N91192.AR.000836
NIROP FRIDLEY
5090.3a

REMEDIAL INVESTIGATION OPERABLE UNIT 3 (OU3) VOLUME III OF IV APPENDICES B THROUGH D NIROP FRIDLEY MN
9/1/2001
TETRA TECH

# Remedial Investigation
for
# Operable Unit 3

# Naval Industrial Reserve Ordnance Plant
Fridley, Minnesota

VOLUME III OF IV
APPENDICES B - D

## Southern Division
## Naval Facilities Engineering Command
**Contract Number N62467-94-D-0888**
**Contract Task Order 0003**

September 2001

**TETRA TECH NUS, INC.**
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PITT-09-1-046

September 24, 2001

Project Number 6966

Commander, Southern Division
Naval Facilities Engineering Command
Attn: Joel R. Sanders, Code ES327
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: CLEAN CONTRACT No. N62467-94-D-0888
Contract Task Order No. 0003

Subject: Remedial Investigation Report (OU3) – Volume 1
NIROP Fridley, Fridley Minnesota

Dear Joel:

As indicated in our recent September 19 letter provided with the distribution of the OU2 Risk Assessment (Supplemental Remedial Investigation Information Report), we would soon be following up with the enclosed Volume I for the OU3 Remedial Investigation Report (revised).

Revisions made to this document since the previous May, 2000 volume are relatively minor and do not impact the conclusions of the OU3 risk assessment. However, rather than provide change pages, we have provided an entire replacement volume for ease of use by those crafting the Environmental Restrictive Covenant. It is possible that further MPCA and EPA comments could necessitate further minor revision to be addressed by change pages to be inserted into this document.

Please note that at the rear of Volume I are replacement pages for Appendix F. Appendix F was originally provided in Volume III in August, 1999. Please remove the Appendix F material from Volume I and place it into previously-provided Volume III, removing the corresponding pages from August, 1999 Volume III. No other revisions or modification to Volumes II, III, or IV are required.

We have been notified that a minor error existed on Figure 2-1 distributed Friday in the OU-2 Risk Assessment Report. Please find a replacement Figure 2-1 for that report. Discard the Figure 2-1 originally received with the report and insert this replacement figure.

Sincerely,

Mark Sladic P.E.
Task Order Manager

MS/kf

Enclosure

cc: Dave Douglas, MPCA (2 copies)
John Aubert, NAVSEA (1 copy)

Tom Bloom, USEPA (1 copy)
Richard Harris, RAB Co-Chair (1 copy)
Doug Hildre UDLP (1 copy)
Bob Jupin, TtNUS (1 copy)
Mark Perry/File 6966 TtNUS (Unbound copy)
Debra Wroblewski TtNUS (Cover Letter Only)

# APPENDIX B

B.1 Boring Logs

B.2 Direct Push Triangulation Maps

B.3 Monitoring Well Construction Sheets

B.4 Certificates of Conformance

B.5 MDH Well and Boring Records

# APPENDIX B.1

# BORING LOGS - PHASE I

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: AOC-3
DATE: 07-13-97
GEOLOGIST: John G Webster
DRILLER: Andy High / Mark McMison

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | 3 feet recovery | | | Dark Brown | fine grained sandy silt | | No UV detected | 0.0 | | | |
| 2025 | 003-SB-001-01 BR | 2 | | | | | | | | | " | | | |
| | | 3 | | | | | Light Brown | fine grained sand | SP | | " | | | |
| | | 4 | | | | | Dark Brown | fine grained sandy silt | | | " | | | |
| 2035 | 003-SB-003-02 BR | 5 | | 100% recovery | | | Light Brown | fine grained sand | SP | No UV detected | 0.0 | | | |
| | | 6 | | | | | | | | | " | | | |
| | | 7 | | | | | | | | | " | | | |
| | | 8 | | | | | | | | | " | | | |
| | 003-SB-003-03 BR | 9 | | 100% recovery | | | Dark Brown | fine grained sand with some gravel | SP | No UV detected | 0.0 | | | |
| 2125 | | 10 | | | | | | " | | | | | | |
| | | 11 | | | | | | " | | | | | | |
| | | 12 | | | | | | " | | | | | | |
| | 003-SB-003-04 BR | 13 | | 100% recovery | | | Dark Brown | fine, medium, and coarse grained sand | SW | No UV detected | 0.0 | | | |
| 2170 | | 14 | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | | |
| | | 16 | | | | | | | | | | | | |
| | | 17 | | 3 feet recovery | | | Dark Brown | fine medium and coarse grained sand grading into | SW | No UV detected | 0.0 | | | |
| | | 18 | | | | | to Light Brown | fine and medium grained sand with gravel ~~cobbles~~ Pebbles | | | | | | |
| 2150 | 003-SB-003-05 BR | 19 | | | | | | | | | | | | |
| | | 20 | | | | | | | | | | | | |
| | | 21 | | 3 feet recovery | | | Dark Brown | f, m, c grained sand | SW | No UV detected | 0.0 | | | |
| 2200 | 003-SB-003-06 BR | 22 | | | | | to Olive | | | moist | | | | |
| | | 23 | | | | | | | | | | | | |
| | | 24 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Stratoprobe
BORING NUMBER: AOC-3
DATE: 07-13-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Mark Mathison

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Bumper BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2210 | | 25 | | No Recovery | | | Dark Brown to Other | fine medium and course grained sand | | No Sample Taken | - | | | |
| | | 26 | | | | | | | | | - | | | |
| | | 27 | | | | | | | | No Recovery | - | | | |
| | | 28 | | | | | | Correlated | | moist to wet | - | | | |
| 2235 | 00-SO 00-DA | 29 | | | | | | | | GW-29.60 | - | | | |
| | | 30 | | 1.5 foot recovery | | | Dark Brown to Other | fine, medium and course grained sand with gravel and cobbles | SW | No UV detected | 0.0 | | | |
| | | 31 | | | | | | | | | - | | | |
| | | 32 | | | | | | | | | - | | | |
| | | 33 | | No recovery | | | | No Recovery | | | - | | | |
| | | 34 | | | | | | | | | - | | | |
| | | 35 | | | | | | | | | - | | | |
| | | 36 | | | | | | | | | - | | | |
| 7-14-97 | | 37 | | 1.5 foot recovery | | | | | SH | No UV detected | - | | | |
| 1640 | | 38 | | | | | | | | No sand was in liner above clay | - | | | |
| | | 39 | | | | | Very Dark Brown | High Plasicity Fatty clay with some sand | CH | | 0.0 | | | |
| | | 40 | | | 40 feet | | | | | End Boring | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): _____

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strataprobe
BORING NUMBER: AOC-4
DATE: 07-22-97
GEOLOGIST: John G Webster
DRILLER: Mark Mathison

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Concrete 8" | | | | |
| | 1 | | 3 foot recovery | | | Light Brown | fine & medium grained sand w/ some gravel | SW | No UV detected | 0.0 | | | |
| 2015 003-SO-004-01 DR | 2 | | | | | Dark Brown | | | | | | | |
| | 3 | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | |
| | 5 | | 100% | | | Dark Brown | fine & medium grained sand w/ gravel signs of slight organics | SW | No UV detected | 0.0 | | | |
| 2025 003-SO-004-02 DR | 6 | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | |
| | 9 | | 100% | | | Light Brown | fine grained sand | SP | No UV detected | 0.0 | | | |
| | 10 | | | | | to Tan | | | | | | | |
| 2030 003-SO-004-03 DR | 11 | | | | | | | | | | | | |
| | 12 | | | | | | | | | | | | |
| | 13 | | 100% | | | Light Brown | fine & medium grained sand w/ gravel | SW | No UV detected | 0.0 | | | |
| 2045 003-SO-004-04 DR | 14 | | | | | Tan | | | | | | | |
| | 15 | | | | | | | | | | | | |
| | 16 | | | | | | | | | | | | |
| 2055 003-SO-004-05 DR | 17 | | 100% | | | Light Brown | fine grained sand w/ a small silt clay lens at base of sample | SP | No UV detected | 0.0 | | | |
| | 19 | | | | | | | | | | | | |
| | 19 | | | | | | | | moist | | | | |
| | 20 | | ~~100%~~ | | | | | | | | | | |
| 2115 003-SO-004-06 DR | 21 | | 3 foot recovery | | | Dark Brown | fine grained sand | SP | wet No UV det. | 0.0 | | | |
| | 22 | | | | | | ~~fine grained~~ silty clay | SC | | | | | |
| | 23 | | | | | | fine grained sand | SP | | | | | |
| | 24 | | | | | | | | | | | | |
| ~~SW~~ | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed well to 27 feet TOC. Stickup .46 feet. 3 foot screen open interval 23 feet. GW at 20.00

Converted to Well: Yes ✓ No _____ Well I.D. #: 003-TW-004-01

# BORING LOG



PROJECT NAME: NI ROP - Findlay
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: AOC-4
DATE: 07-22-97
GEOLOGIST: John G Webster II
DRILLER: Mark Mathison

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 00-30-004-07-OR | 25 | | 3 foot recovery | | | Dark brown | Fine grained sand w/sand sandy silt layers | SP | wet | 0.0 | | | |
| 2130 | | 26 | | | | | | | | | | | | |
| | | 27 | | | | | | | | | | | | |
| | | 28 | | | | | | | | | | | | |
| | | 29 | | 3 foot recovery | | | Dark brown | Sandy silty clay | SC | wet | 0.0 | | | |
| 2150 | 00-30-004-09-BR | 30 | | | | | | | | | | | | |
| | | 31 | | | | | | | | | | | | |
| | | 32 | | | | | | | | | | | | |

End Boring 07-22-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: CTO 0003
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: AOC-6
DATE: July 8, 1997
GEOLOGIST: John G Webster II
DRILLER: Andy High

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. Interval | ~~Blows / 6" or RQD (%)~~ | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks 7.5" of concrete | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1850 | 003- | 1 | | 1.5 feet | | | Dark Brown | fine to medium grained sand | SP | top 1.5 feet | .4 | | | |
| | SB-006- | 2 | | ↓ | | | | " | | NO UV detected | 0.0 | | | |
| | 01-DR | 3 | | | | | | " | | | 0.0 | | | |
| | | 4 | | | | | | " | | | 0.0 | | | |
| 1900 | 003-SB-006 | 5 | | 1.6 feet | | | light Brown | medium to course grained | SW | NO UV detected | 0.0 | | | |
| | 02-DR | 6 | | ↓ | | | " | sand with clear sand, medium grained | | | 0.0 | | | |
| | ↓ | 7 | | | | | " | " | | | 0.0 | | | |
| | | 8 | | | | | " | " | | | 0.0 | | | |
| 1910 | 003-SB-006-03-DR | 9 | | 4 feet | | | Dark Brown | fine grained sand | SP | NO UV detected | 0.7 | | | |
| | | 10 | | 100% | | | light Brown | medium to course grained sand | SW | | 0.0 | | | |
| | | 11 | | | | | " | medium grained well sorted sand | SP | | 0.0 | | | |
| | | 12 | | ↓ | | | " | " | | | 0.0 | | | |
| 1920 | 003-SB-006-04-DR | 13 | | 4 feet 100% | | | light Brown | fine to medium grained sand with course gravel | SW | NO UV detected | 0.0 | | | |
| | | 14 | | | | | to | inclusions | | | 0.0 | | | |
| | | 15 | | | | | Dark Brown | " | | | 0.0 | | | |
| | | 16 | | ↓ | | | " | " | | | 0.0 | | | |
| | | 17 | | 4 feet 100% | | | light and | fine to medium grained | SW | NO UV detected | 0.0 | | | |
| 1930 | 003-SB-006-05-DR | 18 | | | | | Dark Brown | sand | | | 0.0 | | | |
| | | 19 | | | | | | " | | GW - 20.50 | 0.0 | | | |
| | | 20 | | ↓ | | | | " | | very moist | 0.0 | | | |
| | | 21 | | 4 feet 100% | | | light and | fine to medium grained | SW | Rods No UV detected | 0.0 | | | |
| 1945 | 003-SB-006-06-DR | 22 | | | | | Dark Brown | sand | | highest reading so far | 1.7 | | | |
| | | 23 | | | | | | " | | | 0.3 | | | |
| | | 24 | | ↓ | | | | " | | wet | 0.0 | | | |
| 50 | | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Well was installed with hardened steel casing 7¼" ID. Open hole completion

Converted to Well: Yes X No

Well I.D. #: 003-TW-006-01

# BORING LOG



PROJECT NAME: NIROP
PROJECT NUMBER: CTO 0003 (6966)
DRILLING COMPANY: TEG
DRILLING RIG: Strataprobe
BORING NUMBER: AOC-6
DATE: July 8, 1997
GEOLOGIST: John G. Webster II
DRILLER: Andy High

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | | 25 | | 4 feet 100% | | – | Dark brown | fine to medium grained sand | SP | Setting the | 0.0 | | | |
| | 003 SB-006 07 | 26 | | | | – | " | " | | Well - steel casing - open | 0.0 | | | |
| | OR | 27 | | | | – | " | fine to medium grained sand with course poorly | SW | hole 3/4" ID NO UV detected | 0.0 | | | |
| | | 28 | | | | – | " | sorted sand " | | | 0.0 | | | |
| 7/9/97 2025 | 003 SB-006 08-09 | 29 | | 1.5 feet | | – | Dark Brown | fine, medium, and course grained poorly sorted | SW | NO UV detected | 0.0 | | | |
| | | 30 | | | | – | to Dark Gray | sand " | | | 0.0 | | | |
| | | 31 | | – | | – | – | – | | – | – | | | |
| 2145 | | 32 | | – | | – | – | – | | – | – | | | |
| | 003-SB-006-09-09 | 33 | | 1" recovery | | – | Dark Brown | fine grained sand very saturated sliffing | SP | NO UV detected | 0.0 | | | |
| | | 34 | | – | | – | to Gray | back down the sample tube | | | – | | | |
| | | 35 | | – | | – | | – | | | – | | | |
| | | 36 | | – | | – | | – | | | – | | | |
| 2225 | 003-SB-006-10 | 37 | | 1.0' recovery | | – | Dark Brown | fine, medium & course grained poorly sorted | SW | NO UV detected | 0.0 | | | |
| | OR | 38 | | – | | – | to Gray | sand | | | – | | | |
| | | 39 | | – | | – | | | | | – | | | |
| | | 40 | | – | | – | | | | | – | | | |
| 2310 | 003-SB-006-11-11 | 41 | | 1.5' recovery | | – | Dark Brown | fine, medium & course grained poorly sorted | SW | NO UV detected | 0.0 | | | |
| | OR | 42 | | – | | – | to Gray | sand with mature gravels | | | – | | | |
| | | 43 | | – | | – | | – | | | – | | | |
| | | 44 | | – | | – | | – | | | – | | | |
| 2339 | 003-SB-006-12 | 45 | | 1.5 recovery | | | Dark Brown | fine medium & course grained poorly sorted | SW | NO UV detected | 0.0 | | | |
| | OR | 46 | | – | | | to Gray | sand | | | | | | |
| | | 47 | | – | | | – | " – | | | | | | |
| | | 48 | | – | | | – | " – | | | | | | |
| | | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TFG
DRILLING RIG: Strata probe
BORING NUMBER: AOC-6
DATE: July 10, 1997
GEOLOGIST: John G Webster
DRILLER: Andy High

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0-3.0 0.6-13 OK | 49 | | 1.5' Recovery | | | Dark Brown to Gray | fine medium & coarse grained poorly sorted sand | SW | No UV detected | 0.0 | | | |
| 0015 | 50 | | | | | | | | | | | | |
| | 51 | | – | | | | – | | | | | | |
| | 52 | | – | | | | – | | | | | | |
| 0.0-5.0 0.6-14 OK | 53 | | 1.5' recovery | | | " | " | SW | No UV detected | 0.0 | | | |
| 0110 | 54 | | | | | – | – | | | – | | | |
| | 55 | | – | | | – | – | | | – | | | |
| | 56 | | – | | | – | – | | Boring stopped at 56' due to equipment failure. | – | | | |

End 07-10-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe - DPT
BORING NUMBER: AOC-007
DATE: 08-21-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Brett Fishwild

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | 3 foot | | | Black | fine grained sandy silt grading into a | SM | Concrete .60' | 0.0 | | | |
| | | 2 | | | | | Brown | fine, medium, and coarse grained poorly sorted sand w/gravel | SW | | 0.0 | | | |
| 1715 | 003-SB-007-01 BR | 3 | | | | | | | | | 0.0 | | | |
| | | 4 | | | | | | | | | - | | | |
| | | 5 | | 3 foot | | | Brown | fine, medium, and coarse grained sand | SW | | 0.0 | | | |
| 730 | 003-SB-007-02 BR | 6 | | | | | Black | fine grained ~~clay~~ sandy clay | CL | | 0.0 | | | |
| | | 7 | | | | | Tan | fine, medium, and coarse grained poorly sorted sand w/gravel | SW | | 0.0 | | | |
| | | 8 | | | | | | | | | | | | |
| | | 9 | | 2 foot | | | Tan to Brown | Some fine but more medium and coarse grained poorly sorted sand w/pea gravel | SW | | 0.0 | | | |
| 740 | | 10 | | | | | | | | | 0.0 | | | |
| | 003-SB-007-03 BR | 11 | | | | | | | | | 0.0 | | | |
| | | 12 | | | | | | | | | | | | |
| | | 13 | | 3 foot recovery | | | Tan to Brown | " | SW | | 0.0 | | | |
| 905 | 003-SB-007-04 BR | 14 | | | | | | | | | 0.0 | | | |
| | | 15 | | | | | | | | | 0.0 | | | |
| | | 16 | | | | | | | | | - | 0.0 | 0.0 | 0.0 |
| | | 17 | | 2 foot recovery | | | Tan to Brown | " | SW | | 0.0 | | | |
| | | 18 | | | | | | | | | 0.0 | | | |
| 1855 | 003-SB-007-05 BR | 19 | | | | | | | | 19.40 - GW TOC | - | - | | |
| | | 20 | | | | | | | | | - | | | |
| | | 21 | | 2 foot recovery | | | Tan to Grey | " | SW | | 0.0 | | | |
| 1925 | 003-SB-007-06 BR | 22 | | | | | | | | | 0.0 | | | |
| | | 23 | | | | | | | | | 0.0 | | | |
| | | 24 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed a temporary monitor well to 27 feet bgs. There is 28 feet of total rod with a 3.5 foot open interval in a 4 foot slotted rod at base of well. Stick up is 1.10 feet. There is a .5 foot solid steel punch at base of well. GW is 19.40 TOC

Converted to Well: Yes ✓ No _____ Well I.D. #: 003-TW-007-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
BORING NUMBER: AOC - 007
PROJECT NUMBER: 6966
DATE: 08-21-97
DRILLING COMPANY: TEG- Midwest
GEOLOGIST: John G Webster II
DRILLING RIG: Strataprobe
DRILLER: Andy High /

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | .5 foot recovery | | | Tan | " | SW | A lot of Water | 0.0 | | | |
| 1955 003-SB-007-07-BR | 26 | | | | | | | | the piston could not | – | | | |
| | 27 | | | | | | | | displace water low sand | – | | | |
| | 28 | | | | | | | | recovery | – | | | |
| | 29 | | 3 foot recovery | | | Tan | " | | | 0.0 | | | |
| 2000 003-SB-007-08-BR | 30 | | | 30 | | | | | | 0.0 | | | |
| | 31 | | | | | Brown | fine grained well sorted sand | SP | | 1 | | | |
| | 32 | | | 32 | | | | | | – | 0.0 | 0.0 | 0.0 |
| | 33 | | 2.5 foot recovery | | | Brown to Orange | fine, medium, and course grained poorly sorted sand w/a fine grained lens | SW | | 0.0 | | | |
| 2050 003-SB-007-09-BR | 34 | | | 33.5 | | | | SP | | 0.0 | | | |
| | 35 | | | 34 | | | | SW | | 0.0 | | | |
| | 36 | | | | | | | | | – | | | |
| | 37 | | .75 foot recovery | | | Brown to Orange | fine, medium and course grained poorly sorted sand w/large gravel | SW | | 0.0 | | | |
| 2105 003-SB-007-10-BR | 38 | | | | | | | | | – | | | |
| | 39 | | | | | | | | | – | | | |
| | 40 | | | | | | | | | – | | | |
| | 41 | | 1.5 foot recovery | | | " | " | | Duplicate to | 0.0 | | | |
| 2145 003-SB-007-11-BR | 42 | | | | | | | | 003-SB-001-28-BR | | | | |
| | 43 | | | | | | | | | | | | |
| | 44 | | | | | | | | | | | | |
| | 45 | | | | | | No Recovery | | Sample wash | | | | |
| 2200 | 46 | | | | | | evidence of some | | out of the end of | | | | |
| | 47 | | | | | | lithology in bottom | | the sampler | | | | |
| | 48 | | | | | | of sampler | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe
BORING NUMBER: AOC 007
DATE: 08-22-97
GEOLOGIST: John G Webster II
DRILLER: Andy High /

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 49 | | | | | | No Recovery | | Sample washed | | | | |
| 0120 | | 50 | | | | | | | | out of the bottom | | | | |
| | | 51 | | | | | | | | | | | | |
| | | 52 | | | | | | | | | | | | |
| | | 53 | | | | | | No Recovery | | " | | | | |
| 0220 | | 54 | | | | | | | | | | | | |
| | | 55 | | | | | | | | | | | | |
| | | 56 | | | | | | | | | | | | |
| | | 57 | | | | | | No Recovery | | " | | | | |
| 300 | | 58 | | | | | | | | | | | | |
| | | 59 | | | | | | | | | | | | |
| | | 60 | | | | | | | | | | | | |
| | | | | | | | | Due to the nature of the medium, a poorly sorted sand w/ a abundant of pore space, a large amount of water was retained in the macro core. Upon driving the sampler and tripping the sampler could not displace the water and sample would fall out of the bottom of the macro core. The baskets were a different polymer not as forgiving. — Do Not going to use new sampler again. | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Stratoprobe
BORING NUMBER: AOC-08/09
DATE: July 21, 1997
GEOLOGIST: John G Webster II
DRILLER: Mark Mathison / Mady High

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. Interval | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | 3 foot recovery | | | Light Brown to Tan | fine grained sand with some gravel | SP | | 0.0 | | | |
| 1635 | 003-SB-008-01-DR | 2 | | | | | | | | | 0.0 | | | |
| | | 3 | | | | | | | | | 0.0 | | | |
| | | 4 | | | | | | | | | - | | | |
| | | 5 | | 3 foot recovery | | | Light Brown | fine grained sand w/ 2 3" organic pockets | SP | | 0.0 | | | |
| 1655 | 003-SB-008-02-DR | 6 | | | | | | | | | - | | | |
| | | 7 | | | | | | | | | - | | | |
| | | 8 | | | | | | | | | - | | | |
| | | 9 | | 100% recovery | | | Light Brown | fine grained sand w/ some gravel at top | SP | | 0.0 | | | |
| | | 10 | | | | | | | | | - | | | |
| | 003-SB-008-03-DR | 11 | | | | | | | | | - | | | |
| | | 12 | | | | | | | | | - | | | |
| | | 13 | | 3 foot recovery | | | Light Brown | fine grained sand w/some gravel | SP | | 4.1 | | | |
| 715 | 003-SB-008-04-DR | 14 | | | | | | | | | - | | | |
| | | 15 | | | | | | | | | - | | | |
| | | 16 | | | | | | | | | - | | | |
| 730 | 003-SB-008-05-DR | 17 | | 3 foot recovery | | | Dark Brown | fine grained sand w/ some small gravel | SP | Moist at | 4.1 | | | |
| | | 18 | | | | | | | | 1.9 and 20 foot interval | - | | | |
| | | 19 | | | | | | | | GW at 19.6 TOC | - | | | |
| | | 20 | | | | | | | | .57 stick up bgs. | - | | | |
| | | 21 | | 2 foot recovery | | | Dark Brown | fine and medium grained sand | SW | wet | 0.0 | | | |
| 750 | 003-SB-008-06-DR | 22 | | | | | | | | | - | | | |
| | | 23 | | | | | | | | | - | | | |
| | | 24 | | | | | | | | | - | | | |
| | Tem | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to ~~27~~ 28.5 feet BGS. The total length of the rods was 27 feet. The stick-up was .57 feet. There was a 3 foot rod with a slotted screen length of 2.2 feet at bottom of well.

Converted to Well: Yes X No _____ Well I.D. #: 003-TW-009-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Stratoprobe
BORING NUMBER: AOC - 8/9
DATE: 7/21/97
GEOLOGIST: John G Webster II
DRILLER: Mark Mathison / Andy High

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 25 | | 2 foot recovery | | | Dark Brown | fine & medium grained sand | SW | | 0.0 | | | |
| 825 | 003-SB-008-07-BR | 26 | | | | | | | | | | | | |
| | | 27 | | | | | | | | | | | | |
| | | 28 | | | | | | | | | | | | |
| 840 | 003-SB-009-08-BR | 29 | | 2 foot recovery | | | Dark Brown | fine medium and course grained sand | SW | | 0.0 | | | |
| | | 30 | | | | | | | | | | | | |
| | | 31 | | | | | | | | | | | | |
| | | 32 | | | | | | | | | | | | |
| | | 33 | | 1 foot recovery | | | Dark Brown | fine grained sand with a 2" very fine grained section | SP | | 0.0 | | | |
| 2200 | 003-SB-009-09-BR | 34 | | | | | | | | | | | | |
| | | 35 | | | | | | | | | | | | |
| | | 36 | | | | | | | | | | | | |
| 2235 | 003-SB-009-10-BR | 37 | | 1 foot recovery | | | Dark Brown | very fine grained to fine grained sand | SP | | 0.0 | | | |
| | | 38 | | | | | | | | | | | | |
| | | 39 | | | | | | | | | | | | |
| | | 40 | | | | | | | | | | | | |
| 305 | 003-SB-009-11-BR | 41 | | 2 foot recovery | | | Dark Brown | fine grained to very fine grained sand | SP | | 0.0 | | | |
| | | 42 | | | | | | | | | | | | |
| | | 43 | | | | | | | | | | | | |
| | | 44 | | | | | | | | | | | | |
| | | 45 | | 2 foot recovery | | | Dark Brown | very fine grained sand w/ some silty layer in matrix | SP | | 0.3 | | | |
| -22-97 1615 | 003-SB-009-12-BR | 46 | | | | | | | | | | | | |
| | | 47 | | | | | | | | | | | | |
| | | 48 | | | | | | | | | | | | |
| | EW | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strataprobe
BORING NUMBER: AOC 8/9
DATE: 07-22-97
GEOLOGIST: John G Webster II
DRILLER: Mark Mathison

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 49 | | 3 foot recovery | | | Dark Brown | very fine grained sandy silt with grading into a | SP | | 0.0 | | | |
| 710 OOD-30 OOB-13 -DR | 50 | | | | | | fine to medium grained sand | SW | | | | | |
| | 51 | | | | | | | | | | | | |
| | 52 | | | | | | | | | | | | |
| | 53 | | 3 foot rec | | | Dark Brown | fine grained sand | SP | | 0.0 | | | |
| | 54 | | | | | | | | | | | | |
| 750 OOD-30 OOB-14 DR | 55 | | | | | | | | | | | | |
| | 56 | | | | | | | | | | | | |
| | 57 | | 3 foot recovery | | | Dark Brown | fine grained sandy silt | SM | | 0.0 | | | |
| OOD-30 OOB-15 DR | 58 | | | | | | silty clay w/ high plastic | CH | | | | | |
| | 59 | | | | | | " | | | 0.0 | | | |
| | 60 | | | | | | fine grained sandy silt | | Boring Terminated at 60 feet | | | | |

End Boring 07-22-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): _____

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strataprobe
BORING NUMBER: AOC-13/14
DATE: 07-14-97
GEOLOGIST: John G Webster II
DRILLER: Mark McPherson

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1745 | 003-SD-013-01 DR | 1 | | 3 feet recovery | | | Light Brown to Tan | Fine grained sand | SP | No UV detected | 0.0 | | | |
| | | 2 | | | | | | | | | | | | |
| | | 3 | | | | | | | | | | | | |
| | | 4 | | | | | | | | | | | | |
| | | 5 | | 100% recovery | | | Light Brown | Fine grained sand with some lignite | SP | No UV detected | 0.0 | | | |
| 1755 | 003-SD-013-02 DR | 6 | | | | | | | | | | | | |
| | | 7 | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | |
| | | 9 | | 100% recovery | | | Light Brown | fine grained sand | SP | No UV detected | 0.0 | | | |
| | | 10 | | | | | | | | | | | | |
| 1805 | 003-SD-013-03 DR | 11 | | | | | | | | | | | | |
| | | 12 | | | | | | | | | | | | |
| | | 13 | | 100% recovery | | | | Light Brown fine grained sand | SP | No UV detected | 0.0 | | | |
| 1820 | 003-SD-013-04 DR | 14 | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | | |
| | | 16 | | | | | | | | | | | | |
| 840 | 003-SD-013-05 DR | 17 | | 1 foot recovery | | | Light Brown | fine and medium grained sand, large gravel | SW | No UV detected | 0.0 | | | |
| | | 18 | | | | | | " | | | | | | |
| | | 19 | | | | | | – | | GW - 19.75 Tot | | | | |
| | | 20 | | | | | | – | | | | | | |
| | | 21 | | 2 feet recovery | | | Dark Brown | Fine and medium grained sand, moist to wet | SW | wet | 0.0 | | | |
| 935 | 003-SD-013-06 DR | 22 | | " | | | | | | No UV detected | | | | |
| | | 23 | | | | | | | | | | | | |
| | | 24 | | | | | | | | | | | | |
| TD | | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Monitor well installed to 27 feet

Drilling Area Background (ppm):

Converted to Well: Yes X No

Well I.D. #: 003-TW-013-01

# BORING LOG



PROJECT NAME: NIPOP - Findlay
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: AOC-13M
DATE: 7-15-97
GEOLOGIST: John G Webster
DRILLER: Andy High / Mark Mathison

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 1 foot Recovery | | | Dark Brown | fine medium and course grained sand wet | SW | No UV detected | 0.0 | | | |
| 003-30-013-07-BR | 26 | | | | | | | | | | | | |
| | 27 | | | | | | | | | | | | |
| | 28 | | | | | | | | | | | | |
| 003-30-013-08-BR | 29 | | 1 foot recovery | | | Dark Brown | f, m, c grained sand | SW | No UV detected | 1.5 | | | |
| | 30 | | | | | | | | | | | | |
| | 31 | | | | | | | | | | | | |
| | 32 | | | | | | | | | | | | |
| 003-30-013-09-BR | 33 | | | | | | fine, med, course grained sand | SW | No UV detected | 3.2 | | | |
| | 34 | | | | | | | | | 0.8 | | | |
| 0 | 35 | | | | | | | | | 0.1 | | | |
| | 36 | | | | | | | | | | | | |
| 7-15-97 | 37 | | No Recovery | | | | fine grained sand in a large gravel lens granite and basaltic gravel | SW | No Recovery | | | | |
| 003-30-013-10-BR | 38 | | | | | | | | | | | | |
| | 39 | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | |
| 1735 003-30-013-11-BR | 41 | | 10" of recovery | | | | fine medium and course grained sand | | - The piston had what looked like a sandy silt on it | 6.2 | | | |
| | 42 | | | | | | | | | | | | |
| | 43 | | | | | | | | - No UV detected | | | | |
| | 44 | | | | | | End Boring | | - Based on the gravel lens around 20 feet, in which the rig had problems pulling, we stopped because of equipment limitation | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): _____

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strataprobe~~ - DPT - Earthprobe

BORING NUMBER: AOC-015
DATE: 09-22-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Hang

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003-B-015-01-(SB) | 1 | | 2.5 feet | 0-5.0 | | Tan | fine, medium, and coarse grained poorly sorted sand | SW | Concrete .45' | 2.4 | | | |
| | 2 | | | | | | | ↓ | | 2.2 | | | |
| 710 | 3 | | | | | Tan | fine grained well sorted sand | SP | | – | | | |
| | 4 | | | | | | | ↓ | | – | | | |
| | 5 | | 3 feet | | | Tan | fine grained well sorted sand | SP | | 0.0 | | | |
| 1730 003-B-015-02-(SB) | 6 | | | | | | | | | 0.0 | | | |
| | 7 | | | | | | | | | – | | | |
| | 8 | | | | | | | ↓ | | – | | | |
| ~~003-B-015-03~~ | 9 | | 2 feet | | | Tan | fine grained well sorted sand | SP | | 0.0 | | | |
| 1725 | 10 | | | 10' | | | | ↓ | | 0.0 | | | |
| 003-SB-015-03-(SB) | 11 | | | | | Tan | fine, medium, and coarse grained poorly sorted | SW | | – | | | |
| | 12 | | | | | | sand w/ gravel | ↓ | | – | | | |
| | 13 | | 2 feet | | | Tan | fine, medium, and coarse grained poorly sorted sand w/ gravel | SW | | 0.0 | | | |
| 1740 003-B-015-04-(SB) | 14 | | | | | | | ↓ | | 0.2 | | | |
| | 15 | | | | | Dark Brown | fatty slight sandy clay | CH/CL | | – | | | |
| | 16 | | | | | | | ↓ | | – | 0.0 | 0.0 | 0.0 |
| | 17 | | | | | Dark Brown | Slight sandy clay | CL | | 5.8 | | | |
| 805 | 18 | | | +8' | | | | ↓ | | 1.2 | | | |
| 003-B-015-05-(SB) | 19 | | | | | Dark Brown | fine, medium, and coarse grained sand w/ large | SW | | – | – | | |
| | 20 | | | | | | gravel | ↓ | | – | | | |
| | 21 | | 3 feet recovery | | | Brown | Alternating layers of fine, medium, and coarse grained poorly sorted sand and fine grained well sorted sand | SW/SP | wet | 0.0 | | | |
| 1850 003-B-015-06-(SB) | 22 | | | | | | | | | 0.8 | | | |
| | 23 | | | | | | | | | 0.2 | | | |
| | 24 | | | | | | | ↓ | | – | | | |

Due to the limitations of the equipment the boring was ended 09-22-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 27 feet bgs. There was 28 feet of total rod w/ 2-3.5 foot open screens in 4 foot slotted rods at base of well. G.W. was 20.07 TOC. The stick up is 1.00'. The well was installed w/ a disposable point

Converted to Well: Yes X No Well I.D. #: 003-TW-015-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: AOC - 016
DATE: 07-26-97
GEOLOGIST: John G Webster
DRILLER: Mark Mathisen / Brett Fishwild

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1315 | 003-SB-016-01 | 1 | | 1 foot recovery each | | | Dark Brown | fine grained sand w/ some Black silt | SP | No UV detected | 0.0 | | | |
| | | 2 | | 2x sample | | | | 2 sample fine grained sand at top grading into a Black silty | SM | in all samples | .7 | | | |
| | | 3 | | | | | | sandy silt - fill material | | recovered | - | | | |
| | | 4 | | | | | | | SP | | - | | | |
| 1330 | | 5 | | 2 foot recovery | | | Tan | very fine grained ~~sandy~~ silty sand | | | - | | | |
| | | 6 | | | | | | | | | - | | | |
| | 003-SB-016-02 OR | 7 | | | | | | | | | 0.1 | | | |
| | | 8 | | | | | | | | | | | | |
| | 003-SB-016-03 OR | 9 | | 100% recovery | | | Tan | fine and medium grained sand w/gravel | SW | | .4 | | | |
| 1350 | | 10 | | | | | | | | | .9 | | | |
| | | 11 | | | | | | | | | .5 | | | |
| | | 12 | | | | | | | | | - | | | |
| | | 13 | | 3 foot recovery | | | Dark Brown to Tan | fine and medium grained sand w/ pea gravel | SW | | - | | | |
| | | 14 | | | | | | | | | - | | | |
| 405 | 003-SB-016-04 OR | 15 | | | | | | | | | - | | | |
| | | 16 | | | | | | | | Not Valid → | 3.9 | | | |
| | 003-SB-016-05 OR | 17 | | 3 foot recovery | | | Tan | fine, medium and course grained sand | SW | | 2.0 | | | |
| 420 | | 18 | | | | | | | | | | | | |
| | | 19 | | | | | | | | | 1.7 | | | |
| | | 20 | | | | | | | | moist | | | | |
| 1430 | 003-SB-016-06 OR | 21 | | 1.5 foot recovery | | | Dark Brown to Grey | fine, medium, course, very course grained sand w pea and larger gravel | SW | wet | 1.2 | | | |
| | | 22 | | | | | | | | | | | | |
| | | 23 | | | | | | | | | | | | |
| | | 24 | | | | | | | | | | | | |
| TD | | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 27 feet bgs. The total length of the rods was 28 feet. Stick up was .98 feet. There was a 4 foot rod on bottom w 3.5 feet open slotted interval. GW was 20.00 TOC

Converted to Well: Yes Y No

Well I.D. #: 003 - TW - 016 - 01

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata Probe
BORING NUMBER: AOC-016
DATE: 07-26-97
GEOLOGIST: John G Webster II
DRILLER: Mark Mathison / Brett Fishenkl

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003-SO-016-OR 1445 | 25 | | 2 foot recovery | | | Dark Brown | fine and medium grained sand | SW | | 0.0 | | | |
| | 26 | | | | | | | | | | | | |
| | 27 | | | | | | | | | | | | |
| | 28 | | | | | | | | | | | | |
| | 29 | | | | | Dark Brown | medium, course, very course grained mature sand grading into a fine grained sand | SW | | 0.0 | | | |
| 003-SO-016-OR 1515 | 30 | | | | | | | SP | | | | | |
| | 31 | | | | | | | | | | | | |
| 003-SO-016-OR 1720 | 32 | | | | | | | SW | | | | | |
| | 33 | | | | | Dark Brown | fine medium, course, very course grained mature sand w/ gravel clay in the end of the cutting shoe | | | 0.0 | | | |
| | 34 | | | | | | | | | | | | |
| | 35 | | | | | | | | | | | | |
| | 36 | | | 36.5 | | | | CH | | | | | |
| 1900 003-SO-00-OR | 37 | | only went 1 foot | | | Dark Brown | lean fatty clay | | | 0.3 | | | |
| | 38 | | | | | | | | | | | | |
| | 39 | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | |

End Boring 07-26-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): _____

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Stratoprobe
BORING NUMBER: AOC-017
DATE: 07-25-97
GEOLOGIST: John G. Webster II
DRILLER: Andy High / Mark McKinsey

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1605 | 003-SD-01 BR | 1 | | recovery 1.5 | | | Dark Brown | fine grained sandy silt | SM | moist, slight odor | - | | | |
| | | 2 | | Sample 2x | | | | | | | - | | | |
| | | 3 | | | | | | | | | 3.9 | | | |
| | | 4 | | | | | | | | | 4.1 | | | |
| 1620 | 003-SD-07-02 BR | 5 | | 1.5 foot recovery | | | Dark Brown | fine and medium grained sand some black stained | SW | wet | 3.2 | | | |
| | | 6 | | | | | to Black | silt at top | | | 2.3 | | | |
| | | 7 | | | | | | | | | - | | | |
| | | 8 | | | | | | | | | - | | | |
| 645 | 003-SD-07-03 BR | 9 | | full recovery sample | | | Dark Brown | fine to medium grained sand | SW | organic odor | ~~4.8~~ 3.8 | | | |
| | | 10 | | 2 foot recovery due | | | to Slight Tan | | | Trash smell | 2.3 | | | |
| | | 11 | | start | | | | | | | 5.4 | | | |
| | | 12 | | | | | | | | | 4.8 | | | |
| 700 | 003-SD-07-04 BR | 13 | | 2 foot recovery | | | Dark Brown to Tan | fine and medium grained sand | SW | | 1.7 | | | |
| | | 14 | | | | | | | | | 0.8 | | | |
| | | 15 | | | | | | | | | " | | | |
| | | 16 | | | | | | | | | 1.2 | | | |
| 715 | 003-SD-07-05 BR | 17 | | 2 foot recovery | | | Dark Brown | fine, medium, and coarse grained sand w/ pea gravel | SW | | 5.3 | | | |
| | | 18 | | | | | | | | | 2.0 | | | |
| | | 19 | | | | | | | | | - | | | |
| | | 20 | | | | | | | | moist to wet | - | | | |
| 735 | 003-SD-07-06 BR | 21 | | 2 foot recovery | | | Dark Brown | fine grained sand | SP | wet | 5.4 | | | |
| | | 22 | | | | | | | | ↓ | - | | | |
| | | 23 | | | | | | | | wet | - | | | |
| | | 24 | | | | | | | | | - | | | |
| | TW | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed well to 27 feet bgs. There is 28 feet of rod w/ stick up of .98 feet. The screened interval was a 4 foot rod with a slotted length of 3.5 feet. GW was 20.25 TOC.

Converted to Well: Yes Y No Well I.D. #: 003-TW

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: AOC-017
DATE: 07-25-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Mark Mathison

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1750 | 003-SO 017-09 -BR | 25 | | .75 recovery | | | Dark Brown | Fine and medium grained Sand | | | 3.5 | | | |
| | | 26 | | | | | to Olive | | | | | | | |
| | | 27 | | | | | | | | | | | | |
| | | 28 | | | | | | | | | | | | |
| 1815 | 003-SO-017-09 OR | 29 | | 1 foot recovery | | | Dark Brown to Olive | Fine and medium grained sand | | | 1.7 | | | |
| | | 30 | | | | | | | | | | | | |
| | | 31 | | | | | | | | | | | | |
| | | 32 | | | | | | | | | | | | |
| 1825 | 003-SO-017-09 BR | 33 | | No Rec | | | Dark Brown to Olive | f, m, c, grained sand w / trace gravel | | 1" of sample | | | | |
| | | 34 | | ? | | | | | | ? | | | | |
| | | 35 | | | | | | | | | | | | |
| | | 36 | | | | | | | | | | | | |
| 2110 | 003-SO-017-10 OR | 37 | | 1 foot recovery | | | Dark Brown | fine, medium and coarse grained sand | SW | | 1.3 | | | |
| | | 38 | | | | | to Olive | | | | | | | |
| | | 39 | | | | | | | | | | | | |
| | | 40 | | | | | | | | | | | | |
| 2140 | 003-SO-017-11 OR | 41 | | 1 foot recovery | | | Dark Brown | fine, medium, coarse and very coarse grained | SW | | 5.2 | | | |
| | | 42 | | | | | to Olive | sand w/ gravel | | | | | | |
| | | 43 | | | | | | | | | | | | |
| | | 44 | | | | | | | | | | | | |
| 2215 | 003-SO-017-12-OR | 45 | | 3 foot recovery | | | Dark Brown | fine, medium, coarse grained sand grading into a lean fatty clay | SW to | | 0.8 | | | |
| | | 46 | | | | | | | | | | | | |
| | | 47 | | | | | | | | | | | | |
| | | 48 | | | | | | | | | | | | |
| | | | | | | | | End Boring 07-25-97 | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP- Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Shaker Probe
BORING NUMBER: AOC-018
DATE: 07-26-97
GEOLOGIST: John G Webster EE
DRILLER: Mark Mattison / Andy High

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003-SD 018-01 | 1 | | 2 foot recover | | | Dark Brown | fine grained Sand w/gravel Dark Black sandy silt - fill material | SP | | 1.6 | | | |
| ~~1940~~ BR | 2 | | | | | | | SM | | 1.4 | | | |
| 1940 | 3 | | | | | | | | | 1.5 | | | |
| | 4 | | | | | | | | | – | | | |
| 1945 | 5 | | 2 foot recovery | | | Dark Brown | fine and medium grained sand w/gravel | SP | | 1.7 | | | |
| ~~1945~~ 003-SD-018-02 BR | 6 | | | | | | | | | 1.8 | | | |
| | 7 | | | | | | | | | 2.2 | | | |
| | 8 | | | | | | | | | – | | | |
| 1950 | 9 | | 2 foot recovery | | | Tan | fine grained sand | SP | | 1.5 | | | |
| ~~1950~~ 003-SD-018-03 | 10 | | | | | | | | | 1.6 | | | |
| BR | 11 | | | | | | | | | 1.5 | | | |
| | 12 | | | | | | | | | – | | | |
| | 13 | | 2 foot recovery | | | Dark Brown | fine and medium grained sand w/few gravel | SW | | 0.0 | | | |
| 2000 ~~1960~~ 003-SD-018-04 BR | 14 | | | | | | | | | 0.0 | | | |
| | 15 | | | | | | | | | 2.3 | | | |
| | 16 | | | | | | | | | – | | | |
| | 17 | | 2 foot recovery | | | Dark Brown | fine, medium and a little course grained sand | SW | | 2.1 | | | |
| 2010 ~~1970~~ 003-SD-018-05 BR | 18 | | | | | to Olive | | | moist to wet | 0.7 | | | |
| | 19 | | | | | | | | GW - 19.94 TOC | – | | | |
| | 20 | | | | | | | | | – | | | |
| | 21 | | 2 foot recovery | | | Dark Brown | fine and medium grained sand | SW | wet | – | | | |
| 2025 ~~1975~~ 003-SD-018-06 | 22 | | | | | | | | | 5.5 | | | |
| BR | 23 | | | | | | | | | | | | |
| | 24 | | | | | | | | | | | | |
| TD | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary monitor well to 27 feet bgs. 28 feet of rod. Stick up was 1.05 feet. GW was 19.94 TOC. Total of 28 feet of rod with 4 foot screen on bottom with 3.5 feet open interval

Converted to Well: Yes ✓ No _____ Well I.D. #: 003-TW-018-01

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Stratoprobe
BORING NUMBER: AOC-018
DATE: 07-26-97
GEOLOGIST: John G Webstell
DRILLER: Mark Mathison Diane Johnston

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 003-SO-018-OR | 25 | | 2 foot recovery | | | Dark Brown | fine grained well sorted sand | SP | | 2.2 | | | |
| 2040 | | 26 | | | | | to Olive | | | | 0.1 | | | |
| | | 27 | | | | | | | | | – | | | |
| | | 28 | | | | | | | | | – | | | |
| | | 29 | | 2 foot recovery | | | Dark Brown | fine and medium grained sand | SW | | 1.6 | | | |
| 2100 | 003-SO-018-OR | 30 | | | | | | | | | – | | | |
| | | 31 | | | | | | | | | – | | | |
| | | 32 | | | | | | | | | – | | | |
| 7-27-97 | 003-SO-018-OR | 33 | | 1.5 foot recovery | | | Dark Brown | fine, medium, course grained sand | SW | | 0.2 | | | |
| 310 | | 34 | | | | | to Olive | | | | 0.2 | | | |
| | | 35 | | | | | | | | | – | | | |
| | | 36 | | | | | | | | | – | | | |
| | | 37 | | 1.5 foot recovery | | | | | | | | | | |
| 330 | 003-SO-018-10-OR | 38 | | | | | Dark Brown | fine, medium grained sand poorly sorted | SW | | 2.0 | | | |
| | | 39 | | | | | to Olive | | | | 2.0 | | | |
| | | 40 | | | | | | | | | | | | |
| | | 41 | | 2 foot recovery | | | Dark Brown | fine, medium and course grained poorly sorted sand w/peb | SW | | 2.3 | | | |
| 350 | 003-SO-018-11-OR | 42 | | | | | to Olive | gravel | | | | | | |
| | | 43 | | | | | | | | | | | | |
| | | 44 | | | | | | | | | | | | |
| | | 45 | | 2 foot recovery | | | Dark Brown | fine, medium and course grained poorly sorted sand w/peb | SW | | 2.4 | | | |
| 415 | 003-SO-018-12-OR | 46 | | | | | to Olive | gravel | | | 3.2 | | | |
| | | 47 | | | | | | | | | 2.4 | | | |
| | | 48 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP-Findlay
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: AOC-018
DATE: 07-27-97
GEOLOGIST: John G Webster
DRILLER: Andy High / Brett Fishwild

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 49 | | 2 feet | | | Dark Brown | Fine and medium grained sand | | | 2.0 | | | |
| 435 00 3-50- 01 8-13- OR | 50 | | | | | | | | | 3.4 | | | |
| | 51 | | | | | | | | | 5.5 | | | |
| | 52 | | | | | | | | | - | | | |
| | 53 | | No recovery | | | | — | | | - | | | |
| 1500 | 54 | | | | | | | | | - | | | |
| | 55 | | | | | | | | | - | | | |
| | 56 | | | | | | | | | - | | | |
| 00 -50- 01 8-15- OR | 57 | | 2 foot recovery | | | Dark Brown | fine, medium, and coarse grained sand | | | 8.3 | | | |
| | 58 | | | | | N. Olive | | | | | | | |
| | 59 | | | | | | | | | | | | |
| | 60 | | | | | | | | Stopped Boring | | | | |

End Boring 07-27-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strataprobe
BORING NUMBER: AOC-23
DATE: 08-09-97
GEOLOGIST: John G. Webster II
DRILLER: Andy High

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 003-SB 023-01 OR | 1 | | 2 feet | | | Tan to Brown | fine grained well sorted sand w/gravel | SP | | 0.0 | | | |
| 1245 | | 2 | | | | | | | | | | | | |
| | | 3 | | | | | | | | | | | | |
| | | 4 | | | 4 feet | | | | | | | | | |
| | | 5 | | 3 feet | | | Tan | ~~fine grained well sorted sand~~ fine, medium, and course grained poorly sorted sand w/pea gravel | SW | | 0.0 | | | |
| 1250 | 003-SB 023-02 OR | 6 | | | | | | | | | | | | |
| | | 7 | | | 7 feet | | | | | | | | | |
| | | 8 | | | | | | | SP | | | | | |
| | | 9 | | | | | Tan to | fine grained well sorted sand | SP | | | | | |
| | | 10 | | | | | Dark Brown | | | | | | | |
| 1255 | 003-SB 023-03 OR | 11 | | | | | | | | | | | | |
| | | 12 | | | | | | | | | 0.3 | | | |
| | | 13 | | | | | Tan to Dark Brown | fine grained well sorted sand | SP | | 0.0 | | | |
| | | 14 | | | | | | | | | | | | |
| 1305 | 003-SB 023-04 OR | 15 | | | | | | | | | | | | |
| | | 16 | | | | | | | | | | | | |
| | | 17 | | | | | Brown to Dark Brown | fine grained well sorted sand | SP | | 2.0 | 0.9 | | 1.8 |
| | | 18 | | | | | | | | | 2.7 | | | |
| 1315 | 003-SB 023-05 OR | 19 | | | 19 feet | | | | | moist | 37 | | | |
| | | 20 | | | | | Dark Grey | fine, medium, and course grained poorly sorted sand | SW | wet 19.8 TOC GW | | | | |
| | 003-SB 023-06 OR | 21 | | | | | | | | | 4.3 | | | |
| 1330 | | 22 | | | | | | | | | 2.7 | | | |
| | | 23 | | | | | | | | | 1.3 | | | |
| | | 24 | | | | | | fine medium and course grained poorly sorted sand | | | | | | |
| | SW | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed well to approximately 27 feet bgs. There was 28 feet of total rod with a 3.5 foot open screen in a 4 foot slotted rod at base of well. Stick up was 1.0 feet. GW was 19.4 feet TOC.

Converted to Well: Yes ✓ No ____ Well I.D. #: 003-TW-023-01

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strateprobe
BORING NUMBER: AOC-023
DATE: 08-09-97
GEOLOGIST: John G Webster II
DRILLER: Andy High

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 3foot recovery | | | Brown to | fine, medium and coarse grained poorly sorted | SW | | 3.0 | | | |
| 45 003-SS 23-07 | 26 | | | | | Dark Brown | sand | | | 1.0 | | | |
| BR | 27 | | | | | | | | | 1.0 | | | |
| | 28 | | | | | | | | | – | | | |
| | 29 | | 100% recovery | | | Brown to | fine, medium, and coarse grained poorly sorted | SW | | 1.5 | | | |
| 100 003-SS 23- | 30 | | 4 feet | | | Dark Brown | sand grading into a slightly better sorted | | | 1.5 | | | |
| -BR | 31 | | | 31.2 | | | fine and medium grained sand | SP | | 1.5 | | 0.0 | |
| | 32 | | | | | | | | | – | | | |
| | 33 | | 3foot recovery | | | Brown | fine grained well sorted sand | SP | | 0.9 | | | |
| 003-SS 23-09 | 34 | | | | | | | | | 0.8 | | | |
| | 35 | | | | | | | | | 0.5 | | | |
| | 36 | | | | | | | | | | | | |
| | 37 | | 2foot | | | Dark to | fine grained well sorted sand | SP | | 1.3 | | | |
| 003-SS 23-10 | 38 | | | | | Grey | | | | 0.8 | | | |
| 35 BR | 39 | | | | | | | | | 0.6 | | | |
| | 40 | | | | | | | SP | | | | | |
| | 41 | | No Recovery | | | | No Recovery | | Piston tripped | | | | |
| 50 | 42 | | | ? | | | | ? | but sample was | | | | |
| | 43 | | | | | | | | out of bottom of | | | | |
| | 44 | | | | | | | | Macro core | | | | |
| | 45 | | 2.5 feet recovery | | | Dark Grey | fine and medium grained poorly sorted sand | SW | | 1.0 | | | |
| 5 003-SS 23- | 46 | | | 46 | | | grading into a very fine | SP | | 1.3 | | | |
| BR | 47 | | | | | | grained sand | | | 0.9 | | | |
| | 48 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): _____

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 0966
DRILLING COMPANY: TEG
DRILLING RIG: Stratoprobe
BORING NUMBER: AOC-023
DATE: 08-09-97
GEOLOGIST: John G. Webster II
DRILLER: Andy Wright / Brett Grishwold

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 49 | | 1.5 feet | | | Brown to | Fine grained well sorted sand | SP | | 0.9 | | | |
| 003-SD 023-D | 50 | | | | | Dark Grey | | | | 1.5 | | | |
| BR | 51 | | | | | | | | | | | | |
| | 52 | | | | | | | | | | | | |
| 003-SD 003-14 | 53 | | 2 feet | 3 | | Grey to Brown | fine grained well sorted | SP | | 1.3 | | | |
| BR | 54 | | | | | Dark Brown | fine grained sandy silt grading into a | SM | | 0.5 | | | |
| | 55 | | | 5 | | | fine / medium grained | SW | | – | | | |
| | 56 | | | | | | poorly sorted sand | | | – | | | |
| | 57 | | 2.5 feet | | | Grey to Brown | fine, medium, coarse grained poorly sorted sand w/gravel | SW | | | | | |
| 003-SD 003-15 | 58 | | | | | | | | | 1.5 | | | |
| BR | 59 | | | | | Brown | The cutting shoe had some fatty lean clay in it | | | 0.0 | | | |
| | 60 | | | | ? | | | CH | | 0.0 | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strateprobe~~ DPT - Earthprobe

BORING NUMBER: AOC-026
DATE: 09-20-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Haug

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole | Driller BZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | 3 foot | 0.0-0.3 | | Brown Tan | Fine grained well sorted sand | SP | concrete .50' | – | | | |
| 1400 | 003-SB-026-01 BR | 2 | | | | | | | | | 7.1 | | | |
| | | 3 | | | | | | | | | 0.0 | | | |
| | | 4 | | | | | | | | | – | | | |
| | | 5 | | 4 foot | | | Tan | | SP | | 1.3 | | | |
| | | 6 | | | | | | | | | 2.1 | | | |
| 410 | | 7 | | | | | Black | 3" silty sand lens | | | 1.78 | | | |
| | 003-SB-026-01 BR | 8 | | | | | Light Brown | fine grained well sorted sand | | chemical odor | 204 | 19.0 | 26.9 | 0.0 |
| | | 9 | | 4 foot | | | Light Brown | fine grained well sorted sand | SP | petroleum | 80 | | | |
| | | 10 | | | | | | | | | 400 | | | |
| | 003-SB-026-01 BR | 11 | | | | | | | | stained | 760 | | | |
| | | 12 | | | | | | | | | 750 | | | |
| -50 | 003-SB-026-01 BR | 13 | | 2 foot | | | Tan | Fine, medium and coarse grained poorly sorted sand | SW | | 1016 | 1.2 | 22.1 | 0.0 |
| | | 14 | | | | | | | | | 5710 | | | |
| | | 15 | | | | | | | | | – | | | |
| | | 16 | | | | | | | | | – | | | |
| | | 17 | | | | | Tan | Fine, medium, and coarse grained poorly sorted sand | SW | | 2800 | | | |
| 1525 | | 18 | | | 18' | | | | | | 1500 | | | |
| | 003-SB-026-01 BR | 19 | | | | | Dark Brown | Fatty slight sandy clay | CL | | 3860.0 | | | |
| | | 20 | | | 19' 20' | | Brown | Fine ~~medium~~ grained well sorted sand | SP | moist | | 6.0 | 28.0 | 0.0 |
| | | 21 | | 3 foot | | | Grey | Fine, medium, and coarse grained poorly sorted sand | SW | wet | 3833 | | | |
| 1600 | 003-SB-026-01 BR | 22 | | | | | | | | | 3833 | | | |
| | | 23 | | | | | | | | | 3833 | | | |
| | | 24 | | | | | | | | | – | 50 | | 0.0 |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks: Installed temporary well to 27 feet bgs. There is 28 feet of total well w/ 2/3 feet open screen in 2/4 foot stainless rod at bottom of well. GW was 20.17 TOC. There was 1.00" of standing. There was .5' steel punch at base

Converted to Well: Yes ✓ No _____ Well I.D. #: 003 - TW - 026 - 01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strataprobe~~ Earthprobe

BORING NUMBER: AOC-026
DATE: 09-20-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Hang

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 2foot | | | Gray | fine grained well sorted sand | SP | | 3833 | | | |
| 720 OC380 07-01 | 26 | | | | | | | | | 3833 | | | |
| | 27 | | | | | | | | | 3833 | | | |
| | 28 | | | | | | | | | | | | |
| | 29 | | 3foot | | | Gray | fine grained well sorted sand | SP | | 3833 | | | |
| 800 OC3 B 026 01 BL | 30 | | | | | | | | | 3870 | | | |
| | 31 | | | | | | | | | 3850 | | | |
| | 32 | | | | | | | | | – | 80 | 3853 | 0.0 |
| OC3 B 026-01 BL | 33 | | 3foot | | | Gray | fine and medium grained well sorted sand | SP | | 136 | | | |
| 040 | 34 | | | | | | | | | 80 | | | |
| | 35 | | | | | | | | | 76 | | | |
| | 36 | | | 36' | | | | | | – | | | |
| | 37 | | 1foot | | | Gray | fine, medium and coarse grained poorly sorted sand | SW | | 41.9 | | | |
| 70 OC3 B 026 01 BL | 38 | | | | | | sand w/gravel | | | 189 | | | |
| | 39 | | | | | | | | | – | | | |
| | 40 | | | | | | | | | – | | | |
| No Recovery | 41 | | 1 recovery | | | Gray | fine medium and coarse grained poorly sorted sand | SW | Not enough rep. sample to collect 2 oz. soil Jar | | | | |
| 2155 | 42 | | | | | | | | | | | | |
| | 43 | | | | | | | | | | | | |
| | 44 | | | | | | | | | | | | |
| | 45 | | | | | | No Recovery | | | | | | |
| 2246 | 46 | | | | | | Ended Boring due to the time interval and | | | | | | |
| | 47 | | | | | | problems with the pin in the sampler getting | | | | | | |
| | 48 | | | | | | sand locked | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe - DPT

BORING NUMBER: AOC-027
DATE: 08-22-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Brett Fishgald

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: SoB Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Concrete 1.00' | | | | |
| | 003-SB-027-01 BR | 1 | | 2foot recovery | | | Tan | fine and medium grained poorly sorted sand | SW | | 0.0 | | | |
| 705 | | 2 | | | | | | | | | 0.0 | | | |
| | | 3 | | | | | | | | | – | | | |
| | | 4 | | | | | | | | | – | | | |
| | | 5 | | 3foot recovery | | | Tan | fine, medium, and coarse grained poorly sorted sand | SW | | 0.0 | | | |
| 710 | 003-SB-027-02 BR | 6 | | | | | | | | | 0.2 | | | |
| | | 7 | | | | | | | | | 0.0 | | | |
| | | 8 | | | | | | | | | | | | |
| | | 9 | | | | | Tan | fine, medium, and coarse sand | SW | | 0.0 | | | |
| 1725 | 003-SB-027-03 BR | 10 | | | | | | | | | 0.5 | | | |
| | | 11 | | | | | | | | | 0.2 | | | |
| | | 12 | | | | | Brown | fine grained well sorted sand | SW | | | | | |
| | | 13 | | 2foot recovery | | | Brown | fine grained well sorted sand | | | 0.0 | | | |
| 725 | 003-SB-027-04 BR | 14 | | | | | | | | | 0.3 | | | |
| | | 15 | | | | | | | | | | | | |
| | | 16 | | | | | | | | | | 0.0 | 0.5 | |
| | | 17 | | ? | | | Brown | fine, medium, and coarse grained mostly sorted sand | SW | liner got jammed | 0.0 | | | |
| 805 | 003-SB-027-05 BR | 18 | | | | | | | | mounted sample | | | | |
| | | 19 | | | | | | | | out of macro core | | | | |
| | | 20 | | | | | | | | and collected | | | | |
| | 003-SB-027-06 BR | 21 | | | | | Brown | " | SW | moist | 0.0 | | | |
| 2000 | | 22 | | | | | | | | collected out of | – | | | |
| | | 23 | | | | End Boring, Based on equipment | | | | end of macro core | – | | | |
| | | 24 | | | | limitations and nature of media. | | | | liner jammed | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strataprobe~~ - DPT Earthprobe

BORING NUMBER: AOC-028
DATE: 09-16-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Christ Hung

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 003-30 029-01 OC | 1 | | 1 foot | | | Tan | fine, medium, and coarse grained poorly sorted sand | SW | 1 interval up and down | 3.8 | | | |
| 1700 | | 2 | | | | | | | | | 4.6 | | | |
| | | 3 | | 1 foot | | | | | | 2 interval up and down | 11.4 | | | |
| | | 4 | | | | | | | | petroleum smell - diesel | — | | | |
| | 003-30 029-02 OC | 5 | | 2 foot | | | Brown | fine, medium and coarse grained poorly sorted sand | SW | | 9.0 | | | |
| 1720 | | 6 | | | | | | | | | 3.3 | | | |
| | | 7 | | | | | | | | | 1.4 | | | |
| | | 8 | | | | | | | | | — | 0.9 | 3.4 | 0.6 |
| | | 9 | | 1 foot | | | Brown | fine and medium grained sand | SW | | 0.0 | | | |
| 730 | 003-30 028-030 OC | 10 | | | | | | | | | 0.0 | | | |
| | | 11 | | | | | | | | | 0.0 | | | |
| | | 12 | | | | | | | | | 0.0 | | | |
| | 003-30 029-04 OC | 13 | | 2 foot | | | Brown | fine grained well sorted sand | SP | | 0.3 | | | |
| 900 | | 14 | | | | | | | | | 0.5 | | | |
| | | 15 | | | | | | | | | 0.2 | | | |
| | | 16 | | | | | | | | | — | 0.0 | 0.0 | 0.0 |
| | 003-30 028-05 OC | 17 | | 2 foot | | | " | " | SP | 003-30-001-41-02 | 1.3 | | | |
| 1925 | | 18 | | | | | | | | | 0.2 | | | |
| | | 19 | | | | | | | | moist | 0.0 | | | |
| | | 20 | | | | | | | | 20.37 TOC | — | | | |
| | | 21 | | 2 foot | | | " | " | SP | wet | 0.3 | | | |
| 1950 | 003-30 028-06 OC | 22 | | | | | | | | | 0.8 | | | |
| | | 23 | | | | | | | | | — | | | |
| | | 24 | | | | | | | | | — | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks: Installed temporary well to 27 feet bgs. There was 28 feet of total rod w/a 3.5 foot open screen in a 4 foot slotted rod at base of well. Stickup was 1.03'. GW was at 20.37 feet TOC. Disposable point at base of well

Converted to Well: Yes ☑ No ____ Well I.D. #: 003-TW-028-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strateprobe~~ Earthprobe

BORING NUMBER: AOC-028
DATE: 09-16-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Haus

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 2.5 bd | | | Brn | fine grained well sorted sand w/pea gravel | SP | | 00 | | | |
| 0230-0239-07-Dn | 26 | | | | | | | | | 00 | | | |
| | 27 | | | | | | | | | – | | | |
| | 28 | | | | | | | | | – | | | |
| | 29 | | | | End Boring Based upon the potential of tipping the earth probe when extracting the rods. | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| | 31 | | | | | | | | | | | | |
| | 32 | | | | | | | | | | | | |
| | 33 | | | | | | | | | | | | |
| | 34 | | | | | | | | | | | | |
| | 35 | | | | | | | | | | | | |
| | 36 | | | | | | | | | | | | |
| | 37 | | | | | | | | | | | | |
| | 38 | | | | | | | | | | | | |
| | 39 | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | |
| | 41 | | | | | | | | | | | | |
| | 42 | | | | | | | | | | | | |
| | 43 | | | | | | | | | | | | |
| | 44 | | | | | | | | | | | | |
| | 45 | | | | | | | | | | | | |
| | 46 | | | | | | | | | | | | |
| | 47 | | | | | | | | | | | | |
| | 48 | | | | | | | | | | | | |

0240

09-16-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strataprobe~~ - DPT Earthprobe

BORING NUMBER: AOC-029
DATE: 09-15-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Haug

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 710 003-30-029-01 02 | 1 | | 2 hot - 58.5 | 0 - 0 | | ~~Lite~~ | ~~Very fine powder sand w gravel~~ | ~~SP~~ | Moved 6 record | 0.0 | | | |
| 835 | 2 | | 3 x | | | Brown | Fine, medium, and coarse grained 100.1% scaled sand | SW | location | 0.0 | | | |
| | 3 | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | |
| | 5 | | 3.3' | | | Brown | fine grained well sorted sand | SP | | 0.0 | | | |
| 840 003-30-029-01 02 | 6 | | | | | | | | | 0.0 | | | |
| | 7 | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | |
| 910 003-30-029 | 9 | | | | | " | " | SP | Field GC only | 0.0 | | | |
| | 10 | | | | | | | | | 0.0 | | | |
| | 11 | | | | | Earthprobe could not push engine past 10 feet the rig had once push down at max rpms. The result was the rig coming off of the blocks. Going to ~~[illegible]~~ put the temporary well in with a disposable point. | | | | | | | |
| | 12 | | | | | | | | | | | | |
| | 13 | | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | |
| | 16 | | | | | | | | | | | | |
| | 17 | | | | | | | | | | | | |
| | 18 | | | | | | | | | | | | |
| | 19 | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | |
| | 21 | | | | | | | | | | | | |
| | 22 | | | | | | | | | | | | |
| | 23 | | | | | | | | | | | | |
| | 24 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 27 feet bgs. There was 28 total feet of rod w/a 3.5 foot open screen at base of well. GW was 20.15 TOC. Stick up was 1.04'. The well was installed with a disposable point ~~[illegible]~~

Converted to Well: Yes ✓ No _____ Well I.D. #: OM3-TW-029-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe - DPT

BORING NUMBER: AOC - 030
DATE: 08-22-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Brett Fishwild

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | concrete 1.00 | | | | |
| | 1 | | | | | Tan to | fine, medium, and course grained poorly sorted | SW | | 0.0 | | | |
| 400 | 2 | | | | | ~~light~~ white | sand w/ pea gravel | | encountered concrete | 0.6 | | | |
| | 3 | | | | | | | | and punched through | – | | | |
| 003 XS- 0X-0X: OR | 4 | | | | | | | | as a result had to collect | – | | | |
| | 5 | | | | | | | | short for enough sample | – | | | |
| 415 | 6 | | | | | Tan to light Brown | fine ~~grained~~ medium and course grained poorly | | | 1.2 | | | |
| 003 XS 0X.02 OR | 7 | | | 1.5 | | | sorted sand grading into a fine grained well sorted | SP | | 3.2 | | | |
| | 8 | | | | | | sand | | | – | | | |
| | 9 | | | | | Tan to | ~~fine~~ more fine grained but some medium course grained | SP/SW | collected from bottom | 0.0 | | | |
| 003 XS 0X.02 OR | 10 | | | | | light Brown | sand | | of macrocore | 0.8 | | | |
| | 11 | | | | | | | | only relitiks for | – | | | |
| | 12 | | | 12 feet | | | | | lunches | – | 0.9 | 1.3 | 0.9 |
| | 13 | | | | | Tan | fine grained well sorted sand | SP | | 0.0 | | | |
| 530 003 | 14 | | | | | | silty clay lens | | | 5.0 | | | |
| | 15 | | | | | | | | | 0.8 | | | |
| | 16 | | | | | | | | | | | | |
| | 17 | | | | | | | | | | | | |
| | 18 | | | | | | | | | | | | |
| | 19 | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | |
| | 21 | | | | | | | | | | | | |
| | 22 | | | | | | | | | | | | |
| | 23 | | | | | | | | | | | | |
| | 24 | | | | | | | | | | | | |

Final Boring Log based upon OVM readings, limited Extractor refusal. Dry sands

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: PO-1
DATE: 08-07-97
GEOLOGIST: John G Webster II
DRILLER: Andy High

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Concrete .65' | | | | |
| 003-SD-P01-01: OR | 1 | | 3 feet recovery | | | Tan | Fine, medium, and course grained poorly sorted sand w/gravel | SW | | 0.0 | | | |
| 2315 | 2 | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | |
| 003-SD | 5 | | | | | Tan | f, m, c grained poorly sorted sand w/gravel | SW | | 0.0 | | | |
| 2330 003-SD-P01-02: OR | 6 | | 3 foot recovery | 6 feet | | | | | | | | | |
| | 7 | | | | | Tan | fine grained well sorted sand | SP | | 0.0 | | | |
| | 8 | | | | | | | | | | | | |
| | 9 | | Sample outside of macro core | | | Tan | fine grained well sorted sand | | No Laucks | 0.0 | | | |
| 115 003-SD-P01-03 OR | 10 | | | | | | | | liner got overpacked | | | | |
| | 11 | | | | | | | | only Field GC | | | | |
| | 12 | | | | | | | | | | | | |
| | 13 | | 3 foot recovery | | | Tan to | Fine grained well sorted semi rounded sand | SP | | 0.0 | | | |
| 003-SD-P01-04: OR | 14 | | | | | Brown | | | | | | | |
| 003 | 15 | | | | | | | | | | | | |
| | 16 | | | | | | | | | | | | |
| | 17 | | 3 foot recovery | | | Tan | fine grained well sorted sand | SP | | 0.0 | | | |
| 1610 003-SD-P01-05: OR | 18 | | | | | to | | | moist | 0.0 | | | |
| | 19 | | | | | Dark Green Brown | | | wet | | | | |
| | 20 | | | | | $H_2O$ | | | | | | | |
| | 21 | | 3 foot recovery | | | Brown to | fine grained well sorted sand | SP | | 0.0 | | | |
| 1650 003-SD-P01-06: OR | 22 | | | | | Dark Brown | | | | 0.0 | | | |
| | 23 | | | | | | | | | | | | |
| | 24 | | | | | | | | | | | | |
| Tw | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 27 feet bgs. There was 28 feet of total rod w/a 3.5 foot open screen in a 4 foot slotted rod at base of well. Stick up was 1.01 feet. GW was 19.20

Converted to Well: Yes ✓ No _____ Well I.D. #: 003-TW-P01-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Shoto probe
BORING NUMBER: P-01
DATE: 08-08-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Bert Fitzwald

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 2 foot recovery | | | Brown to | fine grained well sorted sand | SP | | 0.0 | | | |
| 1705 003-08 001-07 OR | 26 | | | | | Dark Brown | | | | | | | |
| | 27 | | | | | | | | | | | | |
| | 28 | | | | | | | | | | | | |
| | 29 | | 2 foot recovery | | | Brown to | fine grained well sorted sand | SP | | 0.0 | | | |
| 1735 003-08 001-07 OR | 30 | | | | | Dark Brown | | | | | | | |
| | 31 | | | | | | | | | | | | |
| | 32 | | | | | | | | | | | | |
| | 33 | | 3 foot recovery | | | Brown to | fine grained well sorted sand | SP | | 0.0 | | | |
| 2035 | 34 | | | | | Dark Brown | | | | | | | |
| | 35 | | | | | | | | | | | | |
| | 36 | | | | | | | | | | | | |
| | 37 | | | | | No Recovery | | | | | | | |
| | 38 | | | | | | | | | | | | |
| | 39 | | | | | | | | | | | | |
| | 40 | | | | | End boring based upon equipment limitations Rig having problem pulling out | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe - DPT

BORING NUMBER: P02
DATE: 08-18-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Brett Fishwild

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistance or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) * Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Concrete .70' | | | | |
| | | 1 | | 3 foot recovery | | | Tan | fine, medium, and course grained poorly sorted sand w/pea gravel | SW | | 0.0 | | | |
| 2120 | | 2 | | | | | | | | | 0.0 | | | |
| | 003-SB-P02-01 BR | 3 | | | | | | | | | 0.4 | | | |
| | | 4 | | | | | | | | | – | | | |
| | | 5 | | 3 foot recovery | | | Tan | fine, medium, and course grained poorly sorted sand | SW | | 0.0 | | | |
| 2130 | 003-SB-P02-02 BR | 6 | | | | | | | | | 0.0 | | | |
| | | 7 | | | | | | | | | 0.0 | | | |
| | | 8 | | | | | | | | | - | | | |
| | | 9 | | 4 foot recovery | | | Tan | fine, medium, and course grained poorly sorted sand | SW | possible sluff | 0.0 | | | |
| 2140 | | 10 | | | | | | | | | 0.0 | | | |
| | 003-SB-P02-03 BR | 11 | | | 10.3 – 10.5 | | Black | 2" of fine grained silty sand | SM | | 0.9 | | | |
| | | 12 | | | | | White | fine, medium, and course grained poorly sorted sand | | | | | | |
| | | 13 | | 3 foot recovery | | | Tan to White | fine, medium, and course grained poorly sorted sand w/ heavy gravel at base | SW | piston | 0.0 | | | |
| 2155 | | 14 | | | | | | | | | 0.0 | | | |
| | 003-SB-P02-04 BR | 15 | | | | | | | | | 0.0 | | | |
| | | 16 | | | | | | | | | | | | |
| | | 17 | | 3 foot recovery | | | Tan to Brown | fine and medium grained sand in a course grained sand matrix | SW | | 0.0 | | | |
| 2215 | 003-SB-P02-05 BR | 18 | | | | | | | | moist | 0.0 | | | |
| | | 19 | | | | | | | | wet | 0.0 | | | |
| | | 20 | | | | | | | | 19.60 GW-TOC | | 0.0 | 0.0 | 0.0 |
| | | 21 | | | | | | No Recovery | – | | | | | |
| | | 22 | | | ? | | | | – | | | | | |
| | | 23 | | | | | | | – | | | | | |
| | | 24 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 27 feet bgs. There was 28 feet of total rod with a 3.9 foot open interval i.e. 4 foot slotted rod at base of well. Stickup was 1.00 feet. There was a .5 foot steel punch at base of slotted rod. GW was at 19.60 TOC.

Converted to Well: Yes X No _____ Well I.D. #: 003-TW-P02-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe

BORING NUMBER: P02
DATE: 08-18-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Brett Fishwald

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 25 | | 2.5 foot recovery | | | Brown to Olive | fine, medium, and course grained poorly sorted sand | SW | | 0.0 | | | |
| 1300 | 003-SD P02-07-02 | 26 | | | | | | | | | 0.0 | | | |
| | | 27 | | | | | | | | | 0.0 | | | |
| | | 28 | | | | | | | | | | | | |
| | | 29 | | 2.5 foot recovery | 29 | | Brown to Olive | fine, medium, and course grained poorly sorted sand grading into a fine grained well sorted sand | SW | | 0.0 | | | |
| 1305 | 003-SD P02-09-02 | 30 | | | | | | | SP | | 0.0 | | | |
| | | 31 | | | | | | | | | 0.0 | | | |
| | | 32 | | | | | | | | | | | | |
| 8-19-97 | | 33 | | 2 foot recovery | | | Brown | fine grained well sorted sand | SP | | 0.0 | | | |
| 1630 | 003-SD P02-07-02 | 34 | | | | | | | | | 0.0 | | | |
| | | 35 | | | | | | | | | | | | |
| | | 36 | | | | | | | | | | | | |
| | | 37 | | 2 foot recovery | | | Brown | fine grained well sorted sand | SP | | 0.0 | | | |
| 1700 | 003-SD P02-10-02 | 38 | | | | | | | | | 0.8 | | | |
| | | 39 | | | | | | | | | 0.0 | | | |
| | | 40 | | | | | | | | | – | 0.0 | 0.0 | 0.0 |
| | | 41 | | 2 foot recovery | | | Brown to Olive | fine, medium, and course grained poorly sorted sand grading into a sandy gravel | SW | | 0.0 | | | |
| 1730 | 003-SD P02-11-02 | 42 | | | | | | | | | 0.0 | | | |
| | | 43 | | | 43 | | | | | | 0.0 | | | |
| | | 44 | | | | | | | | | – | | | |
| | | 45 | | 2.5 foot recovery | 45.2 | | Brown | fine, medium, coarse grained poorly sorted sand | SW | | 0.0 | | | |
| 1755 | 003-SD P02-12-02 | 46 | | | 45.4 | | Brown | fine grained well sorted sand | SP | | 0.0 | | | |
| | | 47 | | | | | Brown | fine, medium and course grained poorly sorted sand w/ gravel | SW | | 0.0 | | | |
| | | 48 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ____ No ____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe

BORING NUMBER: P02
DATE: 08-19-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Brett Fishwild

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 49 | | 3foot recovery | | | Brown | fine, medium, and coarse grained, poorly sorted sand w/gravel | SW | Duplicate sample | 0.0 | | | |
| 1825 | 003-SB-P02-13-BR | 50 | | | | | Brown | a 2" sandy silt lens | | 003-SB-P01-24-BR | 0.0 | | | |
| | | 51 | | | | | Brown | f, M, C grained poorly sorted sand w/gravel | | | 0.0 | | | |
| | | 52 | | | 52 feet | | | | | | – | | | |
| | | 53 | | 3foot recovery | | | Brown | fine grained well sorted sand | SP | Abrupt change | 0.0 | | | |
| 1830 | 003-SB-P02-14-BR | 54 | | | | | | | | | 0.0 | | | |
| | | 55 | | | | | | | | | 0.0 | | | |
| | | 56 | | | 56 | | | | | | | | | |
| | | 57 | | 3foot recovery | | | Brown | fine & medium grained poorly sorted sand | SW | | 0.0 | | | |
| 1835 | 003-SB-P02-15-BR | 58 | | | | | | | | | 0.0 | | | |
| | | 59 | | | | | | | | | 0.0 | | | |
| | | 60 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe

BORING NUMBER: 23 at 29.5W P03
DATE: 07-12-97
GEOLOGIST: John G Webster III
DRILLER: Andy High / Mark Mathison

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1650 | 003-P03 -01 & DR | 1 | | 3 feet recovery | | | Dark Brown | fine grained sandy silt | SM | No UV detected | 2.5 | | | |
| | | 2 | | | | | to Black | | | | 2.4 | | | |
| | | 3 | | | 5.5 | | | | | | 0.7 | | | |
| | | 4 | | | | | | | | | — | | | |
| 1700 | 003-P03 -02 & DR | 5 | | 3 foot recovery | | | Light Brown | fine grained sand well sorted w/some gravels | SP | No UV detected | 1.5 | | | |
| | | 6 | | | | | | | | | - | | | |
| | | 7 | | | | | | | | | - | | | |
| | | 8 | | | 9 | | | | | | - | | | |
| | | 9 | | 100% recovery | | | Dark Brown to Black | Sandy silty clay grading into a | SM | ? Maybe slutt | 0.0 | | | |
| | | 10 | | | 10.5 | | | | | | 0.0 | | | |
| 1715 | 003-SB-P03-03 DR → | 11 | | | | | Light Brown to | fine medium and course grained poorly sorted | SW | No UV detected | 0.0 | | | |
| | | 12 | | | | | Dark Brown | sand | | | 1.8 | | | |
| | | 13 | | | | | Light Brown | fine grained sand | SP | | 0 | | | |
| 1750 | 003-SB-P03-04 DR | 14 | | | 13.5 | | Dark Brown | fine grained sandy silt well compacted | SM | ? maybe slutt | 0 | | | |
| | | 15 | | | | | Black Light | fine to medium grained sand | SW | | 0 | | | |
| | | 16 | | | | | Brown | | | | 0 | | | |
| | | 17 | | 100% recovery | | | Light Brown | fine to medium grained sand | | | 0.2 | | | |
| 1820 | 003-SB-003-05 DR | 18 | | | | | to Dark Brown | " | | No UV detected | 0.4 | | | |
| | | 19 | | | | | | " | | | 0.0 | | | |
| | | 20 | | | | | | " | | | 0.0 | | | |
| | | 21 | | | | | | | | | - | | | |
| 1826 | 003-SB-P03-06 DR | 22 | | 100% recovery | | | Light Brown | fine and medium grained sand | SW | No UV detected | 0.3 | | | |
| | | 23 | | | | | | | | moist to wet | - | | | |
| | | 24 | | | | | | | | GW-24.55 | - | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks: Installed ~~monitor~~ temporary monitoring well to a depth of 31 feet bgs.

Converted to Well: Yes Y No ____ Well I.D. #: 003-TW-P03-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strataprobe
BORING NUMBER: 23 at 29.5W P03
DATE: 07-12-97
GEOLOGIST: John G. Webster II
DRILLER: Andy High / Mark Mathison

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 25 | | 3 feet recovery | | | Dark Brown | fine and medium course grained sand | SP | | — | | | |
| 945 | 003-SB-003-07-BR | 26 | | | | | | // | | No UV detected | 1.3 | | | |
| | | 27 | | | | | | // | | | — | | | |
| | | 28 | | | | | | // | | | — | | | |
| 2240 | | 29 | | — | | — | | — | | No Sample Recovery | - | | | |
| | | 30 | | — | | | | — | | | - | | | |
| | | 31 | | — | | — | | — | | — | - | | | |
| | 003-SB-P03-08-BR | 32 | | Only 1 cp. sample | | — | | — | | — | - | | | |
| | | 33 | | 2 foot recovery | | | Dark Brown | fine, medium and course grained sand, poorly sorted | SW | No UV detected | 0.0 | | | |
| 2310 | | 34 | | | | | Yellowish Olive | | | | - | | | |
| | 003-SB-P03-09-BR | 35 | | | | | | | | | - | | | |
| | | 36 | | | | | | | | | - | | | |
| | | 37 | | | | | | | | | - | | | |
| 2335 | 003-SB-P03-10-BR | 38 | | 3 foot recovery | | | Dark Brown | fine medium and course grained poorly sorted mature sand. | SW | No UV detected | 0.9 | | | |
| | | 39 | | | | | | | | | 0.0 | | | |
| | | 40 | | | | | | | | | 0.0 | | | |
| 0020 | 003-SB-P03-11-BR | 41 | | 100% recovery | | | Dark Brown | medium and course poorly sorted sand | SW | No UV detected | 0.0 | | | |
| | | 42 | | | | | | | | | - | | | |
| | | 43 | | | | | | | | | - | | | |
| | | 44 | | | | | | | | | - | | | |
| 0040 | 003-SB-P03-12-BR | 45 | | 2 foot recovery | | | Dark Brown | fine grained well sorted sand | | No UV detected | 0.0 | | | |
| | | 46 | | | | | Yellowish Olive | | | | - | | | |
| | | 47 | | | | | | | | | - | | | |
| | | 48 | | | | | | | | | - | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strataprobe
BORING NUMBER: 23 at 29.5 W P03
DATE: 07-13-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Mark Mathison

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 07/13/97 Cont 48 | | | | | | | | | | | | | |
| | 49 | | 2 foot recovery | | | Dark Brown | fine grained sand | SP Brown | No UV detected | 0.0 | | | |
| 1610 003-SO-P03-13-BR | 50 | | | | | to Olive | " | | | - | | | |
| | 51 | | | | | | " | | | - | | | |
| | 52 | | | | | - | - | | | - | | | |
| | 53 | | No Recovery | | | | Residual is a fine grained sand | SP | Material on piston | 0.0 | | | |
| | 54 | | | | | | | | | - | | | |
| | 55 | | | | | | | | | - | | | |
| | 56 | | | | | | | | | - | | | |
| 1740 003-SO-P03-15-BR | 57 | | 2 foot recovery | | | Dark Brown | fine, medium and course grained poorly sorted, medium grained, sand | | No UV detected | 0.0 | | | |
| | 58 | | | | | | | | | - | | | |
| | 59 | | | | | | | | | - | | | |
| | 60 | | | | | | End Boring No Clay | | | - | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strataprobe - DPT~~ Earth probe Simco - ATV
BORING NUMBER: P04
DATE: 09-06-97
GEOLOGIST: John G Webster II
DRILLER: Andy High

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | concrete .70' | | | | |
| | 1 | | 3 feet | 0.0 6" | | Light Brown | fine grained well sorted sand grading into | SP | | 0.0 | | | |
| 730 003-SD-P04-01 | 2 | | | | | Black | silty sand - fill material | ML | | 0.2 | | | |
| OR | 3 | | | | | Dark Tan | fine grained stiff sandy silt | SC | | 0.0 | | | |
| | 4 | | | | | | | | | – | | | |
| | 5 | | 3.75 recovery | | | Dark Tan | fine grained well sorted sand | SP | Damp | 0.0 | | | |
| 745 | 6 | | | | | | | | | 0.0 | | | |
| | 7 | | | | | | | | | 0.0 | | | |
| 003-SD-P04-02 BZ | 8 | | | 7.5' | | Dark Tan | fine, medium, and course grained poorly sorted sand | SW | | 0.0 | | | |
| | 9 | | 2 feet | | | Brown | fine, medium, and course grained poorly sorted sand w/ gravel | SW | | 0.0 | | | |
| | 10 | | | | | | | | | 0.0 | | | |
| 003-SD-P04-03 OR | 11 | | | | | | | | | 0.0 | | | |
| | 12 | | | | | | | | | – | | | |
| | 13 | | 3 feet | | | Brown | " | SW | | 0.0 | | | |
| | 14 | | | | | | | | | 0.0 | | | |
| 805 003-SD-P04-04 OR | 15 | | | | | | | | | 0.0 | | | |
| | 16 | | | | | | | | | – | | | |
| | 17 | | 3 feet | | | Brown | " | SW | | 0.0 | | | |
| 830 003-SD-P04-05 OR | 18 | | | 18 | | | | | | 0.0 | | | |
| | 19 | | | | | Olive Brown | fine grained well sorted sand | SP | wet | 0.2 | | | |
| | 20 | | | 20 | | Gray | | | | – | | | |
| 845 003-SD-P04-06 OR | 21 | | 1 foot | | | Gray | medium, course, and very course grained sand w gravel | SW | | 0.0 | | | |
| | 22 | | | | | | | | | – | | | |
| | 23 | | | | | | | | | – | | | |
| | 24 | | | | | | | | | – | 0.0 | 0.0 | 0.0 |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary monitoring well to 27 feet bgs. There was 28 feet of total rod w/a 3.5 foot open screen in a 4 foot solid rod at base of well. There was 1.00' of stick up. GW was 19.65 TOC.

Converted to Well: Yes Y No _____ Well I.D. #: 003-TW-P04-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strataprobe~~ Earthprobe

BORING NUMBER: P04
DATE: 09-06-97
GEOLOGIST: John G Webster II
DRILLER: Andy High /

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | | | | | | | | | | | |
| | 26 | | | | | | | | | | | | |
| | 27 | | | | | | | | | | | | |
| | 28 | | | | | | | | | | | | |
| | 29 | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| | 31 | | | | | | | | | | | | |
| | 32 | | | ? | | | | | | | | | |
| | 33 | | | | | | | | | | | | |
| | 34 | | | | | | | | | | | | |
| | 35 | | | | | | | | | | | | |
| | 36 | | | | | | | | | | | | |
| | 37 | | | | | | | | | | | | |
| | 38 | | | | | | | | | | | | |
| | 39 | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | |
| | 41 | | | | | | | | | | | | |
| | 42 | | | | | | | | | | | | |
| | 43 | | | | | | | | | | | | |
| | 44 | | | | start of clay | | evidence of clay on cutting shoe and different drilling conditions were encountered at 44 feet | CL | | | | | |
| | 45 | | | | | | | | | | | | |
| | 46 | | | | | | | | | | | | |
| | 47 | | | | | | | | | | | | |
| | 48 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: ~~Strataprobe~~ - DPT Earthprobe

BORING NUMBER: P05
DATE: 09-17-97
GEOLOGIST: John G Webster II
DRILLER: Andy High /

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Concrete .55 | | | | |
| 650 003-XB-P05-01 OC | 1 | | 2 foot | | | Brown | Fine medium and coarse grained poorly sorted sand w/gravel | SW | | 0.0 | | | |
| | 2 | | | | | | | | | 0.0 | | | |
| | 3 | | | | | | | | | - | | | |
| | 4 | | | | | | | | | - | | | |
| | 5 | | 3 foot | | | | | SW | | 0.0 | | | |
| 655 003-XB-P05-02 OC | 6 | | | | | Brown | fine and medium grained sand | SW/SP | | 0.0 | | | |
| | 7 | | | | | | | | | 0.0 | | | |
| | 8 | | | | | | | | | - | | | |
| | 9 | | 4 foot | | | Brown | fine grained sand well sorted | SP | | 0.0 | | | |
| | 10 | | | | | | | | | 0.0 | | | |
| 003-XB-P05-03 BZ | 11 | | | | | | | | | 0.3 | | | |
| | 12 | | | | | | | | | - | | | |
| 730 003-XB-P05-04 OC | 13 | | 2 foot | | | Brown | fine grained well sorted sand - 1 brown gravel | SP | Auger sample | 1.2 | | | |
| | 14 | | | | | | | | | 2.3 | | | |
| | 15 | | | | | | | | | - | | | |
| | 16 | | | | | | | | | - | 0.0 | 0.0 | 0.0 |
| | 17 | | 2 foot | | | Brown | fine grained well sorted sand | SP | | 1.3 | | | |
| 1820 003-XB-P05-05 OC | 18 | | | | | | | | | 3.1 | | | |
| | 19 | | | | | | | | moist | - | | | |
| | 20 | | | | | | | | | - | | | |
| | 21 | | | | | End Boring Based upon equipment limitation | | | | | | | |
| | 22 | | | | | Rig will not extract rods | | | | | | | |
| | 23 | | | | | | | | | | | | |
| | 24 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 27 feet bgs. There was 28 feet of total rod w/a 3.5 foot open screen in a 4 foot slotted rod at base of well. G.W. was 19.95' TOC. Stick up was 1.00'. Well was installed with a discernible point.

Converted to Well: Yes X No _____ Well I.D. #: 003-TW-P05-01

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strateprobe
BORING NUMBER: ~~AOC~~ PO-6
DATE: 08-07-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Diane Fishwild

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks (Concrete, 85') | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 003-SB-P06-01 OR | 1 | | 2 foot recovery | | | Brown to Tan | fine & medium grained sand w/gravel | SW | | 0.9 | | | |
| 1635 | | 2 | | | | | | | | | 5.0 | | | |
| | | 3 | | | | | | | | | | | | |
| | | 4 | | | | | | | | | | | | |
| | | 5 | | ? | | | Tan | fine & medium grained sand | SW | could not get liner | 0.0 | | | |
| 1650 ? | 003-SB-P06-02 OR | 6 | | | | | | | | out of the sampler | | | | |
| | | 7 | | | | | | | | No Laucky samples collected from interval | | | | |
| | | 8 | | | | | | | | | | | | |
| | | 9 | | 100% | | | Tan | fine & medium grained sand | SW | | 0.0 | 0.0 | | 0.0 |
| | | 10 | | | | | | | | | | | | |
| 1700 | 003-SB-P06-03 OR | 11 | | | 10.5 | | Dark Brown | fine and medium grained sand w/ heavy gravel - 40% matrix | | | | | | |
| | | 12 | | | | | | | | | | | | |
| | | 13 | | 2 foot recovery | | | Brown | fine, medium and course grained poorly sorted sand w/lots gravel | SW | | 0.0 | | | |
| 1725 | 003-SB-P06-04 OR | 14 | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | | |
| | | 16 | | | | | | | | | | | | |
| | | 17 | | 2 foot recovery | | | Tan to | fine, medium and course grained poorly sorted sand | SW | liner got masked | | | | |
| 1750 | 003-SB-P06-05 OR | 18 | | | 18 feet | | | grading into a | ↓ | | | | | |
| | | 19 | | | | | Dark Brown | fine grained well sorted sand | SP | | | | | |
| | | 20 | | | | | | | ↓ | wet GW - 20.03 TOC | 0.0 | | | |
| | | 21 | | 3 foot recovery | 20 | | Dark Brown | fine, medium, course, very course grained poorly | SW | wet | 0.0 | | | |
| 1820 | 003-SB-P06-06 OR | 22 | | | | | to brown | sorted sand | | | | | | |
| | | 23 | | | | | | | | | | | | |
| | | 24 | | | | | | | | | | | | |
| | TW | | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed well to 27 feet bgs. There is 28 feet of total rod w/a 3.5 foot open screen in a 4 foot rod at base of well. Stick up is 1.02 feet. GW was 20.03 TOC. There was no punch on bottom of well - only disposable point

Converted to Well: Yes Y No _____ Well I.D. #: 003-TW-P06-01

Duplicate 003-TW-DP1-02

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Stratoprobe
BORING NUMBER: P-06
DATE: 08-07-97
GEOLOGIST: John G. Jebsen
DRILLER: Andy High/Maine Ellenston

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1850 | 002-SO-0006-07-0A | 25 | | 1 foot decay | | | Grey | Fine, medium, course to very course grained poorly sorted sand w/ gravel | SW | | 6.3 | 0.0 | 0.0 | 0.0 |
| | | 26 | | | | | | | | | | | | |
| | | 27 | | | | | | | | | | | | |
| | | 28 | | | | | | | | | | | | |
| | | 29 | | | | | | No Recovery - when control rods were hammered | | | | | | |
| 1925 | | 30 | | | ? | | | and driven to 32 feet and then pulled up | | | | | | |
| | | 31 | | | | | | sample was in macro core. Pulling the rods out of | | | | | | |
| | | 32 | | | | | | the boring was slow due to gravel lens almost got | | | | | | |
| | | | | | | | | stuck. Talked with Andy High and he was afraid of | | | | | | |
| | | | | | | | | getting stuck going to call this one refusal. | | | | | | |
| | | | | | | | | End Boring 08-07-97 | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: 14 at 4W P07
DATE: 07-10-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Mark Mathison

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 2 feet recovery | | | Light brown | fine grained sand | SP | No UV detected | 0.0 | | | |
| 800 003-SB-P07-01 | 2 | | | | | Black etc | Sandy clay very stiff | SC | | | | | |
| | 3 | | | | | Light brown | fine grained sand | SP | | | | | |
| | 4 | | | | | " | " | | | | | | |
| 003-SB-P07-02 | 5 | | 2 feet recovery | | | Dark brown | fine grained sand | SP | No UV detected | 0.0 | | | |
| 810 | 6 | | | | | | | | | | | | |
| | 7 | | | 7.9 | | | | | | | | | |
| | 8 | | | | | | | SW | | | | | |
| 825 003-SB P07-03 | 9 | | 100% recovery | | | Dark brown to gray | fine medium and coarse grained sand poorly sorted w/ gravels | " | No UV detected | 0.0 | | | |
| | 10 | | | | | | | " | | | | | |
| | 11 | | | | | | | " | | | | | |
| 840 003-SB P07-04 DR | 12 | | 100% recovery | | | | fine medium and coarse grained poorly sorted sand w/ gravels | SW | | 0.0 | | | |
| | 13 | | | | | | | | No UV detected | | | | |
| | 14 | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | |
| 915 003-SB P07-05 DR | 16 | | | | | | | | | | | | |
| | 17 | | 100% recovery | | | Dark brown | f, m, c grained sand poorly sorted with 50% gravels moist to loose | SW | FID Reading | 1.7 | | | |
| | 18 | | | | | | | | No UV detected | | | | |
| | 19 | | | | | | | | | | | | |
| 925 003-SB P07-06 -DR | 20 | | | | | | | | GW - 20.77 | | | | |
| | 21 | | 100% recovery | | | Dark brown | f, m, c grained sand poorly sorted | SW | No UV detected | 0.0 | | | |
| | 22 | | | | | | wet | | moist to wet | | | | |
| | 23 | | | | | | | | | | | | |
| | 24 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks: Installed temporary monitoring well to a depth of 29 feet bgs.

Converted to Well: Yes ✓ No _____ Well I.D. #: 003-TW-P07-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: 14 of 4W
DATE: 07-10-97
GEOLOGIST: John G Debeste
DRILLER: Andy Hill / Mark Mathison

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 145 | 003-SD 007-07 -OR | 25 | | 100% recovery | | — | Dark Brown | f, m, c poorly sorted sand w/gravels | SW | No UV detected | 0.0 | | | |
| | | 26 | | | | | | | | | – | | | |
| | | 27 | | | | | | | | | – | | | |
| 1/11/97 | | 28 | | | | | | | | | – | | | |
| 940 | 003-SD 007-07 -OR | 29 | | 0% recovery | | | Dark Brown | ~~fine grained sand~~ coarse grained sand | SP | No Sample | 0.0 | | | |
| | | 30 | | 1.5 recovery | | | | at top grading into a fine to medium grained sand | SP | | – | | | |
| | | 31 | | | | | | | | | – | | | |
| | | 32 | | | | | | | | | – | | | |
| | No Sample | 33 | | 0% recovery | | | Dark Brown | fine grained sand | SP | No Sample | – | | | |
| | | 34 | | | | | | | | | – | | | |
| | | 35 | | | | | | | | | – | | | |
| | | 36 | | | | | | | | | – | | | |
| 2 530 | 003-SD-007-07 -OR | 37 | | 1.5 recovery | | | Dark Brown | fine grained well sorted sand | SP | | 3.5 | | | |
| | | 38 | | | | | | | | | 0.9 | | | |
| | | 39 | | | | | | | | | 0.6 | | | |
| | | 40 | | | | | | | | | – | | | |
| 2300 | 003-SD 007-07 -OR | 41 | | 2" recovery | | | Dark Brown | very fine grained sand | SP | | 1.3 | | | |
| | | 42 | | | | | | | | | 0.3 | | | |
| | | 43 | | | | | | | | | 1.3 | | | |
| | | 44 | | | | | | | | | – | | | |
| 2345 | 003-SD 007-12 -OR | 45 | | 2" recovery | | | | Dark Brown very fine grained sand | SP | | 1.5 | | | |
| | | 46 | | | | | | | | | | | | |
| | | 47 | | | | | | | | | | | | |
| | | 48 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Stratoprobe
BORING NUMBER: 14 of 40
DATE: 07-12/97
GEOLOGIST: John G Webster
DRILLER: Andy Hugh / Mark McKin

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 49 | | 0% recovery | | | Dark Brown | Bottom of Piston was a fine grained sand with some silt | SP | No Recovery | 0.0 | | | |
| 0040 | 50 | | | | | no olive | | | | — | | | |
| | 51 | | | | | | | | | - | | | |
| | 52 | | | | | | | | | - | | | |
| | 53 | | 100% recovery | | | Dark Brown | Sandy silt very stiff ~~[illegible]~~ plasticity | SM | Going to | 0.0 | | | |
| 0115 | 54 | | | | | olive | slight | | Stop | - | | | |
| | 55 | | | | | | | | No UV detected | - | | | |
| | 56 | | | | | | | | End Boring | - | | | |

John G Webster
07-12-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe - DPT
BORING NUMBER: P08
DATE: 09-02-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Krug

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | | | 0.00 1.20 | | | Concrete | | 1.20' Concrete | | | | |
| 0:00 003-SB-P08-01-BR | 2 | | 2 foot recovery | | | Dark Brown | Fine, medium and coarse grained poorly sorted sand | SW | | 0.0 | | | |
| | 3 | | | | | Tan | " w/gravel | | | 0.0 | | | |
| | 4 | | | | | | | | | | | | |
| 003-SB-P08-02-BR 0:05 | 5 | | 1 foot recovery | | | Dark Brown | Fine and medium grained sand w some clayey sand pockets and gravel | SW | Field GL | 0.0 | | | |
| | 6 | | | | | to Olive | | | only | 0.0 | | | |
| | 7 | | | | | | | | low recovery | | | | |
| | 8 | | | | | | | | No Sample for lab | | 0.0 | 0.0 | 0.0 |
| | 9 | | 1 foot recovery | | | Dark Brown | Fine grained silty sand | SM | | 0.0 | | | |
| | 10 | | | | | | Fine, medium, coarse and | SW | | 0.0 | | | |
| 003-SB-P08-03-BR | 11 | | | | | | very coarse grained poorly sorted sand | | | 0.0 | | | |
| | 12 | | | | | | | | | 0.0 | | | |
| | 13 | | 1 foot | | | Brown to | " | SW | | 0.0 | | | |
| 0:35 003-SB-P08-04-BR | 14 | | | | | Light Brown | | | | 0.0 | | | |
| | 15 | | | | | | | | | 0.0 | | | |
| | 16 | | | 15.5 | | Light Brown | Fine and medium grained sand | SP | | | | | |
| | 17 | | 1 foot | | | Dark Brown | Fine/medium grained sand poorly sorted | | Duplicate | 0.0 | | | |
| 0:45 | 18 | | | | | to Olive | | | | 0.0 | | | |
| 003-SB-P08-05-BR | 19 | | | | | | | | 003-SB-P08-34-BR | 0.0 | | | |
| | 20 | | | | | | | | Wet at 19.3 feet | 0.0 | | | |
| | 21 | | 1 | | | Olive Brown | Fine and medium grained sand | SP | wet | 0.0 | | | |
| 0:50 | 22 | | | | | to Olive | | | over compacted | 0.0 | | | |
| | 23 | | | | | | | | pounded out sample | | | | |
| 003-SB-P08-06-BR | 24 | | | | | | | | and collected | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 27 feet bgs. There was 28 feet of total 100 in a 3.5 foot of open screen in a 4 foot slotted rod. Stickup was 1.00'. GW was at 20.32 TOC

Converted to Well: Yes ✓ No _____ Well I.D. #: 003-~~TEW~~-P08-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe
BORING NUMBER: P08
DATE: 08-2-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Hong

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | SoB Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 2 foot recovery | | | Olive to | Fine medium, and coarse grained poorly sorted sand | SW | | 0.0 | | | |
| 3:30 03-08 P08-07 DL | 26 | | | | | Grey | | | | 0.0 | | | |
| | 27 | | | | | | | | | – | | | |
| | 28 | | | | | | | | | – | | | |
| 03-97 03-08 P08-08 DL | 29 | | 1.5 foot recovery | | | Grey | " No very course | SW | | 0.0 | | | |
| 3:00 | 30 | | | | | | | | | 0.0 | | | |
| | 31 | | | | | | | | | – | | | |
| | 32 | | | | | | | | | – | | | |
| 03-08 P08-09 DL | 33 | | 1 foot recovery | | | Grey | Fine medium, and course grained poorly sorted sand | SW | | 0.0 | | | |
| 30 | 34 | | | | | | | | | – | | | |
| | 35 | | | | | | | | | – | | | |
| | 36 | | | | | | | | | – | | | |
| UV-[illegible] | 37 | | [illegible] | | | Grey | " | SW | No Field GL | [illegible] | | | |
| 7:00 | 38 | | [illegible] | | | | | | sample collected | – | | | |
| | 39 | | | | | | | | Sample marked on | – | | | |
| | 40 | | | | | | | | at the end of sample | – | | | |
| | 41 | | | | | | No Recovery — | SW | Sample marked | – | | | |
| 7:25 | 42 | | | | | | | | out of the end | – | | | |
| | 43 | | | | | | | | of the macro | – | | | |
| | 44 | | | | | | | | core | – | | | |
| 03-08 P08-12 DL | 45 | | .5 foot recovery | | | Grey | Fine medium, and course grained poorly sorted sand | SW | | 0.0 | | | |
| 8:15 | 46 | | | | | | | | | – | | | |
| | 47 | | | | | | | | | – | | | |
| | 48 | | | | | | | | | – | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe

BORING NUMBER: P08
DATE: 08-03-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Haug

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole | Driller BZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003 JB P08-13 BC | 49 | | 2 foot | | | Gray | fine, medium, and coarse grained poorly sorted sand | SW | | 00 | | | |
| | 50 | | | | | | | | | 00 | | | |
| | 51 | | | | | | | | | – | | | |
| | 52 | | | | | | | | | – | 00 | 000 | 0.0 |
| | 53 | | 3.5 foot recovery | | | " | " | SW | | 00 | | | |
| 915 003 JB P08-14 BC | 54 | | | | | | | | | 00 | | | |
| | 55 | | | | | | | | | 00 | | | |
| | 56 | | | | | | | | | | | | |
| | 57 | | 4 foot | 57 | | Gray | " | SW | | 00 | | | |
| 950 003 JB P08-15 BC | 58 | | | | | Gray | fine and medium grained sand poorly sorted | | | 00 | | | |
| | 59 | | | 59.5 | | | | | | 00 | | | |
| | 60 | | | | | Gray | fine medium and coarse grained poorly sorted sand | SW | | 00 | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe - DPT
BORING NUMBER: P0-9
DATE: 08-23-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Long

| | Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | 2 foot recovery | | | Tan | fine, medium, and coarse grained poorly sorted sand w/gravel | SW | Took a Duplicate | 0.0 | | | |
| 0935 | 003-SB-P09-01 DR | 2 | | 2x | | | | | | 003-SB-OP1-05 | 1.3 | | | |
| | | 3 | | | | | | | | | | | | |
| | | 4 | | | | | | | | | - | | | |
| | | 5 | | 4 foot 100% | | | Tan | fine, c grained poorly sorted w/gravel | SW | | 0.8 | | | |
| 1940 | | 6 | | | | | | | | | 0.8 | | | |
| | 003-SB-P09-07 DR | 7 | | | | | Dark Brown | large gravel | | | 1.9 | | | |
| | | 8 | | | | | | | | | 1.1 | | | |
| | | 9 | | 3 foot | | | Tan | fine, medium, and coarse grained poorly sorted | SP | | 1.1 | | | |
| 1950 | | 10 | | | | | | sand | | | 1.7 | | | |
| | 003-SB-P09-03 DR | 11 | | | | | | | | | 10.6 | | | |
| | | 12 | | | 12.0 | | Tan | large gravel | | | - | | | |
| 2005 ~~2010~~ | 003-SB-P09-04 DR | 13 | | 3 foot recovery | | | Brown to Gray | Sandy clay grading into | | | 5.7 | | | |
| | | 14 | | | 13.2 | | | fine medium and coarse grained poorly sorted sand w/gravel | SW | | 2.9 | | | |
| | | 15 | | | | | | | | | 3.5 | | | |
| | | 16 | | | | | | | | | 1.3 | | | |
| | 003-SB-P09-05 DR | 17 | | 3 foot | | | Tan to Light Brown | More fine grained sand but some medium and coarse grained sand intermixed | SW/SP | | 2.5 | | | |
| 2020 | | 18 | | | | | | | | | 0.7 | | | |
| | | 19 | | | | | | | | | 0.2 | | | |
| | | 20 | | | | | | | | | - | | | |
| | | 21 | | 3 foot | | | Tan to Brown | fine, medium, and coarse grained poorly sorted sand | SW | | 15.0 | | | |
| 2050 | | 22 | | | | | | | | wet | 74.0 | | | |
| | 003-SB-P09-06 DR | 23 | | | | | | | | Hot | 205.0 | 0.0 | 0.0 | 0.0 |
| | | 24 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed well to 27 feet bgs. There is 28 feet of total rod w/a 35 foot open-ended screen. Used a steel rod as a well. Pushing wells with h/s w/a drivable point. Grouted started at 19.76 ft. Stickup was 1.00 feet

Converted to Well: Yes ✓ No _____ Well I.D. #: 003-TW-P09-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe

BORING NUMBER: D09
DATE: 08-23-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Hagg

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 2 foot recov | 250 | | Brown | fine grained well sorted sand | SP | Applical 003-SB001-3 | 74.0 | | | |
| 125 00-SB-D09-07 BR | 26 | | | | | | | | Hot | 138.9 | | | |
| | 27 | | | | | | | | | 125 | | | |
| 24.97 | 28 | | | | | | | | | | 00 | 0.0 | 0.0 |
| 00-SB-D09-08 | 29 | | 2 foot | | | Brown | fine grained well sorted sand | SP | | 18.9 | | | |
| ~~135~~ | 30 | | | | | | | | | 15.0 | | | |
| | 31 | | | | | | | | | 14.3 | | | |
| | 32 | | | | | | | | | | | | |
| 00-SB-D09-09 BR | 33 | | 2.5 feet recov | | | Brown | Fine grained well sorted sand | SP | | 18.0 | | | |
| 135 | 34 | | | | | | | | | 15.2 | | | |
| | 35 | | | | | | | | | 14.5 | | | |
| | 36 | | | | | | | | | | | | |
| | 37 | | | | | ~~Gray~~ ~~Brown~~ | | | Auger boring broke upon [illegible] | | | | |
| | 38 | | | | | | | | [illegible] | | | | |
| | 39 | | | | | | | | [illegible] samples caused [illegible] | | | | |
| | 40 | | | | | | | | [illegible] and changed | | | | |
| | 41 | | | | | | | | [illegible] caused refusal | | | | |
| | 42 | | | | | | | | | | | | |
| | 43 | | | | | | | | | | | | |
| | 44 | | | | | | | | | | | | |
| | 45 | | | | | | | | | | | | |
| | 46 | | | | | | | | | | | | |
| | 47 | | | | | | | | | | | | |
| | 48 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe - DPT

BORING NUMBER: P10
DATE: 09-05-97
GEOLOGIST: John G Webster II
DRILLER: Andy High Chris Young

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Concrete. 75' | | | | |
| | 1 | | 3 foot | | | Light Brown | Fine medium and course grained poorly sorted sand | SW | 003-SB-DP1-06 | 0.0 | | | |
| :50 003-SB-P10-01 BR | 2 | | 2 X 5' | | | | | | Leaches | 0.0 | | | |
| | 3 | | 0-P | 3' | | | | | | 0.0 | | | |
| | 4 | | | | | Slight Brown | " | | | – | | | |
| | 5 | | 4 foot | 5' | | Slight Brown | " | SW | | 0.0 | | | |
| 700 003-SB-P10-02 BR | 6 | | | | | Light Brown and Tan layers | fine, medium, and course grained poorly sorted sand | | | 0.0 | | | |
| | 7 | | | | | | | | | 0.0 | | | |
| | 8 | | | | | | | | | – | | | |
| | 9 | | 3 foot | | | | Light Brown | SW | | 0.0 | | | |
| :715 | 10 | | | | | | Tan fine, medium, and course grained poorly sorted sand | | | 0.0 | | | |
| 003-SB-P10-03 BR | 11 | | | | | | | | | 0.0 | | | |
| | 12 | | | | | | | | | | | | |
| | 13 | | 4 foot recovery | | | Tan to light Brown | fine, medium and course grained poorly sorted sand | SW | | 0.0 | | | |
| | 14 | | | 14' | | | | | | 0.0 | | | |
| 735 003-SB-P10-04 BR | 15 | | | 15' | | Brown | fine grained sandy silt grading into a | ML | | 1.4 | | | * |
| | 16 | | | | | Brown | fatty clay w/high plasticity slight sandy | CL | | 0.0 | | | |
| | 17 | | 3 foot recovery | | | Dark Brown | fatty clay w/high plasticity slight sand and some large gravel | | | 0.0 | | | |
| 1740 | 18 | | | | | | | | | 0.0 | | | |
| 003-SB-P10-05 BR | 19 | | | 0 | | | | | | 0.0 | | | |
| | 20 | | | | | | | | | 0.0 | | | |
| | 21 | | 4 foot recovery | | | " | " | CL | | 0.0 | | | |
| 1800 | 22 | | | | | | | | | 0.0 | | | |
| 003-SB-P10-06 BR | 23 | | | | | | | | | 0.0 | | | |
| | 24 | | | | | | | | | 0.0 | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed the temp. well to 36 feet bgs. There was 2'-3.5 foot open screen in a 4 foot slotted rod at base of well.

Converted to Well: Yes X No

Well I.D. #: 003-TW-P10-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe

BORING NUMBER: P10
DATE: 09-05-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Haus

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003-SD | 25 | | 4 foot recovery | | | Dark Brown | Fatty clay - High plasticity slight sand various grain sizes | CL | | 0.0 | | | |
| 1820 P10-07 BR | 26 | | | | | | | | | 0.0 | | | |
| | 27 | | | | | | | | | 0.0 | | | |
| | 28 | | | | | | | | | 0.0 | | | |
| | 29 | | 4 foot recovery | 29' | | " | " | CL | | 0.0 | | | |
| 1840 | 30 | | | 30.3 | | Brown | fine grained clayey sand | SC | | 1.4 | | | |
| 003-SD P10-08 BR | 31 | | | | | Brown | fine grained well sorted sand | SP | | 7.0 | | | |
| | 32 | | | | | Brown | fine, medium, and course grained poorly sorted sand | SW | | 40.0 | | | |
| | 33 | | 3 foot recovery | | | Brown Grey | fine, medium, and course grained poorly sorted sand | SW | | 19.0 | | | |
| 003-SD P10-09 BR | 34 | | | | | | | | | 10.2 | | | |
| | 35 | | | | | | | | | 10.4 | | | |
| | 36 | | | | | | | | | 10.3 | | | |
| | 37 | | 2 foot | | | Gray | fine, medium, and course grained poorly sorted sand | SW | fine/grained | 40.0 | | | |
| 2225 003-SD P10-10 BR | 38 | | | | | | | | Diluted air sample | - | | | |
| | 39 | | | | | | | | and collected | - | | | |
| | 40 | | | | | | | | screen interval bailing → | 599.0 | 0.0 | 0.0 | 0.0 |
| | 41 | | | | | Encountered refusal at 41 feet. The piston | | | | | | | |
| | 42 | | | | | tripped but could not push any more | | | | | | | |
| | 43 | | | | | maximum hammer and down push. | | | | | | | |
| | 44 | | | | | | | | | | | | |
| | 45 | | | | | | | | | | | | |
| | 46 | | | | | | | | | | | | |
| | 47 | | | | | | | | | | | | |
| | 48 | | | | | | | | | | | | |

End Boring 09-05-97

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe - DPT
BORING NUMBER: P11
DATE: 09-08-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Hang

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Concrete .90' | | | | |
| 003-SB-P11-01 | 1 | | 3 foot | 0.0 | | Brown | Sandy silt | SM | 003-SB-DP1-07 | 0.0 | | | |
| 2050 | 2 | | | | | Black | Silty sand - fill material | | | 0.0 | | | |
| | 3 | | | | | | | | | 0.0 | | | |
| | 4 | | | | | | | | | | | | |
| | 5 | | 4 foot | 4.2 | | Light Brown | fine, medium, and course grained poorly sorted sand w/ large gravel | SW | | 0.0 | | | |
| | 6 | | | | | | | | | 0.0 | | | |
| 100 003-SB-P11-02 | 7 | | | | | | | | | 0.0 | | | |
| | 8 | | | | | | | | | 0.0 | | | |
| | 9 | | 4 foot | | | " | " | SW | | 0.0 | | | |
| | 10 | | | | | | | | | 0.0 | | | |
| 110 003-SB-P11-03 | 11 | | | | | | | | | 0.0 | | | |
| | 12 | | | | | | | | | 0.0 | | | |
| | 13 | | 4 foot | | | " | " | SW | | 0.0 | | | |
| | 14 | | | | | | | | | 0.0 | | | |
| 5 003-SB-P11-04 | 15 | | | | | | | | | 0.0 | | | |
| | 16 | | | | | | | | | 0.0 | | | |
| | 17 | | 2 foot | | | Grey | fine, medium, and course grained poorly sorted sand | SW | | 0.0 | | | |
| 130 003-SB-P11-05 | 18 | | | | | | | | | 0.0 | | | |
| | 19 | | | | | | | | Stick up 1.02' | - | - | | |
| | 20 | | | | | | | | 20.37 TOC | - | | | |
| | 21 | | 2 foot | | | " | " | SW | Applied | 0.0 | | | |
| 7210 003-SB-P11-06 | 22 | | | | | | | | 003-SB-DP1-40.00 | 0.0 | | | |
| | 23 | | | | | | | | | - | | | |
| | 24 | | | | | | | | | - | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 27 feet bgs. There was 28 feet of total rod w/a 3 foot open screen and a 4 foot slotted rod at base of well. Stick up was 1.02'. G.W. was 20.37 TOC. There was a .5' steel nipple on end of well screen

Converted to Well: Yes X No _____ Well I.D. #: 003-SB-P11-01

# BORING LOG



PROJECT NAME: NIROP - Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG- Midwest
DRILLING RIG: Strataprobe

BORING NUMBER: P11
DATE: 09-08-97
GEOLOGIST: John G Webster II
DRILLER: Andy High / Chris Hang

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 2foot | | | Org | fine, medium, and coarse grained, poorly sorted | SW | | 00 | | | |
| 003-30 | 26 | | | | | | sand | | | 00 | | | |
| | 27 | | | | | | | | | — | | | |
| | 28 | | | | | | | | | — | | | |
| 003-305 | 29 | | 2foot | | | " | " | SW | | 00 | | | |
| | 30 | | | | | | | | | 00 | | | |
| | 31 | | | | | | | | | — | | | |
| | 32 | | | | | | | | | — | | | |
| | 33 | | 2foot | | | " | " large gravel | SW | | 00 | | | |
| 003-305 | 34 | | | | | | | | | 0.5 | | | |
| | 35 | | | | | | | | | 00 | | | |
| | 36 | | | | | | | | | | 00 | 00 | 00 |
| | 37 | | 2foot | | | | " med gravel, | SW | | 00 | | | |
| 003-305 | 38 | | | | | | pebbles | | | 1.5 | | | |
| | 39 | | | | | | | | | .3 | | | |
| | 40 | | | | | | | | | 00 | | | |
| | 41 | | | | | | | SW | | 1.0 | | | |
| 003-305 | 42 | | | | | | fatty clay some coarse sand | CL | | 7.0 | | | |
| | 43 | | | | | | | | | 5.0 | | | |
| | 44 | | | | | | | | | | 00 | 00 | 00 |
| | 45 | | | | | | | | | | | | |
| | 46 | | | | | | | | | | | | |
| | 47 | | | | | | | | | | | | |
| | 48 | | | | | | | | | | | | |

End Boring at 45' Encountered Clay

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ____ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP - Findlay
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strataprobe
BORING NUMBER: P-12
DATE: 08-10-97
GEOLOGIST: John G. Webster
DRILLER: Andy Hick

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Concrete .75' | | | | |
| 003-SS 12-01 OR | 1 | | 2 foot | | | Tan to | fine grained well sorted sand | SP | | 0.0 | | | |
| 330 | 2 | | | | | Brown | | | | | | | |
| | 3 | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | |
| | 5 | | 2 foot | 4.5 | | Tan to | fine grained well sorted sand grading into a | SW | | 0.0 | | | |
| 340 | 6 | | | | | Brown | fine, medium, and coarse grained poorly sorted sand | | | | | | |
| | 7 | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | |
| | 9 | | 3 foot | | | Tan to | fine, medium and coarse grained sand poorly sorted w/gravel | SW | | 0.0 | | | |
| 350 | 10 | | | | | Brown | | | | | | | |
| 003-SS 12-03 OR | 11 | | | | | | | | | | | | |
| | 12 | | | | | | | | | | | | |
| 003-SS 12-04 OR | 13 | | 3 foot | | | Tan to | fine, medium and coarse grained poorly sorted sand | SW | | 0.0 | 0.0 | | |
| | 14 | | | | | Brown | w/ heavy gravel grading a | | | 0.2 | | | |
| 366 | 15 | | | | | Dark Brown | fatty lean slight sand clay | CH/CL | | | | | |
| | 16 | | | | | | | | | | | | |
| | 17 | | 4 foot 100% | | | Dark Brown to Gray | fatty lean slight sand clay w/gravel inclusion. | | | 0.0 | | | |
| 003-SS 12-05 OR 410 | 18 | | | | | | | | | | | | |
| | 19 | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | |
| | 21 | | 4 foot 100% | | | Dark Brown to Gray | fatty lean slight sand w/ gravel inclusion clay | CH/CL | | 1.3 | | | |
| 435 003-SS 12-06 OR | 22 | | | | | | | | | | | | |
| | 23 | | | | | | | | | | | | |
| | 24 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: Installed temporary well to 36 feet. There was 36 feet of rod. Stick-up is .45. GW is 22.52 TOC. Had problems getting a steady flow rate because of the clay. Put screened interval in sand. The screen was from 33 to 35.5 feet in the sand

Converted to Well: Yes X No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP-Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: TEG
DRILLING RIG: Strata probe
BORING NUMBER: P-12
DATE: 08-10-97
GEOLOGIST: John Webster
DRILLER: Andy High

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | | | | | No Recovery | | | | | | |
| | 26 | | | | | | Correlated | | | | | | |
| | 27 | | | | | | | | | | | | |
| | 28 | | | | | | | | | | | | |
| | 29 | | 3.5 foot | | | Dark Brown | Fatty lean clay slight sand/gravel mixture | | | 0.0 | | | |
| 003-SD-P12-08-OR | 30 | | | 30 ft | | Light Gray | | | | 0.0 | | | |
| | 31 | | | | | Dark Brown | More of a sandy clay | | | 2.1 | | | |
| | 32 | | | | | Gray | Evidence of ~~Course~~ Medium, coarse grained sand | in shoe | | | 0.0 | 0.0 | 0.0 |
| 003-SD-P12-09-OR | 33 | | 3 foot | | | Brown | Medium, course, very course grained sand w/ pebbles | SW | | 0.0 | | | |
| | 34 | | | | | Gray | and heavy large gravel grading into a fine medium and course grained sand | | | 0.0 | | | |
| | 35 | | | | | | | | | 0.0 | | | |
| | 36 | | | 36 | | | | | | | | | |
| | 37 | | 3 foot | | | | fine grained well sorted sand | SP | | 0.0 | | | |
| 003-SD-P12-10-OR | 38 | | | | | | | | | 0.0 | | | |
| | 39 | | | | | Brown | ~~fine grained~~ and course grained | | | 0.0 | | | |
| | 40 | | | 40 feet | | Other | poorly sorted sand w/ pea and large gravel | SW | | | | | |
| | 41 | | 4 foot | | | Brown | very fine to fine grained well sorted sand. | SP | | 0.0 | | | |
| 003-SD-P12-11-OR | 42 | | | | | | | | | 0.0 | | | |
| | 43 | | | | | | | | | 0.0 | | | |
| | 44 | | | | | | | | | | | | |
| | 45 | | | ? | | | No Recovery | | | | | | |
| | 46 | | | | | | Not enough pressure from the fine sand to push piston | | | | | | |
| | 47 | | | | | | | | | | | | |
| | 48 | | | | | | | | | | | | |
| | | | | | | | Ended Boring | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: The boring was ended due to the fine grained sand was locking the piston up and it would not trip. Attempted 3 tries with no luck.

