells MW-13S and MW-14S during the first round of sampling and were somewhat above the standard during the second sampling event, when they were detected at concentrations of 475 ug/l and 340 ug/l, respectively.

Iron was not measured above the standard in groundwater samples collected from intermediate depth upgradient perimeter monitoring wells. Samples collected from intermediate depth downgradient perimeter wells MW-04I, MW-05I and MW-06I exceeded the standard for iron during both rounds of sampling, with iron concentration in these wells ranging from 3,660 ug/l in MW-06I to 55,200 ug/l in MW-04I. Concentrations of iron above the standard were detected during both sampling rounds in wells MW-13I and MW-14I, where iron was detected at respective concentrations of up to 60,600 ug/l and 49,600 ug/l.

Monitoring well MW-10D, located upgradient to the landfill, exhibited iron concentrations of 1,240 ug/l and 1,350 ug/l during each sampling round and was the only deep, upgradient well to exhibit elevated iron concentrations. The highest iron concentration, 75,500 ug/l, was detected in deep downgradient perimeter well MW-04D. The only other deep, downgradient perimeter well exhibiting iron above the groundwater standard was MW-06D, where iron was detected during each sampling round at concentrations of 5,040 ug/l and 4,000 ug/l. Of the two distally downgradient deep monitoring wells (MW-13D and MW-14D), only MW-14D exhibited an elevated iron concentration. Iron was detected in MW-14D at concentrations of 50,400 ug/l during the first sampling event and at 43,000 ug/l during the second sampling round.

While some iron is present in groundwater samples collected from wells located upgradient of the landfill, higher iron concentrations were detected in the downgradient perimeter wells and in the distally downgradient wells.

Manganese

Manganese was detected in shallow groundwater collected at the distally upgradient monitoring well MW-11S, where it was detected at concentrations of 5,290 ug/l and 4,340 ug/l during the first and second sampling round, respectively. Manganese was detected above the standard in shallow upgradient perimeter wells MW-01S and MW-10S during both rounds of sampling. Its highest concentration in MW-01S was 2,210 ug/l and it was detected at up to 6,740 ug/l in MW-10S. Manganese concentration in the downgradient shallow perimeter wells exceeded the standard in MW-03S, MW-04S, MW-05S and MW-06S during both sampling events. The greatest concentration of manganese detected for each of these wells was 5,930 ug/l, 2,040 ug/l, 3,940 ug/l and 543 ug/l, respectively. These values are within and below the manganese concentration ranges detected in groundwater samples collected from upgradient shallow wells MW-01S, MW-10S and MW-11S. Manganese was not detected above the NYSDEC standard in the shallow distally downgradient wells, MW-13S and MW-14S.

Manganese was found to be above the standard in both distally upgradient intermediate depth monitoring wells. Its concentrations in MW-11I were 1,590 ug/l during the first sampling round and 1,340 ug/l during the second round. Manganese was also above the standard in distally upgradient well MW-12I, where it was detected at concentrations of 1,300 ug/l and 1,070 ug/l during each round of sampling. Manganese was measured above the standard in the intermediate depth upgradient perimeter wells MW-02I (up to 417 ug/l), MW-07I (up to 6,510 ug/l), and MW-10I (up to 4,080 ug/l). Downgradient intermediate-depth perimeter wells exhibiting manganese concentrations above the standard include MW-04I (up to 884 ug/l), MW-05I (up to 1,380 ug/l) and MW-06I (up to 807 ug/l). Manganese was detected in both distally downgradient intermediate wells at concentrations of up to 2,130 ug/l in MW-13I and 602 ug/l in MW-14I.

Manganese was not measured above the standard in the deep, distally upgradient monitoring wells. The only exceedance of the standard for manganese in deep, upgradient perimeter wells occurred in MW-10D, where the highest concentration, 5,800 ug/l, occurred during the second round of sampling. Downgradient deep perimeter wells exhibiting elevated manganese concentrations included MW-04D, MW-05D and MW-06D. In these wells,

manganese was measured above the standard during both sampling rounds, and was detected at up to 2,900 ug/l in MW-04D; 21,300 ug/l in MW-05D; and 8,160 ug/l in MW-6D. Distally downgradient, deep monitoring wells exhibited manganese concentrations above the standard during both sampling rounds. Manganese was detected at concentrations of up to 26,100 ug/l in MW-13D and 12,800 ug/l in MW-14D.

Manganese concentrations in groundwater samples collected upgradient and downgradient from the landfill were comparable in the shallow and intermediate zones, but were significantly greater downgradient in the deep zone, particularly in wells MW-05D, MW-13D and MW-14D. In these wells, deep manganese concentrations were at least one order of magnitude above manganese concentrations in other wells. This, combined with elevated downgradient iron concentrations, suggest that a significant portion of the iron and manganese detected in deep downgradient wells is attributable to the landfill. However the occurrence of manganese in shallow and intermediate depth upgradient wells indicates that there is also an upgradient off-site source of manganese, particularly in shallow and intermediate depth groundwater.

Sodium

Sodium was elevated in shallow, distally upgradient monitoring well MW-11S, where it was detected at concentrations of 37,900 ug/l during the first round of baseline sampling and 26,900 ug/l during the second round. Sodium was elevated during the second sampling round in shallow distally upgradient monitoring well MW-12S, where it was detected at a concentration of 21,100 ug/l. Sodium was not elevated in shallow, upgradient perimeter wells located along the eastern half of the landfill's northern boundary (MW-02S and MW-07S). However, high sodium concentrations characterized the landfill's northern upgradient boundary to the west, at wells MW-01S and MW-10S. Sodium was detected in these wells during both rounds of sampling at concentrations of between 33,500 and 45,500 ug/l; these values are consistent with elevated sodium in the distally upgradient wells, MW-11S and MW-12S. Downgradient shallow perimeter wells exhibiting elevated sodium included MW-03S, MW-04S and MW-05S. Sodium concentrations in these wells ranged between 20,500 and 33,300 ug/l, again consistent with

upgradient values. Sodium was not elevated in the distally downgradient shallow wells, MW-13S and MW-14S.

In the distally upgradient intermediate-depth monitoring wells, sodium was elevated only in MW-12I, where it was detected at a concentration of 22,500 ug/l during the first round of baseline sampling. In the intermediate-depth groundwater zone, upgradient perimeter monitoring wells MW-01I, MW-07I and MW-10I exhibited elevated sodium concentrations, with the greatest concentration detected at MW-01I (68,000 ug/l). Sodium was not elevated during the second round of sampling in well MW-07I, but exceeded the standard during the first round of sampling when it was detected at a concentration of 22,300 ug/l. Sodium was elevated during both sampling rounds in MW-10I, at concentrations comparable to samples collected from upgradient perimeter monitoring well MW-07I and the distally off-site upgradient monitoring well MW-12I. Downgradient, intermediate-depth perimeter monitoring wells exhibiting elevated sodium concentrations were MW-03I, MW-04I and MW-05I. In these wells, sodium concentration ranged between 20,100 ug/l (MW-05I) to 46,900 ug/l (MW-03I), which is consistent with upgradient concentrations. Sodium was not elevated in the distally downgradient intermediate well, MW-13I, but was elevated, exhibiting concentrations of 31,800 ug/l and 30,100 ug/l in samples collected from monitoring well MW-14I.

Sodium was not elevated above the standard in the deep, distally upgradient monitoring wells, MW-11D and MW-12D. Sodium was elevated in the deep, upgradient perimeter wells MW-01D, MW-07D and MW-10D. The greatest concentration of sodium detected at the site was in monitoring well MW-01D. In this well, sodium was detected at concentrations of 490,000 ug/l and 390,000 ug/l during the first and second rounds of baseline sampling. Upgradient deep perimeter wells MW-07D and MW-10 D exhibited sodium concentrations of between 22,600 ug/l (MW-07D) and 47,200 ug/l (MW-10D). Sodium was elevated above the standard in downgradient perimeter monitoring wells MW-03D, MW-04D, MW-05D, and MW-06D. The second greatest sodium concentration detected at the site in deep groundwater occurred in a sample obtained from downgradient deep perimeter well, MW-03D, located downgradient (southeast) from MW-01D. During the first and second rounds of sampling, sodium was detected in this well at concentrations of 197,000 ug/l and 119,000 ug/l. The next greatest concentration

of sodium, 62,500 ug/l occurred in MW-05D, also located downgradient of MW-01D. Sodium concentrations were significantly lower and consistent with upgradient perimeter well MW-07D in downgradient perimeter wells MW-04D and MW-06D. Sodium exceeded the standard during both rounds of sampling in MW-04D, attaining a maximum concentration of 27,500 ug/l. In well MW-06D, sodium exceeded the standard only during the first sampling round, when it was detected at a concentration of 20,400 ug/l. Moderately elevated sodium concentrations were detected during both sampling rounds in the distally downgradient deep monitoring wells, MW-13D and MW-14D. In these wells, sodium concentration ranged between 22,300 ug/l (MW-13D) and 29,000 ug/l (MW-14D).

Other Metals

Additional inorganic constituents detected at concentrations above groundwater standards at the site and mainly as single occurrences, include antimony, which was detected at a concentration of 59.8 ug/l in distally downgradient shallow well MW-14S; chromium, which was detected at a concentration of 59.3 ug/l in upgradient shallow perimeter well MW-07S; thallium, which was detected at a concentration of 2.3 ug/l in upgradient shallow perimeter well MW-02S and 5.6 ug/l in distally downgradient intermediate well MW-13I; and selenium, which was detected at a maximum concentration of 12.6 ug/l in distally downgradient deep well MW-13D.

4.4 Leachate Parameters

The results of the leachate parameter analysis for both the initial and second baseline sampling events are provided on Table 4-6.

Phenols

Phenols were detected above the groundwater standard of 0.001 mg/l in only one sample during one sampling event. This occurred during the second round of baseline sampling when phenols were detected at a concentration of 0.00173 mg/l in the groundwater sample collected

from intermediate downgradient perimeter well MW-03I. Phenols were reported from an upgradient site and their presence in this sample is not necessarily related to the landfill.

Ammonia Nitrogen

Ammonia nitrogen was detected above the standard in fourteen (14) of the thirty six (36) monitoring wells. It was not detected above the standard in any of the distally upgradient monitoring wells.

Ammonia nitrogen exceeded the standard in shallow upgradient perimeter well MW-01S where it was detected during both rounds of sampling, at concentrations of 2.1 and 2.2 mg/l. This compound also exceeded the standard in shallow downgradient perimeter wells MW-03S (first round of sampling only), MW-04S, MW-05S and MW-06S, ranging from concentrations of 2.3 mg/l in MW-03S to 7.8 mg/l in MW-04S. Ammonia nitrogen was not found above the standard in the distally downgradient shallow monitoring wells, MW-13S and MW-14S.

Ammonia nitrogen exceeded the standard in intermediate depth, upgradient perimeter well MW-02I during the first round of sampling when it was detected at a concentration of 9.1 mg/l. Ammonia nitrogen exceeded the standard in intermediate depth downgradient perimeter monitoring wells MW-04I and MW-05I during both rounds of sampling, where it was detected at respective concentrations of 9.2 and 8.2 mg/l in well MW-04I, and 3.9 and 4.19 mg/l in well MW-05I. The intermediate-depth, distally downgradient monitoring wells, MW-13I and MW-14I exhibited elevated ammonia nitrogen during both rounds of sampling, with concentrations of 3.2 and 3.75 mg/l in well MW-13I and 9.6 and 9.37 mg/l in MW-14I.

Ammonia nitrogen was not elevated in the samples collected from the deep upgradient monitoring wells. Groundwater samples collected from deep downgradient perimeter monitoring wells MW-04D and MW-05D exceeded the standard for ammonia nitrogen during both sampling events, exhibiting respective ammonia nitrogen concentrations of up to 5.4 ug/l (MW-04D) and 16.1 mg/l (MW-05D). Distally downgradient deep monitoring wells MW-13D and MW-14D exhibited ammonia nitrogen concentrations above the standard during both sampling rounds. In

these wells, concentrations were comparable during each sampling event and were 2.8 and 3.15 mg/l in MW-13D and 7.9 and 8.4 mg/l in MW-14D. Residential land use in the vicinity of monitoring well clusters MW-13 and MW-14 relies on cesspools for sewage disposal, and at least part of the high ammonia nitrogen detected in the distally downgradient samples may be related to the use of cesspools for the disposal and recharge of sanitary wastes.

Chloride

Chloride was detected above the standard in deep upgradient perimeter well MW-01D during each baseline sampling event where it was detected at concentrations of 737 mg/l during the first round of sampling and at 570 mg/l during the second sampling round. It also exceeded the standard in the deep, downgradient perimeter monitoring well, MW-03D during the first round of sampling, where it was detected at a concentration of 275 mg/l.

Alkalinity

Alkalinity was generally greatest in shallow groundwater sampled from wells located immediately downgradient of the landfill. In the shallow upgradient wells, alkalinity ranged between 85 mg/l (MW-02S) and 190 mg/l (MW-10S). Alkalinity for downgradient perimeter wells MW-03S, MW-04S, MW-05S and MW-06S ranged between 160 mg/l for MW-03S and 400 mg/l at MW-04S. Alkalinity in the shallow, distally downgradient wells MW-13S and MW-14S ranged between 1.3 and 6.1 mg/l.

Alkalinity in intermediate depth groundwater was lower in samples collected upgradient of the landfill (i.e., ranging between 8.1 mg/l and 65.6 mg/l in intermediate upgradient samples) than in intermediate depth downgradient perimeter wells (ranging between 21 mg/l in MW-03I to 339 mg/l in MW-04I). Alkalinity was elevated in the distally downgradient intermediate-depth monitoring wells and ranged between 202 mg/l in MW-13I to 342 mg/l in MW-14I.

In deep upgradient groundwater, alkalinity ranged between 3.6 mg/l and 43 mg/l. Alkalinity in deep groundwater from downgradient perimeter wells MW-03D and MW-06D

ranged between 31.8 mg/l and 40.6 mg/l. Deep groundwater sampled from downgradient perimeter wells MW-04D and MW-05D was significantly more alkaline, and ranged between 232 mg/l (MW-04S) and 505 mg/l (MW-05S). Deep groundwater in the distally downgradient wells, MW-13D and MW-14D, also exhibited elevated alkalinity, in the range of between 220 mg/l and 350 mg/l.

Specific Conductance

In general, high values of specific conductance are used as leachate indicators. However, in reviewing the specific conductance of groundwater sampled during the baseline program relative to inorganic and ammonia nitrogen constituents discussed above, it is apparent that there are two factors influencing specific conductance at the site. In one group of monitoring wells, MW-01S, MW-03S, MW-04S, MW-05S, MW-06S, MW-04I, MW-05I, MW-13I, MW-14I, MW-04D, MW-05D, MW-13D and MW-14D, high values of specific conductance (>0.475 mS/cm) correlate with elevated ammonia nitrogen and are valid leachate indicators. However, the highest specific conductance values, measured at levels of 2.57 mS/cm in upgradient deep perimeter well MW-01D and 1.28 mS/cm in downgradient deep perimeter well MW-03D, occur in wells lacking elevated concentrations of ammonia nitrogen. In both of these wells where specific conductance exceeded 1.0 mS/cm, sodium was detected at concentrations close to or exceeding 200,000 ug/l (an order of magnitude above the standard) and chloride was elevated above the standard of 250 mg/l. The third and fourth highest specific conductance values, 1.130 and 0.931 mS/cm, were measured in downgradient deep perimeter well MW-05D during the second and first round of sampling, respectively. This well also exhibited the highest concentrations of ammonia nitrogen detected during both sampling events (16.1 mg/l during the second sampling round and 14.9 mg/l during the first round), as well as relatively elevated sodium (43,400 ug/l during the second sampling round and 62,500 ug/l during the first round). Therefore, while specific conductance is elevated in wells showing high concentrations of ammonia nitrogen, it also is elevated in wells impacted by sodium originating from an off-site source.

4.5 Interpretive Discussion of Groundwater Quality

4.5.1 General

The results of the post-closure baseline groundwater sampling further reinforce the findings of prior investigations that document the occurrence of upgradient contamination. The 1998 Remedial Investigation suggested a plume of VOC contamination in the northeast corner of the property and a second plume crossing the site through the northwest corner. Each plume was attributed to off-site, upgradient sources. The northeast plume was most evident at monitoring well MW-06D, where total volatile concentrations of 1,767 ug/l and 2,032 ug/l were recorded for the two RI sampling events. Lesser concentrations were noted upgradient in well MW-07D and downgradient in well MW-13D, with VOC contamination also noted in well MW-13I. The post-closure baseline sampling clearly suggests a migration of the northeast plume in the direction of groundwater flow. The shift in concentrations along this path suggest that the contamination may be migrating as more of a slug rather than a continuous plume. This pattern is exemplified by the marked reductions in total volatiles at well clusters MW-07 and MW-06 and the marked increase in total volatiles in well MW-13I and MW-13D.

The northwest plume was most evident during the RI in upgradient wells MW-11S and well cluster MW-10, upgradient perimeter well cluster MW-01, downgradient perimeter wells MW-03I and MW-03D, as well as downgradient wells MW-14I and MW-14D. The most significant concentrations were noted in well cluster MW-01.

The plume passing through the northwest corner of the site has shown some improvement in the concentrations of total volatiles during the interim between the RI groundwater sampling and the post-closure baseline groundwater sampling. In general, the upgradient monitoring well clusters MW-12, MW-01 and MW-10 have remained unchanged or shown a modest reducing trend. Monitoring well cluster MW-11 continues to show no volatile contaminants in well MW-11D and a steady to decreasing trend in well MW-11S. However, well MW-11I shows an increasing trend with RI results of 7 and 0 ug/l compared to the post-closure baseline results of 62 and 199 ug/l. The downgradient clusters MW-3, MW-5 and MW-14 continue to show no

volatile contaminants exceeding NYSDEC standards in wells MW-03S, MW-05I, MW-05D and MW-14S, essentially no change in well MW-05S and decreasing trends in wells MW-03I, MW-03D, MW-14I and MW-14D. Concentrations of total volatiles downgradient of the landfill are lower than the concentrations upgradient of the landfill, supporting that the landfill is not actively contributing to the northwest plume.

The post-closure baseline groundwater data (November 2000/January 2001) reflects the continuing impacts of landfill leachate as evidenced by leachate indicators and select metals in the downgradient monitoring wells. These findings are consistent with the results provided by the RI groundwater sampling (November 1997) and reflect the interim conditions prior to and during the landfill capping system construction.

The construction of the landfill capping system was commenced in 1999, and was essentially completed in the Fall of 2000. The beneficial impacts of the completed cap will take time to be realized while the unsaturated portion of the landfill drains its accumulated liquid and the underlying groundwater has migrated through the footprint of the site.

The earliest indications that the benefits of the landfill cap are being realized should be observed in the downgradient, perimeter groundwater monitoring wells. The corresponding improvement in the distally downgradient wells will lag by a number of years while the current conditions prevailing at the landfill site migrate to and beyond the distally downgradient wells.

4.5.2 Discussion of Volatile Organic Compounds in Groundwater

VOCs in Shallow (Water Table) Zone of Upper Glacial Aquifer

The detection of VOCs in upgradient shallow monitoring wells documents the continued influence of VOC contamination originating from off-site upgradient sources impacting groundwater flowing toward the landfill. Elevated VOCs in groundwater collected from shallow upgradient perimeter wells are consistent with the presence of VOC contamination in the distally upgradient shallow well, MW-11S. Along the east side of the site, elevated VOCs in

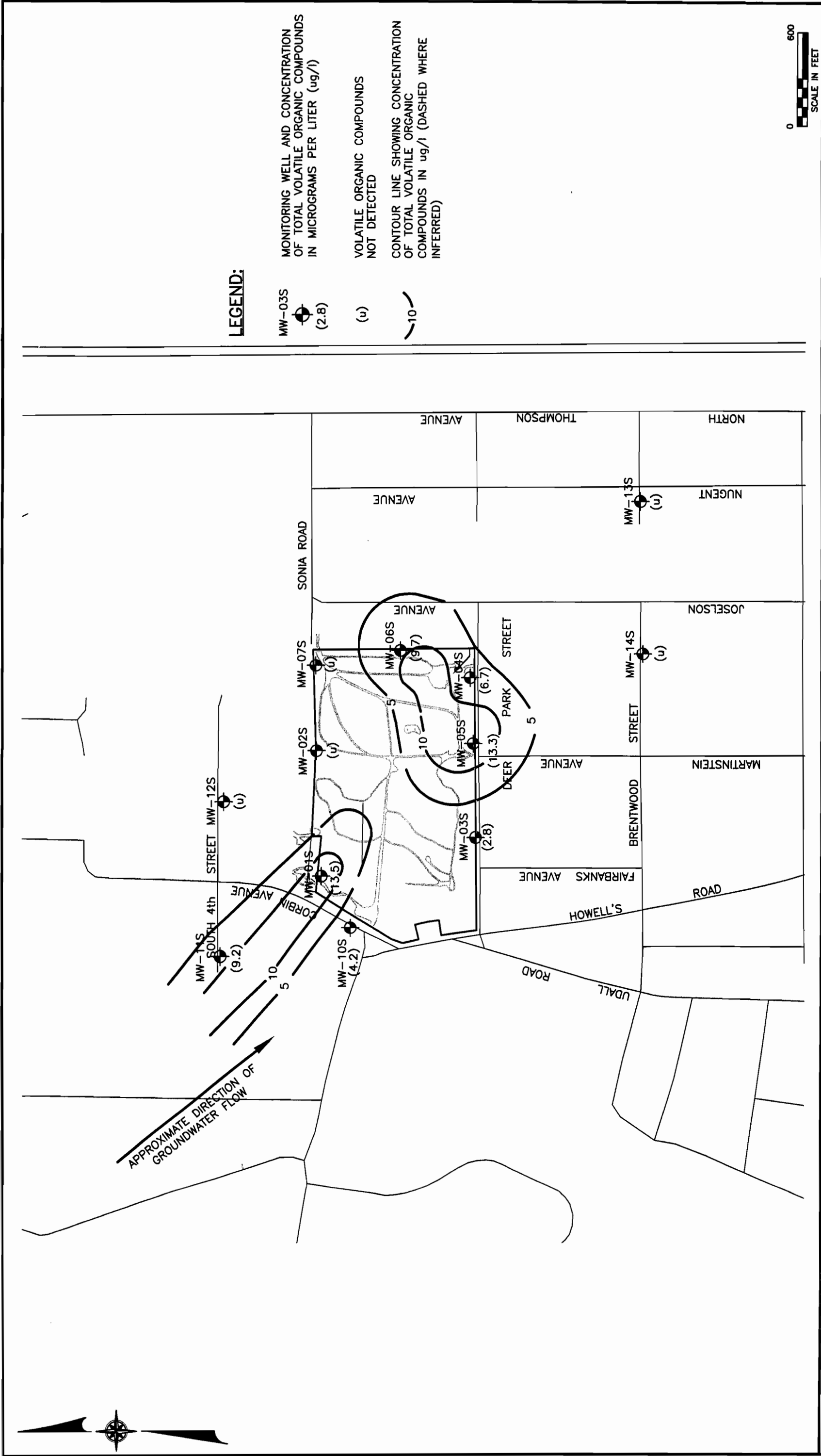
downgradient shallow perimeter wells may also reflect this condition. Elevated levels of vinyl chloride and cis-1,2-dichloroethene detected at shallow downgradient perimeter well MW-06S are much lower in concentration but consistent with the contaminants detected in the deep member of this cluster during the RI, where high levels of VOCs were attributed to a contaminant plume that originated off-site, upgradient of the landfill.

During the first round of baseline sampling, shallow groundwater data from on and off-site monitoring wells in the northwest corner indicated that residual contamination identified in the RI persists in the form of groundwater contaminated primarily with cis-1,2-dichloroethene and with lesser concentrations of trichloroethene and 1,1-dichloroethane. The highest concentration of these constituents occurred in the off-site, upgradient monitoring well MW-11S during the first baseline sampling round and in the upgradient perimeter monitoring well MW-01S during the second baseline sampling event. 1,1-Dichloroethane was present in groundwater samples collected during the first round of baseline sampling from the up/sidegradient perimeter monitoring well MW-10S and is consistent with the results from the RI.

Downgradient perimeter monitoring wells MW-03S, MW-04S and MW-05S exhibited low concentrations of chloroethane (2.8 to 5.2 ug/l) during both baseline sampling events, with MW-04S and MW-05S also containing low concentrations of chlorobenzene. During the second round of baseline sampling, MW-05S also exhibited low concentrations of 1,4-dichlorobenzene and acetone. Chloroethane is a degradation product of 1,1,1-trichloroethane and of 1,1-dichloroethane, which were observed at low levels in the upgradient, shallow groundwater monitoring wells. Figure 4-4 is a contour map illustrating the distribution of total VOCs in shallow groundwater during the January/February 2001 baseline sampling round.

VOCs in Intermediate Zone of Upper Glacial Aquifer

The presence of two chemically distinct VOC areas of concentration were interpreted from the two baseline rounds of intermediate depth groundwater samples. Entering the site from the northwest, intermediate depth groundwater is contaminated primarily with 1,1-dichloroethane (52 and 100 ug/l, respectively for the first and second rounds of sampling at



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

CONTOUR MAP SHOWING CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS IN SHALLOW GROUNDWATER JANUARY/FEBRUARY, 2001

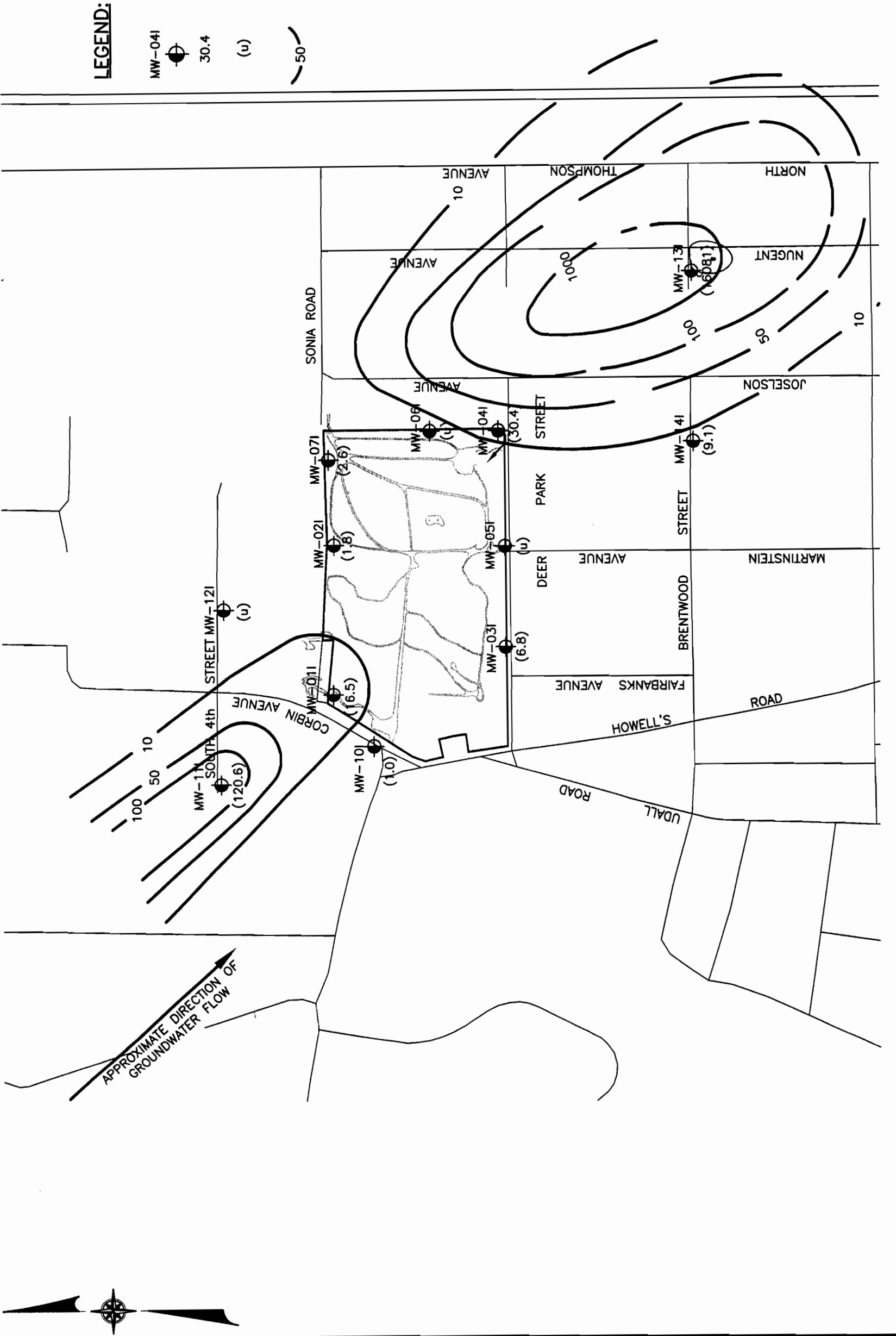
db Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

upgradient intermediate monitoring well MW-11I; and 13 and 8.5 ug/l, respectively, for the upgradient perimeter monitoring well, MW-01I) and 1,1,1-trichloroethane (detected at concentrations ranging between 8 and 19 ug/l in these same wells during both sampling rounds).

The most significant intermediate depth VOC contamination was detected at and beyond the southeastern corner of the landfill, as shown in distally downgradient intermediate depth monitoring well, MW-13I. This well exhibited over 1,000 ug/l total VOCs during the first round of baseline sampling and more than 1,600 ug/l total VOCs during the second round. During the RI, total VOC concentrations in the intermediate depth monitoring well MW-13I were 97 ug/l during the first sampling round and 78.9 ug/l during the second sampling round. The VOC contamination detected at the intermediate zone in MW-13I appears to be consistent with the levels of VOCs detected in monitoring well MW-06D during the RI where total VOCs were detected at 2,032 ug/l. This correlation is most likely the downgradient progression of the upgradient VOC plume.

During the two baseline sampling rounds, relatively low concentrations of VOCs were detected in the monitoring well MW-06 cluster, indicating that the high concentrations of VOCs detected during the RI have moved downgradient toward cluster MW-13. The major VOC constituents of the contamination found during the post-closure baseline sampling of MW-13I is comparable to the VOC constituents found at MW-06D during the RI. These contaminants are consistent with a plume previously attributed to upgradient sources north of the landfill.

VOC contamination at the northwest corner of the site is dominated by 1,1-dichloroethane and 1,1,1-trichloroethane at intermediate depths and may have originated at one or more sources to the northwest. Figure 4-5 is a contour map illustrating the distribution of total VOCs in intermediate depth groundwater during the January/February 2001 round of sampling.



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

CONTOUR MAP SHOWING CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS IN INTERMEDIATE-DEPTH GROUNDWATER JANUARY/FEBRUARY, 2001

db Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 4-5

VOCs in Deep/Basal Zone of Upper Glacial Aquifer

The distribution of VOC contamination in the deep Upper Glacial aquifer is similar to the pattern of contaminant distribution detected in the intermediate depth of the aquifer. In general, baseline VOC concentrations were found to be lower at the base of the aquifer than at intermediate depths. Concentrations of contaminants upgradient of the landfill are generally lower in the deep part of the aquifer relative to the intermediate zone. This tendency continues, to some extent, for the downgradient wells. Monitoring well cluster 13 exhibits high VOC concentrations in both the intermediate and deep zones and notes a significant increase from the concentrations detected during the RI.

Upgradient VOC contamination of the deep zone has diminished in the period from the RI sampling to the baseline sampling. MW-11D, MW-12D and MW-02D continue to show no exceedances of standards. MW-10D exhibited exceedances of 1,1-dichloroethane and 4-methyl-2-pentanone in the RI sampling and no exceedances in the baseline sampling. MW-01D exhibited exceedances for 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane and carbon tetrachloride in the RI and only one exceedance for cis-1,2-dichloroethene in the baseline sampling. Comparable improvement is noted in the downgradient well MW-03D and the continuation of no exceedances in MW-05D. This trend may suggest that the upgradient contamination of the deep zone has begun to migrate through and beyond the landfill site.

A similar trend is noted in the eastern portion of the site. During the remedial investigation, a significant concentration of VOC contamination attributed to upgradient sources was observed in the area of MW-06D with lesser concentrations noted upgradient at MW-07D and downgradient at MW-13D. This distribution offered the appearance that the area of contamination was centered in the vicinity of MW-06D along the axis described by MW-07D, MW-06D and MW-13D.

The results of the baseline sampling have noted a shift in the area of contamination, which is likely due to migration in the downgradient direction. The baseline data for these deep monitoring wells indicate no exceedances were detected in MW-07D; a significant decrease in

the level of contamination in perimeter monitoring well MW-06D and a significant increase in the level of contamination at downgradient monitoring well MW-13D.

The shift in location or migration of the area of contamination becomes apparent when the total VOCs for each of these wells is compared over the time span between the RI and the baseline sampling.

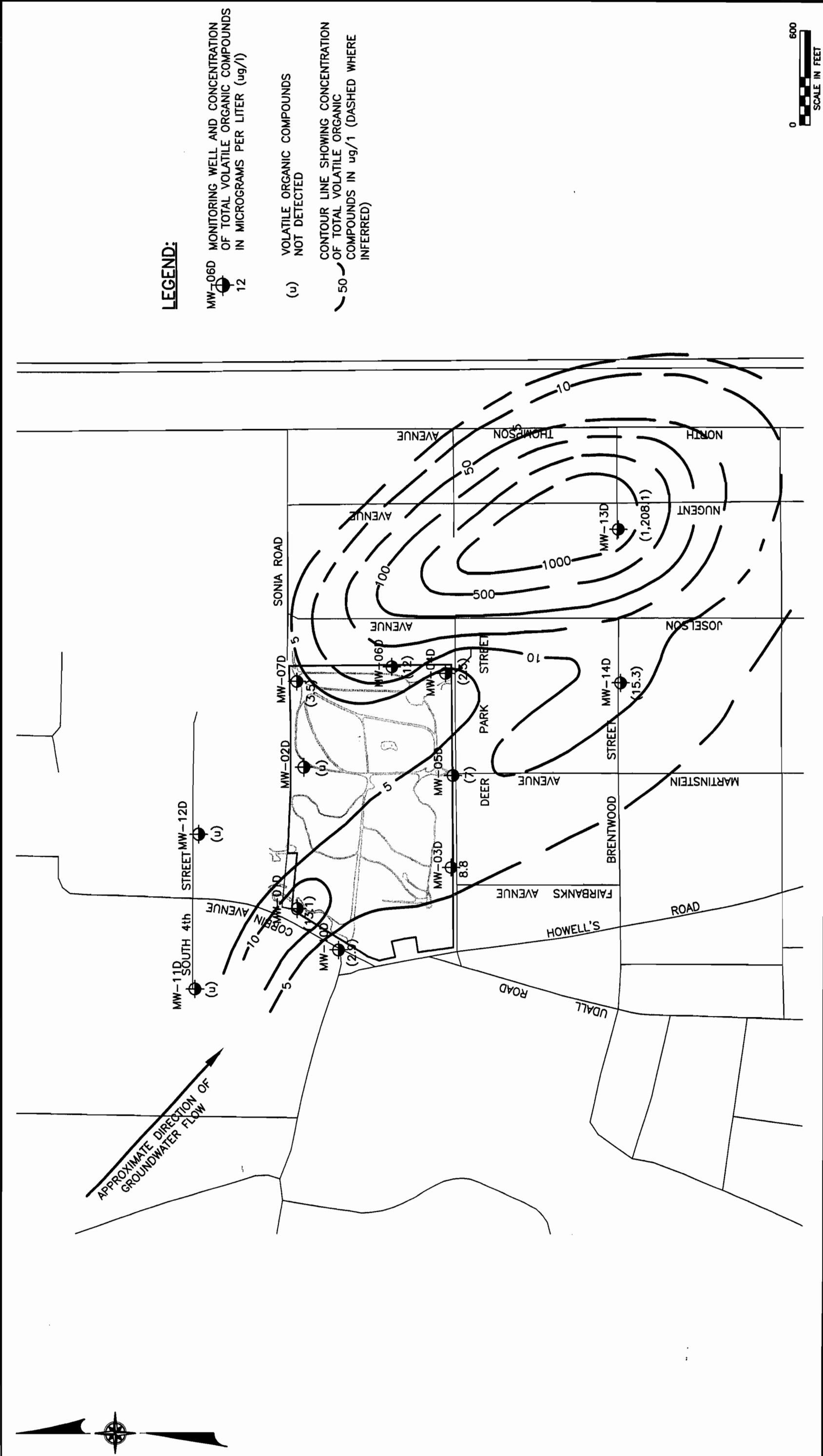
Well	Total VOCs (ug/l)			
	Remedial Investigation		Baseline Sampling	
	Round 1	Round 2	Round 1	Round 2
	Oct-Nov 1997	Jan-Feb 1998	Nov-Dec 2000	Jan-Feb 2001
MW-7D	38	468	4	4
MW-6D	1,776	2,032	18	12
MW-13D	44	52	896	1,209

This data clearly suggests the downgradient migration of an area of contamination away from the landfill and also supports that the landfill is not the source of the contamination. Given that the baseline sampling was performed shortly after completion of the landfill cap, it can be assumed that the benefits offered by the cap were not yet realized. Therefore, any groundwater impacts emanating from the landfill should be present at the time of the baseline sampling. In light of the marked changes noted above, it is more likely that the contamination attributed to off-site sources has been observed to pass through the landfill site in the period between the RI and the baseline sampling.

Figure 4-6 is a contour map illustrating the distribution of total VOCs in the deep groundwater during the January/February round of sampling.

4.5.3 Discussion of Inorganic Parameters in Groundwater

Iron and manganese appear to be the most reliable indicators of leachate contamination originating from the landfill. Elevated manganese and iron downgradient of the landfill is probably attributable to the landfill, however, manganese is also elevated in upgradient groundwater, particularly at shallow and intermediate depths. Elevated iron in groundwater



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

**CONTOUR MAP SHOWING CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS
IN DEEP GROUNDWATER JANUARY/FEBRUARY, 2001**

db Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 4-6

sampled from upgradient perimeter well MW-01S indicates that iron is also impacting the site from upgradient sources. However, iron concentrations in more than half of the downgradient wells are an order of magnitude greater than iron concentrations detected in upgradient well MW-01S. Therefore, elevated iron in downgradient monitoring wells is likely a reliable indicator of leachate contamination originating at the landfill.

Manganese is detected at significantly higher concentrations in downgradient groundwater (such as at MW-05D where it was detected at a concentration of 21,300 ug/l) as compared with upgradient groundwater (such as its presence at concentrations of 5,290 ug/l and 6,510 ug/l in groundwater collected from upgradient wells MW-11S and MW-07I, respectively). It is likely that a significant portion of the manganese originates at the landfill. Assorted occurrences of other metals such as chromium, antimony, thallium and selenium may be attributed to upgradient sources.

4.5.4 Discussion of Leachate Parameters in Groundwater

Leachate parameters and metals are elevated downgradient of the landfill and in some cases are reliable indicators of landfill leachate. Leachate parameters evaluated include alkalinity, conductivity, ammonia nitrogen and metals such as iron and manganese. Some of these factors are elevated in upgradient groundwater, therefore the landfill is not the sole contributor of all leachate indicators. Leachate parameters most likely attributable to the landfill are most prevalent at the downgradient perimeter well clusters MW-04 and MW-05 and in the intermediate and deep members of the distally downgradient well clusters, MW-13 and MW-14.

High conductivity and sodium concentrations at downgradient monitoring well cluster MW-03 are not likely attributable to the landfill, as this cluster is downgradient from monitoring well clusters MW-01, MW-10 and MW-11, which all exhibit elevated levels of sodium and specific conductance. Specific conductance is elevated in monitoring wells exhibiting high concentrations of ammonia nitrogen and in wells impacted by high levels of sodium. Therefore, specific conductance may not be a reliable leachate indicator independent of its relationship to other constituents, especially ammonia nitrogen (that most probably originates at both the

landfill and off-site sources), and alkaline compounds such as sodium (that appear to be migrating into and through the site from upgradient sources).

Elevated ammonia nitrogen in upgradient perimeter well MW-02I indicates that at least some of the ammonia nitrogen detected in downgradient perimeter wells probably originates offsite. Elevated ammonia nitrogen in distally downgradient wells may be attributable to residential sanitary systems (cesspools) located near these wells in addition to leachate migrating from the landfill. Where elevated ammonia nitrogen exceeds background levels in downgradient monitoring wells and occurs in conjunction with elevated iron and/or manganese and high specific conductance (independently of significantly elevated sodium) such as at monitoring well MW-05D, it is likely an indicator of the impacts of landfill leachate.

5.0 DATA VALIDATION AND USABILITY

5.1 Baseline Monitoring

Thirty-six groundwater samples were collected during the first (November 2000) and second (January 2001) round of sampling at the Sonia Road Landfill as part of the Baseline Groundwater Monitoring Program. Samples were analyzed for Baseline Parameters according to the 6 NYCRR Part 360 requirements. The baseline volatile analysis was performed using USEPA SW-846 Method 8260. The metals analyses were performed by ICP applying USEPA Method 6010 CLP-M. Mercury was analyzed by cold vapor using USEPA SW-846 Method 7470. Cyanide analyses was performed using USEPA Method 335.2. The baseline leachate parameters were analyzed using approved EPA methodologies. All analyses were performed by H2M Laboratories, Inc., a subcontractor to the Islip Resource Recovery Agency.

The data was submitted in four separate data packages: IRS013, IRS015, IRS016, and IRS017. The data validation was performed in accordance with NYSDEC QA/QC requirements. The validation for this project included 100% for all metal and volatile standards and quality control. In accordance with project requirements, only 20% of the sample data have been validated. Copies of the validation forms are included in Appendix E. The findings of the validation process are summarized below.

All sample analyses were performed in accordance with the specified methods and within holding time.

No problems were found with any of the sample results; therefore, all the data has been deemed valid and usable for environmental assessment purposes.

Section 6

6.0 GROUNDWATER FLOW

The stratigraphic unit of concern at the Sonia Road Landfill includes the Upper Glacial aquifer and underlying Gardiners Clay unit. Figure 6-1 is a geological cross section of the area near the Sonia Road Landfill, illustrating the relationship between the Upper Glacial aquifer and the Gardiners Clay unit. The site hydrogeology has been determined through the collection and analysis of water level data obtained from the 12 monitoring well clusters and Suffolk County Department of Health Services (SCDHS) monitoring well S-62720. The water level data utilized was previously presented in the RI report. Water level measurements were collected during the RI on November 4 and 18, 1997. Water level measurements were collected as part of the baseline groundwater sampling on November 29, 2000 and again on January 29, 2001.

In order to implement the construction of the landfill cap, the surface topography of the landfill was modified. This necessitated alterations to some of the monitoring wells, resulting in changes in elevation for the tops or reference elevations of the modified well casings. Unfortunately, there is no record of the reference elevations which existed at the time that water levels were measured as part of the baseline groundwater sampling. Subsequent to sampling, additional modifications were performed on the affected wells which resulted in the loss of the reference elevations at the time of the water level measurements. Consequently, the water level readings taken as part of the baseline groundwater sampling are usable only for the monitoring wells which were not modified as a result of the landfill cap construction (i.e., the wells located off-site). The lack of pertinent reference elevations for the on-site wells prevents the use of the baseline water level data in establishing the water table or potentiometric surface elevations.

A coarse, preliminary estimate of site groundwater flow was generated by contouring the baseline water elevation data using only the distally off-site monitoring wells whose elevations did not change since the RI. This indicated that flow direction and gradients between the distally up-and downgradient wells has not changed significantly since the RI. Therefore, the site hydrological conditions reported during the RI are consistent with current conditions. Because of the finer measurement array provided by utilizing all the monitoring wells, the discussion of



Divirka and Bartilucci
A Division of William F. Cosulich Associates, P.C.
Consulting Engineers

GEOLOGICAL CROSS SECTION OF STUDY AREA

ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

SOURCE: USGS HYDROLOGIC INVESTIGATION ATLAS HA-709 (SHEET 1 OF 3) 1989

NATIONAL GEODETIC VERTICAL DATUM OF 1929
VERTICAL SCALE IS GREATLY EXAGGERATED
0 5 10 KILOMETERS
0 5 10 MILES

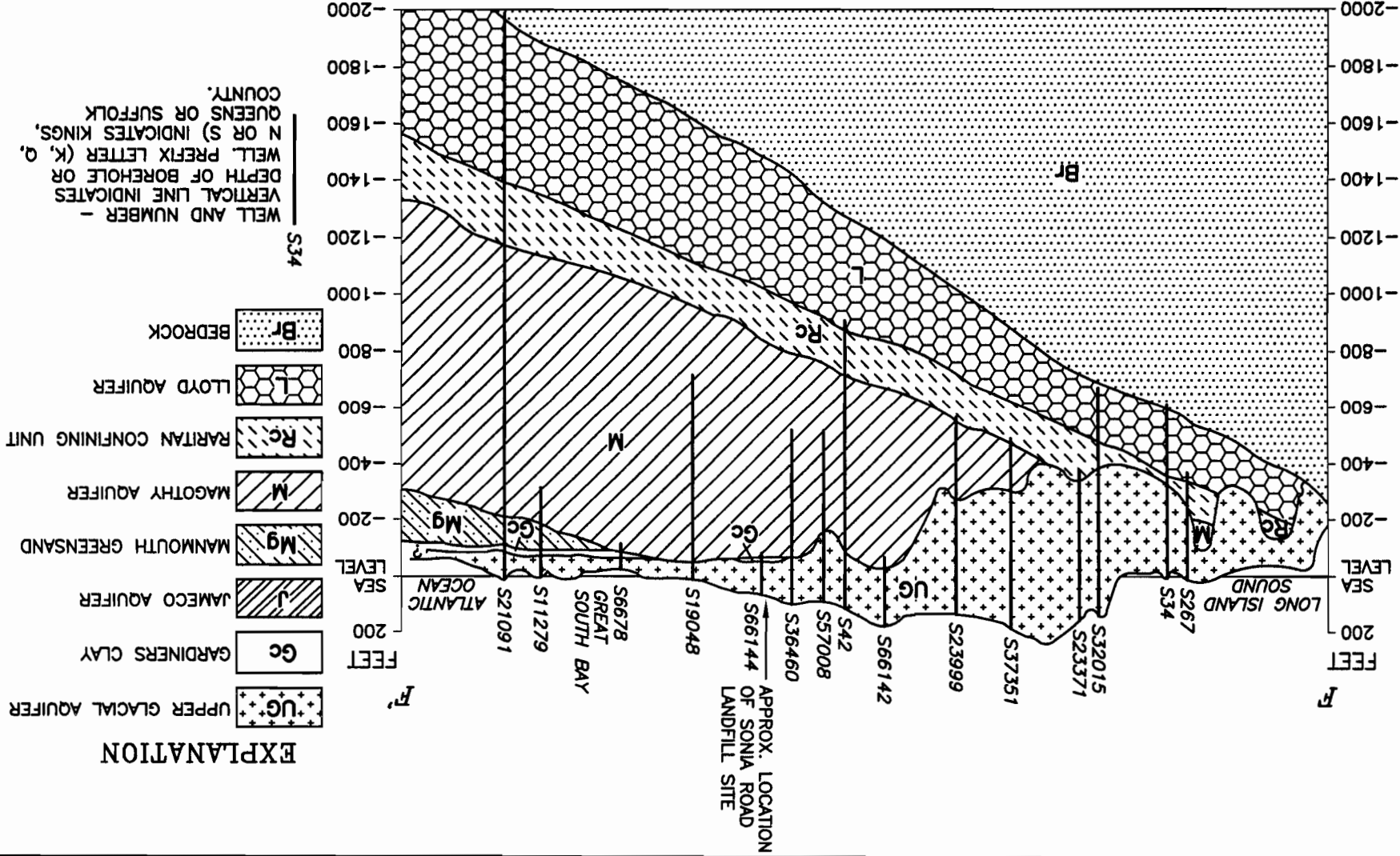


FIGURE 6-1

groundwater flow in this current report relies upon and duplicates the groundwater discussion originally presented in the RI.

The Sonia Road Landfill is located in the northern portion of Hydrogeologic Zone VII as defined in the Long Island Waste Treatment ("208") Management Plan. Hydrogeologic Zone VII is characterized by shallow groundwater flow systems that discharge to streams and marine waters. The transition zone between Hydrogeologic Zones I and VII is located just to the north of the Sonia Road Landfill. Hydrogeologic Zone I is characterized by deep groundwater recharge contributing to the middle and lower portions of the Magothy aquifer. Verification of the location of the landfill in Zone VII is discussed in Section 6.1.4 (Vertical Gradients) below.

