

APPENDIX B

**WELL CONSTRUCTION DIAGRAMS AND LITHOLOGIC LOGS
BROADWAY-PANTANO WQARF SITE, LANDFILL OPERABLE UNIT
TUCSON, ARIZONA**

APPENDIX B
WELL CONSTRUCTION DIAGRAMS AND LITHOLOGIC LOGS
BROADWAY NORTH LANDFILL

**Table B1
Broadway North Landfill
Soil Gas Probe Construction Data**

| Well/Probe ID | Depth (ft bls) | Probe Diameter (in) | Top of Screen (ft bls) | Bottom of Screen (ft bls) | Monitor Well Borehole Diameter (in) | Depth to Top of Probe Filter Pack (ft bls) | Depth to Bottom of Probe Filter Pack (ft bls) | Data Source |
|---------------|----------------|---------------------|------------------------|---------------------------|-------------------------------------|--|---|-------------|
| DP-1 : 50 | 50 | 0.5 | 45 | 50 | 4.0 | 43 | 51 | (1,2) |
| DP-1 : 125 | 125 | 0.5 | 120 | 125 | 4.0 | 118 | 127 | (1,2) |
| DP-1 : 150 | 150 | 0.5 | 145 | 150 | 4.0 | 143 | 151 | (1,2) |
| DP-1 : 193 | 193 | 0.5 | 188 | 193 | 4.0 | 184 | 194 | (1,2) |
| DP-2 : 50 | 50 | 0.5 | 45 | 50 | 4.0 | 43 | 51 | (1,2) |
| DP-2 : 100 | 100 | 0.5 | 95 | 100 | 4.0 | 92 | 101 | (1,2) |
| DP-2 : 150 | 150 | 0.5 | 145 | 150 | 4.0 | 143 | 151 | (1,2) |
| DP-2 : 193 | 193 | 0.5 | 188 | 193 | 4.0 | 184 | 194 | (1,2) |
| DP-3 : 50 | 50 | 0.5 | 45 | 50 | 4.0 | 43 | 51 | (1,2) |
| DP-3 : 100 | 100 | 0.5 | 95 | 100 | 4.0 | 92 | 101 | (1,2) |
| DP-3 : 150 | 150 | 0.5 | 145 | 150 | 4.0 | 143 | 151 | (1,2) |
| DP-3 : 193 | 193 | 0.5 | 188 | 193 | 4.0 | 184 | 194 | (1,2) |
| DP-4 : 50 | 50 | 1.0 | 45 | 50 | 9.6 | 43 | 52 | (1,3) |
| DP-4 : 100 | 100 | 1.0 | 95 | 100 | 9.6 | 93 | 102 | (1,3) |
| DP-4 : 150 | 150 | 1.0 | 145 | 150 | 9.6 | 142 | 152 | (1,3) |
| DP-4 : 200 | 200 | 1.0 | 195 | 200 | 9.6 | 193 | 202 | (1,3) |
| DP-4 : 250 | 250 | 1.0 | 245 | 250 | 9.6 | 242 | 252 | (1,3) |
| DP-4 : 300 | 300 | 1.0 | 295 | 300 | 9.6 | 293 | 305 | (1,3) |
| DP-5 : 50 | 50 | 1.0 | 45 | 50 | 9.6 | 43 | 52 | (1,3) |
| DP-5 : 100 | 100 | 1.0 | 95 | 100 | 9.6 | 93 | 102 | (1,3) |
| DP-5 : 150 | 150 | 1.0 | 145 | 150 | 9.6 | 143 | 152 | (1,3) |
| DP-5 : 200 | 200 | 1.0 | 195 | 200 | 9.6 | 193 | 202 | (1,3) |
| DP-5 : 250 | 250 | 1.0 | 245 | 250 | 9.6 | 243 | 252 | (1,3) |
| DP-5 : 300 | 300 | 1.0 | 295 | 300 | 9.6 | 293 | 305 | (1,3) |
| DP-6 : 50 | 50 | 1.0 | 45 | 50 | 9.6 | 43 | 52 | (1,3) |
| DP-6 : 100 | 100 | 1.0 | 95 | 100 | 9.6 | 93 | 102 | (1,3) |
| DP-6 : 150 | 150 | 1.0 | 145 | 150 | 9.6 | 143 | 152 | (1,3) |
| DP-6 : 200 | 200 | 1.0 | 195 | 200 | 9.6 | 193 | 202 | (1,3) |
| DP-6 : 250 | 250 | 1.0 | 245 | 250 | 9.6 | 243 | 252 | (1,3) |
| DP-6 : 300 | 300 | 1.0 | 295 | 300 | 9.6 | 293 | 306 | (1,3) |
| DP-7 : 50 | 50 | 1.0 | 45 | 50 | 9.6 | 42 | 52 | (1,3) |
| DP-7 : 100 | 100 | 1.0 | 95 | 100 | 9.6 | 93 | 102 | (1,3) |
| DP-7 : 150 | 150 | 1.0 | 145 | 150 | 9.6 | 142 | 152 | (1,3) |
| DP-7 : 200 | 200 | 1.0 | 195 | 200 | 9.6 | 193 | 202 | (1,3) |
| DP-7 : 250 | 250 | 1.0 | 245 | 250 | 9.6 | 243 | 252 | (1,3) |
| DP-7 : 300 | 300 | 1.0 | 295 | 300 | 9.6 | 290 | 307 | (1,3) |
| R-068A : 50 | 50 | 0.5 | 47 | 52 | 12.0 | 41 | 54 | (1,4) |
| R-068A : 100 | 100 | 0.5 | 95 | 100 | 12.0 | 90 | 105 | (1,4) |
| R-068A : 150 | 150 | 0.5 | 144 | 149 | 12.0 | 139 | 151 | (1,4) |
| R-068A : 200 | 200 | 0.5 | 195 | 200 | 12.0 | 190 | 203 | (1,4) |
| R-069A : 50 | 50 | 0.5 | 44 | 49 | 12.0 | 39 | 50 | (1,4) |
| R-069A : 100 | 100 | 0.5 | 95 | 100 | 12.0 | 90 | 102 | (1,4) |
| R-069A : 150 | 150 | 0.5 | 145 | 150 | 12.0 | 139 | 152 | (1,4) |
| R-069A : 200 | 200 | 0.5 | 195 | 200 | 12.0 | 190 | 205 | (1,4) |
| R-070A : 50 | 50 | 0.5 | 45 | 50 | 12.0 | 40 | 54 | (1,4) |
| R-070A : 100 | 100 | 0.5 | 95 | 100 | 12.0 | 90 | 101 | (1,4) |
| R-070A : WH | 225 | 6 | 156 | 225 | 12.0 | 147 | 246 | (1,4) |

Notes on page 2

Table B1
Broadway North Landfill
Soil Gas Probe Construction Data

| Well/Probe ID | Depth (ft bls) | Probe Diameter (in) | Top of Screen (ft bls) | Bottom of Screen (ft bls) | Monitor Well Borehole Diameter (in) | Depth to Top of Probe Filter Pack (ft bls) | Depth to Bottom of Probe Filter Pack (ft bls) | Data Source |
|---------------|----------------|---------------------|------------------------|---------------------------|-------------------------------------|--|---|-------------|
| R-071A : 50 | 50 | 0.5 | 45 | 50 | 12.0 | 40 | 54 | (1,4) |
| R-071A : 100 | 100 | 0.5 | 95 | 100 | 12.0 | 90 | 103 | (1,4) |
| R-071A : WH | 228 | 6 | 158 | 228 | 12.0 | 151 | 249 | (1,4) |
| R-072A : 50 | 50 | 0.5 | 45 | 50 | 12.0 | 40 | 53 | (1,4) |
| R-072A : 100 | 100 | 0.5 | 95 | 100 | 12.0 | 91 | 102 | (1,4) |
| R-072A : WH | 227 | 6 | 157 | 227 | 12.0 | 148 | 245 | (1,4) |
| R-073A : 50 | 50 | 0.5 | 45 | 50 | 12.0 | 40 | 51 | (1,4) |
| R-073A : 100 | 100 | 0.5 | 95 | 100 | 12.0 | 91 | 102 | (1,4) |
| R-073A : WH | 228 | 6 | 158 | 228 | 12.0 | 151 | 244 | (1,4) |
| R-074A : 50 | 50 | 0.5 | 45 | 50 | 12.0 | 41 | 53 | (1,4) |
| R-074A : 100 | 100 | 0.5 | 95 | 100 | 12.0 | 90 | 106 | (1,4) |
| R-074A : WH | 225 | 6 | 157 | 225 | 12.0 | 148 | 248 | (1,4) |
| R-075A : 50 | 50 | 0.5 | 45 | 50 | 12.0 | 40 | 52 | (1,4) |
| R-075A : 100 | 100 | 0.5 | 95 | 100 | 12.0 | 90 | 102 | (1,4) |
| R-075A : WH | 225 | 6 | 157 | 225 | 12.0 | 137 | 251 | (1,4) |
| WR-273A : 50 | 50 | 0.5 | 50 | 55 | 9.6 | 40 | 55 | (1,2) |
| WR-273A : 135 | 135 | 0.5 | 130 | 135 | 9.6 | 125 | 140 | (1,2) |
| WR-273A : 220 | 220 | 0.5 | 215 | 220 | 9.6 | 210 | 225 | (1,2) |
| WR-273A : 300 | 300 | 5 | 295 | 300 | 9.6 | 290 | 347 | (1,2) |
| WR-274A : 50 | 50 | 0.5 | 46 | 51 | 9.6 | 40 | 55 | (1,2) |
| WR-274A : 100 | 100 | 0.5 | 95 | 100 | 9.6 | 90 | 105 | (1,2) |
| WR-274A : 220 | 220 | 0.5 | 215 | 220 | 9.6 | - | - | (1) |
| WR-274A : 300 | 300 | 5 | 295 | 300 | 9.6 | 291 | 350 | (1,2) |
| WR-275A : 50 | 50 | 0.5 | 50 | 55 | 9.6 | 40 | 55 | (1,2) |
| WR-275A : 135 | 135 | 0.5 | 130 | 135 | 9.6 | 125 | 140 | (1,2) |
| WR-275A : 220 | 220 | 0.5 | 215 | 220 | 9.6 | 210 | 225 | (1,2) |
| WR-275A : 300 | 300 | 5 | 295 | 300 | 9.6 | 290 | 360 | (1,2) |

Notes:

ft bls = feet below land surface

in = inches

WH = wellhead

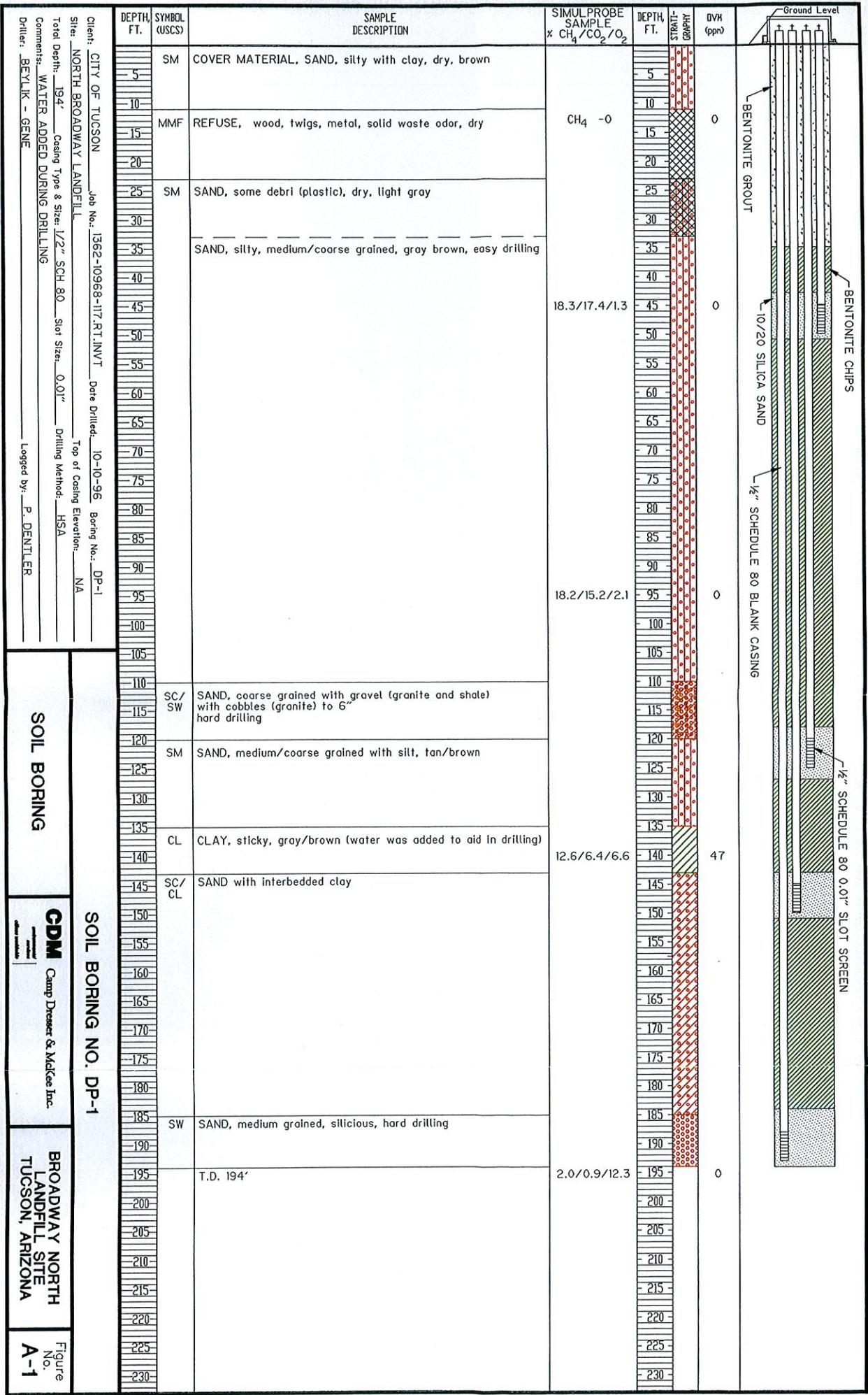
Sample ID (WR-273A : 50) = probe ID (WR-273A) colon sample depth (typically the bottom of the screen interval; 50 feet below land

- Information not known

Data sources:

- 1 Stantec, 2008a.
 - 2 CDM, 1998. Also ADWR imaged records for DP-3 for borehole diameter (55-700706) and WR wells borehole diameters
 - 3 Table 1 from SECOR, 2005a. Also ADWR imaged records.
 - 4 HydroGeoChem, 2000
- Full citations are provided in the References section of the LOU RI Report.

DP-1

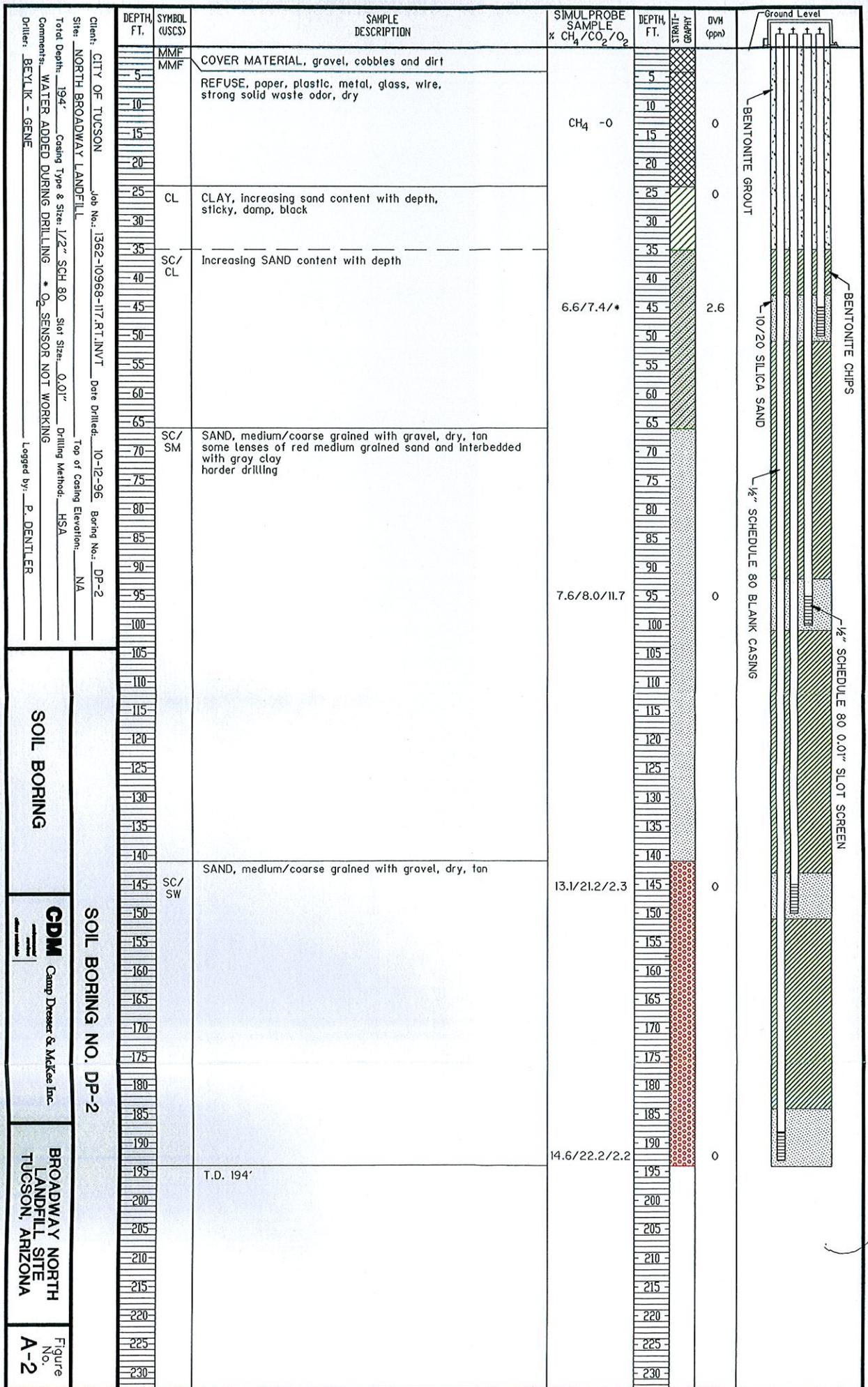


Client: CITY OF TUCSON
 Site: NORTH BROADWAY LANDFILL
 Job No.: 1362-10968-117.RT.INVT
 Date Drilled: 10-10-96
 Boring No.: DP-1
 Total Depth: 194' Casing Type & Size: 1/2" SCH 80 Slot Size: 0.01" Drilling Method: HSA
 Comments: WATER ADDED DURING DRILLING
 Driller: BEYLK - GENE
 Logged by: P. DENTLER

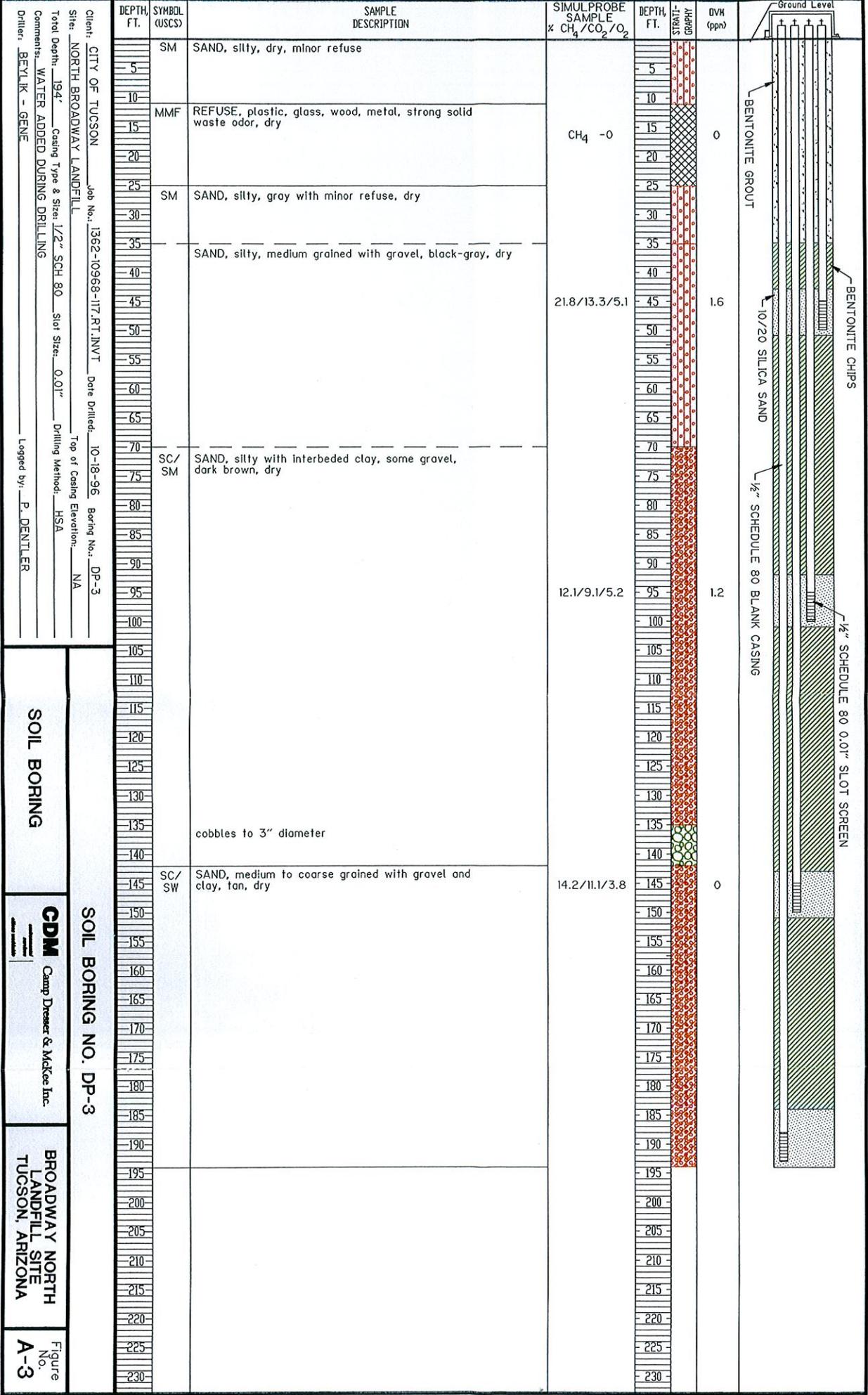
SOIL BORING
 SOIL BORING NO. DP-1
 CDM
 Camp Dresser & McKee Inc.

BROADWAY NORTH
 LANDFILL SITE
 TUCSON, ARIZONA
 Figure No. A-1

DP-2

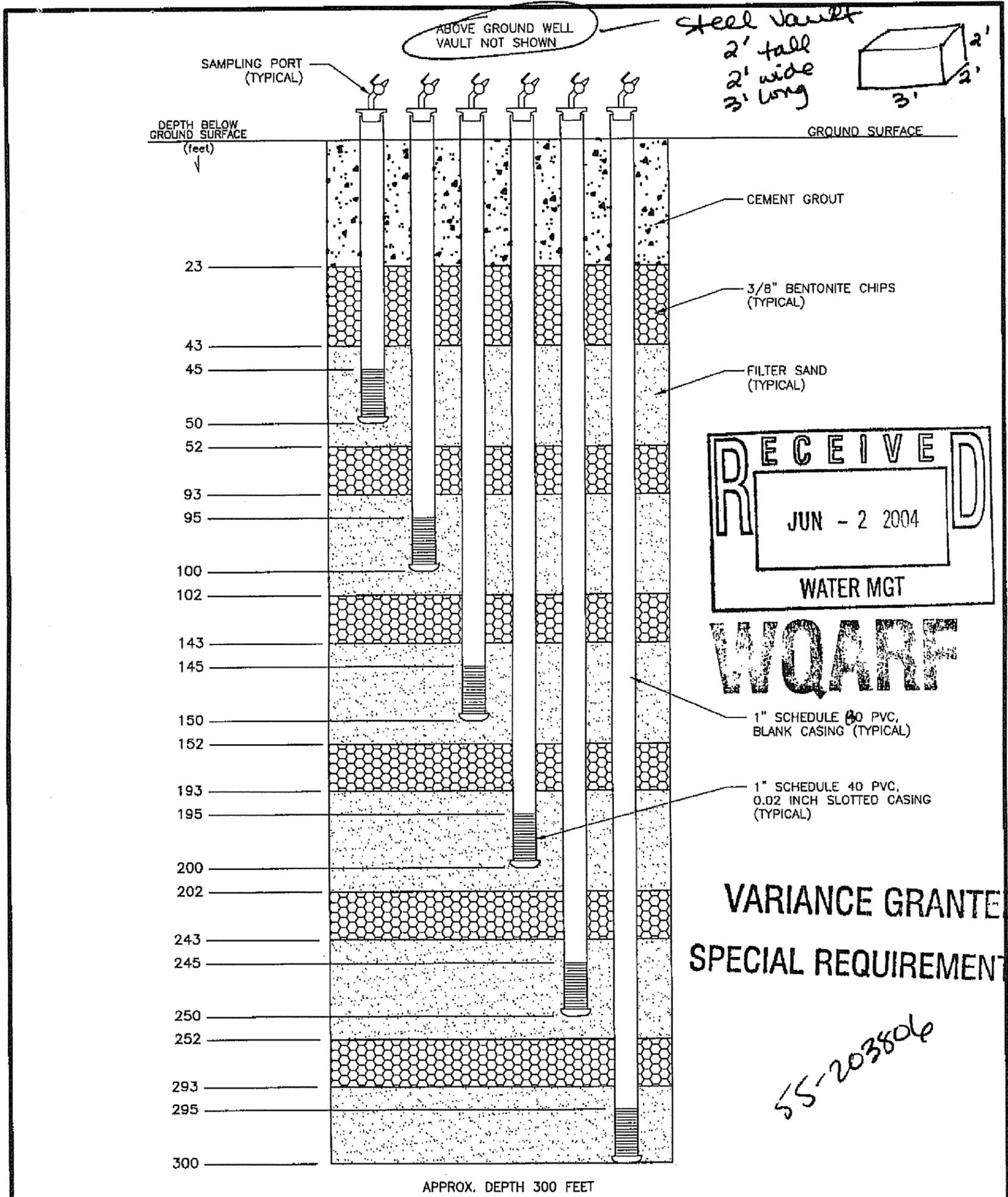


DP-3



SOIL BORING
SOIL BORING NO. DP-3
CDM Camp Dresser & McKee Inc.
BROADWAY NORTH
LANDFILL SITE
TUCSON, ARIZONA
 Figure No. **A-3**

Client: CITY OF TUCSON
 Site: NORTH BROADWAY LANDFILL
 Total Depth: 194' Casing Type & Size: 1/2" SCH 80 Slot Size: 0.01"
 Comments: WATER ADDED DURING DRILLING
 Driller: BEYLK - GENE
 Logged by: P. DENTLER
 Job No.: 1362-10968-117.RT.INVT
 Date Drilled: 10-18-96
 Boring No.: DP-3
 Top of Casing Elevation: NA
 Drilling Method: HSA



NOT TO SCALE

SECOR INTERNATIONAL
INCORPORATED
1830 WEST UNIVERSITY, SUITE 106
PHOENIX, ARIZONA 85281

**BOREHOLE CONSTRUCTION
DIAGRAM**

BROADWAY-PANTANO WQARF SITE
TUCSON, ARIZONA

FIGURE: **1**
DATE: 04/23/04
PROJECT NO:
180T.20401.03

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LOG OF BORING DP-4

(Page 1 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 3, 2004
Finish Date : June 4, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203806

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------|-------|---------|--|---|
| 0 | FL | | LANDFILL REFUSE - newspapers, wood, aluminum pieces, glass, and bones. The refuse is brownish gray (5YR 4/1), olive gray (5Y 4/1), and dark greenish gray (5GY 4/1). The landfill refuse was mixed with a gravel and sand. | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 25 | SW/SM | | WELL GRADED SAND WITH SILT AND GRAVEL, fine- to coarse-grained sand, light brown (5YR 5/6) to grayish orange (10YR 7/4), damp, subangular to subrounded gravel with maximum diameter of 10 millimeters, ~70% sand, ~20% gravel, ~10% silt. Moderate yellowish brown (10YR 5/4). Sand is becoming more coarse-grained, dark reddish brown (10R 3/4), gravel up to one-inch diameter. Light brown (5YR 6/4), less coarse-grained. | |
| 50 | SP | | POORLY GRADED SAND WITH GRAVEL, coarse-grained sand, moderate yellowish brown (10YR 5/4), damp, subangular to subrounded gravel, ~75% sand, ~25% gravel. Pale reddish brown (10R 5/4), sand less coarse-grained and becoming more fine-grained, fewer gravel. Moderate yellowish brown (10YR 5/4), mostly fine- to medium-grained sand with a some coarse-grained sand. | |
| 75 | | | | |

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LOG OF BORING DP-4

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Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

7525 East Broadway Boulevard
Tucson, Arizona

Start Date : June 3, 2004
Finish Date : June 4, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203806

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------|-------|---------|---|---|
| 75 | SP | | | |
| 100 | SW/SM | | <p>WELL GRADED SAND WITH SILT AND GRAVEL, fine- to coarse-grained sand, light brown (10YR 6/4) to grayish orange (10YR 7/4), slightly moist, subrounded to subangular sand, ~80% sand, ~10% fine gravel, ~10% silt.</p> <p>Grayish orange (10YR 7/4), medium- to coarse-grained sand dominant, no silt.</p> <p>Fine- to coarse-grained sand, increasing gravel content with a maximum diameter of one-inch.</p> <p>Light brown (5YR 5/6), decreasing silt content.</p> <p>Moderate yellowish brown (10YR 5/4), decreasing gravel and increasing silt content.</p> | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 125 | SM | | <p>SILTY SAND, poorly graded, fine- to medium-grained sand, moderate yellowish brown (10YR 5/4), damp, trace of fine gravel.</p> <p>Light brown (5YR 5/6), few coarse-grained sand and fine gravel,</p> | |
| 150 | SW/SM | | <p>WELL GRADED SAND WITH SILT AND GRAVEL, fine to coarse grained sand, light brown (5YR 5/6), damp, gravel diameter is approximately one-inch and subrounded to subangular, ~70% sand, ~15% gravel, ~15% silt.</p> <p>Light brown (5YR 5/6), decreasing gravel content, .</p> <p>Moderate yellowish brown (10YR 5/4), increasing gravel content.</p> | |

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LOG OF BORING DP-4

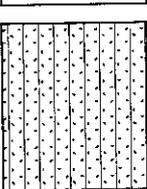
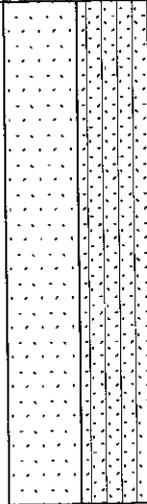
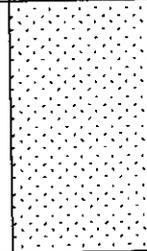
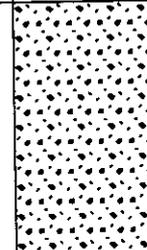
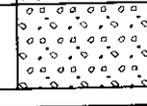
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Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 3, 2004
Finish Date : June 4, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203806

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------------|-------|---|--|---|
| 225 | SM |  | | |
| 250 | SW/SM |  | <p>WELL GRADED SAND WITH SILT AND GRAVEL, fine- to coarse-grained sand, light brown (5YR 6/4), damp, subangular to subrounded gravel with maximum diameter of one-quarter-inch, ~70% sand, ~20% gravel, ~10% silt.</p> <p>Moderate yellowish brown (10YR 5/4).</p> <p>Decreasing gravel content.</p> <p>Light brown (5YR 6/4).</p> <p>Increasing gravel and coarse grained sand content.</p> | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 275 | SP |  | <p>POORLY GRADED SAND AND GRAVEL, medium- to coarse-grained sand, light brown (5YR 6/4) to grayish orange (10YR 7/4), subrounded, damp, gravel is fine with a maximum diameter of one-half inch, ~65% sand, ~35% gravel.</p> | |
| | GP |  | <p>POORLY GRADED GRAVEL WITH SAND, fine, pink, green, white, gray, subangular gravel with a maximum diameter of one-inch, coarse-grained sand, ~70% gravel, ~30% sand.</p> | |
| 300 | GW |  | | |

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LOG OF BORING DP-5

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Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 7, 2004

Soil Logged by : Debbie Kenyon

Finish Date : June 8, 2004

Well Casing Diameter : 1-inch PVC

Drilling Company : WDC Exploration

Slot Size : 0.020-inch

Drilling Method : Air Rotary Casing Hammer

ADWR No. : 55-203807

SECOR Rep on-site : Ron Brazeal

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------------|-------|---------|--|---|
| 75 | SP | | Light brown (5YR 6/4), fine gravel content increasing. | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 100 | GP/GM | | POORLY GRADED GRAVEL WITH SILT, fine, gray, white, green, and black, subangular to subrounded, maximum diameter of one-quarter inch, ~85% gravel, ~15% silt. Increasing fines content, ~40%. | |
| 100 | GW/GM | | WELL GRADED GRAVEL WITH SILT, fine to coarse, gray, green white, pink, and black, subrounded to subangular, maximum diameter of one-inch, ~85% gravel, ~15% silt. | |
| 125 | SW | | WELL GRADED SAND WITH GRAVEL, fine- to coarse-grained sand, moderate yellowish brown (10YR 5/4), subrounded to subangular, fine gravel with a maximum diameter of one-half inch, ~80% sand, ~20% gravel. Light brown (5YR 5/6), increasing fine gravel content with a maximum diameter of one-quarter inch. | |
| 150 | SW | | Moderate yellowish brown (10YR 5/4). | |

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LOG OF BORING DP-5

(Page 3 of 4)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 7, 2004
Finish Date : June 8, 2004
Drilling Company : WDC Exploration
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Ron Brazeal

Soil Logged by : Debbie Kenyon
Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203807

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------------|-------|---------|--|---|
| 150 | SP/SM | | <p>POORLY GRADED SAND WITH SILT, fine-grained sand dominant, moderate yellowish brown (10YR 5/4), ~90% sand, ~10% silt, trace of fine gravel.</p> <p>Moderate brown (5YR 4/4), gravel content increasing.</p> | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 175 | GP/GM | | <p>POORLY GRADED GRAVEL WITH SILT, fine, gray, white, black, subrounded to subangular, maximum diameter of one-quarter inch, ~90% gravel, ~10% silt.</p> | |
| | SP/SM | | <p>POORLY GRADED SAND WITH SILT, fine- to medium-grained sand, light brown (5YR 5/6), ~80-90% sand, ~10-15% silt, trace of coarse-grained sand and fine gravel.</p> | |
| | GW/GM | | <p>WELL GRADED GRAVEL WITH SILT, fine to coarse, gray, black, and white, subangular to angular, maximum diameter is one-inch, trace coarse-grained sand, ~90% gravel, ~10% silt.</p> | |
| | SP/SM | | <p>POORLY GRADED SAND WITH SILT, fine- to medium-grained, light brown (5YR 5/6), ~85% sand, ~15% silt, trace of coarse-grained sand and fine gravel.</p> | |
| 200 | SM | | <p>SILTY SAND, poorly graded, fine to medium grained sand, light brown (5YR 5/6), ~75% sand, ~25% silt, trace of coarse-grained sand and fine gravel.</p> <p>Moderate yellowish brown (10YR 5/4), increasing fine grained sand content.</p> | |
| 225 | GP/GM | | <p>POORLY GRADED GRAVEL WITH SILT, fine, gray, green, white, black, pink, subangular to subrounded, maximum diameter of one-quarter inch, ~80% gravel, ~15% silt, ~5% coarse-grained sand. Gravel content increasing in size with a maximum diameter of three-quarters inch.</p> | |

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LOG OF BORING DP-5

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Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 7, 2004
Finish Date : June 8, 2004
Drilling Company : WDC Exploration
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Ron Brazeal

Soil Logged by : Debbie Kenyon
Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203807

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------|-------|---------|---|--|
| 225 | GP/GM | | | |
| | SW | | WELL GRADED SAND WITH GRAVEL, fine- to coarse-grained sand, moderate yellowish brown (10YR 5/4), fine gravel with a maximum diameter of one-half inch, ~80% sand, ~20% gravel, trace of silt. | <p>NOTES</p> <p>Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| | | | POORLY GRADED GRAVEL WITH SILT, fine, white, gray, and pale pink, subangular, maximum diameter of one-half inch, ~75% gravel, ~25% silt, trace coarse grained sand. | |
| 250 | | | Trace coarse gravel with maximum diameter of one-inch. | |
| | | | Increasing fines content. | |
| 275 | GP/GM | | Gravel has increasing orange tint with increasing coarse-grained sand content. | |
| | | | Fine gravel dominant with coarse-grained sand. | |
| 300 | | | Boring DP-5 terminated at 300 feet bgs. | |

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LOG OF BORING DP-6

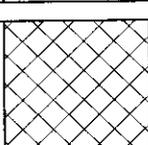
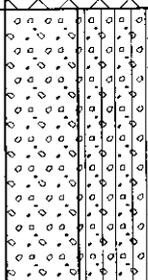
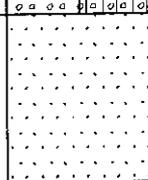
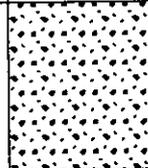
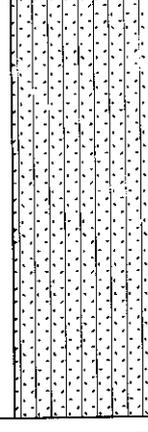
(Page 1 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 8, 2004
Finish Date : June 9, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203808

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------|-------|---|---|---|
| 0 | FL |  | LANDFILL REFUSE - few newspaper scraps and plastic. The refuse is brownish gray (5YR 4/1), olive gray (5Y 4/1), and dark greenish gray (5GY 4/1). The landfill refuse was mixed with gravel and sand. | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| | GW/GM |  | WELL GRADED GRAVEL WITH SILT AND SAND, fine to coarse gravel, pink, green, white, black, with maximum diameter of two and a half inches, fine- to coarse-grained sand, dark yellowish brown sand (10YR 4/2), subangular to subrounded gravel and sand, ~70% gravel, ~20% sand, ~10% silt. | |
| 25 | SW |  | WELL GRADED SAND WITH GRAVEL, fine- to coarse-grained sand, moderate yellowish brown (10YR 5/4), slightly damp, fine to coarse gravel similar to 15 feet bgs with a maximum diameter of one-inch, ~80% sand, ~20% gravel. Gravel content increasing at 30 feet. | |
| | GP |  | POORLY GRADED GRAVEL WITH SAND, coarse gravel, pink, gray, green, white, subangular to subrounded, with a maximum diameter of one and three-quarters inch, coarse-grained sand, moderate yellowish brown (10YR 5/4), ~85% gravel, ~15% sand. Fine to coarse gravel with a maximum diameter of one-inch. | |
| 50 | SP |  | POORLY GRADED SAND WITH GRAVEL, coarse-grained sand, moderate brown (5YR 4/4) to moderate yellowish brown (10YR 5/4), slightly damp, fine to coarse gravel with maximum diameter of one-inch, ~80% sand, ~20% gravel. | |
| 75 | SM |  | SILTY SAND, poorly graded, fine- to coarse-grained sand, moderate yellowish brown (10YR 5/4), slightly damp, trace of fine white gravel. Coarse-grained sand content increasing. | |

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LOG OF BORING DP-6

(Page 2 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 8, 2004
Finish Date : June 9, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203808

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------|-------|---------|---|---|
| 75 | SM | | | |
| | GP/GM | | POORLY GRADED GRAVEL WITH SILT AND SAND, fine gravel dominant, gray, black, and white, maximum diameter of one-inch, medium- to coarse-grained sand, moderate yellowish brown (10YR 5/4), ~70% sand, ~15% silt, ~15% gravel. | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 100 | SM | | SILTY SAND, poorly graded, fine- to medium-grained sand, moderate yellowish brown (10YR 5/4), slightly damp, ~65% sand, ~35% silt, trace fine gravel with a maximum diameter of one-quarter inch. Increasing gravel content. Well graded, fine- to coarse-grained sand, pale reddish brown (10R 5/4), fine gravel content increasing. | |
| 125 | SW/SM | | WELL GRADED SAND WITH GRAVEL AND SILT, fine- to coarse-grained sand, light brown (5YR 5/6), slightly damp, fine, subangular gravel with a maximum diameter of one-quarter inch, ~70% sand, ~20% gravel, ~10% silt. Moderate yellowish brown (10YR 5/4), increasing fine grained sand and silt content. | |
| | SM | | SILTY SAND, poorly graded, fine- to medium-grained sand, moderate yellowish brown (10YR 5/4), damp, with a trace of fine gravel. | |
| 150 | SW/SM | | WELL GRADED SAND WITH SILT AND GRAVEL, fine- to coarse-grained sand, moderate yellowish brown (10YR 5/4), damp, fine, subangular gravel with a maximum diameter of one-half inch, gray, green, black, and white, ~75% sand, ~15% gravel, ~10% silt. Decreasing gravel content at 140 feet. Decreasing silt content. Increasing silt and gravel content with a maximum diameter of three-quarters inch diameter. | |

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LOG OF BORING DP-6

(Page 3 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 8, 2004
Finish Date : June 9, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203808

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------------|-------|---------|---|---|
| 150 | SW/SM | | | |
| | SM | | SILTY SAND, fine- to coarse-grained sand, moderate brown (5YR 4/4), slightly damp, trace fine, subrounded gravel with a maximum diameter of one-quarter inch. Increasing gravel content. | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 175 | SP/SM | | POORLY GRADED SAND WITH SILT AND GRAVEL, fine- to medium-grained sand dominant, moderate yellowish brown (10YR 5/4), slightly moist, fine gravel with a maximum diameter of one-quarter inch, ~80% sand, ~10% gravel, ~10% silt. Light brown (5YR 5/6), increasing silt and fine-grained sand content. | |
| 200 | SM | | SILTY SAND, poorly graded, mostly fine- to medium-grained sand, light brown (5YR 5/6), slightly damp, ~75% silt, ~25% sand, trace fine, subangular gravel with a maximum diameter of one-eighth inch. Moderate yellowish brown (10YR 5/4), increasing coarse-grained sand content. Fine- to coarse-grained sand, light brown (5YR 5/6). Fine- to medium-grained sand, pale reddish brown (10R 5/4), increasing silt content, no gravel. Increasing fine-grained sand content. Fine- to coarse- grained sand. | |
| 225 | | | | |