Converted to Well: Yes _____ No _____ Well I.D. #: _____

# APPENDIX B.1

# BORING LOGS - PHASE II

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-28D
DATE: 12/2/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | Sand, medium to | | Concrete | 0 | | | |
| S-1 | | | 3.3/5' | | Loose | to | fine, w/ pebbles | | dry | 0 | | | |
| @ | | | | | | | up to 3/4" | | | 0 | | | |
| 2402 | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | |
| | | | | | | | Sand, fine to | | sl. moist | 0 | | | |
| | | | | | | | coarse, w/ granules | | | 0 | | | |
| S-2 | | | 4.8'/10 | | Loose | to | and pebbles up to 1/2" | | | 0 | | | |
| @ | | | | | | | ↓ | | | 0 | | | |
| 2415 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | Rod fell 18' | | | | |
| | | | 0/10' | | | | | | during 15'-25' | | | | |
| | | | | | | | | | run | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 25 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Bart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-28D
DATE: 12/2/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | | | | | Sand, medium to | | wet | 0 | | | |
| S-3 | | | | | Loose | to | fine w/ granules | | | 4.8 | | | |
| @ | | | 4.3/10' | | | | and pebbles up to 3" | | | 4.4 | | | |
| 2438 | | | | | | | @ base | | Slow blocked by | 4.5 | | | |
| | 30 | | | | | | ↓ | | 3" gravel @ ~30' | 5.1* | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| S-4 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 35 | | | | | | | | | | | | |
| | | | | | | | Sand, medium to | | wet | 2.5 | | | |
| S-4 | | | | | Loose | to | fine w/ pebbles | | | 3.1* | | | |
| @ | | | 4.3/5' | | | | up to 1½" at base, | | | 2.8 | | | |
| 2447 | | | | | | | fine sand to vf. @ | | | 0 | | | |
| | 40 | | | | | | 38 - 39' | | | 3.0 | | | |
| | | | | | | | Sand, medium to fine | | wet | 2.5 | | | |
| S-5 | | | 3.8/5' | | Loose | to | w/ granules | | | 2.8 | | | |
| @ | | | | 42.7' | | | Sand, fine to vf. | | | 2.8 | | | |
| 2422 | | | | | | | becoming silty w/ ½" | | | 3.4* | | | |
| | 45 | | | | | | silt layer @ ~ 43' | | | 2.8 | | | |
| | | | | | Loose | to | Sand, medium to fine | | wet | 5.5 | | | |
| S-6 | | | 3.9/5.0' | | | | w/ granules | | | 7.1 | | | |
| @ | | | | | | | | | | 8.1* | | | |
| 0136 | | | | | | | | | | 3.8 | | | |
| | 50 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ✓ No ____ Well I.D. #:

# BORING LOG



PROJECT NAME: NJROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-28D
DATE: 12/3/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | | | | loose | tan | Sand, medium to | | wet | 4.0 | | | |
| S-7 | | | 3.9'/5' | | | | fine, w/ granules | | | 4.0* | | | |
| @ | | | | | | | + pebbles up to ½" | | | 3.1 | | | |
| 1605 | | | | | | | ↓ | | | 3.3 | | | |
| | | | | | | | | | | 2.1 | | | |
| | 55 | | | | | | | | | | | | |
| | | | | | loose | tan | Sand, medium to | | wet | 1.3 | | | |
| S-8 | | | 4.1'/5' | | | | fine w/ granules | | | 1.7 | | | |
| @ | | | | | | | 57-58' fine to v.f. sd | | | 2.0* | | | |
| 1622 | | | | | | | also coarser sand | | | 1.1 | | | |
| | | | | | | | | | | 1.3 | | | |
| | 60 | | | | | | | | | | | | |
| | | | | | loose | tan | Sand, medium to | | wet | 13.3* | ○ | ○ | ○ |
| S-9 | | | 4.6'/5' | | | | fine | | | 3.0 | | | |
| @ | | | | | | | ↓ | | | 2.8 | | | |
| 1644 | | | | | | | | | | 3.4 | | | |
| | | | | | | | | | | 3.4 | | | |
| | 65 | | | | | | | | | | | | |
| | | | | | loose | tan | Sand, medium to | | wet | 4.4* | | | |
| S-10 | | | 3.5'/5' | | | | fine | | | 1.3 | | | |
| @ | | | | | | | ↓ | | | 1.3 | | | |
| 1704 | | | | | | | | | | | | | |
| | 70 | | | | | | | | | | | | |
| | | | | | loose | tan | Sand, medium to | | wet | 0.8 | | | |
| S-11 | | | 3.9'/5' | | | | fine becomes coarse | | | 5.2 | | | |
| @ | | | | | | | to medium @ ~72' | | | 6.5* | ○ | ○ | ○ |
| 1729 | | | | | | | | | | 3.5 | | | |
| | | | | | | | | | | 1.2 | | | |
| | 75 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-28 D
DATE: 12/3/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 75 | | | 76.5' | loose | tan | Sand, medium to fine w/ pebbles up to 1" & boul | | wet | 0.4 | | | |
| S-12 @ 1745 | | | 5'/5' | 77.4' | stiff | olive gray | Clay, silty | | slightly moist | 0 | | | |
| | | | | 77.8' | loose | tan | Sand, med. to fine grading to silt | | wet | 0 | | | |
| | | | | 78.2' | soft | olive gray | Clay, silty | | slightly moist | 0 | | | |
| | | | | 78.9' | loose | tan | Sand, med. to fine | | wet | 0 | | | |
| | | | | 79.2' | soft | olive | Clay, silty | | slightly moist | 0 | | | |
| | 80 | | | | loose | tan | Sand, med. to fine | | wet | 0.5 | | | |
| | | | | | loose | tan | Sand, med. to fine | | wet | 0.7 | 0 | | |
| S-13 @ 1821 | | | 4.6'/5' | | | | | | | 1.7 1.6 | 0 | | |
| | | | | | | | 83.3' - 84' Sand, | | | 3.3* | 0 | 0 | 0 |
| | | | | 84' | | | coarse to med., fines up | | | 0.4 | | | |
| | 85 | | | | stiff | olive gray | Clay, silty to sandy, o tip | | slightly moist | 0 | | | |
| | | | | | stiff | olive gray | Clay, silty to sandy, w/ | | slightly moist | 0 | | | |
| S-14 @ 1851 | | | 5'/5' | | | | rare granules | | | 0 | | | |
| | | | | 88.5' | | | | | | 0 | | | |
| | | | | 89' | soft | olive gray | Clay, sandy to Sand, clayey | | wet | 0 | | | |
| | 90 | | | 90' | stiff | olive gray | Clay, sandy, fine sand | | slightly moist | 0 | | | |
| | | | | | stiff | olive gray | Clay, silty to sandy | | slightly moist | 0 | | | |
| S-15 @ 1929 | | | 5'/5' | | to loose | | more sandy @ base | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0.5 | | | |
| | 95 | | | | | | | | | 1.5* | | | |
| | | | | | loose | tan | Sand, medium to fine | | wet | 1.0 | | | |
| S-16 @ 2114 | | | 9.7'/10' | | | | | | | 0.3 | | | |
| | | | | | | | | | | 0.8 | | | |
| | | | | | | | | | | 1.0 | | | |
| | 100 | | | | | | | | | 2.7* | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-28D
DATE: 12/3/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 100 | | | | loose | tan | Sand, coarse to | | wet | 0.9 | | | |
| 5-17 | | | | | | | med. w/ granules | | | 0.8 | | | |
| @ | | | | | | | ↓ | | | 1.1 | | | |
| 2116 | | | | 103.7' | | | ↓ | | | 1.7* | | | |
| | 105 | | | 105' | stiff | dive | Clay, silty, sandy | | slightly moist | 0.4 | | | |
| | | | | | loose | tan | Sand, coarse to | | wet | 4.0 | | | |
| 5-18 | | | 4.4'/5' | | | | medium, clayey lenses | | | 5.0 | | | |
| @ | | | | 108' | | | ~½" thick | | | 5.1* | | | |
| 2141 | | | | | | brown | Gravel, sandy w/ | | wet | 0 0.4 | | | |
| | 110 | | | | | | minor clay, gravel up to 4" | | | | | | |
| | | | | | loose | tan | Sand, coarse to medium | | wet | 0.2 | | | |
| 5-9 | | | 4.5'/5' | | | | w/ pebbles up to 2' | | | 0.4 | | | |
| @ 2205 | | | | | | | subrounded to subangular | | | | | | |
| | | | | 114.3' | | | | | | 0.3 ↓ | | | |
| | 115 | | | | | yellow brown | Landfill: fine grained, | | wet | | | | |
| | | | | | | | slightly weathered, w/ rock | | | | | | |
| | | | | | | | fragments, finite [illegible] | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-29D
DATE: 12/5/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | | | | | | | | | |
| S-1 @ 1538 | | | 4.1/5 | | loose | yellow brn to mod. brn | Sand, medium to fine, w/ some frags up to 2", dry pieces | | dry to sl. moist | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | 5 | | | | | | | | | 1.4 / 1.1 | | | |
| S-2 @ 1844 | | | 6.5/10 | 8' | loose | mod brn | Sand, silty, clayey w/ some frags up to 1" | | dry | 1.7 | | | |
| | | | | | | | | | | 1.7* | | | |
| | | | | | | | | | | 1.3 | | | |
| | | | | | loose | tan | Sand, medium to fine | | dry to sl. moist | 1.1 | | | |
| | | | | | | | | | | 1.4 | | | |
| | | | | | | | | | | 1.2 | | | |
| S-3 @ 1947 | | | | | | | | | | 1.6* | | | |
| | | | | | | | | | | 1.3 | | | |
| | 15 | | | | | | | | | | | | |
| | | | | | loose | tan | Sand, medium to fine w/ granules | | wet | 0 | | | |
| | | | | | | | | | | 3.5* | | | |
| S-4 @ 2240 | | | 2.3/10 | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 25 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

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Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ✓ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NJ ROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-29D
DATE: 12/5/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | | | loose | tan | Sand, medium to | | wet | 0 | | | |
| S-5 | | | 2.6/5' | | | | fine w/ granules | | | 2.1* | | | |
| @ | | | | | | | | | | 0.6 | | | |
| 2405 | | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| | | | | | loose | light | Sand; Coarse to | | wet | 0 | | | |
| S-6 | | | 3.9/5' | | | gray | fine w/ granules | | | 0.9 | | | |
| @ | | | | | | | | | | 0.6 | | | |
| 2419 | | | | | | | ↓ | | | 0.6 | | | |
| | | | | | | | | | | 0.5* | | | |
| | 35 | | | | | | | | | | | | |
| | | | | | loose | light | Sand, coarse to | | wet | 0 | | | |
| | | | | | | gray | fine w/ pebbles up | | | 0 | | | |
| S-7 | | | 6.4/10' | | | | to 1½" (max) | | | 0 | | | |
| @ | | | | | | | | | | | | | |
| 2434 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | 1.4 | | | |
| | | | | | | | | | | 1.6* | | | |
| S-8 | | | | | | | | | | | | | |
| @ | | | | | | | | | | 0.7 | | | |
| 2441 | | | | | | | ↓ | | | 1.0 | | | |
| | 45 | | | | | | | | | | | | |
| | | | | | loose | light | Sand, medium to | | wet | 0 | | | |
| S-9 | | | 6.1/10' | | | gray | fine w/ granules | | | 0 | | | |
| @ | | | | | | | | | | 0 | | | |
| 2451 | | | | | | | | | | | | | |
| | 50 | | | | | | ↓ | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No ____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-29D
DATE: 12/5/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | | | | loose | light gray | Sand, ~~coarse to~~ medium to fine, w/ granules | | wet | 0 | | | |
| | | | | | | | | | | 0 | | | |
| S-10 @ 1451 | | | | | | | | | | 0.9 | | | |
| | 55 | | | | | | | | | | | | |
| | | | | | loose | light gray | Sand, medium to fine w/ pebbles up to 2½" | | wet | 3.0* | | | |
| | | | | | | | | | | 3.0 | | | |
| S-11 @ 1248 | | | 6.1'/10' | 58' | | | | | | 2.5 | | | |
| | | | | | loose | light gray | Sand, coarse to fine w/ pebbles up to 4", subrounded | | wet | 2.2 | | | |
| | | | | | | | | | | 2.3 | | | |
| | | | | | | | | | | 2.8* | | | |
| S-12 @ 1250 | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | |
| | | | | | loose | light gray | Sand, medium to fine, w/ pebbles | | wet | 0.8 | | | |
| | | | | | | | | | | 7.0* | | | |
| S-13 @ 1309 | | | 6.7'/10' | | | | lesser coarse sand w/ abund. pebbles @ ~74' | | | 3.1 | | | |
| | | | | | | | | | | 3.2 | | | |
| | | | | | | | | | | 5.1 | | | |
| S-14 @ 1310 | | | | | | | | | | 5.5 | | | |
| | 75 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

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Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NJROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-29D
DATE: 12/6/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 75 | | | | loose | light gray | Sand, loose to fine w/ abund. pebbles | | wet | 4.5 | | | |
| S-15 @ | | | 9.5/10 | | | | | | | 7.0 | | | |
| 1335 | | | | | | | | | | 4.0 | | | |
| | | | | | | | | | | 17.8* | | | |
| | | | | | | | | | | | | | |
| | | | | 81' | | | | | | 3.2* | | | |
| S-16 @ | | | | | stiff to hard | olive gray | Clay, silty sandy to 85' then Clay, slightly silty | | sl moist | 2.3 | | | |
| 1336 | | | | | | | | | | 2.1 | | | |
| | 85 | | | | | | | | | 2.1 | | | |
| | | | | | hard | olive gray | Clay, silty slightly w/ pebbles up to 1½" | | sl. moist | 0 | | | |
| S-17 @ | | | 10/10' | | | | | | | 0 | | | |
| 1442 | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 2.2 | | | |
| S-18 @ | | | | | | | | | | 2.3* | | | |
| 1443 | | | | | | | | | | 1.9 | | | |
| | 95 | | | | | | | | | 1.8 | | | |
| | | | | | | | | | | 1.9 | | | |
| | | | | | hard | olive gray | Clay, silty w/ pebbles, granules | | sl. moist | 0 | | | |
| S-19 @ | | | 10/10' | | | | | | | 0 | | | |
| 1549 | | | | | | | | | | 2.9* | | | |
| | | | | | | | | | | 1.8 | | | |
| | 100 | | | | | | | | | 1.8 | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-29D
DATE: 12/6/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | hard | olive gray | Clay, silty, sandy in spots, w/ pebbles | | sl. moist | 1.4 | | | |
| S-20 | | | | | | | | | | 0.6 | | | |
| @ | | | | | | | | | | 1.6* | | | |
| 1551 | | | | | | | | | | 1.6 | | | |
| | 105 | | | | | | | | | 1.6 | | | |
| | | | | | | | | | | 0.0 | | | |
| S-21 | | | | | | | | | | 0.0 | | | |
| @ | | | 10'/10' | | | | | | | 0.0 | | | |
| 1644 | | | | | | | | | | 0.0 | | | |
| | 110 | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| S-22 | | | | | | | | | | 0 | | | |
| @ | | | | | | | | | | 0 | | | |
| 1645 | | | | | | | | | | 0 | | | |
| | 115 | | | | | | | | | 0 | | | |
| | | | | | hard | olive gray | Clay, silty becoming sandy, w/ pebbles | | sl. moist | 2.3 | | | |
| S-23 | | | | 117.2' | | | | | | 4.5* | | | |
| @ | | | 10'/10' | | loose | tan | Sand, medium to fine w/ pebbles up to 3" | | wet | 3.8 | | | |
| 1724 | | | | | | | | | | 2.7 | | | |
| | 120 | | | | | | | | | 2.6 | | | |
| | | | | | | | | | | 0 | | | |
| S-24 | | | | | | | | | | 2.1 | | | |
| @ | | | | | | | | | | 2.3 | | | |
| 1725 | | | | | | | | | | 1.9 | | | |
| | 125 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

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Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NI ROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-29D
DATE: 12/6/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 125 | | | | loose | light brown | Sand, medium to | | wet | 0 | | | |
| 4-25 | | | | | | | fine w/ pebbles up | | | 0 | | | |
| @ 1759 | | | | | | | to 2" | | | 2.6 | | | |
| | | | 9.6/10' | | | | | | | 2.5* | | | |
| | 130 | | | | | | | | | | | | |
| | | | | | | | | | | 0 | | | |
| 5-26 | | | | | | | | | | 0 | | | |
| @ 1800 | | | | 132.6' / 133' | stiff | olive gray | Clay, silty, sandy | | slightly moist | 0 | | | |
| | | | | | | rust brown | Gravel, sandy up to | | wet | 0 | | | |
| | 135 | | | | | | 3" diam, subrounded | | | | | | |
| | | | | 136.7' / TD | | light orange | Sandstone fragments fine grained | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotasonic
BORING NUMBER: MS-30D
DATE: 10/23/97
GEOLOGIST: B. Howze
DRILLER: Bill Zamow

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | 1.0' | | Gray | Concrete | | | 270 | | | |
| S-1 | | | | | | | | | | *81 | | – | 0 |
| @ 1050 | | | 5/5' | | loose | lt | Sand, fine to v.f. grnd, | SM | Fill | 20 | | | |
| | | | | | | brn | w/ rock fragments, | | sl. moist | 24 | | | |
| | 5 | | | | | | up to 1" diam, angular - 1st 2' | | | | | | |
| | | | | | | | | | | 3.4 | | | |
| | | | | | | | | | | 12.5 | 0 | – | 0 |
| S-2 | | | 4.5/5' | | loose | lt | Sand, fine to v.f. grnd | | sl. moist | 13.3 | | | |
| @ 1102 | | | | | | brn | mod. well sorted | SW | | 9.0 | | | |
| | 10 | | | | | yellowish brn | | | | | | | |
| | | | | | | | | | | 4.9 | | | |
| S-3 | | | | | loose | lt. | Sand, fine to v.f. grnd | | sl. moist | 5.9 | | | |
| @ 1105 | | | 5/5' | | | brn | mod. well sorted | SW | | 5.6 | | | |
| | | | | | | | | | | 2.7 | | | |
| | 15 | | | | | | | | | | | | |
| | | | | | | | | | | 1.4 | | | |
| | | | | | loose | lt. | Sand, fine to v.f. grnd | SW | | | | | |
| S-4 | | | 5/5' | | | brn | mod. well sorted | | moist | *8.3 | | | |
| @ 1109 | | | | | | | | | | 0 | | | |
| | 20 | | | ▽ 20' | | | | | | | | | |
| | | | | | | | | | wet at 20' | 0 | | | |
| | | | | | loose | lt. | Sand, fine to v.f. grnd | SW | | 0 | | | |
| | | | 4/5' | | | brn | mod. well sorted | | | 0 | | | |
| S-5 | | | | | | | | | | *1.4 | | | |
| @ 1115 | 25 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

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Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ✓ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6866
DRILLING COMPANY: Boart + Longyear
DRILLING RIG: Rotasonic
BORING NUMBER: MS-30D
DATE: 10/23/97
GEOLOGIST: B. Howze
DRILLER: Bill Zamow

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | | | | H. | Sand, f. gnd | | | 0 | | | |
| | | | 5/5' | | loose | brn | rare gravel up to | SW | wet | 0 | | | |
| S-6 | | | | | | | ½" diam | | | 0 | | | |
| 1710 | | | | | | | | | | 0 | | | |
| | 30 | | | | | | | | | | | | |
| | | | | | | | Sand, f grnd | SW | wet | 0 | | | |
| | | | 5/5' | | loose | H-med | | | | 0 | | | |
| S-7 | | | | | | brn | | | | 0 | | | |
| 1728 | | | | | | | | | | 0 | | | |
| | 35 | | | | | | | | | 0 | | | |
| | | | | | | | Sand, f - v.f. grnd | | | 0 | | | |
| | 38' | | 2.6/5' | | loose | H-med | | SW | wet | *0 | | | |
| S-8 | | | | | | brn | | | wl bl | 0 | 0 | - | 0 |
| 1736 | | | | | | | | | | | | | |
| | 46 | | | | | | | | | | | | |
| | | | | 46' | loose | | Sand, f - v f grnd | SW | | 0 | | | |
| | | | 5/5' | | loose | med | 46-47.5' Sand, f grnd | | wet | 0 | | | |
| S-9 | | | | 47.5' | | brn | sl clayey | | | 0 | | | |
| 1810 | | | | | loose | | 47.5'-50' Sand, f-v.f grnd | | | 0 | | | |
| | 46 | | | | | | | | | 0 | | | |
| 0/24 | | | | | | med | Sand, v.f grnd, | | | 0 | | | |
| S-10 | | | 4.7/5' | | loose | brn | mod well sorted | SW | wet | *0 | | | |
| 1009 | | | | | | | | | | 0 | | | |
| | | | | | | | | | | | | | |
| | 50 | | | | | | | | | | | | |

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Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ✓ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart + Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-30D
DATE: 10/24/97
GEOLOGIST: B. Howze
DRILLER: Bill Zamow

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification * | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | | | | | | | | | 0 | | | |
| | | | 4.6/5' | | Loose | Med brn | Sand, f.-v.f. grnd, | SW | wet | 0 | | | |
| S-11 | | | | | | | mod. well sorted | | | 0 | | | |
| @ | | | | 53.5' | | | | | | | | | |
| 1028 | | | | | firm | mod brn | Sand, v.f. to silt, sl | SM | | 0 | | | |
| S-12 | 55 | | | 55' | | to dk | clayey | | | | | | |
| | | | | 56.1 | firm | olive | clay, silty | ML | slightly moist | 0 | | | |
| S-13 | | | 4.4/5' | | loose | orange | Sand, fin grnd. | SM | wet | 0 | | | |
| @ | | | | | | brn | grading to med. grnd, silty | | | 0 | | | |
| 1044 | | | | | | | poorly sorted | | | 0 | | | |
| | 60 | | | | | | | | | | | | |
| | | | | | loose | orange | Sand, med. grnd. | SW | wet | 0 | | | |
| S-14 | | | 4.8/5' | | | brn | grading to v.c. sand | | | 0 | | | |
| @ | | | | | | | w/ gravel, poorly sorted | | | 0 | | | |
| 1100 | | | | | | | | | | 0 | | | |
| | 65 | | | | | | | | | | | | |
| | | | | | loose | | gravel, up to 1" diam, w/ coarse grnd sand, | GW | wet | 0.3 | | | |
| S-15 | | | 4.7/5' | | | | poorly sorted | | | 1.0 | | | |
| @ | | | | 67.5' | | | | | | | | | |
| 1333 | | | | | very | olive | Clay, silty, some | CH | slightly moist | *1.1 | | | |
| | | | | | stiff | gray | granules | | | 0.9 | | | |
| | 70 | | | 69.7' | | | gravel up to 3" diam. | GW | wet | 0 | | | |
| | | | | | loose | | poorly sorted, w/ | | | 0 | | | |
| S-16 | | | 5/5' | | | | v.c. sd., subrounded | | | *2.0 | | | |
| @ | | | | | | | to subangular clasts | | wet | 1.5 | | | |
| 1352 | | | | | | | | | | 0 | | | |
| | 75 | | | | | | | | | 1.9 | | | |

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Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: _____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart + Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-30D
DATE: 10/24/97
GEOLOGIST: B. Howze
DRILLER: Bill Zamow

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 75 | | | | loose | brown | Gravel clasts up | GW | wet | 0 | | | |
| S-17 | | | 1.4'/5' | | | maroon | to 5" diameter, | | sampler blocked | | | | |
| @ | | | | | | dark gray | poorly sorted, granite, | | by rock | | | | |
| 1404 | | | | | | | limestone clasts | | | | | | |
| | 80 | | | | | | v.c. sand matrix, rare clay | | | | | | |
| | | | | | | | | | | 0 | | | |
| S-18 | | | 3.9/5' | | loose | | | GW | wet | 0.7 | | | |
| @ | | | | | | | | | | 1.6 | | | |
| 1427 | | | | | | | | | | *11 | | | |
| | 85 | | | | | | | | | | 1.2 | 1.2 | 1.1 |
| | | | | | | | | | | 0 | | | |
| S-19 | | | 2.4'/5' | | loose | | | GW | wet | 0 | | | |
| @ | | | | | | | | | | | | | |
| 1011 | | | | | | | | | | | | | |
| | 90 | | | | | | | | | | | | |
| | | | | | | | | | | 0 | | | |
| S-20 | | | 5'/5' | | | | | GW | wet | *0.9 | | | |
| @ 1500 | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | 95 | | | | | | | | | | | | |
| | | | | | loose | | | GW | wet | 0 | | | |
| S-21 | | | 2.6'/5' | | | | | | | 0 | | | |
| @ | | | | | | | | | | | | | |
| 1515 | | | | 98.6' | | yellowish | fine grained, well sorted | | | | | | |
| | 100 | | | | | orange | sand w/ weathered rock fragments | | wet | | | | |

(St. Peters Sandstone)

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Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic

BORING NUMBER: MS-31D
DATE: 11/13/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0.7' | | gray | Concrete | | | | | | |
| S-1 @ 1710 | | | 1/3.1/5' | | loose | tan | Sand, fine to med. w/ granules | | dry | 0<br>0* | | | |
| | | | | | | | | | | 0 | | | |
| | 5 | | | | | | | | | | | | |
| S-2 @ 1822 | | | | | | | Sand, fine to med. | | dry | 0 | | | |
| | | | 1.9/10' | | loose | tan | w/ pebbles up to 1½", poorly sorted | | | 0 | | | |
| S-3 @ 1813 | | | | | | | | | | 0.2* | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | |
| S-4 @ 1839 | | | 1.7/10' | | loose | tan | Sand, fine to coarse, pebbles up to 1", poorly sorted | | wet | 0.8*<br>0.4 | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 25 | | | | | | | | | | | | |

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Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-31D
DATE: 11/13/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistancy or Rock Hardness | Color | Material Classification * | USCS * | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | 1 | | | | Sand, med. to coarse, | | wet | 0 | | | |
| S-5 @ | | | 1.2/5' | | loose | tan | w/ pebbles up to 2½" | | | 0 | | | |
| 1847 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| | | | | | Loose | tan | Sand, med. to coarse | | | 14.5 | | | |
| S-6 | | | 5/5' | | | to buff | @ top w/ pebbles up | | wet | 12.9 | | | |
| @ 1950 | | | | | | gray | to ½" becoming coarse | | | 18.3* | | | |
| | | | | | | | to V.C. w/ pebbles up | | | 11.3 | | | |
| | 35 | | | | | | to 1", poorly sorted | | | | | | |
| S-7 | | | | | loose | tan | Sand, med to coarse | | | 10.2 | | | |
| @ 2004 | | | 4.5/5' | | | | w/ pebbles, C. to V.C. | | wet | 7.8 | | | |
| | | | | | | | w/ pebbles & brown | | | 10.5 | | | |
| | | | | | | | w/ med sd. for ~3" | | | | | | |
| | 40 | | | | | | @ 37' | | | | | | |
| S-8 | | | | | loose | tan | Sand, med. to | | wet | 11.1 | | | |
| @ | | | 4.3/5' | | | | coarse, w/ minor granules | | | 14.0* | | | |
| 2026 | | | | | | | @ 42.2' Sand fine to | | | 10.6 | | | |
| | | | | | | | med. moderately sorted | | | 8.5 | | | |
| | 45 | | | | | | 43.6' Sand coarse to V.C. w/ pebbles | | | 8.8 | | | |
| S-9 | | | | | loose | tan to gray | Sand, V.C. to granules, | | wet | 9.7 | | | |
| @ | | | 4.6/5' | 47.3' | | | pebbles up to 2", poorly sorted | | | 12.6 | | | |
| 2043 | | | | | very firm | | Clay, silty w/ granules | | slightly moist | 12.0 | | | |
| | | | | | to | olive | up to ⅛" (minor) | | | 0 | | | |
| | 50 | | | | stiff | | ↓ | | | 0 | | | |

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Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Bart Longyear
DRILLING RIG: Rotasonic
BORING NUMBER: MS-31D
DATE: 11/13/97
GEOLOGIST: B. Howze
DRILLER: Roy Backenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | | | | firm | olive gray | clay, silty, w/ granules up to ½" | | sl. moist | 0 | | | |
| | | | 5/5' | | | | | | | 0 | | | |
| 2103 | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | 55 | | | | | | ↓ | | | | | | |
| | | | | | | | clay, silty, sandy fine | | | 0 | | | |
| | | | | | firm | olive gray | granules up to ½" | | sl. moist | 0* | | | |
| 2117 | | | 5/5' | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | 60 | | | | | | ↓ | | | | | | |
| | | | | | | | clay, silty, sandy, | | | 0 | | | |
| | | | | | firm | olive gray | w/ granules | | sl. moist | 0 | | | |
| 2150 | | | 5/5' | | | | more sandy 64'-65' | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | 65 | | | | | | ↓ | | | | | | |
| | | | | 66.1' | firm | olive gray | clay, silty, sandy | | sl. moist | 0.3 | | | |
| | | | 4.8/5' | | | olive tan | Sand, med. grnd | | | 0 | | | |
| 2208 | | | | | loose | | w/ granules up to 1", | | wet | 0.1 | | | |
| | | | | | | | becomes fine sand @ | | | 6.8* | | | |
| | 70 | | | | | | bottom | | | 6.6 | | | |
| | | | | | | tan | Sand, fine to | | | 11.7* | | | |
| 2241 | | | 4.9/5' | | loose | | v. f. grnd | | wet | 10.2 | | | |
| | | | | | | | | | | 6.3 | | | |
| | | | | | | | | | | 6.2 | | | |
| | 75 | | | | | | ↓ | | | 5.2 | | | |

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Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotasonic
BORING NUMBER: MS-31D
DATE: 11/13/97
GEOLOGIST: R. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm) Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 75 | | | | | | Sand, fine to med. | | | 6 | | | |
| | | | 5/5' | | loose | tan | gand, | | wet | 5.9 | | | |
| 2309 | | | | 77.8' | stiff | gray | clay, sl silty, mica granules | | sl moist | 7.5 | | | |
| | | | | 78.5' | | | | | | 6.8 | | | |
| | 80 | | | | loose | tan | Sand, fine to v.f. gand | | wet | 6.0 | | | |
| | | | | | loose | tan | Sand, fine to | | | 6.3 | | | |
| | | | 5/5' | | | | v.f. gand | | wet | 8.1* | | | |
| 2340 | | | | | | | | | | 7.8 | | | |
| | | | | | | | | | | 7.5 | | | |
| | 85 | | | | | | | | | 7.3 | | | |
| | | | | | Loose | tan | Sand, f. to v.f. sl | | wet | 5.5 | | | |
| | | 85-95' | 10/10' | | | tan | silty, clayey @ bottom | | | 5.9 | | | |
| 2424 | | | | 95' | | | transition into clay | | | 6.5 | | | |
| | | | | | stiff | lime | Clay, silty w/ granules up to ½" | | sl moist | 0 | | | |
| | 90 | | | | | | | | | | | | |
| | | | | | | | | | | 0 | | | |
| | | | | | | | clay, sl silty, w/ | | | 0 | | | |
| | | | | | hard | lime | granules up to ½" | | sl moist | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | 95 | | | 95 | | | | | | | | | |
| | | | | 96.2' | | lime | Sand, fine, clayey w/ granules | | wet | 0 | | | |
| 0111 | | | 5/5' | | | | Silt, clayey, sandy | | moist to wet | 0 | | | |
| | | | | 98' | stiff | lime | | | ~~sl moist~~ | | | | |
| | | | | | to hard | lime | Clay, silty, sandy | | sl moist | 7.2* | | | |
| | 100 | | | | | | | | | | | | |

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Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ✓ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIRO P Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-31D
DATE: 11/13/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification * | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 100 | | | | hard | dk | clay, silty, sandy, | | slightly moist | 0 | | | |
| 0117 | | | 4.5/5' | | | | w/ gravel | | | 0 | | | |
| | | | | 103' | | | | | | 0 | | | |
| | | | | 103.6' | | dk | Sand, f. / clayey | | wet | 10.7* | | | |
| | 105 | | | | hard | dk gray | clay, silty, rock fragments | | slightly moist | 0 | | | |
| | | | | | | | clay, silty, sandy, | | slightly moist | 13.4 | | | |
| 0202 | | | 3/3' | | hard | | w/ rock frags. up to 3" | | | 14.7 | | | |
| | 12 | | | | | | | | | 39.8* | | | |
| | | | 2/3 | | | | | | | 6.1 | | | |
| 5.19 | 115 | | | 109.5' | hard to form | med | clay, silty, sandy w/ gravel | | moist | 2.6 2.0 | | | |
| | | | | | loose | med | Sand, fine to coarse | | wet | 5.8 | | | |
| | | | | | | | w/ gravel, slightly clayey | | | 6.1 | | | |
| 1900 | | | 5/5' | | | | not gravel 112-112.5' | | | 7.6* | | | |
| | | | | | | | ↓ | | | 3.2 4.5* | | | |
| | 115 | | | 114.5' | stiff | med | clay, silty, sandy w/ gravel up to 4" | | | 6.0 | | | |
| | | | | | | | Pebbles up to 2", | | wet | 4.8* | | | |
| 1934 | | | 3.7/10' | | | dm | sandy, v.c. | | | 2.8 | | | |
| | | | | | | | | | | 3.0 | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | 126.7' | | yellowish | | | | | | | |
| | 125 | | | | | dm | Sandstone, fine grained weathered, calcite filled fractures | | wet | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-32D
DATE: 12/8/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification * | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | 0.7' | | ~~Gray~~ | Concrete | | | | | | |
| S-1 @ 1731 | | | 5/5' | 2.7' | loose | Light brn | Sand, medium to fine w/ gravel | | dry | 0 | | | |
| | | | | 3.8' | loose | Brn | Sand, silty, dry | | sl. moist | 0 | | | |
| | | | | | | | | | | 0.2 | | | |
| | 5 | | | | loose | tan | Sand, medium to fine | | dry | 0.4* | | | |
| | | | | | loose | tan | Sand, medium to fine | | wet | 0 | | | |
| S-2 @ 1753 | | | 1.9'/10' | | | | | | | | | | |
| | 15 | | | | | | | | | | | | |
| S-3 @ 1758 | | | 3.8'/5' | | loose | tan | Sand, medium to fine, w/ granules | | wet | 0.5 | | | |
| | | | | | | | | | | 6.3* | | | |
| | | | | | | | | | | 2.9 | | | |
| | | | | | | | | | | 1.0 | | | |
| | 20 | | | | | | | | | 1.1 | | | |
| S-4 @ 1804 | | | 4.2'/5' | | loose | tan | Sand, coarse to fine, w/ granules | | wet | 2.4 | | | |
| | | | | | | | | | | 4.3* | | | |
| | | | | | | | | | | 3.9 | | | |
| | | | | | | | | | | 2.6 | | | |
| | 25 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NI ROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-32D
DATE: 12/8/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS* | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | | | loose | light gray | Sand, medium to fine, w/ granules | | wet | 0 | | | |
| S-5 | | | 2.5'/5' | | | | | | | 15.5* | | | |
| @ | | | | | | | | | | 6.2 | | | |
| 1815 | | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| | | | | | loose | light gray | Sand, medium to fine, w/ granules | | wet | 1.1 | | | |
| | | | 4.2'/5' | | | | | | | 5.7 | | | |
| S-6 | | | | | | | | | | 8.7 | | | |
| @ | | | | | | | | | | 22* | | | |
| 1830 | 35 | | | | | | | | | 17.8 | | | |
| | | | | | loose | light gray | Sand, medium to fine w/ granules and abundant pebbles @ base up to 1½" | | wet | 1.5 | | | |
| | | | 2.7'/5' | | | | | | | 5.1 | | | |
| S-7 | | | | | | | | | | 11.9* | | | |
| @ | | | | | | | | | | | | | |
| 1841 | 40 | | | | | | | | | | | | |
| | | | | | loose | light gray | Sand, medium to fine w/ granules and abundant pebbles up to 3", subangular to rounded | | wet | 0 | | | |
| | | | | | | | | | | 0 | | | |
| S-8 | | | | | | | | | | 0.7 | | | |
| @ | | | | | | | | | | 2.5 | | | |
| 1901 | 45 | | | | | | | | | 0 | | | |
| | | | | | | | | | | 1.7 | | | |
| S-9 | | | 8.7'/10' | | | | | | | 1.2 | | | |
| @ | | | | | | | | | | 8 | | | |
| 1902 | | | | | | | | | | 17.9* | | | |
| | 50 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ✓ No ____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIRDP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-32D
DATE: 12/8/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50 | | | | loose | light | Sand, coarse to | | wet | 0 | | | |
| S-10 | | | 4.3/5' | | | gray | fine, sl abundant | | | 0.2 | | | |
| @ | | | | | | | granules and pebbles | | | 3.4 | | | |
| 1917 | | | | | | | up to 2" | | | 2.9 | | | |
| | 55 | | | | | | ↓ | | | 18.9* | | | |
| | | | | | | | | | sl moist | 0 | | | |
| S-11 | | | 5/5' | | firm | olive gray | Clay, silty, sl | | | 0 | | | |
| @ | | | | | | | sandy, w/ pebbles | | | 0 | | | |
| 1931 | | | | | | | up to 1" | | | 0 | | | |
| | 60 | | | | | | | | | | | | |
| | | | | | firm | olive gray | Clay, silty, sandy, | | slightly moist | 0 | | | |
| S-12 | | | 5/5' | | | | w/ pebbles up to 1" | | | 0 | | | |
| @ | | | | | | | | | | 1.7* | | | |
| 2043 | | | | | | | | | | 0.8 | | | |
| | 65 | | | | | | ↓ | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| S-13 | | | 10/10 | | | | | | | 0 | | | |
| @ | | | | | | | | | | 0 | | | |
| 2101 | | | | | | | | | | 0 | | | |
| | 70 | | | | | | | | | 0 | | | |
| S-14 | | | | | | | | | | 0 | | | |
| @ 2102 | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | 75 | | | | | | ↓ | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIRDP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-32D
DATE: 12/8/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 75 | | | | loose | olive gray | Sand, fine, w/ | | wet | 33 | | | |
| S-15 | | | | | | | granules (minor) | | | 54.9 | | | |
| @ | | | 8.7/10' | | | | | | | 59* | | | |
| 2151 | | | | | | | | | | 53 | | | |
| | 80 | | | | | | | | | 38 | | | |
| | | | | | | | | | | 83 | | | |
| S-16 | | | | | | | | | | 74 | | | |
| @ | | | | | | | | | | 66 | | | |
| 2152 | | | | | | | | | | 134* | 0 | 0 | 0 |
| | 85 | | | | | | | | | | | | |
| | | | | | loose | dk olive gray | Sand, medium fine | | wet | 168 | | | |
| S-17 | | | | | | | w/ granules, pebbles up to 1" | | | 19.4 | | | |
| @ | | | 10/10' | | | | | | | 74 | | | |
| 2225 | | | | | | | | | | 35 | | | |
| | 90 | | | 89.5' | loose | olive gray | Sand, fine to v. f., clayey, w/ pebbles up to 2" | | wet | 56 | | | |
| | | | | 91' | | | | | | 11 | | | |
| S-18 | | | | | loose | olive gray | Sand, medium to fine, | | wet | 89* | | | |
| @ | | | | | | | minor clay, pebbles up | | | 65 | | | |
| 2227 | | | | | | | to 3" abundant at base | | | 67 | | | |
| | 95 | | | | | | | | | 85 | | | |
| | | | | | | | | | wet | 202 | | | |
| S-19 | | | 6/10' | | | | | | | 5.3 | | | |
| @ | | | | 98' | | | | | | 2.6 | | | |
| 2251 | | | | 98.9' | firm | light olive gray | Clay, silty w/ pebbles | | slightly moist | 67 | | | |
| | 100 | | | | loose | med. gray | Sand, coarse to medium w/ abundant pebbles | | wet | 80 | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-32D
DATE: 12/8/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 100 | | | | loose | medium gray | Sand, coarse to medium | | wet | 11.5* | | | |
| S-20 | | | | | | | w/ abundant pebbles | | | | | | |
| @ | | | | | | | | | | | | | |
| 0252 | | | | | | | | | | | | | |
| | 105 | | | | | | | | | | | | |
| | | | | | loose | medium gray | Sand, medium to | | wet | 0.3 | | | |
| S-21 | | | | | | | coarse w/ abundant | | | 10.9 | | | |
| @ | | | 9'/10' | 108' | | | pebbles | | | 2.4 | | | |
| 0315 | | | | | loose | medium gray | Gravel, sandy, | | wet | | | | |
| | 110 | | | | | | subrounded up to 2" clasts | | | | | | |
| | | | | | | | | | | 13.6 | | | |
| S-22 | | | | | | | | | | 4.6 | | | |
| @ | | | | | | | | | | 11.8 | | | |
| 0316 | | | | | | | | | | 15.9* | | | |
| | 115 | | | | | | | | | | | | |
| | | | | | | | | | | 0.1 | | | |
| S-24 | | | | | | | | | | 1.3 | | | |
| @ | | | 7.6'/10' | | | | | | | 3.6 | | | |
| 0343 | | | | | | | | | | | | | |
| | 120 | | | | loose | | Sand, fine to very | | wet | | | | |
| | | | | | | | fine | | | 0.5 | | | |
| | | | | | | | | | | 2.6 | | | |
| S-25 | | | | | | | | | | 3.4* | | | |
| @ | | | | | | | | | | | | | |
| 0344 | | | | | | yellowish | | | | | | | |
| | 125 | | | 126.2' | | orange | Sandstone fragments, fine grained | | | | | | |

* When rock coring, enter rock brokeness (RQD)

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ✓ No ____ Well I.D. #: ____

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic

BORING NUMBER: MS-33D
DATE: 11/18/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification * | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | gray | Concrete - 8" thick | | | | | | |
| S-1 @ 1908 | | | 4/5' | | loose | tan | Sand, fine to | | dry | 3.3 | | | |
| | | | | | | | med. w/ pebbles | | | 0 | | | |
| | | | | | | | up to 1" | | | 4.5 | | | |
| | 5 | | | | | | ↓ | | | 12.7* | | | |
| | | | | | | | Sand, fine to v.c. | | | 23.3* | | | |
| S-2 @ 1921 | | | 4 3/5' | | loose | tan | w/ pebbles, cobbles | | dry | 5.6 | | | |
| | | | | | | | up to 4" (rare) | | | 5.0 | | | |
| | | | | | | | ↓ | | | 10.8 | | | |
| | 10 | | | | | | ↓ | | | | | | |
| S-3 @ 1934 | | | 3/3 | | loose | tan | Sand, fine to v.c | | dry | 12.6* | | | |
| | | | | | | | w/ pebbles | | | 16.1 | | | |
| | 13 | | | | | | ↓ | | | 3.7 | | | |
| S-4 @ 2028 | | | 2/2 | | loose | tan | Sand, fine to | | sl moist | 4.6* | | | |
| | 15 | | | | | | coarse w/ granules | | to dry | 0.4 | | | |
| | | | | | | | Sand, fine to | | | 0.9 | | | |
| S-5 @ 2041 | | | 6.8/10 | | loose | tan | coarse w/ pebbles | | | 4.0 | | | |
| | | | | | | | up to 2", poorly | | moist to | 0.8 | | | |
| | | | | | | | sorted | | wet @ ~20' | 2.0 | | | |
| | | | | | | | ↓ | | | 5.0* | | | |
| | | | | | | | | | wet | 1 | | | |
| S-6 @ 2044 | | | | | | | ↓ | | | 2.4* | | | |
| | 25 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks:

Converted to Well: Yes ✓ No ____ Well I.D. #: MS-33D

# BORING LOG



PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6986
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-33D
DATE: 11/18/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification * | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 25 | | | | loose | tan | Sand, fine to coarse, | | wet | 0.6 | | | |
| S-7 | | | 2.7/5 | | | | w/ pebbles to ½" | | | 1.1 | | | |
| @ 2054 | | | | | | | ↓ | | | 0 | | | |
| | | | | | | | | | | | | | |
| | 30 | | | | | | | | | | | | |
| | | | | | | | Sand, fine to med. | | wet | 0 | | | |
| S-8 | | | 4.4/5 | | loose | tan | moderately well | | | 0 | | | |
| @ 2119 | | | | | | | sorted, some granules | | | 1.3* | | | |
| | | | | | | | up to ½" | | | 1.3 | | | |
| | 35 | | | | | | ↓ | | | 0 | | | |
| | | | | | | | Sand, fine to v.f. | | wet | 0 | | | |
| S-9 | | | 3.8/5 | | loose | tan | grading to med to fine | | | 0 | | | |
| @ 2132 | | | | | | | ↓ | | | 0.1* | | | |
| | | | | | | | | | | | | | |
| | 40 | | | | | | | | | | | | |
| | | | | | loose | tan | Sand, med to fine, | | wet | 1.0* | | | |
| S-10 | | | 4.5/5 | | | | moderately well sorted | | | 0 | | | |
| @ 2154 | | | | | | | ↓ | | | 0 | | | |
| | | | | | | | | | | 0 | | | |
| | 45 | | | | | | ↓ | | | | | | |
| | | | | | loose | tan | Sand, med to | | wet | 1.1 | | | |
| S-11 | | | 5/5 | | | | fine, moderately | | | 0.2 | | | |
| @ 2208 | | | | | | | well sorted | | | 0.1 | | | |
| | | | | | | | ↓ | | | 1.9* | | | |
| | 50 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NI ROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-33D
DATE: 11/18/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness | Color | Material Classification | USCS | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5-12 @ 1234 | 50 | | 4.6/5' | | loose | tan | Sand, med. to fine | | wet | 1.6 | | | |
| | | | | | | | | | | 0.8 | | | |
| | | | | | | | | | | 1.4 | | | |
| | | | | | | | | | | 0.6 | | | |
| | 55 | | | | | | | | | | | | |
| 5-13 @ 1612 | | | 2.8/5' | | loose | tan | Sand, med. to fine | | wet | 5.0 | | | |
| | | | | | | | | | | 6.0* | | | |
| | 60 | | | | | | | | | | | | |
| 5-14 @ 1631 | | | 5/5' | | loose | tan | Sand, med. to fine | | wet | 9.9 | | | |
| | | | | | | | | | | 11.8 | | | |
| | | | | | | | | | | 8.7 | | | |
| | | | | | | | | | | 14.0* | | | |
| | 65 | | | | | | | | | 11.6 | | | |
| 5-15 @ 1654 | | | 9.5/10' | | loose to soft | tan to olive | Sand to silt, v.f. sand, silty becoming silt | | wet | 22.5 | | | |
| | | | | | | | | | | 122 | *2.7 | - | 2.7 |
| | | | | | | | | | | 49 | | | |
| | | | | | | | | | | 99 | | | |
| | 70 | | | | | | | | | | | | |
| 5-16 @ 1656 | | | | 72' | soft | olive | Sand, v.f., silty | | wet | 39 | | | |
| | | | | | | | | | | 42 | | | |
| | | | | | soft to firm | olive | Silt, sandy, clayey in lenses becoming more clayey | | silt, sand wet, clay moist | 101 | | | |
| | | | | | | | | | | 280 | *2.7 | - | 2.7 |
| | 75 | | | | | | | | | 55 | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NI ROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-33D
DATE: 11/ 197
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 75 | | | | firm | dk | Sand, silty, clayey | | moist to wet | 280* | | | |
| S-17 | | | 5/5' | 76.8' | | | fine sand, | | | 250 | | | |
| @ | | | | | | | Sand, med. to fine | | | 73 | | | |
| 1711 | | | | | loose | dk to tan | ↓ | | wet | 13 | | | |
| | 80 | | | | | | ↓ | | | 10 | | | |
| | | | | | | dk to tan | Sand, med. to fine | | | 6.8* | | | |
| S-18 | | | 5/5' | | loose | | becoming fine @ | | wet | 3.3 | | | |
| @ | | | | | | | Cotton wse, v.c. sand | | | 3.0 | | | |
| 1742 | | | | | | | ↓ | | | 1.8 | | | |
| | 85 | | | | | | ↓ | | | 1.9 | | | |
| | | | | | loose | | Sand, med. to | | wet | 3.4 | | | |
| S-19 | | | 5/5' | | firm | dk | fine, clayey @ | | moist to wet in clayey interval | 2.8 | | | |
| @ | | | | | | | 86' for ~1" and | | | 2.6* | | | |
| 1800 | | | | | | | 87' for ½"-1", also | | wet | 2.3 | | | |
| | 90 | | | | loose | | sand med. to fine w/ pebbles | | | 2.3 | | | |
| | | | | | | tan | Sand, med. to fine | | | 1.8* | | | |
| S-20 | | | 5/5' | | loose | | ↓ | | wet | 1.7 | | | |
| @ | | | | | | | | | | | | | |
| 1829 | | | | | | | | | | 1.3 | | | |
| | | | | | | | | | | 1.5 | | | |
| | 95 | | | | | | ↓ | | | 1.4 | | | |
| | | | | | | | | | 95'-100' interval | | | | |
| | | | | | | | | | washed out of | | | | |
| | | | | | | | | | ice barrel into | | | | |
| | | | | | | | | | tub (sand) | | | | |
| | 100 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

# BORING LOG



PROJECT NAME: NJROP Fridley
PROJECT NUMBER: 6966
DRILLING COMPANY: Boart Longyear
DRILLING RIG: Rotosonic
BORING NUMBER: MS-33D
DATE: 11/19/97
GEOLOGIST: B. Howze
DRILLER: Roy Buckenberger

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness | Color | Material Classification * | USCS * | Remarks | PID/FID Reading (ppm): Sample | Sampler BZ | Borehole** | Driller BZ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 100 | | | | loose | tan | Sand, med. to fine | | wet | | | | |
| S-21 | | | 3.6'/10' | | | | w/ v.c. sand, granules | | | | | | |
| @ | | | | 103' | | | | | | 2.2 | | | |
| 1952 | | | | | loose | tan | Sand, fine to v.c. | | wet | 2.2 | | | |
| | 105 | | | | | | w/granules, pebbles up to 4" | | | 3.5* | | | |
| | | | | | | | strongly to saturated | | | 4.4 | | | |
| S-22 | | | | | loose | tan | Sand, c. to v.c. | | wet | 6.5 | | | |
| @ | | | 2.6/5' | | | | w/ granules up to ½" | | | 9.5* | | | |
| 2021 | | | | | | | | | | | | | |
| | 110 | | | | | | | | | | | | |
| | | | | | loose | tan | Pebbles up to 3" | | wet | 10.1* | | | |
| S-23 | | | 3.2'/5' | 112' | | | in c. to v.c. sand | | | 7.4 | | | |
| @ | | | | | firm | dk brn | Silt, slightly clayey, | | moist to wet | 0 | | | |
| 2059 | | | | | | | w/ granules up to ¼" | | | | | | |
| | 115 | | | | | | | | | | | | |
| | | | | | loose | tan | Sand, med. to c. | | wet | 1.6 | | | |
| S-24 | | | 3.3'/5' | | | | w/ pebbles up to | | | 2.4 | | | |
| @ | | | | | | | 2½", sandstone frags. | | | 2.6 | | | |
| 2135 | | | | | | | | | | 1.8 | | | |
| | 120 | | | | | | | | | | | | |
| | | | | 121' | | | | | | | | | |
| | | | | | | | Sandstone, weathered | | wet | | | | |
| | | | | 123' | | yellowish brn | w/ calcite filled | | | | | | |
| | | | | TD | | | fractures and vugs | | | | | | |
| | 125 | | | | | | | | | | | | |

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #:

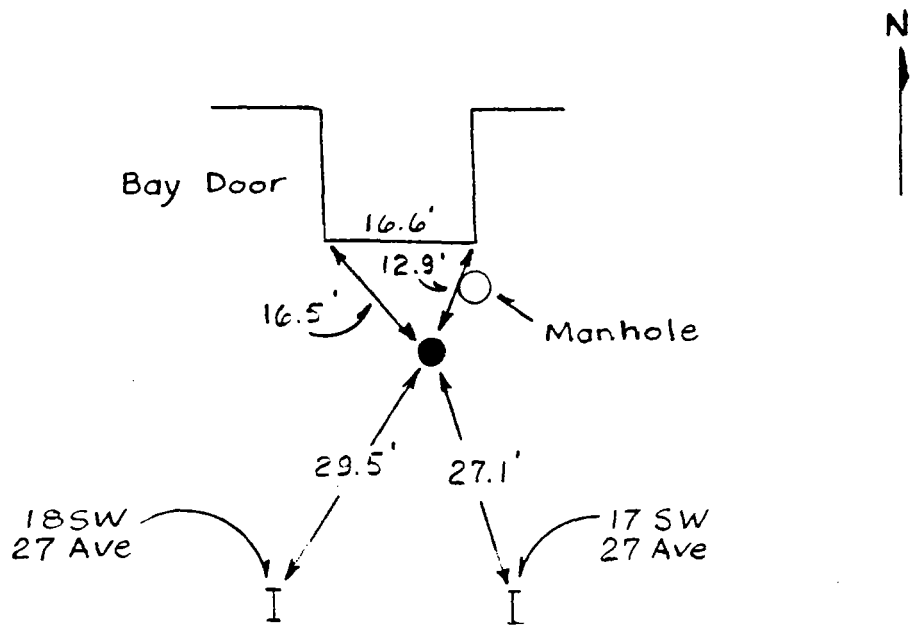
# APPENDIX B.2

# TRIANGULATION MAPS - PHASE I

# CALCULATION WORKSHEET

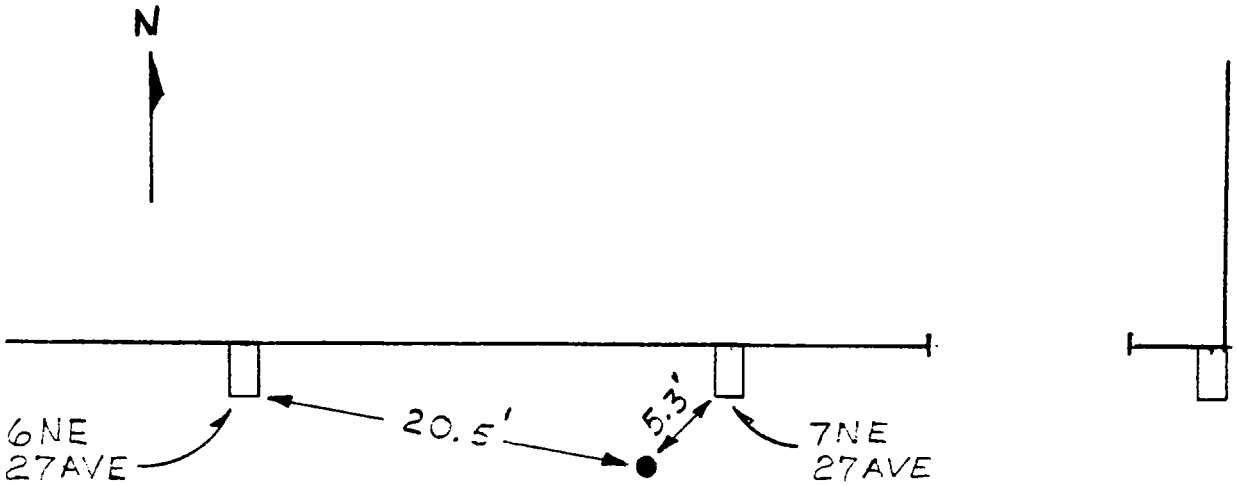
Order No. 19116 (01-91)

| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 3 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 3-25-98 |




1" = 20'

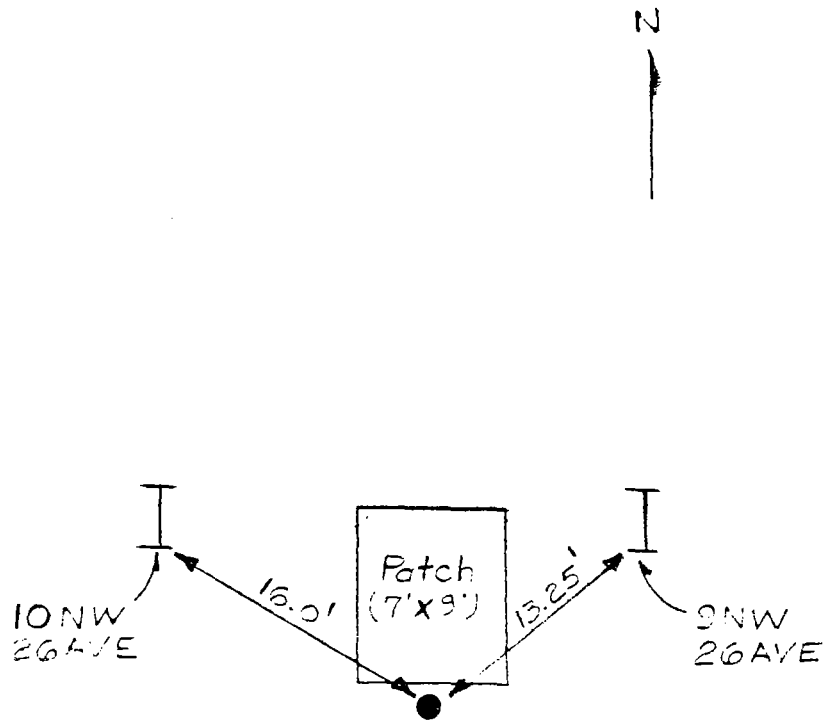
| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 4 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 6-29-97 |




1" = 10'

**CALCULATION WORKSHEET** Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 6 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 6-29-97 |

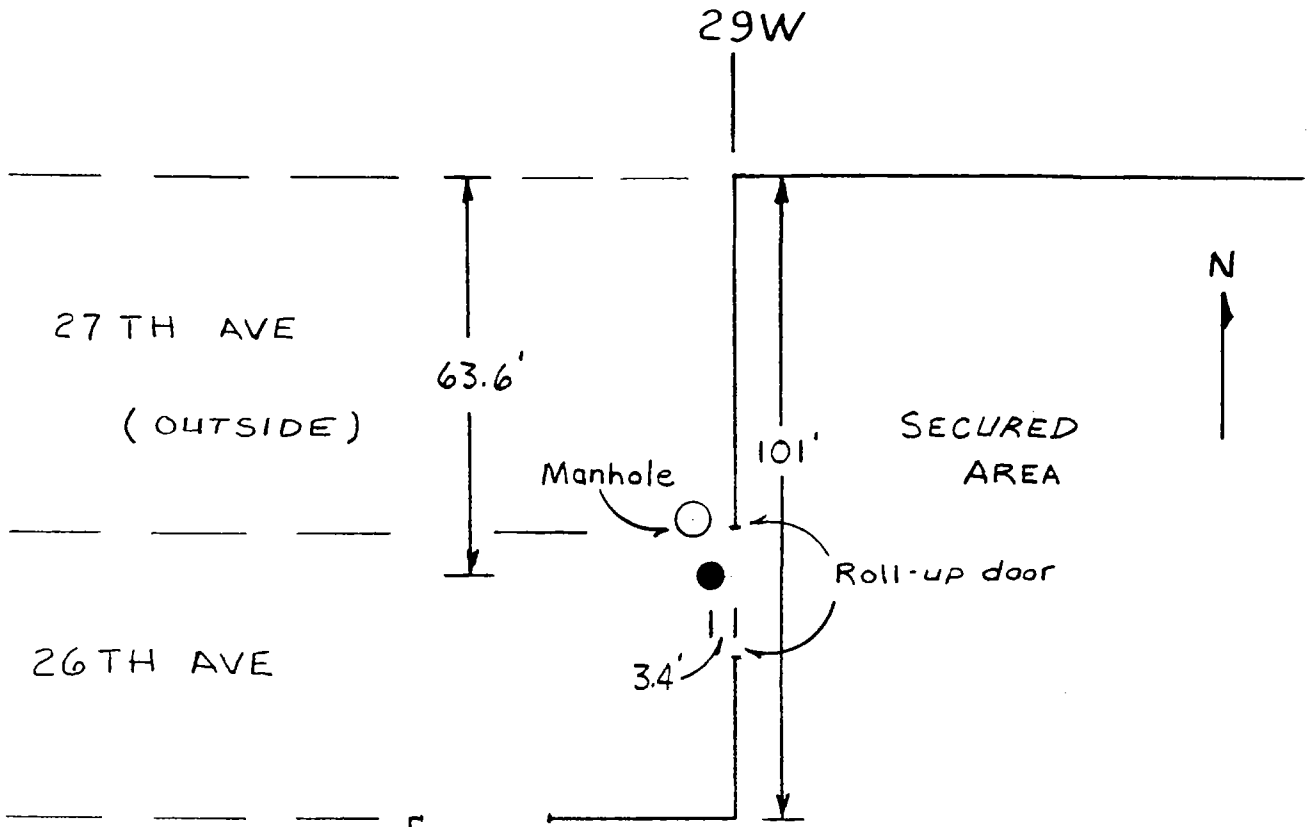



1" = 10'

**CALCULATION WORKSHEET** Order No. 19116 (01-91)

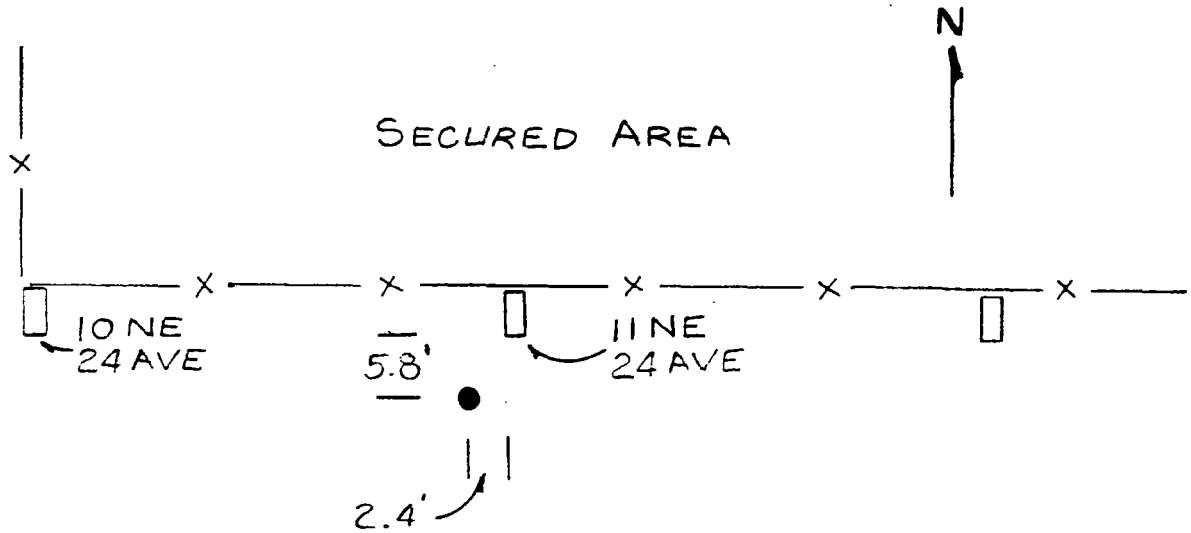


| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 7 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 3-25-98 |



**CALCULATION WORKSHEET** Order No. 19116 (01-91)

| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 8/9 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 6-29-97 |

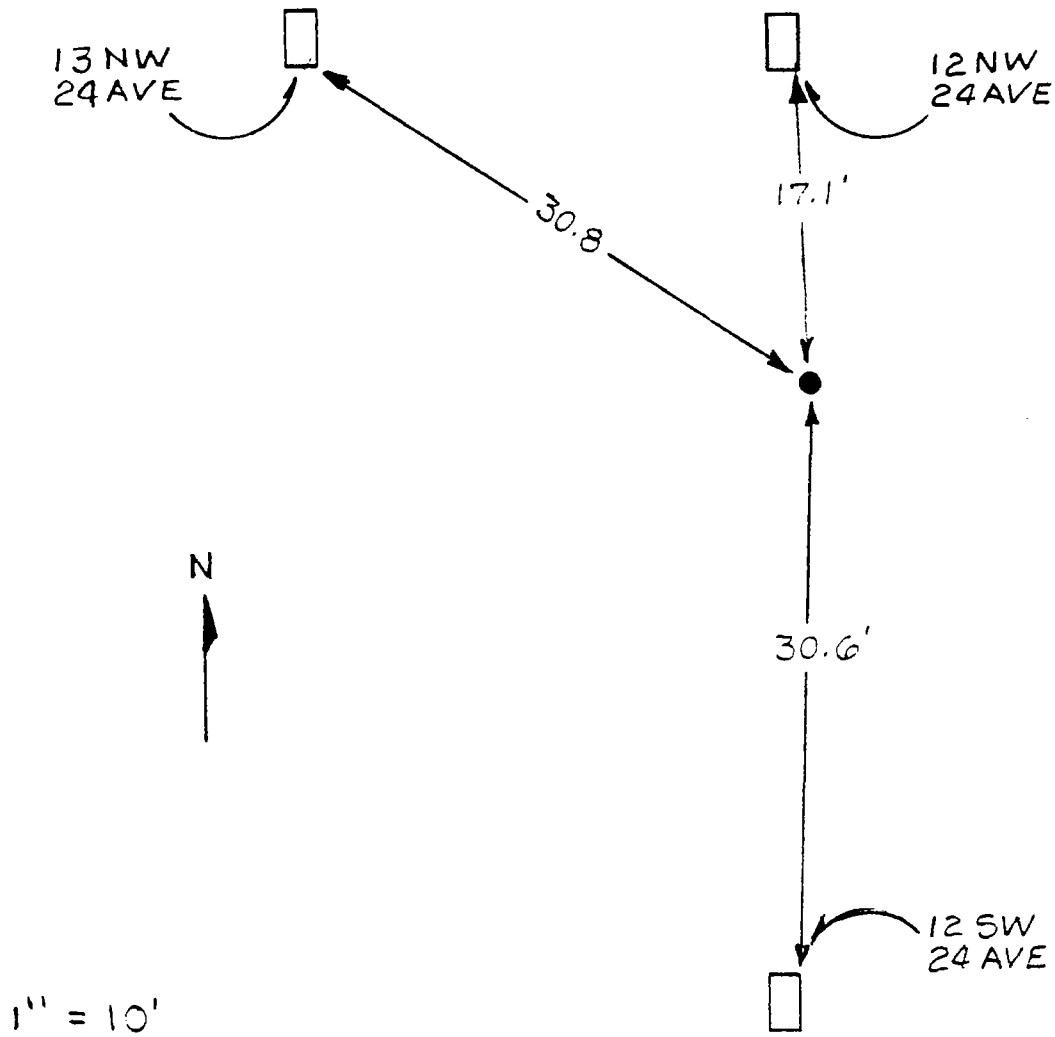



Not to Scale

# CALCULATION WORKSHEET

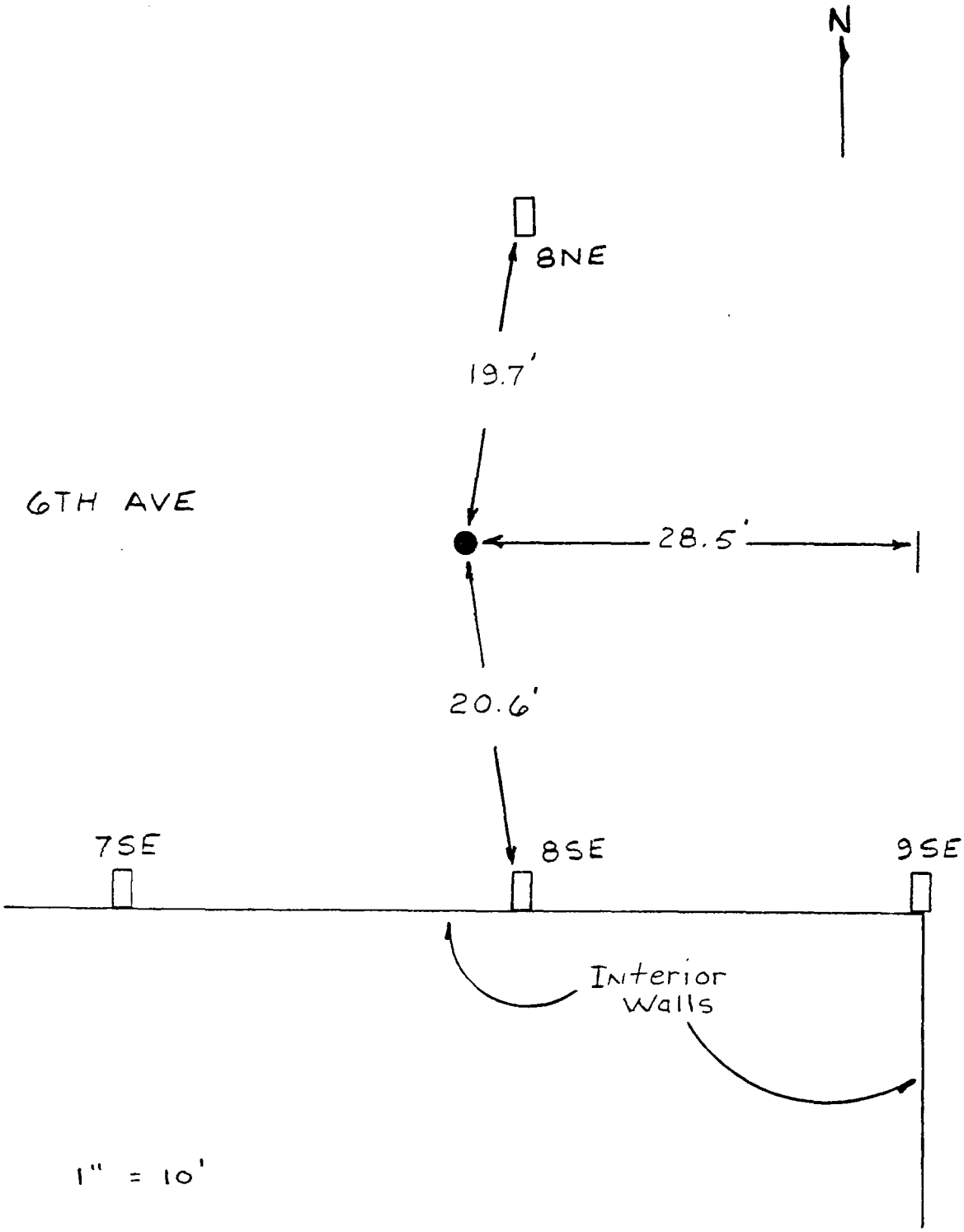
Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 13/14 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 6-29-97 |



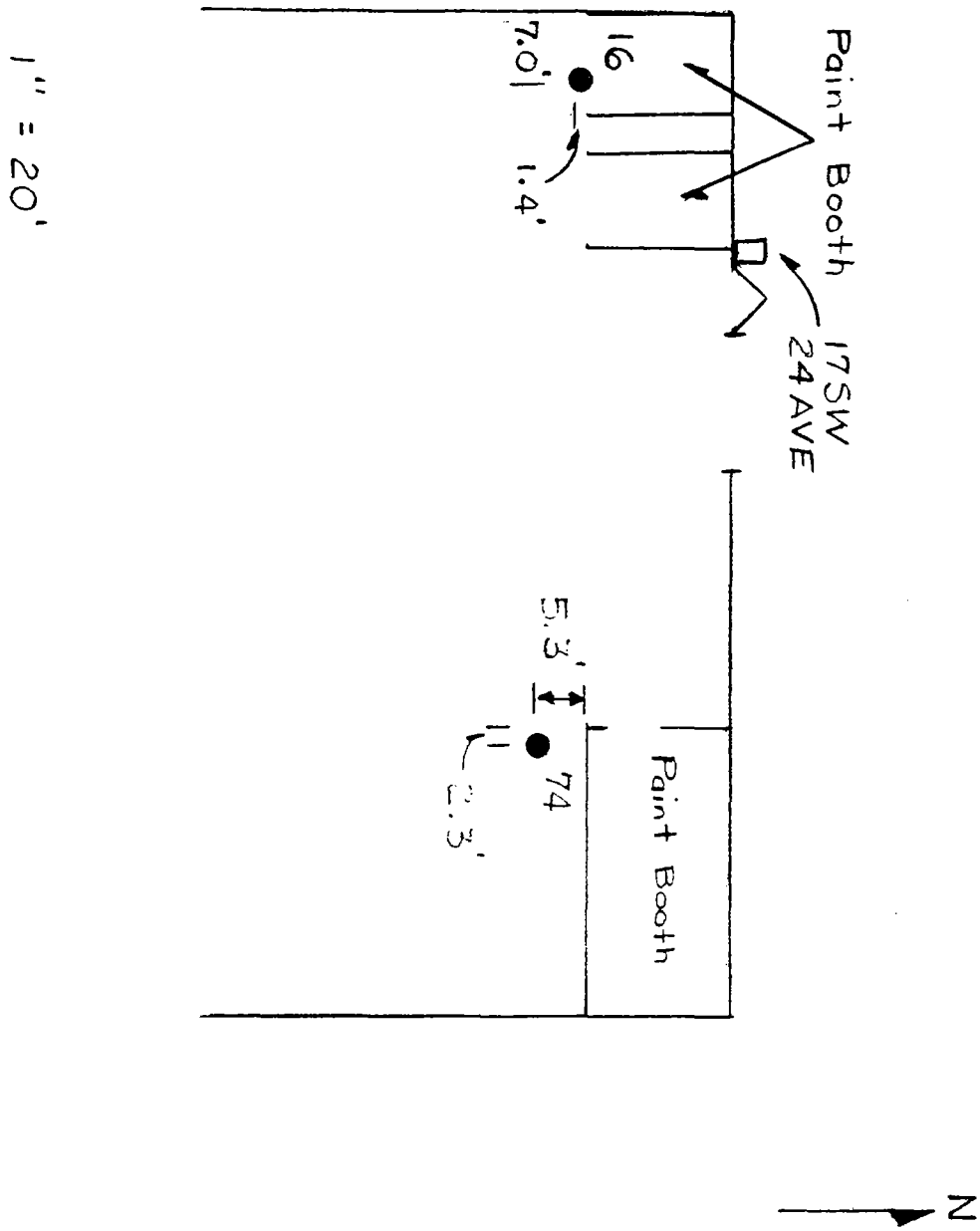
**CALCULATION WORKSHEET** Order No. 19116 (01-91)

| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 15 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 3-25-98 |



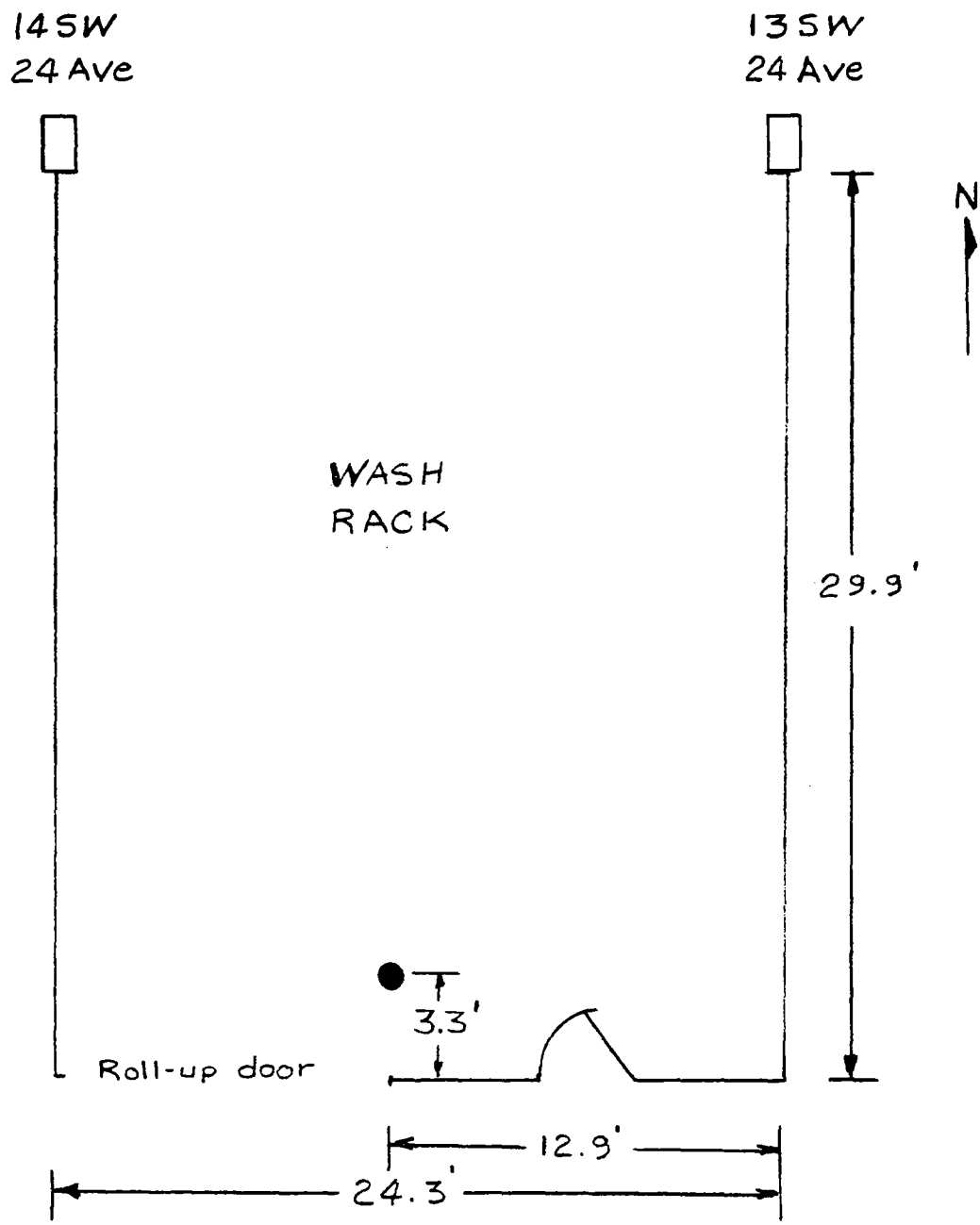
**CALCULATION WORKSHEET** Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLAY | | JOB NUMBER 6966 | |
| SUBJECT AOC 16 & 74 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 6-29-97 |



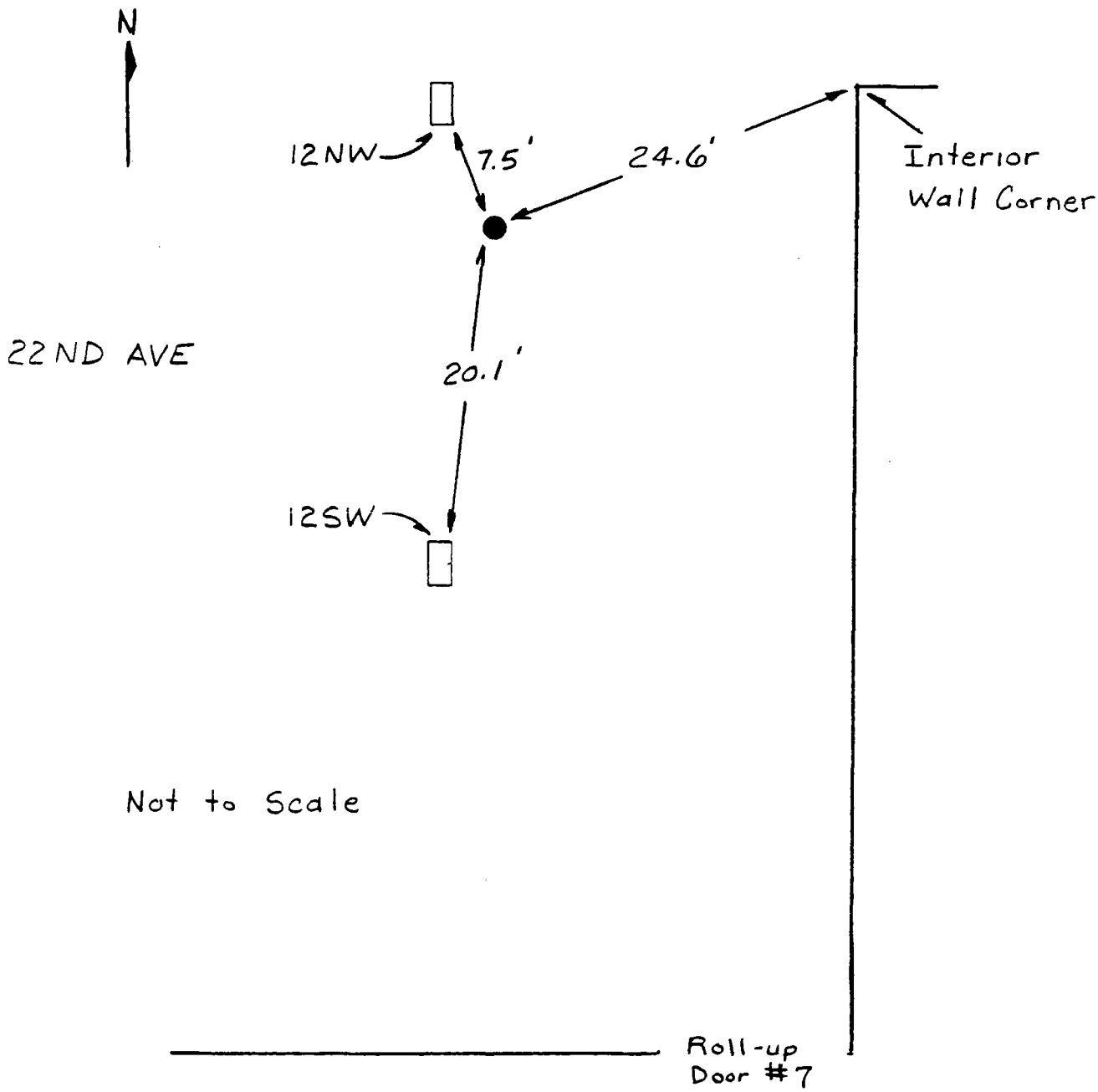
**CALCULATION WORKSHEET** Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 17 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 3-25-98 |




1" = 6'

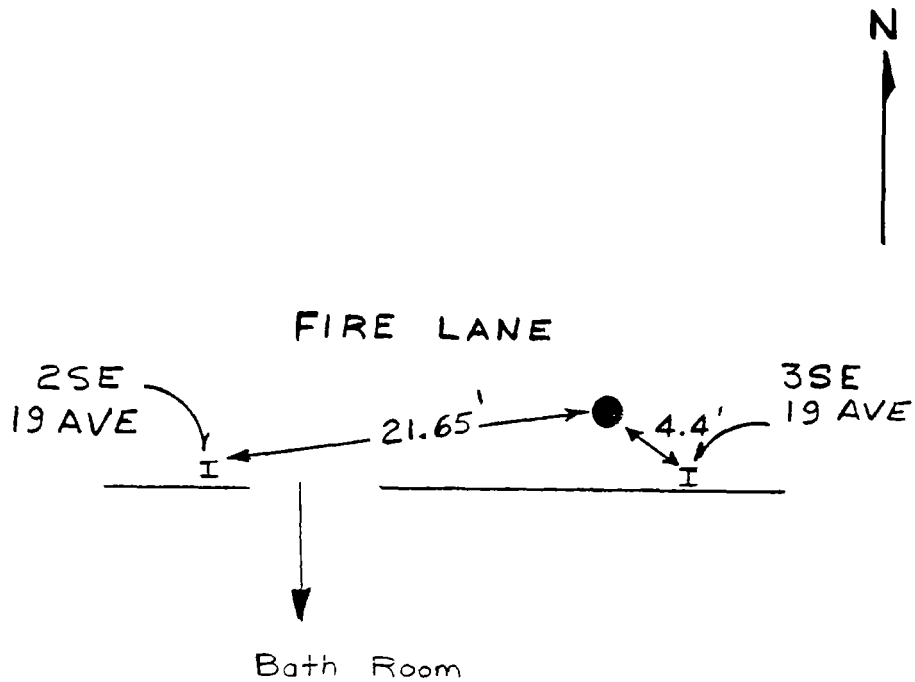
| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 18 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 3-25-98 |



# CALCULATION WORKSHEET

Order No. 19116 (01-91)

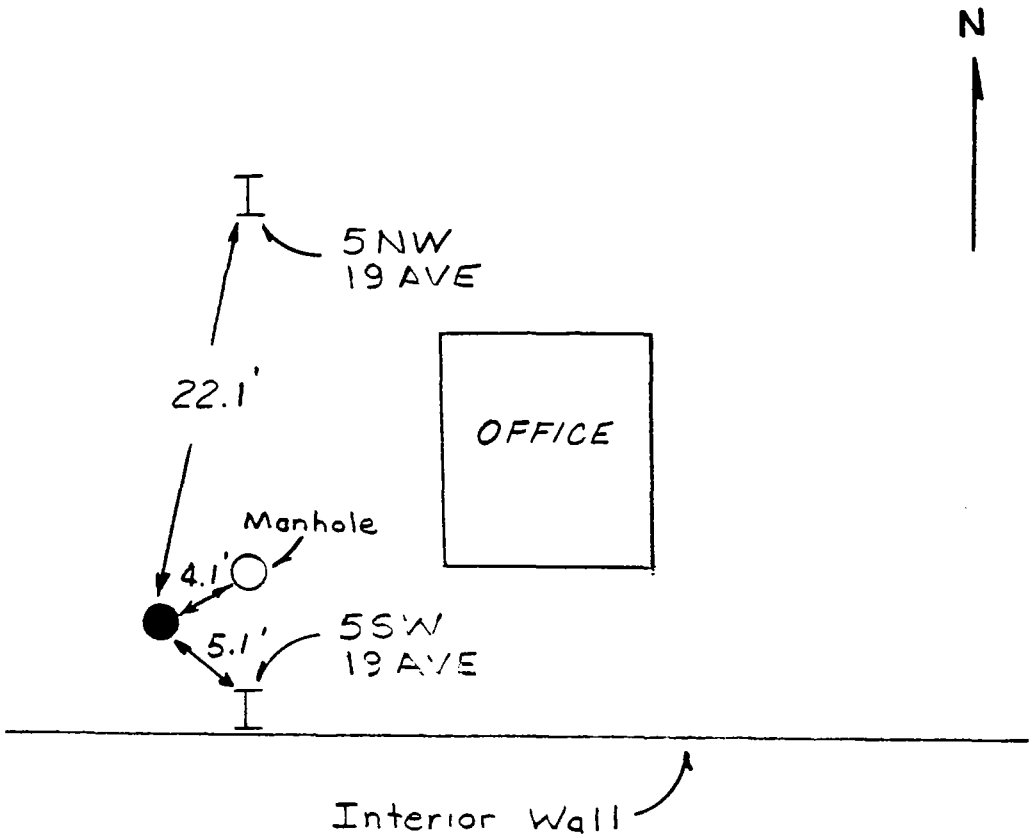
| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 23 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 6-3-98 |




NOT TO SCALE

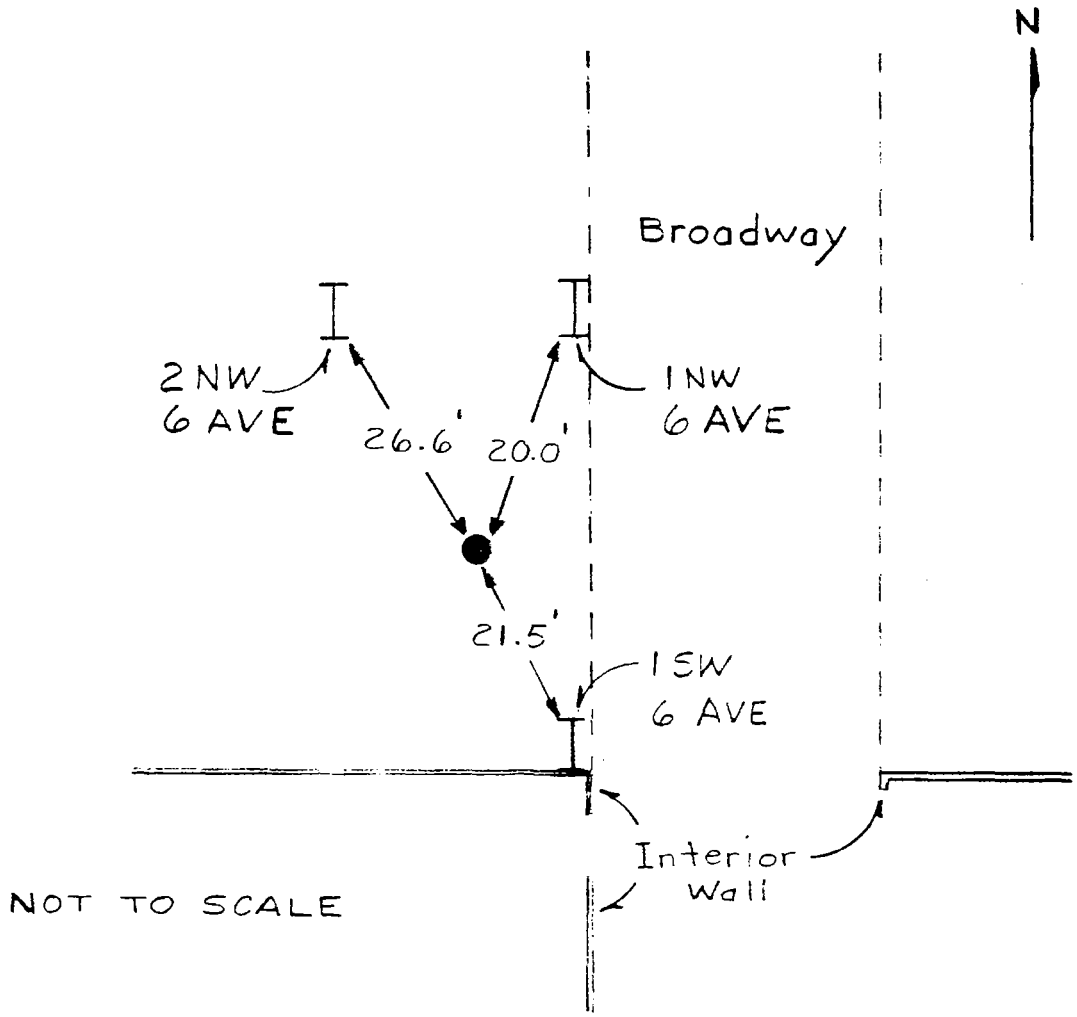
**CALCULATION WORKSHEET** Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 26 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 6-03-98 |




NOT TO SCALE

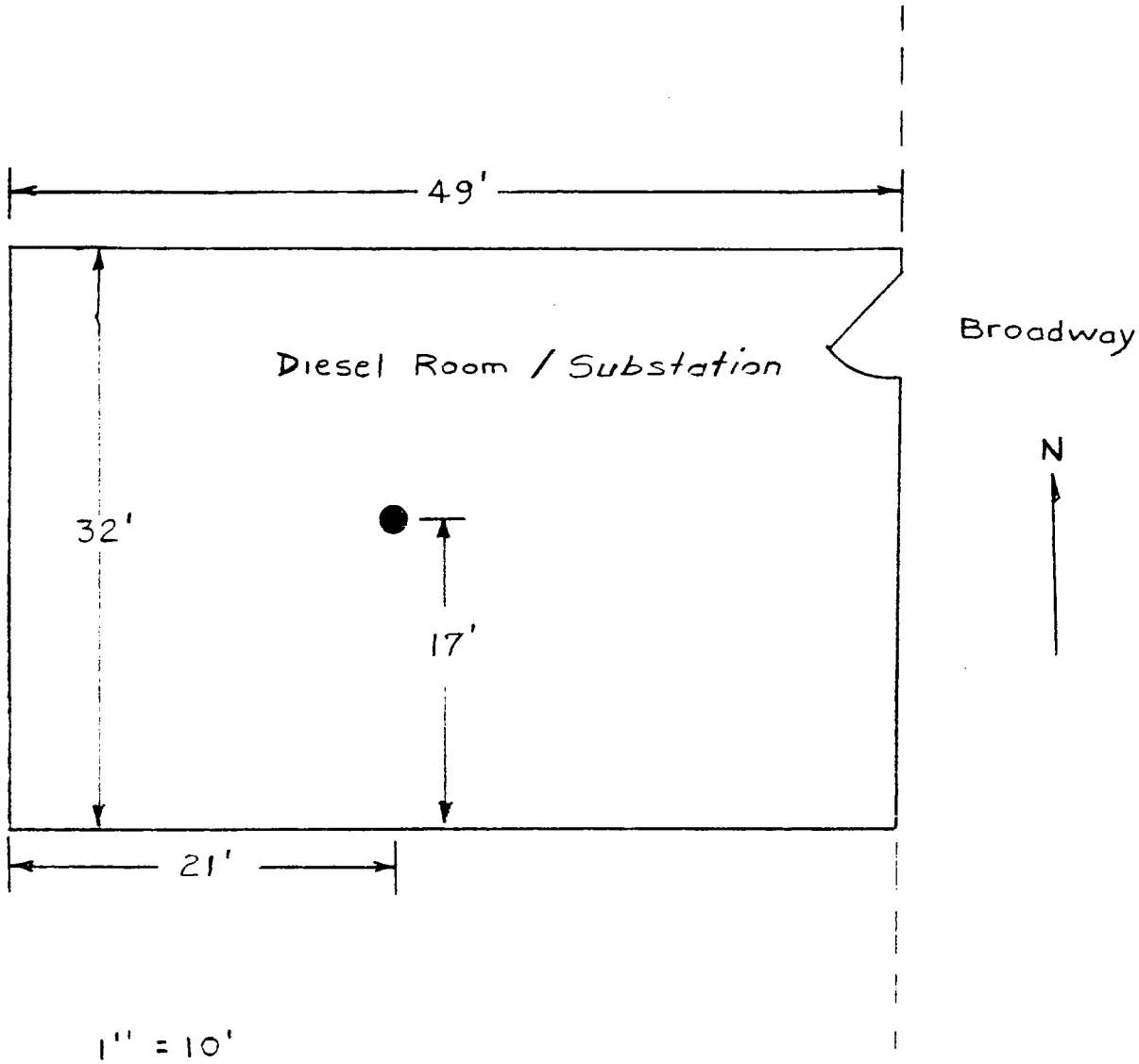
| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 27 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 6-3-98 |



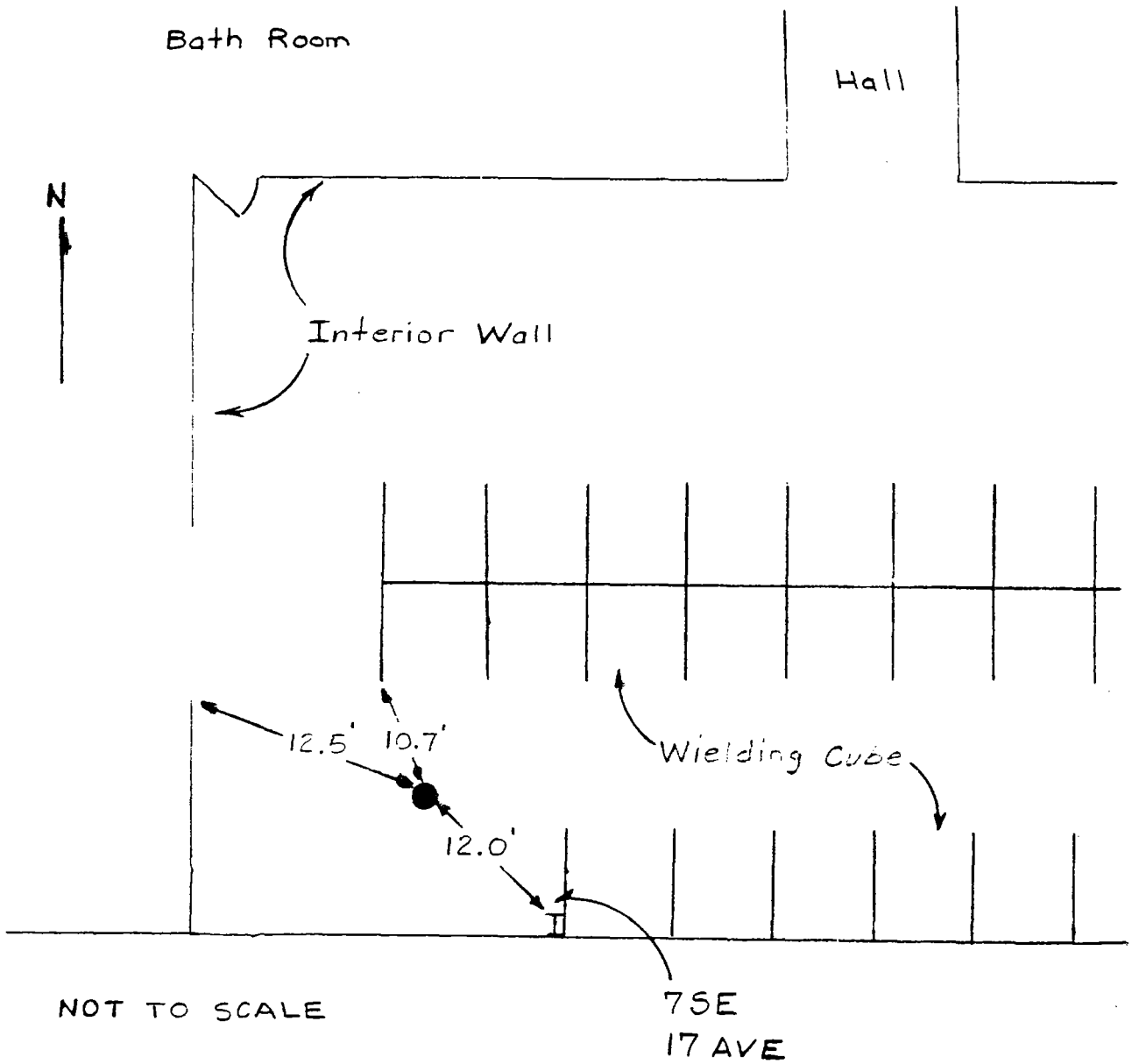
# CALCULATION WORKSHEET

Order No. 19116 (01-91)

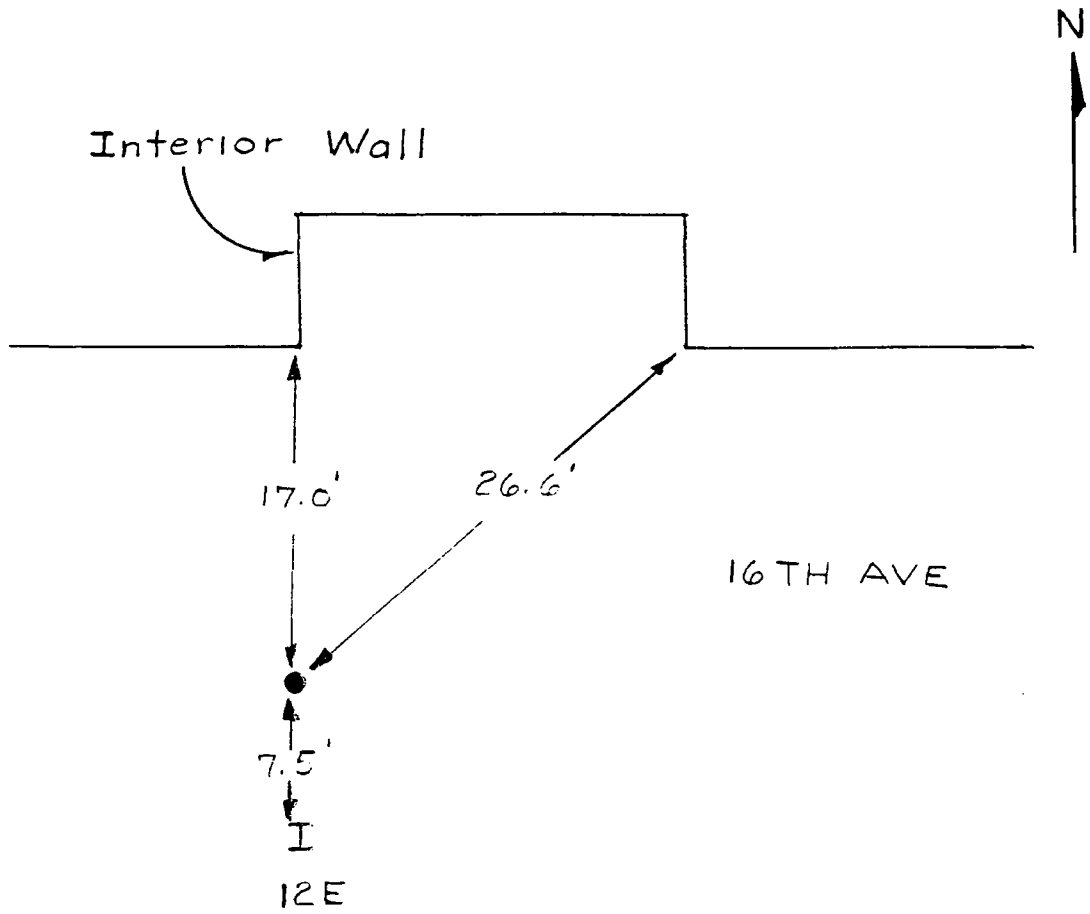
| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 28 | | | |
| BASED ON FIELD MEASUREMENT | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 6-3-98 |



| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 29 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 6-3-98 |



| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 30 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-20-98 |

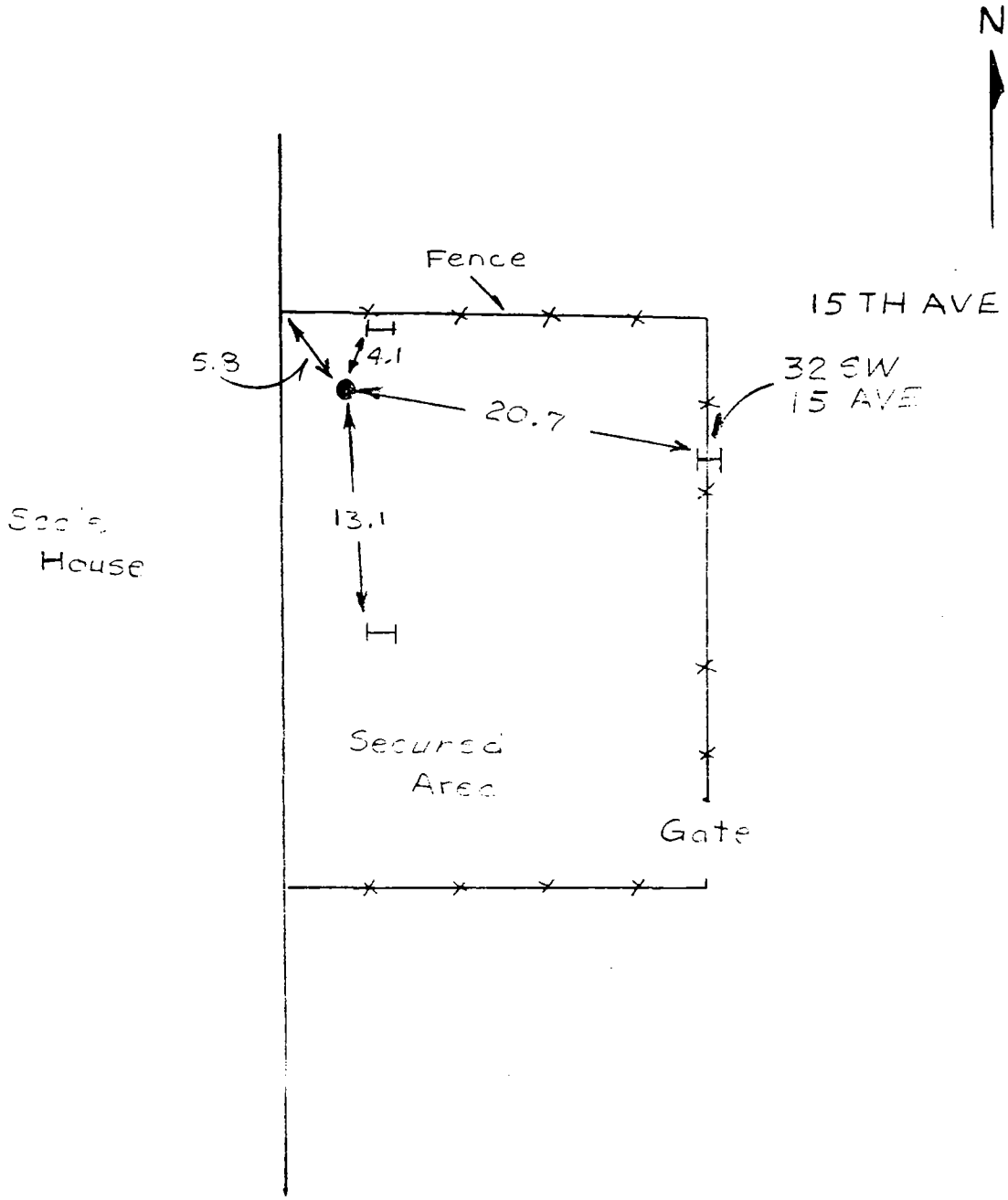



1" = 10'

**CALCULATION WORKSHEET** Order No. 19116 (01-91)



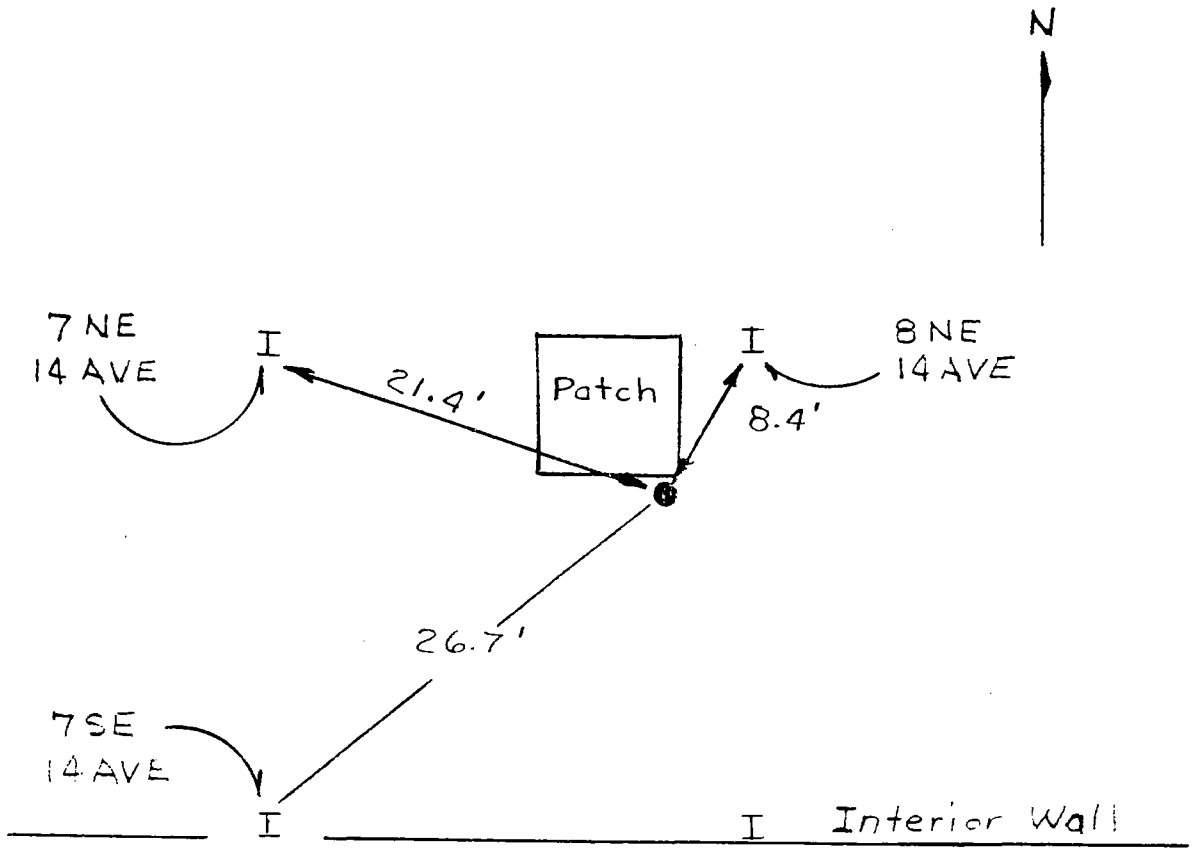
| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 32 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-20-98 |



# CALCULATION WORKSHEET

Order No. 19116 (01-91)

| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 33 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-20-98 |

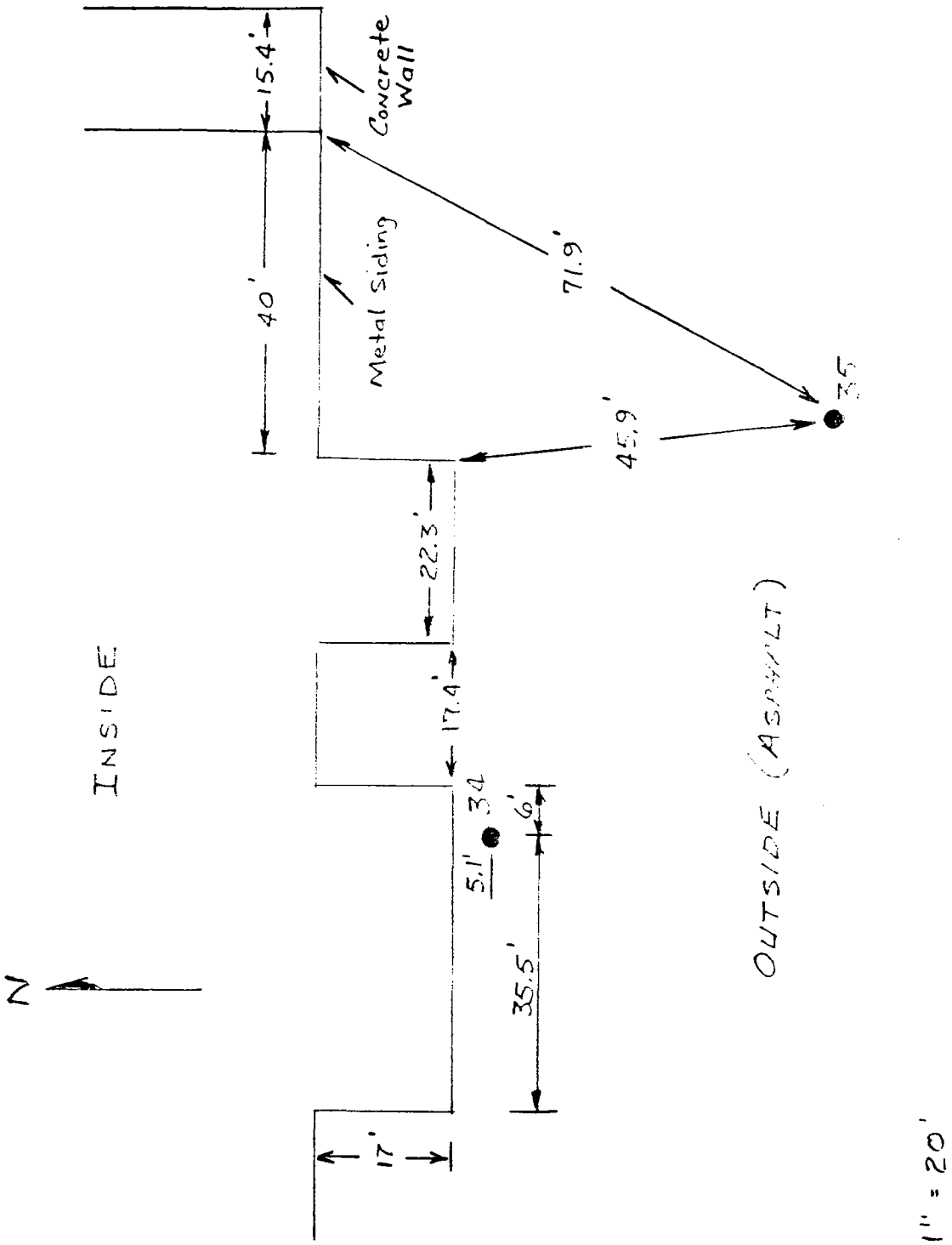



1" = 10'

# CALCULATION WORKSHEET

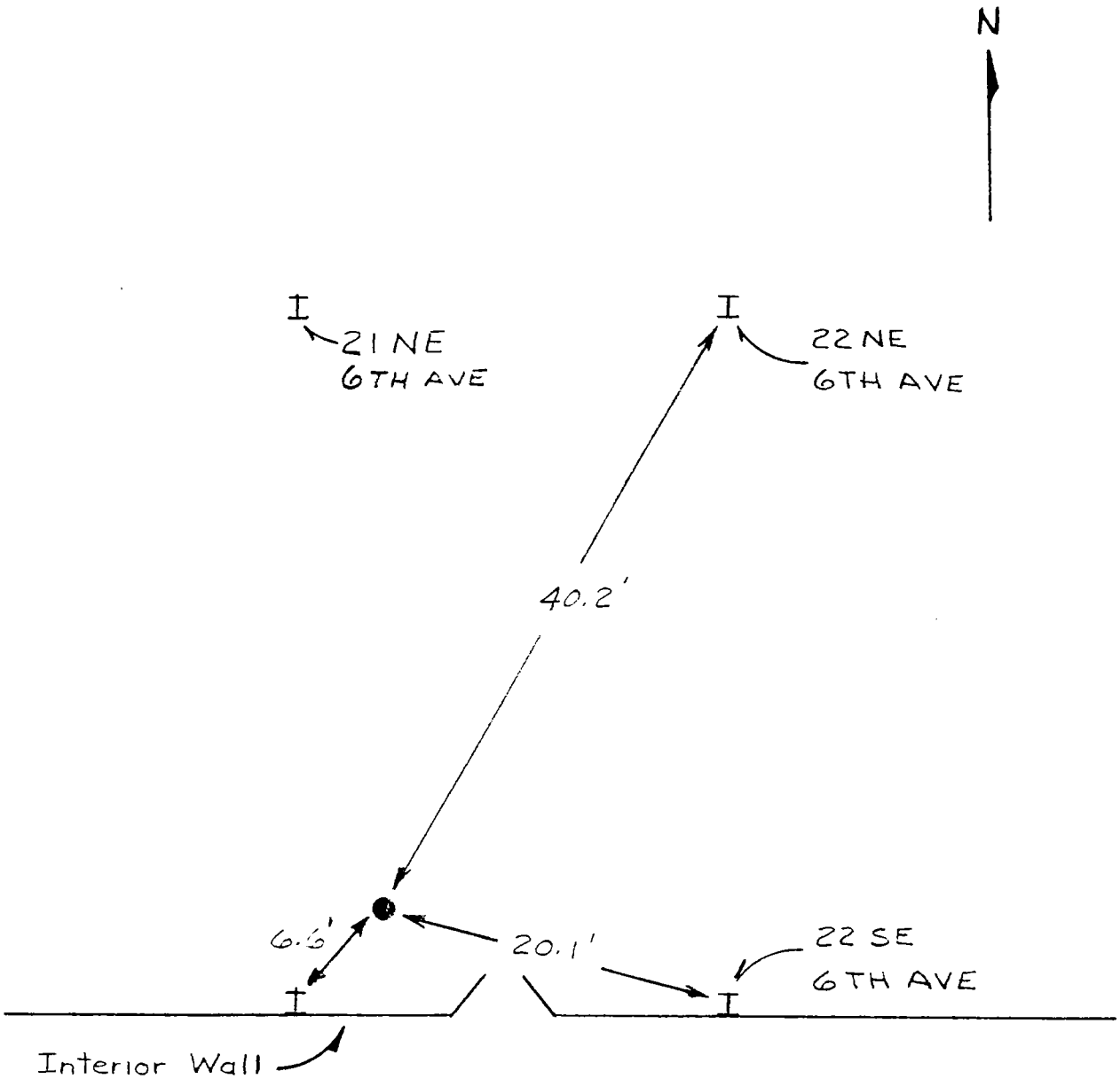
Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 34 & 35 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-20-98 |



**CALCULATION WORKSHEET** Order No. 19115 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 36 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-20-98 |

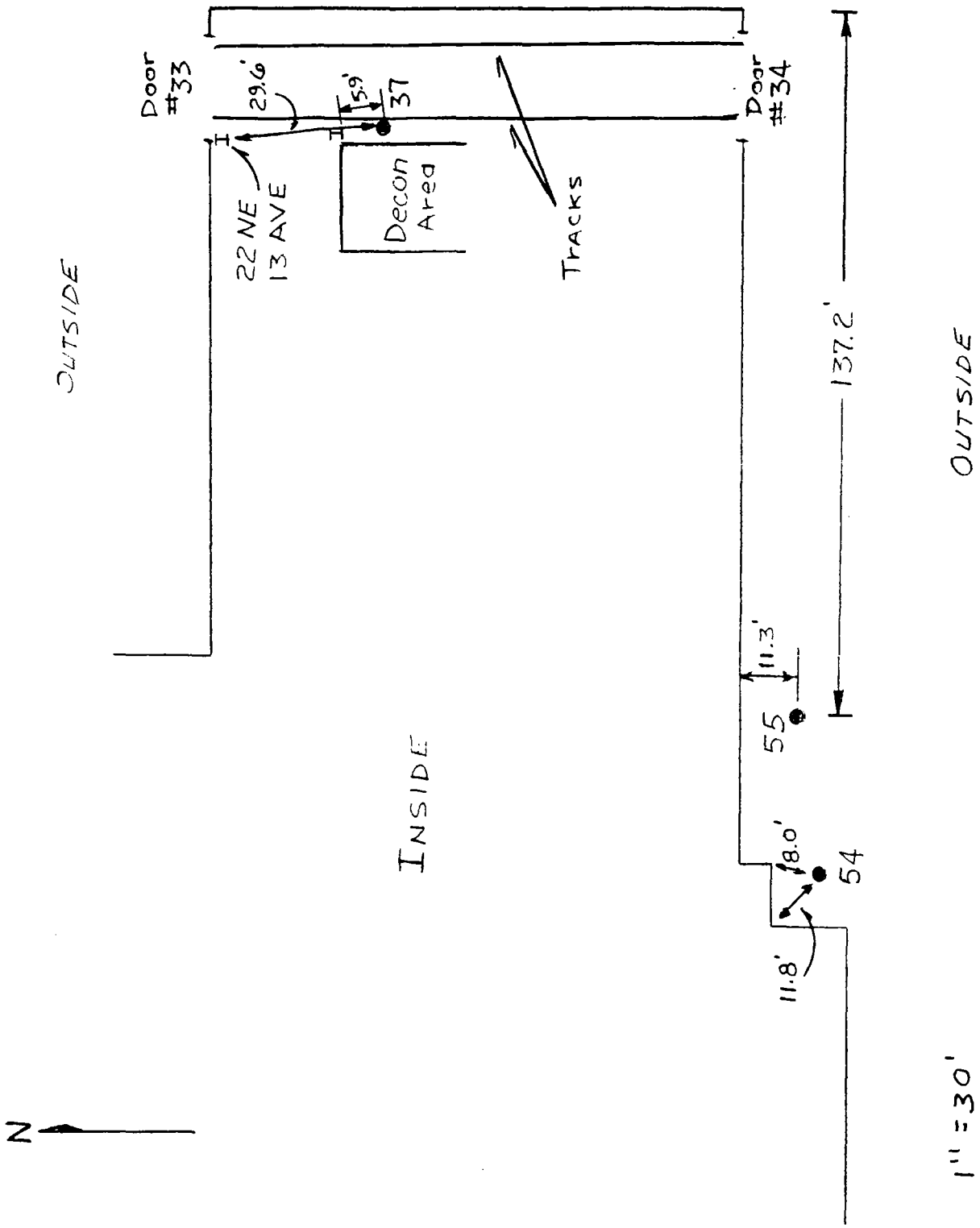



1" = 20'