6.1 Groundwater Flow Patterns

Based on the March 1997 SCDHS Water Table Contour Map, the regional groundwater flow direction is toward the S-SE to SE (see Figure 6-2). Water level data from November 4 and 18, 1997 were used to generate groundwater contour maps for the water table, intermediate and deep Upper Glacial aquifer zones at and in the immediate vicinity of the Sonia Road Landfill. The groundwater elevation data obtained during the RI is presented in Appendix F. Water table and potentiometric surface contour maps for the intermediate and deep zones representing the November 4, 1997 data are presented on Figures 6-3, 6-4 and 6-5, respectively. Water table and potentiometric surface contour maps for the intermediate and deep zones representing the November 18, 1997 data are presented on Figures 6-6, 6-7 and 6-8, respectively. Groundwater flow direction in the water table and intermediate and deep zones was consistent between measurement events and zones, and is also fairly consistent with the regional flow map prepared by SCDHS. The results confirm that groundwater flow in the vicinity of the Sonia Road Landfill is in a southeasterly direction.

6.1.1 Water Table

The depths to groundwater in the shallow water table monitoring wells ranged from 7.32 feet below ground surface (bgs) at monitoring well MW-10S on November 18, 1997, to



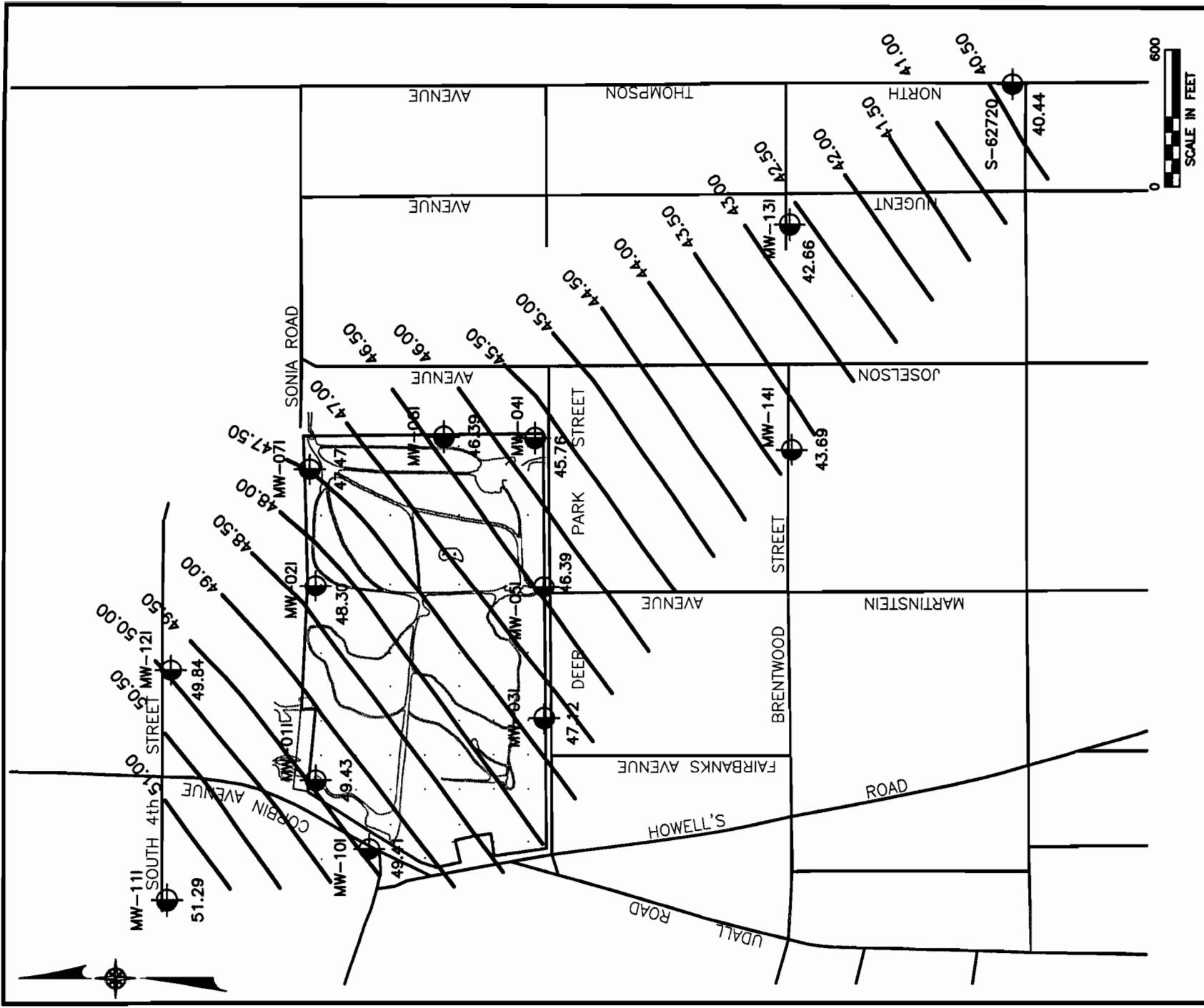
SOURCE: SCDHS WATER TABLE CONTOURS AND LOCATION OF OBSERVATION WELLS IN SUFFOLK COUNTY, NY MARCH 1997

SCALE: 1"=2 MILES

ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE SAMPLING AND ANALYSIS PLAN

REGIONAL WATER TABLE CONTOUR MAP

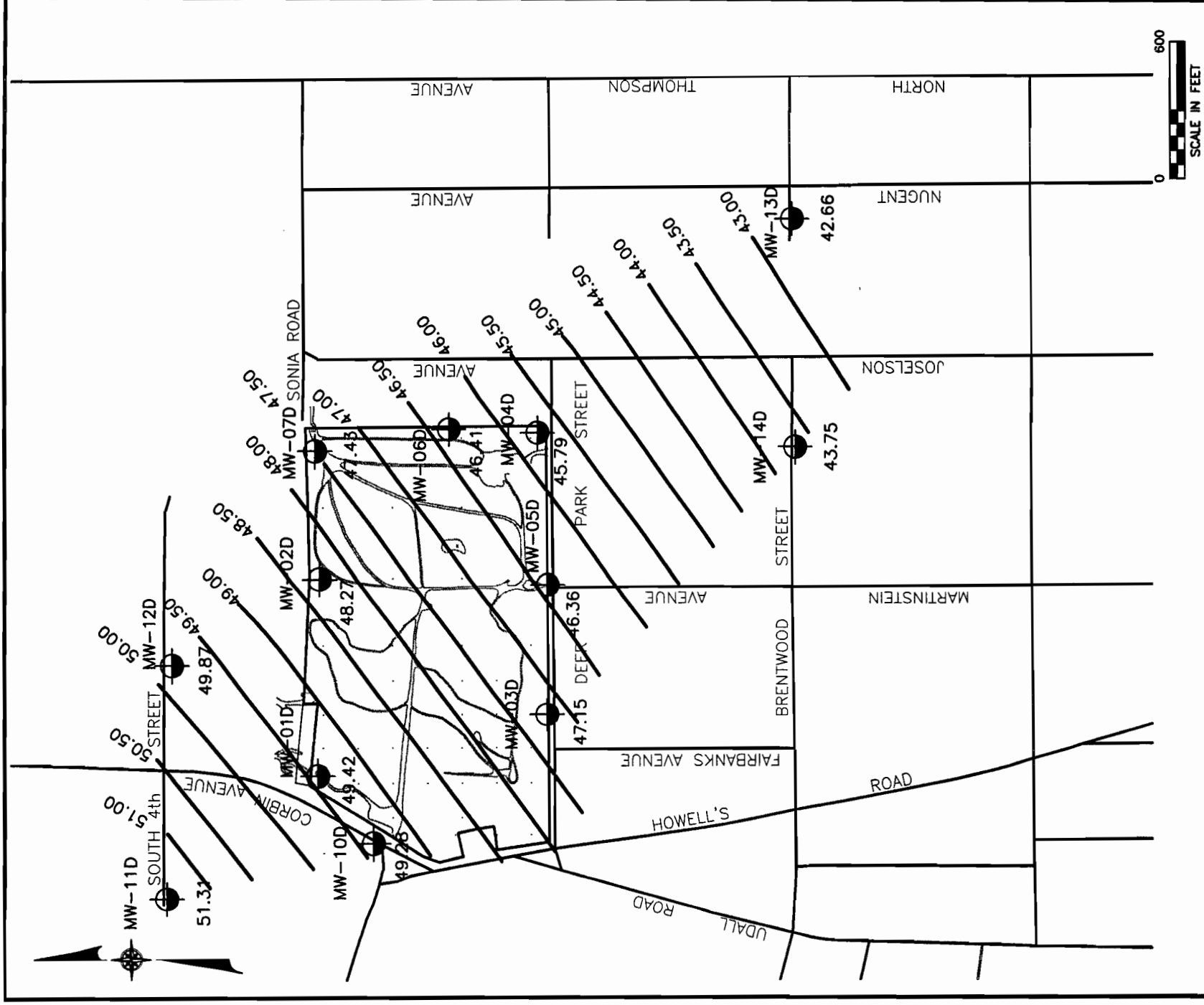
db
Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
 POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
INTERMEDIATE WELL POTENTIOMETRIC SURFACE MAP
NOVEMBER 4, 1997

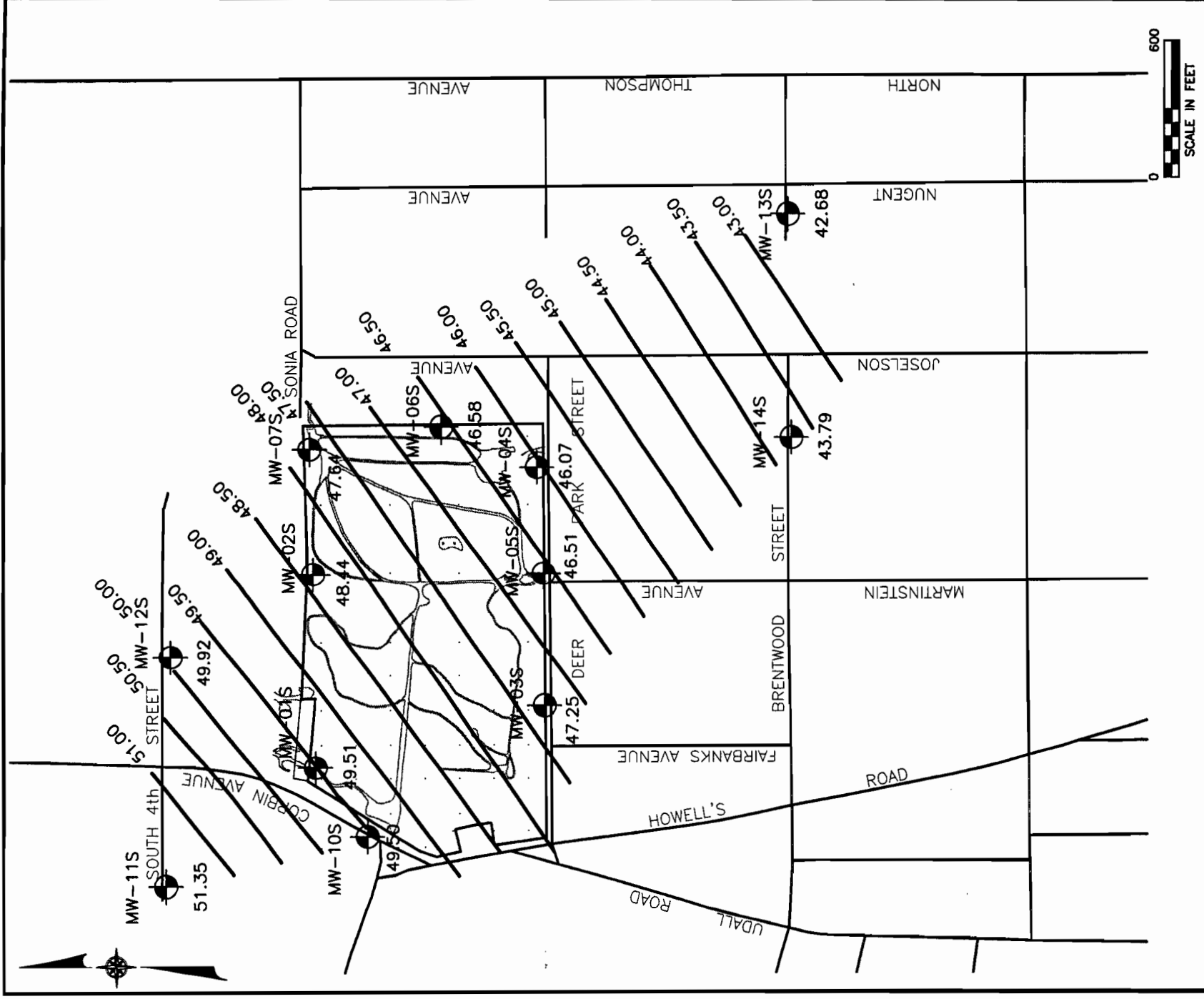


Dvirka and Bartilucci
 Consulting Engineers
 A Division of William F. Cosulich Associates, P.C.



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
DEEP WELL POTENTIOMETRIC SURFACE MAP
NOVEMBER 4, 1997

db
Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

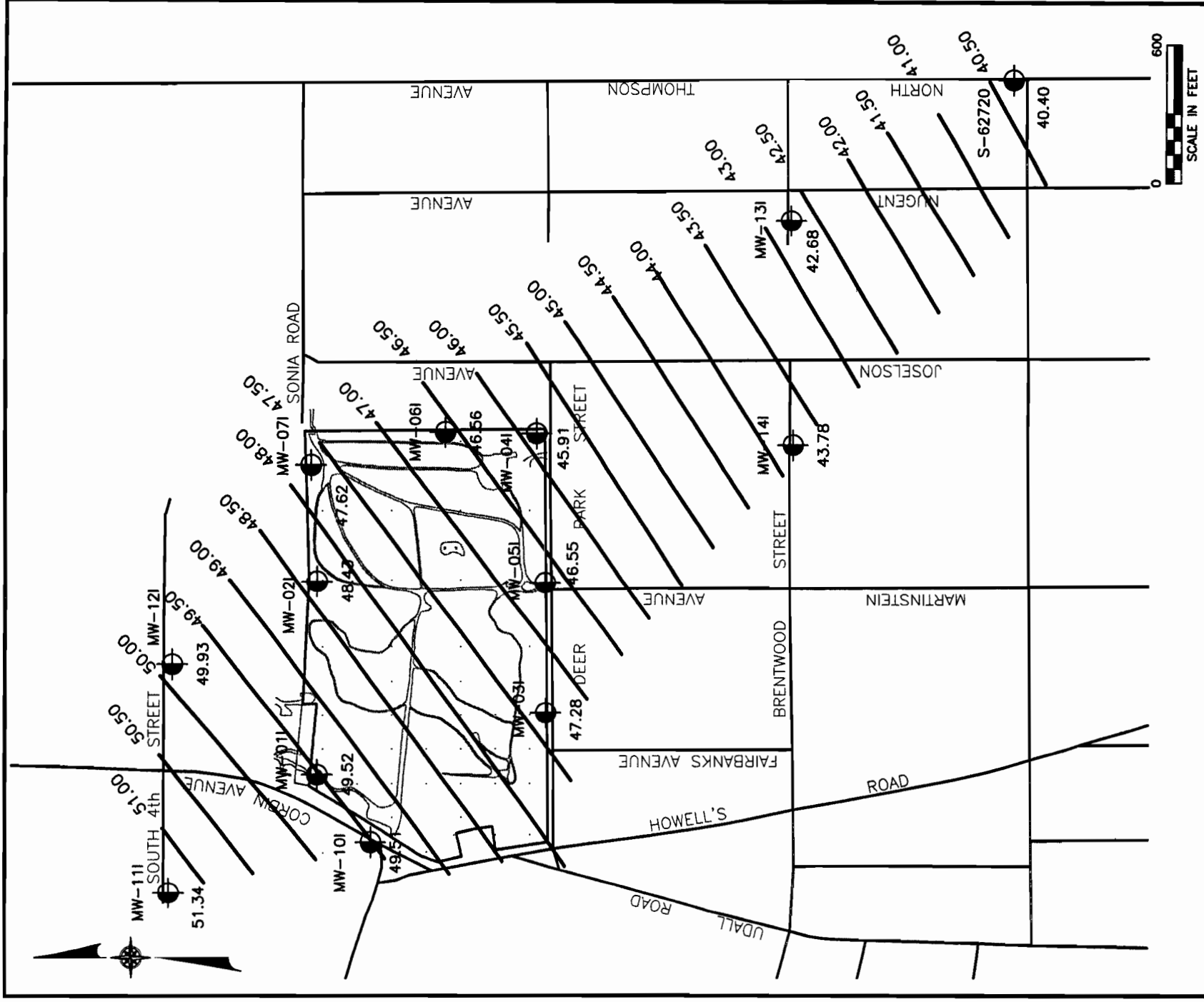


ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

WATER TABLE CONTOUR MAP

NOVEMBER 18, 1997

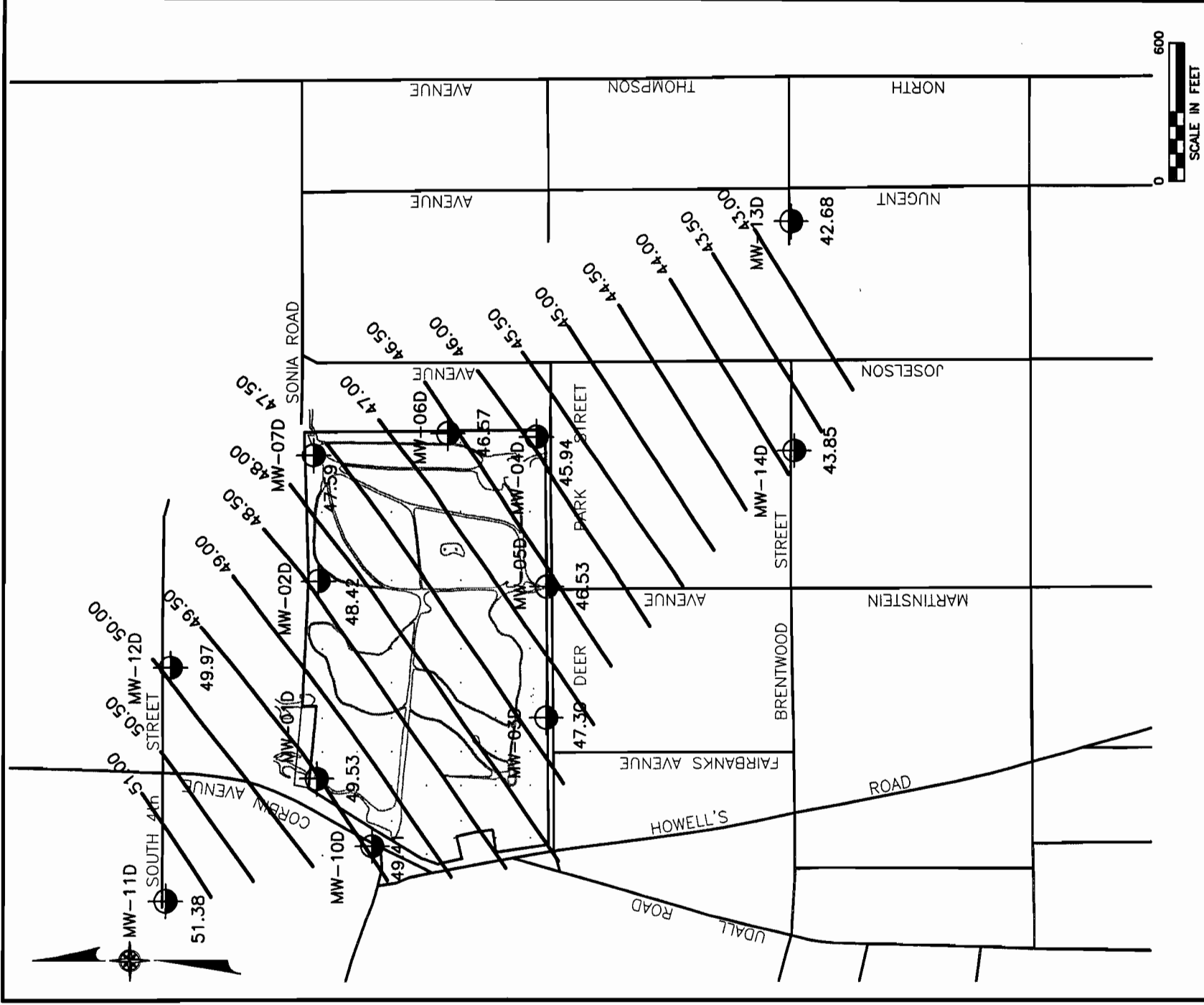
db Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
 POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
INTERMEDIATE WELL POTENTIOMETRIC SURFACE MAP
NOVEMBER 18, 1997



Dvirka and Bartilucci
 Consulting Engineers
 A Division of William F. Cosulich Associates, P.C.



ISLIP RESOURCE RECOVERY AGENCY SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT

DEEP WELL POTENTIOMETRIC SURFACE MAP NOVEMBER 18, 1997

db
Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

28.65 feet bgs at MW-02S on November 4, 1997. The water table elevation ranged from 42.66 feet above mean sea level in MW-13S on November 4, 1997, to 51.35 feet above mean sea level in MW-11S on November 18, 1997. Water level elevation data is presented in Appendix F. The horizontal gradient across the study area, calculated with the November 4 and 18, 1997 water table elevation data, is 0.0022 ft/ft.

6.1.2 Intermediate Zone of the Upper Glacial Aquifer

The depths to groundwater in the intermediate wells ranged from 7.23 feet bgs at monitoring well MW-10I on November 18, 1997, to 28.53 feet bgs at MW-02I on November 4, 1997. The elevation of the potentiometric surface of the intermediate wells ranged from 40.40 feet above mean sea level in S-62720 on November 18, 1997, to 51.34 feet above mean sea level in MW-11I on November 18, 1997. Water level elevation data is presented in Appendix F. The horizontal gradient across the study area, calculated with the November 4 and 18, 1997 intermediate well potentiometric surface elevation data, is 0.0022 ft/ft.

6.1.3 Deep Zone of the Upper Glacial Aquifer

The depths to groundwater in the deep wells ranged from 7.42 feet bgs at monitoring well MW-10D on November 18, 1997, to 28.70 feet bgs at MW-02D on November 4, 1997. The elevation of the potentiometric surface of the deep wells ranged from 42.66 feet above mean sea level in MW-13D on November 4, 1997, to 51.38 feet above mean sea level in MW-11D on November 18, 1997. Water level elevation data is presented in Appendix F. The horizontal gradient across the study area, calculated with the November 4, 1997 deep well potentiometric surface elevation data, is 0.0022 ft/ft. A horizontal gradient of 0.0023 ft/ft was calculated with the November 18, 1997 groundwater data.

6.1.4 Vertical Gradients

Vertical gradients were calculated for the shallow/intermediate, intermediate/deep and shallow/deep zones of the Upper Glacial aquifer for the 12 well clusters constructed in the study

area. Since monitoring well MW-04S is located approximately 160 feet to the west of MW-04I and MW-04, only intermediate/deep zone vertical gradients were calculated for the monitoring well MW-04D cluster. The vertical gradients were calculated utilizing the groundwater level measurements collected on November 4 and 18, 1997. Vertical gradient calculations are presented in Table 6-1.

The vertical gradients for all wells and zones were generally small, being less than or slightly greater than 0.001 ft/ft, except for MW-10 intermediate/deep zone. The vertical gradients at well cluster MW-10 were 0.38 and 0.49 ft/ft downward in the intermediate/deep zone utilizing both the November 4 and 18, 1997 data, respectively.

Considering the Upper Glacial aquifer as a single flow regime (shallow/deep zone water level comparison) a slight upward gradient or no vertical potential (0.0 ft/ft) was calculated in 6 of the 11 monitoring well clusters (MW-01, MW-03, MW-05, MW-11, MW-12 and MW-14). Three of these locations (MW-11 and MW-12 [upgradient] and MW-14 [downgradient]) are considered outside of the influence of the landfill.

Slight downward gradients for the entire Upper Glacial aquifer zone were calculated in 4 of the 11 monitoring well clusters (MW-02, MW-06, MW-07 and MW-10) with both sets of data, except for MW-10, which exhibited a strong downward gradient of 0.18 ft/ft on November 4, 1997. All of the well clusters are within the landfill boundaries, except for MW-10, which is located immediately adjacent and to the west of the landfill.

A 0.0 ft/ft vertical gradient (“no vertical potential”) was calculated for the MW-13 well cluster for all three zones with both sets of data. This cluster location can also be considered outside of the influence of the landfill.

These vertical gradient results, except for a few of the wells located immediately adjacent to the landfill, confirm that the Sonia Road Landfill is located in a zone of groundwater discharge (upward flow) and that the landfill has a slight mounding effect on the water table beneath and in the immediate vicinity of the landfill.

Table 6-1

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
SUMMARY OF VERTICAL GRADIENTS FROM THE REMEDIAL INVESTIGATION

Well #	Aquifer Zone	Vertical Gradient (ft/ft) 11/4/97	Vertical Potential 11/4/97	Vertical Gradient (ft/ft) 11/18/97	Vertical Potential 11/18/97
MW-01S	Shallow	0.00053	Upward	0.00018	Upward
MW-01I	Intermediate				
MW-01I	Intermediate	0.00034	Downward	0.00034	Upward
MW-01D	Deep				
MW-01S	Shallow	0.00023	Upward	0.00023	Upward
MW-01D	Deep				
MW-02S	Shallow	0.00024	Upward	0.00024	Downward
MW-02I	Intermediate				
MW-02I	Intermediate	0.00068	Downward	0.00023	Downward
MW-02D	Deep				
MW-02S	Shallow	0.00025	Downward	0.00012	Downward
MW-02D	Deep				
MW-03S	Shallow	0.00036	Upward	0.00054	Upward
MW-03I	Intermediate				
MW-03I	Intermediate	0.0013	Upward	0.00088	Upward
MW-03D	Deep				
MW-03S	Shallow	0.00064	Upward	0.00064	Upward
MW-03D	Deep				
MW-04I	Intermediate	0.00069	Upward	0.00069	Upward
MW-04D	Deep				
MW-05S	Shallow	0.00072	Upward	0.00096	Upward
MW-05I	Intermediate				
MW-05I	Intermediate	0.00067	Downward	0.00045	Downward
MW-05D	Deep				

Table 6-1 (continued)

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
SUMMARY OF VERTICAL GRADIENTS FROM THE REMEDIAL INVESTIGATION**

Well #	Aquifer Zone	Vertical Gradient (ft/ft) 11/4/97	Vertical Potential 11/4/97	Vertical Gradient (ft/ft) 11/18/97	Vertical Potential 11/18/97
MW-05S	Shallow	0.00	No Vertical	0.00023	Upward
MW-05D	Deep				
MW-06S	Shallow	0.00070	Downward	0.00046	Downward
MW-06I	Intermediate				
MW-06I	Intermediate	0.00049	Upward	0.00025	Upward
MW-06D	Deep				
MW-06S	Shallow	0.00012	Downward	0.00012	Downward
MW-06D	Deep				
MW-07S	Shallow	0.00069	Downward	0.00046	Downward
MW-07I	Intermediate				
MW-07I	Intermediate	0.00087	Downward	0.00066	Downward
MW-07D	Deep				
MW-07S	Shallow	0.00079	Downward	0.00056	Downward
MW-07D	Deep				
MW-10S	Shallow	0.00035	Downward	0.00017	Upward
MW-10I	Intermediate				
MW-10I	Intermediate	0.49	Downward	0.38	Downward
MW-10D	Deep				
MW-10S	Shallow	0.18	Downward	0.0011	Downward
MW-10D	Deep				
MW-11S	Shallow	0.00035	Downward	0.00018	Downward
MW-11I	Intermediate				
MW-11I	Intermediate	0.00085	Upward	0.0017	Upward
MW-11D	Deep				

Table 6-1 (continued)

SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
SUMMARY OF VERTICAL GRADIENTS FROM THE REMEDIAL INVESTIGATION

Well #	Aquifer Zone	Vertical Gradient (ft/ft) 11/4/97	Vertical Potential 11/4/97	Vertical Gradient (ft/ft) 11/18/97	Vertical Potential 11/18/97
MW-11S	Shallow	0.00	No Vertical	0.00037	Upward
MW-11D	Deep				
MW-12S	Shallow	0.00	No Vertical	0.00018	Upward
MW-12I	Intermediate				
MW-12I	Intermediate	0.0010	Upward	0.0014	Upward
MW-12D	Deep				
MW-12S	Shallow	0.00036	Upward	0.00059	Upward
MW-12D	Deep				
MW-13S	Shallow	0.00	No Vertical	0.00	No Vertical
MW-13I	Intermediate				
MW-13I	Intermediate	0.00	No Vertical	0.00	No Vertical
MW-13D	Deep				
MW-13S	Shallow	0.00	No Vertical	0.00	No Vertical
MW-13D	Deep				
MW-14S	Shallow	0.00022	Downward	0.00022	Downward
MW-14I	Intermediate				
MW-14I	Intermediate	0.0018	Upward	0.0021	Upward
MW-14D	Deep				
MW-14S	Shallow	0.00064	Upward	0.00076	Upward
MW-14D	Deep				

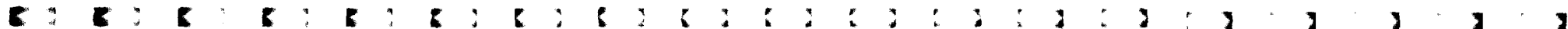
*Monitoring well MW-04S is located 160' to the west of monitoring well MW-04I, and therefore, vertical gradients were not calculated utilizing MW-04S.

6.2 Groundwater Velocity

Grain size distribution data was assessed from split spoon sediment samples collected within the screen zone during the installation of the five monitoring wells as part of the hydrogeologic study conducted for the Sonia Road Landfill by Golder Associates in 1995. The average hydraulic conductivity of the sediments for the shallow wells, based on the Hazen formula estimates (Sowers, 1979), was approximated to be 0.002 ft/sec. The grain size distribution analyses and calculation sheet for the permeability estimates are provided in Appendix G.

A general approximation of groundwater flow velocity was made in the Golder Hydrogeologic Assessment Report using the estimated horizontal hydraulic gradient ($i = 0.0019$ ft/ft) and the estimate of hydraulic conductivity ($K = 0.002$ ft/sec) in the Darcy's Law formula $\mu = Ki$. This calculation yielded an estimated groundwater velocity at the site of approximately 0.33 ft/day or about 120 ft/yr.

Section 7



7.0 CONCLUSIONS

1. As discussed in previous reports, including the 1998 Remedial Investigation Report, volatile organic compounds (VOCs) detected at the landfill as well as up- and downgradient of the landfill are mainly attributable to upgradient, off-site industrial sources. It would appear that at least two chemically distinct VOC sources are identified as impacting groundwater at the landfill. The influence of these upgradient sources will continue to be observed in the vicinity of the landfill until the sources are controlled, the contaminants from these sources have been remediated or the contaminants have migrated or dispersed beyond groundwater monitoring locations associated with the landfill.

Based upon the results of the post-closure baseline groundwater sampling and on a comparison of this data with results from the remedial investigation (RI) of 1998, the occurrence of elevated levels of VOCs detected in deep groundwater during the RI along the eastern end of the landfill have migrated in a southeasterly direction, toward monitoring well cluster MW-13, located approximately 1,400 feet southeast of the southeastern corner of the landfill. Data from downgradient perimeter monitoring well MW-06D and upgradient perimeter monitoring well MW-07D indicated high levels of VOCs during the RI and relatively low levels of VOCs during the post-closure baseline groundwater sampling, therefore, it appears that the contaminants are migrating downgradient. Contaminants are consistent with those associated with releases at sites located immediately upgradient from the landfill.

2. What has been viewed in this investigation as a single release may in fact be a series of releases that originate from an intermittently active upgradient source. If this is the situation, then discrete occurrences of groundwater exhibiting elevated VOCs may continue to impact the site along the same downgradient trajectory along which the currently identified slug is migrating. If, however, the source of the upgradient contamination was deactivated and the current data represents the last of the contaminants to leave the source area, then the currently impacted wells should be restored to more typical background conditions as the contamination moves away from the area.

3. The presence of at least two chemically distinct plumes of VOCs and the occurrence of a sodium plume at the site indicate that the landfill is downgradient of several sources of contamination that are currently impacting background water quality. Other sporadically occurring VOCs associated with contaminants migrating through the western portion of the landfill during the post-closure baseline groundwater monitoring and RI include carbon tetrachloride, 4-methyl-2-pentanone, chlorobenzene, 1,4-dichlorobenzene and 1,2,3-trichloropropane.

4. As VOCs and other contaminants migrate downgradient, their concentrations in groundwater samples collected at the landfill will rise and fall accordingly. Therefore, what may appear to be a significant increase in contamination in a particular well may likely reflect the migration of contaminants through the site, as opposed to originating at the site. This is particularly relevant to VOCs and sodium, both of which have degraded background water quality at and in the vicinity of the landfill. The downgradient movement of contaminants from well MW-06D to well cluster MW-13 over a 2-year period provides an interpretive model from which apparently significant increases in VOC concentrations should be assessed.

5. By inhibiting the infiltration of precipitation, the landfill cap is expected to reduce the migration of leachate into the aquifer. This effect should initially be most notable in the shallow depths of the aquifer and will likely be reflected by reductions of iron, manganese and ammonia nitrogen concentrations in downgradient perimeter wells. However, if these constituents continue to enter the site from upgradient sources, the initial effects of the landfill cap may be obscured. Eventually, decreased concentrations of iron and manganese in intermediate and deep downgradient wells should also occur. Concentrations of ammonia nitrogen in distally downgradient groundwater may not be significantly improved by the landfill cap as nearby sanitary systems (cesspools) will continue to deliver ammonia nitrogen into the aquifer. Ultimately, the effectiveness of the landfill cap can only be interpreted relative to the concentrations and migration of contaminants in upgradient groundwater.

Section 8

8.0 RECOMMENDATIONS

Based on the results of groundwater sampling conducted during this Post-Closure Baseline Groundwater Sampling and in conjunction with the results of the remedial investigation (RI), the recommendations presented below are made for long-term monitoring and future evaluation of groundwater quality and comprise the long-term Post-Closure Groundwater Monitoring Program.

The focus of the monitoring program is to monitor the effectiveness of the landfill cap relative to its purpose of reducing the infiltration of landfill leachate into the Upper Glacial aquifer and to assess the migration off-site of contaminants associated with the landfill. Because significant VOC contamination has impacted groundwater at and downgradient of the landfill from off-site upgradient industrial sources, an important component of the monitoring program includes the monitoring of groundwater quality immediately upgradient of the landfill. Sampling of upgradient monitoring wells will allow for better differentiation of contaminants that are already present in background, upgradient groundwater relative to those originating at the landfill. Monitoring wells immediately downgradient of the landfill will also be monitored. Improvements in groundwater quality relative to the effectiveness of the landfill cap will be realized at the downgradient perimeter wells much earlier than the distally downgradient wells.

Table 8-1 identifies the monitoring wells that should be monitored as part of the Post-Closure Monitoring Program. These wells will be sampled for baseline and routine parameters. Baseline parameters include volatile organic compounds, inorganic constituents and leachate parameters. Routine parameters include inorganic constituents and leachate parameters. In each calendar year, sampling and analysis should be performed quarterly, once for baseline parameters and three times for routine parameters. The baseline sampling event should be rotated quarterly so that successive quarters will be sampled in successive years. As shown on Table 8-1, 23 monitoring wells sampling three groundwater zones will be monitored as part of the long term monitoring program. The table also identifies monitoring wells according to their locations relative to the landfill. Monitoring wells to be included in the monitoring program are depicted on Figure 8-1.

Table 8-1

**SONIA ROAD LANDFILL
POST-CLOSURE BASELINE GROUNDWATER QUALITY REPORT
MONITORING WELLS TO BE SAMPLED**

Distally Upgradient Wells	Upgradient Perimeter Wells	Downgradient Perimeter Wells
Shallow Upper Glacial Monitoring Wells		
MW-11S	MW-01S	MW-03S
MW-12S	MW-02S	MW-04S
		MW-05S
		MW-06S
Intermediate Upper Glacial Monitoring Wells		
MW-11I	MW-01I	MW-04I
MW-12I	MW-02I	MW-05I
	MW-07I	MW-06I
Deep Upper Glacial Monitoring Wells		
MW-11D	MW-01D	MW-04D
MW-12D	MW-02D	MW-05D
		MW-06D

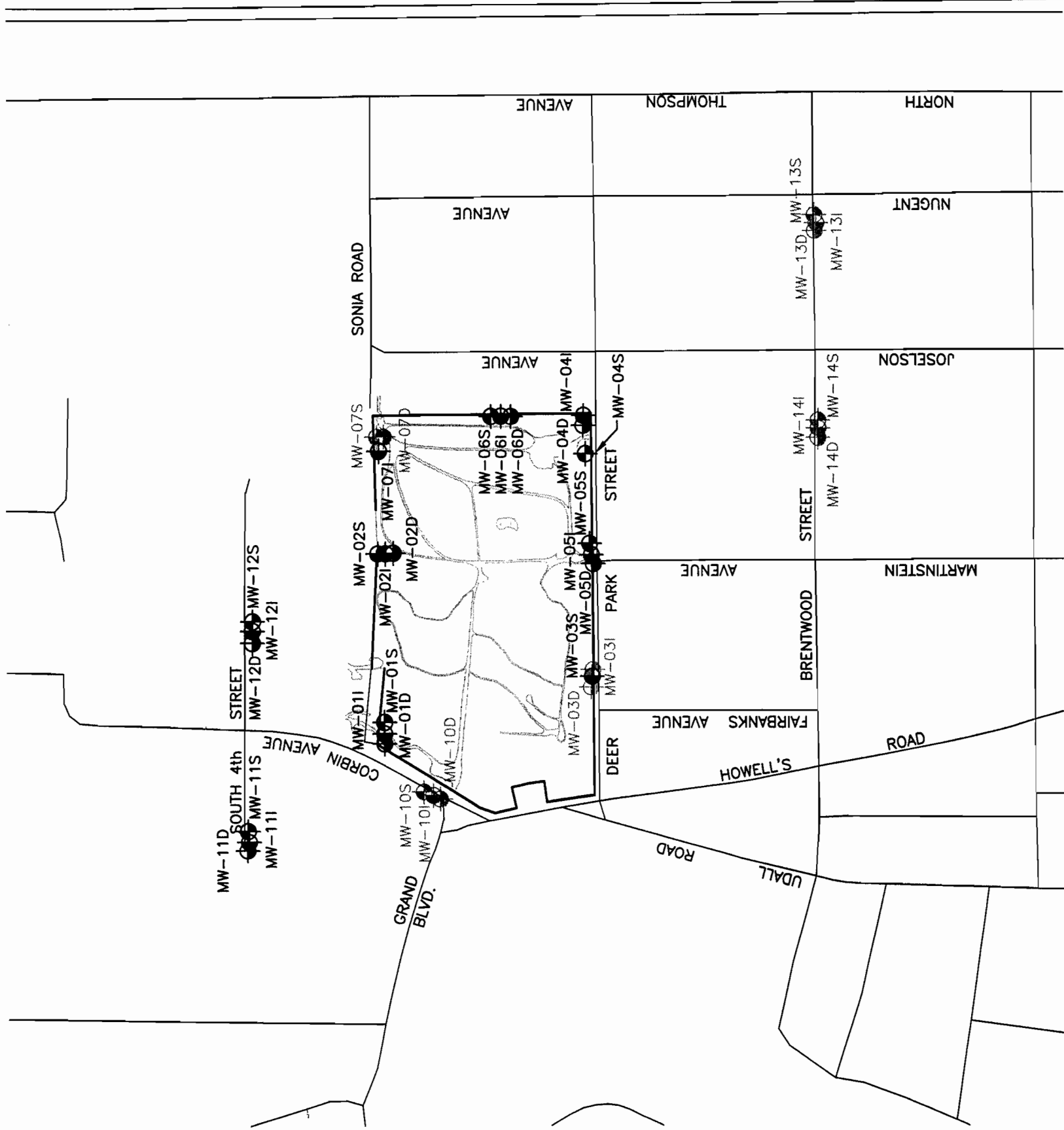
As part of the preparation of the Post-Closure Groundwater Monitoring Program annual report, all data collected as part of the monitoring program will be evaluated and recommendations for modifications in the frequency of sampling and number of wells to be sampled will be made.

In the event of significant increases above existing or background water quality levels for parameters included in the monitoring program and attributable to the landfill, a contingency water quality monitoring plan will be prepared pursuant to 6 NYCRR Part 360-2.11(c)(5)(ii)(f).



NOTE:

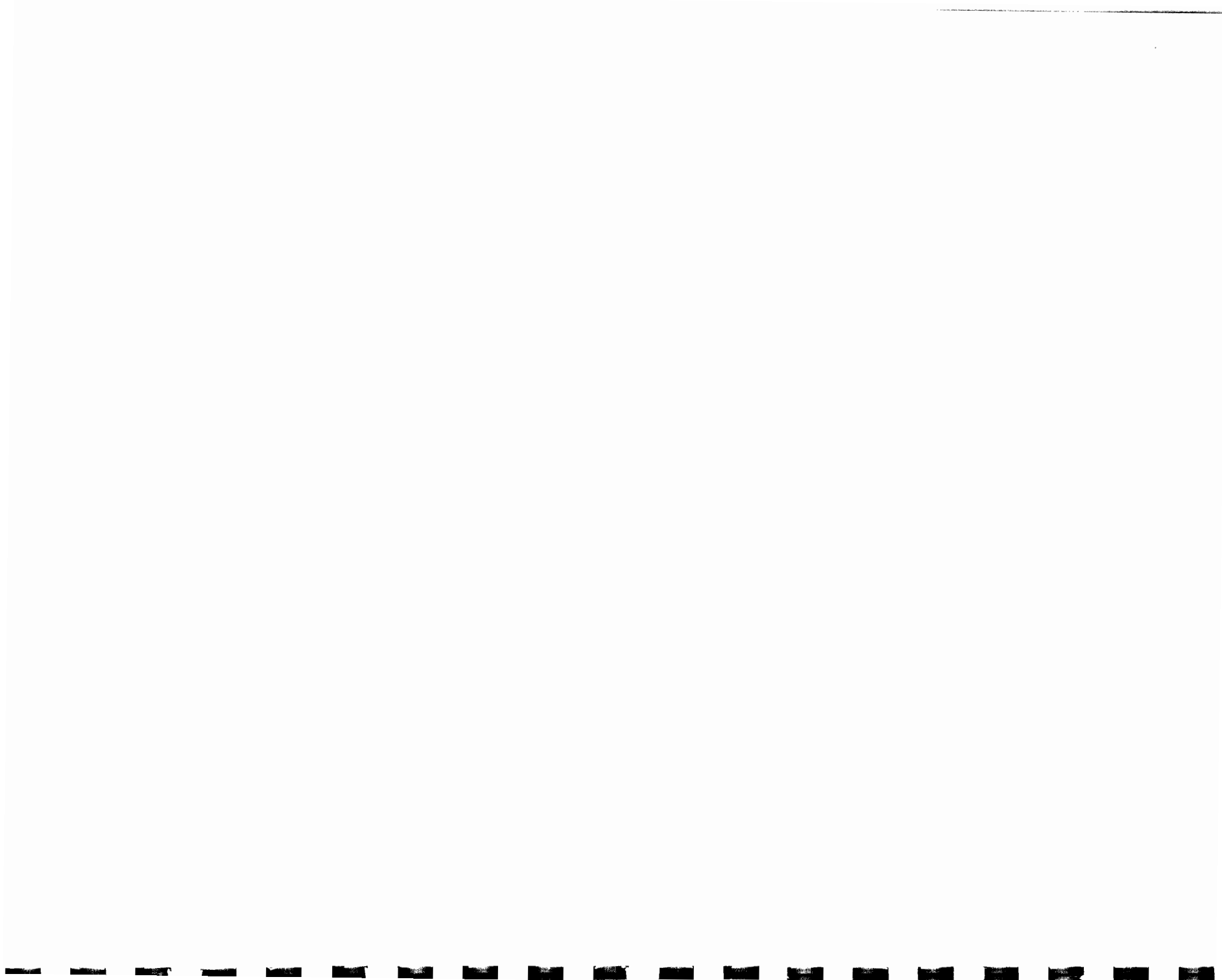
WELLS SHOWN IN BOLD (e.g. **MW-01D**)
TO BE SAMPLED.



SONIA ROAD LANDFILL
POST CLOSURE BASELINE GROUNDWATER QUALITY REPORT
SAMPLING AND ANALYSIS PLAN

Appendix A





APPENDIX A

**RECORD OF DECISION, SONIA ROAD LANDFILL, TOWN OF ISLIP
SITE NUMBER 1-52-013, JULY 1998**





Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision
Sonia Road Landfill
Town of Islip, Suffolk County
Site Number 1-52-013

July 1998

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Sonia Road Landfill Inactive Hazardous Waste Site Town of Islip, Nassau County, New York Site No. 152013

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Sonia Road Landfill inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Sonia Road Landfill Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Sonia Road Landfill and the criteria identified for evaluation of alternatives the NYSDEC has selected capping and landfill gas control. The components of the remedy are as follows:

- A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.
- Construction of a Part 360 landfill cap, featuring a geotextile layer, a 12" gas venting layer, geomembrane hydraulic barrier, geocomposite drainage layer, 24" barrier protection layer, and a 6" vegetative growth medium or 6" stone/recycled concrete layer.

- An active gas collection system consisting of gas collection wells around the perimeter and gas recovery wells within the interior of the landfill. Extracted gas will be treated using a flare, if necessary.
- Because the remedy results in untreated hazardous waste remaining at the site, a long term monitoring program will be instituted. This program will allow the effectiveness of the selected remedy to be monitored and will be a component of the operation and maintenance for the site. The monitoring program, which will monitor groundwater and landfill gas, will be developed in accordance with 6 NYCRR Part 360 regulations.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

Date

7/7/98


Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

TABLE OF CONTENTS

SECTION	PAGE
1: Site Description	4
2: Site History	4
2.1 Operational/Disposal History	4
2.2 Remedial History	4
3: Current Status	5
3.1 Summary of Remedial Investigation	5
3.2 Nature and Extent of Contamination	6
3.3 Ecological Assessment	7
3.4 Summary of Human Exposure Pathways	8
3.5 Summary of Environmental Exposure Pathways	9
4: Enforcement Status	9
5: Summary of Remediation Goals	9
6: Summary of the Evaluation of Alternatives	10
6.1 Description of Remedial Alternatives	10
6.2 Evaluation of Remedial Alternatives	12
7: Summary of the Selected Alternative	15
8: Highlights of Community Participation	16
Figures	
1. Site Location Map	<i>follows 16</i>
2. Volatile Organic Compounds in Monitoring Wells	<i>follows 16</i>
3. Cap Cross Section	<i>follows 16</i>
Tables	
1. Surface Soil Results Exceeding Soil Cleanup Objectives	<i>follows 16</i>
2. Nature and Extent of Contamination	17
3. Remedial Alternative Costs	18
Appendices	
A. Responsiveness Summary	A1
B. Administrative Record Index	B1

SECTION 1: SITE LOCATION AND DESCRIPTION

The Sonia Road Landfill is an inactive municipal solid waste landfill approximately 42 acres in size. The site is located in West Brentwood, in the Town of Islip, Suffolk County. As shown in Figure 1, the landfill is bordered on the south by Deer Park Street, on the west by Corbin Avenue, on the north by industrial properties and on the east by residential properties. The industrial area to the north includes properties which are also listed on the NYSDEC's registry of inactive hazardous waste sites.

Immediately to the southwest of the site along Udalls Road is the Brentwood West Middle School. The closest surface water is the headwater of Sampawams Creek located approximately 3,000 feet southwest of the landfill.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

Prior to 1965 - The site was a sand and gravel mining facility. Sand and gravel was excavated below the water table, which created a groundwater lake at the site.

1965 - 1977 - The Town of Islip operated the site as a municipal solid waste landfill, with the most active period of disposal occurring between 1965 and 1974. During most of its operational period, the landfill accepted all types of municipal solid waste, however during the last few years of operation, the landfill accepted only refuse, rubbish, demolition material and yard waste, particularly leaves. Also, in the early years of operation, the site was used for disposal of junk automobiles.

1973 - 1974 - The landfill may have received approximately four hundred cubic yards of hazardous materials from Hooker Chemical Corporation. These wastes reportedly consisted of gravel containing polyvinyl chloride and gravel saturated with trimellitate plasticizer, 2-ethylhexanol, and other alcohols.

2.2: Remedial History

1975 - A study by Holzmacher, McLendon and Murrell (H2M) was conducted which included three test borings within the landfill. The borings indicated the presence of 29 - 35 feet of refuse, of which 6 - 10 feet was below the water table. Refuse consisted of wood, roots, glass, plastic, metal, cardboard, concrete, household wastes, and general rubbish.