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LOG OF BORING DP-6

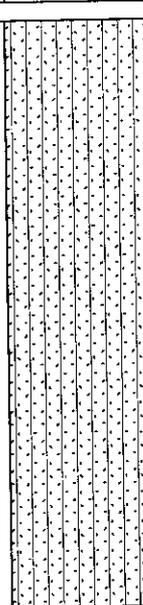
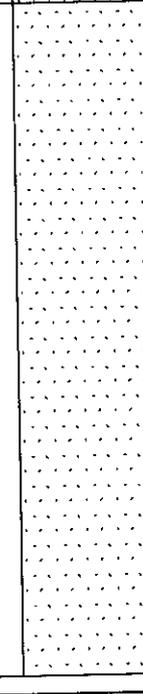
(Page 4 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 8, 2004
Finish Date : June 9, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203808

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------|------|---|---|---|
| 225 | SM |  | <p>Increasing gravel content with a maximum diameter of one-quarter inch.</p> <p>Increasing fine- to medium-grained sand content.</p> <p>Moderate brown (5YR 4/4).</p> | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 45-50, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 250 | SW |  | <p>WELL GRADED SAND WITH GRAVEL, fine- to coarse-grained sand, moderate yellowish brown (10YR 5/4), subrounded, gravel is fine with a maximum diameter of three-quarters inch, ~75% sand, ~25% gravel.</p> <p>Increasing coarse-grained sand content.</p> <p>Increasing gravel content with a maximum diameter of one-inch.</p> | |
| 275 | | | | |
| 300 | | | | |

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LOG OF BORING DP-7

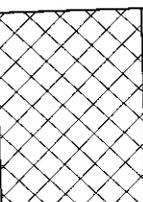
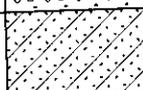
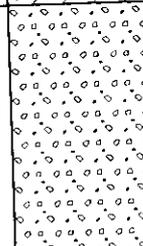
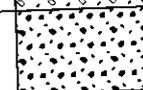
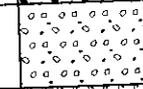
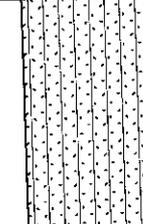
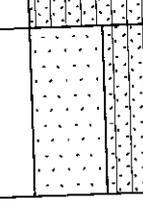
(Page 1 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 6, 2004
Finish Date : June 7, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203809

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------|-------|---|--|---|
| 0 | FL |  | LANDFILL REFUSE - newspapers, plastic, and paper. The refuse is brownish gray (5YR 4/1), olive gray (5Y 4/1), and dark greenish gray (5GY 4/1). The landfill refuse was mixed with a gravel and sand. | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 44.5-49.5, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| | GW |  | WELL GRADED GRAVEL, fine to coarse, various shades of black, white, green, gray, pink, subrounded to subangular, dry, maximum diameter of one-inch. Medium- to coarse-grained sand, moderate yellowish brown (10YR 5/4), subrounded to subangular, ~20% sand. | |
| | SC |  | CLAYEY SAND, fine- to coarse-grained sand, olive gray (5Y 4/1), low plasticity, ~60% sand, ~40% clay, trace subangular gravel. | |
| 25 | GW |  | WELL GRADED GRAVEL WITH SAND, fine to coarse gravel, black, white, gray, and green gravel with maximum diameter of one-inch, fine- to coarse-grained sand, pale yellowish brown (10YR 6/2), subangular to subrounded, ~60% gravel, ~40% sand. Decreasing sand content, increasing gravel diameter. | |
| | GP |  | POORLY GRADED GRAVEL WITH SAND, fine gravel with a maximum diameter of one-quarter inch, brownish red tint as a unit, ~75% gravel, ~25% sand. | |
| | GW |  | WELL GRADED GRAVEL WITH SAND, fine to coarse gravel with fine- to coarse-grained sand, whitish color as a unit with some green, pink, purple, and gray gravel, ~65% gravel, ~35% sand. | |
| 50 | SM |  | SILTY SAND WITH GRAVEL, poorly graded, fine- to medium-grained sand, moderate yellowish brown (10YR 5/4), slightly damp, ~65% sand, ~35% silt, trace of coarse-grained sand and fine gravel with a maximum diameter of one and a half-inches. Fine- to coarse-grained sand, decreasing silt content. Light brown (5YR 5/6), increasing silt content. | |
| | SW/SM |  | WELL GRADED SAND WITH SILT AND GRAVEL, fine- to coarse-grained sand, light brown (5YR 5/6), subangular to subrounded, dry, fine to coarse gravel with a maximum diameter of one and a half inches, subangular to subrounded, ~70% sand, ~20% gravel, ~10% silt. | |
| 75 | | | | |

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LOG OF BORING DP-7

(Page 2 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 6, 2004

Well Casing Diameter : 1-inch PVC

Finish Date : June 7, 2004

Slot Size : 0.020-inch

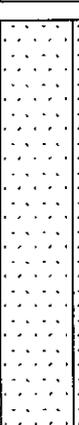
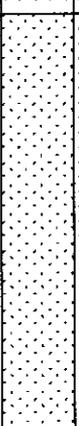
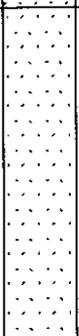
Drilling Company : Yellow Jacket Drilling

ADWR No. : 55-203809

7525 East Broadway Boulevard
Tucson, Arizona

Drilling Method : Air Rotary Casing Hammer

SECOR Rep on-site : Debbie Kenyon

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------------|-------|---|--|---|
| 75 | SW/SM |  | Moderate yellowish brown (10YR 5/4). | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 44.5-49.5, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 100 | SP/SM |  | <p>POORLY GRADED SAND WITH SILT AND GRAVEL, fine- to medium-grained sand dominant, pale reddish brown (10R 5/4), fine gravel is subangular with a maximum diameter of one-quarter inch, ~75% sand, 15% gravel, ~10% silt.</p> <p>Increasing fine grained sand content with decreasing gravel content (maximum diameter is one-quarter inch).</p> <p>Light brown (5YR 6/4), increasing coarse gravel content.</p> <p>Moderate yellowish brown (10YR 5/4).</p> | |
| 125 | SW/SM |  | <p>WELL GRADED SAND WITH SILT AND GRAVEL, fine- to coarse-grained sand, grayish orange (10YR 7/4), damp, fine to coarse gravel with maximum diameter of one-inch, ~75% sand, ~20% gravel, ~5% silt.</p> <p>Light brown (5YR 6/4), decreasing gravel content.</p> | |
| 150 | SP |  | | |

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LOG OF BORING DP-7

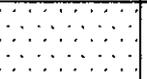
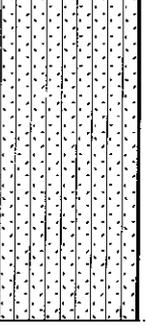
(Page 3 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 6, 2004
Finish Date : June 7, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203809

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------------|------|---|---|--|
| 150 | SP |  | <p>POORLY GRADED SAND WITH SILT, fine- to medium-grained sand, light brown (5YR 6/4), slightly damp, ~85% sand, ~15% silt, trace of coarse-grained sand and fine gravel with a maximum diameter of one-quarter inch, subangular.</p> <p>Moderate yellowish brown (10YR 5/4).</p> <p>Increasing coarse-grained sand content.</p> <p>Fine- to medium-grained sand dominant.</p> | <p>NOTES</p> <p>Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 44.5-49.5, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| 175 | SP |  | <p>Medium-grained sand dominant with decreasing gravel content.</p> <p>Increasing fine-grained sand content.</p> <p>Increasing coarse-grained sand with very little gravel.</p> | |
| 200 | SW |  | <p>WELL GRADED SAND WITH GRAVEL, fine- to coarse-grained sand, pale yellowish brown (10YR 6/2), subrounded, dry, fine to coarse gravel with maximum diameter of one-inch, subangular to subrounded, ~80% sand, ~20% gravel.</p> | |
| 225 | SM |  | <p>SILTY SAND, well graded, fine- to coarse-grained sand, pale yellowish brown (10YR 6/2) to moderate yellowish brown (10YR 5/4), damp, ~60% sand, ~40% silt, trace fine gravel.</p> <p>Fine- to medium- graded sand.</p> | |

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LOG OF BORING DP-7

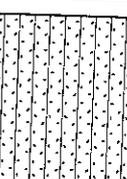
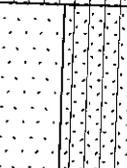
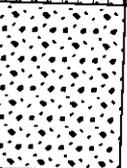
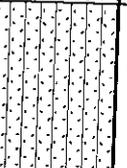
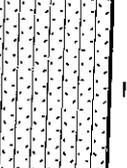
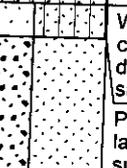
(Page 4 of 5)

Arizona Department of Environmental Quality
Broadway-Pantano WQARF Site

Start Date : June 6, 2004
Finish Date : June 7, 2004
Drilling Company : Yellow Jacket Drilling
Drilling Method : Air Rotary Casing Hammer
SECOR Rep on-site : Debbie Kenyon

Well Casing Diameter : 1-inch PVC
Slot Size : 0.020-inch
ADWR No. : 55-203809

7525 East Broadway Boulevard
Tucson, Arizona

| Depth in Feet | USCS | GRAPHIC | DESCRIPTION | Well Construction Information |
|---------------|-------|---|---|---|
| 225 | SM |  | Fine- to coarse-grained sand, grayish orange pink (5YR 7/2), fine gravel with a maximum diameter of one-half inch. | <p>NOTES Six PVC soil gas probes were installed in this borehole. The one-inch diameter probes were screened at the following depths: 44.5-49.5, 95-100, 145-150, 195-200, 245-250, and 295-300 feet bgs. A description of the well construction is detailed in Table 1.</p> |
| | SW/SM |  | WELL GRADED SAND WITH SILT AND GRAVEL, fine- to coarse-grained sand, grayish orange (10YR 7/4), fine gravel with maximum diameter of one-half inch, ~70% sand, ~15% gravel, ~15% silt. | |
| 250 | SM |  | SILTY SAND, well graded, fine- to coarse-grained sand, light brown (5YR 6/4), slightly damp, ~65% sand, ~35% silt, trace fine gravel with maximum diameter of one-quarter inch. | |
| | GP |  | POORLY GRADED GRAVEL WITH SAND, fine to coarse gravel, various shades of white, black gray, green, pink, maximum diameter of one-inch, coarse-grained sand, ~75% gravel, ~25% sand. Moderate brown (5YR 4/4) sand, mostly fine gravel with a maximum diameter of one-half inch. | |
| 275 | SM |  | SILTY SAND, poorly graded, fine- to medium-grained, moderate brown (5YR 4/4), slightly damp, ~60% sand, ~40% silt, trace fine gravel with a maximum diameter of one-quarter inch. | |
| | | | Increasing coarse grained sand and gravel content. | |
| | SW/SM |  | WELL GRADED SAND WITH SILT AND GRAVEL, fine- to coarse-grained sand, grayish orange pink (5YR 7/2), subrounded, dry, fine gravel with a maximum diameter of one-quarter inch, ~70% sand, ~20% gravel, ~10% silt. | |
| | GP/SP |  | POORLY GRADED GRAVEL AND SAND WITH SILT, intermittent layers of gravel and sand, gravel is subangular to angular, sand subangular, pieces of granite, muscovite, feldspar, quartz, granodiorite. The layers are of two to three feet gravel with one half to one foot sand. | |
| 300 | SP/SM |  | | |

Project: COT, Broadway North Landfill Well Installation Boring: R-68A (SVI-1) Pg. 1 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/21/00

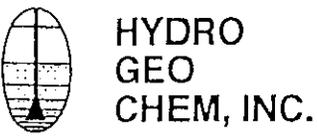
Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 1/24/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2579.0 Meas. Pt. Elev: 2579 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|-------------------------------|------------|------------|-----------|---------|-------------|--|-------------|-------------|----------------|----|----|----------|
| | 12-inch Steel Surface Casing w/ Locking Cap | 12-inch Borehole (0-302' bls) | | | | | | | | | GR | SA | FI | |
| 5 | | | | | | G | 5 | Fill; brown (7.5YR, 5/2). | | | | | | |
| 5 | | | | | | G | 5 | Fill; brown (7.5YR, 5/2), strong acid reaction. | | | | | | |
| 10 | | | | | | G | 10 | Refuse; black (7.5YR, 2.5/1), predominantly woody debris, strong acid reaction. | | | | | | |
| 10 | | | | | | G | 10 | Refuse; black (7.5YR, 2.5/1), predominantly woody debris, strong acid reaction. | | | | | | |
| 15 | | | | | | G | 15 | Refuse; black (7.5YR, 2.5/1), predominantly woody debris, NO ACID REACTION BELOW THIS INTERVAL | | | | | | |
| 20 | | | | | | G | 20 | Silty sand; strong brown (7.5YR 5/6). | SM | 20 | 60 | 20 | | |
| 25 | | | | | | G | 25 | Silty sand w/ gravel; strong brown (7.5YR, 5/6) | SM | 25 | 60 | 15 | | |
| 30 | | | | | | G | 30 | Silty sand; brown (7.5YR, 4/4), medium sand. | SM | 10 | 70 | 20 | | |
| 35 | | | | | | G | 35 | Poorly-graded sand w/ silt & gravel; brown (7.5YR, 4/4), coarse sand. | SP-SM | 20 | 70 | 10 | | |
| 40 | | | | | | G | 40 | Silty sand; brown (7.5YR, 5/3), medium sand. | SM | 10 | 70 | 20 | | |
| 45 | | | | | | G | 45 | Poorly-graded sand w/ silt & gravel; brown (7.5YR, 5/3), medium sand. | SP-SM | 20 | 70 | 10 | | |
| 50 | | | | | | G | 50 | Silty sand; brown (7.5YR, 6/4), fine sand. | SM | 15 | 70 | 15 | | |
| 55 | | | | | | G | 55 | Silty sand; brown (7.5YR, 6/4), fine sand. | SM | 15 | 70 | 15 | | |
| 60 | | | | | | G | 60 | | | | | | | |

Lithologic Log and Well Construction Details of R-68A (SVI-1)
Broadway North Landfill Well Installation



| | | | | | |
|--------------------|------|---------|------|------------|-------------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1a |
|--------------------|------|---------|------|------------|-------------------|

HCUJ.GDT 4/17/00
HGC-WELL 8/8/01/5

Project: COT, Broadway North Landfill Well Installation Boring: R-68A (SVI-1) Pg. 2 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/21/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 1/24/00

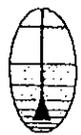
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2579.0 Meas. Pt. Elev: 2579 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PIG (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 65 | | | | | G | 65 | | Silly sand; brown (7.5YR, 5/3), medium sand. (continued) | SM | 10 | 75 | 15 | |
| 70 | Cement grout w/ 5% bentonite (54-87.5' bls) | | | | G | 70 | | Silly sand; light brown (7.5YR, 6/4), fine sand. | SM | 10 | 70 | 20 | |
| 75 | 6-inch sch-80 flush threaded blank PVC casing | | | | G | 75 | | Silly sand; light brown (7.5YR, 6/4), fine sand. | SM | 10 | 70 | 20 | |
| 80 | | | | | G | 80 | | Poorly-graded sand w/ silt and gravel; light brown (7.5YR, 6/4), coarse sand. | SP-SM | 20 | 70 | 10 | |
| 85 | | | | | G | 85 | | Well-graded sand; white (7.5YR, 8/1), medium sand. | SW | 5 | 90 | 5 | |
| 90 | Hydrated bentonite (87.5-89.5' bls) | | | | G | 90 | | Poorly-graded sand w/ gravel; white (7.5YR, 8/1), medium to coarse sand. | SP | 15 | 80 | 5 | |
| 95 | #60 sand (89.5-90' bls) | | | | G | 95 | | Poorly-graded sand w/ gravel; white (7.5YR, 8/1), medium to coarse sand. | SP | 15 | 80 | 5 | |
| 100 | #6-8 sand (90-105' bls) | | | | G | 100 | | Poorly-graded sand w/ gravel; white (7.5YR, 8/1), medium to coarse sand. | SP | 15 | 80 | 5 | |
| 105 | 1/2-inch 0.02 slot sch-40 PVC (95-100' bls) | | | | G | 105 | | Poorly-graded sand w/ gravel; white (7.5YR, 8/1), medium to coarse sand. | SP | 10 | 80 | 10 | |
| 110 | Hydrated bentonite (105-107' bls) | | | | G | 110 | | Poorly-graded sand w/ silt & gravel; brown (7.5YR, 5/4), medium sand, trace cobbles. | SP-SM | 20 | 70 | 10 | |
| 115 | Cement grout w/ 5% bentonite (107-136.5' bls) | | | | G | 115 | | Poorly-graded sand w/ silt & gravel; light brown (7.5YR, 6/4), medium to coarse sand. | SP-SM | 20 | 70 | 10 | |
| 120 | | | | | G | 120 | | Poorly-graded sand w/ silt & gravel; brown (7.5YR, 5/4), coarse sand. | SP-SM | 30 | 60 | 10 | |

Lithologic Log and Well Construction Details of R-68A (SVI-1)
Broadway North Landfill Well Installation

15C-WELL 65900.GPJ



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| | | | | | |
|--------------------|------|---------|------|------------|-------------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1b |
|--------------------|------|---------|------|------------|-------------------|

Project: COT, Broadway North Landfill Well Installation Boring: R-68A (SVI-1) Pg. 3 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/21/00

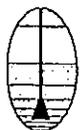
Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 1/24/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2579.0 Meas. Pt. Elev: 2579 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| | | | | | | | | Silty sand w/ gravel; strong brown (7.5YR, 5/6), medium sand. (continued) | SM | 20 | 40 | 40 | |
| 125 | Cement grout w/ 5% bentonite (107-136.5' bls) | | | | G | 125 | | Poorly-graded sand w/ silt & gravel; brown (7.5YR, 5/4), medium to coarse sand. | SP-SM | 30 | 60 | 10 | |
| 130 | | | | | G | 130 | | Well-graded sand w/ silt; pink (7.5YR, 7/3), medium sand. | SW-SM | 10 | 80 | 10 | |
| 135 | | | | | G | 135 | | Water injected to free-up bit - sample lost | | | | | |
| 140 | Hydrated bentonite (136.5-138.7' bls) #60 sand (138.7-139.1' bls) | | | | G | 140 | | Well-graded sand w/ silt; pink (7.5YR, 7/3), medium sand. | SW-SM | 5 | 85 | 10 | |
| 145 | #6-8 sand (139.1-151' bls) | | | | G | 145 | | Well-graded sand w/ silt; brown (7.5YR, 5/4), medium sand. | SW-SM | 10 | 80 | 10 | |
| 150 | 1/2-inch 0.02 slot sch-40 PVC (144-149' bls) | | | | G | 150 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | |
| 155 | | | | | G | 155 | | Silty sand; light brown (7.5YR, 6/4), medium to fine sand. | SM | 5 | 80 | 15 | |
| 160 | | | | | G | 160 | | Silty sand; brown (7.5YR, 5/4), medium to fine sand. | SM | 5 | 80 | 15 | |
| 165 | Cement grout w/ 5% bentonite (151-188' bls) | | | | G | 165 | | Poorly-graded sand w/ silt; light brown (7.5YR, 6/4), medium sand. | SP-SM | 5 | 85 | 10 | |
| 170 | 6-inch sch-80 flush threaded blank PVC (37-240' bls) | | | | G | 170 | | Silty sand; light brown (7.5YR, 6/4), medium sand. | SM | 5 | 80 | 15 | |
| 175 | | | | | G | 175 | | Poorly-graded sand w/ silt; light brown (7.5YR, 6/4), medium sand. | SP-SM | 10 | 80 | 10 | |
| 180 | | | | | G | 180 | | | | | | | |

Lithologic Log and Well Construction Details of R-68A (SVI-1)
Broadway North Landfill Well Installation



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Approved
J. Tano

Date

Revised

Date

Reference:

FIG.

1c

DJ.GDT 4/17/00

IGC-WELL 55800.G

Project: COT, Broadway North Landfill Well Installation Boring: R-68A (SVI-1) Pg. 4 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/21/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 1/24/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2579.0 Meas. Pt. Elev: 2579 Reviewed by: S. Smith

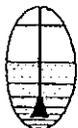
| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Well-graded sand; light brown (7.5YR, 6/3), medium sand. (continued) | SW | 20 | 70 | 5 | |
| 190 | Hydrated bentonite (188-189' bls) #60 sand (189-190' bls) | | | | G | 190 | | Well-graded sand; pinkish gray (7.5YR, 6/2), medium sand. | SW | tr | 95 | 5 | |
| 195 | | | | | G | 195 | | Well-graded sand; pinkish gray (7.5YR, 6/2), medium sand. | SW | tr | 95 | 5 | |
| 200 | 1/2-inch 0.02 slot sch-40 PVC (195-200' bls) | | | | G | 200 | | Well-graded gravel w/ sand; brown (7.5YR, 5/3). | GW | 50 | 45 | 5 | |
| 205 | #6-8 sand (190-203' bls) | | | | G | 205 | | Well-graded sand; light brown (7.5YR, 6/3). | SW | tr | 95 | 5 | |
| 210 | | | | | G | 210 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3). | SW | 25 | 70 | 5 | |
| 215 | Cement grout w/ 5% bentonite (203-230' bls) | | | | G | 215 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3). | SW | 5 | 90 | 5 | |
| 220 | | | | | G | 220 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3). | SW | 5 | 90 | 5 | |
| 225 | | | | | G | 225 | | Well-graded gravel; problems lifting cuttings out of hole - begin injecting water and foam down to 235'. | GW | 90 | 5 | 5 | |
| 230 | Hydrated bentonite (230-231' bls) #6-8 sand (231-233' bls) | | | | G | 230 | | NO RETURN - Can't drive conductor casing any deeper - remainder of borehole drilled open | | | | | |
| 235 | 1/4 to 3/4-inch washed gravel (233-369' bls) | | | | G | 235 | | Well-graded sand; brown (7.5YR, 5/4). | SW | 10 | 85 | 5 | |
| 240 | | | | | G | 240 | | Well-graded sand; light brown (7.5YR, 6/3). | SW | 5 | 90 | 5 | |

Lithologic Log and Well Construction Details of R-68A (SVI-1)
Broadway North Landfill Well Installation

| | | | | | |
|----------------------|------|---------|------|------------|------------|
| Approved .J. Tang | Date | Revised | Date | Reference: | FIG. 1d |
|----------------------|------|---------|------|------------|------------|

CJ.GDT 4/17/00

ISC-WELL 65800.GF



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Project: COT, Broadway North Landfill Well Installation Boring: R-68A (SVI-1) Pg. 5 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/21/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 1/24/00

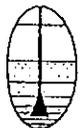
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2579.0 Meas. Pt. Elev: 2579 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|-----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 245 | 6-inch sch-80 1/4-inch slot (240-368' bls) | | | | G | 245 | | Well-graded sand; light brown (7.5YR, 6/4), abundant mica (continued) | SW | tr | 100 | tr | |
| 250 | | | | | G | 250 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 5 | 90 | 5 | |
| 255 | | | | | G | 255 | | Well-graded sand; light brown (7.5YR, 6/3). | SW | tr | 100 | tr | |
| 260 | | | | | G | 260 | | Well-graded sand; light brown (7.5YR, 6/4), medium to fine sand. | SW | tr | 100 | tr | |
| 265 | | | | | G | 265 | | Well-graded sand; light brown (7.5YR, 6/4), medium to fine sand. | SW | tr | 100 | tr | |
| 270 | | | | | G | 270 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3). | SW | 15 | 80 | 5 | |
| 275 | | | | | G | 275 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | tr | 100 | tr | |
| 280 | | | | | G | 280 | | Well-graded gravel w/ sand; coarse angular gravel. | GW | 70 | 30 | tr | |
| 285 | | | | | G | 285 | | Well-graded sand w/ gravel; brown (7.5YR, 5/4). | SW | 50 | 50 | tr | |
| 290 | | | | | G | 290 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 6/2). | GW | 60 | 40 | tr | |
| 295 | | | | | G | 295 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 6/2), very angular gravel. | GW | 60 | 40 | tr | |
| 300 | | | | | G | 300 | | Well-graded sand; white (7.5YR, 8/1). | SW | 40 | 60 | tr | |

JUGDT 4/17/00

1GC-WELL 65800.G



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**Lithologic Log and Well Construction Details of R-68A (SVI-1)
Broadway North Landfill Well Installation**

Approved
J. Tang

Date

Revised

Date

Reference:

FIG.

1e

Project: COT, Broadway North Landfill Well Installation Boring: R-68A (SVI-1) Pg. 6 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/21/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 1/24/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2579.0 Meas. Pt. Elev: 2579 Reviewed by: S. Smith

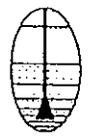
| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|-----------------|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 305 | | | | | G | 305 | | Well-graded gravel w/ sand; brown (7.5YR, 4/3). (continued) | GW | 60 | 40 | tr | |
| 310 | | | | | G | 310 | | Well-graded gravel w/ sand; brown (7.5YR, 4/3). | GW | 60 | 40 | tr | |
| 315 | | | | | G | 315 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3). | SW | 50 | 50 | tr | |
| 320 | | | | | G | 320 | | Well-graded gravel w/ sand; light brown (7.5YR, 6/3). | GW | 60 | 40 | tr | |
| 325 | | | | | G | 325 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3). | SW | 30 | 70 | tr | |
| 330 | | | | | G | 330 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3). | SW | 30 | 70 | tr | |
| 335 | | | | | G | 335 | | Well-graded gravel w/ sand; light brown (7.5YR, 6/3) | GW | 60 | 40 | tr | |
| 340 | | | | | G | 340 | | Well-graded gravel w/ sand; light brown (7.5YR, 6/3) | GW | 70 | 30 | tr | |
| 345 | | | | | G | 345 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3). | SW | 50 | 50 | tr | |
| 350 | | | | | G | 350 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 7/2), angular gravel. | GW | 80 | 20 | tr | |
| 355 | | | | | G | 355 | | Well-graded sand w/ gravel; pinkish gray (7.5YR, 7/2). | SW | 50 | 50 | tr | |
| 360 | | | | | G | 360 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 7/2), angular gravel. | GW | 60 | 40 | tr | |

1/4 to 3/4-inch washed gravel (233-369' bls)

10 3/4-Inch Borehole (302-370' bls)

Lithologic Log and Well Construction Details of R-68A (SVI-1)
Broadway North Landfill Well Installation

MPC-PROJ.GDT 4/17/00
HGC-WELL 65800.G



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| | | | | | |
|---------------------|------|---------|------|------------|-------------------|
| Approved J. Tanq | Date | Revised | Date | Reference: | FIG. 1f |
|---------------------|------|---------|------|------------|-------------------|

Project: COT, Broadway North Landfill Well Installation Boring: R-68A (SVI-1) Pg. 7 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/21/00

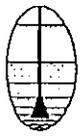
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 1/24/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2579.0 Meas. Pt. Elev: 2579 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|-----------------|------------|------------|-----------|---------|-------------|-------------|----------------------------|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 365 | <p>end-cap</p> | | | | G | 365 | | SW | 40 | 60 | tr | | |
| | | | | | G | 370 | | | GW | 80 | 20 | tr | |
| | | | | | | | 370 | | | | | | |
| | | | | | | | | TD of borehole @ 370' bls. | | | | | |

Lithologic Log and Well Construction Details of R-68A (SVI-1)
Broadway North Landfill Well Installation



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| | | | | | |
|--------------------|------|---------|------|------------|------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. |
|--------------------|------|---------|------|------------|------|

1g

PROJ.GDT 4/17/00
HGC-WELL 65800.G

Project: COT, Broadway North Landfill Well Installation

Boring: R-69A (SVI-2)

Pg. 1 of 7

Drilling Co: THF Drilling Company (Jason Proffer)

Drilling Method: Air Rotary Casing Hammer

Date Started: 2/15/00

Location: Broadway North Landfill, 7451 E.

Sampler: Grab

Date Completed: 2/18/00

5th Street, Tucson AZ

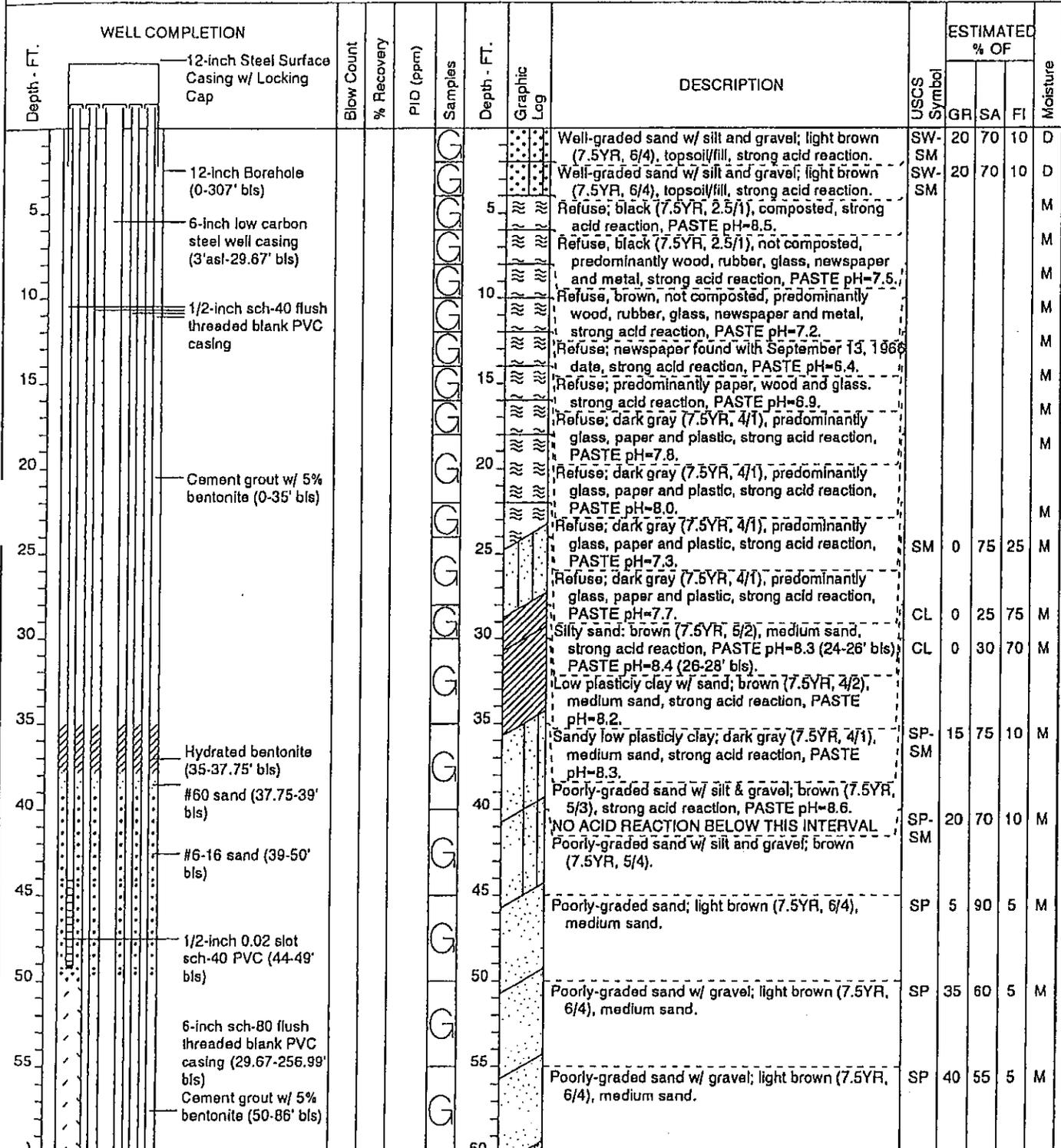
Desc. of Meas Pt: Land Surface Elev.

Logged by: M. McGlone

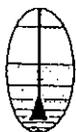
Land Surf. Elev: 2572.0

Meas. Pt. Elev: 2572

Reviewed by: M. McGlone



Lithologic Log and Well Construction Details of R-69A (SVI-2)
Broadway North Landfill Well Installation



**HYDRO
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Approved
J Tann

Date

Revised

Date

Reference:

FIG.

1a

PROJ.GDT 4/18/00

ICC-WELL 55800.GF

Project: COT, Broadway North Landfill Well Installation Boring: R-69A (SVI-2) Pg. 2 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/15/00

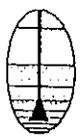
Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/18/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: M. McGlone

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| | | | | | | | | | | | | | |
| 65 | | | | | G | 65 | | Well-graded sand w/ silt and gravel; light brown (7.5YR, 6/4), fine to medium sand(continued) | SW-SM | 25 | 65 | 10 | M |
| 70 | Cement grout w/ 5% bentonite (50-86' bls) | | | | G | 70 | | Well-graded sand w/ silt and gravel; light brown (7.5YR, 6/4), fine to medium sand. | SW-SM | 25 | 65 | 10 | M |
| 75 | 6-inch sch-80 flush threaded blank PVC casing | | | | G | 75 | | Poorly-graded sand; light brown (7.5YR, 6/4), medium sand. | SP | 5 | 90 | 5 | M |
| 80 | | | | | G | 80 | | Poorly-graded sand; reddish yellow (5YR, 6/6), medium sand. | SP | 10 | 85 | 5 | M |
| 85 | | | | | G | 85 | | Well-graded sand w/ silt; reddish yellow (5YR, 6/6), fine to coarse sand. | SW-SM | 10 | 80 | 10 | M |
| 90 | Hydrated bentonite (86-88.5' bls) #60 sand (88.5-90' bls) | | | | G | 90 | | Poorly-graded sand w/ gravel; reddish yellow (5YR, 6/6), medium sand. | SP | 20 | 75 | 5 | M |
| 95 | #6-16 sand (90-101.5' bls) | | | | G | 95 | | Silty sand w/ gravel, light brown (7.5YR, 6/4). | SM | 25 | 60 | 15 | M |
| 100 | 1/2-inch 0.02 slot sch-40 PVC (95-100' bls) | | | | G | 100 | | Poorly-graded sand w/ silt & gravel; light brown (7.5YR, 6/4). | SP-SM | 20 | 70 | 10 | M |
| 105 | | | | | G | 105 | | Silty sand; light brown (7.5YR, 6/4). | SM | 5 | 75 | 20 | M |
| 110 | Cement grout w/ 5% bentonite (101.5-135.9' bls) | | | | G | 110 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | 10 | 80 | 10 | M |
| 115 | | | | | G | 115 | | Well-graded sand; light reddish brown (5YR, 6/4). | SW | 5 | 90 | 5 | M |
| 120 | | | | | G | 120 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4). | SW | 30 | 65 | 5 | M |

HGC-WELL 55600.GF



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**Lithologic Log and Well Construction Details of R-69A (SVI-2)
Broadway North Landfill Well Installation**

| | | | | | |
|--------------------|------|---------|------|------------|-------------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1b |
|--------------------|------|---------|------|------------|-------------------|

Project: COT, Broadway North Landfill Well Installation Boring: R-69A (SVI-2) Pg. 3 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/15/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/18/00

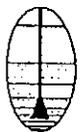
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: M. McGlone

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 125 | | | | | G | 125 | | Silty sand; light reddish brown (5YR, 6/4), fine to coarse sand. (continued) | SM | 5 | 75 | 20 | M |
| 130 | Cement grout w/ 5% bentonite (101.5-135.9' bls) | | | | G | 130 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4). | SW | 35 | 60 | 5 | M |
| 135 | | | | | G | 135 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4). | SW | 15 | 80 | 5 | M |
| 140 | Hydrated bentonite (135.9-137.33' bls) #60 sand (137.33-139' bls) | | | | G | 140 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4). | SW | 40 | 55 | 5 | M |
| 145 | #6-16 sand (139-151.83' bls) | | | | G | 145 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 150 | 1/2-inch 0.02 slot sch-40 PVC (145-150' bls) | | | | G | 150 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 25 | 70 | 5 | M |
| 155 | | | | | G | 155 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 30 | 70 | t | M |
| 160 | | | | | G | 160 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | M |
| 165 | Cement grout w/ 5% bentonite (151.83-186' bls) | | | | G | 165 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 25 | 70 | 5 | M |
| 170 | 6-inch sch-80 flush threaded blank PVC casing | | | | G | 170 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 25 | 70 | 5 | M |
| 175 | | | | | G | 175 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 5 | 90 | 5 | M |
| 180 | | | | | G | 180 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | t | 95 | 5 | M |

PROJ.GDT 4/18/00

HGC-WELL 65800.G



**HYDRO
GEO
CHEM, INC.**

**Lithologic Log and Well Construction Details of R-69A (SVI-2)
Broadway North Landfill Well Installation**

Approved
J. Tang

Date

Revised

Date

Reference:

FIG.

1c

Project: COT, Broadway North Landfill Well Installation Boring: R-69A (SVI-2) Pg. 4 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/15/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/18/00

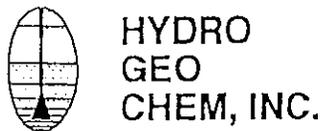
Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: M. McGlone

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). (continued) | SW | 25 | 70 | 5 | M |
| 185 | Hydrated bentonite (186-188.5' bls) | | | | G | 190 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 25 | 70 | 5 | M |
| 190 | #60 sand (188.5-190' bls) | | | | G | 195 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 30 | 65 | 5 | M |
| 195 | | | | | G | 195 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 25 | 70 | 5 | M |
| 200 | 1/2-inch 0.02 slot sch-40 PVC (195-200' bls) | | | | G | 200 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 205 | #6-8 sand (190-204.5' bls) | | | | G | 205 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | tr | 95 | 5 | M |
| 210 | | | | | G | 210 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | 0 | 90 | 10 | D |
| 215 | Cement grout w/ 5% bentonite (204.5-242.5' bls) | | | | G | 215 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | t | 90 | 10 | D |
| 220 | | | | | G | 220 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | t | 95 | 5 | M |
| 225 | | | | | G | 225 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 5 | 90 | 5 | M |
| 230 | | | | | G | 230 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 20 | 75 | 5 | M |
| 235 | | | | | G | 235 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 20 | 75 | 5 | M |
| 240 | | | | | G | 240 | | | | | | | |

Lithologic Log and Well Construction Details of R-69A (SVI-2)
Broadway North Landfill Well Installation

| | | | | | |
|---------------------|------|---------|------|------------|------------|
| Approved J. Tang | Date | Revised | Date | Reference: | FIG. 1d |
|---------------------|------|---------|------|------------|------------|



HGC-WELL_65800.GF

Project: COT, Broadway North Landfill Well Installation Boring: R-69A (SVI-2) Pg. 5 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/15/00

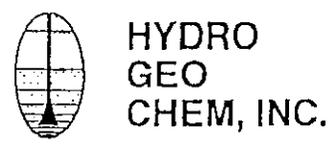
Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/18/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: M. McGlone

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 245 | Hydrated bentonite (242.5-244.65' bls) #6-8 sand (244.65-246.3' bls) | | | | G | 245 | | Well-graded sand; light brown (7.5YR, 6/4). (continued) | SW | 1 | 95 | 5 | M |
| 250 | | | | | G | 250 | | Well-graded sand; light yellowish brown (10YR, 6/4), fine to medium sand. | SW | 5 | 90 | 5 | M |
| 255 | 1/4 to 3/4-inch washed gravel (246.3-378.67' bls) | | | | G | 255 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | 0 | 90 | 10 | M |
| 260 | | | | | G | 260 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | D |
| 265 | 6-inch sch-80 1/4-inch slot (256.99-365.47' bls) | | | | G | 265 | | Well-graded sand w/ silt & gravel; light brown (7.5YR, 6/4). | SW-SM | 15 | 75 | 10 | D |
| 270 | | | | | G | 270 | | Silty sand; pink (7.5YR, 7/3), fine to medium sand. | SM | 0 | 75 | 25 | D |
| 275 | | | | | G | 275 | | Silty sand; pink (7.5YR, 7/3), fine to medium sand. | SM | 5 | 70 | 25 | D |
| 280 | | | | | G | 280 | | Silty sand; pink (7.5YR, 7/3), fine to medlum sand. | SM | 10 | 65 | 25 | D |
| 285 | | | | | G | 285 | | Well-graded sand; light reddish brown (5YR, 6/3). | SW | 5 | 90 | 5 | M |
| 290 | | | | | G | 290 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/3), fine gravel. | SW | 40 | 55 | 5 | M |
| 295 | | | | | G | 295 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/3), fine gravel. | SW | 15 | 80 | 5 | M |
| 300 | | | | | G | 300 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/3), fine gravel. | SW | 25 | 70 | 5 | M |

Lithologic Log and Well Construction Details of R-69A (SVI-2)
Broadway North Landfill Well Installation



| | | | | | |
|--------------------|------|---------|------|------------|-------------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1e |
|--------------------|------|---------|------|------------|-------------------|

HGC-WELL 55900.G
HGC-PROJ.GDT 4/18/00

Project: COT, Broadway North Landfill Well Installation Boring: R-69A (SVI-2) Pg. 6 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/15/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/18/00

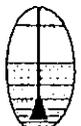
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: M. McGlone

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 305 | | | | | G | 305 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/3), fine gravel (continued) | SW | 25 | 70 | 5 | M |
| 310 | | | | | G | 310 | | Silty sand; pinkish gray (7.5YR, 7/2). | SM | 10 | 65 | 25 | D |
| 315 | | | | | G | 315 | | Well-graded gravel w/ silt & sand; predominantly coarse sand and fine gravel. WATER INJECTED FROM THIS DEPTH DOWN | GW-GM | 65 | 25 | 10 | |
| 320 | | | | | G | 320 | | Well-graded gravel w/ silt; pinkish gray (7.5YR, 7/2) medium sand, fine gravel. | GW | 75 | 20 | 5 | |
| 325 | 1/4 to 3/4-inch washed gravel (246.3-378.67' bls) | | | | G | 325 | | Silty gravel w/ sand; pinkish gray (7.5YR, 7/2), fine gravel. | GM | 60 | 20 | 20 | |
| 330 | 10 3/4-inch Borehole (307-378.67' bls) | | | | G | 330 | | Silty gravel w/ sand; pinkish gray (7.5YR, 7/2), fine gravel. | GM | 60 | 25 | 15 | W |
| 335 | | | | | G | 335 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 7/2), fine gravel. | GW | 65 | 30 | 5 | W |
| 340 | | | | | G | 340 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 7/2), fine gravel. | GW | 65 | 30 | 5 | W |
| 345 | | | | | G | 345 | | Well-graded gravel w/ silt & sand; pinkish gray (7.5YR, 7/2), fine gravel. | GW-GM | 50 | 40 | 10 | W |
| 350 | | | | | G | 350 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 7/2). | GW | 70 | 25 | 5 | W |
| 355 | | | | | G | 355 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 7/2). | GW | 80 | 15 | 5 | W |
| 360 | | | | | G | 360 | | Well-graded gravel w/ sand; pinkish gray (7.5YR, 7/2). | GW | 80 | 15 | 5 | W |

ROJ:GDT 4/18/00

1GC-WELL 65600.G



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**Lithologic Log and Well Construction Details of R-69A (SVI-2)
Broadway North Landfill Well Installation**

| | | | | | |
|----------------------------|------|---------|------|------------|-----------|
| Approved J. Tang | Date | Revised | Date | Reference: | FIG. |
| | | | | | 1f |

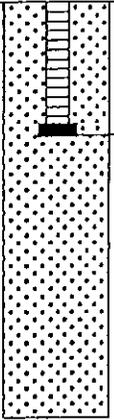
Project: COT, Broadway North Landfill Well Installation Boring: R-69A (SVI-2) Pg. 7 of 7

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/15/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/18/00

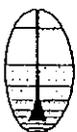
Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: M. McGlone

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | |
|-------------|--|------------|------------|---|---------|-------------|---|-------------|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | Moisture |
| | | | | | | | | | | | | | |
| 365 |  end-cap | | | | G | 365 | Well-graded gravel w/ silt & sand; pinkish gray (7.5YR, 7/2)(continued) | GW-GM | 60 | 30 | 10 | W | |
| 370 | | G | 370 | Well-graded gravel w/ silt & sand; pinkish gray (7.5YR, 7/2). | GW-GM | 60 | 30 | 10 | W | | | | |
| 375 | | G | 375 | Well-graded gravel w/ sand; pinkish gray (7.5YR, 7/2), fine to coarse gravel. | GW | 80 | 15 | 5 | W | | | | |
| | | G | | Silty gravel w/ sand; pinkish gray (7.5YR, 7/2). | GM | 55 | 30 | 15 | W | | | | |
| | | | | | | | TD of borehole @ 378.67' bls. | | | | | | |

PROJ.GDT 4/18/00

1GC-WELL 65800.GP



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CHEM, INC.**

**Lithologic Log and Well Construction Details of R-69A (SVI-2)
Broadway North Landfill Well Installation**

Approved
J.Tana

Date

Revised

Date

Reference:

FIG.