**CALCULATION WORKSHEET** Order No. 19116 (01-91)

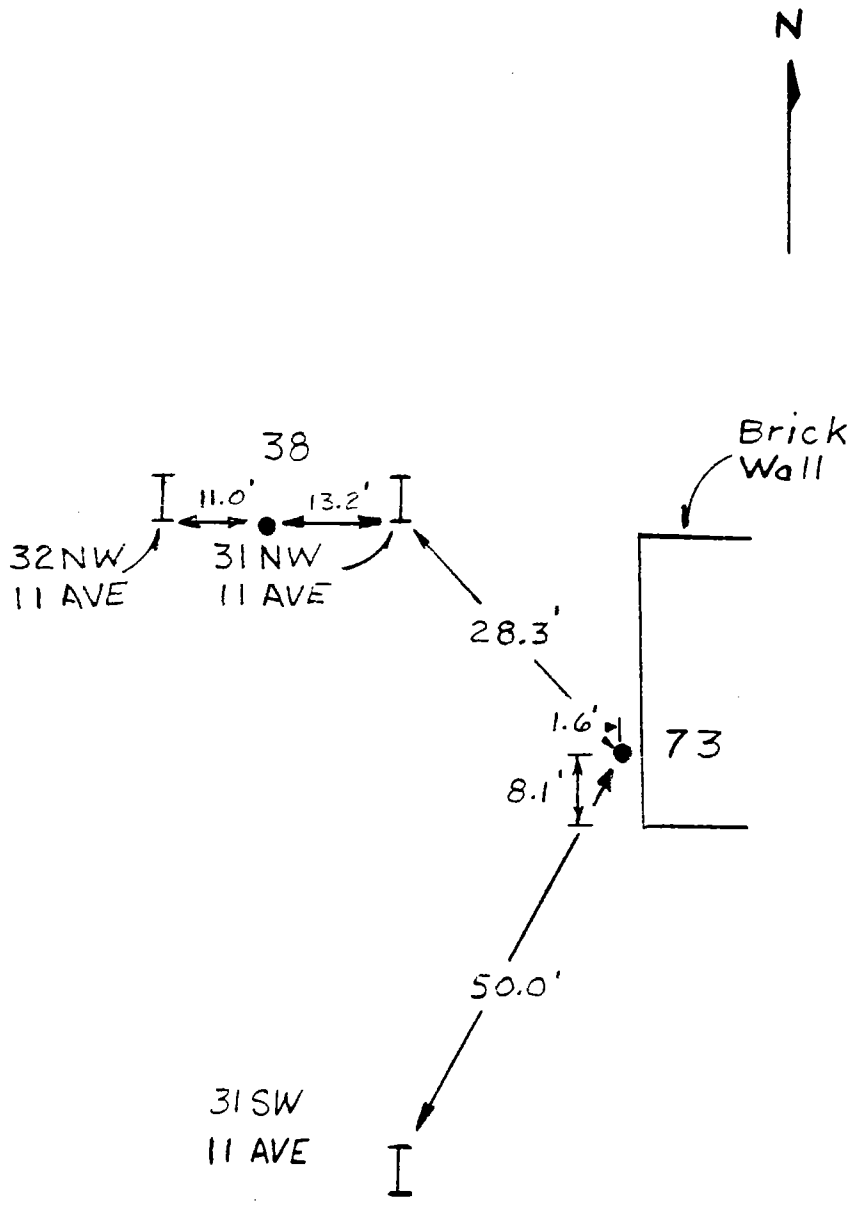


| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 37, 54 & 55 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-20-98 |



**CALCULATION WORKSHEET** Order No. 19116 (01-91)

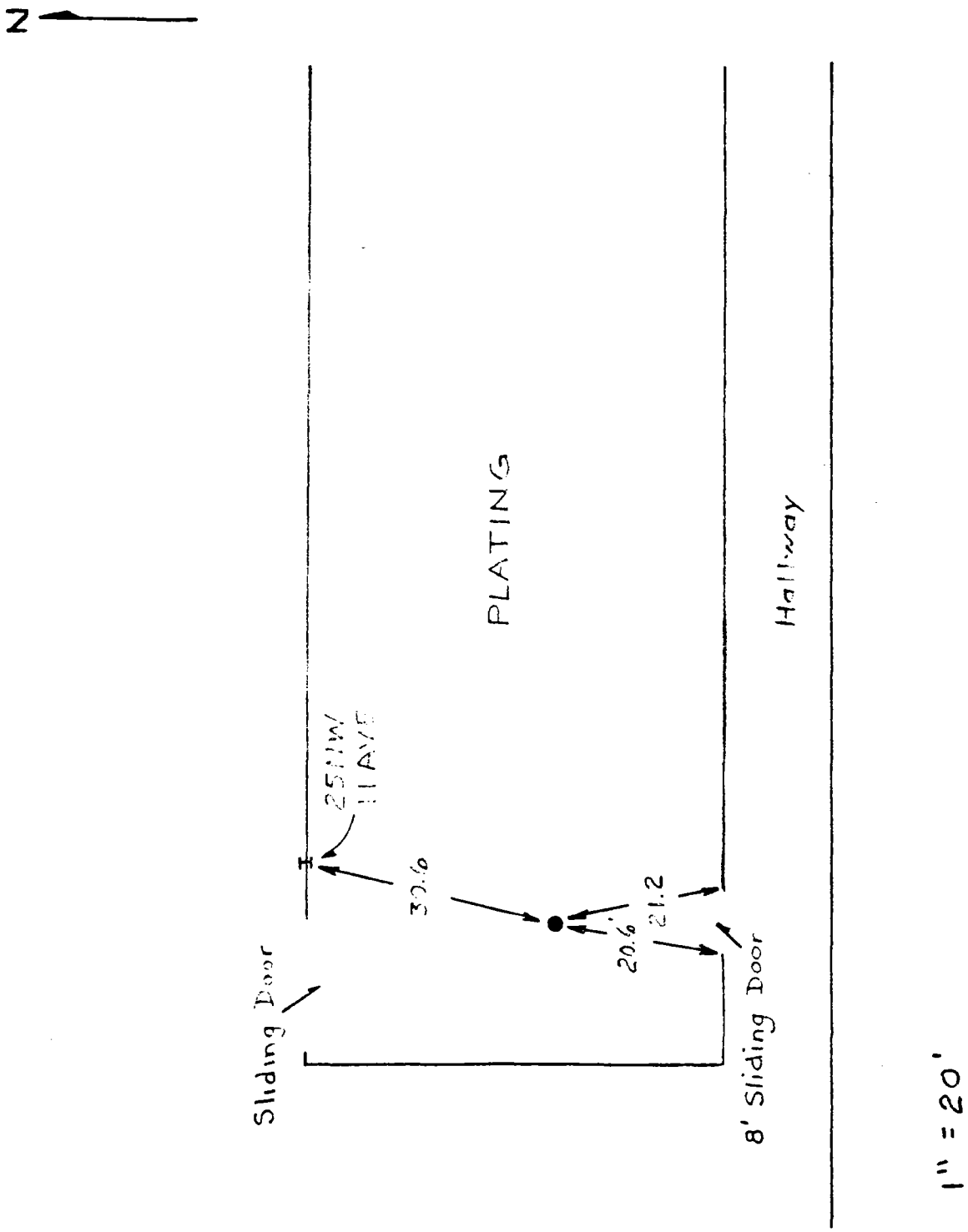
| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 38 & 73 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-21-98 |




1" = 20'

**CALCULATION WORKSHEET** Order No. 19116 (01-91)

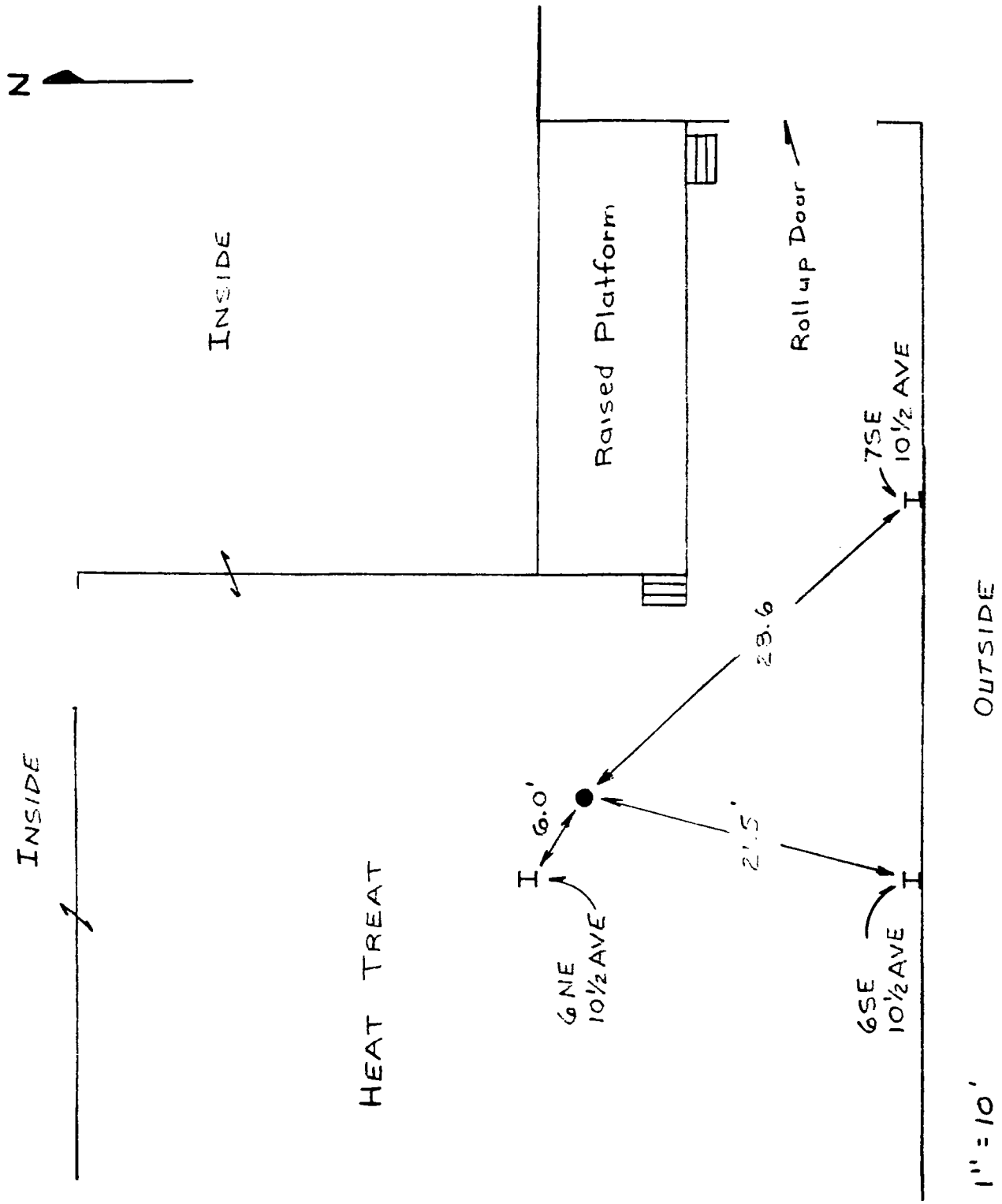
| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 39 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-21-98 |



# CALCULATION WORKSHEET

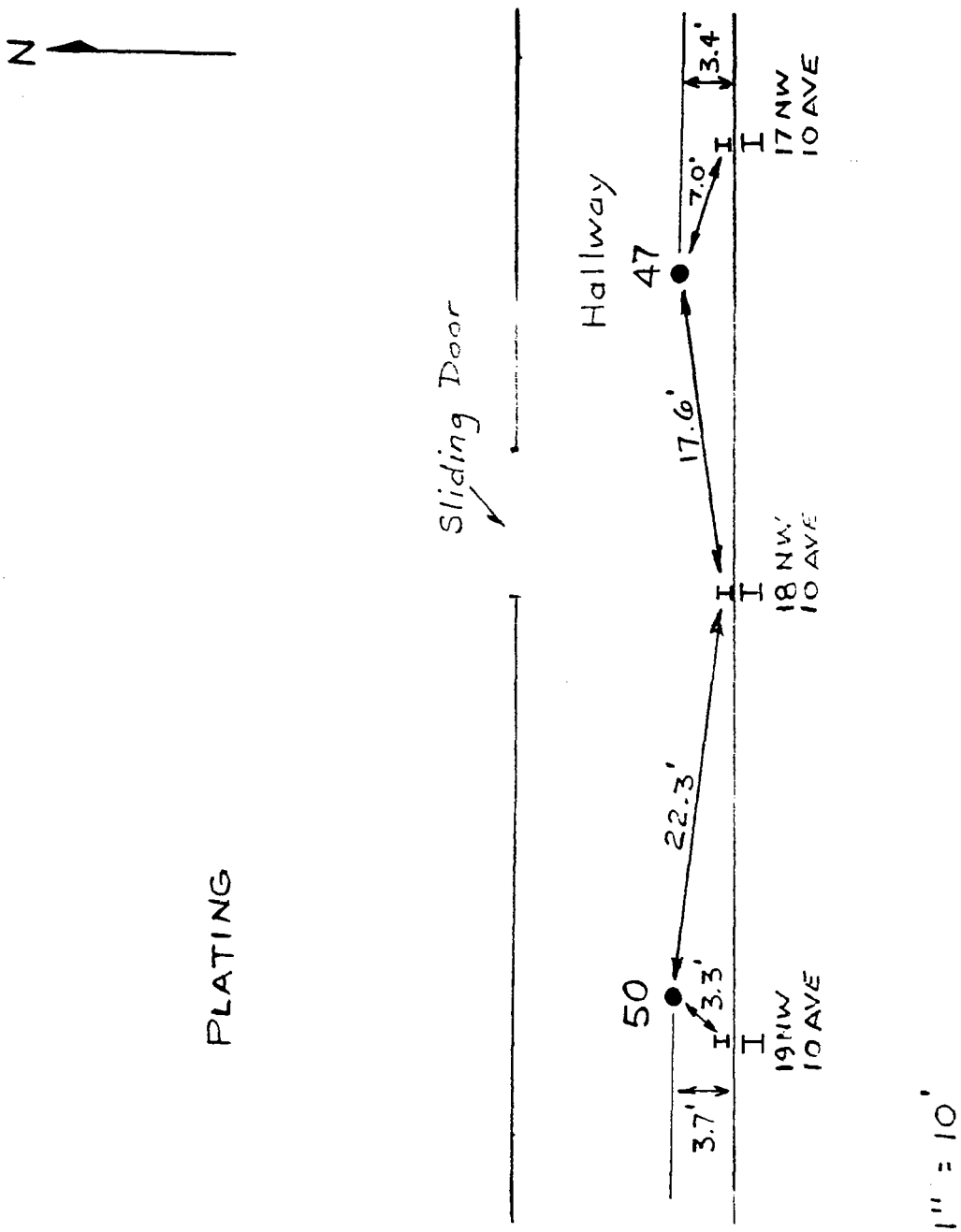
Order No. 19116 (01-91)

| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 46 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-21-98 |



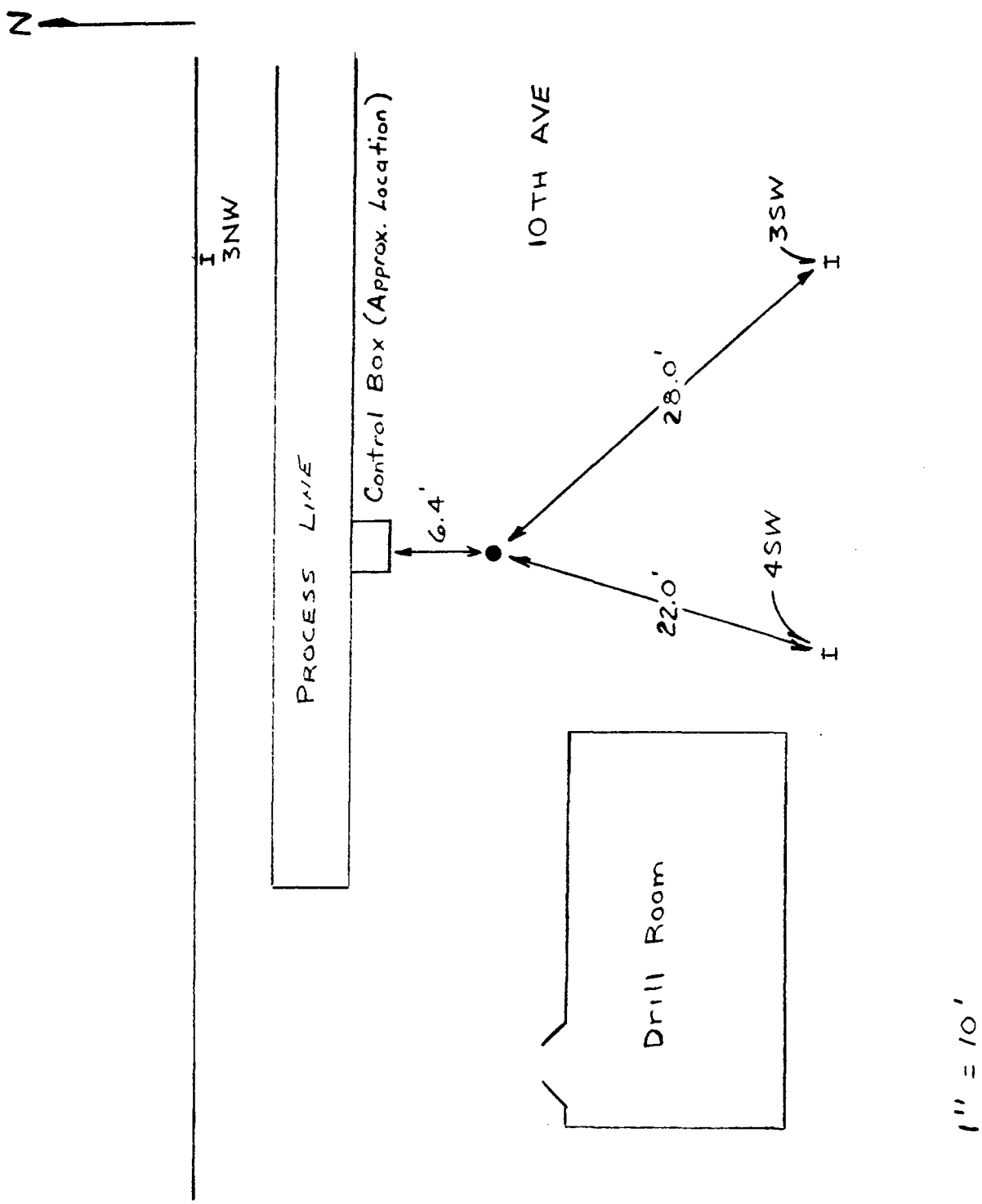
**CALCULATION WORKSHEET** Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 47 & 50 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-21-98 |



**CALCULATION WORKSHEET** Order No. 19116 (01-91)

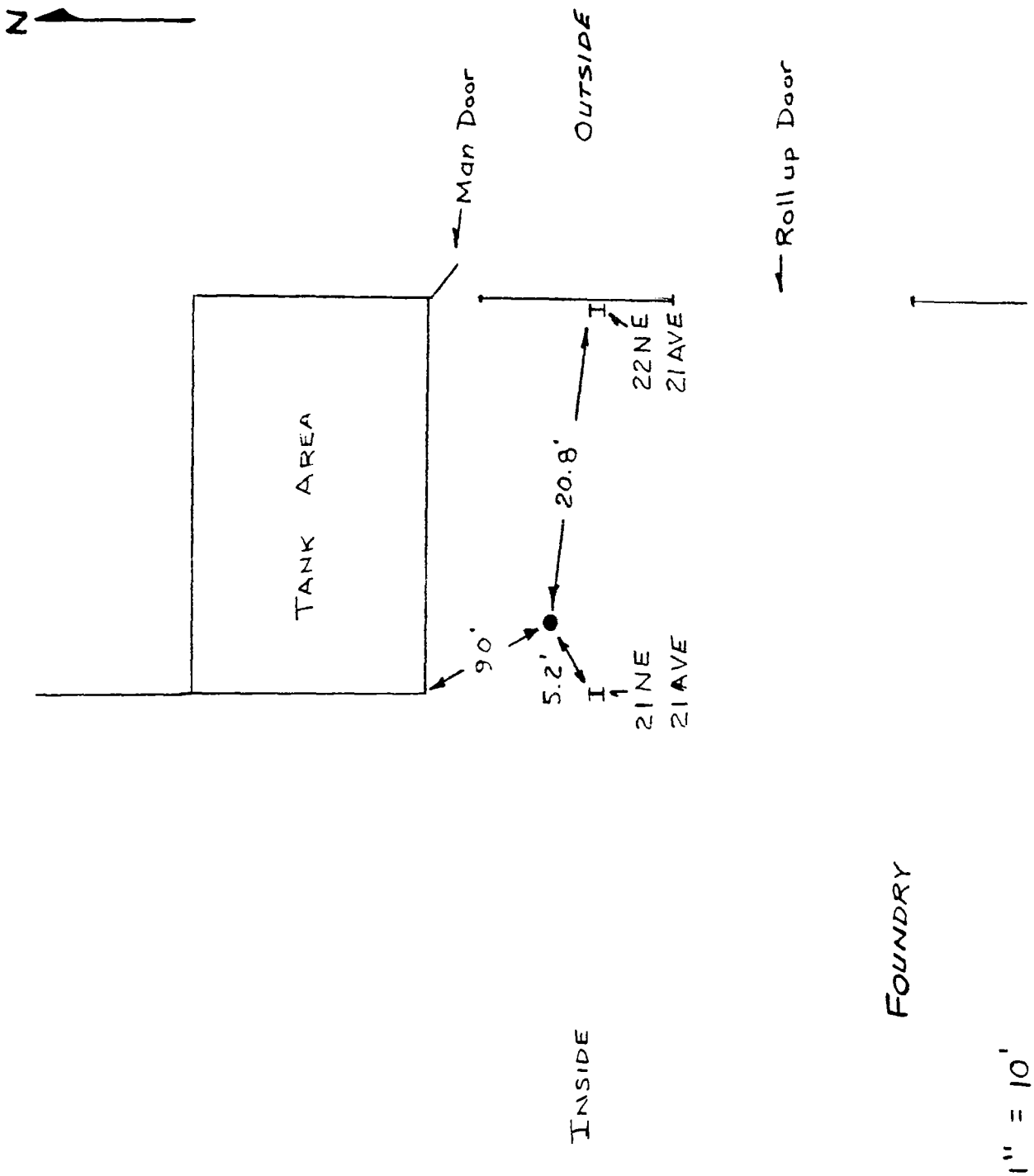
| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 58 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-21-98 |



# CALCULATION WORKSHEET

Order No. 19116 (01-91)

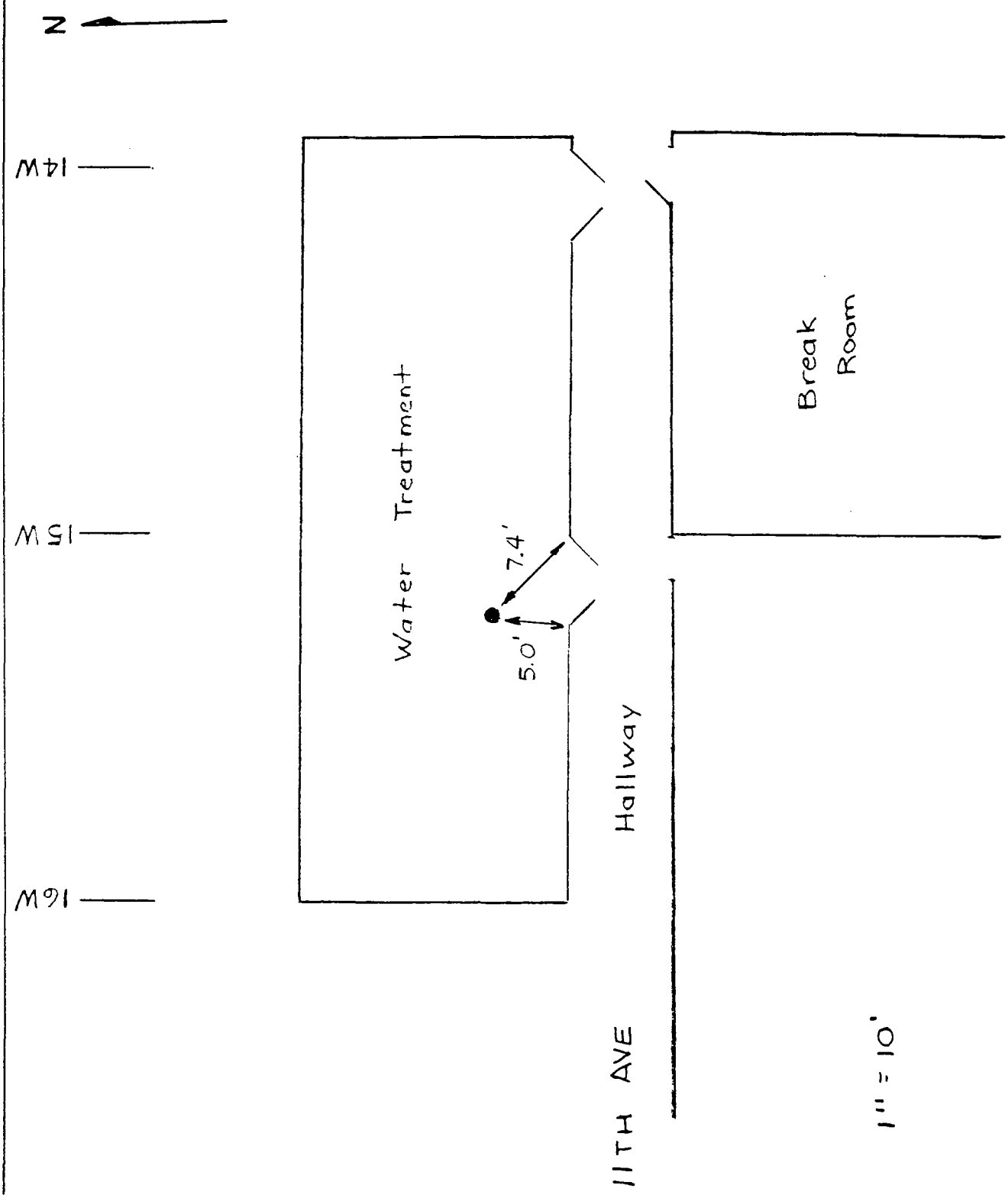
| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 63 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-21-98 |



# CALCULATION WORKSHEET

Order No. 19116 (01-91)

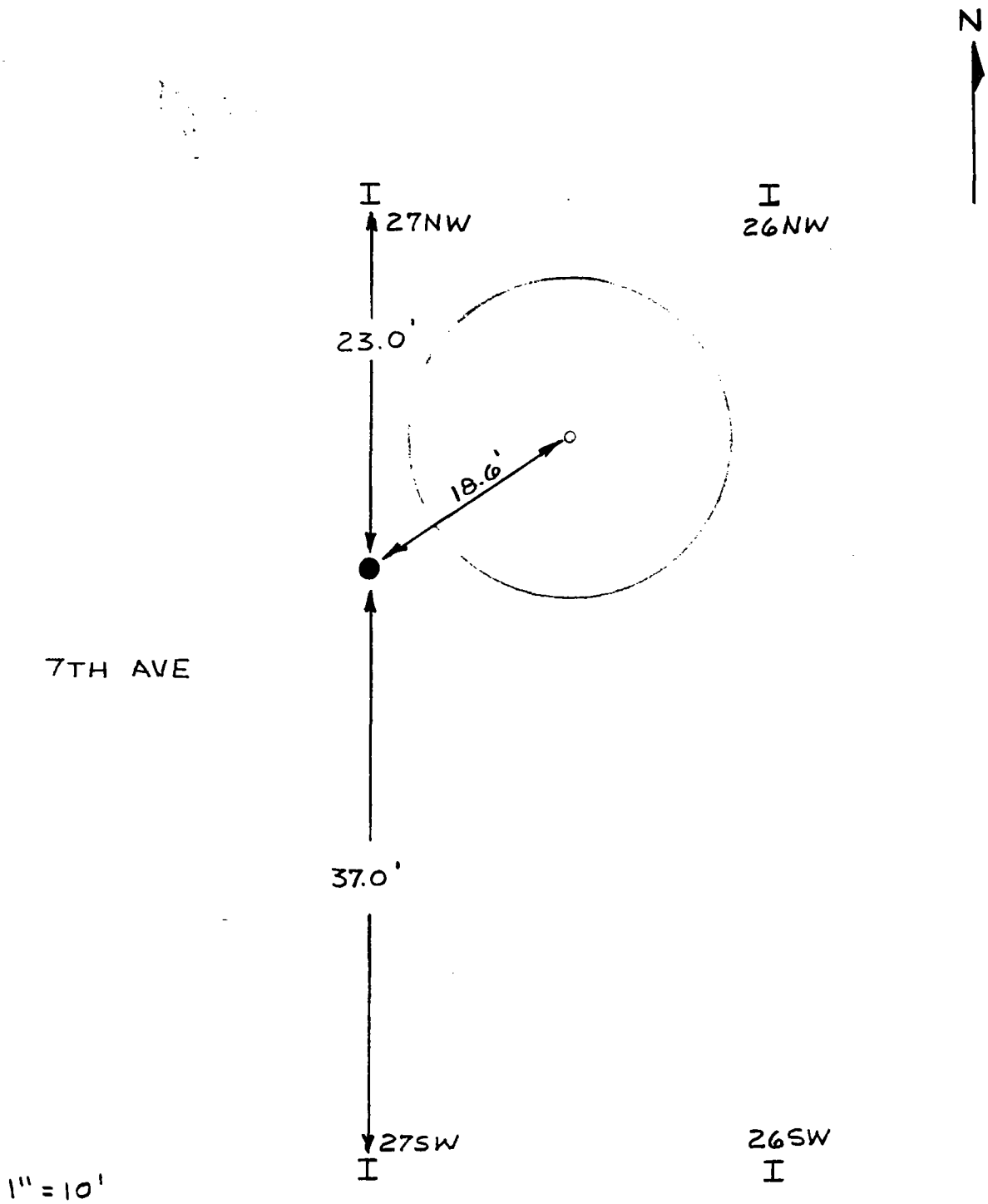
| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT AOC 68 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-21-98 |



# CALCULATION WORKSHEET

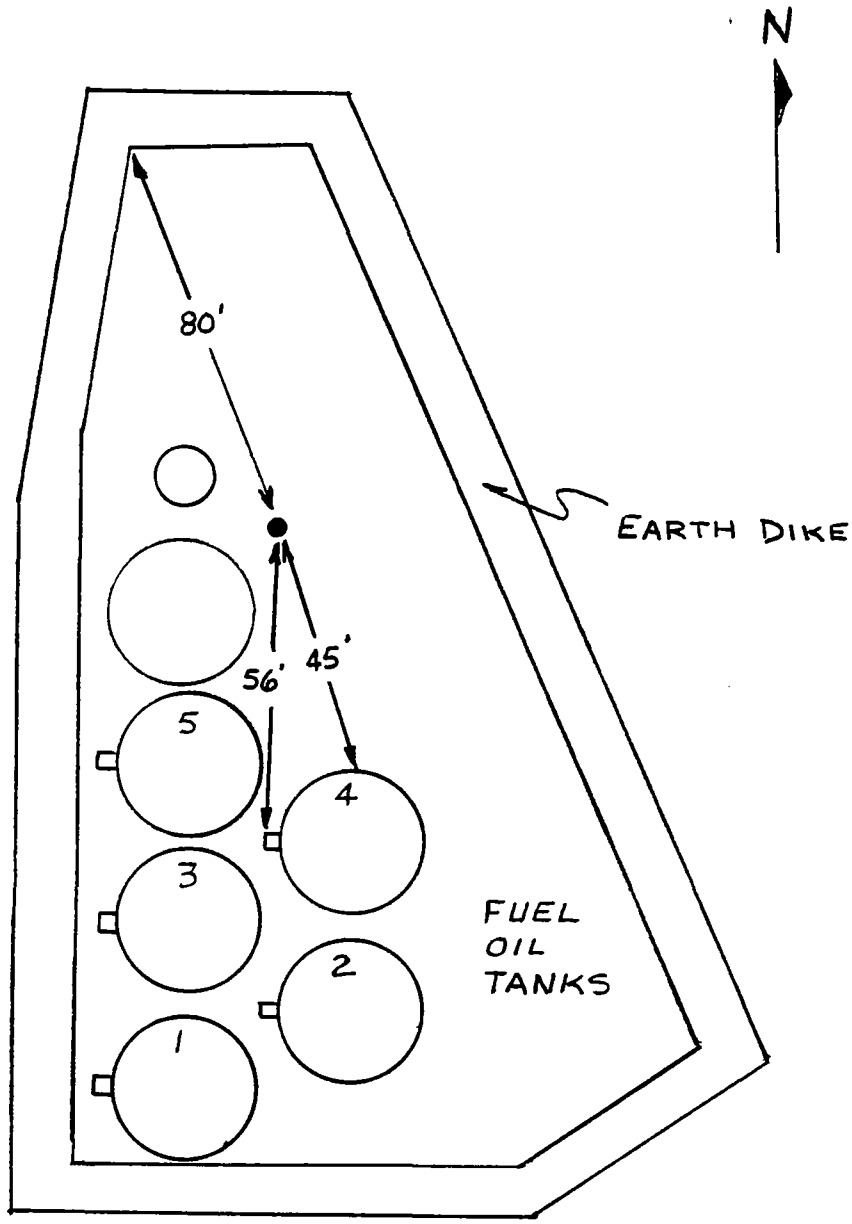
Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 70 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-21-98 |



**CALCULATION WORKSHEET** Order No. 19116 (01-91)

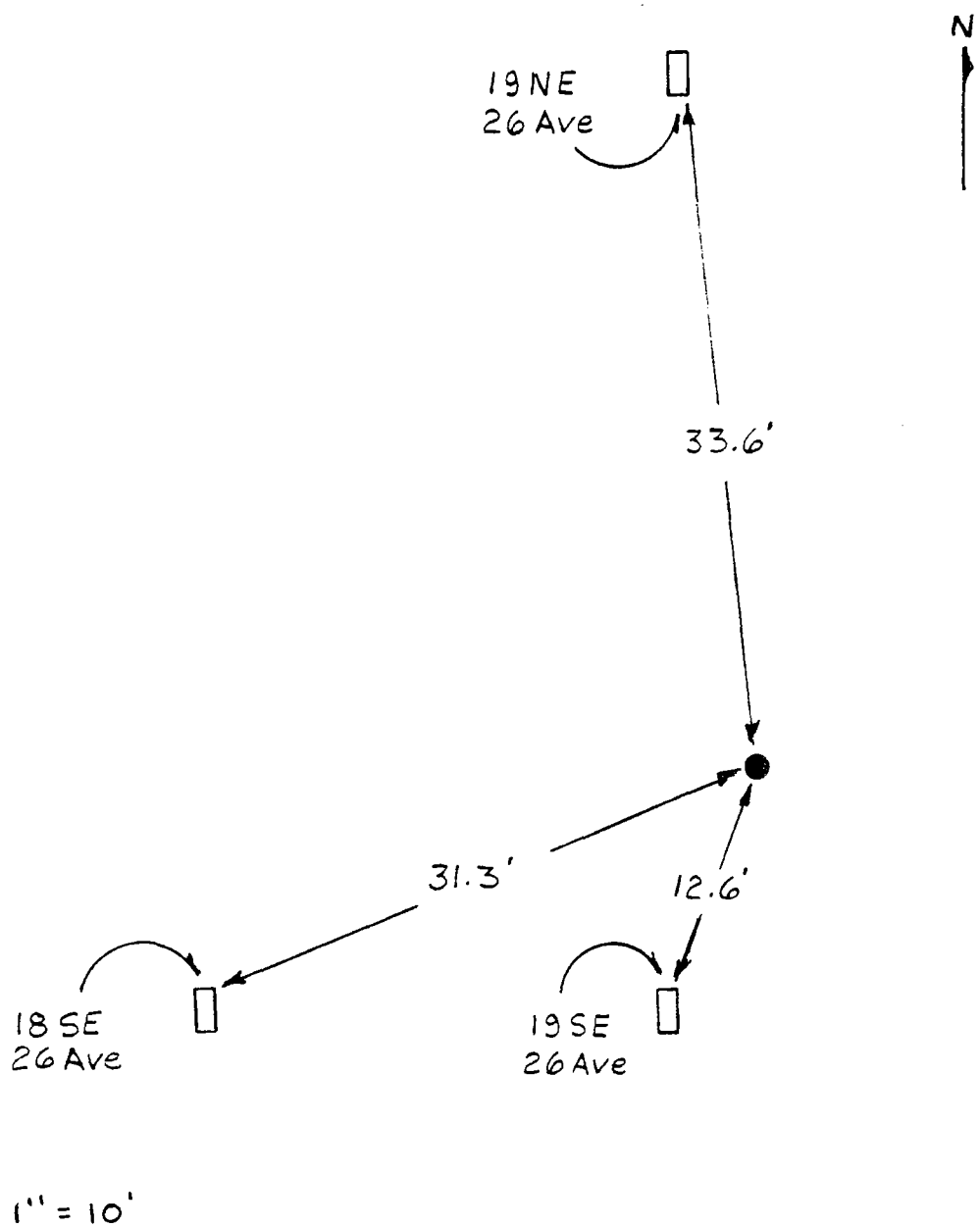
| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT AOC 71 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-21-98 |




1" = ~35'

**CALCULATION WORKSHEET** Order No. 19116 (01-91)

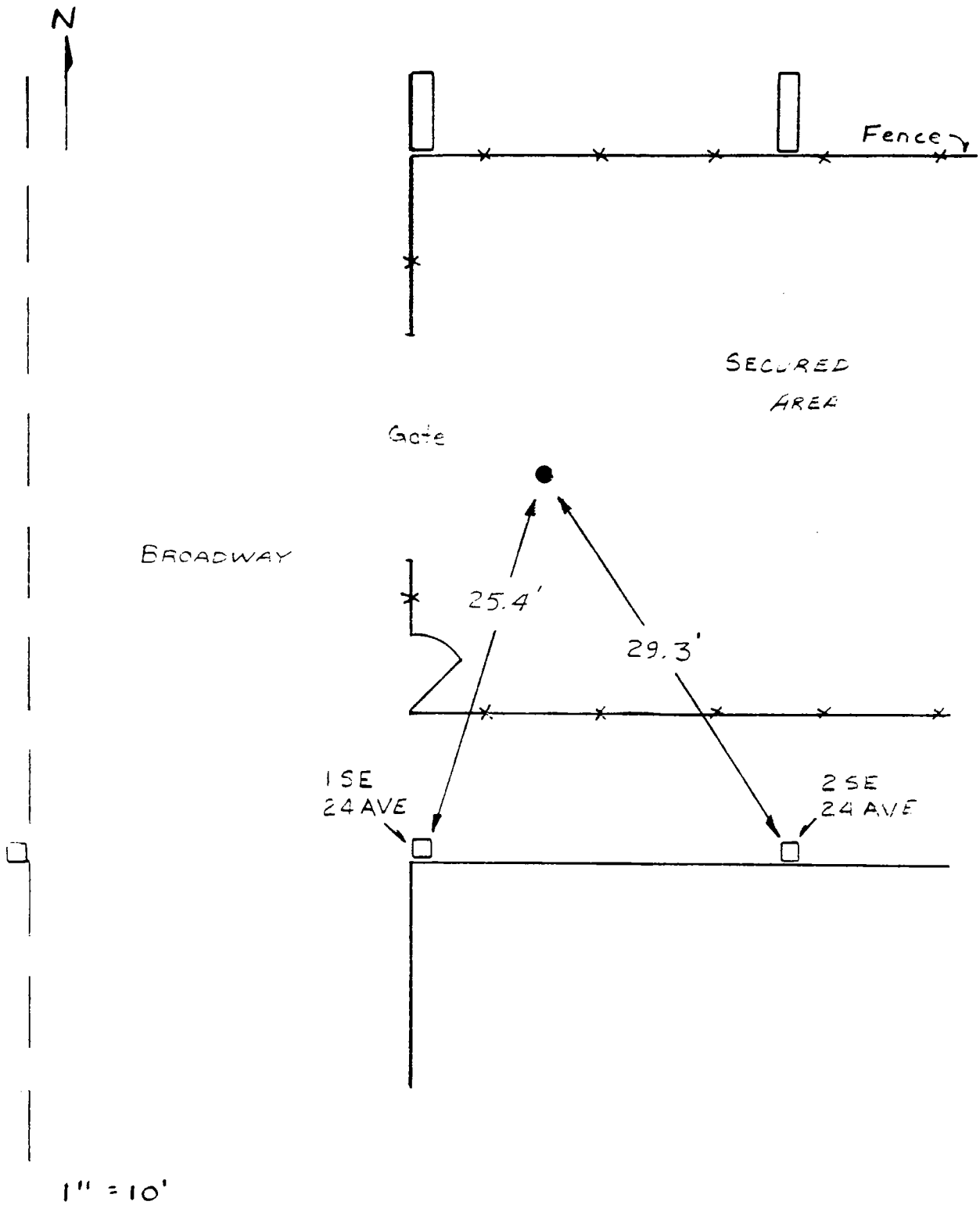
| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT P01 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 3-25-98 |



# CALCULATION WORKSHEET

Order No. 19116 (01-91)

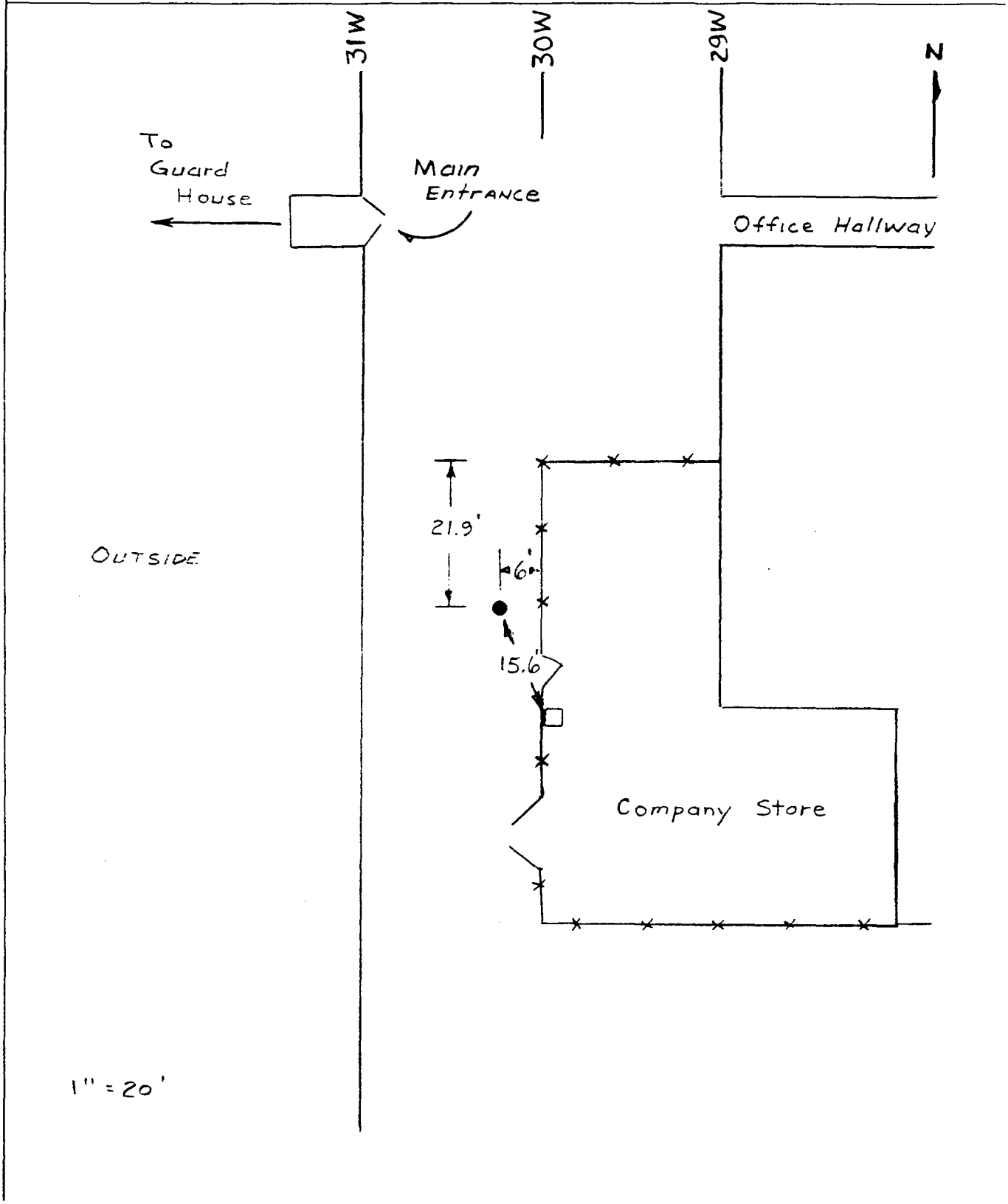
| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT P02 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-22-98 |



# CALCULATION WORKSHEET

Order No. 19116 (01-91)

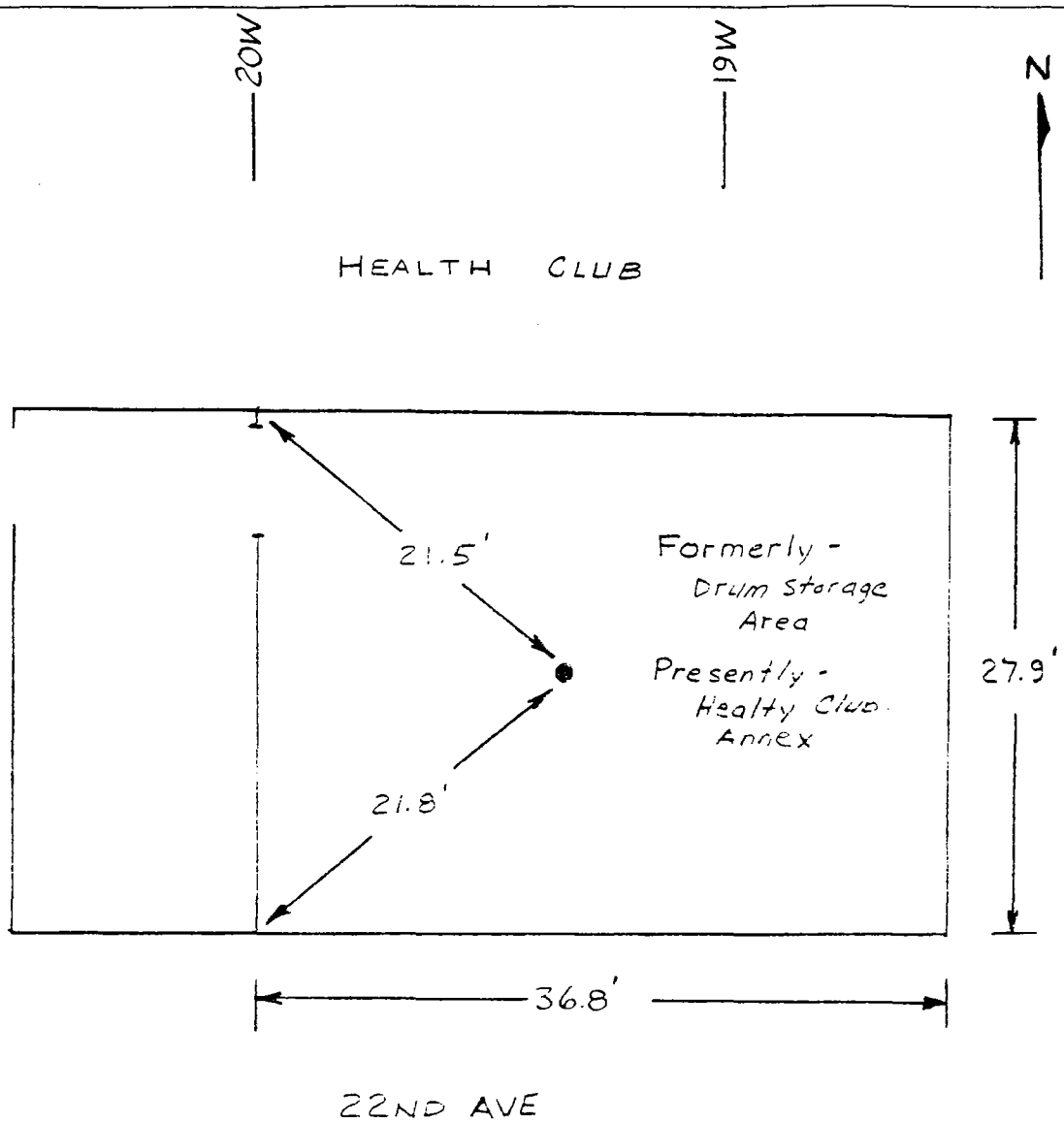
| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT P03 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-22-98 |



# CALCULATION WORKSHEET

Order No. 19116 (01-91)

| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT P04 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-22-98 |

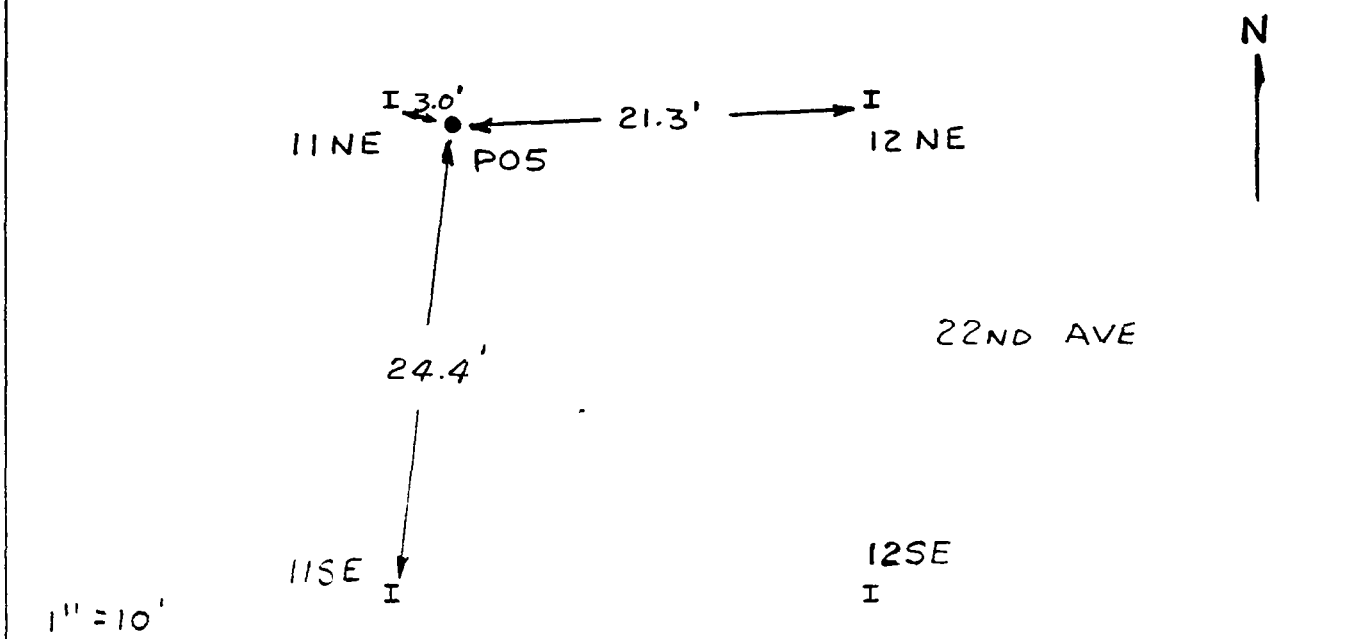


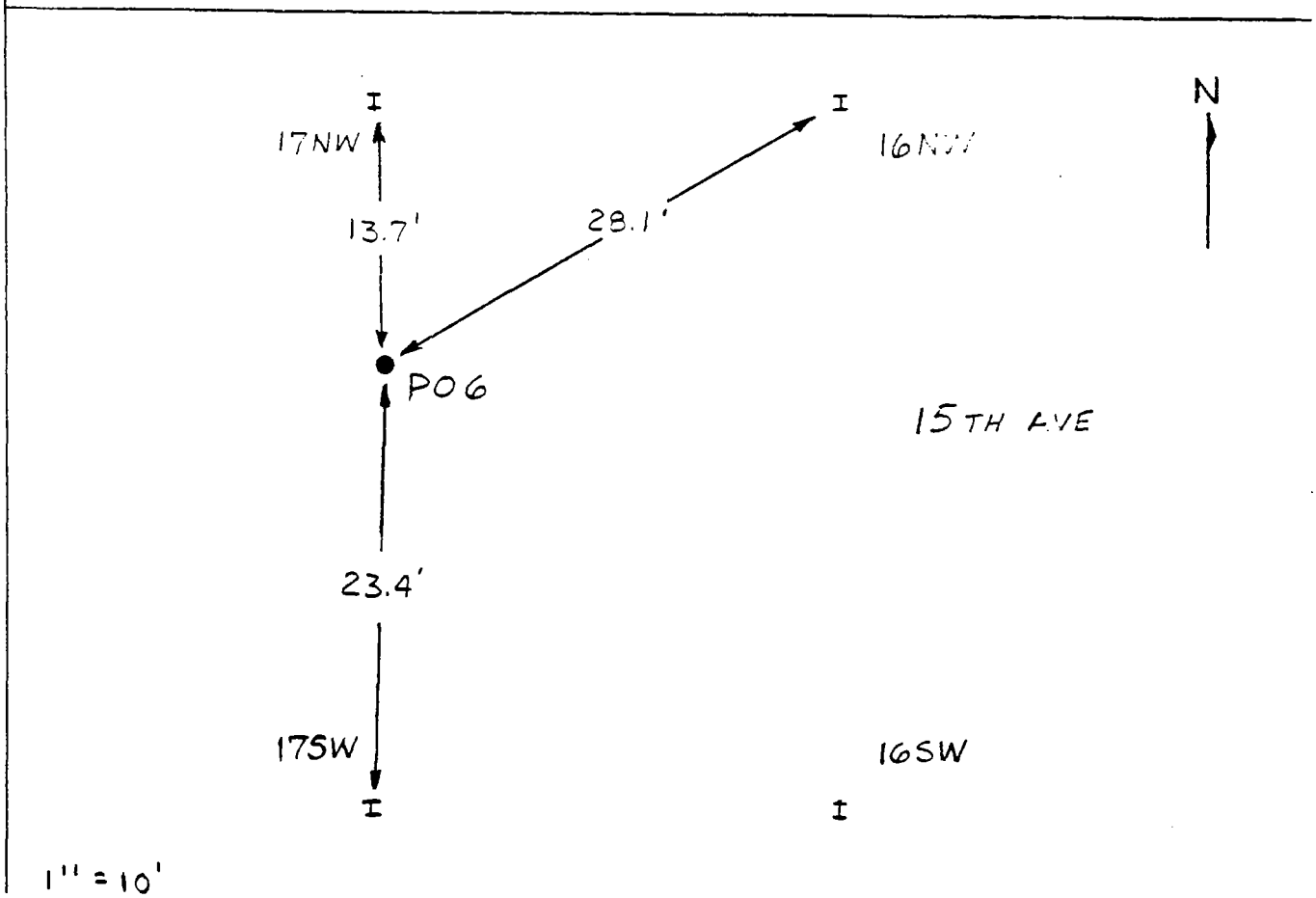

1" = 10'

# CALCULATION WORKSHEET

Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT P05 & P06 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-22-98 |

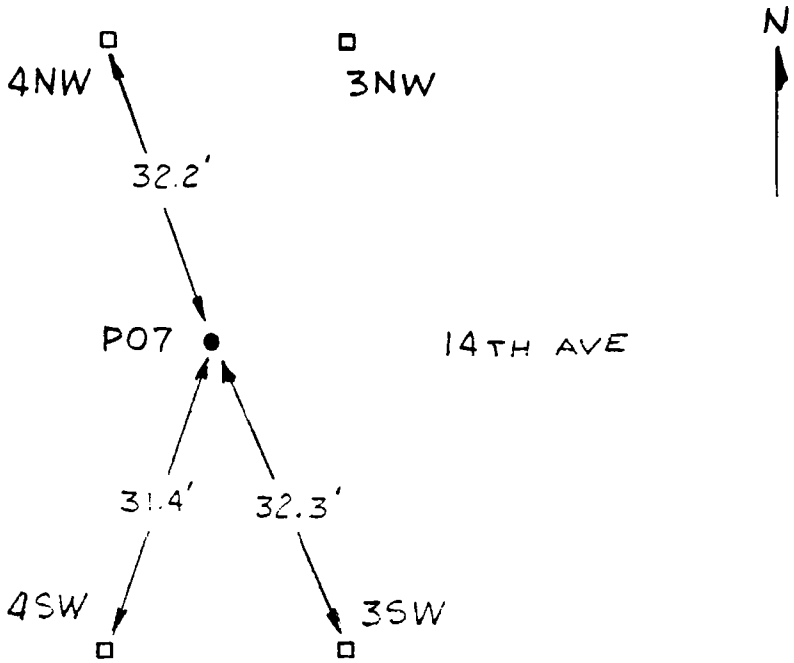


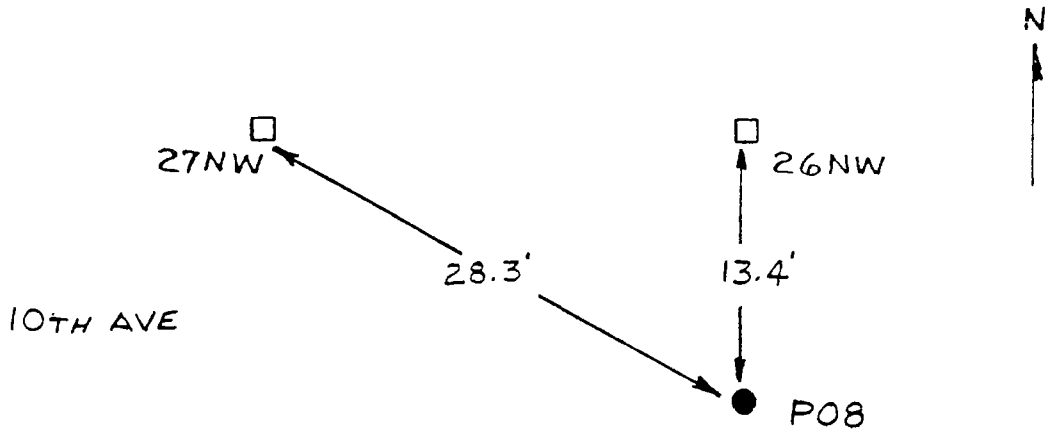
# CALCULATION WORKSHEET

Order No. 19115 (01-91)

| | |
|---|---|
| CLIENT NIROP FRIDLEY | JOB NUMBER 6966 |
| SUBJECT P07 & P08 | |
| BASED ON FIELD MEASUREMENTS | DRAWING NUMBER |
| BY TR / CHECKED BY | APPROVED BY / DATE 7-22-98 |




1" = 20'

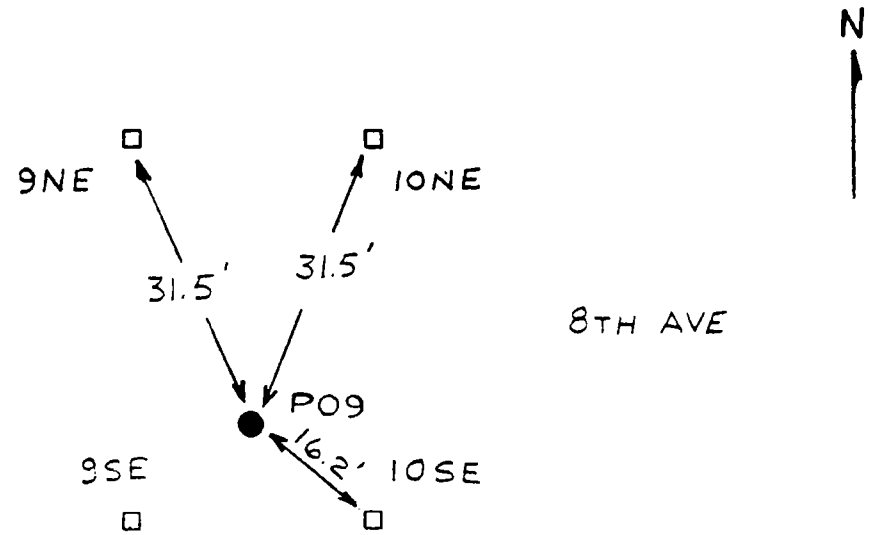



1" = 10'

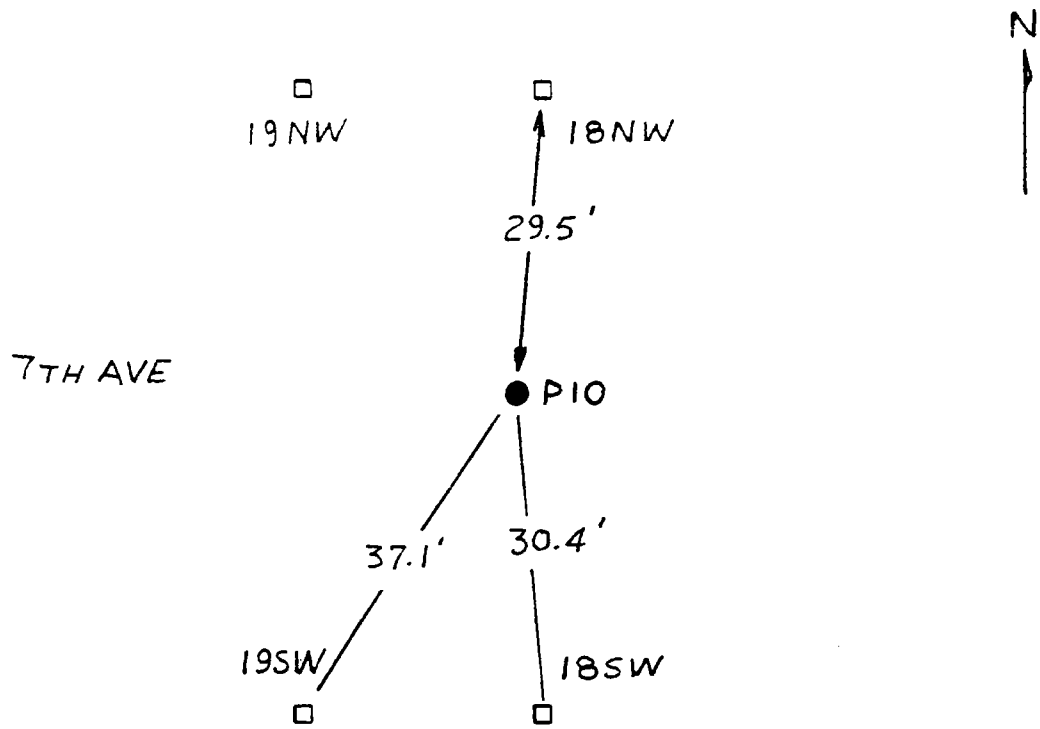
# CALCULATION WORKSHEET

Order No. 19116 (01-91)

| | | | |
|---|---|---|---|
| CLIENT NIROP FRIDLEY | | JOB NUMBER 6966 | |
| SUBJECT P09 & P10 | | | |
| BASED ON FIELD MEASUREMENTS | | DRAWING NUMBER | |
| BY TR | CHECKED BY | APPROVED BY | DATE 7-22-98 |




1" = 20'

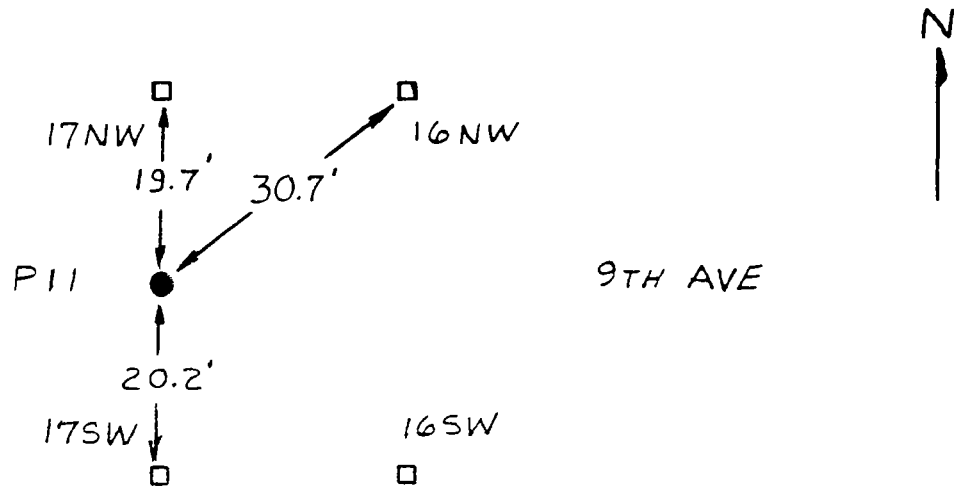



1" = 20'

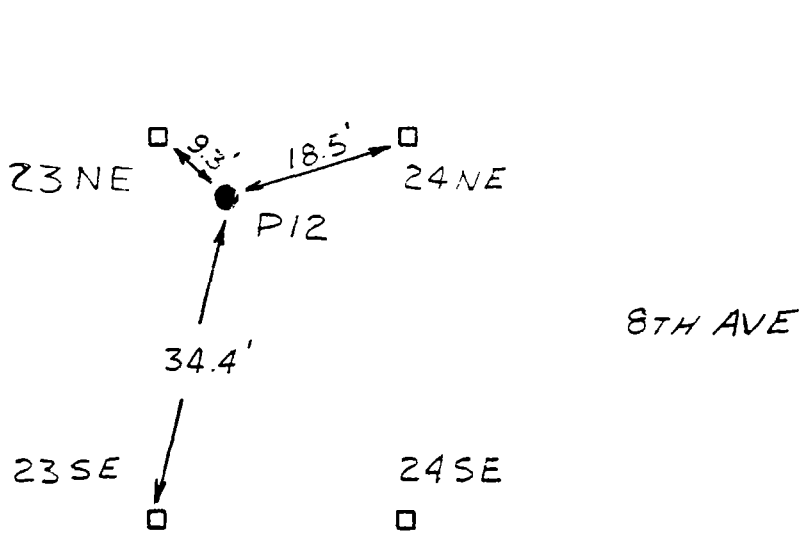
# CALCULATION WORKSHEET

Order No. 19116 (01-91)

| | |
|---|---|
| CLIENT: NIROP FRIDLEY | JOB NUMBER: 6966 |
| SUBJECT: P11 & P12 | |
| BASED ON: FIELD MEASUREMENTS | DRAWING NUMBER: |
| BY: TR | CHECKED BY: |
| APPROVED BY: | DATE: 7-22-98 |




1" = 20'




1" = 20'

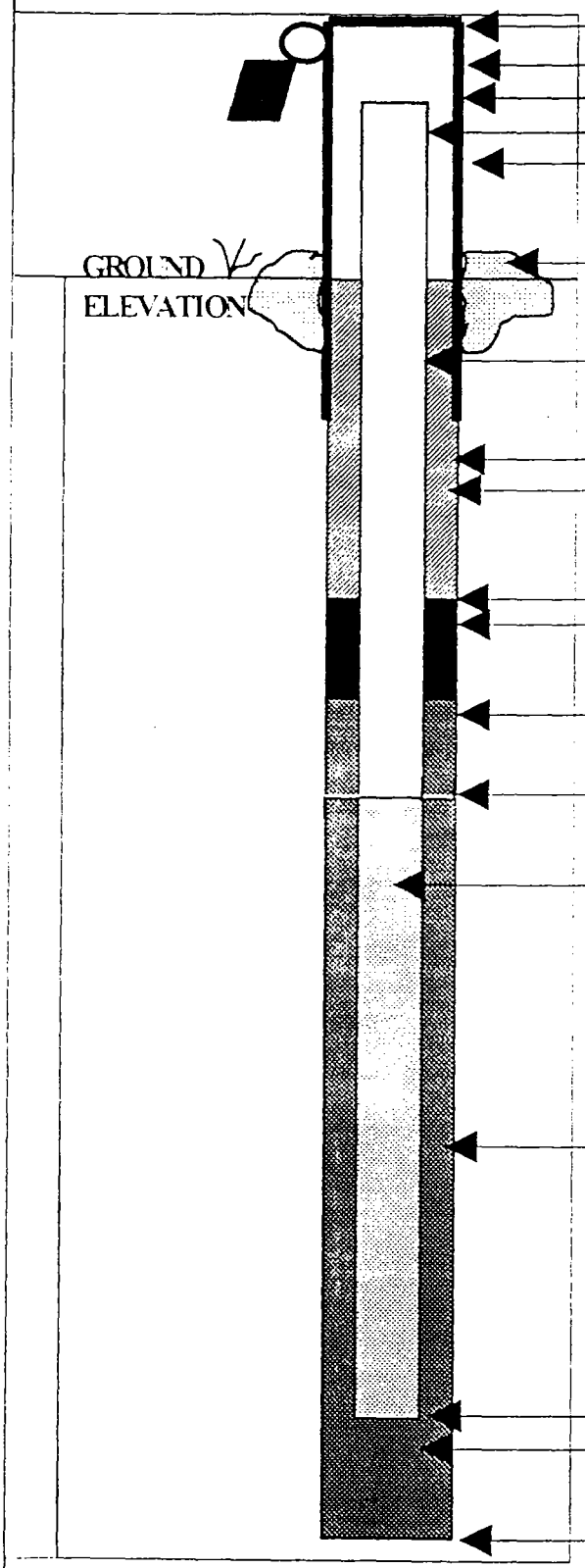
# APPENDIX B.3

# MONITORING WELL CONSTRUCTION SHEETS

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-285 | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/4/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 112

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 14.5

ELEVATION / DEPTH TOP OF SCREEN: 117.2

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.01" x 10.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica Sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 127.3

ELEVATION / DEPTH BOTTOM OF SAND PACK: 127.3

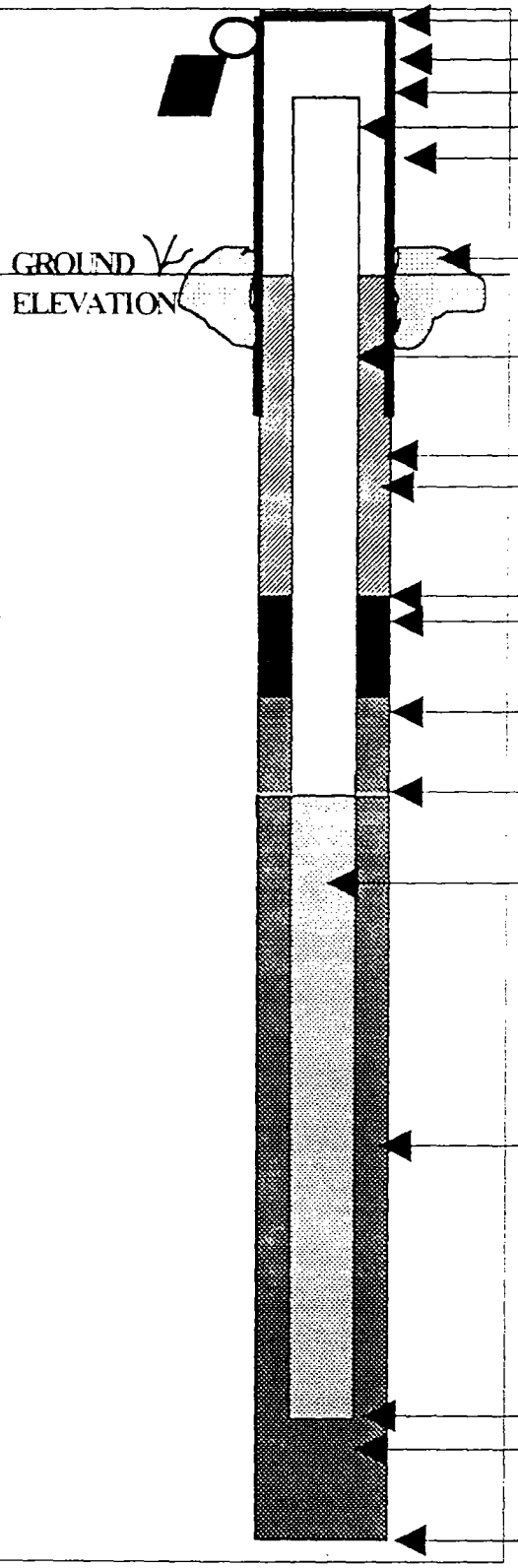
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 127.3

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-28 I | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/4/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 175.5

TYPE OS SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 78

ELEVATION / DEPTH TOP OF SCREEN: 180.4

TYPE OF SCREEN: Stainless

SLOT SIZE X LENGTH: 0.01" X 5.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica Sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 185.5

ELEVATION / DEPTH BOTTOM OF SAND PACK: 185.'

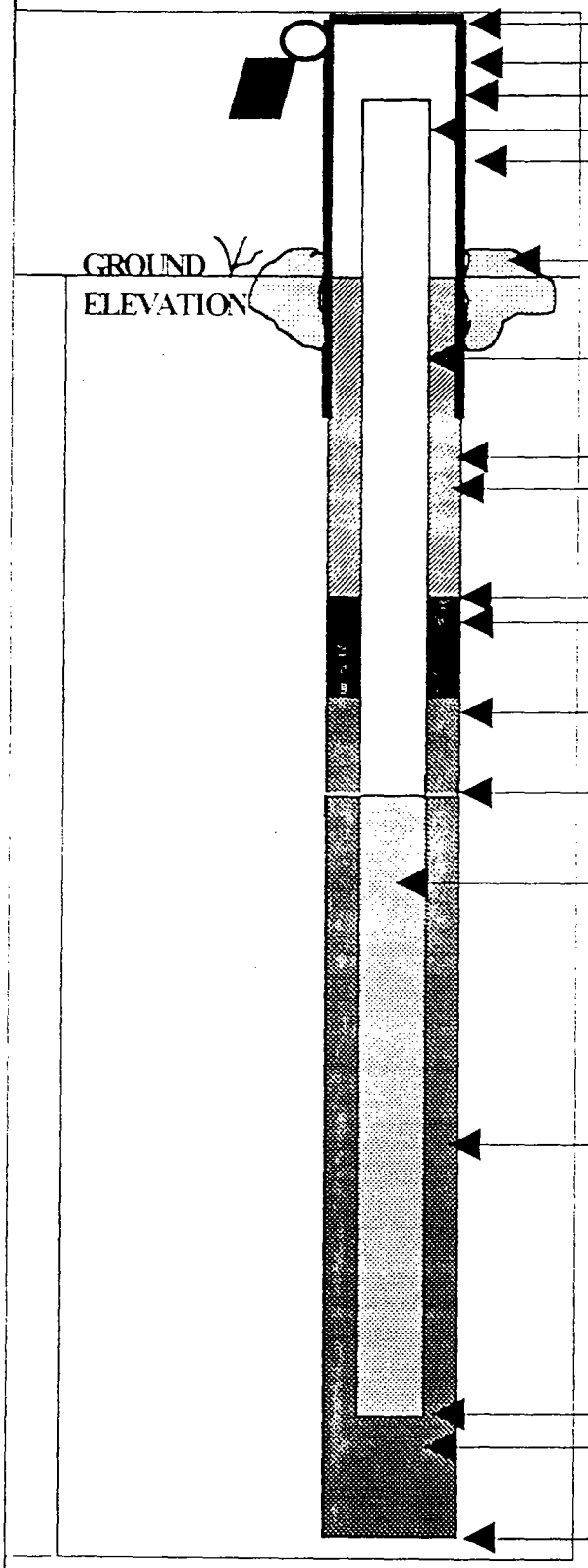
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 185.5

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-28D | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/3/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: | NA |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 1103

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 106

ELEVATION / DEPTH TOP OF SCREEN: 1109.6

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 2"

I.D. OF SCREEN: 0.01" X 5.1'

TYPE OF SAND PACK: Silica Sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 1114.7

ELEVATION / DEPTH BOTTOM OF SAND PACK: 1115

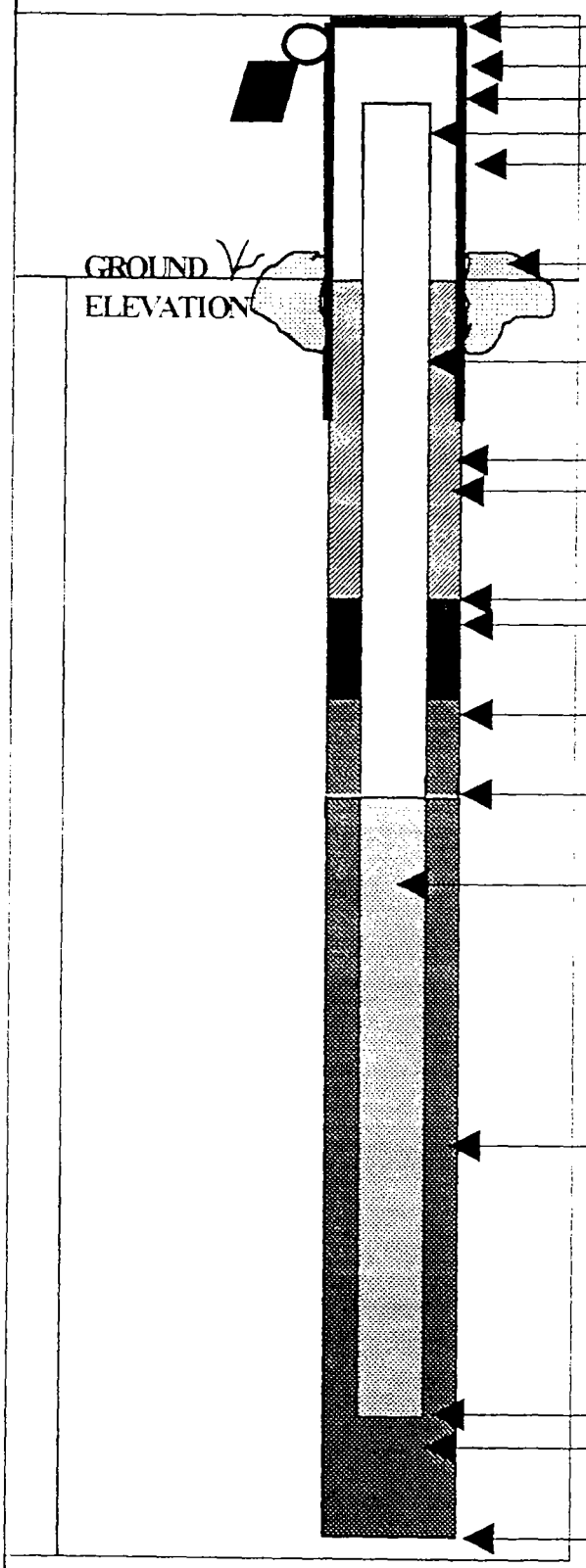
TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand

ELEVATION / DEPTH OF HOLE: 1115

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-295 | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/7/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 111

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 14

ELEVATION / DEPTH TOP OF SCREEN: 117.2

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.01" X 10.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: silica sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 127.3

ELEVATION / DEPTH BOTTOM OF SAND PACK: 127.3

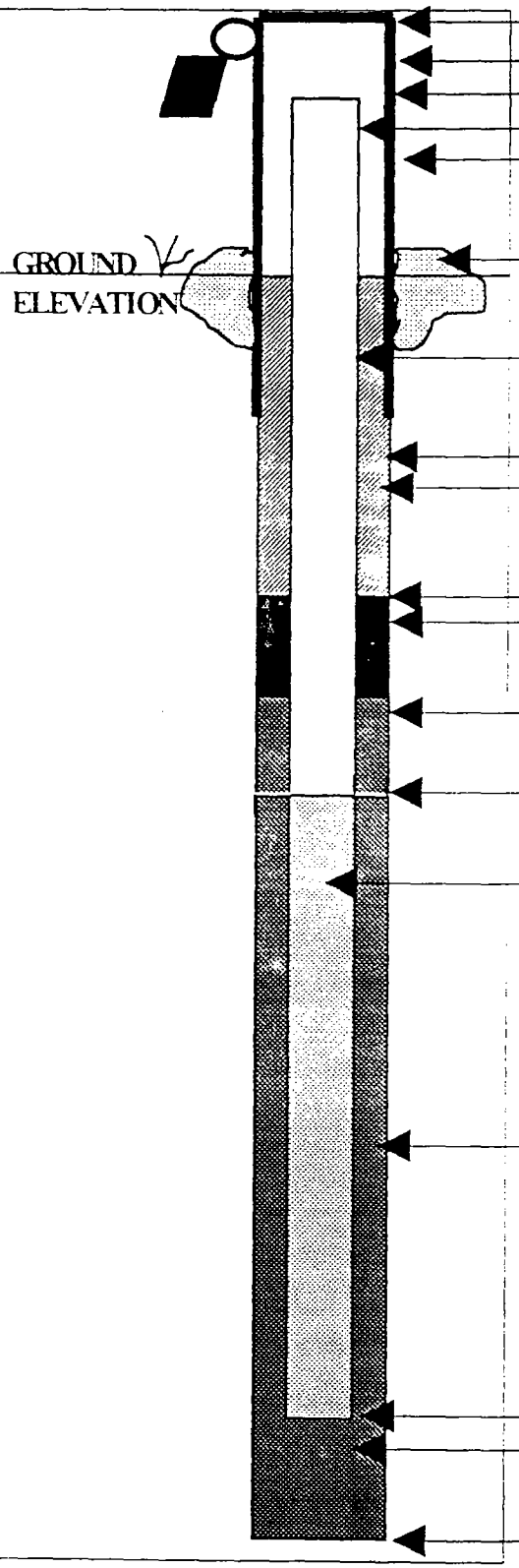
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 127.3

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-29I / | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/7/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 169

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 72

ELEVATION / DEPTH TOP OF SCREEN: 176.1

TYPE OF SCREEN: Stainless steel

SLOT SIZE X LENGTH: 0.01" X 5.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 181.2

ELEVATION / DEPTH BOTTOM OF SAND PACK: 182.6

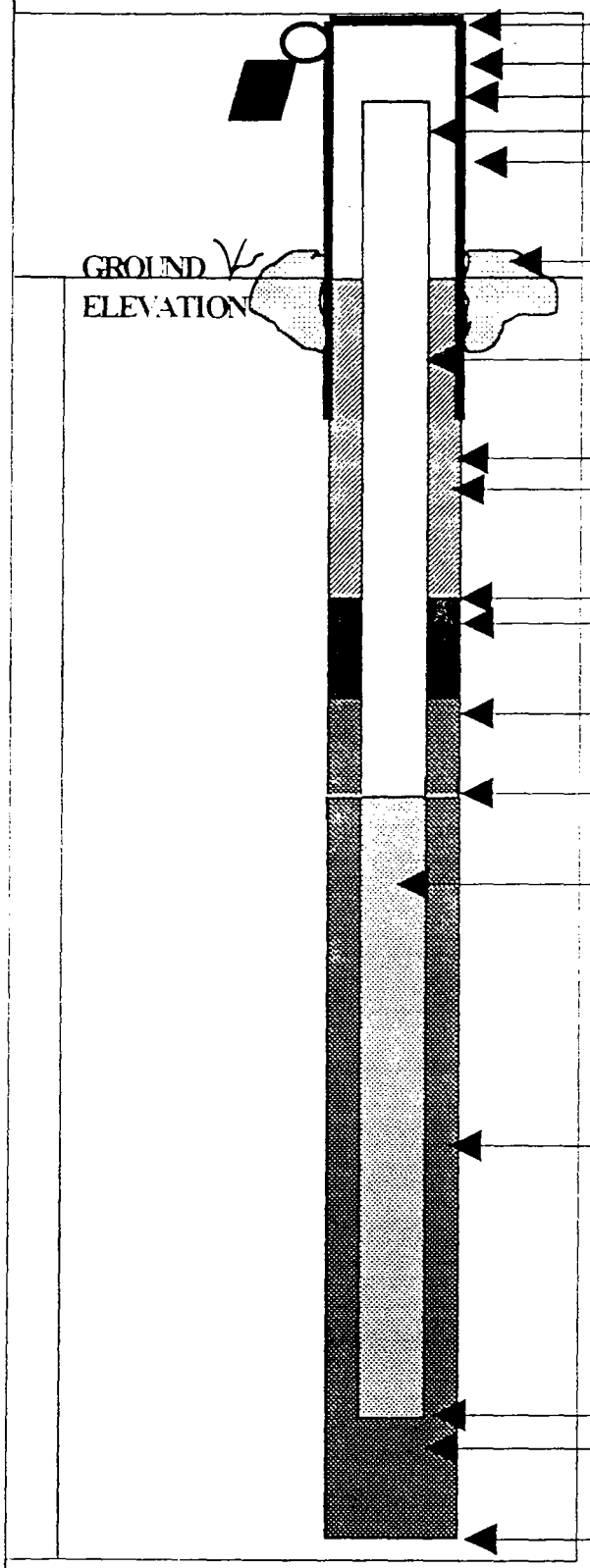
TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand

ELEVATION / DEPTH OF HOLE: 182.6

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-29D | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/6/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: | NA |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL: Concrete well Pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 1126.5

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 130

ELEVATION / DEPTH TOP OF SCREEN: 1131.6

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.01" X 5.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica Sand 20-30

ELEVATION / DEPTHBOTTOM OF SCREEN: 1136.7

ELEVATION / DEPTH BOTTOM OF SAND PACK: 1136.7

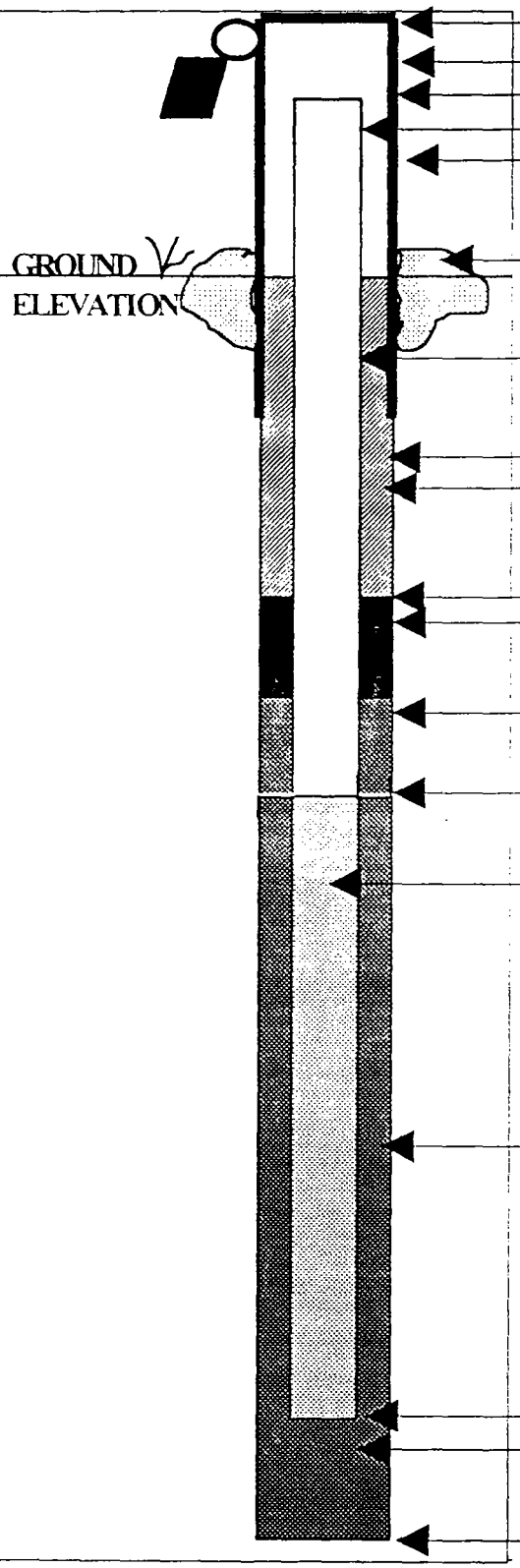
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 1136.7

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | Fridley, MN | DRILLER | Bill Zamow |
| PROJECT NO. | 6966 | BORING | MS-305 | METHOD: | ~~DPT~~ Rotosonic |
| ELEVATION | | DATE | 10/26/97 | DRILLING | |
| FIELD GEOLOGIST | B. Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE: 0

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL: Concrete well pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH OF SEAL: 113'

TYPE OS SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 15'

ELEVATION / DEPTH TOP OF SCREEN: 117.6'

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.010" X 9.4'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20-30 Silica Sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 127.5'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 128'

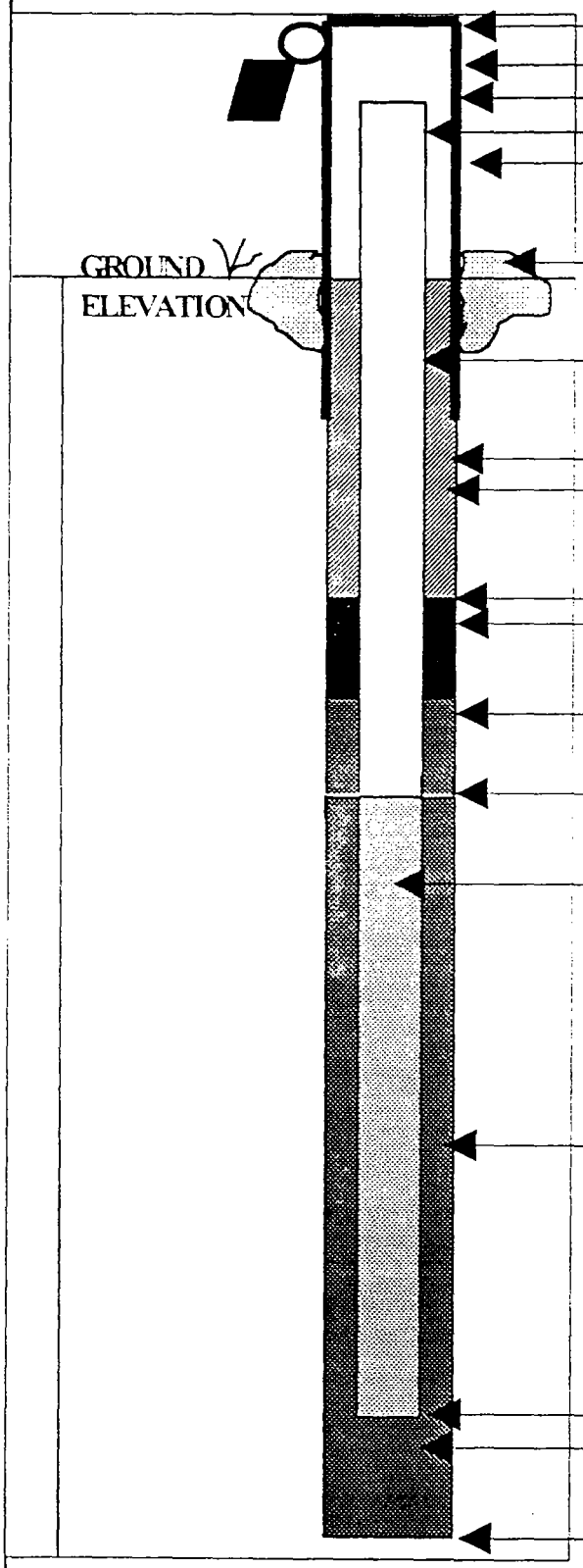
TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand

ELEVATION / DEPTH OF HOLE: 128'

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | Fridley, MN | DRILLER | Bill Zamow |
| PROJECT NO. | 6966 | BORING | MS-36I | METHOD: | ~~DPT~~ Rotosonic |
| ELEVATION | | DATE | 10/25/97 | DRILLING | |
| FIELD GEOLOGIST | B. Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE: 0

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL: Concrete well pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: carbon steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH OF SEAL: 158'

TYPE OS SEAL: bentonite chips

DEPTH TOP OF SAND PACK: 61'

ELEVATION / DEPTH TOP OF SCREEN: 162.8'

TYPE OF SCREEN: stainless steel

SLOT SIZE X LENGTH: 0.010" X 5.0'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20-30 silica sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 167.8'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 168'

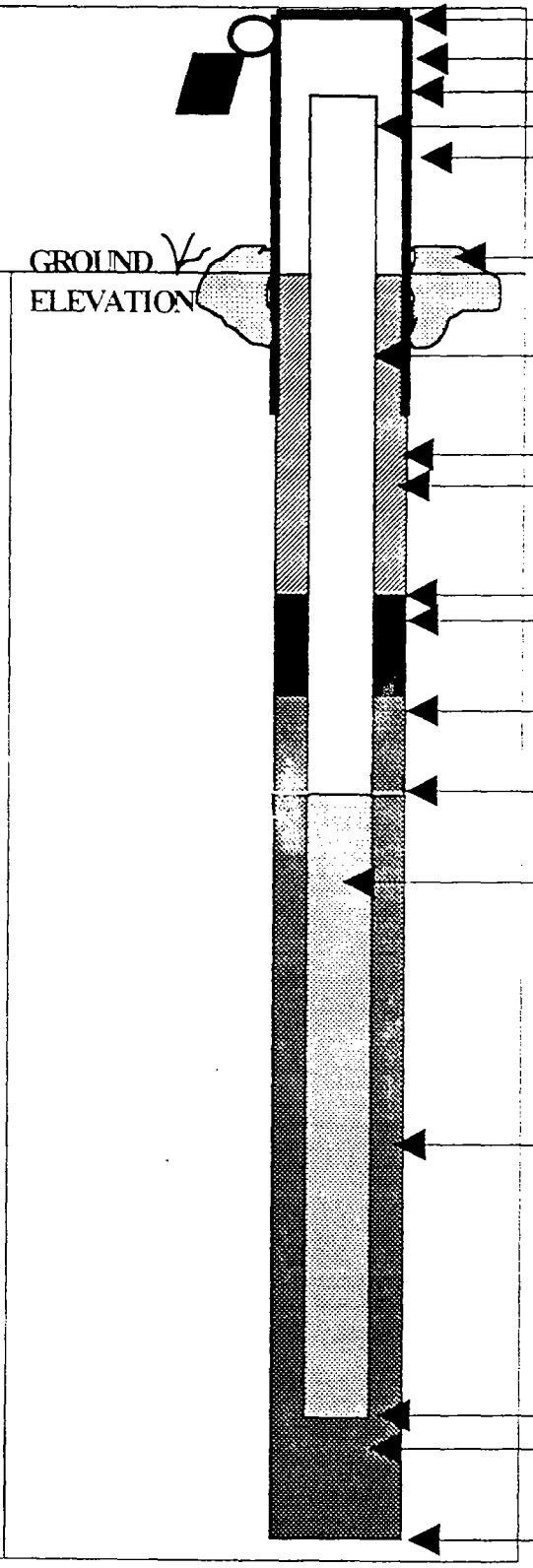
TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand

ELEVATION / DEPTH OF HOLE: 168'

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | Fridley, MN | DRILLER | Bill Zamow |
| PROJECT NO. | 6966 | BORING | MS-30D | METHOD: ~~DPT~~ | Rotosonic |
| ELEVATION | | DATE | 10/24/97 | DRILLING | |
| FIELD GEOLOGIST | B. Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE: 0

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL: Concrete well pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH OF SEAL: 186'

TYPE OS SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 91'

ELEVATION / DEPTH TOP OF SCREEN: 194.6'

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.010" x 4.8'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20-30 Silica sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 199.4'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 100'

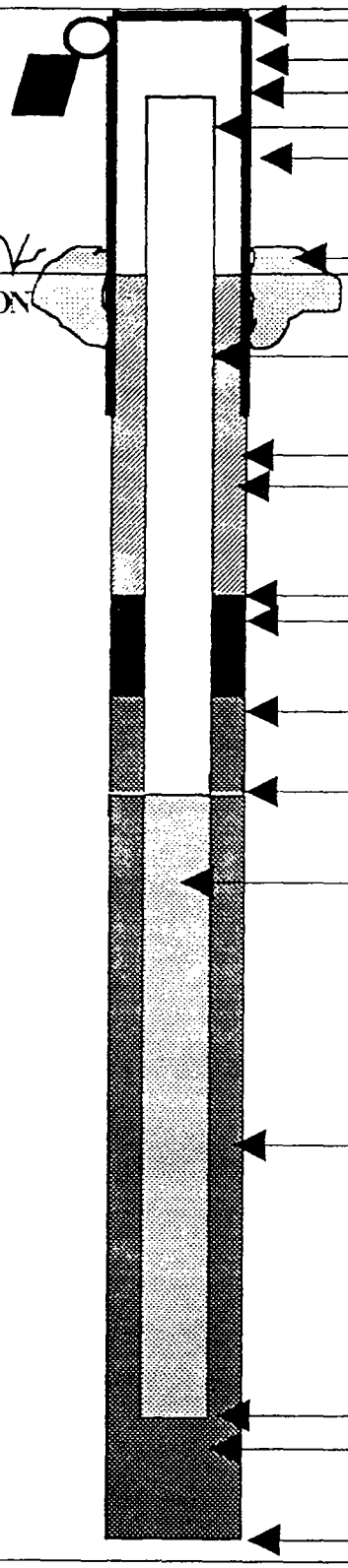
TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand

ELEVATION / DEPTH OF HOLE: 100'

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | Fridley, MN | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-315 | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 11/16/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | B. Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE: 0

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL: Concrete Well Pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 112

TYPE OS SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 14

ELEVATION / DEPTH TOP OF SCREEN: 117.4

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.010" X 10.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20-30 silica sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 127.5

ELEVATION / DEPTH BOTTOM OF SAND PACK: 129

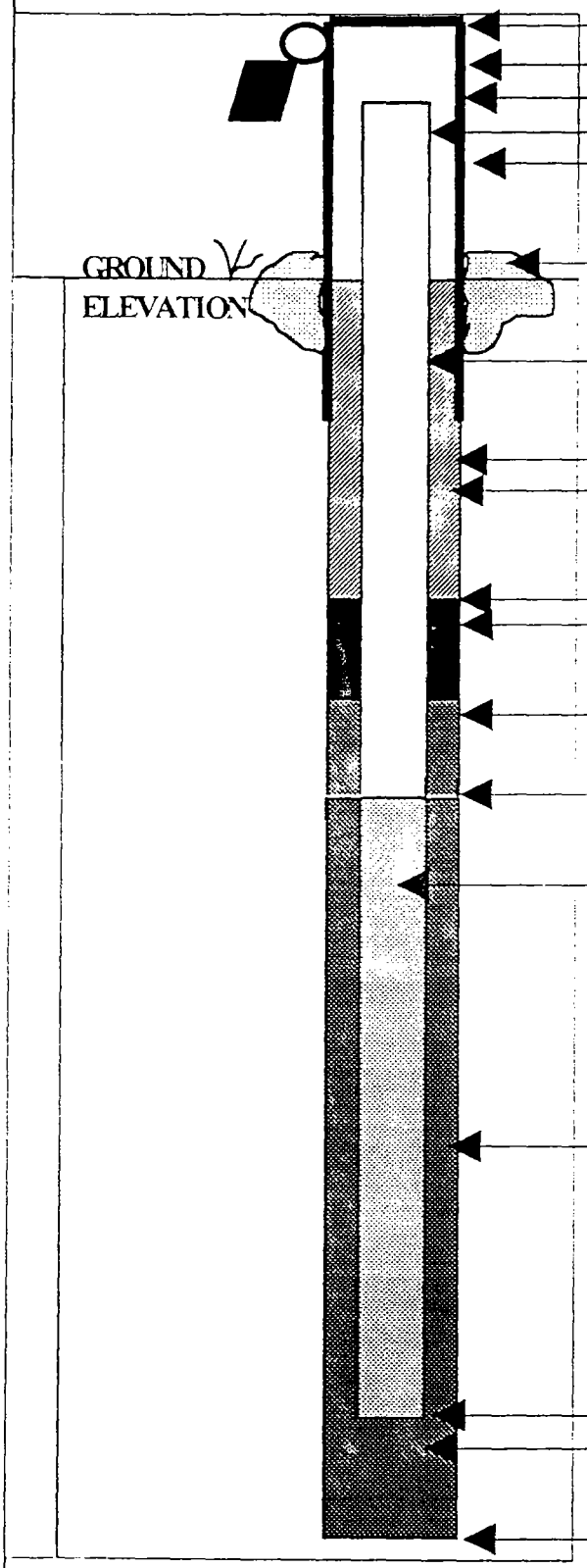
TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand

ELEVATION / DEPTH OF HOLE: 129

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | Fridley, MN | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-31I | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 11/15/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | B. Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL: Concrete well pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 182

TYPE OS SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 86

ELEVATION DEPTH TOP OF SCREEN: 191.5

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.010" X 5.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20-30 silica sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 196.6

ELEVATION / DEPTH BOTTOM OF SAND PACK: 196.6

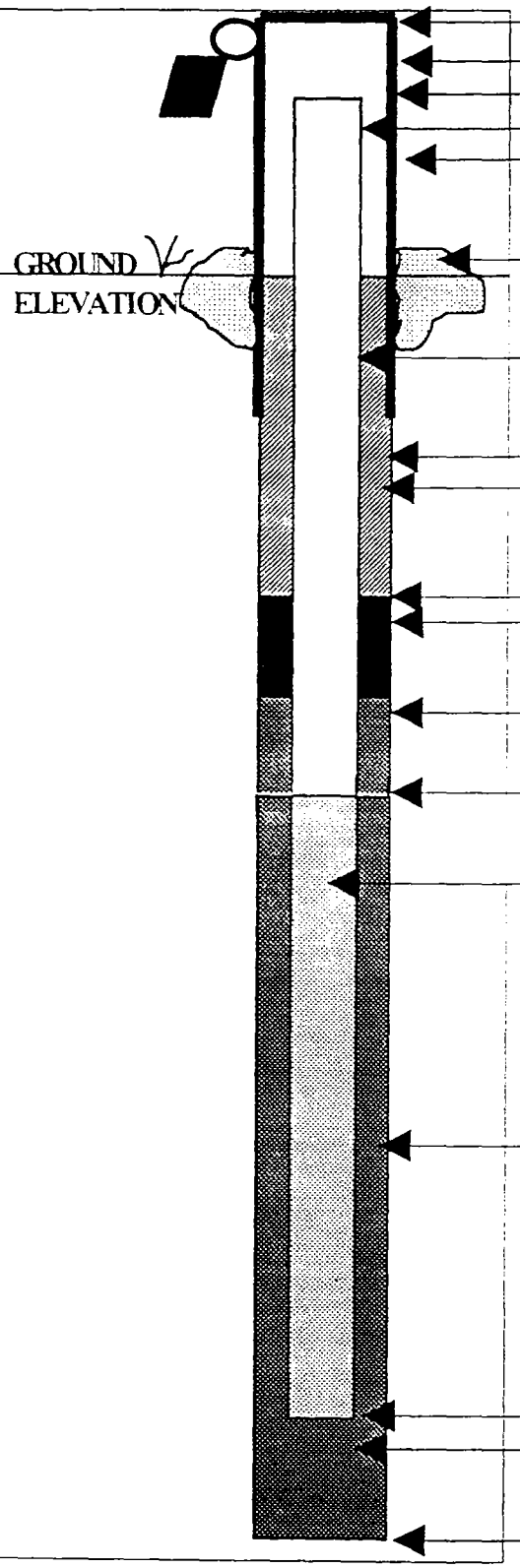
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 196.6

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | Fridley, MN | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-31D | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 11/14/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | B. Howze | | | DEVELOPMENT: | NA |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL: Concrete well pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH OF SEAL: 112.5

TYPE OS SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 117

ELEVATION / DEPTH TOP OF SCREEN: 122.2

TYPE OF SCREEN: Stainless steel

SLOT SIZE X LENGTH: 0.010" X 5'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20-30 silica sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 127.2

ELEVATION / DEPTH BOTTOM OF SAND PACK: 127.2

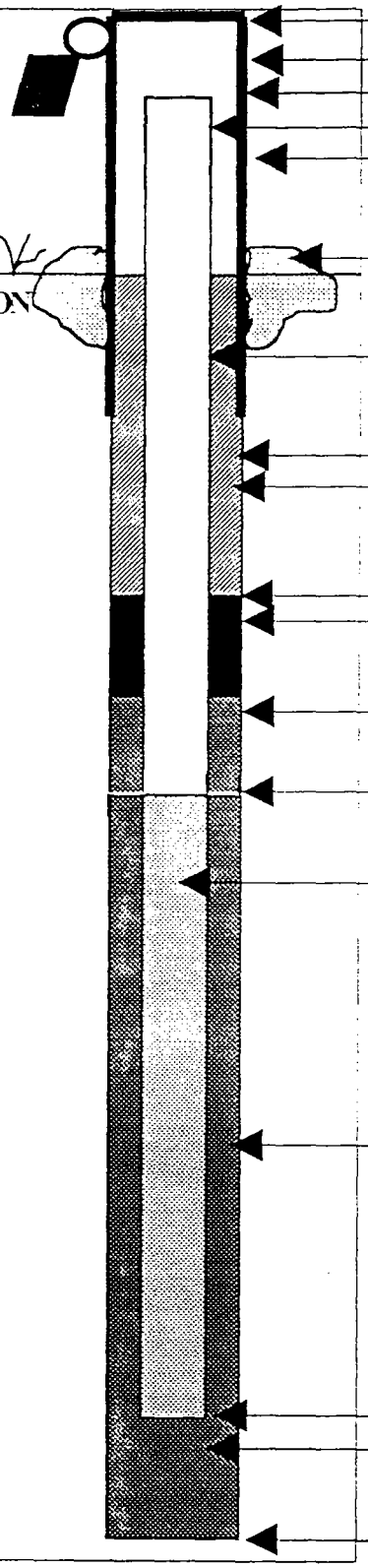
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 127.2

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-325 | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/9/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 118

TYPE OS SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 13

ELEVATION / DEPTH TOP OF SCREEN: 116

TYPE OF SCREEN: Stainless steel

SLOT SIZE X LENGTH: 0.01" X 10.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica sand 20-30

ELEVATION / DEPTHBOTTOM OF SCREEN: 126.1

ELEVATION / DEPTH BOTTOM OF SAND PACK: 126.1

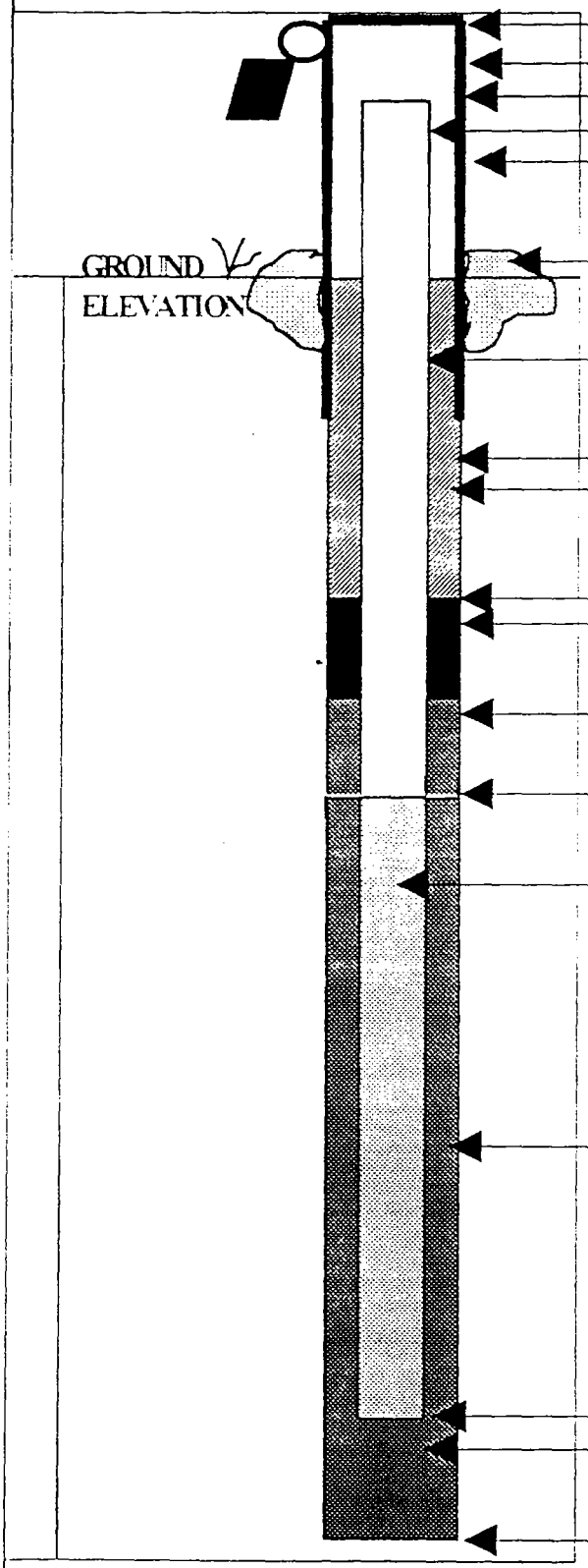
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 126.1

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-32I | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/9/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: | NA |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 172

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 77

ELEVATION . DEPTH TOP OF SCREEN: 179.7

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.01" X 5.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica Sand 20-30

ELEVATION / DEPTHBOTTOM OF SCREEN: 184.8

ELEVATION / DEPTH BOTTOM OF SAND PACK: 185

TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand

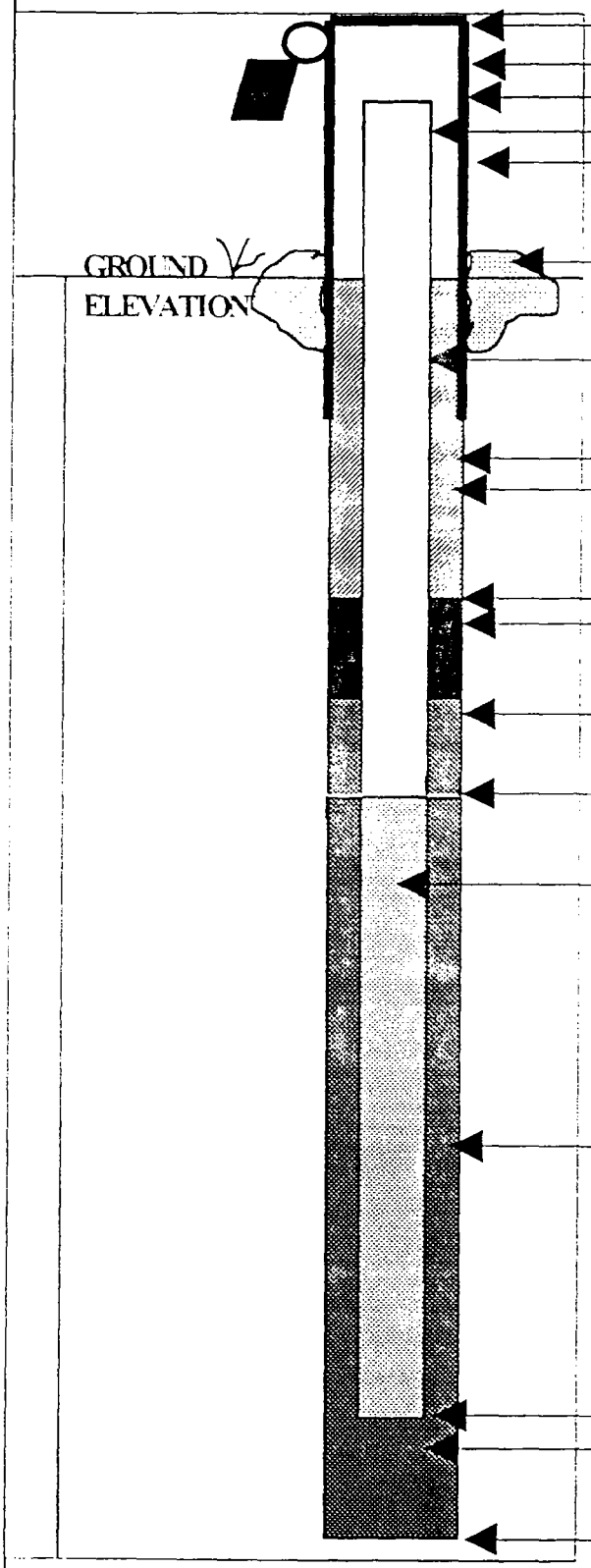
ELEVATION / DEPTH OF HOLE: 185

15

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-32D | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/8/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 115

TYPE OS SEAL: Bentonite chips

DEPTH TOP OF SAND PACK: 118

ELEVATION / DEPTH TOP OF SCREEN: 121.2

TYPE OF SCREEN: Stainless steel

SLOT SIZE X LENGTH: 0.01" X 5.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica sand 20-30

ELEVATION / DEPTHBOTTOM OF SCREEN: 126.2

ELEVATION / DEPTH BOTTOM OF SAND PACK: 126.2

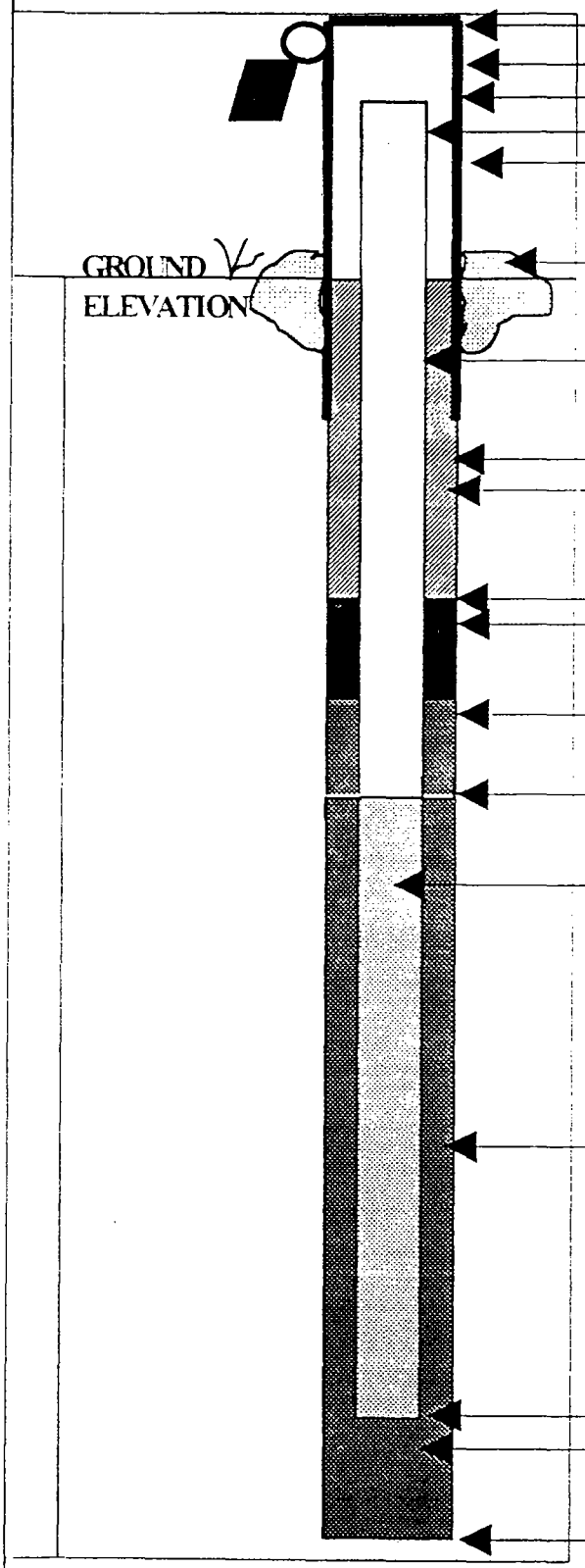
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 126.2

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NIROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-335 | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/2/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 112

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 115

ELEVATION / DEPTH TOP OF SCREEN: 17.0 ~~17.0~~

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.01" X 10.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica Sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 127.1

ELEVATION / DEPTH BOTTOM OF SAND PACK: 127.1

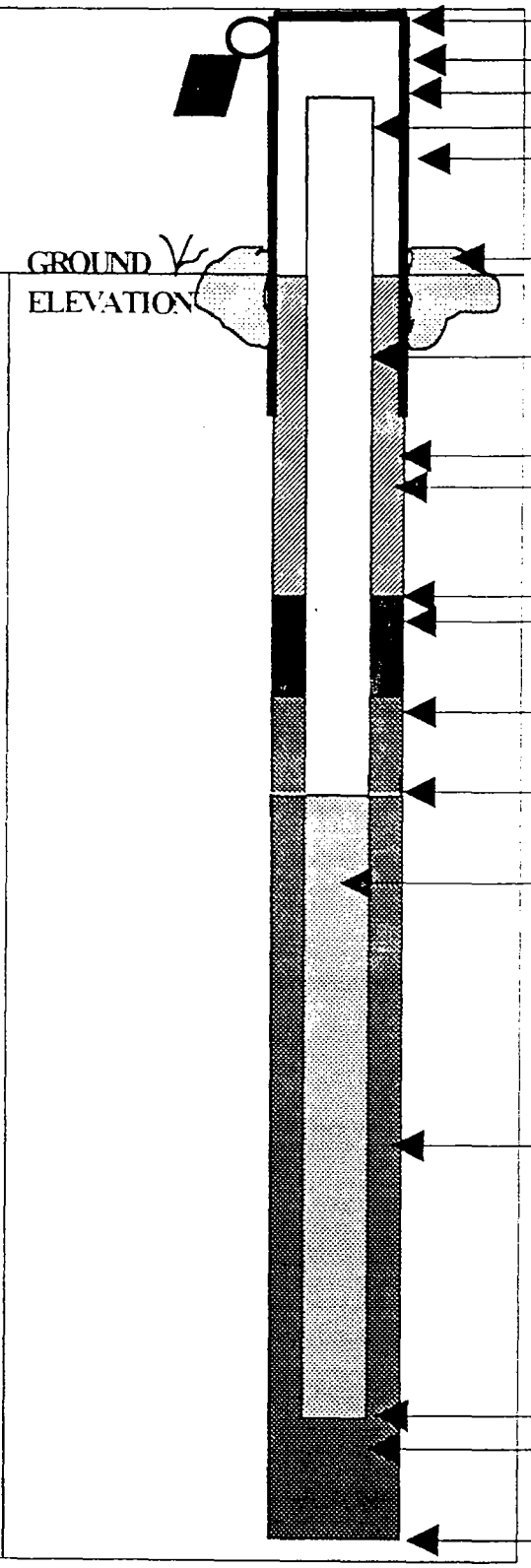
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 127.1

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | NI ROP Fridley | DRILLER | Roy Buckenberger |
| PROJECT NO. | 6966 | BORING | MS-33I | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 12/1/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | Bryn Howze | | | DEVELOPMENT: NA | |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 164

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 67.5

ELEVATION / DEPTH TOP OF SCREEN: 170.8

TYPE OF SCREEN: stainless steel

SLOT SIZE X LENGTH: 0.01" x 5.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: Silica Sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 175.9

ELEVATION / DEPTH BOTTOM OF SAND PACK: 175.9

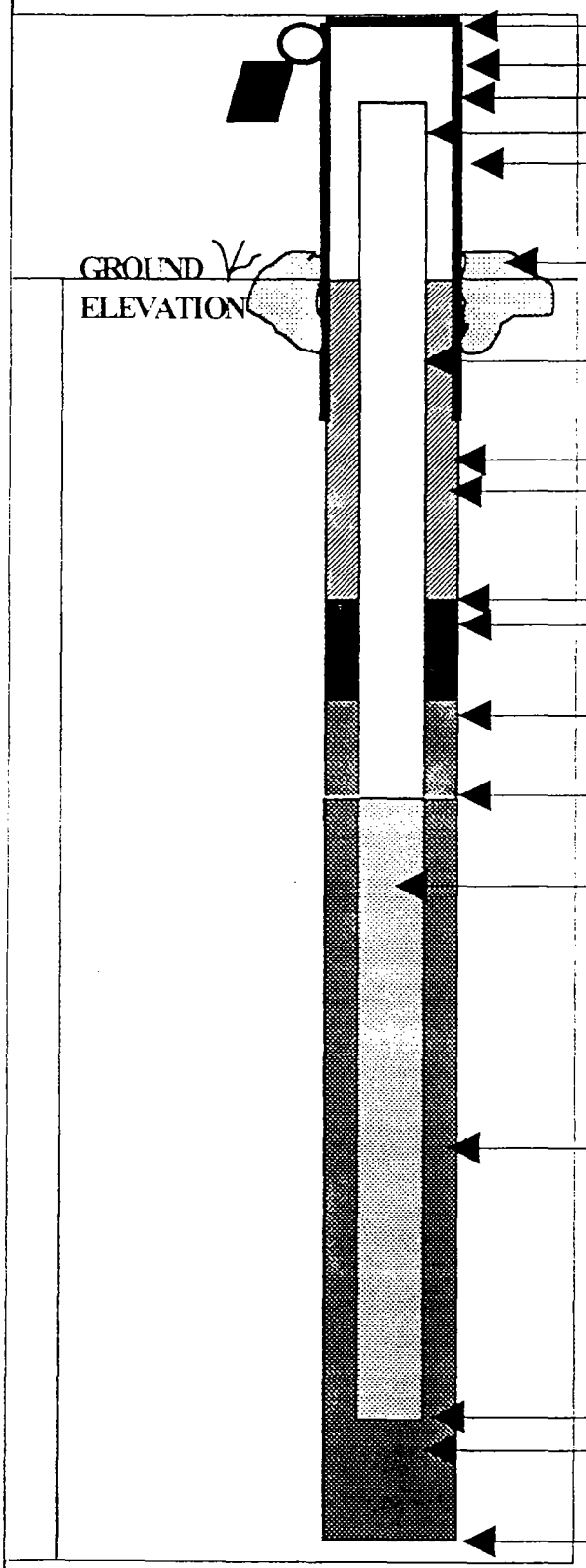
TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 175.9

BORING NO.: _____

# OVERBURDEN MONITORING WELL SHEET

| | | | | | |
|---|---|---|---|---|---|
| PROJECT | NIROP Fridley | LOCATION: | Fridley, MN | DRILLER | Roy Backenberger |
| PROJECT NO. | 6966 | BORING | MS-330 | METHOD: | ~~DPT~~ |
| ELEVATION | | DATE | 11/19/97 | DRILLING | Rotosonic |
| FIELD GEOLOGIST | B. Howze | | | DEVELOPMENT: | NA |




ELEVATION OF TOP OF SURFACE CASING: NA

ELEVATION OF TOP OF RISER PIPE:

STICK-UP TOP OF SURFACE CASING: NA

STICK-UP RISER PIPE:

I.D. OF SURFACE CASING: NA

TYPE OF SURFACE CASING: NA

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Carbon Steel

BOREHOLE DIAMETER: 6"

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH OF SEAL: 1108

TYPE OS SEAL: Bentonite Chips

DEPTH TOP OF SAND PACK: 112

ELEVATION / DEPTH TOP OF SCREEN: 1115.2

TYPE OF SCREEN: Stainless Steel

SLOT SIZE X LENGTH: 0.010" X 5.1'

I.D. OF SCREEN: 2"

TYPE OF SAND PACK: 20-30 Silica Sand

ELEVATION / DEPTHBOTTOM OF SCREEN: 1120.3

ELEVATION / DEPTH BOTTOM OF SAND PACK: 1123

TYPE OF BACKFILL BELOW OBSERVATION WELL: Sand

ELEVATION / DEPTH OF HOLE: 1123

# APPENDIX B.4

# CERTIFICATES OF CONFORMANCE - PHASE I

# CERTIFICATE OF CONFORMANCE

Well Designation: Contiguous area of NIROP-Fridley
Site Name: NIROP - Fridley
Date Installed: 07-08-97 to
Project Name: RI/FS for NIROP - Fridley

Site Geologist: John G Webster II
Drilling Company: TEG
Driller: Andy High
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | STRATAPROBE 1.5" PIPE (STEEL) | | |
| Well Screen | " " (.025 SLOT) | | |
| End Cap | STRATAPROBE 2" PUNCH (STEEL) | | |
| Drilling Fluid | N/A | | |
| Drilling Fluid Additives | N/A | | |
| Backfill Material | Portland Type I cement grout/High Viscosity Bentonite/Silica | | Yes 08-12-97 |
| Annular Filter Pack | N/A | | |
| Bentonite Seal | N/A | | |
| Annular Grout | N/A | | |
| Surface Cement | N/A | | |
| Protective Casing | N/A | | |
| Paint | N/A | | |
| Rod Lubricant | N/A | | |
| Compressor Oil | N/A | | |
| | | | |
| | | | |

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: John G Webster

# APPENDIX B.4

# CERTIFICATES OF CONFORMANCE - PHASE II

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-285
Site Name: NIROP Fridley
Date Installed: 12/4/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon Steel, 2" diameter | Sawhill USA / Goodin | |
| Well Screen | 10' Stainless Steel, 10 slot, 2" diam. | Johnson Screen | |
| End Cap | 2" Watertight Cap (678 XA-2") | Morrison Bros. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand 20-30 | Badger Mining Corporation | |
| Bentonite Seal | Enviroplug Medium chips | WYO-BEN, Inc. / Goodin | |
| Annular Grout | Enviroplug Bentonite grout | WYO-BEN, Inc. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
| | | | |
| | | | |

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-28I
Site Name: NIROP Fridley
Date Installed: 12/4/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon Steel, 2" diameter | Sawhill USA / Goodin | |
| Well Screen | 5' Stainless Steel, 10 slot, 2" diam. | Johnson Screen | |
| End Cap | 2" Watertight Cap (678 X A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand 20-30 | Badger Mining Corporation | |
| Bentonite Seal | Enviroplug Medium Chips | WYO-BEN, Inc. / Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, Inc. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
| | | | |
| | | | |

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-28D
Site Name: NIROP Fridley
Date Installed: 12/3/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon Steel, 2" diameter | Sawhill USA / Goodin | |
| Well Screen | 5' Stainless Steel, 10 Slot, 2" diam. | Johnson Screen | |
| End Cap | 2" Watertight Cap (678 X A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand 20-30 | Badger Mining Corp. | |
| Bentonite Seal | Enviroplug Medium Chips | WYO-BEN, INC. / Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, INC. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
| | | | |
| | | | |

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-295
Site Name: NIROP Fridley
Date Installed: 12/7/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Bart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon Steel, 2" diameter | Sawhill USA / Goodin | |
| Well Screen | 10' Stainless Steel, 10 slot, 2" diam. | Johnson Screen | |
| End Cap | 2" Watertight Cap (678 X A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand 20-30 | Badger Mining Corp. | |
| Bentonite Seal | Enviroplug Medium Chips | WYO-BEN, INC. / Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, INC. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
| | | | |
| | | | |

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-29I
Site Name: NI ROP Fridley
Date Installed: 12/7/97
Project Name: NI ROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon Steel, 2" diameter | Sawhill USA /Goodin | |
| Well Screen | 5' Stainless Steel, 10 Slot, 2" diam. | Johnson Screen | |
| End Cap | 2" Watertight Cap (678X A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NI ROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand 20-30 | Badger Mining Corp. | |
| Bentonite Seal | Enviroplug Medium Chips | WYO-BEN, INC. /Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, INC /Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-29D
Site Name: NIROP Fridley
Date Installed: 12/6/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon steel, 2" diameter | Sawhill USA / Goodin | |
| Well Screen | 5' Stainless steel, 10 slot, 2" diam | Johnson Screen | |
| End Cap | 2" Watertight Cap (678 XA-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand 20-30 | Badger Mining Corp. | |
| Bentonite Seal | Enviroplug Medium Chips | WYO-BEN, INC. / Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, INC. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-305
Site Name: NIROP Fridley
Date Installed: 10/26/97
Project Name: Fridley

Site Geologist: Bryn Houze
Drilling Company: Boart + Longyear
Driller: Bill Zamow
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| **Well Casing** | 2" Carbon Steel | Sawhill USA | no |
| **Well Screen** | 2" Stainless Steel | Johnson Screen | no |
| **End Cap** | 2" Watertight Cap (678XA-2") | Morrison Bros. Co. | no |
| **Drilling Fluid** | Water | City of Ramsey, plant water | yes |
| **Drilling Fluid Additives** | | | |
| **Backfill Material** | | | |
| **Annular Filter Pack** | Sand | Badger Mining Corporation | yes |
| **Bentonite Seal** | Holeplug bentonite chips | Baroid Drilling Fluids, Inc. | yes |
| **Annular Grout** | Enviroplug bentonite grout | WYO-BEN, Inc. | yes |
| **Surface Cement** | Concrete | Model Stone | no |
| **Protective Casing** | | | |
| **Paint** | | | |
| **Rod Lubricant** | Well Guard | Jet Lube, Inc. | yes |
| **Compressor Oil** | | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Houze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-30I
Site Name: NI ROP Fridley
Date Installed: 10/25/97
Project Name: Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart + Longyear
Driller: Bill Zamow
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | 2" Carbon Steel | Sawhill USA | no |
| Well Screen | 2" Stainless Steel | Johnson Screen | no |
| End Cap | 2" Watertight Cap (678XA-2") | Morrison Bros. Co. | no |
| Drilling Fluid | Water | City of Ramsey, MN | yes |
| Drilling Fluid Additives | | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand | Badger Mining Corporation | yes |
| Bentonite Seal | Holeplug bentonite chips | Baroid Drilling Fluids, Inc. | yes |
| Annular Grout | Enviroplug bentonite grout | WYO-BEN, Inc. | yes |
| Surface Cement | Concrete | Model Stone. | no |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc | yes |
| Compressor Oil | | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS - 30 D
Site Name: NI ROP Fridley
Date Installed: 10/24/97
Project Name: Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart + Longyear
Driller: Bill Zamow
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | 2" Carbon steel | Sawhill USA | no |
| Well Screen | 2" Stainless Steel | Johnson Screen | no |
| End Cap | 2" Watertight Cap (678XA - 2") | Morrison Bros Co. | no |
| Drilling Fluid | Water | City of Ramsey, MN | yes |
| Drilling Fluid Additives | | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand | Badger Mining Corporation | yes |
| Bentonite Seal | Holeplug bentonite chips | Baroid Drilling Fluids, Inc. | yes |
| Annular Grout | Enviro plug bentonite grout | WYO - BEN, Inc. | yes |
| Surface Cement | Concrete | Model Stone. | no |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | yes |
| Compressor Oil | | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-315
Site Name: NIROP Fridley
Date Installed: 11/16/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | 2" Carbon Steel | Sawhill USA / Goodin | |
| Well Screen | 10' Stainless Steel, 10 slot, 2" diameter | Johnson Screen Wheelabrator Eng Systems | |
| End Cap | 2" Watertight Cap (678XA-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand | Badger Mining Corporation | |
| Bentonite Seal | Hole plug Bentonite chips | Baroid Drilling Fluids, Inc. / Goodin | |
| Annular Grout | Envirо plug Bentonite Grout | WYO-BEN, INC. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | NA | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-31I
Site Name: NIROP Fridley
Date Installed: 11/15/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | 2" carbon steel | Sawhill USA / Goodin | |
| Well Screen | 5' stainless steel, 10 slot, 2" diameter | Johnson Screen Wheelabrator Eng Systems | |
| End Cap | 2" Watertight cap (678 XA - 2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand | Badger Mining Corporation | |
| Bentonite Seal | Holeplug Bentonite chips | Baroid Drilling Fluids, Inc. / Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, Inc. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | NA | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-31D
Site Name: NIROP Fridley
Date Installed: 11/15/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | carbon steel, 2" diameter | Sawhill USA / Goodin | yes |
| Well Screen | 5' stainless steel, 10 slot, 2" diameter | Johnson Screen Wheelabrator Eng Systems | |
| End Cap | 2" Watertight Cap (678 x A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Plant water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | 20-30 sand | Badger Mining Corporation | |
| Annular Filter Pack | 20-30 sand | Badger Mining Corporation | |
| Bentonite Seal | Hole plug Bentonite chips | Baroid Drilling Fluids, Inc. / Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, INC. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | NA | | |
| Rod Lubricant | Well Guard | Jet Lub, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-325
Site Name: NIROP Fridley
Date Installed: 12/9/97
Project Name: NIROP Fridley

Site Geologist: B. Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | 2" diameter Carbon Steel | Sawhill USA | |
| Well Screen | 10' stainless steel 2" diam. | Johnson Screen | |
| End Cap | 2" Watertight Cap (678 X A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand, silica 20-30 | Badger Mining Corp. | |
| Bentonite Seal | Enviroplug Medium Bentonite chips | WYO-BEN, Inc. | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, Inc. | |
| Surface Cement | | | |
| Protective Casing | NA | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryan Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-32I
Site Name: NIROP Fridley
Date Installed: 12/9/97
Project Name: NIROP Fridley

Site Geologist: B. Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | 2" diameter carbon steel | Sawhill USA | |
| Well Screen | 5' screen-stainless steel 2" diam. | Johnson Screen | |
| End Cap | 2" watertight cap (678 XA-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Silica Sand 20-30 | Badger Mining Corp. | |
| Bentonite Seal | Enviroplug Medium Bentonite Chips | WYO-BEN, Inc. | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, Inc. | |
| Surface Cement | | | |
| Protective Casing | NA | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: By Howze

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-32D
Site Name: NI ROP Fridley
Date Installed: 12/8/97
Project Name: NIROP Fridley

Site Geologist: B. Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | 2" diameter carbon steel | Sawhill USA | |
| Well Screen | 5' Stainless steel - 2" diam. | Johnson screen | |
| End Cap | 2" Watertight cap C678 XA-2" | Morrison Bros. Co. | |
| Drilling Fluid | water | NI ROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand, Silica 20-30 | Badger Mining Corp. | |
| Bentonite Seal | Enviroplug Medium Bentonite chips | WYO-BEN, Inc. | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, Inc. | |
| Surface Cement | | | |
| Protective Casing | NA | | |
| Paint | | | |
| Rod Lubricant | Wall Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryan Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-335
Site Name: NIROP Fridley
Date Installed: 12/2/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon Steel, 2" diameter | Sawhill USA / Goodin | |
| Well Screen | 10' Stainless steel, 10 slot, 2" diam. | Johnson screen | |
| End Cap | 2" Watertight Cap (678 X A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand 20-30 | Badger Mining Corporation | |
| Bentonite Seal | Enviroplug Medium Chips | WYO-BEN, INC. / Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, INC. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

Rev. 0
March 27, 1997

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-33I
Site Name: NIROP Fridley
Date Installed: 12/1/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon steel, 2" diameter | Sawhill USA / Goodin | |
| Well Screen | 5' Stainless steel, 10 slot, 2" diam. | Johnson Screen Wheelabrator Eng. Systems | |
| End Cap | 2" Watertight cap (678 X A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | | | |
| Annular Filter Pack | Sand 20-30 | Badger Mining Corporation | |
| Bentonite Seal | Enviroplug Medium Chips | WYO-BEN, INC. / Goodin | |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, INC. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | NA | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

# CERTIFICATE OF CONFORMANCE

Well Designation: MS-33D
Site Name: NIROP Fridley
Date Installed: 11/19/97
Project Name: NIROP Fridley

Site Geologist: Bryn Howze
Drilling Company: Boart Longyear
Driller: Roy Buckenberger
Project Number: 6966

| Material | Brand/Description | Source/Supplier | Sample Collected ? |
|---|---|---|---|
| Well Casing | Carbon Steel, 2" diameter | Sawhill USA / Goodin | |
| Well Screen | 5' Stainless steel, 10 Slot, 2" diam | Johnson Screen Wheelabrator Eng. Systems | |
| End Cap | 2" Watertight Cap (678 X A-2") | Morrison Bros. Co. | |
| Drilling Fluid | Water | NIROP Fridley | |
| Drilling Fluid Additives | NA | | |
| Backfill Material | 20-30 Sand | Badger Mining Corporation | |
| Annular Filter Pack | 20-30 Sand | Badger Mining Corporation | |
| Bentonite Seal | ~~Hole plug~~ Enviroplug Medium Chips | WYO-BEN, Inc. / Goodin | Yes |
| Annular Grout | Enviroplug Bentonite Grout | WYO-BEN, Inc. / Goodin | |
| Surface Cement | | | |
| Protective Casing | | | |
| Paint | NA | | |
| Rod Lubricant | Well Guard | Jet Lube, Inc. | |
| Compressor Oil | NA | | |
| | | | |
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To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Bryn Howze

# APPENDIX B.5

# MDH WELL AND BORING RECORDS - PHASE I

# TEG ACTIVITY SUMMARY - NIROP SITE, FRIDLEY, MN

| LOCATION | 8-Jul | 9-Jul | 10-Jul | 11-Jul | 12-Jul | 13-Jul | 14-Jul | 15-Jul | OFF | 21-Jul | 22-Jul | 23-Jul | 24-Jul | 25-Jul | 26-Jul | 27-Jul | 28-Jul | 29-Jul | OFF | 4-Aug | 5-Aug | 6-Aug | 7-Aug | 8-Aug | 9-Aug | 10-Aug | 11-Aug | 12-Aug | OFF | 18-Aug | 19-Aug |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AOC 6 | 28 | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P07 | | | 28 | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P03 | | | | | 48 | 12 | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 3 | | | | | | 32 | 4 | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 13/14 | | | | | | | 36 | 8 | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 8/9 | | | | | | | | | | 44 | 16 | | | | | | | | | | | | | | | | | | | | |
| AOC 4 | | | | | | | | | | | 36 | | | | | | | | | | | | | | | | | | | | |
| AOC 38 | | | | | | | | | | | | 56 | | | | | | | | | | | | | | | | | | | |
| AOC 73 | | | | | | | | | | | | | 60 | | | | | | | | | | | | | | | | | | |
| AOC 17 | | | | | | | | | | | | | | 48 | | | | | | | | | | | | | | | | | |
| AOC 16 | | | | | | | | | | | | | | | 42 | | | | | | | | | | | | | | | | |
| AOC 18 | | | | | | | | | | | | | | | 32 | 28 | | | | | | | | | | | | | | | |
| AOC 74 | | | | | | | | | | | | | | | | 44 | | | | | | | | | | | | | | | |
| AOC 35 | | | | | | | | | | | | | | | | | 50 | | | | | | | | | | | | | | |
| AOC 34 | | | | | | | | | | | | | | | | | | 20 | | | | | | | | | | | | | |
| AOC 54 | | | | | | | | | | | | | | | | | | | | 60 | | | | | | | | | | | |
| AOC 63 | | | | | | | | | | | | | | | | | | | | | 48 | 4 | | | | | | | | | |
| AOC 37 | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | | | | | |
| P06 | | | | | | | | | | | | | | | | | | | | | | | 32 | | | | | | | | |
| P01 | | | | | | | | | | | | | | | | | | | | | | | 16 | 24 | | | | | | | |
| AOC 23 | | | | | | | | | | | | | | | | | | | | | | | | | 60 | | | | | | |
| (AOC 33) | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | |
| P12 | | | | | | | | | | | | | | | | | | | | | | | | | | 36 | 12 | | | | |
| AOC 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 28 | | | |
| (AOC 32) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | |
| P02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 32 | 28 |
| AOC 58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36 |
| AOC 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 32A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (AOC 29A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 29B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 71 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 68 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AOC 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTALS | 28 | 28 | 28 | 28 | 48 | 44 | 40 | 8 | | 44 | 52 | 56 | 60 | 48 | 74 | 72 | 50 | 20 | | 60 | 48 | 52 | 48 | 24 | 60 | 40 | 12 | 28 | | 38 | 64 |
| **WELLS SET** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | AOC-6 | | P07 | | P03 | AOC-3 | A13/14 | | | AOC8/9 | AOC-4 | AOC38 | AOC73 | AOC17 | AOC16 | AOC74 | AOC35 | AOC34 | | AOC54 | AOC63 | AOC37 | P06 | P01 | AOC23 | P12 | | AOC36 | | P02 | AOC58 |
| | | | | | | | | | | | | | | | AOC18 | | | | | | | | | | | | | | | | |
| TOTALS | 1 | | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | 1 | 1 |
| **ORING** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | A13/14 | P07 | P03 | AOC-3 | | | | AOC8/9 | | AOC-4 | AOC16 | | | | | | AOC35 | | | AOC54 | AOC63 | | AOC36 | | | | | AOC36 | | AOC32 | AOC58 |
| | AOC-6 | | | | | | | | | AOC38 | AOC74 | | | | | | AOC34 | | | | AOC37 | AOC55 | | | | | | | | P02 | P07 |
| | | | | | | | | | | AOC73 | AOC17 | | | | | | | | | | AOC33 | P12 | | | | | | | | | |
| | | | | | | | | | | | AOC18 | | | | | | | | | | P06 | P01 | | | | | | | | | |
| TOTALS | 2 | 1 | 1 | 1 | | | | 1 | | 3 | 4 | | | | | | 2 | | | 1 | 4 | 3 | 1 | | | | | 1 | | 2 | 2 |
| **ABANDONMENT** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | AOC-6 | | P03 | AOC-3 | | | | AOC8/9 | AOC38 | AOC17 | AOC16 | AOC18 | AOC35 | AOC34 | | | AOC54 | AOC63 | P06 | P01 | AOC23 | AOC37 | | AOC36 | | | AOC32 |
| | | | | | P07 | | | A13/14 | | | | AOC-4 | | AOC73 | | AOC74 | | | | | | AOC33 | | | | | | | | | |
| TOTALS | | | | | 2 | | 1 | 2 | | | | 2 | 1 | 2 | 1 | 2 | 1 | 1 | | | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | | | 1 |
| **BARRELS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | | | 15 | | | | | | | | | | | | | | | | | | | | | | | | | |
| **STANDBY TIME** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | |

( ) = Boring location abandoned after encountering a concrete slab below grade
* First 4 foot interval in triplicate per p.m. plus 1 foot
** First 4-foot interval sampled 4 x per p.m.

# TEG ACTIVITY SUMMARY - NIROP SITE, FRIDLEY, MN

| LOCATION | 20-Aug | 21-Aug | 22-Aug | 23-Aug | 24-Aug | 25-Aug | 26-Aug | OFF | 2-Sep | 3-Sep | 4-Sep | 5-Sep | 6-Sep | 7-Sep | 8-Sep | 9-Sep | OFF | 15-Sep | 16-Sep | 17-Sep | 18-Sep | 19-Sep | 20-Sep | 21-Sep | 22-Sep | 23-Sep | 24-Sep | 25-Sep | OFF | FT. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AOC 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 56 | |
| P07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 56 | |
| P03 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36 | |
| AOC 13/14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 | |
| AOC 8/9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 36 | |
| AOC 38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 56 | |
| AOC 73 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 48 | |
| AOC 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 42 | |
| AOC 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 74 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 | |
| AOC 35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 50 | |
| AOC 34 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20 | |
| AOC 54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 63 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 52 | |
| AOC 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 48 | |
| P06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 32 | |
| P01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 40 | |
| AOC 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| (AOC 33) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | |
| P12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 48 | |
| AOC 36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 28 | |
| (AOC 32) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 6 | |
| P02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 58 | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 64 | |
| AOC 7 | | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 27 | | | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | |
| AOC 30 | | | | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | 16 | |
| P09 | | | | 36 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | 40 | |
| AOC 55 | | | | | 40 | 20 | | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 32A | | | | | | 32 | 28 | | | | | | | | | | | | | | | | | | | | | | | 60 | |
| P08 | | | | | | | | | 32 | 28 | | | | | | | | | | | | | | | | | | | | 60 | |
| AOC 70 | | | | | | | | | | 16 | 44 | | | | | | | | | | | | | | | | | | | 60 | |
| P10 | | | | | | | | | | | | 46 | | | | | | | | | | | | | | | | | | 46 | |
| P04 | | | | | | | | | | | | | 32 | 12 | | | | | | | | | | | | | | | | 44 | |
| AOC 33 | | | | | | | | | | | | | | 12 | 4 | | | | | | | | | | | | | | | 16 | |
| P11 | | | | | | | | | | | | | | | 28 | 20 | | | | | | | | | | | | | | 48 | |
| (AOC 29A) | | | | | | | | | | | | | | | | | | 13* | | | | | | | | | | | | 13 | |
| AOC 29B | | | | | | | | | | | | | | | | | | 10 | | | | | | | | | | | | 10 | |
| AOC 28 | | | | | | | | | | | | | | | | | | | 40** | | | | | | | | | | | 40 | |
| P05 | | | | | | | | | | | | | | | | | | | | 20 | | | | | | | | | | 20 | |
| AOC 71 | | | | | | | | | | | | | | | | | | | | | 40 | | | | | | | | | 40 | |
| AOC 46 | | | | | | | | | | | | | | | | | | | | | | 20 | | | | | | | | 20 | |
| AOC 26 | | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | | | 48 | |
| AOC 68 | | | | | | | | | | | | | | | | | | | | | | | | 48 | | | | | | 48 | |
| AOC 15 | | | | | | | | | | | | | | | | | | | | | | | | | 28 | | | | | 28 | |
| AOC 47 | | | | | | | | | | | | | | | | | | | | | | | | | | 52 | 4 | | | 56 | |
| AOC 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | 48 | | | 48 | |
| AOC 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 | | 44 | |
| TOTALS | 28 | 60 | 24 | 52 | 44 | 52 | 28 | | 32 | 44 | 44 | 46 | 32 | 24 | 32 | 20 | | 23 | 40 | 20 | 40 | 20 | 48 | 48 | 28 | 52 | 52 | 44 | | 2179 | TOTAL FEET |
| | P07 | AOC27 | AOC30 | P09 | AOC55 | AOC32A | | | P08 | | AOC-70 | P10 | P04 | | AOC-33 | | | AOC29B | AOC-28 | P05 | AOC-71 | AOC-46 | AOC-26 | AOC-68 | AOC-15 | AOC-47 | AOC-50 | AOC-39 | | | |
| | | | | | | | | | | | | | | | P11 | | | | | | | | | | | | | | | | TEMPORARY |
| | 1 | 1 | 1 | 1 | 1 | 1 | | | 1 | | 1 | 1 | 1 | | 2 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 48 | WELLS SET |
| | AOC27 | AOC30 | AOC55-2 | AOC32A | | | | | P08 | | | AOC-33 | P04 | | | | | AOC29A | AOC-28 | P05 | AOC-71 | AOC-46 | AOC-26 | AOC-68 | AOC-15 | AOC-47 | AOC-50 | AOC-39 | | | |
| | P09 | AOC55 | AOC55-3 | | | | | | P10 | | | | | | | | | AOC29B | | | | | | | | | | | | | |
| | | | | | | | | | AOC70 | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | P11 | | | | | | | | | | | | | | | | | | | | | | CEMENT |
| | 2 | 2 | 2 | 1 | | | | | 4 | | | 1 | 1 | | | | | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 54 | CORES |
| | P02 | P07 | AOC27 | | AOC30 | AOC55 | AOC32A | | | P08 | AOC70 | P10 | | P04 | AOC33 | P11 | | AOC29A | AOC-28 | P05 | AOC-71 | AOC-46 | AOC-26 | AOC68 | AOC-15 | | AOC-47 | AOC-39 | | | |
| | AOC58 | | | | P09 | | | | | | | | | | | | | AOC29B | | | | | | | | | AOC-50 | | | | ABANDONMENT OF |
| | 2 | 1 | 1 | | 2 | 1 | 1 | | | 1 | 1 | 1 | | 1 | 1 | 1 | | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 2 | 1 | | 50 | SOIL BORINGS |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20 | BARRELS |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | HOURS |

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING SEALING RECORD

*Minnesota Statutes, Chapter 103I*

Minnesota Well and Boring Sealing No. **H 69148**

Minnesota Unique No or W-series No (Leave blank if not known)

**WELL OR BORING LOCATION**

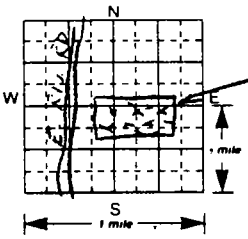
County Name: Anoka

| Township Name | Township No | Range No | Section No | Fraction (sm - lg) |
|---|---|---|---|---|
| Columbia Heights | 30 | 24 | 27 | NW¼ NW¼ SE¼ |

Numerical Street Address or Fire Number and City of Well or Boring Location: 4800 East River Road

Show exact location of well or boring in section grid with "X"

Sketch map of well or boring location, showing property lines, roads, and buildings




inside building

**PROPERTY OWNER'S NAME**

NIROP Fridley

Mailing Address if different than property address indicated above

Same

| GEOLOGICAL MATERIAL | COLOR | HARDNESS OF FORMATION | FROM | TO |
|---|---|---|---|---|
| If not known, indicate estimated formation log from nearby well or boring | | | | |
| Coarse Sand & gravel | brown | soft | 0 | 30' |
| Fine/Coarse Sand | brown | soft | 30 | 60' |

**REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING**

Direct push borings with temporary groundwater sampling tubes. Each was grouted after sample was collected. Cave in depth of 16 feet.

→ 5 borings sealed, #6, P07, P03, #3, #13/14.

H

Date Sealed: 7/9 - 7/15, 1997

Approximate Date Well or Boring Constructed: Same

Depth Before Sealing: 25 ft

Original Depth: 60 ft.

Static Water Level: ☐ Accurate ☒ Approximate

16 ft X below ____ above land surface

☒ Single Aquifer ☐ Multiaquifer

**CASING TYPE**

☐ Steel ☐ Plastic ☐ Tile ☒ Other Slotted drill rod

Screen from 20 to 25 ft Open Hole from 25 to 60 ft

**OBSTRUCTION/DEBRIS/FILL**

☐ Obstruction ☐ Debris ☐ Fill N A

Type of debris/obstruction ____

Obstruction/Debris/Fill removed? ☐ Yes ☐ No

**PUMP**

☐ Removed ☒ Not Present ☐ Other ____

**CASING**

| Diameter | Depth | Set in oversize hole? | Annular space initially grouted? |
|---|---|---|---|
| 1 in. | from 0 to 25 ft. | ☒ Yes ☐ No | ☐ Yes ☒ No ☐ Unknown |
| ____ in. | from ____ to ____ ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| ____ in. | from ____ to ____ ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |

**METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE:**

☒ No Annular Space Exists

☐ Annular space grouted with tremie pipe

☐ Casing Perforation/Removal

____ in. from N.A. to ____ ft. ☐ Perforated ☒ Removed

____ in. from ____ to ____ ft ☐ Perforated ☐ Removed

Type of perforator ____

☐ Other ____

**GROUTING MATERIAL**

Grouting material Neat Cement from 0 to 16 ft. .04 yards 1 bag

____ from ____ to ____ ft ____ yards ____ bag

____ from ____ to ____ ft. ____ yards ____ bag

____ from ____ to ____ ft. ____ yards ____ bag

**UNSEALED WELLS AND BORINGS**

Other unsealed well or boring on property? ☐ Yes ☒ No

**LICENSED OR REGISTERED CONTRACTOR CERTIFICATION**

This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Development Engineering — Contractor Business Name

MO 126 — License or Registration No

[signature] — Authorized Representative Signature

7/16/97 — Date

Ken Wiecks Dan Naughton — Name of Person Sealing Well or Boring

HE-01434-01

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING SEALING RECORD

*Minnesota Statutes, Chapter 103I*

Minnesota Well and Boring Sealing No.
Minnesota Unique No. or W-series No.
(Leave blank if not known)

H 116251

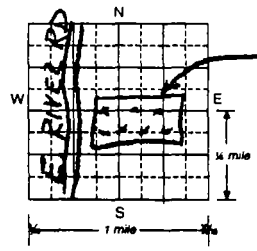
**WELL OR BORING LOCATION**

County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction (sm. → lg.) |
|---|---|---|---|---|
| Columbia Heights | 30 | 24 | 27 | NW¼NW¼SE¼ |

Numerical Street Address or Fire Number and City of Well or Boring Location: 4800 East River Road

Show exact location of well or boring in section grid with "X". Sketch map of well or boring location, showing property lines, roads, and buildings.




Borings inside building

PROPERTY OWNER'S NAME: Nikol Fridley

Property owner's mailing address if different than well location address indicated above.: Same

WELL OWNER'S NAME: —

Well owner's mailing address if different than property owner's address indicated above.: —

Date Sealed: 7/21-7/29, 1997

Date Well or Boring Constructed: Same

Depth Before Sealing: 16-18 ft. Original Depth: 60 ft.

**AQUIFER(S)** ☒ Single Aquifer ☐ Multiaquifer

**WELL/BORING** ☐ Water Supply Well ☐ Monit. Well ☒ Env. Bore Hole ☐ Other

**STATIC WATER LEVEL** ☒ Measured ☐ Estimated 16 ft. ☒ below ☐ above land surface

**CASING TYPE(S)** ☐ Steel ☐ Plastic ☐ Tile ☒ Other Slotted sampling tool

**CASING** NA

| Diameter | Depth | Set in oversize hole? | Annualar space initially grouted? |
|---|---|---|---|
| in. | from to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| in. | from to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| in. | from to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |

**SCREEN/OPEN HOLE** NA

Screen from to ft. Open Hole from to ft.

**OBSTRUCTION/DEBRIS/FILL** ☐ Obstruction ☐ Debris ☐ Fill ☒ No Obstruction

Type of Obstruction/Debris/Fill

Obstruction/Debris/Fill removed? ☐ Yes ☐ No

**PUMP** NA

Type

☐ Removed ☐ Not Present ☐ Other

**METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE:**

☒ No Annular Space Exits
☐ Annular space grouted with tremie pipe
☐ Casing Perforation/Removal

in. from to ft. ☐ Perforated ☐ Removed

in. from to ft. ☐ Perforated ☐ Removed

Type of perforator

☐ Other

**GROUTING MATERIAL(S)**

Grouting Material Neat Cement from 0 to 18 ft. .04 yards 1 bags EA

from to ft. yards bags

from to ft. yards bags

from to ft. yards bags

| GEOLOGICAL MATERIAL | COLOR | HARDNESS OF FORMATION | FROM | TO |
|---|---|---|---|---|
| If not known, indicate estimated formation log from nearby well or boring. | | | | |
| Coarse sand / gravel | brown | soft | 0 | 30 |
| Fine/Coarse Sand | brown | soft | 30 | 60 |

**REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING**

Direct push borings with groundwater sampling
Borings #s 4, 73, 38, 16, 74
17A, 18, 19, 35, 34

**UNSEALED WELLS AND BORINGS**

Other unsealed well or boring on property? ☐ Yes ☒ No

**LICENSED OR REGISTERED CONTRACTOR CERTIFICATION**

This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Development Engineering — Contractor Business Name
mn 126 — License or Registration No.
Authorized Representative Signature
7/16/97 — Date
Ken Meek Chris Haug — Name of Person Sealing Well or Boring

IMPORTANT-FILE WITH PROPERTY PAPERS/WELL OWNER

H 116251

HE-01434-02 10/95R

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING SEALING RECORD

*Minnesota Statutes, Chapter 103I*

Minnesota Well and Boring Sealing No.
Minnesota Unique No. or W-series No.
(Leave blank if not known)

H 116252

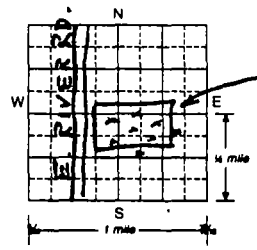
**WELL OR BORING LOCATION**

County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction (sm. → lg.) |
|---|---|---|---|---|
| Columbia Heights | 30 | 24 | 27 | NW¼ NW¼ SE¼ |

Numerical Street Address or Fire Number and City of Well or Boring Location: 4800 East River Road

Show exact location of well or boring in section grid with "X". Sketch map of well or boring location, showing property lines, roads, and buildings.




Borings inside & adjacent to building.

PROPERTY OWNER'S NAME: NIROP Fridley

Property owner's mailing address if different than well location address indicated above.: SAME

WELL OWNER'S NAME: SAME

Well owner's mailing address if different than property owner's address indicated above.: ✓

Date Sealed: 8/4 - 8/14, 1997

Date Well or Boring Constructed: SAME

Depth Before Sealing: 16-20 ft.

Original Depth: 30-60 ft.

**AQUIFER(S)**: ☑ Single Aquifer ☐ Multiaquifer

**WELL/BORING**: ☐ Water Supply Well ☐ Monit. Well ☑ Env. Bore Hole ☐ Other

**STATIC WATER LEVEL**: ☐ Measured ☒ Estimated 16 ft. ☑ below ☐ above land surface

**CASING TYPE(S)**: ☐ Steel ☐ Plastic ☐ Tile ☒ Other Slotted sampling tool

**CASING** NA

| Diameter | Depth | Set in oversize hole? | Annualar space initially grouted? |
|---|---|---|---|
| in. | from to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| in. | from to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| in. | from to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |

**SCREEN/OPEN HOLE** NA

Screen from to ft. Open Hole from to ft.

**OBSTRUCTION/DEBRIS/FILL**: ☐ Obstruction ☐ Debris ☐ Fill ☒ No Obstruction

Type of Obstruction/Debris/Fill

Obstruction/Debris/Fill removed? ☐ Yes ☐ No

**PUMP** NA

Type

☐ Removed ☐ Not Present ☐ Other

**METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE:**

☒ No Annular Space Exits
☐ Annular space grouted with tremie pipe
☐ Casing Perforation/Removal

in. from to ft. ☐ Perforated ☐ Removed

in. from to ft. ☐ Perforated ☐ Removed

Type of perforator

☐ Other

**GROUTING MATERIAL(S)**

Grouting Material: Neat Cement from 0 to 20 ft. .04 yards 1 ~~bags~~ EA.

from to ft. yards bags

from to ft. yards bags

from to ft. yards bags

| GEOLOGICAL MATERIAL | COLOR | HARDNESS OF FORMATION | FROM | TO |
|---|---|---|---|---|
| If not known, indicate estimated formation log from nearby well or boring | | | | |
| Coarse Sand & Gravel | brown | soft | 0 | 25 |
| Fine/Coarse Sand | brown | soft | 25 | 40 |
| Clay | gray | soft | 40 | 60' |

**REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING**

Direct push borings with groundwater sampling. Borings are terminated when clay is encountered.

Boring #'s 54, 63, 37, P12, P01, 36, P06, 23, 36A, 33

**UNSEALED WELLS AND BORINGS**

Other unsealed well or boring on property? ☐ Yes ☒ No

**LICENSED OR REGISTERED CONTRACTOR CERTIFICATION**

This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Development Engineering, P.A. — Contractor Business Name
MO 126 — License or Registration No.

Authorized Representative Signature
8/15/97 — Date

Chris Haug, Ken Meek — Name of Person Sealing Well or Boring

MINN. DEPT OF HEALTH COPY H 116252

HE-01434-02 10/95R

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING SEALING RECORD

*Minnesota Statutes, Chapter 103I*

Minnesota Well and Boring Sealing No.
Minnesota Unique No. or W-series No.
(Leave blank if not known)

H 116253

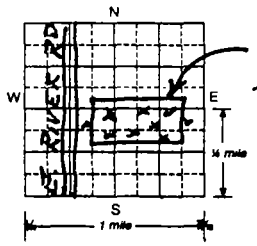
**WELL OR BORING LOCATION**

County Name: ANOKA

| Township Name | Township No. | Range No. | Section No. | Fraction (sm. → lg.) |
|---|---|---|---|---|
| Columbia Heights | 30 | 24 | 27 | NW¼ NW¼ SE¼ |

Numerical Street Address or Fire Number and City of Well or Boring Location: 4800 EAST RIVER ROAD

Show exact location of well or boring in section grid with "X". Sketch map of well or boring location, showing property lines, roads, and buildings.




BORINGS INSIDE & ADJACENT TO BUILDING

PROPERTY OWNER'S NAME: NIROP Fridley

Property owner's mailing address if different than well location address indicated above.: SAME

WELL OWNER'S NAME: SAME

Well owner's mailing address if different than property owner's address indicated above.: ✓

| GEOLOGICAL MATERIAL | COLOR | HARDNESS OF FORMATION | FROM | TO |
|---|---|---|---|---|
| Course Sand & Gravel | brown | soft | 0 | 25 |
| Fine/Course Sand | brown | soft | 25 | 40 |
| Clay | gray | soft | 40 | 60 |

If not known, indicate estimated formation log from nearby well or boring.

**REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING**

Direct push borings with groundwater sampling. Borings are terminated when clay is encountered

Borings: 58, 55, 30, 7, 32, P02, 27, P09

Date Sealed: 8/18 - 8/26, 1997

Date Well or Boring Constructed: SAME

Depth Before Sealing: 16 - 20 ft.

Original Depth: 30 - 60 ft.

**AQUIFER(S)**: ☑ Single Aquifer ☐ Multiaquifer

**WELL/BORING**: ☐ Water Supply Well ☐ Monit. Well ☑ Env. Bore Hole ☐ Other

**STATIC WATER LEVEL**: ☐ Measured ☑ Estimated — 16 ft. ☑ below ☐ above land surface

**CASING TYPE(S)**: ☐ Steel ☐ Plastic ☐ Tile ☑ Other Slotted Sampling Tool

**CASING** NA

| Diameter | Depth | Set in oversize hole? | Annualar space initially grouted? |
|---|---|---|---|
| in. from | to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| in. from | to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| in. from | to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |

**SCREEN/OPEN HOLE** NA

Screen from ____ to ____ ft. Open Hole from ____ to ____ ft.

**OBSTRUCTION/DEBRIS/FILL**: ☐ Obstruction ☐ Debris ☐ Fill ☒ No Obstruction

Type of Obstruction/Debris/Fill: ____

Obstruction/Debris/Fill removed? ☐ Yes ☐ No

**PUMP** NA

Type: ____

☐ Removed ☐ Not Present ☐ Other ____

**METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE:**

☑ No Annular Space Exits

☐ Annular space grouted with tremie pipe

☐ Casing Perforation/Removal

____ in. from ____ to ____ ft. ☐ Perforated ☐ Removed

____ in. from ____ to ____ ft. ☐ Perforated ☐ Removed

Type of perforator: ____

☐ Other ____

**GROUTING MATERIAL(S)**

Grouting Material: Neat Cement from 0 to 20 ft. .04 yards 1 bags

____ from ____ to ____ ft. ____ yards ____ bags

____ from ____ to ____ ft. ____ yards ____ bags

____ from ____ to ____ ft. ____ yards ____ bags

**UNSEALED WELLS AND BORINGS**

Other unsealed well or boring on property? ☐ Yes ☑ No

**LICENSED OR REGISTERED CONTRACTOR CERTIFICATION**

This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Development Engineering, P.A — Contractor Business Name

MO 126 — License or Registration No.

[signature] — Authorized Representative Signature

8/28/97 — Date

Chris Kaus, Ken Meek — Name of Person Sealing Well or Boring

MINN. DEPT OF HEALTH COPY H 116253

HE-01434-02

10/95R

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING SEALING RECORD

*Minnesota Statutes, Chapter 103I*

Minnesota Well and Boring Sealing No.
Minnesota Unique No. or W-series No.
(Leave blank if not known)

H 116254

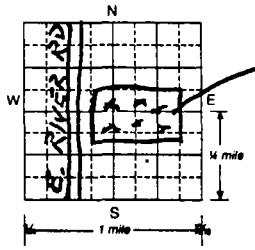
**WELL OR BORING LOCATION**

County Name: ANOKA

| Township Name | Township No. | Range No. | Section No. | Fraction (sm. → lg.) |
|---|---|---|---|---|
| Columbia Heights | 30 | 24 | 27 | NW ¼ NW ¼ SE ¼ |

Numerical Street Address or Fire Number and City of Well or Boring Location: 4800 EAST RIVER ROAD

Show exact location of well or boring in section grid with "X". Sketch map of well or boring location, showing property lines, roads, and buildings.




BORINGS INSIDE AND ~~ADJACENT~~ ADJACENT TO BUILDING

PROPERTY OWNER'S NAME: NIROP Friedley

Property owner's mailing address if different than well location address indicated above.: SAME

WELL OWNER'S NAME: SAME

Well owner's mailing address if different than property owner's address indicated above.: ✓

| GEOLOGICAL MATERIAL | COLOR | HARDNESS OF FORMATION | FROM | TO |
|---|---|---|---|---|
| If not known, indicate estimated formation log from nearby well or boring. | | | | |
| Coarse Sand & Gravel | brown | soft | 0 | 25 |
| Fine/Coarse Sand | brown | soft | 25 | 40 |
| Clay | gray | soft | 40 | 60 |

Date Sealed: 8/31 - 9/9, 9/15 - 9/25

Depth Before Sealing: 16-20 ft.

Date Well or Boring Constructed: SAME

Original Depth: 30 - 60 ft.

**AQUIFER(S)**: ☑ Single Aquifer ☐ Multiaquifer

**WELL/BORING**: ☐ Water Supply Well ☐ Monit. Well ☑ Env. Bore Hole ☐ Other

**STATIC WATER LEVEL**: ☐ Measured ☑ Estimated — 16 ft. ☑ below ☐ above land surface

**CASING TYPE(S)**: ☐ Steel ☐ Plastic ☐ Tile ☑ Other Slo Hed Sampling Tool

**CASING**: Diameter N/A Depth

| Diameter | Depth | Set in oversize hole? | Annualar space initially grouted? |
|---|---|---|---|
| in. from | to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| in. from | to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |
| in. from | to ft. | ☐ Yes ☐ No | ☐ Yes ☐ No ☐ Unknown |

**SCREEN/OPEN HOLE** N/A

Screen from ____ to ____ ft. Open Hole from ____ to ____ ft.

**OBSTRUCTION/DEBRIS/FILL**: ☐ Obstruction ☐ Debris ☐ Fill ☑ No Obstruction

Type of Obstruction/Debris/Fill: ____

Obstruction/Debris/Fill removed? ☐ Yes ☐ No

**PUMP** N/A

Type: ____

☐ Removed ☐ Not Present ☐ Other ____

**METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE:**

☑ No Annular Space Exits

☐ Annular space grouted with tremie pipe

☐ Casing Perforation/Removal

____ in. from ____ to ____ ft. ☐ Perforated ☐ Removed

____ in. from ____ to ____ ft. ☐ Perforated ☐ Removed

Type of perforator: ____

☐ Other ____

**GROUTING MATERIAL(S)**

Grouting Material: Neat Cement from 0 to 20 ft. .04 yards 1 bags

____ from ____ to ____ ft. ____ yards ____ bags

____ from ____ to ____ ft. ____ yards ____ bags

____ from ____ to ____ ft. ____ yards ____ bags

**REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING**

Direct push borings with groundwater sampling. Borings are terminated when clay is encountered. ~20 borings drilled & sealed.

**UNSEALED WELLS AND BORINGS**

Other unsealed well or boring on property? ☐ Yes ☑ No

**LICENSED OR REGISTERED CONTRACTOR CERTIFICATION**

This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Development Engineering, P.A. — Contractor Business Name

MO 126 — License or Registration No.

Authorized Representative Signature

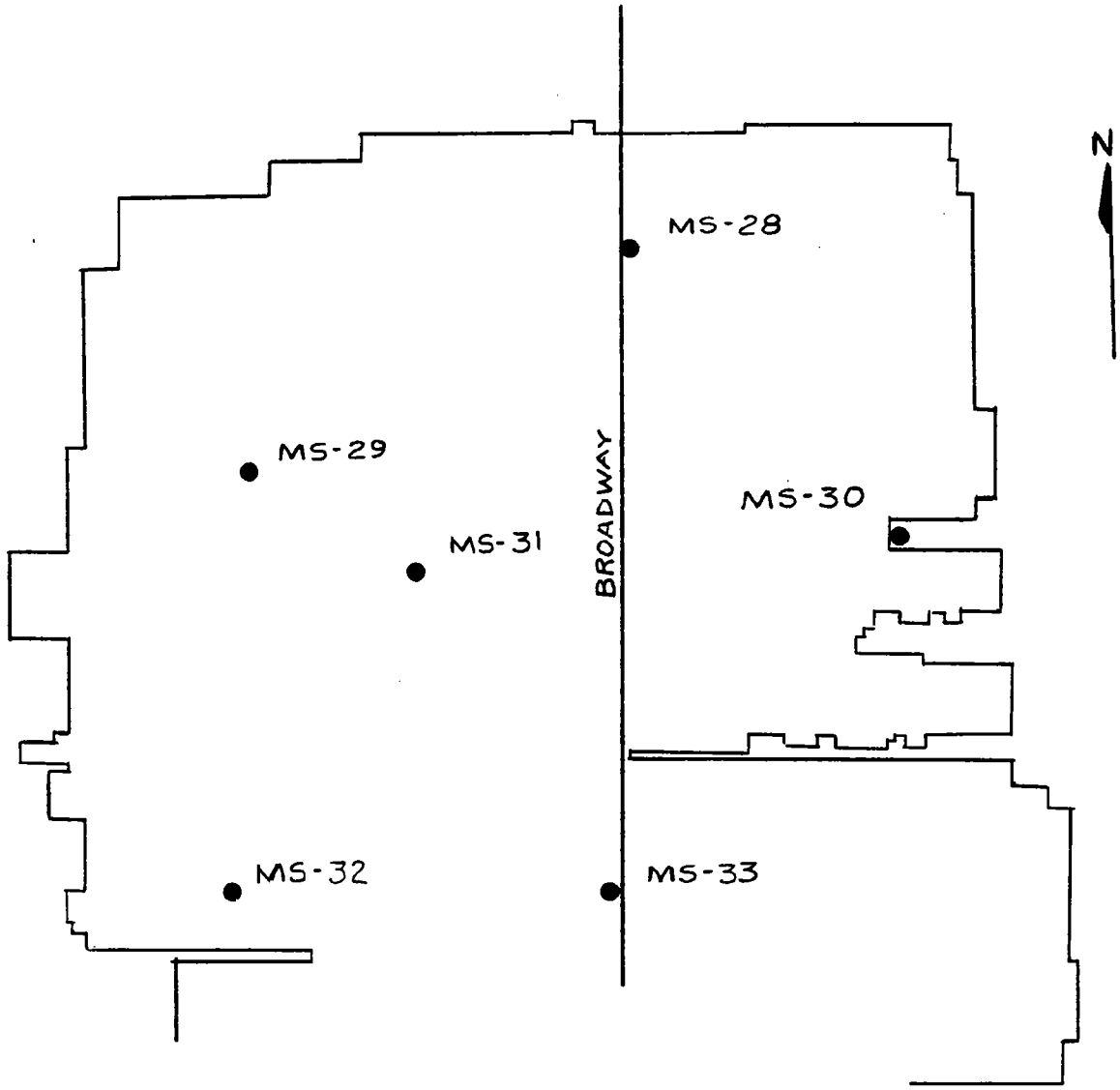
10/8/97 — Date

Chris Hays, Andy High — Name of Person Sealing Well or Boring

MINN. DEPT OF HEALTH COPY H 116254

# APPENDIX B.5

# MDH WELL AND BORING RECORDS - PHASE II




NIROP FRIDLEY
FRIDLEY, MINNESOTA
MONITOR WELL CLUSTER LOCATIONS

**SCALE : 1 INCH = 270 FEET**

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608334

**WELL LOCATION**

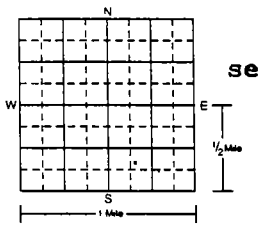
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ___ ___ NE |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA, Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Minneapolis, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| m-c sand/grvl | brn | m | .7 | 28 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-28S

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608334

WELL DEPTH (completed): 27.0 ft.

Date Work Completed: 12-4-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ___ ft. to ___ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ___

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ___

HOLE DIAM.: 6 in. to 28 ft.

CASING DIAMETER / WEIGHT:
2 in. to 17 ft. ___ lbs./ft.
___ in. to ___ ft. ___ lbs./ft.
___ in. to ___ ft. ___ lbs./ft.

SCREEN: yes
Make: Johnson
Type: SS Diam.: 2"
Slot/Gauze: .010 Length: 10.0
Set between 17 ft. and 27 ft. FITTINGS: ___

OPEN HOLE from ___ ft. to ___ ft.

STATIC WATER LEVEL: 19.6 ft. ☒ below ☐ above land surface Date measured 12-4-97

PUMPING LEVEL (below land surface): na ft. after ___ hrs. pumping ___ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ___ Model ___
☐ Casing Protection ___ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grout
from 0 to 12 ft. 18 ☐ yds. ☐ bags
from ___ to ___ ft. ___ ☐ yds. ☐ bags
from ___ to ___ ft. ___ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ___ direction ___ type

Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ___
Manufacturer's name ___
Model number ___ HP ___ Volts ___
Length of drop pipe ___ ft. Capacity ___ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ___

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark [signature] — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 12-4-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO*

608333

**WELL LOCATION**

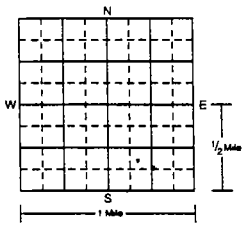
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | NE ¼ ¼ ¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 East River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Minneapolis, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| c-sand/grvl | brown | m | .7 | 85 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-28I

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608333

WELL DEPTH (completed): 85.0, ft.

Date Work Completed: 12-4-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: n/a

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic; Drive Shoe? ☐ Yes ☒ No; ☒ Threaded ☐ Welded ☐ ____

CASING DIAMETER / WEIGHT:
2 in. to 80 ft. ____ lbs./ft.
____ in. to ____ ft. ____ lbs./ft.
____ in. to ____ ft. ____ lbs./ft.

HOLE DIAM.:
6 in. to 85 ft.
____ in. to ____ ft.
____ in. to ____ ft.

SCREEN: yes
Make: Johnson
Type: SS Diam. 2
Slot/Gauze: .010 Length: 5.0
Set between 80 ft. and 85 ft. FITTINGS: ____

OPEN HOLE: from ____ ft. to ____ ft.

STATIC WATER LEVEL: 19.3 ft. ☒ below ☐ above land surface Date measured 12-4-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 75 ft. 112 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION
unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark Smith — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 12-4-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

MINNESOTA UNIQUE WELL NO. 608332

**WELL LOCATION**

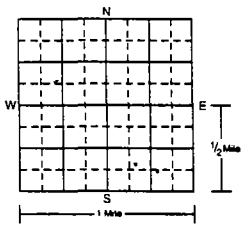
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE ¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 East River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: United States of America (Naval Dept)

Property owner's mailing address if different than well location address indicated above.
Naval Sea Tech. Represent. Office
Minneapolis, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| m-c sand/grvl | brn | m | .7 | 77.5 |
| silty clay | red/brn | m | 77.5 | 78.5 |
| m-c sand/grvl | brown | m | 78.5 | 88.0 |
| sandy clay | brown | m | 88.0 | 114 |
| bedrock | | | 114 | 115 |
| | | | | |
| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-28D

WELL DEPTH (completed): 114.0 ft. Date Work Completed: 12-2-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: na

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.: 6 in. to 115 ft.

CASING DIAMETER / WEIGHT:
2 in. to 109 ft. ____ lbs./ft.
____ in. to ____ ft. ____ lbs./ft.
____ in. to ____ ft. ____ lbs./ft.

SCREEN: yes
Make: Johnson
Type: ~~XXX~~ SS
Slot/Gauze: .010
Set between: 109 ft. and 114 ft. FITTINGS: ____

OPEN HOLE from ____ ft. to ____ ft.
Diam.: 2"
Length: 5.0

STATIC WATER LEVEL: 19.4 ft. ☒ below ☐ above land surface Date measured 12-~~16~~ 2-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☐ High Solids Bentonite / grou
from 0 to 103 ft. ☒ 155 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — Licensee Business Name
49653 — Lic. or Reg. No.
Authorized Representative Signature
2-9-98 — Date
Roy Buckenberger — Name of Driller
12-2-97 — Date

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608332

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608337

**WELL LOCATION**

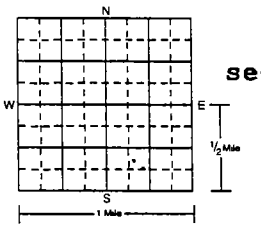
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE ¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| m-c sand | brown | m | .7 | 27 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-29S

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608337

WELL DEPTH (completed): 27.0 ft. Date Work Completed: 12-7-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic ☐

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐

HOLE DIAM.: 6 in. to 27 ft.

| CASING DIAMETER | | WEIGHT |
|---|---|---|
| 2 in. to 22 ft. | | lbs./ft. |
| in. to ft. | | lbs./ft. |
| in. to ft. | | lbs./ft. |

SCREEN: yes
Make: Johnson
Type: SS
Slot/Gauze: .010
Set between 22 ft. and 27 ft.
OPEN HOLE from ____ ft. to ____ ft.
Diam. 2"
Length 5.0
FITTINGS:

STATIC WATER LEVEL: 19.0 ft. ☒ below ☐ above land surface Date measured 12-7-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 12 ft. 18 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

*Authorized Representative Signature* — *Date* 2-9-18

Roy Buckenberger — 12-7-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608336

**WELL LOCATION**

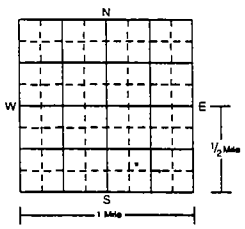
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction | WELL DEPTH (completed) | Date Work Completed |
|---|---|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE¼ | 81.0 ft. | 12-6-97 |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.
Naval Sea Tech. Represent. Office
Minneapolis, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| m-c sand | brown | m | .7 | 81 |
| | | | | |
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*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-29I

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608336

**DRILLING METHOD**: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

**DRILLING FLUID**: none

**WELL HYDROFRACTURED?** ☐ YES ☒ NO — FROM ____ ft. to ____ ft.

**USE**: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

**CASING**: ☒ Steel ☐ Plastic — Drive Shoe? ☐ Yes ☒ No — ☒ Threaded ☐ Welded ☐ ____

**HOLE DIAM.**: 6 in. to 81 ft.

**CASING DIAMETER / WEIGHT**: 2 in. to 76 ft. ____ lbs./ft.; ____ in. to ____ ft. ____ lbs./ft.; ____ in. to ____ ft. ____ lbs./ft.

**SCREEN**: yes
Make: Johnson
Type: SS
Slot/Gauze: .010
Set between: 76 ft. and 81 ft.

**OPEN HOLE**: from ____ ft. to ____ ft.
Diam.: 2
Length: 5.0
FITTINGS: ____

**STATIC WATER LEVEL**: 19.9 ft. ☒ below ☐ above land surface — Date measured 12-6-97

**PUMPING LEVEL** (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

**WELL HEAD COMPLETION**: ☐ Pitless adapter manufacturer ____ Model ____ ☐ Casing Protection ____ ☐ 12 in. above grade ☐ At-grade (Environmental Wells and Borings ONLY)

**GROUTING INFORMATION**: Well grouted? ☒ Yes ☐ No
Grout Material: ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 70 ft. 105 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

**NEAREST KNOWN SOURCE OF CONTAMINATION**: unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

**PUMP**: ☒ Not installed — Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

**ABANDONED WELLS**: Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

**VARIANCE**: Was a variance granted from the MDH for this well? ☐ Yes ☒ No

**WELL CONTRACTOR CERTIFICATION**

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark [signature] — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 12-6-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608335

**WELL LOCATION**

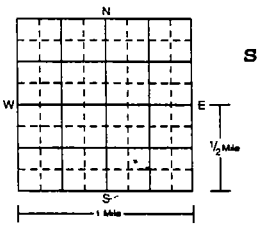
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Minneapolis, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| m-c sand | brown | m | .7 | 85 |
| silty clay | brown | m | 85 | 125 |
| sand/grvl | brown | m | 125 | 137 |
| | | | | |
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*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-29D

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY

608335

WELL DEPTH (completed): 137.0 ft.

Date Work Completed: 12-5-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO
FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic
Drive Shoe? ☐ Yes ☒ No
☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.

| CASING DIAMETER | | WEIGHT | HOLE DIAM. |
|---|---|---|---|
| 2 in. to 132 ft. | | lbs./ft. | 6 in. to 137 ft. |
| in. to ft. | | lbs./ft. | in. to ft. |
| in. to ft. | | lbs./ft. | in. to ft. |

SCREEN: yes
Make: Johnson
Type: SS
Slot/Gauze: .010
Set between: 132 ft. and 137 ft.

OPEN HOLE: from ____ ft. to ____ ft.
Diam.: 2"
Length: 5.0
FITTINGS:

STATIC WATER LEVEL: 19.0 ft. ☒ below ☐ above land surface Date measured 12-5-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 128 ft. 192 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION
unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

*Authorized Representative Signature* — 2-9-90 *Date*

Roy Buckenberger — 12-5-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 599588

**WELL LOCATION**

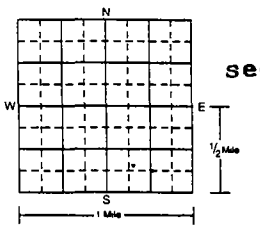
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | NE ¼ ¼ ¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

WELL DEPTH (completed): 27.5 ft.

Date Work Completed: 10-26-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic; Drive Shoe? ☐ Yes ☒ No; ☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.: 6 in. to 27.5 ft.

CASING DIAMETER / WEIGHT:

| Diameter | Weight |
|---|---|
| 2 in. to 17.5 ft. | ____ lbs./ft. |
| ____ in. to ____ ft. | ____ lbs./ft. |
| ____ in. to ____ ft. | ____ lbs./ft. |

SCREEN: yes
Make: Johnson
Type: SS
Slot/Gauze: .010
Set between: 17.5 ft. and 27.5 ft.
Diam.: 2"
Length: 5x 10.0
FITTINGS: ____

OPEN HOLE: from ____ ft. to ____ ft.

STATIC WATER LEVEL: 19 ft. ☒ below ☐ above land surface Date measured 10-26-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION: ☐ Pitless adapter manufacturer ____ Model ____ ☐ Casing Protection ____ ☐ 12 in. above grade ☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION: Well grouted? ☒ Yes ☐ No
Grout Material: ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grout
from 0 to 13.5 ft. 21 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP: ☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS: Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE: Was a variance granted from the MDH for this well? ☐ Yes ☒ No

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.
Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| m-c sand/grvl | brown | m | .7 | 28 |
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*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
SB-30S

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — *Licensee Business Name* — 49653 *Lic. or Reg. No.*

Mark [signature] — *Authorized Representative Signature* — 2-9-98 *Date*

Bill Zamow — *Name of Driller* — 10-26-97 *Date*

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 599588

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO*

599587

**WELL LOCATION**

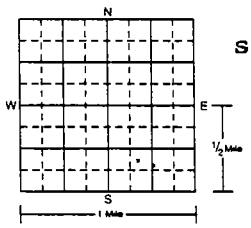
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | NE |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| sand/grvl,clay | brown | m | .7 | 68 |
| | | | | |
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*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
SB-30I

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY

599587

WELL DEPTH (completed): 67.5 ft.

Date Work Completed: 10-25-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic ☒ Threaded ☐ Welded ☐ ____ Drive Shoe? ☐ Yes ☒ No

HOLE DIAM.: 6 in. to 68 ft.

| CASING DIAMETER | | WEIGHT |
|---|---|---|
| 2 in. to 62.5 ft. | | ____ lbs./ft. |
| ____ in. to ____ ft. | | ____ lbs./ft. |
| ____ in. to ____ ft. | | ____ lbs./ft. |

SCREEN: yes
Make: Johnson
Type: SS
Diam.: ~~2x 2~~
Slot/Gauze: .010
Length: 5.0
Set between: 62.5 ft. and 67.5 ft. FITTINGS: ____

OPEN HOLE: from ____ ft. to ____ ft.

STATIC WATER LEVEL: 19 ft. ☒ below ☐ above land surface Date measured 10-25-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 56 ft. 83 ☐ yds. ☐ bags ga
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark Zamow — 2-9-98
*Authorized Representative Signature* — *Date*

Bill Zamow — 10-25-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 599586

**WELL LOCATION**

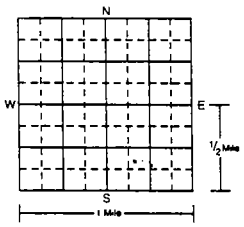
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | NE |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.
Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .6 |
| sand/clay/grvl | brn | m | .6 | 99 |
| | | | | |
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*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
SB-30D

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 599586

WELL DEPTH (completed): 99.0 ft.

Date Work Completed: 10-24-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ Sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO
FROM _____ ft. to _____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ _____

CASING: ☒ Steel ☒ Threaded ☐ Welded ☐ Plastic ☐ _____ Drive Shoe? ☐ Yes ☒ No

CASING DIAMETER / WEIGHT:
2 in. to 94 ft. _____ lbs./ft.
_____ in. to _____ ft. _____ lbs./ft.
_____ in. to _____ ft. _____ lbs./ft.

HOLE DIAM.:
6 in. to 99 ft.
_____ in. to _____ ft.
_____ in. to _____ ft.

SCREEN: yes
Make: Johnson
Type: SS
Diam.: 2"
Slot/Gauze: .010
Length: 5.0
Set between 94 ft. and 99 ft. FITTINGS: _____

OPEN HOLE: from _____ ft. to _____ ft.

STATIC WATER LEVEL: 19.65 ft. ☒ below ☐ above land surface Date measured 10-24-97

PUMPING LEVEL (below land surface): na ft. after _____ hrs. pumping _____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer _____ Model _____
☐ Casing Protection _____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material: ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 86 ft. 129 ☐ yds. ☐ bags gal
from _____ to _____ ft. _____ ☐ yds. ☐ bags
from _____ to _____ ft. _____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION
unknown feet _____ direction _____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed _____
Manufacturer's name _____
Model number _____ HP _____ Volts _____
Length of drop pipe _____ ft. Capacity _____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ _____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark Zamow — 2-9-98
*Authorized Representative Signature* — *Date*

Bill Zamow — 10-24-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

MINNESOTA UNIQUE WELL N: 599591

**WELL LOCATION**

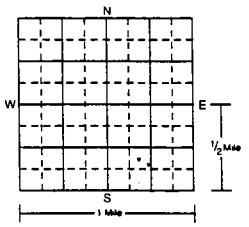
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
~~XXXXXX~~ Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .6 |
| m-sand | brown | m | .6 | 28 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-31S

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 599591

WELL DEPTH (completed): 27.5 ft.

Date Work Completed: 11-16-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.

| CASING DIAMETER | | WEIGHT | HOLE DIAM. |
|---|---|---|---|
| 2 in. to | 17.5 | lbs./ft. | 6 in. to 28 |
| in. to | ft. | lbs./ft. | in. to ft. |
| in. to | ft. | lbs./ft. | in. to ft. |

SCREEN: yes
Make: Johnson
Type: SS Diam.: 2"
Slot/Gauze: .010 Length: 10.0
Set between: 17.5 ft. and 27.5 ft. FITTINGS:

OPEN HOLE from ____ ft. to ____ ft.

STATIC WATER LEVEL: 20.0 ft. ☐ below ☐ above land surface Date measured ____

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☐ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 12 ft. 18 ☐ yds. ☐ bags ga.
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION
unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark Smith — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 11-16-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 599590

**WELL LOCATION**

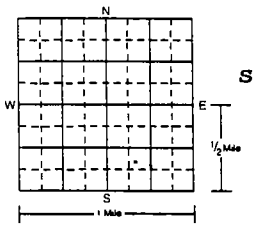
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.
Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .6 |
| sand/clay/grvl brn | | m | .6 | 95 |
| | | | | |
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*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.
3411-1152
MS-31I

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 599590

WELL DEPTH (completed): 94.5 ft. Date Work Completed: 11-15-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.: 6 in. to 95 ft.

CASING DIAMETER: 2 in. to 89.5 ft. WEIGHT: ____ lbs./ft.

SCREEN: yes
Make: Johnson
Type: SS Diam. ____
Slot/Gauze: .010 Length ____
Set between 89.5 ft. and 94.5 ft. FITTINGS: ____

OPEN HOLE from ____ ft. to ____ ft.

STATIC WATER LEVEL: 20.0 ft. ☒ below ☐ above land surface Date measured 11-15-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 77 ft. 116 ☐ yds. ☐ bags ga
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

*Authorized Representative Signature* — 2-9-98 *Date*

Roy Buckenberger — 11-15-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

MINNESOTA UNIQUE WELL N: 599589

**WELL LOCATION**

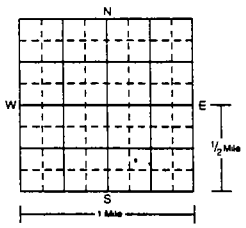
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | NE |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section gnd with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

WELL DEPTH (completed): 125.0 ft.

Date Work Completed: 11-13-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.: 6 in. to 125 ft.

CASING DIAMETER / WEIGHT:
2 in. to 120 ft. ____ lbs./ft.
____ in. to ____ ft. ____ lbs./ft.
____ in. to ____ ft. ____ lbs./ft.

SCREEN: yes
Make: Johnson
Type: SS Diam.: 2"
Slot/Gauze: .010 Length: 5.0
Set between 120 ft. and 125 ft. FITTINGS: ____

OPEN HOLE: from ____ ft. to ____ ft.

STATIC WATER LEVEL: 22.0 ft. ☐ below ☐ above land surface Date measured ____

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☐ High Solids Bentonite grout
from 0 to 112 ft. 168 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| f-m sand | lt.brn | m | .7 | 27 |
| c-sand/grvl | brown | m | 27 | 47 |
| siltyclay/grvl | brown | m | 47 | 66 |
| f-mgrvl/sand | brown | m | 66 | 87 |
| siltyclay/grvl | brown | m | 87 | 105 |
| silt/clay/lgrvl | brn | m | 105 | 107 |
| siltclay/f/grvl | brn | m | 107 | 117 |
| sand/grvl | brown | m | 117 | 125 |
| bedrock | | | 125 | 126 |

Use a second sheet if necessary

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ____ direction ____ type

Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark Smith — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 11-13-97
*Name of Driller* — *Date*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-31D

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 599589

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608342

**WELL LOCATION**

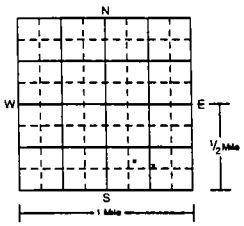
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.
Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| sand,grvl,clay | brown | m | .7 | 26 |
| | | | | |
| | | | | |
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*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-32S

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608342

WELL DEPTH (completed): 26.0 ft.

Date Work Completed: 12-9-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO
FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ____

| CASING DIAMETER | | WEIGHT | HOLE DIAM. |
|---|---|---|---|
| 2 in. to 16 ft. | | ____ lbs./ft. | 6 in. to 26 ft. |
| ____ in. to ____ ft. | | ____ lbs./ft. | ____ in. to ____ ft. |
| ____ in. to ____ ft. | | ____ lbs./ft. | ____ in. to ____ ft. |

SCREEN: yes
Make: Johnson
Type: SS
Diam.: 2"
Slot/Gauze: .010
Length: 10.0
Set between 16 ft. and 26 ft. FITTINGS: ____

OPEN HOLE: from ____ ft. to ____ ft.

STATIC WATER LEVEL: 19.5 ft. ☒ below ☐ above land surface Date measured 12-9-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 10 ft. 15 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION
unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☐ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark [illegible] — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 12-9-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL N*

608341

**WELL LOCATION**

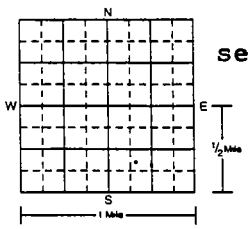
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Minneapolis, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| sand/grvl,clay | brown | m | .7 | 85 |
| | | | | |
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| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-32I

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY

608341

WELL DEPTH (completed): 85.0 ft.

Date Work Completed: 12-9-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic; Drive Shoe? ☐ Yes ☒ No; ☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.: 6 in. to 85 ft.

| CASING DIAMETER | | WEIGHT |
|---|---|---|
| 2 in. to 80 ft. | | ____ lbs./ft. |
| ____ in. to ____ ft. | | ____ lbs./ft. |
| ____ in. to ____ ft. | | ____ lbs./ft. |

SCREEN: yes
Make: Johnson
Type: SS
Slot/Gauze: .010
Set between: 80 ft. and 85 ft.

OPEN HOLE: from ____ ft. to ____ ft.
Diam.: 2 in.
Length: 5.0
FITTINGS: ____

STATIC WATER LEVEL: 19.5 ft. ☒ below ☐ above land surface Date measured 12-9-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material: ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grout
from 0 to 72 ft. 108 ☐ yds. ☐ bags gal.
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

*Authorized Representative Signature* — 12-9-97 *Date*

Roy Buckenberger — 12-9-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608343

**WELL LOCATION**

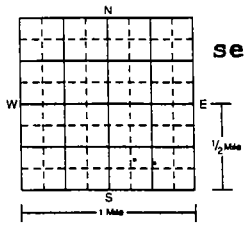
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached map

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| sand/grvl | brown | m | .7 | 10 |
| m-c sand | brown | m | 10 | 55 |
| silty clay/grvl | brn | m | 55 | 75 |
| m-c sand | brown | m | 75 | 127 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-32D

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608343

WELL DEPTH (completed): 127.0 ft.

Date Work Completed: 12-8-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.

| CASING DIAMETER | | WEIGHT | HOLE DIAM. |
|---|---|---|---|
| 2 in. to 122 ft. | | ____ lbs./ft. | 6 in. to 127 ft. |
| ____ in. to ____ ft. | | ____ lbs./ft. | ____ in. to ____ ft. |
| ____ in. to ____ ft. | | ____ lbs./ft. | ____ in. to ____ ft. |

SCREEN: yes
Make: Johnson
Type: SS
Slot/Gauze: .010
Set between: 122 ft. and 127 ft.

OPEN HOLE from ____ ft. to ____ ft.
Diam. 2"
Length 5.0
FITTINGS: ____

STATIC WATER LEVEL: 19.5 ft. ☒ below ☐ above land surface Date measured 12-8-97

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grout
from 0 to 115 ft. 173 ☐ yds. ☐ bags grout
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION
unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 12-8-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608338

**WELL LOCATION**

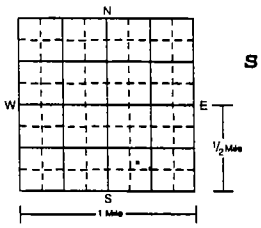
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| sand/grvl | brown | m | .7 | 28 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-33S

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608338

WELL DEPTH (completed): 27.0 ft.

Date Work Completed: 12-2-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ____

CASING DIAMETER / WEIGHT

| Diameter | Depth | Weight |
|---|---|---|
| 2 in. | 17 ft. | lbs./ft. |
| in. | ft. | lbs./ft. |
| in. | ft. | lbs./ft. |

HOLE DIAM.: 6 in. to 28 ft.

SCREEN: yes
Make: Johnson
Type: SS
Slot/Gauze: .010
Set between: 17 ft. and 27 ft. FITTINGS:

OPEN HOLE: from 2" ft. to ____ ft.
Diam.: 10.0
Length:

STATIC WATER LEVEL: 20.0 ft. ☐ below ☐ above land surface Date measured ____

PUMPING LEVEL (below land surface): na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION: ☐ Pitless adapter manufacturer ____ Model ____ ☐ Casing Protection ____ ☐ 12 in. above grade ☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION: Well grouted? ☒ Yes ☐ No
Grout Material: ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 12 ft. 18 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION: unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP: ☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS: Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE: Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark [signature] — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 12-2-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608339

**WELL LOCATION**

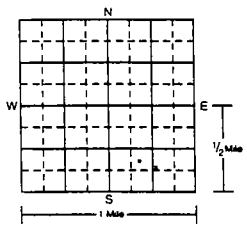
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE ¼ |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.

Naval Sea Technical Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| sand/grvl/clay | brown | m | .7 | 77 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-33I

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608339

WELL DEPTH (completed): 75.0 ft.

Date Work Completed: 12-1-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO FROM ____ ft. to ____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ ____

CASING: ☒ Steel ☐ Plastic Drive Shoe? ☐ Yes ☒ No ☒ Threaded ☐ Welded ☐ ____

HOLE DIAM.: 6 in. to 77 ft.

CASING DIAMETER / WEIGHT:
2 in. to 70 ft. ____ lbs./ft.
____ in. to ____ ft. ____ lbs./ft.
____ in. to ____ ft. ____ lbs./ft.

SCREEN yes
Make Johnson
Type SS
Slot/Gauze .010
Set between 70 ft. and 75 ft. FITTINGS: ____

OPEN HOLE from ____ ft. to ____ ft.
Diam. 2"
Length 5.0

STATIC WATER LEVEL 20.0 ft. ☒ below ☐ above land surface Date measured 12-1-97

PUMPING LEVEL (below land surface) na ft. after ____ hrs. pumping ____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer ____ Model ____
☐ Casing Protection ____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grou
from 0 to 64 ft. 96 ☐ yds. ☐ bags gal
from ____ to ____ ft. ____ ☐ yds. ☐ bags
from ____ to ____ ft. ____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION
unknown feet ____ direction ____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed ____
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of drop pipe ____ ft. Capacity ____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ ____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION

This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark Smalen — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 12-1-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

MINNESOTA DEPARTMENT OF HEALTH

# WELL AND BORING RECORD

*Minnesota Statutes Chapter 103I*

*MINNESOTA UNIQUE WELL NO.* 608340

**WELL LOCATION**

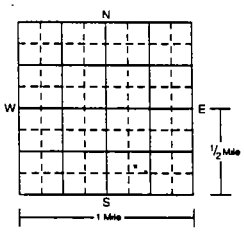
County Name: Anoka

| Township Name | Township No. | Range No. | Section No. | Fraction |
|---|---|---|---|---|
| Fridley | 30N | 24W | 27 | ¼ ¼ NE |

House Number, Street Name, City, and Zip Code of Well Location: 4800 E. River Rd, Fridley

or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.




see attached

PROPERTY OWNER'S NAME: USA Naval Department

Property owner's mailing address if different than well location address indicated above.
Naval Sea Tech. Represent. Office
Mpls, MN 55421

WELL OWNER'S NAME: same

Well owner's mailing address if different than property owner's address indicated above.

| GEOLOGICAL MATERIALS | COLOR | HARDNESS OF MATERIAL | FROM | TO |
|---|---|---|---|---|
| concrete | | | 0 | .7 |
| f-vf sand | brown | m | .7 | 15 |
| sand/grvl | brown | m | 15 | 60 |
| silt/sand/clay | brown | m | 60 | 80 |
| f-m sand | brown | m | 80 | 119 |
| sandstone bedrock | | | 119 | 123 |

*Use a second sheet, if needed*

REMARKS, ELEVATION, SOURCE OF DATA, etc.

3411-1152
MS-33D

IMPORTANT - FILE WITH PROPERTY PAPERS
WELL OWNER COPY 608340

WELL DEPTH (completed): 121.0 ft.

Date Work Completed: 11-18-97

DRILLING METHOD: ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☐ Rotary ☐ Jetted ☒ sonic

DRILLING FLUID: none

WELL HYDROFRACTURED? ☐ YES ☒ NO
FROM _____ ft. to _____ ft.

USE: ☐ Domestic ☐ Irrigation ☐ Test Well ☒ Monitoring ☐ Community PWS ☐ Noncommunity PWS ☐ Dewatering ☐ Heating/Cooling ☐ Industry/Commercial ☐ Remedial ☐ _____

CASING: ☒ Steel ☐ Plastic
Drive Shoe? ☐ Yes ☒ No
☒ Threaded ☐ Welded ☐ _____

| CASING DIAMETER | | WEIGHT |
|---|---|---|
| 2 in. to 116 ft. | | lbs./ft. |
| in. to ft. | | lbs./ft. |
| in. to ft. | | lbs./ft. |

HOLE DIAM.: 6 in. to 123 ft.

SCREEN: yes
Make: Johnson
Type: SS
Slot/Gauze: XXX .010
Set between 116 ft. and 121 ft.

OPEN HOLE from _____ ft. to _____ ft.
Diam. 2"
Length 5.0
FITTINGS: _____

STATIC WATER LEVEL: 20.0 ft. ☒ below ☐ above land surface Date measured 11-18-97

PUMPING LEVEL (below land surface): na ft. after _____ hrs. pumping _____ g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer _____ Model _____
☐ Casing Protection _____ ☐ 12 in. above grade
☒ At-grade (Environmental Wells and Borings ONLY)

GROUTING INFORMATION
Well grouted? ☒ Yes ☐ No
Grout Material ☐ Neat cement ☐ Bentonite ☐ Concrete ☒ High Solids Bentonite grout
from 0 to 108 ft. 162 ☐ yds. ☐ bags gal
from _____ to _____ ft. _____ ☐ yds. ☐ bags
from _____ to _____ ft. _____ ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION
unknown feet _____ direction _____ type
Well disinfected upon completion? ☐ Yes ☒ No

PUMP
☒ Not installed Date installed _____
Manufacturer's name _____
Model number _____ HP _____ Volts _____
Length of drop pipe _____ ft. Capacity _____ g.p.m.
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐ _____

ABANDONED WELLS
Does property have any not in use and not sealed well(s)? ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Boart Longyear — 49653
*Licensee Business Name* — *Lic. or Reg. No.*

Mark [illegible] — 2-9-98
*Authorized Representative Signature* — *Date*

Roy Buckenberger — 11-18-97
*Name of Driller* — *Date*

HE-01205-06 (Rev. 9/96)

# APPENDIC C

C.1 Monitoring Well Development Measurements

C.2 Synoptic Groundwater Level Measurements

C.3 Aquifer Test Data and Calculations

C.4 Hydraulic Gradient and Groundwater Flow Velocity Calculations

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - VOLUME OF DEVELOPMENT WATER EVACUATED FROM MONITORING WELLS

## VOLUME OF DEVELOPMENT WATER EVACUATED FROM MONITORING WELLS
## NIROP FRIDLEY, MINNESOTA

| MONITORING WELL ID | AMOUNT OF WATER USED AT INSTALLATION | ONE SATURATED WELL ANNULUS VOLUME | GALLONS OF WATER USED AT INSTALLATION (TIMES 5) | ONE SATURATED WELL ANNULUS VOLUME (TIMES 5) | TOTAL GALLONS OF WATER EVACUATED FROM WELL |
|---|---|---|---|---|---|
| | | | | | |
| MS-28D | 1080 | 20 | 5400 | 100 | 5500 |
| MS-28I | 335 | 14 | 1675 | 70 | 1745 |
| MS-28S | 100 | 6 | 500 | 30 | 530 |
| | | | | | |
| MS-29D | 900 | 24 | 4500 | 120 | 4620 |
| MS-29I | 150 | 15 | 750 | 75 | 825 |
| MS-29S | 50 | 7 | 250 | 35 | 285 |
| | | | | | |
| MS-30D | 800 | 17 | 4000 | 85 | 4085 |
| MS-30I | 300 | 11 | 1500 | 55 | 1555 |
| MS-30S | 100 | 7 | 500 | 35 | 535 |
| | | | | | |
| MS-31D | 480 | 23 | 2400 | 115 | 2515 |
| MS-31I | 210 | 18 | 1050 | 90 | 1140 |
| MS-31S | 60 | 7 | 300 | 35 | 335 |
| | | | | | |
| MS-32D | 425 | 21 | 2125 | 105 | 2230 |
| MS-321 | 255 | 14 | 1275 | 70 | 1345 |
| MS-32S | 60 | 5 | 300 | 25 | 325 |
| | | | | | |
| MS-33D | 840 | 21 | 4200 | 105 | 4305 |
| MS-33I | 600 | 14 | 3000 | 70 | 3070 |
| MS-33S | 300 | 6 | 1500 | 30 | 1530 |
| | | | | | |
| TOTALS | 7,045 | 250 | 35,225 | 1,250 | 36,475 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - INITIAL WELL DEVELOPMENT

Rev. 0
March 27, 1997

# MONITORING WELL DEVELOPMENT RECORD

Well: MS-285
Site: NIROP Fridley
Date Installed: 12/4/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Val

Depth to Bottom (ft): 27.3
Static Water Level Before(ft): 19.05 BTOC
Static Water Level After (ft):
Screen Length (ft): 10'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2138 | NA | 1L/8 sec | 19.05 | 16.2 | 6.70 | 1.25 | 98 | slightly cloudy |
| 2140 | | | | | | | | surge well |
| 2201 | | 1L/9 sec | 19.17 | 15.8 | 6.65 | 1.13 | 1 | clear |
| 2204 | | | | | | | | surge well |
| 2216 | | 1L/9 sec | 19.05 | 15.9 | 6.74 | 1.14 | 7 | clear |
| 2219 | | | | | | | | surge well |
| 2231 | | 1L/9 sec | 19.07 | 15.8 | 6.75 | 1.13 | 14 | clear |
| 2238 | | 1L/9 sec | 19.07 | 16.2 | 6.75 | 1.15 | 8 | clear, stop develop after 106 gallons |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Rev. 0
March 27, 1997

# MONITORING WELL DEVELOPMENT RECORD

Well: MS-28 I
Site: NIROP Fridley
Date Installed: 12/4/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 85.5'
Static Water Level Before(ft): 18.94'
Static Water Level After (ft): 19.70'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Bodrt Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1915 | NA | | 18.94 | | | | | 1930 Start development |
| 1933 | | 1L/9sec | | 13.9 | 7.28 | 1.01 | 222 | slightly cloudy |
| 1948 | | 1L/9sec | 19.68 | 13.5 | 7.21 | 1.21 | 7 | clear |
| 1949 | | | | | | | | surge well |
| 2001 | | 1L/9sec | 19.76 | 13.5 | 7.11 | 1.31 | 5 | clear |
| 2004 | | | | | | | | surge well |
| 2016 | | 1L/9sec | 19.73 | 13.5 | 7.07 | 1.43 | 9 | clear |
| 2019 | | | | | | | | surge well |
| 2031 | | 1L/9sec | 19.71 | 13.4 | 7.07 | 1.50 | 9 | clear |
| 2046 | | 1L/9sec | 19.83 | 13.5 | 7.06 | 1.52 | 6 | clear |
| 2048 | | | | | | | | surge well |
| 2101 | | 1L/8sec | 19.71 | 13.5 | 7.04 | 1.54 | 6 | clear |
| 2105 | | | | | | | | surge well |
| 2116 | | 1L/8sec | 19.72 | 13.4 | 7.04 | 1.55 | 11 | clear |

Rev. 0
March 27, 1997

# MONITORING WELL DEVELOPMENT RECORD

Well: MS-28I
Site: NIROP Fridley
Date Installed: 12/4/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 85.5'
Static Water Level Before(ft): 18.94'
Static Water Level After (ft): 19.70'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 2 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2118 | NA | | | | | | | surge well |
| 2131 | NA | 1L/9 sec | 19.70 | 13.4 | 7.07 | 1.56 | 4 | clear ~~start development~~ after 212 gallons |
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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-28D
Site: NIROP Fridley
Date Installed: 12/3/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 114.7'
Static Water Level Before(ft): 18.51' BTOC
Static Water Level After (ft): 21.80'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1908 | NA | | 18.51 | | | | 1930 | ~~start~~ development |
| 1930 | | 1L / 5 sec | | 12.7 | 7.11 | .954 | 577 | cloudy |
| 1932 | | | | | | | | surge well |
| 1945 | | 1L / 5 sec | 23.13 | 12.0 | 7.3 | 1.02 | 15 | clear |
| 1947 | | | ~~22.77~~ | | | | | surge well |
| 2000 | | 1L / 5 sec | 22.72 | 12.0 | 7.28 | .965 | 4 | clear |
| 2002 | | | | | | | | surge well |
| 2015 | | 1L / 5 sec | 22.77 | 12.1 | 7.29 | 1.03 | 3 | clear |
| 2017 | | | | | | | | surge well |
| 2030 | | 1L / 5 sec | 22.48 | 12.0 | 7.28 | 1.04 | 3 | clear |
| 2032 | | | | | | | | surge well |
| 2045 | | 1L / 5 sec | 22.27 | 11.9 | 7.27 | 1.04 | 2 | clear |
| 2047 | | | | | | | | surge well |
| 2100 | | 1L / 5 sec | 21.98 | 11.9 | 7.29 | 1.04 | 1 | clear |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-28D
Site: NIROP Fridley
Date Installed: 12/3/98
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 114.7'
Static Water Level Before(ft): 18.51' BTOC
Static Water Level After (ft): 21.80'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 2 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2104 | NA | | | | | | | surge well |
| 2115 | | 1L/5 sec | 22.45 | 12.0 | 7.28 | 1.05 | 12 | clear |
| 2116 | | ~~1L/8~~ | | | | | | surge well |
| 2130 | | 1L/5 sec | 21.9 | 12.0 | 7.28 | 1.04 | 2 | clear |
| 2131 | | | | | | | | surge well |
| 2145 | | 1L/5 sec | 21.94 | 12.1 | 7.25 | 1.03 | 2 | clear |
| 2146 | | | | | | | | surge well |
| 2200 | | 1L/5 sec | 22.02 | 12.0 | 7.21 | 0.98 | 1 | clear |
| 2203 | | | | | | | | surge well |
| 2215 | | 1L/5 sec | 21.8 | 12.1 | 7.24 | 1.02 | 2 | clear |
| 2217 | | | | | | | | surge well |
| 2230 | | 1L/5 sec | 21.8 | 12.3 | 7.22 | 1.02 | 2 | clear, stop development after 571 gallons |
| | | | | | | | | |
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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-295
Site: NIROP Fridley
Date Installed: 12/7/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Wal

Depth to Bottom (ft): 27.3'
Static Water Level Before(ft): 18.73' BTOC
Static Water Level After (ft): 18.00
Screen Length (ft): 10'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 0205 | NA | 1L / 8 sec | 18.73 | 18.2 | 6.93 | 1.33 | 999+ | very turbid, brown |
| 0231 | | 1L / 4 sec | 18.40 | 18.2 | 6.85 | 1.14 | 6 | clear |
| 0233 | | | | | | | | surge well |
| 0246 | | 1L/20sec | 18.68 | 18.6 | 6.88 | 1.14 | 22 | clear |
| 0249 | | | | | | | | surge well |
| 0301 | | 1L/15 sec | 18.60 | 18.6 | 6.88 | 1.13 | 124 | cloudy, stop development after 18 gallons |
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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-29 I
Site: NI ROP Fridley
Date Installed: 12/7/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 21.2
Static Water Level Before(ft): 18.68
Static Water Level After (ft): 18.81
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NI ROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2359 | NA | 1L/9sec | 18.68 | 16.6 | 7.13 | 1.07 | 55 | slightly cloudy |
| 2406 | | | | | | | | surge well |
| 2416 | | 1L/9sec | 18.67 | 15.8 | 7.08 | 1.08 | 61 | slightly cloudy |
| 2431 | | | 18.88 | 15.8 | 7.06 | 1.08 | 28 | clear |
| 2434 | | | | | | | | surge well |
| 2446 | | 1L/13 sec | 18.79 | 15.6 | 7.05 | 1.08 | 1 | Clear |
| | | | | | | | | surge well |
| 0101 | | 1L/11sec | 18.8 | 15.3 | 7.05 | 1.04 | 0 | clear |
| 0104 | | | | | | | | surge well |
| 0116 | | 1L/11sec | 18.81 | 15.3 | 7.04 | 1.07 | 1 | clear |
| 0119 | | | | | | | | surge well |
| 0131 | | 1L/10.5 sec | 18.81 | 15.2 | 7.04 | 1.06 | 1 | clear |
| 0134 | | | | | | | | surge well |
| 0146 | | 1L/10.5 sec | 18.81 | 15.4 | 7.03 | 1.06 | 0 | clear |
| 0147 | | | | | | | | surge well |
| 0200 | | 1L/11 sec | 18.81 | 15.1 | 7.03 | 1.06 | 0 | clear, end development after 182 gallons |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-29D
Site: NIROP Fridley
Date Installed: 12/6/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 13.67'
Static Water Level Before(ft): 17.63'
Static Water Level After (ft): 14.40'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2354 | NA | 1L / 5sec | 17.63' | 13.5 | 7.46 | .884 | 999 | very turbid, brown |
| 2401 | | | | | | | | surge well |
| 2415 | | 1L / 5 sec | 20.12 | 12.6 | 7.33 | 1.03 | 23 | clear |
| 2418 | | | | | | | | surge well |
| 2430 | | 1L / 5 sec | 19.52 | 12.3 | 7.27 | 1.03 | 14 | clear |
| 2431 | | | | | | | | surge well |
| 2445 | | 1L / 5sec | 19.28 | 12.5 | 7.29 | 1.04 | 10 | clear |
| 2447 | | | | | | | | surge well |
| 0100 | | 1L / 5sec | 19.08 | 12.5 | 7.27 | 1.04 | 8 | clear |
| 0102 | | | | | | | | surge well |
| 0115 | | 1L / 5 sec | 19.15 | 12.4 | 7.27 | 1.03 | 8 | clear |
| 0118 | | | | | | | | surge well-good |
| 0130 | | 1L / 45sec | 19.72 | 12.3 | 7.27 | 1.04 | 133 | cloudy |
| 0134 | | | | | | | | surge well |

# MONITORING WELL DEVELOPMENT RECORD

Well: MS-29D
Site: NIROP Fridley
Date Installed: 12/6/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 136.7'
Static Water Level Before(ft): 17.63'
Static Water Level After (ft): 19.4'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 2 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 0145 | NA | 1L/4.5 sec | 19.67 | 12.3 | 7.27 | 1.04 | 33 | clear |
| 0147 | | | | | | | | surge well |
| 0200 | | 1L/4.5 sec | 19.51 | 12.1 | 7.27 | 1.03 | 17 | clear |
| 0202 | | | | | | | | surge well |
| 0215 | | 1L/5 sec | 19.39 | 12.4 | 7.3 | 1.04 | 25 | clear |
| 0216 | | | | | | | | surge well |
| 0230 | | 1L/4.5 sec | 19.49 | 11.9 | 7.27 | 1.03 | 15 | clear |
| 0232 | | | | | | | | surge well |
| 0245 | | 1L/5 sec | 19.44 | 12.7 | 7.27 | 1.04 | 6 | clear |
| 0247 | | | | | | | | surge well |
| 0300 | | 1L/4.5 sec | 19.40 | 12.6 | 7.26 | 1.03 | 7 | clear, stop development after 590 gallons |
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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-305
Site: NIROP Fridley
Date Installed: 10/26/97
Date Developed: 11/17/97
Dev. Method: Surge and Pump
Pump Type: ~~Grundfos~~ Wal (TR)

Depth to Bottom (ft): 27.5'
Static Water Level Before(ft): 19.02
Static Water Level After (ft): 19.74
Screen Length (ft): 9.9'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: B. Howze
Drilling Co.: Boart
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1303 | NA | 1.6 | 19.02 | — | — | — | — | PREP TO START |
| 1316 | | — | — | 13.2 | 5.57 | .609 | 394 | milky |
| 1332 | | 1.6 | 19.5 | 13.7 | 6.20 | .582 | 10 | clear, surge well again |
| 1356 | | | 19.64 | 13.1 | 6.46 | .604 | 16 | clear, surge well again |
| 1414 | | | 19.65 | 13.4 | 6.38 | .591 | 9 | clear |
| 1432 | | | 19.67 | 13.6 | 6.56 | .595 | 32 | slightly cloudy |
| 1449 | | | — | 13.6 | 6.45 | .588 | 923 | slightly turbid to milky - surge |
| 1508 | | | 19.68 | 13.9 | 6.48 | .60 | 19 | slightly cloudy |
| 1528 | | | 19.74 | 13.7 | 6.55 | .582 | 18 | slightly cloudy after 250 gal. Finished development |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-30.I
Site: NIROP Fridley
Date Installed: 10/25/97
Date Developed: 11/17/97
Dev. Method: Surge and pump
Pump Type: Grundfos

Depth to Bottom (ft): 61.8'
Static Water Level Before(ft): 19.73'
Static Water Level After (ft): 19.72'
Screen Length (ft): 5.0'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: B. Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1302 | NA | 0 | 19.73 | — | — | — | — | PREP to start |
| 1725 | | 2.5 | — | 10 | 6.66 | 1.01 | 73 | slightly cloudy |
| 1736 | | 2.8 | 19.66 | 9.9 | 6.62 | 1.03 | 20 | slightly cloudy, surge well |
| 1752 | | | 19.75 | 10.1 | 6.62 | 1.01 | 999+ | very turbid, surge/pump |
| 1807 | | | 19.75 | 10.4 | 6.54 | 1.01 | 58 | slightly cloudy |
| 1820 | | | 19.75 | 10.3 | 6.60 | 1.02 | 45 | slightly cloudy, surge/pump |
| 1835 | | 2.8 | 19.73 | 10.5 | 6.63 | 1.02 | 999+ | cloudy, just surge |
| 1850 | | | 19.71 | 10.5 | 6.66 | 1.02 | 21 | slightly cloudy |
| 1906 | | | 19.72 | 10.6 | 6.68 | 1.02 | 22 | clear |
| 1922 | | | 19.72 | 10.5 | 6.70 | 1.02 | 5 | clear |
| | | | | | | | | Stop development after ~300 gallons |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-30D
Site: NIROP Fridley
Date Installed: 10/24/97
Date Developed: 11/17/97
Dev. Method: Surge and Pump
Pump Type: ~~Wat~~ Grundfos

Depth to Bottom (ft): 99.4'
Static Water Level Before(ft): 19.65
Static Water Level After (ft): 19.79
Screen Length (ft): 4.8'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: B. Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1300 | NA | 2.2 | 19.65 | — | — | — | — | PREP to start |
| 1320 | ↓ | ↓ | — | 9.5 | 6.07 | 1.11 | 999+ | very turbid - brown |
| 1347 | ↓ | ↓ | 19.64 | 8.4 | 6.18 | 1.41 | 82 | slightly cloudy |
| 355 | ↓ | ↓ | 19.9 | — | — | — | — | |
| 1403 | ↓ | ↓ | — | 10.6 | 6.19 | 1.42 | 999+ | very turbid - brown just surged |
| 1417 | ↓ | ↓ | 19.76 | 10.4 | 6.2 | 1.42 | 999+ | very turbid - brown just surged |
| 1429 | ↓ | ↓ | 19.7 | — | — | — | — | |
| 1439 | ↓ | ↓ | — | 10.3 | 6.25 | 1.37 | 31 | slightly cloudy |
| 1504 | ↓ | ↓ | — | 10.0 | 6.23 | 1.39 | 19 | slightly cloudy |
| 1518 | ↓ | ↓ | 19.70 | 10.1 | 6.27 | 1.38 | 245 | murky - just surged |
| 1535 | ↓ | ↓ | — | 10.4 | 6.26 | 1.38 | 32 | Slightly cloudy |
| 1547 | ↓ | ↓ | — | 9.7 | 6.47 | 1.41 | 5 | clear ~10' from bottom |
| 1606 | ↓ | ↓ | 19.78 | 9.9 | 6.52 | 1.41 | 36 | slightly cloudy ~20' from bottom |
| 1626 | ↓ | ↓ | 19.79 | 9.6 | 6.56 | 1.42 | 12 | clear |
| 636 | ↓ | ↓ | 19.79 | 10.4 | 6.44 | 1.41 | 18 | clear |

I think development after ~400 gallons

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-31S
Site: NIR
Date Installed: 11/16/97
Date Developed: 12/16/97
Dev. Method: Surge / Purge
Pump Type: Wal

Depth to Bottom (ft): 27.5
Static Water Level Before(ft): 19.23 BTOC
Static Water Level After (ft): 19.38 BTOC
Screen Length (ft): 10
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units C°) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1550 | NA | 1L / 11 sec | 19.23 | 19 | 6.60 | 1.36 | 103 | slightly cloudy |
| 1605 | | 1L / 10 sec | 19.43 | 18.9 | 6.12 | 1.36 | 35 | clear |
| 1610 | | | | | | | | surged well |
| 1620 | | 1L / 9 sec | 19.36 | 19.6 | 6.74 | 1.34 | 4 | clear |
| 1622 | | | | | | | | surge well |
| 1635 | | 1L / 9 sec | 19.25 | 19.7 | 6.77 | 1.33 | 30 | clear |
| 1637 | | | | | | | | surge well |
| 1649 | | 1L / 9 sec | 19.38 | 19.6 | 6.75 | 1.34 | 1 | clear |
| 1650 | | | | | | | | surge well |
| 1705 | | 1L / 9 sec | 19.38 | 19.6 | 6.76 | 1.33 | 0 | clear / end development after 106 gallons |
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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-31I
Site: NIROP Fridley
Date Installed: 11/15/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 96.6'
Static Water Level Before(ft): 19.12 @ 1545
Static Water Level After (ft): 27.31
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Beart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1545 | NA | 1L / 6sec | 19.12 | 15.1 | 6.36 | 2.28 | 51 | slightly cloudy, slight petroleum odor |
| 1600 | | 1L / 5sec | 26.92 | 15.3 | 6.96 | 2.21 | 5 | clear, slight petroleum odor |
| 1607 | | | | | | | | surge well |
| 1615 | | 1L / 5 sec | 27.17 | 15.6 | 6.99 | 2.21 | 0 | clear, slight petroleum odor |
| 1617 | | | | | | | | surge well |
| 1630 | | 1L / 5 sec | 27.23 | 15.9 | 6.99 | 2.19 | 0 | clear, slight petroleum odor |
| 1632 | | | | | | | | surge well |
| 1645 | | 1L / 5 sec | 27.29 | 15.8 | 6.99 | 2.19 | 0 | clear, slight petroleum odor |
| 1648 | | | | | | | | surge well |
| 1700 | | 1L / 5 sec | 27.29 | 15.8 | 6.99 | 2.18 | 0 | clear, slight petroleum odor |
| 1702 | | | | | | | | surge well |
| 1715 | | 1L / 5 sec | 27.28 | 15.9 | 7.0 | 2.17 | 0 | clear, slight petroleum odor |
| 1718 | | | | | | | | surge well |
| 1730 | | 1L / 5 sec | 27.30 | 15.5 | 7.02 | 2.18 | 0 | clear, slight petroleum odor |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS 31 I
Site: NIROP Fridley
Date Installed: 11/15/97
Date Developed: 12/16/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 96.6'
Static Water Level Before(ft): 19.12
Static Water Level After (ft): 27.31
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 2 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1745 | NA | 1L/5sec | 27.31 | 15.4 | 7.03 | 2.18 | 2 | Clear, slight ~~petroleum odor~~ stop development after ~381 gallons |
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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-31D
Site: NIROP FRIDLEY
Date Installed: 11-14-97
Date Developed: 12-15-97
Dev. Method: SUB PUMP & Surge
Pump Type: GRUNDFOS

Depth to Bottom (ft): 127.2'
Static Water Level Before(ft): 18.05'
Static Water Level After (ft): 102.74'
Screen Length (ft): 5'
Specific Capacity: –
Casing ID (in): 2"

Site Geologist: BRYN HOWZER / TERRY ROJAHN
Drilling Co.: BOART LONGYEAR
Project: NIROP FRIDLEY
Project Number: 6966
Sheet No. 1 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units C°) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1648 | | – | 18.05 | – | – | – | – | without Pump |
| 1702 | | | 18.05 | 18.6 | 6.10 | .582 | 25 | with pump submerged |
| 1707 | NA | 1L in 9 sec | 18.05 | 18.6 | 6.10 | 0.582 | 25 | 320Hz clear-sl. cloudy |
| 1713 | – | – | – | – | – | – | – | kicked off while surging |
| 1715 | – | – | – | – | – | – | – | 280Hz stopped |
| 1716 | – | – | – | – | – | – | – | 260Hz |
| 1718 | – | 1L in 13 sec | – | – | – | – | – | stopped set @ 250Hz |
| 1727 | – | – | – | – | – | – | – | |
| 1730 | – | 1L in 15 sec | 53.28 | 17.0 | 6.57 | 0.956 | 999+ | Grey |
| 1745 | – | 1L in 15.8 sec | – | 15.7 | 6.62 | 1.03 | 93 | Cloudy & Surge |
| 1800 | – | 1L in 15.7 sec | 52.85 | 15.6 | 6.65 | 1.02 | 109 | " |
| 1815 | – | 1L in 15.9 sec | 54.19 | 15.4 | 6.64 | 1.03 | 170 | " |
| 1830 | – | 1L in 15.9 sec | 54.95 | 15.2 | 6.63 | 1.04 | 61 | Sl. Cloudy (Surge) |
| 1845 | – | 1L in 16.2 sec | 55.97 | 15.4 | 6.66 | 1.04 | 110 | Sl. Cloudy 280Hz surge |

1657 MS-31S 19.19
1659 MS-31I 19.09

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# MONITORING WELL DEVELOPMENT RECORD

Well: AS-31D
Site: NIROP FRIDLEY
Date Installed: 11-14-97
Date Developed: 12-15-97
Dev. Method: SUB. PUMP + Surge
Pump Type: GRUNDFOS

Depth to Bottom (ft): 127.2'
Static Water Level Before(ft): 18.05'
Static Water Level After (ft): 102.74'
Screen Length (ft): 5'
Specific Capacity: -
Casing ID (in): 2"

Site Geologist: B. Howe
Drilling Co.: BART LONGYEAR
Project: NIROP FRIDLEY
Project Number: 6966
Sheet No. 2 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units____) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1900 | - | 1L-10SEC | 49.77 | 15.8 | 6.69 | 1.04 | 148 | 290 Hz Stop & Surge |
| (FR) ~~1922~~ 1922 | — | — | — | — | — | — | — | RESTART 270 Hz |
| 1930 | - | 1L in 8.5 sec | 101.93 | 14.5 | 6.71 | 1.04 | 828 | 270 Hz TANNISH |
| 1945 | - | 1L in 12.25 sec | 101.80 | 14.3 | 6.69 | 1.04 | 785 | 250 Hz TANNISH |
| 2000 | - | 1L in 12.45 sec | 101.69 | 14.4 | 6.70 | 1.03 | 156 | " Cloudy & Surge |
| 2015 | - | 1L in 12.30 sec | 102.15 | 14.4 | 6.73 | 1.04 | 90 | " Cloudy |
| 2030 | - | 1L in 12.0 sec | 102.94 | 14.4 | 6.74 | 1.04 | 47 | V.Sl. Cloudy |
| | | | | | | | | |
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Total Purged ≈ 220 gal

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-325
Site: NI ROP Fridley
Date Installed: 12/9/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Val

Depth to Bottom (ft): 26.1
Static Water Level Before(ft): 19.74 BTOC
Static Water Level After (ft): 19.98
Screen Length (ft): 10'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Bart Longyear
Project: NI ROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2258 | NA | 1L/8 sec | 19.74 | 18.8 | 6.71 | 1.54 | 999 | very turbid, brown |
| | | | | | | | | surge well |
| 2316 | | 1L/8 sec | 20.0 | 18.4 | 6.72 | 1.36 | 13 | clear |
| 2318 | | | | | | | | surge well |
| 2331 | | 1L/8 sec | 19.99 | 18.6 | 6.73 | 1.37 | 20 | clear |
| 2335 | | | | | | | | surge well |
| 2346 | | 1L/8 sec | 19.99 | 18.4 | 6.74 | 1.36 | 21 | clear |
| 2350 | | | | | | | | surge well |
| 2400 | | 1L/8 sec | 19.98 | 18.9 | 6.74 | 1.37 | 15 | clear, stop |
| | | | | | | | | development after |
| | | | | | | | | ~123 gallons |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-32I
Site: NIROP Fridley
Date Installed: 12/9/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 8.48
Static Water Level Before(ft): 25.33
Static Water Level After (ft): 27.50
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NI ROP Fridley
Project Number: 6966
Sheet No. 1 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2047 | NA | 1L/12 sec | 25.33 | 17.5 | 7.06 | 0.876 | 95 | slightly cloudy |
| 2051 | | | | | | | | surge well |
| 2102 | | 1L/12sec | 27.57 | 17.3 | 6.91 | 1.33 | 52 | slightly milky |
| 2105 | | | | | | | | surge well |
| 2116 | | 1L/11sec | 27.55 | 17.2 | 6.90 | 1.35 | 22 | clear |
| 2118 | | | | | | | | surge well |
| 2131 | | 1L/11sec | 27.51 | 16.9 | 6.95 | 1.35 | 18 | clear |
| 2135 | | | | | | | | surge well |
| 2146 | | 1L/12sec | 27.52 | 17.1 | 6.93 | 1.35 | 15 | clear |
| 2150 | | | | | | | | surge well |
| 2201 | | 1L/12 sec | 27.52 | 16.9 | 6.94 | 1.35 | 16 | clear |
| 2204 | | | | | | | | surge well |
| 2216 | | 1L / 11sec | 27.51 | 16.8 | 6.94 | 1.34 | 57 | slightly cloudy |
| 2219 | | | | | | | | surge well |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-32I
Site: NIROP FRIDLEY
Date Installed: 12/9/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 84.8'
Static Water Level Before(ft): 25.33
Static Water Level After (ft): 27.50
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 2 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2231 | NA | 12/12 sec | 27.50 | 17.0 | 6.92 | 1.35 | 12 | clear |
| 2238 | | | | | | | | surge well |
| 2246 | NA | 12/12 sec | 27.50 | 17.0 | 6.94 | 1.36 | 2 | clear, stop development after ~ gallons |
| | | | | | | | | |
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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-32 D
Site: NIROP Fridley
Date Installed: 12/8/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 126.2'
Static Water Level Before(ft): 23.93' BTOC
Static Water Level After (ft): 26.81'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2045 | NA | 1L / 6 sec | 23.93 | 13.9 | 7.54 | 0.548 | 999 | very turbid |
| 2048 | | | | | | | | surge well |
| 2101 | | 1L / 6 sec | 27.03 | 13.1 | 7.10 | 0.9679 | 125 | milky |
| 2103 | | | | | | | | surge well |
| 2115 | | 1L / 6 sec | 27.09 | 12.7 | 7.15 | 1.05 | 24 | clear |
| 2118 | | | | | | | | surge well |
| 2130 | | 1L / 5 sec | 27.10 | 12.9 | 7.19 | 1.06 | 7 | clear |
| 2133 | | | | | | | | surge well |
| 2145 | | 1L / 5 sec | 27.08 | 12.7 | 7.23 | 1.06 | 8 | clear |
| 2148 | | | | | | | | surge well |
| 2200 | | 1L / 5 sec | 27.08 | 12.8 | 7.27 | 1.06 | 10 | clear |
| 2203 | | | | | | | | surge well |
| 2215 | | 1L / 5 sec | 26.82 | 12.8 | 7.21 | 1.06 | 67 | ~~pump stopped for ~2 min~~ surge well, cloudy |
| | | | | | | | | |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-32D
Site: NIROP Fridley
Date Installed: 12/9/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 126.2'
Static Water Level Before(ft): 23.93' BTOC
Static Water Level After (ft): 26.8'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 2 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 2230 | NA | 1L/5sec | 26.84 | 12.8 | 7.18 | 1.06 | 15 | clear |
| 2233 | | | | | | | | surge well |
| 2245 | | 1L/5sec | 26.81 | 13.0 | 7.15 | 1.09 | 4 | clear |
| 2248 | | | | | | | | surge well |
| 2301 | | 1L/5sec | 26.81 | 13.2 | 7.20 | 1.09 | 37 | clear |
| | | | | | | | | surge well |
| 2315 | | 1L/5sec | 26.77 | 12.6 | 7.17 | 1.07 | 4 | clear |
| 2317 | | | | | | | | surge well |
| 2330 | | 1L/5sec | 26.86 | 13.3 | 7.17 | 1.09 | 4 | clear |
| 2334 | | | | | | | | surge well |
| 2345 | | 1L/5sec | 26.81 | 13.3 | 7.19 | 1.09 | 4 | clear, ~~surge~~ |
| | | | | | | | | development after ~550 gallons |
| | | | | | | | | |
| | | | | | | | | |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-335
Site: NIROP Fridley
Date Installed: 12/2/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Wdl Pump

Depth to Bottom (ft): 27'
Static Water Level Before(ft): 19.95 BTOC
Static Water Level After (ft): 21.85
Screen Length (ft): 10'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NI ROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1808 | NA | 1L / 10 sec | 19.95 | 19.4 | 7.54 | 0.504 | 999+ | very turbid, grayish gray, sulfur odor |
| 1809 | | | | | | | | surge well |
| 1821 | | 1L / 16 sec | 20.42 | 18.8 | 7.23 | 0.540 | 370 | slightly cloudy, slight odor |
| 1834 | | | | | | | | surge well |
| 1846 | | 1L / 22 sec | 19.90 | 19.40 | 7.26 | 0.539 | 351 | slightly cloudy, slight odor |
| 1848 | | | | | | | | surge well, pump stopped |
| 1901 | | 1L / 8 sec | 20.02 | 19.9 | 7.31 | 0.548 | 999 | pump stopped again, adjusted it and started, |
| | | | | | | | | turbid |
| 1930 | | 1L / 10 sec | 21.81 | 18.8 | 7.38 | 0.537 | 156 | milky |
| 1934 | | | | | | | | surge well, stop |
| 1945 | | 1L / 9 sec | 21.85 | 19.0 | 7.28 | 0.537 | 8 | development after |
| | | | | | | | | ~76 gallons, clear |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-33I
Site: NIROP Fridley
Date Installed: 12/1/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 75.9'
Static Water Level Before(ft): 19.85 BTOC
Static Water Level After (ft): 40.61'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 1

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1553 | NA | 1L/17sec | 19.85 | 17.6 | 7.36 | .91 | 999 | very turbid |
| 1602 | | | | | | | | surge well |
| 1616 | | 1L/32sec | 35.62 | 17.8 | 7.14 | 1.11 | 305 | cloudy |
| | | | | | | | | surge well |
| 1633 | | 1L/37sec | 38.76 | 17.4 | 7.05 | 1.30 | 458 | cloudy |
| 1637 | | | | | | | | surge well |
| 1646 | | 1L/38sec | 39.36 | 17.6 | 7.01 | 1.39 | 103 | silty |
| 1650 | | | | | | | | surge well |
| 1701 | | 1L/44sec | 40.33 | 17.4 | 7.00 | 1.46 | 34 | clear |
| 1704 | | | | | | | | surge well |
| 1716 | | 1L/42sec | 40.07 | 17.4 | 6.98 | 1.49 | 37 | clear |
| 1719 | | | | | | | | surge well |
| 1733 | | 1L/38sec | 40.48 | 17.5 | 6.94 | 1.51 | 14 | clear |
| 1738 | | | | | | | | surge well |
| 1746 | | 1L/42sec | 40.5 | 17.3 | 6.96 | 1.51 | 36 | clear |
| 1750 | | | | | | | | surge well |
| 1801 | | 1L/42sec | 40.61 | 17.2 | 6.95 | 1.52 | 9 | clear. ~~of~~ development after gallons |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-33D
Site: NIROP Fridley
Date Installed: 11/19/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 120.3'
Static Water Level Before(ft): 20.13' BTOC
Static Water Level After (ft): 33.00'
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 1 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1550 | NA | 1L / 45sec | 20.13 | 13.2 | 6.56 | .99 | 999 | very turbid |
| 1554 | | | | | | | | surge well |
| 1615 | | 1L/5sec | 27.1 | 13.2 | 7.20 | 1.04 | 95 | cloudy |
| 1619 | | | | | | | | surge well |
| 1631 | | 1L/5sec | 30.83 | 13.5 | 7.17 | 1.04 | 166 | milky |
| 1634 | | | | | | | | surge well |
| 1645 | | 1L/5sec | 31.34 | 13.4 | 7.17 | 1.05 | 41 | milky |
| 1648 | | | | | | | | surge well |
| 1700 | | 1L/5sec | 31.74 | 13.4 | 7.37 | 1.06 | 33 | clear |
| 1703 | | | | | | | | surge well |
| 1715 | | 1L/5sec | 31.69 | 13.4 | 7.19 | 1.07 | 16 | clear |
| 1718 | | | | | | | | surge well |
| 1731 | | 1L/5sec | 32.36 | 13.4 | 7.17 | 1.06 | 18 | clear |
| 1734 | | | | | | | | surge well |

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# MONITORING WELL DEVELOPMENT RECORD

Well: MS-33D
Site: NIROP Fridley
Date Installed: 11/19/97
Date Developed: 12/17/97
Dev. Method: Surge / Pump
Pump Type: Redi Flo 2

Depth to Bottom (ft): 120.3'
Static Water Level Before(ft): 20.13 BTOC
Static Water Level After (ft): 33.05
Screen Length (ft): 5'
Specific Capacity: —
Casing ID (in): 2"

Site Geologist: Bryn Howze
Drilling Co.: Boart Longyear
Project: NIROP Fridley
Project Number: 6966
Sheet No. 2 of 2

| Time | Estimated Sediment Thickness (ft) | Cumulative Water Volume or Pumping Rate (gallons/gpm) | Water Level Reading (ft. below TOC) | Temperature (units °C) | pH | Specific Conductance (microsiemens/cm) | Turbidity (NTU) | Remarks (odor, color, etc.) |
|---|---|---|---|---|---|---|---|---|
| 1745 | NA | 1L/55cc | 32.46 | 13.3 | 7.22 | 1.06 | 21 | clear |
| 1750 | | | | | | | | surge well |
| 1800 | | 1L/55cc | 32.55 | 13.2 | 7.17 | 1.06 | 9 | clear |
| 1805 | | | | | | | | surge well |
| 1815 | | 1L/55cc | 32.86 | 13.2 | 7.16 | 0.972 | 39 | clear |
| 1817 | | | | | | | | surge well |
| 1830 | | 1L/55cc | 32.90 | 12.28 | 7.16 | 1.05 | 13 | clear |
| 1832 | | | | | | | | surge well |
| 1845 | | 1L/55cc | 32.83 | 13.0 | 7.22 | 1.04 | 14 | clear |
| 1847 | | | | | | | | surge well |
| 1900 | | 1L/55cc | 33.05 | 13.0 | 7.24 | 0.983 | 15 | clear |
| | | | | | | | | stop development after |
| | | | | | | | | 2602 gallons |
| | | | | | | | | |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - FOLLOW-UP WELL DEVELOPMENT TO MEET DRILLING FLUID EVACUATION REQUIREMENTS

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-28S
MEASURED WELL NUMBER: -

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST Follow up WELL DEVELOPMENT

DATE(s): 1-13-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE & HERMIT
DEPTH CORRECTION (ft): NA
TEST NUMBER: 6
PUMP SETTING (Ft. below monitoring point): 24'
STATIC WATER LEVEL (ft): 18.86
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: B. HOWZE & T. ROJAHN
REMARKS: XD @ 26', TD 27.3'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1435 | 0:00 | 18.86 | NA | 0.0 | – | – | Start Test → Step #C |
| – | 0:30 | 19.59 | NA | -0.73 | – | – | |
| 1436 | 1:00 | 19.61 | NA | -0.75 | – | – | |
| – | 1.30 | 19.63 | NA | -0.77 | – | – | |
| 1437 | 2:00 | 19.64 | NA | -0.78 | – | – | |
| 1438 | 3:00 | 19.65 | NA | -0.79 | – | – | |
| 1439 | 4:00 | 19.65 | NA | -0.79 | – | – | |
| 1440 | 5:00 | 19.65 | NA | -0.79 | 31.5 | 19sec/2gal | = 6.3gal/min |
| 1443 | → | → | → | → | 54.0 | → | @ 8:40 min into TEST Pump Stopped → Step #1 |
| 1445 | 10:00 | – | NA | – | – | – | |
| 1450 | 15:00 | 18.87 | NA | -0.01 | – | – | Pump Started again |
| 1455 | → | → | → | → | → | → | Start Step #2 → (DD |
| 1458 | 23 00 | 19.20 | NA | -0.34 | – | 28sec/2gal | = 4.3gal/min |
| 1500 | 25:00 | – | – | | 75.0 | – | Pump Stopped Pumping |
| 1509 | → | → | → | → | → | → | Stop HERMIT Recovery Complete |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | NOTE: | No time to monitor observation wells. | | | | | |
| | | PROBLEM w/ TEEL PUMPS OVER heating & cutting out | | | | | |
| | | will Abort this well until we can find A suitable ~~test~~ SURFACE PUMP (TR) OR PURCHASE | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-28S
MEASURED WELL NUMBER: -

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST
FOLLOW-UP WELL DEVELOPMENT

DATE(s): 1-22-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE & HERMIT
DEPTH CORRECTION (ft): NA
TEST NUMBER: 1
PUMP SETTING (Ft. below monitoring point): 24'
STATIC WATER LEVEL (ft): 18.91
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: S. CONTI & T. ROJAHN
REMARKS: XD PROBE 1' OFF Bottom HEAD READS 7.232
Zeroed Flow Meter

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1725 | 0 | 18.91 | NA | 0.0 | - | - | Start Test 1 → STEP 0 |
| 1730 | 5 | - | | - | - | - | |
| 1735 | 10 | - | | - | - | - | |
| 1740 | 15 | 19.02 | | -0.11 | 34 | 2.81 | |
| 1745 | 20 | 19.02 | | -0.11 | 45 | 2.87 | |
| 1750 | 25 | 19.02 | | -0.11 | 57 | 2.87 | |
| 1755 | 30 | 19.05 | | -0.14 | - | - | |
| 1805 | 40 | 19.06 | | -0.15 | 117 | 3.64 | |
| 1815 | 50 | 19.07 | | -0.16 | 150 | 3.69 | |
| 1825 | 60 | 19.07 | | -0.16 | 186 | 3.64 | |
| 1855 | 90 | 19.07 | | -0.16 | 288 | 3.69 | |
| 1925 | 120 | 19.08 | | -0.17 | 396 | 3.64 | |
| 1926 | | | | | | | Stop Pumping Start Recovery → Step #1 |
| 1949 | | | | | | | Recovery Complete Stop Hermit |
| | | Purged | 75gals | last shift (1-13-98) but old feel | | | |
| | | | Kept Cutting out | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-28S
MEASURED WELL NUMBER: MS-28I

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

| | |
|---|---|
| DATE(s): 1-22-98 | MONITORING POINT: TOC |
| MEASUREMENT METHOD: M-SCOPE | DEPTH CORRECTION (ft): NA |
| TEST NUMBER: 1 | PUMP SETTING (Ft. below monitoring point): NA |
| STATIC WATER LEVEL (ft): 18.89 | DISTANCE FROM PUMPING WELL (ft): 4.6' |
| PERSONNEL: S. Conti & T. Rojahn | |
| REMARKS: OBSERVATION WELL | |

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1725 | 0 | 18.89 | NA | 0.00 | NA | NA | |
| 1825 | 60 | 18.89 | ↓ | 0.00 | ↓ | ↓ | |
| 1855 | 90 | 18.89 | ↓ | 0.00 | ↓ | ↓ | |
| 1925 | 120 | 18.90 | ↓ | -0.01 | ↓ | ↓ | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-28S
MEASURED WELL NUMBER: MS-28D

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-22-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 1
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.50
DISTANCE FROM PUMPING WELL (ft): 9.85'
PERSONNEL: S. CONTI & T. ROJAHN
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1725 | 0 | 18.50 | NA | 0.00 | NA | NA | |
| 1825 | 60 | 18.51 | ↓ | -0.01 | ↓ | ↓ | |
| 1855 | 90 | 18.51 | ↓ | -0.01 | ↓ | ↓ | |
| 1925 | 120 | 18.52 | ↓ | -0.02 | ↓ | ↓ | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-28I
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST
FOLLOW-UP WELL DEVELOPMENT

DATE(s): 1-13-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope + Hermit 2000
DEPTH CORRECTION (ft): NA
TEST NUMBER: #7
PUMP SETTING (Ft. below monitoring point): 84.5'
STATIC WATER LEVEL (ft): 18.83
DISTANCE FROM PUMPING WELL (ft): ~~TBD 4.5~~ NA
PERSONNEL: B. Howze + T. Rojahn
REMARKS: XD @ 50'; USED GRUNDFOES PUMP