1979 - Suffolk County Department of Health Services installed 19 temporary groundwater exploration wells at various locations southeast and downgradient of the site. Based on groundwater samples tested for temperature and specific conductivity, a leachate plume was delineated and reported to extend a distance of 3,800 feet toward the southeast.

1980 - Sonia Road Landfill was listed on the NYSDEC's original registry of inactive hazardous waste sites, with a Class 2 designation. A Class 2 site represents a significant (though not imminent) threat to public health or the environment.

3.5 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures which may be presented by the site.

No environmental exposure pathways have been identified at this time. There are no surface waters or mapped wetlands on or immediately adjacent to the landfill property. The Sampawams Creek is an environmental resource in close proximity to the site, located approximately 3,000 feet southwest of the landfill. The Creek is fed by groundwater discharge as well as storm water management systems for the surrounding areas.

Current site surface water drainage is accomplished by infiltration and percolation into the waste mass with ultimate discharge to the groundwater. Groundwater flow direction from the landfill was determined to be in a southeasterly direction, away from the Sampawams Creek. Therefore, the surface water and sediment of the Sampawams Creek is not expected to be impacted by the landfill and consequently was not sampled as part of this study.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and the Town of Islip entered into a Consent Order on March 27, 1996. The Order obligates the Town to implement a full remedial program and allows reimbursement to the Town of up to 75 percent of the eligible remediation cost.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all Standards, Criteria, and Guidance (SCGs) and be protective of human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for the Sonia Road Landfill are:

- *Reduce, control, or eliminate to the extent practicable the contamination present within the soils/waste on site (generation of leachate within the fill mass).*
- *Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated soils on site.*
- *Eliminate the potential for direct human or animal contact with the contaminated soils on site.*
- *Mitigate the impacts of contaminated groundwater to the environment.*
- *Prevent, to the extent possible, migration of contaminants in the landfill to groundwater.*

■ *Control landfill gas emissions to levels that are protective of on-site and off-site receptors.*

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Sonia Road Landfill were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the report entitled "Final Feasibility Study Report", dated April 1998.

A summary of the detailed analysis follows. As used in the following text, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the remedy, procure contracts for design and construction or to negotiate with responsible parties for implementation of the remedy.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated soils and groundwater at the site.

Alternative 1 - No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Present Worth:

\$450,000

Capital Cost:

\$ 0

Annual O&M:

\$ 30,000

Time to Implement:

3 months

Alternative 2 - Shallow and Deep Groundwater Treatment, Landfill Gas Control and Capping

Alternative 2 would address remediation of all media, including waste, subsurface soil, landfill gas, leachate impacted groundwater, and VOC-impacted groundwater.

Waste beyond the property line of the landfill would be excavated and placed within the boundary of the site and a low permeability cap would be installed over the entire landfill. The cap would consist of the following (from bottom to top): a geotextile layer, a twelve inch gas venting layer, a 60-mil High Density Polyethylene (HDPE) geomembrane, geocomposite drainage layer, 24 inch barrier protection layer, and a 6 inch vegetative growth medium or 6 inch stone / recycled concrete layer. An illustration of this cap is provided as Figure 3. The cap would prevent precipitation from migrating through the landfill and mitigate the generation of leachate and further contamination of the groundwater.

Remediation of landfill gas would be accomplished by placement of 4-inch PVC perimeter gas collection wells around the landfill and recovery wells within the interior of the landfill. If necessary to meet

emission standards or reduce odors, the extracted gas would be treated using a flare. This gas control system would prevent landfill gas from migrating off-site.

Groundwater contaminated by landfill leachate and VOCs from an upgradient source would be extracted and treated via aeration, sand filtration, and ion exchange. The treated effluent would be discharged to the Sampawans Creek or the Southwest Sewer District (SWSD).

Monitoring of groundwater and landfill gas for a 30 year period would be performed to determine the effectiveness of the remediation systems.

Present Worth: \$18,600,000
Capital Cost: \$14,300,000
Annual O&M: \$400,000

Time to Implement: 12 months

Alternative 3 - Shallow Groundwater Treatment, Landfill Gas Control, and Capping

Alternative 3 is identical to Alternative 2 with the exception that the deep groundwater contaminated with VOCs would not be extracted and treated.

Present Worth: \$18,250,000
Capital Cost: \$13,950,000
Annual O&M: \$400,000

Time to Implement: 12 months

Alternative 4 - Landfill Gas Control and Capping

Alternative 4 addresses remediation of waste, subsurface soil and landfill gas, but does not address remediation of groundwater.

The same low permeability cap and landfill gas collection system as described in Alternative 2 would be implemented. In addition, the same long term monitoring program would be conducted.

Present Worth: \$12,400,000
Capital Cost: \$11,050,000
Annual O&M: \$115,000

Time to Implement: 12 months

Alternative 5 - Capping

Alternative 5 addresses only remediation of the waste and subsurface soil.

A low permeability cap with passive vents would be installed and the same long-term groundwater monitoring program described in Alternatives 2 through 4 would be conducted.

Present Worth:

\$10,950,000

Capital Cost:

\$10,050,000

Annual O&M:

\$ 115,000

Time to Implement:

12 months

6.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

One applicable criterion for landfill closure is a cap with a continuous single or double impermeable layer, as specified in 6 NYCRR Part 360. Because the no action alternative does not provide this, Alternative 1 does not comply with this criterion.

NYSDEC believes that groundwater standards would be met by a combination of a landfill cap and groundwater extraction and treatment (Alternatives 2 and 3). Alternative 2 would treat groundwater for those contaminants which exceed groundwater standards in both the shallow and deep zones. Alternative 3 treats only the groundwater impacted by landfill leachate, i.e., the shallow zone. The deeper groundwater contamination is not expected to impact public water supply wells downgradient and there are no users of private wells within a distance of approximately 1.5 miles downgradient.

It is anticipated that a Part 360 cap alone without groundwater extraction and treatment (Alternatives 4 and 5) would significantly reduce and ultimately prevent generation of landfill leachate and further contamination of the groundwater. Alternatives 4 and 5 would not treat contaminated groundwater. Air quality standards are expected to be met by those alternatives that provide active gas collection (Alternatives 2, 3, and 4).

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Human health is protected by elimination of the routes of exposure identified in Section 4.4 as producing unacceptable health risks. Therefore, alternatives that prevent ingestion of contaminated groundwater, dermal (skin) contact / incidental ingestion of surface soils, and inhalation of airborne contaminants in ambient and indoor air are considered to be protective.

Alternatives that provide active landfill gas control and capping (Alternatives 2, 3, and 4) would eliminate all routes of exposure with the exception of ingestion of groundwater. But, as mentioned earlier, the groundwater is not expected to impact human health since no residents are drinking the contaminated groundwater. Alternative 2, which would extract and treat contaminated groundwater in the shallow and deep zones, would be completely protective of human health and the environment.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives that provide for grading and capping the landfill will cause short term adverse impacts due to potential exposure to excavated wastes, contaminated runoff and airborne dusts and gases. Because the amount of waste regrading and time to implement is the same for the four capping options under consideration, short term impacts are similar for all alternatives.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. For each alternative wastes or treated residuals would remain on site after the selected remedy has been implemented. Therefore none of the alternatives is considered permanent and long term effectiveness is evaluated based on 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Alternatives which provide groundwater extraction and treatment of contaminated groundwater would provide the highest degree of long term effectiveness. Groundwater extraction and treatment techniques have been proven effective and reliable. All of the technologies associated with the alternatives that provide for capping the landfill have also been proven effective and are reliable.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site. Because the alternatives under consideration generally involve containment technologies (capping), they reduce the mobility of contaminants by reducing leachate generation and restricting its flow.

Alternatives that include a Part 360 cap provide the greatest reduction in leachate generation. Alternatives that include groundwater treatment (Alternatives 2 and 3) provide the greatest reduction in contaminant mobility and do provide some reduction in volume because contaminated groundwater is extracted and

treated. However, the amount of contaminants treated would be a small percentage of the total amount of waste at the site.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

Technically, the technologies under consideration are well developed and reliable. The greatest technical difficulties for cap construction would be meeting Part 360 requirements of a 4% final slope. Also, accommodating surface water runoff would present a moderate design challenge.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 3.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's responses to the concerns raised. In general the public comments received were supportive of the remedy. Several commentors disagreed with the proposed remedy, wanting to see groundwater contamination more actively addressed. DEC responded emphasizing the major conclusions of the RI/FS and providing commentors with information on remedial action planned for other area contaminant sources which contribute to this groundwater contamination more significantly than the Sonia Road Landfill. No change has been made to the proposed remedy in response to public comments.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC has selected Alternative 4: Landfill Gas Control and Capping as the remedy for the Sonia Road Landfill.

The selection of a Part 360 cap is based on the need to comply with applicable regulations. A Part 360 cap will also provide long term effectiveness by minimizing leachate generation and migration to groundwater, will actively collect and control landfill gas, and prevent any potential for contact with contaminated soils and waste material.

Although groundwater was found to be contaminated above standards, the selected remedy will not address treatment of this medium. The remedy will, however, prevent further groundwater contamination by landfill leachate, and groundwater monitoring will be continued. As discussed earlier, the groundwater is not considered a human exposure pathway of concern since the surrounding community is served by

public water; i.e., no one will drink the contaminated groundwater. Contaminants noted in the shallow zone and presumably derived from landfill leachate will be degraded and/or dissipated over time to background levels after capping. The VOC contamination in the deep zone is considered to be originating from upgradient sources. In response, the NYSDEC plans to conduct additional area-wide groundwater investigations upgradient of the landfill.

Conceptual Grading Plan: The Final Feasibility Study presented a conceptual grading plan that included top slopes of a 2% grade. Part 360 regulations specify a 4% final grade for recently deactivated landfills that may be subject to on-going settlement.

NYSDEC intends to grant a variance from the 4% grading requirement for a number of reasons. Among those are: a.) Given the age of the Sonia Road Landfill, most of the anticipated settlement has already occurred; b.) Considering the construction of the landfill (excavation below grade) and the existing topography, a 2% slope will require far less cutting, filling and shaping operations. Preliminary design calculations estimate that grading to a minimum slope of 4% throughout the site would require an additional 150,000 cubic yards of fill material; and c.) A 4% slope would significantly increase the height of the cap, up to 20 feet in certain locations, and change the visual aesthetics of the area.

NYSDEC will also consider allowing inert waste materials to be brought in from off site for grading purposes. Such materials include alternative grading materials (AGM), which include crushed and sorted road construction debris and inert demolition debris. Any such material will be carefully specified and monitored to ensure that putrescible materials, such as gypsum wallboard, and other hazardous materials are not mixed in. The final grading plan may include a combination of waste regrading and Alternate Grading Material.

NYSDEC believes that a variance from the 4% grading requirement will be desirable due to the above-mentioned reasons. The details of the variance and grading plan will be developed during remedial design.

Elements of the Selected Remedy: The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.
2. Construction of a Part 360 landfill cap, featuring a geotextile layer, a 12" gas venting layer, geomembrane hydraulic barrier, geocomposite drainage layer, 24" barrier protection layer, and a 6" vegetative growth medium or 6" stone/recycled concrete layer.
3. An active gas collection system consisting of gas collection wells around the perimeter and gas recovery wells within the interior of the landfill. Extracted gas will be treated using a flare, if necessary.
4. Because the remedy results in untreated hazardous waste remaining at the site, a long term monitoring program will be instituted. This program will allow the effectiveness of the selected remedy to be monitored and will be a component of the operation and maintenance for the site.

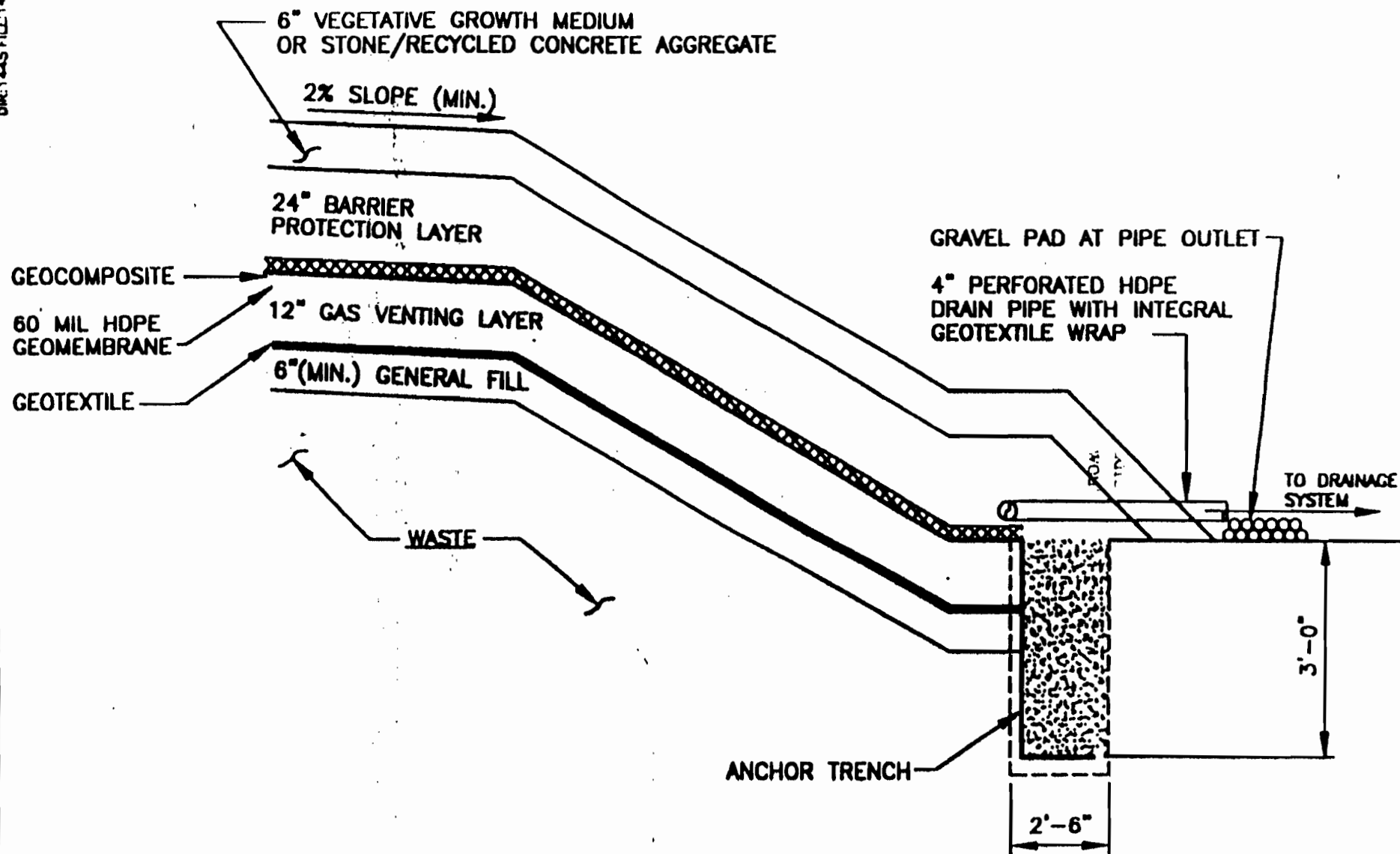
The monitoring program, which will monitor groundwater and landfill gas, will be developed in accordance with 6 NYCRR Part 360 regulations.

The estimated present worth cost to implement the remedy is \$12,400,000. The cost to construct the remedy is estimated to be \$11,050,000 and the estimated average annual operation and maintenance cost for 30 years is \$115,000.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and potential remedial alternatives. The following public participation activities were conducted for the site:

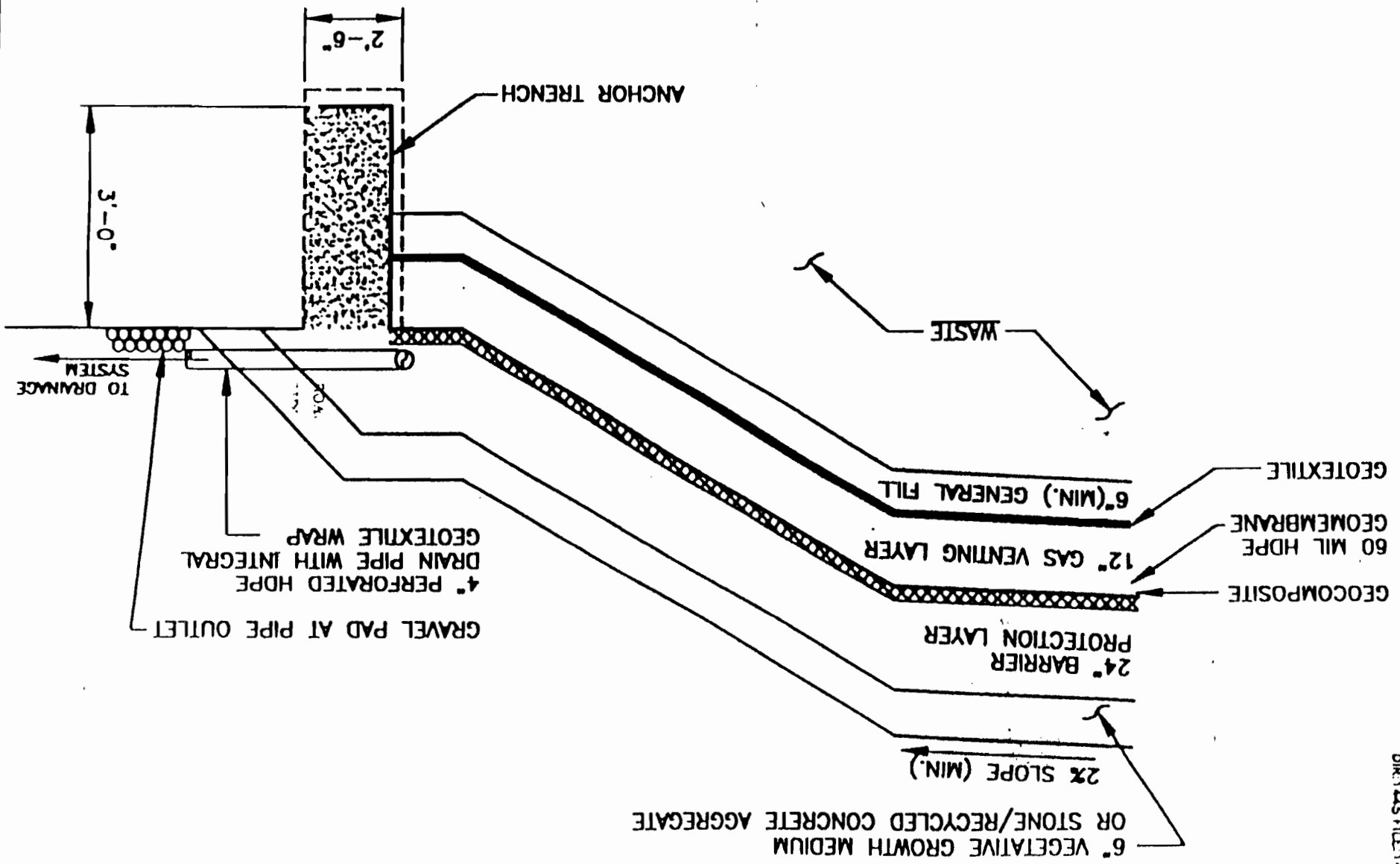
- A site-specific Citizen Participation Plan (CPP) was reviewed and approved by the Department.
- A local repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners; local political officials at various levels; local media; civic, environmental and economic groups; school and water district authorities; and other interested parties.
- A public informational meeting was held in March 1997 to present the Remedial Investigation/Feasibility Study (RI/FS) Work Plan.
- A second public meeting was held in March 1998 to present findings of the Remedial Investigation.
- In May 1998, the Proposed Remedial Action Plan (PRAP) was issued. As mandated by 6NYCRR Part 375, a minimum thirty-day comment period was held for the PRAP from May 11 to June 11, 1998. On May 20, a third public informational meeting was held to present and receive comment on the PRAP.
- In July 1998, a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.



SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

CAP CROSS-SECTION

SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
CAP CROSS-SECTION



CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS EXCEEDING GROUNDWATER STANDARDS IN MONITORING WELLS

SOMMA ROAD LANDFILL
REMEDIATION INVESTIGATION/FEASIBILITY STUDY

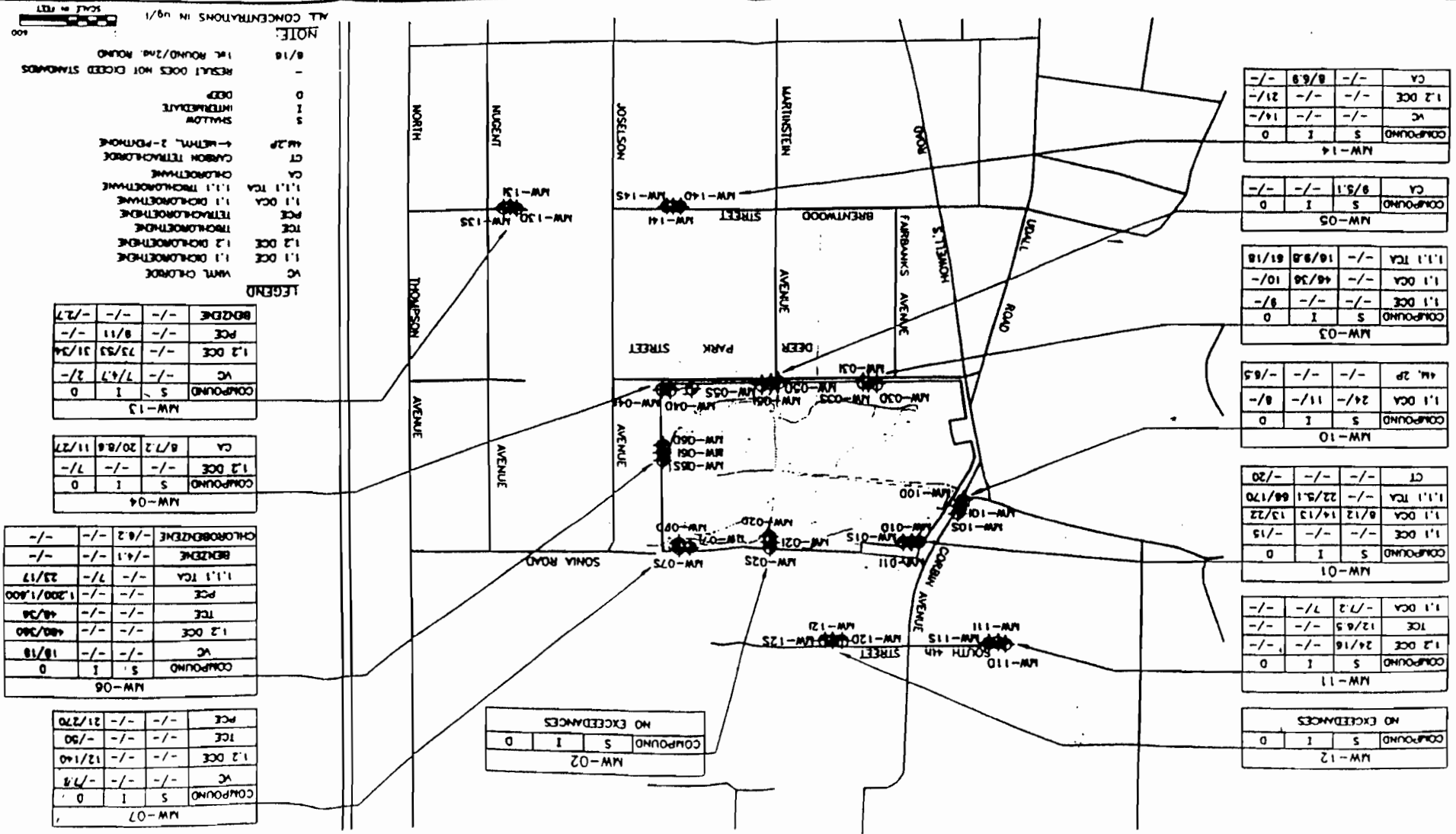


Table 1

SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
SURFACE SOIL RESULTS EXCEEDING SOIL CLEANUP OBJECTIVES

Constituent	NYSDEC Soil Cleanup Objectives	SS-01 Off-Site	SS-02 Off-Site	SS-03 Off-Site	SS-04 On-Site	SS-05 On-Site	SS-06 On-Site	SS-07 On-Site
Semivolatile Organics (units in ug/kg)								
Bis(2-ethylhexyl)phthalate	50000	78000	140 B	140 B	1100 B	ND	130 B	360 B
Benzo(a)pyrene	61	ND	62	140	120	ND	150	100
Dibenzo(a,h)anthracene	14	ND	ND	45	41	ND	29	ND
Metals (units in mg/kg)								
Arsenic	7.5	7.5	3.3	3.9	3.4	2.4	2.2	1.5 B
Beryllium	0.16	0.23 B	0.29 B	ND	0.29	ND	ND	ND
Copper	25	25.7	8.5	10.6	7	8.9	9.4	15.6
Iron	2000	8840	7620	9110	9620	6390	6380	5040
Mercury	0.10	0.31	ND	ND	ND	ND	ND	ND
Zinc	20	116	48.9	62.4	39.4	31.8	44.8	101

Notes:

Concentrations in bold were detected above NYSDEC Soil Cleanup Objectives.

ND: Not detected.

B: Concentrations above instrument detection limit but below contract required detection limit.

Table 2
Nature and Extent of Contamination

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppm)	FREQUENCY of EXCEEDING SCG ₁	SCG (ppm)
Groundwater	Volatile Organic Compounds (VOCs)	Tetrachloroethene	ND to 1.6	6 of 72	0.005
		1,2 Dichloroethene	ND to 0.480	11 of 72	0.005
		1,1,1- Trichloroethane	ND to 0.170	11 of 72	0.005
		Trichloroethene	ND to 0.050	5 of 72	0.005
		1,1 Dichloroethane	ND to 0.046	14 of 72	0.005
	Leachate Parameters	Ammonia	0.02 to 9.3	8 of 36	2
		Iron	33 to 66,000	27 of 36	0.3
		Manganese	6 to 36,100	21 of 36	0.3

Table 3
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
No Action	\$0	\$450,000	\$450,000
Shallow and Deep Groundwater Treatment, Landfill Gas Control, and Capping	\$14,300,000	\$400,000	\$18,600,000
Shallow Groundwater Treatment, Landfill Gas Control, and Capping	\$13,950,000	\$400,000	\$18,250,000
Landfill Gas Control and Capping	\$11,050,000	\$115,000	\$12,400,000
Capping	\$10,050,000	\$115,000	\$10,950,000

APPENDIX A RESPONSIVENESS SUMMARY

Sonia Road Landfill Proposed Remedial Action Plan Town of Islip, Suffolk County Site No. 152013

The Proposed Remedial Action Plan (PRAP) for the Sonia Road Landfill was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on May 11, 1998. This Plan outlined the preferred remedial measure proposed for the Sonia Road Landfill. The preferred remedy is a combination of a final landfill cover (cap), landfill gas migration control, and long-term monitoring of groundwater.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability, and a press notice was distributed to the media.

A public meeting was held on May 20, 1998 which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. This Responsiveness Summary records comments received at this meeting for inclusion in the Administrative Record for this site. Written comments were received from two individuals who attended the public meeting; their comment letters are included in the Administrative Record (see Index in Appendix B).

The public comment period for the PRAP officially closed on June 11, 1998. This Responsiveness Summary responds to all questions and comments raised at the May 20, 1998 public meeting and to the written comments received.

The following are the comments received at the public meeting, with the NYSDEC's responses:

COMMENT 1: Will the landfill cap extend over whole site?

RESPONSE 1: Yes - all 42 acres of the municipal waste.

COMMENT 2: Will final zoning be industrial? Is this compatible with the landfill cap?

RESPONSE 2: The site is zoned Industrial - "I1", and "I2" - suitable for outdoor equipment storage. The Town of Islip is reviewing an application to install a mobile phone transmission tower on the site also. Deed restrictions will not allow any activities which might damage the cap, and will require the approval of NYSDEC for any proposed new uses.

COMMENT 3: Will these deed restrictions only apply to the landfill property or to other properties as well?

RESPONSE 3: The deed restrictions can only apply to the Sonia Road Landfill property.

COMMENT 4: Why were no monitoring wells installed southwest of the site? There are private wells in that direction. You assume regional groundwater flow patterns apply, but the RI should have verified this true for this site.

RESPONSE 4: The data obtained from wells surrounding the site clearly show a south-southeasterly plume of landfill-related contamination, based on leachate indicators such as conductivity and alkalinity. This plume moves with the regional flow of groundwater toward the Great South Bay. A groundwater table mound can be created within a landfill, causing radial flow (flow in all directions away from the mound). Radial flow effects, however, would only be noticed in very close proximity (within a few hundred feet), and would not reach the homes with private wells to the southwest. The Sonia Road Landfill, furthermore, is not a large topographic mound and the groundwater table is relatively high. These factors diminish the water table mounding and the radial effect on groundwater flow from this site. Therefore, the regional flow pattern dominates in the off-site area of concern, including residential neighborhoods.

COMMENT 5: Surface drainage into Sampawams Creek from Corbin Avenue is a serious problem.

RESPONSE 5: The drainage into Sampawams Creek from Corbin Avenue comes from many sources in addition to the landfill. Because of its mostly flat topography, the landfill does not now greatly contribute to area-wide drainage into the Creek. Regardless, one of the major functions of the landfill cap will be to control and direct surface drainage. A properly designed and maintained cap will protect surface runoff from contact with wastes and minimize off-site drainage.

COMMENT 6: The selected remedy is not truly a "remedy". Wastes are not permanently destroyed.

RESPONSE 6: NYSDEC recognizes the cap is not a permanent treatment, but also that capping is the only feasible and the most protective way to address a large quantity of municipal waste that contains some hazardous waste. It should be kept in mind that any type of removal or treatment of this volume of waste could actually cause more environmental problems.

COMMENT 7: Are the contaminants in MW-11 caused by nearby industries?

RESPONSE 7: Yes. MW-11 results, especially for volatile organic compounds such as trichloroethylene, illustrate the impacts to groundwater from industrial sources upgradient (upstream in terms of groundwater flow) of the landfill.

COMMENT 8: The remedy is not a complete containment. You do not address groundwater already contaminated from plume in the past.

RESPONSE 8: While the remedy will prevent future impact to groundwater quality from the landfill, it does not actively address past contamination. As explained in the Feasibility Study, the landfill contaminants - primarily iron, manganese and ammonia - can be expected to naturally dissipate or degrade

before reaching any public or private wells or surface water. In any event, everyone in the plume area receives public water.

COMMENT 9: Industry should be held responsible for contaminant plumes also, not just sources. Plumes are the real problem.

RESPONSE 9: This point is well taken. NYSDEC, however, must consider due process and determining who is responsible when there are multiple sources impacting groundwater. The Town of Islip cannot be required to take care of a plume caused by others (namely, the VOC plume). NYSDEC must enforce cleanup source by source or if possible, get multiple polluters to work out cooperative agreements to address plumes with multiple sources. In a feasibility study, plume cleanup is always considered as well as actions to clean up the source.

Commentors are encouraged to keep in contact with NYSDEC regarding future actions for industrial sources north of the landfill. A plume investigation is planned for this year. Contact Mr. Daniel Eaton, Bureau of Hazardous Site Control, NYSDEC-DER, for more information (address: 50 Wolf Road, Albany, NY 12233-7010 or call toll-free (800) 342-9296).

COMMENT 10: The cost difference (\$8 million) between Alternative 2, which includes groundwater treatment, and 4 (the state's preferred alternative) is not that large - and \$18 million for Alternative 2 is comparable to a school budget. Why not spend the extra \$8 million to "do it right?"

RESPONSE 10: While these costs might not seem significant next to a Long Island school budget, they represent a significant percentage increase when comparing one alternative to another, versus the environmental and health benefits derived from that increased expenditure. NYSDEC must always consider the benefit from these limited monies, and the majority of the cost of the groundwater treatment alternatives would go toward removing iron and manganese - low-hazard contaminants - from groundwater.

COMMENT 11: You are influenced by location of site (NYSDEC shows favoritism toward certain communities).

RESPONSE 11: The record of NYSDEC's remedy choices throughout the state shows that remedies are developed and selected based on the hazards presented by the site and the potential for harm to communities. Objective factors are considered, not favoritism.

COMMENT 12: Was the private property that extends onto the landfill site investigated? The Town should condemn this property!

RESPONSE 12: The Town of Islip has been in contact with the property owner not about condemnation, but to keep the residents informed of progress of the landfill remedial program. The family receives public water, and the Town measured soil gas on their perimeter. The landfill cap and gas control system will be designed to be protective of this family.

COMMENT 13: In regard to the Town using "clean fill" (alternative grading materials to contour the landfill before capping), what is "clean fill"? How will these materials be screened and tested?

RESPONSE 13: "Clean fill" refers to uncontaminated soil or alternative materials such as stone, brick, or any demolition material that will not decompose and cause odors or excessive settlement. The Town must submit a written plan for use of any fill materials to NYSDEC for review. Minimum practices the NYSDEC will require will include a full-time monitor on the site during filling, documentation of the source of fill, and chemical screening and testing.

COMMENT 14: The State Superfund may run out by the year 2000. If this happens, how will the Town of Islip fund the remedy?

RESPONSE 14: The Town of Islip Engineer responded that the Town is making every effort to complete the project before that time. An aggressive design and construction schedule has been proposed to NYSDEC. The Town of Islip is under an Order on Consent to complete the site remedy regardless of the availability of State monies; if the Superfund were to run out, the Town would be obligated to raise money from other sources.

COMMENT 15: Are heavy metals such as arsenic associated with the landfill? What are the environmental and health impacts from these metals?

RESPONSE 15: The Remedial Investigation reports the more toxic heavy metals such as arsenic, lead, mercury and cadmium have not been detected at most well locations. Where detected, levels are below method detection limits and/or within limits of state groundwater quality and drinking water standards. Iron, manganese and sodium, in contrast, exceed groundwater standards at various locations, especially in the landfill plume zone. Standards for iron and manganese are based on taste, odor and the potential for laundry staining, pipe scaling and other nuisances. Sodium standards are based on dietary recommendations. All are naturally occurring in Long Island aquifers, though landfill leachate can cause them to be dissolved and move in groundwater as a plume.

COMMENT 16: Private wells on King Street (southwest of the landfill) have been impacted by high levels of manganese. This could have resulted from southwesterly plume movement from the landfill.

RESPONSE 16: The landfill is an unlikely source for the manganese in this area, since as explained in the response to Comment 4, regional groundwater flow carries the landfill plume to the southeast.

COMMENT 17: Public water supply wells have been shut down in the past due to landfill contamination.

RESPONSE 17: No area public wells have been shut down due to the landfill. Historically, a few wells have been shut down because of other problems, such as cesspool contaminants from surrounding houses and businesses.

COMMENT 18: NYSDEC has known about these plumes for a long time; why hasn't something been done sooner?

RESPONSE 18: As previously discussed, one reason the cleanup process is so time-consuming is the need to identify sources and compel responsible parties to perform source cleanups. The technical complexity of these plumes, and any potential solutions, add to the time needed to develop effective remedies. Plumes which present a more immediate health threat are dealt with quickly using State or federal Superfund monies.

Written Comments Received from Elsa Ford, June 11, 1998:

Remedial Investigation has not investigated the full extent of the plumes from the Sonia Landfill. This site was used for dumping since 1965 beginning with junked cars. NYSDEC reports site known to have received Hooker Chemical Company waste including vinyl chloride. Vinyl chloride found three-quarters of a mile south in 1982, but the full extent of that plume not plotted at that time or since to the point of zero. In 33 years the original Sonia plume has continued to move probably to the bay. While there might be some contaminant breakdown in movement, considerable VOCs persisted in the Servall plume just east of Sonia and could here. Heavy metals would be more likely to persist. Since the 1970s Islip Town's clam harvests have sharply fallen. The Sonia plume could be part of that problem, and if allowed to continue could well impact the Towns plans to reseed the bay with clams from the fish hatchery. Effect on clams could be early warning that canaries in the mines present for signs of human exposure to those swimming in the bay, etc. (Enclosed Newsday and Suffolk Life articles)

The Sonia contribution to the deep contamination plume cannot be ruled out, since it is an old site open to rainfall with refuse 35 feet deep. There need to be monitoring wells southwest of the landfill to determine specific water directions at the site rather than rely on estimates. This site borders on Long Island Hydrogeologic Zone I so that water can flow in more than one direction. A Suffolk County Water Authority report notes that the clay is not continuous; water may move around lenses, and that buried underground valleys allow the water to laterally enter the Magothy directly from glacial deposits (see enclosed report). More needs to be known of surface and groundwater connections. Depending on the time of year and rainfall, the water table can be at 7 feet or higher. People say Lake Street to the west often floods. The 1979 Phase I Sorenson Report notes that the surface water flows southwest except close to the Sampawams Creek where the land slopes creekward. Surface water drainage trends generally southwest toward the creek (report pages enclosed). Since the creek is not full all year water direction changes are indicated - this has implications for people with private wells in the area (King Street), the Sampawams Creek and the Guggenheim Lakes. Since the three homes on King Street have only recently been discovered, there may be other homes with private wells in the plume paths. Note that the King Street contamination is similar to Sonia contamination. At the public meeting background levels of iron and manganese were said to be high, but that was not the case in the 1971 Suffolk County Water Authority report (enclosed p. 25). There are also public wells in the plume paths that could be affected by drawing in contaminated water.

Community people reported cesspool truck dumping in Sonia. What tests for infectious organisms have been done?

The study has shown upgradient sources that need to be addressed, many of which are likely contributors of contamination to the plume. The NYSDEC has known about these problems for many years, but the plume continues. Addressing possible sources one at a time will only result in a circle of finger-pointing

with little remedy in sight. We must have a whole community environmental quality approach that deals with all of the matters together as in the New Cassel Industrial Area. It will take serious commitment of the NYSDEC, the NYS Department of Health, the United States Environmental Protection Agency, NYS Department of Law, Town of Islip and the people of the community working together to protect the health of the people in this long-impacted community.

RESPONSE: Refer to responses to previous comments. It is indeed likely that the landfill, over its period of operation (1965 - 1977) has released contamination to the aquifer that is not visible now, but has impacted the quality of groundwater. The feasible approach at the present time is to address the source (by capping the landfill) to prevent future contamination, and address potential users of groundwater at the points of use (through routine sampling of public supply wells, surveys and monitoring of private wells as appropriate). The RI did not include testing for organisms associated with septic waste because the hazardous waste remediation program focuses primarily on chemical contamination. These organisms are typically filtered out by movement of groundwater a sufficient distance through the soil and sand of an aquifer.

The flow direction of groundwater can reliably stated to be southeastward in the environs of the landfill. The hydrogeologic zone boundary mentioned lies approximately 3000 feet north of the landfill, and in any case is not a divide (where groundwater can flow in different directions) but a representation of how the aquifer is receiving or discharging water.

The more pressing environmental problem clearly is the VOC plume (or plumes) emanating from source(s) north of the landfill. People concerned about groundwater quality in the area are encouraged to keep in contact with NYSDEC regarding investigation and remedial action for this industrial area. It is true that for an effective plume cleanup, the Department must coordinate investigations of individual sources and keep in mind the whole area in any enforcement or remedial strategy.

Written Comments of John McHugh, June 10, 1998:

I am writing to object to the Proposed Remedial Action Plan at the Sonia Road Landfill Site, Islip, NY. Fact Sheet enclosed from May 20, 1998 Meeting ID No. 152013. Also enclosed is the report of groundwater sampling from August 1994.

I am also including parts of Divita and Bartilucci's report pages 3-23 and 3-24. Figure 3-1 and 4-3 speak for themselves. MW-8 well in the report is missing from 4-3. Also included is a hydrology report from the 1960s. Groundwater flow could parallel Sampawans Creek where there are a number of Suffolk County Water wells. One well field, the Harvest Lane well field, recently had carbon filters installed at a cost of millions of dollars to taxpayers.

Alternative 4 is not acceptable. Groundwater must be treated; our children and grandchildren must be protected.

RESPONSE: The Proposed Remedial Action Plan weighs the benefit, cost and feasibility of groundwater collection and treatment for Sonia Road Landfill. In view of the contaminants specific to the landfill, collection and treatment of groundwater would do little to protect public health or the environment. The State and County Departments of Health have determined that the selected remedy is

protective of public health including children. An effective remedy for the VOC contamination must focus on the sources north of the landfill. According to the Remedial Investigation Report, monitoring well cluster MW-8 was never installed because analysis of groundwater quality in the proposed location (the southwest corner of the landfill) showed very little contamination (see page 2-21).

APPENDIX B ADMINISTRATIVE RECORD INDEX

Sonia Road Landfill, Site No. 152013

July 1998

1. Letter from Elisa Ford to Kathleen McCue, New York State Department of Environmental Conservation (NYSDEC), June 11, 1998. Comments on the Proposed Remedial Action Plan for the Sonia Road Landfill.
2. Letter from John McHugh to Kathleen McCue, NYSDEC, June 10, 1998. Comments on the Proposed Remedial Action Plan for the Sonia Road Landfill.
3. Meeting Invitation/ Fact Sheet for the Public Information Meeting held on May 20, 1998, and the public comment period held from May 11, 1998 to June 11, 1998.
4. NYSDEC, April 1998. Proposed Remedial Action Plan for the Sonia Road Landfill, Site No. 152013.
5. Dvirka and Bartlucci Consulting Engineers for the Islip Resource Recovery Agency, April 1998. Feasibility Study Report for the Sonia Road Landfill, West Brentwood, New York.
6. _____, April 1998. Remedial Investigation Report. Three volumes: Report, Appendices A-R, and Appendix S.
7. _____, April 1998. Qualitative Risk Assessment.
8. _____, February 1997. Work Plan for the Sonia Road Landfill Remedial Investigation/ Feasibility Study. Four volumes:
Volume I: Work Plan
Volume II: Sampling/ Analysis Plan
Volume III: Health and Safety Plan (December 1996)
Volume IV: Citizen Participation Plan
9. Order on Consent Index No. W1-0741-95-11 between NYSDEC and the Town of Islip, executed March 29, 1996. Subject: Development and Implementation of a Remedial Program for the Sonia Road Landfill.
10. NYSDEC Division of Hazardous Waste Remediation, August 1994. Report for the Immediate Investigation Work Assignment: Groundwater Investigation of the Sonia Road Landfill.





APPENDIX B

EXTERNAL CHAINS OF CUSTODY FOR NOVEMBER/DECEMBER 2000 AND JANUARY/FEBRUARY 2001 SAMPLING ROUNDS

EXTERNAL CHAIN OF CUSTODY

[illegible]

H2M LABS, INC.

575 Broad Hollow Rd, Melville, NY 11747-5076

Tel: (516) 694-3040 Fax: (516) 420-8436

4731

EXTERNAL CHAIN OF CUSTODY

PROJECT NAME/NUMBER				CLIENT: <u>IRS</u>										H2M SDG NO:					
SAMPLERS: (signature)/Client				Sample Container Description	Total No. of Containers	ANALYSIS REQUESTED										NOTES:		Project Contact:	
DELIVERABLES:						ORGANIC													
TURNAROUND TIME:						VOA	BNA	Pest/PCB	Herbicides	Insecticides	Fungicides	Metals	CN	INORG.					
DATE	TIME	MATRIX	FIELD I.D.												LAB I.D. NO.	REMARKS:			
11/30	915	GW	MW-01S	9	2			2	2			1	1	1		NYSDEC Part 360			
11/30	1030	GW	MW-01E	9	2			2	2			1	1	1		Baseline Parameters			
11/30	1145	GW	MW-01D	9	2			2	2			1	1	1					
11/30	230	GW	MW-02S	9	2			2	2			1	1	1					
11/30	230	GW	MW-02S MS	9	2			2	2			1	1	1					
11/30	230	GW	MW-02S MSD	9	2			2	2			1	1	1					
11/30	-	AQ	TRIP BLANK #1	2	2											VOCs only			
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time	LABORATORY USE ONLY Discrepancies Between Sample Labels and COC Record? Y or N Explain: Samples were: 1. Shipped ___ or Hand Delivered ___ Airbill# ___ 2. Ambient or chilled 3. Received in good condition: Y or N 4. Properly preserved: Y or N 5. Samples returned to lab ___ Hrs from collection. COC Tape was: 1. Present on outer package: Y or N 2. Unbroken on outer package: Y or N 3. COC record present & complete upon sample receipt: Y or N							
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time								
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time								
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time								

H2M LABS, INC.

575 Broad Hollow Rd, Melville, NY 11747-5076

Tel: (516) 694-3040 Fax: (516) 420-8436

4735

EXTERNAL CHAIN OF CUSTODY

PROJECT NAME/NUMBER 50014 Rd Landfill DIB # 1594-II-F				CLIENT: IRS										H2M SDG NO:				NOTES: Project Contact: Keith Robins Phone Number: 516364-9890	
SAMPLERS: (signature)/Client Keith Robins / Town of Islip Resource Recovery Agency				Sample Container Description ↓ 400L Vial				250mL/50. H2SO4	1 Liter Plastic		250mL plastic - HNO3	1 Liter Plastic - HNO3	250mL plastic - NaOH						
DELIVERABLES: B5-900																			
TURNAROUND TIME: 21 DAYS				Total No. of Containers ↓ 9	ANALYSIS REQUESTED										LAB I.D. NO.		REMARKS:		
					ORGANIC					INORG.									
DATE	TIME	MATRIX	FIELD I.D.		VOA	BNA	Pes/PCB	WPC	WPC										
12/5	915	GW	MW-07S	9	2			2	2		1	1	1				NYSDEC Part 360 Base line Parameters		
12/5	1100	GW	MW-06D	9	2			2	2		1	1	1						
12/5	1200	GW	MW-06I	9	2			2	2		1	1	1						
12/5	200	GW	MW-06S	9	2			2	2		1	1	1						
12/5	—	AQ	Trp blank #3	2	2			—	—		—	—	—				VOCs only		
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time		LABORATORY USE ONLY Discrepancies Between Sample Labels and COC Record? Y or N Explain: _____ _____ _____ _____ _____ Samples were: 1. Shipped ___ or Hand Delivered ___ Airbill# _____ 2. Ambient or chilled 3. Received in good condition: Y or N 4. Properly preserved: Y or N 5. Samples returned to lab ___ Hrs from collection. COC Tape was: 1. Present on outer package: Y or N 2. Unbroken on outer package: Y or N 3. COC record present & complete upon sample receipt: Y or N							
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time									
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time									
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time									

EXTERNAL CHAIN OF CUSTODY

PROJECT NAME/NUMBER		SAMPLERS: (signature)/Client		DELIVERABLES:		TURNAROUND TIME:		DATE		TIME		MATRIX		FIELD I.D.		VOA		BNA		PCB		INORG.		ANALYSIS REQUESTED		LAB I.D. NO.		REMARKS:			
50114 Road Landfill		Keith Robbins / Town of Isip / Resource Recovery Agency		85-70D		21 Days		12/6		930		GW		MW-04I		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9		2		2		2		2		2		2		2	
12/6		1100		12/6		1200		12/6		230		GW		MW-04S		9															

H2M LABS, INC.

575 Broad Hollow Rd, Melville, NY 11747-5076

Tel: (516) 694-3040 Fax: (516) 420-8436

4627

EXTERNAL CHAIN OF CUSTODY

PROJECT NAME/NUMBER Sonia Road Landfill DIB Job# 1594-II-F				CLIENT: <u>IRS</u>										H2M SDG NO:					
SAMPLERS: (signature)/Client Keith Robins / Town of Islip Resource Recovery Agency				Sample Container Description 400ml vials 250ml glass H2SO4 1 liter plastic Handless (250ml plastic HNO3) 1 liter Plastic HNO3 250ml plastic NaOH										NOTES:				Project Contact: Keith Robins Phone Number: 516 364-9890	
DELIVERABLES: BS-70D				ANALYSIS REQUESTED															
TURNAROUND TIME: 21 DAYS				ORGANIC										INORG.					
				VOA BNA Pes/ PCB wet che wet che Handless Metal CN										LAB I.D. NO.				REMARKS:	
DATE	TIME	MATRIX	FIELD I.D.	Total No. of Containers	VOA	BNA	Pes/ PCB	wet che	wet che	Handless	Metal	CN	LAB I.D. NO.	REMARKS:					
12/7	1130	GW	MW-03D	9	2			2	2	1	1	1		{ NYSDEC Part 360 Baseline Parameters }					
12/7	1015	GW	MW-03I	9	2			2	2	1	1	1							
12/7	230	GW	MW-12S	9	2			2	2	1	1	1							
12/7	130	GW	MW-12I	9	2			2	2	1	1	1							
12/7	-	AA	TRIP BLANK #5	2	2			-	-	-	-	-		VOCs only					
Relinquished by: (Signature) Keith Robins				Date 12/7/00	Time 3:00	Received by: (Signature) Stephen Tarsis				Date 12/7/00	Time 3:00	LABORATORY USE ONLY							
Relinquished by: (Signature) Stephen Tarsis				Date 12/7/00	Time 15:20	Received by: (Signature) Angela P.				Date 12/7/00	Time 15:20	Discrepancies Between Sample Labels and COC Record? Y or N Explain:							
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time	Samples were: 1. Shipped ___ or Hand Delivered ___ Airbill# ___ 2. Ambient or chilled 3. Received in good condition: Y or N 4. Properly preserved: Y or N 5. Samples returned to lab ___ Hrs from collection. COC Tape was: 1. Present on outer package: Y or N 2. Unbroken on outer package: Y or N 3. COC record present & complete upon sample receipt: Y or N							
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time								

4743

EXTERNAL CHAIN OF CUSTODY

[illegible]

H2M LABS, INC.