1g

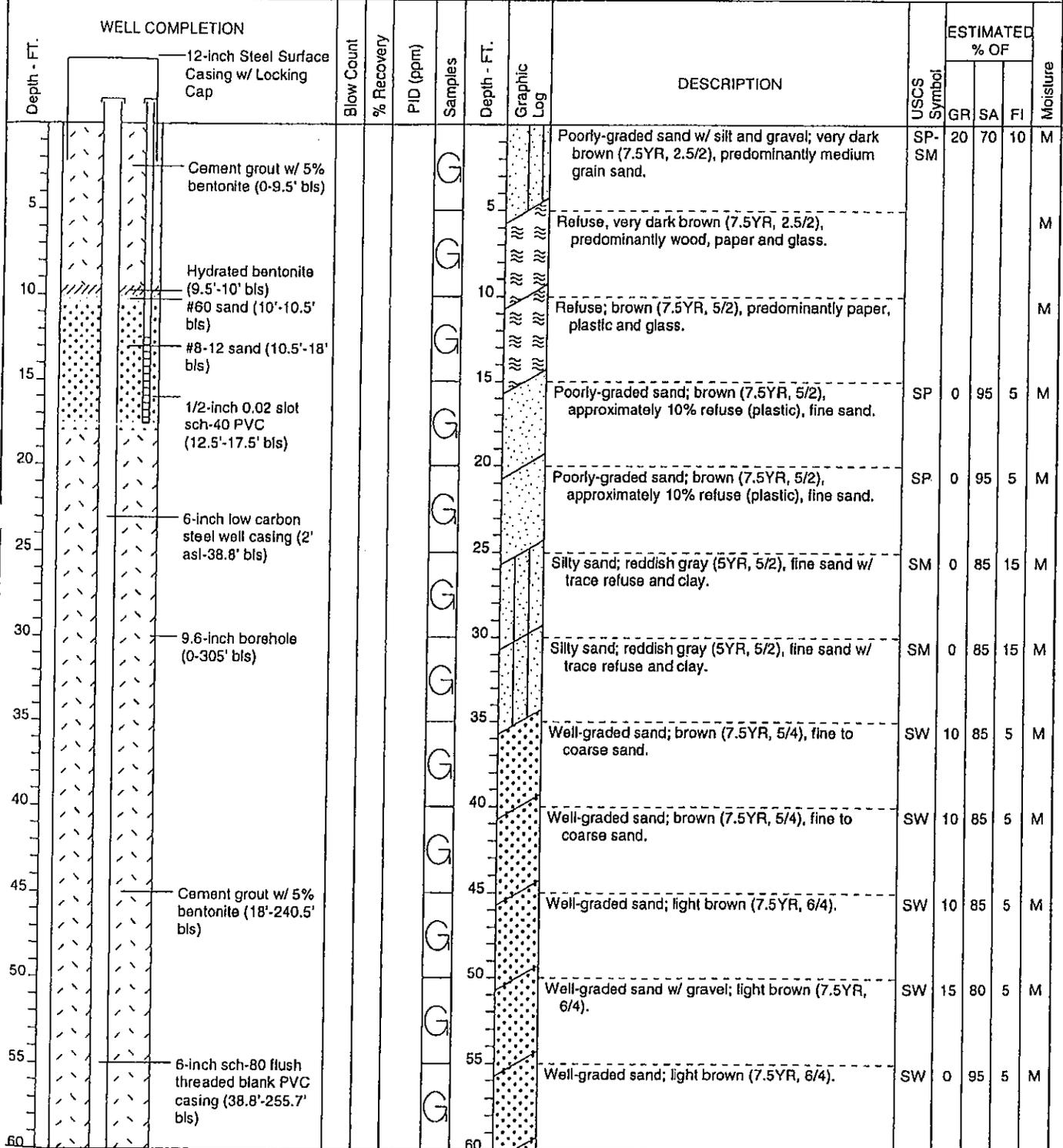
Project: COT, Broadway North Landfill Well Installation Boring: R-69Ar (SVI-2r) Pg. 1 of 7

Drilling Co: THF Drilling Company (Caudle/Villegas) Drilling Method: Air Rotary Casing Hammer Date Started: 4/5/00

Location: Broadway North Landfill, 7451 Sampler: Grab Date Completed: 4/19/00

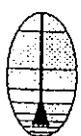
E. 5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: _____



Lithologic Log and Well Construction Details of R-69Ar (SVI-2r)
Broadway North Landfill Well Installation

3:WP/PROJ.GDT 4/26/00



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Approved _____ Date _____ Revised _____ Date _____ Reference: _____ FIG. _____

1a

Project: COT, Broadway North Landfill Well Installation Boring: R-69Ar (SVI-2r) Pg. 2 of 7

Drilling Co: THF Drilling Company (Caudle/Villegas) Drilling Method: Air Rotary Casing Hammer Date Started: 4/5/00

Location: Broadway North Landfill, 7451 Sampler: Grab Date Completed: 4/19/00

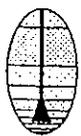
E. 5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: _____

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 65 | 6-inch sch-80 flush threaded blank PVC casing (38.8'-255.7' bls) Cement grout w/ 5% bentonite (18'-240.5' bls) | | | | G | 65 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 70 | | | | | G | 70 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 75 | | | | | G | 75 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 80 | | | | | G | 80 | | Well-graded sand; brown (7.5YR, 5/4). | SW | 0 | 95 | 5 | M |
| 85 | | | | | G | 85 | | Well-graded sand; brown (7.5YR, 5/4). | SW | 0 | 95 | 5 | M |
| 90 | | | | | G | 90 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 15 | 80 | 5 | M |
| 95 | | | | | G | 95 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 15 | 80 | 5 | M |
| 100 | | | | | G | 100 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 5 | 90 | 5 | M |
| 105 | | | | | G | 105 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 110 | | | | | G | 110 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 15 | 80 | 5 | M |
| 115 | | | | | G | 115 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 15 | 80 | 5 | M |
| 120 | | | | | G | 120 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 40 | 55 | 5 | M |

EWPROJ.GDT 4/26/00

HGC-WELL 658



**HYDRO
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CHEM, INC.**

**Lithologic Log and Well Construction Details of R-69Ar (SVI-2r)
Broadway North Landfill Well Installation**

| | | | | | |
|----------|------|---------|------|------------|-----------|
| Approved | Date | Revised | Date | Reference: | FIG. |
| | | | | | 1b |

Project: COT, Broadway North Landfill Well Installation Boring: R-69Ar (SVI-2r) Pg. 3 of 7

Drilling Co: THF Drilling Company (Caudle/Villegas) Drilling Method: Air Rotary Casing Hammer Date Started: 4/5/00

Location: Broadway North Landfill, 7451 Sampler: Grab Date Completed: 4/19/00

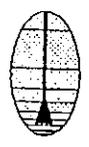
E. 5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: _____

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| | | | | | | | | | | | | | |
| 125 | | | | | G | 125 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | M |
| 130 | 6-inch sch-80 flush threaded blank PVC casing (38.8'-255.7' bls) | | | | G | 130 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | M |
| 135 | | | | | G | 135 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | M |
| 140 | | | | | G | 140 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 145 | Cement grout w/ 5% bentonite (18'-240.5' bls) | | | | G | 145 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 5 | 90 | 5 | M |
| 150 | | | | | G | 150 | | Silty sand w/ gravel; light brown (7.5YR, 6/4), well-graded sand. | SM | 0 | 95 | 5 | M |
| 155 | | | | | G | 155 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | 15 | 70 | 15 | M |
| 160 | | | | | G | 160 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | 0 | 90 | 10 | M |
| 165 | | | | | G | 165 | | Silty sand w/ gravel; light brown (7.5YR, 6/4), well-graded sand. | SM | tr | 90 | 10 | M |
| 170 | | | | | G | 170 | | Well-graded sand; light brown (7.5YR, 6/4). | SM | 15 | 70 | 15 | M |
| 175 | | | | | G | 175 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 180 | | | | | G | 180 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |

E:\WPROJ.GDT 4/26/00

HGC-WELL 65E



**HYDRO
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CHEM, INC.**

**Lithologic Log and Well Construction Details of R-69Ar (SVI-2r)
Broadway North Landfill Well Installation**

| | | | | | |
|----------|------|---------|------|------------|-----------|
| Approved | Date | Revised | Date | Reference: | FIG. |
| | | | | | 1c |

Project: COT, Broadway North Landfill Well Installation **Boring:** R-69Ar (SVI-2r) Pg. 4 of 7

Drilling Co: THF Drilling Company (Caudle/Villegas) **Drilling Method:** Air Rotary Casing Hammer **Date Started:** 4/5/00

Location: Broadway North Landfill, 7451 **Sampler:** Grab **Date Completed:** 4/19/00

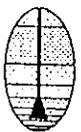
E. 5th Street, Tucson AZ **Desc. of Meas Pt:** Land Surface Elev. **Logged by:** J. Malusa

Land Surf. Elev: 2572.0 **Meas. Pt. Elev:** 2572 **Reviewed by:**

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 190 | | | | | G | 190 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | M |
| 195 | 6-inch sch-80 flush threaded blank PVC casing (38.8'-255.7' bls) | | | | G | 195 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 200 | | | | | G | 200 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 205 | Cement grout w/ 5% bentonite (18'-240.5' bls) | | | | G | 205 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 210 | | | | | G | 210 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 215 | | | | | G | 215 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 220 | | | | | G | 220 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 225 | | | | | G | 225 | | Well-graded sand w/ silt and gravel; reddish yellow (7.5YR, 6/6), fine to medium gravel. | SW-SM | 15 | 75 | 10 | M |
| 230 | | | | | G | 230 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 235 | | | | | G | 235 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | 0 | 90 | 10 | M |
| 240 | | | | | G | 240 | | | | | | | |

EWPROJ/GDT 4/26/00

HGC-WELL 658L



**HYDRO
GEO
CHEM, INC.**

**Lithologic Log and Well Construction Details of R-69Ar (SVI-2r)
Broadway North Landfill Well Installation**

Approved _____ Date _____ Revised _____ Date _____ Reference: _____ FIG. _____

1d

Project: COT, Broadway North Landfill Well Installation Boring: R-69Ar (SVI-2r) Pg. 5 of 7

Drilling Co: THF Drilling Company (Caudle/Villegas) Drilling Method: Air Rotary Casing Hammer Date Started: 4/5/00

Location: Broadway North Landfill, 7451 Sampler: Grab Date Completed: 4/19/00

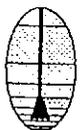
E. 5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: _____

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 245 | Hydrated bentonite (240.5'-243.5' bls) | | | | G | 245 | | Silty sand w/ gravel; light brown (7.5YR, 6/4), well-graded sand, fine gravel. | SM | 40 | 45 | 15 | M |
| 245 | #8-12 sand (243.5'-246' bls) | | | | G | 245 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 250 | 1/4 to 3/4-inch washed gravel (246'-375' bls) | | | | G | 250 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 255 | | | | | G | 255 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 260 | | | | | G | 260 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 0 | 95 | 5 | M |
| 265 | | | | | G | 265 | | Well-graded sand w/ silt; pink (7.5YR, 7/3). | SW-SM | 0 | 90 | 10 | M |
| 270 | 6-inch sch-80 1/4-inch slot (255.7'-363.4' bls) | | | | G | 270 | | Poorly-graded sand w/ silt; light brown (7.5YR, 6/4), fine sand. | SP-SM | 0 | 90 | 10 | M |
| 275 | | | | | G | 275 | | Poorly-graded sand w/ silt; light brown (7.5YR, 6/4), fine sand. | SP-SM | 0 | 90 | 10 | M |
| 280 | | | | | G | 280 | | Poorly-graded sand w/ silt; light brown (7.5YR, 6/4), fine sand. | SP-SM | 0 | 90 | 10 | M |
| 285 | | | | | G | 285 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | 0 | 90 | 10 | M |
| 290 | | | | | G | 290 | | Poorly-graded sand w/ silt; light brown (7.5YR, 6/4). | SP-SM | 0 | 90 | 10 | M |
| 295 | | | | | G | 295 | | Silty sand; light brown (7.5YR, 6/4), predominantly fine sand. | SM | 0 | 85 | 15 | M |
| 300 | | | | | G | 300 | | | | | | | |

EWPROJ.GDT 4/26/00

HGC-WELL 6581



**HYDRO
GEO
CHEM, INC.**

**Lithologic Log and Well Construction Details of R-69Ar (SVI-2r)
Broadway North Landfill Well Installation**

Approved _____ Date _____ Revised _____ Date _____ Reference: _____ FIG. _____

1e

Project: COT, Broadway North Landfill Well Installation Boring: R-69Ar (SVI-2r) Pg. 6 of 7

Drilling Co: THF Drilling Company (Caudle/Villegas) Drilling Method: Air Rotary Casing Hammer Date Started: 4/5/00

Location: Broadway North Landfill, 7451 Sampler: Grab Date Completed: 4/19/00

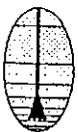
E. 5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: _____

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 305 | | | | | G | 305 | | Silty sand; light brown (7.5YR, 6/3), predominantly fine sand. | SM | 0 | 85 | 15 | M |
| 310 | 8.5-inch borehole (305'-375' bls) | | | | G | 310 | | Silty sand; light brown (7.5YR, 6/3), predominantly fine sand. | SM | 0 | 85 | 15 | M |
| 315 | | | | | G | 315 | | Well-graded sand w/ silt; reddish yellow (7.5YR, 6/6). | SW | 0 | 90 | 10 | M |
| 320 | 1/4 to 3/4-inch washed gravel (246'-375' bls) | | | | G | 320 | | Well-graded sand w/ silt; reddish yellow (7.5YR, 6/6). | SW | 0 | 90 | 10 | M |
| 325 | | | | | G | 325 | | Poorly-graded gravel w/ sand; pink (7.5YR, 7/4), predominantly coarse sand w/ fine to medium gravel. | GP | 55 | 40 | 5 | W |
| 330 | | | | | G | 330 | | Poorly-graded sand w/ gravel; pink (7.5YR, 7/4), predominantly coarse sand w/ fine to medium gravel. | SP | 15 | 80 | 5 | W |
| 335 | 6-inch sch-80 1/4-inch slot (255.7'-363.4' bls) | | | | G | 335 | | Poorly-graded gravel w/ sand; pink (7.5YR, 7/4), predominantly coarse sand w/ fine to medium gravel. | GP | 75 | 20 | 5 | W |
| 340 | | | | | G | 340 | | Poorly-graded gravel w/ sand; pink (7.5YR, 7/4), predominantly coarse sand w/ fine to medium gravel. | GP | 75 | 20 | 5 | W |
| 345 | | | | | G | 345 | | Poorly-graded gravel w/ sand; pinkish gray (7.5YR, 7/2), predominantly coarse sand w/ fine to medium gravel. | GP | 75 | 20 | 5 | W |
| 350 | | | | | G | 350 | | Poorly-graded gravel w/ sand; pinkish gray (7.5YR, 7/2), predominantly coarse sand w/ fine to medium gravel. | GP | 75 | 20 | 5 | W |
| 355 | | | | | G | 355 | | Poorly-graded sand; pinkish gray (7.5YR, 7/2), coarse sand. | SP | 5 | 90 | 5 | W |
| 360 | | | | | G | 360 | | | | | | | |

_WPROJ.GDT 4/26/00

HGC-WELL 658L



**HYDRO
GEO
CHEM, INC.**

**Lithologic Log and Well Construction Details of R-69Ar (SVI-2r)
Broadway North Landfill Well Installation**

| | | | | | |
|----------|------|---------|------|------------|-----------|
| Approved | Date | Revised | Date | Reference: | FIG. |
| | | | | | 1f |

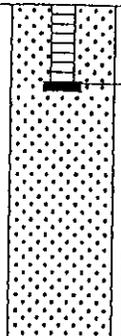
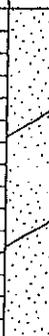
Project: COT, Broadway North Landfill Well Installation Boring: R-69Ar (SVI-2r) Pg. 7 of 7

Drilling Co: THF Drilling Company (Caudle/Villegas) Drilling Method: Air Rotary Casing Hammer Date Started: 4/5/00

Location: Broadway North Landfill, 7451 Sampler: Grab Date Completed: 4/19/00

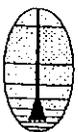
E. 5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: _____

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|---|-------------|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 365 |  <p>end-cap (0.5 ft) - TD of well = 363.9' bls</p> | | | | G | 365 |  | SP | 40 | 55 | 5 | W | |
| 370 | | G | 370 | SP | 40 | 55 | | 5 | W | | | | |
| 375 | | G | 375 | SP | 40 | 55 | | 5 | W | | | | |
| | | | | | | | 375 | TD=375' bls | | | | | |

EMPROJ.GDT 4/26/00

HGC-WELL 658x



**HYDRO
GEO
CHEM, INC.**

**Lithologic Log and Well Construction Details of R-69Ar (SVI-2r)
Broadway North Landfill Well Installation**

Approved _____ Date _____ Revised _____ Date _____ Reference: _____ FIG. _____

1g

Project: COT, Broadway North Landfill Well Installation

Boring: R-070A (SVE-1) Pg. 1 of 5

Drilling Co: THF Drilling Company (Jason Proffer) **Drilling Method:** Air Rotary Casing Hammer **Date Started:** 1/18/00

Location: Broadway North Landfill, 7451 E. **Sampler:** Grab **Date Completed:** 1/19/00

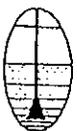
5th Street, Tucson AZ **Desc. of Meas Pt:** Land Surface Elev. **Logged by:** M. Geddis

Land Surf. Elev: 2551.0 **Meas. Pt. Elev:** 2551 **Reviewed by:** S.Smith

| Depth - FT. | WELL COMPLETION | | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|--|------------|------------|-----------|---------|-------------|-------------------------|---|-------------|----------------|----|----|----------|
| | 12-inch Steel Surface Casing w/ Locking Cap | 12-inch Bore hole (0-240' bls) | | | | | | | | | GR | SA | FI | |
| 5 | | 12-inch Bore hole (0-240' bls) | | | | G | 5 | [Cross-hatched pattern] | Silty Sand; brown (7.5YR, 5/4), no acid reaction. | SM | 5 | 80 | 15 | D |
| 10 | | 6-inch low carbon steel well casing (2.8'asl-37.2' bls) | | | | G | 10 | [Wavy pattern] | Refuse; dark reddish gray (2.5YR, 3/1) compost, wood fragments and glass, strong acid reaction. | | | | | M |
| 15 | | 1/2-inch sch-40 flush threaded blank PVC casing | | | | G | 15 | [Wavy pattern] | Refuse; dark reddish gray (2.5YR, 3/1) compost, wood fragments and glass, no acid reaction. | | | | | M |
| 20 | | | | | | G | 20 | [Wavy pattern] | Refuse; dark reddish gray (2.5YR, 3/1) compost, wood fragments and glass, strong acid reaction, STRONG ANAEROBIC ODOR. | | | | | M |
| 25 | | Cement grout w/ 5% bentonite (0-37' bls) | | | | G | 25 | [Wavy pattern] | Refuse; dark reddish gray (2.5YR, 3/1) abundant newspaper, very little decomposition as seen above, strong acid reaction. | | | | | M |
| 30 | | | | | | G | 30 | [Dotted pattern] | Poorly-graded sand w/ Clay; brown (7.5YR, 4/2), NO ACID REACTION BELOW THIS INTERVAL. | SP-SC | 10 | 80 | 10 | D |
| 35 | | | | | | G | 35 | [Dotted pattern] | Silty Sand; brown (7.5YR, 5/4), medium grain sand. | SM | 5 | 80 | 15 | D |
| 40 | | | | | | G | 40 | [Dotted pattern] | Well-graded sand w/ Clay; brown (7.5YR, 5/3), medium grain sand. | SW-SC | 10 | 80 | 10 | D |
| 45 | | Hydrated bentonite (37-39' bls) | | | | G | 45 | [Dotted pattern] | Well-graded sand w/ Clay; brown (7.5YR, 5/3), fine grain sand. | SW-SC | 10 | 80 | 10 | D |
| 50 | | #60 sand (39-40' bls) | | | | G | 50 | [Dotted pattern] | Silty Sand; pink (7.5YR, 7/4), sand is fine grained. | SM | 5 | 80 | 15 | D |
| 55 | | #6-8 sand (40-53.5' bls) | | | | G | 55 | [Dotted pattern] | Poorly-graded sand w/ silt and gravel; light brown (7.5YR, 6/3), sand is mainly fine. | SP-SM | 15 | 75 | 10 | D |
| 60 | | 1/2-inch 0.02 slot sch-40 PVC (45-50' bls) | | | | G | 60 | [Dotted pattern] | Poorly-graded sand w/ silt and gravel; pink (7.5YR, 7/3), sand is mainly fine. | SP-SM | 15 | 75 | 10 | D |
| 65 | | 6-inch sch-80 flush threaded blank PVC (37.2-155.6' bls) | | | | G | 65 | [Dotted pattern] | Poorly-graded gravel w/ silt; pink (7.5YR, 7/3), fine gravel. | GP-GM | 60 | 30 | 10 | D |
| 70 | | Cement grout w/ 5% bentonite (53.5-87.5' bls) | | | | G | 70 | [Dotted pattern] | | | | | | |

Lithologic Log and Well Construction Details of R-070A (SVE-1)
Broadway North Landfill Well Installation

Approved: J.Tang Date: Revised: Date: Reference: FIG. 1a



**HYDRO
GEO
CHEM, INC.**

Project: COT, Broadway North Landfill Well Installation

Boring: R-070A (SVE-1) Pg. 2 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/18/00

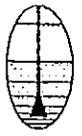
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 1/19/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 65 | | | | | G | 65 | | Silty sand; pink (7.5YR, 7/4), coarse sand.(continued) | SM | 10 | 75 | 15 | D |
| 70 | Cement grout w/ 5% bentonite (53.5-87.5' bls) | | | | G | 70 | | Silty sand; pink (7.5YR, 7/4), coarse sand. | SM | 10 | 75 | 15 | D |
| 75 | | | | | G | 75 | | Poorly-graded gravel w/ sand; pink (7.5YR, 7/4), medium sand. | GP | 60 | 35 | 5 | D |
| 80 | | | | | G | 80 | | Poorly-graded gravel; light gray (7.5YR, 7/1), fine gravel. | GP | 60 | 35 | 5 | D |
| 85 | | | | | G | 85 | | Poorly-graded gravel w/ sand; pink (7.5YR, 7/3), fine gravel. | GP | 60 | 35 | 5 | D |
| 90 | Hydrated bentonite (87.5-89.5' bls) | | | | G | 90 | | Poorly graded gravel w/ sand; pink (7.5YR, 7/4), fine gravel, slightly moist. | GP | 60 | 35 | 5 | D |
| 95 | #60 sand (89.5-90' bls) | | | | G | 95 | | Poorly-graded gravel w/ sand; pink (7.5YR, 7/4), medium gravel. | GP | 60 | 35 | 5 | D |
| 100 | #6-8 sand (90-101' bls) | | | | G | 100 | | Silty gravel w/ sand; light brown (7.5YR, 6/4), medium gravel. | GM | 45 | 35 | 20 | D |
| 105 | 1/2-inch 0.02 slot sch-40 PVC (95-100' bls) | | | | G | 105 | | Silty gravel w/ sand; light brown (7.5YR, 6/4), fine gravel. | GM | 45 | 35 | 20 | D |
| 110 | Cement grout w/ 5% bentonite (101-146' bls) | | | | G | 110 | | Silty sand w/ gravel; pinkish gray (7.5YR 7/2), coarse sand. | SM | 20 | 60 | 20 | D |
| 115 | | | | | G | 115 | | Poorly-graded sand w/ silt and gravel; light brown (7.5YR, 6/4), fine gravel. | SP-SM | 30 | 60 | 10 | D |
| 120 | | | | | G | 120 | | Silty sand w/ gravel; light brown (7.5YR, 6/4), coarse sand. | SM | 15 | 70 | 15 | D |

Lithologic Log and Well Construction Details of R-070A (SVE-1)
Broadway North Landfill Well Installation



**HYDRO
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CHEM, INC.**

| | | | | | |
|--------------------|------|---------|------|------------|-------------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1b |
|--------------------|------|---------|------|------------|-------------------|

HGC-WELL 55800.GP YPROJ.GDT 4/17/00

Project: COT, Broadway North Landfill Well Installation Boring: R-070A (SVE-1) Pg. 3 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/18/00

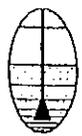
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 1/19/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 125 | Cement grout w/ 5% bentonite (101-146' bls) | | | | G | 125 | | Silty sand; light brown (7.5YR, 6/3), medium sand. (continued) | SM | 10 | 75 | 15 | D |
| 130 | | | | | G | 130 | | Poorly-graded sand w/ silt & gravel; light brown (7.5YR, 6/4), fine to medium sand. | SP-SM | 30 | 60 | 10 | D |
| 135 | | | | | G | 135 | | Poorly-graded sand w/ silt & gravel; light brown (7.5YR, 6/4), medium sand. | SP-SM | 20 | 70 | 10 | D |
| 140 | | | | | G | 140 | | Poorly-graded sand w/ silt & gravel; light brown (7.5YR, 6/3), medium sand. | SP-SM | 20 | 70 | 10 | D |
| 145 | Hydrated bentonite (146-147' bls) | | | | G | 145 | | Poorly-graded sand w/ silt & gravel; light brown (7.5YR, 6/3), medium sand. | SP-SM | 20 | 70 | 10 | D |
| 150 | #6-8 sand (147-149' bls) | | | | G | 150 | | Silty sand; light brown (7.5YR, 6/4), medium sand. | SM | 10 | 75 | 15 | D |
| 155 | 1/4 to 3/4-inch washed gravel (149-246' bls) | | | | G | 155 | | Poorly-graded sand w/ silt & gravel; brown (7.5YR 5/4), coarse sand. | SP-SM | 30 | 60 | 10 | D |
| 160 | | | | | G | 160 | | Silty sand; pink (7.5YR, 7/3), medium to fine sand. | SM | 10 | 70 | 20 | D |
| 165 | | | | | G | 165 | | Silty sand with gravel, light brown (7.5YR, 6/3), medium sand. | SM | 20 | 60 | 20 | D |
| 170 | 6-inch sch-80 1/4-inch slot (155.6-224.5' bls) | | | | G | 170 | | Silty sand with gravel, light brown (7.5YR, 6/4), coarse to medium sand. | SM | 20 | 60 | 20 | D |
| 175 | | | | | G | 175 | | Silty sand with gravel, light brown (7.5YR, 6/4), medium sand. | SM | 20 | 60 | 20 | D |

Lithologic Log and Well Construction Details of R-070A (SVE-1)
Broadway North Landfill Well Installation



**HYDRO
GEO
CHEM, INC.**

| | | | | | |
|----------------------------|------|---------|------|------------|-------------------|
| Approved J. Tang | Date | Revised | Date | Reference: | FIG. 1c |
|----------------------------|------|---------|------|------------|-------------------|

PROJ. GDT 4/17/00
HGC-WELL 65800.G

Project: COT, Broadway North Landfill Well Installation Boring: R-070A (SVE-1) Pg. 4 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/18/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 1/19/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|-----------------|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Silty sand with gravel, light brown (7.5YR, 6/4), coarse to medium sand (continued) | SM | 20 | 60 | 20 | D |
| 190 | | | | | G | 190 | | Silty sand with gravel, light brown (7.5YR, 6/4), coarse to medium sand. | SM | 25 | 60 | 15 | D |
| 195 | | | | | G | 195 | | Well-graded sand w/ silt; pinkish gray (7.5YR, 7/2), medium sand. | SW-SM | 10 | 80 | 10 | D |
| 200 | | | | | G | 200 | | Silty sand; pink (7.5YR, 7/3), medium sand. | SM | 5 | 80 | 15 | D |
| 205 | | | | | G | 205 | | Silty sand, brown (7.5YR, 5/3), medium sand. | SM | 5 | 80 | 15 | D |
| 210 | | | | | G | 210 | | Silty sand, brown (7.5YR, 5/4), medium sand, slightly moist. | SM | 10 | 70 | 20 | D |
| 215 | | | | | G | 215 | | Silty sand; pinkish gray (7.5YR, 7/2), medium to fine sand. | SM | 10 | 70 | 20 | D |
| 220 | | | | | G | 220 | | Well-graded sand w/ gravel; pinkish gray (7.5YR, 7/2), coarse sand. | SW | 15 | 80 | 5 | D |
| 225 | | | | | G | 225 | | Well graded sand; pinkish gray (7.5YR, 7/2), coarse to medium sand. | SW | 5 | 90 | 5 | D |
| 230 | | | | | G | 230 | | Well graded sand; light brown (7.5YR, 6/3), coarse to medium sand. | SW | 5 | 90 | 5 | D |
| 235 | | | | | G | 235 | | Silty sand; light brown (7.5YR, 6/3), medium to fine sand. | SM | 5 | 80 | 15 | D |
| 240 | | | | | G | 240 | | Silty sand; light brown (7.5YR, 6/3), medium to fine sand. | SM | 5 | 75 | 20 | D |

6-inch sch-80
1/4-inch slot
(155.6-224.5' bls)

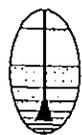
1/4 to 3/4-inch
washed gravel
(149-246' bls)

no end cap

Condensate sump

Lithologic Log and Well Construction Details of R-070A (SVE-1)
Broadway North Landfill Well Installation

Approved: J. Tann Date: Revised: Date: Reference: FIG. 1d



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90.J.GDT 4/17/00

IGC-WELL 55800.GP

Project: COT, Broadway North Landfill Well Installation Boring: R-070A (SVE-1) Pg. 5 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/18/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 1/19/00

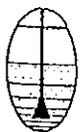
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. Geddis

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 245 | 9 7/8-inch Bore hole (240-250' bis) Slough | | | | G | 245 | | Silty sand; light brown (7.5YR, 6/3), medium to fine sand. (continued) | SM | 5 | 75 | 20 | D |
| 250 | | | | | G | 250 | | Silty sand; light brown (7.5YR, 6/3), medium to fine sand. | SM | 5 | 75 | 20 | D |
| | | | | | | | | Total hole depth = 250' bis | | | | | |

VPROJ.GDT 4/17/00

HGC-WELL 03600 GJP



**HYDRO
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**Lithologic Log and Well Construction Details of R-070A (SVE-1)
Broadway North Landfill Well Installation**

Approved
J.Tana

Date

Revised

Date

Reference:

FIG.

Project: COT, Broadway North Landfill Well Installation Boring: R-071A (SVE-4) Pg. 1 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/10/00

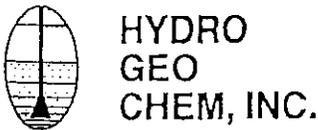
Location: Broadway North Landfill, 7451 E, 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/11/00

Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 0 | 12-inch Steel Surface Casing w/ Locking Cap | | | | | | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), strong acid reaction, PASTE pH=11.6 | SW | 40 | 55 | 5 | D |
| 0-249' | 12-inch Bore hole (0-249' bls) | | | | | | | Well-graded sand w/ gravel & REFUSE; strong brown (7.5YR, 5/8), sample is 90% soil and 10% refuse, the refuse is predominantly glass, paper, & plastic, strong acid reaction, PASTE pH=8.5 | SW | 15 | 80 | 5 | D |
| 0-28.8' | 6-inch low carbon steel well casing (2'asl-28.8' bls) | | | | | | | Poorly-graded sand; strong brown (7.5YR, 5/6), strong acid reaction, PASTE pH=8.4 | SP | 5 | 85 | 10 | M |
| 0-33.5' | 1/2-inch sch-40 flush threaded blank PVC casing | | | | | | | Well-graded sand w/ gravel; brown (7.5YR, 5/3), medium to fine sand; strong acid reaction, PASTE pH=8.4 | SW | 45 | 50 | 5 | M |
| 0-33.5' | Cement grout w/ 5% bentonite (0-33.5' bls) | | | | | | | Well-graded sand w/ gravel; brown (7.5YR, 5/3), fine gravel, strong acid reaction, PASTE pH=8.4 | SW | 20 | 75 | 5 | M |
| 0-33.5' | | | | | | | | Well-graded sand w/ gravel; brown (7.5YR, 5/3), fine gravel, strong acid reaction, PASTE pH=8.5 | SW | 15 | 80 | 5 | M |
| 0-33.5' | | | | | | | | Well-graded gravel w/ sand; light brown (7.5YR 6/3), strong acid reaction. | GW | 65 | 30 | 5 | M |
| 0-33.5' | | | | | | | | Poorly-graded sand; pink (7.5YR, 7/4), fine sand, strong acid reaction, PASTE pH=8.7 | SP | 5 | 90 | 5 | M |
| 0-33.5' | | | | | | | | Well-graded gravel w/ sand; light brown (7.5YR 6/3), strong acid reaction. | GW | 70 | 25 | 5 | D |
| 0-33.5' | | | | | | | | Well-graded sand w/ gravel; strong brown (7.5YR, 5/6), fine to medium sand; moderate acid reaction. | SW | 20 | 75 | 5 | M |
| 33.5-37.4' | Hydrated bentonite (33.5-37.4' bls) | | | | | | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), medium to fine sand, NO ACID REACTION BELOW THIS INTERVAL. | SW | 40 | 55 | 5 | M |
| 37.4-39.5' | #60 sand (37.4-39.5' bls) | | | | | | | Well-graded sand w/ gravel; strong brown (7.5YR, 5/6), fine to medium sand, trace clay. | SW | 40 | 55 | 5 | M |
| 39.5-54' | #6-8 sand (39.5-54' bls) | | | | | | | Well-graded sand; strong brown (7.5YR, 5/8), fine to coarse sand, trace clay. | SW | 5 | 90 | 5 | M |
| 45-50' | 1/2-inch 0.02 slot sch-40 PVC (45-50' bls) | | | | | | | Well-graded sand; reddish yellow (7.5YR, 6/6), fine to coarse sand. | SW | TR | 95 | 5 | M |
| 50-158' | 6-inch sch-80 flush threaded blank PVC (28.8-158' bls) | | | | | | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 5 | 90 | 5 | M |
| 54-85' | Cement grout w/ 5% bentonite (54-85' bls) | | | | | | | | | | | | |

Lithologic Log and Well Construction Details of R-071A (SVE-4)
Broadway North Landfill Well Installation



Approved: J.Tand Date: Revised: Date: Reference: FIG. 1a

PROJ.GDT 4/17/00
GC-WELL 65800.GP

Project: COT, Broadway North Landfill Well Installation Boring: R-071A (SVE-4) Pg. 2 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/10/00

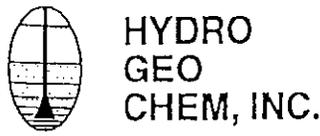
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/11/00

Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 65 | | | | | G | 65 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. (continued) | SW | 5 | 90 | 5 | M |
| 70 | Cement grout w/ 5% bentonite (54-85' bls) | | | | G | 70 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 15 | 80 | 5 | M |
| 75 | | | | | G | 75 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 5 | 90 | 5 | M |
| 80 | | | | | G | 80 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 10 | 85 | 5 | M |
| 85 | Hydrated bentonite (85-88' bls) | | | | G | 85 | | Well-graded sand; reddish yellow (7.5YR, 6/6), fine to coarse sand. | SW | 5 | 90 | 5 | M |
| 90 | #60 sand (88-90' bls) | | | | G | 90 | | Well-graded sand; reddish yellow (7.5YR, 6/6), fine to coarse sand. | SW | 10 | 85 | 5 | M |
| 95 | #6-8 sand (90-103' bls) | | | | G | 95 | | Well-graded sand w/ gravel; reddish yellow (7.5YR, 6/6), fine to coarse sand. | SW | 15 | 80 | 5 | M |
| 100 | 1/2-inch 0.02 slot sch-40 PVC (95-100' bls) | | | | G | 100 | | Well-graded sand w/ gravel; reddish yellow (7.5YR, 6/6), fine to coarse sand. | SW | 25 | 70 | 5 | M |
| 105 | | | | | G | 105 | | Well-graded sand w/ gravel; reddish yellow (7.5YR, 6/6), fine to coarse sand. | SW | 25 | 70 | 5 | M |
| 110 | Cement grout w/ 5% bentonite (103-149' bls) | | | | G | 110 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 25 | 70 | 5 | M |
| 115 | | | | | G | 115 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 20 | 75 | 5 | M |
| 120 | | | | | G | 120 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 20 | 75 | 5 | M |

Lithologic Log and Well Construction Details of R-071A (SVE-4)
Broadway North Landfill Well Installation



| | | | | | |
|---------------------|------|---------|------|------------|-------------------|
| Approved J. Tang | Date | Revised | Date | Reference: | FIG. 1b |
|---------------------|------|---------|------|------------|-------------------|

HGC-WELL 65800.GPJ ***WPROJ.GDT 4/17/00

Project: COT, Broadway North Landfill Well Installation

Boring: R-071A (SVE-4) Pg. 4 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/10/00

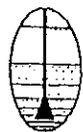
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/11/00

Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. (continued) | SW | TR | 95 | 5 | M |
| 190 | 6-inch sch-80 1/4-inch slot (157-227.5' bls) | | | | G | 190 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 20 | 75 | 5 | M |
| 195 | | | | | G | 195 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 25 | 70 | 5 | M |
| 200 | | | | | G | 200 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 25 | 70 | 5 | M |
| 205 | 1/4 to 3/4-inch washed gravel (152-249' bls) | | | | G | 205 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 5 | 90 | 5 | M |
| 210 | | | | | G | 210 | | Well-graded sand w/ gravel; reddish yellow (7.5YR 6/6), coarse to fine sand. | SW | 15 | 80 | 5 | M |
| 215 | | | | | G | 215 | | Well-graded sand; reddish yellow (7.5YR 6/6), coarse to fine sand. | SW | 10 | 85 | 5 | M |
| 220 | | | | | G | 220 | | Well-graded sand; reddish yellow (7.5YR 6/6), coarse to fine sand. | SW | 10 | 85 | 5 | M |
| 225 | | | | | G | 225 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 0 | 95 | 5 | M |
| 230 | no end cap | | | | G | 230 | | Poorly-graded gravel w/ sand; pinkish gray (7.5YR, 6/2), fine gravel with coarse to fine sand. | GP | 50 | 45 | 5 | M |
| 235 | Condensate sump | | | | G | 235 | | Well-graded sand; light brown (7.5YR, 6/3), coarse to fine sand. | SW | 0 | 95 | 5 | M |
| 240 | | | | | G | 240 | | Well-graded sand; light brown (7.5YR, 6/3), coarse to fine sand. | SW | 10 | 85 | 5 | M |

Lithologic Log and Well Construction Details of R-071A (SVE-4)
Broadway North Landfill Well Installation



**HYDRO
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Approved: J. Tang Date: _____ Revised: _____ Date: _____ Reference: _____ FIG. **1d**

HCC-WELL 65800.GP YPROJ.GDT 4/17/00

Project: COT, Broadway North Landfill Well Installation

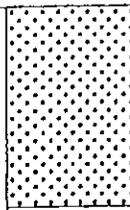
Boring: R-071A (SVE-4) Pg. 5 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/10/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/11/00

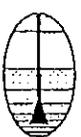
Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2572.0 Meas. Pt. Elev: 2572 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-----------------------------|-----------------|------------|------------|-----------|---------|-------------|---|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 245 | Condensate sump | | | | G | 245 |  | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand (continued) | SW | 0 | 95 | 5 | M |
| | | | | | G | |  | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 0 | 95 | 5 | M |
| Total hole depth = 249' bls | | | | | | | | | | | | | |