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) GALS REMOVED | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1635 | 0:00 | 18.83 | NA | 0.0 | — | — | STEP #0 Hermit |
| — | 0:30 | 20.46 | | -1.63 | — | — | 230 Hz |
| 1636 | 1:00 | 20.47 | | -1.64 | — | — | |
| 1637 | 2:00 | 20.47 | | -1.64 | — | — | |
| 1638 | 3:00 | 20.47 | | -1.64 | — | 4.4 sec/L | |
| 1639 | 4:00 | 20.47 | | -1.64 | — | — | |
| 1640 | 5:00 | 20.47 | | -1.64 | 18 | — | |
| 1645 | 10:00 | 20.52 | | -1.69 | 36 | 4.1 sec/L | adjusted pumping speed → 235 |
| 1650 | 15:00 | 20.52 | | -1.69 | — | — | 235 Hz |
| 1655 | 20:00 | 20.52 | | -1.69 | — | — | |
| 1700 | 25:00 | 20.53 | | -1.70 | — | — | |
| 1705 | 30:00 | 20.53 | | -1.70 | 113 | 4.0 sec/L | |
| 1735 | 60:00 | 20.53 | | -1.70 | 233 | 4.0 sec/L | |
| 1805 | 90:00 | 20.54 | | -1.71 | 353 | 3.8 sec/L | |
| 1835 | 120:00 | 20.54 | | -1.71 | 478 | 3.8 sec/L | |
| 1905 | 150:00 | 20.54 | | -1.71 | 603 | 3.7 sec/L | |
| 1935 | 180:00 | 20.54 | | -1.71 | 728 | 3.8 sec/L | |
| 2005 | 210:00 | 20.56 | | -1.73 | 853 | 3.8 sec/L | |
| 2035 | 240:00 | 20.56 | | -1.73 | 978 | 3.8 sec/L | |
| 2105 | 270:00 | 20.56 | | -1.73 | 1103 | 3.8 sec/L | |
| 2135 | 300:00 | 20.57 | | -1.74 | 1228 | 3.8 sec/L | |
| 2205 | 330:00 | 20.57 | | -1.74 | 1353 | 3.8 sec/L | |
| 2235 | 360:00 | 20.57 | | -1.74 | 1478 | 3.8 sec/L | |
| 2250 | 375.00 | — | | — | 1538 | 3.9 sec/L | Stop Pump Start Step #1 (RECOVERY) |
| | | | | | | | |
| 2255 | — | — | NA | — | NA | NA | |
| 2256 | 1:00 | 18.87 | | -0.04 | | | — |
| 2257 | 2:00 | 18.86 | | -0.03 | | | — |
| 2258 | 3:00 | 18.86 | | -0.03 | | | — |
| 2259 | 4:00 | 18.86 | | -0.03 | | | — |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-28 I
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST FOLLOW-UP WELL DEVELOPMENT

DATE(s): 1-13-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: #7
PUMP SETTING (Ft. below monitoring point): 84.5'
STATIC WATER LEVEL (ft): 18.83
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: B. Howze & T. Rojahn
REMARKS: See page 1 of 2
RECOVERY CON'T ON PUMPING WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) Con't | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2300 | 5:00 | 18.85 | NA | -0.02 | NA | NA | — |
| 2305 | 10:00 | 18.85 | ↓ | -0.02 | ↓ | ↓ | — |
| 2310 | 15:00 | 18.84 | ↓ | -0.01 | ↓ | ↓ | — |
| 2315 | 20:00 | 18.84 | ↓ | -0.01 | ↓ | ↓ | Stop Test #7 & Step 1 (Helmit) |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS - 28 I
MEASURED WELL NUMBER: MS - 28 S

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-13-98
MONITORING POINT: TOC (PVC)
MEASUREMENT METHOD: M - Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: # 7
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.86
DISTANCE FROM PUMPING WELL (ft): 4.6'
PERSONNEL: B. Howze & T. Rojahai
REMARKS: OBSERVATION WELL FOR MS-28 I

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1640 | 5 | 18.87 | NA | - 0.01 | NA | NA | |
| 1735 | 60 | 18.88 | | - 0.02 | | | |
| 1835 | 120 | 18.89 | | - 0.03 | | | |
| 1935 | 180 | 18.89 | | - 0.03 | | | |
| 2035 | 240 | 18.89 | | - 0.03 | | | |
| 2135 | 300 | 18.89 | | - 0.03 | | | |
| 2235 | 360 | 18.89 | | - 0.03 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-28I
MEASURED WELL NUMBER: MS-28D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-13-98
MONITORING POINT: TOC (PVC)
MEASUREMENT METHOD: M-Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: #7
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.29
DISTANCE FROM PUMPING WELL (ft): 5.25'
PERSONNEL: B. Howze & T. Rojahn
REMARKS: OBSERVATION WELL FOR MS-28I

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1640 | 5 | 18.29 | NA | 0.0 | NA | NA | |
| 1735 | 60 | 18.29 | | | | | |
| 1835 | 120 | 18.29 | | | | | |
| 1935 | 180 | 18.29 | | | | | |
| 2035 | 240 | 18.29 | | | | | |
| 2135 | 300 | 18.29 | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-28 I
MEASURED WELL NUMBER: MS-31 I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-13-98
MONITORING POINT: TOP OF PVC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: #7
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 20.19
DISTANCE FROM PUMPING WELL (ft):
PERSONNEL: B. HOWZE & T. ROJAHN
REMARKS: OBSERVATION WELL FOR MS-28 I

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1700 | 25 | 20.19 | NA | 0.0 | NA | NA | |
| 2210 | 335 | 20.19 | NA | 0.0 | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-28D
MEASURED WELL NUMBER: —

[ ] PUMPING TEST FOLLOW UP WELL DEVELOPMENT [ ] STEP DRAW DOWN TEST ✓ SP CAP TEST

DATE(s): 1-20-98
MONITORING POINT: TOC
MEASUREMENT METHOD: HERMIT only
DEPTH CORRECTION (ft): NA
TEST NUMBER: 0
PUMP SETTING (Ft. below monitoring point): 30' Below TOC
STATIC WATER LEVEL (ft): ~~18.48~~ 18.51
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: S. Cant. & T. Rojahn
REMARKS: ~~XD @ 500'~~; XD @ READING ~~33.389~~ 33.311 (HEAD)

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| M-Scope | NO READINGS | | w/ 1¼" PE Tubing | | | WOULD NOT PUMP w/ 1½ HP | OUR NEW PUMP |
| 1916 | 0 | 18.51 | NA | 0.0 | | | Not pumping |
| 1935 | 0 | 18.51 | NA | 0.0 | | | NOT PUMPING |
| 2130 | 0 | 18.51 | NA | 0.0 | | | |
| 2135 | 5 | 21.22 | | -2.71 | — | — | USING NEW TEEL |
| 2141 | 11 | 21.25 | | -2.74 | — | 4.87 | 1½ HP CENTR. PUMP |
| 2147 | 17 | 21.30 | | -2.79 | 85.0 | 4.92 | HAD TO PRIME PUMP |
| 2150 | 20 | 21.33 | | -2.82 | 95.0 | 4.87 | AND ALSO 1" WATER |
| 2155 | 25 | 21.33 | | -2.82 | 120.0 | 4.97 | HOSE TO GET IT TO PUMP |
| 2200 | 30 | 21.35 | | -2.84 | — | — | THEN IT WAS OK |
| 2201 | 31 | — | | — | 150.0 | 5.03 | XD MAY HAVE MOVED A LITTLE |
| 2215 | 45 | 21.39 | | -2.88 | 220.0 | 4.98 | |
| 2230 | 60 | 21.39 | | -2.87 | 295.0 | 4.87 | |
| 2300 | 90 | 21.38 | | -2.87 | 445.0 | 4.92 | |
| 2330 | 120 | 21.43 | | -2.92 | 597.0 | 5.03 | XD -2.774 |
| 2400 | 150 | 21.43 | | -2.92 | 761.0 | 5.08 | XD -2.758 |
| 0030 | 180 | 21.44 | | -2.93 | 892.0 | 5.03 | XD -2.726 |
| 0030 | REC @ | 0030 HRS | NA | — | | | PUMP OFF |
| 0040 | 10 | 18.55 | NA | -0.04 | | | SEE XD/HERMIT |
| 0045 | 15 | — | NA | — | | | DATA FOR MEAS. |
| | | | | | | | XD @ 0.000 |
| | | | | | | | HEAD (33.343) |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS28D
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST
FOLLOW-UP WELL DEVELOPMENT

DATE(s): 1-21-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope (Only)
DEPTH CORRECTION (ft): NA
TEST NUMBER: —
PUMP SETTING (Ft. below monitoring point): 30'
STATIC WATER LEVEL (ft): 18.51 (T CAS.)
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: SJC/TR
REMARKS: THIS DAYS PUMPING - ONLY TO EVACUATE THE REQUIRED VOLUME OF WATER - WHICH IS ≈ 5000 GAL
Grand Total on Flow Meter (38,458) & ZEROED FLOW METER

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | HAND WATER LEVEL (Ft.) MEAS (HERON) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1300 | 0 | 18.51 | NA | 0.0 | — | — | TEEL 1/2 HP CENTR PUMP - INTAKE |
| 1305 | 5 | 21.11 | | -2.60 | 20.0 | 5.34 | @ ≈ 31' BGS. |
| 1310 | 10 | 21.15 | | -2.64 | 45.5 | 5.39 | HERON METER |
| 1315 | 15 | 21.21 | | -2.70 | 72.5 | 5.39 | |
| 1320 | 20 | 21.22 | | -2.71 | 98.0 | 5.44 | |
| 1325 | 25 | 21.29 | | -2.78 | 133.0 | 5.44 | |
| 1330 | 30 | 21.31 | | -2.80 | 152.5 | 5.49 | |
| 1340 | 40 | 21.35 | | -2.84 | 207 | 5.44 | |
| 1350 | 50 | 21.34 | | -2.83 | 274 | 5.44 | |
| 1400 | 60 | 21.35 | | -2.84 | 319 | 5.49 | |
| 1430 | 90 | 21.39 | | -2.88 | 482 | 5.44 | |
| 1500 | 120 | 21.39 | | -2.88 | 643 | 5.44 | |
| 1530 | 150 | 21.39 | | -2.88 | 805 | 5.34 | |
| 1600 | 180 | 21.40 | | -2.89 | 993 | 5.39 | |
| 1630 | 210 | 21.39 | | -2.88 | 1128 | 5.44 | |
| 1700 | 240 | 21.39 | | -2.88 | 1290 | 5.39 | |
| 1730 | 270 | 21.38 | | -2.87 | 1455 | 5.23 | |
| 1800 | 300 | 21.36 | | -2.85 | 1607 | 5.28 | |
| 1830 | 330 | 21.37 | | -2.86 | 1766 | 5.28 | |
| 1900 | 360 | 21.37 | | -2.86 | 1923 | 5.23 | STOP PUMPING @ 1953g |
| ~~1930~~ | ~~390~~ | TR — | — | — | — | — | CHANGE 200 GAL TANKS |
| ~~2000~~ | ~~420~~ | TR — | — | — | ~~1953~~ TR | — | |
| 2000 TR | 0 | 18.57 | NA | -0.06 | 1953 | 0.0 | |
| 2140 | 40 | 20.89 | | -2.38 | 2166 | 5.08 | |
| 2200 | 60 | 20.91 | | -2.40 | 2260 | 5.03 | |
| 2230 | 90 | 20.96 | | -2.45 | 2440 | 5.18 | |
| 2300 | 120 | 20.99 | | -2.48 | 2594 | 5.13 | |
| 2330 | 150 | 20.99 | | -2.48 | 2726 | 4.92 | |
| 2400 | 180 | 20.99 | | -2.48 | 2875 | 5.03 | |
| 0050 | 230 | 20.97 | | -2.46 | 3144 | 5.18 | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-28D
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-21/22/98
MEASUREMENT METHOD: M-SCOPE
TEST NUMBER: —
STATIC WATER LEVEL (ft): 18.57
PERSONNEL: S. CONTI & T. ROJAHN
REMARKS: Continue EVACUATION OF REQUIRED VOLUME

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): 30'
DISTANCE FROM PUMPING WELL (ft): NA

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0100 | 240 | 20.96 | NA | -2.45 | 3180 | 5.13 | |
| 0130 | 270 | 20.96 | | -2.45 | 3335 | 5.13 | |
| 0200 | 300 | 21.00 | | -2.49 | 3503 | 5.03 | |
| 0230 | 330 | 20.96 | | -2.45 | 3645 | 5.03 | |
| 0300 | 360 | 20.97 | | -2.46 | 3790 | 5.03 | |
| 0330 | 390 | 20.95 | | -2.44 | 3939 | 5.13 | |
| 0350 | 410 | 20.95 | | -2.44 | 4040 | 5.03 | |
| | +360 | | | | | | PUMP OFF @ |
| | 780 | min total | Pumping | Time | | | 0350 - REQ. |
| | | | | | | | VOLUMES REACHED |
| | | | | | | | — SJC |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-28D
MEASURED WELL NUMBER: MS-28S

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-20-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 0
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.86
DISTANCE FROM PUMPING WELL (ft): 9.85
PERSONNEL: S. CONTI & T. ROWAHN
REMARKS: HERON WATER LEVEL METER.
OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1905 | 0 | 18.86 | NA | — | NA | NA | |
| 2130 | 0 | 18.86 | | — | | | |
| 2200 | 30 | 18.87 | | -0.01 | | | |
| 2230 | 60 | 18.87 | | -0.01 | | | |
| 2300 | 90 | 18.87 | | -0.01 | | | |
| 2330 | 120 | 18.87 | | -0.01 | | | |
| 2400 | 150 | 18.87 | | -0.01 | | | |
| 0030 | 180 | 18.87 | | -0.01 | | | |
| | REC | | | | | | |
| 0037 | 7 | 18.87 | NA | — | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-28D
MEASURED WELL NUMBER: MS-28I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-20-98
MONITORING POINT: TOC
MEASUREMENT METHOD:
DEPTH CORRECTION (ft): NA
TEST NUMBER: 0
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.82
DISTANCE FROM PUMPING WELL (ft): 5.25'
PERSONNEL: S. CONTI & T. ROJAHN
REMARKS: HERON WATER LEVEL METER
OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1900 | 0 | 18.82 | NA | – | NA | NA | |
| 2130 | 0 | 18.92 | | – | | | |
| 2200 | 30 | 18.93 | | -0.01 | | | |
| 2230 | 60 | 18.83 | | -0.01 | | | |
| 2300 | 90 | 18.83 | | -0.01 | | | |
| 2330 | 120 | 18.83 | | -0.01 | | | |
| 2400 | 150 | 18.83 | | -0.01 | | | |
| 0030 | 180 | 18.83 | | -0.01 | | | |
| | REC | | | | | | |
| 0037 | 7 | 18.84 | NA | – | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-28D
MEASURED WELL NUMBER: MS-31D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-20-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 0
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.27
DISTANCE FROM PUMPING WELL (ft): SEE SURVEY MAP
PERSONNEL: S. CONTI & T. ROJAHN
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1857 | 0 | 18.27 | NA | – | NA | NA | |
| 2300 | 90 | 18.27 | NA | 0.0 | NA | NA | NO CHANGE |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-29S
MEASURED WELL NUMBER: –

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-22-98 (TR)
MEASUREMENT METHOD: ~~M-Scope~~ & HERMIT
TEST NUMBER: 2
STATIC WATER LEVEL (ft): 19.20 @ 2045
PERSONNEL: S. CONTI & T. ROJAHN
REMARKS: XD - 1' OFF Bottom

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): 24'
DISTANCE FROM PUMPING WELL (ft): NA

No m-scope readings - hose/tubing to thick to allow m-scope probe to pass

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) SEE HERMIT DATA | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2130 | 0 | 19.20 | → | → | → | STEP 0 | HERMIT @ 7.023 |
| 2140 | 10 | – | NA | – | 45 | 5.80 | USING 1" INLET |
| 2150 | 20 | – | NA | – | 99 | 5.70 | CANNOT USE |
| 2200 | 30 | – | NA | – | 157 | 5.70 | M-SCOPE |
| 2212 | 42 | – | NA | – | 228 | 5.60 | |
| | | | | | | | |
| 2214 | 0 | → | → | → | → | STEP 1 | Start RECOVERY |
| 2224 | 10 | → | → | → | → | END | Stop RECOVERY |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-295
MEASURED WELL NUMBER: MS-29I

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-22-98
MEASUREMENT METHOD: M-Scope
TEST NUMBER: 2
STATIC WATER LEVEL (ft): 19.18 @ 2045
PERSONNEL: S. Conti & T. Rojahn
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.0'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2130 | 0 | 19.18 | NA | 0.0 | NA | NA | |
| 2210 | 40 | 19.18 | NA | 0.0 | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-29S
MEASURED WELL NUMBER: MS-29D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

| | |
|---|---|
| DATE(s): 1-22-98 | MONITORING POINT: TOC |
| MEASUREMENT METHOD: M-SCOPE | DEPTH CORRECTION (ft): NA |
| TEST NUMBER: 2 | PUMP SETTING (Ft. below monitoring point): NA |
| STATIC WATER LEVEL (ft): 17.92 | DISTANCE FROM PUMPING WELL (ft): 10.0' |
| PERSONNEL: S. CONTI & T. ROJAHN | |
| REMARKS: OBSERVATION WELL | |

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 21:30 | 0 | 17.92 | NA | 0.0 | NA | NA | |
| 22:10 | 40 | 17.92 | NA | 0.0 | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-29 I
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST
FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-9-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE & HERMIT
DEPTH CORRECTION (ft): NA
TEST NUMBER: 2
PUMP SETTING (Ft. below monitoring point): 30'
STATIC WATER LEVEL (ft): 19.02
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: B. HOWZE & T. ROJAHN
REMARKS: XD 1' OFF Bottom; TEEL Pump
PURGED 644gals this date - TEEL Kept cutting out (Stop + Start 4 times)

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2030 | - | 19.02 | NA | 0.0 | 0.0 | — | |
| 2120 | 0 | 19.02 | | 0.0 | 0.0 | — | Start Step 0 |
| 2120 | 0:30 | 19.89 | | -0.87 | | — | |
| 2121 | 1 | 19.89 | | -0.87 | | — | |
| 2122 | 2 | 19.89 | | -0.87 | | — | |
| 2123 | 3 | 19.89 | | -0.87 | | — | |
| 2124 | 4 | 19.88 | | -0.86 | | — | |
| 2125 | 5 | 19.88 | | -0.86 | | 2SEC/L | 7.9 gpm |
| 2130 | 10 | 19.88 | | -0.86 | | — | |
| 2135 | 15 | 19.88 | | -0.86 | | 1.8SEC/L | 8.8 gpm |
| 2150 | 30 | 19.88 | | -0.86 | | 1.8SEC/L | |
| 2156 | 36 | | | | ~288gals | — | Pump Cut out (let pump coi) |
| | | | | | | | |
| 2230 | 0 | 19.04 | NA | -0.02 | 0 | — | Restart Pump (STEP #1) |
| 2230 | 0:45 | 19.94 | | -0.92 | | — | |
| 2231 | 1 | 19.93 | | -0.91 | | — | |
| 2232 | 2 | 19.93 | | -0.91 | | 1.6SEC/L | 9.9 gpm |
| 2233 | 3 | 19.93 | | -0.91 | | — | |
| 2234 | 4 | 19.93 | | -0.91 | | — | |
| 2235 | 5 | 19.93 | | -0.91 | | — | |
| 2240 | 10 | 19.93 | | -0.91 | | 1.7SEC/L | 9.3 gpm |
| 2245 | 15 | 19.93 | | -0.91 | | 1.7SEC/L | 9.3 gpm |
| 2249 | 19 | | | Another | ~176gals | purged | Pump Cut out 2nd time |
| | | | | | | | |
| 2315 | 0 | — | NA | — | 0 | — | |
| 2315 | 0:30 | 19.79 | | -0.77 | | 1.8SEC/L | 8.8 gpm |
| 2316 | 1 | 19.79 | | -0.77 | | — | |
| 2320 | 5 | 19.78 | | -0.76 | | 1.8SEC/L | 8.8 gpm |
| 2325 | 10 | 19.78 | | -0.76 | | — | |
| 2327 | 12:30 | | | Another | ~110gals | purged | Stopped pump & started STEP #3 @ 234 LET RECOVER |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

Restart Pump @ 2341 pump rate @ 8.8gpm → SHUT PUMP OFF @ 2349 Hrs = 70gals Addit.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-29 I
MEASURED WELL NUMBER: MS-29 S

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-9-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 2
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 19.07
DISTANCE FROM PUMPING WELL (ft): 4.9'
PERSONNEL: B. HOWZE & T. ROJAHN
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2032 | - | 19.07 | NA | | NA | NA | STEP 0 |
| 2150 | 30 | 19.08 | NA | -0.01 | ↓ | ↓ | |
| | | | | | | | |
| 2236 | 6 | 19.08 | NA | -0.01 | NA | NA | STEP 1 |
| 2245 | 15 | 19.08 | NA | -0.01 | ↓ | ↓ | |
| | | | | | | | |
| 2322 | 7 | 19.08 | NA | -0.01 | NA | NA | STEP 2 |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-29 I
MEASURED WELL NUMBER: MS-29 D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-9-98
MEASUREMENT METHOD: M-SCOP
TEST NUMBER: 2
STATIC WATER LEVEL (ft): 17.95
PERSONNEL: B. HOWZE & T. ROJAHN
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.1'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2034 | – | 17.95 | NA | 0.0 | NA | NA | STEP 0 |
| 2150 | 30 | 17.97 | NA | - 0.02 | NA | NA | ↓ |
| | | | | | | | |
| 2236 | 6 | 17.97 | NA | - 0.02 | NA | NA | STEP 1 |
| 2245 | 15 | 17.97 | NA | -0.02 | NA | NA | ↓ |
| | | | | | | | |
| 2322 | 7 | 17.97 | NA | -0.02 | NA | NA | STEP 2 |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-29D
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST
FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-25-98
MONITORING POINT: TOC
MEASUREMENT METHOD: Hermit only
DEPTH CORRECTION (ft): NA
TEST NUMBER: 2
PUMP SETTING (Ft. below monitoring point): 25'
STATIC WATER LEVEL (ft): 17.91
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: S.C/TR
REMARKS: 1" Hose inlet - No room for M-scope cable.
New surface pump.

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) From Hermit | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS XD Head @ Start 50.025 |
|---|---|---|---|---|---|---|---|
| 0200 | 0 | 17.91 | NA | — | 0 | 0 | Start Step 0 |
| 0205 | 5 | — | | -2.465 | 27.0 | 6.21 | |
| 0210 | 10 | — | | -2.353 | 61.0 | 6.21 | |
| 0215 | 15 | — | | -2.433 | 88.0 | 6.21 | |
| 0220 | 20 | — | | -2.433 | 115.0 | 6.21 | |
| 0225 | 25 | — | | -2.417 | 148.0 | 6.21 | |
| 0230 | 30 | — | | -2.497 | 181.0 | 6.16 | |
| 0240 | 40 | — | | -2.433 | 245.0 | 6.21 | |
| 0250 | 50 | — | | -2.465 | 307.0 | 6.16 | |
| 0300 | 60 | — | | -2.433 | 375.0 | 6.10 | |
| 0330 | 90 | — | | -2.497 | 557.0 | 6.21 | |
| 0400 | 120 | — | | -2.497 | 746.0 | 6.16 | |
| 0430 | 150 | — | | -2.449 | 939.0 | 6.21 | |
| 0500 | 180 | — | | -2.449 | 1122.0 | 6.21 | |
| 0600 | 240 | — | | -2.433 | 1491.0 | 6.16 | |
| 0700 | 300 | — | | -2.417 | 1882.0 | 6.16 | |
| 0800 | 360 | — | | -2.401 | 2235.0 | 6.21 | |
| 0900 | 420 | — | | -2.433 | 2605.0 | 6.26 | |
| 1000 | 480 | — | | -2.401 | 3020.0 | 6.21 | |
| 1100 | 540 | — | | -2.449 | 3359.0 | 6.16 | |
| 1200 | 600 | — | | -2.417 | 3730.0 | 6.21 | |
| 1252 | 652 | — | | — | 4030.0 | — | |
| | | | | | | | |
| 1253 | — | — | — | — | — | → | Start Step #1 |
| 1259 | — | — | — | — | — | → | Stop Recovery |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-29 D
MEASURED WELL NUMBER: MS-29 S

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-25-98
MEASUREMENT METHOD:
TEST NUMBER: 2
STATIC WATER LEVEL (ft): 19.27
PERSONNEL: SC / TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 10'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0200 | 0 | 19.27 | NA | 0.0 | NA | NA | |
| 0215 | 15 | 19.27 | | 0.0 | | | |
| 0230 | 30 | 19.27 | | 0.0 | | | |
| 0300 | 60 | 19.27 | | 0.0 | | | |
| 0400 | 120 | 19.28 | | -0.01 | | | |
| 0500 | 180 | 19.28 | | -0.01 | | | |
| 0600 | 240 | 19.28 | | -0.01 | | | |
| 0800 | 360 | 19.28 | | -0.01 | | | |
| 0900 | 420 | 19.28 | | -0.01 | | | |
| 1100 | 540 | 19.28 | | -0.01 | | | |
| 1200 | 600 | 19.29 | | -0.02 | | | |
| 1245 | 645 | 19.29 | | -0.02 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-29D
MEASURED WELL NUMBER: MS-29I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-25-98
MEASUREMENT METHOD:
TEST NUMBER: 2
STATIC WATER LEVEL (ft): 19.25
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.1'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0200 | 0 | 19.25 | NA | 0.0 | NA | NA | |
| 0215 | 15 | 19.25 | | 0.0 | | | |
| 0230 | 30 | 19.26 | | -0.01 | | | |
| 0300 | 60 | 19.25 | | 0.0 | | | |
| 0400 | 120 | 19.25 | | 0.0 | | | |
| 0500 | 180 | 19.25 | | 0.0 | | | |
| 0600 | 240 | 19.25 | | 0.0 | | | |
| 0800 | 360 | 19.26 | | -0.01 | | | |
| 0900 | 420 | 19.26 | | -0.01 | | | |
| 1100 | 540 | 19.26 | | -0.01 | | | |
| 1200 | 600 | 19.26 | | -0.01 | | | |
| 1245 | 645 | 19.26 | | -0.01 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-29D
MEASURED WELL NUMBER: MS-31D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-25-98
MEASUREMENT METHOD:
TEST NUMBER: 2
STATIC WATER LEVEL (ft): 18.25
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): SEE SURVEY MAP

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0200 | 0 | 18.25 | NA | 0.00 | NA | NA | |
| 0305 | 65 | 18.23 | | +0.02 | | | WATER LEVEL |
| 0505 | 185 | 18.20 | | +0.05 | | | CAME UP |
| 0905 | 425 | 18.16 | | +0.09 | | | IN WELL |
| 1105 | 545 | 18.18 | | +0.07 | | | |
| 1240 | 640 | 18.20 | | +0.05 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-30S
MEASURED WELL NUMBER: –

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-27-98
MONITORING POINT: TOC
MEASUREMENT METHOD: HERMIT Only
DEPTH CORRECTION (ft): NA
TEST NUMBER: 0
PUMP SETTING (Ft. below monitoring point): 25'
STATIC WATER LEVEL (ft): 18.95
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: SC / TR
REMARKS: XD @ 7.521 (HEAD READING)
USED NEW SURFACE PUMP - INLET Tubing to large FOR M-SCOPE CABLE ACCESS

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) From HERMIT | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1550 | 0 | 18.95 | NA | – | 0.0 | 0 | Start Step #0 |
| 1555 | 5 | – | | -0.879 | 27.0 | 5.03 | |
| 1600 | 10 | – | | -0.959 | 52.0 | 5.03 | |
| 1605 | 15 | – | | -1.007 | 78.0 | 5.08 | |
| 1620 | 30 | – | | -1.086 | 154.0 | 5.08 | |
| 1635 | 45 | – | | -1.182 | 228.0 | 5.13 | |
| 1646 | 56 | – | | -1.198 | 285.0 | 5.08 | |
| | | | | | | | |
| 1647 | Step #1 | | | | | | Start Recovery |
| 1719 | End Step #1 | | | | | | End Recovery |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS30S
MEASURED WELL NUMBER: MS-30I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-27-98
MEASUREMENT METHOD: M - Scope
TEST NUMBER: 0
STATIC WATER LEVEL (ft): 19.65
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.6'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1550 | 0 | 19.65 | NA | 0.0 | NA | NA | |
| 1605 | 15 | 19.65 | ↓ | 0.0 | ↓ | ↓ | |
| 1620 | 30 | 19.65 | ↓ | 0.0 | ↓ | ↓ | |
| 1635 | 45 | 19.66 | ↓ | -0.01 | ↓ | ↓ | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS 30S
MEASURED WELL NUMBER: MS 30D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-27-98
MEASUREMENT METHOD: M-SCOPE
TEST NUMBER: 0
STATIC WATER LEVEL (ft): 19.62
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 11.6

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1550 | 0 | 19.62 | NA | 0.0 | NA | NA | |
| 1605 | 15 | 19.62 | ↓ | 0.0 | ↓ | ↓ | |
| 1620 | 30 | 19.62 | ↓ | 0.0 | ↓ | ↓ | |
| 1635 | 45 | 19.63 | ↓ | -0.01 | ↓ | ↓ | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-30I
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST — FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-27-98
MEASUREMENT METHOD: Hermit only
TEST NUMBER: #1
STATIC WATER LEVEL (ft): 19.65
PERSONNEL: Conti/Rojahn
REMARKS: NEW SURFACE PUMP USED - Inlet Tubing to large FOR M-SCOPE CABLE ACCESS

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): 25'
DISTANCE FROM PUMPING WELL (ft): NA

XD = 23.094

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) Hermit Data | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1940 | 0 | 19.65 | NA | 0 | 0 | 0 | Start Step #0 |
| 1950 | 10 | – | | -0.447 | 49 | 5.49 | |
| 2000 | 20 | – | | -0.463 | 105 | 5.34 | |
| 2010 | 30 | – | | -0.527 | 162 | 5.54 | |
| 2020 | 40 | – | | -0.511 | 216 | 5.54 | |
| 2030 | 50 | – | | -0.447 | 272 | 5.54 | |
| 2040 | 60 | – | | -0.527 | 328 | 5.70 | |
| 2100 | 80 | – | | -0.527 | 449 | 5.49 | |
| 2130 | 110 | – | | -0.527 | 610 | 5.64 | |
| 2200 | 140 | – | | -0.495 | 776 | 5.49 | |
| 2230 | 170 | – | | -0.559 | 946 | 5.70 | |
| 2300 | 200 | – | | -0.527 | 1123 | 5.54 | |
| 2330 | 230 | – | | -0.511 | 1283 | 5.75 | |
| | | | | | | | |
| 2331 | → | | | → | stop pump | start | Step 1 (Recovery) |
| 2346 | → | | | → | Stop Hermit | & | Step 1 Rec Complete |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-30I
MEASURED WELL NUMBER: MS-30S

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-27-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: #1
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.95
DISTANCE FROM PUMPING WELL (ft): 5.6'
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1940 | 0 | 18.95 | NA | 0.0 | NA | NA | |
| 2040 | 60 | 18.95 | | 0.0 | | | |
| 2100 | 80 | 18.95 | | 0.0 | | | |
| 2130 | 110 | 18.95 | | 0.0 | | | |
| 2200 | 140 | 18.95 | | 0.0 | | | |
| 2230 | 170 | 18.95 | | 0.0 | | | |
| 2300 | 200 | 18.95 | | 0.0 | | | |
| 2330 | 230 | 18.95 | | 0.0 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-30I
MEASURED WELL NUMBER: MS-30D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-27-98
MEASUREMENT METHOD: M. SCOPE
TEST NUMBER: #1
STATIC WATER LEVEL (ft): 19.62
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 6.0'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1940 | 0 | 19.62 | NA | 0.0 | NA | NA | |
| 2040 | 60 | 19.66 | | -0.04 | | | |
| 2100 | 80 | 19.66 | | -0.04 | | | |
| 2130 | 110 | 19.66 | | -0.04 | | | |
| 2200 | 140 | 19.67 | | -0.05 | | | |
| 2230 | 170 | 19.66 | | -0.04 | | | |
| 2300 | 200 | 19.67 | | -0.05 | | | |
| 2330 | 230 | 19.67 | | -0.05 | | | |
| 2334 | 4 | 19.65 | | -0.03 | | | RECOVERY |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-30D
MEASURED WELL NUMBER: MS-30D

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST FOLLOW UP WELL DEVELOPMENT

DATE(s): 2/13/95
MONITORING POINT: TOC
MEASUREMENT METHOD:
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3
PUMP SETTING (Ft. below monitoring point): 1' OFF Bottom
STATIC WATER LEVEL (ft): 20.01
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: C. SNYDER & T. ROJAHN
REMARKS: REDI Flow Sub. PUMP USED

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) M-SCOPE READINGS | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) HERCULITE READINGS | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | XD READING 67.689 REMARKS |
|---|---|---|---|---|---|---|---|
| 1229 | 0 | 20.01 | NA | — | — | — | |
| 1230 | 0 | 20.01 | | -.016 | 0 | 0 | START PUMP |
| 1236 | 6 | 20.50 | | -.400 | — | 4.21 | 231 Hz |
| 1240 | 10 | 20.50 | | -.448 | — | 4.21 | |
| 1245 | 15 | 20.50 | | -.368 | 80 | 4.21 | |
| 1250 | 20 | 20.50 | | -.384 | 100 | 4.21 | |
| 1255 | 25 | 20.50 | | -.368 | 120 | 4.21 | |
| 1300 | 30 | 20.50 | | -.400 | 142 | 4.21 | |
| 1315 | 45 | 20.50 | | -.448 | 205 | 4.26 | |
| 1330 | 60 | 20.50 | | -.400 | 269 | 4.26 | |
| 1400 | 90 | 20.50 | | -.416 | 396 | 4.26 | |
| 1430 | 120 | 20.51 | | -.416 | 523 | 4.26 | |
| 1500 | 150 | 20.51 | | -.400 | 650 | 4.26 | |
| 1530 | 180 | 20.51 | | -.432 | 777 | 4.26 | |
| 1600 | 210 | 20.51 | | -.400 | 908 | 4.21 | |
| 1630 | 240 | 20.52 | | -.432 | 1030 | 4.21 | |
| 1700 | 270 | 20.52 | | -.416 | 1159 | 4.21 | |
| 1730 | 300 | 20.52 | | -.400 | 1285 | 4.21 | |
| 1800 | 330 | 20.53 | | -.448 | 1415 | 4.21 | |
| 1830 | 360 | 20.52 | | -.432 | 1542 | 4.26 | |
| 1900 | 390 | 20.54 | | -.448 | 1668 | 4.26 | |
| 1930 | 420 | 20.55 | | -.480 | 1796 | 4.26 | |
| 2000 | 450 | 20.55 | | -.464 | 1923 | 4.26 | |
| 2030 | 480 | 20.55 | | -.448 | 2051 | 4.26 | |
| 2100 | 510 | 20.56 | | -.464 | 2177 | 4.26 | 240 Hz |
| 2130 | 540 | 20.57 | | -.480 | 2310 | 4.46 | |
| 2200 | 570 | 20.57 | | -.432 | 2446 | 4.41 | |
| 2230 | 600 | 20.59 | | -.448 | 2579 | 4.41 | |
| 2300 | 630 | 20.58 | | -.544 | 2713 | 4.46 | |
| 2330 | 660 | 20.58 | | -.496 | 2855 | 4.46 | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-30D
MEASURED WELL NUMBER: MS-30D (Con't)

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 2/13-14/98
MONITORING POINT: TOC
MEASUREMENT METHOD:
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3 Cont
PUMP SETTING (Ft. below monitoring point): 1' OFF BOTTOM
STATIC WATER LEVEL (ft): 20.01
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: CS/TR
REMARKS: PUMPING WELL (CON'T)

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) M-Scope Readings | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) HERMIT Readings | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2400 | 690 | 20.58 | NA | -.512 | 2979 | 4.41 | 240 Hz |
| 0030 | 720 | 20.56 | ↓ | -.464 | 3112 | 4.46 | ↓ |
| 0100 | 750 | 20.56 | ↓ | -.480 | 3247 | 4.46 | ↓ |
| 0130 | 780 | 20.56 | ↓ | -.448 | 3382 | 4.46 | ↓ |
| 0200 | 810 | 20.56 | ↓ | -.464 | 3514 | 4.46 | ↓ |
| 0230 | 840 | 20.56 | ↓ | -.496 | 3645 | 4.41 | ↓ |
| | | | | | 3690 | → | Total gal removed |
| 0240 | 0 | 20.56 | NA | → | SHUT OFF PUMP = | | STEP 1/Recovery |
| 0243 | 3 | 20.08 | ↓ | -.016 | NA | NA | Fully Recovered |
| 0250 | 10 | 20.03 | ↓ | -.032 | NA | NA | Stop Test #3 Step #1 |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-30D
MEASURED WELL NUMBER: MS-30S

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 2/13-14/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 19.21
DISTANCE FROM PUMPING WELL (ft): 11.6'
PERSONNEL: CS/TR
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0853 | 0 | 19.21 | NA | 0.0 | NA | NA | |
| 1220 | 0 | 19.21 | | 0.0 | | | |
| 1300 | 30 | 19.21 | | 0.0 | | | |
| 1330 | 60 | 19.20 | | +0.01 | | | |
| 1400 | 90 | 19.20 | | +0.01 | | | |
| 1430 | 120 | 19.20 | | +0.01 | | | |
| 1500 | 150 | 19.20 | | +0.01 | | | |
| 1600 | 210 | 19.21 | | 0.0 | | | |
| 1700 | 270 | 19.21 | | 0.0 | | | |
| 1800 | 330 | 19.21 | | 0.0 | | | |
| 1900 | 390 | 19.21 | | 0.0 | | | |
| 2000 | 450 | 19.21 | | 0.0 | | | |
| 2100 | 510 | 19.21 | | 0.0 | | | |
| 2200 | 570 | 19.21 | | 0.0 | | | |
| 2300 | 630 | 19.21 | | 0.0 | | | |
| 2400 | 690 | 19.21 | | 0.0 | | | |
| 0100 | 750 | 19.21 | | 0.0 | | | |
| 0200 | 810 | 19.21 | | 0.0 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-30D
MEASURED WELL NUMBER: MS-30I

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 2/13-14/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 20.05
DISTANCE FROM PUMPING WELL (ft): 6.0'
PERSONNEL: CS/TR
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0855 | 0 | 20.05 | NA | 0.0 | NA | NA | |
| 1224 | 0 | 20.05 | | 0.0 | | | |
| 1300 | 30 | 20.06 | | -0.01 | | | |
| 1330 | 60 | 20.07 | | -0.02 | | | |
| 1400 | 90 | 20.07 | | -0.02 | | | |
| 1430 | 120 | 20.07 | | -0.02 | | | |
| 1500 | 150 | 20.07 | | -0.02 | | | |
| 1600 | 210 | 20.08 | | -0.03 | | | |
| 1700 | 270 | 20.10 | | -0.05 | | | |
| 1800 | 330 | 20.10 | | -0.05 | | | |
| 1900 | 390 | 20.12 | | -0.07 | | | |
| 2000 | 450 | 20.12 | | -0.07 | | | |
| 2100 | 510 | 20.14 | | -0.09 | | | |
| 2200 | 570 | 20.12 | | -0.07 | | | |
| 2300 | 630 | 20.12 | | -0.07 | | | |
| 2400 | 690 | 20.12 | | -0.07 | | | |
| 0100 | 750 | 20.12 | | -0.07 | | | |
| 0200 | 810 | 20.12 | | -0.07 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-30D
MEASURED WELL NUMBER: MS-28D

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 2/13-14/98
MONITORING POINT: TOC
MEASUREMENT METHOD: TOC
DEPTH CORRECTION (ft): NA
TEST NUMBER: #3
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.88
DISTANCE FROM PUMPING WELL (ft): SEE SURVEY MAP
PERSONNEL: CS/TR
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0815 | 0 | 18.88 | NA | 0.0 | NA | NA | |
| 1730 | 300 | 18.87 | | +0.01 | | | |
| 2050 | 500 | 19.02 | | -0.14 | | | |
| 0010 | 700 | 19.02 | | -0.14 | | | |
| 0210 | 820 | 19.00 | | -0.12 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31S
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-8-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 0
PUMP SETTING (Ft. below monitoring point): 25'
STATIC WATER LEVEL (ft): 19.17
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: B. HOWZE & T. ROJAHN
REMARKS: XD ~1' OFF BOTTOM; TD = 27.5'; TEST 0 ~20 MIN & 40 SEC
STEP 1 = RECOVERY (~30 SEC)

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) SEC/L | REMARKS |
|---|---|---|---|---|---|---|---|
| 1254 | 0 | 19.17 | NA | 0.0 | 0.0 | 0.0 | Start (Test 0) |
| 1256 | 2 | 19.55 | NA | -0.38 | | 3.15 | PUMP STOPPED |
| | | | | | | | |
| 1505 | 0 | 19.17 | NA | 0.0 | | 0.0 | Restart (TEST 0) |
| 1507:30 | 2:30 | 19.55 | NA | -0.38 | | 3.65 | Pump Stopped |
| | | | | | | | |
| 1530 | 0 | 19.17 | NA | 0.0 | | 0.0 | Restart (TEST 0) |
| 1532:30 | 2:30 | 19.63 | NA | -0.46 | ~50 gal | 2.20 | Pump Stopped |
| | | | | | | | |
| 1540 | 0 | 19.17 | NA | 0.0 | 50 | — | BEGIN NEW TEST 0 |
| 1542 | 2 | 20.01 | | -0.84 | 71.2 | 1.5 | 10.6 gpm |
| 1544 | 4 | 20.02 | | -0.85 | 97.6 | 1.2 | 13.2 gpm |
| 1546 | 6 | 20.03 | | -0.86 | 124.0 | — | |
| 1550 | 10 | 20.04 | | -0.87 | 169.2 | 1.4 | 11.3 gpm |
| 1554 | 14 | 20.04 | | -0.87 | 214.4 | — | |
| 1557 | 17 | 20.04 | | -0.87 | 248.0 | — | |
| 1558 | 18 | 20.04 | | -0.87 | 259.3 | 1.4 | 11.3 gpm |
| 1600 | 20 | 20.04 | | -0.87 | 281.9 | — | |
| 1600:40 | 20:40 | — | | — | 289.4 | — | Stop Pump |
| | | | | | | | |
| RECOVERY TO FAST TO RECORD WITH M-SCOPE (~30 SEC) → SEE | | | | | | | |
| | HEMT DATA | TEST #0 | STEP #1 | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-31S
MEASURED WELL NUMBER: MS-31I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-8-98
MEASUREMENT METHOD: M-Scope
TEST NUMBER: 0
STATIC WATER LEVEL (ft): 19.09
PERSONNEL: B. Howze, T. Rosahn
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 52'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1340 | – | 19.09 | NA | 0.00 | NA | NA | |
| 1546 | 6 | 19.09 | NA | 0.00 | NA | NA | |
| 1600 | 20 | 19.09 | NA | 0.00 | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31S
MEASURED WELL NUMBER: MS-31D

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-8-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: 0
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.09
DISTANCE FROM PUMPING WELL (ft): 10.35'
PERSONNEL: B. Howze, T. Rojahn
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1341 | – | 18.09 | NA | 0.00 | NA | NA | |
| 1546 | 6 | 18.09 | ↓ | 0.00 | ↓ | ↓ | |
| 1600 | 20 | 18.09 | ↓ | 0.00 | ↓ | ↓ | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31I
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-8-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: #1, Step 0
PUMP SETTING (Ft. below monitoring point): 95.6
STATIC WATER LEVEL (ft): 19.09
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: B. Howze, T. Roiahn
REMARKS: XD @ 90', Pump Grundfuss 1' off Bottom
AVE.

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) SEC. | REMARKS |
|---|---|---|---|---|---|---|---|
| 1830 | — | 19.09 | | | | | Start Test 1 |
| 1831 | 1 | 26.9 | NA | -7.81 | 2.9 | 5.5/L | 232 Hz |
| 1833 | 3 | 27.18 | | -8.09 | 8.6 | — | |
| 1834 | 4 | — | | — | 12.0 | 4.65/L | 3.4gpm |
| 1835 | 5 | 27.21 | | -8.12 | 15.4 | — | |
| 1837:30 | 7.30 | 27.29 | | -8.20 | 23.9 | — | |
| 1840 | 10 | 27.33 | | -8.24 | 34.7 | 4.3/L | 3.6gpm |
| 1845 | 15 | 27.38 | | -8.29 | 52.7 | — | |
| 1847 | 17 | — | | — | 60.3 | 4.15/L | 3.8gpm |
| 1850 | 20 | — | | — | 71.7 | — | |
| 1852 | 22 | 27.41 | | -8.32 | 79.3 | — | |
| 1855 | 25 | 27.43 | | -8.34 | 91.3 | 4.0/L | 4.0gpm |
| 1900 | 30 | 27.45 | | -8.36 | 111.3 | — | |
| 1910 | 40 | 27.48 | | -8.39 | 149.3 | 4.15/L | 3.8gpm |
| 1920 | 50 | 27.50 | | -8.41 | 191.3 | 3.8/L | 4.2 gpm |
| 1930 | 60 | 27.53 | | -8.44 | 231.3 | 4/L | 4.0gpm |
| 1945 | 75 | 27.55 | | -8.46 | 289.8 | 4.1/L | 3.9 |
| 2000 | 90 | 27.58 | | -8.49 | 349.8 | 4/L | 4.0 gpm |
| 2015 | 105 | 27.60 | | -8.51 | 409.8 | 4/L | 4.0 gpm |
| 2030 | 120 | 27.59 | | -8.50 | 469.8 | 4/L | 4.0 gpm |
| 2045 | 135 | 27.60 | | -8.51 | 529.8 | 4/L | 4.0 gpm |
| 2100 | 150 | 27.61 | | -8.52 | 589.8 | 4/L | 4.0 gpm |
| 2115 | 165 | 27.62 | | -8.53 | 649.8 | 4/L | 4.0 gpm |
| 2130 | 180 | 27.62 | | -8.53 | 709.8 | 4/L | 4.0 gpm |
| 2145 | 195 | 27.63 | | -8.54 | 772.3 | 3.8/L | 4.2 gpm |
| 2200 | 210 | 27.63 | | -8.54 | 832.3 | 4/L | 4.0 gpm |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-31 I
MEASURED WELL NUMBER: MS-31 I

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-8-98
MEASUREMENT METHOD: M-Scope
TEST NUMBER: #1 Step 1
STATIC WATER LEVEL (ft): Recovery Test
PERSONNEL: BH/TR
REMARKS: Recovery

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): 95.6
DISTANCE FROM PUMPING WELL (ft): NA

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2207:30 | 0:30 | 19.75 | NA | -0.66 | NA | NA | Stop Pump @ |
| 2208 | 1:00 | 19.35 | | -0.26 | | | 2207 Hrs & |
| | 1:30 | 19.24 | | -0.15 | | | Start Test 1 |
| 2209 | 2:00 | 19.20 | | -0.11 | | | Step 1: |
| | 2:30 | 19.18 | | -0.09 | | | Water level |
| 2210 | 3:00 | 19.18 | | -0.09 | | | Started @ |
| | 3:30 | 19.16 | | -0.07 | | | 2763 came |
| 2211 | 4:00 | 19.15 | | -0.06 | | | up to 19.75 in ~ |
| | 4:30 | 19.14 | | -0.05 | | | 30 sec. |
| 2212 | 5 | 19.14 | | -0.05 | | | |
| 2213 | 6 | 19.14 | | -0.05 | | | |
| 2214 | 7 | 19.13 | | -0.04 | | | |
| 2215 | 8 | 19.13 | | -0.04 | | | |
| 2216 | 9 | 19.13 | | -0.04 | | | |
| 2217 | 10 | 19.13 | | -0.04 | | | |
| 2222 | 15 | 19.12 | | -0.03 | | | |
| 2227 | 20 | 19.12 | | -0.03 | | | |
| 2232 | 25 | 19.12 | | -0.03 | | | |
| 2240 | 33 | — | | — | | | Stop Test |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-31 I
MEASURED WELL NUMBER: MS-31 S

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-8-98
MEASUREMENT METHOD: M-SCOPE
TEST NUMBER: #1
STATIC WATER LEVEL (ft): 19.17
PERSONNEL: BH/TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.25'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1830 | – | 19.17 | NA | 0.00 | NA | NA | |
| 1845 | 15 | 19.17 | | | | | |
| 1900 | 30 | 19.17 | | | | | |
| 1930 | 60 | 19.17 | | | | | |
| 2000 | 90 | 19.17 | | | | | |
| 2030 | 120 | 19.17 | | | | | |
| 2100 | 150 | 19.17 | | | | | |
| 2130 | 180 | 19.17 | | | | | |
| 2200 | 210 | 19.17 | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-31 I
MEASURED WELL NUMBER: MS-31 D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-8-98
MEASUREMENT METHOD: M-SCOPE
TEST NUMBER: #1
STATIC WATER LEVEL (ft): 18.09
PERSONNEL: BH/TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.2'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1830 | 0 | 18.09 | NA | 0.00 | NA | NA | |
| 1845 | 15 | 18.09 | | | | | |
| 1900 | 30 | 18.09 | | | | | |
| 1930 | 60 | 18.09 | | | | | |
| 2000 | 90 | 18.09 | | | | | |
| 2030 | 120 | 18.09 | | | | | |
| 2100 | 150 | 18.09 | | | | | |
| 2130 | 180 | 18.09 | | | | | |
| 2200 | 210 | 18.09 | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-31 I
MEASURED WELL NUMBER: MS-29 I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-8-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: #1
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 20.03
DISTANCE FROM PUMPING WELL (ft): SEE SURVEY MAP
PERSONNEL: BH/TR
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1830 | – | 20.03 | NA | 0.00 | NA | NA | |
| 1900 | 30 | 20.03 | ↓ | ↓ | ↓ | ↓ | |
| 2000 | 90 | 20.03 | ↓ | ↓ | ↓ | ↓ | |
| 2100 | 150 | 20.03 | ↓ | ↓ | ↓ | ↓ | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-31D
MEASURED WELL NUMBER: –

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST FOLLOW UP WELL DEVELOPMENT

DATE(s): 12-20-97
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE / HERMIT
DEPTH CORRECTION (ft): NA
TEST NUMBER: #1
PUMP SETTING (Ft. below monitoring point): ~1 FT. OFF Bottom
STATIC WATER LEVEL (ft): 18.24
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: BH / J.L. / TR
REMARKS: Boart Longyear REDI Flow
Pump ~1' off Bottom of WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) SEC/L | REMARKS |
|---|---|---|---|---|---|---|---|
| 1330 | – | 18.24 | NA | 0.0 | 0.0 | 0.0 | Start Test #1 |
| 1335 | 5 | – | | – | 6.6 | 12 | Pump Stopped |
| 1340 | 10 | 28.20 | | -9.96 | 13.2 | | " " |
| 1345 | 15 | – | | – | – | | " " |
| 1350 | 20 | – | | – | – | | " " |
| 1355 | 25 | – | | – | – | | " " |
| 1400 | 30 | 18.45 | | -0.21 | – | | |
| 1405 | 35 | 19.60 | | -1.36 | 17.9 | 17 | |
| 1410 | Pump | Continue to shut off | | | → 23.6 | 14 | Stop Test & |
| | | | | | | | Pull Pump |
| | Repair | bare wire on pump | | | | | |
| | Hermit | Transducer mal | function | | -go with M-Scope Readings Only | | |
| | | | | | | | |
| 1450 | → | 21.64 | → | -3.40 | 23.6 | → | Restart Pumping |
| 1450:30 | 30 sec | – | NA | – | 24.4 | 10 | 230Hz |
| 1452 | 2 | – | | – | 26.0 | 14.6 | |
| 1455 | 5 | 30.95 | | -12.71 | 29.3 | – | |
| 1456 | 6 | – | | – | 30.3 | 16 | 1 gpm |
| 1500 | 10 | 34.68 | | -16.44 | 34.3 | 16 | |
| 1505 | 15 | 36.16 | | -17.92 | 39.3 | 16 | |
| 1510 | 20 | 37.21 | | -18.97 | 43.8 | 17 | 0.9 gpm |
| 1515 | 25 | 37.73 | | -19.49 | 48.8 | 16 | 1 gpm |
| 1520 | 30 | 38.04 | | -19.80 | 53.8 | 16 | |
| 1525 | 35 | 38.34 | | -20.10 | 58.3 | 17 | 0.9 gpm |
| 1530 | 40 | 38.49 | | -20.25 | 62.8 | 17 | |
| 1535 | 45 | 38.78 | | -20.54 | 67.3 | 17 | |
| 1540 | 50 | 38.88 | | -20.64 | 72.3 | 16.5 | 1 gpm |
| 1545 | 55 | 38.99 | | -20.75 | 77.3 | 16.5 | |
| 1550 | 60 | 38.30 | | -20.06 | 81.8 | 17 | 0.9 |
| 1600 | 70 | 38.20 | | -19.96 | 91.8 | 16 | 1 |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31D
MEASURED WELL NUMBER: -

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 12-20 & 21-98
MEASUREMENT METHOD: M-SCOPE
TEST NUMBER: TRANSDUCER MALFUCTION
STATIC WATER LEVEL (ft): 18.24
PERSONNEL: BH/JL/TR
REMARKS: DD Cont FOR MS-31D

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): ~1' OFF Bottom
DISTANCE FROM PUMPING WELL (ft): NA

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) sec/L | REMARKS |
|---|---|---|---|---|---|---|---|
| 1610 | 80 | 38.08 | NA | -19.84 | 101.8 | 16 | 1 gpm 230Hz |
| 1620 | 90 | 38.21 | | -19.97 | 110.8 | 17 | 0.9 gpm |
| 1630 | 100 | 38.31 | | -20.07 | 120.8 | 16 | 1 gpm |
| 1640 | 110 | 38.41 | | -20.17 | 130.8 | 16 | |
| 1650 | 120 | 38.49 | | -20.25 | 140.8 | 16 | |
| 1700 | 130 | 38.50 | | -20.26 | 150.8 | 16 | |
| 1715 | 145 | 38.55 | | -20.31 | 165.8 | 16 | |
| 1730 | 160 | 38.61 | | -20.37 | 180.8 | 16 | |
| 1745 | 175 | 38.60 | | -20.36 | 195.8 | 16 | |
| 1800 | 190 | 38.64 | | -20.40 | 210.8 | 16.5 | |
| 1830 | 220 | 38.64 | | -20.40 | 240.8 | 16.5 | |
| 1900 | 250 | 38.70 | | -20.46 | 270.8 | 17 | 0.9 gpm |
| 1930 | 280 | 39.34 | | -21.10 | 300.8 | 16 | 1 gpm |
| 2000 | 310 | 39.67 | | -21.43 | 330.8 | 16 | |
| 2030 | 340 | 39.78 | | -21.54 | 360.8 | 16 | |
| 2100 | 370 | 39.80 | | -21.56 | 390.8 | 16 | |
| 2130 | 400 | 39.79 | | -21.55 | 420.8 | 16 | |
| 2200 | 430 | 39.82 | | -21.58 | 450.8 | 16 | |
| 2230 | 460 | 40.02 | | -21.78 | 480.8 | 16 | |
| 2300 | 490 | 40.09 | | -21.85 | 510.8 | 16 | |
| 2330 | 520 | 40.16 | | -21.92 | 540.8 | 16 | |
| 12/21 0000 | 550 | 40.18 | | -21.94 | 570.8 | 16 | |
| 0030 | 580 | 40.29 | | -22.05 | 600.8 | 16 | |
| 0100 | 610 | 40.42 | | -22.18 | 630.8 | 16 | |
| 0130 | 640 | 40.45 | | -22.21 | 660.8 | 16 | |
| 0200 | 670 | 40.51 | | -22.27 | 690.8 | 16 | |
| 0230 | 700 | 40.54 | | -22.30 | 720.8 | 16 | 231 Hz |
| 0300 | 730 | 40.54 | | -22.30 | 750.8 | 16 | |
| 0330 | 760 | 40.57 | | -22.33 | 780.8 | 16 | |
| 0400 | 790 | 40.62 | | -22.38 | 810.8 | 16 | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31D
MEASURED WELL NUMBER:

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 12/21/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: TRANSDUCER MALFUCTIONED
PUMP SETTING (Ft. below monitoring point): ~1 OFF Bottom
STATIC WATER LEVEL (ft): 18.24
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: BH/JL/TR
REMARKS: DD Only FOR MS-31D

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) SEC/L | REMARKS |
|---|---|---|---|---|---|---|---|
| 0430 | 820 | 40.65 | NA | -22.41 | 840 | 16 | 1gpm 231 Hz |
| 0500 | 850 | 40.70 | | -22.46 | 870 | 16 | |
| 0530 | 880 | 40.76 | | -22.52 | 900 | 16 | |
| 0600 | 910 | 40.85 | | -22.61 | 930 | 16 | |
| 0630 | 940 | 40.72 | | -22.48 | 960 | 16 | |
| 0700 | 970 | 40.76 | | -22.52 | 990 | 16 | |
| 0730 | 1000 | 40.75 | | -22.51 | 1020 | 16 | |
| 0800 | 1030 | 40.71 | | -22.47 | 1050 | 16 | |
| 0830 | 1060 | 40.69 | | -22.45 | 1080 | 15.5 | |
| 0900 | 1090 | 40.72 | | -22.48 | 1110 | 16 | |
| 0930 | 1120 | 40.69 | | -22.45 | 1140 | 16 | |
| 1000 | 1150 | 40.75 | | -22.51 | 1170 | 15.8 | |
| 1030 | 1180 | 40.73 | | -22.49 | 1200 | 16 | |
| 1100 | 1210 | 40.77 | | -22.53 | 1230 | 16 | |
| 1130 | 1240 | 40.73 | | -22.49 | 1260 | 15.8 | |
| 1200 | 1270 | 40.77 | | -22.53 | 1290 | 15.8 | |
| 1230 | 1300 | 40.79 | | -22.55 | 1320 | 16 | |
| 1300 | 1330 | 40.81 | | -22.57 | 1350 | 16 | |
| 1330 | 1360 | 40.79 | | -22.55 | 1380 | 16 | |
| 1400 | 1390 | 40.93 | | -22.69 | 1410 | 16 | |
| 1430 | 1420 | 40.79 | | -22.55 | 1440 | 16 | |
| 1500 | 1450 | 40.75 | | -22.51 | 1470 | 16 | |
| 1530 | 1480 | 40.70 | | -22.46 | 1500 | 16 | |
| 1600 | 1510 | 40.68 | | -22.44 | 1530 | 16 | |
| 1630 | 1540 | 40.63 | | -22.39 | 1560 | 16 | |
| 1700 | 1570 | 40.71 | | -22.47 | 1590 | 16 | |
| 1730 | 1600 | 40.74 | | -22.50 | 1620 | 16 | |
| 1800 | 1630 | 40.66 | | -22.42 | 1650 | 16 | Moved hose to tank in truck |
| 1830 | 1660 | 42.13 | | -23.89 | 1680 | 16 | |
| 1900 | 1690 | 42.07 | | -23.83 | 1710 | 16 | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31D
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 12/21-22/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: TRANSDUCER MALFUCTIONED
PUMP SETTING (Ft. below monitoring point): ~1' OFF Bottom
STATIC WATER LEVEL (ft): 18.24
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: BH/JL/TR
REMARKS: DD. CON'T FOR MS-31D

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) SEC/L | REMARKS |
|---|---|---|---|---|---|---|---|
| 1930 | 1720 | 42.14 | NA | -23.90 | 1740 | 16 | 1gpm 231 Hz |
| 2000 | 1750 | 42.29 | | -24.05 | 1770 | 16 | |
| 2030 | 1780 | 42.27 | | -24.03 | 1800 | 16 | |
| 2100 | 1810 | 42.11 | | -23.87 | 1830 | 16 | |
| 2130 | 1840 | 42.39 | | -24.15 | 1860 | 16 | |
| 2200 | 1870 | 41.17 | | -22.93 | 1890 | 16 | Move hose to 2000 gal Tank |
| 2230 | 1900 | 42.75 | | -24.51 | 1920 | 16.5 | |
| 2300 | 1930 | 42.31 | | -24.07 | 1950 | 16 | |
| 2330 | 1960 | 42.55 | | -24.31 | 1980 | 15.5 | |
| 12/22 0000 | 1990 | 41.29 | | -23.05 | 2010 | 16.5 | |
| 0030 | 2020 | 41.01 | | -22.77 | 2040 | 16.5 | |
| 0100 | 2050 | 41.13 | | -22.89 | 2070 | 16.4 | |
| 0130 | 2080 | 41.02 | | -22.78 | 2100 | 16 | |
| 0200 | 2110 | 41.04 | | -22.80 | 2130 | 16 | |
| 0230 | 2140 | 41.06 | | -22.82 | 2160 | 16 | |
| 0300 | 2170 | 41.04 | | -22.80 | 2190 | 16 | |
| 0330 | 2200 | 41.02 | | -22.88 | 2220 | 16 | |
| 0400 | 2230 | 41.14 | | -22.90 | 2250 | 16 | |
| 0430 | 2260 | 41.24 | | -23.00 | 2280 | 16 | |
| 0500 | 2290 | 41.17 | | -22.93 | 2310 | 16 | |
| 0530 | 2320 | 41.14 | | -22.90 | 2340 | 16 | |
| 0600 | 2350 | 41.11 | | -22.87 | 2370 | 16 | Stop Pumping @ 0605 |
| | | | | | | | Start Recovery |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31D
MEASURED WELL NUMBER: -

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 12-22-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: NA
PUMP SETTING (Ft. below monitoring point): NA (1' OFF Bottom)
STATIC WATER LEVEL (ft): 18.24
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: BH | JL | TR
REMARKS: RECOVERY SHUT OFF PUMP @ 0605 Hrs.

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0605 | 0 | 41.11 | NA | -22.87 | NA | NA | |
| - | 0:30 | 31.90 | | -13.66 | | | |
| 0606 | 1 | 29.80 | | -11.56 | | | |
| - | 1:30 | 29.19 | | -10.95 | | | |
| 0607 | 2 | 26.92 | | -8.68 | | | |
| - | 2:30 | 25.75 | | -7.51 | | | |
| 0608 | 3 | 24.73 | | -6.49 | | | |
| - | 3:30 | 23.85 | | -5.61 | | | |
| 0609 | 4 | 23.08 | | -4.84 | | | |
| - | 4:30 | 22.39 | | -4.15 | | | |
| 0610 | 5 | 21.81 | | -3.57 | | | |
| 0611 | 6 | 20.88 | | -2.64 | | | |
| 0612 | 7 | 20.14 | | -1.90 | | | |
| 0613 | 8 | 19.60 | | -1.36 | | | |
| 0614 | 9 | 19.20 | | -0.96 | | | |
| 0615 | 10 | 18.91 | | -0.67 | | | |
| 0616 | 11 | 18.71 | | -0.47 | | | |
| 0617 | 12 | 18.55 | | -0.31 | | | |
| 0618 | 13 | 18.46 | | -0.22 | | | |
| 0619 | 14 | 18.38 | | -0.14 | | | |
| 0620 | 15 | 18.33 | | -0.09 | | | |
| 0622 | 17:30 | 18.26 | | -0.02 | | | |
| 0625 | 20 | 18.24 | | 0.00 | | | |
| 0630 | 25 | 18.22 | | +0.02 | | | |
| 0635 | 30 | 18.22 | | +0.02 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31D
MEASURED WELL NUMBER: MS-31S

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 12/20-22/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: NA
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 19.08
DISTANCE FROM PUMPING WELL (ft): 10.45'
PERSONNEL: BH/JL/TR
REMARKS: OBSERVATION WELL

| | MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | 1330 | 0 | 19.08 | NA | 0.00 | NA | NA | |
| | 1550 | 60 | 19.08 | | | | | |
| | 1700 | 130 | 19.08 | | | | | |
| | 1800 | 190 | 19.08 | | | | | |
| | 1900 | 250 | 19.08 | | | | | |
| | 2000 | 310 | 19.08 | | | | | |
| | 2100 | 370 | 19.08 | | | | | |
| | 2200 | 430 | 19.08 | | | | | |
| | 2300 | 490 | 19.08 | | | | | |
| 12/21 | 0000 | 550 | 19.08 | | | | | |
| | 0100 | 610 | 19.08 | | | | | |
| | 0200 | 670 | 19.08 | | | | | |
| | 0300 | 730 | 19.08 | | | | | |
| | 0400 | 790 | 19.08 | | | | | |
| | 0500 | 850 | 19.08 | | | | | |
| | 0600 | 910 | 19.08 | | | | | |
| | 0700 | 970 | 19.08 | | | | | |
| | 0800 | 1030 | 19.08 | | | | | |
| | 0900 | 1090 | 19.08 | | | | | |
| | 1000 | 1150 | 19.08 | | | | | |
| | 1100 | 1210 | 19.08 | | | | | |
| | 1200 | 1270 | 19.08 | | | | | |
| | 1600 | 1510 | 19.08 | | | | | |
| | 2000 | 1750 | 19.08 | | | | | |
| 12/22 | 0100 | 2050 | 19.08 | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-31D
MEASURED WELL NUMBER: MS-31I

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 12/20-22/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: NA
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 19.14
DISTANCE FROM PUMPING WELL (ft): 5.2'
PERSONNEL: BH/JL/TK
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1330 | 0 | 19.14 | NA | 0.00 | NA | NA | |
| 1550 | 60 | 19.15 | | -0.01 | | | |
| 1700 | 130 | 19.16 | | -0.02 | | | |
| 1800 | 190 | 19.15 | | -0.01 | | | |
| 1900 | 250 | 19.15 | | -0.01 | | | |
| 2000 | 310 | 19.15 | | -0.01 | | | |
| 2100 | 370 | 19.15 | | -0.01 | | | |
| 2200 | 430 | 19.16 | | -0.02 | | | |
| 2300 | 490 | 19.15 | | -0.01 | | | |
| 12/21 0000 | 550 | 19.15 | | -0.01 | | | |
| 0100 | 610 | 19.16 | | -0.02 | | | |
| 0200 | 670 | 19.16 | | -0.02 | | | |
| 0300 | 730 | 19.15 | | -0.01 | | | |
| 0400 | 790 | 19.15 | | -0.01 | | | |
| 0500 | 850 | 19.16 | | -0.02 | | | |
| 0600 | 910 | 19.16 | | -0.02 | | | |
| 0700 | 970 | 19.15 | | -0.01 | | | |
| 0800 | 1030 | 19.16 | | -0.02 | | | |
| 0900 | 1090 | 19.16 | | -0.02 | | | |
| 1000 | 1150 | 19.15 | | -0.01 | | | |
| 1100 | 1210 | 19.16 | | -0.02 | | | |
| 1200 | 1270 | 19.16 | | -0.02 | | | |
| 1600 | 1510 | 19.16 | | -0.02 | | | |
| 2000 | 1750 | 19.16 | | -0.02 | | | |
| 12/22 0100 | 2050 | 19.15 | | -0.01 | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

NOTE: All measurements to [illegible] foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MJ-32S
MEASURED WELL NUMBER: NA

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST
FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-12-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: 5
PUMP SETTING (Ft. below monitoring point): 25' 24'
STATIC WATER LEVEL (ft): 19.53
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: B. Howze, T. Rojahn
REMARKS: XO @ 25.5'; Teel Pumped 220 gals total

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1855 | 0 | 19.53 | NA | 0.00 | 0.00 | | START PUMP |
| — | 0:30 | 20.15 | | -0.62 | | | |
| 1856 | 1:00 | 20.17 | | -0.64 | | | |
| — | 1:30 | 20.17 | | -0.64 | | | |
| 1857 | 2:00 | 20.17 | | -0.64 | | | |
| 1858 | 3:00 | 20.18 | | -0.65 | | | |
| 1859 | 4:00 | 20.19 | | -0.66 | | | |
| 1900 | 5:00 | 20.20 | | -0.67 | | 10.4 sec/gal | = 11.0 gpm KH |
| 1905 | 10:00 | 20.23 | | -0.70 | | | |
| 1910 | 15:00 | 20.23 | | -0.70 | | | |
| 1915 | 20:00 | 20.23 | | -0.70 | 220 gals | | Stop Test 5 Step 0 E |
| 1915:30 | 0:30 | 19.57 | | -0.04 | NA | NA | Start Step 1 (Rec 0-15) |
| 1916 | 1 | 19.56 | | -0.03 | | | |
| | 2 | 19.55 | | -0.02 | | | |
| | 3 | 19.54 | | -0.01 | | | |
| | 4 | 19.54 | | -0.01 | | | |
| 1920 | 5 | 19.53 | | -0.00 | | | |
| 1921 | 6 | — | | | | | Stop Hermit/Test |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-32S
MEASURED WELL NUMBER: MS-32I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-12-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 5
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 24.64
DISTANCE FROM PUMPING WELL (ft): 5.55'
PERSONNEL: BH/TR
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 1909 | 14 | 24.64 | NA | 0.00 | NA | NA | |
| 1915 | 20 | 24.64 | NA | 0.00 | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-32S
MEASURED WELL NUMBER: MS-32D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-12-98
MEASUREMENT METHOD: M-SCOPE
TEST NUMBER: 5
STATIC WATER LEVEL (ft): 23.40
PERSONNEL: BH MR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 11.25'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 1909 | 14 | 23.40 | NA | 0.00 | NA | NA | |
| 1915 | 20 | 23.40 | NA | 0.00 | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-32I
MEASURED WELL NUMBER: -

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-10-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE & HERMIT
DEPTH CORRECTION (ft): NA
TEST NUMBER: #3
PUMP SETTING (Ft. below monitoring point): 80'
STATIC WATER LEVEL (ft): 24.81
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: B. HOWZE & T. ROJAHN
REMARKS: Grundfocs 1' OFF Bottom

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) SEC/L | REMARKS |
|---|---|---|---|---|---|---|---|
| 1730 | 0 | 24.81 | NA | 0.00 | 0.0 | 0.0 | |
| 1840 | 0 | 24.81 | | 0.00 | 0.0 | 0.0 | |
| - | 0:30 | - | | - | | - | Start Test #3 step 0 |
| 1841 | 1 | 28.51 | | -3.70 | | - | |
| 1842 | 2 | 29.01 | | -4.20 | | - | |
| 1843 | 3 | 29.29 | | -4.48 | 9.6 | 5 | 3.2gpm |
| 1844 | 4 | 29.53 | | -4.72 | 12.8 | - | |
| 1845 | 5 | 29.64 | | -4.83 | 16.3 | 4.5 | 3.5gpm |
| 1850 | 10 | 30.08 | | -5.27 | 33.8 | - | |
| 1855 | 15 | 30.23 | | -5.42 | 51.8 | 4.4 | 3.6gpm |
| 1900 | 20 | 30.27 | | -5.46 | 69.8 | - | |
| 1910 | 30 | 30.30 | | -5.49 | 105 | 4.5 | |
| 1920 | 40 | 30.32 | | -5.51 | 140 | - | |
| 1930 | 50 | 30.33 | | -5.52 | 175 | 4.5 | |
| 1940 | 60 | 30.30 | | -5.49 | 209 | 4.6 | 3.4gpm |
| 2010 | 90 | 30.33 | | -5.52 | 311 | 4.6 | |
| 2040 | 120 | 30.35 | | -5.54 | 419 | 4.4 | |
| 2110 | 150 | 30.37 | | -5.56 | 524 | 4.5 | |
| 2140 | 180 | 30.39 | | -5.58 | 629 | 4.5 | |
| 2210 | 210 | 30.41 | | -5.60 | 734 | 4.5 | |
| 2240 | 240 | 30.10 | | -5.29 | 839 | 4.5 | |
| 2310 | 270 | 30.36 | | -5.55 | 947 | 4.4 | |
| 2340 | 300 | 30.35 | | -5.54 | 1055 | 4.4 | |
| 0010 | 330 | 30.34 | | -5.53 | 1163 | - | |
| | | | | | | | |
| 0015 | | | | | | | Start Recovery Step #1 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-32I
MEASURED WELL NUMBER: MS-32I

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-11-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE & HERMIT
DEPTH CORRECTION (ft): NA
TEST NUMBER: #3 STEP #1
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 24.81
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: BH/TR
REMARKS: RECOVERY @ MS-32I

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 0015 | 0 | – | NA | – | NA | NA | Start Recovery |
| | 0:30 | 26.09 | | -1.28 | | | |
| 0016 | 1 | 26.11 | | -1.30 | | | |
| | 1.30 | 26.00 | | -1.19 | | | |
| 0017 | 2 | 25.88 | | -1.07 | | | |
| | 2:30 | 25.78 | | -0.97 | | | |
| 0018 | 3 | 25.70 | | -0.89 | | | |
| | 3:30 | 25.64 | | -0.83 | | | |
| 0019 | 4 | 25.57 | | -0.76 | | | |
| | 4:30 | 25.51 | | -0.70 | | | |
| 0020 | 5 | 25.46 | | -0.65 | | | |
| 0021 | 6 | 25.38 | | -0.57 | | | |
| 0022 | 7 | 25.30 | | -0.49 | | | |
| 0023 | 8 | 25.24 | | -0.43 | | | |
| 0024 | 9 | 25.19 | | -0.38 | | | |
| 0025 | 10 | 25.14 | | -0.33 | | | |
| 0030 | 15 | 24.99 | | -0.18 | | | |
| 0036 | 21 | 24.91 | | -0.10 | | | |
| 0040 | 25 | 24.88 | | -0.07 | | | |
| 0045 | 30 | 24.86 | | -0.05 | | | |
| 0050 | 35 | 24.85 | | -0.04 | | | |
| 0055 | 40 | 24.84 | | -0.03 | | | |
| 0100 | 45 | 24.84 | | -0.03 | | | |
| 0105 | 50 | 24.84 | | -0.03 | | | |
| 0115 | 60 | 24.83 | | -0.02 | | | |
| 0125 | 70 | 24.83 | | -0.02 | | | |
| 0135 | 80 | 24.82 | | -0.01 | | | |
| | | | | | | | |
| 0140 | 85 | 24.82 | | | | | STOP RECOVERY |
| | | | | | | | TEST #3 STEP #1 |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-32 I
MEASURED WELL NUMBER: MS-32 S

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-10-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 19.39
DISTANCE FROM PUMPING WELL (ft): 5.55'
PERSONNEL: BH/TR
REMARKS: OBSERVATION WELL FOR MS-32 I

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1730 | 0 | 19.39 | NA | 0.00 | NA | NA | |
| 1850 | 10 | 19.39 | | | | | |
| 1910 | 30 | 19.39 | | | | | |
| 1940 | 60 | 19.39 | | | | | |
| 2040 | 120 | 19.39 | | | | | |
| 2140 | 180 | 19.39 | | | | | |
| 2240 | 240 | 19.39 | | | | | |
| 2310 | 270 | 19.39 | | | | | |
| 2340 | 300 | 19.39 | | | | | |
| 0010 | 330 | 19.39 | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-32I
MEASURED WELL NUMBER: MS-32D

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-10-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 23.55
DISTANCE FROM PUMPING WELL (ft): 5.7'
PERSONNEL: BH/TR
REMARKS: OBSERVATION WELL FOR MS-32I

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1730 | 0 | 23.55 | NA | 0.00 | NA | NA | |
| 1850 | 10 | 23.56 | | -0.01 | | | |
| 1910 | 30 | 23.56 | | -0.01 | | | |
| 1940 | 60 | 23.56 | | -0.01 | | | |
| 2040 | 120 | 23.57 | | -0.02 | | | |
| 2140 | 180 | 23.57 | | -0.02 | | | |
| 2240 | 240 | 23.57 | | -0.02 | | | |
| 2310 | 270 | 23.57 | | -0.02 | | | |
| 2340 | 300 | 23.57 | | -0.02 | | | |
| 0010 | 330 | 23.57 | | -0.02 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-32 I
MEASURED WELL NUMBER: MS-33 I

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-10-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 20.33
DISTANCE FROM PUMPING WELL (ft): SEE SURVEY MAP
PERSONNEL: BH/TR
REMARKS: OBSERVATION WELL FOR MS-32 I

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1835 | 0 | 20.33 | NA | 0.00 | NA | NA | |
| 1940 | 60 | 20.33 | NA | 0.00 | NA | NA | |
| 2140 | 180 | 20.33 | NA | 0.00 | NA | NA | |
| 0000 | 320 | 20.33 | NA | 0.00 | NA | NA | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-32D
MEASURED WELL NUMBER: –

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST FOLLOW UP WELL DEVELOPMENT

DATE(s): 1-11-98
MEASUREMENT METHOD: M-SCOPE & HERMIT
TEST NUMBER: #4
STATIC WATER LEVEL (ft): 23.53
PERSONNEL: B. HOWZE & T. ROJAHN
REMARKS: XD @ 49.95'

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): 1' OFF Bottom
DISTANCE FROM PUMPING WELL (ft): NA

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) SEC/L | REMARKS |
|---|---|---|---|---|---|---|---|
| 1150 | 0 | 23.53 | NA | 0.00 | 0.0 | 0.0 | |
| – | 0:30 | 26.36 | | -2.83 | | – | |
| 1151 | 1 | 26.46 | | -2.93 | | – | |
| 1152 | 2 | 26.43 | | -2.90 | | – | |
| 1153 | 3 | 26.51 | | -2.98 | | – | |
| 1154 | 4 | 26.54 | | -3.01 | | – | |
| 1155 | 5 | 26.55 | | -3.02 | 17.5 | 4.5 | 3.5gpm |
| 1200 | 10 | 26.59 | | -3.06 | 35 | – | |
| 1205 | 15 | 26.60 | | -3.07 | 52 | 4.6 | 3.4gpm |
| 1210 | 20 | 26.62 | | -3.09 | 69 | – | |
| 1220 | 30 | 26.64 | | -3.11 | 104 | 4.5 | |
| 1230 | 40 | 26.64 | | -3.11 | 139 | – | |
| 1240 | 50 | 26.64 | | -3.11 | 175 | 4.4 | 3.6gpm |
| 1250 | 60 | 26.64 | | -3.11 | 211 | 4.4 | |
| 1320 | 90 | 26.64 | | -3.11 | 319 | 4.4 | |
| 1350 | 120 | 26.64 | | -3.11 | 427 | 4.4 | |
| 1420 | 150 | 26.64 | | -3.11 | 535 | 4.4 | |
| 1450 | 180 | 26.64 | | -3.11 | 643 | 4.4 | |
| 1520 | 210 | 26.64 | | -3.11 | 757 | 4.2 | 3.8gpm |
| 1550 | 240 | 26.64 | | -3.11 | 871 | 4.2 | |
| 1620 | 270 | 26.59 | | -3.06 | 985 | 4.2 | |
| 1650 | 300 | 26.59 | | -3.06 | 1102 | 4.05 | 3.9gpm |
| 1720 | 330 | 26.60 | | -3.07 | 1216 | 4.2 | |
| 1750 | 360 | 26.60 | | -3.07 | 1327 | 4.3 | 3.7gpm |
| 1820 | 390 | 26.60 | | -3.07 | 1438 | 4.3 | |
| 1850 | 420 | 26.61 | | -3.08 | 1552 | 4.2 | |
| 1920 | 450 | 26.62 | | -3.09 | 1663 | 4.3 | |
| 1940 | 470 | – | | – | 1737 | – | Start Recovery |
| | | | | | | | Test #4 Step #1 |
| | | | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-32D
MEASURED WELL NUMBER: MS-32D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

| | |
|---|---|
| DATE(s): 1-11-98 | MONITORING POINT: TOC |
| MEASUREMENT METHOD: M-SCOPE | DEPTH CORRECTION (ft): NA |
| TEST NUMBER: #4 STEP #1 | PUMP SETTING (Ft. below monitoring point): NA |
| STATIC WATER LEVEL (ft): 23.53 | DISTANCE FROM PUMPING WELL (ft): NA |
| PERSONNEL: BH/TR | |
| REMARKS: RECOVERY @ MS-32D | |

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1940 | 0 | - | NA | - | NA | NA | START RECOVERY |
| - | 0:30 | - | | - | | | |
| 1941 | 1 | 23.57 | | -0.04 | | | |
| - | 1:30 | 23.57 | | -0.04 | | | |
| 1942 | 2 | 23.57 | | -0.04 | | | |
| - | 2:30 | 23.56 | | -0.03 | | | |
| 1943 | 3 | 23.55 | | -0.02 | | | |
| 1944 | 4 | 23.55 | | -0.02 | | | |
| 1945 | 5 | 23.54 | | -0.01 | | | |
| 1946 | 6 | 23.53 | | 0.00 | | | |
| | | | | | | | |
| 1950 | | | | | | | STOP TEST #4 STEP #1 |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-32D
MEASURED WELL NUMBER: MS-32S

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-11-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: 4
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 19.41
DISTANCE FROM PUMPING WELL (ft): 11.25'
PERSONNEL: B. Huwze, T. Rojahn
REMARKS: OBSERVATION WELL

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1150 | 0 | 19.41 | – | – | – | – | |
| 1205 | 15 | 19.41 | NA | 0.00 | NA | NA | |
| 1220 | 30 | 19.41 | | | | | |
| 1250 | 60 | 19.41 | | | | | |
| 1350 | 120 | 19.41 | | | | | |
| 1450 | 180 | 19.41 | | | | | |
| 1550 | 240 | 19.41 | | | | | |
| 1650 | 300 | 19.41 | | | | | |
| 1750 | 360 | 19.41 | | | | | |
| 1850 | 420 | 19.41 | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-32D
MEASURED WELL NUMBER: MS-32I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1-11-98
MEASUREMENT METHOD: M-Scope
TEST NUMBER: 4
STATIC WATER LEVEL (ft): 24.78
PERSONNEL: B. Howze, T. Rojahn
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.7'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1150 | 0 | 24.78 | NA | 0.00 | NA | NA | |
| 1205 | 15 | 24.78 | | | | | |
| 1220 | 30 | 24.78 | | | | | |
| 1250 | 60 | 24.78 | | | | | |
| 1350 | 120 | 24.78 | | | | | |
| 1450 | 180 | 24.78 | | | | | |
| 1550 | 240 | 24.78 | | | | | |
| 1650 | 300 | 24.78 | | | | | |
| 1750 | 360 | 24.78 | | | | | |
| 1850 | 420 | 24.78 | | | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-32D
MEASURED WELL NUMBER: MS-33D

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-11-98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope
DEPTH CORRECTION (ft): NA
TEST NUMBER: 4
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 20.31
DISTANCE FROM PUMPING WELL (ft): SEE Fig 2-1 OR SURVEY MAP
PERSONNEL: B. Howze, T. Rojahn
REMARKS: OBSERVATION WELL FOR MS-32D

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1140 | 0 | 20.31 | NA | 0.00 | NA | NA | |
| 1500 | 190 | 20.31 | ↓ | 0.00 | ↓ | ↓ | |
| 1800 | 370 | 20.30 | ↓ | +0.01 | ↓ | ↓ | |
| 1925 | 455 | 20.29 | ↓ | +0.02 | ↓ | ↓ | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-33S
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST FOLLOW-UP WELL DEVELOPMENT

DATE(s): 1/22-23/98
MEASUREMENT METHOD: Hermit only
TEST NUMBER: 3
STATIC WATER LEVEL (ft): 19.48
PERSONNEL: SC/TR
MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): 25'
DISTANCE FROM PUMPING WELL (ft): NA
REMARKS: XD = 0.5' OFF Bottom; Hermit Head 7.012

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2315 | 0 | 19.48 | NA | 0.00 | 0.0 | 0.0 | Start Test #3 Step #0 |
| 2320 | 5 | — | | -2.67 | 21 | 4.62 | |
| 2325 | 10 | — | | -2.733 | 46.5 | 4.56 | |
| 2330 | 15 | — | | -2.77 | 66.5 | 4.56 | |
| 2335 | 20 | — | | -2.814 | 90.1 | 4.56 | |
| 2340 | 25 | — | | -2.86 | 111.6 | 4.41 | |
| 2345 | 30 | — | | -2.90 | 139.0 | 4.46 | |
| 2415 | 60 | — | | -3.11 | 268.7 | 4.36 | |
| 2445 | 90 | — | | -3.207 | 403.3 | 4.41 | |
| 0115 | 120 | — | | -3.384 | — | — | |
| 0145 | 150 | — | | -3.52 | 675.0 | 4.36 | |
| 0215 | 180 | — | | -3.668 | 805.0 | 4.36 | |
| 0245 | 210 | — | | -3.733 | 935.0 | 4.20 | |
| 0315 | 240 | — | | -3.842 | 1060.0 | 4.26 | |
| 0348 | 273 | — | | -3.923 | 1200.0 | 4.31 | DD @ 270 min |
| 0415 | 300 | — | | -4.004 | 1312.5 | 4.15 | |
| 0445 | 330 | — | | -4.048 | 1435.0 | 4.26 | |
| 0450 | 335 | — | | — | 1454.0 | 4.21 | |
| | | | | | | | |
| 0451 | | | | | | | Start Step #1 Recovery |
| 0511 | | | | | | | |
| | | — | — | — | — | | Stop Hermit |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-33S
MEASURED WELL NUMBER: MS-33I

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1/22-23/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 19.64
DISTANCE FROM PUMPING WELL (ft): 5.45'
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL FOR MS-33S

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2315 | 0 | 19.64 | NA | 0.00 | NA | NA | |
| 2345 | 30 | 19.66 | | -0.02 | | | |
| 2415 | 60 | 19.66 | | -0.02 | | | |
| 0145 | 150 | 19.67 | | -0.03 | | | |
| 0245 | 210 | 19.67 | | -0.03 | | | |
| 0350 | 275 | 19.67 | | -0.03 | | | |
| 0445 | 330 | 19.68 | | -0.04 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-33S
MEASURED WELL NUMBER: MS-33D

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1/22-23/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 3
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 19.76
DISTANCE FROM PUMPING WELL (ft): 10.9'
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL FOR MS-33S

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 2315 | 0 | 19.76 | NA | 0.00 | NA | NA | |
| 2345 | 30 | 19.77 | | -0.01 | | | |
| 2415 | 60 | 19.76 | | 0.00 | | | |
| 0145 | 150 | 19.76 | | 0.00 | | | |
| 0245 | 210 | 19.76 | | 0.00 | | | |
| 0350 | 275 | 19.75 | | +0.01 | | | |
| 0445 | 330 | 19.75 | | +0.01 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-33 I
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST
FOLLOW UP WELL DEVELOPMENT

DATE(s): 1/26/98
MONITORING POINT: TOC
MEASUREMENT METHOD: Hermit & M-Scope
DEPTH CORRECTION (ft): —
TEST NUMBER: #3 & #0
PUMP SETTING (Ft. below monitoring point): ~75'
STATIC WATER LEVEL (ft): 19.78
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: CONTI | ROJAHN
REMARKS: 2" REDI FLOW @ 1' OFF Bottom OF WELL

| | MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | Running TOTAL ~~FLOW METER READING~~ (Gals.) | PUMPING RATE (GPM) | REMARKS XD HEAD READING 52.763 |
|---|---|---|---|---|---|---|---|---|
| TEST #3 | 1130 | 0 | 19.78 | NA | 0.0 | | ~3.0gpm | Start Step 0 |
| | 1136 | — | — | NA | → | DRY out well | | Stop Pump |
| | 1137 | | | | | ~18gals | | |
| 3gals Removed | | | | | | | Step 1 | Start Recovery |
| | ~~1222~~ (TA) | | | | | | | Stop Recovery |
| | 1223 | | | | | | | |
| | | | | | | | | |
| | * S. Conti will dump all tests #0 → #3 due to Hermit malfuction @ Enter ID No. in Start Test MODE | | | | | | | |
| | • Will start next test @ MS 33 I @ TEST 0 | | | | | | | |
| | | | | | | | | |
| | 1300 | 0 | 19.82 | NA | 0 | 0 | 0 | XD HEAD READING |
| | 1330 | 30 | 33.72 | | -13.845 | — | .45 | @ start 52.715 |
| TEST #0 | 1345 | 45 | 33.44 | | | — | .43 | Hz = 148 |
| | 1350 | 50 | 40.30 | | -20.358 | — | 1.00 | Hz = 160 |
| | 1400 | 60 | 40.17 | | -20.224 | — | 0.58 | " |
| | 1420 | 80 | 39.91 | | -20.022 | — | 0.58 | " |
| | 1440 | 100 | 39.90 | | -20.006 | 50 | 0.57 | " |
| | 1444 | 104 | — | | — | — | 1.32 | Hz = 175 |
| | 1446 | 106 | 47.45 | | — | — | — | " |
| | 1450 | 110 | 48.31 | | -28.388 | — | 0.81 | " |
| | 1456 | 116 | | | — | — | 1.07 | Hz = 180 |
| | 1458 | 118 | 50.70 | | — | — | — | " |
| | 1500 | 120 | 51.13 | | 31.219 | — | 0.93 | " |
| | 1503 | 123 | — | | — | — | 1.05 | Hz = 183 |
| | 1510 | 130 | 52.70 | | 32.786 | — | 0.93 | " |
| | 1512 | 132 | — | | — | — | 1.01 | Hz = 185 |
| | 1514 | 134 | 53.84 | | — | — | — | " |
| | 1520 | 140 | 54.06 | | 34.113 | — | 0.93 | " |
| | 1530 | 150 | 54.04 | | 34.129 | 96.5 | 0.93 | " |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

* MALFUCTION NOTE

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-33I
MEASURED WELL NUMBER: –

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1/26/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-Scope & Hermit
DEPTH CORRECTION (ft): NA
TEST NUMBER: #0 Con't
PUMP SETTING (Ft. below monitoring point): ~75'
STATIC WATER LEVEL (ft): 19.82
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: CONTI / ROJAHN
REMARKS: MS-33I WELL DEVELOPMENT Con't

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | RUNNING TOTAL ~~FLOW METER READING~~ (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1540 | 160 | 54.13 | NA | -34.209 | 106 | 0.94 | H2=185 |
| 1600 | 180 | 54.21 | | -34.337 | 124.6 | 0.93 | " |
| 1630 | 210 | 54.33 | | -34.417 | 152.5 | 0.93 | " |
| 1700 | 240 | 54.41 | | -34.513 | 179.5 | 0.90 | " |
| 1730 | 270 | 54.57 | | -34.657 | 207.4 | 0.93 | " |
| 1800 | 300 | 54.67 | | -34.753 | 234.4 | 0.90 | " |
| 1830 | 330 | 54.86 | | -34.961 | 261.4 | 0.90 | " |
| 1900 | 360 | 54.92 | | -35.009 | 288.4 | 0.90 | " |
| 1930 | 390 | 55.08 | | -35.185 | 315.4 | 0.90 | " |
| 2000 | 420 | 55.16 | | -35.265 | 342.4 | 0.90 | " |
| 2030 | 450 | 55.32 | | -35.409 | 369.4 | 0.90 | " |
| 2100 | 480 | 55.39 | | -35.473 | 396.4 (TD) | 0.90 | " |
| 2200 | 540 | 55.46 | | -35.553 | ~~4[illegible]~~ 450.4 | 0.90 | " |
| 2300 | 600 | 55.54 | | -35.633 | 504.4 | 0.90 | " |
| 0000 | 660 | 55.59 | | -35.681 | 558.4 | 0.90 | " |
| 0100 | 720 | 55.69 | | -35.793 | 612.4 | 0.90 | " |
| | | | | | | | |
| 0103 | – | – | – | – | – | → | STEP 1 / Start Recovery |
| 0153 | – | – | – | – | – | → | END RECOVERY |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-33I
MEASURED WELL NUMBER: MS-33S

[ ] PUMPING TEST

[ ] STEP DRAW DOWN TEST

DATE(s): 1/26/98
MEASUREMENT METHOD: M-SCOPE HERON
TEST NUMBER: 3
STATIC WATER LEVEL (ft): 19.64
PERSONNEL: CONTI / ROJALIN
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): —
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.45'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| Test #3 1130 | 0 | 19.64 | NA | 0.00 | NA | NA | |
| Test #0 1247 | 0 | 19.64 | | 0.00 | | | |
| 1530 | 150 | 19.64 | | 0.00 | | | |
| 1730 | 270 | 19.65 | | -0.01 | | | |
| 1930 | 390 | 19.65 | | -0.01 | | | |
| 2300 | 600 | 19.65 | | -0.01 | | | |
| 0050 | 710 | 19.65 | | -0.01 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-33I
MEASURED WELL NUMBER: MS-33D

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1/26/98
MEASUREMENT METHOD: M SCOPE (HERON)
TEST NUMBER: 3
STATIC WATER LEVEL (ft): 19.85
PERSONNEL: CONTI/ROJAHN
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): —
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.45'

| | MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| Cst#3 | 1130 | 0 | 19.85 | NA | 0.00 | NA | NA | |
| Cst#0 | 1247 | 0 | 19.85 | | 0.00 | | | |
| | 1530 | 150 | 19.86 | | -0.01 | | | |
| | 1730 | 270 | 19.85 | | 0.00 | | | |
| | 1930 | 390 | 19.86 | | -0.01 | | | |
| | 2300 | 600 | 19.86 | | -0.01 | | | |
| | 0050 | 710 | 19.86 | | -0.01 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-33D
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST
FOLLOW UP WELL DEVELOPMENT

DATE(s): 1/23/98
MEASUREMENT METHOD: M-Scope & HERMIT
TEST NUMBER: 0; STEP 0 & #1
STATIC WATER LEVEL (ft): 19.79 @ 1634
PERSONNEL: S. Cont. & T. Rojahn

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): 119'
DISTANCE FROM PUMPING WELL (ft): NA

REMARKS:

| | MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) M-Scope | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) HERMIT | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS XD HEAD (94.036) |
|---|---|---|---|---|---|---|---|---|
| | 1800 | 0 | 19.79 | — | 0.000 | 0.0 | 0 | 2" SUB PUMP |
| | 1805 | 5 | 22.85 | — | -2.934 | 20.0 | 3.02 | REDI FLO |
| | 1815 | 15 | 22.87 | — | -2.998 | 48.0 | 3.02 | |
| | 1820 | 20 | 22.91 | — | -3.046 | 65 | 3.07 | |
| | 1825 | 25 | 22.92 | — | -3.046 | 78 | 3.02 | |
| | 1830 | 30 | 22.92 | — | -3.062 | 92 | 3.07 | |
| | 1840 | 40 | 22.95 | — | -3.094 | 125 | 3.07 | |
| 1/23 | 1850 | 50 | — | — | -3.094 | — | — | |
| | 1900 | 60 | 22.97 | — | -3.126 | 185 | 3.02 | |
| | 1930 (TA) | 90 | 23.01 | — | -3.142 | 280 | 3.02 | |
| | 1940 | 100 | 23.01 | — | -3.158 | 306 | 3.02 | Stepped up test to 4gpm |
| | 2000 | 120 | 24.62 | — | -4.745 | 388 | 4.00 | |
| | 2030 | 150 | 24.75 | — | -4.783 | 518 | 4.00 | |
| | 2100 | 180 | 24.81 | — | 4.922 | 624 | 4.00 | |
| | 2120 (TB) | 200 | 24.85 | — | 4.922 | 715 | 4.00 | Stepped up test to 5gpm |
| | 2130 (TC) | 240 | 26.87 | | 7.006 | 757 | — | |
| | 2131 | 211 | — | — | — | 760 | → | Pump Stopped HZ 27 |
| | 2132 → STEP #1 | | | | | | | RECOVERY ~ 7 MIN |
| NEW TEST #1 | 2145 | 0 | 19.83 | — | 0.000 | 760 | 4.00 | TEST 1 STEP 0 |
| | 2200 | 15 | 24.96 | — | -5.05 | 823 | 3.90 | |
| | 2215 | 30 | 25.16 | — | -5.226 | 884 | 4.00 | |
| | 2235 | 50 | 25.27 | — | -5.338 | 965 | 4.05 | |
| | 2245 | 60 | 25.31 | — | -5.386 | 1010 | 4.00 | |
| | 2315 | 90 | 25.31 | — | -5.338 | 1130 | 4.00 | |
| 1/23 | 2345 | 120 | 25.40 | — | -5.451 | 1247 | 4.05 | |
| | 2415 | 150 | 25.42 | — | -5.483 | 1367 | 4.00 | |
| 1/24 | 2445 | 180 | 25.45 | — | -5.547 | 1492 | 4.00 | |
| | 0115 | 210 | 25.48 | — | -5.563 | 1615 | 4.00 | |
| | 0145 | 240 | 25.50 | — | -5.595 | 1731 | 4.00 | |
| | 0215 | 270 | 25.51 | — | -5.595 | 1858 | 4.05 | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-33D
MEASURED WELL NUMBER: —

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1/23 & 1/24
MONITORING POINT: TOC
MEASUREMENT METHOD:
DEPTH CORRECTION (ft): —
TEST NUMBER: 0
PUMP SETTING (Ft. below monitoring point): 119
STATIC WATER LEVEL (ft): 19.79
DISTANCE FROM PUMPING WELL (ft): NA
PERSONNEL: SJC/TR
REMARKS: MS-33D WELL DEVELOPMENT CON'T

| | MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| SAT 1/24 | 0245 | 300 | 25.56 | — | -5.627 | 1977 | 4.00 | |
| | 0315 | 330 | 25.59 | — | -5.691 | 2094 | 4.05 | |
| | 0345 | 360 | 25.58 | — | -5.659 | 2214 | 4.05 | |
| | 0445 | 420 | 25.61 | — | -5.707 | 2459 | 4.05 | |
| | 0545 | 480 | 25.63 | — | -5.707 | 2705 | 4.05 | |
| | 0645 | 540 | 25.64 | — | -5.739 | 2950 | 4.05 | |
| | 0745 | 600 | 25.65 | — | -5.755 | 3205 | 4.00 | |
| | 0845 | 660 | 25.69 | — | -5.771 | 3441 | 4.05 | |
| | 0945 | 720 | 25.70 | — | 5.819 | 3675 | 4.00 | |
| | 0954 | 729 | | | | 3703 | | |
| | | | | | | | | |
| | 0956 | → | | | | | | START RECOVERY |
| | 1002 | → END RECOVERY STOP HERMIT | | | | | | STEP #1 |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966

PUMPING WELL NUMBER: MS-33D
MEASURED WELL NUMBER: MS-33S

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-23-98
MEASUREMENT METHOD: M-SCOPE
TEST NUMBER: 0
STATIC WATER LEVEL (ft): 19.53
PERSONNEL: SC/TR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 10.9'

| | MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | 1800 | 0 | 19.53 | NA | 0.00 | NA | NA | |
| TEST | 1805 | 5 | 19.53 | | 0.00 | | | |
| #0 | 1900 | 60 | 19.53 | | 0.00 | | | |
| | 1930 | 90 | 19.53 | | 0.00 | | | |
| | 2000 | 120 | 19.53 | | 0.00 | | | |
| | 2030 | 150 | 19.53 | | 0.00 | | | |
| | 2145 | 0 | 19.53 | | 0.00 | | | |
| TEST | 2245 | 60 | 19.53 | | 0.00 | | | |
| #1 | 2415 | 150 | 19.54 | | -0.01 | | | |
| | 0215 | 270 | 19.54 | | -0.01 | | | |
| | 0315 | 330 | 19.54 | | -0.01 | | | |
| | 0545 | 480 | 19.55 | | -0.02 | | | |
| | 0645 | 540 | 19.55 | | -0.02 | | | |
| | 0745 | 600 | 19.55 | | -0.02 | | | |
| | 0845 | 660 | 19.56 | | -0.03 | | | |
| | 0945 | 720 | 19.56 | | -0.03 | | | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS 33D
MEASURED WELL NUMBER: MS-33I

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1-23-98
MEASUREMENT METHOD: M-SCOPE
TEST NUMBER: 0
STATIC WATER LEVEL (ft): 19.70
PERSONNEL: SC ITR
REMARKS: OBSERVATION WELL

MONITORING POINT: TOC
DEPTH CORRECTION (ft): NA
PUMP SETTING (Ft. below monitoring point): NA
DISTANCE FROM PUMPING WELL (ft): 5.45'

| MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|
| 1800 | 0 | 19.70 | NA | 0.00 | NA | NA | |
| 1805 | 5 | 19.70 | | 0.00 | | | |
| 1900 | 60 | 19.70 | | 0.00 | | | |
| 1930 | 90 | 19.70 | | 0.00 | | | |
| 2000 | 120 | 19.70 | | 0.00 | | | |
| 2030 | 150 | 19.71 | | -0.01 | | | |
| 2145 | 0 | 19.71 | | -0.01 | | | |
| 2245 | 60 | 19.71 | | -0.01 | | | |
| 2415 | 150 | 19.72 | | -0.02 | | | |
| 0215 | 270 | 19.72 | | -0.02 | | | |
| 0315 | 330 | 19.72 | | -0.02 | | | |
| 0545 | 480 | 19.72 | | -0.02 | | | |
| 0645 | 540 | 19.72 | | -0.02 | | | |
| 0745 | 600 | 19.73 | | -0.03 | | | |
| 0845 | 660 | 19.73 | | -0.03 | | | |
| 0945 | 720 | 19.73 | | -0.03 | | | |

TEST #0

#1

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# PUMPING TEST DATA SHEET

PROJECT NAME: NIROP Fridley
PROJECT NUMBER: 6966
PUMPING WELL NUMBER: MS-33D
MEASURED WELL NUMBER: MS-31D

[ ] PUMPING TEST
[ ] STEP DRAW DOWN TEST

DATE(s): 1/23 & 1/24/98
MONITORING POINT: TOC
MEASUREMENT METHOD: M-SCOPE
DEPTH CORRECTION (ft): NA
TEST NUMBER: 0 & 1
PUMP SETTING (Ft. below monitoring point): NA
STATIC WATER LEVEL (ft): 18.26
DISTANCE FROM PUMPING WELL (ft): SEE SURVEY MAP
PERSONNEL: SC & T.R.
REMARKS: OBSERVATION WELL FOR MS-33D

| | MILITARY TIME | ELAPSED TIME SINCE PUMP START OR STOP (Min.) | WATER LEVEL (Ft.) | CORRECTION (Ft.) | DRAW DOWN OR RECOVERY (Ft.) | FLOW METER READING (Gals.) | PUMPING RATE (GPM) | REMARKS |
|---|---|---|---|---|---|---|---|---|
| Test 0 | 1750 | 0 | 18.26 | NA | 0.00 | NA | NA | |
| | 2050 | 170 | 18.29 | NA | -0.03 | NA | NA | |
| | | | | | | | | |
| Test #1 | 2420 | 155 | 18.26 | NA | 0.00 | NA | NA | |
| | 0320 | 335 | 18.26 | ↓ | 0.00 | ↓ | ↓ | |
| | 0550 | 485 | 18.26 | ↓ | 0.00 | ↓ | ↓ | |
| | 0755 | 610 | 18.26 | ↓ | 0.00 | ↓ | ↓ | |
| | 0940 | 715 | 18.26 | ↓ | 0.00 | ↓ | ↓ | |

NOTE: All measurements to nearest 0.01 foot measured from top of well riser pipe unless otherwise noted.

# APPENDIX C.1

# MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-28S

SE2000

Environmental Logger

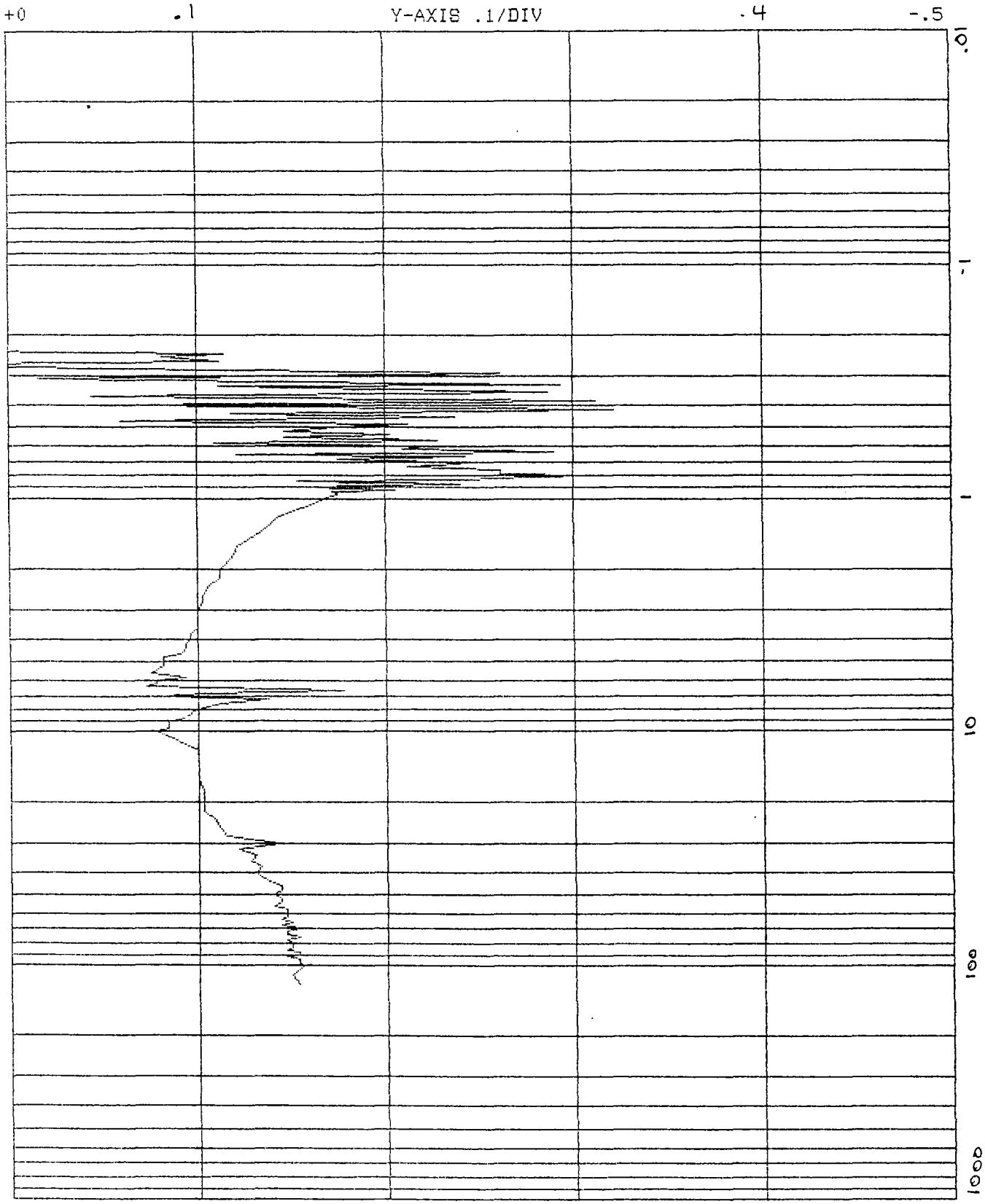
01/23 01:36

Unit# 2000 Test 1

Step 0 01/22 17:24:59

≈ 3.64 Gpm

INPUT 1: MS28S




(Y-AXIS = .01 TO +1000)

SE2000
Environmental Logger
01/23 01:16

MS28SDD.PT
MS28SDD.NNN

Unit# 2000 Test 1

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS28S |

| | |
|---|---|
| Reference | 0.000 |
| PSI at Ref. | 3.135 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

DD. ≈ 3.64 GPM

Step 0 01/22 17:24:59

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.000 |
| 0.0083 | 0.000 |
| 0.0166 | 0.000 |
| 0.0250 | 0.000 |
| 0.0333 | 0.000 |
| 0.0416 | 0.000 |
| 0.0500 | 0.000 |
| 0.0583 | 0.000 |
| 0.0666 | 0.000 |
| 0.0750 | 0.000 |
| 0.0833 | 0.000 |
| 0.0916 | 0.000 |
| 0.1000 | 0.000 |
| 0.1083 | 0.000 |
| 0.1166 | 0.000 |
| 0.1250 | 0.000 |
| 0.1333 | 0.000 |
| 0.1416 | 0.000 |
| 0.1500 | 0.000 |
| 0.1583 | 0.000 |
| 0.1666 | 0.000 |
| 0.1750 | 0.000 |
| 0.1833 | 0.000 |
| 0.1916 | 0.000 |
| 0.2000 | 0.000 |
| 0.2083 | 0.000 |
| 0.2166 | 0.000 |
| 0.2250 | 0.000 |
| 0.2333 | 0.031 |
| 0.2416 | -0.115 |
| 0.2500 | -0.081 |
| 0.2583 | -0.112 |
| 0.2666 | 0.028 |
| 0.2750 | 0.003 |
| 0.2833 | -0.112 |

| | |
|---|---|
| 0.2916 | -0.261 |
| 0.3000 | -0.146 |
| 0.3083 | -0.015 |
| 0.3166 | -0.143 |
| 0.3250 | -0.293 |
| 0.3333 | -0.112 |
| 0.3500 | -0.286 |
| 0.3666 | -0.043 |
| 0.3833 | -0.311 |
| 0.4000 | -0.049 |
| 0.4166 | -0.321 |
| 0.4333 | -0.118 |
| 0.4500 | -0.237 |
| 0.4666 | -0.059 |
| 0.4833 | -0.212 |
| 0.5000 | -0.174 |
| 0.5166 | -0.146 |
| 0.5333 | -0.202 |
| 0.5500 | -0.146 |
| 0.5666 | -0.227 |
| 0.5833 | -0.109 |
| 0.6000 | -0.221 |
| 0.6166 | -0.208 |
| 0.6333 | -0.290 |
| 0.6500 | -0.121 |
| 0.6666 | -0.243 |
| 0.6833 | -0.174 |
| 0.7000 | -0.230 |
| 0.7166 | -0.240 |
| 0.7333 | -0.212 |
| 0.7500 | -0.261 |
| 0.7666 | -0.261 |
| 0.7833 | -0.261 |
| 0.8000 | -0.308 |
| 0.8166 | -0.255 |
| 0.8333 | -0.246 |
| 0.8500 | -0.152 |
| 0.8666 | -0.240 |
| 0.8833 | -0.190 |
| 0.9000 | -0.159 |
| 0.9166 | -0.205 |
| 0.9333 | -0.171 |
| 0.9500 | -0.174 |
| 0.9666 | -0.174 |
| 0.9833 | -0.171 |
| 1.0000 | -0.168 |
| 1.2000 | -0.143 |
| 1.4000 | -0.134 |
| 1.6000 | -0.121 |
| 1.8000 | -0.118 |
| 2.0000 | -0.112 |
| 2.2000 | -0.112 |
| 2.4000 | -0.106 |
| 2.6000 | -0.102 |
| 2.8000 | -0.102 |
| 3.0000 | -0.099 |
| 3.2000 | -0.099 |
| 3.4000 | -0.099 |
| 3.6000 | -0.099 |
| 3.8000 | -0.096 |

| | |
|---|---|
| 4.0000 | -0.096 |
| 4.2000 | -0.093 |
| 4.4000 | -0.093 |
| 4.6000 | -0.090 |
| 4.8000 | -0.081 |
| 5.0000 | -0.081 |
| 5.2000 | -0.081 |
| 5.4000 | -0.077 |
| 5.6000 | -0.074 |
| 5.8000 | -0.093 |
| 6.0000 | -0.077 |
| 6.2000 | -0.077 |
| 6.4000 | -0.071 |
| 6.6000 | -0.177 |
| 6.8000 | -0.102 |
| 7.0000 | -0.081 |
| 7.2000 | -0.137 |
| 7.4000 | -0.121 |
| 7.6000 | -0.112 |
| 7.8000 | -0.106 |
| 8.0000 | -0.099 |
| 8.2000 | -0.096 |
| 8.4000 | -0.096 |
| 8.6000 | -0.093 |
| 8.8000 | -0.090 |
| 9.0000 | -0.084 |
| 9.2000 | -0.084 |
| 9.4000 | -0.084 |
| 9.6000 | -0.084 |
| 9.8000 | -0.081 |
| 10.0000 | -0.077 |
| 12.0000 | -0.099 |
| 14.0000 | -0.099 |
| 16.0000 | -0.099 |
| 18.0000 | -0.102 |
| 20.0000 | -0.102 |
| 22.0000 | -0.102 |
| 24.0000 | -0.109 |
| 26.0000 | -0.112 |
| 28.0000 | -0.115 |
| 30.0000 | -0.143 |
| 32.0000 | -0.121 |
| 34.0000 | -0.130 |
| 36.0000 | -0.127 |
| 38.0000 | -0.134 |
| 40.0000 | -0.130 |
| 42.0000 | -0.134 |
| 44.0000 | -0.137 |
| 46.0000 | -0.143 |
| 48.0000 | -0.143 |
| 50.0000 | -0.140 |
| 52.0000 | -0.143 |
| 54.0000 | -0.143 |
| 56.0000 | -0.140 |
| 58.0000 | -0.146 |
| 60.0000 | -0.146 |
| 62.0000 | -0.146 |
| 64.0000 | -0.143 |
| 66.0000 | -0.149 |
| 68.0000 | -0.143 |

| | |
|---|---|
| 70.0000 | -0.152 |
| 72.0000 | -0.146 |
| 74.0000 | -0.146 |
| 76.0000 | -0.152 |
| 78.0000 | -0.146 |
| 80.0000 | -0.149 |
| 82.0000 | -0.149 |
| 84.0000 | -0.149 |
| 86.0000 | -0.146 |
| 88.0000 | -0.152 |
| 90.0000 | -0.152 |
| 92.0000 | -0.146 |
| 94.0000 | -0.152 |
| 96.0000 | -0.152 |
| 98.0000 | -0.152 |
| 100.000 | -0.155 |
| 110.000 | -0.149 |
| 120.000 | -0.152 |

END

SE2000
Environmental Logger
01/19 15:43

Unit# 2000 Test 6

Setups: INPUT 1

| | |
|---|---|
| Type | Level (F) |
| Mode | TOC |
| I.D. | MS28S |
| Reference | 0.000 |
| PSI at Ref. | 3.061 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

Step 0 01/13 14:34:47

Elapsed Time INPUT 1

| | |
|---|---|
| 0.0000 | -0.003 |
| 0.0083 | -0.003 |
| 0.0166 | -0.003 |
| 0.0250 | -0.003 |
| 0.0333 | 0.000 |
| 0.0416 | 0.000 |
| 0.0500 | 0.059 |
| 0.0583 | 0.193 |
| 0.0666 | 0.174 |
| 0.0750 | 0.274 |
| 0.0833 | 0.293 |
| 0.0916 | 0.280 |
| 0.1000 | 0.271 |
| 0.1083 | 0.274 |
| 0.1166 | 0.283 |
| 0.1250 | 0.283 |
| 0.1333 | 0.286 |
| 0.1416 | 0.290 |
| 0.1500 | 0.293 |
| 0.1583 | 0.296 |
| 0.1666 | 0.299 |
| 0.1750 | 0.277 |
| 0.1833 | 0.414 |
| 0.1916 | 0.452 |
| 0.2000 | 0.511 |
| 0.2083 | 0.589 |

MS28S DO. HDI
(or)
MS28S DO. NMS

| | |
|---|---|
| 0.2166 | 0.629 |
| 0.2250 | 0.642 |
| 0.2333 | 0.642 |
| 0.2416 | 0.636 |
| 0.2500 | 0.629 |
| 0.2583 | 0.626 |
| 0.2666 | 0.626 |
| 0.2750 | 0.629 |
| 0.2833 | 0.629 |
| 0.2916 | 0.642 |
| 0.3000 | 0.645 |
| 0.3083 | 0.645 |
| 0.3166 | 0.651 |
| 0.3250 | 0.657 |
| 0.3333 | 0.657 |
| 0.3500 | 0.664 |
| 0.3666 | 0.670 |
| 0.3833 | 0.673 |
| 0.4000 | 0.673 |
| 0.4166 | 0.679 |
| 0.4333 | 0.682 |
| 0.4500 | 0.689 |
| 0.4666 | 0.692 |
| 0.4833 | 0.695 |
| 0.5000 | 0.698 |
| 0.5166 | 0.701 |
| 0.5333 | 0.701 |
| 0.5500 | 0.707 |
| 0.5666 | 0.710 |
| 0.5833 | 0.707 |
| 0.6000 | 0.710 |
| 0.6166 | 0.710 |
| 0.6333 | 0.714 |
| 0.6500 | 0.720 |
| 0.6666 | 0.723 |
| 0.6833 | 0.723 |
| 0.7000 | 0.723 |
| 0.7166 | 0.723 |
| 0.7333 | 0.723 |
| 0.7500 | 0.723 |
| 0.7666 | 0.723 |
| 0.7833 | 0.723 |
| 0.8000 | 0.726 |
| 0.8166 | 0.729 |
| 0.8333 | 0.732 |
| 0.8500 | 0.729 |
| 0.8666 | 0.742 |
| 0.8833 | 0.720 |
| 0.9000 | 0.726 |
| 0.9166 | 0.726 |
| 0.9333 | 0.723 |

| | |
|---|---|
| 0.9500 | 0.726 |
| 0.9666 | 0.726 |
| 0.9833 | 0.726 |
| 1.0000 | 0.729 |
| 1.2000 | 0.732 |
| 1.4000 | 0.739 |
| 1.6000 | 0.742 |
| 1.8000 | 0.745 |
| 2.0000 | 0.745 |
| 2.2000 | 0.751 |
| 2.4000 | 0.748 |
| 2.6000 | 0.754 |
| 2.8000 | 0.751 |
| 3.0000 | 0.751 |
| 3.2000 | 0.751 |
| 3.4000 | 0.754 |
| 3.6000 | 0.751 |
| 3.8000 | 0.754 |
| 4.0000 | 0.760 |
| 4.2000 | 0.757 |
| 4.4000 | 0.757 |
| 4.6000 | 0.757 |
| 4.8000 | 0.754 |
| 5.0000 | 0.760 |
| 5.2000 | 0.757 |
| 5.4000 | 0.757 |
| 5.6000 | 0.757 |
| 5.8000 | 0.726 |
| 6.0000 | 0.717 |
| 6.2000 | 0.452 |
| 6.4000 | 0.433 |
| 6.6000 | 0.352 |
| 6.8000 | 0.439 |
| 7.0000 | 0.411 |
| 7.2000 | 0.570 |
| 7.4000 | 0.530 |
| 7.6000 | 0.517 |
| 7.8000 | 0.424 |
| 8.0000 | 0.427 |
| 8.2000 | 0.477 |
| 8.4000 | 0.455 |
| 8.6000 | 0.258 |

SE2000
Environmental Logger
01/19 15:38

Unit# 2000 Test 6

Setups: INPUT 1

| | |
|---|---|
| Type | Level (F) |
| Mode | TOC |
| I.D. | MS28S |

| | |
|---|---|
| Reference | 0.000 |
| PSI at Ref. | 3.061 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

Step 2 01/13 14:55:05

Elapsed Time INPUT 1

| | |
|---|---|
| 0.0000 | -0.006 |
| 0.0083 | -0.006 |
| 0.0166 | -0.006 |
| 0.0250 | 0.106 |
| 0.0333 | 0.237 |
| 0.0416 | 0.212 |
| 0.0500 | 0.318 |
| 0.0583 | 0.367 |
| 0.0666 | 0.361 |
| 0.0750 | 0.352 |
| 0.0833 | 0.355 |
| 0.0916 | 0.358 |
| 0.1000 | 0.358 |
| 0.1083 | 0.358 |
| 0.1166 | 0.392 |
| 0.1250 | 0.442 |
| 0.1333 | 0.392 |
| 0.1416 | 0.474 |
| 0.1500 | 0.467 |
| 0.1583 | 0.461 |
| 0.1666 | 0.405 |
| 0.1750 | 0.461 |
| 0.1833 | 0.433 |
| 0.1916 | 0.427 |
| 0.2000 | 0.352 |
| 0.2083 | 0.467 |

MS 28s dd . hd
MS 28s dd * - NVm 2

| | |
|---|---|
| 0.2166 | 0.445 |
| 0.2250 | 0.455 |
| 0.2333 | 0.464 |
| 0.2416 | 0.389 |
| 0.2500 | 0.483 |
| 0.2583 | 0.464 |
| 0.2666 | 0.452 |
| 0.2750 | 0.467 |
| 0.2833 | 0.377 |
| 0.2916 | 0.492 |
| 0.3000 | 0.467 |
| 0.3083 | 0.464 |
| 0.3166 | 0.486 |
| 0.3250 | 0.483 |
| 0.3333 | 0.486 |
| 0.3500 | 0.502 |
| 0.3666 | 0.492 |
| 0.3833 | 0.505 |
| 0.4000 | 0.495 |
| 0.4166 | 0.505 |
| 0.4333 | 0.498 |
| 0.4500 | 0.505 |
| 0.4666 | 0.502 |
| 0.4833 | 0.511 |
| 0.5000 | 0.498 |
| 0.5166 | 0.508 |
| 0.5333 | 0.511 |
| 0.5500 | 0.502 |
| 0.5666 | 0.445 |
| 0.5833 | 0.486 |
| 0.6000 | 0.483 |
| 0.6166 | 0.498 |
| 0.6333 | 0.502 |
| 0.6500 | 0.502 |
| 0.6666 | 0.505 |
| 0.6833 | 0.505 |
| 0.7000 | 0.502 |
| 0.7166 | 0.505 |
| 0.7333 | 0.502 |
| 0.7500 | 0.502 |
| 0.7666 | 0.505 |
| 0.7833 | 0.508 |
| 0.8000 | 0.505 |
| 0.8166 | 0.505 |
| 0.8333 | 0.505 |
| 0.8500 | 0.508 |
| 0.8666 | 0.502 |
| 0.8833 | 0.502 |
| 0.9000 | 0.508 |
| 0.9166 | 0.505 |
| 0.9333 | 0.502 |

| | |
|---|---|
| 0.9500 | 0.505 |
| 0.9666 | 0.505 |
| 0.9833 | 0.505 |
| 1.0000 | 0.505 |
| 1.2000 | 0.477 |
| 1.4000 | 0.430 |
| 1.6000 | 0.414 |
| 1.8000 | 0.402 |
| 2.0000 | 0.374 |
| 2.2000 | 0.318 |
| 2.4000 | 0.318 |
| 2.6000 | 0.327 |
| 2.8000 | 0.308 |
| 3.0000 | 0.299 |
| 3.2000 | 0.286 |
| 3.4000 | 0.290 |
| 3.6000 | 0.299 |
| 3.8000 | 0.293 |
| 4.0000 | 0.290 |
| 4.2000 | 0.290 |
| 4.4000 | 0.327 |
| 4.6000 | 0.380 |
| 4.8000 | 0.380 |
| 5.0000 | -0.028 |
| 5.2000 | -0.040 |
| 5.4000 | -0.046 |
| 5.6000 | -0.049 |
| 5.8000 | -0.049 |
| 6.0000 | -0.068 |
| 6.2000 | -0.109 |
| 6.4000 | -0.024 |
| 6.6000 | -0.018 |
| 6.8000 | -0.018 |
| 7.0000 | -0.015 |
| 7.2000 | -0.015 |
| 7.4000 | -0.015 |
| 7.6000 | -0.015 |
| 7.8000 | -0.015 |
| 8.0000 | -0.015 |
| 8.2000 | -0.015 |
| 8.4000 | -0.015 |
| 8.6000 | -0.015 |
| 8.8000 | -0.015 |
| 9.0000 | -0.015 |
| 9.2000 | -0.018 |
| 9.4000 | -0.018 |
| 9.6000 | -0.018 |
| 9.8000 | -0.018 |
| 10.0000 | -0.018 |
| 12.0000 | -0.018 |
| 14.0000 | -0.021 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-28S