575 Broad Hollow Rd, Melville, NY 11747-5076

Tel: (516) 694-3040 Fax: (516) 420-8436

1883

EXTERNAL CHAIN OF CUSTODY

CLIENT: IRRA

H2M SDG NO:

PROJECT NAME/NUMBER

SONIA ROAD LANDFILL

SAMPLERS: (signature)/Client

Kenneth P. Wang DAB
Signature

DELIVERABLES:

TURNAROUND TIME:

Sample Container Description

40 ml - unpreserved

250 ml - NaOH

250 ml - HNO₃

1 L Plastic - unpreserved

250 ml glass - H₂SO₄

1 L Plastic - HNO₃

NOTES:

PART 360
BASELINE
PARAMETERS

Project Contact:

RUBIN PETRECA
DAB

Phone Number:

(516) 364-9810

GR/Ken DELIVERABLES

Total No. of Containers

ANALYSIS REQUESTED

ORGANIC

INORG.

VOA

BNA

Pes/PCB

Metal

CN

LAB I.D. NO.

REMARKS:

DATE TIME MATRIX FIELD I.D.

2/7/01 - Water TB 020701

0920 MW-14D

1030 MW-11 I

1130 MW-11 D

1205 MW-11 S

1330 MW-12 D

Relinquished by: (Signature)

Signature

Date

Time

2/7/01 14:00

Received by: (Signature)

Signature

Date

Time

2/7/01 14:00

LABORATORY USE ONLY

Discrepancies Between Sample Labels and COC Record? Y or N Explain:

Samples were:

1. Shipped ☐ or Hand Delivered ☐ Airbill#
2. Ambient or chilled
3. Received in good condition: Y or N
4. Properly preserved: Y or N
5. Samples returned to lab Hrs from collection.

COC Tape was:

1. Present on outer package: Y or N
2. Unbroken on outer package: Y or N
3. COC record present & complete upon sample receipt: Y or N

WHITE COPY - ORIGINAL

YELLOW COPY - CLIENT

PINK COPY - LABORATORY

EXTERNAL CHAIN OF CUSTODY

Tel: (516) 694-3040 Fax: (516) 420-8436

H2M SDG NO:

SONIA ROAD LANDFILL

SAMPLERS: (signature)/Client

0 Kenneth R. Wend

DELIVERABLES:

TURNAROUND TIME:

DATE	TIME	MATRIX	FIELD I.D.
------	------	--------	------------

2101	-	WATER	TB	020101
------	---	-------	----	--------

1	0900	1	MW-06S
---	------	---	--------

0945	MW-06I
------	--------

	1200		MW-045
--	------	--	--------

1045	MW-04I
------	--------

↓	1125	↓	MW-04
---	------	---	-------

Relinquished by: (Signature)

Date _____

Time

Received by: (Signature)

Date _____

Time

LABORATORY USE ONLY

Discrepancies Between
Sample Labels and
COC Record? Y or N
Explain:

Samples were:

1. Shipped___ or Hand Delivered___ Airbill# _____
2. Ambient or chilled
3. Received in good condition: Y or N
4. Properly preserved: Y or N
5. Samples returned to lab _____ Hrs from collection.

COC Tape was:

1. Present on outer package: Y or N
2. Unbroken on outer package: Y or N
3. COC record present & complete upon sample receipt:
Y or N

WHITE COPY - ORIGINAL

YELLOW COPY - CLIENT

PINK COPY - LABORATORY

1887

EXTERNAL CHAIN OF CUSTODY

[illegible]

Tel: (516) 694-3040 Fax: (516) 420-8436

EXTERNAL CHAIN OF CUSTODY

LINK COPY - LABORATORY

EXTERNAL CHAIN OF CUSTODY

1877.

Tel: (516) 694-3040 Fax: (516) 420-8436		CLIENT: 1R2A/D46		H2M SDG NO:	
PROJECT NAME/NUMBER SONIA RIVER LANDFILL		SAMPLES: (signature)/Client Renee O. Libby		DELIVERABLES:	
TURNAROUND TIME:		ANALYSIS REQUESTED		NOTES: Part 360 Parameters GHS/Key Deliverables	
DATE		TIME		MATRIX	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
11/29/01		-		W	
11/29/01		TRIP BLANK 012901		2	
DATE		TIME		FIELD I.D.	
11/29/01		1545		W	
1					



CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

Page 1 of 1

Contact Person <u>ROBBIN PETROLA</u> Company <u>DURKA & BARTOLUCCI CONSULTING ENGINEERS</u> Address <u>330 CRESSWICK PARK DR</u> City <u>WILDBURY</u> State <u>IN</u> Zip <u>47797</u> Phone <u>(516) 364-9890</u> FAX <u>(516) 364-9415</u> Collected By: Signature <u>Kenneth F. Werny / DAB</u>	Project info: P.O. # _____ Project # <u>DAB 159411-F</u> Project Name <u>SONIA ROAD LANDFILL</u>	Turn Around Time: ☒ Normal ☐ Rush _____ Specify _____
--	---	--

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum		
				Initial	Final	Receipt
	COMBINED LANDFILL GAS SAMPLE	2/12/01 1245	EPA TO-12 (NON-METHANE ORGANIC COMPOUNDS) EPA TO-14 (VOLATILE ORGANIC COMPOUNDS)	-30	-5.5	

Relinquished By: (Signature) <u>Kenneth F. Werny</u> Date/Time <u>2/12/01</u> Relinquished By: (Signature) _____ Date/Time _____ Relinquished By: (Signature) _____ Date/Time _____	Received By: (Signature) <u>[Signature]</u> Date/Time <u>2/12/01</u> Received By: (Signature) _____ Date/Time _____ Received By: (Signature) _____ Date/Time _____	Notes: <u>CANISTER # 09407</u> <u>BILL TO H2M LABORATORIES</u>
---	--	---

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
						Yes No None	

EXTERNAL CHAIN OF CUSTODY

H2M SDG NO:

CLIENT:

[illegible]

Tel: (516) 694-3040 Fax: (516) 420-8436

1882

EXTERNAL CHAIN OF CUSTODY

Tel: (516) 694-3040 Fax: (516) 420-8436				CLIENT: IRRA				H2M SDG NO:								
PROJECT NAME/NUMBER SONIA ROAD LANDFILL				Sample Container Description ↓ 40 ml - unpreserved 250 ml - NaOH 250 ml - HNO₃ 1 L Plastic - unpreserved 250 ml glass - H₂SO₄ 1 L Plastic - HNO₃ ANALYSIS REQUESTED ORGANIC VOA BNA Pest/PCB INORG. Metal CN				NOTES: PART 360 BASELINE PARAMETERS GIS/Key DELIVERABLES				Project Contact: RUBIN PETRELA D&B Phone Number: (516) 364 9990				
SAMPLERS: (signature)/Client Samuel P. Wang / D&B Stephen T. Jones																
DELIVERABLES:																
TURNAROUND TIME:																
DATE	TIME	MATRIX	FIELD I.D.	Total No. of Containers ↓	VOA	BNA	Pest/PCB								LAB I.D. NO.	REMARKS:
2/6/01	0930	WATER	MW-13S	9	2			1	1	2	2	1				
	1010		MW-13I	9	2			1	1	2	2	1				
	1050		MW-13D	9	2			1	1	2	2	1				
	-		TB 020601	2	2											
	1200		MW-14S	9	2			1	1	2	2	1				
	1240		MW-14I	9	2			1	1	2	2	1				
Relinquished by: (Signature) Stephen T. Jones				Date 2/6/01	Time 1350	Received by: (Signature) [Signature]				Date 2/6/01	Time 13:50	LABORATORY USE ONLY				
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time	Discrepancies Between Sample Labels and COC Record? Y or N Explain:				
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time	Samples were: 1. Shipped ___ or Hand Delivered ___ Airbill# ___ 2. Ambient or chilled 3. Received in good condition: Y or N 4. Properly preserved: Y or N 5. Samples returned to lab ___ Hrs from collection. COC Tape was: 1. Present on outer package: Y or N 2. Unbroken on outer package: Y or N 3. COC record present & complete upon sample receipt: Y or N				
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time					

Appendix C





APPENDIX C

GROUNDWATER MONITORING WELL RESULTS FOR VOLATILE ORGANIC COMPOUNDS, INORGANIC CONSTITUENTS AND LEACHATE PARAMETERS FROM 1998 REMEDIAL INVESTIGATION REPORT

Table C-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	MW-01D	MW-01D	MW-01D	MW-01D	MW-01D	DATE	Sum of Constituents
Vinyl chloride	(ug/l)	2	0.6 U	10.0 U	0.6 U	10.0 U	0.6 U	10.0 U	0.6 U	10/24/1997	8.00
Chloroethane	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	01/28/1998	18.10
Methylene chloride	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10/24/1997	38.00
Acetone	(ug/l)	50	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	01/28/1998	18.10
1,1-Dichloroethene	(ug/l)	5	[5] J	[15.0]	2 J	[14]	[13.0]	[8] J	0.6 U	10/24/1997	8.00
1,1-Dichloroethane	(ug/l)	5	[13]	[22.0]	[14]	[13.0]	[8] J	0.2 U	0.2 U	01/28/1998	18.10
Chloroform	(ug/l)	7	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	10/24/1997	38.00
2-Butanone	(ug/l)	50	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	01/28/1998	18.10
1,1,1-Trichloroethane	(ug/l)	5	[66]	[170.0]	[22]	[5.1] J	0.6 U	0.4 U	0.4 U	10/24/1997	38.00
Carbon tetrachloride	(ug/l)	5	0.4 U	[20.0]	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	01/28/1998	18.10
Trichloroethene	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10/24/1997	38.00
Benzene	(ug/l)	1.0	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	01/28/1998	18.10
4-Methyl-2-pentanone	(ug/l)	5	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	10/24/1997	38.00
2-Hexanone	(ug/l)	50	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	01/28/1998	18.10
Tetrachloroethene	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10/24/1997	38.00
1,1,2,2-Tetrachloroethane	(ug/l)	5	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U	01/28/1998	18.10
Toluene	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10/24/1997	38.00
Chlorobenzene	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	01/28/1998	18.10
1,2-Dichloroethene	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U	10/24/1997	38.00
Sum of Constituents	(ug/l)		84.00	227.00	38.00	18.10	8.00				

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table C-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

Page: 2 of 11
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-01S MW-01S 01/28/1998	MW-03D MW-03D 10/30/1997	MW-03D MW-03D 02/02/1998	MW-03I MW-03I 10/30/1997	MW-03I MW-03I 02/02/1998
Vinyl chloride	(ug/l)	2	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U
Chloroethane	(ug/l)	5	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U
Methylene chloride	(ug/l)	5	10.0 U	1.40 U	2.5 J	1.40 U	10.0 U
Acetone	(ug/l)	50	10.0 U	3.40 U	10.0 U	3.40 U	10.0 U
1,1-Dichloroethene	(ug/l)	5	10.0 U	[9] J	2.9 J	[5] J	3.6 J
1,1-Dichloroethane	(ug/l)	5	[12.0]	[10] J	3.5 J	[46]	[36.0]
Chloroform	(ug/l)	7	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U
2-Butanone	(ug/l)	50	10.0 U	2.20 U	10.0 U	2.20 U	10.0 U
1,1,1-Trichloroethane	(ug/l)	5	10.0 U	[61]	[18.0]	[12]	[9.8] J
Carbon tetrachloride	(ug/l)	5	10.0 U	1.80 U	3.0 J	1.80 U	10.0 U
Trichloroethene	(ug/l)	5	10.0 U	1 J	10.0 U	3 J	3.0 J
Benzene	(ug/l)	1.0	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U
4-Methyl-2-pentanone	(ug/l)	5	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U
2-Hexanone	(ug/l)	50	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U
Tetrachloroethene	(ug/l)	5	10.0 U	1.40 U	2.0 J	1.40 U	10.0 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10.0 U	2.20 U	10.0 U	2.20 U	10.0 U
Toluene	(ug/l)	5	10.0 U	1.20 U	10.0 U	1.20 U	10.0 U
Chlorobenzene	(ug/l)	5	10.0 U	1.40 U	10.0 U	1.40 U	10.0 U
1,2-Dichloroethene	(ug/l)	5	10.0 U	2.60 U	10.0 U	2.60 U	10.0 U
Sum of Constituents	(ug/l)		12.00	81.00	31.90	66.00	52.40

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table C-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT		SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE				
		SAMPLE ID								
Vinyl chloride	(ug/l)	2		1.40 U	0.6 U	10/28/1997	MW-04D	01/28/1998	MW-04I	01/28/1998
Chloroethane	(ug/l)	5		4 J	[11]	10/28/1997	MW-04D	01/28/1998	MW-04I	01/28/1998
Methylene chloride	(ug/l)	5		1.40 U	0.4 U	10/30/1997	MW-03S	10/29/1997	MW-04I	10/28/1998
Acetone	(ug/l)	50		3.40 U	0.4 U					
1,1-Dichloroethene	(ug/l)	5		1.40 U	0.6 U					
1,1-Dichloroethane	(ug/l)	5		1.20 U	0.4 U					
Chloroform	(ug/l)	7		1.40 U	0.2 U					
2-Butanone	(ug/l)	50		2.20 U	0.2 U					
1,1,1-Trichloroethane	(ug/l)	5		1.80 U	0.6 U					
Carbon tetrachloride	(ug/l)	5		1.80 U	0.4 U					
Trichloroethene	(ug/l)	5		1.40 U	0.4 U					
Benzene	(ug/l)	1.0		1.40 U	0.4 U					
4-Methyl-2-pentanone	(ug/l)	5		1.40 U	0.2 U					
2-Hexanone	(ug/l)	50		1.40 U	0.2 U					
Tetrachloroethene	(ug/l)	5		1.40 U	4 J					
1,1,2,2-Tetrachloroethane	(ug/l)	5		2.20 U	0.2 U					
Toluene	(ug/l)	5		1.20 U	0.4 U					
Chlorobenzene	(ug/l)	5		1.40 U	1 J					
1,2-Dichloroethene	(ug/l)	5		2.60 U	[7] J					
Sum of Constituents	(ug/l)			4.00	23.00					
					32.50					
					29.00					
					8.60					

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table C-1

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std/ Guidelines	MW-04S MW-04S 10/29/1997	MW-04S MW-04S 02/02/1998	MW-05D MW-05D 10/29/1997	MW-05D MW-05D 02/03/1998	MW-05I MW-05I 10/29/1997
Vinyl chloride	(ug/l)	2	0.6 U	10.0 U	0.6 U	10.0 U	0.6 U
Chloroethane	(ug/l)	5	[8] J	[7.2] J	0.4 U	10.0 U	0.4 U
Methylene chloride	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U
Acetone	(ug/l)	50	0.4 U	3.4 JB	0.4 U	10.0 U	0.4 U
1,1-Dichloroethene	(ug/l)	5	0.6 U	10.0 U	0.6 U	10.0 U	0.6 U
1,1-Dichloroethane	(ug/l)	5	0.4 U	10.0 U	1 J	10.0 U	0.4 U
Chloroform	(ug/l)	7	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U
2-Butanone	(ug/l)	50	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U
1,1,1-Trichloroethane	(ug/l)	5	0.6 U	10.0 U	0.6 U	10.0 U	0.6 U
Carbon tetrachloride	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U
Trichloroethene	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	4 J
Benzene	(ug/l)	1.0	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U
4-Methyl-2-pentanone	(ug/l)	5	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U
2-Hexanone	(ug/l)	50	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U
Tetrachloroethene	(ug/l)	5	0.4 U	10.0 U	3 J	10.0 U	0.4 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	0.2 U	10.0 U	0.2 U	10.0 U	0.2 U
Toluene	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	0.4 U
Chlorobenzene	(ug/l)	5	4 J	3.0 J	2 J	3.9 J	0.4 U
1,2-Dichloroethene	(ug/l)	5	0.4 U	10.0 U	0.4 U	10.0 U	4 J
Sum of Constituents	(ug/l)		12.00	13.60	6.00	3.90	8.00

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U, J, B
NA = Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	02/02/1998	MW-051	02/03/1998	MW-055	02/03/1998	MW-055	10/28/1997	MW-06D	01/28/1998	MW-06D
DATE	SAMPLE ID	Stds/Guidelines											
Vinyl chloride	(ug/l)	2	10.0 U	0.6 U	10.0 U	[19]	[19.0]	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
Chloroethane	(ug/l)	5	10.0 U	[9] J	[5.1] J	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
Methylene chloride	(ug/l)	5	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
Acetone	(ug/l)	50	3.5 JB	0.4 U	10.0 U	0.4 U	10.0 U	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
1,1-Dichloroethene	(ug/l)	5	10.0 U	0.6 U	10.0 U	4 J	10.0 U	10.0 U	4 J	10.0 U	10.0 U	10.0 U	10.0 U
1,1-Dichloroethane	(ug/l)	5	10.0 U	0.4 U	10.0 U	4 J	10.0 U	10.0 U	4 J	10.0 U	10.0 U	10.0 U	10.0 U
Chloroform	(ug/l)	7	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	10.0 U	0.2 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Butanone	(ug/l)	50	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	10.0 U	0.2 U	10.0 U	10.0 U	10.0 U	10.0 U
1,1,1-Trichloroethane	(ug/l)	5	10.0 U	0.6 U	10.0 U	[23]	[17.0]	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
Carbon tetrachloride	(ug/l)	5	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
Trichloroethene	(ug/l)	5	2.2 J	0.4 U	10.0 U	[45]	[36.0]	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzene	(ug/l)	1.0	10.0 U	0.4 U	10.0 U	0.4 U	10.0 U	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
4-Methyl-2-pentanone	(ug/l)	5	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	10.0 U	0.2 U	10.0 U	10.0 U	10.0 U	10.0 U
2-Hexanone	(ug/l)	50	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	10.0 U	0.2 U	10.0 U	10.0 U	10.0 U	10.0 U
Tetrachloroethene	(ug/l)	5	10.0 U	0.4 U	10.0 U	[1200] D	[1600.0] E	10.0 U	0.2 U	10.0 U	10.0 U	10.0 U	10.0 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10.0 U	0.2 U	10.0 U	0.2 U	10.0 U	10.0 U	0.2 U	10.0 U	10.0 U	10.0 U	10.0 U
Toluene	(ug/l)	5	10.0 U	0.4 U	10.0 U	1 J	10.0 U	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
Chlorobenzene	(ug/l)	5	10.0 U	[5] J	2.4 J	0.4 U	10.0 U	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
1,2-Dichloroethene	(ug/l)	5	4.2 J	0.4 U	10.0 U	[480] D	[360.0] E	10.0 U	0.4 U	10.0 U	10.0 U	10.0 U	10.0 U
Sum of Constituents	(ug/l)		9.90	14.00	7.50	1776.00	2032.00						

U: Analyzed for but not detected
[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U, J, B, D, E NA=Not analyzed

Table C-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

Page: 6 of 11
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-06I MW-06I 10/28/1997	MW-06S MW-06S 10/28/1997	MW-06S MW-06S 01/28/1998	MW-07D MW-07D 10/27/1997	MW-07D MW-07D 01/28/1998
Vinyl chloride	(ug/l)	2	0.6 U	0.6 U	10.0 U	1 J	[7.7] J
Chloroethane	(ug/l)	5	0.4 U	1 J	10.0 U	0.4 U	10.0 U
Methylene chloride	(ug/l)	5	0.4 U	0.4 U	10.0 U	0.4 U	10.0 U
Acetone	(ug/l)	50	0.4 U	0.4 U	10.0 U	0.4 U	10.0 U
1,1-Dichloroethene	(ug/l)	5	0.6 U	0.6 U	10.0 U	0.6 U	10.0 U
1,1-Dichloroethane	(ug/l)	5	[5] J	0.4 U	10.0 U	0.4 U	10.0 U
Chloroform	(ug/l)	7	0.2 U	0.2 U	10.0 U	0.2 U	10.0 U
2-Butanone	(ug/l)	50	0.2 U	0.2 U	10.0 U	0.2 U	10.0 U
1,1,1-Trichloroethane	(ug/l)	5	4 J	0.6 U	10.0 U	0.6 U	10.0 U
Carbon tetrachloride	(ug/l)	5	0.4 U	0.4 U	10.0 U	0.4 U	10.0 U
Trichloroethene	(ug/l)	5	0.4 U	0.4 U	10.0 U	3 J	[50.0]
Benzene	(ug/l)	1.0	0.4 U	[4] J	[4.1] J	0.4 U	10.0 U
4-Methyl-2-pentanone	(ug/l)	5	0.2 U	0.2 U	10.0 U	0.2 U	10.0 U
2-Hexanone	(ug/l)	50	0.2 U	0.2 U	10.0 U	0.2 U	10.0 U
Tetrachloroethene	(ug/l)	5	3 J	0.4 U	10.0 U	[21]	[270.0] E
1,1,2,2-Tetrachloroethane	(ug/l)	5	0.2 U	0.2 U	10.0 U	0.2 U	10.0 U
Toluene	(ug/l)	5	0.4 U	0.4 U	10.0 U	1 J	10.0 U
Chlorobenzene	(ug/l)	5	0.4 U	4 J	[6.2] J	0.4 U	10.0 U
1,2-Dichloroethene	(ug/l)	5	0.4 U	0.4 U	10.0 U	[12]	[140.0]
Sum of Constituents	(ug/l)		12.00	9.00	10.30	38.00	467.70

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J, E
NA=Not analyzed

Table C-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT		SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE	Vinyl chloride	Chloroethane	Methylene chloride	Acetone	1,1-Dichloroethene	1,1-Dichloroethane	Chloroform	2-Butanone	1,1,1-Trichloroethane	Carbon tetrachloride	Trichloroethene	Benzene	4-Methyl-2-pentanone	2-Hexanone	Tetrachloroethene	1,1,2,2-Tetrachloroethane	Toluene	Chlorobenzene	1,2-Dichloroethene	Sum of Constituents	
	MW-10D	MW-10D	MW-10D	MW-10D	MW-10D	10/30/1997	1.40 U	1.40 U	1.40 U	3.40 U	1.40 U	1.40 U	1.40 U	2.20 U	3 J	1.80 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	2.20 U	1.20 U	1.40 U	2.60 U	11.00
	MW-10D	MW-10D	MW-10D	MW-10D	MW-10D	02/02/1998	10.0 U	10.0 U	10.0 U	9.6 JB	10.0 U	10.0 U	10.0 U	7.8 J	10.0 U	1.80 U	1.40 U	1.40 U	10.0 U	1.40 U	1.40 U	10.0 U	3.4 J	10.0 U	10.0 U	10.0 U	39.80
	MW-10I	MW-10I	MW-10I	MW-10I	MW-10I	10/30/1997	1.40 U	1.40 U	1.40 U	3.40 U	1.40 U	1.40 U	1.40 U	2.20 U	1.80 U	1.80 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	2.20 U	1.20 U	1.40 U	2.60 U	11.00
	MW-10I	MW-10I	MW-10I	MW-10I	MW-10I	02/02/1998	10.0 U	10.0 U	10.0 U	4.8 J	1.40 U	1.40 U	1.40 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	7.60
	MW-10S	MW-10S	MW-10S	MW-10S	MW-10S	10/30/1997	1.40 U	2 J	1.40 U	3.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.80 U	1.80 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	1.40 U	2.20 U	1.20 U	1.40 U	2.60 U	26.00

U: Analyzed for but not detected
[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U, J, B
NA = Not analyzed

Table C-1

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-10S MW-10S 02/02/1998	MW-11D MW-11D 10/31/1997	MW-11I MW-11I 10/31/1997	MW-11I MW-11I 01/28/1998	MW-11S MW-11S 10/31/1997
Vinyl chloride	(ug/l)	2	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
Chloroethane	(ug/l)	5	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
Methylene chloride	(ug/l)	5	2.1 J	1.40 U	1.40 U	10.0 U	1.40 U
Acetone	(ug/l)	50	4.4 JB	2 J	3.40 U	10.0 U	3.40 U
1,1-Dichloroethene	(ug/l)	5	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
1,1-Dichloroethane	(ug/l)	5	4.0 J	1.20 U	[7] J	3.2 J	3 J
Chloroform	(ug/l)	7	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
2-Butanone	(ug/l)	50	10.0 U	2.20 U	2.20 U	10.0 U	2.20 U
1,1,1-Trichloroethane	(ug/l)	5	10.0 U	1.80 U	2 J	10.0 U	1.80 U
Carbon tetrachloride	(ug/l)	5	10.0 U	1.80 U	1.80 U	10.0 U	1.80 U
Trichloroethene	(ug/l)	5	10.0 U	1.40 U	1.40 U	10.0 U	[12]
Benzene	(ug/l)	1.0	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
4-Methyl-2-pentanone	(ug/l)	5	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
2-Hexanone	(ug/l)	50	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
Tetrachloroethene	(ug/l)	5	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10.0 U	2.20 U	2.20 U	10.0 U	2.20 U
Toluene	(ug/l)	5	10.0 U	1.20 U	1.20 U	10.0 U	1.20 U
Chlorobenzene	(ug/l)	5	10.0 U	1.40 U	1.40 U	10.0 U	1.40 U
1,2-Dichloroethene	(ug/l)	5	10.0 U	2.60 U	2.60 U	10.0 U	[24]
Sum of Constituents	(ug/l)		10.50	2.00	9.00	3.20	39.00

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J, B
NA=Not analyzed

Table C-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	DATE	SAMPLE ID
Vinyl chloride	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Chloroethane	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Methylene chloride	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Acetone	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
1,1-Dichloroethene	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
1,1-Dichloroethane	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Chloroform	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
2-Butanone	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
1,1,1-Trichloroethane	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Carbon tetrachloride	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Trichloroethene	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Benzene	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
4-Methyl-2-pentanone	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
2-Hexanone	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Tetrachloroethene	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
1,1,2,2-Tetrachloroethane	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Toluene	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Chlorobenzene	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
1,2-Dichloroethene	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998
Sum of Constituents	MW-11S	MW-11S	MW-11S	10/31/1997	MW-13D	02/03/1998

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table C-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

Page: 10 of 11
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-13I MW-13I 02/03/1998	MW-13S MW-13S 02/03/1998	MW-14D MW-14D 11/03/1997	MW-14D MW-14D 02/03/1998	MW-14I MW-14I 11/03/1997
Vinyl chloride	(ug/l)	2	[4.7] J	10.0 U	[14]	10.0 U	1.40 U
Chloroethane	(ug/l)	5	10.0 U	10.0 U	[5] J	10.0 U	[8] J
Methylene chloride	(ug/l)	5	2.3 J	2.4 J	1.40 U	2.9 J	1.40 U
Acetone	(ug/l)	50	10.0 U	10.0 U	2 J	10.0 U	3.40 U
1,1-Dichloroethene	(ug/l)	5	10.0 U	10.0 U	1.40 U	10.0 U	1.40 U
1,1-Dichloroethane	(ug/l)	5	3.1 J	10.0 U	1 J	10.0 U	1.20 U
Chloroform	(ug/l)	7	10.0 U	10.0 U	1.40 U	2.1 J	1.40 U
2-Butanone	(ug/l)	50	10.0 U	10.0 U	2.20 U	10.0 U	2.20 U
1,1,1-Trichloroethane	(ug/l)	5	10.0 U	10.0 U	1.80 U	10.0 U	1.80 U
Carbon tetrachloride	(ug/l)	5	10.0 U	10.0 U	1.80 U	10.0 U	1.80 U
Trichloroethene	(ug/l)	5	4.8 J	10.0 U	1.40 U	10.0 U	1.40 U
Benzene	(ug/l)	1.0	10.0 U	10.0 U	1.40 U	10.0 U	1.40 U
4-Methyl-2-pentanone	(ug/l)	5	10.0 U	10.0 U	1.40 U	10.0 U	1.40 U
2-Hexanone	(ug/l)	50	10.0 U	10.0 U	1.40 U	10.0 U	1.40 U
Tetrachloroethene	(ug/l)	5	[11.0]	10.0 U	1.40 U	10.0 U	1.40 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10.0 U	10.0 U	2.20 U	10.0 U	2.20 U
Toluene	(ug/l)	5	10.0 U	10.0 U	1.20 U	10.0 U	1.20 U
Chlorobenzene	(ug/l)	5	10.0 U	10.0 U	1 J	10.0 U	1.40 U
1,2-Dichloroethene	(ug/l)	5	[53.0]	10.0 U	[21]	10.0 U	2.60 U
Sum of Constituents	(ug/l)		78.90	2.40	44.00	5.00	8.00

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP Q: J, U
NA = Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT					SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	02/03/1998	02/03/1998	MW-14S	MW-14S
Vinyl chloride					(ug/l)			2		10.0 U	10.0 U	10.0 U	
Chloroethane					(ug/l)			5		[6.9] U	10.0 U	10.0 U	
Methylene chloride					(ug/l)			5		10.0 U	10.0 U	2.0 U	
Acetone					(ug/l)			50		5.5 U	10.0 U	10.0 U	
1,1-Dichloroethene					(ug/l)			5		10.0 U	10.0 U	10.0 U	
1,1-Dichloroethane					(ug/l)			5		10.0 U	10.0 U	10.0 U	
Chloroform					(ug/l)			7		10.0 U	10.0 U	2.1 U	
2-Butanone					(ug/l)			50		10.0 U	10.0 U	10.0 U	
1,1,1-Trichloroethane					(ug/l)			5		10.0 U	10.0 U	10.0 U	
Carbon tetrachloride					(ug/l)			5		10.0 U	10.0 U	10.0 U	
Trichloroethene					(ug/l)			5		10.0 U	10.0 U	10.0 U	
Benzene					(ug/l)			1.0		10.0 U	10.0 U	10.0 U	
4-Methyl-2-pentanone					(ug/l)			5		10.0 U	10.0 U	10.0 U	
2-Hexanone					(ug/l)			50		10.0 U	10.0 U	10.0 U	
Tetrachloroethene					(ug/l)			5		10.0 U	10.0 U	10.0 U	
1,1,2,2-Tetrachloroethane					(ug/l)			5		10.0 U	10.0 U	10.0 U	
Toluene					(ug/l)			5		10.0 U	10.0 U	10.0 U	
Chlorobenzene					(ug/l)			5		10.0 U	10.0 U	10.0 U	
1,2-Dichloroethene					(ug/l)			5		10.0 U	10.0 U	10.0 U	
Sum of Constituents					(ug/l)					12.40	4.10		

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed



Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	DATE				
	SAMPLE ID								
Aluminum		MW-01D	MW-01D	MW-01D	10/24/1997	105	NA	NA	NA
Arsenic						25	NA	NA	NA
Barium						1000	111	NA	NA
Beryllium						3	0.13	NA	NA
Boron						1000	40.1	NA	NA
Cadmium						5	NA	NA	NA
Calcium						35300	NA	NA	NA
Chromium						50	0.53	NA	NA
Cobalt							1.3	NA	NA
Copper						200	1.9	NA	NA
Iron						300	110	NA	NA
Lead						25	1.3	NA	NA
Magnesium						35000	10700	NA	NA
Manganese						300	132	NA	NA
Mercury						0.7	NA	NA	NA
Nickel						100	2.2	NA	NA
Potassium							6780	NA	NA
Selenium						10	NA	NA	NA
Sodium						20000	[61000]	NA	NA
Thallium						0.5	NA	NA	NA
Vanadium							NA	NA	NA

U : Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: E
NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Page: 2 of 26
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-01D MW-01D 10/24/1997	MW-01D MW-01D 01/28/1998	MW-01I MW-01I 10/24/1997	MW-01I MW-01I 01/28/1998	MW-01S MW-01S 10/24/1997
Zinc	(ug/l)	2000	39.0 E	NA	29.5 E	NA	37.0 E

U: Analyzed for but not detected

NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-01S	MW-02D	MW-02I	MW-02S	MW-03D
Aluminum	(ug/l)	NA	33.5	80.2	146	156	
Arsenic	(ug/l)	25	NA	NA	NA	NA	
Barium	(ug/l)	1000	6.9	47.9	26.3	6.0	
Beryllium	(ug/l)	3	0.10	0.10	0.77	NA	
Boron	(ug/l)	1000	28.7	81.4	43.4	117	
Cadmium	(ug/l)	5	NA	NA	0.57	NA	
Calcium	(ug/l)	NA	4750	4990	27000	9040	
Chromium	(ug/l)	50	NA	0.70	1.1	NA	
Cobalt	(ug/l)	NA	NA	1.1	1.5	NA	
Copper	(ug/l)	200	NA	3.6	4.0	NA	
Iron	(ug/l)	300	33.2	249	[312]	191	
Lead	(ug/l)	25	NA	3.5	2.1	NA	
Magnesium	(ug/l)	35000	2220	685	2890	4000	
Manganese	(ug/l)	300	54.8	40.9	5.6	52.8	
Mercury	(ug/l)	0.7	NA	NA	NA	NA	
Nickel	(ug/l)	100	NA	NA	NA	NA	
Potassium	(ug/l)	NA	636	3100	4660	753	
Selenium	(ug/l)	10	NA	NA	NA	NA	
Sodium	(ug/l)	20000	8120	15300	18900	17600	
Thallium	(ug/l)	0.5	NA	NA	NA	NA	
Vanadium	(ug/l)	NA	NA	NA	NA	NA	

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: E
NA=Not analyzed

Table C-2

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-01S MW-01S 01/28/1998	MW-02D MW-02D 10/27/1997	MW-02I MW-02I 10/27/1997	MW-02S MW-02S 10/27/1997	MW-03D MW-03D 10/30/1997
Zinc	(ug/l)	2000	NA	27.5 E	37.0 E	20.8 E	18.9

NA=Not analyzed

U: Analyzed for but not detected

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-03D	MW-03I	MW-03I	MW-03S	MW-04D
DATE	SAMPLE ID	GA Groundwater	02/02/1998	10/30/1997	02/02/1998	10/30/1997	10/28/1997
Aluminum	(ug/l)	NA	162	NA	1080	52.9	
Arsenic	(ug/l)	25	NA	NA	3.2	7.6	
Barium	(ug/l)	1000	NA	14.8	136	186	
Beryllium	(ug/l)	3	NA	NA	NA	0.10	
Boron	(ug/l)	1000	NA	83.7	130	358	
Cadmium	(ug/l)	5	NA	NA	NA	NA	
Calcium	(ug/l)	NA	10600	NA	50800	56100	
Chromium	(ug/l)	50	NA	NA	3.1	NA	
Cobalt	(ug/l)	NA	NA	NA	1.1	14.9	
Copper	(ug/l)	200	NA	2.4	3.3	NA	
Iron	(ug/l)	300	NA	[462]	[12700]	[66000]	
Lead	(ug/l)	25	NA	1.4	1.4	NA	
Magnesium	(ug/l)	35000	NA	5720	7970	8830	
Manganese	(ug/l)	300	NA	113	[7270]	[1700]	
Mercury	(ug/l)	0.7	NA	NA	NA	NA	
Nickel	(ug/l)	100	NA	NA	2.6	7.4	
Potassium	(ug/l)	NA	1200	NA	7870	14000	
Selenium	(ug/l)	10	NA	NA	NA	NA	
Sodium	(ug/l)	20000	NA	10300	NA	[21100]	
Thallium	(ug/l)	0.5	NA	NA	NA	NA	
Vanadium	(ug/l)	NA	NA	NA	3.7	NA	

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: E
NA=Not analyzed

Table C-2

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-03D MW-03D 02/02/1998	MW-03I MW-03I 10/30/1997	MW-03I MW-03I 02/02/1998	MW-03S MW-03S 10/30/1997	MW-04D MW-04D 10/28/1997
Zinc	(ug/l)	2000	NA	65.5	NA	34.0	85.9 E

NA=Not analyzed

U: Analyzed for but not detected

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-04D	MW-04I	MW-04I	MW-04S	MW-04S	DATE
Aluminum	(ug/l)	NA	365	NA	574	NA		02/02/1998
Arsenic	(ug/l)	25	10.1	NA	11.4	NA		
Barium	(ug/l)	1000	128	NA	441	NA		
Beryllium	(ug/l)	3	0.10	NA	0.20	NA		
Boron	(ug/l)	1000	245	NA	482	NA		
Cadmium	(ug/l)	5	NA	NA	NA	NA		
Calcium	(ug/l)	NA	53200	NA	152000	NA		
Chromium	(ug/l)	50	3.7	NA	1.6	NA		
Cobalt	(ug/l)	NA	2.5	NA	2.1	NA		
Copper	(ug/l)	200	5.2	NA	2.5	NA		
Iron	(ug/l)	300	[31800]	NA	[56800]	NA		
Lead	(ug/l)	25	3.7	NA	NA	NA		
Magnesium	(ug/l)	35000	9580	NA	22600	NA		
Manganese	(ug/l)	300	[480]	NA	[1520]	NA		
Mercury	(ug/l)	0.7	NA	NA	NA	NA		
Nickel	(ug/l)	100	3.9	NA	NA	NA		
Potassium	(ug/l)	NA	69400	NA	30800	NA		
Selenium	(ug/l)	10	NA	NA	NA	NA		
Sodium	(ug/l)	20000	[29200]	NA	[29900]	NA		
Thallium	(ug/l)	0.5	NA	NA	NA	NA		
Vanadium	(ug/l)	NA	4.4	NA	3.2	NA		

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: E
NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Page: 8 of 26
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-04D MW-04D 01/28/1998	MW-04I MW-04I 10/29/1997	MW-04I MW-04I 01/28/1998	MW-04S MW-04S 10/29/1997	MW-04S MW-04S 02/02/1998
Zinc	(ug/l)	2000	NA	96.1 E	NA	32.3 E	NA

U: Analyzed for but not detected

NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	GA Groundwater	NYSDEC Class	MW-05D	MW-05D	MW-05D	MW-05I	MW-05I	MW-05I
DATE	SAMPLE ID	Sids/Guidelines	10/29/1997	02/03/1998	10/29/1997	02/02/1998	10/29/1997	02/02/1998	10/29/1997
Aluminum	(ug/l)	241	NA	NA	330	NA	121	NA	121
Arsenic	(ug/l)	25	NA	NA	4.3	NA	NA	NA	NA
Barium	(ug/l)	1000	117	NA	17.8	NA	296	NA	296
Beryllium	(ug/l)	3	0.17	NA	0.10	NA	0.13	NA	0.13
Boron	(ug/l)	1000	148	NA	90.8	NA	323	NA	323
Cadmium	(ug/l)	5	0.30	NA	NA	NA	NA	NA	NA
Calcium	(ug/l)	47300	NA	NA	8280	NA	105000	NA	105000
Chromium	(ug/l)	50	2.9	NA	3.3	NA	6.5	NA	6.5
Cobalt	(ug/l)		4.6	NA	NA	NA	1.3	NA	1.3
Copper	(ug/l)	200	4.8	NA	2.5	NA	NA	NA	NA
Iron	(ug/l)	300	[374]	NA	[7250]	NA	[32000]	NA	[32000]
Lead	(ug/l)	25	1.2	NA	3.0	NA	NA	NA	NA
Magnesium	(ug/l)	35000	12400	NA	1260	NA	17900	NA	17900
Manganese	(ug/l)	300	[17200]	NA	[1080]	NA	[3370]	NA	[3370]
Mercury	(ug/l)	0.7	NA	NA	NA	NA	NA	NA	NA
Nickel	(ug/l)	100	5.1	NA	3.6	NA	4.6	NA	4.6
Potassium	(ug/l)	20200	NA	NA	4820	NA	20600	NA	20600
Selenium	(ug/l)	10	NA	NA	NA	NA	NA	NA	NA
Sodium	(ug/l)	20000	[26500]	NA	12500	NA	[35000]	NA	[35000]
Thallium	(ug/l)	0.5	NA	NA	NA	NA	NA	NA	NA
Vanadium	(ug/l)		NA	NA	NA	NA	1.8	NA	1.8

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: E
NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Page: 10 of 26
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-05D MW-05D 10/29/1997	MW-05D MW-05D 02/03/1998	MW-05I MW-05I 10/29/1997	MW-05I MW-05I 02/02/1998	MW-05S MW-05S 10/29/1997
Zinc	(ug/l)	2000	283 E	NA	95.3 E	NA	25.0 E

U: Analyzed for but not detected

NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-05S	MW-06D	MW-06D	MW-06I	MW-06I
DATE	SAMPLE ID	GA Groundwater	02/03/1998	10/28/1997	01/28/1998	10/28/1997	10/28/1997
Stds/Guidelines							
Aluminum	(ug/l)	NA	320	NA	140	NA	NA
Arsenic	(ug/l)	25	3.2	NA	4.3	NA	NA
Barium	(ug/l)	1000	15.1	NA	107	NA	NA
Beryllium	(ug/l)	3	NA	NA	0.10	NA	NA
Boron	(ug/l)	1000	33.2	NA	120	NA	NA
Cadmium	(ug/l)	5	NA	NA	NA	NA	NA
Calcium	(ug/l)	NA	5070	NA	33300	NA	NA
Chromium	(ug/l)	50	1.3	NA	0.73	NA	NA
Cobalt	(ug/l)	NA	6.6	NA	6.4	NA	NA
Copper	(ug/l)	200	2.5	NA	3.9	NA	NA
Iron	(ug/l)	300	[5220]	NA	[6490]	NA	NA
Lead	(ug/l)	25	NA	NA	1.0	NA	NA
Magnesium	(ug/l)	35000	2040	NA	3810	NA	NA
Manganese	(ug/l)	300	[6800]	NA	[2100]	NA	NA
Mercury	(ug/l)	0.7	NA	NA	NA	NA	NA
Nickel	(ug/l)	100	3.3	NA	2.0	NA	NA
Potassium	(ug/l)	NA	1140	NA	7680	NA	NA
Selenium	(ug/l)	10	NA	NA	NA	NA	NA
Sodium	(ug/l)	20000	11600	NA	14000	NA	NA
Thallium	(ug/l)	0.5	NA	NA	NA	NA	NA
Vanadium	(ug/l)	NA	NA	NA	NA	NA	NA

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: E
NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Page: 12 of 26
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-05S MW-05S 02/03/1998	MW-06D MW-06D 10/28/1997	MW-06D MW-06D 01/28/1998	MW-06I MW-06I 10/28/1997	MW-06I MW-06I 10/28/1997
Zinc	(ug/l)	2000	NA	75.1 E	NA	61.4 E	NA

U: Analyzed for but not detected

NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-06S	MW-06S	MW-07D	MW-07D	MW-07D	DATE
Aluminum	(ug/l)	96.2	NA	1420	NA	NA	NA	
Arsenic	(ug/l)	25	9.6	NA	NA	11.4	NA	
Barium	(ug/l)	1000	306	NA	0.13	NA	NA	
Beryllium	(ug/l)	3	0.10	NA	NA	39.0	NA	
Boron	(ug/l)	1000	405	NA	NA	NA	NA	
Cadmium	(ug/l)	5	NA	NA	NA	NA	NA	
Calcium	(ug/l)	131000	NA	1210	NA	NA	NA	
Chromium	(ug/l)	50	1.3	NA	3.4	NA	NA	
Cobalt	(ug/l)	2.2	NA	1.5	NA	NA	NA	
Copper	(ug/l)	200	NA	7.6	NA	NA	NA	
Iron	(ug/l)	300	[58700]	NA	[1560]	NA	NA	
Lead	(ug/l)	25	NA	3.0	NA	NA	NA	
Magnesium	(ug/l)	35000	16400	609	NA	NA	NA	
Manganese	(ug/l)	300	[837]	55.7	NA	NA	NA	
Mercury	(ug/l)	0.7	NA	NA	NA	NA	NA	
Nickel	(ug/l)	100	NA	12.9	NA	NA	NA	
Potassium	(ug/l)	18200	NA	569	NA	NA	NA	
Selenium	(ug/l)	10	NA	NA	NA	NA	NA	
Sodium	(ug/l)	20000	18900	16800	NA	NA	NA	
Thallium	(ug/l)	0.5	NA	NA	NA	NA	NA	
Vanadium	(ug/l)		NA	2.6	NA	NA	NA	

U: Analyzed for but not detected
 []=Greater than Action Level The following qualifier(s) exist: CLP Q: E
 NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stdsg/Guidelines	MW-06S MW-06S 10/28/1997	MW-06S MW-06S 01/28/1998	MW-07D MW-07D 10/27/1997	MW-07D MW-07D 10/27/1997	MW-07D MW-07D 01/28/1998
Zinc	(ug/l)	2000	14.2 E	NA	207 E	NA	NA

U: Analyzed for but not detected

NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-071	MW-07S	MW-10D	MW-10D	MW-10I
Aluminum	(ug/l)	90.1	276	134	NA	54.9	
Arsenic	(ug/l)	25	NA	NA	NA	NA	
Barium	(ug/l)	1000	32.2	18.7	206	38.6	
Beryllium	(ug/l)	3	NA	0.10	NA	NA	
Boron	(ug/l)	1000	46.4	35.9	63.1	117	
Cadmium	(ug/l)	5	0.47	NA	0.83	0.30	
Calcium	(ug/l)	8890	34100	31000	NA	5220	
Chromium	(ug/l)	50	0.80	4.1	4.3	NA	
Cobalt	(ug/l)	2.3	1.1	10.0	NA	1.7	
Copper	(ug/l)	200	1.6	1.8	NA	NA	
Iron	(ug/l)	300	[396]	[610]	[10300]	95.4	
Lead	(ug/l)	25	2.8	NA	3.2	NA	
Magnesium	(ug/l)	35000	1300	1890	11700	1540	
Manganese	(ug/l)	300	[519]	27.0	[36100]	[2940]	
Mercury	(ug/l)	0.7	NA	NA	NA	NA	
Nickel	(ug/l)	100	1.8	2.4	15.1	1.8	
Potassium	(ug/l)	3840	5730	5370	NA	2780	
Selenium	(ug/l)	10	NA	NA	3.4	NA	
Sodium	(ug/l)	20000	6950	8170	[628000]	[137000]	
Thallium	(ug/l)	0.5	NA	NA	[5.1]	[2.9]	
Vanadium	(ug/l)	NA	NA	NA	NA	NA	

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: E
NA=Not analyzed

Table C-2

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Page: 16 of 26

Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-07I MW-07I 10/28/1997	MW-07S MW-07S 10/27/1997	MW-10D MW-10D 10/30/1997	MW-10D MW-10D 02/02/1998	MW-10I MW-10I 10/30/1997
Zinc	(ug/l)	2000	51.7 E	16.6 E	124	NA	22.5

U: Analyzed for but not detected

NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	GA Groundwater	NYSDEC Class	MW-10I	MW-10S	MW-10S	MW-10S	MW-10S	DATE	Sample ID	Units
Aluminum	NA	NA	NA	NA	553	NA	NA	473	(ug/l)		
Arsenic	25	NA	NA	NA	NA	18.7	NA	NA	(ug/l)		
Barium	1000	NA	NA	NA	NA	NA	NA	27.8	(ug/l)		
Beryllium	3	NA	NA	NA	NA	NA	NA	NA	(ug/l)		
Boron	1000	NA	110	NA	NA	NA	NA	19.3	(ug/l)		
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	(ug/l)		
Calcium	NA	NA	NA	33000	NA	NA	NA	7300	(ug/l)		
Chromium	50	NA	NA	NA	NA	NA	NA	0.43	(ug/l)		
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	(ug/l)		
Copper	200	NA	NA	2.5	NA	NA	NA	NA	(ug/l)		
Iron	300	NA	NA	[670]	NA	NA	NA	153	(ug/l)		
Lead	25	NA	NA	NA	NA	NA	NA	NA	(ug/l)		
Magnesium	35000	NA	NA	3940	NA	NA	NA	1330	(ug/l)		
Manganese	300	NA	NA	[1600]	NA	NA	NA	74.6	(ug/l)		
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	(ug/l)		
Nickel	100	NA	NA	NA	NA	NA	NA	2.1	(ug/l)		
Potassium	NA	NA	NA	8010	NA	NA	NA	10000	(ug/l)		
Selenium	10	NA	NA	NA	NA	NA	NA	NA	(ug/l)		
Sodium	20000	NA	NA	[98100]	NA	NA	NA	8050	(ug/l)		
Thallium	0.5	NA	NA	[2.8]	NA	NA	NA	[2.7]	(ug/l)		
Vanadium	(ug/l)	NA	NA	NA	NA	NA	NA	1.4	(ug/l)		