VPROCJ.GDT 4/17/00

HGC-WELL 65600.G



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**Lithologic Log and Well Construction Details of R-071A (SVE-4)
Broadway North Landfill Well Installation**

| | | | | | |
|--------------------|------|---------|------|------------|------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. |
|--------------------|------|---------|------|------------|------|

1e

Project: COT, Broadway North Landfill Well Installation

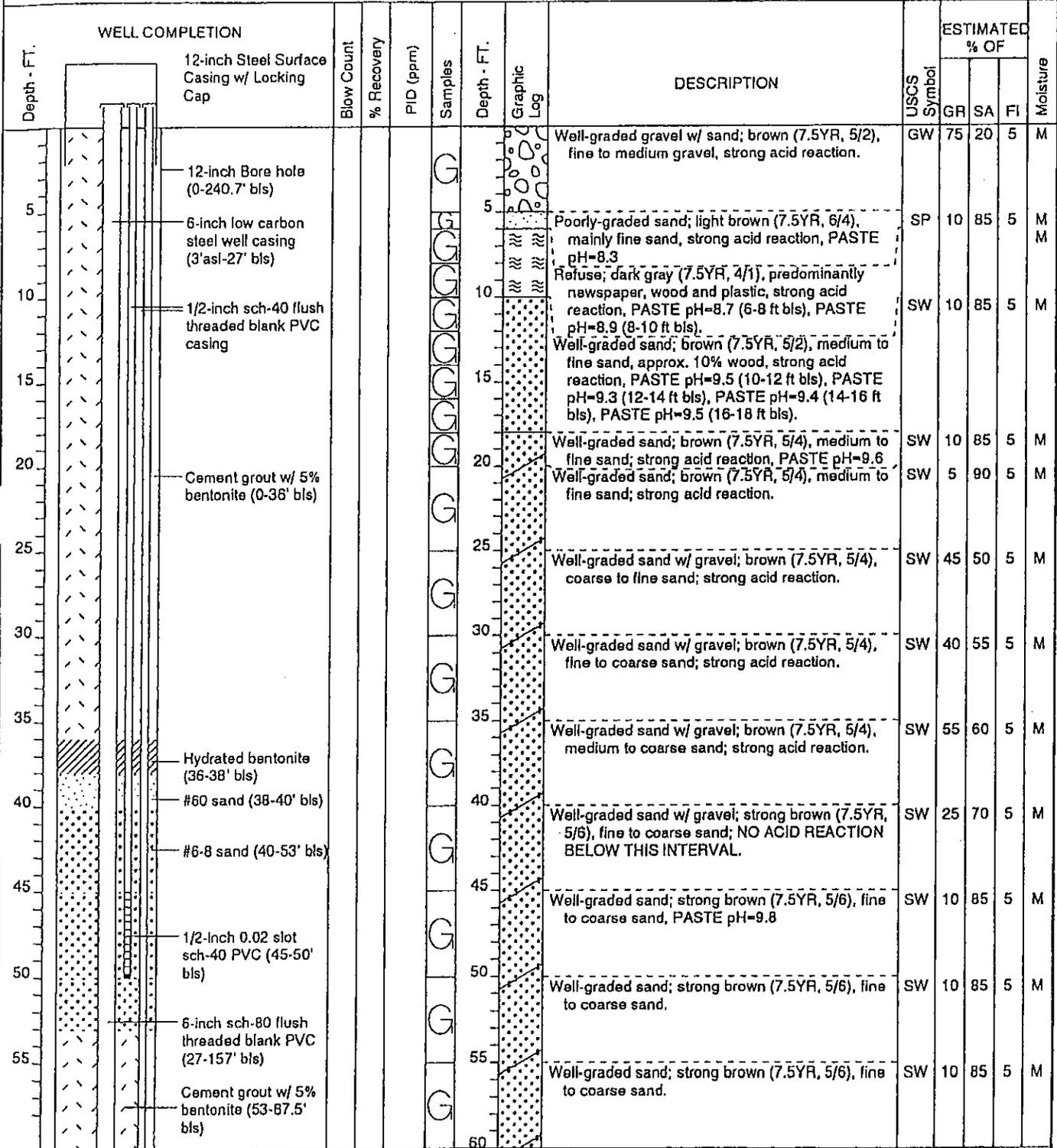
Boring: R-072A (SVE-3) Pg. 1 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/4/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/5/00

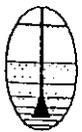
Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

Land Surf. Elev: 2575.0 Meas. Pt. Elev: 2575 Reviewed by: S. Smith



Lithologic Log and Well Construction Details of R-072A (SVE-3)
Broadway North Landfill Well Installation

WPROJ.GDT 4/17/00
IGC-WELL 65900.GP



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| | | | | | |
|---------------------|------|---------|------|------------|------|
| Approved J. Tano | Date | Revised | Date | Reference: | FIG. |
|---------------------|------|---------|------|------------|------|

1a

Project: COT, Broadway North Landfill Well Installation Boring: R-072A (SVE-3) Pg. 2 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/4/00

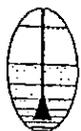
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/5/00

Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2575.0 Meas. Pt. Elev: 2575 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 65 | | | | | G | 65 | | Well graded sand w/ gravel; strong brown (7.5YR, 5/6), coarse to fine sand(continued) | SW | 30 | 65 | 5 | M |
| 70 | Cement grout w/ 5% bentonite (53-87.5' bls) | | | | G | 70 | | Well graded sand w/ gravel; strong brown (7.5YR, 5/6), coarse to fine sand. | SW | 30 | 65 | 5 | M |
| 75 | | | | | G | 75 | | Well-graded sand; strong brown (7.5YR, 5/6), fine to medium sand. | SW | tr | 95 | 5 | M |
| 80 | | | | | G | 80 | | Well-graded sand; strong brown (7.5YR, 5/6), fine to medium sand. | SW | 10 | 85 | 5 | M |
| 85 | | | | | G | 85 | | Well-graded sand; strong brown (7.5YR, 5/6), fine to medium sand. | SW | 5 | 90 | 5 | M |
| 90 | Hydrated bentonite (87.5-89' bls) | | | | G | 90 | | Well graded sand w/ gravel; brown (7.5YR, 5/4), coarse to fine sand. | SW | 25 | 70 | 5 | M |
| 95 | #60 sand (89-90.5' bls) | | | | G | 95 | | Well graded sand; light brown (7.5YR, 6/3), medium to fine sand. | SW | 10 | 85 | 5 | M |
| 100 | #6-8 sand (90.5-101.7' bls) | | | | G | 100 | | Well graded sand; light brown (7.5YR, 6/3), medium to fine sand. | SW | tr | 95 | 5 | D |
| 105 | 1/2-inch 0.02 slot sch-40 PVC (95-100' bls) | | | | G | 105 | | Well graded sand; light brown (7.5YR, 6/3), medium to fine sand. | SW | tr | 95 | 5 | D |
| 110 | Cement grout w/ 5% bentonite (101.7-142.5' bls) | | | | G | 110 | | Well-graded gravel w/ sand; pink (7.5YR, 7/3), medium to fine gravel. | GW | 55 | 40 | 5 | D |
| 115 | | | | | G | 115 | | Well-graded sand; light brown (7.5YR, 6/4), medium to fine sand. | SW | tr | 95 | 5 | D |
| 120 | | | | | G | 120 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 10 | 85 | 5 | D |

Lithologic Log and Well Construction Details of R-072A (SVE-3)
Broadway North Landfill Well Installation



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| | | | | | |
|--------------------|------|---------|------|------------|-------------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1b |
|--------------------|------|---------|------|------------|-------------------|

HGC-WELL 65800.GP *PROJ.GDT 4/17/00

Project: COT, Broadway North Landfill Well Installation Boring: R-072A (SVE-3) Pg. 3 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/4/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/5/00

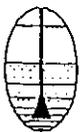
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2575.0 Meas. Pt. Elev: 2575 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|-----------------|---|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | | GR | SA | FI | |
| 125 | | | | | | | 125 | | Well-graded sand; brown (7.5YR, 5/4), coarse to fine sand. (continued) | SW | 10 | 85 | 5 | M |
| 125 | | Cement grout w/ 5% bentonite (101.7-142.5' bls) | | | | | 130 | | Well-graded sand w/ gravel; strong brown (7.5YR, 5/6), coarse to fine sand. | SW | 25 | 70 | 5 | M |
| 130 | | | | | | | 135 | | Well-graded sand; brown (7.5YR, 5/4), coarse to fine sand. | SW | 10 | 85 | 5 | M |
| 135 | | | | | | | 140 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 25 | 70 | 5 | D |
| 140 | | | | | | | 145 | | Well-graded sand w/ gravel; brown (7.5YR, 5/3), fine to coarse sand. | SW | 25 | 70 | 5 | M |
| 145 | | Hydrated bentonite (142.5-147.5' bls) | | | | | 150 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 20 | 75 | 5 | M |
| 145 | | #6-8 sand (147.5-149' bls) | | | | | 155 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 0 | 95 | 5 | M |
| 150 | | 1/4 to 3/4-inch washed gravel (149-245' bls) | | | | | 160 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand and fine gravel. | SW | 25 | 70 | 5 | M |
| 155 | | | | | | | 165 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 10 | 85 | 5 | M |
| 160 | | | | | | | 170 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand and fine gravel. | SW | 20 | 75 | 5 | M |
| 165 | | | | | | | 175 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | tr | 95 | 5 | M |
| 170 | | 6-inch sch-80 1/4-inch slot (157-227' bls) | | | | | 180 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | tr | 95 | 5 | M |
| 175 | | | | | | | | | | | | | | |

*PROJ.GDT 4/17/00

HGC-WELL 65800.GF



**HYDRO
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**Lithologic Log and Well Construction Details of R-072A (SVE-3)
Broadway North Landfill Well Installation**

| | | | | | |
|--------------------|------|---------|------|------------|------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. |
|--------------------|------|---------|------|------------|------|

1c

Project: COT, Broadway North Landfill Well Installation Boring: R-072A (SVE-3) Pg. 4 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/4/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/5/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J. Malusa

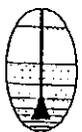
Land Surf. Elev: 2575.0 Meas. Pt. Elev: 2575 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. (continued) | SW | tr | 95 | 5 | M |
| 190 | 6-inch sch-80 1/4-inch slot (157-227' bls) | | | | G | 190 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 20 | 75 | 5 | M |
| 195 | | | | | G | 195 | | Well-graded sand; pink (7.5YR, 7/4), medium to fine sand. | SW | tr | 95 | 5 | M |
| 200 | | | | | G | 200 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4), fine gravel w/ coarse to fine sand. | SW | 25 | 70 | 5 | NA |
| 205 | 1/4 to 3/4-inch washed gravel (149-245' bls) | | | | G | 205 | | Poorly-graded gravel; pinkish gray (7.5YR, 6/2), fine gravel. | GP | 85 | 10 | 5 | NA |
| 210 | | | | | G | 210 | | Poorly-graded gravel; pinkish gray (7.5YR, 6/2), fine gravel. | GP | 80 | 10 | 10 | NA |
| 215 | | | | | G | 215 | | Poorly-graded gravel; pinkish gray (7.5YR, 6/2), fine gravel. | GP | 80 | 10 | 10 | NA |
| 220 | | | | | G | 220 | | Poorly-graded gravel; pinkish gray (7.5YR, 6/2), fine gravel. | GP | 85 | 10 | 5 | NA |
| 225 | | | | | G | 225 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 5 | 90 | 5 | NA |
| 230 | no end cap | | | | G | 230 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 5 | 90 | 5 | NA |
| 235 | Condensate sump | | | | G | 235 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 15 | 80 | 5 | NA |
| 240 | | | | | G | 240 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | tr | 95 | 5 | NA |

Lithologic Log and Well Construction Details of R-072A (SVE-3)
Broadway North Landfill Well Installation

Approved: J. Tano Date: _____ Revised: _____ Date: _____ Reference: _____ FIG. _____

1d



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PROJ.GDT 4/17/00

IGC-WELL 65800.GP

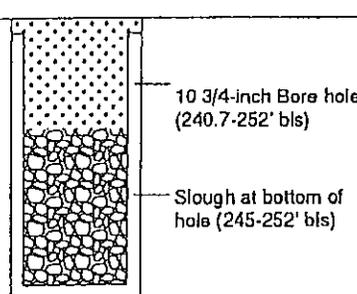
Project: COT, Broadway North Landfill Well Installation Boring: R-072A (SVE-3) Pg. 5 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/4/00

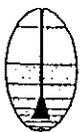
Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/5/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2575.0 Meas. Pt. Elev: 2575 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|---|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 245 |  <p>10 3/4-inch Bore hole (240.7-252' bbls)</p> <p>Slough at bottom of hole (245-252' bbls)</p> | | | | G | 245 |  | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand (continued) | SW | 0 | 95 | 5 | NA |
| 250 | | | | | G | 250 |  | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | tr | 95 | 5 | NA |
| | | | | | | | | Total hole depth = 252' bbls | | | | | |

Lithologic Log and Well Construction Details of R-072A (SVE-3)
Broadway North Landfill Well Installation



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| | | | | | |
|--------------------|------|---------|------|------------|------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. |
|--------------------|------|---------|------|------------|------|

1e

Project: COT, Broadway North Landfill Well Installation

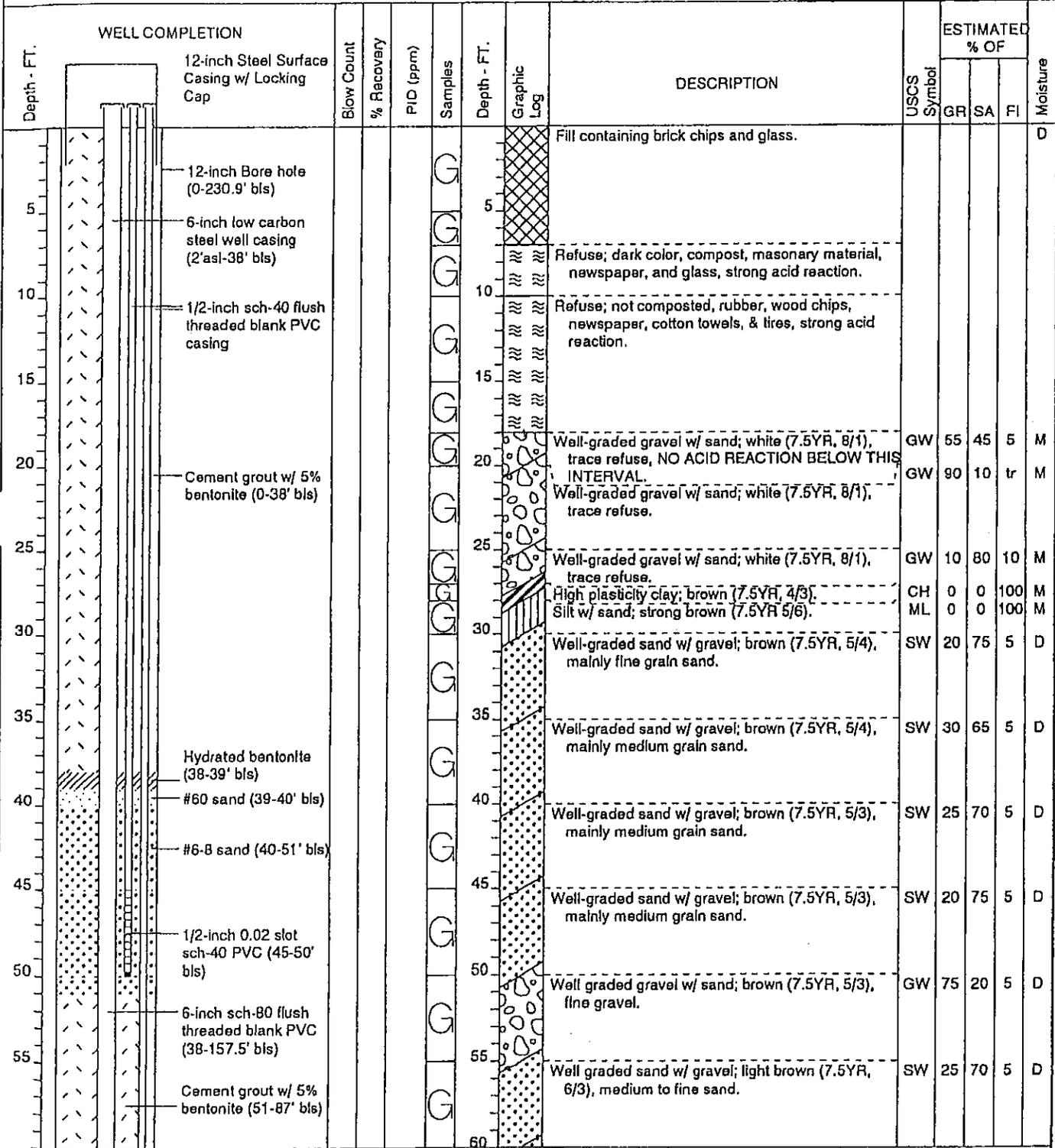
Boring: R-073A (SVE-2) Pg. 1 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/31/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/1/00

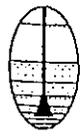
Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2580.0 Meas. Pt. Elev: 2580 Reviewed by: S.Smith



Lithologic Log and Well Construction Details of R-073A (SVE-2)
Broadway North Landfill Well Installation

| | | | | | |
|--------------------|------|---------|------|------------|------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1a |
|--------------------|------|---------|------|------------|------------|



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HGC-WELL 65800 GF
WPROJ.GDT 4/17/00

Project: COT, Broadway North Landfill Well Installation

Boring: R-073A (SVE-2) Pg. 2 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/31/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/1/00

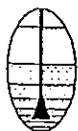
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2580.0 Meas. Pt. Elev: 2580 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 65 | | | | | G | 65 | | Well graded sand w/ gravel; light brown (7.5YR, 6/3), medium to fine sand (continued) | SW | 25 | 70 | 5 | D |
| 70 | Cement grout w/ 5% bentonite (51-87' bls) | | | | G | 70 | | Well graded sand w/ gravel; light brown (7.5YR, 6/3), medium to fine sand. | SW | 25 | 70 | 5 | D |
| 75 | | | | | G | 75 | | Well graded sand w/ gravel; pink (7.5YR, 7/3), medium to fine sand. | SW | 25 | 70 | 5 | D |
| 80 | | | | | G | 80 | | Well graded sand; pink (7.5YR, 7/4), medium to fine sand. | SW | 10 | 85 | 5 | D |
| 85 | | | | | G | 85 | | Well graded sand; light brown (7.5YR, 6/4), medium to fine sand. | SW | 10 | 85 | 5 | D |
| 90 | Hydrated bentonite (87-89' bls) | | | | G | 90 | | Well graded sand w/ gravel; reddish yellow (7.5YR, 6/6), coarse to fine sand. | SW | 15 | 80 | 5 | D |
| 95 | #60 sand (89-91' bls) | | | | G | 95 | | Well graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 10 | 85 | 5 | D |
| 100 | #6-8 sand (91-102' bls) | | | | G | 100 | | Well graded sand w/ gravel; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 20 | 75 | 5 | D |
| 105 | 1/2-inch 0.02 slot sch-40 PVC (95-100' bls) | | | | G | 105 | | Well graded sand; pink (7.5YR, 7/4), coarse to fine sand. | SW | tr | 95 | 5 | D |
| 110 | Cement grout w/ 5% bentonite (102-149.5' bls) | | | | G | 110 | | Well graded sand w/ gravel; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 25 | 70 | 5 | D |
| 115 | | | | | G | 115 | | Poorly-graded sand; light brown (7.5YR, 7/4), fine sand. | SP | tr | 95 | 5 | D |
| 120 | | | | | G | 120 | | Well-graded sand w/ gravel; light brown (7.5YR 6/4), fine to medium gravel. | SW | 40 | 55 | 5 | D |

Lithologic Log and Well Construction Details of R-073A (SVE-2)
Broadway North Landfill Well Installation

Approved: J.Tang Date: _____ Revised: _____ Date: _____ Reference: _____ FIG. **1b**



**HYDRO
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HGC-WELL 55800.GP YPROJ.GDT 4/17/00

Project: COT, Broadway North Landfill Well Installation

Boring: R-073A (SVE-2) Pg. 3 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/31/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/1/00

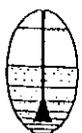
Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2580.0 Meas. Pt. Elev: 2580 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|--|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 125 | Cement grout w/ 5% bentonite (102-149.5' bls) | | | | G | 125 | | Poorly-graded sand; pink (7.5YR 7/4), fine sand.(continued) | SP | tr | 95 | 5 | D |
| 130 | | | | | G | 130 | | Well-graded sand w/ gravel; light brown (7.5YR 6/4), fine gravel and coarse to fine sand. | SW | 40 | 55 | 5 | D |
| 135 | | | | | G | 135 | | Poorly-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SP | 0 | 95 | 5 | D |
| 140 | | | | | G | 140 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 20 | 75 | 5 | D |
| 145 | | | | | G | 145 | | Well-graded sand; reddish yellow (7.5YR, 6/6). | SW | tr | 95 | 5 | D |
| 150 | | | | | G | 150 | | Well-graded sand w/ gravel; reddish yellow (7.5YR, 6/6). | SW | 25 | 70 | 5 | D |
| 155 | | | | | G | 155 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 40 | 55 | 5 | D |
| 160 | | | | | G | 160 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | tr | 95 | 5 | D |
| 165 | | | | | G | 165 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4), fine gravel. | SW | 20 | 75 | 5 | D |
| 170 | | | | | G | 170 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. | SW | 10 | 85 | 5 | D |
| 175 | | | | G | 175 | | Well-graded sand; light brown (7.5YR, 6/4), fine to medium sand. | SW | tr | 95 | 5 | D | |
| 180 | | | | G | 180 | | Well-graded sand; light brown (7.5YR, 6/4), fine to medium sand. | SW | tr | 95 | 5 | D | |
| | Hydrated bentonite (149.5-150.8' bls) | | | | | | | | | | | | |
| | #6-8 sand (150.8-151.5' bls) | | | | | | | | | | | | |
| | 1/4 to 3/4-inch washed gravel (151.5-244' bls) | | | | | | | | | | | | |
| | 6-inch sch-80 1/4-inch slot (157.5-227.5' bls) | | | | | | | | | | | | |

Lithologic Log and Well Construction Details of R-073A (SVE-2)
Broadway North Landfill Well Installation

Approved: J.Tang Date: _____ Revised: _____ Date: _____ Reference: _____ FIG. 1c



**HYDRO
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HYPROJ.GDT 4/17/00
HGC-WELL 65900.G

Project: COT, Broadway North Landfill Well Installation Boring: R-073A (SVE-2) Pg. 4 of 5

Drilling Co: THF Drilling Company (Jason Proffter) Drilling Method: Air Rotary Casing Hammer Date Started: 1/31/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/1/00

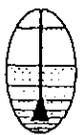
Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2580.0 Meas. Pt. Elev: 2580 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. (continued) | SW | 10 | 85 | 5 | D |
| 190 | | | | | G | 190 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel w/ coarse to fine sand. | SW | 15 | 80 | 5 | D |
| 195 | 6-inch sch-80 1/4-inch slot (157.5-227.5' bls) | | | | G | 195 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel w/ coarse to fine sand. | SW | 15 | 80 | 5 | D |
| 200 | | | | | G | 200 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel w/ coarse to fine sand. | SW | 15 | 80 | 5 | D |
| 205 | 1/4 to 3/4-inch washed gravel (151.5-244' bls) | | | | G | 205 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | 5 | 90 | 5 | D |
| 210 | | | | | G | 210 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | tr | 95 | 5 | D |
| 215 | | | | | G | 215 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | tr | 95 | 5 | D |
| 220 | | | | | G | 220 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | tr | 95 | 5 | D |
| 225 | | | | | G | 225 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel w/ coarse to fine sand. | SW | 15 | 80 | 5 | D |
| 230 | no end cap | | | | G | 230 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | tr | 95 | 5 | D |
| 235 | 10 3/4-inch Bore hole (230.9-244' bls) | | | | G | 235 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | tr | 95 | 5 | D |
| 240 | Condensate sump | | | | G | 240 | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand. | SW | tr | 95 | 5 | D |

PROJ.GDT 4/17/00

IGC-WELL 55800.GF



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**Lithologic Log and Well Construction Details of R-073A (SVE-2)
Broadway North Landfill Well Installation**

| | | | | | |
|---------------------------|------|---------|------|------------|-------------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1d |
|---------------------------|------|---------|------|------------|-------------------|

Project: COT, Broadway North Landfill Well Installation Boring: R-073A (SVE-2) Pg. 5 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 1/31/00

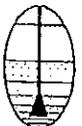
Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/1/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: J.Malusa

Land Surf. Elev: 2580.0 Meas. Pt. Elev: 2580 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | | | | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|-----------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | Blow Count | % Recovery | PID (ppm) | Samples | | | | | GR | SA | FI | |
| | | | | | | | Well-graded sand; light brown (7.5YR, 6/4), coarse to fine sand (continued) | | | | | |
| | | | | | | | Total hole depth = 244' bls | | | | | |

Lithologic Log and Well Construction Details of R-073A (SVE-2)
Broadway North Landfill Well Installation



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| | | | | | |
|--------------------|------|---------|------|------------|------|
| Approved J.Tano | Date | Revised | Date | Reference: | FIG. |
|--------------------|------|---------|------|------------|------|

1e

PROJ.GDT 4/17/00

IGC-WELL 65800.GP

Project: COT, Broadway North Landfill Well Installation Boring: R-074A (SVE-6) Pg. 1 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/24/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/24/00

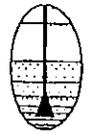
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S. Smith

| Depth - Ft. | WELL COMPLETION | | | | Blow Count | % Recovery | PID (ppm) | Samples | Depth - Ft. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | | | |
|-------------|---|--------------------------------|---|---|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|---|--|
| | 12-inch Steel Surface Casing w/ Locking Cap | 12-inch Bore hole (0-248' bls) | 6-inch low carbon steel wall casing (2'asl-28' bls) | 1/2-inch sch-40 flush threaded blank PVC casing | | | | | | | | | GR | SA | FI | Moisture | | |
| 0 | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | Silty Sand; brown (7.5YR, 5/4), fine sand, backfill, strong acid reaction. | SM | 5 | 70 | 25 | | D | |
| | | | | | | | | | | | Silty Sand; brown (7.5YR, 5/4), fine sand, backfill, strong acid reaction. | SM | 5 | 70 | 25 | | D | |
| | | | | | | | | | | | Silty Sand; brown (7.5YR, 5/4), fine sand, backfill, strong acid reaction. | SM | 5 | 70 | 25 | | D | |
| | | | | | | | | | | | Silty Sand; brown (7.5YR, 5/4), fine sand, backfill, strong acid reaction. | SM | 5 | 70 | 25 | | D | |
| | | | | | | | | | | | Silty Sand; brown (7.5YR, 5/4), fine sand, backfill, strong acid reaction. | SM | 5 | 70 | 25 | | D | |
| 10 | | | | | | | | | | | Well-graded sand w/ silt & gravel; brown (7.5YR, 5/4), strong acid reaction. | SW-SM | 20 | 70 | 10 | | D | |
| | | | | | | | | | | | Well-graded sand w/ silt & gravel; light brown (7.5YR, 6/3), fine gravel, strong acid reaction. | SW-SM | 40 | 50 | 10 | | D | |
| | | | | | | | | | | | Well-graded sand w/ silt & gravel; light brown (7.5YR, 6/3), fine to coarse gravel, strong acid reaction. | SW-SM | 30 | 60 | 10 | | D | |
| | | | | | | | | | | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel, NO ACID REACTION BELOW THIS INTERVAL. | SW | 10 | 85 | 5 | | D | |
| | | | | | | | | | | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | | M | |
| 20 | | | | | | | | | | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 20 | 75 | 5 | | M | |
| 25 | | | | | | | | | | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 25 | 70 | 5 | | M | |
| 30 | | | | | | | | | | | Well-graded sand w/ gravel; light brown (7.5YR, 6/3), fine to coarse gravel. | SW | 35 | 60 | 5 | | M | |
| 35 | | | | | | | | | | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse gravel. | SW | 40 | 55 | 5 | | M | |
| 40 | | | | | | | | | | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine to coarse gravel. | SW | 25 | 70 | 5 | | M | |
| 45 | | | | | | | | | | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 25 | 70 | 5 | | M | |
| 50 | | | | | | | | | | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 20 | 75 | 5 | | M | |
| 55 | | | | | | | | | | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 20 | 75 | 5 | | M | |
| 60 | | | | | | | | | | | | | | | | | | |

VPROJ.GDT 4/17/00

HGC-WELL 65800.F



**HYDRO
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**Lithologic Log and Well Construction Details of R-074A (SVE-6)
Broadway North Landfill Well Installation**

| | | | | | |
|----------------------------|------|---------|------|------------|-------------------|
| Approved J. Tang | Date | Revised | Date | Reference: | FIG. 1a |
|----------------------------|------|---------|------|------------|-------------------|

Project: COT, Broadway North Landfill Well Installation

Boring: R-074A (SVE-6) Pg. 2 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/24/00

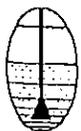
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/24/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M.McGlone

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 65 | | | | | G | 65 | | Poorly-graded sand w/ gravel; brown (5YR, 5/4), fine gravel. (continued) | SP | 20 | 75 | 5 | M |
| 70 | Cement grout w/ 5% bentonite (53-86.5' bls) | | | | G | 70 | | Poorly-graded sand w/ gravel; brown (5YR, 5/4), fine gravel. | SP | 30 | 65 | 5 | M |
| 75 | | | | | G | 75 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 25 | 70 | 5 | M |
| 80 | | | | | G | 80 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 25 | 70 | 5 | M |
| 85 | | | | | G | 85 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 15 | 80 | 5 | M |
| 90 | Hydrated bentonite (86.5-89' bls) #60 sand (89-90' bls) | | | | G | 90 | | Well-graded gravel w/ sand; light reddish brown (5YR, 6/4), medium sand. | GW | 65 | 30 | 5 | M |
| 95 | #6-9 silica sand (90-106' bls) | | | | G | 95 | | Well-graded sand; light reddish brown (5YR, 6/4). | SW | 5 | 90 | 5 | M |
| 100 | 1/2-inch 0.02 slot sch-40 PVC (95-100' bls) | | | | G | 100 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 15 | 80 | 5 | M |
| 105 | | | | | G | 105 | | Well-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 15 | 80 | 5 | M |
| 110 | Cement grout w/ 5% bentonite (106-145' bls) | | | | G | 110 | | Well-graded sand w/ gravel; reddish brown (5YR, 5/4), fine gravel. | SW | 25 | 70 | 5 | M |
| 115 | | | | | G | 115 | | Well-graded sand; light reddish brown (5YR, 6/4). | SW | 5 | 90 | 5 | M |
| 120 | | | | | G | 120 | | Well graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SW | 20 | 75 | 5 | M |

Lithologic Log and Well Construction Details of R-074A (SVE-6)
Broadway North Landfill Well Installation



**HYDRO
GEO
CHEM, INC.**

Approved
J.Tang

Date

Revised

Date

Reference:

FIG.

1b

HYDROGEOCHEM, INC. 4/1/00

Project: COT, Broadway North Landfill Well Installation

Boring: R-074A (SVE-6) Pg. 3 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/24/00

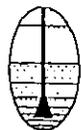
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/24/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M.McGlone

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 125 | Cement grout w/ 5% bentonite (106-145' bls) | | | | G | 125 | | Poorly-graded sand; light brown (7.5YR, 6/4), medium sand (continued) | SP | 5 | 90 | 5 | M |
| 130 | | | | | G | 130 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 20 | 75 | 5 | M |
| 135 | | | | | G | 135 | | Poorly-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SP | 25 | 70 | 5 | M |
| 140 | | | | | G | 140 | | Poorly-graded sand; light brown (7.5YR, 6/4), medium sand. | SP | 10 | 85 | 5 | M |
| 145 | Hydrated bentonite (145-147.5' bls) | | | | G | 145 | | Poorly-graded sand; light brown (7.5YR, 6/4), medium sand. | SP | 5 | 90 | 5 | M |
| 150 | #6-9 silica sand (147.5-148.8' bls) | | | | G | 150 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine to coarse gravel. | SW | 25 | 70 | 5 | M |
| 155 | 1/4 to 3/4-inch washed gravel (148.8-248' bls) | | | | G | 155 | | Poorly-graded sand; light brown (7.5YR, 6/4). | SP | tr | 95 | 5 | M |
| 160 | | | | | G | 160 | | Poorly-graded sand; light brown (7.5YR, 6/4). | SP | 5 | 90 | 5 | M |
| 165 | | | | | G | 165 | | Poorly-graded sand w/ gravel; light reddish brown (5YR, 6/4), fine gravel. | SP | 25 | 70 | 5 | M |
| 170 | 6-inch sch-80 1/4-inch slot (156.5-225.4' bls) | | | | G | 170 | | Well-graded sand; light brown (7.5YR, 6/4), fine gravel. | SW | 20 | 75 | 5 | M |
| 175 | | | | | G | 175 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 15 | 80 | 5 | M |
| 180 | | | | | G | 180 | | | | | | | |

Lithologic Log and Well Construction Details of R-074A (SVE-6)
Broadway North Landfill Well Installation



**HYDRO
GEO
CHEM, INC.**

Approved
J.Tang

Date

Revised

Date

Reference:

FIG.

1c

WPROJ.GOT 4/17/00

HGC-WELL 85800 GP

Project: COT, Broadway North Landfill Well Installation Boring: R-074A (SVE-6) Pg. 4 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/24/00

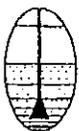
Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/24/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M.McGloine

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel (<i>continued</i>) | SW | 20 | 75 | 5 | M |
| 190 | | | | | G | 190 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 25 | 70 | 5 | M |
| 195 | 6-inch sch-80 1/4-inch slot (156.5-225.4' bls) | | | | G | 195 | | Poorly-graded sand; light brown (7.5YR, 6/4). | SP | 5 | 90 | 5 | M |
| 200 | | | | | G | 200 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 30 | 65 | 5 | M |
| 205 | 1/4 to 3/4-inch washed gravel (148.8-248' bls) | | | | G | 205 | | Poorly-graded sand; light brown (7YR, 6/4), medium sand. | SP | 10 | 85 | 5 | M |
| 210 | | | | | G | 210 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 25 | 70 | 5 | M |
| 215 | | | | | G | 215 | | Poorly-graded sand; light brown (7YR, 6/4), medium sand. | SP | 5 | 90 | 5 | M |
| 220 | | | | | G | 220 | | Poorly-graded sand; light brown (7YR, 6/4), medium sand. | SP | 5 | 90 | 5 | M |
| 225 | no end cap | | | | G | 225 | | Poorly-graded sand; very pale brown (10YR, 7/4), medium sand. | SP | 0 | 95 | 5 | M |
| 230 | | | | | G | 230 | | Well-graded sand w/ silt; very pale brown (10YR, 7/4). | SW-SM | 5 | 85 | 10 | M |
| 235 | Condensate sump | | | | G | 235 | | Poorly-graded sand; pink (7.5YR, 7/4), medium sand. | SP | 5 | 90 | 5 | M |
| 240 | | | | | G | 240 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4). | SW | 20 | 75 | 5 | M |

Lithologic Log and Well Construction Details of R-074A (SVE-6)
Broadway North Landfill Well Installation



**HYDRO
GEO
CHEM, INC.**

Approved
J.Tang

Date

Revised

Date

Reference:

FIG.

1d

*PROJ.GDT 4/17/00

HGC-WELL 65600.GF

Project: COT, Broadway North Landfill Well Installation Boring: R-074A (SVE-6) Pg. 5 of 5

Drilling Co: THE Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/24/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/24/00

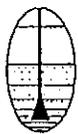
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M.McGione

Land Surf. Elev: 2551.0 Meas. Pt. Elev: 2551 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|-----------------|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 245 | Condensate sump | | | | G | 245 | | Well-graded sand w/ silt; pink (7.5YR, 7/4). (continued) | SW-SM | 0 | 90 | 10 | M |
| | | | | | G | | | Well-graded sand w/ silt; pink (7.5YR, 7/4). | SW-SM | 10 | 80 | 10 | M |
| | | | | | | | | Total hole depth = 248' bls | | | | | |

PROJ.GDT 4/17/00

HGC-WELL 65800.GF



**HYDRO
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CHEM, INC.**

**Lithologic Log and Well Construction Details of R-074A (SVE-6)
Broadway North Landfill Well Installation**

Approved
J.Tang

Date

Revised

Date

Reference:

FIG.

1e

Project: COT, Broadway North Landfill Well Installation Boring: R-075A (SVE-5) Pg. 1 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/21/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/23/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2563.0 Meas. Pt. Elev: 2563 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|--------------------------------|------------|------------|-----------|---------|-------------|--|-------------|-------------|----------------|-----|----|----------|
| | 12-inch Steel Surface Casing w/ Locking Cap | 12-inch Bore hole (0-244' bls) | | | | | | | | | GR | SA | FI | |
| 0-5 | | | | | | | | Fill; brown (7.5YR, 5/3), strong acid reaction, PASTE pH=8.5 (0-4 ft bls). | | | | | M | |
| 5-6 | | | | | | | | Refuse; black (7.5YR, 2.5/1), composted, strong acid reaction, PASTE pH=7.8 | | | | | M | |
| 6-8 | | | | | | | | Refuse; dark brown (7.5YR, 3/3), slightly composted, strong acid reaction, PASTE pH=7.4 (6-8 ft bls), PASTE pH=8.3 ft (8-10 ft bls). | | | | | M | |
| 8-10 | | | | | | | | Refuse; dark brown (7.5YR, 3/3), slightly composted, abundant fill mixed w/ refuse, predominantly newspaper, metal and glass, strong acid reaction, PASTE pH=7.5 | | | | | M | |
| 10-15 | | | | | | | | Refuse; dark brown (7.5YR, 3/3), slightly composted refuse, predominantly brick, paper, metal and glass, strong acid reaction, PASTE pH=6.9 | | | | | M | |
| 15-20 | | | | | | | | Refuse; dark brown (7.5YR, 3/3), slightly composted refuse, predominantly newspaper (one w/ Feb. 14, 1966 date), wood, masonry, metal and glass, no acid reaction, PASTE pH=6.4 (14-16 ft bls), PASTE pH=7.1 (16-18 ft bls). | | | | | M | |
| 20-25 | | | | | | | | Refuse; dark gray (7.5YR, 4/1), predominantly wood w/ some metal and fine gravel, very moist, strong acid reaction, PASTE pH=7.2 | CH | 0 | 0 | 100 | M | |
| 25-30 | | | | | | | | Fill/Refuse; dark gray (7.5YR, 4/1), mainly fill with wood and plastic refuse, very moist, strong acid reaction, PASTE pH=9.5 | | | | | M | |
| 30-35 | | | | | | | | Refuse; dark gray (7.5YR, 4/1), mixture of refuse and silty clay, moth ball odor, very moist, strong acid reaction, PASTE pH=9.1 | | | | | M | |
| 35-40 | | | | | | | | High Plasticity Clay; dark gray (10YR, 4/1), trace silt, settling pond deposit?, very moist, strong acid reaction, PASTE pH=8.9 (24-30 ft bls). | GW | 60 | 35 | 5 | M | |
| 40-45 | | | | | | | | Well-graded gravel w/ sand; light brown (7.5YR, 6/4), predominantly fine gravel and medium sand, no acid reaction. | | | | | M | |
| 45-50 | | | | | | | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand, no acid reaction. | SW | 10 | 85 | 5 | M | |
| 50-55 | | | | | | | | Clayey sand; brown (7.5YR, 5/2), well-graded sand w/ clay, strong acid reaction. (Suspect Sample, clay may be from shallower zone) | SC | 10 | 50 | 40 | M | |
| 55-60 | | | | | | | | Well-graded sand w/ silt; light brown (7.5YR, 6/4), no acid reaction. | SW-SM | 5 | 85 | 10 | M | |

Lithologic Log and Well Construction Details of R-075A (SVE-5)
Broadway North Landfill Well Installation

Approved
J. Tang

Date

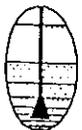
Revised

Date

Reference:

FIG.