SE2000

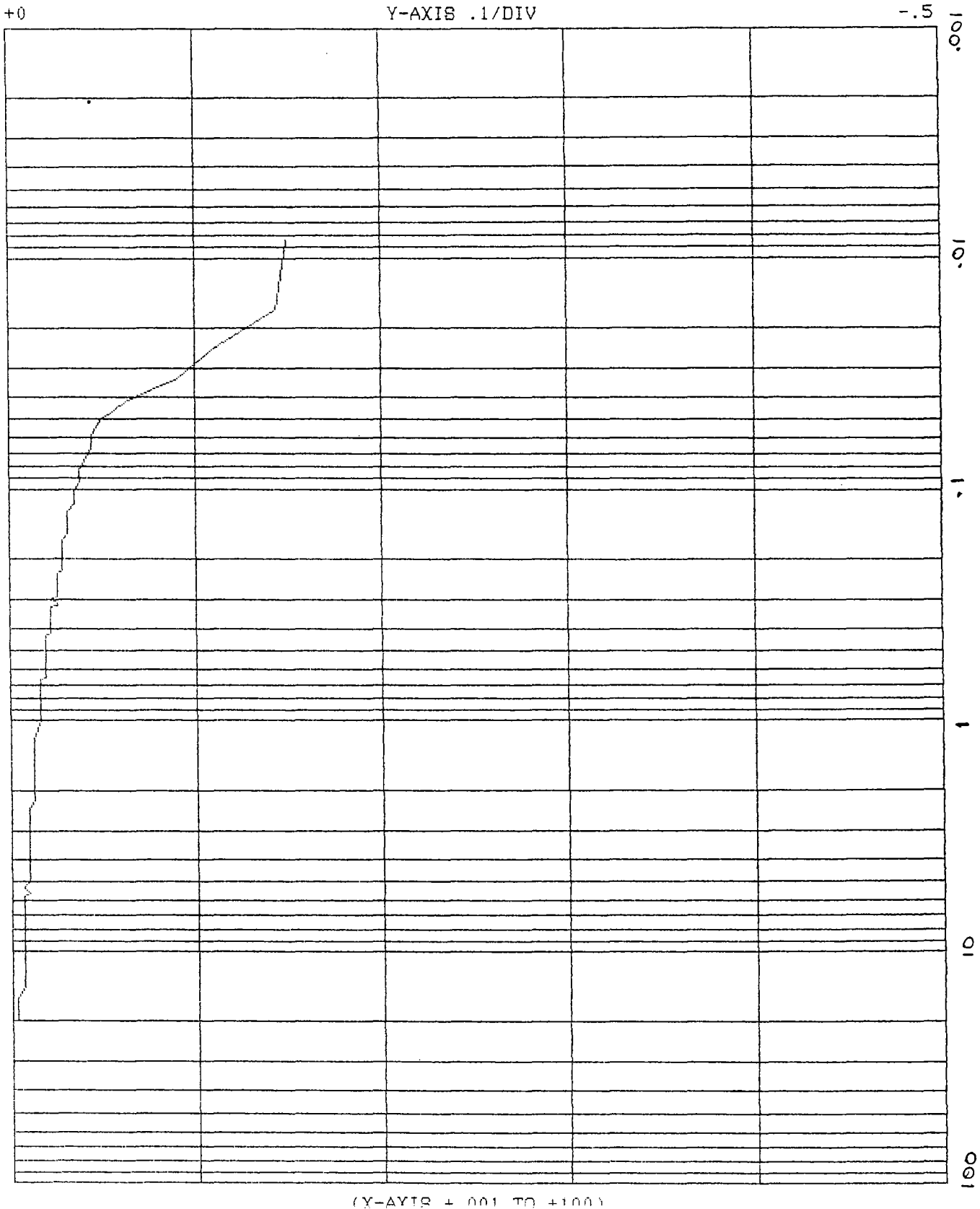
Environmental Logger

01/23 01:52

Unit# 2000 Test 1

Step 1 01/22 19:27:41

INPUT 1: MS28S



Environmental Logger
01/23 01:11

Unit# 2000 Test 1

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS28S |
| Reference | 0.000 |
| PSI at Ref. | 3.135 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

MS28S Rec. II
(OK)
MS28S Rec. NNN

Step 1 01/22 19:27:41

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -0.149 |
| 0.0083 | -0.149 |
| 0.0166 | -0.143 |
| 0.0250 | -0.109 |
| 0.0333 | -0.090 |
| 0.0416 | -0.062 |
| 0.0500 | -0.049 |
| 0.0583 | -0.043 |
| 0.0666 | -0.043 |
| 0.0750 | -0.040 |
| 0.0833 | -0.037 |
| 0.0916 | -0.037 |
| 0.1000 | -0.034 |
| 0.1083 | -0.034 |
| 0.1166 | -0.034 |
| 0.1250 | -0.031 |
| 0.1333 | -0.031 |
| 0.1416 | -0.031 |
| 0.1500 | -0.031 |
| 0.1583 | -0.031 |
| 0.1666 | -0.028 |
| 0.1750 | -0.028 |
| 0.1833 | -0.028 |
| 0.1916 | -0.028 |
| 0.2000 | -0.028 |
| 0.2083 | -0.028 |
| 0.2166 | -0.028 |
| 0.2250 | -0.028 |
| 0.2333 | -0.024 |
| 0.2416 | -0.024 |
| 0.2500 | -0.024 |
| 0.2583 | -0.024 |
| 0.2666 | -0.024 |
| 0.2750 | -0.024 |
| 0.2833 | -0.024 |
| 0.2916 | -0.024 |
| 0.3000 | -0.021 |

| | |
|---|---|
| 0.3166 | -0.024 |
| 0.3250 | -0.021 |
| 0.3333 | -0.021 |
| 0.3500 | -0.021 |
| 0.3666 | -0.021 |
| 0.3833 | -0.021 |
| 0.4000 | -0.021 |
| 0.4166 | -0.021 |
| 0.4333 | -0.018 |
| 0.4500 | -0.018 |
| 0.4666 | -0.018 |
| 0.4833 | -0.018 |
| 0.5000 | -0.018 |
| 0.5166 | -0.018 |
| 0.5333 | -0.018 |
| 0.5500 | -0.018 |
| 0.5666 | -0.018 |
| 0.5833 | -0.018 |
| 0.6000 | -0.018 |
| 0.6166 | -0.018 |
| 0.6333 | -0.018 |
| 0.6500 | -0.018 |
| 0.6666 | -0.015 |
| 0.6833 | -0.015 |
| 0.7000 | -0.015 |
| 0.7166 | -0.015 |
| 0.7333 | -0.015 |
| 0.7500 | -0.015 |
| 0.7666 | -0.015 |
| 0.7833 | -0.015 |
| 0.8000 | -0.015 |
| 0.8166 | -0.015 |
| 0.8333 | -0.015 |
| 0.8500 | -0.015 |
| 0.8666 | -0.015 |
| 0.8833 | -0.015 |
| 0.9000 | -0.015 |
| 0.9166 | -0.015 |
| 0.9333 | -0.015 |
| 0.9500 | -0.015 |
| 0.9666 | -0.015 |
| 0.9833 | -0.015 |
| 1.0000 | -0.015 |
| 1.2000 | -0.012 |
| 1.4000 | -0.012 |
| 1.6000 | -0.012 |
| 1.8000 | -0.012 |
| 2.0000 | -0.012 |
| 2.2000 | -0.012 |
| 2.4000 | -0.009 |
| 2.6000 | -0.009 |
| 2.8000 | -0.009 |
| 3.0000 | -0.009 |
| 3.2000 | -0.009 |
| 3.4000 | -0.009 |
| 3.6000 | -0.009 |
| 3.8000 | -0.009 |
| 4.0000 | -0.009 |

| | |
|---|---|
| 4.6000 | -0.009 |
| 4.8000 | -0.009 |
| 5.0000 | -0.009 |
| 5.2000 | -0.006 |
| 5.4000 | -0.006 |
| 5.6000 | -0.009 |
| 5.8000 | -0.006 |
| 6.0000 | -0.006 |
| 6.2000 | -0.006 |
| 6.4000 | -0.006 |
| 6.6000 | -0.006 |
| 6.8000 | -0.006 |
| 7.0000 | -0.006 |
| 7.2000 | -0.006 |
| 7.4000 | -0.006 |
| 7.6000 | -0.006 |
| 7.8000 | -0.006 |
| 8.0000 | -0.006 |
| 8.2000 | -0.006 |
| 8.4000 | -0.006 |
| 8.6000 | -0.006 |
| 8.8000 | -0.006 |
| 9.0000 | -0.006 |
| 9.2000 | -0.006 |
| 9.4000 | -0.006 |
| 9.6000 | -0.006 |
| 9.8000 | -0.006 |
| 10.0000 | -0.006 |
| 12.0000 | -0.006 |
| 14.0000 | -0.006 |
| 16.0000 | -0.003 |
| 18.0000 | -0.003 |
| 20.0000 | -0.003 |

END

SE2000
Environmental Logger
01/19 15:40

Unit# 2000 Test 6

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS28S

Reference 0.000
PSI at Ref. 3.061
SG 1.000
Linearity 0.039
Scale factor 9.868
Offset -0.009
Delay mSEC 50.000

Step 1 01/13 14:43:25

Elapsed Time INPUT 1
--- ---

| | |
|---|---|
| 0.0000 | 0.081 |
| 0.0083 | 0.068 |
| 0.0166 | 0.056 |
| 0.0250 | 0.049 |
| 0.0333 | 0.040 |
| 0.0416 | 0.034 |
| 0.0500 | 0.028 |
| 0.0583 | 0.024 |
| 0.0666 | 0.021 |
| 0.0750 | 0.015 |
| 0.0833 | 0.015 |
| 0.0916 | 0.009 |
| 0.1000 | 0.009 |
| 0.1083 | 0.006 |
| 0.1166 | 0.006 |
| 0.1250 | 0.003 |
| 0.1333 | 0.000 |
| 0.1416 | 0.000 |
| 0.1500 | -0.003 |
| 0.1583 | -0.003 |
| 0.1666 | -0.003 |
| 0.1750 | -0.006 |
| 0.1833 | -0.009 |
| 0.1916 | -0.006 |
| 0.2000 | -0.009 |
| 0.2083 | -0.012 |

MS28S rec. HD
MS28S rec. NM

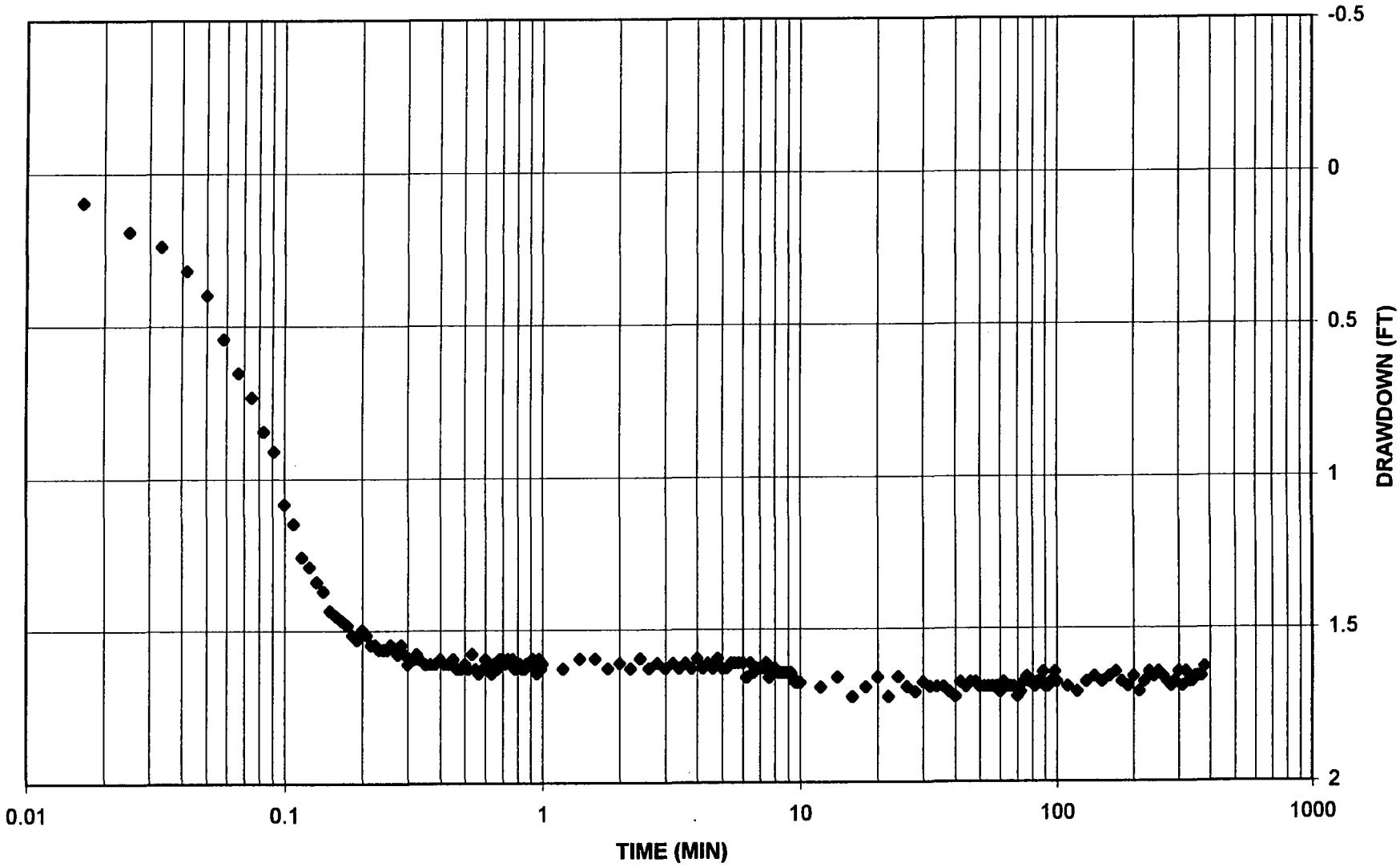
| | |
|---|---|
| 0.2166 | -0.012 |
| 0.2250 | -0.012 |
| 0.2333 | -0.012 |
| 0.2416 | -0.012 |
| 0.2500 | -0.015 |
| 0.2583 | -0.015 |
| 0.2666 | -0.015 |
| 0.2750 | -0.018 |
| 0.2833 | -0.018 |
| 0.2916 | -0.018 |
| 0.3000 | -0.021 |
| 0.3083 | -0.018 |
| 0.3166 | -0.021 |
| 0.3250 | -0.021 |
| 0.3333 | -0.021 |
| 0.3500 | -0.024 |
| 0.3666 | -0.024 |
| 0.3833 | -0.024 |
| 0.4000 | -0.028 |
| 0.4166 | -0.028 |
| 0.4333 | -0.028 |
| 0.4500 | -0.031 |
| 0.4666 | -0.031 |
| 0.4833 | -0.031 |
| 0.5000 | -0.031 |
| 0.5166 | -0.031 |
| 0.5333 | -0.031 |
| 0.5500 | -0.034 |
| 0.5666 | -0.034 |
| 0.5833 | -0.034 |
| 0.6000 | -0.037 |
| 0.6166 | -0.037 |
| 0.6333 | -0.037 |
| 0.6500 | -0.040 |
| 0.6666 | -0.037 |
| 0.6833 | -0.040 |
| 0.7000 | -0.040 |
| 0.7166 | -0.040 |
| 0.7333 | -0.040 |
| 0.7500 | -0.040 |
| 0.7666 | -0.040 |
| 0.7833 | -0.040 |
| 0.8000 | -0.040 |
| 0.8166 | -0.040 |
| 0.8333 | -0.043 |
| 0.8500 | -0.043 |
| 0.8666 | -0.043 |
| 0.8833 | -0.043 |
| 0.9000 | -0.046 |
| 0.9166 | -0.177 |
| 0.9333 | -0.218 |

| | |
|---|---|
| 0.9500 | -0.299 |
| 0.9666 | -0.177 |
| 0.9833 | -0.159 |
| 1.0000 | -0.280 |
| 1.2000 | -0.012 |
| 1.4000 | -0.003 |
| 1.6000 | 0.000 |
| 1.8000 | 0.000 |
| 2.0000 | 0.000 |
| 2.2000 | 0.000 |
| 2.4000 | 0.000 |
| 2.6000 | 0.000 |
| 2.8000 | -0.003 |
| 3.0000 | 0.000 |
| 3.2000 | 0.000 |
| 3.4000 | -0.003 |
| 3.6000 | -0.003 |
| 3.8000 | -0.003 |
| 4.0000 | -0.003 |
| 4.2000 | -0.003 |
| 4.4000 | -0.003 |
| 4.6000 | -0.006 |
| 4.8000 | -0.006 |
| 5.0000 | -0.006 |
| 5.2000 | -0.006 |
| 5.4000 | -0.006 |
| 5.6000 | -0.006 |
| 5.8000 | -0.006 |
| 6.0000 | -0.006 |
| 6.2000 | -0.006 |
| 6.4000 | -0.009 |
| 6.6000 | -0.009 |
| 6.8000 | -0.009 |
| 7.0000 | -0.009 |
| 7.2000 | -0.009 |
| 7.4000 | -0.009 |
| 7.6000 | -0.009 |
| 7.8000 | -0.009 |
| 8.0000 | -0.009 |
| 8.2000 | -0.012 |
| 8.4000 | -0.009 |
| 8.6000 | -0.012 |
| 8.8000 | -0.012 |
| 9.0000 | -0.031 |
| 9.2000 | -0.003 |
| 9.4000 | -0.009 |
| 9.6000 | -0.006 |
| 9.8000 | -0.006 |
| 10.0000 | -0.006 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-28I

# NIROP FRIDLEY MS28I DRAWDOWN



SE2000
Environmental Logger
01/19 15:34

Unit# 2000 Test 7

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS28I

Reference 0.000
PSI at Ref. 14.164
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

MS 28I dd. hd
or
MS 28I dd. nvm

Step 0 01/13 16:34:47

Elapsed Time INPUT 1
--- ---

| | |
|---|---|
| 0.0000 | -0.015 |
| 0.0083 | 0.015 |
| 0.0166 | 0.095 |
| 0.0250 | 0.191 |
| 0.0333 | 0.239 |
| 0.0416 | 0.318 |
| 0.0500 | 0.398 |
| 0.0583 | 0.542 |
| 0.0666 | 0.653 |
| 0.0750 | 0.733 |
| 0.0833 | 0.845 |
| 0.0916 | 0.908 |
| 0.1000 | 1.084 |
| 0.1083 | 1.148 |
| 0.1166 | 1.259 |
| 0.1250 | 1.291 |
| 0.1333 | 1.339 |
| 0.1416 | 1.371 |
| 0.1500 | 1.435 |
| 0.1583 | 1.451 |
| 0.1666 | 1.467 |
| 0.1750 | 1.483 |
| 0.1833 | 1.514 |
| 0.1916 | 1.530 |
| 0.2000 | 1.498 |
| 0.2083 | 1.514 |

| | |
|---|---|
| 0.2166 | 1.546 |
| 0.2250 | 1.546 |
| 0.2333 | 1.562 |
| 0.2416 | 1.562 |
| 0.2500 | 1.562 |
| 0.2583 | 1.546 |
| 0.2666 | 1.562 |
| 0.2750 | 1.578 |
| 0.2833 | 1.546 |
| 0.2916 | 1.578 |
| 0.3000 | 1.610 |
| 0.3083 | 1.594 |
| 0.3166 | 1.594 |
| 0.3250 | 1.578 |
| 0.3333 | 1.594 |
| 0.3500 | 1.610 |
| 0.3666 | 1.610 |
| 0.3833 | 1.610 |
| 0.4000 | 1.594 |
| 0.4166 | 1.610 |
| 0.4333 | 1.610 |
| 0.4500 | 1.594 |
| 0.4666 | 1.626 |
| 0.4833 | 1.626 |
| 0.5000 | 1.610 |
| 0.5166 | 1.626 |
| 0.5333 | 1.578 |
| 0.5500 | 1.626 |
| 0.5666 | 1.642 |
| 0.5833 | 1.626 |
| 0.6000 | 1.594 |
| 0.6166 | 1.610 |
| 0.6333 | 1.642 |
| 0.6500 | 1.610 |
| 0.6666 | 1.626 |
| 0.6833 | 1.594 |
| 0.7000 | 1.594 |
| 0.7166 | 1.610 |
| 0.7333 | 1.594 |
| 0.7500 | 1.610 |
| 0.7666 | 1.594 |
| 0.7833 | 1.626 |
| 0.8000 | 1.610 |
| 0.8166 | 1.610 |
| 0.8333 | 1.626 |
| 0.8500 | 1.626 |
| 0.8666 | 1.610 |
| 0.8833 | 1.610 |
| 0.9000 | 1.610 |
| 0.9166 | 1.594 |
| 0.9333 | 1.626 |

| | |
|---|---|
| 0.9500 | 1.642 |
| 0.9666 | 1.594 |
| 0.9833 | 1.626 |
| 1.0000 | 1.610 |
| 1.2000 | 1.626 |
| 1.4000 | 1.594 |
| 1.6000 | 1.594 |
| 1.8000 | 1.626 |
| 2.0000 | 1.610 |
| 2.2000 | 1.626 |
| 2.4000 | 1.594 |
| 2.6000 | 1.626 |
| 2.8000 | 1.610 |
| 3.0000 | 1.626 |
| 3.2000 | 1.610 |
| 3.4000 | 1.626 |
| 3.6000 | 1.610 |
| 3.8000 | 1.626 |
| 4.0000 | 1.594 |
| 4.2000 | 1.626 |
| 4.4000 | 1.610 |
| 4.6000 | 1.626 |
| 4.8000 | 1.594 |
| 5.0000 | 1.626 |
| 5.2000 | 1.626 |
| 5.4000 | 1.610 |
| 5.6000 | 1.610 |
| 5.8000 | 1.610 |
| 6.0000 | 1.610 |
| 6.2000 | 1.658 |
| 6.4000 | 1.610 |
| 6.6000 | 1.642 |
| 6.8000 | 1.626 |
| 7.0000 | 1.626 |
| 7.2000 | 1.626 |
| 7.4000 | 1.610 |
| 7.6000 | 1.658 |
| 7.8000 | 1.642 |
| 8.0000 | 1.626 |
| 8.2000 | 1.642 |
| 8.4000 | 1.642 |
| 8.6000 | 1.642 |
| 8.8000 | 1.642 |
| 9.0000 | 1.642 |
| 9.2000 | 1.642 |
| 9.4000 | 1.658 |
| 9.6000 | 1.674 |
| 9.8000 | 1.674 |
| 10.0000 | 1.674 |
| 12.0000 | 1.690 |
| 14.0000 | 1.658 |

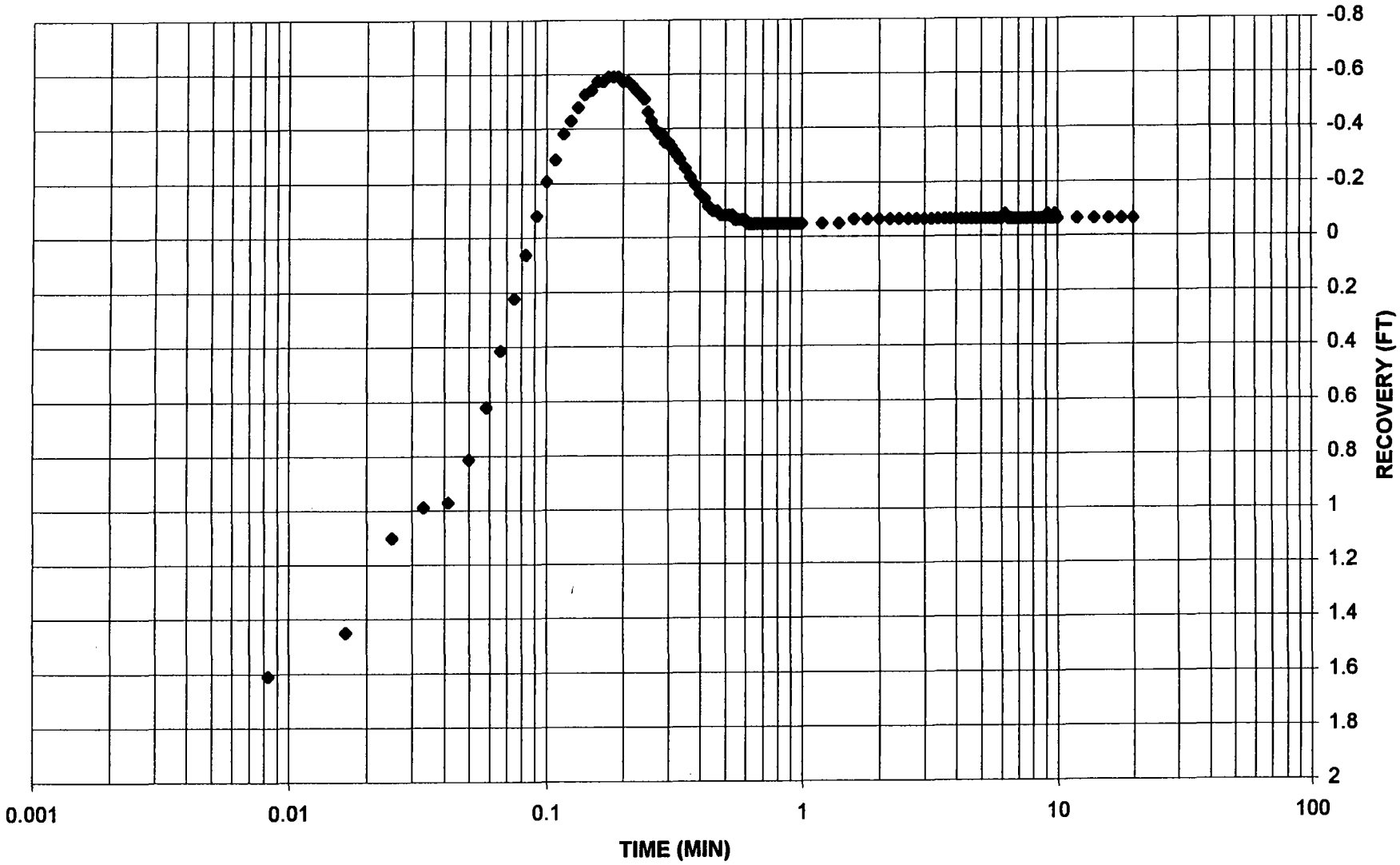
| | |
|---|---|
| 16.0000 | 1.722 |
| 18.0000 | 1.690 |
| 20.0000 | 1.658 |
| 22.0000 | 1.722 |
| 24.0000 | 1.658 |
| 26.0000 | 1.690 |
| 28.0000 | 1.706 |
| 30.0000 | 1.674 |
| 32.0000 | 1.690 |
| 34.0000 | 1.690 |
| 36.0000 | 1.690 |
| 38.0000 | 1.706 |
| 40.0000 | 1.722 |
| 42.0000 | 1.674 |
| 44.0000 | 1.690 |
| 46.0000 | 1.674 |
| 48.0000 | 1.674 |
| 50.0000 | 1.690 |
| 52.0000 | 1.690 |
| 54.0000 | 1.690 |
| 56.0000 | 1.690 |
| 58.0000 | 1.690 |
| 60.0000 | 1.706 |
| 62.0000 | 1.674 |
| 64.0000 | 1.690 |
| 66.0000 | 1.690 |
| 68.0000 | 1.690 |
| 70.0000 | 1.722 |
| 72.0000 | 1.706 |
| 74.0000 | 1.674 |
| 76.0000 | 1.658 |
| 78.0000 | 1.674 |
| 80.0000 | 1.674 |
| 82.0000 | 1.690 |
| 84.0000 | 1.674 |
| 86.0000 | 1.674 |
| 88.0000 | 1.642 |
| 90.0000 | 1.690 |
| 92.0000 | 1.690 |
| 94.0000 | 1.674 |
| 96.0000 | 1.674 |
| 98.0000 | 1.642 |
| 100.000 | 1.674 |
| 110.000 | 1.690 |
| 120.000 | 1.706 |
| 130.000 | 1.674 |
| 140.000 | 1.658 |
| 150.000 | 1.674 |
| 160.000 | 1.658 |
| 170.000 | 1.642 |
| 180.000 | 1.674 |

| | |
|---|---|
| 190.000 | 1.690 |
| 200.000 | 1.658 |
| 210.000 | 1.706 |
| 220.000 | 1.674 |
| 230.000 | 1.642 |
| 240.000 | 1.658 |
| 250.000 | 1.642 |
| 260.000 | 1.658 |
| 270.000 | 1.674 |
| 280.000 | 1.690 |
| 290.000 | 1.674 |
| 300.000 | 1.642 |
| 310.000 | 1.690 |
| 320.000 | 1.642 |
| 330.000 | 1.674 |
| 340.000 | 1.674 |
| 350.000 | 1.658 |
| 360.000 | 1.658 |
| 370.000 | 1.658 |
| 380.000 | 1.626 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-28I

## NIROP FRIDLEY MS28I RECOVERY



SE2000
Environmental Logger
01/19 15:32

Unit# 2000 Test 7

Setups: INPUT 1

| | |
|---|---|
| Type | Level (F) |
| Mode | TOC |
| I.D. | MS28I |

| | |
|---|---|
| Reference | 0.000 |
| PSI at Ref. | 14.164 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.530 |
| Offset | 0.520 |
| Delay mSEC | 50.000 |

Step 1 01/13 22:54:51

MS28IRec.hd
MS28IRec.num

Elapsed Time INPUT 1

| | |
|---|---|
| 0.0000 | 1.610 |
| 0.0083 | 1.610 |
| 0.0166 | 1.451 |
| 0.0250 | 1.100 |
| 0.0333 | 0.988 |
| 0.0416 | 0.972 |
| 0.0500 | 0.813 |
| 0.0583 | 0.621 |
| 0.0666 | 0.414 |
| 0.0750 | 0.223 |
| 0.0833 | 0.063 |
| 0.0916 | -0.079 |
| 0.1000 | -0.207 |
| 0.1083 | -0.287 |
| 0.1166 | -0.382 |
| 0.1250 | -0.430 |
| 0.1333 | -0.478 |
| 0.1416 | -0.526 |
| 0.1500 | -0.542 |
| 0.1583 | -0.574 |
| 0.1666 | -0.574 |
| 0.1750 | -0.590 |
| 0.1833 | -0.590 |
| 0.1916 | -0.590 |
| 0.2000 | -0.574 |
| 0.2083 | -0.574 |

| | |
|---|---|
| 0.2166 | -0.558 |
| 0.2250 | -0.542 |
| 0.2333 | -0.526 |
| 0.2416 | -0.510 |
| 0.2500 | -0.462 |
| 0.2583 | -0.430 |
| 0.2666 | -0.398 |
| 0.2750 | -0.382 |
| 0.2833 | -0.382 |
| 0.2916 | -0.350 |
| 0.3000 | -0.350 |
| 0.3083 | -0.334 |
| 0.3166 | -0.318 |
| 0.3250 | -0.302 |
| 0.3333 | -0.287 |
| 0.3500 | -0.255 |
| 0.3666 | -0.223 |
| 0.3833 | -0.191 |
| 0.4000 | -0.159 |
| 0.4166 | -0.143 |
| 0.4333 | -0.111 |
| 0.4500 | -0.095 |
| 0.4666 | -0.095 |
| 0.4833 | -0.079 |
| 0.5000 | -0.079 |
| 0.5166 | -0.079 |
| 0.5333 | -0.079 |
| 0.5500 | -0.063 |
| 0.5666 | -0.063 |
| 0.5833 | -0.063 |
| 0.6000 | -0.063 |
| 0.6166 | -0.047 |
| 0.6333 | -0.047 |
| 0.6500 | -0.047 |
| 0.6666 | -0.047 |
| 0.6833 | -0.047 |
| 0.7000 | -0.047 |
| 0.7166 | -0.047 |
| 0.7333 | -0.047 |
| 0.7500 | -0.047 |
| 0.7666 | -0.047 |
| 0.7833 | -0.047 |
| 0.8000 | -0.047 |
| 0.8166 | -0.047 |
| 0.8333 | -0.047 |
| 0.8500 | -0.047 |
| 0.8666 | -0.047 |
| 0.8833 | -0.047 |
| 0.9000 | -0.047 |
| 0.9166 | -0.047 |
| 0.9333 | -0.047 |

| | |
|---|---|
| 0.9500 | -0.047 |
| 0.9666 | -0.047 |
| 0.9833 | -0.047 |
| 1.0000 | -0.047 |
| 1.2000 | -0.047 |
| 1.4000 | -0.047 |
| 1.6000 | -0.063 |
| 1.8000 | -0.063 |
| 2.0000 | -0.063 |
| 2.2000 | -0.063 |
| 2.4000 | -0.063 |
| 2.6000 | -0.063 |
| 2.8000 | -0.063 |
| 3.0000 | -0.063 |
| 3.2000 | -0.063 |
| 3.4000 | -0.063 |
| 3.6000 | -0.063 |
| 3.8000 | -0.063 |
| 4.0000 | -0.063 |
| 4.2000 | -0.063 |
| 4.4000 | -0.063 |
| 4.6000 | -0.063 |
| 4.8000 | -0.063 |
| 5.0000 | -0.063 |
| 5.2000 | -0.063 |
| 5.4000 | -0.063 |
| 5.6000 | -0.063 |
| 5.8000 | -0.063 |
| 6.0000 | -0.063 |
| 6.2000 | -0.079 |
| 6.4000 | -0.063 |
| 6.6000 | -0.063 |
| 6.8000 | -0.063 |
| 7.0000 | -0.063 |
| 7.2000 | -0.063 |
| 7.4000 | -0.063 |
| 7.6000 | -0.063 |
| 7.8000 | -0.063 |
| 8.0000 | -0.063 |
| 8.2000 | -0.063 |
| 8.4000 | -0.063 |
| 8.6000 | -0.063 |
| 8.8000 | -0.063 |
| 9.0000 | -0.063 |
| 9.2000 | -0.079 |
| 9.4000 | -0.063 |
| 9.6000 | -0.063 |
| 9.8000 | -0.079 |
| 10.0000 | -0.063 |
| 12.0000 | -0.063 |
| 14.0000 | -0.063 |

| | |
|---|---|
| 16.0000 | -0.063 |
| 18.0000 | -0.063 |
| 20.0000 | -0.063 |

SE2000

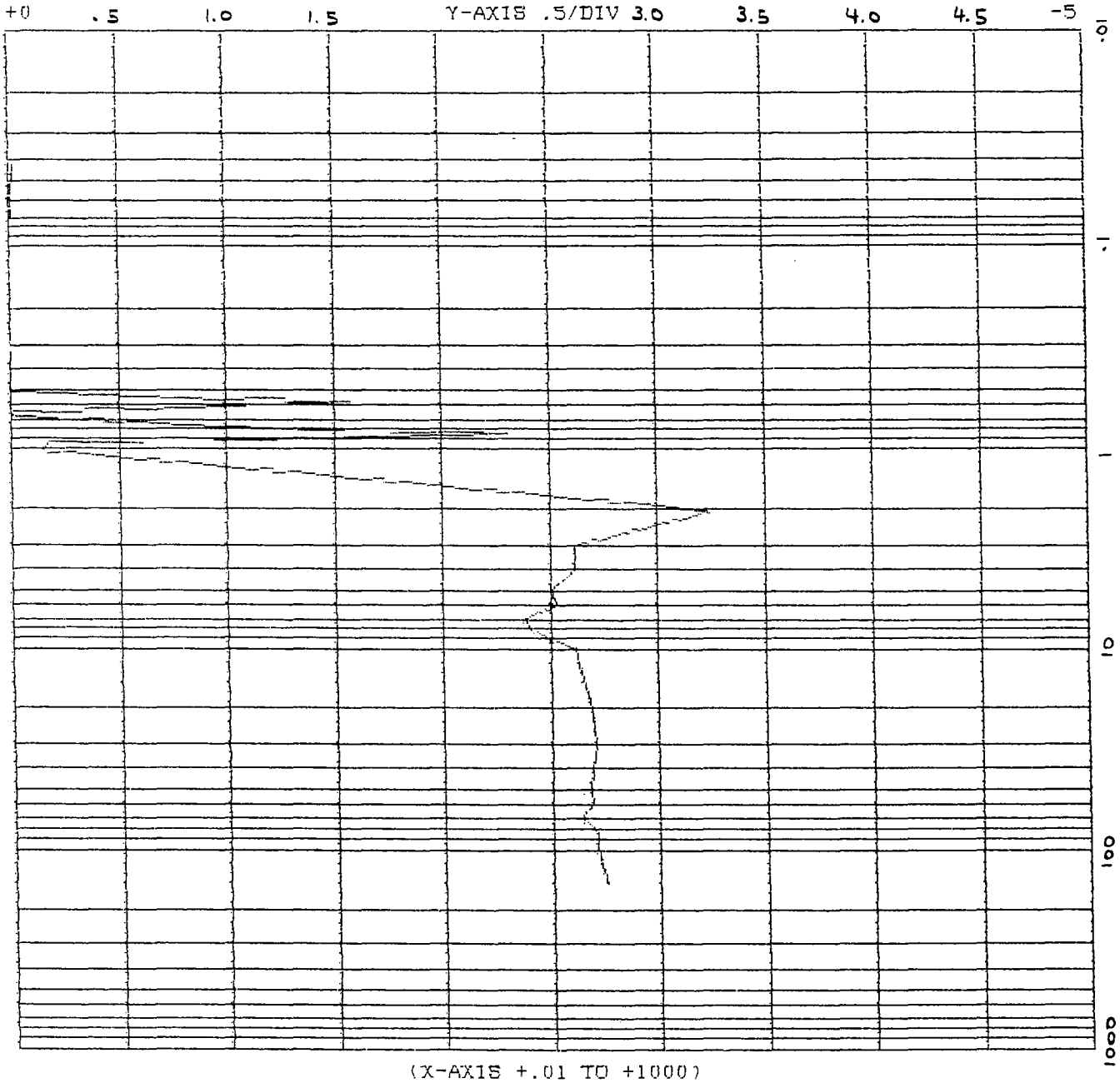
Environmental Logger

01/21 12:03

Unit# 2000 Test 0

Step 0 01/20 21:30:00

INPUT 1: MS28D - DD




(X-AXIS +.01 TO +1000)

ELAPSED TIME (MIN)

SE2000
Environmental Logger
01/21 11:05

Unit# 2000 Test 0

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | M526D |
| Reference | 0.000 |
| PSI at Ref. | 14.455 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.530 |
| Offset | 0.520 |
| Delay mSEC | 50.000 |

Step 0 01/20 21:30:00

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.000 |
| 0.0083 | 0.000 |
| 0.0166 | 0.015 |
| 0.0250 | 0.000 |
| 0.0333 | 0.031 |
| 0.0416 | -0.015 |
| 0.0500 | 0.000 |
| 0.0583 | 0.000 |
| 0.0666 | 0.015 |
| 0.0750 | 0.000 |
| 0.0833 | 0.000 |
| 0.0916 | 0.000 |
| 0.1000 | 0.000 |
| 0.1083 | 0.000 |
| 0.1166 | 0.000 |
| 0.1250 | 0.000 |
| 0.1333 | 0.000 |
| 0.1416 | 0.000 |
| 0.1500 | 0.015 |
| 0.1583 | 0.000 |
| 0.1666 | 0.015 |
| 0.1750 | 0.000 |
| 0.1833 | 0.000 |
| 0.1916 | 0.000 |
| 0.2000 | 0.000 |
| 0.2083 | 0.000 |
| 0.2166 | 0.015 |
| 0.2250 | 0.015 |
| 0.2333 | 0.000 |
| 0.2416 | 0.000 |
| 0.2500 | 0.000 |
| 0.2583 | 0.000 |
| 0.2666 | 0.015 |
| 0.2750 | 0.015 |
| 0.2833 | 0.000 |

DD DATA @ 5.00 gpm
w/ new centrifigal pump

| | |
|---|---|
| 0.2916 | 0.000 |
| 0.3000 | 0.000 |
| 0.3083 | 0.000 |
| 0.3166 | 0.000 |
| 0.3250 | 0.000 |
| 0.3333 | 0.000 |
| 0.3500 | 0.000 |
| 0.3666 | 0.000 |
| 0.3833 | 0.015 |
| 0.4000 | 0.000 |
| 0.4166 | 0.000 |
| 0.4333 | 0.015 |
| 0.4500 | -0.637 |
| 0.4666 | -3.157 |
| 0.4833 | -0.318 |
| 0.5000 | 0.574 |
| 0.5166 | 0.191 |
| 0.5333 | -1.020 |
| 0.5500 | -2.982 |
| 0.5666 | -2.599 |
| 0.5833 | -1.578 |
| 0.6000 | -0.574 |
| 0.6166 | 0.845 |
| 0.6333 | -0.287 |
| 0.6500 | -0.861 |
| 0.6666 | 0.143 |
| 0.6833 | -1.132 |
| 0.7000 | 0.430 |
| 0.7166 | -1.530 |
| 0.7333 | 0.287 |
| 0.7500 | -0.797 |
| 0.7666 | 0.414 |
| 0.7833 | -0.526 |
| 0.8000 | -1.610 |
| 0.8166 | -0.940 |
| 0.8333 | -2.312 |
| 0.8500 | -0.430 |
| 0.8666 | -0.271 |
| 0.8833 | -0.414 |
| 0.9000 | -0.287 |
| 0.9166 | -0.175 |
| 0.9333 | -0.191 |
| 0.9500 | -0.159 |
| 0.9666 | -0.143 |
| 0.9833 | -0.143 |
| 1.0000 | -0.143 |
| 1.2000 | -1.180 |
| 1.4000 | -1.562 |
| 1.6000 | -1.211 |
| 1.8000 | -2.503 |
| 2.0000 | -3.269 |
| 2.2000 | 0.366 |
| 2.4000 | -3.061 |
| 2.6000 | -3.699 |
| 2.8000 | -2.120 |
| 3.0000 | -2.615 |
| 3.2000 | -2.679 |
| 3.4000 | -2.694 |
| 3.6000 | -2.551 |
| 3.8000 | -2.599 |

| | |
|---|---|
| 4.0000 | -2.615 |
| 4.2000 | -2.583 |
| 4.4000 | -2.567 |
| 4.6000 | -2.647 |
| 4.8000 | -2.583 |
| 5.0000 | -2.503 |
| 5.2000 | -2.535 |
| 5.4000 | -2.519 |
| 5.6000 | -2.455 |
| 5.8000 | -2.503 |
| 6.0000 | -2.535 |
| 6.2000 | -2.455 |
| 6.4000 | -2.519 |
| 6.6000 | -2.503 |
| 6.8000 | -2.519 |
| 7.0000 | -2.376 |
| 7.2000 | -2.376 |
| 7.4000 | -2.407 |
| 7.6000 | -2.487 |
| 7.8000 | -2.471 |
| 8.0000 | -2.423 |
| 8.2000 | -2.519 |
| 8.4000 | -2.487 |
| 8.6000 | -2.567 |
| 8.8000 | -2.551 |
| 9.0000 | -2.503 |
| 9.2000 | -2.535 |
| 9.4000 | -2.663 |
| 9.6000 | -2.535 |
| 9.8000 | -2.535 |
| 10.0000 | -2.615 |
| 12.0000 | -2.567 |
| 14.0000 | -2.583 |
| 16.0000 | -2.694 |
| 18.0000 | -2.647 |
| 20.0000 | -2.694 |
| 22.0000 | -2.631 |
| 24.0000 | -2.631 |
| 26.0000 | -2.599 |
| 28.0000 | -2.742 |
| 30.0000 | -2.710 |
| 32.0000 | -2.726 |
| 34.0000 | -2.599 |
| 36.0000 | -2.663 |
| 38.0000 | -2.663 |
| 40.0000 | -2.694 |
| 42.0000 | -2.726 |
| 44.0000 | -2.726 |
| 46.0000 | -2.710 |
| 48.0000 | -2.694 |
| 50.0000 | -2.679 |
| 52.0000 | -2.742 |
| 54.0000 | -2.710 |
| 56.0000 | -2.758 |
| 58.0000 | -2.694 |
| 60.0000 | -2.694 |
| 62.0000 | -2.758 |
| 64.0000 | -2.742 |
| 66.0000 | -2.647 |
| 68.0000 | -2.694 |

| | |
|---|---|
| 70.0000 | -2.631 |
| 72.0000 | -2.710 |
| 74.0000 | -2.726 |
| 76.0000 | -2.631 |
| 78.0000 | -2.726 |
| 80.0000 | -2.710 |
| 82.0000 | -2.790 |
| 84.0000 | -2.694 |
| 86.0000 | -2.694 |
| 88.0000 | -2.726 |
| 90.0000 | -2.710 |
| 92.0000 | -2.726 |
| 94.0000 | -2.710 |
| 96.0000 | -2.726 |
| 98.0000 | -2.663 |
| 100.000 | -2.710 |
| 110.000 | -2.726 |
| 120.000 | -2.774 |
| 130.000 | -2.758 |
| 140.000 | -2.742 |
| 150.000 | -2.758 |
| 160.000 | -2.742 |
| 170.000 | -2.758 |
| 180.000 | -2.726 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-28D

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-28D

SE2000

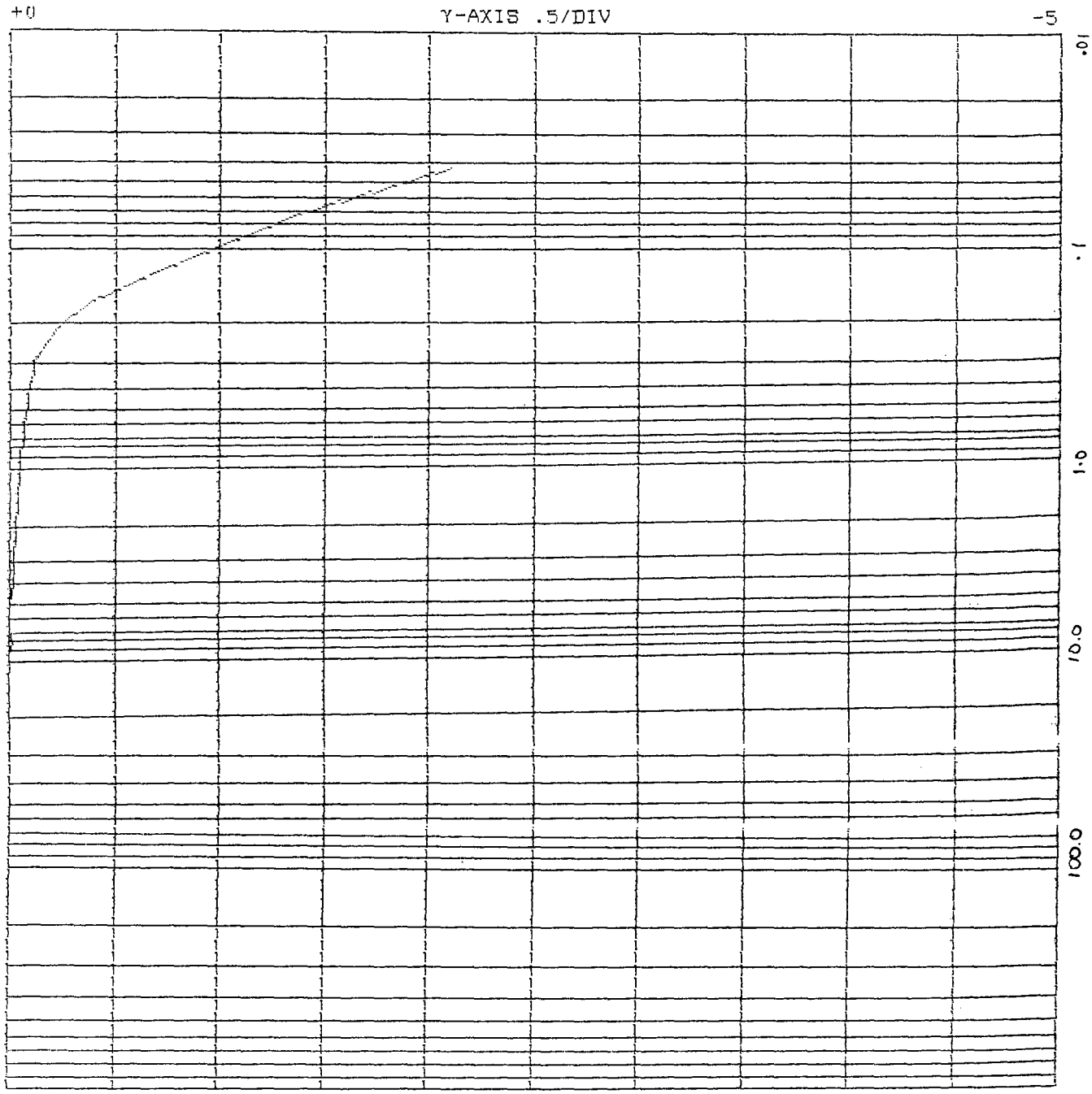
Environmental Logger

01/21 12:13

Unit# 2000 Test 0

Step 1 01/21 00:30:37

INPUT 1: MS28D - REC




(X-AXIS +.01 TO +1000)

ELAPSED TIME (MIN)

SE2000
Environmental Logger
01/21 11:00

Unit# 2000 Test 0

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS28D |
| Reference | 0.000 |
| PSI at Ref. | 14.455 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.530 |
| Offset | 0.520 |
| Delay mSEC | 50.000 |

Step 1 01/21 00:30:37

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -2.742 |
| 0.0083 | -2.710 |
| 0.0166 | -2.615 |
| 0.0250 | -2.519 |
| 0.0333 | -2.296 |
| 0.0416 | -2.104 |
| 0.0500 | -1.865 |
| 0.0583 | -1.690 |
| 0.0666 | -1.514 |
| 0.0750 | -1.355 |
| 0.0833 | -1.211 |
| 0.0916 | -1.068 |
| 0.1000 | -0.956 |
| 0.1083 | -0.861 |
| 0.1166 | -0.733 |
| 0.1250 | -0.685 |
| 0.1333 | -0.590 |
| 0.1416 | -0.542 |
| 0.1500 | -0.478 |
| 0.1583 | -0.430 |
| 0.1666 | -0.382 |
| 0.1750 | -0.350 |
| 0.1833 | -0.318 |
| 0.1916 | -0.287 |
| 0.2000 | -0.255 |
| 0.2083 | -0.223 |
| 0.2166 | -0.207 |
| 0.2250 | -0.191 |
| 0.2333 | -0.175 |
| 0.2416 | -0.175 |
| 0.2500 | -0.159 |
| 0.2583 | -0.143 |
| 0.2666 | -0.143 |
| 0.2750 | -0.127 |
| 0.2833 | -0.127 |

REC - DATA -

| | |
|---|---|
| 0.2916 | -0.111 |
| 0.3000 | -0.127 |
| 0.3083 | -0.111 |
| 0.3166 | -0.095 |
| 0.3250 | -0.111 |
| 0.3333 | -0.111 |
| 0.3500 | -0.095 |
| 0.3666 | -0.095 |
| 0.3833 | -0.095 |
| 0.4000 | -0.079 |
| 0.4166 | -0.079 |
| 0.4333 | -0.079 |
| 0.4500 | -0.079 |
| 0.4666 | -0.079 |
| 0.4833 | -0.079 |
| 0.5000 | -0.079 |
| 0.5166 | -0.079 |
| 0.5333 | -0.063 |
| 0.5500 | -0.079 |
| 0.5666 | -0.063 |
| 0.5833 | -0.063 |
| 0.6000 | -0.063 |
| 0.6166 | -0.063 |
| 0.6333 | -0.063 |
| 0.6500 | -0.063 |
| 0.6666 | -0.063 |
| 0.6833 | -0.063 |
| 0.7000 | -0.063 |
| 0.7166 | -0.063 |
| 0.7333 | -0.047 |
| 0.7500 | -0.063 |
| 0.7666 | -0.063 |
| 0.7833 | -0.047 |
| 0.8000 | -0.047 |
| 0.8166 | -0.047 |
| 0.8333 | -0.047 |
| 0.8500 | -0.047 |
| 0.8666 | -0.047 |
| 0.8833 | -0.047 |
| 0.9000 | -0.047 |
| 0.9166 | -0.047 |
| 0.9333 | -0.047 |
| 0.9500 | -0.047 |
| 0.9666 | -0.047 |
| 0.9833 | -0.047 |
| 1.0000 | -0.047 |
| 1.2000 | -0.047 |
| 1.4000 | -0.031 |
| 1.6000 | -0.031 |
| 1.8000 | -0.015 |
| 2.0000 | -0.031 |
| 2.2000 | -0.015 |
| 2.4000 | -0.015 |
| 2.6000 | -0.015 |
| 2.8000 | -0.015 |
| 3.0000 | -0.015 |
| 3.2000 | -0.015 |
| 3.4000 | -0.015 |
| 3.6000 | -0.015 |
| 3.8000 | -0.015 |

| | |
|---|---|
| 4.0000 | -0.015 |
| 4.2000 | -0.015 |
| 4.4000 | -0.015 |
| 4.6000 | 0.000 |
| 4.8000 | -0.015 |
| 5.0000 | 0.000 |
| 5.2000 | 0.000 |
| 5.4000 | -0.015 |
| 5.6000 | 0.000 |
| 5.8000 | -0.015 |
| 6.0000 | 0.000 |
| 6.2000 | 0.000 |
| 6.4000 | 0.000 |
| 6.6000 | 0.000 |
| 6.8000 | 0.000 |
| 7.0000 | 0.000 |
| 7.2000 | 0.000 |
| 7.4000 | 0.000 |
| 7.6000 | 0.000 |
| 7.8000 | 0.000 |
| 8.0000 | -0.015 |
| 8.2000 | 0.000 |
| 8.4000 | 0.000 |
| 8.6000 | 0.000 |
| 8.8000 | 0.000 |
| 9.0000 | 0.000 |
| 9.2000 | 0.000 |
| 9.4000 | 0.000 |
| 9.6000 | 0.000 |
| 9.8000 | 0.000 |
| 10.0000 | 0.000 |
| 12.0000 | -0.015 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-29S

SE2000

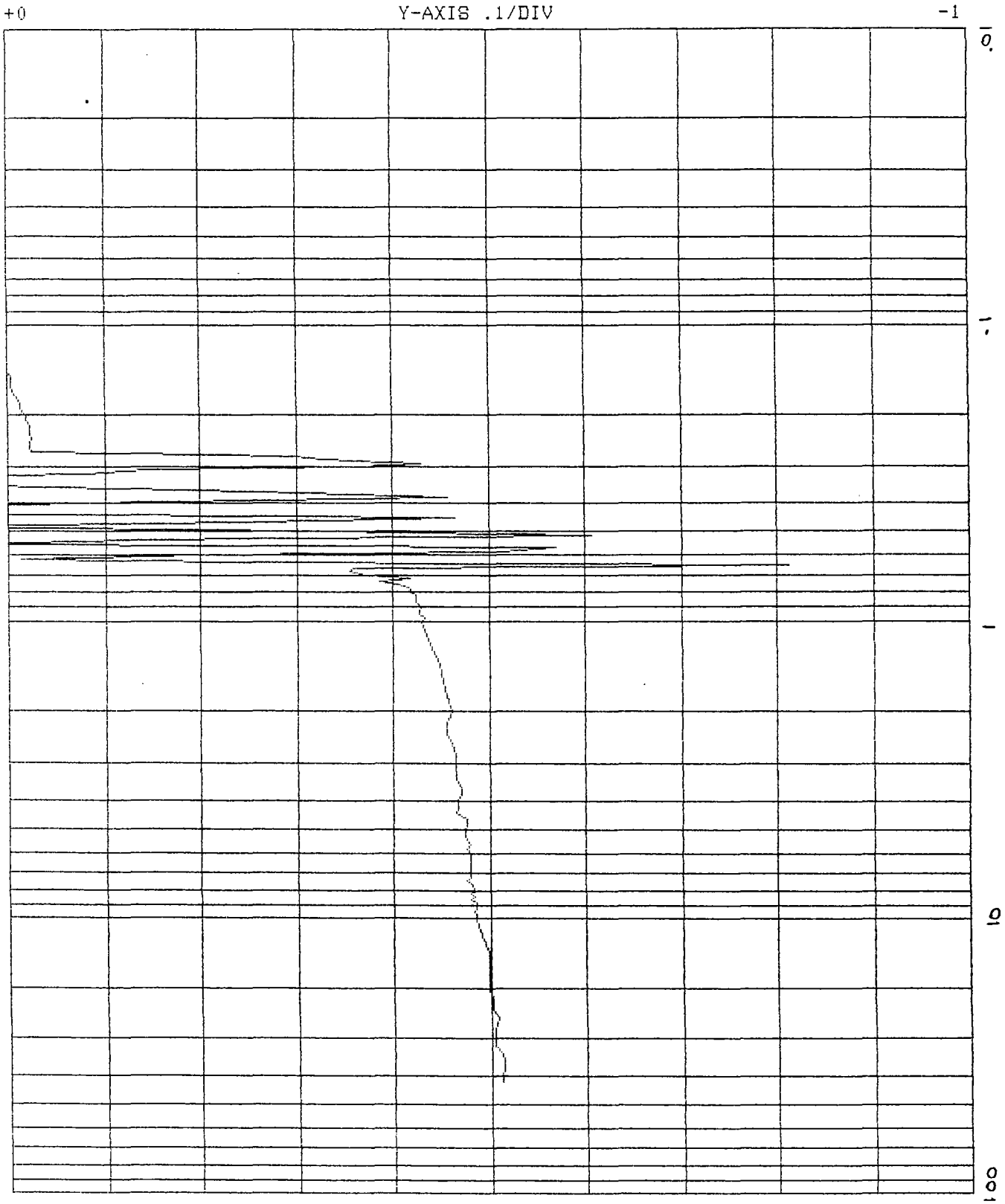
Environmental Logger

01/23 00:55

Unit# 2000 Test 2

Step 0 01/22 21:30:00

INPUT 1: MS29S -DD @ 5.7 GPM ±




(X-AXIS +.01 TO +100)

SE2000
Environmental Logger
01/23 00:20

Unit# 2000 Test 2

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS29S |
| Reference | 0.000 |
| PSI at Ref. | 3.044 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

Step 0 01/22 21:30:00

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.000 |
| 0.0083 | 0.000 |
| 0.0166 | 0.000 |
| 0.0250 | 0.000 |
| 0.0333 | 0.000 |
| 0.0416 | 0.000 |
| 0.0500 | 0.000 |
| 0.0583 | 0.000 |
| 0.0666 | 0.000 |
| 0.0750 | 0.000 |
| 0.0833 | 0.000 |
| 0.0916 | 0.000 |
| 0.1000 | 0.000 |
| 0.1083 | 0.000 |
| 0.1166 | 0.000 |
| 0.1250 | 0.000 |
| 0.1333 | 0.000 |
| 0.1416 | 0.000 |
| 0.1500 | -0.003 |
| 0.1583 | -0.003 |
| 0.1666 | -0.006 |
| 0.1750 | -0.009 |
| 0.1833 | -0.012 |
| 0.1916 | -0.012 |
| 0.2000 | -0.018 |
| 0.2083 | -0.018 |
| 0.2166 | -0.021 |
| 0.2250 | -0.021 |
| 0.2333 | -0.021 |
| 0.2416 | -0.024 |
| 0.2500 | -0.021 |
| 0.2583 | -0.021 |
| 0.2666 | -0.024 |
| 0.2750 | -0.299 |
| 0.2833 | -0.327 |

ms29s dd.hd
ms29s dd.num

| | |
|---|---|
| 0.2916 | -0.430 |
| 0.3000 | -0.364 |
| 0.3083 | -0.143 |
| 0.3166 | -0.081 |
| 0.3250 | 0.087 |
| 0.3333 | 0.177 |
| 0.3500 | 0.024 |
| 0.3666 | -0.255 |
| 0.3833 | -0.458 |
| 0.4000 | -0.068 |
| 0.4166 | 0.137 |
| 0.4333 | 0.127 |
| 0.4500 | -0.464 |
| 0.4666 | -0.255 |
| 0.4833 | 0.106 |
| 0.5000 | -0.324 |
| 0.5166 | -0.608 |
| 0.5333 | -0.124 |
| 0.5500 | 0.037 |
| 0.5666 | -0.570 |
| 0.5833 | -0.514 |
| 0.6000 | -0.205 |
| 0.6166 | -0.012 |
| 0.6333 | -0.240 |
| 0.6500 | -0.813 |
| 0.6666 | -0.358 |
| 0.6833 | -0.355 |
| 0.7000 | -0.371 |
| 0.7166 | -0.417 |
| 0.7333 | -0.386 |
| 0.7500 | -0.405 |
| 0.7666 | -0.411 |
| 0.7833 | -0.417 |
| 0.8000 | -0.417 |
| 0.8166 | -0.424 |
| 0.8333 | -0.424 |
| 0.8500 | -0.424 |
| 0.8666 | -0.424 |
| 0.8833 | -0.427 |
| 0.9000 | -0.430 |
| 0.9166 | -0.427 |
| 0.9333 | -0.427 |
| 0.9500 | -0.427 |
| 0.9666 | -0.433 |
| 0.9833 | -0.433 |
| 1.0000 | -0.430 |
| 1.2000 | -0.439 |
| 1.4000 | -0.449 |
| 1.6000 | -0.452 |
| 1.8000 | -0.455 |
| 2.0000 | -0.461 |
| 2.2000 | -0.455 |
| 2.4000 | -0.455 |
| 2.6000 | -0.461 |
| 2.8000 | -0.464 |
| 3.0000 | -0.464 |
| 3.2000 | -0.464 |
| 3.4000 | -0.464 |
| 3.6000 | -0.470 |
| 3.8000 | -0.470 |

| | |
|---|---|
| 4.0000 | -0.467 |
| 4.2000 | -0.467 |
| 4.4000 | -0.464 |
| 4.6000 | -0.477 |
| 4.8000 | -0.477 |
| 5.0000 | -0.474 |
| 5.2000 | -0.474 |
| 5.4000 | -0.477 |
| 5.6000 | -0.480 |
| 5.8000 | -0.477 |
| 6.0000 | -0.480 |
| 6.2000 | -0.480 |
| 6.4000 | -0.480 |
| 6.6000 | -0.480 |
| 6.8000 | -0.480 |
| 7.2000 | -0.480 |
| 7.4000 | -0.477 |
| 7.6000 | -0.480 |
| 7.8000 | -0.483 |
| 8.0000 | -0.486 |
| 8.2000 | -0.480 |
| 8.4000 | -0.483 |
| 8.6000 | -0.480 |
| 8.8000 | -0.486 |
| 9.0000 | -0.486 |
| 9.2000 | -0.486 |
| 9.4000 | -0.483 |
| 9.6000 | -0.486 |
| 9.8000 | -0.486 |
| 10.0000 | -0.486 |
| 12.0000 | -0.492 |
| 14.0000 | -0.498 |
| 16.0000 | -0.498 |
| 18.0000 | -0.498 |
| 20.0000 | -0.498 |
| 22.0000 | -0.502 |
| 24.0000 | -0.502 |
| 26.0000 | -0.508 |
| 28.0000 | -0.505 |
| 30.0000 | -0.505 |
| 32.0000 | -0.505 |
| 34.0000 | -0.511 |
| 36.0000 | -0.514 |
| 38.0000 | -0.514 |
| 40.0000 | -0.511 |
| 42.0000 | -0.511 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-29S

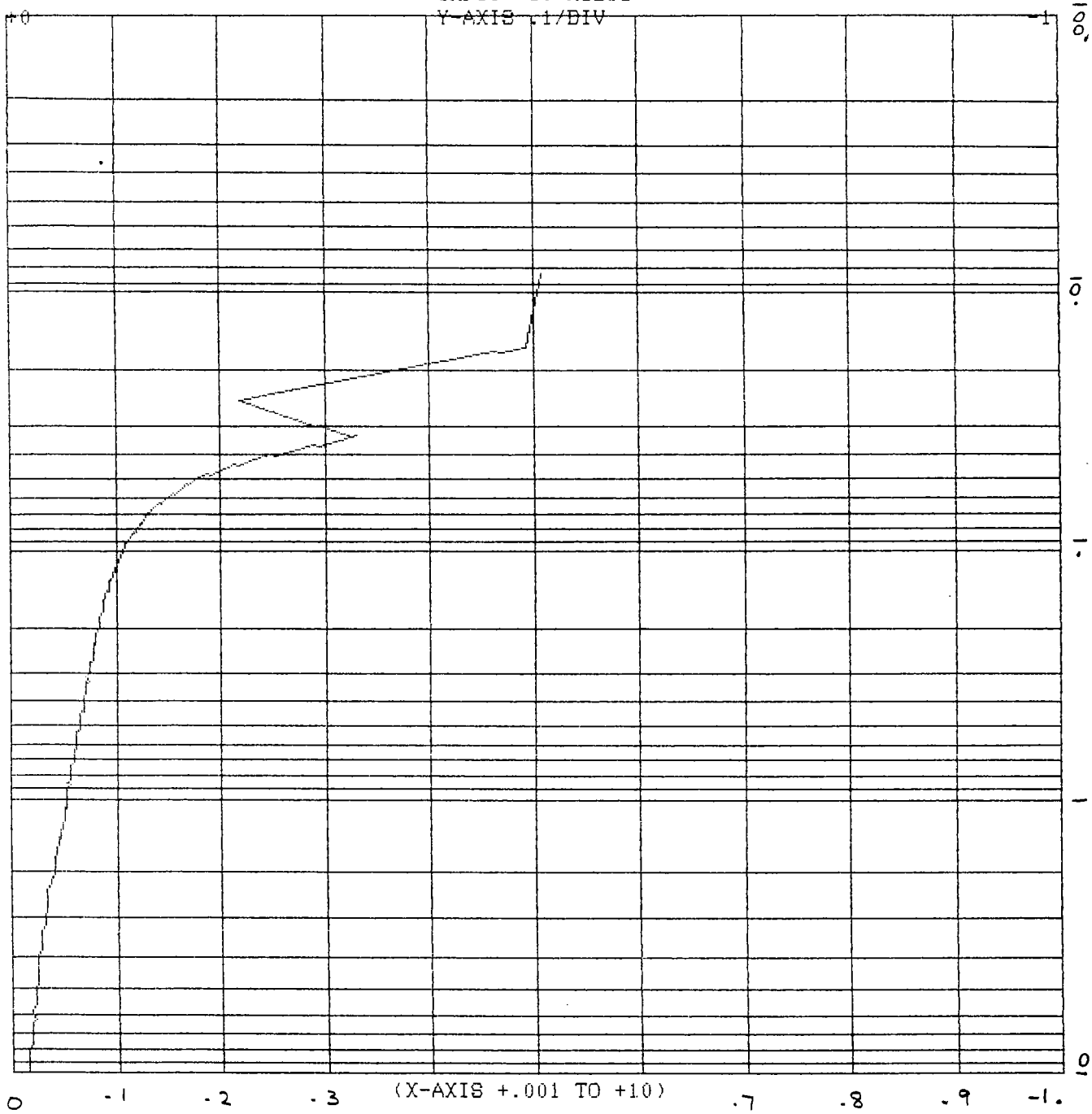
Environmental Logger

01/23 00:41

Unit# 2000 Test 2

Step 1 01/22 22:13:32

INPUT 1: MS29S - REC




ELAPSED TIME (MIN)

SE2000
Environmental Logger
01/23 00:17

Unit# 2000 Test 2

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS29S |
| Reference | 0.000 |
| PSI at Ref. | 3.044 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

Step 1 01/22 22:13:32

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -0.505 |
| 0.0083 | -0.508 |
| 0.0166 | -0.492 |
| 0.0250 | -0.218 |
| 0.0333 | -0.330 |
| 0.0416 | -0.227 |
| 0.0500 | -0.177 |
| 0.0583 | -0.152 |
| 0.0666 | -0.134 |
| 0.0750 | -0.124 |
| 0.0833 | -0.118 |
| 0.0916 | -0.109 |
| 0.1000 | -0.106 |
| 0.1083 | -0.102 |
| 0.1166 | -0.099 |
| 0.1250 | -0.096 |
| 0.1333 | -0.093 |
| 0.1416 | -0.093 |
| 0.1500 | -0.090 |
| 0.1583 | -0.087 |
| 0.1666 | -0.087 |
| 0.1750 | -0.087 |
| 0.1833 | -0.084 |
| 0.1916 | -0.084 |
| 0.2000 | -0.084 |
| 0.2083 | -0.081 |
| 0.2166 | -0.081 |
| 0.2250 | -0.081 |
| 0.2333 | -0.077 |
| 0.2416 | -0.077 |
| 0.2500 | -0.077 |
| 0.2583 | -0.077 |
| 0.2666 | -0.077 |
| 0.2750 | -0.074 |
| 0.2833 | -0.074 |

MS29S Rec.hd
OR
MS29S Rec.NVM

| | |
|---|---|
| 0.2916 | -0.074 |
| 0.3000 | -0.074 |
| 0.3083 | -0.074 |
| 0.3166 | -0.071 |
| 0.3250 | -0.074 |
| 0.3333 | -0.071 |
| 0.3500 | -0.071 |
| 0.3666 | -0.071 |
| 0.3833 | -0.068 |
| 0.4000 | -0.068 |
| 0.4166 | -0.068 |
| 0.4333 | -0.068 |
| 0.4500 | -0.065 |
| 0.4666 | -0.065 |
| 0.4833 | -0.065 |
| 0.5000 | -0.065 |
| 0.5166 | -0.065 |
| 0.5333 | -0.062 |
| 0.5500 | -0.062 |
| 0.5666 | -0.062 |
| 0.5833 | -0.062 |
| 0.6000 | -0.062 |
| 0.6166 | -0.062 |
| 0.6333 | -0.059 |
| 0.6500 | -0.059 |
| 0.6666 | -0.059 |
| 0.6833 | -0.059 |
| 0.7000 | -0.059 |
| 0.7166 | -0.059 |
| 0.7333 | -0.056 |
| 0.7500 | -0.056 |
| 0.7666 | -0.056 |
| 0.7833 | -0.056 |
| 0.8000 | -0.056 |
| 0.8166 | -0.056 |
| 0.8333 | -0.056 |
| 0.8500 | -0.056 |
| 0.8666 | -0.053 |
| 0.8833 | -0.056 |
| 0.9000 | -0.053 |
| 0.9166 | -0.053 |
| 0.9333 | -0.053 |
| 0.9500 | -0.053 |
| 0.9666 | -0.053 |
| 0.9833 | -0.053 |
| 1.0000 | -0.053 |
| 1.2000 | -0.049 |
| 1.4000 | -0.046 |
| 1.6000 | -0.043 |
| 1.8000 | -0.040 |
| 2.0000 | -0.040 |
| 2.2000 | -0.037 |
| 2.4000 | -0.034 |
| 2.6000 | -0.034 |
| 2.8000 | -0.034 |
| 3.0000 | -0.031 |
| 3.2000 | -0.031 |
| 3.4000 | -0.028 |
| 3.6000 | -0.028 |

| | |
|---|---|
| 4.0000 | -0.024 |
| 4.2000 | -0.024 |
| 4.4000 | -0.024 |
| 4.6000 | -0.024 |
| 4.8000 | -0.024 |
| 5.0000 | -0.021 |
| 5.2000 | -0.021 |
| 5.4000 | -0.021 |
| 5.6000 | -0.021 |
| 5.8000 | -0.018 |
| 6.0000 | -0.018 |
| 6.2000 | -0.021 |
| 6.4000 | -0.018 |
| 6.6000 | -0.018 |
| 6.8000 | -0.018 |
| 7.0000 | -0.018 |
| 7.2000 | -0.018 |
| 7.4000 | -0.018 |
| 7.6000 | -0.018 |
| 7.8000 | -0.018 |
| 8.0000 | -0.015 |
| 8.2000 | -0.015 |
| 8.4000 | -0.015 |
| 8.6000 | -0.015 |
| 8.8000 | -0.015 |
| 9.0000 | -0.015 |
| 9.2000 | -0.015 |
| 9.4000 | -0.015 |
| 9.6000 | -0.015 |
| 9.8000 | -0.015 |
| 10.0000 | -0.015 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-29I

SE2000
Environmental Logger
01/19 16:09

Unit# 2000 Test 2

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS29I

Reference 0.000
PSI at Ref. 26.733
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

Step 0 01/09 21:21:20

Elapsed Time INPUT 1
--- ---

| | |
|---|---|
| 0.0000 | -0.015 |
| 0.0083 | -0.015 |
| 0.0166 | -0.015 |
| 0.0250 | -0.015 |
| 0.0333 | -0.015 |
| 0.0416 | -0.015 |
| 0.0500 | -0.015 |
| 0.0583 | -0.015 |
| 0.0666 | -0.015 |
| 0.0750 | -0.015 |
| 0.0833 | 0.000 |
| 0.0916 | -0.015 |
| 0.1000 | 0.031 |
| 0.1083 | 0.127 |
| 0.1166 | 0.175 |
| 0.1250 | 0.239 |
| 0.1333 | 0.303 |
| 0.1416 | 0.351 |
| 0.1500 | 0.383 |
| 0.1583 | 0.383 |
| 0.1666 | 0.367 |
| 0.1750 | 0.319 |
| 0.1833 | 0.287 |
| 0.1916 | 0.239 |
| 0.2000 | 0.191 |
| 0.2083 | 0.175 |

| | |
|---|---|
| 0.2166 | 0.159 |
| 0.2250 | 0.159 |
| 0.2333 | 0.159 |
| 0.2416 | 0.175 |
| 0.2500 | 0.207 |
| 0.2583 | 0.255 |
| 0.2666 | 0.335 |
| 0.2750 | 0.415 |
| 0.2833 | 0.494 |
| 0.2916 | 0.574 |
| 0.3000 | 0.654 |
| 0.3083 | 0.718 |
| 0.3166 | 0.766 |
| 0.3250 | 0.798 |
| 0.3333 | 0.798 |
| 0.3500 | 0.750 |
| 0.3666 | 0.686 |
| 0.3833 | 0.654 |
| 0.4000 | 0.638 |
| 0.4166 | 0.654 |
| 0.4333 | 0.670 |
| 0.4500 | 0.686 |
| 0.4666 | 0.702 |
| 0.4833 | 0.686 |
| 0.5000 | 0.686 |
| 0.5166 | 0.670 |
| 0.5333 | 0.670 |
| 0.5500 | 0.670 |
| 0.5666 | 0.670 |
| 0.5833 | 0.670 |
| 0.6000 | 0.670 |
| 0.6166 | 0.670 |
| 0.6333 | 0.670 |
| 0.6500 | 0.670 |
| 0.6666 | 0.670 |
| 0.6833 | 0.670 |
| 0.7000 | 0.670 |
| 0.7166 | 0.670 |
| 0.7333 | 0.670 |
| 0.7500 | 0.670 |
| 0.7666 | 0.670 |
| 0.7833 | 0.670 |
| 0.8000 | 0.670 |
| 0.8166 | 0.670 |
| 0.8333 | 0.670 |
| 0.8500 | 0.670 |
| 0.8666 | 0.670 |
| 0.8833 | 0.670 |
| 0.9000 | 0.670 |
| 0.9166 | 0.670 |
| 0.9333 | 0.670 |

| | |
|---|---|
| 0.9500 | 0.670 |
| 0.9666 | 0.670 |
| 0.9833 | 0.670 |
| 1.0000 | 0.670 |
| 1.2000 | 0.670 |
| 1.4000 | 0.670 |
| 1.6000 | 0.686 |
| 1.8000 | 0.670 |
| 2.0000 | 0.670 |
| 2.2000 | 0.670 |
| 2.4000 | 0.670 |
| 2.6000 | 0.670 |
| 2.8000 | 0.670 |
| 3.0000 | 0.670 |
| 3.2000 | 0.670 |
| 3.4000 | 0.670 |
| 3.6000 | 0.670 |
| 3.8000 | 0.670 |
| 4.0000 | 0.670 |
| 4.2000 | 0.670 |
| 4.4000 | 0.686 |
| 4.6000 | 0.670 |
| 4.8000 | 0.670 |
| 5.0000 | 0.670 |
| 5.2000 | 0.670 |
| 5.4000 | 0.670 |
| 5.6000 | 0.670 |
| 5.8000 | 0.670 |
| 6.0000 | 0.670 |
| 6.2000 | 0.670 |
| 6.4000 | 0.670 |
| 6.6000 | 0.670 |
| 6.8000 | 0.670 |
| 7.0000 | 0.670 |
| 7.2000 | 0.670 |
| 7.4000 | 0.670 |
| 7.6000 | 0.670 |
| 7.8000 | 0.670 |
| 8.0000 | 0.670 |
| 8.2000 | 0.670 |
| 8.4000 | 0.670 |
| 8.6000 | 0.670 |
| 8.8000 | 0.670 |
| 9.0000 | 0.670 |
| 9.2000 | 0.670 |
| 9.4000 | 0.670 |
| 9.6000 | 0.670 |
| 9.8000 | 0.670 |
| 10.0000 | 0.670 |
| 12.0000 | 0.670 |
| 14.0000 | 0.670 |

| | |
|---|---|
| 16.0000 | 0.670 |
| 18.0000 | 0.670 |
| 20.0000 | 0.670 |
| 22.0000 | 0.670 |
| 24.0000 | 0.670 |
| 26.0000 | 0.654 |
| 28.0000 | 0.670 |
| 30.0000 | 0.670 |
| 32.0000 | 0.654 |
| 34.0000 | 0.654 |
| 36.0000 | 0.654 |
| 38.0000 | -0.079 |
| 40.0000 | -0.031 |
| 42.0000 | -0.015 |
| 44.0000 | -0.031 |
| 46.0000 | -0.031 |
| 48.0000 | -0.031 |
| 50.0000 | -0.031 |
| 52.0000 | -0.031 |
| 54.0000 | -0.031 |
| 56.0000 | -0.031 |
| 58.0000 | -0.031 |
| 60.0000 | -0.031 |
| 62.0000 | -0.031 |
| 64.0000 | -0.031 |
| 66.0000 | -0.031 |
| 68.0000 | -0.031 |
| 70.0000 | -0.031 |

SE2000
Environmental Logger
01/19 16:07

Unit# 2000 Test 2

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS29I

Reference 0.000
PSI at Ref. 26.733
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

Step 1 01/09 22:31:22

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -0.031 |
| 0.0083 | -0.031 |
| 0.0166 | -0.031 |
| 0.0250 | -0.031 |
| 0.0333 | -0.047 |
| 0.0416 | -0.031 |
| 0.0500 | -0.015 |
| 0.0583 | 0.079 |
| 0.0666 | 0.143 |
| 0.0750 | 0.175 |
| 0.0833 | 0.223 |
| 0.0916 | 0.287 |
| 0.1000 | 0.335 |
| 0.1083 | 0.351 |
| 0.1166 | 0.335 |
| 0.1250 | 0.319 |
| 0.1333 | 0.287 |
| 0.1416 | 0.255 |
| 0.1500 | 0.223 |
| 0.1583 | 0.223 |
| 0.1666 | 0.207 |
| 0.1750 | 0.223 |
| 0.1833 | 0.239 |
| 0.1916 | 0.271 |
| 0.2000 | 0.319 |
| 0.2083 | 0.399 |

| | |
|---|---|
| 0.2166 | 0.478 |
| 0.2250 | 0.558 |
| 0.2333 | 0.638 |
| 0.2416 | 0.702 |
| 0.2500 | 0.750 |
| 0.2583 | 0.782 |
| 0.2666 | 0.782 |
| 0.2750 | 0.782 |
| 0.2833 | 0.750 |
| 0.2916 | 0.718 |
| 0.3000 | 0.686 |
| 0.3083 | 0.670 |
| 0.3166 | 0.638 |
| 0.3250 | 0.638 |
| 0.3333 | 0.622 |
| 0.3500 | 0.654 |
| 0.3666 | 0.670 |
| 0.3833 | 0.686 |
| 0.4000 | 0.686 |
| 0.4166 | 0.686 |
| 0.4333 | 0.670 |
| 0.4500 | 0.670 |
| 0.4666 | 0.670 |
| 0.4833 | 0.670 |
| 0.5000 | 0.670 |
| 0.5166 | 0.670 |
| 0.5333 | 0.686 |
| 0.5500 | 0.670 |
| 0.5666 | 0.686 |
| 0.5833 | 0.670 |
| 0.6000 | 0.670 |
| 0.6166 | 0.670 |
| 0.6333 | 0.670 |
| 0.6500 | 0.670 |
| 0.6666 | 0.670 |
| 0.6833 | 0.670 |
| 0.7000 | 0.670 |
| 0.7166 | 0.670 |
| 0.7333 | 0.670 |
| 0.7500 | 0.686 |
| 0.7666 | 0.670 |
| 0.7833 | 0.670 |
| 0.8000 | 0.670 |
| 0.8166 | 0.686 |
| 0.8333 | 0.686 |
| 0.8500 | 0.670 |
| 0.8666 | 0.686 |
| 0.8833 | 0.686 |
| 0.9000 | 0.670 |
| 0.9166 | 0.670 |
| 0.9333 | 0.670 |

| | |
|---|---|
| 0.9500 | 0.670 |
| 0.9666 | 0.686 |
| 0.9833 | 0.670 |
| 1.0000 | 0.670 |
| 1.2000 | 0.670 |
| 1.4000 | 0.686 |
| 1.6000 | 0.670 |
| 1.8000 | 0.686 |
| 2.0000 | 0.670 |
| 2.2000 | 0.670 |
| 2.4000 | 0.670 |
| 2.6000 | 0.670 |
| 2.8000 | 0.686 |
| 3.0000 | 0.686 |
| 3.2000 | 0.670 |
| 3.4000 | 0.686 |
| 3.6000 | 0.686 |
| 3.8000 | 0.686 |
| 4.0000 | 0.686 |
| 4.2000 | 0.686 |
| 4.4000 | 0.670 |
| 4.6000 | 0.670 |
| 4.8000 | 0.670 |
| 5.0000 | 0.670 |
| 5.2000 | 0.670 |
| 5.4000 | 0.686 |
| 5.6000 | 0.670 |
| 5.8000 | 0.686 |
| 6.0000 | 0.686 |
| 6.2000 | 0.686 |
| 6.4000 | 0.686 |
| 6.6000 | 0.670 |
| 6.8000 | 0.670 |
| 7.0000 | 0.670 |
| 7.2000 | 0.670 |
| 7.4000 | 0.670 |
| 7.6000 | 0.670 |
| 7.8000 | 0.686 |
| 8.0000 | 0.670 |
| 8.2000 | 0.686 |
| 8.4000 | 0.686 |
| 8.6000 | 0.686 |
| 8.8000 | 0.670 |
| 9.0000 | 0.670 |
| 9.2000 | 0.670 |
| 9.4000 | 0.686 |
| 9.6000 | 0.686 |
| 9.8000 | 0.670 |
| 10.0000 | 0.670 |
| 12.0000 | 0.670 |
| 14.0000 | 0.670 |

| | |
|---|---|
| 16.0000 | 0.670 |
| 18.0000 | 0.670 |
| 20.0000 | -0.031 |
| 22.0000 | -0.047 |
| 24.0000 | -0.047 |
| 26.0000 | -0.047 |
| 28.0000 | -0.047 |
| 30.0000 | -0.047 |
| 32.0000 | -0.047 |
| 34.0000 | -0.047 |
| 36.0000 | -0.047 |
| 38.0000 | -0.047 |
| 40.0000 | -0.047 |
| 42.0000 | -0.047 |
| 44.0000 | -0.047 |

SE2000
Environmental Logger
01/19 16:04

Unit# 2000 Test 2

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS29I

Reference 0.000
PSI at Ref. 26.733
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

Step 2 01/09 23:16:20

Elapsed Time INPUT 1
--- ---

| | |
|---|---|
| 0.0000 | -0.047 |
| 0.0083 | -0.047 |
| 0.0166 | -0.047 |
| 0.0250 | -0.047 |
| 0.0333 | -0.047 |
| 0.0416 | -0.015 |
| 0.0500 | 0.079 |
| 0.0583 | 0.127 |
| 0.0666 | 0.159 |
| 0.0750 | 0.223 |
| 0.0833 | 0.287 |
| 0.0916 | 0.319 |
| 0.1000 | 0.319 |
| 0.1083 | 0.319 |
| 0.1166 | 0.287 |
| 0.1250 | 0.255 |
| 0.1333 | 0.223 |
| 0.1416 | 0.207 |
| 0.1500 | 0.175 |
| 0.1583 | 0.159 |
| 0.1666 | 0.175 |
| 0.1750 | 0.175 |
| 0.1833 | 0.191 |
| 0.1916 | 0.223 |
| 0.2000 | 0.287 |
| 0.2083 | 0.335 |

| | |
|---|---|
| 0.2166 | 0.415 |
| 0.2250 | 0.478 |
| 0.2333 | 0.542 |
| 0.2416 | 0.606 |
| 0.2500 | 0.638 |
| 0.2583 | 0.670 |
| 0.2666 | 0.670 |
| 0.2750 | 0.654 |
| 0.2833 | 0.622 |
| 0.2916 | 0.606 |
| 0.3000 | 0.574 |
| 0.3083 | 0.542 |
| 0.3166 | 0.526 |
| 0.3250 | 0.526 |
| 0.3333 | 0.510 |
| 0.3500 | 0.526 |
| 0.3666 | 0.542 |
| 0.3833 | 0.558 |
| 0.4000 | 0.558 |
| 0.4166 | 0.558 |
| 0.4333 | 0.558 |
| 0.4500 | 0.542 |
| 0.4666 | 0.542 |
| 0.4833 | 0.558 |
| 0.5000 | 0.558 |
| 0.5166 | 0.558 |
| 0.5333 | 0.558 |
| 0.5500 | 0.542 |
| 0.5666 | 0.558 |
| 0.5833 | 0.558 |
| 0.6000 | 0.558 |
| 0.6166 | 0.542 |
| 0.6333 | 0.558 |
| 0.6500 | 0.542 |
| 0.6666 | 0.558 |
| 0.6833 | 0.558 |
| 0.7000 | 0.558 |
| 0.7166 | 0.558 |
| 0.7333 | 0.558 |
| 0.7500 | 0.542 |
| 0.7666 | 0.558 |
| 0.7833 | 0.558 |
| 0.8000 | 0.542 |
| 0.8166 | 0.558 |
| 0.8333 | 0.542 |
| 0.8500 | 0.558 |
| 0.8666 | 0.558 |
| 0.8833 | 0.558 |
| 0.9000 | 0.542 |
| 0.9166 | 0.558 |
| 0.9333 | 0.542 |

| | |
|---|---|
| 0.9500 | 0.558 |
| 0.9666 | 0.558 |
| 0.9833 | 0.558 |
| 1.0000 | 0.558 |
| 1.2000 | 0.542 |
| 1.4000 | 0.542 |
| 1.6000 | 0.542 |
| 1.8000 | 0.558 |
| 2.0000 | 0.558 |
| 2.2000 | 0.558 |
| 2.4000 | 0.558 |
| 2.6000 | 0.542 |
| 2.8000 | 0.558 |
| 3.0000 | 0.558 |
| 3.2000 | 0.558 |
| 3.4000 | 0.542 |
| 3.6000 | 0.558 |
| 3.8000 | 0.542 |
| 4.0000 | 0.542 |
| 4.2000 | 0.558 |
| 4.4000 | 0.558 |
| 4.6000 | 0.558 |
| 4.8000 | 0.558 |
| 5.0000 | 0.558 |
| 5.2000 | 0.542 |
| 5.4000 | 0.558 |
| 5.6000 | 0.558 |
| 5.8000 | 0.558 |
| 6.0000 | 0.558 |
| 6.2000 | 0.558 |
| 6.4000 | 0.558 |
| 6.6000 | 0.542 |
| 6.8000 | 0.542 |
| 7.0000 | 0.558 |
| 7.2000 | 0.558 |
| 7.4000 | 0.542 |
| 7.6000 | 0.542 |
| 7.8000 | 0.558 |
| 8.0000 | 0.542 |
| 8.2000 | 0.542 |
| 8.4000 | 0.558 |
| 8.6000 | 0.558 |
| 8.8000 | 0.558 |
| 9.0000 | 0.542 |
| 9.2000 | 0.542 |
| 9.4000 | 0.542 |
| 9.6000 | 0.542 |
| 9.8000 | 0.542 |
| 10.0000 | 0.558 |
| 12.0000 | 0.558 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA RECOVERY DATA FOR MS-29I

SE2000
Environmental Logger
01/19 16:02

Unit# 2000 Test 2

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS29I

Reference 0.000
PSI at Ref. 26.733
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

Step 3 01/09 23:28:50

Elapsed Time INPUT 1
--- ---

| | |
|---|---|
| 0.0000 | 0.542 |
| 0.0083 | 0.558 |
| 0.0166 | 0.542 |
| 0.0250 | 0.558 |
| 0.0333 | 0.383 |
| 0.0416 | 0.319 |
| 0.0500 | 0.175 |
| 0.0583 | 0.079 |
| 0.0666 | -0.047 |
| 0.0750 | -0.207 |
| 0.0833 | -0.287 |
| 0.0916 | -0.319 |
| 0.1000 | -0.335 |
| 0.1083 | -0.351 |
| 0.1166 | -0.303 |
| 0.1250 | -0.239 |
| 0.1333 | -0.191 |
| 0.1416 | -0.143 |
| 0.1500 | -0.111 |
| 0.1583 | -0.079 |
| 0.1666 | -0.063 |
| 0.1750 | -0.063 |
| 0.1833 | -0.079 |
| 0.1916 | -0.079 |
| 0.2000 | -0.127 |
| 0.2083 | -0.143 |

| | |
|---|---|
| 0.2166 | -0.143 |
| 0.2250 | -0.159 |
| 0.2333 | -0.175 |
| 0.2416 | -0.175 |
| 0.2500 | -0.159 |
| 0.2583 | -0.159 |
| 0.2666 | -0.143 |
| 0.2750 | -0.143 |
| 0.2833 | -0.127 |
| 0.2916 | -0.127 |
| 0.3000 | -0.111 |
| 0.3083 | -0.127 |
| 0.3166 | -0.127 |
| 0.3250 | -0.127 |
| 0.3333 | -0.127 |
| 0.3500 | -0.143 |
| 0.3666 | -0.127 |
| 0.3833 | -0.127 |
| 0.4000 | -0.127 |
| 0.4166 | -0.127 |
| 0.4333 | -0.127 |
| 0.4500 | -0.127 |
| 0.4666 | -0.127 |
| 0.4833 | -0.127 |
| 0.5000 | -0.127 |
| 0.5166 | -0.127 |
| 0.5333 | -0.111 |
| 0.5500 | -0.127 |
| 0.5666 | -0.127 |
| 0.5833 | -0.127 |
| 0.6000 | -0.127 |
| 0.6166 | -0.111 |
| 0.6333 | -0.111 |
| 0.6500 | -0.127 |
| 0.6666 | -0.127 |
| 0.6833 | -0.127 |
| 0.7000 | -0.127 |
| 0.7166 | -0.127 |
| 0.7333 | -0.111 |
| 0.7500 | -0.127 |
| 0.7666 | -0.127 |
| 0.7833 | -0.111 |
| 0.8000 | -0.111 |
| 0.8166 | -0.127 |
| 0.8333 | -0.111 |
| 0.8500 | -0.175 |
| 0.8666 | -0.239 |
| 0.8833 | -0.255 |
| 0.9000 | -0.287 |
| 0.9166 | -0.271 |
| 0.9333 | -0.223 |

| | |
|---|---|
| 0.9500 | -0.159 |
| 0.9666 | -0.143 |
| 0.9833 | -0.111 |
| 1.0000 | -0.127 |
| 1.2000 | -0.063 |
| 1.4000 | -0.047 |
| 1.6000 | -0.047 |
| 1.8000 | -0.047 |
| 2.0000 | -0.047 |
| 2.2000 | -0.063 |
| 2.4000 | -0.047 |
| 2.6000 | -0.063 |
| 2.8000 | -0.063 |
| 3.0000 | -0.047 |
| 3.2000 | -0.047 |
| 3.4000 | -0.047 |
| 3.6000 | -0.063 |
| 3.8000 | -0.063 |
| 4.0000 | -0.063 |
| 4.2000 | -0.063 |
| 4.4000 | -0.063 |
| 4.6000 | -0.047 |
| 4.8000 | -0.047 |
| 5.0000 | -0.063 |
| 5.2000 | -0.063 |
| 5.4000 | -0.047 |
| 5.6000 | -0.047 |
| 5.8000 | -0.047 |
| 6.0000 | -0.047 |
| 6.2000 | -0.063 |
| 6.4000 | -0.063 |
| 6.6000 | -0.063 |
| 6.8000 | -0.063 |
| 7.0000 | -0.063 |
| 7.2000 | -0.063 |
| 7.4000 | -0.063 |
| 7.6000 | -0.063 |
| 7.8000 | -0.063 |
| 8.0000 | -0.047 |
| 8.2000 | -0.063 |
| 8.4000 | -0.063 |
| 8.6000 | -0.063 |
| 8.8000 | -0.047 |
| 9.0000 | -0.063 |
| 9.2000 | -0.047 |
| 9.4000 | -0.063 |
| 9.6000 | -0.063 |
| 9.8000 | -0.063 |
| 10.0000 | -0.063 |
| 12.0000 | -0.047 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-29D

SE2000

Environmental Logger

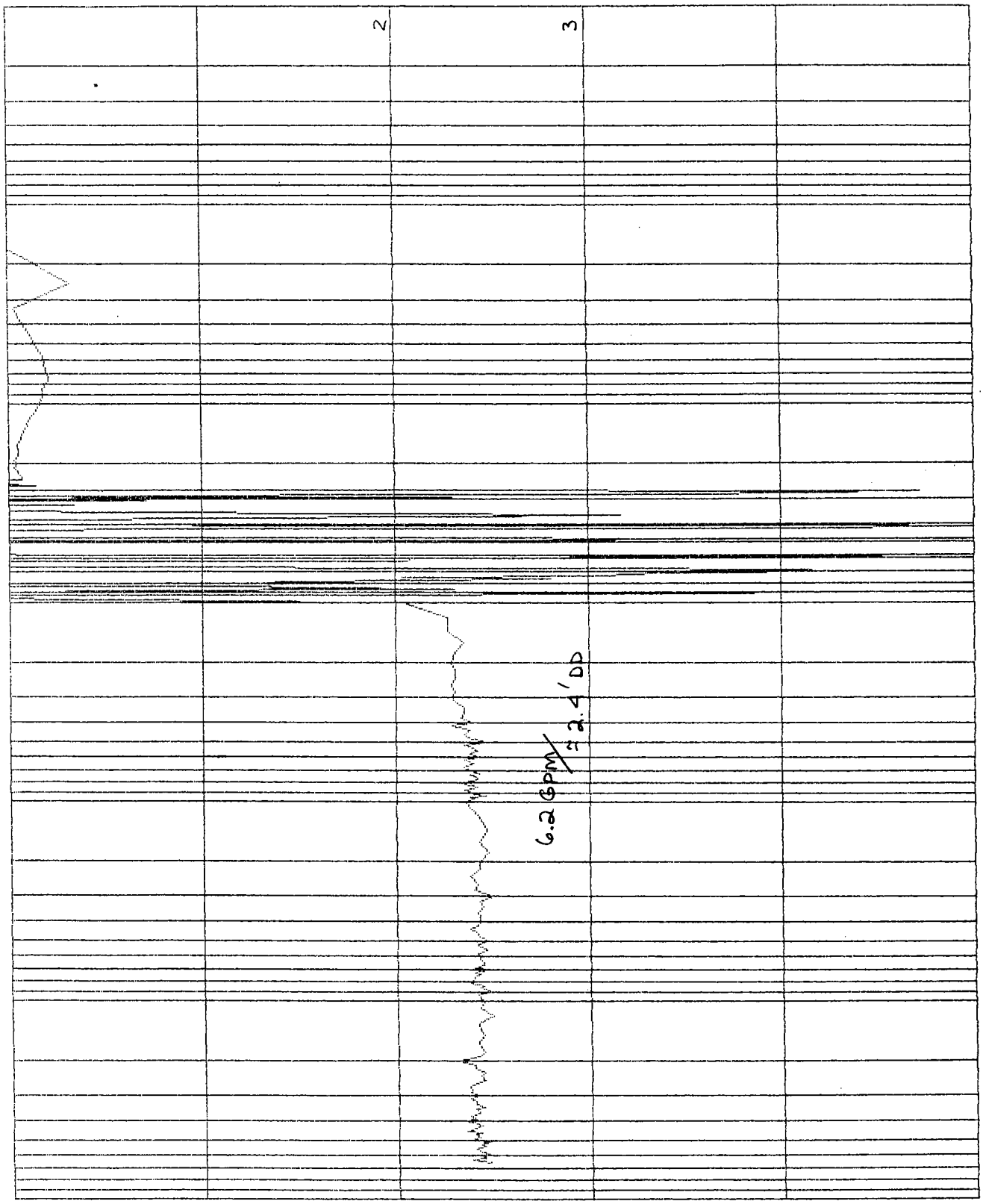
01/25 13:00

Unit# 2000 Test 2

Step 0 01/25 02:00:00

INPUT 1: MS29D - DD @ ± 6.2 GPM

+0 — Y-AXIS 1/DIV 4 -5




(X-AXIS +.001 TO +1000)

SE2000
Environmental Logger
01/25 13:21

Unit# 2000 Test 2

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS29D |
| Reference | 0.000 |
| PSI at Ref. | 21.687 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 0 01/25 02:00:00

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.000 |
| 0.0083 | 0.000 |
| 0.0166 | 0.000 |
| 0.0250 | -0.320 |
| 0.0333 | -0.032 |
| 0.0416 | -0.096 |
| 0.0500 | -0.144 |
| 0.0583 | -0.176 |
| 0.0666 | -0.192 |
| 0.0750 | -0.208 |
| 0.0833 | -0.176 |
| 0.0916 | -0.176 |
| 0.1000 | -0.160 |
| 0.1083 | -0.144 |
| 0.1166 | -0.112 |
| 0.1250 | -0.096 |
| 0.1333 | -0.080 |
| 0.1416 | -0.064 |
| 0.1500 | -0.064 |
| 0.1583 | -0.048 |
| 0.1666 | -0.048 |
| 0.1750 | -0.048 |
| 0.1833 | -0.048 |
| 0.1916 | -0.032 |
| 0.2000 | -0.048 |
| 0.2083 | -0.032 |
| 0.2166 | -0.048 |
| 0.2250 | -0.048 |
| 0.2333 | -0.064 |
| 0.2416 | -0.064 |
| 0.2500 | 0.224 |

Drawdown Data

| | |
|---|---|
| 0.2583 | -0.144 |
| 0.2666 | 1.745 |
| 0.2750 | -4.722 |
| 0.2833 | -3.489 |
| 0.2916 | 0.672 |
| 0.3000 | -3.297 |
| 0.3083 | 1.873 |
| 0.3166 | 0.784 |
| 0.3250 | -0.336 |
| 0.3333 | 0.992 |
| 0.3500 | -0.512 |
| 0.3666 | -3.169 |
| 0.3833 | -0.128 |
| 0.4000 | 0.912 |
| 0.4166 | -6.530 |
| 0.4333 | 1.664 |
| 0.4500 | 4.787 |
| 0.4666 | 8.085 |
| 0.4833 | -6.450 |
| 0.5000 | 6.756 |
| 0.5166 | 3.442 |
| 0.5333 | 3.185 |
| 0.5500 | 5.251 |
| 0.5666 | 5.283 |
| 0.5833 | -5.346 |
| 0.6000 | -2.081 |
| 0.6166 | -2.065 |
| 0.6333 | 3.073 |
| 0.6500 | 8.438 |
| 0.6666 | 0.256 |
| 0.6833 | -3.201 |
| 0.7000 | -4.482 |
| 0.7166 | -3.377 |
| 0.7333 | -3.073 |
| 0.7500 | -2.033 |
| 0.7666 | -2.801 |
| 0.7833 | -2.001 |
| 0.8000 | -1.168 |
| 0.8166 | 3.890 |
| 0.8333 | -1.168 |
| 0.8500 | -1.552 |
| 0.8666 | -2.305 |
| 0.8833 | -0.288 |
| 0.9000 | -1.776 |
| 0.9166 | -3.857 |
| 0.9333 | 1.761 |
| 0.9500 | 0.544 |
| 0.9666 | -0.784 |
| 0.9833 | -0.976 |
| 1.0000 | -2.033 |
| 1.2000 | -2.273 |
| 1.4000 | -2.273 |
| 1.6000 | -2.353 |
| 1.8000 | -2.305 |
| 2.0000 | -2.289 |
| 2.2000 | -2.305 |
| 2.4000 | -2.305 |
| 2.6000 | -2.289 |
| 2.8000 | -2.305 |
| 3.0000 | -2.289 |

| | |
|---|---|
| 3.2000 | -2.321 |
| 3.4000 | -2.353 |
| 3.6000 | -2.353 |
| 3.8000 | -2.337 |
| 4.0000 | -2.401 |
| 4.2000 | -2.289 |
| 4.4000 | -2.385 |
| 4.6000 | -2.353 |
| 4.8000 | -2.369 |
| 5.0000 | -2.465 |
| 5.2000 | -2.353 |
| 5.4000 | -2.401 |
| 5.6000 | -2.417 |
| 5.8000 | -2.385 |
| 6.0000 | -2.417 |
| 6.2000 | -2.353 |
| 6.4000 | -2.401 |
| 6.6000 | -2.369 |
| 6.8000 | -2.353 |
| 7.0000 | -2.385 |
| 7.2000 | -2.433 |
| 7.4000 | -2.385 |
| 7.6000 | -2.417 |
| 7.8000 | -2.417 |
| 8.0000 | -2.353 |
| 8.2000 | -2.353 |
| 8.4000 | -2.417 |
| 8.6000 | -2.401 |
| 8.8000 | -2.353 |
| 9.0000 | -2.401 |
| 9.2000 | -2.401 |
| 9.4000 | -2.465 |
| 9.6000 | -2.385 |
| 9.8000 | -2.401 |
| 10.0000 | -2.353 |
| 12.0000 | -2.433 |
| 14.0000 | -2.465 |
| 16.0000 | -2.433 |
| 18.0000 | -2.481 |
| 20.0000 | -2.433 |
| 22.0000 | -2.433 |
| 24.0000 | -2.385 |
| 26.0000 | -2.417 |
| 28.0000 | -2.401 |
| 30.0000 | -2.497 |
| 32.0000 | -2.433 |
| 34.0000 | -2.449 |
| 36.0000 | -2.417 |
| 38.0000 | -2.433 |
| 40.0000 | -2.433 |
| 42.0000 | -2.417 |
| 44.0000 | -2.385 |
| 46.0000 | -2.417 |
| 48.0000 | -2.433 |
| 50.0000 | -2.465 |
| 52.0000 | -2.417 |
| 54.0000 | -2.433 |
| 56.0000 | -2.465 |
| 58.0000 | -2.417 |
| 60.0000 | -2.433 |

| | |
|---|---|
| 62.0000 | -2.433 |
| 64.0000 | -2.449 |
| 66.0000 | -2.449 |
| 68.0000 | -2.401 |
| 70.0000 | -2.481 |
| 72.0000 | -2.401 |
| 74.0000 | -2.433 |
| 76.0000 | -2.401 |
| 78.0000 | -2.401 |
| 80.0000 | -2.385 |
| 82.0000 | -2.385 |
| 84.0000 | -2.449 |
| 86.0000 | -2.433 |
| 88.0000 | -2.449 |
| 90.0000 | -2.497 |
| 92.0000 | -2.433 |
| 94.0000 | -2.417 |
| 96.0000 | -2.433 |
| 98.0000 | -2.433 |
| 100.000 | -2.449 |
| 110.000 | -2.433 |
| 120.000 | -2.497 |
| 130.000 | -2.417 |
| 140.000 | -2.433 |
| 150.000 | -2.449 |
| 160.000 | -2.417 |
| 170.000 | -2.433 |
| 180.000 | -2.449 |
| 190.000 | -2.417 |
| 200.000 | -2.321 |
| 210.000 | -2.401 |
| 220.000 | -2.401 |
| 230.000 | -2.449 |
| 240.000 | -2.433 |
| 250.000 | -2.449 |
| 260.000 | -2.401 |
| 270.000 | -2.369 |
| 280.000 | -2.385 |
| 290.000 | -2.369 |
| 300.000 | -2.417 |
| 310.000 | -2.369 |
| 320.000 | -2.401 |
| 330.000 | -2.401 |
| 340.000 | -2.449 |
| 350.000 | -2.401 |
| 360.000 | -2.417 |
| 370.000 | -2.417 |
| 380.000 | -2.369 |
| 390.000 | -2.401 |
| 400.000 | -2.337 |
| 410.000 | -2.385 |
| 420.000 | -2.433 |
| 430.000 | -2.417 |
| 440.000 | -2.385 |
| 450.000 | -2.353 |
| 460.000 | -2.433 |
| 470.000 | -2.401 |
| 480.000 | -2.417 |
| 490.000 | -2.401 |
| 500.000 | -2.385 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-29D

SE2000
Environmental Logger
01/25 13:12

Unit# 2000 Test 2

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS29D |
| Reference | 0.000 |
| PSI at Ref. | 21.687 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 1 01/25 12:52:59

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -2.449 |
| 0.0083 | -2.465 |
| 0.0166 | -2.433 |
| 0.0250 | -1.856 |
| 0.0333 | -1.808 |
| 0.0416 | -1.728 |
| 0.0500 | -1.392 |
| 0.0583 | -1.088 |
| 0.0666 | -0.848 |
| 0.0750 | -0.640 |
| 0.0833 | -0.464 |
| 0.0916 | -0.320 |
| 0.1000 | -0.208 |
| 0.1083 | -0.128 |
| 0.1166 | -0.048 |
| 0.1250 | 0.000 |
| 0.1333 | 0.032 |
| 0.1416 | 0.048 |
| 0.1500 | 0.048 |
| 0.1583 | 0.064 |
| 0.1666 | 0.064 |
| 0.1750 | 0.064 |
| 0.1833 | 0.064 |
| 0.1916 | 0.048 |
| 0.2000 | 0.048 |
| 0.2083 | 0.032 |
| 0.2166 | 0.048 |
| 0.2250 | 0.032 |
| 0.2333 | 0.032 |
| 0.2416 | 0.016 |
| 0.2500 | 0.032 |
| 0.2583 | 0.032 |
| 0.2666 | 0.032 |
| 0.2750 | 0.032 |
| 0.2833 | 0.032 |

MS29DREC.hd
" .Nvm

| | |
|---|---|
| 0.2916 | 0.032 |
| 0.3000 | 0.032 |
| 0.3083 | 0.032 |
| 0.3166 | 0.032 |
| 0.3250 | 0.032 |
| 0.3333 | 0.032 |
| 0.3500 | 0.032 |
| 0.3666 | 0.032 |
| 0.3833 | 0.032 |
| 0.4000 | 0.032 |
| 0.4166 | 0.032 |
| 0.4333 | 0.032 |
| 0.4500 | 0.032 |
| 0.4666 | 0.032 |
| 0.4833 | 0.032 |
| 0.5000 | 0.032 |
| 0.5166 | 0.032 |
| 0.5333 | 0.032 |
| 0.5500 | 0.032 |
| 0.5666 | 0.032 |
| 0.5833 | 0.032 |
| 0.6000 | 0.048 |
| 0.6166 | 0.032 |
| 0.6333 | 0.048 |
| 0.6500 | 0.048 |
| 0.6666 | 0.032 |
| 0.6833 | 0.032 |
| 0.7000 | 0.032 |
| 0.7166 | 0.032 |
| 0.7333 | 0.032 |
| 0.7500 | 0.032 |
| 0.7666 | 0.032 |
| 0.7833 | 0.032 |
| 0.8000 | 0.032 |
| 0.8166 | 0.032 |
| 0.8333 | 0.048 |
| 0.8500 | 0.048 |
| 0.8666 | 0.032 |
| 0.8833 | 0.032 |
| 0.9000 | 0.048 |
| 0.9166 | 0.032 |
| 0.9333 | 0.032 |
| 0.9500 | 0.032 |
| 0.9666 | 0.032 |
| 0.9833 | 0.032 |
| 1.0000 | 0.048 |
| 1.2000 | 0.048 |
| 1.4000 | 0.032 |
| 1.6000 | 0.048 |
| 1.8000 | 0.032 |
| 2.0000 | 0.048 |
| 2.2000 | 0.048 |
| 2.4000 | 0.032 |
| 2.6000 | 0.032 |
| 2.8000 | 0.032 |
| 3.0000 | 0.048 |
| 3.2000 | 0.032 |
| 3.4000 | 0.032 |
| 3.6000 | 0.048 |
| 3.8000 | 0.048 |

```
   4.0000          0.048
   4.2000          0.032
   4.4000          0.048
   4.6000          0.048
   4.8000          0.048
   5.0000          0.048
   5.2000          0.032
   5.4000          0.032
   5.6000          0.048
   5.8000          0.048
   6.0000          0.032
END
```

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-30S

SE2000

Environmental Logger

01/27 16:53

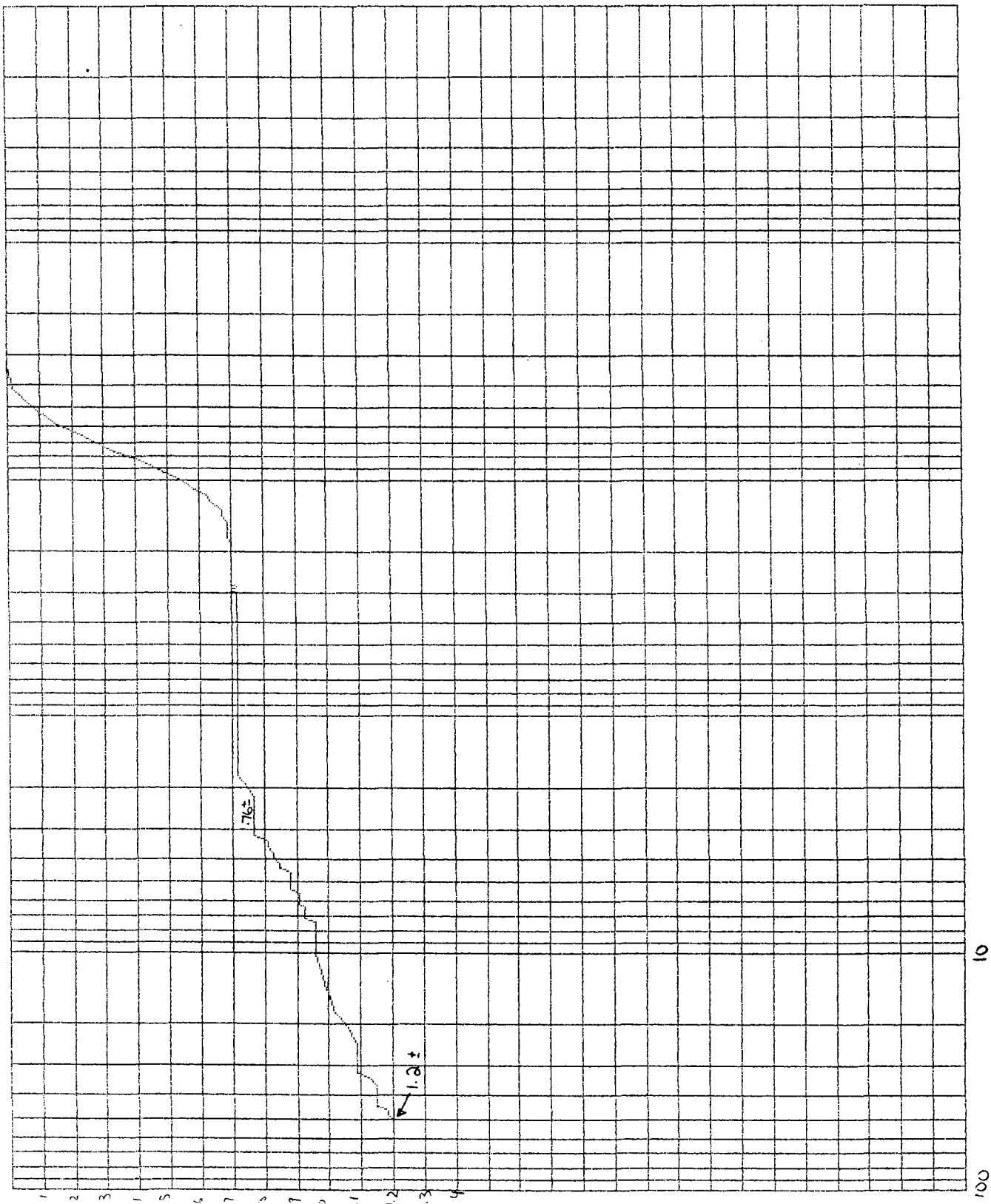
Unit# 2000 Test 0

Centrifugal Pump

Step 0 01/27 15:49:59

INPUT 1: MS30S – DD e ≈ 5.03 → 5.13 GPM

+0 Y-AXIS .1/DIV -3



SE2000
Environmental Logger
01/27 17:03

Unit# 2000 Test 0

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS30S |
| Reference | 0.000 |
| PSI at Ref. | 3.260 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 0 01/27 15:49:59

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.000 |
| 0.0083 | 0.000 |
| 0.0166 | 0.015 |
| 0.0250 | 0.000 |
| 0.0333 | 0.000 |
| 0.0416 | -0.015 |
| 0.0500 | -0.079 |
| 0.0583 | -0.143 |
| 0.0666 | -0.239 |
| 0.0750 | -0.319 |
| 0.0833 | -0.415 |
| 0.0916 | -0.479 |
| 0.1000 | -0.543 |
| 0.1083 | -0.575 |
| 0.1166 | -0.623 |
| 0.1250 | -0.639 |
| 0.1333 | -0.671 |
| 0.1416 | -0.671 |
| 0.1500 | -0.687 |
| 0.1583 | -0.687 |
| 0.1666 | -0.687 |
| 0.1750 | -0.687 |
| 0.1833 | -0.703 |
| 0.1916 | -0.703 |
| 0.2000 | -0.703 |
| 0.2083 | -0.703 |
| 0.2166 | -0.703 |
| 0.2250 | -0.703 |
| 0.2333 | -0.703 |
| 0.2416 | -0.703 |
| 0.2500 | -0.703 |
| 0.2583 | -0.703 |
| 0.2666 | -0.703 |
| 0.2750 | -0.703 |
| 0.2833 | -0.719 |

ms30s00.hd
OR
ms30s00.num

| | |
|---|---|
| 0.2916 | -0.703 |
| 0.3000 | -0.719 |
| 0.3083 | -0.719 |
| 0.3166 | -0.719 |
| 0.3250 | -0.719 |
| 0.3333 | -0.719 |
| 0.3500 | -0.719 |
| 0.3666 | -0.719 |
| 0.3833 | -0.719 |
| 0.4000 | -0.719 |
| 0.4166 | -0.719 |
| 0.4333 | -0.719 |
| 0.4500 | -0.719 |
| 0.4666 | -0.719 |
| 0.4833 | -0.719 |
| 0.5000 | -0.719 |
| 0.5166 | -0.719 |
| 0.5333 | -0.719 |
| 0.5500 | -0.719 |
| 0.5666 | -0.719 |
| 0.5833 | -0.719 |
| 0.6000 | -0.719 |
| 0.6166 | -0.719 |
| 0.6333 | -0.719 |
| 0.6500 | -0.719 |
| 0.6666 | -0.719 |
| 0.6833 | -0.719 |
| 0.7000 | -0.719 |
| 0.7166 | -0.719 |
| 0.7333 | -0.719 |
| 0.7500 | -0.719 |
| 0.7666 | -0.719 |
| 0.7833 | -0.719 |
| 0.8000 | -0.719 |
| 0.8166 | -0.719 |
| 0.8333 | -0.719 |
| 0.8500 | -0.719 |
| 0.8666 | -0.719 |
| 0.8833 | -0.719 |
| 0.9000 | -0.719 |
| 0.9166 | -0.719 |
| 0.9333 | -0.719 |
| 0.9500 | -0.719 |
| 0.9666 | -0.719 |
| 0.9833 | -0.719 |
| 1.0000 | -0.719 |
| 1.2000 | -0.719 |
| 1.4000 | -0.719 |
| 1.6000 | -0.719 |
| 1.8000 | -0.719 |
| 2.0000 | -0.751 |
| 2.2000 | -0.767 |
| 2.4000 | -0.767 |
| 2.6000 | -0.767 |
| 2.8000 | -0.767 |
| 3.0000 | -0.767 |
| 3.2000 | -0.767 |
| 3.4000 | -0.815 |
| 3.6000 | -0.815 |
| 3.8000 | -0.831 |

| | |
|---|---|
| 4.0000 | -0.831 |
| 4.2000 | -0.847 |
| 4.4000 | -0.847 |
| 4.6000 | -0.879 |
| 4.8000 | -0.879 |
| 5.0000 | -0.879 |
| 5.2000 | -0.879 |
| 5.4000 | -0.879 |
| 5.6000 | -0.911 |
| 5.8000 | -0.911 |
| 6.0000 | -0.911 |
| 6.2000 | -0.911 |
| 6.4000 | -0.927 |
| 6.6000 | -0.927 |
| 6.8000 | -0.927 |
| 7.0000 | -0.927 |
| 7.2000 | -0.927 |
| 7.4000 | -0.959 |
| 7.6000 | -0.959 |
| 7.8000 | -0.959 |
| 8.0000 | -0.959 |
| 8.2000 | -0.959 |
| 8.4000 | -0.959 |
| 8.6000 | -0.959 |
| 8.8000 | -0.959 |
| 9.0000 | -0.959 |
| 9.2000 | -0.959 |
| 9.4000 | -0.959 |
| 9.6000 | -0.959 |
| 9.8000 | -0.959 |
| 10.0000 | -0.959 |
| 12.0000 | -0.975 |
| 14.0000 | -0.991 |
| 16.0000 | -1.007 |
| 18.0000 | -1.023 |
| 20.0000 | -1.054 |
| 22.0000 | -1.070 |
| 24.0000 | -1.086 |
| 26.0000 | -1.086 |
| 28.0000 | -1.086 |
| 30.0000 | -1.086 |
| 32.0000 | -1.086 |
| 34.0000 | -1.134 |
| 36.0000 | -1.150 |
| 38.0000 | -1.150 |
| 40.0000 | -1.150 |
| 42.0000 | -1.150 |
| 44.0000 | -1.150 |
| 46.0000 | -1.182 |
| 48.0000 | -1.182 |
| 50.0000 | -1.198 |
| 52.0000 | -1.198 |
| 54.0000 | -1.198 |
| 56.0000 | -1.198 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-30S

SE2000

Environmental Logger

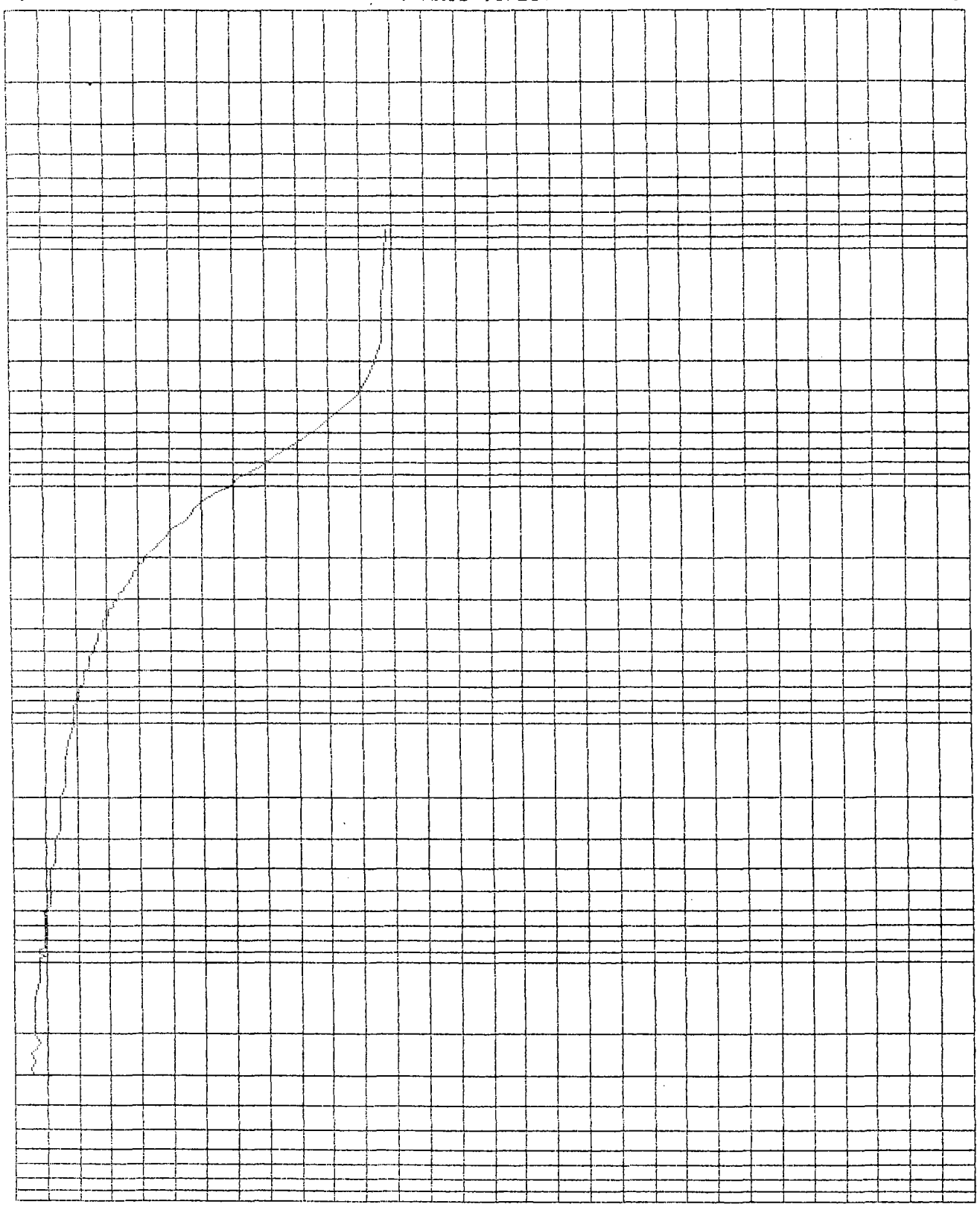
01/27 17:20

Unit# 2000 Test 0

Step 1 01/27 16:47:18

INPUT 1: MS30S REC

+0 Y-AXIS .1/DIV -3



SE2000
Environmental Logger
01/27 17:27

Unit# 2000 Test 0

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS30S |
| Reference | 0.000 |
| PSI at Ref. | 3.260 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 1 01/27 16:47:18