U: Analyzed for but not detected
[] = Greater than Action Level NA = Not analyzed

Table C-2

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-10I MW-10I 02/02/1998	MW-10S MW-10S 10/30/1997	MW-10S MW-10S 10/30/1997	MW-10S MW-10S 02/02/1998	MW-11D MW-11D 10/31/1997
Zinc	(ug/l)	2000	NA	NA	17.3	NA	19.0

U: Analyzed for but not detected

NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	MW-111	MW-111	MW-11S	MW-11S	MW-11S	DATE
Aluminum	(ug/l)	113	NA	NA	703	NA	288	NA	NA	
Arsenic	(ug/l)	25	NA	NA	NA	NA	NA	NA	NA	
Barium	(ug/l)	1000	22.2	NA	30.5	NA	6.5	NA	NA	
Beryllium	(ug/l)	3	NA	NA	NA	NA	NA	NA	NA	
Boron	(ug/l)	1000	100	NA	450	NA	27.9	NA	NA	
Cadmium	(ug/l)	5	NA	NA	NA	NA	NA	NA	NA	
Calcium	(ug/l)	10200	NA	NA	39100	NA	8460	NA	NA	
Chromium	(ug/l)	50	NA	NA	0.73	NA	0.87	NA	NA	
Cobalt	(ug/l)	4.7	NA	NA	2.1	NA	NA	NA	NA	
Copper	(ug/l)	200	3.1	NA	3.2	NA	2.4	NA	NA	
Iron	(ug/l)	300	191	NA	[739]	NA	[312]	NA	NA	
Lead	(ug/l)	25	NA	NA	NA	NA	NA	NA	NA	
Magnesium	(ug/l)	35000	6510	NA	4000	NA	2330	NA	NA	
Manganese	(ug/l)	300	245	NA	[1820]	NA	82.5	NA	NA	
Mercury	(ug/l)	0.7	NA	NA	NA	NA	NA	NA	NA	
Nickel	(ug/l)	100	4.3	NA	2.6	NA	NA	NA	NA	
Potassium	(ug/l)	3870	NA	NA	8620	NA	837	NA	NA	
Selenium	(ug/l)	10	NA	NA	NA	NA	NA	NA	NA	
Sodium	(ug/l)	20000	11100	NA	[43700]	NA	8400	NA	NA	
Thallium	(ug/l)	0.5	NA	NA	[3.2]	NA	NA	NA	NA	
Vanadium	(ug/l)	NA	NA	NA	1.8	NA	1.2	NA	NA	

[] = Greater than Action Level NA = Not analyzed

U : Analyzed for but not detected

Table C-2

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Page: 20 of 26

Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-11I MW-11I 10/31/1997	MW-11I MW-11I 01/28/1998	MW-11S MW-11S 10/31/1997	MW-11S MW-11S 01/28/1998	MW-12D MW-12D 10/31/1997
Zinc	(ug/l)	2000	100	NA	12.7	NA	311

U: Analyzed for but not detected

NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-121	MW-12S	MW-13D	MW-13D	MW-13D	DATE
Aluminum	(ug/l)	281	275	190	NA	1160	NA	11/03/1997
Arsenic	(ug/l)	25	NA	NA	NA	NA	NA	02/03/1998
Barium	(ug/l)	1000	25.1	24.7	104	262	NA	11/03/1997
Beryllium	(ug/l)	3	NA	NA	NA	0.80	NA	11/03/1997
Boron	(ug/l)	1000	103	80.1	135	93.6	NA	11/03/1997
Cadmium	(ug/l)	5	NA	NA	NA	0.33	NA	11/03/1997
Calcium	(ug/l)	13000	32500	58600	NA	32900	NA	11/03/1997
Chromium	(ug/l)	50	NA	8.3	4.7	0.60	NA	11/03/1997
Cobalt	(ug/l)	NA	NA	NA	9.8	30.1	NA	11/03/1997
Copper	(ug/l)	200	1.0	NA	0.97	3.2	NA	11/03/1997
Iron	(ug/l)	300	213	[326]	[524]	[27700]	NA	11/03/1997
Lead	(ug/l)	25	NA	NA	1.7	NA	NA	11/03/1997
Magnesium	(ug/l)	35000	4930	1730	8920	3580	NA	11/03/1997
Manganese	(ug/l)	300	[1290]	29.2	[31000]	[1610]	NA	11/03/1997
Mercury	(ug/l)	0.7	NA	NA	NA	NA	NA	11/03/1997
Nickel	(ug/l)	100	1.5	NA	6.6	2.7	NA	11/03/1997
Potassium	(ug/l)	1520	14700	13900	NA	7910	NA	11/03/1997
Selenium	(ug/l)	10	NA	NA	3.8	NA	NA	11/03/1997
Sodium	(ug/l)	20000	10800	17800	16100	[26900]	NA	11/03/1997
Thallium	(ug/l)	0.5	NA	NA	NA	[4.3]	NA	11/03/1997
Vanadium	(ug/l)	NA	NA	NA	NA	1.5	NA	11/03/1997

U: Analyzed for but not detected
[]=Greater than Action Level NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Page: 22 of 26
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-12I MW-12I 10/31/1997	MW-12S MW-12S 10/31/1997	MW-13D MW-13D 11/03/1997	MW-13D MW-13D 02/03/1998	MW-13I MW-13I 11/03/1997
Zinc	(ug/l)	2000	39.2	15.0	65.1	NA	45.9

NA=Not analyzed

U: Analyzed for but not detected

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-13I	MW-13S	MW-13S	MW-14D	MW-14D	DATE
Aluminum	(ug/l)	NA	544	NA	37.0	NA	NA	02/03/1998
Arsenic	(ug/l)	25	NA	NA	NA	NA	NA	02/03/1998
Barium	(ug/l)	1000	32.9	NA	172	NA	NA	02/03/1998
Beryllium	(ug/l)	3	0.10	NA	NA	NA	NA	02/03/1998
Boron	(ug/l)	1000	36.0	NA	287	NA	NA	02/03/1998
Cadmium	(ug/l)	5	NA	NA	NA	NA	NA	02/03/1998
Calcium	(ug/l)	NA	7570	NA	52600	NA	NA	02/03/1998
Chromium	(ug/l)	50	1.3	NA	NA	NA	NA	02/03/1998
Cobalt	(ug/l)	NA	NA	NA	9.5	NA	NA	02/03/1998
Copper	(ug/l)	200	3.6	NA	NA	NA	NA	02/03/1998
Iron	(ug/l)	300	[683]	NA	[24500]	NA	NA	02/03/1998
Lead	(ug/l)	25	NA	NA	NA	NA	NA	02/03/1998
Magnesium	(ug/l)	35000	1890	NA	11900	NA	NA	02/03/1998
Manganese	(ug/l)	300	157	NA	[6290]	NA	NA	02/03/1998
Mercury	(ug/l)	0.7	NA	NA	NA	NA	NA	02/03/1998
Nickel	(ug/l)	100	3.0	NA	3.6	NA	NA	02/03/1998
Potassium	(ug/l)	NA	1930	NA	31100	NA	NA	02/03/1998
Selenium	(ug/l)	10	NA	NA	NA	NA	NA	02/03/1998
Sodium	(ug/l)	20000	8230	NA	19100	NA	NA	02/03/1998
Thallium	(ug/l)	0.5	NA	NA	[2.6]	NA	NA	02/03/1998
Vanadium	(ug/l)	NA	1.2	NA	NA	NA	NA	02/03/1998

U: Analyzed for but not detected
[] = Greater than Action Level NA = Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	DATE	Aluminum	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Sodium	Thallium	Vanadium
	MW-14S	MW-14I	MW-14I	MW-14I	11/03/1997	83.1	11.7	118	NA	219	NA	68600	NA	6.2	0.93	[54200]	NA	10400	[461]	NA	NA	16200	NA	14200	[3.4]	NA
	MW-14S	MW-14I	MW-14I	MW-14I	02/03/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.0	[575]	NA	NA	1960	71.3	NA	1.4	3230	NA	9970	NA
	MW-14S	MW-14I	MW-14I	MW-14I	11/03/1997	507	NA	24.6	0.10	26.4	0.43	8850	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	MW-14S	MW-14I	MW-14I	MW-14I	02/03/1998	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

U: Analyzed for but not detected
[]=Greater than Action Level NA=Not analyzed

Table C-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
INORGANIC CONSTITUENTS (METALS) - DETECTS ONLY

Page: 26 of 26
Date: 07/31/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-14I MW-14I 11/03/1997	MW-14I MW-14I 02/03/1998	MW-14S MW-14S 11/03/1997	MW-14S MW-14S 02/03/1998
Zinc	(ug/l)	2000	50.7	NA	116	NA

NA=Not analyzed

U: Analyzed for but not detected

Table C-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
LEACHATE PARAMETERS - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	DATE
	SAMPLE ID				

Color(APHA Units)	(mg/l)	5 U	5 U	5 U	80	5 U	10/27/1997	MW-02D	MW-02I
Alkalinity(as CaCO ₃)	(mg/l)	11.4	20.7	264	10.2	12.3	10/27/1997	MW-02D	MW-02I
Ammonia (as N)	(mg/l)	0.36	0.9	1.0	0.24	0.65	10/27/1997	MW-02D	MW-02I
Biochemical Oxygen Demand	(mg/l)	20	2 U	2 U	2 U	2 U	10/27/1997	MW-02D	MW-02I
Bromide	(mg/l)	2	0.5 U	0.5 U	0.7	0.5 U	10/27/1997	MW-02D	MW-02I
Chemical Oxygen Demand	(mg/l)	3 U	3 U	46	15 U	15 U	10/27/1997	MW-02D	MW-02I
Chloride	(mg/l)	250	198	195	69.7	10.0	10/27/1997	MW-02D	MW-02I
Hardness(as CaCO ₃)	(mg/l)	146	42	310	30	26	10/27/1997	MW-02D	MW-02I
Nitrate(as N)	(mg/l)	10	0.72	0.1 U	1.4	1.9	10/27/1997	MW-02D	MW-02I
Phenols, total	(mg/l)	0.001	0.0010 U	0.0010 U	0.0010 U	0.0010 U	10/27/1997	MW-02D	MW-02I
Sulfate	(mg/l)	250	5.2	35.2	36.3	32.9	10/27/1997	MW-02D	MW-02I
Total Organic Carbon	(mg/l)	1.3	2.8	11.7	0.7	1.5	10/27/1997	MW-02D	MW-02I
Total Dissolved Solids	(mg/l)	452	356	432	76	103	10/27/1997	MW-02D	MW-02I
Total Kjeldahlnitrogen(as N)	(mg/l)	0.2 U	0.2 U	2.3	0.23	0.80	10/27/1997	MW-02D	MW-02I

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP C: U
NA=Not analyzed

Table C-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
LEACHATE PARAMETERS - DETECTS ONLY

Page: 2 of 8
Date: 08/01/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-02S MW-02S 10/27/1997	MW-03D MW-03D 10/30/1997	MW-03I MW-03I 10/30/1997	MW-03S MW-03S 10/30/1997	MW-04D MW-04D 10/28/1997
Color(APHA Units)	(mg/l)		5 U	5 U	5 U	70	150
Alkalinity(as CaCO3)	(mg/l)		86.6	30.7	36.2	187	210
Ammonia (as N)	(mg/l)	2	0.08	0.08	0.24	[2]	[2.8]
Biochemical Oxygen Demand	(mg/l)		2 U	2 U	4	11	8
Bromide	(mg/l)	2	0.5 U	0.5 U	0.5 U	0.5 U	1.1
Chemical Oxygen Demand	(mg/l)		15 U	15 U	15 U	37	46
Chloride	(mg/l)	250	21.2	22	15	75.3	50.1
Hardness(as CaCO3)	(mg/l)		92	46	52	190	280
Nitrate(as N)	(mg/l)	10	0.82	3.6	0.88	0.1 U	0.1 U
Phenols, total	(mg/l)	0.001	0.0010 U	0.0010 U	[0.0020]	[0.0018]	[0.0049]
Sulfate	(mg/l)	250	20.9	22.8	20.4	5 U	18.3
Total Organic Carbon	(mg/l)		2.2	1.3	2.1	7.7	4.7
Total Dissolved Solids	(mg/l)		171	107	86	246	318
Total KjeldahlNitrogen(as N)	(mg/l)		0.20	0.2 U	0.45	3.1	5.6

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP C: U
NA = Not analyzed

Table C-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
LEACHATE PARAMETERS - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDC Class	MW-041	MW-04S	MW-05D	MW-05I	MW-05S
	DATE	Stds/Guidelines	10/29/1997	10/29/1997	10/29/1997	10/29/1997	10/29/1997
Color(APHA Units)	(mg/l)		30	150	5 U	40	60
Alkalinity(as CaCO ₃)	(mg/l)		309	618	234	30.4	412
Ammonia (as N)	(mg/l)	2	1.8	[9.3]	[4.3]	0.49	[4.4]
Biochemical Oxygen Demand	(mg/l)		6	5	2	3	8
Bromide	(mg/l)	2	0.8	1.0	0.5 U	0.6	0.5 U
Chemical Oxygen Demand	(mg/l)		37	67	43	16	46
Chloride	(mg/l)	250	28.7	63.3	51.5	24.3	82.1
Hardness(as CaCO ₃)	(mg/l)		210	540	260	50	400
Nitrate(as N)	(mg/l)	10	0.12	0.1 U	0.1 U	0.1 U	0.1 U
Phenols, total	(mg/l)	0.001	[0.0039]	[0.0049]	[0.0015]	0.0010 U	[0.0049]
Sulfate	(mg/l)	250	14.5	5 U	27.5	8.9	5 U
Total Organic Carbon	(mg/l)		5.2	17.3	6.0	1.8	9.6
Total Dissolved Solids	(mg/l)		424	624	337	100	482
Total Kjeldahl Nitrogen(as N)	(mg/l)		4.3	23.3	6.0	0.70	9.6

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP C: U
NA=Not analyzed

Table C-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
LEACHATE PARAMETERS - DETECTS ONLY

Page: 4 of 8
Date: 08/01/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-06D MW-06D 10/28/1997	MW-06I MW-06I 10/28/1997	MW-06S MW-06S 10/28/1997	MW-07D MW-07D 10/27/1997	MW-07I MW-07I 10/28/1997
Color(APHA Units)	(mg/l)		10	10	150	20	5 U
Alkalinity(as CaCO3)	(mg/l)		31.3	115	453	22.7	23.4
Ammonia (as N)	(mg/l)	2	0.32	0.76	[7.2]	0.37	1.3
Biochemical Oxygen Demand	(mg/l)		3	2 U	5	2 U	6
Bromide	(mg/l)	2	0.5 U	0.5 U	0.6	0.9	0.5 U
Chemical Oxygen Demand	(mg/l)		15 U	15 U	46	25	15 U
Chloride	(mg/l)	250	7.3	25.4	39.8	11.6	9.2
Hardness(as CaCO3)	(mg/l)		120	180	440	9	180
Nitrate(as N)	(mg/l)	10	0.1 U	0.1 U	0.1 U	1.3	0.88
Phenols, total	(mg/l)	0.001	0.0010 U	[0.0018]	[0.0054]	0.0010 U	0.0010 U
Sulfate	(mg/l)	250	20.3	21.2	5 U	5.2	19.9
Total Organic Carbon	(mg/l)		2.0	2.4	11.4	0.8	1.9
Total Dissolved Solids	(mg/l)		78	190	480	101	65
Total KjeldahlNitrogen(as N)	(mg/l)		0.2 U	1.4	17.3	0.36	1.7

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP C: U
NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
LEACHATE PARAMETERS - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive

CONSTITUENT	SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	Stds/Guidelines	10/27/1997	MW-07S	MW-10D	10/30/1997	MW-10I	10/30/1997	MW-10S	10/30/1997	MW-11D	10/31/1997
Color(APHA Units)	(mg/l)				5 U		30		5 U				10		80	
Alkalinity(as CaCO3)	(mg/l)				88.0		13.9		36.4				93		36.8	
Ammonia (as N)	(mg/l)		2		0.26		0.55		1.3				0.5		0.5	
Biochemical Oxygen Demand	(mg/l)				2 U		3		2				2		4	
Bromide	(mg/l)		2		0.5 U		0.5 U		0.6				0.5 U		0.5 U	
Chemical Oxygen Demand	(mg/l)				15 U		82		16				25		40	
Chloride	(mg/l)		250		10.6		[1230]		183				126		13.3	
Hardness(as CaCO3)	(mg/l)				98		220		24				104		26	
Nitrate(as N)	(mg/l)		10		2.4		0.14		0.7				0.1 U		1.5	
Phenols, total	(mg/l)		0.001		0.0010 U		0.0010 U		[0.0013]				[0.0015]		[0.0063]	
Sulfate	(mg/l)		250		11.6		101		45.4				69.6		31.3	
Total Organic Carbon	(mg/l)				1.0		1.9		6.3				6.4		5.6	
Total Dissolved Solids	(mg/l)				181		1950		400				361		124	
Total Kjeldahlnitrogen(as N)	(mg/l)				0.2 U		0.81		1.9				0.53		0.58	

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP C: U

NA=Not analyzed

Table C-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
LEACHATE PARAMETERS - DETECTS ONLY

Page: 6 of 8
Date: 08/01/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-11I MW-11I 10/31/1997	MW-11S MW-11S 10/31/1997	MW-12D MW-12D 10/31/1997	MW-12I MW-12I 10/31/1997	MW-12S MW-12S 10/31/1997
Color(APHA Units)	(mg/l)		5 U	100	5 U	5 U	5 U
Alkalinity(as CaCO ₃)	(mg/l)		27.6	127	19.3	10.5	102
Ammonia (as N)	(mg/l)	2	0.99	1	0.02 U	0.51	0.11
Biochemical Oxygen Demand	(mg/l)		2 U	2 U	3	2 U	3
Bromide	(mg/l)	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chemical Oxygen Demand	(mg/l)		15 U	22	15 U	16	16
Chloride	(mg/l)	250	40.4	65.1	11.7	17.5	21
Hardness(as CaCO ₃)	(mg/l)		54	120	34	54	90
Nitrate(as N)	(mg/l)	10	0.13	0.28	0.32	4.7	0.75
Phenols, total	(mg/l)	0.001	[0.0013]	[0.0018]	[0.0018]	0.0010 U	0.0010 U
Sulfate	(mg/l)	250	14.9	42.1	19.5	43.1	32.8
Total Organic Carbon	(mg/l)		1.6	3.7	0.5 U	3.6	2.3
Total Dissolved Solids	(mg/l)		96	261	45	106	170
Total KjeldahlNitrogen(as N)	(mg/l)		1.5	1.2	0.2 U	0.46	0.21

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP C: U
NA = Not analyzed

Table C-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
LEACHATE PARAMETERS - DETECTS ONLY

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE
	SAMPLE ID				

Color(APHA Units)	(mg/l)	5 U	20	30	20	20
Alkalinity(as CaCO ₃)	(mg/l)	242	116	2	274	225
Ammonia (as N)	(mg/l)	[5]	[2]	0.12	[7.7]	[7.2]
Biochemical Oxygen Demand	(mg/l)	2 U	2 U	2 U	2 U	18
Bromide	(mg/l)	0.5 U	0.6	0.5 U	0.5 U	0.5 U
Chemical Oxygen Demand	(mg/l)	37	19	15 U	31	28
Chloride	(mg/l)	34.8	33.2	13.7	45.4	24.8
Hardness(as CaCO ₃)	(mg/l)	400	110	26	200	200
Nitrate(as N)	(mg/l)	0.29	0.1 U	0.1 U	0.89	0.1 U
Phenols, total	(mg/l)	[0.0025]	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Sulfate	(mg/l)	21.4	33.4	19.3	7.4	5 U
Total Organic Carbon	(mg/l)	3.9	3.4	0.5 U	6.3	5.8
Total Dissolved Solids	(mg/l)	306	207	67	280	240
Total Kjeldahlnitrogen(as N)	(mg/l)	5.5	2.9	0.2 U	10.8	6.4

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP C: U
NA=Not analyzed

Table C-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL REMEDIAL INVESTIGATION APRIL 1998
BASELINE GROUNDWATER MONITORING
MONITORING WELL SAMPLING RESULTS
LEACHATE PARAMETERS - DETECTS ONLY

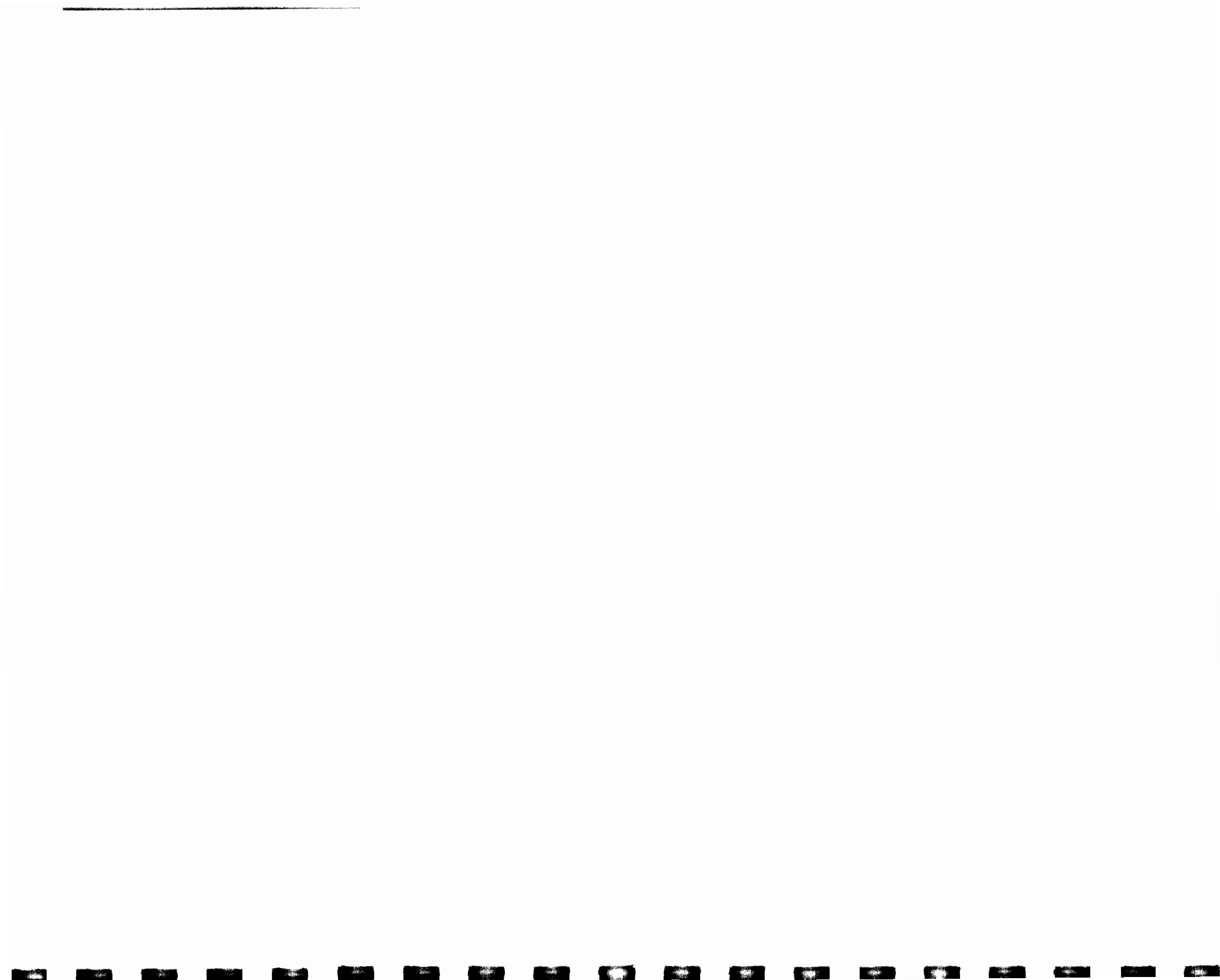
Page: 8 of 8
Date: 08/01/2001

PERIOD: From 10/24/1997 thru 02/03/1998 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-14S MW-14S 11/03/1997
Color(APHA Units)	(mg/l)		5 U
Alkalinity(as CaCO3)	(mg/l)		10.8
Ammonia (as N)	(mg/l)	2	0.02 U
Biochemical Oxygen Demand	(mg/l)		2 U
Bromide	(mg/l)	2	0.5 U
Chemical Oxygen Demand	(mg/l)		15 U
Chloride	(mg/l)	250	15.7
Hardness(as CaCO3)	(mg/l)		36
Nitrate(as N)	(mg/l)	10	4.5
Phenols, total	(mg/l)	0.001	0.0010 U
Sulfate	(mg/l)	250	12.2
Total Organic Carbon	(mg/l)		0.5 U
Total Dissolved Solids	(mg/l)		93
Total KjeldahlNitrogen(as N)	(mg/l)		0.2 U
U: Analyzed for but not detected The following qualifier(s) exist: CLP C: U NA=Not analyzed			

Appendix D





APPENDIX D

GROUNDWATER MONITORING WELL RESULTS FOR 2000-2001 BASELINE GROUNDWATER QUALITY MONITORING PROGRAM

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Std's/Guidelines	11/30/2000	MW-01D	01/30/2001	MW-01D	11/30/2000	MW-011	01/30/2001	MW-01S	11/30/2000
Chloromethane	(ug/l)	5	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Bromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Vinyl chloride	(ug/l)	2	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Chloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Methylene chloride	(ug/l)	5	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Acetone	(ug/l)	50	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Carbon disulfide	(ug/l)	50	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	10 U	2 J	5 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	10 U	3 J	5 U	10 U	2 J	5 U	10 U	5 U	5 U	5 U
Chloroform	(ug/l)	7	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
2-Butanone	(ug/l)	50	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Vinyl Acetate	(ug/l)		5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Trichloroethene	(ug/l)	5	4 J	3.7 J	5 U	10 U	10 U	5 U	10 U	5 U	10 U	2 J	5 U
Dibromochloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table D-1

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 2 of 45

Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-01D MW-01D 11/30/2000	MW-01D MW-01D 01/30/2001	MW-01I MW-01I 11/30/2000	MW-01I MW-01I 01/30/2001	MW-01S MW-01S 11/30/2000
Benzene	(ug/l)	1.0	5 U	10 U	5 U	10 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U
Bromoform	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
2-Hexanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Toluene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Chlorobenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Ethylbenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Styrene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Xylene (total)	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Acrylonitrile	(ug/l)	5	5 U	50 U	5 U	50 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U
Dibromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Iodomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

U: Analyzed for but not detected

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	MW-01D	MW-01D	MW-01D	MW-01I	MW-01I	MW-01S
	SAMPLE ID	DATE			11/30/2000	01/30/2001	01/30/2000	01/30/2001	01/30/2000	11/30/2000
1,2-Dichlorobenzene	(ug/l)	3	5 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
1,4-Dichlorobenzene	(ug/l)	3	5 U	10 U	5 U	10 U	5 U	10 U	5 U	5 U
Bromochloromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U	[7]
cis-1,2-Dichloroethene	(ug/l)	5	[8]	5 U	10 U	5 U	10 U	5 U	10 U	5 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U	NA
1,1-Dichloropropene	(ug/l)		NA	10 U	NA	10 U	NA	10 U	NA	NA
1,2-Dichloroethene	(ug/l)	5	NA	10 U	10 U	10 U	NA	10 U	16.50	12.00
Sum of Constituents	(ug/l)		15.00	13.10	29.00	16.50	12.00			

U: Analyzed for but not detected
 []=Greater than Action Level The following qualifier(s) exist: CLP Q: U
 NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 4 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-01S MW-01S 01/29/2001	MW-02D MW-02D 12/01/2000	MW-02D MW-02D 01/30/2001	MW-02I MW-02I 12/01/2000	MW-02I MW-02I 01/30/2001
Chloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Bromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl chloride	(ug/l)	2	10 U	5 U	10 U	5 U	10 U
Chloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Methylene chloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Acetone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
Carbon disulfide	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethane	(ug/l)	5	2.2 J	5 U	10 U	5 U	10 U
Chloroform	(ug/l)	7	10 U	5 U	10 U	5 U	10 U
1,2-Dichloroethane	(ug/l)	0.6	10 U	5 U	10 U	5 U	10 U
2-Butanone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,1-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Carbon tetrachloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl Acetate	(ug/l)		10 U	5 U	10 U	5 U	10 U
Bromodichloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,2-Dichloropropane	(ug/l)	1	10 U	5 U	10 U	5 U	10 U
cis-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U	10 U
Trichloroethene	(ug/l)	5	3.3 J	5 U	10 U	5 U	1.8 J
Dibromochloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,2-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U

The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

U: Analyzed for but not detected

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-01S	MW-02D	MW-02D	MW-02D	MW-02I	MW-02I
DATE	SAMPLE ID	GA Groundwater	01/29/2001	12/01/2000	01/30/2001	12/01/2000	01/30/2001	01/30/2001
Benzene	(ug/l)	1.0	10 U	5 U	10 U	5 U	10 U	10 U
trans-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U	10 U	10 U
Bromoform	(ug/l)	50	10 U	5 U	10 U	5 U	10 U	10 U
4-Methyl-2-pentanone	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
2-Hexanone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U	10 U
Tetrachloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
Toluene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
Chlorobenzene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
Ethylbenzene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
Styrene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
Xylene (total)	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
Acrylonitrile	(ug/l)	5	50 U	5 U	50 U	5 U	50 U	50 U
1,2-Dibromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	10 U	5 U	10 U	5 U	10 U	10 U
Dibromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
Iodomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
Trichlorofluoromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	10 U
1,2,3-Trichloropropane	(ug/l)	0.04	10 U	5 U	10 U	5 U	10 U	10 U

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

U: Analyzed for but not detected

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 6 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stdts/Guidelines	MW-01S MW-01S 01/29/2001	MW-02D MW-02D 12/01/2000	MW-02D MW-02D 01/30/2001	MW-02I MW-02I 12/01/2000	MW-02I MW-02I 01/30/2001
1,2-Dichlorobenzene	(ug/l)	3	10 U	5 U	10 U	5 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	5 U	10 U	5 U	10 U
Bromochloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
cis-1,2-Dichloroethene	(ug/l)	5	[8]	5 U	10 U	5 U	10 U
trans-1,2-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1-Dichloropropene	(ug/l)		10 U	NA	10 U	NA	10 U
1,2-Dichloroethene	(ug/l)	5	10 U	NA	10 U	NA	10 U
Sum of Constituents	(ug/l)		13.50	0.00	0.00	0.00	1.80

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U
NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	MW-02S	MW-02S	MW-03D	MW-03D	MW-03I
	SAMPLE ID				11/30/2000	01/31/2001	12/07/2000	02/02/2001	12/07/2000
	DATE								

Chloromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Bromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Vinyl chloride	(ug/l)	2	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Chloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Methylene chloride	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Acetone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Carbon disulfide	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	10 U	4 U	3.5 U	2 U	5 U	5 U
Chloroform	(ug/l)	7	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2-Butanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	10 U	2 U	2 U	10 U	5 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Vinyl Acetate	(ug/l)		5 U	10 U	5 U	10 U	5 U	10 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	10 U	5 U	10 U	5 U	10 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Trichloroethene	(ug/l)	5	5 U	10 U	5 U	1.1 U	5 U	10 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected
The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

Table D-1

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-02S MW-02S 11/30/2000	MW-02S MW-02S 01/31/2001	MW-03D MW-03D 12/07/2000	MW-03D MW-03D 02/02/2001	MW-03I MW-03I 12/07/2000
Benzene	(ug/l)	1.0	5 U	10 U	5 U	10 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U
Bromoform	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
2-Hexanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Toluene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Chlorobenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Ethylbenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Styrene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Xylene (total)	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Acrylonitrile	(ug/l)	5	5 U	50 U	5 U	50 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U
Dibromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Iodomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	10 U	5 U	[2.1] J	5 U

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT		SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	Sids/Guidelines	MW-02S	MW-02S	MW-02S	MW-03D	MW-03D	MW-03D	MW-03D	MW-03I	MW-03I
1,2-Dichlorobenzene	(ug/l)	3						5 U	10 U	10 U	5 U	10 U	10 U	5 U	12/07/2000	12/07/2000
1,4-Dichlorobenzene	(ug/l)	3						5 U	10 U	10 U	5 U	10 U	10 U	5 U	12/07/2000	12/07/2000
Bromochloromethane	(ug/l)	5						5 U	10 U	10 U	5 U	10 U	10 U	5 U	12/07/2000	12/07/2000
cis-1,2-Dichloroethene	(ug/l)	5						5 U	10 U	10 U	5 U	10 U	10 U	5 U	12/07/2000	12/07/2000
trans-1,2-Dichloroethene	(ug/l)	5						5 U	10 U	10 U	5 U	10 U	10 U	5 U	12/07/2000	12/07/2000
1,1-Dichloropropene	(ug/l)							NA	10 U	10 U	NA	10 U	10 U	NA	12/07/2000	12/07/2000
1,2-Dichloroethene	(ug/l)	5						NA	10 U	10 U	NA	10 U	10 U	NA	12/07/2000	12/07/2000
Sum of Constituents	(ug/l)							0.00	10 U	10 U	0.00	10 U	10 U	8.80	12/07/2000	12/07/2000

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

U: Analyzed for but not detected

U: Analyzed for but not detected
The following qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 10 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stdts/Guidelines	MW-03I MW-03I 02/02/2001	MW-03S MW-03S 12/06/2000	MW-03S MW-03S 02/02/2001	MW-04D MW-04D 12/06/2000	MW-04D MW-04D 02/01/2001
Chloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Bromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl chloride	(ug/l)	2	10 U	5 U	10 U	5 U	10 U
Chloroethane	(ug/l)	5	10 U	3 J	2.8 J	4 J	2.5 J
Methylene chloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Acetone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
Carbon disulfide	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethane	(ug/l)	5	2.4 J	5 U	10 U	5 U	10 U
Chloroform	(ug/l)	7	10 U	5 U	10 U	5 U	10 U
1,2-Dichloroethane	(ug/l)	0.6	10 U	5 U	10 U	5 U	10 U
2-Butanone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,1-Trichloroethane	(ug/l)	5	1.9 J	5 U	10 U	5 U	10 U
Carbon tetrachloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl Acetate	(ug/l)		10 U	5 U	10 U	5 U	10 U
Bromodichloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,2-Dichloropropane	(ug/l)	1	10 U	5 U	10 U	5 U	10 U
cis-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U	10 U
Trichloroethene	(ug/l)	5	1.0 J	5 U	10 U	5 U	10 U
Dibromochloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,2-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U

The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

U: Analyzed for but not detected

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	MW-03I	MW-03S	MW-03S	MW-04D	MW-04D
DATE	Sids/Guidelines	02/02/2001	12/06/2000	02/02/2001	12/06/2000	02/01/2001		
Benzene	(ug/l)	1.0	5 U	10 U	5 U	10 U	5 U	10 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U	10 U
Bromoform	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
2-Hexanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U
Tetrachloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
Toluene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
Chlorobenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
Ethylbenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
Styrene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
Xylene (total)	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
Acrylonitrile	(ug/l)	5	5 U	50 U	5 U	50 U	5 U	50 U
1,2-Dibromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U	10 U
Dibromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
Iodomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
Trichlorofluoromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U
1,2,3-Trichloropropane	(ug/l)	0.04	[1.5] U	5 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 12 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-03I MW-03I 02/02/2001	MW-03S MW-03S 12/06/2000	MW-03S MW-03S 02/02/2001	MW-04D MW-04D 12/06/2000	MW-04D MW-04D 02/01/2001
1,2-Dichlorobenzene	(ug/l)	3	10 U	5 U	10 U	5 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	5 U	10 U	5 U	10 U
Bromochloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
cis-1,2-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
trans-1,2-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1-Dichloropropene	(ug/l)		10 U	NA	10 U	NA	10 U
1,2-Dichloroethene	(ug/l)	5	10 U	NA	10 U	NA	10 U
Sum of Constituents	(ug/l)		6.80	3.00	2.80	4.00	2.50

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	MW-04I	MW-04I	MW-04S	MW-04S	MW-05D
DATE	SAMPLE ID				02/06/2000	02/01/2001	12/06/2000	02/01/2001	12/08/2000
Chloromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Bromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Vinyl chloride	(ug/l)	2	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Chloroethane	(ug/l)	5	[63]	[29]	5 U	10 U	[5]	3.8 U	5 U
Methylene chloride	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Acetone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Carbon disulfide	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Chloroform	(ug/l)	7	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2-Butanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Vinyl Acetate	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	10 U	5 U	10 U	5 U	10 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Trichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected
 []=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
 NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 14 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-04I MW-04I 12/06/2000	MW-04I MW-04I 02/01/2001	MW-04S MW-04S 12/06/2000	MW-04S MW-04S 02/01/2001	MW-05D MW-05D 12/08/2000
Benzene	(ug/l)	1.0	5 U	10 U	5 U	10 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U
Bromoform	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
2-Hexanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Toluene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Chlorobenzene	(ug/l)	5	2 J	1.4 J	3 J	2.9 J	2 J
Ethylbenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Styrene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Xylene (total)	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Acrylonitrile	(ug/l)	5	5 U	50 U	5 U	50 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U
Dibromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Iodomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	12/06/2000	02/01/2001	12/06/2000	02/01/2001	12/08/2000
	SAMPLE ID	MW-04I	MW-04I	MW-04S	MW-04S	MW-04S	MW-04S	MW-04S	MW-05D
	DATE	MW-04I	MW-04I	MW-04S	MW-04S	MW-04S	MW-04S	MW-04S	MW-05D

1,2-Dichlorobenzene	(ug/l)	3	5 U	10 U	5 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	5 U	10 U	5 U	10 U
Bromochloromethane	(ug/l)	5	5 U	10 U	5 U	10 U
cis-1,2-Dichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U
1,1-Dichloropropene	(ug/l)	NA	NA	10 U	NA	10 U
1,2-Dichloroethene	(ug/l)	5	NA	10 U	NA	10 U
Sum of Constituents	(ug/l)		65.00	30.40	8.00	6.70
						3.00

The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

U: Analyzed for but not detected

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 16 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-05D MW-05D 02/02/2001	MW-05I MW-05I 12/08/2000	MW-05I MW-05I 02/02/2001	MW-05S MW-05S 12/08/2000	MW-05S MW-05S 02/02/2001
Chloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Bromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl chloride	(ug/l)	2	10 U	5 U	10 U	5 U	10 U
Chloroethane	(ug/l)	5	10 U	5 U	10 U	3 J	[5.2] J
Methylene chloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Acetone	(ug/l)	50	10 U	5 U	10 U	5 U	2 J
Carbon disulfide	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Chloroform	(ug/l)	7	10 U	5 U	10 U	5 U	10 U
1,2-Dichloroethane	(ug/l)	0.6	10 U	5 U	10 U	5 U	10 U
2-Butanone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,1-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Carbon tetrachloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl Acetate	(ug/l)		10 U	5 U	10 U	5 U	10 U
Bromodichloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,2-Dichloropropane	(ug/l)	1	10 U	5 U	10 U	5 U	10 U
cis-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U	10 U
Trichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Dibromochloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,2-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	MW-05D	MW-05I	MW-05I	MW-05S	MW-05S
DATE	SAMPLE ID				02/02/2001	12/08/2000	02/02/2001	12/08/2000	02/02/2001

Benzene	(ug/l)	1.0	10 U	5 U	10 U	5 U	10 U	5 U	10 U
trans-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Bromoform	(ug/l)	50	10 U	5 U	10 U	5 U	10 U	5 U	10 U
4-Methyl-2-pentanone	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
2-Hexanone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Tetrachloroethene	(ug/l)	5	1.2 U	5 U	10 U	5 U	10 U	5 U	10 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Toluene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Chlorobenzene	(ug/l)	5	3.4 U	5 U	10 U	5 U	10 U	3 U	4.9 U
Ethylbenzene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Styrene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Xylene (total)	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Acrylonitrile	(ug/l)	5	50 U	5 U	50 U	5 U	50 U	5 U	50 U
1,2-Dibromoethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Dibromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Iodomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
Trichlorofluoromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U	5 U	10 U
1,2,3-Trichloropropane	(ug/l)	0.04	10 U	5 U	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected
The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

Table D-1

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 18 of 45

Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-05D MW-05D 02/02/2001	MW-05I MW-05I 12/08/2000	MW-05I MW-05I 02/02/2001	MW-05S MW-05S 12/08/2000	MW-05S MW-05S 02/02/2001
1,2-Dichlorobenzene	(ug/l)	3	10 U	5 U	10 U	5 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	2.4 J	5 U	10 U	5 U	1.2 J
Bromochloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
cis-1,2-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	NA
trans-1,2-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	NA
1,1-Dichloropropene	(ug/l)		10 U	NA	10 U	NA	10 U
1,2-Dichloroethene	(ug/l)	5	10 U	NA	10 U	NA	10 U
Sum of Constituents	(ug/l)		7.00	0.00	0.00	6.00	13.30

The following qualifier(s) exist: CLP Q: J, U NA=Not analyzed

U: Analyzed for but not detected

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	MW-06D	MW-06D	MW-06I	MW-06I	MW-06S
DATE	SAMPLE ID								
Chloromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Bromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Vinyl chloride	(ug/l)	2	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Chloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Methylene chloride	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Acetone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Carbon disulfide	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Chloroform	(ug/l)	7	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	10 U	5 U	10 U	5 U	10 U	5 U
2-Butanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Carbon tetrachloride	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Vinyl Acetate	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	10 U	5 U	10 U	5 U	10 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U	10 U	5 U
Trichloroethene	(ug/l)	5	2 U	10 U	5 U	10 U	5 U	10 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	10 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected
 []=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
 NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 20 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-06D MW-06D 12/05/2000	MW-06D MW-06D 01/31/2001	MW-06I MW-06I 12/05/2000	MW-06I MW-06I 02/01/2001	MW-06S MW-06S 12/05/2000
Benzene	(ug/l)	1.0	5 U	10 U	5 U	10 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U
Bromoform	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
2-Hexanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
Tetrachloroethene	(ug/l)	5	[15]	[11]	2 J	10 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Toluene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Chlorobenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Ethylbenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Styrene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Xylene (total)	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Acrylonitrile	(ug/l)	5	5 U	50 U	5 U	50 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U
Dibromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Iodomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected

[J]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT		SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	Stds/Guidelines
1,2-Dichlorobenzene	(ug/l)	3	5 U	10 U	5 U	10 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	5 U	10 U	5 U	10 U	10 U
Bromochloromethane	(ug/l)	5	5 U	10 U	5 U	10 U	10 U
cis-1,2-Dichloroethene	(ug/l)	5	1 J	1	4 J	10 U	10 U
trans-1,2-Dichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	10 U
1,1-Dichloropropene	(ug/l)	NA	NA	10 U	NA	10 U	10 U
1,2-Dichloroethene	(ug/l)	5	NA	10 U	NA	10 U	10 U
Sum of Constituents	(ug/l)						

1,2-Dichlorobenzene	5 U	10 U	5 U	10 U	5 U	10 U	10 U
1,4-Dichlorobenzene	5 U	10 U	5 U	10 U	5 U	10 U	10 U
Bromochloromethane	5 U	10 U	5 U	10 U	5 U	10 U	10 U
cis-1,2-Dichloroethene	5 U	10 U	1	4 J	10 U	10 U	10 U
trans-1,2-Dichloroethene	5 U	10 U	5 U	10 U	5 U	10 U	10 U
1,1-Dichloropropene	NA	10 U	NA	10 U	NA	10 U	10 U
1,2-Dichloroethene	5	NA	10 U	10 U	NA	10 U	10 U
Sum of Constituents							

U: Analyzed for but not detected
The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 22 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std/ Guidelines	MW-06S MW-06S 02/01/2001	MW-07D MW-07D 12/01/2000	MW-07D MW-07D 01/31/2001	MW-07I MW-07I 12/01/2000	MW-07I MW-07I 01/31/2001
Chloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Bromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl chloride	(ug/l)	2	[2.6] J	5 U	10 U	5 U	10 U
Chloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Methylene chloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Acetone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
Carbon disulfide	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Chloroform	(ug/l)	7	10 U	5 U	10 U	5 U	10 U
1,2-Dichloroethane	(ug/l)	0.6	10 U	5 U	10 U	5 U	10 U
2-Butanone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,1-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	[6]	2.6 J
Carbon tetrachloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl Acetate	(ug/l)		10 U	5 U	10 U	5 U	10 U
Bromodichloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,2-Dichloropropane	(ug/l)	1	10 U	5 U	10 U	5 U	10 U
cis-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U	10 U
Trichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Dibromochloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,2-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	DATE	SAMPLE ID
Benzene	(ug/l)	1.0	10 U	5 U	10 U	10 U
trans-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U
Bromoform	(ug/l)	50	10 U	5 U	10 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	10 U	5 U	10 U	5 U
2-Hexanone	(ug/l)	50	10 U	5 U	10 U	5 U
Tetrachloroethene	(ug/l)	5	10 U	4 U	3.5 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10 U	5 U	10 U	5 U
Toluene	(ug/l)	5	10 U	5 U	10 U	5 U
Chlorobenzene	(ug/l)	5	1.1 U	5 U	10 U	5 U
Ethylbenzene	(ug/l)	5	10 U	5 U	10 U	5 U
Styrene	(ug/l)	5	10 U	5 U	10 U	5 U
Xylene (total)	(ug/l)	5	10 U	5 U	10 U	5 U
Acrylonitrile	(ug/l)	5	50 U	5 U	50 U	50 U
1,2-Dibromoethane	(ug/l)	5	10 U	5 U	10 U	5 U
1,2-Dibromo-3-chloropropene	(ug/l)	0.04	10 U	5 U	10 U	5 U
Dibromomethane	(ug/l)	5	10 U	5 U	10 U	5 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	10 U	5 U	10 U	5 U
Iodomethane	(ug/l)	5	10 U	5 U	10 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	10 U	5 U	10 U	5 U
Trichlorofluoromethane	(ug/l)	5	10 U	5 U	10 U	5 U
1,2,3-Trichloropropene	(ug/l)	0.04	10 U	5 U	10 U	5 U

The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

U: Analyzed for but not detected

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 24 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-06S MW-06S 02/01/2001	MW-07D MW-07D 12/01/2000	MW-07D MW-07D 01/31/2001	MW-07I MW-07I 12/01/2000	MW-07I MW-07I 01/31/2001
1,2-Dichlorobenzene	(ug/l)	3	10 U	5 U	10 U	5 U	10 U
1,4-Dichlorobenzene	(ug/l)	3	10 U	5 U	10 U	5 U	10 U
Bromochloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
cis-1,2-Dichloroethene	(ug/l)	5	[6]	5 U	10 U	5 U	10 U
trans-1,2-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1-Dichloropropene	(ug/l)		10 U	NA	10 U	NA	10 U
1,2-Dichloroethene	(ug/l)	5	10 U	NA	10 U	NA	10 U
Sum of Constituents	(ug/l)		9.70	4.00	3.50	6.00	2.60

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U
NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	MW-07S	MW-10D	MW-10D	MW-10I
DATE	SAMPLE ID				01/31/2001	12/01/2000	02/05/2001	12/01/2000

Chloromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	5 U
Bromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	5 U
Vinyl chloride	(ug/l)	2	5 U	10 U	5 U	10 U	5 U	5 U
Chloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	5 U
Methylene chloride	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	5 U
Acetone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	5 U
Carbon disulfide	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	5 U
1,1-Dichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	5 U
1,1-Dichloroethane	(ug/l)	5	5 U	10 U	1 J	1.7 J	1 J	5 U
Chloroform	(ug/l)	7	5 U	10 U	5 U	10 U	5 U	5 U
1,2-Dichloroethane	(ug/l)	0.6	5 U	10 U	5 U	10 U	5 U	5 U
2-Butanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	5 U
1,1,1-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	1.2 J	1 J	5 U
Carbon tetrachloride	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	5 U
Vinyl Acetate	(ug/l)		5 U	10 U	5 U	10 U	5 U	5 U
Bromodichloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	5 U
1,2-Dichloropropane	(ug/l)	1	5 U	10 U	5 U	10 U	5 U	5 U
cis-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U	5 U
Trichloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	5 U
Dibromochloromethane	(ug/l)	50	5 U	10 U	5 U	10 U	5 U	5 U
1,1,2-Trichloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U	5 U