1a



**HYDRO
GEO
CHEM, INC.**

Project: COT, Broadway North Landfill Well Installation

Boring: R-075A (SVE-5) Pg. 2 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/21/00

Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/23/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M.McGloone

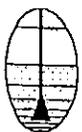
Land Surf. Elev: 2563.0 Meas. Pt. Elev: 2563 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|---|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 65 | | | | | G | 65 | | Well-graded sand w/ fine gravel; light brown (7.5YR, 6/4), NO ACID REACTION BELOW THIS INTERVAL(continued) | SW | 25 | 70 | 5 | M |
| 70 | Cement grout w/ 5% bentonite (51.5-85' bls) | | | | G | 70 | | Well-graded sand w/ fine gravel; light brown (7.5YR, 6/4). | SW | 25 | 70 | 5 | M |
| 75 | | | | | G | 75 | | Well-graded sand w/ fine gravel; light brown (7.5YR, 6/4). | SW | 25 | 70 | 5 | M |
| 80 | | | | | G | 80 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | M |
| 85 | Hydrated bentonite (85-88.25' bls) | | | | G | 85 | | Well-graded sand w/ fine gravel; light brown (7.5YR, 6/4). | SW | 15 | 80 | 5 | M |
| 90 | #60 sand (88.25-90' bls) | | | | G | 90 | | Well-graded sand w/ fine gravel; light brown (7.5YR, 6/4). | SW | 30 | 65 | 5 | D |
| 95 | #6-9 silica sand (90-102' bls) | | | | G | 95 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | D |
| 100 | 1/2-inch 0.02 slot sch-40 PVC (95-100' bls) | | | | G | 100 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 35 | 60 | 5 | D |
| 105 | | | | | G | 105 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 35 | 60 | 5 | D |
| 110 | Cement grout w/ 5% bentonite (102-134' bls) | | | | G | 110 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 35 | 60 | 5 | M |
| 115 | | | | | G | 115 | | Well-graded sand w/ silt; pink (7.5YR, 7/4), fine to medium sand. | SW-SM | 10 | 80 | 10 | M |

Lithologic Log and Well Construction Details of R-075A (SVE-5)
Broadway North Landfill Well Installation

| | | | | | |
|--------------------|------|---------|------|------------|------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. |
|--------------------|------|---------|------|------------|------|

1b



**HYDRO
GEO
CHEM, INC.**

"PROJ SGT 4/17/00"
"GCC-WELL 65800.GP"

Project: COT, Broadway North Landfill Well Installation Boring: R-075A (SVE-5) Pg. 3 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/21/00

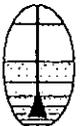
Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/23/00

5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M. McGlone

Land Surf. Elev: 2563.0 Meas. Pt. Elev: 2563 Reviewed by: S. Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| | | | | | | | | Poorly-graded sand w/ gravel; light yellowish brown (10YR, 6/4). (continued) | SP | 15 | 80 | 5 | M |
| 125 | Cement grout w/ 5% bentonite (102-134' bls) | | | | G | 125 | | Well-graded sand w/ gravel; light yellowish brown (10YR, 6/4). | SW | 25 | 70 | 5 | M |
| 130 | | | | | G | 130 | | Well-graded sand w/ gravel; light yellowish brown (10YR, 6/4). | SW | 25 | 70 | 5 | M |
| 135 | Hydrated bentonite (134-137' bls) | | | | G | 135 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4). | SW | 30 | 65 | 5 | M |
| 140 | #8-12 silica sand (137-139' bls) | | | | G | 140 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4). | SW | 20 | 75 | 5 | M |
| 145 | | | | | G | 145 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4). | SW | 20 | 75 | 5 | M |
| 150 | | | | | G | 150 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4). | SW | 20 | 75 | 5 | M |
| 155 | 1/4 to 3/4-inch washed gravel (139-250.6' bls) | | | | G | 155 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4). | SW | 15 | 80 | 5 | M |
| 160 | | | | | G | 160 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4). | SW | 30 | 65 | 5 | M |
| 165 | | | | | G | 165 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4). | SW | 30 | 65 | 5 | M |
| 170 | 6-inch sch-80 1/4-inch slot (156.5-225.4' bls) | | | | G | 170 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 35 | 60 | 5 | M |
| 175 | | | | | G | 175 | | Well-graded sand; light brown (7.5YR, 6/4). | SW | 10 | 85 | 5 | M |
| 180 | | | | | G | 180 | | | | | | | |

PROJ.GDT 4/17/00
ISC-WELL 65800.GP



**HYDRO
GEO
CHEM, INC.**

**Lithologic Log and Well Construction Details of R-075A (SVE-5)
Broadway North Landfill Well Installation**

| | | | | | |
|--------------------|------|---------|------|------------|-------------------|
| Approved J.Tana | Date | Revised | Date | Reference: | FIG. 1c |
|--------------------|------|---------|------|------------|-------------------|

Project: COT, Broadway North Landfill Well Installation Boring: R-075A (SVE-5) Pg. 4 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/21/00

Location: Broadway North Landfill, 7451 E. Sampler: Grab Date Completed: 2/23/00

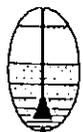
5th Street, Tucson AZ Desc. of Meas Pt: Land Surface Elev. Logged by: M.McGione

Land Surf. Elev: 2563.0 Meas. Pt. Elev: 2563 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------|--|------------|------------|-----------|---------|-------------|-------------|---|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 185 | | | | | G | 185 | | Poorly-graded sand; light brown (7.5YR, 6/4), medium sand. (continued) | SP | 5 | 90 | 5 | M |
| 190 | | | | | G | 190 | | Poorly-graded sand w/ gravel; light brown (7.5YR, 6/4), medium sand w/ fine gravel. | SP | 25 | 70 | 5 | M |
| 195 | 6-inch sch-80 1/4-inch slot (156.5-225.4' bls) | | | | G | 195 | | Poorly-graded sand; very pale brown (10YR, 7/4), medium sand. | SP | 0 | 95 | 5 | M |
| 200 | | | | | G | 200 | | Well-graded sand w/ gravel; pinkish gray (7.5YR, 6/2), fine gravel. | SW | 30 | 65 | 5 | M |
| 205 | 1/4 to 3/4-inch washed gravel (139-250.6' bls) | | | | G | 205 | | Well-graded sand w/ gravel; pink (7.5YR, 7/4), fine gravel. | SW | 25 | 70 | 5 | M |
| 210 | | | | | G | 210 | | Well-graded sand w/ gravel; light brown (7.5YR, 6/4), fine gravel. | SW | 25 | 70 | 5 | M |
| 215 | | | | | G | 215 | | Well-graded sand; light brown (7.5YR, 6/4), fine to medium sand. | SW | tr | 95 | 5 | M |
| 220 | | | | | G | 220 | | Well-graded sand w/ silt; light brown (7.5YR, 6/4). | SW-SM | 10 | 80 | 10 | M |
| 225 | no end cap | | | | G | 225 | | Silty sand; light gray (10YR, 7/2), fine to medium sand. | SM | tr | 85 | 15 | M |
| 230 | | | | | G | 230 | | Silty sand; light gray (10YR, 7/2), fine to medium sand. | SM | 5 | 70 | 25 | D |
| 235 | Condensate sump | | | | G | 235 | | Silty sand w/ gravel; light gray (10YR, 7/2), fine to medium sand. | SM | 20 | 60 | 20 | D |
| 240 | | | | | G | 240 | | Well-graded sand w/ silt and gravel; light brown (7.5YR, 6/4). | SW-SM | 40 | 50 | 10 | M |

VPROJ.GDT 4/17/00

HGC-WELL 65800.GP



**HYDRO
GEO
CHEM, INC.**

**Lithologic Log and Well Construction Details of R-075A (SVE-5)
Broadway North Landfill Well Installation**

Approved
J.Tang

Date

Revised

Date

Reference:

FIG.

1d

Project: COT, Broadway North Landfill Well Installation Boring: R-075A (SVE-5) Pg. 5 of 5

Drilling Co: THF Drilling Company (Jason Proffer) Drilling Method: Air Rotary Casing Hammer Date Started: 2/21/00

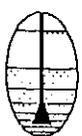
Location: Broadway North Landfill, 7451 E. 5th Street, Tucson AZ Sampler: Grab Date Completed: 2/23/00

Desc. of Meas Pt: Land Surface Elev. Logged by: M.McGlone

Land Surf. Elev: 2563.0 Meas. Pt. Elev: 2563 Reviewed by: S.Smith

| Depth - FT. | WELL COMPLETION | Blow Count | % Recovery | PID (ppm) | Samples | Depth - FT. | Graphic Log | DESCRIPTION | USCS Symbol | ESTIMATED % OF | | | Moisture |
|-------------------------------|--|------------|------------|-----------|---------|-------------|-------------|--|-------------|----------------|----|----|----------|
| | | | | | | | | | | GR | SA | FI | |
| 245 | Condensate sump | | | | G | 245 | | Well-graded sand; light brown (7.5YR, 6/4), fine to coarse sand. (continued) | SW | tr | 95 | 5 | D |
| 250 | 10 3/4-inch Bore hole (244-250.6' bls) | | | | G | 250 | | Well-graded sand w/ silt & gravel; light brown (7.5YR, 6/4), fine gravel. | SW-SM | 40 | 50 | 10 | D |
| Total hole depth = 250.6' bls | | | | | | | | | | | | | |

Lithologic Log and Well Construction Details of R-075A (SVE-5)
Broadway North Landfill Well Installation

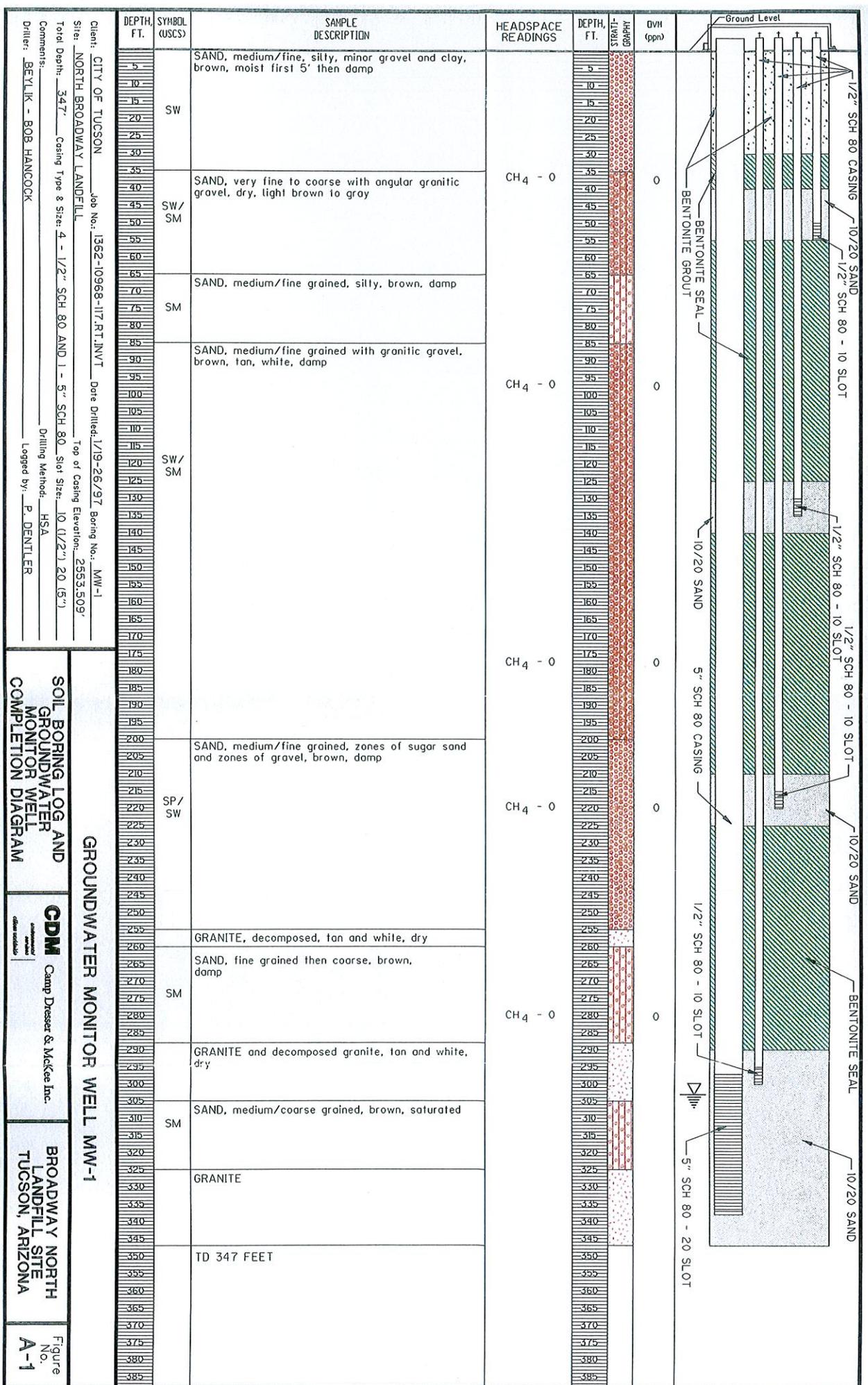


**HYDRO
GEO
CHEM, INC.**

| | | | | | |
|--------------------|------|---------|------|------------|------------|
| Approved J.Tang | Date | Revised | Date | Reference: | FIG. 1e |
|--------------------|------|---------|------|------------|------------|

YPROJ.GDT 4/17/00
HGC-WELL 65800.GF

WR-273A



SOIL BORING LOG AND GROUNDWATER MONITOR WELL COMPLETION DIAGRAM

GROUNDWATER MONITOR WELL MW-1

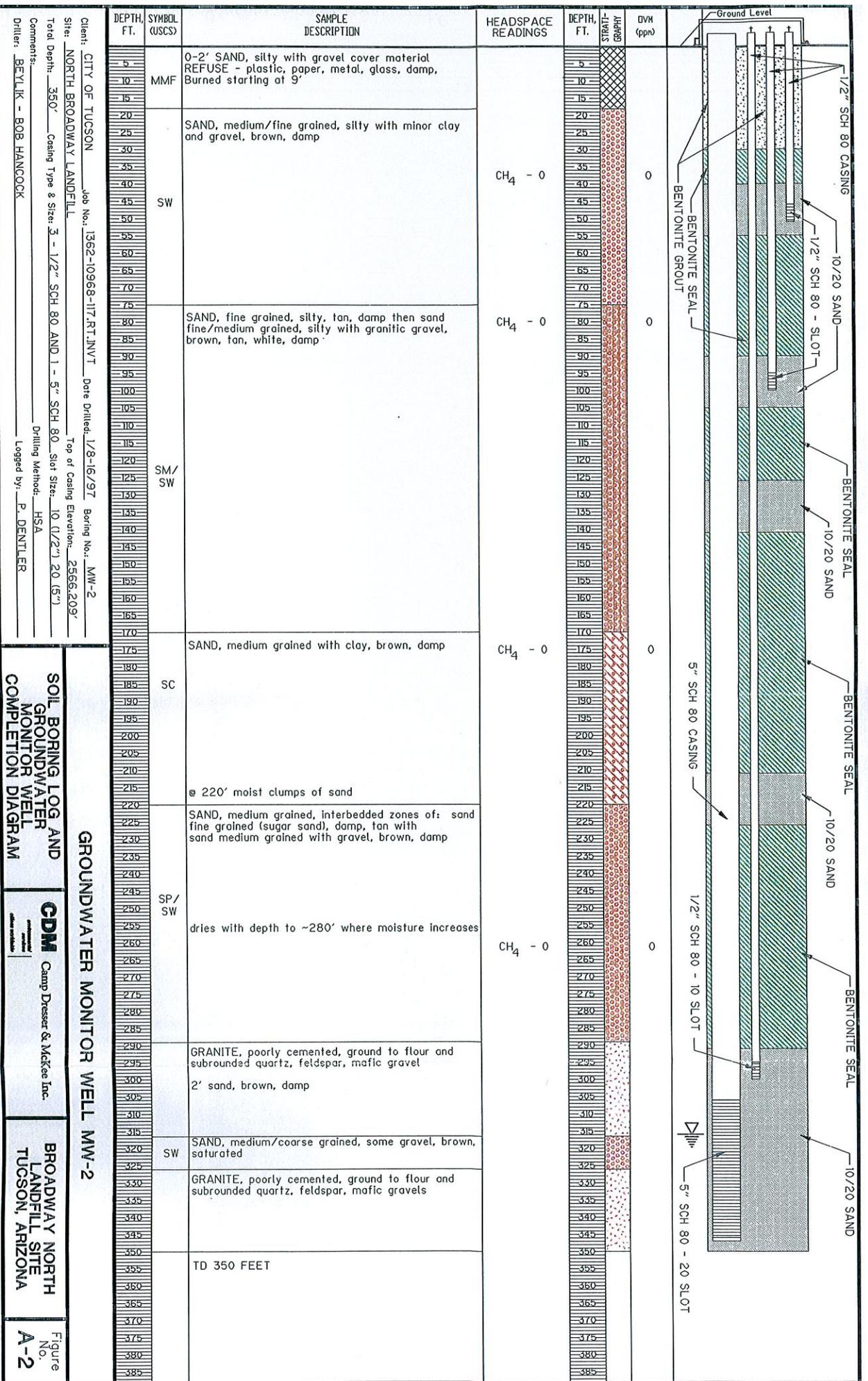
CDM Camp Dresser & McKee Inc.

BROADWAY NORTH LANDFILL SITE TUCSON, ARIZONA

Figure No. A-1

Client: CITY OF TUCSON
 Site: NORTH BROADWAY LANDFILL
 Job No.: 1362-10968-117.RT.JANVT
 Date Drilled: 1/19-26/97
 Boring No.: MW-1
 Total Depth: 347' Casing Type & Size: 4 - 1/2" SCH 80 AND - 5" SCH 80 Slot Size: 10 (1/2") 20 (5")
 Comments: Drilling Method: HSA
 Driller: BEYLIK - BOB HANCOCK
 Logged by: P. DENTLER
 Top of Casing Elevation: 2553.509'

WR-274A



SOIL BORING LOG AND
GROUNDWATER
MONITOR WELL
COMPLETION DIAGRAM

CDM
Camp Dresser & McKee Inc.

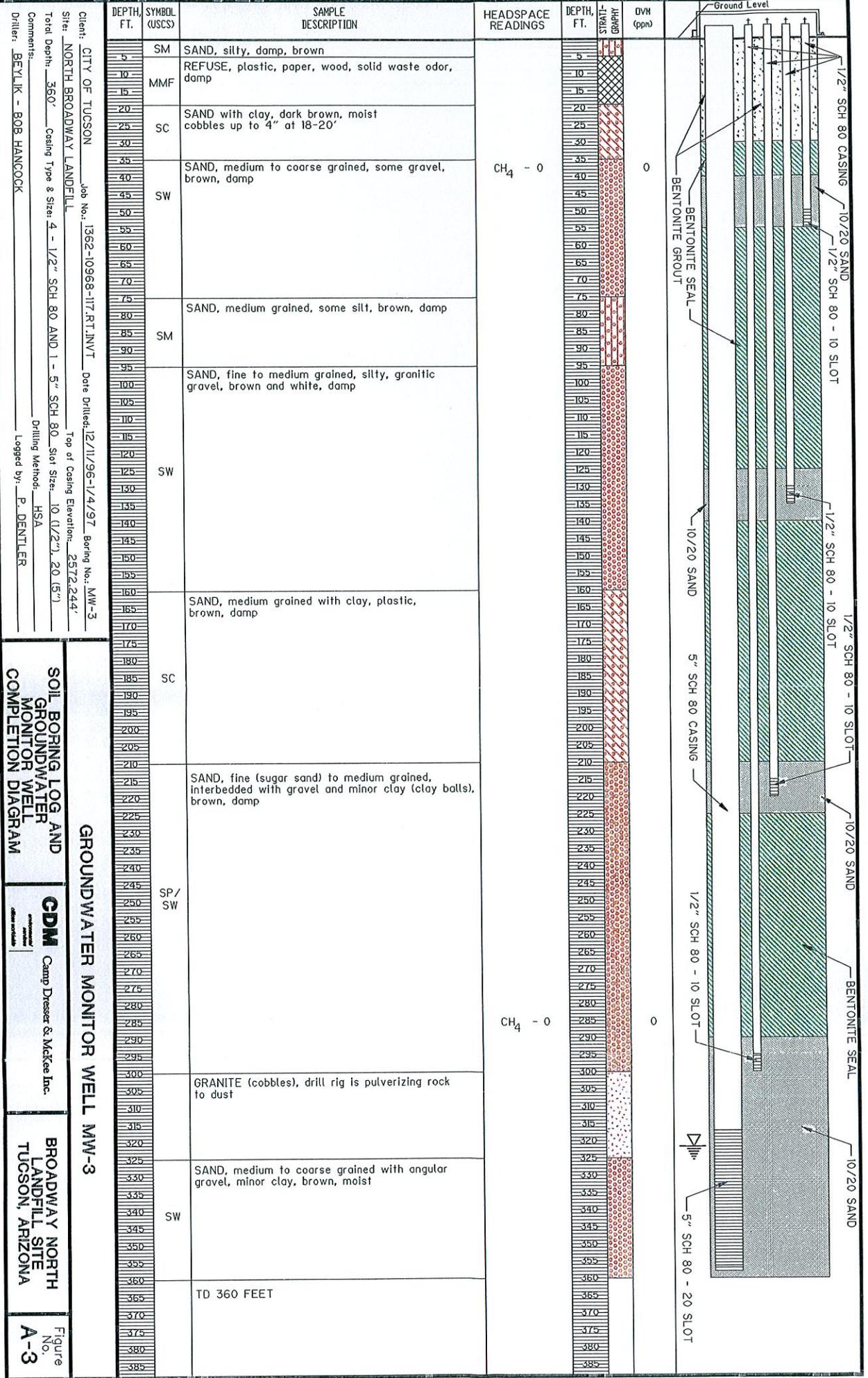
BROADWAY NORTH
LANDFILL SITE
TUCSON, ARIZONA

Figure
No.
A-2

GROUNDWATER MONITOR WELL MW-2

Client: CITY OF TUCSON
Site: NORTH BROADWAY LANDFILL
Job No.: 1362-10968-117-RT-INV1
Date Drilled: 1/8-16/97
Boring No.: MW-2
Total Depth: 350' Casing Type & Size: 3 - 1/2" SCH 80 AND 1 - 5" SCH 80 Slot Size: 10 (1/2") 20 (5")
Drilling Method: HSA
Drippers: BEYLK - BOB HANCOCK
Lugged by: P. DENTLER
Top of Casing Elevation: 2566.209'

WR-275A



SOIL BORING LOG AND GROUNDWATER MONITOR WELL COMPLETION DIAGRAM

CDM Camp Dresser & McKee Inc.

BROADWAY NORTH LANDFILL SITE TUCSON, ARIZONA

Figure No. A-3

Client: CITY OF TUCSON
 Site: NORTH BROADWAY LANDFILL
 Total Depth: 360' Casing Type & Size: 4 - 1/2" SCH 80 AND 1 - 5" SCH 80 Slot Size: 10 (1/2"), 20 (5")
 Date Drilled: 12/11/96-1/4/97 Boring No.: MW-3
 Top of Casing Elevation: 2572.244'

Drilling Method: HSA
 Logged by: P. DENTLER

Job No.: 1362-10968-117.RT.JNVT

Drillers: BEYLK - BOB HANCOCK

APPENDIX B
WELL CONSTRUCTION DIAGRAMS AND LITHOLOGIC LOGS
BROADWAY SOUTH LANDFILL

**Table B2
Broadway South Landfill
Soil Gas Probe Construction Data**

| Well/Probe ID | Depth (ft bsl) | Probe Diameter (in) | Top of Screen (ft bsl) | Bottom of Screen (ft bsl) | Monitor Well Borehole Diameter (in) | Depth to Top of Probe Filter Pack (ft bsl) | Depth to Bottom of Probe Filter Pack (ft bsl) | Data Source |
|---------------|----------------|---------------------|------------------------|---------------------------|-------------------------------------|--|---|-------------|
| BP-22 : 200 | 200 | 1.0 | 195 | 200 | 10.75 | 190 | 205 | (1) |
| BP-22 : 250 | 250 | 1.0 | 245 | 250 | 10.75 | 240 | 255 | (1) |
| BP-22 : 300 | 300 | 1.0 | 295 | 300 | 10.75 | 290 | 305 | (1) |
| BP-22 : 438 | 350 | 4.0 | 358 | 438 | 10.75 | 358 | 458 | (1) |
| BP-23 : 200 | 200 | 1.0 | 195 | 200 | 10.75 | 190 | 205 | (1) |
| BP-23 : 250 | 250 | 1.0 | 245 | 250 | 10.75 | 240 | 255 | (1) |
| BP-23 : 300 | 300 | 1.0 | 295 | 300 | 10.75 | 289 | 305 | (1) |
| BP-23 : 440 | 350 | 4.0 | 350 | 440 | 10.75 | 345 | 455 | (1) |
| BSDP-1 : 100 | 100 | 1.0 | 95 | 100 | 10.75 | 90 | 106 | (1) |
| BSDP-1 : 150 | 150 | 1.0 | 145 | 150 | 10.75 | 140 | 155 | (1) |
| BSDP-1 : 200 | 200 | 1.0 | 195 | 200 | 10.75 | 190 | 205 | (1) |
| BSDP-1 : 248 | 248 | 1.0 | 243 | 248 | 10.75 | 238 | 253 | (1) |
| BSDP-1 : 300 | 300 | 1.0 | 295 | 300 | 10.75 | 290 | 305 | (1) |
| BSDP-1 : 350 | 350 | 1.0 | 345 | 350 | 10.75 | 340 | 351 | (1) |
| BSDP-2 : 100 | 100 | 1.0 | 95 | 100 | 10.75 | 90 | 105 | (1) |
| BSDP-2 : 150 | 150 | 1.0 | 145 | 150 | 10.75 | 140 | 156 | (1) |
| BSDP-2 : 200 | 200 | 1.0 | 195 | 200 | 10.75 | 190 | 205 | (1) |
| BSDP-2 : 250 | 250 | 1.0 | 245 | 250 | 10.75 | 240 | 255 | (1) |
| BSDP-2 : 300 | 300 | 1.0 | 295 | 300 | 10.75 | 290 | 305 | (1) |
| BSDP-2 : 350 | 350 | 1.0 | 345 | 350 | 10.75 | 340 | 351 | (1) |
| BSDP-3 : 50 | 50 | 1.0 | 45 | 50 | 9 | 40 | 55 | (1) |
| BSDP-3 : 100 | 100 | 1.0 | 95 | 100 | 9 | 90 | 105 | (1) |
| BSDP-3 : 150 | 150 | 1.0 | 145 | 150 | 9 | 140 | 157 | (1) |
| BSDP-4 : 48 | 48 | 1.0 | 43 | 48 | 9 | 38 | 53 | (1) |
| BSDP-4 : 100 | 100 | 1.0 | 95 | 100 | 9 | 90 | 105 | (1) |
| BSDP-4 : 150 | 150 | 1.0 | 145 | 150 | 9 | 140 | 157 | (1) |
| MW-5 | 14.6** | 4.0 | - | - | - | - | - | (2) |
| MW-6 | - | - | - | - | - | - | - | |
| MW-7 | 18.5** | 4.0 | - | - | - | - | - | (2) |
| MW-8 | 18.5** | 4.0 | - | - | - | - | - | (2) |
| MW-9 | 19.4** | 4.0 | - | - | - | - | - | (2) |
| PRUD-1 | - | - | - | - | - | - | - | |
| PRUD-2 | - | - | - | - | - | - | - | |
| PRUD-3 | - | - | - | - | - | - | - | |
| PRUD-4 | 9.8** | 0.5 | - | - | - | - | - | (2) |
| PRUD-5 | 30.5** | 0.5 | - | - | - | - | - | (2) |
| PRUD-6 | 29.7** | 1.0 | - | - | - | - | - | (2) |
| PRUD-16 | 15 | 0.5 | 15 | 18 | 8 | - | - | (3) |
| PRUD-16 | 25 | 0.5 | 25 | 28 | 8 | - | - | (3) |
| PRUD-17 | 10 | 0.5 | 10 | 13 | 8 | - | - | (3) |
| PRUD-17 | 25 | 0.5 | 25 | 28 | 8 | - | - | (3) |
| PRUD-18 | 10 | 0.5 | 10 | 13 | 8 | - | - | (3) |
| PRUD-18 | 25 | 0.5 | 25 | 28 | 8 | - | - | (3) |
| PRUD-19 | 10 | 0.5 | 10 | 13 | 8 | - | - | (3) |
| PRUD-19 | 25 | 0.5 | 25 | 28 | 8 | - | - | (3) |
| PRUD-20 | 10 | 0.5 | 10 | 13 | 8 | - | - | (3) |
| PRUD-20 | 25 | 0.5 | 25 | 28 | 8 | - | - | (3) |
| WR-434A : 50 | 50 | 0.5 | 45 | 50 | 10.75* | 35 | 60 | (4) |
| WR-434A : 150 | 150 | 0.5 | 145 | 150 | 10.75* | 135 | 160 | (4) |
| WR-434A : 250 | 250 | 0.5 | 245 | 250 | 10.75* | 235 | 260 | (4) |
| WR-434A : 350 | 350 | 0.5 | 345 | 350 | 10.75* | 335 | 360 | (4) |

Notes:

ft bls = feet below land surface

in = inches

* Diameter was assumed to calculate purge volume

** Depth was measured on May 10, 2013 by Clear Creek and ADEQ. Possible obstructions may have been present, causing inaccurate measurements.

- Information not known

Sample ID (WR-273A : 50) = probe ID (WR-273A) colon sample depth (typically the bottom of the screen interval; 50 feet below land surface).

Data sources:

- 1 SECOR, 2006b
- 2 Measured by Clear Creek and ADEQ 5-10-13
- 3 Engineering and Environmental Consultants, Inc., 2007
- 4 City of Tucson, 2001

Full citations are provided in the References section of the LOU RI Report.

| | | | |
|--|--|---------------------------------------|-------|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BP-22 | PAGE 1 OF 14 | SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | | |
| PROJECT NUMBER: 18OT.20401.06 | | | |
| DRILLING: STARTED 5/2/06 COMPLETED: 5/11/06 | NORTHING (ft): | EASTING (ft): | |
| INSTALLATION: STARTED 5/2/06 COMPLETED: 5/11/06 | LATITUDE: | LONGITUDE: | |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): | |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 403.70 5/5/06 | BOREHOLE DEPTH (ft): 458.0 | |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 458.0 | |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 | |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock | |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace P/D (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | | Fill Material consists of silt, clay, sand, and gravel, Boring post hole dug to approx. 2.5 feet bgs | | | | | | | Above ground dog house vault with 1 inch and 4 inch PVC caps |
| 5 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; dense; dry; no odor; none cementation; subangular; well graded; 55% sand, 30% clay, 15% fine to coarse (5-35mm), subangular gravel Medium dense; slight odor | | 1633 - soil | | | 3.2 | 5 | |
| 10 | | | Loose; 55% sand, 30% fine (5-15mm), subangular gravel, 15% clay, trace of trash - glass, wood, plastic | | 1641 - soil | | | 3.5 | 10 | 4 inch schedule 80 PVC, Blank Casing with cement grout |
| 15 | | SM | SILTY SAND WITH GRAVEL; SM; 10YR 2/2 dark yellowish brown; fine to coarse-grained; non plastic; loose; dry; strong odor; none cementation; subangular; well graded; 40% sand, 25% silt, 25% (5-35mm), subangular gravel, 10% trash-glass, plastic, wood, metal | | 1647 - soil | | | 6.8 | 15 | |
| 20 | | | 15% trash - glass pieces, wood fragments, plastic, paper, trace of clay | | 1650 - soil | | | 11.3 | 20 | |
| 25 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; dry; slight odor; none cementation; subangular; well graded; 40% sand, 35% fine (5-15mm), subangular gravel, 25% clay | | 1700 - soil | | | 7.8 | 25 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 30 | | | 40% sand, 30% clay, 20% fine (5-15mm), subangular gravel | | 1706 - soil | | | 12.0 | 30 | |
| | | | | | 1710 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| | | |
|--|--|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BP-22 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 2 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 5/2/06 COMPLETED: 5/11/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 5/2/06 COMPLETED: 5/11/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 403.70 5/5/06 | BOREHOLE DEPTH (ft): 458.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 458.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|------|--|---|-----------------------|------------------------|------------|-----------------------|--------------|--|
| |  | SM | SILTY SAND ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; poorly graded; 85% sand, 15% silt, trace of fine (5 mm), subangular gravel and clay |  | - soil | | | 5.5 | | |
| 40 |  | SM | CLAYEY SAND WITH GRAVEL ; SM; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; slight odor; none cementation; subangular; well graded; 55% sand, 30% fine (5-10mm), subangular gravel, 15% clay |  | 1713 - soil | | | 3.7 | 40 | 4 inch schedule 80 PVC, Blank Casing with cement grout |
| 45 |  | SW | SAND WITH GRAVEL ; SW; 5YR 5/6 light brown; fine to coarse-grained; loose; dry; slight odor; none cementation; subangular; well graded; 75% sand, 25% fine (5-10mm), subrounded gravel, trace of silt |  | 1755 - soil | | | 1.6 | 45 | |
| 50 |  | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 20% clay, 20% fine to coarse (5-40mm), subrounded gravel |  | 1800 - soil | | | 6.9 | 50 | |
| 55 |  | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% fine (5-7mm), subangular gravel, 20% silt, trace of clay |  | 1805 - soil | | | 4.4 | 55 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 60 |  | | 45% sand, 40% fine (5-7mm), subangular gravel, 15% silt, trace of clay |  | 1812 - soil | | | 3.8 | 60 | |
| 65 |  | | SILTY SAND ; 5YR 5/6 light brown; fine to medium-grained; poorly graded; 60% sand, 40% silt, trace of fine (5 mm), subrounded gravel |  | 1814 - soil | | | 4.2 | 65 | |
| | | | | | 1820 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BP-22 PAGE 3 OF 14



SECOR

DRILLING: STARTED **5/2/06** COMPLETED: **5/11/06**
 INSTALLATION: STARTED **5/2/06** COMPLETED: **5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 30% clay, 10% fine (5-10mm), subangular gravel | | - soil | | | 6.8 | | |
| 75 | | | Non plastic; no odor; 70% sand, 15% clay, 15% fine to coarse (5-25mm), subangular gravel, trace of silt | | 1828 - soil | | | 5.8 | 75 | 4 inch schedule 80 PVC, Blank Casing with cement grout |
| 80 | | | Low plasticity; 50% sand, 30% fine to cobbles (5-75mm), subangular gravel, 20% clay | | 1830 - soil | | | 4.1 | 80 | |
| 85 | | | CLAYEY SAND ; 5YR 5/6 light brown; fine to medium-grained; low plasticity; loose; dry; no odor; none cementation; subangular; poorly graded; 80% sand, 20% clay, trace of fine (5-10mm), subrounded gravel | | 0931 - soil | | | 7.0 | 85 | |
| 90 | | | WITH GRAVEL ; 5YR 4/4 brown; medium plasticity; medium dense to loose; 70% sand, 15% clay, 15% fine to coarse (5-40mm), subrounded gravel | | 0936 - soil | | | 1.2 | 90 | |
| 95 | | | CLAYEY SAND ; fine to coarse-grained; low plasticity; loose; well graded; 85% sand, 15% clay, trace of fine (5-7mm), subangular gravel | | 0942 - soil | | | 1.7 | 95 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 100 | | | WITH GRAVEL ; 60% sand, 20% clay, 20% fine to coarse (5-20mm), subangular gravel | | 0945 - soil | | | 0.7 | 100 | |
| | | | | | 0951 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| | | |
|---|--|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BP-22 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 4 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 5/2/06 COMPLETED: 5/11/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 5/2/06 COMPLETED: 5/11/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 403.70 5/5/06 | BOREHOLE DEPTH (ft): 458.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 458.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|--|------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|--|
| |  | SW | SAND WITH GRAVEL; SW; 10YR 7/4 grayish orange; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; 85% sand, 15% fine to coarse (5-25mm), subrounded gravel, trace of silt |  | - soil | | | 2.2 | | |
| 110 |  | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to medium-grained; low plasticity; medium dense to loose; dry; no odor; none cementation; subangular; well graded; 45% sand, 30% fine to coarse (5-40mm), subrounded gravel, 25% clay |  | 1004 - soil | | | 0.0 | 110 | 4 inch schedule 80 PVC, Blank Casing with cement grout |
| 115 | | | CLAYEY SAND; fine to coarse-grained; loose; 80% sand, 20% clay, trace of fine (5-7mm), subangular gravel |  | 1009 - soil | | | 0.9 | 115 | |
| 120 | | | WITH GRAVEL; 50% sand, 35% fine (5-15mm), subangular to subrounded gravel, 15% clay |  | 1013 - soil | | | 2.7 | 120 | |
| 125 | | | CLAYEY SAND; fine to medium-grained; subrounded; poorly graded; 80% sand, 20% clay, trace of fine (5-7mm), subrounded gravel and silt |  | 1017 - soil | | | 1.6 | 125 | |
| 130 | | | WITH GRAVEL; fine to coarse-grained; medium plasticity; medium dense to loose; well graded; 45% sand, 35% fine to coarse (5-45mm), subangular to subrounded gravel, 20% clay |  | 1026 - soil | | | 1.2 | 130 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 135 | | | Low plasticity; loose; 70% sand, 15% clay, 15% fine to coarse (5-20mm), subrounded gravel |  | 1044 - soil | | | 5.1 | 135 | |
| | | | |  | 1053 - soil | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:



BP-22 PAGE 5 OF 14

SECOR

DRILLING: STARTED **5/2/06** COMPLETED: **5/11/06**
 INSTALLATION: STARTED **5/2/06** COMPLETED: **5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|--|
| | | SC | Medium plasticity; 50% sand, 30% fine to coarse (5-20mm), subangular gravel, 20% clay | | - soil | | | 4.1 | | | |
| 145 | | | 45% sand, 35% clay, 20% fine to coarse (5-20mm), subangular to subrounded gravel | | 1100 - soil | | | 4.2 | 145 | | 4 inch schedule 80 PVC, Blank Casing with cement grout |
| 150 | | | Low plasticity; 65% sand, 20% clay, 15% fine to coarse (5-20mm), subangular gravel | | 1117 - soil | | | 4.0 | 150 | | |
| 155 | | | Poorly graded; 60% sand, 30% clay, 10% fine (5-15mm), subrounded gravel | | 1124 - soil | | | 3.5 | 155 | | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 160 | | | Fine to medium-grained; 60% sand, 30% clay, 10% fine (5-10mm), subrounded gravel | | 1133 - soil | | | 5.8 | 160 | | 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 165 | | | Fine to coarse-grained; well graded; 55% sand, 30% fine to coarse (5/10mm), subangular gravel, 15% clay, trace of silt | | 1146 - soil | | | 4.9 | 165 | | |
| 170 | | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% fine to coarse (5-20mm), subrounded gravel, 20% silt, trace of clay | | 1157 - soil | | | 5.7 | 170 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal | |
| | | | | | 1204 | | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:



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SECOR

DRILLING: STARTED **5/2/06** COMPLETED: **5/11/06**
 INSTALLATION: STARTED **5/2/06** COMPLETED: **5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|
| | | SM | 65% sand, 20% silt, 15% fine to coarse (5-20mm), subrounded gravel | | - soil | | | 2.9 | | |
| 180 | | | 55% sand, 30% fine to coarse (5-20mm), subrounded gravel, 15% silt | | 1234 - soil | | | 4.1 | 180 | 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 185 | | | SILTY SAND ; fine to medium-grained; poorly graded; 80% sand, 20% silt, trace of fine (5-10mm), subrounded gravel and clay | | 1310 - soil | | | 2.8 | 185 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 190 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to medium-grained; medium plasticity; medium dense to loose; dry; no odor; none cementation; subrounded; poorly graded; 55% sand, 35% clay, 10% fine (5-10mm), subrounded to rounded gravel, trace of silt | | 1323 - soil | | | 1.8 | 190 | |
| 195 | | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% fine (5-7mm), subangular gravel, 20% silt, trace of clay | | 1342 - soil | | | 4.1 | 195 | 1 inch and 4 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 200 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; loose; dry; no odor; none cementation; subrounded; poorly graded; 50% sand, 35% clay, 15% fine to coarse (10-30mm), subrounded to rounded gravel | | 1350 - soil | | | 1.8 | 200 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 205 | | | Subangular; well graded; 50% sand, 30% clay, 20% fine (5-15mm), subangular to subrounded gravel | | 1416 - soil | | | 3.9 | 205 | |
| | | | | | 1430 - soil | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:



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SECOR

DRILLING: STARTED **5/2/06** COMPLETED: **5/11/06**
 INSTALLATION: STARTED **5/2/06** COMPLETED: **5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|-------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | GW-GC | GRAVEL WITH SAND AND CLAY; GW-GC; N6 light gray; fine-grained; medium plasticity; loose; dry; no odor; none cementation; well graded; 45% (5-15mm), subangular to subrounded gravel, 35% fine to coarse-grained sand, 20% clay | | - soil | | | 2.0 | | |
| 215 | | SC | CLAYEY SAND; SC; 5YR 4/4 brown; fine to medium-grained; medium plasticity; dense; dry; no odor; none cementation; subrounded; poorly graded; 60% sand, 40% clay | | 1438 - soil | | | 0.5 | 215 | ← 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 220 | | SM | SILTY SAND; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 70% sand, 30% silt, trace of fine (5-7mm), subangular gravel and clay | | 1450 - soil | | | 1.3 | 220 | |
| 225 | | GP-GC | GRAVEL WITH SAND AND CLAY; GP-GC; N7 - 5YR 4/4 light gray to brown; fine-grained; medium plasticity; loose; dry; no odor; none cementation; poorly graded; 55% (5-10mm), subangular to angular gravel, 30% fine to coarse-grained sand, 15% clay | | 1455 - soil | | | 1.2 | 225 | |
| 230 | | | Low plasticity; 45% (5-15mm), subangular to subrounded gravel, 40% fine to coarse-grained sand, 15% clay | | 1457 - soil | | | 1.5 | 230 | |
| 235 | | SW | SAND; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; trace of fine (5-10mm), subrounded gravel and clay | | 1506 - soil | | | 0.8 | 235 | ← 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 240 | | | Trace of silt | | 1511 - soil | | | 0.9 | 240 | |
| | | | | | 1522 - soil | | | | | ← 1 inch and 4 inch schedule 80 PVC, Blank Casing with |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:



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SECOR

DRILLING: STARTED **5/2/06** COMPLETED: **5/11/06**
 INSTALLATION: STARTED **5/2/06** COMPLETED: **5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | | |
|---------------------|--|------|--|--------|--|------------------------|-------------|-----------------------|--------------|---|-----|--|
| | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 45% sand, 30% fine (5-15mm), subangular gravel, 25% clay | | - soil | | | 0.7 | | filter sand 8-12 | | |
| 250 | | | 75% sand, 15% clay, 10% fine (5-15mm), subangular gravel | | 1535 - soil | | | 1.4 | 250 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 | | |
| 255 | | | CLAYEY SAND ; medium plasticity; medium dense to loose; 70% sand, 30% clay, trace of fine (5 mm), subangular gravel | | 1548 - soil | | | 2.3 | 255 | | | |
| 260 | | | WITH GRAVEL ; low plasticity; 55% sand, 25% fine (5-10mm), subangular gravel, 20% clay | | 1601 - soil | | | 0.9 | 260 | 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal | | |
| 265 | | | | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 65% sand, 20% silt, 15% fine (5-10mm), subangular gravel | | 1612 - soil | | | 5.1 | 265 | |
| 270 | | | | | Fine (5-15mm), subrounded gravel | | 1628 - soil | | | 5.2 | 270 | |
| 275 | 65% sand, 20% fine (5-15mm), subrounded gravel, 15% silt | | | | 1640 - soil | | | 5.7 | 275 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal | | |
| | | | | | 1700 | | | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO: **BP-22** PAGE 9 OF 14