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -1.182 |
| 0.0083 | -1.182 |
| 0.0166 | -1.166 |
| 0.0250 | -1.166 |
| 0.0333 | -1.134 |
| 0.0416 | -1.086 |
| 0.0500 | -1.023 |
| 0.0583 | -0.959 |
| 0.0666 | -0.895 |
| 0.0750 | -0.831 |
| 0.0833 | -0.783 |
| 0.0916 | -0.719 |
| 0.1000 | -0.687 |
| 0.1083 | -0.639 |
| 0.1166 | -0.607 |
| 0.1250 | -0.575 |
| 0.1333 | -0.559 |
| 0.1416 | -0.543 |
| 0.1500 | -0.511 |
| 0.1583 | -0.495 |
| 0.1666 | -0.479 |
| 0.1750 | -0.463 |
| 0.1833 | -0.447 |
| 0.1916 | -0.431 |
| 0.2000 | -0.415 |
| 0.2083 | -0.415 |
| 0.2166 | -0.399 |
| 0.2250 | -0.399 |
| 0.2333 | -0.383 |
| 0.2416 | -0.383 |
| 0.2500 | -0.367 |
| 0.2583 | -0.367 |
| 0.2666 | -0.351 |
| 0.2750 | -0.351 |
| 0.2833 | -0.335 |

MS30S Rec.hd
or
MS30S Rec.Num

| | |
|---|---|
| 0.2916 | -0.335 |
| 0.3000 | -0.335 |
| 0.3083 | -0.319 |
| 0.3166 | -0.319 |
| 0.3250 | -0.319 |
| 0.3333 | -0.303 |
| 0.3500 | -0.303 |
| 0.3666 | -0.287 |
| 0.3833 | -0.287 |
| 0.4000 | -0.287 |
| 0.4166 | -0.271 |
| 0.4333 | -0.271 |
| 0.4500 | -0.271 |
| 0.4666 | -0.255 |
| 0.4833 | -0.255 |
| 0.5000 | -0.255 |
| 0.5166 | -0.239 |
| 0.5333 | -0.239 |
| 0.5500 | -0.239 |
| 0.5666 | -0.239 |
| 0.5833 | -0.239 |
| 0.6000 | -0.223 |
| 0.6166 | -0.223 |
| 0.6333 | -0.223 |
| 0.6500 | -0.223 |
| 0.6666 | -0.223 |
| 0.6833 | -0.223 |
| 0.7000 | -0.207 |
| 0.7166 | -0.207 |
| 0.7333 | -0.207 |
| 0.7500 | -0.207 |
| 0.7666 | -0.207 |
| 0.7833 | -0.207 |
| 0.8000 | -0.207 |
| 0.8166 | -0.207 |
| 0.8333 | -0.191 |
| 0.8500 | -0.191 |
| 0.8666 | -0.191 |
| 0.8833 | -0.191 |
| 0.9000 | -0.191 |
| 0.9166 | -0.191 |
| 0.9333 | -0.191 |
| 0.9500 | -0.191 |
| 0.9666 | -0.191 |
| 0.9833 | -0.191 |
| 1.0000 | -0.191 |
| 1.2000 | -0.175 |
| 1.4000 | -0.159 |
| 1.6000 | -0.159 |
| 1.8000 | -0.159 |
| 2.0000 | -0.143 |
| 2.2000 | -0.143 |
| 2.4000 | -0.143 |
| 2.6000 | -0.143 |
| 2.8000 | -0.143 |
| 3.0000 | -0.127 |
| 3.2000 | -0.127 |
| 3.4000 | -0.127 |
| 3.6000 | -0.127 |
| 3.8000 | -0.127 |

| | |
|---|---|
| 4.0000 | -0.111 |
| 4.2000 | -0.111 |
| 4.4000 | -0.111 |
| 4.6000 | -0.111 |
| 4.8000 | -0.111 |
| 5.0000 | -0.111 |
| 5.2000 | -0.111 |
| 5.4000 | -0.111 |
| 5.6000 | -0.111 |
| 5.8000 | -0.111 |
| 6.0000 | -0.095 |
| 6.2000 | -0.095 |
| 6.4000 | -0.095 |
| 6.6000 | -0.095 |
| 6.8000 | -0.095 |
| 7.0000 | -0.095 |
| 7.2000 | -0.095 |
| 7.4000 | -0.095 |
| 7.6000 | -0.095 |
| 7.8000 | -0.095 |
| 8.0000 | -0.095 |
| 8.2000 | -0.095 |
| 8.4000 | -0.095 |
| 8.6000 | -0.095 |
| 8.8000 | -0.079 |
| 9.0000 | -0.079 |
| 9.2000 | -0.079 |
| 9.4000 | -0.095 |
| 9.6000 | -0.079 |
| 9.8000 | -0.079 |
| 10.0000 | -0.079 |
| 12.0000 | -0.079 |
| 14.0000 | -0.063 |
| 16.0000 | -0.063 |
| 18.0000 | -0.063 |
| 20.0000 | -0.063 |
| 22.0000 | -0.079 |
| 24.0000 | -0.047 |
| 26.0000 | -0.063 |
| 28.0000 | -0.047 |
| 30.0000 | -0.063 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-30I

Environmental Logger

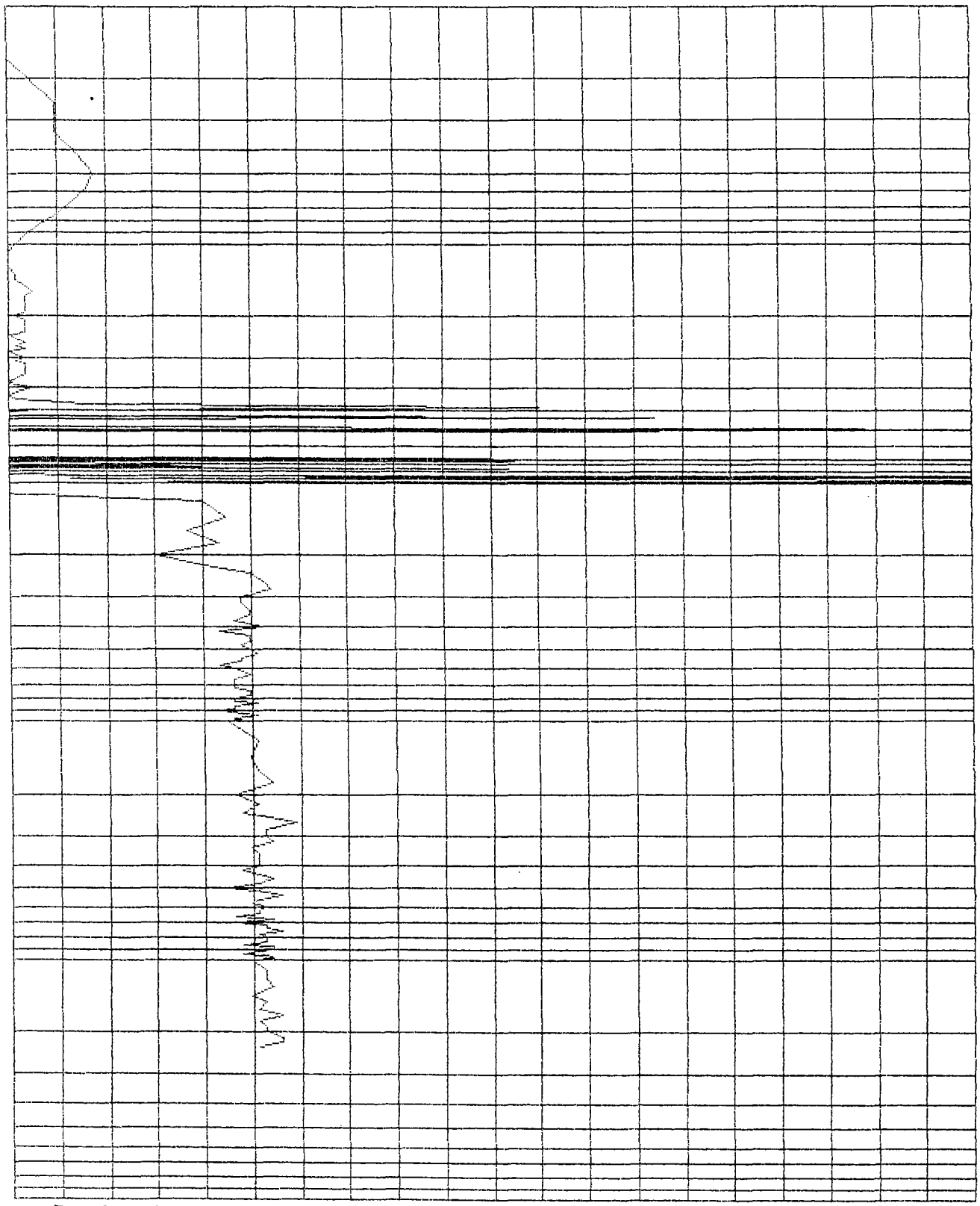
01/28 10:05

Unit# 2000 Test 1

Step 0 01/27 19:39:59

INPUT 1: MS30I - DD @ ≈ 5.4 GPM

+0 Y-AXIS .1/DIV -2



(X-AXIS +.01 TO +1000)

SEZ000
Environmental Logger
01/28 09:59

Unit# 2000 Test 1

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS30I |
| Reference | 0.000 |
| PSI at Ref. | 10.858 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 0 01/27 19:39:59

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.000 |
| 0.0083 | 0.000 |
| 0.0166 | 0.000 |
| 0.0250 | -0.095 |
| 0.0333 | -0.095 |
| 0.0416 | -0.143 |
| 0.0500 | -0.175 |
| 0.0583 | -0.159 |
| 0.0666 | -0.127 |
| 0.0750 | -0.095 |
| 0.0833 | -0.063 |
| 0.0916 | -0.031 |
| 0.1000 | -0.015 |
| 0.1083 | 0.000 |
| 0.1166 | 0.015 |
| 0.1250 | 0.000 |
| 0.1333 | -0.015 |
| 0.1416 | -0.015 |
| 0.1500 | -0.031 |
| 0.1583 | -0.047 |
| 0.1666 | -0.031 |
| 0.1750 | -0.031 |
| 0.1833 | -0.031 |
| 0.1916 | -0.031 |
| 0.2000 | -0.015 |
| 0.2083 | -0.031 |
| 0.2166 | -0.031 |
| 0.2250 | -0.031 |
| 0.2333 | -0.031 |
| 0.2416 | 0.000 |
| 0.2500 | -0.015 |
| 0.2583 | -0.031 |
| 0.2666 | -0.015 |
| 0.2750 | -0.031 |
| 0.2833 | 0.000 |

MS30idd.hd
" .NVM

| | |
|---|---|
| 0.2916 | -0.015 |
| 0.3000 | -0.031 |
| 0.3083 | -0.015 |
| 0.3166 | -0.031 |
| 0.3250 | -0.031 |
| 0.3333 | -0.031 |
| 0.3500 | -0.031 |
| 0.3666 | -0.015 |
| 0.3833 | 0.000 |
| 0.4000 | -0.047 |
| 0.4166 | -0.015 |
| 0.4333 | 0.000 |
| 0.4500 | -0.015 |
| 0.4666 | -0.159 |
| 0.4833 | -1.103 |
| 0.5000 | -0.159 |
| 0.5166 | 0.559 |
| 0.5333 | -1.343 |
| 0.5500 | 2.127 |
| 0.5666 | 1.183 |
| 0.5833 | -0.175 |
| 0.6000 | -2.319 |
| 0.6166 | 1.535 |
| 0.6333 | 1.215 |
| 0.6500 | 0.927 |
| 0.6666 | 2.207 |
| 0.6833 | 1.951 |
| 0.7000 | 0.047 |
| 0.7166 | 0.159 |
| 0.7333 | 0.175 |
| 0.7500 | 0.079 |
| 0.7666 | 0.015 |
| 0.7833 | 0.000 |
| 0.8000 | -2.015 |
| 0.8166 | 1.839 |
| 0.8333 | -2.191 |
| 0.8500 | 1.519 |
| 0.8666 | -1.039 |
| 0.8833 | 1.791 |
| 0.9000 | 1.263 |
| 0.9166 | 3.039 |
| 0.9333 | -3.182 |
| 0.9500 | -1.103 |
| 0.9666 | -0.127 |
| 0.9833 | -3.230 |
| 1.0000 | 0.639 |
| 1.2000 | -0.399 |
| 1.4000 | -0.447 |
| 1.6000 | -0.367 |
| 1.8000 | -0.431 |
| 2.0000 | -0.303 |
| 2.2000 | -0.383 |
| 2.4000 | -0.495 |
| 2.6000 | -0.527 |
| 2.8000 | -0.543 |
| 3.0000 | -0.479 |
| 3.2000 | -0.479 |
| 3.4000 | -0.495 |
| 3.6000 | -0.495 |

| | |
|---|---|
| 4.0000 | -0.527 |
| 4.2000 | -0.431 |
| 4.4000 | -0.495 |
| 4.6000 | -0.495 |
| 4.8000 | -0.479 |
| 5.0000 | -0.495 |
| 5.2000 | -0.511 |
| 5.4000 | -0.479 |
| 5.6000 | -0.479 |
| 5.8000 | -0.431 |
| 6.0000 | -0.463 |
| 6.2000 | -0.479 |
| 6.4000 | -0.495 |
| 6.6000 | -0.463 |
| 6.8000 | -0.463 |
| 7.0000 | -0.463 |
| 7.2000 | -0.463 |
| 7.4000 | -0.495 |
| 7.6000 | -0.495 |
| 7.8000 | -0.495 |
| 8.0000 | -0.463 |
| 8.2000 | -0.463 |
| 8.4000 | -0.511 |
| 8.6000 | -0.463 |
| 8.8000 | -0.463 |
| 9.0000 | -0.431 |
| 9.2000 | -0.479 |
| 9.4000 | -0.511 |
| 9.6000 | -0.463 |
| 9.8000 | -0.479 |
| 10.0000 | -0.447 |
| 12.0000 | -0.511 |
| 14.0000 | -0.495 |
| 16.0000 | -0.511 |
| 18.0000 | -0.543 |
| 20.0000 | -0.463 |
| 22.0000 | -0.511 |
| 24.0000 | -0.479 |
| 26.0000 | -0.591 |
| 28.0000 | -0.527 |
| 30.0000 | -0.527 |
| 32.0000 | -0.543 |
| 34.0000 | -0.495 |
| 36.0000 | -0.511 |
| 38.0000 | -0.511 |
| 40.0000 | -0.511 |
| 42.0000 | -0.479 |
| 44.0000 | -0.511 |
| 46.0000 | -0.543 |
| 48.0000 | -0.511 |
| 50.0000 | -0.447 |
| 52.0000 | -0.527 |
| 54.0000 | -0.559 |
| 56.0000 | -0.511 |
| 58.0000 | -0.495 |
| 60.0000 | -0.527 |
| 62.0000 | -0.511 |
| 64.0000 | -0.511 |
| 66.0000 | -0.463 |
| 68.0000 | -0.543 |

| | |
|---|---|
| 70.0000 | -0.463 |
| 72.0000 | -0.527 |
| 74.0000 | -0.527 |
| 76.0000 | -0.559 |
| 78.0000 | -0.511 |
| 80.0000 | -0.527 |
| 82.0000 | -0.527 |
| 84.0000 | -0.527 |
| 86.0000 | -0.479 |
| 88.0000 | -0.543 |
| 90.0000 | -0.543 |
| 92.0000 | -0.511 |
| 94.0000 | -0.479 |
| 96.0000 | -0.527 |
| 98.0000 | -0.543 |
| 100.000 | -0.495 |
| 110.000 | -0.527 |
| 120.000 | -0.527 |
| 130.000 | -0.543 |
| 140.000 | -0.495 |
| 150.000 | -0.527 |
| 160.000 | -0.511 |
| 170.000 | -0.559 |
| 180.000 | -0.511 |
| 190.000 | -0.527 |
| 200.000 | -0.527 |
| 210.000 | -0.559 |
| 220.000 | -0.559 |
| 230.000 | -0.511 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-30I

SE2000

Environmental Logger

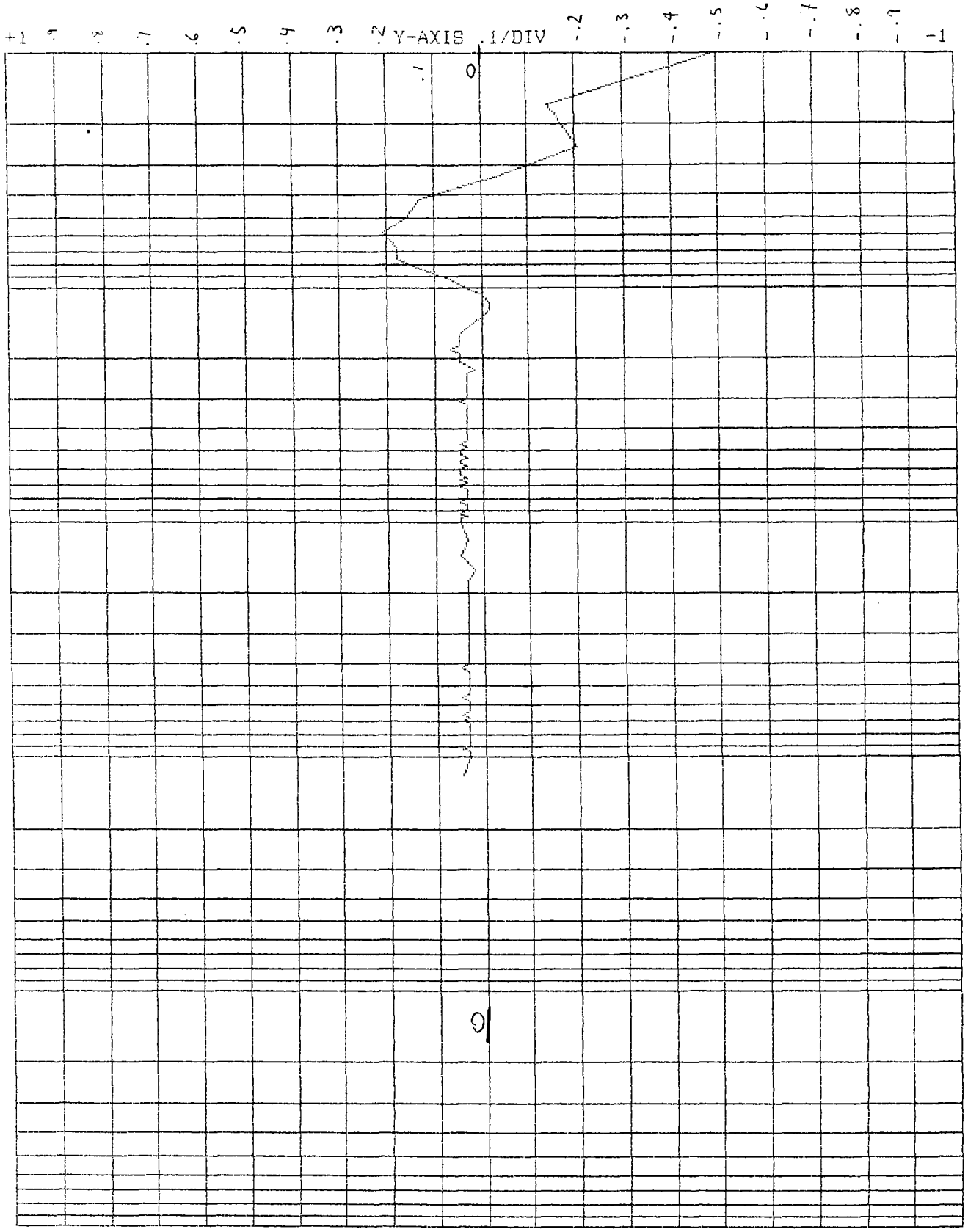
01/28 10:14

Unit# 2000 Test 1

Step 1 01/27 23:31:00

INPUT 1: MS30I

REC.




(X-AXIS +.01 TO +1000)

SE2000
Environmental Logger
01/28 10:01

Unit# 2000 Test 1

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. . | MS30I |
| Reference | 0.000 |
| PSI at Ref. | 10.858 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 1 01/27 23:31:00

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -0.463 |
| 0.0083 | -0.495 |
| 0.0166 | -0.143 |
| 0.0250 | -0.207 |
| 0.0333 | -0.031 |
| 0.0416 | 0.127 |
| 0.0500 | 0.159 |
| 0.0583 | 0.207 |
| 0.0666 | 0.175 |
| 0.0750 | 0.175 |
| 0.0833 | 0.127 |
| 0.0916 | 0.063 |
| 0.1000 | 0.031 |
| 0.1083 | 0.000 |
| 0.1166 | -0.015 |
| 0.1250 | -0.015 |
| 0.1333 | 0.000 |
| 0.1416 | 0.015 |
| 0.1500 | 0.031 |
| 0.1583 | 0.047 |
| 0.1666 | 0.047 |
| 0.1750 | 0.047 |
| 0.1833 | 0.063 |
| 0.1916 | 0.047 |
| 0.2000 | 0.047 |
| 0.2083 | 0.047 |
| 0.2166 | 0.031 |
| 0.2250 | 0.015 |
| 0.2333 | 0.031 |
| 0.2416 | 0.031 |
| 0.2500 | 0.031 |
| 0.2583 | 0.031 |
| 0.2666 | 0.031 |
| 0.2750 | 0.031 |
| 0.2833 | 0.031 |

MS30: rec.hd
" . Nvm

| | |
|---|---|
| 0.2916 | 0.031 |
| 0.3000 | 0.031 |
| 0.3083 | 0.047 |
| 0.3166 | 0.031 |
| 0.3250 | 0.031 |
| 0.3333 | 0.031 |
| 0.3500 | 0.031 |
| 0.3666 | 0.031 |
| 0.3833 | 0.031 |
| 0.4000 | 0.031 |
| 0.4166 | 0.031 |
| 0.4333 | 0.031 |
| 0.4500 | 0.031 |
| 0.4666 | 0.047 |
| 0.4833 | 0.031 |
| 0.5000 | 0.047 |
| 0.5166 | 0.047 |
| 0.5333 | 0.031 |
| 0.5500 | 0.047 |
| 0.5666 | 0.047 |
| 0.5833 | 0.031 |
| 0.6000 | 0.047 |
| 0.6166 | 0.047 |
| 0.6333 | 0.047 |
| 0.6500 | 0.031 |
| 0.6666 | 0.047 |
| 0.6833 | 0.031 |
| 0.7000 | 0.047 |
| 0.7166 | 0.047 |
| 0.7333 | 0.031 |
| 0.7500 | 0.031 |
| 0.7666 | 0.031 |
| 0.7833 | 0.031 |
| 0.8000 | 0.031 |
| 0.8166 | 0.047 |
| 0.8333 | 0.047 |
| 0.8500 | 0.031 |
| 0.8666 | 0.031 |
| 0.8833 | 0.031 |
| 0.9000 | 0.031 |
| 0.9166 | 0.047 |
| 0.9333 | 0.047 |
| 0.9500 | 0.031 |
| 0.9666 | 0.047 |
| 0.9833 | 0.047 |
| 1.0000 | 0.047 |
| 1.2000 | 0.031 |
| 1.4000 | 0.047 |
| 1.6000 | 0.015 |
| 1.8000 | 0.031 |
| 2.0000 | 0.031 |
| 2.2000 | 0.031 |
| 2.4000 | 0.031 |
| 2.6000 | 0.031 |
| 2.8000 | 0.031 |
| 3.0000 | 0.031 |
| 3.2000 | 0.031 |
| 3.4000 | 0.031 |
| 3.6000 | 0.031 |
| 3.8000 | 0.031 |

| | |
|---|---|
| 4.0000 | 0.031 |
| 4.2000 | 0.047 |
| 4.4000 | 0.031 |
| 4.6000 | 0.031 |
| 4.8000 | 0.031 |
| 5.0000 | 0.031 |
| 5.2000 | 0.031 |
| 5.4000 | 0.031 |
| 5.6000 | 0.047 |
| 5.8000 | 0.031 |
| 6.0000 | 0.031 |
| 6.2000 | 0.031 |
| 6.4000 | 0.031 |
| 6.6000 | 0.047 |
| 6.8000 | 0.031 |
| 7.0000 | 0.047 |
| 7.2000 | 0.031 |
| 7.4000 | 0.031 |
| 7.6000 | 0.031 |
| 7.8000 | 0.031 |
| 8.0000 | 0.031 |
| 8.2000 | 0.031 |
| 8.4000 | 0.031 |
| 8.6000 | 0.031 |
| 8.8000 | 0.031 |
| 9.0000 | 0.031 |
| 9.2000 | 0.047 |
| 9.4000 | 0.031 |
| 9.6000 | 0.031 |
| 9.8000 | 0.031 |
| 10.0000 | 0.031 |
| 12.0000 | 0.047 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-30D

Environmental Logger

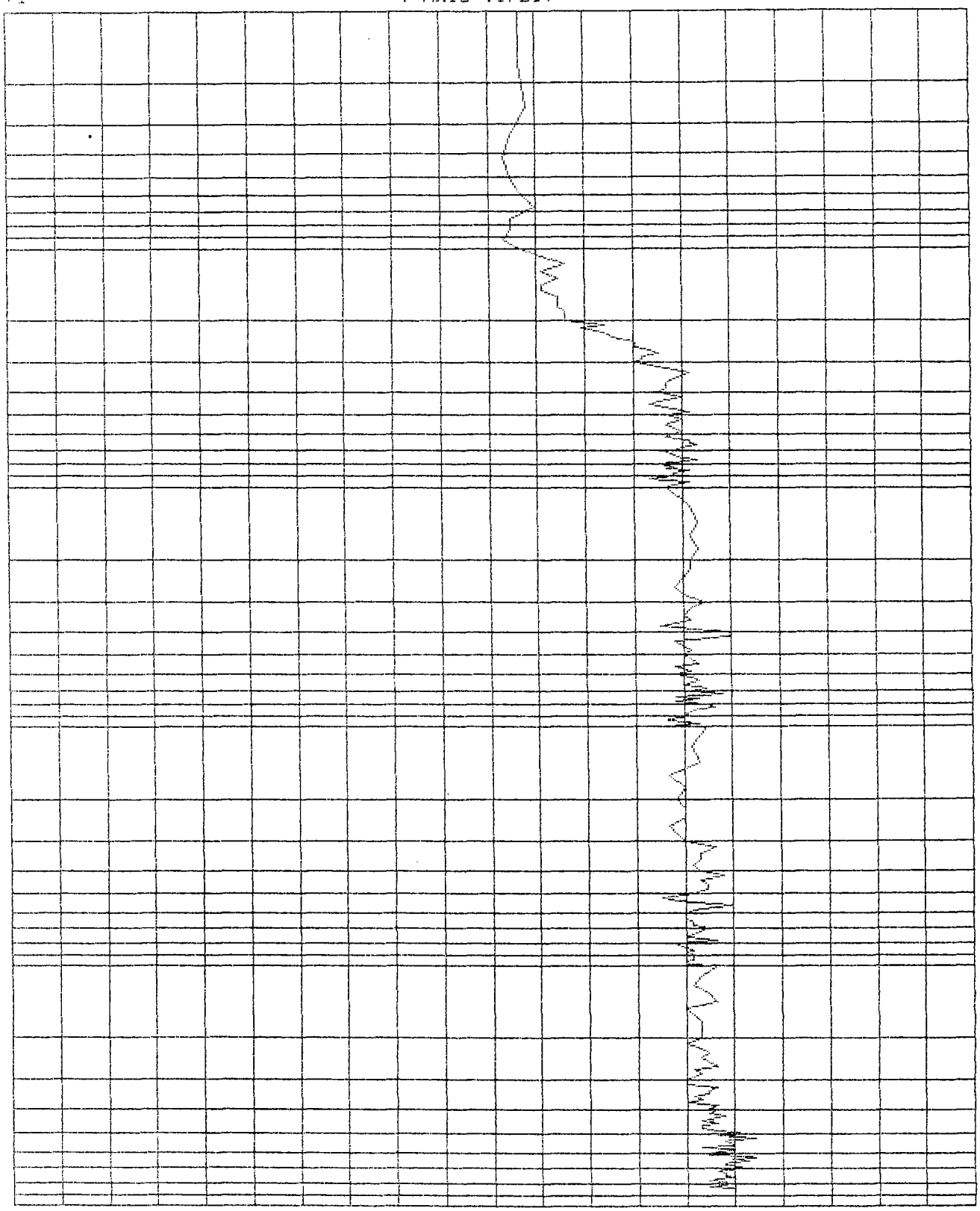
02/23 15:41

Unit# 2000 Test 3

Step 0 02/13 12:30:01

INPUT 1: MS30D

+1 Y-AXIS .1/DIV -1



(X-AXIS +.01 TO +1000)

ELAPSED TIME (MIN)

SE2000
Environmental Logger
02/23 14:33

Unit# 2000 Test 3

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. . | MS30D |
| Reference | 0.000 |
| PSI at Ref. | 29.337 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 0 02/13 12:30:01

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -0.016 |
| 0.0083 | -0.064 |
| 0.0166 | -0.064 |
| 0.0250 | -0.080 |
| 0.0333 | -0.048 |
| 0.0416 | -0.032 |
| 0.0500 | -0.048 |
| 0.0583 | -0.064 |
| 0.0666 | -0.096 |
| 0.0750 | -0.048 |
| 0.0833 | -0.048 |
| 0.0916 | -0.032 |
| 0.1000 | -0.064 |
| 0.1083 | -0.112 |
| 0.1166 | -0.160 |
| 0.1250 | -0.112 |
| 0.1333 | -0.144 |
| 0.1416 | -0.112 |
| 0.1500 | -0.112 |
| 0.1583 | -0.144 |
| 0.1666 | -0.144 |
| 0.1750 | -0.144 |
| 0.1833 | -0.160 |
| 0.1916 | -0.160 |
| 0.2000 | -0.160 |
| 0.2083 | -0.240 |
| 0.2166 | -0.192 |
| 0.2250 | -0.240 |
| 0.2333 | -0.256 |
| 0.2416 | -0.288 |
| 0.2500 | -0.304 |
| 0.2583 | -0.304 |
| 0.2666 | -0.336 |
| 0.2750 | -0.352 |
| [illegible] | [illegible] |

MS30dd.hd
" .Num

| | |
|---|---|
| 0.2916 | -0.320 |
| 0.3000 | -0.304 |
| 0.3083 | -0.336 |
| 0.3166 | -0.368 |
| 0.3250 | -0.400 |
| 0.3333 | -0.416 |
| 0.3500 | -0.384 |
| 0.3666 | -0.368 |
| 0.3833 | -0.368 |
| 0.4000 | -0.352 |
| 0.4166 | -0.400 |
| 0.4333 | -0.352 |
| 0.4500 | -0.336 |
| 0.4666 | -0.384 |
| 0.4833 | -0.416 |
| 0.5000 | -0.368 |
| 0.5166 | -0.400 |
| 0.5333 | -0.384 |
| 0.5500 | -0.368 |
| 0.5666 | -0.384 |
| 0.5833 | -0.400 |
| 0.6000 | -0.384 |
| 0.6166 | -0.368 |
| 0.6333 | -0.416 |
| 0.6500 | -0.416 |
| 0.6666 | -0.432 |
| 0.6833 | -0.400 |
| 0.7000 | -0.384 |
| 0.7166 | -0.368 |
| 0.7333 | -0.384 |
| 0.7500 | -0.400 |
| 0.7666 | -0.432 |
| 0.7833 | -0.384 |
| 0.8000 | -0.352 |
| 0.8166 | -0.384 |
| 0.8333 | -0.368 |
| 0.8500 | -0.416 |
| 0.8666 | -0.384 |
| 0.8833 | -0.384 |
| 0.9000 | -0.384 |
| 0.9166 | -0.336 |
| 0.9333 | -0.368 |
| 0.9500 | -0.416 |
| 0.9666 | -0.400 |
| 0.9833 | -0.384 |
| 1.0000 | -0.368 |
| 1.2000 | -0.416 |
| 1.4000 | -0.432 |
| 1.6000 | -0.416 |
| 1.8000 | -0.432 |
| 2.0000 | -0.416 |
| 2.2000 | -0.416 |
| 2.4000 | -0.400 |
| 2.6000 | -0.384 |
| 2.8000 | -0.400 |
| 3.0000 | -0.448 |
| 3.2000 | -0.416 |
| 3.4000 | -0.400 |
| [illegible] | [illegible] |

| | |
|---|---|
| 4.0000 | -0.496 |
| 4.2000 | -0.496 |
| 4.4000 | -0.384 |
| 4.6000 | -0.400 |
| 4.8000 | -0.416 |
| 5.0000 | -0.400 |
| 5.2000 | -0.416 |
| 5.4000 | -0.432 |
| 5.6000 | -0.384 |
| 5.8000 | -0.416 |
| 6.0000 | -0.384 |
| 6.2000 | -0.416 |
| 6.4000 | -0.432 |
| 6.6000 | -0.400 |
| 6.8000 | -0.448 |
| 7.0000 | -0.416 |
| 7.2000 | -0.480 |
| 7.4000 | -0.384 |
| 7.6000 | -0.432 |
| 7.8000 | -0.384 |
| 8.0000 | -0.448 |
| 8.2000 | -0.464 |
| 8.4000 | -0.432 |
| 8.6000 | -0.416 |
| 8.8000 | -0.400 |
| 9.0000 | -0.416 |
| 9.2000 | -0.368 |
| 9.4000 | -0.368 |
| 9.6000 | -0.432 |
| 9.8000 | -0.384 |
| 10.0000 | -0.448 |
| 12.0000 | -0.416 |
| 14.0000 | -0.432 |
| 16.0000 | -0.368 |
| 18.0000 | -0.400 |
| 20.0000 | -0.384 |
| 22.0000 | -0.400 |
| 24.0000 | -0.400 |
| 26.0000 | -0.368 |
| 28.0000 | -0.384 |
| 30.0000 | -0.400 |
| 32.0000 | -0.464 |
| 34.0000 | -0.432 |
| 36.0000 | -0.432 |
| 38.0000 | -0.416 |
| 40.0000 | -0.432 |
| 42.0000 | -0.480 |
| 44.0000 | -0.432 |
| 46.0000 | -0.448 |
| 48.0000 | -0.448 |
| 50.0000 | -0.416 |
| 52.0000 | -0.352 |
| 54.0000 | -0.384 |
| 56.0000 | -0.496 |
| 58.0000 | -0.432 |
| 60.0000 | -0.400 |
| 62.0000 | -0.400 |
| 64.0000 | -0.400 |
| 66.0000 | -0.416 |

| | |
|---|---|
| 70.0000 | -0.448 |
| 72.0000 | -0.432 |
| 74.0000 | -0.416 |
| 76.0000 | -0.400 |
| 78.0000 | -0.464 |
| 80.0000 | -0.384 |
| 82.0000 | -0.384 |
| 84.0000 | -0.400 |
| 86.0000 | -0.416 |
| 88.0000 | -0.400 |
| 90.0000 | -0.416 |
| 92.0000 | -0.416 |
| 94.0000 | -0.416 |
| 96.0000 | -0.400 |
| 98.0000 | -0.400 |
| 100.000 | -0.464 |
| 110.000 | -0.432 |
| 120.000 | -0.416 |
| 130.000 | -0.448 |
| 140.000 | -0.464 |
| 150.000 | -0.400 |
| 160.000 | -0.416 |
| 170.000 | -0.432 |
| 180.000 | -0.432 |
| 190.000 | -0.432 |
| 200.000 | -0.432 |
| 210.000 | -0.400 |
| 220.000 | -0.432 |
| 230.000 | -0.448 |
| 240.000 | -0.432 |
| 250.000 | -0.448 |
| 260.000 | -0.464 |
| 270.000 | -0.416 |
| 280.000 | -0.432 |
| 290.000 | -0.416 |
| 300.000 | -0.400 |
| 310.000 | -0.400 |
| 320.000 | -0.464 |
| 330.000 | -0.448 |
| 340.000 | -0.448 |
| 350.000 | -0.416 |
| 360.000 | -0.432 |
| 370.000 | -0.400 |
| 380.000 | -0.464 |
| 390.000 | -0.448 |
| 400.000 | -0.464 |
| 410.000 | -0.448 |
| 420.000 | -0.480 |
| 430.000 | -0.464 |
| 440.000 | -0.432 |
| 450.000 | -0.464 |
| 460.000 | -0.432 |
| 470.000 | -0.432 |
| 480.000 | -0.448 |
| 490.000 | -0.464 |
| 500.000 | -0.528 |
| 510.000 | -0.464 |
| 520.000 | -0.544 |

| | |
|---|---|
| 550.000 | -0.496 |
| 560.000 | -0.496 |
| 570.000 | -0.432 |
| 580.000 | -0.496 |
| 590.000 | -0.496 |
| 600.000 | -0.448 |
| 610.000 | -0.448 |
| 620.000 | -0.528 |
| 630.000 | -0.544 |
| 640.000 | -0.496 |
| 650.000 | -0.528 |
| 660.000 | -0.496 |
| 670.000 | -0.480 |
| 680.000 | -0.480 |
| 690.000 | -0.512 |
| 700.000 | -0.512 |
| 710.000 | -0.480 |
| 720.000 | -0.464 |
| 730.000 | -0.480 |
| 740.000 | -0.480 |
| 750.000 | -0.480 |
| 760.000 | -0.496 |
| 770.000 | -0.464 |
| 780.000 | -0.448 |
| 790.000 | -0.480 |
| 800.000 | -0.480 |
| 810.000 | -0.464 |
| 820.000 | -0.480 |
| 830.000 | -0.448 |
| 840.000 | -0.496 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-30D

Environmental Logger

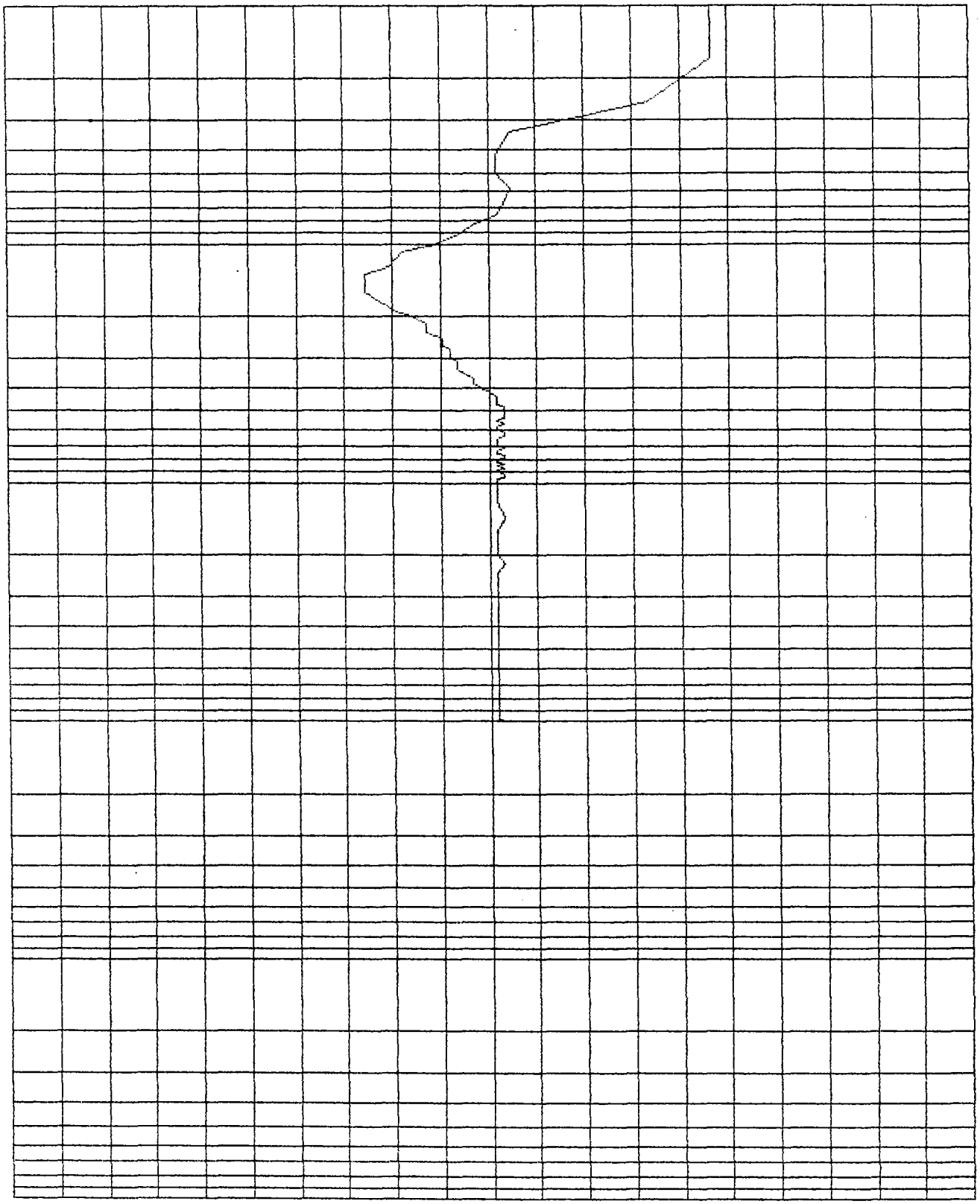
02/23 16:13

Unit# 2000 Test 3

Step 1 02/14 02:40:00

INPUT 1: MS30D

+1 Y-AXIS .1/DIV -1



(X-AXIS +.01 TO +1000)

SE2000
Environmental Logger
02/23 14:30

Unit# 2000 Test 3

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS30D |
| Reference | 0.000 |
| PSI at Ref. | 29.337 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 1 02/14 02:40:00

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -0.480 |
| 0.0083 | -0.464 |
| 0.0166 | -0.464 |
| 0.0250 | -0.336 |
| 0.0333 | -0.048 |
| 0.0416 | -0.016 |
| 0.0500 | -0.016 |
| 0.0583 | -0.048 |
| 0.0666 | -0.032 |
| 0.0750 | -0.016 |
| 0.0833 | 0.032 |
| 0.0916 | 0.064 |
| 0.1000 | 0.112 |
| 0.1083 | 0.176 |
| 0.1166 | 0.192 |
| 0.1250 | 0.208 |
| 0.1333 | 0.256 |
| 0.1416 | 0.256 |
| 0.1500 | 0.256 |
| 0.1583 | 0.256 |
| 0.1666 | 0.240 |
| 0.1750 | 0.224 |
| 0.1833 | 0.208 |
| 0.1916 | 0.192 |
| 0.2000 | 0.160 |
| 0.2083 | 0.144 |
| 0.2166 | 0.128 |
| 0.2250 | 0.128 |
| 0.2333 | 0.128 |
| 0.2416 | 0.112 |
| 0.2500 | 0.096 |
| 0.2583 | 0.096 |
| 0.2666 | 0.096 |
| 0.2750 | 0.080 |
| 0.2833 | 0.080 |

MS30D rec. hd
" , nvm

| | |
|---|---|
| 0.2916 | 0.080 |
| 0.3000 | 0.080 |
| 0.3083 | 0.064 |
| 0.3166 | 0.064 |
| 0.3250 | 0.064 |
| 0.3333 | 0.064 |
| 0.3500 | 0.048 |
| 0.3666 | 0.032 |
| 0.3833 | 0.032 |
| 0.4000 | 0.016 |
| 0.4166 | 0.000 |
| 0.4333 | -0.016 |
| 0.4500 | -0.016 |
| 0.4666 | -0.016 |
| 0.4833 | -0.032 |
| 0.5000 | -0.032 |
| 0.5166 | -0.032 |
| 0.5333 | -0.032 |
| 0.5500 | -0.016 |
| 0.5666 | -0.032 |
| 0.5833 | -0.016 |
| 0.6000 | -0.016 |
| 0.6166 | -0.032 |
| 0.6333 | -0.032 |
| 0.6500 | -0.016 |
| 0.6666 | -0.016 |
| 0.6833 | -0.016 |
| 0.7000 | -0.016 |
| 0.7166 | -0.032 |
| 0.7333 | -0.016 |
| 0.7500 | -0.016 |
| 0.7666 | -0.032 |
| 0.7833 | -0.032 |
| 0.8000 | -0.016 |
| 0.8166 | -0.016 |
| 0.8333 | -0.032 |
| 0.8500 | -0.016 |
| 0.8666 | -0.032 |
| 0.8833 | -0.016 |
| 0.9000 | -0.016 |
| 0.9166 | -0.032 |
| 0.9333 | -0.032 |
| 0.9500 | -0.032 |
| 0.9666 | -0.016 |
| 0.9833 | -0.016 |
| 1.0000 | -0.016 |
| 1.2000 | -0.016 |
| 1.4000 | -0.032 |
| 1.6000 | -0.016 |
| 1.8000 | -0.016 |
| 2.0000 | -0.016 |
| 2.2000 | -0.032 |
| 2.4000 | -0.016 |
| 2.6000 | -0.016 |
| 2.8000 | -0.016 |
| 3.0000 | -0.016 |
| 3.2000 | -0.016 |
| 3.4000 | -0.016 |
| 3.6000 | -0.016 |
| 3.8000 | -0.016 |

| | |
|---|---|
| 4.0000 | -0.016 |
| 4.2000 | -0.016 |
| 4.4000 | -0.016 |
| 4.6000 | -0.016 |
| 4.8000 | -0.016 |
| 5.0000 | -0.016 |
| 5.2000 | -0.016 |
| 5.4000 | -0.016 |
| 5.6000 | -0.016 |
| 5.8000 | -0.016 |
| 6.0000 | -0.016 |
| 6.2000 | -0.016 |
| 6.4000 | -0.016 |
| 6.6000 | -0.016 |
| 6.8000 | -0.016 |
| 7.0000 | -0.016 |
| 7.2000 | -0.016 |
| 7.4000 | -0.016 |
| 7.6000 | -0.016 |
| 7.8000 | -0.016 |
| 8.0000 | -0.016 |
| 8.2000 | -0.016 |
| 8.4000 | -0.016 |
| 8.6000 | -0.016 |
| 8.8000 | -0.016 |
| 9.0000 | -0.016 |
| 9.2000 | -0.016 |
| 9.4000 | -0.016 |
| 9.6000 | -0.016 |
| 9.8000 | -0.016 |
| 10.0000 | -0.032 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-31S

MS31IDD

file improperly named
it should be
MS31SDD.hd
&
MS31SDD.NAN

SE2000
Environmental Logger
01/19 16:21

Unit# 2000 Test 0

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS31S

Reference 0.000
PSI at Ref. 5.749
SG 1.000
Linearity 0.039
Scale factor 9.868
Offset -0.009
Delay mSEC 50.000

Step 0 01/08 15:41:20

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 5.963 |
| 0.0083 | 5.960 |
| 0.0166 | 5.963 |
| 0.0250 | 6.178 |
| 0.0333 | 6.160 |
| 0.0416 | 6.234 |
| 0.0500 | 6.312 |
| 0.0583 | 6.344 |
| 0.0666 | 6.337 |
| 0.0750 | 6.341 |
| 0.0833 | 6.341 |
| 0.0916 | 6.344 |
| 0.1000 | 6.350 |
| 0.1083 | 6.350 |
| 0.1166 | 6.353 |
| 0.1250 | 6.356 |
| 0.1333 | 6.359 |
| 0.1416 | 6.381 |
| 0.1500 | 6.431 |
| 0.1583 | 6.503 |
| 0.1666 | 6.549 |
| 0.1750 | 6.615 |
| 0.1833 | 6.659 |
| 0.1916 | 6.684 |
| 0.2000 | 6.702 |
| 0.2083 | 6.712 |

| | |
|---|---|
| 0.2166 | 6.718 |
| 0.2250 | 6.721 |
| 0.2333 | 6.724 |
| 0.2416 | 6.727 |
| 0.2500 | 6.727 |
| 0.2583 | 6.730 |
| 0.2666 | 6.737 |
| 0.2750 | 6.733 |
| 0.2833 | 6.740 |
| 0.2916 | 6.740 |
| 0.3000 | 6.740 |
| 0.3083 | 6.740 |
| 0.3166 | 6.740 |
| 0.3250 | 6.743 |
| 0.3333 | 6.746 |
| 0.3500 | 6.746 |
| 0.3666 | 6.749 |
| 0.3833 | 6.752 |
| 0.4000 | 6.752 |
| 0.4166 | 6.752 |
| 0.4333 | 6.755 |
| 0.4500 | 6.755 |
| 0.4666 | 6.755 |
| 0.4833 | 6.758 |
| 0.5000 | 6.758 |
| 0.5166 | 6.761 |
| 0.5333 | 6.761 |
| 0.5500 | 6.765 |
| 0.5666 | 6.761 |
| 0.5833 | 6.761 |
| 0.6000 | 6.761 |
| 0.6166 | 6.765 |
| 0.6333 | 6.765 |
| 0.6500 | 6.765 |
| 0.6666 | 6.765 |
| 0.6833 | 6.768 |
| 0.7000 | 6.768 |
| 0.7166 | 6.771 |
| 0.7333 | 6.768 |
| 0.7500 | 6.771 |
| 0.7666 | 6.768 |
| 0.7833 | 6.771 |
| 0.8000 | 6.771 |
| 0.8166 | 6.771 |
| 0.8333 | 6.771 |
| 0.8500 | 6.771 |
| 0.8666 | 6.771 |
| 0.8833 | 6.771 |
| 0.9000 | 6.771 |
| 0.9166 | 6.774 |
| 0.9333 | 6.774 |

| | |
|---|---|
| 0.9500 | 6.774 |
| 0.9666 | 6.774 |
| 0.9833 | 6.777 |
| 1.0000 | 6.777 |
| 1.2000 | 6.780 |
| 1.4000 | 6.780 |
| 1.6000 | 6.786 |
| 1.8000 | 6.786 |
| 2.0000 | 6.790 |
| 2.2000 | 6.793 |
| 2.4000 | 6.793 |
| 2.6000 | 6.793 |
| 2.8000 | 6.793 |
| 3.0000 | 6.796 |
| 3.2000 | 6.799 |
| 3.4000 | 6.799 |
| 3.6000 | 6.802 |
| 3.8000 | 6.799 |
| 4.0000 | 6.802 |
| 4.2000 | 6.805 |
| 4.4000 | 6.802 |
| 4.6000 | 6.805 |
| 4.8000 | 6.805 |
| 5.0000 | 6.805 |
| 5.2000 | 6.805 |
| 5.4000 | 6.808 |
| 5.6000 | 6.808 |
| 5.8000 | 6.808 |
| 6.0000 | 6.808 |
| 6.2000 | 6.808 |
| 6.4000 | 6.808 |
| 6.6000 | 6.808 |
| 6.8000 | 6.811 |
| 7.0000 | 6.811 |
| 7.2000 | 6.811 |
| 7.4000 | 6.811 |
| 7.6000 | 6.815 |
| 7.8000 | 6.815 |
| 8.0000 | 6.811 |
| 8.2000 | 6.811 |
| 8.4000 | 6.815 |
| 8.6000 | 6.815 |
| 8.8000 | 6.815 |
| 9.0000 | 6.815 |
| 9.2000 | 6.815 |
| 9.4000 | 6.815 |
| 9.6000 | 6.818 |
| 9.8000 | 6.818 |
| 10.0000 | 6.818 |
| 12.0000 | 6.824 |
| 14.0000 | 6.827 |

| | |
|---|---|
| 16.0000 | 6.830 |
| 18.0000 | 6.830 |
| 20.0000 | 6.830 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-31S

MS31~~1~~REC ← File improperly Named it should read. MS31SREC

S

SE2000
Environmental Logger
01/19 16:19

Unit# 2000 Test 0

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS31S

Reference 0.000
PSI at Ref. 5.749
SG 1.000
Linearity 0.039
Scale factor 9.868
Offset -0.009
Delay mSEC 50.000

Step 1 01/08 16:01:57

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 6.565 |
| 0.0083 | 6.415 |
| 0.0166 | 6.331 |
| 0.0250 | 6.228 |
| 0.0333 | 6.200 |
| 0.0416 | 6.160 |
| 0.0500 | 6.132 |
| 0.0583 | 6.113 |
| 0.0666 | 6.094 |
| 0.0750 | 6.079 |
| 0.0833 | 6.066 |
| 0.0916 | 6.057 |
| 0.1000 | 6.047 |
| 0.1083 | 6.041 |
| 0.1166 | 6.035 |
| 0.1250 | 6.029 |
| 0.1333 | 6.026 |
| 0.1416 | 6.019 |
| 0.1500 | 6.016 |
| 0.1583 | 6.013 |
| 0.1666 | 6.010 |
| 0.1750 | 6.010 |
| 0.1833 | 6.007 |
| 0.1916 | 6.004 |
| 0.2000 | 6.001 |
| 0.2083 | 6.001 |

| | |
|---|---|
| 0.2166 | 6.001 |
| 0.2250 | 5.997 |
| 0.2333 | 5.997 |
| 0.2416 | 5.994 |
| 0.2500 | 5.994 |
| 0.2583 | 5.994 |
| 0.2666 | 5.991 |
| 0.2750 | 5.991 |
| 0.2833 | 5.991 |
| 0.2916 | 5.988 |
| 0.3000 | 5.988 |
| 0.3083 | 5.988 |
| 0.3166 | 5.985 |
| 0.3250 | 5.988 |
| 0.3333 | 5.988 |
| 0.3500 | 5.985 |
| 0.3666 | 5.985 |
| 0.3833 | 5.982 |
| 0.4000 | 5.982 |
| 0.4166 | 5.979 |
| 0.4333 | 5.979 |
| 0.4500 | 5.979 |
| 0.4666 | 5.979 |
| 0.4833 | 5.979 |
| 0.5000 | 5.976 |
| 0.5166 | 5.976 |
| 0.5333 | 5.976 |
| 0.5500 | 5.976 |
| 0.5666 | 5.976 |
| 0.5833 | 5.972 |
| 0.6000 | 5.976 |
| 0.6166 | 5.994 |
| 0.6333 | 5.991 |
| 0.6500 | 5.979 |
| 0.6666 | 5.976 |
| 0.6833 | 5.976 |
| 0.7000 | 5.972 |
| 0.7166 | 5.972 |
| 0.7333 | 5.972 |
| 0.7500 | 5.972 |
| 0.7666 | 5.969 |
| 0.7833 | 5.969 |
| 0.8000 | 5.972 |
| 0.8166 | 5.969 |
| 0.8333 | 5.972 |
| 0.8500 | 5.969 |
| 0.8666 | 5.969 |
| 0.8833 | 5.969 |
| 0.9000 | 5.969 |
| 0.9166 | 5.969 |
| 0.9333 | 5.969 |

| | |
|---|---|
| 0.9500 | 5.969 |
| 0.9666 | 5.969 |
| 0.9833 | 5.969 |
| 1.0000 | 5.969 |
| 1.2000 | 5.966 |
| 1.4000 | 5.963 |
| 1.6000 | 5.804 |
| 1.8000 | 5.857 |
| 2.0000 | 6.284 |
| 2.2000 | 5.898 |
| 2.4000 | 6.447 |
| 2.6000 | 6.447 |
| 2.8000 | 6.016 |
| 3.0000 | 6.001 |
| 3.2000 | 6.001 |
| 3.4000 | 5.997 |
| 3.6000 | 5.997 |
| 3.8000 | 5.994 |
| 4.0000 | 5.994 |
| 4.2000 | 5.994 |
| 4.4000 | 5.991 |
| 4.6000 | 5.991 |
| 4.8000 | 5.991 |
| 5.0000 | 5.991 |
| 5.2000 | 5.991 |
| 5.4000 | 5.991 |
| 5.6000 | 5.991 |
| 5.8000 | 5.988 |
| 6.0000 | 5.988 |
| 6.2000 | 5.988 |
| 6.4000 | 5.988 |
| 6.6000 | 5.988 |
| 6.8000 | 5.988 |
| 7.0000 | 5.988 |
| 7.2000 | 5.988 |
| 7.4000 | 5.988 |
| 7.6000 | 6.153 |
| 7.8000 | 5.180 |
| 8.0000 | 14.664 |
| 8.2000 | 14.664 |
| 8.4000 | 14.664 |
| 8.6000 | 14.664 |
| 8.8000 | 14.664 |
| 9.0000 | 14.664 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-31I

SE2000
Environmental Logger
01/19 16:13

Unit# 2000 Test 1

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS31I

Reference 0.000
PSI at Ref. 29.972
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

Step 0 01/08 18:31:26

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.000 |
| 0.0083 | 0.127 |
| 0.0166 | 0.415 |
| 0.0250 | 0.558 |
| 0.0333 | 0.287 |
| 0.0416 | 0.590 |
| 0.0500 | 0.750 |
| 0.0583 | 0.814 |
| 0.0666 | 0.766 |
| 0.0750 | 1.229 |
| 0.0833 | 1.213 |
| 0.0916 | 1.325 |
| 0.1000 | 1.516 |
| 0.1083 | 1.660 |
| 0.1166 | 1.868 |
| 0.1250 | 2.027 |
| 0.1333 | 2.171 |
| 0.1416 | 2.331 |
| 0.1500 | 2.458 |
| 0.1583 | 2.618 |
| 0.1666 | 2.762 |
| 0.1750 | 2.858 |
| 0.1833 | 3.033 |
| 0.1916 | 3.113 |
| 0.2000 | 3.241 |
| 0.2083 | 3.384 |

| | |
|---|---|
| 0.2166 | 3.480 |
| 0.2250 | 3.624 |
| 0.2333 | 3.816 |
| 0.2416 | 3.832 |
| 0.2500 | 3.927 |
| 0.2583 | 3.943 |
| 0.2666 | 4.151 |
| 0.2750 | 4.231 |
| 0.2833 | 4.326 |
| 0.2916 | 4.406 |
| 0.3000 | 4.502 |
| 0.3083 | 4.598 |
| 0.3166 | 4.694 |
| 0.3250 | 4.758 |
| 0.3333 | 4.837 |
| 0.3500 | 5.029 |
| 0.3666 | 5.157 |
| 0.3833 | 5.284 |
| 0.4000 | 5.412 |
| 0.4166 | 5.508 |
| 0.4333 | 5.683 |
| 0.4500 | 5.779 |
| 0.4666 | 5.843 |
| 0.4833 | 5.987 |
| 0.5000 | 6.051 |
| 0.5166 | 6.146 |
| 0.5333 | 6.274 |
| 0.5500 | 6.322 |
| 0.5666 | 6.434 |
| 0.5833 | 6.482 |
| 0.6000 | 6.546 |
| 0.6166 | 6.625 |
| 0.6333 | 6.705 |
| 0.6500 | 6.737 |
| 0.6666 | 6.817 |
| 0.6833 | 6.881 |
| 0.7000 | 6.881 |
| 0.7166 | 6.961 |
| 0.7333 | 7.024 |
| 0.7500 | 7.040 |
| 0.7666 | 7.120 |
| 0.7833 | 7.152 |
| 0.8000 | 7.168 |
| 0.8166 | 7.264 |
| 0.8333 | 7.168 |
| 0.8500 | 7.312 |
| 0.8666 | 7.296 |
| 0.8833 | 7.328 |
| 0.9000 | 7.360 |
| 0.9166 | 7.424 |
| 0.9333 | 7.424 |

| | |
|---|---|
| 0.9500 | 7.456 |
| 0.9666 | 7.440 |
| 0.9833 | 7.503 |
| 1.0000 | 7.503 |
| 1.2000 | 7.711 |
| 1.4000 | 7.823 |
| 1.6000 | 7.887 |
| 1.8000 | 7.918 |
| 2.0000 | 7.902 |
| 2.2000 | 7.966 |
| 2.4000 | 7.966 |
| 2.6000 | 8.030 |
| 2.8000 | 7.998 |
| 3.0000 | 7.998 |
| 3.2000 | 7.918 |
| 3.4000 | 8.030 |
| 3.6000 | 7.998 |
| 3.8000 | 7.982 |
| 4.0000 | 7.982 |
| 4.2000 | 8.014 |
| 4.4000 | 8.030 |
| 4.6000 | 8.014 |
| 4.8000 | 8.078 |
| 5.0000 | 8.078 |
| 5.2000 | 8.062 |
| 5.4000 | 8.078 |
| 5.6000 | 8.110 |
| 5.8000 | 8.078 |
| 6.0000 | 8.094 |
| 6.2000 | 8.094 |
| 6.4000 | 8.078 |
| 6.6000 | 8.094 |
| 6.8000 | 8.110 |
| 7.0000 | 8.142 |
| 7.2000 | 8.126 |
| 7.4000 | 8.158 |
| 7.6000 | 8.126 |
| 7.8000 | 8.126 |
| 8.0000 | 8.158 |
| 8.2000 | 8.190 |
| 8.4000 | 8.174 |
| 8.6000 | 8.142 |
| 8.8000 | 8.142 |
| 9.0000 | 8.174 |
| 9.2000 | 8.126 |
| 9.4000 | 8.158 |
| 9.6000 | 8.158 |
| 9.8000 | 8.142 |
| 10.0000 | 8.126 |
| 12.0000 | 8.158 |
| 14.0000 | 8.206 |

| | |
|---|---|
| 16.0000 | 8.190 |
| 18.0000 | 8.238 |
| 20.0000 | 8.238 |
| 22.0000 | 8.222 |
| 24.0000 | 8.270 |
| 26.0000 | 8.254 |
| 28.0000 | 8.254 |
| 30.0000 | 8.254 |
| 32.0000 | 8.286 |
| 34.0000 | 8.302 |
| 36.0000 | 8.286 |
| 38.0000 | 8.302 |
| 40.0000 | 8.286 |
| 42.0000 | 8.286 |
| 44.0000 | 8.318 |
| 46.0000 | 8.302 |
| 48.0000 | 8.302 |
| 50.0000 | 8.318 |
| 52.0000 | 8.286 |
| 54.0000 | 8.254 |
| 56.0000 | 8.222 |
| 58.0000 | 8.206 |
| 60.0000 | 8.238 |
| 62.0000 | 8.190 |
| 64.0000 | 8.142 |
| 66.0000 | 8.094 |
| 68.0000 | 8.030 |
| 70.0000 | 7.998 |
| 72.0000 | 7.950 |
| 74.0000 | 7.918 |
| 76.0000 | 7.871 |
| 78.0000 | 7.855 |
| 80.0000 | 7.823 |
| 82.0000 | 7.807 |
| 84.0000 | 7.743 |
| 86.0000 | 7.711 |
| 88.0000 | 7.695 |
| 90.0000 | 7.663 |
| 92.0000 | 7.647 |
| 94.0000 | 7.599 |
| 96.0000 | 7.583 |
| 98.0000 | 7.535 |
| 100.000 | 7.519 |
| 105.000 | 7.471 |
| 110.000 | 7.360 |
| 115.000 | 7.312 |
| 120.000 | 7.248 |
| 125.000 | 7.152 |
| 130.000 | 7.136 |
| 135.000 | 7.104 |
| 140.000 | 7.009 |

| | |
|---|---|
| 145.000 | 6.993 |
| 150.000 | 6.929 |
| 155.000 | 6.849 |
| 160.000 | 6.801 |
| 165.000 | 6.769 |
| 170.000 | 6.769 |
| 175.000 | 6.753 |
| 180.000 | 6.737 |
| 185.000 | 6.721 |
| 190.000 | 6.753 |
| 195.000 | 6.705 |
| 200.000 | 6.705 |
| 205.000 | 6.753 |
| 210.000 | 6.737 |
| 215.000 | 6.753 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-31I

MS31IREC

SE2000
Environmental Logger
01/19 16:11

Unit# 2000 Test 1

Setups: INPUT 1

| | |
|---|---|
| Type | Level (F) |
| Mode | TOC |
| I.D. | MS31I |

| | |
|---|---|
| Reference | 0.000 |
| PSI at Ref. | 29.972 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.530 |
| Offset | 0.520 |
| Delay mSEC | 50.000 |

Step 1 01/08 22:08:38

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 6.753 |
| 0.0083 | 6.705 |
| 0.0166 | 6.705 |
| 0.0250 | 6.721 |
| 0.0333 | 6.737 |
| 0.0416 | 5.045 |
| 0.0500 | 5.045 |
| 0.0583 | 5.891 |
| 0.0666 | 5.779 |
| 0.0750 | 5.524 |
| 0.0833 | 5.173 |
| 0.0916 | 4.853 |
| 0.1000 | 4.566 |
| 0.1083 | 4.279 |
| 0.1166 | 4.007 |
| 0.1250 | 3.704 |
| 0.1333 | 3.448 |
| 0.1416 | 3.193 |
| 0.1500 | 2.969 |
| 0.1583 | 2.762 |
| 0.1666 | 2.570 |
| 0.1750 | 2.347 |
| 0.1833 | 2.171 |
| 0.1916 | 1.916 |
| 0.2000 | 1.740 |
| 0.2083 | 1.516 |

| | |
|---|---|
| 0.2166 | 1.469 |
| 0.2250 | 1.309 |
| 0.2333 | 1.149 |
| 0.2416 | 1.005 |
| 0.2500 | 0.846 |
| 0.2583 | 0.718 |
| 0.2666 | 0.606 |
| 0.2750 | 0.479 |
| 0.2833 | 0.367 |
| 0.2916 | 0.255 |
| 0.3000 | 0.143 |
| 0.3083 | 0.063 |
| 0.3166 | -0.047 |
| 0.3250 | -0.111 |
| 0.3333 | -0.191 |
| 0.3500 | -0.335 |
| 0.3666 | -0.463 |
| 0.3833 | -0.558 |
| 0.4000 | -0.638 |
| 0.4166 | -0.702 |
| 0.4333 | -0.750 |
| 0.4500 | -0.798 |
| 0.4666 | -0.846 |
| 0.4833 | -0.878 |
| 0.5000 | -0.910 |
| 0.5166 | -0.942 |
| 0.5333 | -0.974 |
| 0.5500 | -1.005 |
| 0.5666 | -1.037 |
| 0.5833 | -1.069 |
| 0.6000 | -1.085 |
| 0.6166 | -1.117 |
| 0.6333 | -1.133 |
| 0.6500 | -1.165 |
| 0.6666 | -1.181 |
| 0.6833 | -1.197 |
| 0.7000 | -1.229 |
| 0.7166 | -1.229 |
| 0.7333 | -1.261 |
| 0.7500 | -1.277 |
| 0.7666 | -1.293 |
| 0.7833 | -1.309 |
| 0.8000 | -1.309 |
| 0.8166 | -1.341 |
| 0.8333 | -1.341 |
| 0.8500 | -1.357 |
| 0.8666 | -1.373 |
| 0.8833 | -1.389 |
| 0.9000 | -1.389 |
| 0.9166 | -1.405 |
| 0.9333 | -1.405 |

| | |
|---|---|
| 0.9500 | -1.421 |
| 0.9666 | -1.437 |
| 0.9833 | -1.437 |
| 1.0000 | -1.453 |
| 1.2000 | -1.532 |
| 1.4000 | -1.580 |
| 1.6000 | -1.628 |
| 1.8000 | -1.644 |
| 2.0000 | -1.660 |
| 2.2000 | -1.676 |
| 2.4000 | -1.676 |
| 2.6000 | -1.676 |
| 2.8000 | -1.692 |
| 3.0000 | -1.692 |
| 3.2000 | -1.692 |
| 3.4000 | -1.692 |
| 3.6000 | -1.708 |
| 3.8000 | -1.708 |
| 4.0000 | -1.708 |
| 4.2000 | -1.708 |
| 4.4000 | -1.708 |
| 4.6000 | -1.708 |
| 4.8000 | -1.708 |
| 5.0000 | -1.724 |
| 5.2000 | -1.708 |
| 5.4000 | -1.708 |
| 5.6000 | -1.724 |
| 5.8000 | -1.724 |
| 6.0000 | -1.724 |
| 6.2000 | -1.708 |
| 6.4000 | -1.724 |
| 6.6000 | -1.724 |
| 6.8000 | -1.724 |
| 7.0000 | -1.708 |
| 7.2000 | -1.724 |
| 7.4000 | -1.724 |
| 7.6000 | -1.724 |
| 7.8000 | -1.724 |
| 8.0000 | -1.724 |
| 8.2000 | -1.724 |
| 8.4000 | -1.740 |
| 8.6000 | -1.740 |
| 8.8000 | -1.740 |
| 9.0000 | -1.724 |
| 9.2000 | -1.740 |
| 9.4000 | -1.724 |
| 9.6000 | -1.740 |
| 9.8000 | -1.724 |
| 10.0000 | -1.740 |
| 12.0000 | -1.724 |
| 14.0000 | -1.740 |

| | |
|---|---|
| 16.0000 | -1.740 |
| 18.0000 | -1.740 |
| 20.0000 | -1.740 |
| 22.0000 | -1.740 |
| 24.0000 | -1.740 |
| 26.0000 | -1.740 |
| 28.0000 | -1.740 |
| 30.0000 | -1.756 |
| 32.0000 | -1.740 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-31D

HAND DATA ONLY

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-31D

HAND DATA ONLY

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-32S

SE2000
Environmental Logger
01/19 15:48

Unit# 2000 Test 5

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | TOC |
| I.D. | MS32S |

| | |
|---|---|
| Reference | 0.000 |
| PSI at Ref. | 2.561 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

Step 0 01/12 18:54:46

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.003 |
| 0.0083 | 0.003 |
| 0.0166 | 0.087 |
| 0.0250 | 0.143 |
| 0.0333 | 0.158 |
| 0.0416 | 0.218 |
| 0.0500 | 0.205 |
| 0.0583 | 0.187 |
| 0.0666 | 0.174 |
| 0.0750 | 0.168 |
| 0.0833 | 0.162 |
| 0.0916 | 0.158 |
| 0.1000 | 0.155 |
| 0.1083 | 0.158 |
| 0.1166 | 0.118 |
| 0.1250 | 0.152 |
| 0.1333 | 0.165 |
| 0.1416 | 0.180 |
| 0.1500 | 0.190 |
| 0.1583 | 0.199 |
| 0.1666 | 0.211 |
| 0.1750 | 0.224 |
| 0.1833 | 0.240 |
| 0.1916 | 0.252 |
| 0.2000 | 0.286 |
| 0.2083 | 0.321 |

| | |
|---|---|
| 0.2166 | 0.427 |
| 0.2250 | 0.476 |
| 0.2333 | 0.545 |
| 0.2416 | 0.576 |
| 0.2500 | 0.595 |
| 0.2583 | 0.601 |
| 0.2666 | 0.604 |
| 0.2750 | 0.595 |
| 0.2833 | 0.598 |
| 0.2916 | 0.595 |
| 0.3000 | 0.589 |
| 0.3083 | 0.598 |
| 0.3166 | 0.589 |
| 0.3250 | 0.601 |
| 0.3333 | 0.595 |
| 0.3500 | 0.598 |
| 0.3666 | 0.607 |
| 0.3833 | 0.607 |
| 0.4000 | 0.595 |
| 0.4166 | 0.604 |
| 0.4333 | 0.610 |
| 0.4500 | 0.607 |
| 0.4666 | 0.604 |
| 0.4833 | 0.617 |
| 0.5000 | 0.595 |
| 0.5166 | 0.614 |
| 0.5333 | 0.607 |
| 0.5500 | 0.610 |
| 0.5666 | 0.614 |
| 0.5833 | 0.610 |
| 0.6000 | 0.617 |
| 0.6166 | 0.614 |
| 0.6333 | 0.614 |
| 0.6500 | 0.620 |
| 0.6666 | 0.607 |
| 0.6833 | 0.623 |
| 0.7000 | 0.604 |
| 0.7166 | 0.626 |
| 0.7333 | 0.610 |
| 0.7500 | 0.623 |
| 0.7666 | 0.620 |
| 0.7833 | 0.607 |
| 0.8000 | 0.629 |
| 0.8166 | 0.623 |
| 0.8333 | 0.620 |
| 0.8500 | 0.626 |
| 0.8666 | 0.623 |
| 0.8833 | 0.632 |
| 0.9000 | 0.623 |
| 0.9166 | 0.617 |
| 0.9333 | 0.632 |

| | |
|---|---|
| 0.9500 | 0.623 |
| 0.9666 | 0.623 |
| 0.9833 | 0.629 |
| 1.0000 | 0.620 |
| 1.2000 | 0.635 |
| 1.4000 | 0.642 |
| 1.6000 | 0.645 |
| 1.8000 | 0.645 |
| 2.0000 | 0.645 |
| 2.2000 | 0.642 |
| 2.4000 | 0.645 |
| 2.6000 | 0.645 |
| 2.8000 | 0.651 |
| 3.0000 | 0.651 |
| 3.2000 | 0.657 |
| 3.4000 | 0.651 |
| 3.6000 | 0.657 |
| 3.8000 | 0.663 |
| 4.0000 | 0.654 |
| 4.2000 | 0.657 |
| 4.4000 | 0.657 |
| 4.6000 | 0.663 |
| 4.8000 | 0.663 |
| 5.0000 | 0.660 |
| 5.2000 | 0.660 |
| 5.4000 | 0.660 |
| 5.6000 | 0.670 |
| 5.8000 | 0.663 |
| 6.0000 | 0.667 |
| 6.2000 | 0.667 |
| 6.4000 | 0.670 |
| 6.6000 | 0.673 |
| 6.8000 | 0.670 |
| 7.0000 | 0.667 |
| 7.2000 | 0.663 |
| 7.4000 | 0.667 |
| 7.6000 | 0.667 |
| 7.8000 | 0.676 |
| 8.0000 | 0.670 |
| 8.2000 | 0.673 |
| 8.4000 | 0.676 |
| 8.6000 | 0.676 |
| 8.8000 | 0.670 |
| 9.0000 | 0.673 |
| 9.2000 | 0.679 |
| 9.4000 | 0.673 |
| 9.6000 | 0.679 |
| 9.8000 | 0.679 |
| 10.0000 | 0.673 |
| 12.0000 | 0.688 |
| 14.0000 | 0.692 |

| | |
|---|---|
| 16.0000 | 0.695 |
| 18.0000 | 0.692 |
| 20.0000 | 0.698 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-32S

SE2000
Environmental Logger
01/19 15:45

Unit# 2000 Test 5

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS32S

Reference 0.000
PSI at Ref. 2.561
SG 1.000
Linearity 0.039
Scale factor 9.868
Offset -0.009
Delay mSEC 50.000

Step 1 01/12 19:15:15

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.688 |
| 0.0083 | 0.695 |
| 0.0166 | 0.688 |
| 0.0250 | 0.464 |
| 0.0333 | 0.264 |
| 0.0416 | 0.255 |
| 0.0500 | 0.046 |
| 0.0583 | 0.118 |
| 0.0666 | 0.071 |
| 0.0750 | 0.068 |
| 0.0833 | 0.068 |
| 0.0916 | 0.059 |
| 0.1000 | 0.056 |
| 0.1083 | 0.056 |
| 0.1166 | 0.052 |
| 0.1250 | 0.052 |
| 0.1333 | 0.049 |
| 0.1416 | 0.049 |
| 0.1500 | 0.049 |
| 0.1583 | 0.049 |
| 0.1666 | 0.052 |
| 0.1750 | 0.052 |
| 0.1833 | 0.049 |
| 0.1916 | 0.043 |
| 0.2000 | 0.043 |
| 0.2083 | 0.040 |

| | |
|---|---|
| 0.2166 | 0.040 |
| 0.2250 | 0.040 |
| 0.2333 | 0.037 |
| 0.2416 | 0.040 |
| 0.2500 | 0.040 |
| 0.2583 | 0.037 |
| 0.2666 | 0.037 |
| 0.2750 | 0.037 |
| 0.2833 | 0.037 |
| 0.2916 | 0.034 |
| 0.3000 | 0.034 |
| 0.3083 | 0.034 |
| 0.3166 | 0.034 |
| 0.3250 | 0.034 |
| 0.3333 | 0.034 |
| 0.3500 | 0.034 |
| 0.3666 | 0.031 |
| 0.3833 | 0.031 |
| 0.4000 | 0.031 |
| 0.4166 | 0.028 |
| 0.4333 | 0.028 |
| 0.4500 | 0.028 |
| 0.4666 | 0.028 |
| 0.4833 | 0.028 |
| 0.5000 | 0.024 |
| 0.5166 | 0.024 |
| 0.5333 | 0.024 |
| 0.5500 | 0.024 |
| 0.5666 | 0.024 |
| 0.5833 | 0.024 |
| 0.6000 | 0.024 |
| 0.6166 | 0.021 |
| 0.6333 | 0.021 |
| 0.6500 | 0.021 |
| 0.6666 | 0.021 |
| 0.6833 | 0.021 |
| 0.7000 | 0.021 |
| 0.7166 | 0.021 |
| 0.7333 | 0.021 |
| 0.7500 | 0.018 |
| 0.7666 | 0.018 |
| 0.7833 | 0.018 |
| 0.8000 | 0.018 |
| 0.8166 | 0.018 |
| 0.8333 | 0.018 |
| 0.8500 | 0.018 |
| 0.8666 | 0.018 |
| 0.8833 | 0.015 |
| 0.9000 | 0.015 |
| 0.9166 | 0.015 |
| 0.9333 | 0.015 |

| | |
|---|---|
| 0.9500 | 0.015 |
| 0.9666 | 0.015 |
| 0.9833 | 0.015 |
| 1.0000 | 0.015 |
| 1.2000 | 0.012 |
| 1.4000 | 0.009 |
| 1.6000 | 0.009 |
| 1.8000 | 0.006 |
| 2.0000 | 0.006 |
| 2.2000 | 0.003 |
| 2.4000 | 0.003 |
| 2.6000 | 0.000 |
| 2.8000 | 0.000 |
| 3.0000 | 0.000 |
| 3.2000 | -0.003 |
| 3.4000 | -0.006 |
| 3.6000 | -0.006 |
| 3.8000 | -0.006 |
| 4.0000 | -0.006 |
| 4.2000 | -0.009 |
| 4.4000 | -0.012 |
| 4.6000 | -0.009 |
| 4.8000 | -0.009 |
| 5.0000 | -0.012 |
| 5.2000 | -0.012 |
| 5.4000 | -0.015 |
| 5.6000 | -0.015 |
| 5.8000 | -0.018 |
| 6.0000 | -0.015 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-32I

SE2000
Environmental Logger
01/19 15:59

Unit# 2000 Test 3

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | TOC |
| I.D. | MS32I |
| Reference | 0.000 |
| PSI at Ref. | 24.442 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.530 |
| Offset | 0.520 |
| Delay mSEC | 50.000 |

Step 0 01/10 18:41:20

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -0.143 |
| 0.0083 | -0.159 |
| 0.0166 | -0.159 |
| 0.0250 | -0.159 |
| 0.0333 | -0.143 |
| 0.0416 | -0.143 |
| 0.0500 | -0.143 |
| 0.0583 | -0.159 |
| 0.0666 | -0.159 |
| 0.0750 | 0.095 |
| 0.0833 | 0.255 |
| 0.0916 | 0.287 |
| 0.1000 | 0.319 |
| 0.1083 | 0.399 |
| 0.1166 | 0.542 |
| 0.1250 | 0.734 |
| 0.1333 | 0.766 |
| 0.1416 | 0.861 |
| 0.1500 | 1.037 |
| 0.1583 | 1.197 |
| 0.1666 | 1.308 |
| 0.1750 | 1.420 |
| 0.1833 | 1.548 |
| 0.1916 | 1.675 |
| 0.2000 | 1.771 |
| 0.2083 | 1.851 |

| | |
|---|---|
| 0.2166 | 1.915 |
| 0.2250 | 1.963 |
| 0.2333 | 2.042 |
| 0.2416 | 2.106 |
| 0.2500 | 2.122 |
| 0.2583 | 2.202 |
| 0.2666 | 2.250 |
| 0.2750 | 2.298 |
| 0.2833 | 2.346 |
| 0.2916 | 2.378 |
| 0.3000 | 2.409 |
| 0.3083 | 2.457 |
| 0.3166 | 2.473 |
| 0.3250 | 2.521 |
| 0.3333 | 2.553 |
| 0.3500 | 2.617 |
| 0.3666 | 2.665 |
| 0.3833 | 2.713 |
| 0.4000 | 2.761 |
| 0.4166 | 2.808 |
| 0.4333 | 2.856 |
| 0.4500 | 2.888 |
| 0.4666 | 2.920 |
| 0.4833 | 2.952 |
| 0.5000 | 3.000 |
| 0.5166 | 3.016 |
| 0.5333 | 3.032 |
| 0.5500 | 3.064 |
| 0.5666 | 3.096 |
| 0.5833 | 3.112 |
| 0.6000 | 3.128 |
| 0.6166 | 3.160 |
| 0.6333 | 3.175 |
| 0.6500 | 3.191 |
| 0.6666 | 3.207 |
| 0.6833 | 3.223 |
| 0.7000 | 3.239 |
| 0.7166 | 3.255 |
| 0.7333 | 3.255 |
| 0.7500 | 3.271 |
| 0.7666 | 3.287 |
| 0.7833 | 3.303 |
| 0.8000 | 3.303 |
| 0.8166 | 3.319 |
| 0.8333 | 3.335 |
| 0.8500 | 3.335 |
| 0.8666 | 3.351 |
| 0.8833 | 3.367 |
| 0.9000 | 3.367 |
| 0.9166 | 3.383 |
| 0.9333 | 3.383 |

| | |
|---|---|
| 0.9500 | 3.383 |
| 0.9666 | 3.399 |
| 0.9833 | 3.399 |
| 1.0000 | 3.399 |
| 1.2000 | 3.495 |
| 1.4000 | 3.606 |
| 1.6000 | 3.654 |
| 1.8000 | 3.782 |
| 2.0000 | 3.926 |
| 2.2000 | 4.005 |
| 2.4000 | 4.069 |
| 2.6000 | 4.133 |
| 2.8000 | 4.181 |
| 3.0000 | 4.213 |
| 3.2000 | 4.261 |
| 3.4000 | 4.309 |
| 3.6000 | 4.356 |
| 3.8000 | 4.388 |
| 4.0000 | 4.420 |
| 4.2000 | 4.452 |
| 4.4000 | 4.500 |
| 4.6000 | 4.516 |
| 4.8000 | 4.548 |
| 5.0000 | 4.580 |
| 5.2000 | 4.596 |
| 5.4000 | 4.628 |
| 5.6000 | 4.644 |
| 5.8000 | 4.676 |
| 6.0000 | 4.692 |
| 6.2000 | 4.707 |
| 6.4000 | 4.723 |
| 6.6000 | 4.755 |
| 6.8000 | 4.771 |
| 7.0000 | 4.787 |
| 7.2000 | 4.803 |
| 7.4000 | 4.819 |
| 7.6000 | 4.835 |
| 7.8000 | 4.851 |
| 8.0000 | 4.867 |
| 8.2000 | 4.867 |
| 8.4000 | 4.883 |
| 8.6000 | 4.899 |
| 8.8000 | 4.899 |
| 9.0000 | 4.915 |
| 9.2000 | 4.931 |
| 9.4000 | 4.947 |
| 9.6000 | 4.963 |
| 9.8000 | 4.963 |
| 10.0000 | 4.979 |
| 12.0000 | 5.043 |
| 14.0000 | 5.090 |

| | |
|---|---|
| 16.0000 | 5.106 |
| 18.0000 | 5.122 |
| 20.0000 | 5.138 |
| 22.0000 | 5.138 |
| 24.0000 | 5.122 |
| 26.0000 | 5.122 |
| 28.0000 | 5.106 |
| 30.0000 | 5.122 |
| 32.0000 | 5.106 |
| 34.0000 | 5.106 |
| 36.0000 | 5.090 |
| 38.0000 | 5.090 |
| 40.0000 | 5.106 |
| 42.0000 | 5.090 |
| 44.0000 | 5.090 |
| 46.0000 | 5.090 |
| 48.0000 | 5.075 |
| 50.0000 | 5.075 |
| 52.0000 | 5.075 |
| 54.0000 | 5.075 |
| 56.0000 | 5.075 |
| 58.0000 | 5.075 |
| 60.0000 | 5.043 |
| 62.0000 | 5.027 |
| 64.0000 | 5.027 |
| 66.0000 | 5.027 |
| 68.0000 | 5.011 |
| 70.0000 | 4.995 |
| 72.0000 | 4.995 |
| 74.0000 | 5.011 |
| 76.0000 | 5.011 |
| 78.0000 | 4.995 |
| 80.0000 | 5.011 |
| 82.0000 | 5.011 |
| 84.0000 | 5.011 |
| 86.0000 | 5.011 |
| 88.0000 | 5.011 |
| 90.0000 | 5.011 |
| 92.0000 | 5.011 |
| 94.0000 | 4.995 |
| 96.0000 | 5.011 |
| 98.0000 | 5.011 |
| 100.000 | 5.011 |
| 110.000 | 5.011 |
| 120.000 | 5.027 |
| 130.000 | 5.027 |
| 140.000 | 5.027 |
| 150.000 | 5.027 |
| 160.000 | 5.027 |
| 170.000 | 5.027 |
| 180.000 | 5.027 |

| | |
|---|---|
| 190.000 | 5.027 |
| 200.000 | 5.011 |
| 210.000 | 5.043 |
| 220.000 | 5.043 |
| 230.000 | 5.043 |
| 240.000 | 4.532 |
| 250.000 | 4.979 |
| 260.000 | 5.027 |
| 270.000 | 4.963 |
| 280.000 | 4.979 |
| 290.000 | 4.947 |
| 300.000 | 4.947 |
| 310.000 | 4.947 |
| 320.000 | 4.947 |
| 330.000 | 4.947 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-32I

SE2000
Environmental Logger
01/19 15:56

Unit# 2000 Test 3

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS32I

Reference 0.000
PSI at Ref. 24.442
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

Step 1 01/11 00:16:20

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 4.947 |
| 0.0083 | 4.947 |
| 0.0166 | 4.947 |
| 0.0250 | 4.947 |
| 0.0333 | 3.878 |
| 0.0416 | 3.511 |
| 0.0500 | 4.181 |
| 0.0583 | 4.181 |
| 0.0666 | 3.846 |
| 0.0750 | 3.495 |
| 0.0833 | 3.223 |
| 0.0916 | 2.984 |
| 0.1000 | 2.761 |
| 0.1083 | 2.537 |
| 0.1166 | 2.330 |
| 0.1250 | 2.154 |
| 0.1333 | 1.963 |
| 0.1416 | 1.803 |
| 0.1500 | 1.675 |
| 0.1583 | 1.532 |
| 0.1666 | 1.404 |
| 0.1750 | 1.308 |
| 0.1833 | 1.212 |
| 0.1916 | 1.101 |
| 0.2000 | 1.053 |
| 0.2083 | 0.973 |

| | |
|---|---|
| 0.2166 | 0.893 |
| 0.2250 | 0.813 |
| 0.2333 | 0.734 |
| 0.2416 | 0.686 |
| 0.2500 | 0.622 |
| 0.2583 | 0.574 |
| 0.2666 | 0.542 |
| 0.2750 | 0.478 |
| 0.2833 | 0.462 |
| 0.2916 | 0.446 |
| 0.3000 | 0.414 |
| 0.3083 | 0.399 |
| 0.3166 | 0.399 |
| 0.3250 | 0.383 |
| 0.3333 | 0.367 |
| 0.3500 | 0.367 |
| 0.3666 | 0.383 |
| 0.3833 | 0.383 |
| 0.4000 | 0.414 |
| 0.4166 | 0.446 |
| 0.4333 | 0.478 |
| 0.4500 | 0.510 |
| 0.4666 | 0.558 |
| 0.4833 | 0.590 |
| 0.5000 | 0.622 |
| 0.5166 | 0.670 |
| 0.5333 | 0.686 |
| 0.5500 | 0.718 |
| 0.5666 | 0.750 |
| 0.5833 | 0.766 |
| 0.6000 | 0.782 |
| 0.6166 | 0.782 |
| 0.6333 | 0.798 |
| 0.6500 | 0.798 |
| 0.6666 | 0.813 |
| 0.6833 | 0.813 |
| 0.7000 | 0.813 |
| 0.7166 | 0.829 |
| 0.7333 | 0.829 |
| 0.7500 | 0.829 |
| 0.7666 | 0.829 |
| 0.7833 | 0.829 |
| 0.8000 | 0.829 |
| 0.8166 | 0.829 |
| 0.8333 | 0.829 |
| 0.8500 | 0.813 |
| 0.8666 | 0.829 |
| 0.8833 | 0.813 |
| 0.9000 | 0.829 |
| 0.9166 | 0.813 |
| 0.9333 | 0.813 |

| | |
|---|---|
| 0.9500 | 0.813 |
| 0.9666 | 0.798 |
| 0.9833 | 0.798 |
| 1.0000 | 0.798 |
| 1.2000 | 0.734 |
| 1.4000 | 0.686 |
| 1.6000 | 0.638 |
| 1.8000 | 0.590 |
| 2.0000 | 0.542 |
| 2.2000 | 0.510 |
| 2.4000 | 0.478 |
| 2.6000 | 0.430 |
| 2.8000 | 0.399 |
| 3.0000 | 0.367 |
| 3.2000 | 0.335 |
| 3.4000 | 0.319 |
| 3.6000 | 0.287 |
| 3.8000 | 0.271 |
| 4.0000 | 0.239 |
| 4.2000 | 0.223 |
| 4.4000 | 0.191 |
| 4.6000 | 0.159 |
| 4.8000 | 0.159 |
| 5.0000 | 0.127 |
| 5.2000 | 0.111 |
| 5.4000 | 0.079 |
| 5.6000 | 0.079 |
| 5.8000 | 0.063 |
| 6.0000 | 0.047 |
| 6.2000 | 0.031 |
| 6.4000 | 0.015 |
| 6.6000 | 0.000 |
| 6.8000 | -0.015 |
| 7.0000 | -0.031 |
| 7.2000 | -0.063 |
| 7.4000 | -0.063 |
| 7.6000 | -0.079 |
| 7.8000 | -0.095 |
| 8.0000 | -0.111 |
| 8.2000 | -0.111 |
| 8.4000 | -0.127 |
| 8.6000 | -0.127 |
| 8.8000 | -0.143 |
| 9.0000 | -0.159 |
| 9.2000 | -0.159 |
| 9.4000 | -0.175 |
| 9.6000 | -0.191 |
| 9.8000 | -0.191 |
| 10.0000 | -0.191 |
| 12.0000 | -0.271 |
| 14.0000 | -0.319 |

| | |
|---|---|
| 16.0000 | -0.367 |
| 18.0000 | -0.399 |
| 20.0000 | -0.414 |
| 22.0000 | -0.430 |
| 24.0000 | -0.446 |
| 26.0000 | -0.462 |
| 28.0000 | -0.478 |
| 30.0000 | -0.478 |
| 32.0000 | -0.478 |
| 34.0000 | -0.478 |
| 36.0000 | -0.494 |
| 38.0000 | -0.494 |
| 40.0000 | -0.494 |
| 42.0000 | -0.494 |
| 44.0000 | -0.494 |
| 46.0000 | -0.494 |
| 48.0000 | -0.494 |
| 50.0000 | -0.510 |
| 52.0000 | -0.510 |
| 54.0000 | -0.494 |
| 56.0000 | -0.494 |
| 58.0000 | -0.510 |
| 60.0000 | -0.510 |
| 62.0000 | -0.510 |
| 64.0000 | -0.510 |
| 66.0000 | -0.510 |
| 68.0000 | -0.510 |
| 70.0000 | -0.510 |
| 72.0000 | -0.510 |
| 74.0000 | -0.510 |
| 76.0000 | -0.510 |
| 78.0000 | -0.526 |
| 80.0000 | -0.510 |
| 82.0000 | -0.526 |
| 84.0000 | -0.526 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-32D

SE2000
Environmental Logger
01/19 15:53

Unit# 2000 Test 4

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS32D

Reference 0.000
PSI at Ref. 12.326
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

Step 0 01/11 11:49:47

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.015 |
| 0.0083 | 0.015 |
| 0.0166 | 0.000 |
| 0.0250 | 0.015 |
| 0.0333 | 0.015 |
| 0.0416 | -0.031 |
| 0.0500 | 0.079 |
| 0.0583 | 0.175 |
| 0.0666 | 0.255 |
| 0.0750 | 0.334 |
| 0.0833 | 0.414 |
| 0.0916 | 0.605 |
| 0.1000 | 0.701 |
| 0.1083 | 0.845 |
| 0.1166 | 0.972 |
| 0.1250 | 1.147 |
| 0.1333 | 1.243 |
| 0.1416 | 1.419 |
| 0.1500 | 1.514 |
| 0.1583 | 1.626 |
| 0.1666 | 1.801 |
| 0.1750 | 1.833 |
| 0.1833 | 1.881 |
| 0.1916 | 2.072 |
| 0.2000 | 2.056 |
| 0.2083 | 2.152 |

| | |
|---|---|
| 0.2166 | 2.088 |
| 0.2250 | 2.232 |
| 0.2333 | 2.216 |
| 0.2416 | 2.279 |
| 0.2500 | 2.343 |
| 0.2583 | 2.311 |
| 0.2666 | 2.391 |
| 0.2750 | 2.423 |
| 0.2833 | 2.407 |
| 0.2916 | 2.439 |
| 0.3000 | 2.471 |
| 0.3083 | 2.503 |
| 0.3166 | 2.519 |
| 0.3250 | 2.519 |
| 0.3333 | 2.519 |
| 0.3500 | 2.582 |
| 0.3666 | 2.630 |
| 0.3833 | 2.646 |
| 0.4000 | 2.678 |
| 0.4166 | 2.694 |
| 0.4333 | 2.742 |
| 0.4500 | 2.726 |
| 0.4666 | 2.758 |
| 0.4833 | 2.790 |
| 0.5000 | 2.790 |
| 0.5166 | 2.774 |
| 0.5333 | 2.790 |
| 0.5500 | 2.837 |
| 0.5666 | 2.822 |
| 0.5833 | 2.837 |
| 0.6000 | 2.837 |
| 0.6166 | 2.822 |
| 0.6333 | 2.837 |
| 0.6500 | 2.885 |
| 0.6666 | 2.885 |
| 0.6833 | 2.837 |
| 0.7000 | 2.901 |
| 0.7166 | 2.885 |
| 0.7333 | 2.901 |
| 0.7500 | 2.917 |
| 0.7666 | 2.901 |
| 0.7833 | 2.869 |
| 0.8000 | 2.885 |
| 0.8166 | 2.933 |
| 0.8333 | 2.917 |
| 0.8500 | 2.933 |
| 0.8666 | 2.933 |
| 0.8833 | 2.965 |
| 0.9000 | 2.949 |
| 0.9166 | 2.965 |
| 0.9333 | 2.981 |

| | |
|---|---|
| 0.9500 | 2.933 |
| 0.9666 | 2.949 |
| 0.9833 | 2.949 |
| 1.0000 | 2.933 |
| 1.2000 | 2.933 |
| 1.4000 | 2.933 |
| 1.6000 | 2.885 |
| 1.8000 | 2.869 |
| 2.0000 | 2.837 |
| 2.2000 | 2.965 |
| 2.4000 | 2.933 |
| 2.6000 | 2.949 |
| 2.8000 | 2.981 |
| 3.0000 | 2.997 |
| 3.2000 | 2.981 |
| 3.4000 | 3.013 |
| 3.6000 | 2.997 |
| 3.8000 | 3.029 |
| 4.0000 | 3.029 |
| 4.2000 | 3.013 |
| 4.4000 | 3.013 |
| 4.6000 | 3.029 |
| 4.8000 | 3.013 |
| 5.0000 | 3.029 |
| 5.2000 | 3.029 |
| 5.4000 | 3.029 |
| 5.6000 | 3.013 |
| 5.8000 | 3.045 |
| 6.0000 | 2.997 |
| 6.2000 | 3.045 |
| 6.4000 | 3.045 |
| 6.6000 | 3.045 |
| 6.8000 | 3.045 |
| 7.0000 | 3.045 |
| 7.2000 | 3.029 |
| 7.4000 | 3.029 |
| 7.6000 | 3.061 |
| 7.8000 | 3.045 |
| 8.0000 | 3.045 |
| 8.2000 | 3.029 |
| 8.4000 | 3.029 |
| 8.6000 | 3.061 |
| 8.8000 | 3.045 |
| 9.0000 | 3.061 |
| 9.2000 | 3.077 |
| 9.4000 | 3.045 |
| 9.6000 | 3.045 |
| 9.8000 | 3.029 |
| 10.0000 | 3.029 |
| 12.0000 | 3.061 |
| 14.0000 | 3.093 |

| | |
|---|---|
| 16.0000 | 3.093 |
| 18.0000 | 3.140 |
| 20.0000 | 3.109 |
| 22.0000 | 3.109 |
| 24.0000 | 3.124 |
| 26.0000 | 3.124 |
| 28.0000 | 3.124 |
| 30.0000 | 3.124 |
| 32.0000 | 3.124 |
| 34.0000 | 3.124 |
| 36.0000 | 3.124 |
| 38.0000 | 3.109 |
| 40.0000 | 3.109 |
| 42.0000 | 3.140 |
| 44.0000 | 3.140 |
| 46.0000 | 3.109 |
| 48.0000 | 3.156 |
| 50.0000 | 3.140 |
| 52.0000 | 3.156 |
| 54.0000 | 3.124 |
| 56.0000 | 3.140 |
| 58.0000 | 3.156 |
| 60.0000 | 3.140 |
| 62.0000 | 3.156 |
| 64.0000 | 3.124 |
| 66.0000 | 3.156 |
| 68.0000 | 3.124 |
| 70.0000 | 3.172 |
| 72.0000 | 3.140 |
| 74.0000 | 3.156 |
| 76.0000 | 3.140 |
| 78.0000 | 3.124 |
| 80.0000 | 3.140 |
| 82.0000 | 3.140 |
| 84.0000 | 3.140 |
| 86.0000 | 3.140 |
| 88.0000 | 3.156 |
| 90.0000 | 3.140 |
| 92.0000 | 3.172 |
| 94.0000 | 3.140 |
| 96.0000 | 3.140 |
| 98.0000 | 3.140 |
| 100.000 | 3.140 |
| 110.000 | 3.140 |
| 120.000 | 3.156 |
| 130.000 | 3.140 |
| 140.000 | 3.156 |
| 150.000 | 3.156 |
| 160.000 | 3.156 |
| 170.000 | 3.140 |
| 180.000 | 3.156 |

| | |
|---|---|
| 190.000 | 3.140 |
| 200.000 | 3.140 |
| 210.000 | 3.140 |
| 220.000 | 3.140 |
| 230.000 | 3.156 |
| 240.000 | 3.140 |
| 250.000 | 3.140 |
| 260.000 | 3.156 |
| 270.000 | 3.109 |
| 280.000 | 3.109 |
| 290.000 | 3.061 |
| 300.000 | 3.077 |
| 310.000 | 3.093 |
| 320.000 | 3.093 |
| 330.000 | 3.124 |
| 340.000 | 3.109 |
| 350.000 | 3.109 |
| 360.000 | 3.093 |
| 370.000 | 3.140 |
| 380.000 | 3.124 |
| 390.000 | 3.109 |
| 400.000 | 3.109 |
| 410.000 | 3.140 |
| 420.000 | 3.140 |
| 430.000 | 3.109 |
| 440.000 | 3.124 |
| 450.000 | 3.140 |
| 460.000 | 3.124 |
| 470.000 | 3.140 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA RECOVERY DATA FOR MS-32D

SE2000
Environmental Logger
01/19 15:51

Unit# 2000 Test 4

Setups: INPUT 1
--- ---
Type Level (F)
Mode TOC
I.D. MS32D

Reference 0.000
PSI at Ref. 12.326
SG 1.000
Linearity 0.106
Scale factor 50.530
Offset 0.520
Delay mSEC 50.000

Step 1 01/11 19:41:35

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 3.093 |
| 0.0083 | 3.124 |
| 0.0166 | 3.109 |
| 0.0250 | 3.093 |
| 0.0333 | 3.109 |
| 0.0416 | 2.662 |
| 0.0500 | 2.535 |
| 0.0583 | 2.535 |
| 0.0666 | 2.439 |
| 0.0750 | 2.232 |
| 0.0833 | 1.977 |
| 0.0916 | 1.706 |
| 0.1000 | 1.450 |
| 0.1083 | 1.211 |
| 0.1166 | 0.988 |
| 0.1250 | 0.781 |
| 0.1333 | 0.605 |
| 0.1416 | 0.446 |
| 0.1500 | 0.334 |
| 0.1583 | 0.143 |
| 0.1666 | 0.063 |
| 0.1750 | -0.111 |
| 0.1833 | -0.239 |
| 0.1916 | -0.271 |
| 0.2000 | -0.382 |
| 0.2083 | -0.462 |

| | |
|---|---|
| 0.2166 | -0.542 |
| 0.2250 | -0.605 |
| 0.2333 | -0.637 |
| 0.2416 | -0.685 |
| 0.2500 | -0.733 |
| 0.2583 | -0.765 |
| 0.2666 | -0.781 |
| 0.2750 | -0.797 |
| 0.2833 | -0.829 |
| 0.2916 | -0.829 |
| 0.3000 | -0.813 |
| 0.3083 | -0.876 |
| 0.3166 | -0.605 |
| 0.3250 | -0.892 |
| 0.3333 | -0.781 |
| 0.3500 | -0.717 |
| 0.3666 | -0.701 |
| 0.3833 | -0.669 |
| 0.4000 | -0.637 |
| 0.4166 | -0.589 |
| 0.4333 | -0.542 |
| 0.4500 | -0.494 |
| 0.4666 | -0.430 |
| 0.4833 | -0.382 |
| 0.5000 | -0.318 |
| 0.5166 | -0.271 |
| 0.5333 | -0.239 |
| 0.5500 | -0.191 |
| 0.5666 | -0.143 |
| 0.5833 | -0.127 |
| 0.6000 | -0.079 |
| 0.6166 | -0.079 |
| 0.6333 | -0.047 |
| 0.6500 | -0.031 |
| 0.6666 | -0.015 |
| 0.6833 | 0.000 |
| 0.7000 | 0.000 |
| 0.7166 | 0.015 |
| 0.7333 | 0.015 |
| 0.7500 | 0.031 |
| 0.7666 | 0.031 |
| 0.7833 | 0.047 |
| 0.8000 | 0.047 |
| 0.8166 | 0.047 |
| 0.8333 | 0.063 |
| 0.8500 | 0.063 |
| 0.8666 | 0.063 |
| 0.8833 | 0.063 |
| 0.9000 | 0.063 |
| 0.9166 | 0.063 |
| 0.9333 | 0.063 |

| | |
|---|---|
| 0.9500 | 0.063 |
| 0.9666 | 0.079 |
| 0.9833 | 0.079 |
| 1.0000 | 0.079 |
| 1.2000 | 0.079 |
| 1.4000 | 0.079 |
| 1.6000 | 0.079 |
| 1.8000 | 0.079 |
| 2.0000 | 0.079 |
| 2.2000 | 0.079 |
| 2.4000 | 0.063 |
| 2.6000 | 0.079 |
| 2.8000 | 0.063 |
| 3.0000 | 0.063 |
| 3.2000 | 0.063 |
| 3.4000 | 0.047 |
| 3.6000 | 0.063 |
| 3.8000 | 0.063 |
| 4.0000 | 0.063 |
| 4.2000 | 0.047 |
| 4.4000 | 0.047 |
| 4.6000 | 0.047 |
| 4.8000 | 0.047 |
| 5.0000 | 0.047 |
| 5.2000 | 0.047 |
| 5.4000 | 0.047 |
| 5.6000 | 0.047 |
| 5.8000 | 0.047 |
| 6.0000 | 0.047 |
| 6.2000 | 0.047 |
| 6.4000 | 0.047 |
| 6.6000 | 0.031 |
| 6.8000 | 0.031 |
| 7.0000 | 0.031 |
| 7.2000 | 0.031 |
| 7.4000 | 0.047 |
| 7.6000 | 0.031 |
| 7.8000 | 0.047 |
| 8.0000 | 0.031 |
| 8.2000 | 0.031 |
| 8.4000 | 0.031 |
| 8.6000 | 0.031 |
| 8.8000 | 0.031 |
| 9.0000 | 0.031 |
| 9.2000 | 0.031 |
| 9.4000 | 0.031 |
| 9.6000 | 0.031 |
| 9.8000 | 0.031 |
| 10.0000 | 0.031 |

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-33S

Environmental Logger

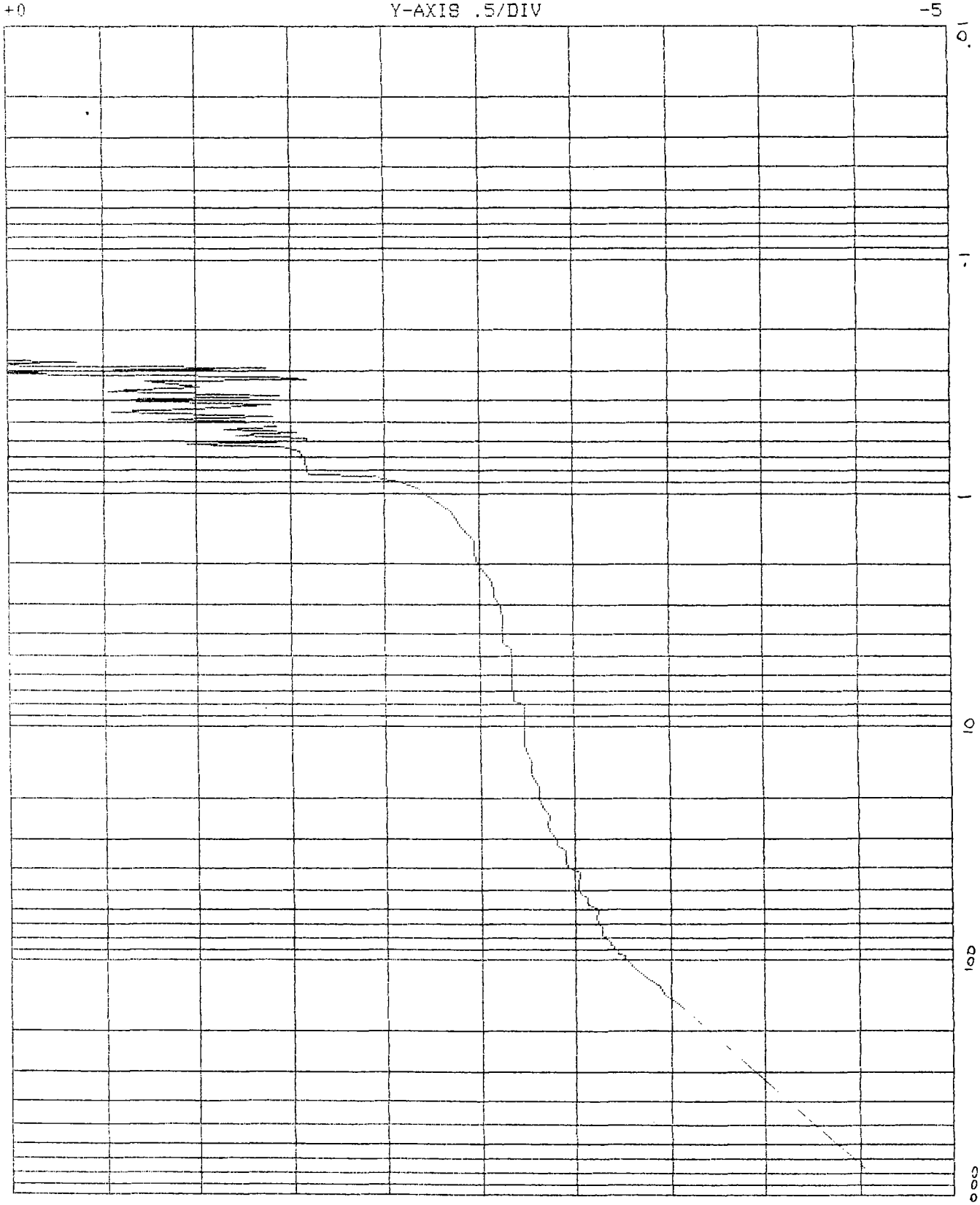
01/23 02:03

Unit# 2000 Test 3

Step 0 01/22 23:15:00

INPUT 1: MS33S

+0 Y-AXIS .5/DIV -5




(X-AXIS +.01 TO +1000)

Environmental Logger
01/23 15:38

Unit# 2000 Test 3

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | M8338 |
| Reference | 0.000 |
| PSI at Ref. | 3.057 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

Step 0 01/22 23:15:00

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | 0.000 |
| 0.0083 | -0.003 |
| 0.0166 | -0.003 |
| 0.0250 | -0.003 |
| 0.0333 | -0.003 |
| 0.0416 | -0.003 |
| 0.0500 | -0.003 |
| 0.0583 | -0.003 |
| 0.0666 | -0.003 |
| 0.0750 | -0.003 |
| 0.0833 | -0.003 |
| 0.0916 | 0.000 |
| 0.1000 | -0.003 |
| 0.1083 | -0.003 |
| 0.1166 | -0.003 |
| 0.1250 | -0.003 |
| 0.1333 | -0.003 |
| 0.1416 | -0.003 |
| 0.1500 | -0.003 |
| 0.1583 | -0.003 |
| 0.1666 | -0.003 |
| 0.1750 | -0.003 |
| 0.1833 | -0.003 |
| 0.1916 | -0.003 |
| 0.2000 | 0.000 |
| 0.2083 | -0.003 |
| 0.2166 | -0.003 |
| 0.2250 | -0.003 |
| 0.2333 | -0.003 |
| 0.2416 | -0.003 |
| 0.2500 | -0.003 |
| 0.2583 | -0.003 |
| 0.2666 | 0.608 |
| 0.2750 | -0.367 |
| 0.2833 | 0.383 |
| 0.2916 | -1.375 |

m5338d2.hd

| | |
|---|---|
| 0.3166 | -1.412 |
| 0.3250 | -1.590 |
| 0.3333 | -0.729 |
| 0.3500 | -1.016 |
| 0.3666 | -0.536 |
| 0.3833 | -1.446 |
| 0.4000 | -0.536 |
| 0.4166 | -1.399 |
| 0.4333 | -0.979 |
| 0.4500 | -0.555 |
| 0.4666 | -1.415 |
| 0.4833 | -0.848 |
| 0.5000 | -1.403 |
| 0.5166 | -1.434 |
| 0.5333 | -1.147 |
| 0.5500 | -1.534 |
| 0.5666 | -1.216 |
| 0.5833 | -1.593 |
| 0.6000 | -1.599 |
| 0.6166 | -0.954 |
| 0.6333 | -1.462 |
| 0.6500 | -1.524 |
| 0.6666 | -1.549 |
| 0.6833 | -1.558 |
| 0.7000 | -1.568 |
| 0.7166 | -1.577 |
| 0.7333 | -1.580 |
| 0.7500 | -1.583 |
| 0.7666 | -1.587 |
| 0.7833 | -1.590 |
| 0.8000 | -1.593 |
| 0.8166 | -1.596 |
| 0.8333 | -1.599 |
| 0.8500 | -1.942 |
| 0.8666 | -1.995 |
| 0.8833 | -2.042 |
| 0.9000 | -2.082 |
| 0.9166 | -2.126 |
| 0.9333 | -2.151 |
| 0.9500 | -2.172 |
| 0.9666 | -2.185 |
| 0.9833 | -2.197 |
| 1.0000 | -2.210 |
| 1.2000 | -2.353 |
| 1.4000 | -2.412 |
| 1.6000 | -2.472 |
| 1.8000 | -2.472 |
| 2.0000 | -2.490 |
| 2.2000 | -2.531 |
| 2.4000 | -2.571 |
| 2.6000 | -2.574 |
| 2.8000 | -2.574 |
| 3.0000 | -2.618 |
| 3.2000 | -2.618 |
| 3.4000 | -2.621 |
| 3.6000 | -2.621 |
| 3.8000 | -2.621 |
| 4.0000 | -2.624 |
| 4.2000 | -2.624 |

| | |
|---|---|
| 4.4000 | -2.624 |
| 4.6000 | -2.671 |
| 4.8000 | -2.674 |
| 5.0000 | -2.674 |
| 5.2000 | -2.674 |
| 5.4000 | -2.674 |
| 5.6000 | -2.674 |
| 5.8000 | -2.674 |
| 6.0000 | -2.674 |
| 6.2000 | -2.674 |
| 6.4000 | -2.674 |
| 6.6000 | -2.674 |
| 6.8000 | -2.674 |
| 7.0000 | -2.677 |
| 7.2000 | -2.677 |
| 7.4000 | -2.677 |
| 7.6000 | -2.677 |
| 7.8000 | -2.677 |
| 8.0000 | -2.733 |
| 8.2000 | -2.733 |
| 8.4000 | -2.733 |
| 8.6000 | -2.733 |
| 8.8000 | -2.736 |
| 9.0000 | -2.733 |
| 9.2000 | -2.733 |
| 9.4000 | -2.733 |
| 9.6000 | -2.733 |
| 9.8000 | -2.733 |
| 10.0000 | -2.733 |
| 12.0000 | -2.733 |
| 14.0000 | -2.771 |
| 16.0000 | -2.771 |
| 18.0000 | -2.814 |
| 20.0000 | -2.814 |
| 22.0000 | -2.830 |
| 24.0000 | -2.864 |
| 26.0000 | -2.861 |
| 28.0000 | -2.864 |
| 30.0000 | -2.905 |
| 32.0000 | -2.905 |
| 34.0000 | -2.951 |
| 36.0000 | -2.948 |
| 38.0000 | -2.948 |
| 40.0000 | -2.967 |
| 42.0000 | -3.023 |
| 44.0000 | -3.023 |
| 46.0000 | -3.020 |
| 48.0000 | -3.017 |
| 50.0000 | -3.020 |
| 52.0000 | -3.036 |
| 54.0000 | -3.064 |
| 56.0000 | -3.067 |
| 58.0000 | -3.067 |
| 60.0000 | -3.120 |
| 62.0000 | -3.117 |
| 64.0000 | -3.113 |
| 66.0000 | -3.113 |
| 68.0000 | -3.117 |
| 70.0000 | -3.126 |

| | |
|---|---|
| 74.0000 | -3.135 |
| 76.0000 | -3.135 |
| 78.0000 | -3.138 |
| 80.0000 | -3.163 |
| 82.0000 | -3.166 |
| 84.0000 | -3.185 |
| 86.0000 | -3.185 |
| 88.0000 | -3.204 |
| 90.0000 | -3.207 |
| 92.0000 | -3.219 |
| 94.0000 | -3.222 |
| 96.0000 | -3.263 |
| 98.0000 | -3.263 |
| 100.000 | -3.266 |
| 110.000 | -3.328 |
| 120.000 | -3.384 |
| 130.000 | -3.447 |
| 140.000 | -3.478 |
| 150.000 | -3.522 |
| 160.000 | -3.568 |
| 170.000 | -3.590 |
| 180.000 | -3.668 |
| 190.000 | -3.671 |
| 200.000 | -3.690 |
| 210.000 | -3.733 |
| 220.000 | -3.764 |
| 230.000 | -3.792 |
| 240.000 | -3.842 |
| 250.000 | -3.873 |
| 260.000 | -3.898 |
| 270.000 | -3.923 |
| 280.000 | -3.945 |
| 290.000 | -3.986 |
| 300.000 | -4.004 |
| 310.000 | -4.007 |
| 320.000 | -4.032 |
| 330.000 | -4.048 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## RECOVERY DATA FOR MS-33S

Environmental Logger

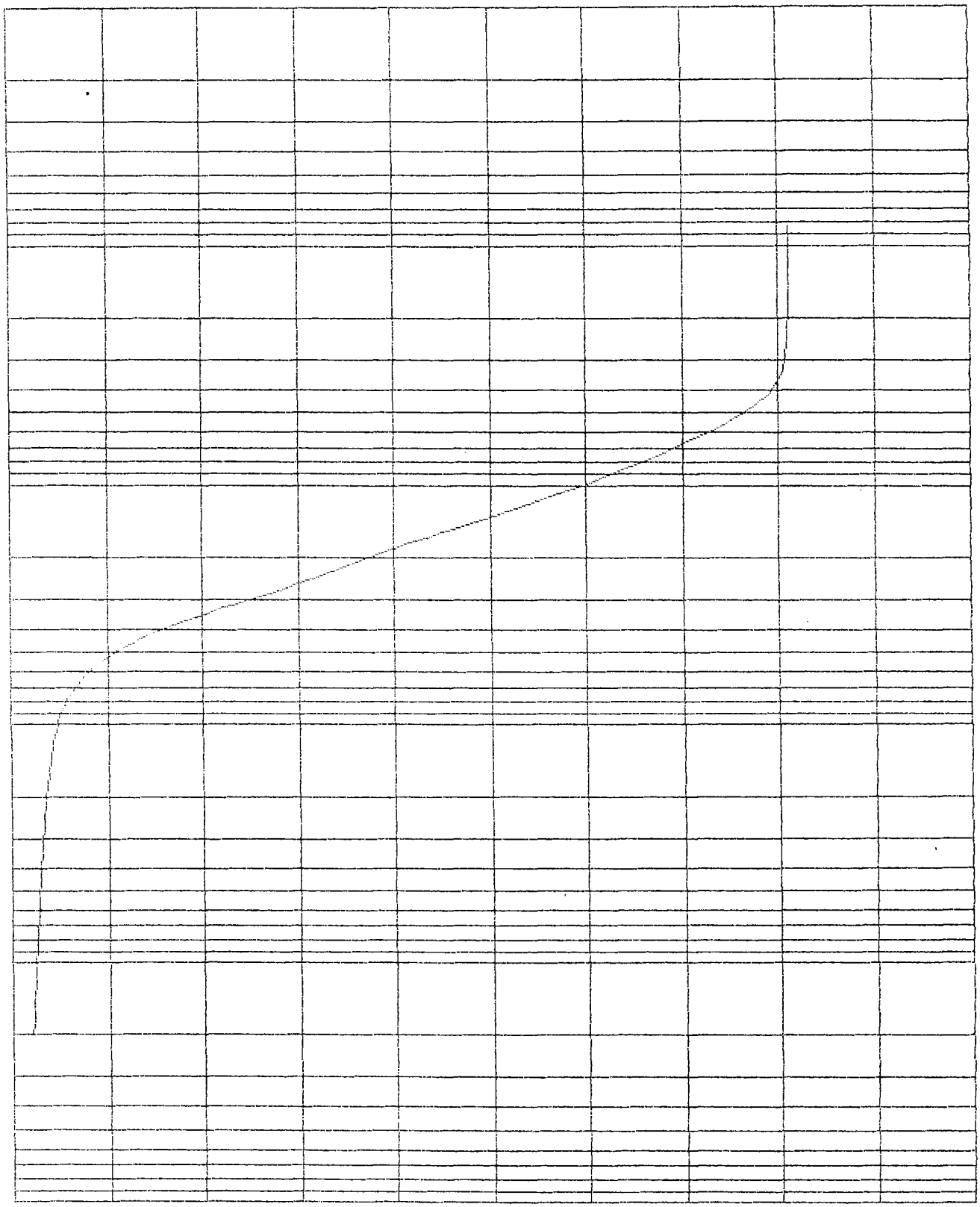
01/23 15:42

Unit# 2000 Test 3

Step 1 01/23 04:51:00

INPUT 1: MS33S

+0 Y-AXIS .5/DIV -5



(X-AXIS +.001 TO +100)

Environmental Logger
01/23 15:35

Unit# 2000 Test 3

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | M8338 |
| Reference | 0.000 |
| PSI at Ref. | 3.057 |
| SG | 1.000 |
| Linearity | 0.039 |
| Scale factor | 9.868 |
| Offset | -0.009 |
| Delay mSEC | 50.000 |

Step 1 01/23 04:51:00

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -4.051 |
| 0.0083 | -4.051 |
| 0.0166 | -4.051 |
| 0.0250 | -4.048 |
| 0.0333 | -4.029 |
| 0.0416 | -3.954 |
| 0.0500 | -3.821 |
| 0.0583 | -3.668 |
| 0.0666 | -3.515 |
| 0.0750 | -3.369 |
| 0.0833 | -3.229 |
| 0.0916 | -3.098 |
| 0.1000 | -2.976 |
| 0.1083 | -2.855 |
| 0.1166 | -2.743 |
| 0.1250 | -2.631 |
| 0.1333 | -2.525 |
| 0.1416 | -2.428 |
| 0.1500 | -2.338 |
| 0.1583 | -2.250 |
| 0.1666 | -2.166 |
| 0.1750 | -2.085 |
| 0.1833 | -2.004 |
| 0.1916 | -1.932 |
| 0.2000 | -1.870 |
| 0.2083 | -1.814 |
| 0.2166 | -1.758 |
| 0.2250 | -1.708 |
| 0.2333 | -1.655 |
| 0.2416 | -1.605 |
| 0.2500 | -1.552 |
| 0.2583 | -1.502 |
| 0.2666 | -1.452 |
| 0.2750 | -1.403 |
| 0.2833 | -1.353 |