U: Analyzed for but not detected
The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 26 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-07S MW-07S 12/05/2000	MW-07S MW-07S 01/31/2001	MW-10D MW-10D 12/01/2000	MW-10D MW-10D 02/05/2001	MW-10I MW-10I 12/01/2000
Benzene	(ug/l)	1.0	5 U	10 U	5 U	10 U	5 U
trans-1,3-Dichloropropene	(ug/l)	0.4	5 U	10 U	5 U	10 U	5 U
Bromoform	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
4-Methyl-2-pentanone	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
2-Hexanone	(ug/l)	50	5 U	10 U	5 U	10 U	5 U
Tetrachloroethene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Toluene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Chlorobenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Ethylbenzene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Styrene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Xylene (total)	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Acrylonitrile	(ug/l)	5	5 U	50 U	5 U	50 U	5 U
1,2-Dibromoethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U
Dibromomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Iodomethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
Trichlorofluoromethane	(ug/l)	5	5 U	10 U	5 U	10 U	5 U
1,2,3-Trichloropropane	(ug/l)	0.04	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT		SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	Sids/Guidelines	MW-07S	MW-07S	MW-10D	MW-10D	MW-10D	MW-10I	MW-10I
1,2-Dichlorobenzene	(ug/l)	3		5 U	10 U	5 U	10 U	5 U	10 U	5 U	10 U	12/01/2000	5 U	
1,4-Dichlorobenzene	(ug/l)	3		5 U	10 U	5 U	10 U	5 U	10 U	5 U	10 U	12/01/2000	5 U	
Bromochloromethane	(ug/l)	5		5 U	10 U	5 U	10 U	5 U	10 U	5 U	10 U	12/01/2000	5 U	
cis-1,2-Dichloroethene	(ug/l)	5		5 U	10 U	5 U	10 U	5 U	10 U	5 U	10 U	02/05/2001	5 U	
trans-1,2-Dichloroethene	(ug/l)	5		5 U	10 U	5 U	10 U	5 U	10 U	5 U	10 U	02/05/2001	5 U	
1,1-Dichloropropene	(ug/l)			NA	10 U	NA	10 U	NA	10 U	NA	10 U	02/05/2001	NA	
1,2-Dichloroethene	(ug/l)	5		NA	10 U	NA	10 U	NA	10 U	NA	10 U	02/05/2001	NA	
Sum of Constituents	(ug/l)							0.00	10 U	NA	10 U	02/05/2001	2.90	2.00

U: Analyzed for but not detected
The following qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-1
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

Page: 28 of 45
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-10I MW-10I 02/05/2001	MW-10S MW-10S 12/01/2000	MW-10S MW-10S 02/05/2001	MW-11D MW-11D 12/13/2000	MW-11D MW-11D 02/07/2001
Chloromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Bromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl chloride	(ug/l)	2	10 U	5 U	10 U	5 U	10 U
Chloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Methylene chloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Acetone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
Carbon disulfide	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1-Dichloroethane	(ug/l)	5	1.0 J	[6]	4.2 J	5 U	10 U
Chloroform	(ug/l)	7	10 U	5 U	10 U	5 U	10 U
1,2-Dichloroethane	(ug/l)	0.6	10 U	5 U	10 U	5 U	10 U
2-Butanone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,1-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Carbon tetrachloride	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Vinyl Acetate	(ug/l)		10 U	5 U	10 U	5 U	10 U
Bromodichloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,2-Dichloropropane	(ug/l)	1	10 U	5 U	10 U	5 U	10 U
cis-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U	10 U
Trichloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Dibromochloromethane	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
1,1,2-Trichloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

[J]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	DATE
	MW-101	MW-10S	MW-10S	12/01/2000	
	MW-10S	MW-10S	MW-10S	02/05/2001	
	MW-11D	MW-11D	MW-11D	12/13/2000	
	MW-11D	MW-11D	MW-11D	02/07/2001	

Benzene	(ug/l)	1.0	10 U	5 U	10 U	5 U	10 U
trans-1,3-Dichloropropene	(ug/l)	0.4	10 U	5 U	10 U	5 U	10 U
Bromoform	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
4-Methyl-2-pentanone	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
2-Hexanone	(ug/l)	50	10 U	5 U	10 U	5 U	10 U
Tetrachloroethene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1,2,2-Tetrachloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Toluene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Chlorobenzene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Ethylbenzene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Styrene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Xylene (total)	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Acrylonitrile	(ug/l)	5	50 U	5 U	50 U	5 U	50 U
1,2-Dibromoethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,2-Dibromo-3-chloropropane	(ug/l)	0.04	10 U	5 U	10 U	5 U	10 U
Dibromomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
trans-1,4-Dichloro-2-butene	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Iodomethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,1,1,2-Tetrachloroethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
Trichlorofluoromethane	(ug/l)	5	10 U	5 U	10 U	5 U	10 U
1,2,3-Trichloropropane	(ug/l)	0.04	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected
The following qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	Sids/Guidelines	MW-02S	MW-02S	MW-03D	MW-03D	MW-03D
Aluminum	(ug/l)				15.8 B	11.8 U	18.3 B	22.3	16.7 B		
Antimony	(ug/l)	3			1.7 U	12.3 U	1.7 U	12.3 U	1.7 U		
Arsenic	(ug/l)	25			2.5 U	1.9 U	2.5 U	1.9 U	2.5 U		
Barium	(ug/l)	1000			34.1 B	31.9	58.5 B	22.6	19.4 B		
Beryllium	(ug/l)	3			0.1 U	0.14	0.1 U	0.11	0.1 U		
Boron	(ug/l)	1000			59.7 B	87.8	77.8 B	90.6 E	84.3 B		
Cadmium	(ug/l)	5			0.4 U	0.2 U	0.4 U	0.2 U	0.4 U		
Calcium	(ug/l)				30300	33100	29400	11800	2560 B		
Chromium	(ug/l)	50			3.5 U	0.6 U	18.3	2.2	3.5 U		
Cobalt	(ug/l)				0.9 U	1.7 U	0.9 U	1.7 U	0.9 U		
Copper	(ug/l)	200			2.6 B	1.5 U	2.6 B	1.5 U	2.9 B		
Iron	(ug/l)	300			18.7 B	13.8	93.8 B	41.1	16.4 B		
Lead	(ug/l)	25			1.4 U	1.1 U	1.4 U	1.1 U	1.4 U		
Magnesium	(ug/l)	35000			2360 B	2750	12800	5060	1140 B		
Manganese	(ug/l)	300			61.1	68.4	24.1	12.2	26.9		
Mercury	(ug/l)	0.7			0.1 U	0.1 U	0.1 U	0.1 U	0.1 U		
Nickel	(ug/l)	100			1.9 U	1.4 U	16.7 B	7.9	1.9 U		
Potassium	(ug/l)				7850	7600	3670 B	2350	1650 B		
Selenium	(ug/l)	10			4 B	1.5 U	1.7 U	1.5 U	1.7 U		
Silver	(ug/l)	50			0.93 B	1.6 U	0.5 U	1.6 U	0.5 U		
Sodium	(ug/l)	20000			12900	13100	[197000]	[119000]	[46900]		

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: B, U, E NA=Not analyzed

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: B, U, E NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 6 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-02S MW-02S 11/30/2000	MW-02S MW-02S 01/31/2001	MW-03D MW-03D 12/07/2000	MW-03D MW-03D 02/02/2001	MW-03I MW-03I 12/07/2000
Thallium	(ug/l)	0.5	[2.3] B	2.8 U	2.3 U	2.8 U	2.3 U
Vanadium	(ug/l)		0.7 U	1.7 U	0.7 U	1.7 U	0.7 U
Zinc	(ug/l)	2000	2.8 B	3.6 U	2.9 B	3.6 U	3.1 B
Cyanide	(ug/l)	200	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U, B NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	MW-03I	MW-03S	MW-03S	MW-04D	MW-04D
Aluminum	(ug/l)	20.1	16.5 B	53.7	17.7 B	15.7	
Antimony	(ug/l)	3	12.3 U	1.7 U	12.3 U	1.7 U	12.3 U
Arsenic	(ug/l)	25	1.9 U	2.5 U	1.9 U	11.9	14.4
Barium	(ug/l)	1000	15.4	125 B	125	249	224
Beryllium	(ug/l)	3	0.1 U	0.1 U	0.24	0.1 U	0.16
Boron	(ug/l)	1000	103 E	128	153 E	291	326
Cadmium	(ug/l)	5	0.2 U	0.4 U	0.22	0.4 U	0.37
Calcium	(ug/l)	2080	51200	57700	60000	59100	
Chromium	(ug/l)	50	0.6 U	3.5 U	0.6	3.5 U	0.6 U
Cobalt	(ug/l)		1.7 U	0.9 U	1.7 U	17.7 B	14.4
Copper	(ug/l)	200	1.5 U	2.6 B	1.5 U	1.5 U	1.5 U
Iron	(ug/l)	300	21.8	[10200]	[7390]	[75500]	[69500]
Lead	(ug/l)	25	1.1 U	1.4 U	1.1 U	4	3.6
Magnesium	(ug/l)	35000	925	7620	8320	11500	11100
Manganese	(ug/l)	300	31.1	[5840]	[5930]	[2900]	[2470]
Mercury	(ug/l)	0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	(ug/l)	100	1.4 U	1.9 U	1.4 U	7.1 B	5.4
Potassium	(ug/l)		1530	8310	9590	14900	16200
Selenium	(ug/l)	10	1.5 U	2.8 B	2 N	2.2 B	1.5 U
Silver	(ug/l)	50	1.6 U	1.7 B	1.6 U	1.3 B	1.6 U
Sodium	(ug/l)	20000					[27500]

U: Analyzed for but not detected
 []=Greater than Action Level The following qualifier(s) exist: CLP Q: B, U, E, N NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 8 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-03I MW-03I 02/02/2001	MW-03S MW-03S 12/06/2000	MW-03S MW-03S 02/02/2001	MW-04D MW-04D 12/06/2000	MW-04D MW-04D 02/01/2001
Thallium	(ug/l)	0.5	2.8 U	2.3 U	2.8 U	2.3 U	2.8 U
Vanadium	(ug/l)		1.7 U	0.7 U	1.7 U	0.7 U	1.7 U
Zinc	(ug/l)	2000	3.6 U	3.5 B	3.6 U	5.9 B	3.6 U
Cyanide	(ug/l)	200	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U, B NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	SAMPLE ID	DATE	Sds/Guidelines	MW-041	MW-041	MW-04S	MW-04S	MW-05D
Aluminum	(ug/l)	19.9 B	18.7	28.8 B	32.4	12.2 U	1.7 U	7.8	2.5 U
Arsenic	(ug/l)	25	14.6	17.1	3.7 B	12.3 U	1.7 U	206	0.1 U
Barium	(ug/l)	1000	175 B	107	278	285	0.18	324 E	0.77
Beryllium	(ug/l)	3	0.1 U	0.14	0.12 B	296	0.2 U	107000	3.5 U
Boron	(ug/l)	1000	300	285	263	0.6 U	0.9 U	1.7 U	5.3
Cadmium	(ug/l)	5	0.4 U	0.2 U	0.4 U	0.6 U	1.5 U	2.2	6.3
Calcium	(ug/l)	92000	62200	99400	109000	1.5 U	1.7 U	300	2.1
Chromium	(ug/l)	50	3.5 U	0.6 U	3.5 U	1.9 B	1.5 U	1.4 U	0.1 U
Cobalt	(ug/l)	200	1.7 B	1.7 U	0.9 U	1.4 U	1.5 U	1.9 U	0.1 U
Copper	(ug/l)	300	1.5 U	1.5 U	1.4 U	1.5 U	1.5 U	1.4 U	0.1 U
Iron	(ug/l)	25	1.9 B	1.9 U	1.4 U	1.5 U	1.5 U	1.4 U	0.1 U
Lead	(ug/l)	35000	15700	9960	14400	1.5 U	1.5 U	1.4 U	0.1 U
Magnesium	(ug/l)	300	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	0.1 U
Manganese	(ug/l)	300	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	0.1 U
Nickel	(ug/l)	100	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	0.1 U
Potassium	(ug/l)	21700	19400	19800	21800	21800	21800	21800	0.1 U
Selenium	(ug/l)	10	1.7 U	1.5 U	1.7 U	1.5 U	1.5 U	1.5 U	0.1 U
Silver	(ug/l)	50	0.5 U	1.6 U	1.3 B	1.6 U	1.6 U	1.6 U	0.1 U
Sodium	(ug/l)	20000	32500	22700	32100	33300	62500	62500	0.1 U

U: Analyzed for but not detected
E, *, N NA=Not analyzed
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: B, U,

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 10 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-04I MW-04I 12/06/2000	MW-04I MW-04I 02/01/2001	MW-04S MW-04S 12/06/2000	MW-04S MW-04S 02/01/2001	MW-05D MW-05D 12/08/2000
Thallium	(ug/l)	0.5	2.3 U	2.8 U	2.3 U	2.8 U	4.6 U
Vanadium	(ug/l)		0.7 U	1.7 U	1.1 B	1.7 U	0.7 U
Zinc	(ug/l)	2000	6.8 B	3.6 U	2.2 U	3.6 U	18.7
Cyanide	(ug/l)	200	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U, B NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	GA Groundwater	NYSDEC Class	DATE	Sds/Guidelines	MW-05D	MW-05I	MW-05I	MW-05S	MW-05S
Aluminum	(ug/l)	11.8 U	12.2 U	15.8	234	313	12.3 U	1.7 U	2.5 U	1.9 U
Antimony	(ug/l)	3	12.3 U	3.5	5.5	12.3 U	12.3 U	1.7 U	2.5 U	1.9 U
Arsenic	(ug/l)	25	1.9 U	3.5	5.5	12.3 U	12.3 U	1.7 U	2.5 U	1.9 U
Barium	(ug/l)	1000	190	50.4	57.7	206	0.1 U	0.1 U	0.23	0.3
Beryllium	(ug/l)	3	0.17	0.1 U	0.1 U	0.3	0.1 U	0.1 U	0.23	0.3
Boron	(ug/l)	1000	292 E	176 E	138 E	226 E	0.4 U	0.4 U	0.23	0.3
Cadmium	(ug/l)	5	0.69	0.4 U	0.36	0.2 U	0.4 U	0.4 U	0.23	0.3
Calcium	(ug/l)	99900	39200	45300	93500	90500	0.6 U	0.6 U	0.23	0.3
Chromium	(ug/l)	50	0.85	3.5 U	0.6 U	1.7	0.9 U	0.9 U	0.23	0.3
Cobalt	(ug/l)	4.6	0.9 U	1.7 U	0.9 U	1.7 U	0.9 U	0.9 U	0.23	0.3
Copper	(ug/l)	200	4.6	1.5 U	1.5 U	1.5 U	0.9 U	0.9 U	0.23	0.3
Copper	(ug/l)	200	4.6	1.5 U	1.5 U	1.5 U	0.9 U	0.9 U	0.23	0.3
Iron	(ug/l)	300	23.2	14600	15400	129800	1.4 U	1.4 U	2.9	2.5
Lead	(ug/l)	25	1.1 U	1.4 U	1.1 U	2.5	0.1 U	0.1 U	2.9	2.5
Magnesium	(ug/l)	35000	23300	6780	8460	12900	0.1 U	0.1 U	13300	12900
Manganese	(ug/l)	300	17500	1160	1380	3940	0.1 U	0.1 U	13300	12900
Mercury	(ug/l)	0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	13300	12900
Nickel	(ug/l)	100	6.7	1.9 U	1.4 U	1.4 U	0.1 U	0.1 U	13300	12900
Potassium	(ug/l)	33000	14900	15300	14000	14300	2.1 *N	2.1	14000	14300
Selenium	(ug/l)	10	7.4 N	2.1 *N	1.6 N	2.4 N	2.1	2.1	14000	14300
Silver	(ug/l)	50	2.9	1.1	1.6 U	1.6 U	2.1	2.1	14000	14300
Sodium	(ug/l)	20000	143400	20100	24100	27300	2.1	2.1	14000	14300

U: Analyzed for but not detected
[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U, E, N, * NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 12 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-05D MW-05D 02/02/2001	MW-05I MW-05I 12/08/2000	MW-05I MW-05I 02/02/2001	MW-05S MW-05S 12/08/2000	MW-05S MW-05S 02/02/2001
Thallium	(ug/l)	0.5	2.8 U	2.3 U	2.8 U	2.3 U	2.8 U
Vanadium	(ug/l)		1.7 U	0.7 U	1.7 U	2.5	2.6
Zinc	(ug/l)	2000	6	4.6	3.6 U	2.2 U	3.6 U
Cyanide	(ug/l)	200	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	GA Groundwater	NYSDEC Class	12/05/2000	MW-06D	01/31/2001	MW-06D	12/05/2000	MW-06I	02/01/2001	MW-06I	12/05/2000	MW-06S	12/05/2000	MW-06S
Aluminum	(ug/l)	12.2 U	14.9	17.6 B	16.4	45.5 B	1.7 U	12.3 U	2.6	3.2 B	121 B	0.1 U	162	0.4 U	64500
Arsenic	(ug/l)	2.5 U	1.9 U	2.5 U	2.6	3.2 B	91.4	0.14	186	162	0.4 U	64500	3.5 U	0.9 U	1.5 U
Barium	(ug/l)	23.8 B	20.1	88.4 B	91.4	121 B	0.1 U	0.14	186	162	0.4 U	64500	3.5 U	0.9 U	1.5 U
Beryllium	(ug/l)	0.1 U	0.1 U	0.1 U	0.14	0.1 U	186	162	0.4 U	64500	3.5 U	0.9 U	1.5 U	0.9 U	1.5 U
Boron	(ug/l)	44.7 B	63.6	149	186	162	0.4 U	64500	3.5 U	0.9 U	1.5 U	0.9 U	1.5 U	0.9 U	1.5 U
Cadmium	(ug/l)	0.4 U	0.2 U	0.4 U	0.2 U	0.4 U	0.2 U	0.4 U	0.2 U	0.4 U	0.2 U	0.4 U	0.2 U	0.4 U	0.2 U
Calcium	(ug/l)	4640 B	4290	36900	36000	64500	3.5 U	0.9 U	1.5 U	0.9 U	1.5 U	0.9 U	1.5 U	0.9 U	1.5 U
Chromium	(ug/l)	3.5 U	0.6 U	3.5 U	0.6 U	3.5 U	0.6 U	3.5 U	0.6 U	3.5 U	0.6 U	3.5 U	0.6 U	3.5 U	0.6 U
Cobalt	(ug/l)	5.7 B	5.3	3 B	2.3	0.9 U	1.5 U	0.9 U	1.5 U	0.9 U	1.5 U	0.9 U	1.5 U	0.9 U	1.5 U
Copper	(ug/l)	2.1 B	1.5 U	2.6 B	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Iron	(ug/l)	[5040]	[4000]	[5150]	[3660]	[48000]	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U
Lead	(ug/l)	1.4 U	1.1 U	1.4 U	1.1 U	1.4 B	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U
Magnesium	(ug/l)	1930 B	1800	4020 B	3680	6280	[807]	[805]	3680	6280	[543]	6280	300	35000	1930 B
Manganese	(ug/l)	[8160]	[7680]	[805]	[807]	[543]	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Mercury	(ug/l)	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	(ug/l)	2.3 B	2	1.9 U	1.4 U	1.9 U	1.4 U	1.9 U	1.4 U	1.9 U	1.4 U	1.9 U	1.4 U	1.9 U	1.4 U
Potassium	(ug/l)	1220 B	1260	8540	9670	8250	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U
Selenium	(ug/l)	4.3 B	2.9 N	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U	1.5 U
Silver	(ug/l)	2.4 B	1.8	0.75 B	1.6 U	0.63 B	1.6 U	1.5 U	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U	1.5 U	1.7 U
Sodium	(ug/l)	[20400]	17700	19600	17400	12800	17400	12800	17400	12800	17400	12800	17400	12800	17400

U: Analyzed for but not detected
 []=Greater than Action Level The following qualifier(s) exist: CLP Q: U, B, N NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 14 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-06D MW-06D 12/05/2000	MW-06D MW-06D 01/31/2001	MW-06I MW-06I 12/05/2000	MW-06I MW-06I 02/01/2001	MW-06S MW-06S 12/05/2000
Thallium	(ug/l)	0.5	2.3 U	2.8 U	2.3 U	2.8 U	2.3 U
Vanadium	(ug/l)		0.7 U	1.7 U	0.7 U	1.7 U	0.7 U
Zinc	(ug/l)	2000	3.8 B	3.6 U	5 B	3.6 U	2.2 U
Cyanide	(ug/l)	200	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U, B NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	DATE	SAMPLE ID
Aluminum	(ug/l)	12.1	55.6 B	28.4	16 B	23.6
Antimony	(ug/l)	3	12.3 U	1.7 U	12.3 U	1.7 U
Arsenic	(ug/l)	25	8	2.5 U	1.9 U	2.5 U
Barium	(ug/l)	1000	101	2.5 B	2.9 U	39.6 B
Beryllium	(ug/l)	3	0.1 U	0.1 U	0.11	0.1 U
Boron	(ug/l)	1000	183	43.2 B	71.4	33 B
Cadmium	(ug/l)	5	0.2 U	0.4 U	0.2 U	0.4 U
Calcium	(ug/l)	53100	544 B	465	20000	14700
Chromium	(ug/l)	50	0.6 U	3.5 U	0.6 U	3.5 U
Cobalt	(ug/l)		1.7 U	0.9 U	1.7 U	0.9 U
Copper	(ug/l)	200	1.5 U	2.3 B	1.5 U	1.5 U
Iron	(ug/l)	300	[40000]	34.5 B	12.4	26.2 B
Lead	(ug/l)	25	1.9	1.4 U	1.1 U	1.1 U
Magnesium	(ug/l)	35000	4680	276 B	269	4310 B
Manganese	(ug/l)	300	[430]	3 B	1.9	[6510]
Mercury	(ug/l)	0.7	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	(ug/l)	100	1.4 U	1.9 U	1.4 U	1.9 U
Potassium	(ug/l)	8050	458 B	497	2590 B	2460
Selenium	(ug/l)	10	1.5 U	1.7 U	1.5 U	1.7 U
Silver	(ug/l)	50	1.6 U	0.5 U	1.6 U	1.6 U
Sodium	(ug/l)	20000	13200	[22700]	[22600]	[22300]
						19600

U: Analyzed for but not detected
 []=Greater than Action Level The following qualifier(s) exist: CLP Q: B, U,
 N NA=Not analyzed

Table D-2

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stdts/Guidelines	MW-06S MW-06S 02/01/2001	MW-07D MW-07D 12/01/2000	MW-07D MW-07D 01/31/2001	MW-07I MW-07I 12/01/2000	MW-07I MW-07I 01/31/2001
Thallium	(ug/l)	0.5	2.8 U	2.3 U	2.8 U	2.3 U	2.8 U
Vanadium	(ug/l)		1.7 U	0.7 U	1.7 U	0.7 U	1.7 U
Zinc	(ug/l)	2000	3.6 U	9.8 B	3.6 U	3.8 B	3.6 U
Cyanide	(ug/l)	200	5 U	10 U	5 U	10 U	5 U

The following qualifier(s) exist: CLP Q: U, B NA=Not analyzed

U: Analyzed for but not detected

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	GA Groundwater	NYSDEC Class	Sids/Guidelines	MW-07S	MW-07S	MW-10D	MW-10D	MW-10D	DATE
Aluminum	(ug/l)	23 B	105	66.4	33.9	12.9				
Antimony	(ug/l)	3	12.3 U	1.7 U	12.3 U	1.7 U				
Arsenic	(ug/l)	25	1.9 U	2.5 U	1.9 U	2.5 U				
Barium	(ug/l)	1000	35.3 B	26.1	17.4	18.8				
Beryllium	(ug/l)	3	0.1 U	0.19	0.1 U	0.54				
Boron	(ug/l)	1000	92.5 B	65.7	130 E	121 E				
Cadmium	(ug/l)	5	0.4 U	0.2 U	0.4 U	0.27				
Calcium	(ug/l)	51000	45900	3800	4230	10300				
Chromium	(ug/l)	50	3.5 U	[59.3]	3.5 U	0.6 U				
Cobalt	(ug/l)		0.9 U	1.7 U	1.2	0.9 U				
Copper	(ug/l)	200	3.2 B	9.4	2.1	1.5 U				
Iron	(ug/l)	300	43.9 B	[1500]	[1240]	[1350]				
Lead	(ug/l)	25	1.4 U	1.4	1.4 U	1.4 U				
Magnesium	(ug/l)	35000	9390	5340	1390	1460				
Manganese	(ug/l)	300	148	58.9	[4950]	[5800]				
Mercury	(ug/l)	0.7	0.1 U	0.1 U	0.1 U	0.1 U				
Nickel	(ug/l)	100	1.9 U	10.6	2.1	1.4 U				
Potassium	(ug/l)		9250	8070	1530	1580				
Selenium	(ug/l)	10	1.7 U	1.5 U	2.6 * N	8.1 N				
Silver	(ug/l)	50	0.5 U	1.6 U	2.3	1.6 U				
Sodium	(ug/l)	20000	16200	12400	[47200]	[37900]				
						[24200]				

U: Analyzed for but not detected
E, *, N NA=Not analyzed
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: B, U,

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 18 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-07S MW-07S 12/05/2000	MW-07S MW-07S 01/31/2001	MW-10D MW-10D 12/12/2000	MW-10D MW-10D 02/05/2001	MW-10I MW-10I 12/12/2000
Thallium	(ug/l)	0.5	2.3 U	2.8 U	2.3 U	2.8 U	2.3 U
Vanadium	(ug/l)		0.7 U	1.7 U	0.7 U	1.7 U	0.7 U
Zinc	(ug/l)	2000	2.2 U	6.9	2.9	8.2	9.5
Cyanide	(ug/l)	200	10 U	5 U	10 U	5 U	10 U

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

U: Analyzed for but not detected

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	GA Groundwater	NYSDEC Class	Std's/GuideLines	MW-101	MW-10S	MW-10S	MW-11D	MW-11D	DATE
Aluminum	(ug/l)	20.2	18.8	171	578	12.3 U	1.7 U	2.5 U	1.9 U	31.9
Antimony	(ug/l)	3	12.3 U	1.7 U	12.3 U	1.9 U	1.7 U	2.5 U	1.9 U	0.13
Arsenic	(ug/l)	25	1.9 U	2.5 U	2.5 U	2.5 U	1.9 U	2.5 U	1.9 U	0.22
Barium	(ug/l)	1000	17.5	23.1	27.2	34	0.22	42.2 E	32.6 E	0.13
Beryllium	(ug/l)	3	0.1 U	0.1 U	0.1 U	0.11	0.22	0.4 U	0.22	0.22
Boron	(ug/l)	1000	122	102 E	87.8	42.2 E	0.4 U	0.4 U	0.22	0.22
Cadmium	(ug/l)	5	0.34	0.4 U	0.2 U	0.2 U	0.4 U	0.4 U	0.22	0.22
Calcium	(ug/l)	11000	62700	68800	4290	5130	0.4 U	0.4 U	0.22	0.22
Chromium	(ug/l)	50	0.6 U	3.5 U	1.7	3.5 U	0.9 U	0.9 U	1.6	1.6
Cobalt	(ug/l)		1.7 U	0.9 U	1.7 U	0.9 U	0.9 U	0.9 U	1.7 U	1.7 U
Copper	(ug/l)	200	1.5 U	3.1	2.5	2.3	2.3	2.3	1.5 U	1.5 U
Iron	(ug/l)	300	7.5	190	133	16.7	30.6	30.6	1.1 U	1.1 U
Lead	(ug/l)	25	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U	1.1 U
Magnesium	(ug/l)	35000	3170	8560	9210	1340	1440	1340	1440	1440
Manganese	(ug/l)	300	[3920]	[6570]	[6740]	76.7	83.5	76.7	83.5	83.5
Mercury	(ug/l)	0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	(ug/l)	100	1.4 U	1.9 U	3	5.3	5.8	5.3	5.8	5.8
Potassium	(ug/l)	1970	13400	16900	3.1 N	1.7 UN	7120	6950	7120	7120
Selenium	(ug/l)	10	1.5 U	3.8 *N	1.6 U	1.2	2 N	1.6 U	2 N	2 N
Silver	(ug/l)	50	2.7	2.7	1.6 U	1.2	1.6 U	1.2	1.6 U	1.6 U
Sodium	(ug/l)	20000	[22500]	[33500]	[45500]	7840	7610	7840	7610	7610

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U, E, *, N NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 20 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-10I MW-10I 02/05/2001	MW-10S MW-10S 12/12/2000	MW-10S MW-10S 02/05/2001	MW-11D MW-11D 12/13/2000	MW-11D MW-11D 02/07/2001
Thallium	(ug/l)	0.5	2.8 U	2.3 U	2.8 U	2.3 U	2.8 U
Vanadium	(ug/l)		1.7 U	0.78	1.7 U	0.7 U	1.7 U
Zinc	(ug/l)	2000	3.6 U	2.2 U	3.6 U	2.8	13.6
Cyanide	(ug/l)	200	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	Stds/Guidelines	MW-111	MW-111	MW-111S	MW-111S	MW-112D	MW-112D
Aluminum	(ug/l)	22.3	11.8 U	31.7	47.7	14.9	1.7 U	12.3 U	1.7 U	12.3 U	1.7 U	14.9
Antimony	(ug/l)	3	1.7 U	12.3 U	1.7 U	12.3 U	1.9 U	2.5 U	1.9 U	12.3 U	1.7 U	2.5 U
Arsenic	(ug/l)	25	2.5 U	1.9 U	1.9 U	1.9 U	10.3	27.3	24.1	0.1 U	0.1 U	1.5
Barium	(ug/l)	1000	13.1	10.3	27.3	24.1	0.1 U	0.1 U	0.1 U	630 E	29.4 E	0.4 U
Beryllium	(ug/l)	3	0.1 U	0.1 U	0.1 U	0.1 U	0.4 U	0.4 U	0.2 U	53800	3180	3.5 U
Chromium	(ug/l)	50	3.5 U	0.6 U	3.5 U	9.8	0.6 U	0.4 U	0.2 U	53800	3180	3.5 U
Cobalt	(ug/l)	4	3.2	1.4	1.8	0.9 U	3.2	3.2	3	65.1	20.9	1.5 U
Copper	(ug/l)	200	2.4	1.5 U	3.2	3	2.4	1.5 U	3	65.1	20.9	1.5 U
Iron	(ug/l)	300	24.1	10.2	45.6	65.1	24.1	10.2	45.6	65.1	20.9	1.5 U
Lead	(ug/l)	25	1.4 U	1.1 U	1.4 U	1.1 U	1.4 U	1.1 U	1.1 U	1.4 U	1.4 U	1.4 U
Magnesium	(ug/l)	35000	2670	2670	6250	5770	2670	6250	5770	1520	1.8	1.8
Manganese	(ug/l)	300	[1590]	[1340]	[5290]	[4340]	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Mercury	(ug/l)	0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	(ug/l)	100	3.5	2.5	3.1	3.3	3.5	2.5	3.1	3.3	1.9 U	1.9 U
Potassium	(ug/l)	2690	2270	9070	7980	554	2270	9070	7980	554	1.7 UN	1.7 UN
Selenium	(ug/l)	10	1.7 UN	1.5 U	3 *N	3 N	1.7 UN	1.5 U	3 *N	3 N	1.7 UN	1.7 UN
Silver	(ug/l)	50	1.7	1.6 U	3.6	1.6 U	1.7	1.6 U	3.6	1.6 U	1.4	1.4
Sodium	(ug/l)	20000	13200	10400	[37900]	[26900]	13200	10400	[37900]	[26900]	8610	8610

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U, E, N, * NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 22 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-11I MW-11I 12/13/2000	MW-11I MW-11I 02/07/2001	MW-11S MW-11S 12/13/2000	MW-11S MW-11S 02/07/2001	MW-12D MW-12D 12/08/2000
Thallium	(ug/l)	0.5	2.3 U	2.8 U	2.3 U	2.8 U	2.3 U
Vanadium	(ug/l)		0.95	1.7 U	0.98	1.7 U	0.7 U
Zinc	(ug/l)	2000	5.4	4.1	2.2 U	3.6 U	2.2 U
Cyanide	(ug/l)	200	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	Sids/GuideLines	MW-12D	MW-12I	MW-12I	MW-12I	MW-12S	MW-12S
Aluminum	(ug/l)	18.6	38.1 B	13.5	135 B	109	12.3 U	1.7 U	1.7 U	2.5 U	1.9 U	12.3 U
Antimony	(ug/l)	3	12.3 U	1.7 U	12.3 U	1.7 U	1.9 U	1.9 U	2.5 U	1.9 U	1.9 U	12.3 U
Arsenic	(ug/l)	25	1.9 U	2.5 U	1.9 U	1.9 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1.9 U
Barium	(ug/l)	1000	2.9 U	20.2 B	12.6	35.5 B	32.6	0.1 U	0.1 U	102	108	0.1 U
Beryllium	(ug/l)	3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	102	108	0.1 U
Boron	(ug/l)	1000	25.2 E	865	423 E	102	108	0.2 U	0.2 U	102	108	0.2 U
Cadmium	(ug/l)	5	0.2 U	0.4 U	0.2 U	0.4 U	0.2 U	0.2 U	0.2 U	102	108	0.2 U
Calcium	(ug/l)	3660	13500	9680	33500	38700	3	0.6 U	0.6 U	8.7 B	3	38700
Chromium	(ug/l)	50	1	3.5 U	8.7 B	3	0.9 U	0.9 U	0.9 U	8.7 B	3	0.9 U
Cobalt	(ug/l)	1.7 U	0.9 U	1.7 U	0.9 U	1.7 U	1.7 U	0.9 U	0.9 U	0.9 U	1.7 U	1.7 U
Copper	(ug/l)	200	1.5 U	2.4 B	1.5 U	3.2 B	1.5 U	1.5 U	1.5 U	3.2 B	1.5 U	1.5 U
Iron	(ug/l)	300	16.5	20.9 B	12.4	88.4	300	1.1 U	1.1 U	170	88.4	300
Lead	(ug/l)	25	1.1 U	1.4 U	1.1 U	1.1 U	25	1.4 U	1.4 U	1.4 U	1.1 U	25
Magnesium	(ug/l)	35000	1760	3600 B	2400	2280	35000	1.760	1.760	1990 B	2280	35000
Manganese	(ug/l)	300	1.4	[1300]	[1070]	14.1	300	1.4	1.4	45	14.1	300
Mercury	(ug/l)	0.7	0.1 U	NA	0.1 U	0.1 U	0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.7
Nickel	(ug/l)	100	1.4 U	1.9 U	1.4 U	1.4 U	100	1.4 U	1.4 U	3.5 B	1.4 U	100
Potassium	(ug/l)	673	2110 B	1810	14900	15400	673	2110 B	2110 B	3.5 B	15400	673
Selenium	(ug/l)	10	1.5 U	1.7 U	1.5 U	1.5 U	10	1.5 U	1.5 U	1.7 U	1.5 U	10
Silver	(ug/l)	50	1.6 U	0.65 B	1.6 U	1.6 U	50	1.6 U	1.6 U	0.5 U	1.6 U	50
Sodium	(ug/l)	20000	9340	[22500]	13900	[21100]	20000	9340	9340	18000	[21100]	20000

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: B, U, E NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 24 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-12D MW-12D 02/07/2001	MW-12I MW-12I 12/07/2000	MW-12I MW-12I 02/08/2001	MW-12S MW-12S 12/07/2000	MW-12S MW-12S 02/05/2001
Thallium	(ug/l)	0.5	2.8 U	2.3 U	2.8 U	2.3 U	2.8 U
Vanadium	(ug/l)		1.7 U	0.7 U	1.7 U	0.98 B	1.7 U
Zinc	(ug/l)	2000	3.6 U	13.7 B	9	2.2 U	3.6 U
Cyanide	(ug/l)	200	5 U	10 U	5 U	10 U	5 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U, B NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT		SITE	SAMPLE ID	DATE	NYSDEC Class	GA Groundwater	Stds/Guidelines	MW-13D	MW-13D	MW-13I	MW-13I	MW-13S	MW-13S
Aluminum	(ug/l)				12.2 U	11.8 U	13.6	11.8 U	11.8 U	11.8 U	11.8 U	303	
Antimony	(ug/l)				3	1.7 U	12.3 U	1.7 U	1.7 U	12.3 U	1.7 U	1.7 U	
Arsenic	(ug/l)				25	2.5 U	1.9 U	2.5 U	1.9 U	1.9 U	1.9 U	2.5 U	
Barium	(ug/l)				1000	74.9	73.9	453	391	391	391	46.4	
Beryllium	(ug/l)				3	0.1 U	0.16	0.1 U	0.1 U	0.1 U	0.1 U	0.26	
Boron	(ug/l)				1000	183 E	175 E	221 E	190 E	190 E	190 E	42.4 E	
Cadmium	(ug/l)				5	0.4 U	0.38	0.4 U	0.41	0.41	0.4 U	0.4 U	
Calcium	(ug/l)				59000	58700	58100	49800	9750	9750	9750	9750	
Chromium	(ug/l)				50	3.6	1.2	3.5 U	0.6 U	0.6 U	0.6 U	3.5 U	
Cobalt	(ug/l)					6.8	6.5	52.7	44.3	44.3	44.3	0.9 U	
Copper	(ug/l)				200	2.1	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.8	
Iron	(ug/l)				300	53.5	47.3	[60600]	[53500]	[53500]	[53500]	100	
Lead	(ug/l)				25	2.5	1.5	4	2.5	2.5	2.5	1.6	
Magnesium	(ug/l)				35000	8170	8180	6750	5970	5970	5970	1870	
Manganese	(ug/l)				300	[26100]	[25800]	[2130]	[1700]	[1700]	[1700]	61.5	
Mercury	(ug/l)				0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
Nickel	(ug/l)				100	4.1	3.9	2.5	2.1	2.1	2.1	1.9 U	
Potassium	(ug/l)					12400	13400	12500	11600	11600	11600	2970	
Selenium	(ug/l)				10	[12.6] *N	[10.5] N	2.3 *N	1.5 U	1.5 U	1.5 U	5.1 *N	
Silver	(ug/l)				50	6.3	4.6	1.7	1.6 U	1.6 U	1.6 U	1	
Sodium	(ug/l)				20000	[23300]	[22300]	17900	14600	14600	14600	8870	

U: Analyzed for but not detected
 []=Greater than Action Level The following qualifier(s) exist: CLP Q: U, E,
 *, N NA=Not analyzed

Table D-2

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 26 of 30

Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stdts/Guidelines	MW-13D MW-13D 12/12/2000	MW-13D MW-13D 02/06/2001	MW-13I MW-13I 12/12/2000	MW-13I MW-13I 02/06/2001	MW-13S MW-13S 12/11/2000
Thallium	(ug/l)	0.5	4.6 U	5.6 U	[5.6]	2.8 U	2.3 U
Vanadium	(ug/l)		0.7 U	1.7 U	0.7 U	1.7 U	0.78
Zinc	(ug/l)	2000	2.2	3.6 U	2.2 U	3.6 U	2.2 U
Cyanide	(ug/l)	200	10 U	5 U	10 U	5 U	10 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	GA Groundwater	NYSDEC Class	Sids/Guidelines	DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium
						(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
						931	12.3 U	1.9 U	52.9	0.46	29.5 E	0.36	5950	2.2	1.7 U	1.5 U	[475]	1.1 U	1710	152	0.1 U	2.4	2130	1.5 U	1.6 U	5300
						12.2 U	1.7 U	2.5 U	325	0.14	279 E	0.4 U	76500	3.5 U	20.7	1.5 U	[50400]	3.9	17000	[12700]	0.1 U	6.2	30400	5.5* N	4.1	[29000]
						17.6	12.3 U	1.9 U	307	0.1 U	254 E	0.44	74500	0.6 U	19.3	1.5 U	[43000]	3.6	17000	[12800]	0.1 U	6.1	30300	5.7 N	2	[27100]
						20.2	1.7 U	11.2	164	0.1 U	295 E	0.4 U	77900	3.5 U	7.3	1.5 U	[49600]	3.9	14200	[602]	0.1 U	1.9 U	23500	1.7 UN	1.3	[31800]
						18.1	12.3 U	10.7	147	0.1 U	277 E	0.45	72900	0.6 U	6	1.5 U	[46000]	2.5	13200	[564]	0.1 U	1.4 U	24000	1.5 U	1.6 U	[30100]

U: Analyzed for but not detected
[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U, E, *, N NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 28 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-13S MW-13S 02/06/2001	MW-14D MW-14D 12/11/2000	MW-14D MW-14D 02/07/2001	MW-14I MW-14I 12/11/2000	MW-14I MW-14I 02/06/2001
Thallium	(ug/l)	0.5	2.8 U	2.3 U	2.8 U	2.3 U	2.8 U
Vanadium	(ug/l)		1.7 U	0.7 U	1.7 U	0.7 U	1.7 U
Zinc	(ug/l)	2000	3.6 U	8.7	10.3	2.6	3.6 U
Cyanide	(ug/l)	200	5 U	10 U	7.4 J	10 U	5 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Stds/Guidelines	DATE	Aluminum (ug/l)	Antimony (ug/l)	Arsenic (ug/l)	Barium (ug/l)	Beryllium (ug/l)	Boron (ug/l)	Cadmium (ug/l)	Calcium (ug/l)	Chromium (ug/l)	Cobalt (ug/l)	Copper (ug/l)	Iron (ug/l)	Lead (ug/l)	Magnesium (ug/l)	Manganese (ug/l)	Mercury (ug/l)	Nickel (ug/l)	Potassium (ug/l)	Selenium (ug/l)	Silver (ug/l)	Sodium (ug/l)
	MW-14S	MW-14S	MW-14S	12/11/2000	02/06/2001	685	12.3 U	1.9 U	28.8	0.1 U	55.8 E	0.71	12100	2	1.7 U	4.4	[340]	1.1 U	2740	87.4	0.1 U	3.3	2740	1.5 U	1.6 U	8420
						94	[59.8]	2.5 U	20.3	0.1 U	74 E	2 U	11400	17.5 U	0.9 U	2.3	26	7 U	2480	94.9	0.1 U	5.6	2510	8.5 UN	0.94	7930
							3	25	1000	3	1000	5		50		200	300	25	35000	300	0.7	100		10	50	20000

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, E, N NA=Not analyzed

Table D-2
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
INORGANIC ANALYSIS (METALS)

Page: 30 of 30
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-14S MW-14S 12/11/2000	MW-14S MW-14S 02/06/2001
Thallium	(ug/l)	0.5	11.5 U	2.8 U
Vanadium	(ug/l)		3.5 U	1.7 U
Zinc	(ug/l)	2000	62.9	191
Cyanide	(ug/l)	200	10 U	5 U

U: Analyzed for but not detected

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE	SAMPLE ID
Color(APHA Units)	(mg/l)	5 U	5 U	5 U	5 U	5 U
Alkalinity(as CaCO ₃)	(mg/l)	37	43	65.6	50	183
Ammonia (as N)	(mg/l)	0.46	0.49	0.24	0.63	[2.1]
Biochemical Oxygen Demand	(mg/l)	2 U	2 U	2	2 U	2 U
Bromide	(mg/l)	2	0.5 U	0.5 U	0.5 U	0.5
Chemical Oxygen Demand	(mg/l)	21.5	10.7	10 U	10 U	29.6
Chloride	(mg/l)	250	[737]	[570]	34.6	72
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO ₃)	(mg/l)	74	80	5	30	140
Nitrate(as N)	(mg/l)	10	0.42	1.0	0.53	1.3
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	19.8	33.2	10.2	5 U
Total Organic Carbon	(mg/l)	2.3	2.4	1.7	0.99 U	6
TDS	(mg/l)	1060	1500	179	310	259
Total Kjeldahlnitrogen(as N)	(mg/l)	0.59	0.660	0.35	1.16	(1.9)

U: Analyzed for but not detected
()=Less than Reporting Limit []=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

Page: 2 of 15
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stdts/Guidelines	MW-01S MW-01S 01/29/2001	MW-02D MW-02D 12/01/2000	MW-02D MW-02D 01/30/2001	MW-02I MW-02I 12/01/2000	MW-02I MW-02I 01/30/2001
Color(APHA Units)	(mg/l)		50	5 U	5 U	5 U	5 U
Alkalinity(as CaCO3)	(mg/l)		180	13.8	14	9	9.3
Ammonia (as N)	(mg/l)	2	[2.2]	0.2	0.22	[9.1]	0.64
Biochemical Oxygen Demand	(mg/l)		6.00	2 U	2 U	2 U	2 U
Bromide	(mg/l)	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chemical Oxygen Demand	(mg/l)		10.7	73	10 U	56.7	10 U
Chloride	(mg/l)	250	42	5.2	5.5	12.8	15
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO3)	(mg/l)		200	30	68	34	80
Nitrate(as N)	(mg/l)	10	0.080 J	1.2	1.0	2.2	2.4
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	42.5	5 U	8.20	5.4	7.80
Total Organic Carbon	(mg/l)		9.1	1 U	0.88 J	1.5	1.1
TDS	(mg/l)		310	96	80	88	99
Total KjeldahlNitrogen(as N)	(mg/l)		3.30	(0.19)	0.340	9	1.20

U: Analyzed for but not detected

()=Less than Reporting Limit []=Greater than Action Level The following
qualifier(s) exist: CLP Q: U, J NA=Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE	Color(APHA Units)	Alkalinity(as CaCO ₃)	Ammonia (as N)	Biochemical Oxygen Demand	Bromide	Chemical Oxygen Demand	Chloride	Chromium(Hexavalent)	Hardness(as CaCO ₃)	Nitrate(as N)	Phenols, total	Sulfate	Total Organic Carbon	TDS	Total Kjeldahlnitrogen(as N)
		MW-02S	MW-02S	MW-02S	01/31/2001	5 U	86.2	1.5	2 U	0.5 U	10 U	9.5	0.02 U	88	2.4	0.0050 U	26.6	1.6	138	(1.4)
		MW-03D	MW-03D	MW-03D	12/07/2000	5 U	31.8	0.26	3	0.6	10 U	[275]	0.02 U	140	2.8	0.0050 U	140	1 U	664	0.7
		MW-03D	MW-03D	MW-03D	02/02/2001	5 U	34.2	0.32	2 U	0.5 U	10 U	96.6	0.02 U	44	3.76	0.0050 U	77.0	1.25	393	0.710
		MW-03I	MW-03I	MW-03I	12/07/2000	5 U	21	0.10 U	6	0.5 U	10 U	34.1	0.02 U	16	6.5	0.0050 U	29.1	1 U	163	0.10 U

U: Analyzed for but not detected
()=Less than Reporting Limit []=Greater than Action Level The following
qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

Page: 4 of 15
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-03I MW-03I 02/02/2001	MW-03S MW-03S 12/06/2000	MW-03S MW-03S 02/02/2001	MW-04D MW-04D 12/06/2000	MW-04D MW-04D 02/01/2001
Color(APHA Units)	(mg/l)		5 U	70	100	150	50
Alkalinity(as CaCO3)	(mg/l)		21.6	183	160	232	260
Ammonia (as N)	(mg/l)	2	0.1 U	[2.3]	1.66	[5.3]	[5.40]
Biochemical Oxygen Demand	(mg/l)		2 U	11	18.0	4	8.00
Bromide	(mg/l)	2	0.700	0.5 U	0.5 U	0.8	1.1
Chemical Oxygen Demand	(mg/l)		10 U	10 U	32.6	10 U	10.6
Chloride	(mg/l)	250	32.0	28.8	26.8	42.8	42
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO3)	(mg/l)		72	180	188	280	200
Nitrate(as N)	(mg/l)	10	4.63	0.1 U	0.254	0.1 U	0.1 U
Phenols, total	(mg/l)	0.001	[0.0017] J	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	16.6	5.1	19.0	9.1	6.10
Total Organic Carbon	(mg/l)		1.12	4.3	4.67	6.5	6.2
TDS	(mg/l)		135	237	248	304	310
Total KjeldahNitrogen(as N)	(mg/l)		0.160	2	1.70	6.6	7.00

U: Analyzed for but not detected

[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U, J
NA=Not analyzed

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE	Color(APHA Units)	Alkalinity(as CaCO ₃)	Ammonia (as N)	Biochemical Oxygen Demand	Bromide	Chemical Oxygen Demand	Chloride	Chromium(Hexavalent)	Hardness(as CaCO ₃)	Nitrate(as N)	Phenols, total	Sulfate	Total Organic Carbon	TDS	Total Kjeldahl Nitrogen(as N)
	MW-041	MW-041	MW-041	MW-041	12/06/2000	200	339	[9.2]	24	0.9	10 U	50.9	0.02 U	480	0.1 U	0.0050 U	5 U	7.5	410	11.4
	MW-041	MW-041	MW-041	MW-041	02/01/2001	60	240	[8.20]	20.0	0.70	10 U	48	0.02 U	200	0.1 U	0.0050 U	5 U	7.5	310	10.1
	MW-04S	MW-04S	MW-04S	MW-04S	12/06/2000	200	364	[7.8]	37	1.2	10 U	42.2	0.02 U	480	0.1 U	0.0050 U	8.9	8.1	426	8.9
	MW-04S	MW-04S	MW-04S	MW-04S	02/01/2001	80	400	[7.20]	34.0	1.0	13.4	49	0.02 U	340	0.1 U	0.0050 U	5.30	11	460	10.7
	MW-05D	MW-05D	MW-05D	MW-05D	12/08/2000	50	467	[14.9]	5	0.5 U	40.5	65.4	0.02 U	410	0.1 U	0.0050 U	25.5	13.6	549	15.3