SECOR

DRILLING: STARTED **5/2/06** COMPLETED: **5/11/06**
 INSTALLATION: STARTED **5/2/06** COMPLETED: **5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|-------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|---|
| |  | SW | SAND ; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; dry; no odor; none cementation; subrounded; well graded; trace of fine (5 mm), subrounded gravel and silt |  | - soil | | | 7.9 | | |
| 285 |  | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 35% clay, 15% fine (5-10mm), subrounded gravel |  | 1715 - soil | | | 5.5 | 285 | 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 290 |  | | 5YR 6/4 light brown; fine to medium-grained; low plasticity; 70% sand, 15% clay, 15% fine (5-10mm), subrounded gravel |  | 1727 - soil | | | 6.3 | 290 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 295 |  | | 5YR 4/4 brown; fine to coarse-grained; 50% sand, 35% clay, 15% fine (5-10mm), subangular gravel |  | 1735 - soil | | | 6.9 | 295 | 1 inch and 4 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 300 |  | GP-GM | GRAVEL WITH SAND AND SILT ; GP-GM; 5YR 6/4 light brown; fine-grained; non plastic; loose; dry; no odor; none cementation; subangular; poorly graded; 70% gravel, 20% fine to coarse-grained sand, 10% silt |  | 1751 - soil | | | 5.4 | 300 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 305 |  | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; dense; dry; no odor; none cementation; subangular; well graded; 55% sand, 30% clay, 15% fine to coarse (5-20mm), subangular gravel |  | 1030 - soil | | | 6.2 | 305 | |
| 310 |  | | Low plasticity; 50% sand, 30% clay, 20% fine (5-10mm), subangular gravel |  | 1042 - soil | | | 5.2 | 310 | |
| | | | | | 1105 | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

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DRILLING: STARTED **5/2/06** COMPLETED: **5/11/06**
 INSTALLATION: STARTED **5/2/06** COMPLETED: **5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|
| | | SC | Medium plasticity; subrounded; 45% sand, 40% clay, 15% fine (5-10mm), subangular gravel | | - soil | | | 5.8 | | |
| 320 | | | Low plasticity; subangular; 50% sand, 30% clay, 20% fine to coarse (5-20mm), subangular gravel | | 1121 - soil | | | 4.5 | 320 | |
| 325 | | SM | SILTY SAND ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subrounded; well graded; 75% sand, 25% silt, trace of fine (5 mm), subrounded gravel and clay | | 1131 - soil | | | 7.0 | 325 | |
| 330 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; dense; dry; no odor; none cementation; subangular; well graded; 60% sand, 25% clay, 15% fine (5-10mm), subangular sand | | 1219 - soil | | | 5.3 | 330 | |
| 335 | | | CLAYEY SAND ; subrounded; 60% sand, 40% clay, trace of fine (5-10mm), subangular gravel | | 1224 - soil | | | 4.4 | 335 | |
| 340 | | SW | SAND WITH GRAVEL ; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; 70% sand, 30% fine (5-7mm), subangular gravel, trace of clay | | 1251 - soil | | | 4.3 | 340 | |
| 345 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 55% sand, 35% clay, 10% fine (5-10mm), subangular sand | | 1308 - soil | | | 4.4 | 345 | |
| | | | | | 1325 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

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DRILLING: STARTED **5/2/06** COMPLETED: **5/11/06**
 INSTALLATION: STARTED **5/2/06** COMPLETED: **5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|
| | | SW | SAND WITH GRAVEL; SW; 5YR 7/2 grayish orange pink; fine to coarse-grained; loose; dry; no odor; none cementation; subrounded; well graded; 80% sand, 20% fine (5-10mm), subrounded gravel, trace of clay | | - soil | | | 3.1 | | <p>4 inch schedule 80 PVC, Blank Casing with filter sand 8-12</p> <p>4 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12</p> |
| 355 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 60% sand, 30% silt, 10% fine (5-15mm), subrounded gravel, trace of clay | | 1405 - soil | | | 2.6 | 355 | |
| 360 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; loose; dry; no odor; none cementation; subangular; well graded; 40% sand, 35% clay, 25% fine to coarse (5-20mm), subangular to subrounded gravel | | 1431 - soil | | | 4.6 | 360 | |
| 365 | | | Subrounded; 55% sand, 25% fine to coarse (5-20mm), subangular gravel, 20% clay | | 1442 - soil | | | 4.2 | 365 | |
| 370 | | SW | SAND WITH GRAVEL; SW; 5YR 7/2 grayish orange pink; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; 75% sand, 25% fine to coarse (5-20mm), subangular to angular gravel, trace of clay | | 1451 - soil | | | 3.3 | 370 | |
| 375 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 6/4 - 4/4 light brown to brown; fine to coarse-grained; medium plasticity; medium dense to loose; moist; no odor; none cementation; subangular; well graded; 45% sand, 30% fine to coarse (5-20mm), subangular gravel, 25% clay | | 1457 - soil | | | 2.3 | 375 | |
| 380 | | | 5YR 4/4 brown; saturated; 60% sand, 25% clay, 15% fine to coarse (5-20mm), subangular gravel | | 1530 - soil | | | 2.5 | 380 | |
| | | | | | 1610 | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

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DRILLING: **STARTED 5/2/06 COMPLETED: 5/11/06**
 INSTALLATION: **STARTED 5/2/06 COMPLETED: 5/11/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **403.70 5/5/06** BOREHOLE DEPTH (ft): **458.0**
 STATIC DTW (ft): WELL DEPTH (ft): **458.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|-------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|
| | | SC | 50% sand, 25% clay, 25% fine to coarse (5-20mm), subangular gravel | | - soil | | | 2.5 | | |
| 390 | | GW-GC | GRAVEL WITH SAND AND CLAY; GW-GC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; dense; saturated; no odor; none cementation; subangular; well graded; 40% gravel, 30% fine to coarse-grained sand, 30% clay | | 1616 - soil | | | 2.5 | 390 | |
| 395 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; wet; no odor; none cementation; subangular; well graded; 50% sand, 25% clay, 25% fine (5-10mm), subangular gravel | | 1655 - soil | | | 1.9 | 395 | |
| 400 | | | Saturated; 60% sand, 20% clay, 20% fine (5-10mm), subangular gravel | | 1754 - soil | | | 8.7 | 400 | |
| 405 | | | 45% sand, 35% fine (5-10mm), subangular gravel, 20% clay | | 1815 - soil | | | 6.8 | 405 | |
| 410 | | | 50% sand, 30% fine to coarse (5-25mm), subangular to subrounded gravel, 20% clay | | 1830 - soil | | | 6.1 | 410 | |
| 415 | | SW | SAND WITH GRAVEL; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; saturated; no odor; none cementation; subangular; well graded; 65% sand, 35% fine to coarse (5-25mm), subangular gravel, trace of clay | | 0936 - soil | | | 6.4 | 415 | |
| | | | | | 0942 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

← 4 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12

| | | |
|--|--|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BP-22 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 13 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 5/2/06 COMPLETED: 5/11/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 5/2/06 COMPLETED: 5/11/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 403.70 5/5/06 | BOREHOLE DEPTH (ft): 458.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 458.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|-------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| |  | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense; saturated; no odor; none cementation; subangular; well graded; 60% sand, 20% clay, 20% fine to cobbles (5-110mm), subangular gravel | | - soil | | | 7.2 | | |
| 425 | | | 70% sand, 15% clay, 15% fine to coarse (5-30mm), subangular gravel | | 1000 - soil | | | 6.4 | 425 | |
| 430 |  | SW-SC | SAND WITH GRAVEL AND CLAY; SW-SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; wet; no odor; none cementation; subangular; well graded; 60% sand, 30% fine (5-15mm), subangular gravel, 10% clay | | 1048 - soil | | | 6.0 | 430 | 4 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 |
| 435 | | | | | 1059 - soil | | | 5.9 | 435 | |
| 440 |  | SW | SAND WITH GRAVEL; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; wet; no odor; none cementation; subangular; well graded; 60% sand, 40% fine to coarse (5-40mm), subangular gravel, trace of silt | | 1117 - soil | | | 6.8 | 440 | |
| 445 | | | Fine to cobbles (5-110mm), subangular gravel | | 1124 - soil | | | 5.8 | 445 | 4 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 450 | | | | | 1136 - soil | | | 5.8 | 450 | 4 inch PVC end plug, filter sand 8-12 |
| | | | | | 1248 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | |
|--|--|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | BP-22 PAGE 14 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 5/2/06 COMPLETED: 5/11/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 5/2/06 COMPLETED: 5/11/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 403.70 5/5/06 | BOREHOLE DEPTH (ft): 458.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 458.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1,4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|
| | ••••• | SW | SAND ; 5YR 4/4 brown; saturated; subrounded; trace of fine (5 mm), subangular gravel and clay | | - soil | | | 5.2 | | ••••• |
| | | | Hole terminated at 458 feet. | | | | | | | |
| 460 | | | | | | | | | 460 | |
| 465 | | | | | | | | | 465 | |
| 470 | | | | | | | | | 470 | |
| 475 | | | | | | | | | 475 | |
| 480 | | | | | | | | | 480 | |
| 485 | | | | | | | | | 485 | |

| | | | |
|--|--|---------------------------------------|-------|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BP-23 | PAGE 1 OF 14 | SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | | |
| PROJECT NUMBER: 18OT.20401.06 | | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): | |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: | |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): | |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 | |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 | |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 | |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock | |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | | Fill Material consists of well graded sand with gravel, Boring post hole dug to approx. 3 feet bgs | | | | | | | Above ground dog house vault with 1 inch and 4 inch PVC caps |
| 5 | | SW | SAND WITH GRAVEL ; SW; loose; dry; well graded; trace of cobbles and fines | | - soil | | | 3.1 | 5 | |
| 10 | | SP | SAND ; SP; fine-grained; poorly graded; debris waste | | - soil | | | 6.7 | 10 | 4 inch schedule 80 PVC, Blank Casing with cement grout |
| 15 | | | | | - soil | | | 19.4 | 15 | |
| 20 | | | | | - soil | | | 16.7 | 20 | |
| 25 | | SW | SAND WITH GRAVEL ; SW; light brown; fine to coarse-grained; loose; dry; subrounded; well graded; 30% medium-grained sand | | - soil | | | 9.4 | 25 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 30 | | | | | - soil | | | 3.5 | 30 | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BP-23 PAGE 2 OF 14



SECOR

DRILLING: STARTED **4/25/06** COMPLETED: **5/2/06**
 INSTALLATION: STARTED **4/25/06** COMPLETED: **5/2/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **358.00 4/27/06** BOREHOLE DEPTH (ft): **455.0**
 STATIC DTW (ft): WELL DEPTH (ft): **455.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **D. Fischer** CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|--|
| | | SW | Some fines | | - soil | | | 7.9 | | | |
| 40 | | | | | - soil | | | 6.7 | 40 | | 4 inch schedule 80 PVC, Blank Casing with cement grout |
| 45 | | SW | SAND ; SW; tan; fine to coarse-grained; 30% fine-grained sand, trace of fine gravel | | - soil | | | 4.7 | 45 | | |
| 50 | | | | | - soil | | | 3.5 | 50 | | |
| 55 | | | | | - soil | | | 4.5 | 55 | | |
| 60 | | | | | - soil | | | 6.7 | 60 | | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 65 | | | | | - soil | | | 9.3 | 65 | | |

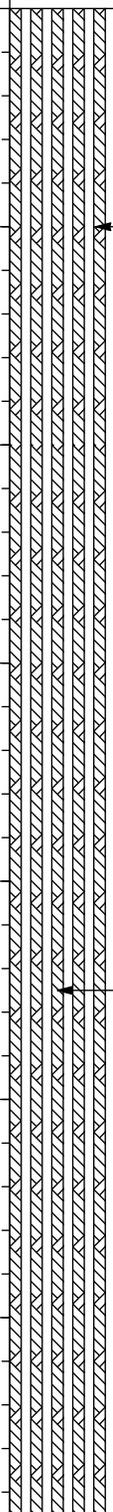
GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | BP-23 PAGE 3 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | | | |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|-----|-----|-----|
| | SP | SP | SAND; SP; light brown; fine to coarse-grained; dry; poorly graded; 50% medium-grained sand, trace of fine gravel and fines | - | - | | | 7.0 | | 4 inch schedule 80 PVC, Blank Casing with cement grout | | | |
| 75 | | | | - | - | - | - | | | | 7.6 | 75 | |
| 80 | | | | - | - | - | - | - | | | | 4.0 | 80 |
| 85 | | | | - | - | - | - | - | | | | 4.3 | 85 |
| 90 | | | | - | - | - | - | - | | | | 6.0 | 90 |
| | SW | SW | SAND; SW; light brown; fine to coarse-grained; dry; well graded; 30% fine-grained sand with fines, trace of fine gravel | - | - | | | 6.0 | 90 | 1 inch schedule 80 PVC, Blank Casing with cement grout | | | |
| 95 | | | | - | - | - | - | | | | 6.9 | 95 | |
| 100 | | | | - | - | - | - | - | | | | 7.0 | 100 |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | BP-23 PAGE 4 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | |
|---------------------|------------------|------|--|--------|--|------------------------|------------|-----------------------|--------------|--|-----|
| | [Dotted Pattern] | SW | SAND ; light brown; fine to coarse-grained; loose; dry; well graded; 30% fine-grained sand with fines, trace of fine gravel | - | - | | | 6.4 | |  4 inch schedule 80 PVC, Blank Casing with cement grout | |
| 110 | | | | - | - | - | - | | 17.4 | | 110 |
| 115 | | | | - | - | - | - | | 6.8 | | 115 |
| 120 | | | | - | - | - | - | | 8.0 | | 120 |
| 125 | | | | SW | SAND WITH GRAVEL ; SW; fine to coarse-grained; loose; dry; trace of fines | - | - | - | | | 5.4 |
| 130 | - | - | - | | | - | | 6.2 | 130 | | |
| 135 | - | - | - | | | - | - | | 5.1 | 135 | |
| | | | | - | - | | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BP-23 PAGE 5 OF 14



SECOR

DRILLING: STARTED **4/25/06** COMPLETED: **5/2/06**
 INSTALLATION: STARTED **4/25/06** COMPLETED: **5/2/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **358.00 4/27/06** BOREHOLE DEPTH (ft): **455.0**
 STATIC DTW (ft): WELL DEPTH (ft): **455.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **D. Fischer** CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | SW | SAND ; fine to coarse-grained; loose; dry; 30% fine-grained sand with fines, trace of fine gravel | | - | | | 8.2 | 145 | 4 inch schedule 80 PVC, Blank Casing with cement grout |
| | | | | | | | | | 150 | |
| | | | | | | | | | 155 | |
| | | | | | | | | | 160 | |
| | | | | | | | | | 165 | |
| | | | | | | | | | 170 | |
| | | SP | SAND ; SP; tan; fine-grained; loose; dry; poorly graded | | - | | | 9.2 | 170 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | |
|--|--|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BP-23 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 6 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|---|
| |  | SP | SAND ; tan; fine-grained; loose; dry; poorly graded |  | - soil | | | 5.2 | | |
| 180 |  | SW | SAND ; SW; light brown; fine to coarse-grained; loose; dry; well graded; 30% medium-grained sand |  | - soil | | | 6.1 | 180 | 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 185 |  | | |  | - soil | | | 4.4 | 185 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 190 |  | | |  | - soil | | | 6.7 | 190 | |
| 195 |  | | |  | - soil | | | 5.6 | 195 | 1 inch and 4 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 200 |  | | |  | - soil | | | 4.6 | 200 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 205 |  | GW | GRAVEL WITH SAND ; GW; loose; dry; well graded; 40% coarse (1/2" to 2" diameter), subangular to angular gravel, fine sand to coarse gravel |  | - soil | | | 3.7 | 205 | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| | | | |
|--|---|---------------------------------------|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: | BP-23 PAGE 7 OF 14 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | | |
| PROJECT NUMBER: 18OT.20401.06 | | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): | |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: | |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): | |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 | |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 | |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 | |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock | |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | SW | SAND ; SW; light brown; loose; dry; subangular; well graded; 25% medium-grained sand with fines, trace of fine to coarse (to 2' diameter) gravel | - | - | | | 7.3 | | <div style="position: absolute; top: 20%; left: 50%; transform: translate(-50%, -50%);"> ← 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal </div> <div style="position: absolute; top: 70%; left: 50%; transform: translate(-50%, -50%);"> ← 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal </div> <div style="position: absolute; top: 95%; left: 50%; transform: translate(-50%, -50%);"> ← 1 inch and 4 inch schedule 80 PVC, Blank Casing with </div> |
| 215 | | | | - | - | | | 6.4 | 215 | |
| 220 | | | | - | - | | | 6.1 | 220 | |
| 225 | | SP | SAND ; SP; light brown; medium-grained; loose; dry; subangular; poorly graded | - | - | | | 5.1 | 225 | |
| 230 | | | | - | - | | | 6.6 | 230 | |
| 235 | | | Tan; fine to coarse-grained; 50% medium-grained sand, trace of fines | - | - | | | 9.8 | 235 | |
| 240 | | | | - | - | | | 7.9 | 240 | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| | | |
|--|--|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BP-23 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 8 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | |
|---------------------|--|------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|---|
| |  | SP | SAND ; SP; tan; fine to coarse-grained; loose; dry; subangular; poorly graded; 50% medium-grained sand, trace of fines and subrounded gravel |  | - | | | 6.0 | | filter sand 8-12 | |
| 250 | | | |  | - | | | | 8.5 | 250 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 255 | | | |  | - | | | | 12.4 | 255 | |
| 260 | | | |  | - | | | | 7.5 | 260 | 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 265 | | | |  | - | | | | 8.3 | 265 | |
| 270 | | | |  | - | | | | 7.7 | 270 | |
| 275 | | | |  | - | | | | 7.0 | 275 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| | | | | | | | | - | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | | |
|--|---|---------------------------------------|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: | BP-23 PAGE 9 OF 14 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | | |
| PROJECT NUMBER: 18OT.20401.06 | | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): | |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: | |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): | |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 | |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 | |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 | |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock | |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | | |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|------|-----|
| | SP | SP | SAND ; SP; tan; fine to coarse-grained; loose; dry; subangular; poorly graded; 50% medium-grained sand, trace of fines | - | - | | | 7.9 | | <div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">← 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal</div> <div style="margin-bottom: 10px;">← 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal</div> <div style="margin-bottom: 10px;">← 1 inch and 4 inch schedule 80 PVC, Blank Casing with filter sand 8-12</div> <div style="margin-bottom: 10px;">← 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12</div> <div style="margin-bottom: 10px;">← 1 inch PVC end plug, filter sand 8-12</div> </div> | | |
| 285 | | | | - | - | - | - | | | | 13.6 | 285 |
| 290 | | | | - | - | - | - | | | | 6.8 | 290 |
| 295 | | | | - | - | - | - | | | | 9.2 | 295 |
| 300 | | | | - | - | - | - | | | | 8.1 | 300 |
| 305 | | | | - | - | - | - | | | | 7.1 | 305 |
| 310 | | | | - | - | - | - | | | | 5.1 | 310 |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | |
|--|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | BP-23 PAGE 10 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|--|
| |  | SP | SAND ; SP; tan; fine to coarse-grained; loose; dry; subangular; poorly graded; 50% medium-grained sand, trace of fines |  | - | | | 6.2 | |  |
| 320 | | | | | - | | | 7.8 | 320 | |
| 325 | | | | | - | | | 12.0 | 325 | |
| 330 | | | | | - | | | 5.3 | 330 | |
| 335 | | | | | - | | | 8.1 | 335 | |
| 340 | | | | | - | | | 8.0 | 340 | |
| |  | | Tan; medium-grained; dry |  | - | | | 8.1 | 335 | |
| 345 | | | | | - | | | 8.0 | 340 | |
| |  | | Fine to coarse-grained; dry; 50% medium-grained sand, trace of fines and fine gravel |  | - | | | 8.9 | 345 | |
| | | | | | - | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

← 4 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal

← 4 inch schedule 80 PVC, Blank Casing with filter sand

| | | | |
|--|---|---------------------------------------|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: | BP-23 PAGE 11 OF 14 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | | |
| PROJECT NUMBER: 18OT.20401.06 | | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): | |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: | |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): | |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 | |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 | |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1.4 | BOREHOLE DIAMETER (in): 10 3/4 | |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock | |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | | |
|---------------------|---------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|------|-----|
| | [Graphic Log] | SP | SAND ; SP; tan; fine to coarse-grained; loose; dry; subangular; poorly graded; 50% medium-grained sand, trace of fines and fine gravel Moist; 40% coarse-grained sand, trace of fines and fine gravel | - | - | | | 11.1 | | 8-12 ← 4 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 | | |
| 355 | | | | - | - | - | - | | | | 9.8 | 355 |
| 360 | | | | - | - | - | - | - | | | 10.7 | 360 |
| 365 | | | | - | - | - | - | - | | | 5.2 | 365 |
| 370 | | | | - | - | - | - | - | | | 2.4 | 370 |
| 375 | | | | - | - | - | - | - | | | 3.1 | 375 |
| 380 | | | | - | - | - | - | - | | | 3.5 | 380 |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BP-23 PAGE 12 OF 14



DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06
 INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): **358.00 4/27/06** BOREHOLE DEPTH (ft): **455.0**
 STATIC DTW (ft): WELL DEPTH (ft): **455.0**
 WELL CASING DIAMETER (in): **1.4** BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **D. Fischer** CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | SP | SAND ; SP; tan; fine to coarse-grained; loose; saturated; subangular; poorly graded; 50% medium-grained sand, trace of fines and fine gravel | | - soil | | | 3.5 | | |
| 390 | | | | | - soil | | | 2.7 | 390 | |
| 395 | | | | | - soil | | | 2.8 | 395 | |
| 400 | | GW | GRAVEL ; GW; tan; fine to coarse-grained; loose; saturated; subrounded; well graded; 70% fine (to 3" diameter) gravel, trace of coarse-grained sand | | - soil | | | 2.7 | 400 | |
| 405 | | | | | - soil | | | 2.0 | 405 | 4 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 |
| 410 | | SP | SAND ; SP; tan; fine to coarse-grained; loose; saturated; subangular; poorly graded; 40% coarse-grained sand | | - soil | | | 2.3 | 410 | |
| 415 | | | WITH GRAVEL ; medium to coarse-grained; fine to coarse gravel | | - soil | | | 3.9 | 415 | |

| | | | |
|---|----------------------------------|--------------------------------|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: | BP-23 PAGE 13 OF 14 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | | |
| PROJECT NUMBER: 18OT.20401.06 | | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): | |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: | |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): | |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 | |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 | |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1,4 | BOREHOLE DIAMETER (in): 10 3/4 | |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock | |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|--|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | | NO RECOVERY | | - | | | NR | | |
| 425 | | | | | - | | | NR | 425 | |
| 430 |  | SW | SAND ; SW; brown; fine to coarse-grained; medium dense; saturated; subangular; well graded; 30% coarse-grained sand, trace of fines and fine to coarse (to 3" diameter) gravel | | - | | | - | 430 | 4 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 |
| 435 | | | | | - | | | - | 435 | |
| 440 | | | | | - | | | - | 440 | |
| 445 | | | | | - | | | - | 445 | 4 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 450 | | | | | - | | | - | 450 | 4 inch PVC end plug, filter sand 8-12 |

Hole terminated at 455 feet.

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | BP-23 PAGE 14 OF 14 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/25/06 COMPLETED: 5/2/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/25/06 COMPLETED: 5/2/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): 358.00 4/27/06 | BOREHOLE DEPTH (ft): 455.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 455.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1,4 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: D. Fischer | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|-------------|--------|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|
| 460 | | | | | | | | | 460 | |
| 465 | | | | | | | | | 465 | |
| 470 | | | | | | | | | 470 | |
| 475 | | | | | | | | | 475 | |
| 480 | | | | | | | | | 480 | |
| 485 | | | | | | | | | 485 | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-1 PAGE 1 OF 11



SECOR

DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06
 INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): 1
 LOGGED BY: **K. Harker**

EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **351.0**
 WELL DEPTH (ft): **351.0**
 BOREHOLE DIAMETER (in): **10 3/4**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | | Fill Material consists of silt, clay, sand, and gravel, Boring post hole dug to approx. 2.5 feet bgs | | | | | | | Above ground dog house vault with 1 inch PVC caps |
| 5 | | SM | SILTY SAND ; SM; 5YR 3/4 brown; fine to coarse-grained; non plastic; medium dense; dry; no odor; weak cementation; subangular; well graded; 70% sand, 30% silt | | 1235 - soil | | | 0.0 | 5 | |
| 10 | | | WITH GRAVEL ; 5YR 4/4 brown; dry; no odor; 65% sand, 20% silt, 15% fine (5 mm), subrounded to subangular gravel | | 0904 - soil | | | 5.3 | 10 | |
| 15 | | | 10YR 2/2 dark yellowish brown; loose; dry; slight odor; 60% sand, 10% silt, 20% fine to coarse (5-70mm), subrounded gravel, 10% trash - fragments of wood | | 0911 - soil | | | 25.5 | 15 | |
| 20 | | | Strong odor; 70% trash, 20% sand, 5% silt, 5% (5-25mm), subrounded gravel, cardboard, newspaper, wood | | 0918 - soil | | | 52.4 | 20 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 25 | | SW | SAND WITH GRAVEL ; SW; 10YR 6/2 pale yellowish brown; fine to coarse-grained; medium dense; dry; strong odor; weak cementation; subangular; well graded; 60% sand, 25% (5-30mm), subangular gravel, 15% trash - wood, paper, plastic, trace of silt | | 0922 - soil | | | 140.2 | 25 | |
| 30 | | SC | CLAYEY SAND ; SC; 10YR 4/2 dark yellowish brown; fine to coarse-grained; medium plasticity; medium dense; dry; moderate odor; none cementation; subangular; well graded; 70% sand, 30% clay, trace of fine (5-7mm), subangular gravel and trash - plastic | | 0928 - soil | | | 7.9 | 30 | |
| | | | | | 0935 | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-1 PAGE 3 OF 11



DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06
 INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): BOREHOLE DEPTH (ft): **351.0**
 STATIC DTW (ft): WELL DEPTH (ft): **351.0**
 WELL CASING DIAMETER (in): 1 BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | |
|---------------------|-------------|-------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|--|
| | | SC | CLAYEY SAND; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense; dry; slight odor; none cementation; subangular; well graded; 60% sand, 40% clay, trace of fine (5-7mm), subangular gravel | | - soil | | | 2.4 | | | |
| 75 | | SM | SILTY SAND; SM; 5YR 6/4 light brown; fine to medium-grained; non plastic; loose; dry; no odor; none cementation; subangular; poorly graded; 85% sand, 15% silt, trace of fine (5 mm), subrounded gravel | | 1030 - soil | | | 0.7 | 75 | 1 inch schedule 80 PVC, Blank Casing with cement grout | |
| 80 | | | Fine to coarse-grained; well graded | | 1034 - soil | | | 4.2 | 80 | | |
| 85 | | | WITH GRAVEL; 60% sand, 25% fine to coarse (5-35mm), subangular gravel, 15% silt | | 1039 - soil | | | 0.8 | 85 | | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 90 | | SW-SM | SAND WITH SILT AND GRAVEL; SW-SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 55% sand, 35% fine (5-10mm), subangular to subrounded gravel, 10% silt | | 1043 - soil | | | 1.5 | 90 | | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 95 | | SM | SILTY SAND; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 85% sand, 15% silt, trace of fine (5-9mm), subrounded gravel | | 1052 - soil | | | 7.0 | 95 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 | |
| 100 | | SC | CLAYEY SAND; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; dry; moderate odor; none cementation; subangular; well graded; 80% sand, 20% clay, trace of subangular cobbles (75mm) | | 1116 - soil | | | 9.4 | 100 | 1 inch PVC end plug, filter sand 8-12 | |
| | | | | | 1125 - soil | | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-1 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 4 OF 11 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|------|--|---|-----------------------|------------------------|------------|-----------------------|--------------|--|
| |  | SM | SILTY SAND ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 70% sand, 30% silt, trace of fine (5 mm), subangular gravel |  | - soil | | | 7.1 | |  <p>1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal</p> |
| 110 |  | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; dry; slight odor; none cementation; subangular; well graded; 60% sand, 30% clay, 10% fine (5-10mm), subangular gravel |  | 1128 - soil | | | 12.0 | 110 | |
| 115 |  | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 4/4 brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 75% sand, 15% silt, 10% fine to cobbles (5-80mm), subangular to subrounded gravel, trace of clay |  | 1214 - soil | | | 6.7 | 115 | |
| 120 |  | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense; dry; no odor; none cementation; subangular; well graded; 45% sand, 40% clay, 15% fine (5-7mm), subangular gravel |  | 1220 - soil | | | 5.3 | 120 | |
| 125 |  | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 4/4 brown; medium to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 40% sand, 30% silt, 30% fine to cobbles (10-75mm), subangular to subrounded gravel |  | 1225 - soil | | | 9.8 | 125 | |
| 130 |  | | SILTY SAND ; trace of fine (5 mm), subangular gravel, 75% sand, 25% silt |  | 1230 - soil | | | 3.8 | 130 | |
| 135 |  | | WITH GRAVEL ; 50% sand, 30% silt, 20% fine (5-15mm), subangular to subrounded gravel |  | 1235 - soil | | | 4.1 | 135 | |
| | | | | | 1241 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

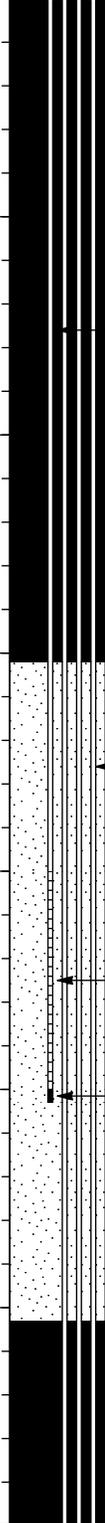
| | | | |
|---|---|---------------------------------------|-------|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-1 | PAGE 5 OF 11 | SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | | |
| PROJECT NUMBER: 18OT.20401.06 | | | |
| DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06 | NORTHING (ft): | EASTING (ft): | |
| INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06 | LATITUDE: | LONGITUDE: | |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): | |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 | |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 | |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 | |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock | |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense; dry; slight odor; none cementation; subangular; well graded; 40% sand, 30% clay, 30% fine (5-20mm), subangular gravel | | - soil | | | 4.6 | | |
| 145 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 4/4 brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% fine (5-7mm), subrounded gravel, 20% silt | | 1247 - soil | | | 3.0 | 145 | |
| 150 | | | 10YR 6/2 pale yellowish brown; 50% sand, 40% silt, 10% fine (5-7mm), subrounded gravel | | 1253 - soil | | | 4.0 | 150 | |
| 155 | | SW | SAND; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; dry; no odor; none cementation; subrounded; well graded; trace of silt | | 1300 - soil | | | 3.0 | 155 | |
| 160 | | SM | SILTY SAND; SM; 5YR 6/4 light brown; fine to coarse-grained; medium dense to loose; dry; no odor; none cementation; subangular; well graded; 60% sand, 40% silt, trace of fine (5-10mm), subrounded gravel and clay | | 1317 - soil | | | 4.6 | 160 | |
| 165 | | SP | SAND; SP; 5YR 6/4 light brown; fine to medium-grained; loose; dry; no odor; none cementation; subangular; poorly graded | | 1326 - soil | | | 3.1 | 165 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 170 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 65% sand, 20% silt, 15% fine (5-10mm), subangular to subrounded gravel, trace of clay | | 1337 - soil | | | 4.6 | 170 | |
| | | | | | 1349 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

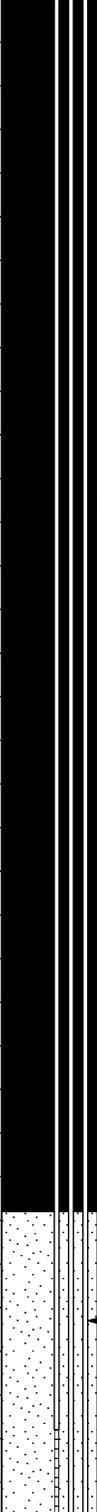
← 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12
← 1 inch PVC end plug, filter sand 8-12

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-1 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 6 OF 11 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|-------|--|---|-----------------------|------------------------|------------|-----------------------|--------------|--|
| |  | SM | SILTY SAND ; subrounded; trace of fine (5mm), subrounded gravel, 70% sand, 30% silt |  | - soil | | | 5.5 | | |
| 180 |  | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; slight odor; none cementation; subrounded; well graded; 55% sand, 30% clay, 15% fine to coarse (5-60mm), subrounded to rounded gravel, trace of silt |  | 1358 - soil | | | 3.5 | 180 |  <p>1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal</p> <p>1 inch schedule 80 PVC, Blank Casing with filter sand 8-12</p> <p>1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12</p> |
| 185 | | | CLAYEY SAND ; fine to medium-grained; loose; no odor; poorly graded; 60% sand, 40% silt, trace of silt |  | 1408 - soil | | | 3.1 | 185 | |
| 190 | | | WITH GRAVEL ; fine to coarse-grained; subangular; well graded; 50% sand, 25% clay, 25% fine to coarse (5-30mm), subrounded gravel |  | 1414 - soil | | | 11.5 | 190 | |
| 195 | | | 40% sand, 35% fine (5-7mm), subangular gravel, 25% clay |  | 1438 - soil | | | 10.5 | 195 | |
| 200 |  | GW-GC | GRAVEL WITH SAND AND CLAY ; GW-GC; N7 - N9 light gray to white; fine-grained; low plasticity; loose; dry; no odor; none cementation; subrounded; well graded; 55% gravel, 30% fine to coarse-grained sand, 15% clay |  | 1438 - soil | | | 4.9 | 200 | |
| 205 |  | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 40% sand, 30% silt, 30% fine (5-8mm), subangular gravel, trace of clay |  | 1501 - soil | | | 3.9 | 205 | |
| | | | | | 1530 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| | | |
|--|--|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-1 PAGE 7 OF 11 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| |  | GW | GRAVEL WITH SAND; GW; N7 - N9 light gray to white; fine to coarse-grained; loose; dry; no odor; none cementation; subrounded; well graded; 70% gravel, 30% medium to coarse-grained sand, trace of silt | | - soil | | | 2.8 | |  <p>1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal</p> <p>1 inch schedule 80 PVC, Blank Casing with filter sand 8-12</p> |
| 215 |  | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 20% silt, 30% fine (5-15mm), subangular to subrounded gravel | | 1545 - soil | | | 2.7 | 215 | |
| 220 |  | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense; dry; no odor; none cementation; subangular; well graded; 55% sand, 35 % clay, 10% fine to coarse (5-20mm), subrounded gravel | | 1601 - soil | | | 2.6 | 220 | |
| 225 |  | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to medium-grained; non plastic; loose; dry; no odor; none cementation; subrounded; poorly graded; 55% sand, 25% fine (5-10mm), subrounded gravel, 20% silt | | 1604 - soil | | | 3.2 | 225 | |
| 230 |  | SP | SAND; SP; 5YR 7/2 grayish orangeish pink; medium to coarse-grained; loose; dry; no odor; none cementation; subangular; poorly graded; trace of fine (5mm), subangular gravel and silt | | 1609 - soil | | | 5.5 | 230 | |
| 235 |  | SM | SILTY SAND; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 85% sand, 15% silt | | 1614 - soil | | | 6.6 | 235 | |
| 240 |  | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 35% clay, 15% fine to coarse (5-30mm), subrounded gravel | | 1635 - soil | | | 3.7 | 240 | |
| | | | | | 0836 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-1 PAGE 8 OF 11



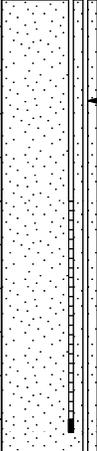
DRILLING: **STARTED 4/10/06 COMPLETED: 4/18/06**
 INSTALLATION: **STARTED 4/10/06 COMPLETED: 4/18/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 EASTING (ft):
 LATITUDE:
 LONGITUDE:
 GROUND ELEV (ft):
 TOC ELEV (ft):
 INITIAL DTW (ft):
 BOREHOLE DEPTH (ft): **351.0**
 STATIC DTW (ft):
 WELL DEPTH (ft): **351.0**
 WELL CASING DIAMETER (in): **1**
 BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker**
 CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|-------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | SC | 5YR 6/4 light brown; fine to medium-grained; loose; poorly graded; 70% sand, 15% clay, 15% fine (5-10mm), subrounded gravel, trace of silt | | - soil | | | 3.1 | | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 |
| 250 | | | Fine to coarse-grained; 75% sand, 15% clay, 10% fine (5-10mm), subrounded gravel | | 0844 - soil | | | 4.5 | 250 | 1 inch PVC end plug, filter sand 8-12 |
| 255 | | SM | SILTY SAND ; SM; 5YR 6/4 light brown; fine to medium-grained; low plasticity; loose; dry; no odor; none cementation; subangular; poorly graded; 85% sand, 15% silt, trace of coarse (20-25mm), subrounded gravel and clay | | 1246 - soil | | | 7.4 | 255 | |
| 260 | | GW-GC | GRAVEL WITH CLAY AND SAND ; GW-GC; N4 - 5YR 4/4 dark gray to brown; fine to coarse-grained; medium plasticity; loose; dry; no odor; none cementation; subrounded; well graded; 55% gravel (5-80mm), 30% clay, 15% fine to medium-grained sand | | 1300 - soil | | | 8.1 | 260 | |
| 265 | | SM | SILTY SAND WITH GRAVEL ; SM; 10YR 6/2 pale yellowish brown; fine to medium-grained; low plasticity; loose; dry; no odor; none cementation; subrounded; poorly graded; 65% sand, 20% silt, 15% fine (5-15mm), subrounded gravel, trace of clay | | 1308 - soil | | | 5.1 | 265 | |
| 270 | | GP-GC | GRAVEL WITH CLAY AND SAND ; GP-GC; N7 light gray; fine-grained; medium plasticity; medium dense to loose; dry; no odor; none cementation; subangular; poorly graded; 50% gravel, 25% clay, 25% fine to coarse-grained sand | | 1320 - soil | | | 9.5 | 270 | |
| 275 | | SM | SILTY SAND ; SM; 10YR 6/2 pale yellowish brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 85% sand, 15% silt, trace of fine (5-10mm), subrounded gravel | | 1331 - soil | | | 5.7 | 275 | |
| | | | | | 1342 | | | | | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| | | | |
|--|--|--------------------------------|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-1 | PAGE 9 OF 11 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | | | |
| PROJECT NUMBER: 18OT.20401.06 | | | |
| DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06 | NORTHING (ft): | EASTING (ft): | |
| INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06 | LATITUDE: | LONGITUDE: | |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): | |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 | |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 | |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 | |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock | |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|---|
| |  | SM | Fine to medium-grained; low plasticity; subrounded; poorly graded; 85% sand, 15% silt, trace of fine (5-10mm), subrounded gravel and clay |  | 1353 - soil | | | 5.8 | 285 |  <p>1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal</p> |
| 285 | | | WITH GRAVEL ; fine to coarse-grained; subangular; well graded; 65% sand, 20% silt, 15% fine (5-10mm), subrounded gravel, trace of clay |  | 1404 - soil | | | 8.1 | 290 | |
| 290 | | | |  | 1420 - soil | | | 5.8 | 295 |  <p>1 inch schedule 80 PVC, Blank Casing with filter sand 8-12</p> |
| 295 |  | SC | CLAYEY SAND WITH GRAVEL ; SC; 10YR 6/2 pale yellowish brown; fine to coarse-grained; low plasticity; medium dense; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% clay, 20% fine (5-10mm), subrounded gravel |  | 1451 - soil | | | 7.5 | 300 | |
| 300 | | | CLAYEY SAND ; 5YR 6/4 light brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 85% sand, 15% clay, trace of fine (5-7mm), subangular gravel |  | 1504 - soil | | | 3.4 | 305 |  <p>1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12</p> |
| 305 | | | 5YR 4/4 brown; fine to medium-grained; medium plasticity; medium dense; subrounded; poorly graded; 80% sand, 20% clay |  | 1515 - soil | | | 4.0 | 310 | |
| 310 | | | WITH GRAVEL ; 10YR 6/2 pale yellowish brown; fine to coarse-grained; subangular; well graded; 60% sand, 30% clay, 10% fine (5-10mm), angular gravel |  | 1529 - soil | | | 2.6 | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:



BSDP-1 PAGE 10 OF 11

SECOR

DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06
 INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): BOREHOLE DEPTH (ft): **351.0**
 STATIC DTW (ft): WELL DEPTH (ft): **351.0**
 WELL CASING DIAMETER (in): 1 BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | SC | CLAYEY SAND ; 5YR 4/4 brown; fine to medium-grained; medium dense to loose; subrounded; poorly graded; 80% sand, 20% clay | | - soil | | | 3.0 | | |
| 320 | | SM | SILTY SAND ; SM; 10YR 6/2 pale yellowish brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 70% sand, 30% silt, trace of fine (5-10mm), subangular gravel and clay | | 1552 - soil | | | 2.7 | 320 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 325 | | | 5YR 4/4 brown; fine to medium-grained; low plasticity; subrounded; poorly graded; 80% sand, 20% silt, trace of fine (5-8mm), subangular gravel and clay | | 1605 - soil | | | 1.9 | 325 | |
| 330 | | | WITH CLAY ; 5YR 6/4 light brown; non plastic; medium dense to loose; 55% sand, 30% silt, 15% medium plasticity clay | | 1621 - soil | | | 1.0 | 330 | |
| 335 | | | WITH GRAVEL ; fine to coarse-grained; loose; subangular; well graded; 45% sand, 35% fine (5-7mm), subangular gravel, 20% silt | | 1643 - soil | | | 0.7 | 335 | |
| 340 | | SC | CLAYEY SAND ; SC; 5YR 6/4 light brown; fine to medium-grained; low plasticity; medium dense; dry; no odor; none cementation; subangular; poorly graded; 85% sand, 15% clay, trace of fine (5 mm), subangular gravel and silt | | 1706 - soil | | | 0.1 | 340 | |
| 345 | | | 5YR 4/4 brown; medium plasticity; 60% sand, 40% clay, trace of fine (5-8mm), subrounded gravel | | 1721 - soil | | | 0.0 | 345 | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| | | | | | 1731 | | | | | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| | | |
|---|-------------------------------------|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | BSDP-1 PAGE 11 OF 11 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/10/06 COMPLETED: 4/18/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/10/06 COMPLETED: 4/18/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|-------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|
| 355 |  | GW-GC | GRAVEL WITH SAND AND CLAY; GW-GC; N7 - 5YR 6/4 light gray to light brown; fine-grained; medium plasticity; medium dense to loose; dry; no odor; none cementation; subangular; well graded; 65% gravel (5-15mm), 20% fine to coarse-grained sand, 15% clay Hole terminated at 351 feet. | | - soil | | | 0.3 | 355 |  sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 360 | | | | | | | | | 360 | |
| 365 | | | | | | | | | 365 | |
| 370 | | | | | | | | | 370 | |
| 375 | | | | | | | | | 375 | |
| 380 | | | | | | | | | 380 | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-2 PAGE 1 OF 11