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U
NA=Not analyzed

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

Page: 6 of 15
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-05D MW-05D 02/02/2001	MW-05I MW-05I 12/08/2000	MW-05I MW-05I 02/02/2001	MW-05S MW-05S 12/08/2000	MW-05S MW-05S 02/02/2001
Color(APHA Units)	(mg/l)		10.0	300	100	400	100
Alkalinity(as CaCO3)	(mg/l)		505	113	157	390	362
Ammonia (as N)	(mg/l)	2	[16.1]	[3.9]	[4.19]	[6.1]	[6.55]
Biochemical Oxygen Demand	(mg/l)		12.0	4 U	9.00	25	33.0
Bromide	(mg/l)	2	0.5 U	0.5 U	0.5 U	0.6	0.900
Chemical Oxygen Demand	(mg/l)		32.6	10 U	10 U	10 U	21.8
Chloride	(mg/l)	250	51.6	29.6	39.9	36.4	36.6
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO3)	(mg/l)		360	104	140	290	276
Nitrate(as N)	(mg/l)	10	1.5	0.1 U	1.4	0.1 U	0.29
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	17.8	24.2	17.0	5 U	5 U
Total Organic Carbon	(mg/l)		11.1	4.7	5.12	12	9.17
TDS	(mg/l)		566	216	250	385	383
Total Kjeldahlnitrogen(as N)	(mg/l)		18.0	4.4	5.00	7.8	8.40

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U
NA = Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE	SAMPLE ID
Color(APHA Units)						
(mg/l)	30					
Alkalinity(as CaCO ₃)						
(mg/l)	40.6					
Ammonia (as N)						
(mg/l)	0.10 U					
Biochemical Oxygen Demand						
(mg/l)	37					
Bromide						
(mg/l)	0.5 U					
Chemical Oxygen Demand						
(mg/l)	10 U					
Chloride						
(mg/l)	12.6					
Chromium(Hexavalent)						
(mg/l)	0.02 U					
Hardness(as CaCO ₃)						
(mg/l)	44					
Nitrate(as N)						
(mg/l)	0.2					
Phenols, total						
(mg/l)	0.0050 U					
Sulfate						
(mg/l)	23.3					
Total Organic Carbon						
(mg/l)	1.7					
TDS						
(mg/l)	130					
Total Kjeldahl Nitrogen(as N)						
(mg/l)	0.2					

U: Analyzed for but not detected
[]=Greater than Action Level The following qualifier(s) exist: CLP Q: U
NA=Not analyzed

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

Page: 8 of 15
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-06S MW-06S 02/01/2001	MW-07D MW-07D 12/01/2000	MW-07D MW-07D 01/31/2001	MW-07I MW-07I 12/01/2000	MW-07I MW-07I 01/31/2001
Color(APHA Units)	(mg/l)		70	5 U	5 U	5 U	5 U
Alkalinity(as CaCO3)	(mg/l)		200	28.3	29	22.1	23
Ammonia (as N)	(mg/l)	2	[3.70]	0.18	0.18	0.89	1.20
Biochemical Oxygen Demand	(mg/l)		10.0	5	3.00	2 U	8.00
Bromide	(mg/l)	2	0.5 U	1	0.80	0.6	0.90
Chemical Oxygen Demand	(mg/l)		10 U	13.4	10 U	10 U	10 U
Chloride	(mg/l)	250	20	7.1	7.1	37.6	31
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO3)	(mg/l)		140	22	56	72	88
Nitrate(as N)	(mg/l)	10	0.1 U	0.31	0.28	3.4	3.1
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	8.40	5 U	5.40	6	18.9
Total Organic Carbon	(mg/l)		5.8	1 U	1.1	1 U	1.2
TDS	(mg/l)		220	73	89	164	140
Total KjeldahlNitrogen(as N)	(mg/l)		4.90	0.39	0.140	0.84	1.60

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U
NA = Not analyzed

TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE	Color(APHA Units)	Alkalinity(as CaCO ₃)	Ammonia (as N)	Biochemical Oxygen Demand	Bromide	Chemical Oxygen Demand	Chloride	Chromium(Hexavalent)	Hardness(as CaCO ₃)	Nitrate(as N)	Phenols, total	Sulfate	Total Organic Carbon	TDS	Total Kjeldahl Nitrogen(as N)
						5	85.3	0.22	0.110	2	0.5 U	10 U	0.02 U	172	4.8	0.0050 U	66.6	6.1	265	0.8
	MW-07S				12/05/2000	5 U	75	0.36	0.110	2 U	0.5 U	36	0.02 U	160	4.6	0.0050 U	30.8	7.4	260	0.710
	MW-10D				01/31/2001	5 U	21.2	0.36	0.110	2	0.5 U	55.1	0.02 U	22	3.6	0.0050 U	13.8	1.1	185	0.32
	MW-10D				12/12/2000	5 U	20.4	0.254	0.110	2.00	0.800	10 U	0.02 U	40.0	4.1	0.0050 U	13.8	1 U	160	0.321
	MW-10D				02/05/2001	5 U	8.1	0.32	0.110	2	0.800	10 U	0.02 U	44	6.2	0.0050 U	15.3	1 U	124	0.66
	MW-10I				12/12/2000	5 U	8.1	0.32	0.110	2	0.800	10 U	0.02 U	44	6.2	0.0050 U	15.3	1 U	124	0.66

The following qualifier(s) exist: CLP Q: U NA=Not analyzed
U: Analyzed for but not detected

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

Page: 10 of 15
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Std's/Guidelines	MW-10I MW-10I 02/05/2001	MW-10S MW-10S 12/12/2000	MW-10S MW-10S 02/05/2001	MW-11D MW-11D 12/13/2000	MW-11D MW-11D 02/07/2001
Color(APHA Units)	(mg/l)		5 U	5	5.0	5 U	5 U
Alkalinity(as CaCO3)	(mg/l)		20	182	190	3.6	6.80
Ammonia (as N)	(mg/l)	2	0.22	0.9	0.95	0.14	0.481
Biochemical Oxygen Demand	(mg/l)		2.00	4	2 U	2	2 U
Bromide	(mg/l)	2	0.60	0.6	1.1	0.5 U	0.5 U
Chemical Oxygen Demand	(mg/l)		10 U	10 U	59.4	10 U	10 U
Chloride	(mg/l)	250	39	43.1	68	7.9	10.3
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO3)	(mg/l)		44	210	240	17	28.0
Nitrate(as N)	(mg/l)	10	5.9	0.95	0.19	1.9	1.79
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	28.4	27.4	29.2	11.3	10.9
Total Organic Carbon	(mg/l)		0.99 J	7.3	7.9	1 U	1 U
TDS	(mg/l)		180	291	360	61	84.0
Total Kjeldahlnitrogen(as N)	(mg/l)		0.320	1.2	1.60	0.1 U	0.460

The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

U: Analyzed for but not detected

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	12/13/2000	MW-111	02/07/2001	MW-111	12/13/2000	MW-11S	02/07/2001	MW-12D	12/08/2000
DATE													

Color(APHA Units)	(mg/l)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Alkalinity(as CaCO ₃)	(mg/l)	34.2	27.4	134	135	7.3	0.1 U	2	2 U	1.51	7	0.5 U	10 U
Ammonia (as N)	(mg/l)	1.1	0.910	1.3	1.51	0.1 U	7	2 U	0.5 U	11.0	36.1	4.7	0.02 U
Biochemical Oxygen Demand	(mg/l)	2 U	2 U	2 U	2 U	0.5 U	0.5 U	10 U	17.5	50.7	34	40.0	0.02 U
Bromide	(mg/l)	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	17.5	50.7	34	40.0	0.02 U
Chemical Oxygen Demand	(mg/l)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloride	(mg/l)	250	17.3	17.5	50.7	36.1	4.7	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO ₃)	(mg/l)	34	0.42	1.8	0.21	0.25	0.38	156	210	156	15	0.0050 U	0.0050 U
Nitrate(as N)	(mg/l)	10	0.42	1.8	0.21	0.25	0.38	156	210	156	15	0.0050 U	0.0050 U
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	6.8	7.00	28.6	49.6	20.1	49.6	28.6	49.6	20.1	0.0050 U	0.0050 U
Total Organic Carbon	(mg/l)	1.3	1 U	4.6	3.53	2.1	2.1	4.6	3.53	2.1	2.1	0.0050 U	0.0050 U
TDS	(mg/l)	42	63.0	253	254	77	0.1 U	254	253	254	77	0.0050 U	0.0050 U
Total Kjeldahlnitrogen(as N)	(mg/l)	1.2	0.790	1.5	7.76	0.1 U	0.1 U	1.5	7.76	0.1 U	0.1 U	0.0050 U	0.0050 U

The following qualifier(s) exist: CLP Q: U NA=Not analyzed

U: Analyzed for but not detected

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

Page: 12 of 15
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stdts/Guidelines	MW-12D MW-12D 02/07/2001	MW-12I MW-12I 12/07/2000	MW-12I MW-12I 02/08/2001	MW-12S MW-12S 12/07/2000	MW-12S MW-12S 02/05/2001
Color(APHA Units)	(mg/l)		5 U	5 U	5 U	5 U	5.0
Alkalinity(as CaCO3)	(mg/l)		7.80	31.8	17.2	104	98
Ammonia (as N)	(mg/l)	2	0.1 U	0.61	0.703	0.02 U	0.070 J
Biochemical Oxygen Demand	(mg/l)		4.00	6	2 U	2	2 U
Bromide	(mg/l)	2	0.5 U	0.5 U	0.700	0.5 U	0.5 U
Chemical Oxygen Demand	(mg/l)		10 U	10 U	10 U	10 U	10 U
Chloride	(mg/l)	250	5.71	14.9	13.1	16	24
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO3)	(mg/l)		28.0	52	36.0	96	100
Nitrate(as N)	(mg/l)	10	0.31	0.73	1.1	0.67	0.40
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	12.8	48.3	24.2	36.4	13.4
Total Organic Carbon	(mg/l)		1 U	1.2	0.0010 U	1.7	2.2
TDS	(mg/l)		380	143	90	175	250
Total KjeldahlNitrogen(as N)	(mg/l)		8.54	0.84	8.30	0.2 U	0.120

The following qualifier(s) exist: CLP Q: U, J NA=Not analyzed

U: Analyzed for but not detected

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE	NYSDEC Class	GA Groundwater	Sids/Guidelines	DATE	SAMPLE ID
	MW-13D				12/12/2000	MW-13D
	MW-13D				02/06/2001	MW-13D
	MW-13I				12/12/2000	MW-13I
	MW-13I				02/06/2001	MW-13I
	MW-13S				12/11/2000	MW-13S

Color(APHA Units)	(mg/l)	5 U	235	220	150	250	5
Alkalinity(as CaCO ₃)	(mg/l)	2	[2.8]	[3.15]	[3.2]	[3.75]	0.1
Biochemical Oxygen Demand	(mg/l)	2	2	2.00	5	2.00	4
Bromide	(mg/l)	2	0.5 U	0.5 U	0.7	1.10	0.5 U
Chemical Oxygen Demand	(mg/l)	10 U	16.4	10 U	10 U	10 U	10 U
Chloride	(mg/l)	250	33.4	34.9	20.8	21.5	10.2
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO ₃)	(mg/l)	148	5 U	180	128	128	30
Nitrate(as N)	(mg/l)	10	0.1 U	0.1 U	0.1 U	0.1 U	4.6
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	15	12.0	24.4	18.6	36.5
Total Organic Carbon	(mg/l)	4.1	3.39	5.3	4.59	1.5	78
TDS	(mg/l)	311	315	229	250	78	(0.13)
Total Kjeldahl Nitrogen(as N)	(mg/l)	3.4	3.00	4.2	NA		

U: Analyzed for but not detected
()=Less than Reporting Limit []=Greater than Action Level The following
qualifier(s) exist: CLP Q: U NA=Not analyzed

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

Page: 14 of 15
Date: 07/31/2001

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	NYSDEC Class GA Groundwater Stds/Guidelines	MW-13S MW-13S 02/06/2001	MW-14D MW-14D 12/11/2000	MW-14D MW-14D 02/07/2001	MW-14I MW-14I 12/11/2000	MW-14I MW-14I 02/06/2001
Color(APHA Units)	(mg/l)		5.00	200	70.0	200	300
Alkalinity(as CaCO3)	(mg/l)		1.30	352	350	342	293
Ammonia (as N)	(mg/l)	2	0.136	[7.9]	[8.41]	[9.6]	[9.37]
Biochemical Oxygen Demand	(mg/l)		2 U	10	4.00	16	10.0
Bromide	(mg/l)	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chemical Oxygen Demand	(mg/l)		10 U	10 U	21.8	10 U	35.3
Chloride	(mg/l)	250	7.90	50.5	51.4	52.2	54.7
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hardness(as CaCO3)	(mg/l)		32.0	320	252	250	228
Nitrate(as N)	(mg/l)	10	2.89	0.1 U	0.1 U	0.1 U	0.1 U
Phenols, total	(mg/l)	0.001	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Sulfate	(mg/l)	250	5 U	26.1	5 U	26.9	5.40
Total Organic Carbon	(mg/l)		1.2	8.2	7.53	9.1	7.79
TDS	(mg/l)		60.0	351	391	349	380
Total Kjeldahlnitrogen(as N)	(mg/l)		0.150	9.1	8.58	10.7	12.7

U: Analyzed for but not detected

[] = Greater than Action Level The following qualifier(s) exist: CLP Q: U
NA = Not analyzed

Table D-3
TOWN OF ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
GROUNDWATER MONITORING RESULTS
LEACHATE PARAMETERS

PERIOD: From 11/30/2000 thru 02/08/2001 - Inclusive
SAMPLE TYPE: Water

CONSTITUENT				SITE	SAMPLE ID	GA Groundwater	NYSDEC Class	MW-14S	MW-14S	DATE	Sids/Guidelines	12/11/2000	02/06/2001
Color(APHA Units)	(mg/l)	5 U	10.0										
Alkalinity(as CaCO ₃)	(mg/l)	6.1	5.40										
Ammonia (as N)	(mg/l)	0.1 U	0.15										
Biochemical Oxygen Demand	(mg/l)	2	2 U										
Bromide	(mg/l)	0.5 U	0.600										
Chemical Oxygen Demand	(mg/l)	10 U	10 U										
Chloride	(mg/l)	250	13.0										
Chromium(Hexavalent)	(mg/l)	0.05	0.02 U										
Hardness(as CaCO ₃)	(mg/l)	40	52.0										
Nitrate(as N)	(mg/l)	10	6.24										
Phenols, total	(mg/l)	0.001	0.0050 U										
Sulfate	(mg/l)	250	11.2										
Total Organic Carbon	(mg/l)	1.9	1.32										
TDS	(mg/l)	96	89.0										
Total Kjeldahl Nitrogen(as N)	(mg/l)	0.1 U	0.270										

The following qualifier(s) exist: CLP Q: U NA=Not analyzed
U: Analyzed for but not detected

Appendix E



1871

APPENDIX E

DATA VALIDATION FOR 2000-2001 BASELINE GROUNDWATER QUALITY MONITORING PROGRAM RESULTS



DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill

Laboratory Name: H2M

Reviewer: R. Petrella

Date of Review: 3/01

I. Data Deliverable Requirements

- | | |
|----------------------------|-----|
| A. Legible | Yes |
| B. Paginated | Yes |
| C. Arranged in order | Yes |
| D. Consistent dates | Yes |
| E. Case Narrative | Yes |
| F. Chain-of-Custody Record | Yes |
| G. Sample Data Complete | Yes |
| H. Standard Date Complete | Yes |
| I. Raw QC Data Complete | Yes |

Comments: IRS015

16 well samples, 1 MS/MSD and 4 trip blanks. Samples analyzed for baseline parameters

[illegible]

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

II. Holding Times

<u>Sample I.D.</u>	<u>Date Received</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>	<u>Holding Time Exceeded?</u> No
MW-05D	12/8		12/15/00	
MW-05I				
MW-05S				
MW-12D				
MW-13S*	12/11			
MW-14D				
MW-14I				
MW-14S				
MW-10D	12/12			
MW-10I				
MW-10S				
MW-13D				
MW-13I				
MW-11D	12/13			
MW-11I				
MW-11S				
TB#6	12/8			
TB#7	12/11			
TB#8	12/12			
TB#9	12/12			

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01
Fraction: VOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. A28823.D	YES	INITIAL
2. A29526.D	YES	SAMPLES
3. A29553.D	YES	DILUTIONS
4.		
5.		
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 10/12/00

A. Standard Data Files

Standard 1 ID: <u>A28824.D</u>	Conc: <u>10</u>
Standard 2 ID: <u>A28825.D</u>	Conc: <u>20</u>
Standard 3 ID: <u>A28826.D</u>	Conc: <u>50</u>
Standard 4 ID: <u>A28827.D</u>	Conc: <u>100</u>
Standard 5 ID: <u>A28828.D</u>	Conc: <u>200</u>

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments: _____

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA Date of Calibration: 10/12

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments: _____

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments: _____

D. Overall assessment of the initial calibration:
(list the associated samples)

Calibration met QC requirements

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 10/12

Date of Continuing Calibration: 12/15, 12/18 File ID: A29527.D,
A29554.D

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments:

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments:

B. Overall assessment of Continuing Calibration
(list associated samples)

OK

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R. Petrella Date of Review: 3/01

Fraction: VOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

<u>Sample</u>	<u>Internal Standard Outside Limits</u>	<u>Amount Above Contract Requirement</u>	<u>Comments</u>

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

All lab blanks are clean

IX. Blank Summary

Date/Time of Analysis: _____ File ID: _____

<u>Compound</u>	<u>Concentration</u>	<u>≤ CROL</u>	<u>Comments</u>
PCE	2	<	Compound found in TB#8 collected on 12/12. This samples associated with this trip blank either contained no PCE or levels above 400 ug/l

List the samples associated with this method blank.

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: _____

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes

If No, please note below.

<u>Sample</u>	<u>Surrogate Compound Outside Recovery Limits</u>	<u>Amount Above Contract Requirement</u>	<u>Comments</u>
---------------	---	--	-----------------

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: MW-13S Matrix: Water

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R. Petrella Date of Review: 3/01

I. Holding times

Sample	Date Received	Date Digested	Date Analyzed	Holding Time Exceeded?
MW-05D	12/8		12/00	No
MW-05I				
MW-05S				
MW-12D				
MW-13S*	12/11			
MW-14D				
MW-14I				
MW-14S				
MW-10D	12/12			
MW-10I				
MW-10S				
MW-13D				
MW-13I				
MW-11D	12/13			
MW-11I				
MW-11S				

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

Yes

Comments:

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

Yes

Comments:

3. Were the initial calibration results within the control limits listed below?

For tin and mercury: 80-120% of the true value
For all other metals: 90-110% of the true value

Yes

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R. Petrella Date of Review: 3/01

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

Yes

Comments:

2. Were the continuing calibration results within the control limits listed below?

For tin and mercury: 80-120% of the true value
For all other metals: 90-110% of the true value

Yes

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

Yes

2. Were all the analytes below the CRDL in the method blank?

Yes

Comments:

Copper 1.757, magnesium 7.583, manganese 0.53, potassium 15.627, silver 2.572
vanadium 1.463,

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

Yes

Comments:

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

MW-13S

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

Yes

Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

Yes

Comments:

Selenium found in sample not in duplicate

For sample values >5 times the CRDL, the RPD control limit is $\pm 20\%$.

For sample values >5 times the CRDL, the RPD control limit is $\pm \text{CRDL}$.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a "**".

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R. Petrella Date of Review: 3/01

MW-13S

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?
Yes

Comments:

2. Were the matrix spike recoveries within the contract specified control limits
(75-125%)?

Yes

If "No", note analytes Selenium 87% limit is 75, ran post spike recovery only 41%

Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

Yes

Comments:

2. ~~Were~~ the serial dilution differences within the contract specified limits of $\pm 10\%$?

Yes

Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

Yes

Comments:

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:
Yes

Comments:

5. Were the ICP interference check sample results within the control limit of $\pm$ w-20% of the mean value?

Yes

If "No", not analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?
Yes

Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

Yes

Comments:

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill

Laboratory Name: H2M

Laboratory Name: H2M

Reviewer: R. Petrella Date of Review: 3/01

Date of Review: 3/01

1. Data Deliverable Requirements

A. Legible Yes

Yes

	Yes
B. Paginated	

Yes

C. Arranged in order Yes

Yes

D. Consistent dates Yes

Yes

E. Case Narrative	Yes
1. The patient is a 45-year-old male with a history of chronic kidney disease (CKD) and hypertension. He has been on dialysis for the past 10 years. He presents to the emergency department with a 2-day history of shortness of breath and chest pain. The chest pain is described as a sharp, stabbing pain that worsens with deep breathing and is located in the lower left chest area. He also reports a persistent cough and a low-grade fever. His vital signs are: temperature 38.2°C, heart rate 105 bpm, respiratory rate 22 breaths per minute, and oxygen saturation 92% on 2L nasal cannula. Physical examination reveals clear lungs, normal heart sounds, and no lower extremity edema. Laboratory tests show a white blood cell count of 12,000/mm³, a hemoglobin level of 10 g/dL, and a serum lactate level of 2.5 mmol/L. A chest X-ray shows a small left pleural effusion and no consolidation. A CT scan of the chest shows a small, peripheral, wedge-shaped consolidation in the lower left lung, consistent with a pulmonary embolism. The patient is started on intravenous heparin and oxygen. He is transferred to the medical intensive care unit for further monitoring and treatment.	☐

Yes

F. Chain-of-Custody Record	Yes

Yes

G. Sample Data Complete Yes

Yes

H. Standard Date Complete	Yes

Yes

1. Raw QC Data Complete	Yes

Yes

Comments: IRS013

Comments: IRS013

20 well samples, 1 MS/MSD and 5 trip blanks. Samples analyzed for baseline parameters

Mercury was not reported for MW-121 but it was analyzed for. I'm having the lab resubmit the data reporting form.

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

II. Holding Times

<u>Sample I.D.</u>	<u>Date Received</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>	<u>Holding Time Exceeded? No</u>
MW-01D	11/30		12/06/00	
MW-01I	11/30		12/06/00	
MW-01S	11/30		12/06/00	
MW-02D	12/1		12/06/00	
MW-02I	12/1		12/7/00	
MW-02S*	11/30		12/06/00	
MW-03D	12/07		12/8/00	
MW-03I	12/07		12/8/00	
MW-03S	12/6		12/8/00	
MW-04D	12/6		12/8/00	
MW-04I	12/6		12/8/00	
MW-04S	12/6		12/8/00	
MW-06D	12/05		12/8/00	
MW-06I	12/05		12/8/00	
MW-06S	12/05		12/8/00	
MW-07D	12/1		12/7	
MW-07I	12/1		12/7	
MW-07S	12/05		12/8/00	
MW-12I	12/7		12/8/00	
MW-12S	12/7		12/8/00	
TB#1	11/30		12/6	
TB#2	12/1		12/7	
TB#3	12/5		12/8/00	
TB#4	12/6		12/8/00	
TB#5	12/7		12/8/00	

DATA VALIDATION – ORGANICS

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name:H2M

Reviewer: R.Petrella Date of Review:3/01
Fraction: VOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. A28823.D	YES	INITIAL
2. A29418.D	YES	SAMPLES
3. A29444.D	YES	DILUTIONS
4.		
5.		
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 10/12/00

A. Standard Data Files

Standard 1 ID: <u>A28824.D</u>	Conc: <u>10</u>
Standard 2 ID: <u>A28825.D</u>	Conc: <u>20</u>
Standard 3 ID: <u>A28826.D</u>	Conc: <u>50</u>
Standard 4 ID: <u>A28827.D</u>	Conc: <u>100</u>
Standard 5 ID: <u>A28828.D</u>	Conc: <u>200</u>

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments: _____

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill

Laboratory
Name: H2M

Reviewer: R.Petrella

Date of Review: 3/01

Fraction: VOA

Date of Calibration: 10/12

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments: _____

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments: _____

D. Overall assessment of the initial calibration:
(list the associated samples)

Calibration met QC requirements

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 10/12

Date of Continuing Calibration: 12/6, 12/8 File ID: A29420.D, A29445.D

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments: _____

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: _____

B. Overall assessment of Continuing Calibration
(list associated samples)

OK

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

<u>Sample</u>	<u>Internal Standard Outside Limits</u>	<u>Amount Above Contract Requirement</u>	<u>Comments</u>
---------------	---	--	-----------------

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

All lab and trip blanks are clean

IX. Blank Summary

Date/Time of Analysis: _____ File ID: _____

<u>Compound</u>	<u>Concentration</u>	<u>< CROL</u>	<u>Comments</u>
-----------------	----------------------	------------------	-----------------

List the samples associated with this method blank.

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: _____

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes

If No, please note below.

<u>Sample</u>	<u>Surrogate Compound Outside Recovery Limits</u>	<u>Amount Above Contract Requirement</u>	<u>Comments</u>
---------------	---	--	-----------------

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: MW-02S Matrix: Water

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

I. Holding times

<u>Sample</u>	<u>Date Received</u>	<u>Date Digested</u>	<u>Date Analyzed</u>	<u>Holding Time Exceeded?</u>
MW-01D	11/30		12/00	No
MW-01I	11/30			
MW-01S	11/30			
MW-02D	12/1			
MW-02I	12/1			
MW-02S*	11/30			
MW-03D	12/07			
MW-03I	12/07			
MW-03S	12/6			
MW-04D	12/6			
MW-04I	12/6			
MW-04S	12/6			
MW-06D	12/05			
MW-06I	12/05			
MW-06S	12/05			
MW-07D	12/1			
MW-07I	12/1			
MW-07S	12/05			
MW-12I	12/7			
MW-12S	12/7			

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

Yes

Comments:

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

Yes

Comments:

3. Were the initial calibration results within the control limits listed below?

For tin and mercury: 80-120% of the true value
For all other metals: 90-110% of the true value

Yes

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R. Petrella Date of Review: 3/01

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

Yes

Comments:

2. Were the continuing calibration results within the control limits listed below?

For tin and mercury: 80-120% of the true value
For all other metals: 90-110% of the true value

Yes

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

Yes

2. Were all the analytes below the CRDL in the method blank?

Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

Yes

Comments:

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

MW-02S

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

Yes

Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

Yes

Comments:

Selenium found in sample not in duplicate

For sample values >5 times the CRDL, the RPD control limit is $\pm 20\%$.

For sample values >5 times the CRDL, the RPD control limit is $\pm \text{CRDL}$.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a “*”.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

MW-02S

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?
Yes

Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?

Yes

If "No", note analytes Selenium 87% limit is 75, ran post spike recovery only 41%

Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?
Yes

Comments:

2. Were the serial dilution differences within the contract specified limits of $\pm 10\%$?
Yes

Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?
Yes

Comments:

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:
Yes

Comments:

5. Were the ICP interference check sample results within the control limit of $\pm$ w-20% of the mean value?
Yes

If "No", not analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?
Yes

Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

Yes

Comments:

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill

Laboratory Name: H2M

Reviewer: R.Petrella

Date of Review:3/01

1. Data Deliverable Requirements

A. Legible

B. Paginated Yes

C. Arranged in order Yes

D. Consistent dates

E. Case Narrative	Yes
1. The patient is a 45-year-old male with a history of chronic kidney disease (CKD) and hypertension. He has been on dialysis for the past 10 years. He presents to the emergency department with a 2-day history of severe, constant abdominal pain in the right lower quadrant (RLQ). The pain is described as sharp and is exacerbated by movement. He also reports nausea and vomiting, but no diarrhea or constipation. His vital signs are stable, and he appears well-appearing. Physical examination reveals tenderness in the RLQ without guarding or rebound. Laboratory tests show a white blood cell count of 12,000/mm³ and a C-reactive protein (CRP) of 15 mg/L. Imaging studies, including a CT scan of the abdomen, show a 4x5 cm fluid collection in the right lower quadrant, consistent with an abscess. The patient is diagnosed with a right lower quadrant abscess secondary to CKD. He is started on intravenous antibiotics and scheduled for surgical drainage. The patient is discharged on the 4th day of admission, feeling better and with no further abdominal pain.	Yes

F. Chain-of-Custody Record

Yes

G. Sample Data Complete Yes

H. Standard Date Complete	Yes

1. Raw QC Data Complete	Yes

Comments: IRS017

18 wells analyzed for baseline parameters

[illegible]

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

II. Holding Times

<u>Sample I.D.</u>	<u>Date Received</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>	<u>Holding Time Exceeded?</u>
MW-03D	2/2		2/6	No
MW-03I				
MW-03S				
MW-05D				
MW-05I				
MW-05S				
MW-10D*	2/5			
MW-11D	2/7		2/9	
MW-11I				
MW-11S				
MW-12D				
MW-12I	2/8			
MW-13D	2/6		2/6	
MW-13I			2/6	
MW-13S			2/9	
MW-14D	2/7		2/9	
MW-14I	2/6		2/9	
MW-14S	2/6		2/9	
TB-020201	2/2		2/6	
TB-020501	2/5		2/6	
TB-020601	2/6		2/6	
TB-020701	2/7		2/9	
TB020801	2/8		2/9	

*MS/MSD

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. F5270.D	YES	INITIAL
2. F5279.D	YES	SAMPLES
3. F5324.D	YES	SAMPLES
4.		
5.		
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 2/01/01

A. Standard Data Files

Standard 1 ID: <u>F5278.D</u>	Conc: <u>10</u>
Standard 2 ID: <u>F5277.D</u>	Conc: <u>20</u>
Standard 3 ID: <u>F5273.D</u>	Conc: <u>50</u>
Standard 4 ID: <u>F5274.D</u>	Conc: <u>100</u>
Standard 5 ID: <u>F5275.D</u>	Conc: <u>200</u>

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments: _____

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill

Laboratory
Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA Date of Calibration: 2/1

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments: _____

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments: _____

D. Overall assessment of the initial calibration: (list the associated samples)

Ok _____

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 2/1/01

Date of Continuing Calibration: 2/6,2/9 File ID: F5280.D,
F5326.D

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments: _____

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: _____

B. Overall assessment of Continuing Calibration
(list associated samples)

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

<u>Sample</u>	<u>Internal Standard Outside Limits</u>	<u>Amount Above Contract Requirement</u>	<u>Comments</u>
---------------	---	--	-----------------

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

CLEAN

IX. Blank Summary

Date/Time of Analysis: _____ File ID: _____

<u>Compound</u>	<u>Concentration</u>	$\leq$ <u>CROL</u>	<u>Comments</u>
-----------------	----------------------	--------------------	-----------------

List the samples associated with this method blank.

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill

Laboratory Name: H2M

Reviewer: R.Petrella

Date of Review: 3/01

Fraction: VOA

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes

If No, please note below.

<u>Sample</u>	<u>Surrogate Compound Outside Recovery Limits</u>	<u>Amount Above Contract Requirement</u>	<u>Comments</u>
---------------	---	--	-----------------

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: MW-10D Matrix: WATER

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

Recovery of TCE, toluene and chlorobenzene were slightly above QC limits for both the MS and MSD all RPDs were ok, no action required

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

I. Holding times

Sample	Date <u>Received</u>	Date <u>Digested</u>	Date <u>Analyzed</u>	Holding Time <u>Exceeded?</u>
MW-03D	2/2		2/01	no
MW-03I				
MW-03S				
MW-05D				
MW-05I				
MW-05S				
MW-10D*	2/5			
MW-11D	2/7			
MW-11I				
MW-11S				
MW-12D				
MW-12I	2/8			
MW-13D	2/6			
MW-13I				
MW-13S				
MW-14D	2/7			
MW-14I	2/6			
MW-14S	2/6			

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

Yes

Comments:

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

Yes

Comments:

3. Were the initial calibration results within the control limits listed below?

For tin and mercury: 80-120% of the true value

For all other metals: 90-110% of the true value

Yes

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

Yes

Comments:

2. Were the continuing calibration results within the control limits listed below?

For tin and mercury: 80-120% of the true value
For all other metals: 90-110% of the true value

Yes

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

Yes

2. Were all the analytes below the CRDL in the method blank?

Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

Yes

Comments:

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

MW-10D

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?
Yes

Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

Yes

Comments:

For sample values >5 times the CRDL, the RPD control limit is $\pm 20\%$.

For sample values >5 times the CRDL, the RPD control limit is $\pm$ CRDL.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a “*”.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

MW-10D

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?
Yes

Comments:

2. Were the matrix spike recoveries within the contract specified control limits (75-125%)?
Yes

If "No", note analytes Se had %recovery of 47.7

Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?
Yes

Comments:

2. Were the serial dilution differences within the contract specified limits of $\pm 10\%$?
Yes

Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?
Yes

Comments:

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

Yes

Comments:

5. Were the ICP interference check sample results within the control limit of $\pm$ w-20% of the mean value?

Yes

If "No", not analytes

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?
Yes

Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?
Yes

Comments:

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella
Date of Review:3/01

I. Data Deliverable Requirements

A. Legible	Yes
B. Paginated	Yes
C. Arranged in order	Yes
D. Consistent dates	Yes
E. Case Narrative	Yes
F. Chain-of-Custody Record	Yes
G. Sample Data Complete	Yes
H. Standard Date Complete	Yes
I. Raw QC Data Complete	Yes

Comments: IRS016

18 wells analyzed for baseline parameters

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

II. Holding Times

<u>Sample I.D.</u>	<u>Date Received</u>	<u>Date Extracted</u>	<u>Date Analyzed</u>	<u>Holding Time Exceeded?</u> No
MW-01D	1/30		1/31	
MW-01I	1/30		2/1	
MW-01S*	1/29		1/31	
MW-02D	1/30		2/1	
MW-02I	1/30		2/1	
MW-02S	1/31		2/2	
MW-04D	2/1		2/2	
MW-04I	2/1		2/2	
MW-04S	2/1		2/2	
MW-06D	1/31		2/2	
MW-06I	2/1		2/2	
MW-06S	2/1		2/2	
MW-07D	1/31		2/2	
MW-07I	1/31		2/2	
MW-07S	1/31		2/2	
MW-10I	2/5		2/12	
MW-10S	2/5		2/12	
MW-12S	2/5		2/12	
TB-013001	1/30		2/2	
TB-013101	1/31		2/2	
TB-020101	2/1		2/2	
Trip Blank- 012901	1/29		1/31	

*MS/MSD

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01
Fraction: VOA

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1. A28823.D	YES	INITIAL
2. A29763.D	YES	SAMPLES
3. A29814.D	YES	SAMPLES
4. A29907.D	YES	SAMPLES
5.		
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

IV. Initial Calibration Summary (GC/MS)

Date of Calibration: 10/12/00

A. Standard Data Files

Standard 1 ID: <u>A28824.D</u>	Conc: <u>10</u>
Standard 2 ID: <u>A28825.D</u>	Conc: <u>20</u>
Standard 3 ID: <u>A28826.D</u>	Conc: <u>50</u>
Standard 4 ID: <u>A28827.D</u>	Conc: <u>100</u>
Standard 5 ID: <u>A28828.D</u>	Conc: <u>200</u>

B. 1. All SPCC met Criteria ?

Yes

2. Calculate a SPCC average RRF

Comments: _____

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA Date of Calibration: 10/12

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes

Comments: _____

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes

2. Was the calibration conducted within 12 hours of the tune

Yes

Comments: _____

D. Overall assessment of the initial calibration: (list the associated samples)

Ok

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration: 10/12/00

Date of Continuing Calibration: 1/31, 2/2, 2/12

File ID: A29765,
A29815,
A29908

A. 1. All SPCC met criteria ?

Yes

Calculate a SPCC RRF

Comments: _____

2. All CCC met criteria ?

Yes

Calculate a CCC % D

Comments: _____

B. Overall assessment of Continuing Calibration
(list associated samples)

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes

If No, please note below

<u>Sample</u>	<u>Internal Standard Outside Limits</u>	<u>Amount Above Contract Requirement</u>	<u>Comments</u>
---------------	---	--	-----------------

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

CLEAN

IX. Blank Summary

Date/Time of Analysis: _____ File ID: _____

<u>Compound</u>	<u>Concentration</u>	<u>< CROL</u>	<u>Comments</u>
-----------------	----------------------	------------------	-----------------

List the samples associated with this method blank.

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill

Laboratory Name: H2M

Reviewer: R.Petrella

Date of Review: 3/01

Fraction: VOA

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes

If No, please note below.

<u>Sample</u>	<u>Surrogate Compound Outside Recovery Limits</u>	<u>Amount Above Contract Requirement</u>	<u>Comments</u>
---------------	---	--	-----------------

DATA VALIDATION – ORGANICS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Fraction: VOA

XI. Matrix Spike/Matrix Spike Duplication Summary

Sample ID: MW-01S Matrix: WATER

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes

If No, please note below.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R. Petrella Date of Review: 3/01

I. Holding times

<u>Sample</u>	<u>Date Received</u>	<u>Date Digested</u>	<u>Date Analyzed</u>	<u>Holding Time Exceeded?</u>
MW-01D	1/30		1/01 & 2/01	no
MW-01I	1/30			
MW-01S*	1/29			
MW-02D	1/30			
MW-02I	1/30			
MW-02S	1/31			
MW-04D	2/1			
MW-04I	2/1			
MW-04S	2/1			
MW-06D	1/31			
MW-06I	2/1			
MW-06S	2/1			
MW-07D	1/31			
MW-07I	1/31			
MW-07S	1/31			
MW-10I	2/5			
MW-10S	2/5			
MW-12S	2/5			

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Associated Samples: _____

II. Initial Calibration

1. Were all initial instrument calibrations performed?

Yes

Comments:

2. Were the initial calibration verification standards analyzed at the contract specified frequency?

Yes

Comments:

3. Were the initial calibration results within the control limits listed below?

For tin and mercury: 80-120% of the true value
For all other metals: 90-110% of the true value

Yes

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

Associated Samples: _____

III. Continuing Calibration

1. Were the continuing calibration verification standards analyzed at the contract specified frequency?

Yes

Comments:

2. Were the continuing calibration results within the control limits listed below?

For tin and mercury: 80-120% of the true value

For all other metals: 90-110% of the true value

Yes

If "No", note analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

IV. Blank Summary

A. Method Blanks

1. Was a method blank prepared and analyzed at the contract specified frequency?

Yes

2. Were all the analytes below the CRDL in the method blank?

Yes

Comments:

B. Calibration Blanks

1. Were all initial and continuing calibration blanks analyzed at the contract specified frequency/

Yes

2. Were all the analytes below the CRDL in all the calibration blanks?

Yes

Comments:

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

MW-01S

V. Duplicate Analysis

1. Was a duplicate prepared and analyzed at the contract specified frequency?

Yes

Comments:

2. Were control limits for the relative percent differences (RPD) met for each analyte?

Yes

Comments:

For sample values >5 times the CRDL, the RPD control limit is $\pm 20\%$.

For sample values >5 times the CRDL, the RPD control limit is $\pm \text{CRDL}$.

If sample results were outside of the control limits, all data associated with that duplicate sample should have been flagged with a “*”.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

MW-01S

VI. Matrix Spike Analysis

1. Was a matrix spike prepared and analyzed at the contract specified frequency?
Yes

Comments:

2. Were the matrix spike recoveries within the contract specified control limits
(75-125%)?

Yes

If "No", note analytes Se had %recovery of 63.7

Data should have been flagged with "N" for analytes out of control limits. If the sample concentration exceeds the spike concentration by a factor of four or more, no flag is required.

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VII. ICP Interference Check Sample Summary

1. Was the ICP serial dilution analyzed at the contract specified frequency?

Yes

Comments:

2. Were the serial dilution differences within the contract specified limits of $\pm 10\%$?

Yes

Comments:

3. Was the ICP CRDL check standard analyzed at the contract specified frequency for the analytes required?

Yes

Comments:

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M

Reviewer: R.Petrella Date of Review: 3/01

VII. ICP Interference Check Sample Summary (continued):

4. Was the ICP interference check sample analyzed at the contract specified frequency:

Yes

Comments:

5. Were the ICP interference check sample results within the control limit of $\pm$ w-20% of the mean value?

Yes

If "No", not analytes _____

DATA VALIDATION – METALS

Site Name: Sonia Rd Landfill Laboratory Name: H2M
Reviewer: R.Petrella Date of Review: 3/01

VIII. Laboratory Control Sample Analysis

1. Was a laboratory control sample analyzed at the contract required frequency?

Yes

Comments:

2. Were the percent recoveries within the control limits of 80-120% (except for Ag and Sb) for each analyte?

Yes

Comments:

Appendix F





APPENDIX F

WATER LEVEL ELEVATIONS FOR MONITORING WELLS FROM 1998 REMEDIAL INVESTIGATION



APPENDIX F

ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
WATER LEVEL ELEVATIONS FOR MONITORING WELLS FROM
1998 REMEDIAL INVESTIGATION

PERIOD: From 11/04/1997 thru 11/18/1997 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH TO WATER (feet)	DELTA WATER ELEV (feet)	WATER ELEV. (feet)
MW-01D	11/4/1997	56.71	00:00	7.29	NA	49.42
MW-01I	11/4/1997	57.25	00:00	7.82	NA	49.43
MW-01S	11/4/1997	57.36	00:00	7.96	NA	49.40
MW-02D	11/4/1997	76.63	00:00	28.36	NA	48.27
MW-02I	11/4/1997	76.35	00:00	28.05	NA	48.30
MW-02S	11/4/1997	76.32	00:00	28.03	NA	48.29
MW-03D	11/4/1997	70.50	00:00	23.35	NA	47.15
MW-03I	11/4/1997	70.51	00:00	23.39	NA	47.12
MW-03S	11/4/1997	70.49	00:00	23.39	NA	47.10
MW-04D	11/4/1997	67.90	00:00	22.11	NA	45.79
MW-04I	11/4/1997	68.06	00:00	22.30	NA	45.76
MW-04S	11/4/1997	69.18	00:00	23.25	NA	45.93
MW-05D	11/4/1997	71.04	00:00	24.68	NA	46.36
MW-05I	11/4/1997	70.55	00:00	24.16	NA	46.39
MW-05S	11/4/1997	70.58	00:00	24.22	NA	46.36
MW-06D	11/4/1997	69.65	00:00	23.24	NA	46.41
MW-06I	11/4/1997	69.21	00:00	22.82	NA	46.39
MW-06S	11/4/1997	69.06	00:00	22.64	NA	46.42
MW-07D	11/4/1997	72.16	00:00	24.73	NA	47.43
MW-07I	11/4/1997	69.25	00:00	21.78	NA	47.47
MW-07S	11/4/1997	71.72	00:00	24.22	NA	47.50
MW-10D	11/4/1997	56.34	00:00	7.06	NA	49.28
MW-10I	11/4/1997	56.16	00:00	6.75	NA	49.41
MW-10S	11/4/1997	56.65	00:00	7.22	NA	49.43
MW-11D	11/4/1997	59.03	00:00	7.72	NA	51.31
MW-11I	11/4/1997	58.85	00:00	7.56	NA	51.29
MW-11S	11/4/1997	59.24	00:00	7.93	NA	51.31
MW-12D	11/4/1997	58.68	00:00	8.81	NA	49.87
MW-12I	11/4/1997	58.95	00:00	9.11	NA	49.84
MW-12S	11/4/1997	58.81	00:00	8.97	NA	49.84
MW-13D	11/4/1997	70.35	00:00	27.69	NA	42.66
MW-13I	11/4/1997	70.29	00:00	27.63	NA	42.66
MW-13S	11/4/1997	70.50	00:00	27.84	NA	42.66
MW-14D	11/4/1997	64.59	00:00	20.84	NA	43.75
MW-14I	11/4/1997	64.58	00:00	20.89	NA	43.69
MW-14S	11/4/1997	64.55	00:00	20.85	NA	43.70
S-62720	11/4/1997	67.19	00:00	26.75	NA	40.44
MW-01D	11/18/1997	56.71	00:00	7.18	0.11	49.53
MW-01I	11/18/1997	57.25	00:00	7.73	0.09	49.52
MW-01S	11/18/1997	57.36	00:00	7.85	0.11	49.51
MW-02D	11/18/1997	76.63	00:00	28.21	0.15	48.42
MW-02I	11/18/1997	76.35	00:00	27.92	0.13	48.43
MW-02S	11/18/1997	76.32	00:00	27.88	0.15	48.44
MW-03D	11/18/1997	70.50	00:00	23.20	0.15	47.30
MW-03I	11/18/1997	70.51	00:00	23.23	0.16	47.28
MW-03S	11/18/1997	70.49	00:00	23.24	0.15	47.25

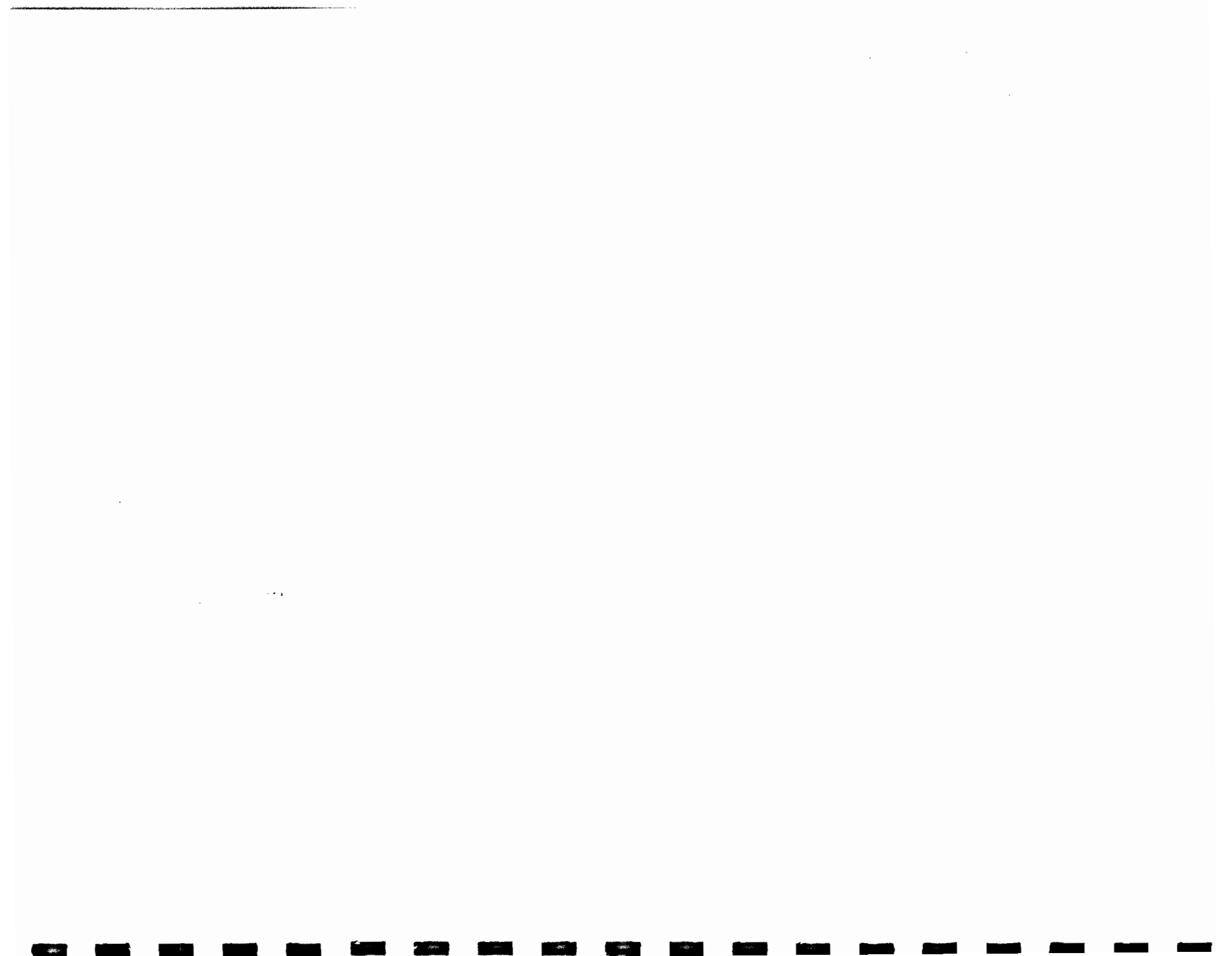
APPENDIX F
ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL POST-CLOSURE SAMPLING AND ANALYSIS PLAN
WATER LEVEL ELEVATIONS FOR MONITORING WELLS FROM
1998 REMEDIAL INVESTIGATION