SECOR

DRILLING: STARTED 4/19/06 COMPLETED: 4/25/06
 INSTALLATION: STARTED 4/19/06 COMPLETED: 4/25/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 EASTING (ft):
 LATITUDE:
 LONGITUDE:
 GROUND ELEV (ft):
 TOC ELEV (ft):
 INITIAL DTW (ft):
 BOREHOLE DEPTH (ft): **351.0**
 STATIC DTW (ft):
 WELL DEPTH (ft): **351.0**
 WELL CASING DIAMETER (in): **1**
 BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | | Fill Material consists of silt, clay, sand, and gravel, Boring post hole dug to approx. 2.5 feet bgs | | | | | | | Above ground dog house vault with 1 inch PVC caps |
| 5 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to dense; dry; no odor; none cementation; subrounded; well graded; 60% sand, 20% clay, 20% fine to coarse (5-20mm), subrounded gravel, trace of silt 60% sand, 25% clay, 15% fine (5-10mm), subangular gravel, trace of silt | | 1233 - soil | | | 4.2 | 5 | |
| 10 | | | 50% sand, 30% fine to coarse (5-25mm), subangular gravel, 20% clay, trace of silt | | 1236 - soil | | | 2.8 | 10 | |
| 15 | | | Medium plasticity; moderate odor; 40% sand, 20% clay, 20% (5-25mm), subangular gravel, 20% trash - paper, ceramic, glass, wood, can | | 1242 - soil | | | 5.5 | 15 | |
| 20 | | | 40% trash - plastic, wood, ceramics, marble, charcoal, 30% sand, 15% clay, 15% (5-35mm), gravel | | 1251 - soil | | | 4.7 | 20 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 25 | | | 10YR 4/2 dark yellowish brown to black; poorly graded; 40% sand, 25% gravel, 20% clay, 15% trash - wood, plastic, ceramic | | 1257 - soil | | | 60.0 | 25 | |
| 30 | | SM | SILTY SAND WITH GRAVEL; SM; 10YR 7/4 grayish orange; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; well graded; 45% sand, 30% silt, 25% fine (5-15mm), subangular gravel, trace of trash - metal | | 1304 - soil | | | 4.5 | 30 | |
| | | | | | 1315 | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-2 PAGE 2 OF 11



SECOR

DRILLING: **STARTED 4/19/06 COMPLETED: 4/25/06**
 INSTALLATION: **STARTED 4/19/06 COMPLETED: 4/25/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): 1
 LOGGED BY: **K. Harker**

EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **351.0**
 WELL DEPTH (ft): **351.0**
 BOREHOLE DIAMETER (in): **10 3/4**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | SM | SILTY SAND ; 5YR 6/4 light brown; fine to medium-grained; 70% sand, 30% silt, trace of clay | | - soil | | | 7.1 | | |
| 40 | | SC | CLAYEY SAND WITH COBBLES ; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; dry; slight odor; none cementation; subangular; well graded; 55% sand, 35% clay, 10% fine (5-10mm), subrounded gravel to cobbles (110mm) | | 1320 - soil | | | 61.2 | 40 | |
| 45 | | SM | SILTY SAND ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; well graded; 70% sand, 30% silt, trace of fine (5-7mm), subangular gravel and clay | | 1329 - soil | | | 6.6 | 45 | |
| 50 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; dry; slight odor; none cementation; subangular; well graded; 60% sand, 30% clay, 10% fine to coarse (5-20mm), subangular gravel | | 1334 - soil | | | 9.1 | 50 | |
| 55 | | | CLAYEY SAND ; low plasticity; loose; poorly graded; 70% sand, 30% clay, trace of fine (5-7mm), subangular gravel | | 1344 - soil | | | 6.2 | 55 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 60 | | SM | SILTY SAND ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; well graded; 70% sand, 30% silt, trace of fine (5-7mm), subrounded gravel and clay | | 1352 - soil | | | 7.7 | 60 | |
| 65 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; slight odor; none cementation; subangular; well graded; 55% sand, 25% clay, 20% fine to coarse (5-20mm), subrounded gravel | | 1356 - soil | | | 12.0 | 65 | |
| | | | | | 1359 | | | | | |

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-2 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 3 OF 11 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/19/06 COMPLETED: 4/25/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/19/06 COMPLETED: 4/25/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|---|
| |  | SC | CLAYEY SAND ; fine to medium-grained; medium plasticity; medium dense; subrounded; 60% sand, 40% clay, trace of fine (5 mm), subangular gravel |  | - soil | | | 10.4 | | |
| 75 |  | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 65% sand, 20% silt, 15% fine to coarse (5-20mm), subangular gravel |  | 1406 - soil | | | 14.5 | 75 | |
| 80 |  | | |  | 1416 - soil | | | 11.4 | 80 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 85 |  | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 60% sand, 20% clay, 20% fine to coarse (5-25mm), subrounded to angular gravel |  | 1420 - soil | | | 8.3 | 85 | 1 inch schedule 80 PVC, Blank Casing with bentonite |
| 90 |  | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 70% sand, 20% silt, 10% fine (5-10mm), subangular gravel, trace of clay |  | 1426 - soil | | | 7.4 | 90 | 3/8" chip and 1/4" pellet seal |
| 95 |  | | Fine to medium-grained; poorly graded; 65% sand, 20% silt, 15% fine (5-15mm), subangular to subrounded gravel, trace of clay |  | 1429 - soil | | | 8.6 | 95 | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 100 |  | | Fine to coarse-grained; well graded; 70% sand, 20% silt, 10% fine (5-10mm), subrounded gravel |  | 1433 - soil | | | 7.2 | 100 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| | | | |  | 1440 - soil | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-2 PAGE 4 OF 11



SECOR

DRILLING: STARTED 4/19/06 COMPLETED: 4/25/06
 INSTALLATION: STARTED 4/19/06 COMPLETED: 4/25/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): 1
 LOGGED BY: **K. Harker**
 EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **351.0**
 WELL DEPTH (ft): **351.0**
 BOREHOLE DIAMETER (in): **10 3/4**
 CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|
| | | SM | SILTY SAND ; fine to medium-grained; subrounded; 60% sand, 40% silt, trace of fine (5-7mm), subrounded gravel | | - soil | | | 1.7 | | |
| 110 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subrounded; well graded; 45% sand, 40% fine to coarse (5-25mm), angular to subrounded gravel, 15% clay | | 1444 - soil | | | 3.6 | 110 | |
| 115 | | | CLAYEY SAND ; fine to medium-grained; subangular; poorly graded; 85% sand, 15% clay, trace of fine (5-8mm), subangular gravel | | 1451 - soil | | | 2.8 | 115 | |
| 120 | | | | | 1458 - soil | | | 2.9 | 120 | |
| 125 | | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subrounded; well graded; 55% sand, 25% fine (5-15mm), subrounded to rounded gravel, 20% silt, trace of clay | | 1504 - soil | | | 2.7 | 125 | |
| 130 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 65% sand, 20% clay, 15% fine to coarse (5-30mm), subrounded gravel, trace of silt | | 1510 - soil | | | 4.6 | 130 | |
| 135 | | | | | 1515 - soil | | | 3.5 | 135 | |
| | | | | | 1520 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-2 PAGE 5 OF 11



SECOR

DRILLING: **STARTED 4/19/06 COMPLETED: 4/25/06**
 INSTALLATION: **STARTED 4/19/06 COMPLETED: 4/25/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 EASTING (ft):
 LATITUDE:
 LONGITUDE:
 GROUND ELEV (ft):
 TOC ELEV (ft):
 INITIAL DTW (ft):
 BOREHOLE DEPTH (ft): **351.0**
 STATIC DTW (ft):
 WELL DEPTH (ft): **351.0**
 WELL CASING DIAMETER (in): **1**
 BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker**
 CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|
| | | GW | GRAVEL WITH SAND AND CLAY; GW; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; dry; no odor; none cementation; subangular; well graded; 45% (5-20mm) gravel, 35% fine to coarse-grained sand, 20% clay | | - soil | | | 5.5 | | |
| 145 | | SW | SAND; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; trace of coarse (20-25mm), subangular gravel and silt | | 1533 - soil | | | 3.1 | 145 | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 150 | | | Trace of fine (5-10mm), subrounded gravel and silt | | 1535 - soil | | | 3.8 | 150 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 155 | | | | | 1541 - soil | | | 3.3 | 155 | |
| 160 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% fine (5-10mm), subangular to subrounded gravel, 20% silt, trace of clay | | 1552 - soil | | | 3.8 | 160 | |
| 165 | | SW | SAND; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; trace of coarse (20 mm), subrounded gravel and silt | | 1558 - soil | | | 3.8 | 165 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 170 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 70% sand, 15% silt, 15% fine to coarse (5-25mm), subrounded to rounded gravel, trace of clay | | 1603 - soil | | | 3.3 | 170 | |
| | | | | | 1605 - soil | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-2 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 6 OF 11 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/19/06 COMPLETED: 4/25/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/19/06 COMPLETED: 4/25/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|---|
| |  | SW | SAND WITH GRAVEL; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; 75% sand, 25% fine to coarse (5-30mm), subrounded gravel |  | - soil | | | 4.1 | | |
| 180 |  | SM | SILTY SAND; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 80% sand, 20% silt, trace of fine (5-10mm), subrounded gravel |  | 1611 - soil | | | 4.4 | 180 | |
| 185 |  | | 85% sand, 15% silt, trace of fine (5-7mm), subrounded gravel |  | 1619 - soil | | | 4.0 | 185 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 190 |  | | 65% sand, 35% silt, trace of fine (5-7mm), subangular gravel |  | 1626 - soil | | | 3.5 | 190 | |
| 195 |  | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense; dry; no odor; none cementation; subangular; well graded; 45% sand, 35% fine to coarse (5-25mm), subangular gravel, 20% clay, trace of silt |  | 1637 - soil | | | 3.8 | 195 | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 200 |  | SM | SILTY SAND; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; poorly graded; 80% sand, 20% silt, trace of fine (5 mm), subangular gravel |  | 1643 - soil | | | 4.0 | 200 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 205 |  | SC | CLAYEY SAND; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; poorly graded; 70% sand, 30% clay, trace of fine (5-10mm), subrounded gravel |  | 1648 - soil | | | 3.5 | 205 | |
| | | | | | 1659 - soil | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-2 PAGE 7 OF 11



SECOR

DRILLING: STARTED 4/19/06 COMPLETED: 4/25/06
 INSTALLATION: STARTED 4/19/06 COMPLETED: 4/25/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): 1
 LOGGED BY: **K. Harker**
 EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **351.0**
 WELL DEPTH (ft): **351.0**
 BOREHOLE DIAMETER (in): **10 3/4**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|-------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | GW-GM | GRAVEL WITH SAND AND SILT; GW-GM; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 50% (5-20mm) gravel, 30% fine to coarse-grained sand, 20% silt, trace of clay | | - soil | | | 2.8 | | |
| 215 | | SM | SILTY SAND WITH GRAVEL; SM; 10YR 7/4 grayish orange; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subrounded; well graded; 50% sand, 30% silt, 20% fine to coarse (5-20mm), subrounded gravel | | 1717 - soil | | | 1.1 | 215 | |
| 220 | | SW | SAND WITH GRAVEL; SW; 5YR 6/4 light brown; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; 65% sand, 35% fine to coarse (5-20mm), subrounded gravel, trace of silt | | 1722 - soil | | | 1.9 | 220 | |
| 225 | | | Fine (5-10mm), subrounded gravel, trace of clay | | 1729 - soil | | | 1.3 | 225 | |
| 230 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; rounded; well graded; 45% sand, 35% fine (5-15mm), subangular gravel, 20% silt | | 1736 - soil | | | 1.7 | 230 | |
| 235 | | | 55% sand, 25% fine to coarse (5-20mm), subrounded to rounded gravel, 20% silt | | 1745 - soil | | | 1.8 | 235 | |
| 240 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 6/4 light brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 65% sand, 20% clay, 15% fine to coarse (5-20mm), subrounded gravel | | 1756 - soil | | | 3.3 | 240 | |
| | | | | | 1820 | | | | | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| | | | | | | | | | | 1 inch schedule 80 PVC, Blank Casing with filter sand |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-2 PAGE 8 OF 11



DRILLING: STARTED 4/19/06 COMPLETED: 4/25/06
 INSTALLATION: STARTED 4/19/06 COMPLETED: 4/25/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 EASTING (ft):
 LATITUDE:
 LONGITUDE:
 GROUND ELEV (ft):
 TOC ELEV (ft):
 INITIAL DTW (ft):
 BOREHOLE DEPTH (ft): **351.0**
 STATIC DTW (ft):
 WELL DEPTH (ft): **351.0**
 WELL CASING DIAMETER (in): **1**
 BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|
| | | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% fine to coarse (5-20mm), subangular to subrounded gravel, 20% silt, trace of clay | | - soil | | | 3.4 | | 8-12 |
| 250 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 6/4 light brown; fine to coarse-grained; medium plasticity; medium dense to loose; dry; no odor; none cementation; subangular; well graded; 60% sand, 30% clay, 10% fine (5-7mm), subrounded gravel | | 1829 - soil | | | 2.9 | 250 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 255 | | SM | SILTY SAND WITH GRAVEL ; SM; 10YR 7/4 grayish orange; fine to coarse-grained; non plastic; medium dense to loose; dry; no odor; none cementation; subangular; well graded; 60% sand, 30% silt, 10% fine (5-7mm), subrounded gravel, trace of clay | | 0840 - soil | | | 5.9 | 255 | |
| 260 | | | SILTY SAND ; 5YR 6/4 light brown; fine to medium-grained; low plasticity; loose; subrounded; poorly graded; 60% sand, 40% silt, trace of fine (10mm), subrounded gravel and clay | | 0849 - soil | | | 4.1 | 260 | |
| 265 | | | 75% sand, 25% silt, trace of fine (5-10mm), subrounded gravel and clay | | 0852 - soil | | | 4.2 | 265 | |
| 270 | | | Trace of fine to coarse (5-20mm), subrounded gravel and clay | | 0905 - soil | | | 7.4 | 270 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 275 | | | Poorly graded; 80% sand, 20% silt, trace of fine to coarse (5-15mm), subrounded gravel and clay | | 0912 - soil | | | 5.7 | 275 | |
| | | | | | 0927 | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-2 PAGE 9 OF 11



DRILLING: **STARTED 4/19/06 COMPLETED: 4/25/06**
 INSTALLATION: **STARTED 4/19/06 COMPLETED: 4/25/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): 1
 LOGGED BY: **K. Harker**

EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **351.0**
 WELL DEPTH (ft): **351.0**
 BOREHOLE DIAMETER (in): **10 3/4**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|
| | | SM | WITH GRAVEL ; fine to coarse-grained; non plastic; subangular; well graded; 45% sand, 35% fine to coarse (5-25mm), subrounded gravel, 20% silt, trace of clay | | - soil | | | 7.0 | | |
| 285 | | | SILTY SAND ; 10YR 6/2 pale yellowish brown; fine to medium-grained; low plasticity; subrounded; poorly graded; 70% sand, 30% silt, trace of fine (5-10mm), subrounded gravel and clay | | 0939 - soil | | | 5.0 | 285 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 290 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 6/4 light brown; fine to coarse-grained; medium plasticity; medium dense to loose; dry; no odor; none cementation; subangular; well graded; 55% sand, 30% clay, 15% fine to coarse (5-20mm), subrounded gravel, trace of silt | | 0945 - soil | | | 4.9 | 290 | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 295 | | | CLAYEY SAND ; medium plasticity; loose; 60% sand, 40% clay, trace of fine (5-10mm), subrounded gravel and silt | | 1002 - soil | | | 6.2 | 295 | |
| 300 | | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 40% sand, 35% fine (5-15mm), subangular gravel, 25% silt, trace of clay | | 1007 - soil | | | 5.4 | 300 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 305 | | SC | CLAYEY SAND ; SC; 5YR 6/4 light brown; fine to medium-grained; low plasticity; loose; dry; no odor; none cementation; subrounded; poorly graded; 70% sand, 30% clay, trace of fine (5-15mm), subrounded gravel and silt | | 1021 - soil | | | 5.4 | 305 | |
| 310 | | | WITH GRAVEL ; fine to coarse-grained; medium plasticity; medium dense to loose; subangular; well graded; 40% sand, 30% clay, 30% fine to coarse (5-20mm), subrounded gravel | | 1030 - soil | | | 6.5 | 310 | |
| | | | | | 1045 - soil | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-2 PAGE 10 OF 11



DRILLING: STARTED 4/19/06 COMPLETED: 4/25/06
 INSTALLATION: STARTED 4/19/06 COMPLETED: 4/25/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): BOREHOLE DEPTH (ft): **351.0**
 STATIC DTW (ft): WELL DEPTH (ft): **351.0**
 WELL CASING DIAMETER (in): 1 BOREHOLE DIAMETER (in): **10 3/4**
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|--|------|---|--------|--|------------------------|-------------|-----------------------|--------------|-------------------|
| | | SM | SILTY SAND ; SM; 5YR 6/4 light brown; fine to medium-grained; low plasticity; loose; dry; no odor; none cementation; subrounded; poorly graded; 70% sand, 30% silt, trace of fine (5-15mm), subangular to subrounded gravel and clay | | - soil | | | 4.6 | | |
| 320 | | | WITH GRAVEL ; fine to coarse-grained; subangular; well graded; 40% sand, 30% silt, 30% fine to coarse (5-20mm), subangular to subrounded gravel, trace of clay | | 1051 - soil | | | 6.6 | 320 | |
| 325 | | | SILTY SAND ; fine to medium-grained; subrounded; poorly graded; 70% sand, 30% silt, trace of fine (5-7mm), subangular gravel | | 1101 - soil | | | 5.5 | 325 | |
| 330 | | | Fine to coarse-grained; well graded; 80% sand, 20% silt, trace of fine (5-10mm), subangular gravel and clay | | 1110 - soil | | | 6.4 | 330 | |
| 335 | | | WITH GRAVEL ; non plastic; subangular; 45% sand, 40% fine (5-10mm), subangular to subrounded gravel, 15% silt, trace of clay | | 1210 - soil | | | 7.5 | 335 | |
| 340 | | | | SC | CLAYEY SAND ; SC; 5YR 6/4 light brown; fine to medium-grained; low plasticity; loose; dry; no odor; none cementation; subrounded; poorly graded; 70% sand, 30% clay, trace of fine to coarse (5-20mm), subrounded gravel and silt | | 1221 - soil | | 4.2 | |
| 345 | WITH GRAVEL ; fine to coarse-grained; medium plasticity; medium dense to loose; subangular; well graded; 40% sand, 30% clay, 30% fine to coarse (5-25mm), subangular gravel | | | | 1234 - soil | | 2.9 | 345 | | |
| | | | | | 1241 | | | | | |

← 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal

← 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12

← 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-2 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 11 OF 11 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 4/19/06 COMPLETED: 4/25/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 4/19/06 COMPLETED: 4/25/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 351.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 351.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 10 3/4 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|---|-------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| 355 |  | GW-GC | GRAVEL WITH SAND AND CLAY; GW-GC; N7 - 5YR 6/4 light gray to light brown; fine to coarse-grained; medium plasticity; loose; dry; no odor; none cementation; subrounded; well graded; 45% gravel (5-35mm), 30% fine to coarse-grained sand, 25% clay Hole terminated at 351 feet. | | - soil | | | 3.1 | 355 |  sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 360 | | | | | | | | | 360 | |
| 365 | | | | | | | | | 365 | |
| 370 | | | | | | | | | 370 | |
| 375 | | | | | | | | | 375 | |
| 380 | | | | | | | | | 380 | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-3 PAGE 1 OF 5



DRILLING: **STARTED 5/11/06 COMPLETED: 5/12/06**
 INSTALLATION: **STARTED 5/11/06 COMPLETED: 5/12/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 EASTING (ft):
 LATITUDE:
 LONGITUDE:
 GROUND ELEV (ft):
 TOC ELEV (ft):
 INITIAL DTW (ft):
 BOREHOLE DEPTH (ft): **157.0**
 STATIC DTW (ft):
 WELL DEPTH (ft): **157.0**
 WELL CASING DIAMETER (in): **1**
 BOREHOLE DIAMETER (in): **9**
 LOGGED BY: **K. Harker**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | | Fill Material consists of silt, clay, sand, and gravel, Boring post hole dug to approx. 2.5 feet bgs | | | | | | | |
| 5 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; dry; slight odor; none cementation; subangular; well graded; 55% sand, 25% clay, 20% fine to coarse (5-30mm), subangular gravel Trace of trash - wood fragments and concrete | | 1400 - soil | | | 12.0 | 5 | <p>Above ground dog house vault with 1 inch PVC caps</p> <p>1 inch schedule 80 PVC, Blank Casing with cement grout</p> |
| 10 | | | Low plasticity; loose; 45% sand, 30% (5-30mm), subangular to subrounded gravel, 15% clay, 10% trash-wood, plastic, concrete | | 1407 - soil | | | 8.7 | 10 | |
| 15 | | SM | SILTY SAND; SM; 10YR 2/2 dark yellowish brown; fine to coarse-grained; loose; dry; strong odor; none cementation; subangular; well graded; 40% sand, 20% gravel, 15% silt, 25% trash - glass, newspaper, wood fragments, foam | | 1410 - soil | | | 15.4 | 15 | |
| 20 | | SC | CLAYEY SAND; SC; 5YR 4/4 brown; fine to coarse-grained; medium plasticity; medium dense; dry; strong odor; weak cementation; subangular; well graded; 70% sand, 30% clay, trace of trash - wood, plastic, and fine (5-10mm), subangular gravel | | 1416 - soil | | | 12.5 | 20 | |
| 25 | | | Slight odor; none cementation; trace of fine (5-10mm), subangular gravel | | 1419 - soil | | | 8.7 | 25 | |
| 30 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 20% silt, 20% (5-15mm), subangular gravel, trace of clay and trash - wood fragments | | 1425 - soil | | | 6.6 | 30 | |
| | | | | | 1434 | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-3 PAGE 2 OF 5



DRILLING: **STARTED 5/11/06 COMPLETED: 5/12/06**
 INSTALLATION: **STARTED 5/11/06 COMPLETED: 5/12/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): 1
 LOGGED BY: **K. Harker**

EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **157.0**
 WELL DEPTH (ft): **157.0**
 BOREHOLE DIAMETER (in): **9**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|
| | | SM | 55% sand, 25% fine to coarse (5-20mm), subangular gravel, 15% silt, trace of clay | | - soil | | | 7.6 | | |
| 40 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; slight odor; none cementation; subangular; well graded; 55% sand, 30% fine (5-10mm), subangular gravel, 15% clay | | 1441 - soil | | | 8.3 | 40 | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 45 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 25% fine (5-10mm), subrounded gravel, 15% silt | | 1446 - soil | | | 3.4 | 45 | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 50 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 20% clay, 20% fine to coarse (5-25mm), subrounded gravel | | 1453 - soil | | | 3.4 | 50 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 55 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% fine (5-10mm), subangular gravel, 20% silt, trace of clay | | 1455 - soil | | | 4.6 | 55 | |
| 60 | | | 55% sand, 30% silt, 15% fine (5-10mm), subangular gravel, trace of clay | | 1458 - soil | | | 4.5 | 60 | |
| 65 | | | 60% sand, 30% silt, 10% fine (5-10mm), subangular gravel, trace of clay | | 1504 - soil | | | 2.5 | 65 | |
| | | | | | 1509 - soil | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-3 PAGE 3 OF 5



DRILLING: STARTED 5/11/06 COMPLETED: 5/12/06
 INSTALLATION: STARTED 5/11/06 COMPLETED: 5/12/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): 1
 LOGGED BY: **K. Harker**
 EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **157.0**
 WELL DEPTH (ft): **157.0**
 BOREHOLE DIAMETER (in): 9
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|---|
| | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 30% clay, 10% fine (5-10mm), subangular gravel | | - soil | | | 0.0 | | | |
| 75 | | | Medium dense to loose; no odor; 70% sand, 15% clay, 15% fine to coarse (5-20mm), subangular gravel, trace of silt | | 1518 - soil | | | 5.0 | 75 | | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 80 | | | CLAYEY SAND ; fine to medium-grained; loose; poorly graded; 80% sand, 20% clay, trace of fine (5-10mm), subrounded gravel | | 1522 - soil | | | 5.4 | 80 | | |
| 85 | | | WITH GRAVEL ; fine to coarse-grained; well graded; 70% sand, 15% clay, 15% fine (5-15mm), subangular gravel | | 1526 - soil | | | 7.2 | 85 | | |
| 90 | | | 50% sand, 30% fine (5-15mm), subrounded gravel, 20% clay | | 1529 - soil | | | 4.2 | 90 | | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 95 | | | CLAYEY SAND ; fine to medium-grained; poorly graded; 70% sand, 30% clay, trace of fine (5-7mm), subrounded gravel | | 1532 - soil | | | 2.0 | 95 | | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 100 | | | | | 1534 - soil | | 1.4 | 100 | | | |
| | | | | | 1545 | | | | | | |

| | | |
|---|---|--|
| PROJECT: Broadway South Landfill | WELL / PROBEHOLE / BOREHOLE NO: BSDP-3 |  SECOR |
| LOCATION: Broadway Boulevard and Prudence Road | PAGE 4 OF 5 | |
| PROJECT NUMBER: 18OT.20401.06 | | |
| DRILLING: STARTED 5/11/06 COMPLETED: 5/12/06 | NORTHING (ft): | EASTING (ft): |
| INSTALLATION: STARTED 5/11/06 COMPLETED: 5/12/06 | LATITUDE: | LONGITUDE: |
| DRILLING COMPANY: Layne Christensen Company | GROUND ELEV (ft): | TOC ELEV (ft): |
| DRILLING EQUIPMENT: Becker Hammer | INITIAL DTW (ft): | BOREHOLE DEPTH (ft): 157.0 |
| DRILLING METHOD: Percussion-Hammer | STATIC DTW (ft): | WELL DEPTH (ft): 157.0 |
| SAMPLING EQUIPMENT: Cyclone | WELL CASING DIAMETER (in): 1 | BOREHOLE DIAMETER (in): 9 |
| | LOGGED BY: K. Harker | CHECKED BY: C. Pollock |

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|--|------|---|---|-----------------------|------------------------|------------|-----------------------|--------------|--|
| |  | SW | SAND WITH GRAVEL; SW; 10YR 7/4 grayish orange; fine to coarse-grained; loose; dry; no odor; none cementation; subangular; well graded; 85% sand, 15% fine (5-7mm), subrounded gravel, trace of silt |  | - soil | | | 2.0 | |  |
| 110 | | | 5YR 6/4 light brown; subangular gravel, trace of clay |  | 1551 - soil | | | 0.1 | 110 | |
| 115 |  | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; no odor; none cementation; subangular; well graded; 60% sand, 30% clay, 10% fine (5-15mm), subangular gravel |  | 1600 - soil | | | 1.0 | 115 | |
| 120 | | | 50% sand, 30% fine to coarse (5-40mm), subangular gravel, 20% clay |  | 1611 - soil | | | 3.0 | 120 | |
| 125 | | | CLAYEY SAND; fine to medium-grained; loose; subrounded; poorly graded; 80% sand, 20% clay, trace of fine (5 mm), subrounded gravel |  | 1624 - soil | | | 1.4 | 125 | |
| 130 | | | WITH GRAVEL; fine to coarse-grained; subangular; well graded; 65% sand, 20% clay, 15% fine to coarse (5-40mm), subangular gravel |  | 1617 - soil | | | 0.9 | 130 | |
| 135 | | | 70% sand, 20% clay, 10% fine (5-7mm), subangular gravel |  | 1621 - soil | | | 4.0 | 135 | |
| | | | | | 1629 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-3 PAGE 5 OF 5



SECOR

DRILLING: STARTED 5/11/06 COMPLETED: 5/12/06
 INSTALLATION: STARTED 5/11/06 COMPLETED: 5/12/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft): EASTING (ft):
 LATITUDE: LONGITUDE:
 GROUND ELEV (ft): TOC ELEV (ft):
 INITIAL DTW (ft): BOREHOLE DEPTH (ft): **157.0**
 STATIC DTW (ft): WELL DEPTH (ft): **157.0**
 WELL CASING DIAMETER (in): 1 BOREHOLE DIAMETER (in): 9
 LOGGED BY: **K. Harker** CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction | |
|---------------------|-------------|------|------------------------------|---|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|---|
| | | SC | | | - soil | | | 3.9 | | | |
| 145 | | | | Fine (5-15mm), subrounded gravel | | 1631 - soil | | | 5.5 | 145 | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 150 | | | | Fine to coarse (5-30mm), subangular gravel | | 1633 - soil | | | 2.9 | 150 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 155 | | | | Poorly graded; 60% sand, 30% clay, 10% fine (5-15mm), subrounded gravel | | 1636 - soil | | | 2.5 | 155 | |
| | | | Hole terminated at 157 feet. | | | | | | | | |
| 160 | | | | | | | | | 160 | | |
| 165 | | | | | | | | | 165 | | |
| 170 | | | | | | | | | 170 | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-4 PAGE 1 OF 5



DRILLING: **STARTED 5/15/06 COMPLETED: 5/16/06**
 INSTALLATION: **STARTED 5/15/06 COMPLETED: 5/16/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 EASTING (ft):
 LATITUDE:
 LONGITUDE:
 GROUND ELEV (ft):
 TOC ELEV (ft):
 INITIAL DTW (ft):
 BOREHOLE DEPTH (ft): **156.9**
 STATIC DTW (ft):
 WELL DEPTH (ft): **156.9**
 WELL CASING DIAMETER (in): **1**
 BOREHOLE DIAMETER (in): **9**
 LOGGED BY: **K. Harker**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| | | | Fill Material consists of silt, clay, sand, and gravel, Boring post hole dug to approx. 2.5 feet bgs | | | | | | | Above ground dog house vault with 1 inch PVC caps |
| 5 | | SC | CLAYEY SAND WITH GRAVEL; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; dense; dry; no odor; none cementation; subangular; well graded; 55% sand, 25% clay, 20% fine (5-10mm), subangular gravel Loose; slight odor; trace of trash - plastic | | 1003 - soil | | | 3.4 | 5 | |
| 10 | | | Slight odor; 50% sand, 35% (5-30mm), subangular to subrounded gravel, 15% clay, trace of trash - wood fragments | | 1006 - soil | | | 15.1 | 10 | |
| 15 | | | Strong odor; 40% sand, 25% trash - newspaper, wood, cloth, glass, 20% fine (5-15mm), subangular gravel, 15% clay | | 1009 - soil | | | 11.1 | 15 | |
| 20 | | SM | SILTY SAND WITH GRAVEL; SM; 10YR 2/2 dark yellowish brown; fine to coarse-grained; medium plasticity; loose; dry; strong odor; none cementation; subangular; well graded; 40% sand, 25% trash - wood, glass, wire metal, cloth, 20% fine (5-15mm), subangular gravel, 15% silt | | 1013 - soil | | | 22.4 | 20 | 1 inch schedule 80 PVC, Blank Casing with cement grout |
| 25 | | SC | CLAYEY SAND; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense; dry; strong odor; none cementation; subangular; well graded; 65% sand, 30% clay, 5% trash - wood fragments and glass | | 1018 - soil | | | 13.3 | 25 | |
| 30 | | SM | SILTY SAND WITH GRAVEL; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; well graded; 65% sand, 20% silt, 15% fine (5-15mm), subangular gravel, trace of trash - wood fragments | | 1020 - soil | | | 1.4 | 30 | |
| | | | | | 1031 - soil | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-4 PAGE 2 OF 5



SECOR

DRILLING: **STARTED 5/15/06 COMPLETED: 5/16/06**
 INSTALLATION: **STARTED 5/15/06 COMPLETED: 5/16/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 EASTING (ft):
 LATITUDE:
 LONGITUDE:
 GROUND ELEV (ft):
 TOC ELEV (ft):
 INITIAL DTW (ft):
 BOREHOLE DEPTH (ft): **156.9**
 STATIC DTW (ft):
 WELL DEPTH (ft): **156.9**
 WELL CASING DIAMETER (in): **1**
 BOREHOLE DIAMETER (in): **9**
 LOGGED BY: **K. Harker**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|---|
| | | SM | 50% sand, 25% fine to coarse (5-20mm), subangular to subrounded gravel, 15% silt, trace of clay | | - soil | | | 2.0 | | 1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal |
| 40 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; slight odor; none cementation; subangular; well graded; 70% sand, 20% clay, 10% fine (5-15mm), subangular gravel | | 1033 - soil | | | 3.2 | 40 | 1 inch schedule 80 PVC, Blank Casing with filter sand 8-12 |
| 45 | | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 25% fine to coarse (5-30mm), subangular to subrounded gravel, 15% silt, trace of clay | | 1040 - soil | | | 3.2 | 45 | 1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12 1 inch PVC end plug, filter sand 8-12 |
| 50 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; medium dense to loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 20% clay, 20% fine to coarse (5-25mm), subrounded gravel | | 1043 - soil | | | 3.4 | 50 | |
| 55 | | | 50% sand, 30% fine to coarse (5-25mm), subangular to subrounded gravel, 20% clay | | 1046 - soil | | | 5.2 | 55 | |
| 60 | | SM | SILTY SAND ; SM; 5YR 4/4 brown; fine to coarse-grained; non plastic; loose; dry; slight odor; none cementation; subangular; well graded; 70% sand, 30% silt, trace of fine (5-15mm), subangular gravel and clay | | 1049 - soil | | | 4.7 | 60 | |
| 65 | | | WITH GRAVEL ; 50% sand, 25% silt, 25% fine (5-15mm), subangular to subrounded gravel, trace of clay | | 1051 - soil | | | 3.0 | 65 | |
| | | | | | 1054 - soil | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-4 PAGE 3 OF 5



DRILLING: **STARTED 5/15/06 COMPLETED: 5/16/06**
 INSTALLATION: **STARTED 5/15/06 COMPLETED: 5/16/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 EASTING (ft):
 LATITUDE:
 LONGITUDE:
 GROUND ELEV (ft):
 TOC ELEV (ft):
 INITIAL DTW (ft):
 BOREHOLE DEPTH (ft): **156.9**
 STATIC DTW (ft):
 WELL DEPTH (ft): **156.9**
 WELL CASING DIAMETER (in): **1**
 BOREHOLE DIAMETER (in): **9**
 LOGGED BY: **K. Harker**
 CHECKED BY: **C. Pollock**

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|--|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| 75 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; slight odor; none cementation; subangular; well graded; 60% sand, 30% clay, 10% fine to coarse (5-40mm), subrounded gravel | | - soil | | | 1.9 | | <p>1 inch schedule 80 PVC, Blank Casing with bentonite 3/8" chip and 1/4" pellet seal</p> |
| | | | CLAYEY SAND ; 70% sand, 30% clay, trace of fine (5-7mm), subangular gravel and silt | | 1059 - soil | | | 4.9 | 75 | |
| | | | WITH GRAVEL ; fine to medium-grained; medium plasticity; poorly graded; 60% sand, 30% clay, 10% fine to coarse (5-20mm), subrounded to rounded gravel | | 1100 - soil | | | 6.0 | 80 | |
| | | | SILTY SAND ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 80% sand, 20% silt, trace of fine (5-10mm), subangular gravel | | 1104 - soil | | | 8.1 | 85 | |
| | | SM | | | 1110 - soil | | | 5.0 | 90 | |
| 95 | | SC | CLAYEY SAND WITH GRAVEL ; SC; 5YR 4/4 brown; fine to coarse-grained; low plasticity; loose; dry; no odor; none cementation; subangular; well graded; 65% sand, 20% clay, 15% fine to coarse (5-75mm), subrounded to subangular gravel | | - soil | | | | | <p>1 inch schedule 80 PVC, Blank Casing with filter sand 8-12</p> <p>1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12</p> <p>1 inch PVC end plug, filter sand 8-12</p> |
| | | | Slight odor; 50% sand, 30% fine to coarse (5-20mm), subangular to subrounded gravel, 20% clay | | 1112 - soil | | | 3.2 | 95 | |
| | | | 60% sand, 20% clay, 20% fine (5-15mm), subangular gravel | | 1116 - soil | | | 1.5 | 100 | |
| 100 | | | | | 1127 - soil | | | | | |

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-4 PAGE 4 OF 5



SECOR

DRILLING: STARTED **5/15/06** COMPLETED: **5/16/06**
 INSTALLATION: STARTED **5/15/06** COMPLETED: **5/16/06**
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): **1**
 LOGGED BY: **K. Harker**

EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **156.9**
 WELL DEPTH (ft): **156.9**
 BOREHOLE DIAMETER (in): **9**
 CHECKED BY: **C. Pollock**

| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|-------------------|
| | | SC | CLAYEY SAND ; fine to medium-grained; no odor; subrounded; poorly graded; 70% sand, 30% clay, trace of fine (5-7mm), subrounded gravel | | - soil | | | 3.6 | | |
| 110 | | | WITH GRAVEL ; fine to coarse-grained; medium dense to loose; subangular; well graded; 55% sand, 25% fine to coarse (5-75mm), subangular gravel, 20% clay | | 1132 - soil | | | 0.5 | 110 | |
| 115 | | | 50% sand, 30% fine to coarse (5-20mm), subangular gravel, 20% clay | | 1136 - soil | | | 3.5 | 115 | |
| 120 | | | 60% sand, 25% clay, 15% fine (5-10mm), subangular gravel | | 1139 - soil | | | 3.5 | 120 | |
| 125 | | | Medium plasticity; 50% sand, 30% clay, 20% fine to coarse (5-30mm), subrounded gravel | | 1143 - soil | | | 2.6 | 125 | |
| 130 | | | 65% sand, 20% clay, 15% fine to coarse (5-70mm), subangular gravel | | 1150 - soil | | | 1.3 | 130 | |
| 135 | | | CLAYEY SAND ; loose; 70% sand, 30% clay, trace of fine (5 mm), subangular gravel | | 1153 - soil | | | 4.2 | 135 | |
| | | | | | 1200 | | | | | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR.INTL.GDT 10/23/06

PROJECT: **Broadway South Landfill**
 LOCATION: **Broadway Boulevard and Prudence Road**
 PROJECT NUMBER: **18OT.20401.06**

WELL / PROBEHOLE / BOREHOLE NO:

BSDP-4 PAGE 5 OF 5



SECOR

DRILLING: STARTED 5/15/06 COMPLETED: 5/16/06
 INSTALLATION: STARTED 5/15/06 COMPLETED: 5/16/06
 DRILLING COMPANY: **Layne Christensen Company**
 DRILLING EQUIPMENT: **Becker Hammer**
 DRILLING METHOD: **Percussion-Hammer**
 SAMPLING EQUIPMENT: **Cyclone**

NORTHING (ft):
 LATITUDE:
 GROUND ELEV (ft):
 INITIAL DTW (ft):
 STATIC DTW (ft):
 WELL CASING DIAMETER (in): 1
 LOGGED BY: **K. Harker**

EASTING (ft):
 LONGITUDE:
 TOC ELEV (ft):
 BOREHOLE DEPTH (ft): **156.9**
 WELL DEPTH (ft): **156.9**
 BOREHOLE DIAMETER (in): 9
 CHECKED BY: **C. Pollock**

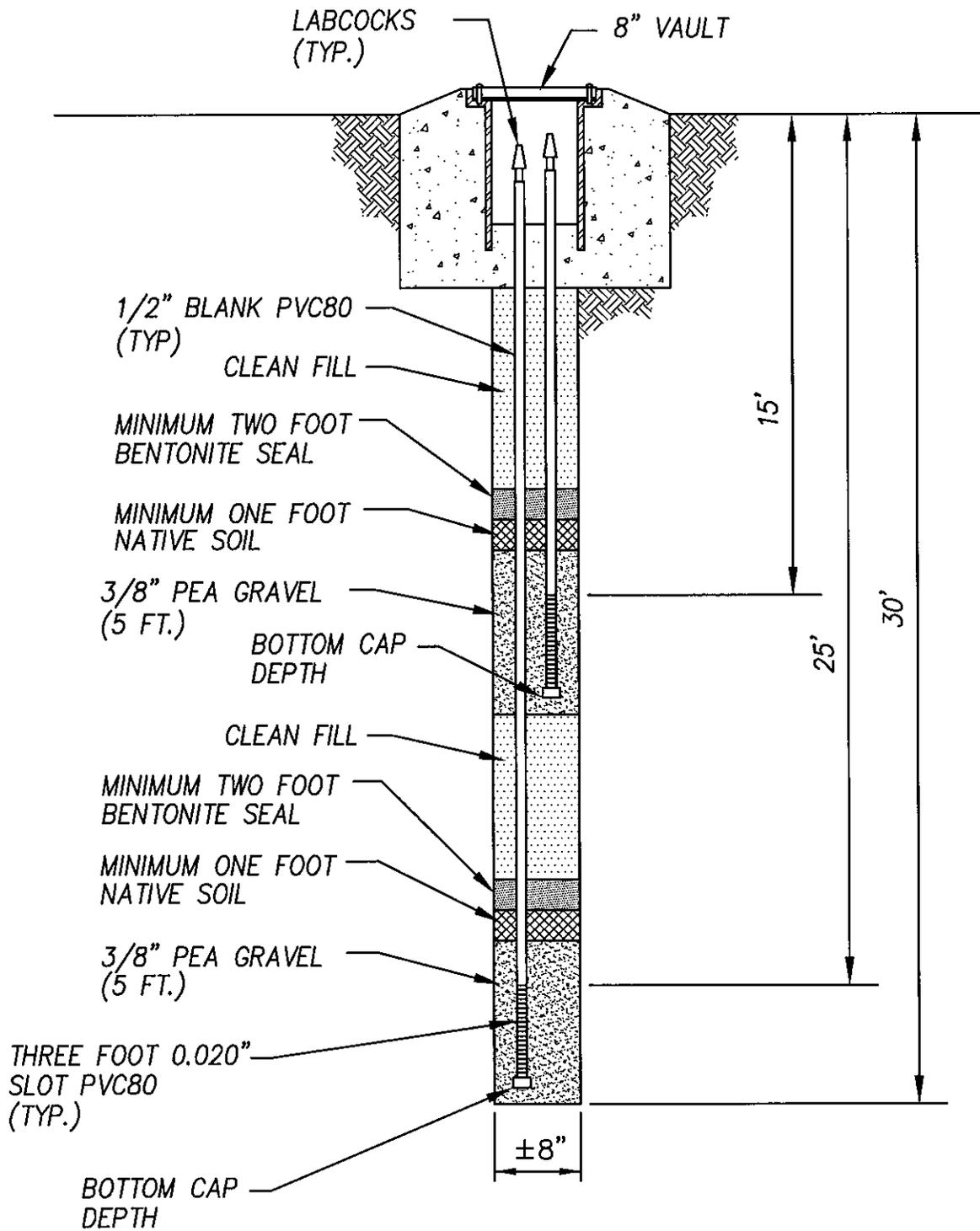
| Time & Depth (feet) | Graphic Log | USCS | Description | Sample | Time Sample ID Method | Measured Recov. (feet) | Blow Count | Headspace PID (units) | Depth (feet) | Well Construction |
|---------------------|-------------|------|---|--------|-----------------------|------------------------|------------|-----------------------|--------------|--|
| 145 | | SC | WITH GRAVEL ; fine to medium-grained; 65% sand, 25% clay, 10% fine to coarse (5-20mm), subrounded gravel | | - soil | | | 5.0 | | <p>1 inch schedule 80 PVC, Blank Casing with filter sand 8-12</p> <p>1 inch schedule 80 PVC, 0.02 inch slotted casing, filter sand 8-12</p> <p>1 inch PVC end plug, filter sand 8-12</p> |
| 150 | | | Fine to coarse-grained; low plasticity; 65% sand, 20% clay, 15% fine to coarse (5-30mm), subrounded gravel | | 1203 - soil | | | 6.0 | 145 | |
| 155 | | | 50% sand, 30% fine to coarse (5-20mm), subangular to subrounded gravel, 20% clay | | 1207 - soil | | | 3.0 | 150 | |
| 155 | | SM | SILTY SAND WITH GRAVEL ; SM; 5YR 6/4 light brown; fine to coarse-grained; non plastic; loose; dry; no odor; none cementation; subangular; well graded; 50% sand, 30% fine to coarse (5-40mm), subangular to subrounded gravel, 20% silt, trace of clay Hole terminated at 156.9 feet. | | 1210 - soil | | | 4.1 | 155 | |
| 160 | | | | | | | | | 160 | |
| 165 | | | | | | | | | 165 | |
| 170 | | | | | | | | | 170 | |

GEO FORM 304 BORING LOGS BSDP-1, BSDP-2, BSDP-3, BSDP-4, BP-22, AND BP-23.GPJ SECOR INTL.GDT 10/23/06

| | | | |
|---------------|------|---------------------------|---|
| Depth In Feet | Time | Boring No.: GMP-16 | Engineering and Environmental Consultants, Inc. |
| | | Project No.: 206100.17 | Page 1 of 1 |
| | | Project Loc.: Gollob Park | Rig Type: CME-75 |
| | | Init. Date: 11/30/2006 | Drilling Method: Hollow-stem Auger |
| | | Comp. Date: 11/30/2006 | Field Geologist: Hancock |
| | | Elevation: ~2,615 feet | Reviewed By: Pierce |
| | | Total Depth: 30 feet | Initial GW Depth: N/A |
| | | Datum: USGS | Static GW Depth: N/A |

| | | |
|----|------|---|
| 0 | 0831 | Start Drilling - unpaved grassy surface SANDY CLAY (GC) medium brown, slightly moist |
| 5 | | SANDY CLAY (GC) medium brown, moist |
| 10 | | SAME plastic bag in cuttings <i>encounterd stained soil and bits of plastic at ~11 to 12' bls</i> |
| 15 | | SAME no staining, trash, or debris in cuttings |
| 20 | | SAME no staining, trash, or debris in cuttings |
| 25 | | SAME hard drilling; no staining, trash, or debris in cuttings <i>gravels encounterd at ~26' bls</i> |
| 30 | | SAME with 1" gravels |
| 35 | | Total Depth = 30' |
| 40 | | Source: Engineering and Environmental Consultants, Inc., 2007 |
| 45 | | |

Notes
Isolated pocket of debris encountered from 11 to 12' bls, set shallow probe at 15' bls per Jeff Drumm (CoT-ES)



| | |
|--------------|---------|
| DESIGNED BY: | CSH |
| DRAWN BY: | DIM |
| CHK'D BY: | CSH |
| DATE: | 04-2007 |
| SCALE: | |
| HORIZ. | N.T.S. |
| VERT. | N/A |

**MONITORING WELL SCHEMATIC
GOLLOB PARK/PRUDENCE LANDFILL**

GMP - 16 PRUD-16



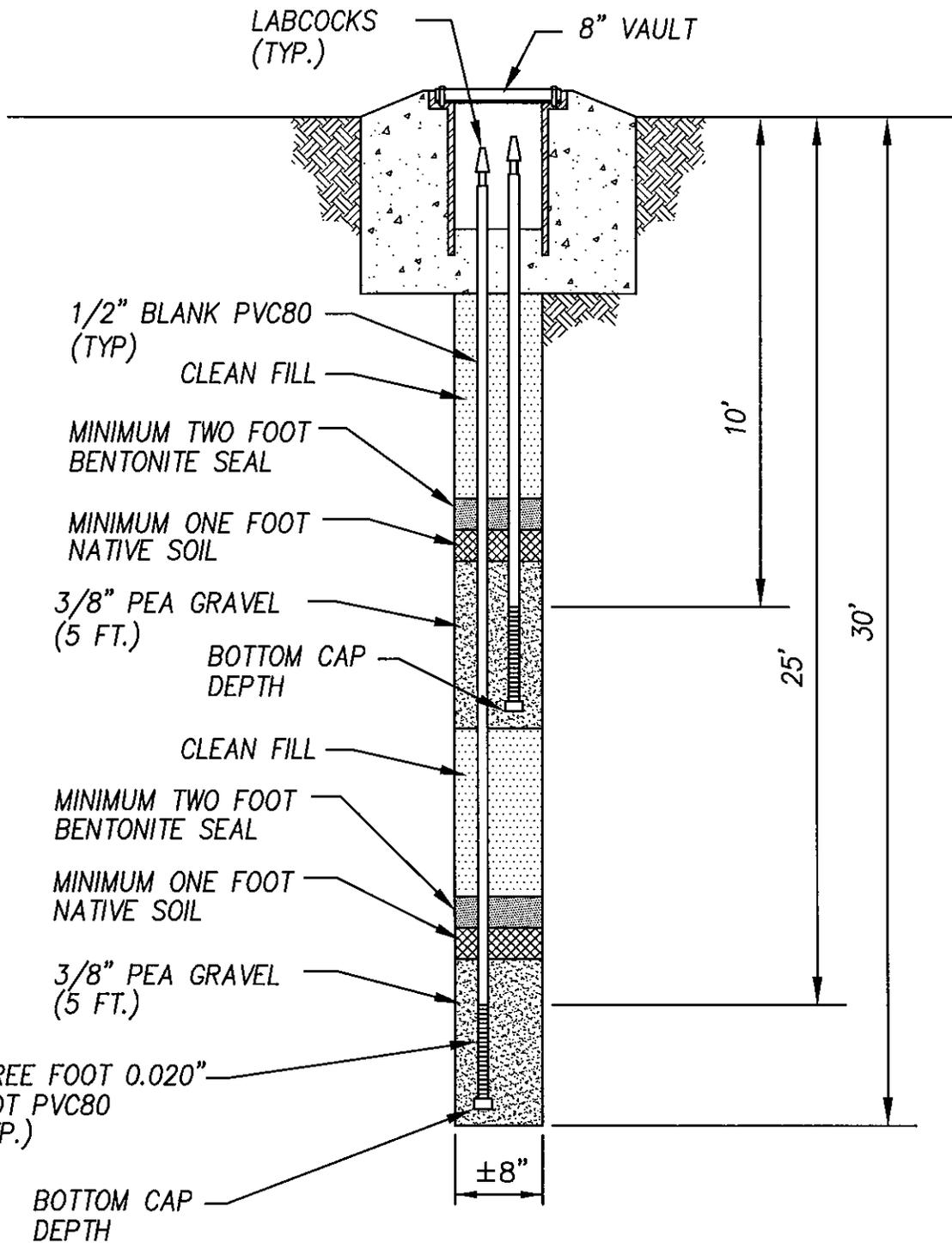
Engineering and Environmental Consultants, Inc.
4825 E. FT. LOWELL RD.
TUCSON, ARIZONA 85712 520-321-4825

| | | | |
|---------------|------|---------------------------|---|
| Depth In Feet | Time | Boring No.: GMP-17 | Engineering and Environmental Consultants, Inc. |
| | | Project No.: 206100.17 | Page 1 of 1 |
| | | Project Loc.: Gollob Park | Rig Type: CME-75 |
| | | Init. Date: 11/30/2006 | Drilling Method: Hollow-stem Auger |
| | | Comp. Date: 11/30/2006 | Field Geologist: Hancock |
| | | Elevation: ~2,615 feet | Reviewed By: Pierce |
| | | Total Depth: 30 feet | Initial GW Depth: N/A |
| | | Datum: USGS | Static GW Depth: N/A |

| | | |
|----|------|--|
| 0 | 1015 | Start Drilling - unpaved grassy surface CLAYEY SAND (SC) medium brown, moist |
| 5 | | SAME |
| 10 | | SAME with decreasing clay and some small gravels <i>increasing gravels</i> |
| 15 | | POORLY GRADED GRAVELLY CLAYEY SAND (GC) medium brown, moist |
| 20 | | SAME |
| 25 | | SAME <i>decreasing gravels</i> |
| 30 | | CLAYEY SAND (SC) medium brown, moist Total Depth = 30' |
| 35 | | |
| 40 | | |
| 45 | | |

Notes

Source: Engineering and Environmental Consultants, Inc., 2007



| | |
|--------------|---------|
| DESIGNED BY: | CSH |
| DRAWN BY: | DIM |
| CHK'D BY: | CSH |
| DATE: | 04-2007 |
| SCALE: | |
| HORIZ. | N.T.S. |
| VERT. | N/A |

**GENERALIZED MONITORING WELL SCHEMATIC
GOLLOB PARK/PRUDENCE LANDFILL
GMP - 17, 18, 19, AND 20**



PRUD 17, 18, 19, 20
Engineering and Environmental Consultants, Inc.
4825 E. FT. LOWELL RD.
TUCSON, ARIZONA 85712 620-321-4825

| Depth In Feet | Time | Boring No.: | GMP-18 | Engineering and Environmental Consultants, Inc. | |
|---------------|------|---|-------------|---|-------------------|
| | | Project No.: | 206100.17 | Page | 1 of 1 |
| | | Project Loc.: | Gollob Park | Rig Type: | CME-75 |
| | | Init. Date: | 11/30/2006 | Drilling Method: | Hollow-stem Auger |
| | | Comp. Date: | 11/30/2006 | Field Geologist: | Hancock |
| | | Elevation: | ~2,615 feet | Reviewed By: | Pierce |
| | | Total Depth: | 30 feet | Initial GW Depth: | N/A |
| | | Datum: | USGS | Static GW Depth: | N/A |
| 0 | 1300 | Start Drilling - unpaved grassy surface | | | |
| | | SILTY SAND (SM) | | | |
| | | medium to light brown, very slightly moist | | | |
| 5 | | SAME | | | |
| | | with some small (-1") gravels | | | |
| | | <i>increasing gravels</i> | | | |
| 10 | | SAME | | | |
| | | with gravels | | | |
| | | <i>decreasing gravels, increasing clay</i> | | | |
| 15 | | CLAYEY SAND (SC) | | | |
| | | medium brown, slightly moist | | | |
| 20 | | SAME | | | |
| | | with small (-1") gravels | | | |
| 25 | | SAME | | | |
| | | with gravels | | | |
| | | <i>increasing gravels</i> | | | |
| 30 | | GRAVELLY CLAYEY SAND (GC) | | | |
| | | medium brown, slightly moist | | | |
| | | Total Depth = 30' | | | |
| 35 | | | | | |
| 40 | | Source: Engineering and Environmental Consultants, Inc., 2007 | | | |
| 45 | | | | | |
| Notes | | | | | |

| Depth In Feet | Time | Boring No.: | GMP-19 | Engineering and Environmental Consultants, Inc. | |
|---------------|------|--|-------------|---|-------------------|
| | | Project No.: | 206100.17 | Page | 1 of 1 |
| | | Project Loc.: | Gollob Park | Rig Type: | CME-75 |
| | | Init. Date: | 12/1/2006 | Drilling Method: | Hollow-stem Auger |
| | | Comp. Date: | 12/1/2006 | Field Geologist: | Hancock |
| | | Elevation: | ~2,615 feet | Reviewed By: | Pierce |
| | | Total Depth: | 30 feet | Initial GW Depth: | N/A |
| | | Datum: | USGS | Static GW Depth: | N/A |
| 0 | 0812 | Start Drilling - unpaved dirt surface | | | |
| | | SILTY SAND (SM) | | | |
| | | with some small (-1") gravels, medium brown, very slightly moist | | | |
| 5 | | SAME | | | |
| | | <i>increasing gravels, hard drilling at 7'</i> | | | |
| 10 | | GRAVELLY SILTY SAND (GM) | | | |
| | | medium brown, slightly moist | | | |
| | | <i>decreasing gravels, increasing clay</i> | | | |
| 15 | | SAME | | | |
| | | with 1 to 2" boulders | | | |
| 20 | | SAME | | | |
| 25 | | SAME | | | |
| | | <i>hard drilling 26 to 28' bls</i> | | | |
| 30 | | SAME | | | |
| | | Total Depth = 30' | | | |
| 35 | | | | | |
| 40 | | Source: Engineering and Environmental Consultants, Inc., 2007 | | | |
| 45 | | | | | |
| Notes | | | | | |

| | | | |
|---------------|------|---|---|
| Depth In Feet | Time | Boring No.: GMP-20 | Engineering and Environmental Consultants, Inc. |
| | | Project No.: 206100.17 | Page 1 of 1 |
| | | Project Loc.: Gollob Park | Rig Type: CME-75 |
| | | Init. Date: 12/1/2006 | Drilling Method: Hollow-stem Auger |
| | | Comp. Date: 12/1/2006 | Field Geologist: Hancock |
| | | Elevation: ~2,615 feet | Reviewed By: Pierce |
| | | Total Depth: 30 feet | Initial GW Depth: N/A |
| | | Datum: USGS | Static GW Depth: N/A |
| 0 | 0945 | Start Drilling - unpaved grass/dirt surface SILTY SAND (SM) medium brown, very slightly moist | |
| 5 | | SAME with some small (-1") gravels | |
| 10 | | SAME <i>increasing gravels</i> | |
| 15 | | GRAVELLY SILTY SAND (GM) medium brown, slightly moist | |
| 20 | | SAME | |
| 25 | | SAME <i>hard drilling 26 to 28' bls, some 1 to 3" boulders</i> | |
| 30 | | SAME | |
| | | Total Depth = 30' | |
| 35 | | | |
| 40 | | | |
| 45 | | | |

Notes

| Boring No. WR-434A | | | | | Project No. | Prudence Landfill | | Project Loc. | Gollob Park | | | | | |
|--------------------|---------|-----------------------|-------------|------|---|-------------------|------|-----------------|------------------|---|---|--|--|--|
| Depth In Feet | PID/FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | 07-10-01 | | M.P. Elevation | | | | | | |
| | | | | | Comp. Date | 07-12-01 | Well | 07-13-01 | Initial GW Depth | N/A | ▽ | | | |
| | | | | | Driller | Layne | | Static GW Depth | N/A | ▽ | | | | |
| | | | | | Rig Type | AP-1000 | | GW Elevation | | | | | | |
| | | | | | Drilling Method | Casing Hammer | | Field Geologist | R M Byrd | | | | | |
| | | | | | Datum | Land Surface | | Reviewed By | N W Petersen | | | | | |
| | | | | | Total Depth | 360' BGS | | x - coord = | | | | | | |
| | | | | | y - coord = | | | | | | | | | |
| | | | | | 0 | N/A | N/A | | 0910 | Hand dig 18" to insure no utility conflict, turf, and sod | | | | |
| | | | | | | N/A | N/A | | 0930 | (SPG) Poorly Graded Sand with Gravel & Silt, Fine-Medium, Subangular, Light Orange/Tan, Dry & Dusty | | | | |
| 5 | N/A | N/A | | 0940 | (SPG) Poorly Graded Sand with Gravel & Silt, Fine-Medium, Subangular, Light Orange/Tan, Dry & Dusty | | | | | | | | | |
| | N/A | N/A | | 0945 | (SP) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Light Tan, Dry, Dusty, Broken Glass, Bricks, and Wood Present | | | | | | | | | |
| | N/A | N/A | | 0950 | (SP) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Light Tan, Dry, Dusty, Trace Silt | | | | | | | | | |
| 15 | N/A | N/A | | 0950 | (SP) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Medium Tan, Dry, Dusty, Trace Silt | | | | | | | | | |
| | N/A | N/A | | 0955 | (SP) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Medium Tan, Dry, Dusty, Trace Cobbles | | | | | | | | | |
| | N/A | N/A | | 0955 | (SP-SM) Poorly Graded Sand with Silt, Medium-Coarse Grain, Subangular, Light Tan, Trace Gravel | | | | | | | | | |
| 25 | N/A | N/A | | 1000 | (SP-SM) Poorly Graded Sand with Silt, Medium-Coarse Grain, Subangular, Light Orange/Tan, Trace Gravel | | | | | | | | | |
| | N/A | N/A | | 1002 | (SP-SM) Poorly Graded Sand with Silt, Medium-Coarse Grain, Subangular, Light Orange/Tan, Trace Gravel | | | | | | | | | |
| 30 | N/A | N/A | | 1002 | (SP-SM) Poorly Graded Sand with Silt, Medium-Coarse Grain, Subangular, Light Orange/Tan, Trace Gravel | | | | | | | | | |
| | N/A | N/A | | 1005 | (SPG) Poorly Graded Sand with Gravel, Medium-Coarse, Subangular, Firm, Light Orange/Brown, Damp | | | | | | | | | |
| 35 | N/A | N/A | | 1005 | (SPG) Poorly Graded Sand with Gravel, Medium-Coarse, Subangular, Firm, Light Grayish/Brown, Damp | | | | | | | | | |
| | | | | | Ten Feet of Hydrated bentonite Pellets for Seal | | | | | | | | | |
| | | | | | #8-12 Colorado Silica Sand Filter pack. | | | | | | | | | |
| 40 | | | | | | | | | | | | | | |

WELL PRUDENCE.GPJ TUCSON.GDT 10/25/01

| Boring No. WR-434A | | | | | Project No. | Prudence Landfill | | Project Loc. | Gollob Park | | | | | | |
|--------------------|---------|-----------------------|-------------|------|--|------------------------|-----|------------------|-----------------------------------|--|--|--|--|--|--|
| Depth In Feet | PID/FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | 07-10-01 | | M.P. Elevation | | | | | | | |
| | | | | | Comp. Date | 07-12-01 Well 07-13-01 | | Initial GW Depth | N/A | | | | | | |
| | | | | | Driller | Layne | | Static GW Depth | N/A | | | | | | |
| | | | | | Rig Type | AP-1000 | | GW Elevation | | | | | | | |
| | | | | | Drilling Method | Casing Hammer | | Field Geologist | R M Byrd | | | | | | |
| | | | | | Datum | Land Surface | | Reviewed By | N W Petersen | | | | | | |
| | | | | | Total Depth | 360' BGS | | x - coord = | | | | | | | |
| | | | | | y - coord = | | | | | | | | | | |
| | | | | | 40 | N/A | N/A | | 1010 | (SPG) Poorly Graded Sand with Gravel, Medium-Coarse, Subangular, Firm, Light Grayish/Brown, Damp | | | | | |
| | | | | | 45 | N/A | N/A | | 1015 | (SPG) Poorly Graded Sand with Gravel, Medium-Coarse, Subangular, Firm, Light Grayish/Brown, Damp | | | | The "D" Well Screened with 0.020" machine cut slots from 45' to 50' Below Land Surface (BLS) | |
| 50 | N/A | N/A | | 1020 | (SP) Poorly Graded Sand with Gravel & Cobbles, Medium-Coarse, Subangular, Firm, Light Orange/Brown, Damp | | | | | | | | | | |
| 55 | N/A | N/A | | 1030 | (SM) Poorly Graded Sand with Silt, Medium-Coarse, Subangular, Firm, Light Orange/Brown, Damp | | | | | | | | | | |
| 60 | N/A | N/A | | 1035 | (SM) Poorly Graded Sand with Silt, Medium-Coarse, Subangular, Firm, Light Orange/Brown, Damp | | | | | | | | | | |
| 65 | N/A | N/A | | 1100 | (SP-SM) Poorly Graded Sand with Silt, Fine-Medium, Subangular, Firm, Light Tan, Damp | | | | | | | | | | |
| 70 | N/A | N/A | | 1105 | (SP-SM) Poorly Graded Sand with Silt, Fine-Medium, Subangular, Firm, Light Tan, Damp | | | | | | | | | | |
| 75 | N/A | N/A | | 1110 | (SP-SM) Poorly Graded Sand with Silt, Fine-Medium, Subangular, Firm, Light Tan, Damp | | | | | | | | | | |
| 80 | | | | | | | | | Hydrated Bentonite Chips for Seal | | | | | | |

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| Boring No. WR-434A | | | | | Project No. | Prudence Landfill | | Project Loc. | Gollob Park | | | | | |
|--------------------|---------|-----------------------|-------------|------|---|-------------------|------|-----------------|------------------|---|---|--|--|--|
| Depth In Feet | PID/FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | 07-10-01 | | M.P. Elevation | | | | | | |
| | | | | | Comp. Date | 07-12-01 | Well | 07-13-01 | Initial GW Depth | N/A | ▽ | | | |
| | | | | | Driller | Layne | | Static GW Depth | N/A | ▽ | | | | |
| | | | | | Rig Type | AP-1000 | | GW Elevation | | | | | | |
| | | | | | Drilling Method | Casing Hammer | | Field Geologist | R M Byrd | | | | | |
| | | | | | Datum | Land Surface | | Reviewed By | N W Petersen | | | | | |
| | | | | | Total Depth | 360' BGS | | x - coord = | | | | | | |
| | | | | | y - coord = | | | | | | | | | |
| | | | | | 80 | N/A | N/A | | 1115 | (SP-SM) Poorly Graded Sand with Silt, Fine-Medium, Subangular, Firm, Light Tan, Damp, Mica content increasing | | | | |
| | | | | | 85 | N/A | N/A | | 1120 | (SP-SM) Poorly Graded Sand with Silt, Fine-Medium, Subangular, Firm, Light Tan, Damp, Mica content increasing | | | | |
| 90 | N/A | N/A | | 1125 | (SP-SM) Poorly Graded Sand with Silt, Fine-Medium, Subangular, Firm, Light Tan, Damp, Mica content increasing | | | | | | | | | |
| 95 | N/A | N/A | | 1130 | (SP-SM) Poorly Graded Sand with Silts, Medium-Coarse, Firm, Subrounded, Light Brown | | | | | | | | | |
| 100 | N/A | N/A | | 1135 | (SP-SM) Poorly Graded Sand with Silts and Gravel, Medium-Coarse, Firm, Subrounded, Light Brown | | | | | | | | | |
| 105 | N/A | N/A | | 1140 | (SP-SM) Poorly Graded Sand with Silts and Gravel, Medium-Coarse, Firm, Subrounded, Light Brown | | | | | | | | | |
| 110 | N/A | N/A | | 1145 | (SM) Poorly Graded Sand with Silts, Calcite Cementation, Medium-Coarse, Hard, Subrounded, Light Brown | | | | | | | | | |
| 115 | N/A | N/A | | 1255 | (SM) Poorly Graded Sand with Silts, Calcite Cementation, Medium-Coarse, Hard, Subrounded, Light Brown | | | | | | | | | |
| 120 | N/A | N/A | | 1305 | (SPG-SM) Poorly Graded Sand with Silts and Gravel, Medium-Coarse, Firm, Subrounded, Light | | | | | | | | | |

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| Boring No. WR-434A | | | | | Project No. | Prudence Landfill | | Project Loc. | Gollob Park | | | | | | |
|--------------------|---------|-----------------------|-------------|------|--|------------------------|--|------------------|--------------|--|--|--|--|--|--|
| Depth In Feet | PID/FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | 07-10-01 | | M.P. Elevation | | | | | | | |
| | | | | | Comp. Date | 07-12-01 Well 07-13-01 | | Initial GW Depth | N/A | | | | | | |
| | | | | | Driller | Layne | | Static GW Depth | N/A | | | | | | |
| | | | | | Rig Type | AP-1000 | | GW Elevation | | | | | | | |
| | | | | | Drilling Method | Casing Hammer | | Field Geologist | R M Byrd | | | | | | |
| | | | | | Datum | Land Surface | | Reviewed By | N W Petersen | | | | | | |
| | | | | | Total Depth | 360' BGS | | x - coord = | | | | | | | |
| | | | | | y - coord = | | | | | | | | | | |
| | | | | | 120 | N/A | N/A | | 1315 | Tan/White | | | | | |
| | | | | | | | | | | (SP) Poorly Graded Sand, Medium-Coarse, Firm, Subrounded, Medium Brown, Damp | | | | | |
| 125 | | | | | | | | | | | | | | | |
| | N/A | N/A | | | (SPG) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Subrounded, Medium Brown, Dry/Dusty | | | | | | | | | | |
| 130 | N/A | N/A | | 1320 | (SPG) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Subrounded, Medium Brown, Dry/Dusty | | Five Feet of Hydrated bentonite Pellets for Seal | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 135 | N/A | N/A | | 1325 | (SPG) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Subrounded, Medium Brown, Dry/Dusty | | #8-12 Colorado Silica Sand Filter pack. | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 140 | N/A | N/A | | 1330 | (SPG) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Subrounded, Medium Orange/Brown, Dry/Dusty | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 145 | N/A | N/A | | 1340 | (SM) Poorly Graded Sand with Silts and Trace Gravel, Medium-Fine, Firm, Subrounded, Medium Brown, Dry/Dusty | | The "C" Well Screened with 0.020" machine cut slots from 145' to 150' Below Land Surface (BLS) | | | | | | | | |
| | | | | | (SM) Poorly Graded Sand with Silts and Trace Gravel, Medium-Fine, Firm, Subrounded, Medium Brown, Dry/Dusty | | | | | | | | | | |
| 150 | N/A | N/A | | 1350 | (SM) Poorly Graded Sand with Silts and Trace Gravel, Medium-Fine, Medium Brown, Dry/Dusty, Calcite Cementation increasing with Depth | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 155 | | | | | | | | | | | | | | | |
| | N/A | N/A | | 1355 | (GP) Poorly Graded Gravels with Cobbles, 2" - Subrounded, Light Tan/White, Dry/Dusty | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 160 | N/A | N/A | | | (SPG) Poorly Graded Sand with Gravel, Light Brown, Dusty, Calcite Cementation | | | | | | | | | | |

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| Boring No. WR-434A | | | | | Project No. | Prudence Landfill | | Project Loc. | Gollob Park | | | | | |
|--------------------|---------|-----------------------|-------------|------|---|-------------------|---------------|------------------|--------------|---|--|--|-----------------------------------|--|
| Depth In Feet | PID/FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | 07-10-01 | | M.P. Elevation | | | | | | |
| | | | | | Comp. Date | 07-12-01 | Well 07-13-01 | Initial GW Depth | N/A | ▽ | | | | |
| | | | | | Driller | Layne | | Static GW Depth | N/A | ▼ | | | | |
| | | | | | Rig Type | AP-1000 | | GW Elevation | | | | | | |
| | | | | | Drilling Method | Casing Hammer | | Field Geologist | R M Byrd | | | | | |
| | | | | | Datum | Land Surface | | Reviewed By | N W Petersen | | | | | |
| | | | | | Total Depth | 360' BGS | | x - coord = | | | | | | |
| | | | | | | | | y - coord = | | | | | | |
| | | | | | 160 | N/A | N/A | | 1400 | (SPG) Poorly Graded Sand with Gravel, Light Brown, Dusty, Calcite Cementation | | | Hydrated Bentonite Chips for Seal | |
| | | | | | 165 | N/A | N/A | | 1420 | (SPG) Poorly Graded Sand with Gravel, Light Brown, Dusty, Calcite Cementation | | | | |
| 170 | N/A | N/A | | 1436 | (SP) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Subrounded, Dark Orange/Brown, No Dust | | | | | | | | | |
| 175 | N/A | N/A | | 1440 | (SP) Poorly Graded Sand with Gravel, Medium-Coarse, Firm, Subrounded, Dark Orange/Brown, No Dust | | | | | | | | | |
| 180 | N/A | N/A | | 1450 | (GP) Poorly Graded Gravel Zone, Subangular | | | | | | | | | |
| 185 | N/A | N/A | | 1500 | (SP-SM) Poorly Graded Sand with Silts, Coarse Grain, Firm, Subrounded, Medium Orange/Brown, No Dust, Trace Gravel | | | | | | | | | |
| 190 | N/A | N/A | | 1510 | (GP) Poorly Graded Gravel & Cobble Zone, Subangular to Rounded | | | | | | | | | |
| 195 | N/A | N/A | | | (SP) Poorly Graded Sand, Medium to Coarse Grain, Light Brown, Dry/Dusty | | | | | | | | | |
| 200 | N/A | N/A | | | | | | | | | | | | |

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| Boring No. WR-434A | | | | | Project No. Prudence Landfill | Project Loc. Gollob Park |
|----------------------|--------------|-----------------------|-------------|------|---|--|
| Depth In Feet | PID/FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | M.P. Elevation |
| | | | | | 07-10-01 | |
| | | | | | Comp. Date | Initial GW Depth |
| | | | | | 07-12-01 Well 07-13-01 | N/A |
| | | | | | Driller | Static GW Depth |
| | | | | | Layne | N/A |
| | | | | | Rig Type | GW Elevation |
| | | | | | AP-1000 | |
| | | | | | Drilling Method | Field Geologist |
| | | | | | Casing Hammer | R M Byrd |
| Datum | Reviewed By | | | | | |
| Land Surface | N W Petersen | | | | | |
| Total Depth 360' BGS | | x - coord = | y - coord = | | | |
| 200 | N/A | N/A | | 1520 | (SP) Poorly Graded Sand, Medium to Coarse Grain, Light Brown, Dry/Dusty | |
| | N/A | N/A | | | (SW) Well Graded Sand, Fine to Medium Grain, Light Tan, Dry/Dusty | |
| 205 | N/A | N/A | | 1530 | (SW) Well Graded Sand, Fine to Medium Grain, Light Tan, Dry/Dusty | |
| | N/A | N/A | | | (SPG) Poorly Graded Sand with Gravel, Medium to Coarse Grain, Subangular Light Tan, Dry/Dusty | |
| 215 | N/A | N/A | | 1600 | (SPG) Poorly Graded Sand with Gravel, Medium to Coarse Grain, Subangular Light Tan, Dry/Dusty | |
| | N/A | N/A | | 1610 | Gravel and Cobble Zone | |
| 220 | N/A | N/A | | | (SP-SM) Poorly Graded Sand with Silt and Traces of Gravel, Fine-Medium Grain, Light Tan, Dry/Dusty, Calcite Cementation | |
| 225 | N/A | N/A | | 0815 | (SP-SM) Poorly Graded Sand with Silt and Traces of Gravel, Fine-Medium Grain, Light Tan, Dry/Dusty, Calcite Cementation | |
| | N/A | N/A | | | (SPG) Poorly Graded Sand with Gravel, Larger Clasts Subangular, Light Tan, Dry/Dusty | |
| 230 | N/A | N/A | | 0825 | (SPG) Poorly Graded Sand with Gravel, Larger Clasts Subangular, Light Tan, Dry/Dusty | Five Feet of Hydrated bentonite Pellets for Seal |
| | N/A | N/A | | | (SPG) Poorly Graded Sand with Gravel, Larger Clasts Subangular, Light Tan, Dry/Dusty | #8-12 Colorado Silica Sand Filter pack. |
| 235 | N/A | N/A | | 0840 | (SPG) Poorly Graded Sand with Gravel, Larger Clasts Subangular, Light Tan, Dry/Dusty | |
| | N/A | N/A | | | (MLS) Poorly Graded Silt with Sand, Light Tan/Brown, Dry/Dusty, Calcite Cementation | |
| 240 | N/A | N/A | | | | |

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| Boring No. WR-434A | | | | | Project No. | Prudence Landfill | | Project Loc. | Gollob Park | | | | | | |
|--------------------|---------|-----------------------|-------------|--|--|-------------------|---------------|------------------|--------------|--|--|--|--|--|--|
| Depth In Feet | PID/FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | 07-10-01 | | M.P. Elevation | | | | | | | |
| | | | | | Comp. Date | 07-12-01 | Well 07-13-01 | Initial GW Depth | N/A | ▽ | | | | | |
| | | | | | Driller | Layne | | Static GW Depth | N/A | ▽ | | | | | |
| | | | | | Rig Type | AP-1000 | | GW Elevation | | | | | | | |
| | | | | | Drilling Method | Casing Hammer | | Field Geologist | R M Byrd | | | | | | |
| | | | | | Datum | Land Surface | | Reviewed By | N W Petersen | | | | | | |
| | | | | | Total Depth | 360' BGS | | x - coord = | | | | | | | |
| | | | | | y - coord = | | | | | | | | | | |
| | | | | | 240 | N/A | N/A | | 0850 | (MLS) Poorly Graded Silt with Sand, Light Tan/Brown, Dry/Dusty, Calcite Cementation | | | | | |
| | | | | | 245 | N/A | N/A | | 0900 | (SP-SM) Poorly Graded Sand with Silts and Gravel, Fine Grain, Firm, Subrounded, Light Orange/Brown, Dry/Dusty, Secondary Calcification, (drilling gets hard) | | | | | The "B" Well Screened with 0.020" machine cut slots from 245' to 250' Below Land Surface (BLS) |
| 250 | N/A | N/A | 0915 | (SM) Poorly Graded Silty Sand, Coarse Grain, Light Tan | | | | | | | | | | | |
| 255 | N/A | N/A | | 0940 | (SPG) Poorly Graded Sand with Gravel and Trace Silt, Medium-Coarse Grain, Light Brown, Dry/Dusty | | | | | | | | | | |
| 260 | N/A | N/A | | 0950 | (SPG) Poorly Graded Sand with Gravel and Trace Silt, Medium-Coarse Grain, Light Brown, Dry/Dusty, (Repair drill rig) | | | | | Hydrated Bentonite Chips for Seal | | | | | |
| 265 | N/A | N/A | | 1000 | (SPG) Poorly Graded Sand with Gravel and Trace Silt, Medium-Coarse Grain, Light Brown, Dry/Dusty | | | | | | | | | | |
| 270 | N/A | N/A | | 1015 | (SM) Poorly Graded Silty Sand, Medium-Coarse Grain, Secondary Calcification | | | | | | | | | | |
| 275 | N/A | N/A | | 1020 | (SM) Poorly Graded Silty Sand, Medium-Coarse Grain, Secondary Calcification | | | | | | | | | | |
| 280 | | | | | | | | | | | | | | | |

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| Boring No. WR-434A | | | | | Project No. | Prudence Landfill | | Project Loc. | Gollob Park | | | | | |
|--------------------|---------|-----------------------|-------------|------|---|------------------------|-----|------------------|--------------|---|--|--|--|--|
| Depth In Feet | PID\FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | 07-10-01 | | M.P. Elevation | | | | | | |
| | | | | | Comp. Date | 07-12-01 Well 07-13-01 | | Initial GW Depth | N/A | | | | | |
| | | | | | Driller | Layne | | Static GW Depth | N/A | | | | | |
| | | | | | Rig Type | AP-1000 | | GW Elevation | | | | | | |
| | | | | | Drilling Method | Casing Hammer | | Field Geologist | R M Byrd | | | | | |
| | | | | | Datum | Land Surface | | Reviewed By | N W Petersen | | | | | |
| | | | | | Total Depth | 360' BGS | | x - coord = | | | | | | |
| | | | | | | | | y - coord = | | | | | | |
| | | | | | 280 | N/A | N/A | | 1025 | (SM) Poorly Graded Silty Sand, Medium-Coarse Grain, Secondary Calcification | | | | |
| | | | | | 285 | N/A | N/A | | 1135 | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Coarse, Secondary Calcification (Driller adding water to aid progress) | | | | |
| 290 | N/A | N/A | | 1150 | (SM) Poorly Graded Silty Sand, Medium-Coarse Grain, Secondary Calcification | | | | | | | | | |
| 295 | N/A | N/A | | 1155 | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Coarse, Secondary Calcification (Driller adding water to aid progress) | | | | | | | | | |
| 300 | N/A | N/A | | 1200 | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Coarse, Secondary Calcification (Driller adding water to aid progress) | | | | | | | | | |
| 305 | N/A | N/A | | 1210 | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Fine-Medium Grain, Secondary Calcification, Light Tan, Subangular | | | | | | | | | |
| 310 | N/A | N/A | | 1215 | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Fine-Medium Grain, Secondary Calcification, Light Tan, Subangular | | | | | | | | | |
| 315 | N/A | N/A | | 1220 | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Fine-Medium Grain, Secondary Calcification, Light Tan, Subangular | | | | | | | | | |
| 320 | N/A | N/A | | | (SPW) Well Graded Sand with Gravel, Hard, Coarse Grain, Light Orange/Tan, Subangular, Damp, No Dust | | | | | | | | | |

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| Boring No. WR-434A | | | | | Project No. | Prudence Landfill | | Project Loc. | Gollob Park | | | | | |
|--------------------|---------|-----------------------|-------------|------|---|------------------------|-----|------------------|--|---|--|--|--|--|
| Depth In Feet | PID/FID | Blow Count Blows/Foot | Sample Type | Time | Init. Date | 07-10-01 | | M.P. Elevation | | | | | | |
| | | | | | Comp. Date | 07-12-01 Well 07-13-01 | | Initial GW Depth | N/A | | | | | |
| | | | | | Driller | Layne | | Static GW Depth | N/A | | | | | |
| | | | | | Rig Type | AP-1000 | | GW Elevation | | | | | | |
| | | | | | Drilling Method | Casing Hammer | | Field Geologist | R M Byrd | | | | | |
| | | | | | Datum | Land Surface | | Reviewed By | N W Petersen | | | | | |
| | | | | | Total Depth | 360' BGS | | x - coord = | | | | | | |
| | | | | | y - coord = | | | | | | | | | |
| | | | | | 320 | N/A | N/A | | 1230 | (SPW) Well Graded Sand with Gravel, Hard, Coarse Grain, Light Orange/Tan, Subangular, Damp, No Dust | | | | |
| | | | | | | N/A | N/A | | | (GPS) Poorly Graded Gravel with Sand, Secondary Cementation, 3/8"-1/2" Clasts, Angular | | | | |
| 325 | N/A | N/A | | 1240 | (GPS) Poorly Graded Gravel with Sand, Secondary Cementation, 3/8"-1/2" Clasts, Angular | | | | | | | | | |
| | N/A | N/A | | | (GPS) Poorly Graded Gravel with Sand, Secondary Cementation, 3/8"-1/2" Clasts, Angular | | | | | | | | | |
| 330 | N/A | N/A | | 1245 | (GPS) Poorly Graded Gravel with Sand, Secondary Cementation, 3/8"-1/2" Clasts, Angular | | | | Five Feet of Hydrated bentonite Pellets for Seal | | | | | |
| | N/A | N/A | | | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Fine-Medium Grain, Secondary Calcification, Light Orange/Brown | | | | | | | | | |
| 335 | N/A | N/A | | 1300 | (SPG) Poorly Graded Sand with Gravel & Silt, Extremely Hard, Fine-medium Grain, Secondary Calcification, Light Orange/Tan | | | | #8-12 Colorado Silica Sand Filter pack. | | | | | |
| | N/A | N/A | | | (GPS) Poorly Graded Gravel with Sand, Extremely Hard, Fine-Medium Grain, Secondary Calcite Cementation, Light Orange/Tan | | | | | | | | | |
| 340 | N/A | N/A | | 1315 | (GPS) Poorly Graded Gravel with Sand, Extremely Hard, Fine-Medium Grain, Secondary Calcite Cementation, Light Orange/Tan | | | | | | | | | |
| | N/A | N/A | | | (SP) Poorly Graded Sand, Coarse Grain, Secondary Calcite Cementation, Sub Rounded | | | | | | | | | |
| 345 | N/A | N/A | | 1320 | (SP) Poorly Graded Sand, Coarse Grain, Secondary Calcite Cementation, Sub Rounded | | | | The "A" Well Screened with 0.020" machine cut slots from 345' to 350' Below Land Surface (BLS) | | | | | |
| | N/A | N/A | | | (SP) Poorly Graded Sand, Coarse Grain, Secondary Calcite Cementation, Sub Rounded | | | | | | | | | |
| 350 | N/A | N/A | | | Hard Gravel Zone | | | | | | | | | |
| | N/A | N/A | | | (SP-SM) Poorly Graded Sand with Silt & Gravel, Hard, Fine-Medium Grain, Secondary Calcification, Light Tan, Subangular | | | | | | | | | |
| 355 | N/A | N/A | | 1400 | (SP-SM) Poorly Graded Sand with Silt & Gravel, Hard, Fine-Medium Grain, Secondary Calcification, Light Tan, Subangular | | | | | | | | | |
| | N/A | N/A | | | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Fine-Medium Grain, Secondary Calcification, Light Tan, Subangular | | | | | | | | | |
| 360 | N/A | N/A | | 1415 | (SPG) Poorly Graded Sand with Gravel and Silt, Hard, Fine-Medium Grain, Secondary Calcification, Light Tan, Subangular | | | | | | | | | |

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