PERIOD: From 11/04/1997 thru 11/18/1997 - Inclusive

SITE	DATE	MP ELEVATION (feet)	TIME	DEPTH		DELTA		WATER ELEV. (feet)
				TO WATER (feet)		WATER ELEV (feet)		
MMW-04D	11/18/1997	67.90	00:00	21.96		0.15		45.94
MMW-04I	11/18/1997	68.06	00:00	22.15		0.15		45.91
MMW-04S	11/18/1997	69.18	00:00	23.11		0.14		46.07
MMW-05D	11/18/1997	71.04	00:00	24.51		0.17		46.53
MMW-05I	11/18/1997	70.55	00:00	24.00		0.16		46.55
MMW-05S	11/18/1997	70.58	00:00	24.07		0.15		46.51
MMW-06D	11/18/1997	69.65	00:00	23.08		0.16		46.57
MMW-06I	11/18/1997	69.21	00:00	22.65		0.17		46.56
MMW-06S	11/18/1997	69.06	00:00	22.48		0.16		46.58
MMW-07D	11/18/1997	72.16	00:00	24.57		0.16		47.59
MMW-07I	11/18/1997	69.25	00:00	21.63		0.15		47.62
MMW-07S	11/18/1997	71.72	00:00	24.08		0.14		47.64
MMW-10D	11/18/1997	56.34	00:00	6.93		0.13		49.41
MMW-10I	11/18/1997	56.16	00:00	6.65		0.10		49.51
MMW-10S	11/18/1997	56.65	00:00	7.15		0.07		49.50
MMW-11D	11/18/1997	59.03	00:00	7.65		0.07		51.38
MMW-11I	11/18/1997	58.85	00:00	7.51		0.05		51.34
MMW-11S	11/18/1997	59.24	00:00	7.89		0.04		51.35
MMW-12D	11/18/1997	58.68	00:00	8.71		0.10		49.97
MMW-12I	11/18/1997	58.95	00:00	9.02		0.09		49.93
MMW-12S	11/18/1997	58.81	00:00	8.89		0.08		49.92
MMW-13D	11/18/1997	70.35	00:00	27.67		0.02		42.68
MMW-13I	11/18/1997	70.29	00:00	27.61		0.02		42.68
MMW-13S	11/18/1997	70.50	00:00	27.82		0.02		42.68
MMW-14D	11/18/1997	64.59	00:00	20.74		0.10		43.85
MMW-14I	11/18/1997	64.58	00:00	20.80		0.09		43.78
MMW-14S	11/18/1997	64.55	00:00	20.76		0.09		43.79
S-62720	11/18/1997	67.19	00:00	26.79		-0.04		40.40

Appendix G





APPENDIX G

GRAIN SIZE DISTRIBUTION ANALYSES

SIEVE ANALYSIS

SITE	WELL NO. 1	WELL NO. 1	WELL NO. 1	WELL NO. 2	WELL NO. 2	WELL NO. 2	WELL NO. 3	WELL NO. 3	WELL NO. 3	WELL NO. 4	WELL NO. 4	WELL NO. 5
SIZE	DEPTH 14-16	DEPTH 19-21	DEPTH 24-26	DEPTH 34-36	DEPTH 40-42	DEPTH 24-26	DEPTH 32-34	DEPTH 29-31	DEPTH 31-33	DEPTH 31-33	DEPTH 31-33	DEPTH 31-33
SIEVE	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %	WT. CUM. %
.065	18	.09	18	.14	.25	30	.15	34	.14	94	.29	55
.046	39	.18	26	.13	.19	78	.32	45	.19	111	.34	67
.033	52	.23	41	.21	.24	97	.40	52	.26	134	.41	83
.023	75	.34	66	.34	.37	123	.51	90	.37	163	.50	113
.016	111	.50	105	.53	61	.48	164	.68	121	.61	203	.62
.012	154	.69	150	.76	93	.73	210	.87	165	.83	253	.78
.008	180	.81	179	.91	112	.88	232	.96	185	.93	279	.86
PAN	222	1.00	197	1.00	127	1.00	241	1.00	199	1.00	326	1.00

SITE] WELL NO. 5]
SIZE] DEPTH 82-84]
Sieve] WT. CUM. %]

.065	31	.12
.046	39	.15
.033	55	.21
.023	87	.34
.016	138	.53
.012	208	.81
.008	239	.93
PAN	258	1.00



SAND ANALYSIS

97 Union Avenue P.O. Box 1309
RONXONKOMA, NEW YORK 11779
(516) 981-2255

388

Job Name

IRRA SONIA ROAD LANDFILL

Date 1/13/95

City

31751

NEW YORK

Zip

2011

MR. JOSEPH GUGGINO

Pharmacokinetics

Engineer

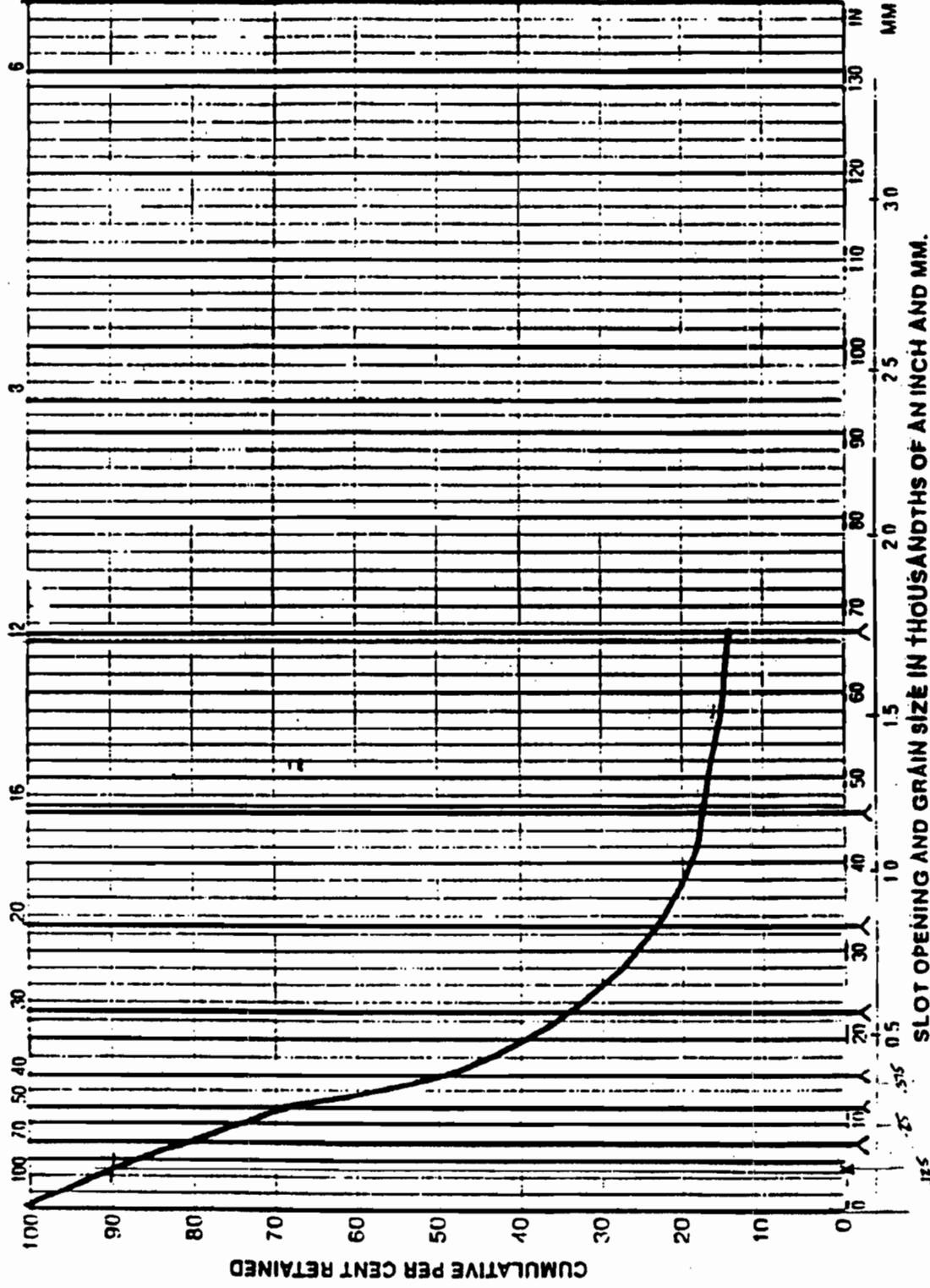
Phone

Remarks

WELL, GW

DEPTH=	FEET
14-16	

U.S. STANDARD SIEVE NUMBERS



U.S. SIEVE No.	SLOT OPENING		SAMPLE DEPTH
	IN	MM	
6	132	3.36	
8	104	2.38	
12	966	1.68	
16	947	1.19	
20	851	0.84	
30	600	0.60	
40	475	0.42	
50	425	0.40	
70	250	0.25	
100	150	0.15	

Comments

SCREEN RECOMMENDATIONS: DIAM.

SLOT	SETTING	LENGTH

& PUMP CO., INC.
97 Union Avenue P.O. Box 1309
ROCKONKOMA, NEW YORK 11779
(516) 981-2255

SAND ANALYSIS

388

Job Name
City
Driller
Engineer
Remarks

IRRA SONIA ROAD LANDFILL
ISLIP

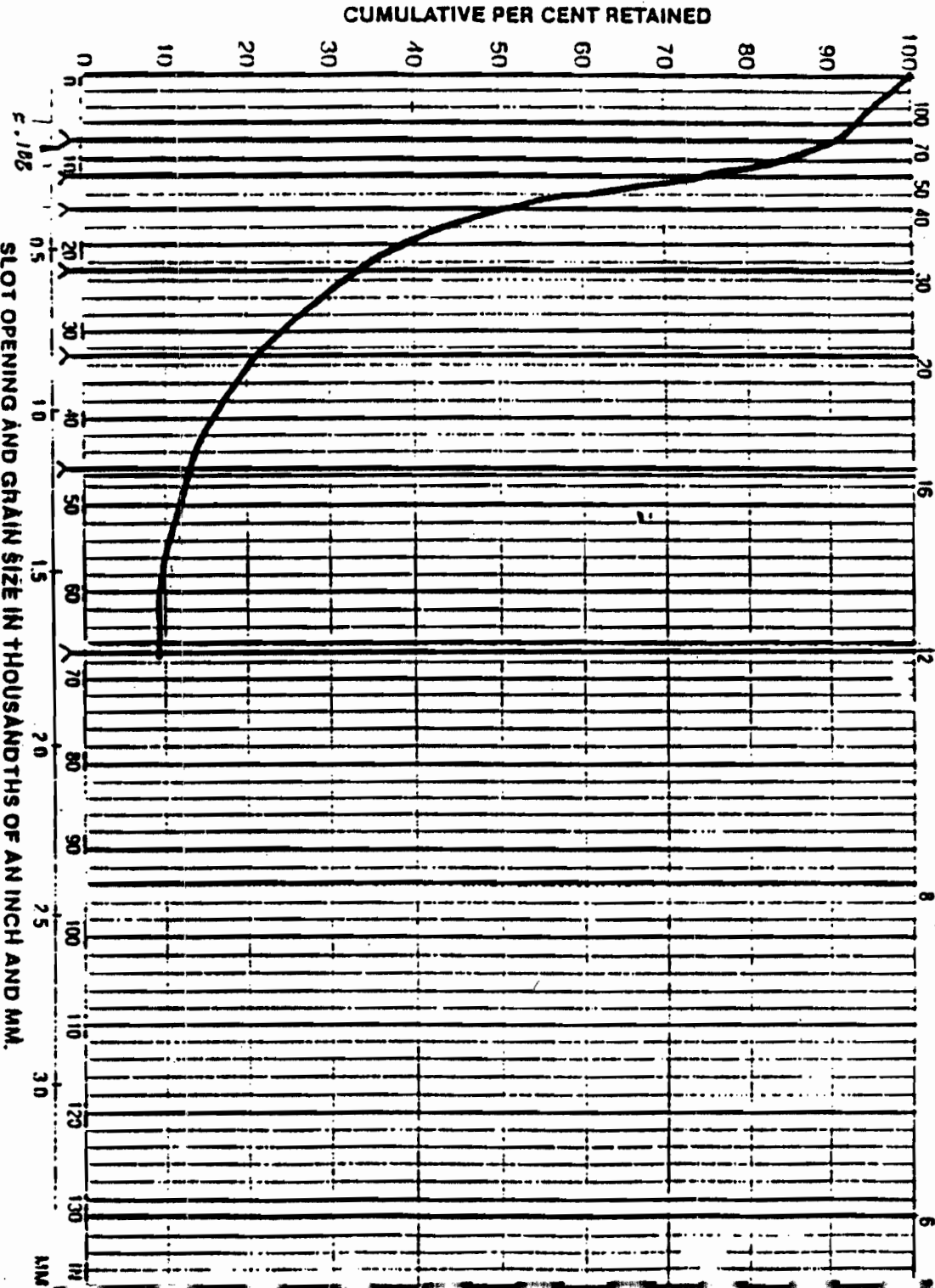
MR. JOSEPH GUCCINO

Date: 1/13/95
State: NEW YORK
Zip

Phone

WELL GW 1 DEPTH- 19-21 FEET

U.S. STANDARD SIEVE NUMBERS



U.S. SIEVE NO.	SLOT OPENING		SAMPLE DEPTHS	
	IN	MM		
6	1.32	3.36		
8	0.84	2.18		
12	0.66	1.68		
16	0.47	1.19		
20	0.33	0.84		
30	0.23	0.60		
40	0.16	0.42		
50	0.12	0.30		
70	0.09	0.21		
100	0.075	0.15		

Comments

SCREEN RECOMMENDATIONS: DIAM.

SLOT

SETTING

LENGTH

388

IRRA SONIA ROAD LANDFILL.

Date 1/13/95

ISLIP

State
NEW YORK

.zin

MR. JOSEPH CUGGINO

Phone

Engineering

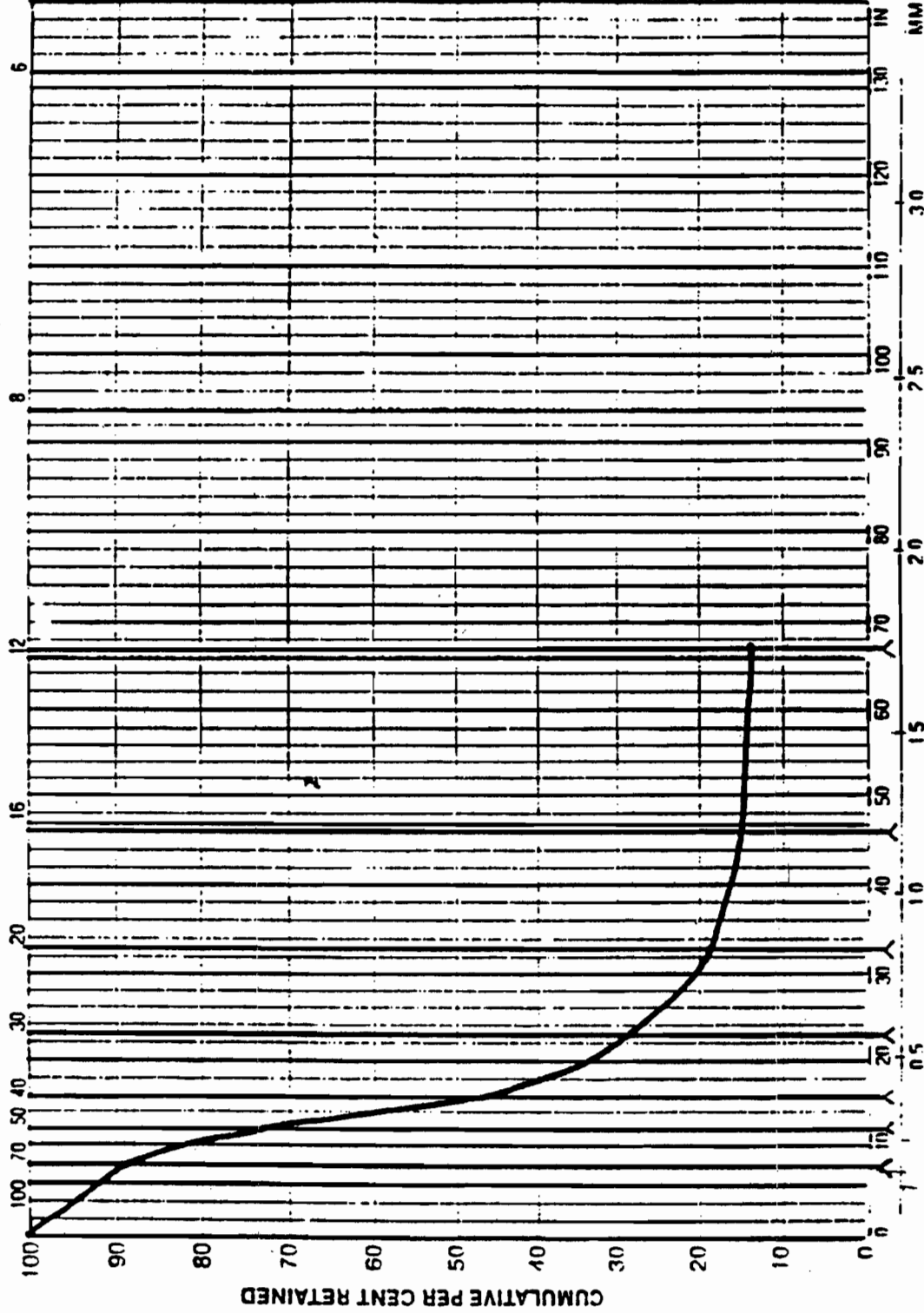
Phone:

WELL GW 2

	DEPTH-	34-36	FEET
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

Remarks

U.S. STANDARD SIEVE NUMBERS



SLOT OPENING AND GRAIN SIZE IN THOUSANDTHS OF AN INCH AND MM.

U.S. SIEVE NO.	SLOT OPENING		SAMPLE DEPTHS
	IN.	MM.	
6	1/32	3.36	
8	0094	2.38	
12	0066	1.68	
16	0047	1.19	
20	0033	0.84	
30	0023	0.60	
40	0016	0.42	
50	0012	0.30	
70	0009	0.21	
100	0006	0.15	

Comments

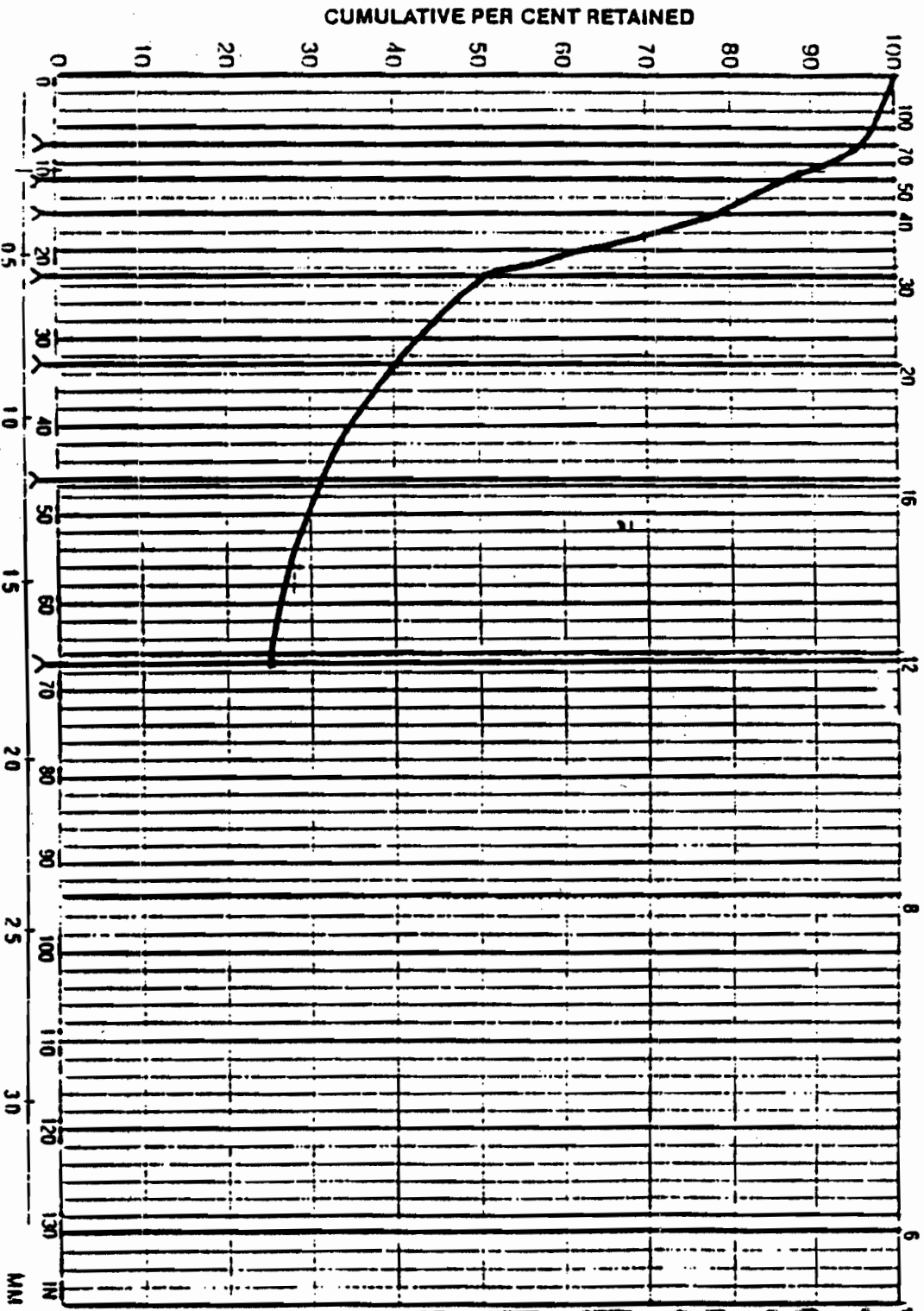
SCREEN RECOMMENDATIONS: DIAM.

SLOT	SETTING	LENGTH

97 Union Avenue P.O. Box 1309
RONKONKOMA, NEW YORK 11779
(516) 981-2255

DAVID ANALYSIS
388

Job Name IRRA SONIA ROAD LANDFILL Date 1/13/95
City ISLIP State NEW YORK Zip _____
Fuller MR. JOSEPH GUCCINO Phone _____
Engineer _____ Phone _____
Remarks WELL GW 2 DEPTH- 40-42 FEET
U.S. STANDARD SIEVE NUMBERS



SLOT OPENING AND GRAIN SIZE IN THOUSANDTHS OF AN INCH AND MM.

U.S. SIEVE NO.	SLOT OPENING		SAMPLE DEPTHS	
	IN	MM		
6	132	3.36		
8	98.4	2.48		
12	166	1.68		
16	104.7	1.19		
20	113.3	0.84		
30	107.3	0.60		
40	101.6	0.42		
50	112	0.30		
70	106	0.21		
100	149	0.15		

Comments _____

SCREEN RECOMMENDATIONS: DIAM. _____

SLOT	SETTING	LENGTH

DELIA WELL
& PUMP CO., INC.
97 Union Avenue P.O. Box 1309
RONKONKOMA, NEW YORK 11779
(516) 981-2255

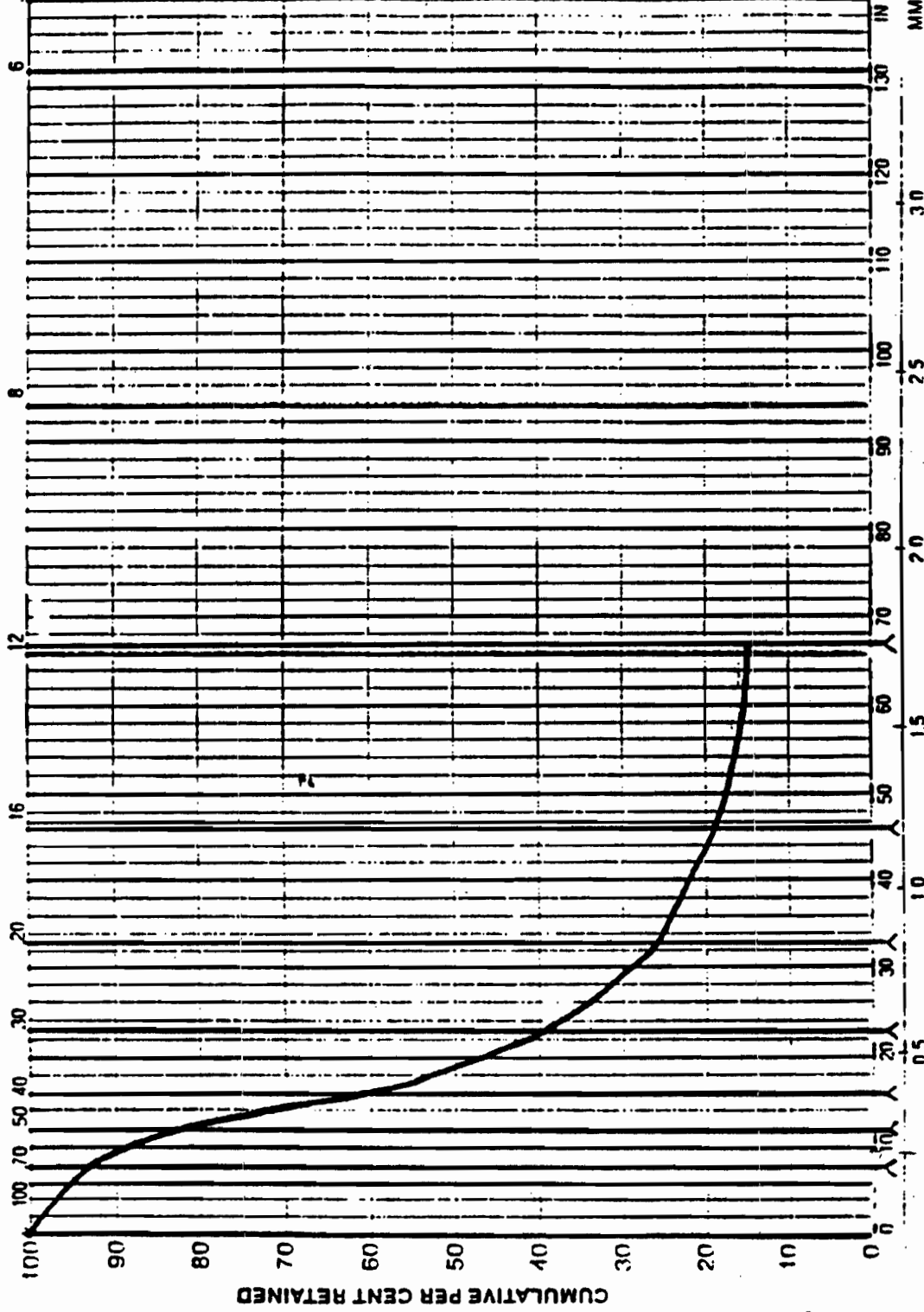
SAND ANALYSIS

388

Job Name IRRA SONIA ROAD LANDFILL Date 1/13/95
City ISLIP State NEW YORK Zip _____
Driller MR. JOSEPH GUCCINO Phone _____
Engineer _____ Phone _____
Remarks _____

WELL GW 3 DEPTH- 24-26 FEET

U.S. STANDARD SIEVE NUMBERS



SLOT OPENING AND GRAIN SIZE IN THOUSANDTHS OF AN INCH AND MM.

U.S. SIEVE No.	SLOT OPENING IN.	SLOT OPENING MM.	SAMPLE DEPTHS
6	.132	3.36	
8	.094	2.38	
12	.066	1.68	
16	.047	1.19	
20	.033	0.84	
30	.023	0.60	
40	.016	0.42	
50	.012	0.30	
70	.009	0.21	
100	.0075	0.15	

Comments

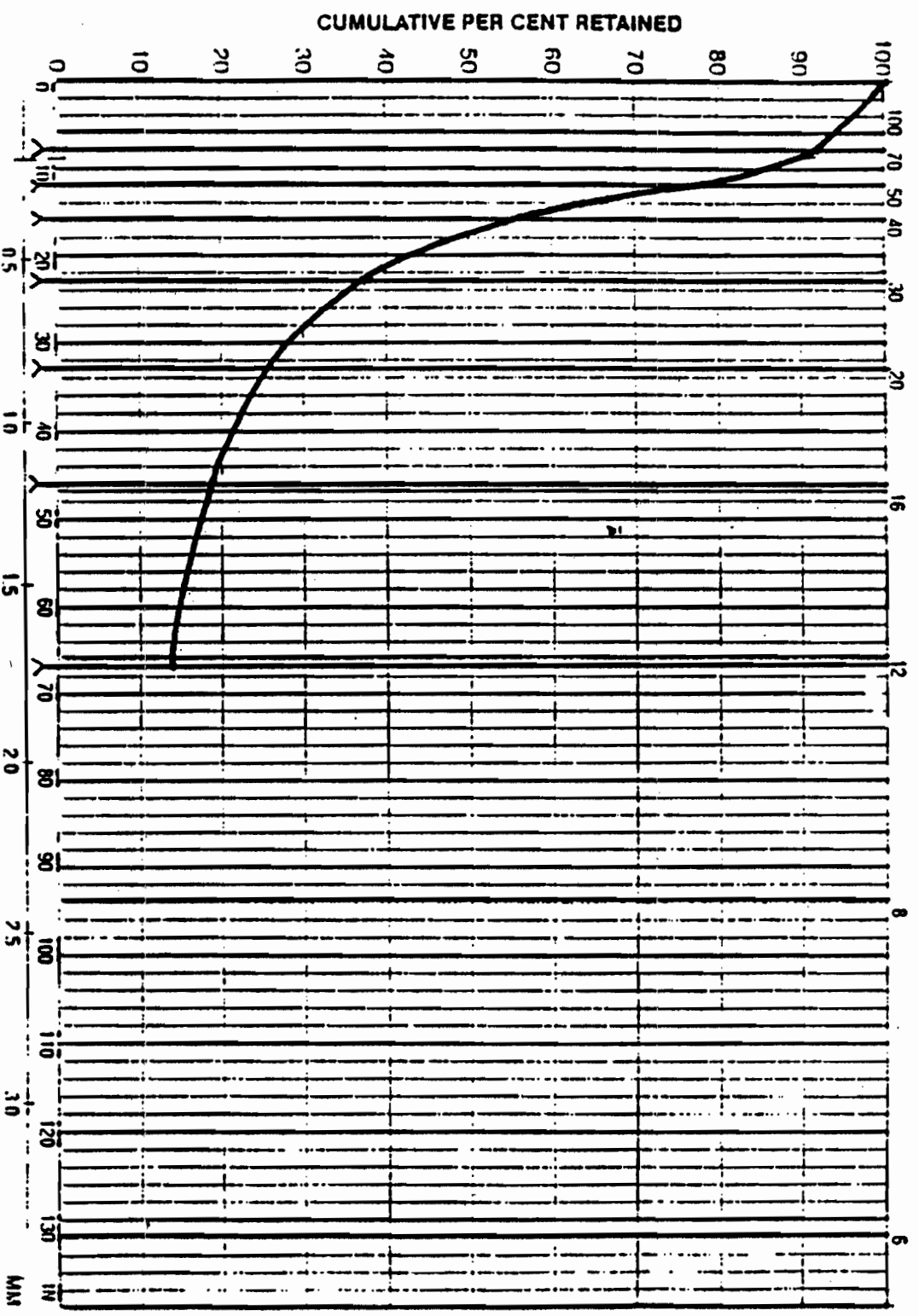
SCREEN RECOMMENDATIONS: DIAM.

SLOT	SETTING	LENGTH

& PUMP CO., INC.
97 Union Avenue, P.O. Box 1309
RONKONKOMA, NEW YORK 11779
(516) 981-2255

SAND ANALYSIS
388

Job Name IRRA SONIA ROAD LANDFILL Date 1/13/95
City ISLIP State NEW YORK Zip _____
Driller MR. JOSEPH GUCCINO Phone _____
Engineer _____ Phone _____
Remarks WELL CW 3 DEPTH - 32-34 FEET
U.S. STANDARD SIEVE NUMBERS



SLOT OPENING AND GRAIN SIZE IN THOUSANDTHS OF AN INCH AND MM.

U.S. SIEVE NO.	SLOT OPENING		SAMPLE DEPTHS		Comments
	IN	MM			
6	132	3.36			
10	99	2.38			
12	96	1.68			
15	91	1.19			
20	85	0.85			
30	60	0.60			
40	42	0.42			
60	25	0.25			
100	15	0.15			
150	10	0.10			

SCREEN RECOMMENDATIONS: DIAM.		
SLOT	SETTING	LENGTH

& PUMP CO., INC.

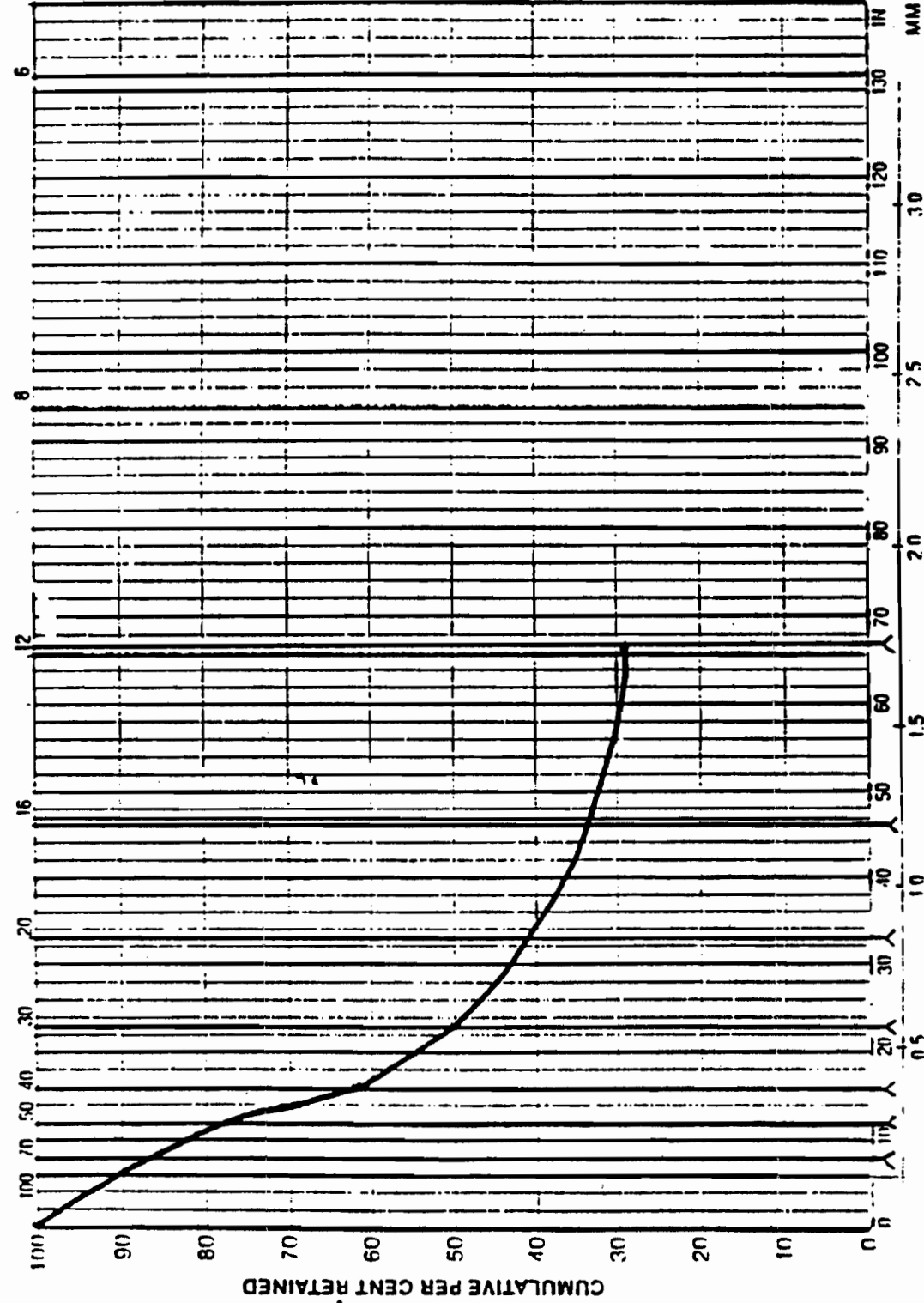
97 Union Avenue P.O. Box 1309
 RONKONKOMA, NEW YORK 11779
 (516) 981-2255

SAND ANALYSIS

388

Job Name IRRA SONIA ROAD LANDFILL Date 1/13/95
 City ISLIP State NEW YORK Zip _____
 Driller MR. JOSEPH GUGGINO Phone _____
 Engineer _____ Phone _____

Well GW 4 DEPTH- 29-31 FEET
 U.S. STANDARD SIEVE NUMBERS



SLOT OPENING AND GRAIN SIZE IN THOUSANDTHS OF AN INCH AND MM.

U.S. SIEVE NO.	SLOT OPENING		SAMPLE DEPTHS	
	IN.	MM.		
6	.132	3.36		
10	.094	2.38		
20	.066	1.68		
40	.047	1.19		
60	.033	0.84		
80	.025	0.60		
100	.019	0.47		
120	.016	0.40		
150	.012	0.30		
200	.009	0.21		
250	.008	0.15		

Comments

SCREEN RECOMMENDATIONS: DIAM.

SLOT	SETTING	LENGTH

& PUMP CO., INC.
97 Union Avenue P.O. Box 1309
RONKONKOMA, NEW YORK 11779
(516) 981-2255

SAND ANALYSIS

388

Job Name

IRRA SONIA ROAD LANDFILL

Date 1/13/95

City

ISLIP

State NEW YORK

Zip

Filler

MR. JOSEPH GUCCINO

Phone

Engineer

Phone

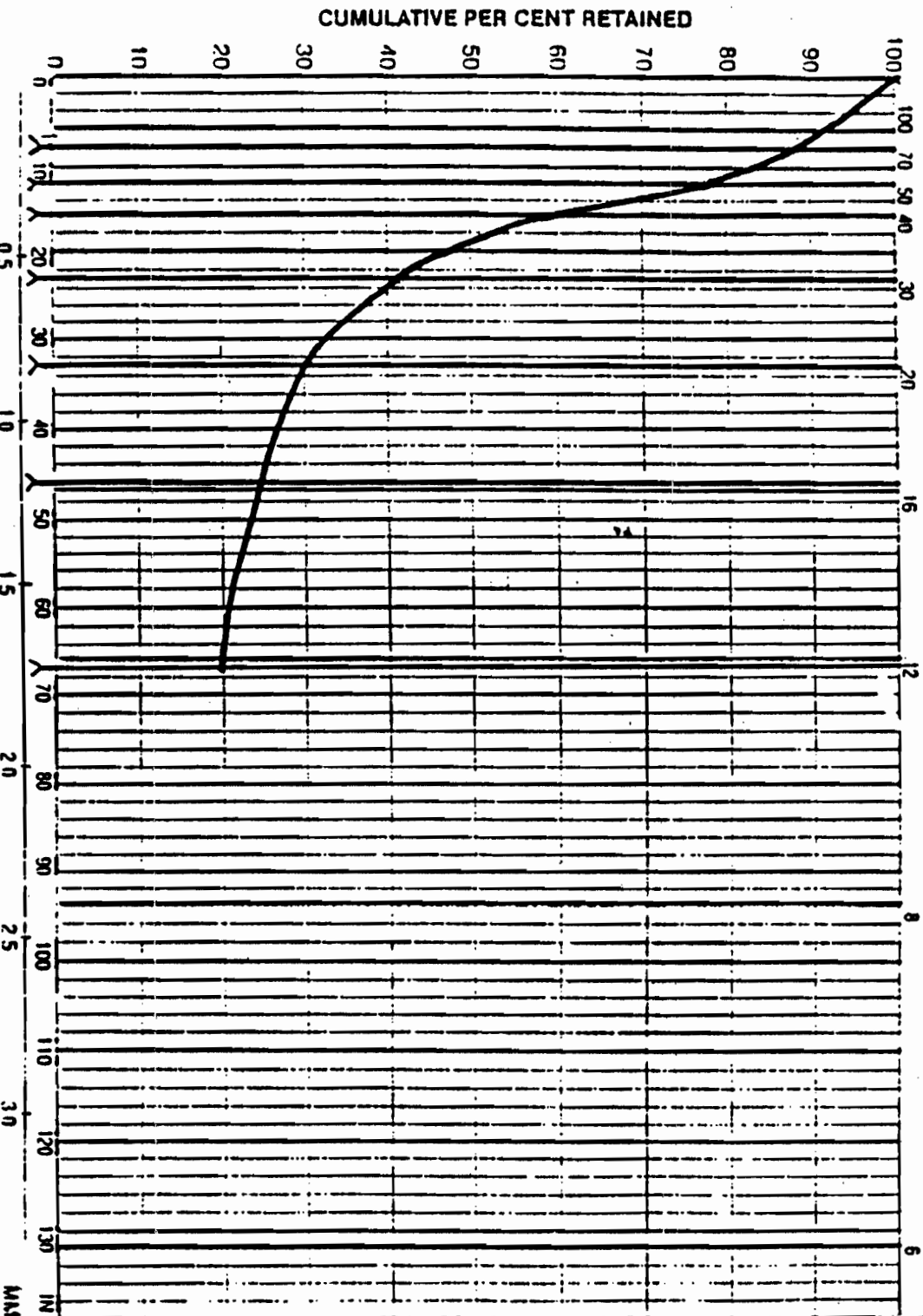
Remarks

WELL CW 4

DEPTH- 31-33

FEET

U.S. STANDARD SIEVE NUMBERS



SLOT OPENING AND GRAIN SIZE IN THOUSANDTHS OF AN INCH AND MM.

U.S. SIEVE NO.	SLOT OPENING		SAMPLE DEPTHS	
	IN.	MM.		
6	132	3.36		
8	09.4	2.38		
12	06.6	1.68		
16	04.7	1.19		
20	03.9	0.94		
30	02.3	0.60		
40	01.6	0.42		
50	01.2	0.30		
60	01.0	0.21		
70	00.9	0.15		

Comments

SCREEN RECOMMENDATIONS: DIAM.

SLOT

SETTING

LENGTH

SAND ANALYSIS

388

Date: **1/13/95**

NEW YORK
State Zip

Pharm

Plum

U.S. STANDARD SLEEVE NUMBERS

[illegible]

LEGEND

APPROXIMATE GROUNDWATER TABLE
CONTOUR LINE

1.) ISUP RESOURCE RECOVERY AGENCY, 1995.

REFERENCE

SURVEYED MARCH 20, 1995

PROJ. # 95019

MIDDLE ISLAND, NEW YORK, 11953
(516) 345-2658

SONIA ROAD LANDFILL
ISLIP, NEW YORK

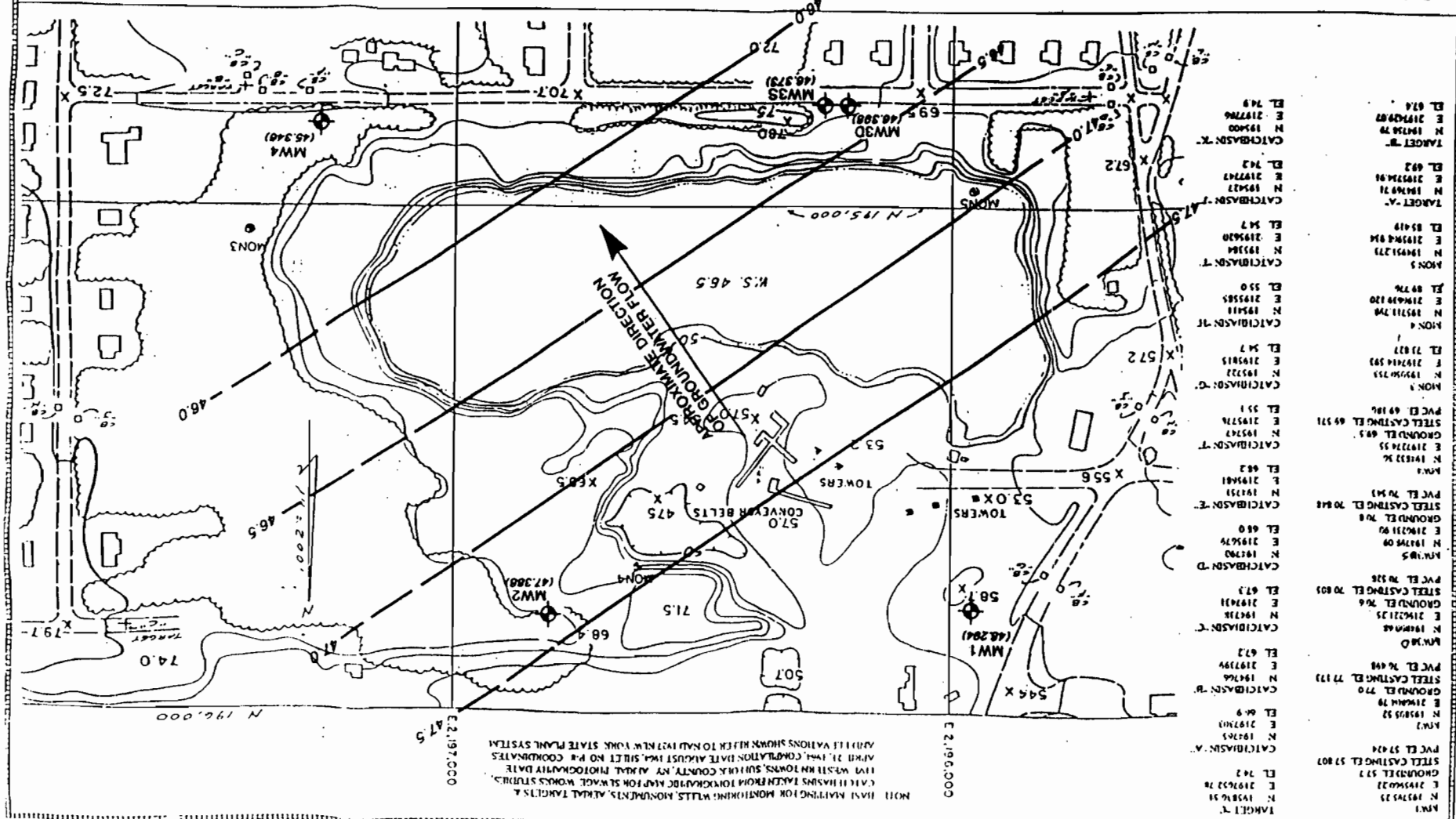
MONITORING WELL, NEW MONUMENTS, AERIAL TARGETS
AND CATCH BASINS

MUNICIPAL LAND SURVEY P.C.

10 SYLVIA LANE

FIGUR

(45,364)
GROUNDWATER ELEVATION IN FEET
PROVIDED BY RRA, MAY 24, 1995



105862
105859
105858
105857
105856

Golder Associates

SUBJECT		IRRA	Sanic-Ed Hydrogeo Assmnt.
Job No.	953-6247	Made By	RSW
Ref.		Checked	
		Reviewed	
Date	6/1/95	Sheet	1 of 1

Monitoring Well/Interval (#/ft-ft)	Effective S _{yc} - D ₉₀ (mm)	Permeability* $K = C(D_{90})^2$ $C = 12.5$ (mm/s - cm/s)	Permeability - Conversion - (ft/s)	Average Permeability per well (cm/s - ft/s)
Shallow GW1/14-16	.125	.2 - .02	.0007	.03 - .001
Shallow GW1/19-21	.188	.4 - .04	.0013	
Shallow GW2/34-36	.16	.3 - .03	.001	.06 - .002
Shallow GW2/40-42	.25	.8 - .08	.0026	
Shallow GW35/24-26	.23	.7 - .07	.0022	.06 - .002
Shallow GW-35/32-34	.20	.5 - .05	.0016	
Deep well GW-30/71-81	.185	.4 - .04	.0013	.05 - .0016
Shallow GW-30/82-84	.22	.6 - .06	.002	
Shallow GW-4/29-31	.125	.2 - .02	.0007	
Shallow GW-4/31-33	.155	.3 - .03	.001	.025 - .0009
Average Permeability for Shallow Wells = .04 - .002				
Average Permeability for Deep Well = .05 - .0016				

* Savers, G.B. Soil Mechanics And Foundations, 1979
 (Values are rounded to 1 significant figure)
 * Estimates from Delta well Pump "Sand Analysis"
 (Graphical interpretation of results)