US335REC.hd

0.2916 -1.300

| | |
|---|---|
| 0.3250 | -1.116 |
| 0.3333 | -1.072 |
| 0.3500 | -0.994 |
| 0.3666 | -0.919 |
| 0.3833 | -0.854 |
| 0.4000 | -0.795 |
| 0.4166 | -0.742 |
| 0.4333 | -0.695 |
| 0.4500 | -0.651 |
| 0.4666 | -0.611 |
| 0.4833 | -0.573 |
| 0.5000 | -0.542 |
| 0.5166 | -0.514 |
| 0.5333 | -0.489 |
| 0.5500 | -0.464 |
| 0.5666 | -0.445 |
| 0.5833 | -0.424 |
| 0.6000 | -0.408 |
| 0.6166 | -0.392 |
| 0.6333 | -0.377 |
| 0.6500 | -0.364 |
| 0.6666 | -0.352 |
| 0.6833 | -0.343 |
| 0.7000 | -0.333 |
| 0.7166 | -0.324 |
| 0.7333 | -0.314 |
| 0.7500 | -0.305 |
| 0.7666 | -0.299 |
| 0.7833 | -0.293 |
| 0.8000 | -0.286 |
| 0.8166 | -0.283 |
| 0.8333 | -0.277 |
| 0.8500 | -0.271 |
| 0.8666 | -0.268 |
| 0.8833 | -0.261 |
| 0.9000 | -0.258 |
| 0.9166 | -0.255 |
| 0.9333 | -0.252 |
| 0.9500 | -0.246 |
| 0.9666 | -0.246 |
| 0.9833 | -0.243 |
| 1.0000 | -0.240 |
| 1.2000 | -0.218 |
| 1.4000 | -0.202 |
| 1.6000 | -0.193 |
| 1.8000 | -0.187 |
| 2.0000 | -0.180 |
| 2.2000 | -0.174 |
| 2.4000 | -0.171 |
| 2.6000 | -0.168 |
| 2.8000 | -0.165 |
| 3.0000 | -0.162 |
| 3.2000 | -0.162 |
| 3.4000 | -0.159 |
| 3.6000 | -0.155 |
| 3.8000 | -0.152 |
| 4.0000 | -0.152 |

| | |
|---|---|
| 4.4000 | -0.149 |
| 4.6000 | -0.149 |
| 4.8000 | -0.146 |
| 5.0000 | -0.143 |
| 5.2000 | -0.143 |
| 5.4000 | -0.143 |
| 5.6000 | -0.143 |
| 5.8000 | -0.140 |
| 6.0000 | -0.140 |
| 6.2000 | -0.140 |
| 6.4000 | -0.137 |
| 6.6000 | -0.137 |
| 6.8000 | -0.137 |
| 7.0000 | -0.134 |
| 7.2000 | -0.134 |
| 7.4000 | -0.134 |
| 7.6000 | -0.130 |
| 7.8000 | -0.130 |
| 8.0000 | -0.130 |
| 8.2000 | -0.130 |
| 8.4000 | -0.127 |
| 8.6000 | -0.127 |
| 8.8000 | -0.127 |
| 9.0000 | -0.127 |
| 9.2000 | -0.127 |
| 9.4000 | -0.124 |
| 9.6000 | -0.124 |
| 9.8000 | -0.124 |
| 10.0000 | -0.124 |
| 12.0000 | -0.118 |
| 14.0000 | -0.115 |
| 16.0000 | -0.112 |
| 18.0000 | -0.109 |
| 20.0000 | -0.106 |

END

# APPENDIX C.1

## MONITORING WELL DEVELOPMENT RECORDS - HERMIT DATA
## DRAW DOWN DATA FOR MS-33I

SE2000

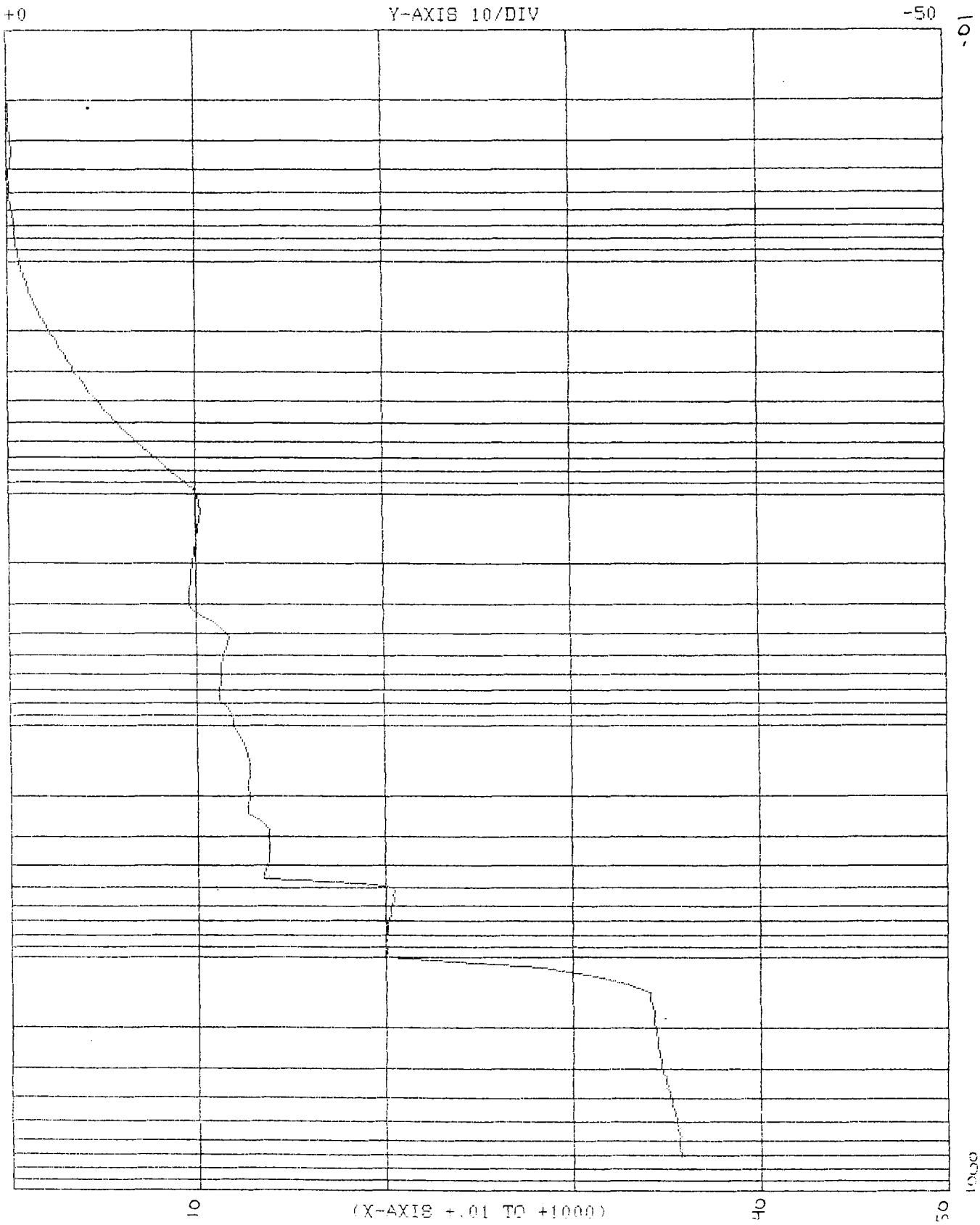
Environmental Logger

01/27 01:04

Unit# 2000 Test 0

Step 0 01/26 12:59:59

INPUT 1: MS33I DD @ 0.9 GPM (FINAL)



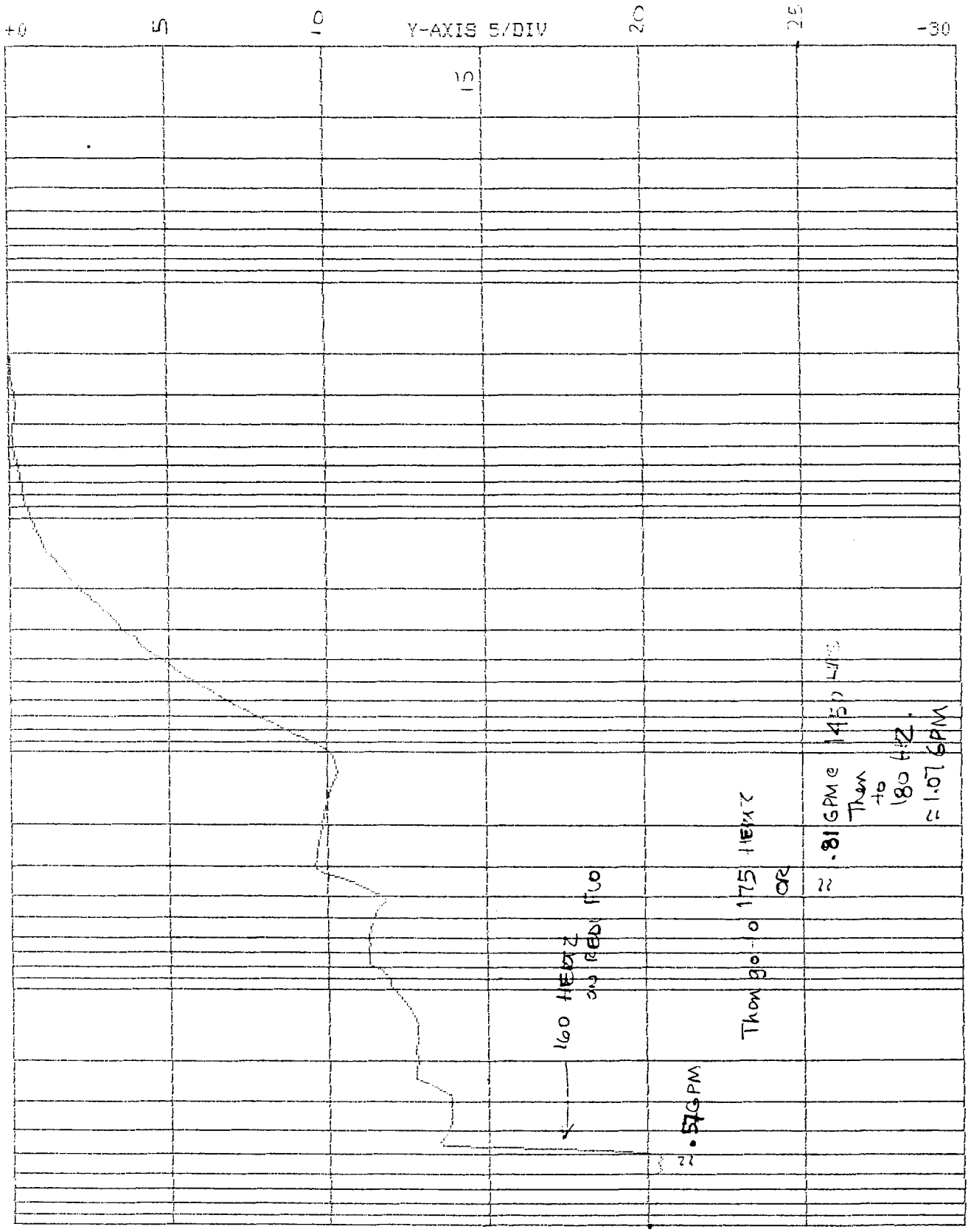
Environmental Logger

01/26 14:00

Unit# 2000 Test 0

Step 0 01/26 12:59:59 331

INPUT 1: MS33I




(X-AXIS +.001 TO +100)

600 - 300

SE2000

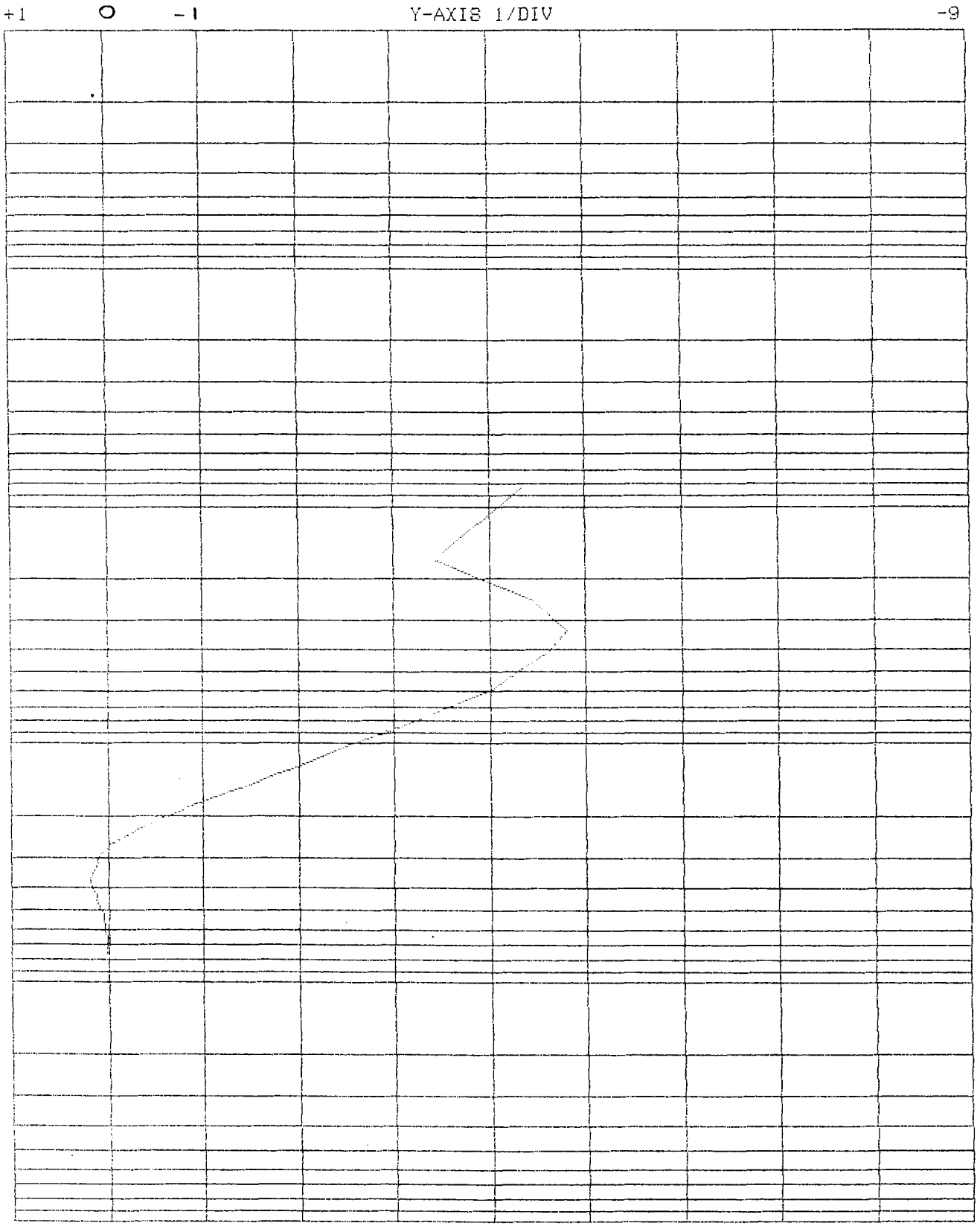
Environmental Logger

01/25 02:33

Unit# 2000 Test 1

Step 1 01/24 09:56:00

INPUT 1: MS33D - REC DATA



SE2000
Environmental Logger
01/25 02:16

Unit# 2000 Test 1

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS33D |
| Reference | 0.000 |
| PSI at Ref. | 40.760 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

REC

Step 1 01/24 09:56:00

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -5.819 |
| 0.0083 | -4.344 |
| 0.0166 | -3.431 |
| 0.0250 | -4.457 |
| 0.0333 | -4.809 |
| 0.0416 | -4.585 |
| 0.0500 | -4.296 |
| 0.0583 | -4.040 |
| 0.0666 | -3.719 |
| 0.0750 | -3.415 |
| 0.0833 | -3.126 |
| 0.0916 | -2.853 |
| 0.1000 | -2.597 |
| 0.1083 | -2.372 |
| 0.1166 | -2.180 |
| 0.1250 | -1.988 |
| 0.1333 | -1.795 |
| 0.1416 | -1.619 |
| 0.1500 | -1.443 |
| 0.1583 | -1.298 |
| 0.1666 | -1.138 |
| 0.1750 | -1.010 |
| 0.1833 | -0.865 |
| 0.1916 | -0.753 |
| 0.2000 | -0.625 |
| 0.2083 | -0.529 |
| 0.2166 | -0.448 |
| 0.2250 | -0.368 |
| 0.2333 | -0.288 |
| 0.2416 | -0.208 |
| 0.2500 | -0.144 |
| 0.2583 | -0.080 |
| 0.2666 | -0.032 |
| 0.2750 | 0.016 |
| 0.2833 | 0.048 |

ms33drec.hd1

| | |
|---|---|
| 0.2916 | 0.080 |
| 0.3000 | 0.096 |
| 0.3083 | 0.096 |
| 0.3166 | 0.096 |
| 0.3250 | 0.128 |
| 0.3333 | 0.128 |
| 0.3500 | 0.160 |
| 0.3666 | 0.176 |
| 0.3833 | 0.176 |
| 0.4000 | 0.160 |
| 0.4166 | 0.144 |
| 0.4333 | 0.128 |
| 0.4500 | 0.112 |
| 0.4666 | 0.096 |
| 0.4833 | 0.080 |
| 0.5000 | 0.064 |
| 0.5166 | 0.048 |
| 0.5333 | 0.048 |
| 0.5500 | 0.048 |
| 0.5666 | 0.032 |
| 0.5833 | 0.032 |
| 0.6000 | 0.032 |
| 0.6166 | 0.032 |
| 0.6333 | 0.016 |
| 0.6500 | 0.016 |
| 0.6666 | 0.016 |
| 0.6833 | 0.016 |
| 0.7000 | 0.016 |
| 0.7166 | 0.016 |
| 0.7333 | 0.000 |
| 0.7500 | 0.016 |
| 0.7666 | 0.000 |
| 0.7833 | 0.000 |
| 0.8000 | 0.000 |
| 0.8166 | 0.000 |
| 0.8333 | 0.000 |
| 0.8500 | 0.000 |
| 0.8666 | 0.000 |
| 0.8833 | 0.000 |
| 0.9000 | 0.000 |
| 0.9166 | 0.000 |
| 0.9333 | 0.000 |
| 0.9500 | 0.000 |
| 0.9666 | 0.000 |
| 0.9833 | 0.000 |
| 1.0000 | 0.000 |
| 1.2000 | 0.000 |
| 1.4000 | 0.000 |
| 1.6000 | 0.000 |
| 1.8000 | 0.000 |
| 2.0000 | 0.000 |
| 2.2000 | 0.000 |
| 2.4000 | 0.000 |
| 2.6000 | 0.000 |
| 2.8000 | 0.000 |
| 3.0000 | 0.000 |
| 3.2000 | 0.000 |
| 3.4000 | 0.000 |
| 3.6000 | 0.000 |
| 3.8000 | 0.000 |

| | |
|---|---|
| 4.0000 | 0.000 |
| 4.2000 | 0.000 |
| 4.4000 | 0.000 |
| 4.6000 | 0.000 |
| 4.8000 | 0.000 |
| 5.0000 | 0.000 |
| 5.2000 | 0.000 |
| 5.4000 | 0.000 |
| 5.6000 | 0.000 |
| 5.8000 | 0.000 |
| 6.0000 | 0.000 |

END

SE2000
Environmental Logger
01/23 22:01

Unit# 2000 Test 0

| Setups: | INPUT 1 |
|---|---|
| Type | Level (F) |
| Mode | Surface |
| I.D. | MS33D |
| Reference | 0.000 |
| PSI at Ref. | 40.767 |
| SG | 1.000 |
| Linearity | 0.106 |
| Scale factor | 50.693 |
| Offset | -0.140 |
| Delay mSEC | 50.000 |

Step 1 01/23 21:32:31

| Elapsed Time | INPUT 1 |
|---|---|
| 0.0000 | -0.849 |
| 0.0083 | -0.737 |
| 0.0166 | -0.625 |
| 0.0250 | -0.529 |
| 0.0333 | -0.464 |
| 0.0416 | -0.384 |
| 0.0500 | -0.304 |
| 0.0583 | -0.256 |
| 0.0666 | -0.176 |
| 0.0750 | -0.144 |
| 0.0833 | -0.080 |
| 0.0916 | -0.064 |
| 0.1000 | 0.000 |
| 0.1083 | 0.000 |
| 0.1166 | 0.032 |
| 0.1250 | 0.032 |
| 0.1333 | 0.064 |
| 0.1416 | 0.064 |
| 0.1500 | 0.080 |
| 0.1583 | 0.064 |
| 0.1666 | 0.048 |
| 0.1750 | 0.032 |
| 0.1833 | 0.032 |
| 0.1916 | 0.064 |
| 0.2000 | 0.032 |
| 0.2083 | 0.048 |
| 0.2166 | 0.032 |
| 0.2250 | 0.032 |
| 0.2333 | 0.032 |
| 0.2416 | 0.000 |
| 0.2500 | -0.032 |
| 0.2583 | -0.032 |
| 0.2666 | -0.080 |
| 0.2750 | -0.080 |
| 0.2833 | -0.064 |

~~DD~~

AFTER PUMP OUT WHILE GOING TO 5 GPM - MEAS REC - BUT ONLY GOT PARTIAL.

(NO PRINT OUT OF PLOT)

MS33D Rec.hd

| | |
|---|---|
| 0.2916 | -0.064 |
| 0.3000 | -0.064 |
| 0.3083 | -0.080 |
| 0.3166 | -0.080 |
| 0.3250 | -0.064 |
| 0.3333 | -0.048 |
| 0.3500 | -0.016 |
| 0.3666 | -0.016 |
| 0.3833 | 0.000 |
| 0.4000 | 0.000 |
| 0.4166 | 0.000 |
| 0.4333 | 0.000 |
| 0.4500 | 0.016 |
| 0.4666 | 0.000 |
| 0.4833 | 0.016 |
| 0.5000 | 0.000 |
| 0.5166 | 0.000 |
| 0.5333 | 0.000 |
| 0.5500 | 0.000 |
| 0.5666 | 0.016 |
| 0.5833 | 0.000 |
| 0.6000 | 0.016 |
| 0.6166 | 0.000 |
| 0.6333 | 0.016 |
| 0.6500 | 0.016 |
| 0.6666 | 0.000 |
| 0.6833 | 0.016 |
| 0.7000 | 0.000 |
| 0.7166 | 0.000 |
| 0.7333 | 0.000 |
| 0.7500 | 0.000 |
| 0.7666 | 0.016 |
| 0.7833 | 0.016 |
| 0.8000 | 0.016 |
| 0.8166 | 0.000 |
| 0.8333 | 0.016 |
| 0.8500 | 0.016 |
| 0.8666 | 0.016 |
| 0.8833 | 0.016 |
| 0.9000 | 0.000 |
| 0.9166 | 0.000 |
| 0.9333 | 0.016 |
| 0.9500 | 0.016 |
| 0.9666 | 0.000 |
| 0.9833 | 0.000 |
| 1.0000 | 0.000 |
| 1.2000 | 0.016 |
| 1.4000 | 0.000 |
| 1.6000 | 0.016 |
| 1.8000 | 0.000 |
| 2.0000 | 0.000 |
| 2.2000 | 0.000 |
| 2.4000 | 0.016 |
| 2.6000 | 0.000 |
| 2.8000 | 0.016 |
| 3.0000 | 0.000 |
| 3.2000 | 0.000 |
| 3.4000 | 0.000 |
| 3.6000 | 0.016 |
| 3.8000 | 0.000 |

| | |
|---|---|
| 4.0000 | 0.000 |
| 4.2000 | 0.000 |
| 4.4000 | 0.016 |
| 4.6000 | 0.016 |
| 4.8000 | 0.016 |
| 5.0000 | 0.000 |
| 5.2000 | 0.016 |
| 5.4000 | 0.000 |
| 5.6000 | 0.016 |
| 5.8000 | 0.016 |
| 6.0000 | 0.016 |
| 6.2000 | 0.016 |
| 6.4000 | 0.016 |
| 6.6000 | 0.000 |
| 6.8000 | 0.016 |
| 7.0000 | 0.016 |
| 7.2000 | 0.016 |
| 7.4000 | 0.016 |
| 7.6000 | 0.016 |

END

# APPENDIX C.2

# SYNOPTIC GROUNDWATER LEVEL MEASUREMENTS

TABLE C.2-1

GROUNDWATER LEVEL MEASUREMENTS TAKEN ON March 1, 1998(2)
NIROP FRIDLEY, MINNESOTA


| location | Time | top_casing | depth_to_wate | water level elev. |
|---|---|---|---|---|
| 8-S | 0955 | 835.76 | 19.87 | 815.89 |
| 12-D | 0957 | 837.79 | 21.03 | 816.76 |
| 3-I | 0959 | 837.38 | 21.43 | 815.95 |
| 2-S | 1004 | 836.07 | 20.10 | 815.97 |
| 2-D | 1006 | 836.04 | 19.97 | 816.07 |
| 10-1 | 1011 | NA | 21.00 | NA |
| 5-D | 1013 | 836 | 19.93 | 816.07 |
| 7-S | 1015 | 835.97 | 19.94 | 816.03 |
| 3-S | 1020 | 836.75 | 21.12 | 815.63 |
| 4-D | 1030 | 834.79 | 27.98 | 806.81 |
| 5-S | 1032 | 835.06 | 20.82 | 814.24 |
| 24-S | 1036 | 836.33 | 22.94 | 813.39 |
| 6-D | 1038 | 835.69 | 30.18 | 805.51 |
| 11-S | 1040 | 835.89 | 30.42 | 805.47 |
| 17-S | 1055 | 835.75 | 24.78 | 810.97 |
| 17-D | 1057 | NA | 31.37 | NA |
| 13-D | 1104 | 835.77 | 19.20 | 816.57 |
| 25-S | 1106 | 835.31 | 19.63 | 815.68 |
| 16-S | 1110 | 837.26 | 31.18 | 806.08 |
| 11-D | 1112 | 837.52 | 20.83 | 816.69 |
| MS-28D | 1143 | 834.8 | 18.73 | 816.07 |
| MS-28I | 1140 | 834.83 | 19.39 | 815.44 |
| MS-28S | 1137 | 834.81 | 19.42 | 815.39 |
| MS-29D | 1209 | 834.69 | 18.12 | 816.57 |
| MS-29I | 1207 | 834.67 | 19.74 | 814.93 |
| MS-29S | 1205 | 834.68 | 19.77 | 814.91 |
| MS-30D | 1128 | 834.81 | 19.85 | 814.96 |
| MS-30I | 1126 | 834.85 | 19.88 | 814.97 |
| MS-30S | 1124 | 834.83 | 19.37 | 815.46 |
| MS-31D | 1159 | 834.81 | 18.44 | 816.37 |
| MS-31I | 1157 | 834.81 | 19.90 | 814.91 |
| MS-31S | 1155 | 834.81 | 19.91 | 814.90 |
| MS-32D | 1224 | 834.75 | 27.34 | 807.41 |
| MS-32I | 1222 | 834.69 | 28.08 | 806.61 |
| MS-32S | 1220 | 834.76 | 20.33 | 814.43 |
| MS-33D | 1238 | 834.76 | 20.08 | 814.68 |
| MS-33I | 1236 | 834.74 | 20.35 | 814.39 |
| MS-33S | 1234 | 834.72 | 20.22 | 814.50 |

Notes:
NA - not available
msl - mean sea level
(1) Depth to water is measured as feet below top of casing (TOC).
(2) Depth to water measurements taken by Tetra Tech NUS

TABLE C.2-2

GROUNDWATER LEVEL MEASUREMENTS TAKEN ON JULY 7, 1998[2]
NIROP FRIDLEY, MINNESOTA
PAGE 1 OF 1

| Monitoring Well | Top of Casing Elevation (feet-msl) | Depth to Water[1] (feet-TOC) | Water Level Elevation (feet-msl) |
|---|---|---|---|
| Shallow Wells | | | |
| 1-S | 837.14 | 20.60 | 816.54 |
| 2-S | 836.07 | 19.71 | 816.36 |
| 3-S | 836.75 | 20.67 | 816.08 |
| 4-S | 837.45 | 21.09 | 816.36 |
| 5-S | 835.06 | 20.43 | 814.63 |
| 6-S | 835.73 | 21.49 | 814.24 |
| 7-S | 835.97 | 19.53 | 816.44 |
| 8-S | 835.76 | 19.44 | 816.32 |
| 9-S | 836.68 | 17.55 | 819.13 |
| 10-S | 835.89 | 20.98 | 814.91 |
| 12-S | 838.51 | 22.04 | 816.47 |
| 13-S | 834.59 | 18.07 | 816.52 |
| 14-S | 835.99 | 19.44 | 816.55 |
| 15-S | 834.83 | 18.13 | 816.70 |
| 16-S | 837.26 | 20.81 | 816.45 |
| 17-S | 835.75 | 24.35 | 811.40 |
| 18-S | 834.08 | 28.35 | 805.73 |
| 19-S | 834.56 | 31.92 | 802.64 |
| 20-S | 837.62 | 21.19 | 816.43 |
| 21-S | 837.67 | 20.77 | 816.90 |
| 22-S | 837.76 | 21.82 | 815.94 |
| 23-S | 847.11 | 30.57 | 816.54 |
| 24-S | 836.33 | 22.51 | 813.82 |
| 25-S | 835.31 | 19.26 | 816.05 |
| 26-S | 834.06 | 28.55 | 805.51 |
| 27-S | 832.74 | 29.22 | 803.52 |
| AT-2 | 836.45 | 35.22 | 801.23 |
| AT-4 | 836.44 | 21.55 | 814.89 |
| 11-SB | NA | 21.60 | NA |
| FMC-33 | 837.05 | 24.11 | 812.94 |
| MS-28S | 834.81 | 19.06 | 815.75 |
| MS-29S | 834.68 | 19.42 | 815.26 |
| MS-30S | 834.83 | 19.06 | 815.77 |
| MS-31S | 834.81 | 19.55 | 815.26 |
| MS-32S | 834.76 | 20.01 | 814.75 |
| MS-33S | 834.72 | 19.88 | 814.84 |
| Intermediate Wells | | | |
| 1-IS | 835.28 | 48.32 | 786.96 |
| 2-IS | 838.05 | 22.08 | 815.97 |
| 3-IS | 837.38 | 21.00 | 816.38 |
| 4-IS | 833.46 | 27.76 | 805.70 |
| 5-IS | 838.02 | 25.16 | 812.86 |
| 6-IS | 837.24 | 31.90 | 805.34 |

| Monitoring Well | Top of Casing Elevation (feet-msl) | Depth to Water[1] (feet-TOC) | Water Level Elevation (feet-msl) |
|---|---|---|---|
| Intermediate Aquifer (continued) | | | |
| 7-IS | 836.82 | NA | NA |
| 8-IS | 836.82 | 31.54 | 805.28 |
| 10-IS | 837.04 | 20.58 | 816.46 |
| 11-IS | NA | 29.75 | NA |
| 12-IS | 834.94 | 23.21 | 811.73 |
| 13-IS | 834.96 | 23.65 | 811.31 |
| 14-IS | 835.21 | 37.05 | 798.16 |
| 15-IS | 833.74 | 28.40 | 805.34 |
| 16-IS | 832.77 | 29.20 | 803.57 |
| AT-1A | 836.57 | 51.51 | 785.06 |
| AT-5A | 835.57 | 40.86 | 794.71 |
| MS-28I | 834.83 | 19.03 | 815.80 |
| MS-29I | 834.67 | 19.36 | 815.31 |
| MS-30I | 834.85 | 19.88 | 814.97 |
| MS-31I | 834.81 | 19.59 | 815.22 |
| MS-32I | 834.69 | 27.96 | 806.73 |
| MS-33I | 834.74 | 20.11 | 814.63 |
| Deep Wells | | | |
| 1-D | 836.75 | 20.02 | 816.73 |
| 2-D | 836.04 | 19.65 | 816.39 |
| 3-D | 837.48 | 22.00 | 815.48 |
| 4-D | 834.79 | 27.07 | 807.72 |
| 5-D | 836 | 19.54 | 816.46 |
| 6-D | 835.69 | 29.49 | 806.20 |
| 7-D | 835.63 | 30.68 | 804.95 |
| 8-D | 834.02 | 28.35 | 805.67 |
| 9-D | 834.3 | 37.07 | 797.23 |
| 10-D | 834.77 | 47.79 | 786.98 |
| 11-D | 837.52 | 20.76 | 816.76 |
| 12-D | 837.79 | 24.12 | 813.67 |
| 13-D | 835.77 | 19.15 | 816.62 |
| 14-D | 837.92 | 22.97 | 814.95 |
| 15-D | 834.01 | 28.20 | 805.81 |
| 16-D | 833.08 | 29.65 | 803.43 |
| 17-D | 835.24 | 29.61 | 805.63 |
| AT-3A | 836.1 | 51.79 | 784.31 |
| AT-5B | 835.62 | 38.55 | 797.07 |
| MS-28D | 834.8 | 18.83 | 815.97 |
| MS-29D | 834.69 | 18.37 | 816.32 |
| MS-30D | 834.81 | 19.82 | 814.99 |
| MS-31D | 834.81 | 18.57 | 816.24 |
| MS-32D | 834.75 | 26.94 | 807.81 |
| MS-33D | 834.76 | 20.08 | 814.68 |

Notes: NA - not available
msl - mean sea level
(1) Depth to water is measured as feet below top of casing (TOC).
(2) Depth to water measurements after USGS, 1998

# APPENDIX C.3

# AQUIFER TEST DATA AND CALCULATIONS

```
*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                 SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-28S

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     18.91
DEPTH TO WATER DURING TEST (FT) =          19.08
THE LENGTH OF THE TEST (HR) =              2
PUMPING RATE (GPM) =          3.64
THICKNESS OF AQUIFER (FT) =                76.5
OPEN INTERVAL (FT) =          10.1
STORAGE COEFFICIENT =         .01
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  21.42004

TRANSMISSIVITY:   (FT*FT/SEC) =  .3010749
                  (FT*FT/DAY) =  26012.87
                  (GAL/DAY/FT) =  194589.3
            USING A STORAGE COEFFICIENT =  .01
            NUMBER OF ITERATIONS =  3

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  3.935619E-03
                         (FT/DAY) =  340.0375
                         (GAL/DAY/FT*FT) =  2259.046

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

```
*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                  SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-28I

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     18.83
DEPTH TO WATER DURING TEST (FT) =          20.48
THE LENGTH OF THE TEST (HR) =              6.16
PUMPING RATE (GPM) =          4.06
THICKNESS OF AQUIFER (FT) =                5.1
OPEN INTERVAL (FT) =          5.1
STORAGE COEFFICIENT =         .0001
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  2.460729

TRANSMISSIVITY:   (FT*FT/SEC) =  8.839894E-03
                  (FT*FT/DAY) =  763.7669
                  (GAL/DAY/FT) =  5713.358
            USING A STORAGE COEFFICIENT =  .0001
            NUMBER OF ITERATIONS =  4

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  1.733313E-03
                         (FT/DAY) =  149.7582
                         (GAL/DAY/FT*FT) =  994.9214

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

**********
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
**********

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-28D

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 18.51
DEPTH TO WATER DURING TEST (FT) = 20.97
THE LENGTH OF THE TEST (HR) = 3
PUMPING RATE (GPM) = 5.03
THICKNESS OF AQUIFER (FT) = 19.3
OPEN INTERVAL (FT) = 5.1
STORAGE COEFFICIENT = .0001
WELL-LOSS COEFFICIENT = 1

SPECIFIC CAPACITY (GPM/FT) = 2.044821

TRANSMISSIVITY: (FT*FT/SEC) = .0147986
(FT*FT/DAY) = 1278.599
(GAL/DAY/FT) = 9564.561
USING A STORAGE COEFFICIENT = .0001
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 7.66767E-04
(FT/DAY) = 66.24866
(GAL/DAY/FT*FT) = 440.1243

THE NUMBER OF WELLS IN THIS RECORD IS 1

```
*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                 SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-29S

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     19.2
DEPTH TO WATER DURING TEST (FT) =          19.7
THE LENGTH OF THE TEST (HR) =              .5
PUMPING RATE (GPM) =          5.7
THICKNESS OF AQUIFER (FT) =                81
OPEN INTERVAL (FT) =          10.1
STORAGE COEFFICIENT =         .01
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  11.40368

TRANSMISSIVITY:  (FT*FT/SEC) =  .1653149
                 (FT*FT/DAY) =  14283.21
                 (GAL/DAY/FT) =  106845.5
           USING A STORAGE COEFFICIENT =  .01
           NUMBER OF ITERATIONS =  3

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  2.040924E-03
                         (FT/DAY) =  176.3359
                         (GAL/DAY/FT*FT) =  1171.491

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

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*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                 SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-29I

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     19.02
DEPTH TO WATER DURING TEST (FT) =          19.88
THE LENGTH OF THE TEST (HR) =              .5
PUMPING RATE (GPM) =          8.8
THICKNESS OF AQUIFER (FT) =                81
OPEN INTERVAL (FT) =          5.1
STORAGE COEFFICIENT =         .0001
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  10.23715

TRANSMISSIVITY:  (FT*FT/SEC) =  .2734017
                 (FT*FT/DAY) =  23621.91
                 (GAL/DAY/FT) =  176703.7
           USING A STORAGE COEFFICIENT =  .0001
           NUMBER OF ITERATIONS =  3

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  3.375329E-03
                         (FT/DAY) =  291.6285
                         (GAL/DAY/FT*FT) =  1937.439

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

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*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                  SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-29D

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     17.91
DEPTH TO WATER DURING TEST (FT) =          20.33
THE LENGTH OF THE TEST (HR) =              10
PUMPING RATE (GPM) =          6.21
THICKNESS OF AQUIFER (FT) =                19.5
OPEN INTERVAL (FT) =          5.1
STORAGE COEFFICIENT =         .0001
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  2.566319

TRANSMISSIVITY:   (FT*FT/SEC) =  .0193866
                  (FT*FT/DAY) =  1675.002
                  (GAL/DAY/FT) =  12529.85
            USING A STORAGE COEFFICIENT =  .0001
            NUMBER OF ITERATIONS =  3

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  9.941844E-04
                         (FT/DAY) =  85.89753
                         (GAL/DAY/FT*FT) =  570.6619

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

**********
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
**********

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-30S

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 18.95
DEPTH TO WATER DURING TEST (FT) = 20.148
THE LENGTH OF THE TEST (HR) = .93
PUMPING RATE (GPM) = 5.08
THICKNESS OF AQUIFER (FT) = 55
OPEN INTERVAL (FT) = 9.899999
STORAGE COEFFICIENT = .01
WELL-LOSS COEFFICIENT = 1

SPECIFIC CAPACITY (GPM/FT) = 4.240854

TRANSMISSIVITY: (FT*FT/SEC) = 4.252717E-02
(FT*FT/DAY) = 3674.347
(GAL/DAY/FT) = 27485.95
USING A STORAGE COEFFICIENT = .01
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 7.732212E-04
(FT/DAY) = 66.80631
(GAL/DAY/FT*FT) = 443.829

THE NUMBER OF WELLS IN THIS RECORD IS 1

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*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                 SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-30I

```
WELL DIAMETER (IN) =            2
STATIC WATER LEVEL (FT) =       19.65
DEPTH TO WATER DURING TEST (FT) =            20.193
THE LENGTH OF THE TEST (HR) =                1.33
PUMPING RATE (GPM) =            5.49
THICKNESS OF AQUIFER (FT) =                  11.4
OPEN INTERVAL (FT) =            5
STORAGE COEFFICIENT =           .001
WELL-LOSS COEFFICIENT =         1
```

SPECIFIC CAPACITY (GPM/FT) = 10.11326

```
TRANSMISSIVITY:   (FT*FT/SEC) =  4.805651E-02
                  (FT*FT/DAY) =  4152.083
                  (GAL/DAY/FT) =  31059.65
            USING A STORAGE COEFFICIENT =  .001
            NUMBER OF ITERATIONS =  4

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  4.215484E-03
                         (FT/DAY) =  364.2178
                         (GAL/DAY/FT*FT) =  2419.688
```

THE NUMBER OF WELLS IN THIS RECORD IS 1

```
*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                 SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-30D

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     20.01
DEPTH TO WATER DURING TEST (FT) =          20.51
THE LENGTH OF THE TEST (HR) =              14
PUMPING RATE (GPM) =          4.41
THICKNESS OF AQUIFER (FT) =                29.7
OPEN INTERVAL (FT) =          4.8
STORAGE COEFFICIENT =         .0001
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  8.821702

TRANSMISSIVITY:   (FT*FT/SEC) =  9.902162E-02
                  (FT*FT/DAY) =  8555.468
                  (GAL/DAY/FT) =  63999.18
            USING A STORAGE COEFFICIENT =  .0001
            NUMBER OF ITERATIONS =  2

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  3.334061E-03
                         (FT/DAY) =  288.0629
                         (GAL/DAY/FT*FT) =  1913.751

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

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*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                 SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-31S

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     19.17
DEPTH TO WATER DURING TEST (FT) =          20.04
THE LENGTH OF THE TEST (HR) =              .33
PUMPING RATE (GPM) =          11.32
THICKNESS OF AQUIFER (FT) =                50
OPEN INTERVAL (FT) =          10.1
STORAGE COEFFICIENT =         .01
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  13.02099

TRANSMISSIVITY:  (FT*FT/SEC) =  .1175573
                 (FT*FT/DAY) =  10156.95
                 (GAL/DAY/FT) =  75979.09
           USING A STORAGE COEFFICIENT =  .01
           NUMBER OF ITERATIONS =  3

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  2.351147E-03
                         (FT/DAY) =  203.1391
                         (GAL/DAY/FT*FT) =  1349.558

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

**********
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
**********

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-31I

| | | |
|---|---|---|
| WELL DIAMETER (IN) = | 2 | |
| STATIC WATER LEVEL (FT) = | 19.09 | |
| DEPTH TO WATER DURING TEST (FT) = | | 27.63 |
| THE LENGTH OF THE TEST (HR) = | | 3.5 |
| PUMPING RATE (GPM) = | 3.96 | |
| THICKNESS OF AQUIFER (FT) = | | 21.9 |
| OPEN INTERVAL (FT) = | 5.1 | |
| STORAGE COEFFICIENT = | .0001 | |
| WELL-LOSS COEFFICIENT = | 1 | |

SPECIFIC CAPACITY (GPM/FT) = .4637046

TRANSMISSIVITY: (FT*FT/SEC) = 3.589955E-03
(FT*FT/DAY) = 310.1721
(GAL/DAY/FT) = 2320.242
USING A STORAGE COEFFICIENT = .0001
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 1.639249E-04
(FT/DAY) = 14.16311
(GAL/DAY/FT*FT) = 94.09288

THE NUMBER OF WELLS IN THIS RECORD IS 1

**********
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
**********

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-31D

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 18.24
DEPTH TO WATER DURING TEST (FT) = 38.61
THE LENGTH OF THE TEST (HR) = 1.667
PUMPING RATE (GPM) = .96
THICKNESS OF AQUIFER (FT) = 17.4
OPEN INTERVAL (FT) = 5
STORAGE COEFFICIENT = .0001
WELL-LOSS COEFFICIENT = 1

SPECIFIC CAPACITY (GPM/FT) = 4.712814E-02

TRANSMISSIVITY: (FT*FT/SEC) = 2.818532E-04
(FT*FT/DAY) = 24.35212
(GAL/DAY/FT) = 182.166
USING A STORAGE COEFFICIENT = .0001
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 1.619846E-05
(FT/DAY) = 1.399547
(GAL/DAY/FT*FT) = 9.297916

THE NUMBER OF WELLS IN THIS RECORD IS 1

```
*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                 SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-32S

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     19.53
DEPTH TO WATER DURING TEST (FT) =          20.23
THE LENGTH OF THE TEST (HR) =              .33
PUMPING RATE (GPM) =          11
THICKNESS OF AQUIFER (FT) =                56
OPEN INTERVAL (FT) =          10.1
STORAGE COEFFICIENT =         .01
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  15.7278

TRANSMISSIVITY:   (FT*FT/SEC) =  .1587131
                  (FT*FT/DAY) =  13712.82
                  (GAL/DAY/FT) =  102578.7
            USING A STORAGE COEFFICIENT =  .01
            NUMBER OF ITERATIONS =  3

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  2.834163E-03
                         (FT/DAY) =  244.8717
                         (GAL/DAY/FT*FT) =  1626.81

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

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*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                 SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-32I

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     24.81
DEPTH TO WATER DURING TEST (FT) =          30.34
THE LENGTH OF THE TEST (HR) =              5.5
PUMPING RATE (GPM) =          3.6
THICKNESS OF AQUIFER (FT) =                23
OPEN INTERVAL (FT) =          5.1
STORAGE COEFFICIENT =         .0001
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  .6510021

TRANSMISSIVITY:   (FT*FT/SEC) =  5.339578E-03
                  (FT*FT/DAY) =  461.3395
                  (GAL/DAY/FT) =  3451.05
            USING A STORAGE COEFFICIENT =  .0001
            NUMBER OF ITERATIONS =  3

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  2.321556E-04
                         (FT/DAY) =  20.05824
                         (GAL/DAY/FT*FT) =  133.2573

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

**********
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
**********

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-32D

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 23.53
DEPTH TO WATER DURING TEST (FT) = 26.64
THE LENGTH OF THE TEST (HR) = .5
PUMPING RATE (GPM) = 3.52
THICKNESS OF AQUIFER (FT) = 27.3
OPEN INTERVAL (FT) = 5
STORAGE COEFFICIENT = .0001
WELL-LOSS COEFFICIENT = 1

SPECIFIC CAPACITY (GPM/FT) = 1.131856

TRANSMISSIVITY: (FT*FT/SEC) = 1.046203E-02
(FT*FT/DAY) = 903.9189
(GAL/DAY/FT) = 6761.766
USING A STORAGE COEFFICIENT = .0001
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 3.832244E-04
(FT/DAY) = 33.11059
(GAL/DAY/FT*FT) = 219.9708

THE NUMBER OF WELLS IN THIS RECORD IS 1

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*****************************************************************
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
                  SPECIFIC CAPACITY TESTS
*****************************************************************
```

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-33S

```
WELL DIAMETER (IN) =          2
STATIC WATER LEVEL (FT) =     19.48
DEPTH TO WATER DURING TEST (FT) =          23.53
THE LENGTH OF THE TEST (HR) =              5.5
PUMPING RATE (GPM) =          4.3
THICKNESS OF AQUIFER (FT) =                72
OPEN INTERVAL (FT) =          10.1
STORAGE COEFFICIENT =         .01
WELL-LOSS COEFFICIENT =       1
```

```
SPECIFIC CAPACITY (GPM/FT) =  1.061752

TRANSMISSIVITY:  (FT*FT/SEC) =  1.369754E-02
                 (FT*FT/DAY) =  1183.468
                 (GAL/DAY/FT) =  8852.929
           USING A STORAGE COEFFICIENT =  .01
           NUMBER OF ITERATIONS =  3

HYDRAULIC CONDUCTIVITY:  (FT/SEC) =  1.902436E-04
                         (FT/DAY) =  16.43705
                         (GAL/DAY/FT*FT) =  109.1999

THE NUMBER OF WELLS IN THIS RECORD IS  1
```

**********
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
**********

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-33I

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 19.78
DEPTH TO WATER DURING TEST (FT) = 55.69
THE LENGTH OF THE TEST (HR) = 12
PUMPING RATE (GPM) = .9
THICKNESS OF AQUIFER (FT) = 5.1
OPEN INTERVAL (FT) = 5.1
STORAGE COEFFICIENT = .09448
WELL-LOSS COEFFICIENT = 1

SPECIFIC CAPACITY (GPM/FT) = 2.506266E-02

TRANSMISSIVITY: (FT*FT/SEC) = 3.844359E-05
(FT*FT/DAY) = 3.321526
(GAL/DAY/FT) = 24.84667
USING A STORAGE COEFFICIENT = .09448
NUMBER OF ITERATIONS = 3

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 7.537958E-06
(FT/DAY) = .6512796
(GAL/DAY/FT*FT) = 4.326788

THE NUMBER OF WELLS IN THIS RECORD IS 1

**********
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
**********

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER MS-33D

WELL DIAMETER (IN) = 2
STATIC WATER LEVEL (FT) = 19.79
DEPTH TO WATER DURING TEST (FT) = 25.529
THE LENGTH OF THE TEST (HR) = 12.15
PUMPING RATE (GPM) = 4
THICKNESS OF AQUIFER (FT) = 6
OPEN INTERVAL (FT) = 5.1
STORAGE COEFFICIENT = .09448
WELL-LOSS COEFFICIENT = 1

SPECIFIC CAPACITY (GPM/FT) = .6969953

TRANSMISSIVITY: (FT*FT/SEC) = 1.627869E-03
(FT*FT/DAY) = 140.6479
(GAL/DAY/FT) = 1052.117
USING A STORAGE COEFFICIENT = .09448
NUMBER OF ITERATIONS = 4

HYDRAULIC CONDUCTIVITY: (FT/SEC) = 2.713115E-04
(FT/DAY) = 23.44131
(GAL/DAY/FT*FT) = 155.7328

THE NUMBER OF WELLS IN THIS RECORD IS 1

# APPENDIX C.4

# HYDRAULIC GRADIENT AND GROUNDWATER FLOW VELOCITY CALCULATIONS

**CALCULATION WORKSHEET** Order No. 19116 (01-91)



| | |
|---|---|
| CLIENT: NIROP Fridley | JOB NUMBER: 6966 |
| SUBJECT: Hydraulic Gradient and GW Flow calcs | |
| BASED ON: July 7, 1998 W. Level Data | DRAWING NUMBER: |
| BY: K. Henn | CHECKED BY: / APPROVED BY: / DATE: |

## Horizontal Hydraulic Gradient (Unconfined Aquifer)

North and Northeast Portion of Site

Wells 8-S (upgradient) and 6-S (downgradient)

$$\frac{dh}{dx} = \frac{816.32' - 814.24'}{1325'} = 0.00157$$

Wells 15-S (upgradient) and MS-31S (downgradient)

$$\frac{dh}{dx} = \frac{816.54' - 815.26'}{1450'} = 0.000880$$

Average = 0.001226

South and South west portion of the site

Wells MS-29S (upgradient) and 17-S (downgrad.)

$$\frac{dh}{dx} = \frac{815.26' - 811.40'}{870'} = 0.0044$$

Wells MS-33S (up-grad) and 8-IS (down-grad)

$$\frac{dh}{dx} = \frac{814.84 - 805.28'}{720'} = 0.0133$$

Average : $0.0044 + 0.0133/2 = 0.00884$

Avg. Across entire site

Average $dh/dl$ across entire site:

$= 0.001226 + 0.00884/2$

$= \underline{0.00503}$

Notes:
$dh$ = Difference in head
$dx$ = length between difference of head

**CALCULATION WORKSHEET** Order No. 19116 (01-91)



| CLIENT cont. | | JOB NUMBER | |
|---|---|---|---|
| SUBJECT | | | |
| BASED ON | | DRAWING NUMBER | |
| BY | CHECKED BY | APPROVED BY | DATE |

Horizontal Hydraulic gradient (Deep Confined Aquifer) (semi-confined)

North and East of Site

Wells 1-D (upgradient) and 4-D (down-grad)

$$\frac{dh}{dx} = \frac{816.73' - 807.72'}{2150'} = 0.00419$$

Wells 3-D (upgradient) and MS-33D (dg)

$$\frac{dh}{dx} = \frac{815.48' - 814.68'}{450'} = 0.00178$$

Average 0.00298

South and west of Site

wells MS-29D (up) and 7-D (dg)

$$\frac{dh}{dx} = \frac{816.32 - 804.95}{1050'} = 0.0108$$

Avg across the site

Average dh/dl

$= 0.00298 + 0.0108 / 2$

$= 0.00639$

**CALCULATION WORKSHEET** Order No. 19116 (01-91)



| CLIENT | | JOB NUMBER | |
|---|---|---|---|
| SUBJECT | | | |
| BASED ON | | DRAWING NUMBER | |
| BY | CHECKED BY | APPROVED BY | DATE |

## Vertical Hydraulic Gradient

(Unconfined Aquifer & Deep Confined Aquifer)

- well cluster 1-S & 1-D

$$\frac{dh}{dx} = \frac{|816.54 - 816.73|}{|25.75 - 108.51|} = 0.0022 \text{ upward gradient}$$

depth @ midpoint of screen

- well cluster MS-28S & MS-28D

$$\frac{dh}{dx} = \frac{815.75 - 815.97}{812.61 - 722.71} = -0.0024 \text{ upward gradient}$$

elev. at screen midpoint

- well cluster MS-29S & MS-29D

$$\frac{dh}{dx} = \frac{815.26 - 816.32}{812.68 - 700.62} = -0.0095 \text{ upward gradient}$$

elev.

- well cluster MS-30S - MS-30D

$$\frac{dh}{dx} = \frac{815.77 - 814.99}{812.28 - 737.78} = +0.0105 \text{ downward gradient}$$

| CLIENT | | JOB NUMBER | |
|---|---|---|---|
| SUBJECT | | | |
| BASED ON | | DRAWING NUMBER | |
| BY | CHECKED BY | APPROVED BY | DATE |

Vertical Gradient (cont.)

- well cluster MS-31S & MS 31D

$$\frac{dh}{dx} = \frac{315.26 - 816.24}{812.42 - 710.12} = -0.0096$$ upward gradient

elev at midpoint

- well cluster MS-32S & MS-32D

$$\frac{dh}{dx} = \frac{814.75 - 807.81}{813.75 - 711.05} = +0.0676$$ downward gradient

elev

- well cluster MS-33S & MS 33D

$$\frac{dh}{dx} = \frac{814.84 - 814.68}{812.77 - 717.07} = +0.00167$$ downward gradient

elev.

- well cluster 18-S & 8-D (no distinct aquifer separation x-sect D-D')

$$\frac{dh}{dx} = \frac{|805.73 - 805.67|}{|31.5 - 120|} = 0.000678$$ downward gradient

Depth

- well cluster 26-S & 15-D (distinct aquifer separation E-E')

$$\frac{dh}{dx} = \frac{|805.51 - 805.81|}{|35.0 - 125.5|} = 0.0033$$ upward gradient

depths

=

| CLIENT | | JOB NUMBER | |
|---|---|---|---|
| SUBJECT | | | |
| BASED ON | | DRAWING NUMBER | |
| BY | CHECKED BY | APPROVED BY | DATE |

## Average Linear Ground Water Velocity

Shallow Unconfined Aquifer

North + Northeast portion of site

$$V_x = \frac{K}{n_e} \frac{dh}{dx}$$

geometric mean

Avg from page 1

$$= \frac{67.916}{.30} \times 0.001206 = 0.277 \text{ Feet/Day}$$

(Assumed from Freeze + Cherry 1979)

South + Southwest portion of site

$$V_x = \frac{K}{n_e} \cdot \frac{dh}{dx}$$

Avg. from page 1

$$= \frac{67.916}{.30} \times 0.00884 = 2.00 \text{ Ft/Day}$$

Avg Across Site

$$V_x = \frac{K}{n_e} \cdot \frac{dh}{dx}$$

Avg for site on page 1

$$= \frac{67.916}{0.30} \times 0.00503 = 1.1387 \text{ Ft/D}$$

| CLIENT | | JOB NUMBER | |
|---|---|---|---|
| SUBJECT | | | |
| BASED ON | | DRAWING NUMBER | |
| BY | CHECKED BY | APPROVED BY | DATE |

## Avg. Linear GW Velocity (Cont.)

Deep Confined (or semi-confined) Aquifer

North and East of Site

$$V_x = \frac{K}{n_e} \cdot \frac{dh}{dx}$$

GEO MEAN

$$= \frac{34.811}{0.30} \times 0.00298 = 0.345 \text{ ft/d}$$

Assumed from F&C (1979)

South or West of Site

$$V_x = \frac{K}{n_e} \cdot \frac{dh}{dx}$$

$$= \frac{34.811}{0.3} \times 0.0108 = 1.253 \text{ ft/d}$$

Average Across Site

$$V_x = \frac{K}{n_e} \times \frac{dh}{dx}$$

$$= \frac{34.811}{0.3} \times 0.00689 = 0.7995 \text{ ft/d.}$$

# APPENDIX D

# FIELD SCREENING METHODS AND RESULTS

# METHODS FOR FIELD SCREENING OF VOLATILE ORGANIC COMPOUNDS

## 1.0 INTRODUCTION

This appendix provides a summary of the on-site screening analyses for volatile organic compounds (VOCs) performed for soil samples collected during the Operable Unit 3 (OU3) Remedial Investigation (RI) at NIROP Fridley, Minnesota. The on-site analyses were performed using a purge and trap gas chromatography (GC) procedure and provided analytical results on a quick turnaround basis. Results of the field GC analyses were used in association with other investigative techniques to select environmental samples for analysis by a fixed-base laboratory and to aid in evaluating the limits of VOC contamination.

The following attachments are included as part of this appendix: 1) method detection limit (MDL) study summary; 2) initial and continuing calibration summaries; 3) quality control (QC) check standard results; 4) internal standard (IS) area summary for diluted and reanalyzed samples; 5) summary of blank analyses for each sample group; 6) matrix spike recoveries; 7) field duplicate results; 8) laboratory duplicate results; and 9) instrument logbook photocopies.

## 2.0 EQUIPMENT CONFIGURATION

The sample screening analyses were performed in the on-site field trailer using a Hewlett-Packard (HP) model 5890 GC equipped with a 30-meter, 0.25 mm capillary column (Rtx-624) and using photoionization and electron capture detectors (PID and ECD, respectively) in series. Sample introduction was accomplished via a 24-port Tekmar ALS 2016 autosampler coupled to a Tekmar 3000 purge and trap controller. HP ChemStation software, a computer, and a laser printer were used to collect, report, and print chromatographic data. Ultra high purity (UHP) helium and nitrogen gases were used in the instrument makeup, sampling purging, and carrier gas lines.

The draft work plan initially proposed a headspace analysis method for field screening at NIROP Fridley, which included SOP specifications for a narrowbore capillary column and ambient oven cooling. However, the work plan was revised to accommodate recommendations for the use of purge and trap methodology, which preconcentrates the sample for a greater injected quantity and is optimally configured using different instrument accessories than those used for headspace analysis. Consequently, during the initial field analytical equipment set up, the ECD was configured to operate without dilution of the column effluent, which maximized sensitivity for

dichlorinated compounds but caused saturated response for trichlorinated and tetrachlorinated species. In addition, the GC was installed with only ambient oven cooling for use with the 0.25 mm i.d. narrowbore column because of a historical lack of success with equipment vendors who attempted to install cryogenic cooling in a field GC. Although acceptable for headspace analysis, this configuration produced less than optimal peak separation of target compounds in the early part of the chromatogram for purge and trap analysis. Despite these limitations, the field GC achieved detection limits superior to (lower than) the fixed-base laboratory for several chlorinated compounds and was also able to qualitatively identify the site-specific target compounds present in NIROP Fridley soil samples.

## 3.0 SITE-SPECIFIC TARGET COMPOUNDS

The instrument was calibrated for detection of the site-specific target compounds of concern (COCs) listed in Table D.1-1. Primary COCs were selected based on the chemicals historically detected or used at NIROP Fridley. Groundwater data indicated that trichloroethene (TCE) and tetrachloroethene (PCE) are the most pervasive VOCs present at the site. These two VOCs were found in association with other chlorinated ethenes that are TCE and PCE degradation products. Therefore, the list of primary COCs for the field screening analysis was comprised of TCE, PCE, their associated degradation products, and other common solvents. Field analysis also required reporting results for other compounds found on EPA's routine Target Compound List, although chloromethane and chloroethane were not detectable using the ECD or PID.

## 4.0 METHOD DETECTION LIMIT STUDY

A method detection limit (MDL) study was performed for all target compounds to determine appropriate reporting limits and lower quantitation limits for all target compounds. The results of the MDL study are presented in Attachment 1.

Prior to calculating MDLs, statistical outlier tests were conducted using the measured MDL standard concentrations. To determine whether the largest (or smallest) reported concentration was an outlier, the ratio was computed of the largest minus second largest value (or smallest minus second smallest) to the largest minus second smallest (or smallest minus second largest). Critical values for the test statistic were obtained from Table A-8e in Dixon and Massey's Introduction to Statistical Analysis (McGraw-Hill, Inc., 1983). Outlier values were excluded from all calculations of the MDL, mean, standard deviation, and range in Attachment 1.

**TABLE D.1-1**

**CHEMICALS OF CONCERN FOR FIELD GC ANALYSIS**
**NIROP FRIDLEY, MINNESOTA**

**Primary Chemicals of Concern**

| Volatile Organic Compound (VOC) | Abbreviation | CAS Number | Detector | Method Detection Limit (ug/L) |
|---|---|---|---|---|
| vinyl chloride | VCl | 75-01-4 | PID | 20 |
| 1,1-dichloroethene | 11DCE | 75-35-4 | ECD | 3.6 |
| trans-1,2-dichloroethene | t12DCE | 156-60-5 | ECD | 2.5 |
| cis-1,2-dichloroethene | c12DCE | 156-59-4 | ECD | 3.2 |
| 1,1,1-trichloroethane | 111TCEa | 71-55-6 | ECD | 1.4 |
| carbon tetrachloride | CCl4 | 56-23-5 | ECD | 0.22 |
| benzene | Ben | 71-43-2 | PID | 0.89 |
| trichloroethene | TCE | 79-01-6 | ECD | 0.33 |
| toluene | Tol | 108-88-3 | PID | 1.1 |
| tetrachloroethene | PCE | 127-18-4 | ECD | 0.15 |

**Other Chemicals of Concern**

| Volatile Organic Compound (VOC) | Abbreviation | CAS Number | Detector | Method Detection Limit (ug/L) |
|---|---|---|---|---|
| bromomethane | BrMe | 74-83-9 | ECD | 22 |
| acetone | Ace | 67-64-1 | PID | 18 |
| methylene chloride | MeCl2 | 75-09-2 | ECD | 4.3 |
| carbon disulfide | CS2 | 75-15-0 | PID | 11 |
| 2-butanone | 2-but | 78-93-3 | PID | 6.9 |
| chloroform | CHCl3 | 67-66-3 | ECD | 3.8 |
| 1,2-dichloroethane | 12DCEa | 107-06-2 | ECD | 12 |
| 4-methyl-2-pentanone | 4Me2P | 108-10-1 | PID | 6.6 |
| 1,1,2-trichloroethane | 112TCEa | 79-00-5 | ECD | 4.6 |
| 2-hexanone | 2-hex | 591-78-6 | PID | 6.9 |
| chlorobenzene | ClBen | 108-90-7 | PID | 0.56 |
| ethylbenzene | Eben | 100-41-4 | PID | 1.1 |
| o-xylene/styrene | o-xyl/Sty | 95-47-6 / | PID | 5.6 |
| m,p-xylenes | M&P | 1330-20-7 | PID | 1.7 |
| bromoform | CHBr3 | 75-25-2 | ECD | 0.28 |
| 1,1,2,2-tetrachloroethane | 1122PCEa | 79-34-5 | ECD | 0.17 |

It should be noted that cis-1,2-dichloroethene, 1,1-dichloroethene, methylene chloride, and 1,2-dichloroethane exhibited coelutions with other target compounds in the MDL standards which prevented accurate area measurements for these substances. Therefore, MDLs for these compounds were indirectly determined by using calibration factor (area versus amount) proportions determined from individual standard runs and adjusting the MDLs of nearby target compounds unaffected by coelution according to the ratio of the two compounds' calibration factors.

MDLs formed the basis for the lower reporting limit for all field screening target analytes on each detector. A related quantity, the practical quantitation limit (PQL), was defined for each compound as the level below which values are considered to be estimated based on sensitivity limitations. The PQL for each compound was set equal to twice the compound's MDL, which is consistent with recommendations for the NIROP Fridley field laboratory submitted by the Minnesota Pollution Control Agency (MCPA).

## 5.0 CALIBRATION SUMMARY

For the primary COCs, efforts were made to optimize calibration performance for compliance with the QC criteria listed in Tetra Tech NUS field screening SOP SF-1.6. COCs other than the site-specific primary COCs were considered to be a lower priority for QC compliance, and more limited efforts were applied to optimize their compound separation and quantitative calibration accuracy. Therefore, QC data for the secondary COCs are presented for information only.

Table D.1-2 contains summary statistics for the frequency of QC compliance for all initial and continuing calibration analyses. For each individual initial or continuing calibration, response factors and QC data for all target compounds are presented in Attachment 2a (internal standard method of quantitation) and Attachment 2b (external standard method).

The precision and linearity of initial calibrations are measured by the percent relative standard deviation (% RSD) of response factors; the closer the RSD value is to zero the more linear the calibration curve for a given compound. The precision of continuing calibrations is measured by the percent difference (PD) between the response factor observed in the continuing calibration standard run on a particular day versus the average response factor from the most recent initial calibration. The closer the PD value is to zero the more precise and stable the calibration response for a given compound.

## Table D.1-2

## Precision and Accuracy of Initial and Continuing Calibrations
## CTO 003, Fridley, Minnesota

| Compound | Coelution? (N)one (M)oderate (S)evere | Initial Calibration RSD Using Internal Standards | | | Initial Calibration RSD Using External Standards | | | Continuing Calib. % D Using Internal Standards | | Continuing Calib. % D Using External Standards | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No. RSDs <= 30 % | No. RSDs > 30 % | No. RSDs > 90 % | No. RSDs <= 30 % | No. RSDs > 30 % | No. RSDs > 90 % | No. % Ds <= 25 % | No. % Ds > 25 % | No. % Ds <= 25 % | No. % Ds > 25 % |
| **PID Detector** | | | | | | | | | | | |
| Vinyl chloride | N | 2 | 6 | | 1 | 7 | | 22 | 38 | 30 | 30 |
| Acetone | M | 3 | 5 | | 3 | 5 | | 17 | 43 | 32 | 28 |
| Trans-1,2-dichloroethene | M | 4 | 4 | | 5 | 3 | | 19 | 41 | 33 | 27 |
| Cis-1,2-dichloroethene | S | 2 | 6 | | 2 | 6 | | 21 | 38 | 23 | 36 |
| Carbon disulfide | S | 3 | 4 | 1 | 3 | 5 | | 20 | 39 | 17 | 42 |
| 2-butanone | S | 3 | 4 | 1 | 4 | 4 | | 24 | 35 | 22 | 37 |
| Benzene | S | 5 | 3 | | 7 | 1 | | 35 | 24 | 27 | 32 |
| Trichloroethene | S | 3 | 5 | | | 8 | | 30 | 30 | 22 | 38 |
| Toluene | S | | 8 | | 4 | 4 | | 22 | 38 | 30 | 30 |
| 4-methyl-2-pentanone | S | 1 | 7 | | 4 | 4 | | 23 | 37 | 31 | 29 |
| 2-hexanone | S | 3 | 5 | | 2 | 6 | | 17 | 43 | 20 | 40 |
| Tetrachloroethene | S | 5 | 1 | 2 | 1 | 5 | 2 | 22 | 38 | 15 | 45 |
| Chlorobenzene | N | 3 | 5 | | 4 | 4 | | 33 | 27 | 28 | 32 |
| Ethylbenzene | N | 5 | 3 | | 6 | 2 | | 30 | 29 | 24 | 35 |
| M- and P-xylene | M | 4 | 4 | | 4 | 4 | | 29 | 30 | 18 | 41 |
| O-xylene and Styrene | M | 5 | 3 | | 5 | 3 | | 39 | 20 | 31 | 28 |
| **ECD Detector** | | | | | | | | | | | |
| Bromomethane | M | | 8 | | | 8 | | 19 | 41 | 18 | 42 |
| 1,1-Dichloroethene | M | 1 | 7 | | 1 | 7 | | 36 | 24 | 33 | 27 |
| Methylene chloride | S | 3 | 5 | | 2 | 6 | | 29 | 31 | 26 | 34 |
| Chloroform | S | 1 | 7 | | 1 | 7 | | 34 | 26 | 35 | 25 |
| 1,1,1-trichloroethane | S | 1 | 7 | | 1 | 7 | | 34 | 26 | 35 | 25 |
| Carbon tetrachloride | S | 1 | 7 | | 1 | 7 | | 34 | 26 | 35 | 25 |
| 1,2-dichloroethane | S | 3 | 5 | | 3 | 5 | | 13 | 47 | 12 | 48 |
| Trichloroethene | M | 8 | | | 8 | | | 44 | 16 | 47 | 13 |
| Tetrachloroethene | M | 8 | | | 7 | 1 | | 34 | 26 | 33 | 27 |
| 1,1,2-trichloroethane | S | 8 | | | 7 | 1 | | 37 | 23 | 35 | 25 |
| Bromoform | N | 3 | 4 | 1 | 5 | 3 | | 35 | 25 | 53 | 7 |
| 1,1,2,2-tetrachloroethane | N | 1 | 5 | 2 | 2 | 6 | | 26 | 34 | 46 | 14 |

TCE and PCE, which are the two most prevalent primary COCs at NIROP Fridley, exhibited compliance with initial calibration criteria in every case except one and with continuing calibration criteria in most cases. However, other primary and secondary COCs displayed more frequent calibration noncompliances on the PID and ECD. As noted in the table, there is some correlation between target compounds that coelute in the calibration chromatograms and the occurrence of more frequent problems with RSDs or PDs exceeding the SOP's calibration QC criteria. A principal reason that RSD criteria were exceeded is because the ECD was operated for maximum sensitivity, which in the case of highly sensitive compounds caused the initial calibration concentrations to fall above the detector's upper linearity limit. Another reason for the number of observed QC exceedances for RSD criteria and PD criteria was that area measurements were adversely affected by coelution of target compounds in the calibration standards, which, as discussed previously, was a consequence of suboptimal chromatographic peak separations given the narrowbore GC column and ambient oven cooling equipment configuration. Due to these problems, which adversely affected calibration accuracy and precision, quantitative results obtained for this field screening analysis project are generally considered to be estimated values.

## 6.0 QUALITY CONTROL CHECK STANDARD RESULTS

After each initial calibration was performed, an independent QC check standard was analyzed for selected compounds to verify accuracy and integrity of reference standards and accuracy in the dilution and analysis of calibration standards. Attachment 3 presents true values, observed concentrations, and percent recoveries for the QC check standards. (Note that hard-copy printouts of QC check standards run on July 13 and July 23 were misplaced and could not be regenerated because the misplacement of these printouts was noted after return of vendor-supplied data processing software.) QC check standard recoveries for TCE were within the SOP's 50 to 150 percent acceptance window. Other COCs exceeded these criteria in one or more runs. Consistently high recoveries for 1,1-dichloroethene appear to be affected by the coelution problems discussed earlier. The cause of several high recoveries on the PID may also be related to coelutions.

## 7.0 INTERNAL STANDARD AREA EVALUATION

Internal standards (ISs) were added to each calibration standard, field sample, or QC sample before analysis. For each field or QC sample, the area recoveries of all internal standards were compared to the 50 to 200 percent control limits designated in the field analysis SOP. Recoveries

that were outside the acceptance window triggered sample reanalysis. A summary of IS areas and recoveries for each reanalyzed or diluted sample is presented in Attachment 4.

For each sample that was rerun, chromatograms were evaluated to determine if IS recoveries were biased from coelutions or integration error. For each sample, the data believed to be the most accurate were then selected to be reported from either the initial analysis, reanalysis, or a diluted analysis. In some cases, external standard quantitation (i.e., calculation of results without using internal standard areas) was performed to mitigate the effects of sample components that coeluted with and adversely affected internal standard areas. Coelution problems and external standard quantitation are footnoted where applicable on the reanalysis summary table. In conjunction, an evaluation of external standard-based calibration statistics for RSD and PD is presented in Attachment 2b to document calibration accuracy and precision associated with those sample results that were calculated using the external standard quantitation method.

## 8.0 SUMMARY OF BLANK ANALYSES

Complete laboratory and field QC blank results are presented for each sample analysis group in Attachment 5. Table D.1-3 summarizes the contaminants detected in each type of field QC blank or laboratory blank. Chloroform was the most frequently detected compound in laboratory method blanks but was not found in field QC blanks. This compound appears to have been present at levels below 10 ug/L in the reagent water used in the field laboratory. The reported blank results for 1,1,1-trichloroethane and carbon tetrachloride are a consequence of chloroform coeluting with these compounds in the calibration mixture analyses. However, individual standard runs for 1,1,1-trichloroethane suggest a slightly shifted (later) retention time compared to chloroform, and it is probable that the detected blank contaminant peak is actually chloroform and not the other two substances.

Bromomethane was detected in method blanks and trip blanks at similar frequencies (approximately one-third of all blanks). Because bromomethane was not among the reagents used in the field laboratory, the detection of this compound may be caused by an unknown but unrelated VOC contaminant that has a retention time very close to that of bromomethane.

Other field screening blank contaminants were detected very infrequently. Several compounds were reported on the PID (acetone, trans-1,2-dichloroethene, and 2-butanone) in blanks analyzed during a brief period when the PID detector was suspected to exhibit a temporary problem with retained water peaks in the purge and trap plumbing system, suggesting that these contaminants

## Table D.1-3

## Summary of Field Screening Blank Analyses
## CTO 003, Fridley, Minnesota

| Compound | Method Blanks | | Trip Blanks | | Batch Blanks | | Source Water Blanks | |
|---|---|---|---|---|---|---|---|---|
| | Detection Frequency | Range of Conc.(ug/L) | Detection Frequency | Range of Conc.(ug/L) | Detection Frequency | Range of Conc.(ug/L) | Detection Frequency | Range of Conc.(ug/L) |
| Vinyl chloride | | | | | | | | |
| Bromomethane | 19/63 | 22 - 69.5 | 17/56 | 22.3 - 47.7 | 1/4 | 23 | 0/3 | |
| 1,1-Dichloroethene | | | | | | | | |
| Acetone | 3/63 | 36.1 - 154 | | | | | | |
| Methylene chloride | | | | | | | | |
| Trans-1,2-dichloroethene | 8/63 | 2.7 - 38.4 | 1/56 | 2.8 | | | | |
| Cis-1,2-dichloroethene | | | | | | | | |
| Carbon disulfide | 7/63 | 16.6 - 311 | 1/56 | 73.1 | | | | |
| 2-butanone | 6/63 | 10.7 - 201 | 1/56 | 249 | 1/4 | 129 | | |
| Chloroform | 46/63 | 4.3 - 16.6 | | | | | | |
| 1,1,1-trichloroethane | 46/63 | 1.6 - 6.0 | | | | | | |
| Carbon tetrachloride | 46/63 | 0.25 - 0.96 | | | | | | |
| Benzene | | | 1/56 | 1.5 | | | | |
| 1,2-dichloroethane | | | | | | | | |
| Trichloroethene | 2/63 | 0.49 - 0.75 | 2/56 | 0.91 - 1.4 | | | | |
| Toluene | 1/63 | 1.6 | | | | | | |
| 4-methyl-2-pentanone | 2/63 | 9.0 - 48.5 | | | | | | |
| Tetrachloroethene | | | | | | | | |
| 1,1,2-trichloroethane | | | | | | | | |
| 2-hexanone | 2/63 | 9.9 - 88.7 | | | | | | |
| Chlorobenzene | | | | | | | | |
| Ethylbenzene | | | | | | | | |
| M-andP-xylene | | | | | | | | |
| O-xylene and Styrene | | | | | | | | |
| Bromoform | | | | | | | | |
| 1,1,2,2-tetrachloroethane | | | | | | | | |

may be merely instrument artifacts. Carbon disulfide was detected in seven blank analyses and may have been an ambient contaminant in the laboratory atmosphere over the brief timeframe during which this compound was more frequently detected.

TCE was detected in only two laboratory blanks and in only two trip blanks. The trace blank levels detected (0.5 and 0.8 ug/L in method blanks and 0.9 and 1.4 ug/L in trip blanks) were not specifically noted by the analyst to be related to residual cross-contamination in the purge and trap vessels or plumbing. In accordance with the SOP, the analytical sequence was continually monitored to ensure that actions were taken (decontamination and/or sample reanalysis) in cases where there was a possibility of a high-concentration preceding sample run causing residual instrument contamination and a carryover "memory effect" in the next analysis.

## 9.0 SUMMARY OF MATRIX SPIKE ANALYSES

Attachment 6 summarizes the percent recoveries obtained for all laboratory matrix spikes run for this project. The SOP QC limits of 50 to 150 percent were met for seven out of 27 TCE recoveries. In general, matrix spike recovery outliers for TCE more frequently indicated low rather than high recoveries and were in a range lower than or similar to the low recoveries also observed for TCE in the QC check standards. This supports the hypothesis that low TCE recoveries were a systematic problem caused by a low bias in the measured IS area in the associated continuing calibration, which was attributable to coelution with a target compound on the ECD.

Two out of 27 matrix spike recoveries were observed to be zero for 1,1-dichloroethene, which could suggest an isolated sample matrix effect. With chlorobenzene, 14 out of 27 spike recoveries were greater than the 150 percent upper QC limit, which correlates with a similar trend of five out of six high recoveries occurring for this compound in QC check standards. With benzene, 15 out of 27 matrix spike recoveries were less than the 50 percent lower QC limit. The cause of the low benzene recoveries did not appear to be calibration standard area coelutions involving benzene, since the associated QC check standard recoveries for benzene were below QC limits in only one out of six analyses.

## 10.0 SUMMARY OF FIELD DUPLICATE ANALYSES

Attachment 7 summarizes the relative percent differences (RPDs) obtained for all field duplicate results that were positively detected in either the original or duplicate analysis. Overall, general qualitative agreement was indicated by the duplicate results. The SOP QC action limit of 150

RPD was exceeded in only one out of 95 positive duplicate results. The QC warning limit of 50 RPD was exceeded in 26 out of 95 positive results.

There were 38 duplicate pairs for which a positive result was obtained for one sample and a nondetect result was obtained for the companion analysis. However, in the majority of these cases, the positive results for the companion analyses were within a factor of two of the detection limit. One exception was the detection of 2-butanone, carbon disulfide, and trans-1,2-dichloroethene in the field duplicate of sample 003SB03204 but not in the original analysis. In this case, many extraneous peaks occurred on the PID chromatogram in the duplicate run, and examination of chromatograms suggests that positive results were possibly artifacts from residual water peaks that were found only in one analysis. Another anomaly occurred with the detection of 1,2-dichloroethane in the sample 003SBP1009. However, the detection limits for this compound are uncertain due to significant coelutions in the calibration standard, so that the positive result might be closer to the true detection limit than indicated by the reported values. The only significant anomaly that did not appear to have an assignable cause occurred for PCE in sample 003SBP0907. In this sample, a positive PCE result of 90 ug/kg was reported for the original analysis, but a nondetect result was reported for the field duplicate.

## 11.0 SUMMARY OF LABORATORY DUPLICATE ANALYSES

Attachment 8 summarizes the relative percent differences (RPDs) obtained for all laboratory duplicate results that were positively detected in either the original or duplicate analysis. Overall, general qualitative agreement was indicated by the duplicate results. The SOP QC action limit of 150 RPD was not exceeded in any of the 34 positive duplicate results. The QC warning limit of 50 RPD was exceeded in 7 out of 34 positive results.

There were 5 duplicate pairs for which one positive result was obtained and a nondetect was reported for the companion analysis. However, in all of these cases, the positive results reported for the companion analysis were within a factor of two of the detection limit.

## 12.0 CHRONOLOGICAL ACTIVITIES LOGBOOK

Attachment 9 contains photocopies of applicable pages from the instrument logbook number 1222. This includes a chronological injection record for instrument runs, standard preparation and certification records, a daily log of activities and events occurring during startup, maintenance, troubleshooting, sampling, and analysis, and percent dry weight determinations.

## 13.0 DATA REPORTING

Appendix D.2 contains spreadsheet data summaries for all sample analyses arranged in chronological order of analysis. The reported results have been adjusted for percent moisture, sample weight, and dilutions. The results have also been qualified based on blank contamination. Qualification for blank contamination was performed by applying the "five-times" criterion described in the U.S. EPA Region 5 SOP for Validation of CLP Organic Data to the maximum concentration of each target compound detected in one or more associated blanks. One or more results associated with 21 samples were qualified as rejected, R or UR, based upon interference caused by large peaks which may have obscured peaks associated with the qualified compounds. Positive results were also qualified as estimated based upon concentrations reported above the upper calibration limit or below the PQL. Raw chromatograms and integration reports to support these sample results will be kept on file by Tetra Tech NUS.

## 14.0 DATA CORRELATION

VOC sample results from the fixed-base laboratory were compared with field screening results from the same locations. Because of the previously noted problems with linearity and coelutions, the degree of correlation of screening and confirmation results was found to be qualitative rather than quantitative. Qualitative agreement was best illustrated for TCE, one of the primary compounds of concern at NIROP Fridley.

To compare the TCE data sets, it was first necessary to censor the paired screening/confirmation data points below the lower concentration limits at which the intrinsic detection limits of either the field method or the fixed-base laboratory method might not be reliable for compound detection and result comparison. For the field screening data, there was a systematic low bias for TCE by factors ranging from two to four as noted above for matrix spikes and QC check standards. Therefore, there was justification for censoring data at two different limits by considering only result pairs in which either the field TCE value was above 1.5 ug/kg or the fixed-base laboratory value was above 8 ug/kg.

This modified TCE data set revealed 100 percent qualitative agreement, as indicated by the observation that all samples with positive TCE results greater than 1.5 ug/kg for the field analysis were positively detected by the fixed-base laboratory; likewise, all samples with positive results greater than 8 ug/kg for the fixed-base laboratory were positively detected by the field laboratory. Although acceptable qualitative agreement was found, the quantitative correlation was marginal,

which is a reflection of the fact that TCE results by one method were often up to an order of magnitude higher or lower than corresponding results of the companion method.

The probable reasons for TCE's poor quantitative correlation include the previously-discussed problems with field screening calibration nonlinearity and peak coelutions in conjunction with inhomogeneity of the soil. The samples that were split may have been very inhomogeneous due to the manner in which VOCs must be collected with minimal handling (no stirring or mixing is allowed before aliquots are taken). In addition, any inhomogeneity effects would be enhanced by the nature of residual subsurface contamination in that the contamination may be influenced by attenuation from migration effects, degradation/weathering, and smearing by fluctuating water levels over time.

# ATTACHMENT D.1

# METHODS OF FIELD SCREENING FOR VOLATILE ORGANIC COMPOUNDS

# ATTACHMENT 1

## MDLs

## METHOD DETECTION LIMITS FOR HP-5890
## August 4, 1997 Runs (N = 8)

| PID COMPOUNDS | 0.99 t | MDLs | Conc. Range | Mean Conc. | Individual Run Measured Concentrations | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 008R0101 | 009R0101 | 007R0101 | 022R0101 | 012R0101 | 013R0101 | 014R0101 | 015R0101 |
| vinyl chloride | | 20.092 | 20.904 | 28.808 | 25.473 | 30.940 | 31.875 | 38.129 | 17.225 | 31.108 | 21.388 | 34.329 |
| acetone (coelutes) | | 17.689 | 19.200 | 11.523 | 2.702 | 10.805 | 9.890 | outlr-47.92 | 8.939 | 11.239 | 15.185 | 21.902 |
| trans-1,2-dichloroethene | | 2.461 | 2.564 | 2.916 | 1.908 | 2.426 | 2.915 | 4.473 | 2.917 | 3.715 | 2.057 | 2.916 |
| cis-1,2-dichloroethene | | | | | | | | | | | | |
| carbon disulfide (coelutes) | | 10.724 | 8.695 | 56.107 | 58.655 | 59.296 | 58.987 | 57.762 | 50.602 | 54.216 | 53.230 | outlr-37.21 |
| 2-butanone (coelutes) | | 6.939 | 5.626 | 36.304 | 37.953 | 38.368 | 38.168 | 37.375 | 32.742 | 35.081 | 34.443 | outlr-24.07 |
| benzene | | 0.890 | 0.874 | 1.174 | 1.017 | 1.017 | 1.010 | outlr-4.239 | 1.787 | 1.255 | 0.912 | 1.218 |
| trichloroethene (PID - MDL N/A) | | 0.285 | 0.240 | 0.322 | 0.266 | 0.424 | 0.444 | 0.231 | 0.441 | 0.276 | 0.203 | 0.289 |
| toluene (coelutes) | | 1.149 | 0.970 | 2.327 | 2.061 | 2.077 | 2.005 | outlr-6.910 | 2.016 | 2.594 | 2.564 | 2.975 |
| 4-methyl-2-pentanone (coelutes) | | 6.622 | 5.591 | 13.417 | 11.879 | 11.973 | 11.560 | outlr-39.83 | 11.623 | 14.952 | 14.779 | 17.151 |
| 2-hexanone | | 6.857 | 6.996 | 6.162 | 3.851 | 4.062 | 4.334 | 10.847 | 5.161 | 7.712 | 7.041 | 6.288 |
| tetrachloroethene (PID - MDL N/A) | | 0.320 | 0.288 | 0.444 | 0.471 | 0.351 | 0.459 | outlr-2.776 | 0.346 | 0.631 | 0.343 | 0.507 |
| chlorobenzene | | 0.557 | 0.667 | 0.680 | 0.731 | 0.780 | 0.984 | 0.770 | 0.641 | 0.639 | 0.317 | 0.577 |
| ethylbenzene | | 1.123 | 1.114 | 1.246 | 1.251 | 1.301 | 1.637 | outlr-4.653 | 1.098 | 1.237 | 0.542 | 1.656 |
| m-xylene (coelutes) | | 1.687 | 1.826 | 1.987 | 1.889 | 1.999 | 2.330 | outlr-6.503 | 1.689 | 1.900 | 1.139 | 2.965 |
| p-xylene (coelutes) | | 1.687 | 1.826 | 1.987 | 1.889 | 1.999 | 2.330 | outlr-6.503 | 1.689 | 1.900 | 1.139 | 2.965 |
| o-xylene (coelutes) | | 5.582 | 5.640 | 3.589 | 2.664 | 3.456 | 2.945 | 7.831 | 2.256 | 2.464 | 2.191 | 4.902 |
| styrene (coelutes) | | 5.582 | 5.640 | 3.589 | 2.664 | 3.456 | 2.945 | 7.831 | 2.256 | 2.464 | 2.191 | 4.902 |

| ECD COMPOUNDS | 0.99 t | MDLs | Conc. Range | Mean Conc. | 008F0101 | 009F0101 | 007F0101 | 022F0101 | 012F0101 | 013F0101 | 014F0101 | 015F0101 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | | 22.328 | 26.685 | 45.162 | 34.082 | 44.456 | 43.224 | 60.767 | 40.089 | 45.431 | 43.843 | 49.407 |
| 1,1-dichloroethene | | | | | | | | | | | | |
| methylene chloride | | | | | | | | | | | | |
| chloroform (coelutes) | | 3.775 | 3.811 | 8.585 | 9.345 | 9.413 | 9.293 | 5.865 | 9.676 | 9.104 | 8.526 | 7.460 |
| 1,1,1-trichloroethane (coelutes) | | 1.373 | 1.386 | 3.122 | 3.398 | 3.423 | 3.379 | 2.133 | 3.519 | 3.311 | 3.100 | 2.713 |
| carbon tetrachloride (coelutes) | | 0.220 | 0.222 | 0.500 | 0.544 | 0.548 | 0.541 | 0.341 | 0.563 | 0.530 | 0.496 | 0.434 |
| 1,2-dichloroethane | | | | | | | | | | | | |
| trichloroethene (ECD) | | 0.331 | 0.343 | 0.796 | 0.595 | 0.938 | 0.891 | 0.777 | 0.847 | 0.862 | 0.785 | 0.676 |
| tetrachloroethene (ECD) (coelutes) | | 0.148 | 0.142 | 0.564 | 0.601 | 0.600 | 0.564 | outlr-0.741 | 0.560 | 0.530 | 0.473 | 0.616 |
| 1,1,2-trichloroethane (coelutes) | | 4.586 | 4.404 | 17.442 | 18.591 | 18.565 | 17.469 | outlr-22.94 | 17.346 | 16.411 | 14.653 | 19.056 |
| bromoform | | 0.275 | 0.300 | 0.776 | 0.671 | 0.748 | 0.854 | 0.971 | 0.760 | 0.752 | 0.703 | 0.748 |
| 1,1,2,2-tetrachloroethane | | 0.166 | 0.195 | 1.125 | 1.090 | 1.136 | 1.163 | 1.221 | 1.147 | 1.114 | 1.026 | 1.100 |

outlr – Result is excluded from calculation and is a statistical outlier.

Tetrachloroethene and Trichloroethene are reported from the ECD, so MDLs given for the PID are for comparison purposes only.

# ATTACHMENT 2a

## CALIBRATION SUMMARIES
## INTERNAL STANDARD METHOD

# INITIAL CALIBRATION SUMMARY
July 11, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 84627 | 100 | 78217 | 100 | 66339 | 100 | 71405 | 100 | NA | 100 |
| 74288 | 100 | 83739 | 100 | 103244 | 100 | 137339 | 100 | NA | 100 |

## RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | NA | 1.210E+00 | 9.965E-01 | 6.725E-01 | NA | 9.596E-01 | 28.2 | NA | 0 | 23659 | 25 | 33052 | 50 | 48019 | 100 | NA | 0 |
| acetone (coelutes) | NA | NA | 5.518E+00 | 4.531E+00 | NA | 5.024E+00 | 13.9 | NA | 0 | NA | 0 | 472227 | 129 | 928523 | 287 | NA | 0 |
| trans-1,2-dichloroethene | NA | 6.755E+01 | 7.195E+01 | 6.758E+01 | NA | 6.903E+01 | 3.7 | NA | 0 | 264182 | 5 | 715972 | 15 | 2171527 | 45 | NA | 0 |
| cis-1,2-dichloroethene | NA | 1.254E+02 | 7.105E+01 | 5.750E+01 | NA | 8.465E+01 | 42.5 | NA | 0 | 490441 | 5 | 706963 | 15 | 1847460 | 45 | NA | 0 |
| carbon disulfide (coelutes) | NA | NA | 9.700E-01 | 1.421E+00 | NA | 1.196E+00 | 26.7 | NA | 0 | NA | 0 | 163452 | 254 | 515591 | 508 | NA | 0 |
| 2-butanone (coelutes) | NA | NA | 1.493E+00 | 2.188E+00 | NA | 1.841E+00 | 26.7 | NA | 0 | NA | 0 | 163452 | 165 | 515591 | 330 | NA | 0 |
| benzene | NA | NA | 1.236E+02 | 1.271E+02 | NA | 1.254E+02 | 2.0 | NA | 0 | NA | 0 | 409923 | 5 | 1815837 | 20 | NA | 0 |
| trichloroethene (PID - MDL N/A) | NA | 2.157E+01 | 3.744E+01 | 1.002E+02 | NA | 5.307E+01 | 78.3 | NA | 0 | 33745 | 2 | 99357 | 4 | 572306 | 8 | NA | 0 |
| toluene (coelutes) | NA | NA | 7.595E+01 | 2.021E+01 | NA | 4.808E+01 | 82.0 | NA | 0 | NA | 0 | 1108454 | 22 | 793630 | 55 | NA | 0 |
| 4-methyl-2-pentanone (coelutes) | NA | NA | 1.295E+01 | 3.528E+00 | NA | 8.241E+00 | 80.9 | NA | 0 | NA | 0 | 1108454 | 129 | 793630 | 315 | NA | 0 |
| 2-hexanone | NA | NA | 9.380E+00 | 5.639E+00 | NA | 7.509E+00 | 35.2 | NA | 0 | NA | 0 | 622234 | 100 | 805349 | 200 | NA | 0 |
| tetrachloroethene (PID - MDL N/A) | NA | 1.945E+01 | 5.358E+01 | 1.536E+02 | NA | 7.553E+01 | 92.3 | NA | 0 | 30433 | 2 | 142176 | 4 | 877257 | 8 | NA | 0 |
| chlorobenzene | NA | 3.535E+01 | 3.809E+01 | 3.950E+01 | NA | 3.765E+01 | 5.6 | NA | 0 | 59207 | 2 | 157288 | 4 | 434026 | 8 | NA | 0 |
| ethylbenzene | NA | NA | 2.798E+01 | 1.897E+01 | NA | 2.347E+01 | 27.1 | NA | 0 | NA | 0 | 144429 | 5 | 520967 | 20 | NA | 0 |
| m-xylene (coelutes) | NA | NA | 2.205E+01 | 2.591E+01 | NA | 2.398E+01 | 11.4 | NA | 0 | NA | 0 | 227647 | 10 | 1423601 | 40 | NA | 0 |
| p-xylene (coelutes) | NA | NA | 2.205E+01 | 2.591E+01 | NA | 2.398E+01 | 11.4 | NA | 0 | NA | 0 | 227647 | 10 | 1423601 | 40 | NA | 0 |
| o-xylene (coelutes) | NA | NA | 2.484E+01 | 2.018E+01 | NA | 2.251E+01 | 14.7 | NA | 0 | NA | 0 | 256439 | 10 | 1108332 | 40 | NA | 0 |
| styrene (coelutes) | NA | NA | 2.484E+01 | 2.018E+01 | NA | 2.251E+01 | 14.7 | NA | 0 | NA | 0 | 256439 | 10 | 1108332 | 40 | NA | 0 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 12603800 | 100 | 12228200 | 100 | 11508500 | 100 | 10391400 | 100 | | 100 |
| 36319700 | 100 | 49831000 | 100 | 52378400 | 100 | 38426800 | 100 | | 100 |

| ECD COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | NA | 1.238E+00 | 6.739E-01 | 3.178E-01 | NA | 7.433E-01 | 62.4 | NA | 0 | 3785509 | 25 | 3877933 | 50 | 3301999 | 100 | NA | 0 |
| 1,1-dichloroethene | NA | 5.141E+00 | 3.585E+00 | 3.569E+00 | NA | 4.098E+00 | 22.0 | NA | 0 | 3143229 | 5 | 6189353 | 15 | 16689100 | 45 | NA | 0 |
| methylene chloride | NA | 1.442E+00 | 7.556E-01 | 7.520E-01 | NA | 9.833E-01 | 40.4 | NA | 0 | 3527488 | 20 | 4348175 | 50 | 7814668 | 100 | NA | 0 |
| chloroform (coelutes) | NA | 7.408E+01 | 4.322E+01 | 3.567E+01 | NA | 5.099E+01 | 39.9 | NA | 0 | 99651100 | 11 | 108921100 | 21.9 | 162347025 | 43.8 | NA | 0 |
| 1,1,1-trichloroethane (coelutes) | NA | 2.037E+02 | 1.198E+02 | 9.826E+01 | NA | 1.406E+02 | 39.6 | NA | 0 | 99651100 | 4 | 108921100 | 7.9 | 162347025 | 15.9 | NA | 0 |
| carbon tetrachloride (coelutes) | NA | 1.273E+03 | 7.280E+02 | 6.249E+02 | NA | 8.754E+02 | 39.8 | NA | 0 | 99651100 | 0.64 | 108921100 | 1.3 | 162347025 | 2.5 | NA | 0 |
| 1,2-dichloroethane | NA | NA | 2.453E+00 | 9.108E-01 | NA | 1.682E+00 | 64.8 | NA | 0 | NA | 0 | 14117800 | 50 | 9464771 | 100 | NA | 0 |
| trichloroethene (ECD) | 9.086E+01 | 7.497E+01 | 6.739E+01 | 9.012E+01 | NA | 8.084E+01 | 14.3 | 11452400 | 1 | 18334600 | 2 | 31021800 | 4 | 74921100 | 8 | NA | 0 |
| tetrachloroethene (ECD) (coelutes) | 1.252E+02 | 1.071E+02 | 1.246E+02 | 1.103E+02 | NA | 1.168E+02 | 8.1 | 15775500 | 1 | 27496900 | 2.1 | 58803200 | 4.1 | 95099800 | 8.3 | NA | 0 |
| 1,1,2-trichloroethane (coelutes) | 3.911E+00 | 3.459E+00 | 3.961E+00 | 3.547E+00 | NA | 3.720E+00 | 6.8 | 15775500 | 32 | 27496900 | 65 | 58803200 | 129 | 95099800 | 258 | NA | 0 |
| bromoform | 1.080E+01 | 7.215E+00 | 6.267E+00 | 8.435E+00 | NA | 8.180E+00 | 24.0 | 3924096 | 1 | 7190222 | 2 | 13129800 | 4 | 25929600 | 8 | NA | 0 |
| 1,1,2,2-tetrachloroethane | 5.960E+00 | 3.227E+00 | 2.104E+00 | 1.951E+00 | NA | 3.311E+00 | 56.0 | 2164537 | 1 | 3216402 | 2 | 4409212 | 4 | 5996874 | 8 | NA | 0 |

# INITIAL CALIBRATION SUMMARY
July 13, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 70875 | 100 | 58973 | 100 | 78526 | 100 | 66368 | 100 | NA | 100 |
| 44925 | 100 | 48076 | 100 | 74130 | 100 | 71979 | 100 | NA | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | NA | 7.643E-01 | 5.251E-01 | 4.322E-01 | NA | 5.739E-01 | 29.9 | NA | 0 | 11269 | 25 | 20818 | 50 | 28682 | 100 | NA | 0 |
| acetone (coelutes) | NA | NA | 3.011E+00 | 3.018E+00 | NA | 3.015E+00 | 0.2 | NA | 0 | NA | 0 | 305044 | 129 | 574861 | 287 | NA | 0 |
| trans-1,2-dichloroethene | NA | 4.020E+01 | 4.006E+01 | 3.797E+01 | NA | 3.941E+01 | 3.2 | NA | 0 | 118538 | 5 | 471838 | 15 | 1133905 | 45 | NA | 0 |
| cis-1,2-dichloroethene | NA | 5.895E+01 | 4.060E+01 | 2.291E+01 | NA | 4.082E+01 | 44.1 | NA | 0 | 173813 | 5 | 478248 | 15 | 684352 | 45 | NA | 0 |
| carbon disulfide (coelutes) | NA | NA | 8.108E-01 | 1.206E+00 | NA | 1.008E+00 | 27.7 | NA | 0 | NA | 0 | 181715 | 254 | 1033215 | 508 | NA | 0 |
| 2-butanone (coelutes) | NA | NA | 1.248E+00 | 1.856E+00 | NA | 1.552E+00 | 27.7 | NA | 0 | NA | 0 | 161715 | 165 | 406594 | 330 | NA | 0 |
| benzene | NA | NA | 7.203E+01 | 5.691E+01 | NA | 6.447E+01 | 16.6 | NA | 0 | NA | 0 | 282808 | 5 | 755379 | 20 | NA | 0 |
| trichloroethene (PID - MDL N/A) | NA | 2.312E+01 | 2.876E+01 | 4.781E+01 | NA | 3.323E+01 | 38.9 | NA | 0 | 27272 | 2 | 90323 | 4 | 253830 | 8 | NA | 0 |
| toluene (coelutes) | NA | NA | 3.512E+01 | 1.734E+01 | NA | 2.623E+01 | 47.9 | NA | 0 | NA | 0 | 606758 | 22 | 632815 | 55 | NA | 0 |
| 4-methyl-2-pentanone (coelutes) | NA | NA | 5.990E+00 | 3.027E+00 | NA | 4.508E+00 | 46.5 | NA | 0 | NA | 0 | 606758 | 129 | 1932613 | 315 | NA | 0 |
| 2-hexanone | NA | NA | 3.819E+00 | 1.320E+00 | NA | 2.569E+00 | 68.8 | NA | 0 | NA | 0 | 299865 | 100 | 175207 | 200 | NA | 0 |
| tetrachloroethene (PID - MDL N/A) | NA | 1.026E+01 | 1.529E+01 | 6.880E+01 | NA | 3.145E+01 | 103.2 | NA | 0 | 12099 | 2 | 48038 | 4 | 365273 | 8 | NA | 0 |
| chlorobenzene | NA | 2.279E+01 | 1.761E+01 | 1.561E+01 | NA | 1.867E+01 | 19.8 | NA | 0 | 21000 | 2 | 52210 | 4 | 89897 | 8 | NA | 0 |
| ethylbenzene | NA | NA | 1.785E+01 | 1.219E+01 | NA | 1.502E+01 | 26.7 | NA | 0 | NA | 0 | 66153 | 5 | 175440 | 20 | NA | 0 |
| m-xylene (coelutes) | NA | NA | 2.434E+01 | 1.779E+01 | NA | 2.106E+01 | 22.0 | NA | 0 | NA | 0 | 180402 | 10 | 512192 | 40 | NA | 0 |
| p-xylene (coelutes) | NA | NA | 2.434E+01 | 1.779E+01 | NA | 2.106E+01 | 22.0 | NA | 0 | NA | 0 | 180402 | 10 | 512192 | 40 | NA | 0 |
| o-xylene (coelutes) | NA | NA | 2.562E+01 | 2.623E+01 | NA | 2.593E+01 | 1.6 | NA | 0 | NA | 0 | 189949 | 10 | 755136 | 40 | NA | 0 |
| styrene (coelutes) | NA | NA | 2.562E+01 | 2.623E+01 | NA | 2.593E+01 | 1.6 | NA | 0 | NA | 0 | 189949 | 10 | 755136 | 40 | NA | 0 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 11391400 | 100 | 11424700 | 100 | 10895100 | 100 | 8442671 | 100 | 7560881 | 100 |
| 37268600 | 100 | 40639500 | 100 | 41879700 | 100 | 44958800 | 100 | 34496800 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | NA | 1.198E+00 | 7.550E-01 | 4.911E-01 | 3.170E+00 | 1.403E+00 | 86.4 | NA | 0 | 3421532 | 25 | 4112709 | 50 | 4146166 | 100 | 35946600 | 150 |
| 1,1-dichloroethene | NA | 4.573E+00 | 3.731E+00 | 3.843E+00 | 1.546E+00 | 3.423E+00 | 38.1 | NA | 0 | 2612107 | 5 | 6096673 | 15 | 14601300 | 45 | 14026800 | 120 |
| methylene chloride | NA | 8.649E-01 | 1.093E+00 | 3.504E-01 | 7.649E-01 | 7.682E-01 | 40.4 | NA | 0 | 1976288 | 20 | 5951617 | 50 | 2958412 | 100 | 8674705 | 150 |
| chloroform (coelutes) | NA | 5.205E+01 | 2.999E+01 | 2.337E+01 | NA | 3.514E+01 | 42.7 | NA | 0 | 65407600 | 11 | 71566300 | 21.9 | 86422300 | 43.8 | NA | 0 |
| 1,1,1-trichloroethane (coelutes) | NA | 1.431E+02 | 8.315E+01 | 6.438E+01 | NA | 9.688E+01 | 42.5 | NA | 0 | 12076800 | 4 | 16863000 | 7.9 | 24921000 | 15.9 | NA | 0 |
| carbon tetrachloride (coelutes) | NA | 8.945E+02 | 5.053E+02 | 4.095E+02 | NA | 6.031E+02 | 42.6 | NA | 0 | 12076800 | 0.64 | 16863000 | 1.3 | 24921000 | 2.5 | NA | 0 |
| 1,2-dichloroethane | NA | NA | 4.000E-01 | 1.729E+00 | 8.358E-01 | 9.884E-01 | 68.6 | NA | 0 | NA | 0 | 2179120 | 50 | 14601300 | 100 | 9478838 | 150 |
| trichloroethene (ECD) | 1.157E+02 | 7.973E+01 | 7.325E+01 | 8.460E+01 | NA | 8.831E+01 | 21.3 | 13176200 | 1 | 18217500 | 2 | 31922800 | 4 | 57140600 | 8 | NA | 0 |
| tetrachloroethene (ECD) (coelutes) | 1.638E+02 | 1.343E+02 | 9.821E+01 | 8.208E+01 | NA | 1.196E+02 | 30.7 | 18857800 | 1 | 32227900 | 2.1 | 43871100 | 4.1 | 57514500 | 8.3 | NA | 0 |
| 1,1,2-trichloroethane (coelutes) | 5.118E+00 | 4.340E+00 | 3.121E+00 | 2.640E+00 | NA | 3.805E+00 | 29.7 | 1357800 | 32 | 32227900 | 65 | 43871100 | 129 | 57514500 | 258 | NA | 0 |
| bromoform | 9.873E+00 | 8.267E+00 | 6.804E+00 | 5.920E+00 | NA | 7.716E+00 | 22.5 | 3879498 | 1 | 6719692 | 2 | 11398800 | 4 | 21292000 | 8 | NA | 0 |
| 1,1,2,2-tetrachloroethane | 5.843E+00 | 4.115E+00 | 2.724E+00 | 1.664E+00 | NA | 3.586E+00 | 50.4 | 2177666 | 1 | 3344276 | 2 | 4562751 | 4 | 5983588 | 8 | NA | 0 |

# INITIAL CALIBRATION SUMMARY
## July 23, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc |
| 21610 | 100 | 22253 | 100 | 25547.391 | 100 | 34980 | 100 | NA | 100 |
| 47380 | 100 | 43492 | 100 | 41063 | 100 | 36080 | 100 | NA | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | NA | 9.442E-01 | 3.196E-01 | 4.158E-01 | NA | 5.599E-01 | 60.1 | NA | 0 | 5253 | 25 | 4082 | 50 | 14546 | 100 | NA | 0 |
| acetone (coelutes) | NA | NA | 2.339E+00 | 1.953E+00 | NA | 2.146E+00 | 12.7 | NA | 0 | NA | 0 | 77080 | 129 | 196034 | 287 | NA | 0 |
| trans-1,2-dichloroethene | NA | 4.684E+01 | 4.188E+01 | 2.700E+01 | NA | 3.857E+01 | 26.8 | NA | 0 | 52122 | 5 | 160474 | 15 | 424949 | 45 | NA | 0 |
| cis-1,2-dichloroethene | NA | 1.712E+01 | 8.824E+00 | 4.720E+00 | NA | 1.022E+01 | 61.8 | NA | 0 | 19047 | 5 | 33813 | 15 | 74302 | 45 | NA | 0 |
| carbon disulfide (coelutes) | NA | NA | 2.331E+00 | 2.111E+00 | NA | 2.221E+00 | 7.0 | NA | 0 | NA | 0 | 151242 | 254 | 375191 | 508 | NA | 0 |
| 2-butanone (coelutes) | NA | NA | 3.588E+00 | 3.250E+00 | NA | 3.419E+00 | 7.0 | NA | 0 | NA | 0 | 151242 | 165 | 375191 | 330 | NA | 0 |
| benzene | NA | NA | 9.581E+01 | 4.984E+01 | NA | 7.283E+01 | 44.6 | NA | 0 | NA | 0 | 122386 | 5 | 348717 | 20 | NA | 0 |
| trichloroethene (PID - MDL N/A) | NA | 2.604E+01 | 6.939E+01 | 5.625E+01 | NA | 5.056E+01 | 44.0 | NA | 0 | 11591 | 2 | 70907 | 4 | 157422 | 8 | NA | 0 |
| toluene (coelutes) | NA | NA | 1.833E+01 | 1.333E+01 | NA | 1.583E+01 | 22.4 | NA | 0 | NA | 0 | 103025 | 22 | 256404 | 55 | NA | 0 |
| 4-methyl-2-pentanone (coelutes) | NA | NA | 3.126E+00 | 2.327E+00 | NA | 2.727E+00 | 20.7 | NA | 0 | NA | 0 | 103025 | 129 | 256404 | 315 | NA | 0 |
| 2-hexanone | NA | NA | 2.928E+00 | 2.619E+00 | NA | 2.773E+00 | 7.9 | NA | 0 | NA | 0 | 74790 | 100 | 183224 | 200 | NA | 0 |
| tetrachloroethene (PID - MDL N/A) | NA | 4.896E+00 | 5.029E+01 | 4.767E+01 | NA | 3.428E+01 | 74.3 | NA | 0 | 2179 | 2 | 51390 | 4 | 133399 | 8 | NA | 0 |
| chlorobenzene | NA | 7.170E+00 | 1.526E+01 | 1.586E+01 | NA | 1.276E+01 | 38.0 | NA | 0 | 6237 | 2 | 25070 | 4 | 45771 | 8 | NA | 0 |
| ethylbenzene | NA | NA | 1.300E+01 | 1.036E+01 | NA | 1.168E+01 | 16.0 | NA | 0 | NA | 0 | 26687 | 5 | 74757 | 20 | NA | 0 |
| m-xylene (coelutes) | NA | NA | 1.182E+01 | 1.186E+01 | NA | 1.184E+01 | 0.2 | NA | 0 | NA | 0 | 48552 | 10 | 171195 | 40 | NA | 0 |
| p-xylene (coelutes) | NA | NA | 1.182E+01 | 1.186E+01 | NA | 1.184E+01 | 0.2 | NA | 0 | NA | 0 | 48552 | 10 | 171195 | 40 | NA | 0 |
| o-xylene (coelutes) | NA | NA | 7.093E+00 | 8.823E+00 | NA | 7.958E+00 | 15.4 | NA | 0 | NA | 0 | 29127 | 10 | 127325 | 40 | NA | 0 |
| styrene (coelutes) | NA | NA | 7.093E+00 | 8.823E+00 | NA | 7.958E+00 | 15.4 | NA | 0 | NA | 0 | 29127 | 10 | 127325 | 40 | NA | 0 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc |
| 3185065 | 100 | 3063208 | 100 | 2688514 | 100 | 2850166 | 100 | 2353185 | 100 |
| 1256700 | 100 | 11286800 | 100 | 12355600 | 100 | 11965500 | 100 | 5831807 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | NA | 3.309E+00 | 8.874E-01 | 4.608E-01 | 1.979E+00 | 1.659E+00 | 76.7 | NA | 0 | 2533849 | 25 | 1192861 | 50 | 1313406 | 100 | 6987101 | 150 |
| 1,1-dichloroethene | NA | 9.151E+00 | 5.538E+00 | 3.438E+00 | 1.161E+00 | 4.822E+00 | 70.4 | NA | 0 | 1401495 | 5 | 2233338 | 15 | 4410036 | 45 | 3278081 | 120 |
| methylene chloride | NA | 1.213E+00 | 6.414E-01 | 6.085E-01 | 1.197E+00 | 9.149E-01 | 36.6 | NA | 0 | 742884 | 20 | 862181 | 50 | 1734407 | 100 | 4225541 | 150 |
| chloroform (coelutes) | NA | 5.688E+01 | 4.130E+01 | 3.650E+01 | NA | 4.490E+01 | 23.7 | NA | 0 | 18167400 | 11 | 24317400 | 21.9 | 45571500 | 43.8 | NA | 0 |
| 1,1,1-trichloroethane (coelutes) | NA | 1.564E+02 | 1.145E+02 | 1.006E+02 | NA | 1.238E+02 | 23.5 | NA | 0 | 18167400 | 4 | 24317400 | 7.9 | 45571500 | 15.9 | NA | 0 |
| carbon tetrachloride (coelutes) | NA | 9.777E+02 | 6.958E+02 | 6.396E+02 | NA | 7.710E+02 | 23.5 | NA | 0 | 18167400 | 0.64 | 24317400 | 1.3 | 45571500 | 2.5 | NA | 0 |
| 1,2-dichloroethane | NA | NA | 2.329E+00 | 1.244E+00 | 4.839E+00 | 2.804E+00 | 65.8 | NA | 0 | NA | 0 | 3130698 | 50 | 3546533 | 100 | 17079700 | 150 |
| trichloroethene (ECD) | 1.075E+02 | 8.671E+01 | 8.714E+01 | 7.319E+01 | NA | 8.863E+01 | 16.0 | 3423722 | 1 | 5312441 | 2 | 9370829 | 4 | 16687500 | 8 | NA | 0 |
| tetrachloroethene (ECD) (coelutes) | 1.797E+02 | 1.645E+02 | 1.456E+02 | 1.177E+02 | NA | 1.519E+02 | 17.6 | 5724389 | 1 | 10579800 | 2.1 | 16051400 | 4.1 | 27837200 | 8.3 | NA | 0 |
| 1,1,2-trichloroethane (coelutes) | 5.616E+00 | 5.314E+00 | 4.628E+00 | 3.786E+00 | NA | 4.836E+00 | 16.8 | 5724389 | 32 | 10579800 | 65 | 16051400 | 129 | 27837200 | 258 | NA | 0 |
| bromoform | 7.589E+01 | 1.061E+01 | 7.871E+00 | 7.048E+00 | NA | 2.535E+01 | 133.0 | 953767 | 1 | 2394070 | 2 | 3889953 | 4 | 6746215 | 8 | NA | 0 |
| 1,1,2,2-tetrachloroethane | 2.615E+01 | 3.812E+00 | 2.073E+00 | 1.923E+00 | NA | 8.490E+00 | 139.1 | 328670 | 1 | 860443 | 2 | 1024745 | 4 | 1840513 | 8 | NA | 0 |

CONTINUING CALIBRATION SUMMARY
July 13 to July 23 , 1997

| DATE: | | | 07/14/97 | | 07/14/97 | | 07/15/97 | | 07/15/97 | | 07/16/97 | | 07/16/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| | INITIAL CALIBRATION | | 055R0101 | | 079R0201 | | 086R0101 | | 006R0301 | | 009R0101 | | 013R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 5.739E-01 | 29.9 | 4.620E-01 | -19.5 | 4.278E-01 | -25.5 | 6.864E-01 | 19.6 | 5.153E-01 | -10.2 | 1.703E+00 | 196.7 | 8.458E-01 | 47.4 |
| acetone (coelutes) | 3.015E+00 | 0.2 | 2.362E+00 | -21.6 | 1.858E+00 | -38.4 | 3.422E+00 | 13.5 | 2.344E+00 | -22.2 | 3.996E+00 | 32.5 | 2.183E+00 | -27.6 |
| trans-1,2-dichloroethene | 3.941E+01 | 3.2 | 2.999E+01 | -23.9 | 3.602E+01 | -8.6 | 4.714E+01 | 19.6 | 3.726E+01 | -5.5 | 4.978E+01 | 26.3 | 3.810E+01 | -3.3 |
| cis-1,2-dichloroethene | 4.082E+01 | 44.1 | 2.785E+01 | -31.8 | 2.831E+01 | -30.7 | 3.635E+01 | -10.9 | 2.927E+01 | -28.3 | 3.529E+01 | -13.6 | 3.055E+01 | -25.2 |
| carbon disulfide (coelutes) | 1.008E+00 | 27.7 | 7.049E-01 | -30.1 | 7.165E-01 | -28.9 | 1.201E+00 | 19.1 | 7.409E-01 | -26.5 | 8.931E-01 | -11.4 | 7.733E-01 | -23.3 |
| 2-butanone (coelutes) | 1.552E+00 | 27.7 | 1.085E+00 | -30.1 | 1.103E+00 | -28.9 | 1.849E+00 | 19.1 | 1.140E+00 | -26.5 | 1.375E+00 | -11.4 | 1.190E+00 | -23.3 |
| benzene | 6.447E+01 | 16.6 | 5.315E+01 | -17.6 | 6.650E+01 | 3.2 | 9.811E+01 | 52.2 | 6.361E+01 | -1.3 | 7.668E+01 | 18.9 | 7.609E+01 | 18.0 |
| trichloroethene (PID - MDL N/A) | 3.323E+01 | 38.9 | 2.252E+01 | -32.2 | 2.935E+01 | -11.7 | 3.233E+01 | -2.7 | 2.685E+01 | -19.2 | 3.290E+01 | -1.0 | 3.442E+01 | 3.6 |
| toluene (coelutes) | 2.623E+01 | 47.9 | 3.076E+01 | 17.3 | 2.026E+01 | -22.7 | 3.854E+01 | 46.9 | 2.189E+01 | -16.6 | 4.589E+01 | 75.0 | 1.853E+01 | -29.4 |
| 4-methyl-2-pentanone (coelutes | 4.508E+00 | 46.5 | 5.246E+00 | 16.4 | 3.456E+00 | -23.4 | 6.573E+00 | 45.8 | 3.733E+00 | -17.2 | 7.827E+00 | 73.6 | 3.159E+00 | -29.9 |
| 2-hexanone | 2.569E+00 | 68.8 | 3.024E+00 | 17.7 | 2.112E+00 | -17.8 | 2.541E+00 | -1.1 | 2.855E+00 | 11.1 | 3.081E+00 | 19.9 | 4.076E+00 | 58.6 |
| tetrachloroethene (PID - MDL N/ | 3.145E+01 | 103.2 | 1.796E+01 | -42.9 | 1.139E+01 | -63.8 | 2.323E+01 | -26.1 | 1.421E+01 | -54.8 | 2.491E+01 | -20.8 | 4.563E+01 | 45.1 |
| chlorobenzene | 1.867E+01 | 19.8 | 2.327E+01 | 24.6 | 1.720E+01 | -7.9 | 1.963E+01 | 5.2 | 1.678E+01 | -10.1 | 2.058E+01 | 10.3 | 1.376E+01 | -26.3 |
| ethylbenzene | 1.502E+01 | 26.7 | 3.357E+01 | 123.5 | 1.332E+01 | -11.3 | 1.838E+01 | 22.4 | 1.515E+01 | 0.9 | 1.918E+01 | 27.7 | 1.176E+01 | -21.7 |
| m-xylene (coelutes) | 2.106E+01 | 22.0 | 9.262E+00 | -56.0 | 1.771E+01 | -15.9 | 2.495E+01 | 18.5 | 1.250E+01 | -40.6 | 2.497E+01 | 18.6 | 1.356E+01 | -35.6 |
| p-xylene (coelutes) | 2.106E+01 | 22.0 | 9.262E+00 | -56.0 | 1.771E+01 | -15.9 | 2.495E+01 | 18.5 | 1.250E+01 | -40.6 | 2.497E+01 | 18.6 | 1.356E+01 | -35.6 |
| o-xylene (coelutes) | 2.593E+01 | 1.6 | 2.651E+01 | 2.2 | 2.569E+01 | -0.9 | 2.501E+01 | -3.5 | 1.692E+01 | -34.7 | 2.578E+01 | -0.6 | 2.238E+01 | -13.7 |
| styrene (coelutes) | 2.593E+01 | 1.6 | 2.651E+01 | 2.2 | 2.569E+01 | -0.9 | 2.501E+01 | -3.5 | 1.692E+01 | -34.7 | 2.578E+01 | -0.6 | 2.238E+01 | -13.7 |

| | INITIAL CALIBRATION | | 055F0101 | | 079F0201 | | 086F0101 | | 006F0301 | | 009F0101 | | 013F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.403E+00 | 86.4 | 7.973E-01 | -43.2 | 3.184E-01 | -77.3 | 7.273E-01 | -48.2 | 9.442E-01 | -32.7 | 1.367E+00 | -2.6 | 1.338E+00 | -4.6 |
| 1,1-dichloroethene | 3.423E+00 | 38.1 | 3.614E+00 | 5.6 | 3.477E+00 | 1.6 | 3.589E+00 | 4.9 | 3.730E+00 | 9.0 | 4.579E+00 | 33.8 | 4.906E+00 | 43.3 |
| methylene chloride | 7.682E-01 | 40.4 | 4.486E-01 | -41.6 | 1.057E+00 | 37.6 | 1.050E+00 | 36.7 | 1.104E+00 | 43.8 | 1.260E+00 | 64.0 | 4.638E-01 | -39.6 |
| chloroform (coelutes) | 3.514E+01 | 42.7 | 3.650E+01 | 3.9 | 3.108E+01 | -11.5 | 3.007E+01 | -14.4 | 3.117E+01 | -11.3 | 3.023E+01 | -14.0 | 3.451E+01 | -1.8 |
| 1,1,1-trichloroethane (coelutes) | 9.688E+01 | 42.5 | 1.012E+02 | 4.4 | 8.617E+01 | -11.1 | 8.335E+01 | -14.0 | 8.642E+01 | -10.8 | 8.380E+01 | -13.5 | 9.567E+01 | -1.3 |
| carbon tetrachloride (coelutes) | 6.031E+02 | 42.6 | 6.148E+02 | 1.9 | 5.237E+02 | -13.2 | 5.065E+02 | -16.0 | 5.251E+02 | -12.9 | 5.092E+02 | -15.6 | 5.814E+02 | -3.6 |
| 1,2-dichloroethane | 9.884E-01 | 68.6 | 2.388E+00 | 141.6 | 2.784E-01 | -71.8 | 1.664E+00 | 68.4 | 1.488E+00 | 50.6 | 1.348E+00 | 36.4 | 1.694E+00 | 71.4 |
| trichloroethene (ECD) | 8.831E+01 | 21.3 | 6.345E+01 | -28.2 | 5.993E+01 | -32.1 | 6.060E+01 | -31.4 | 6.264E+01 | -29.1 | 6.014E+00 | -93.2 | 7.363E+01 | -16.6 |
| tetrachloroethene (ECD) (coelut | 1.196E+02 | 30.7 | 9.641E+01 | -19.4 | 9.711E+01 | -18.8 | 1.008E+02 | -15.8 | 1.022E+02 | -14.5 | 1.033E+02 | -13.6 | 1.053E+02 | -12.0 |
| 1,1,2-trichloroethane (coelutes) | 3.805E+00 | 29.7 | 3.064E+00 | -19.5 | 3.086E+00 | -18.9 | 3.202E+00 | -15.8 | 3.250E+00 | -14.6 | 3.283E+00 | -13.7 | 3.347E+00 | -12.0 |
| bromoform | 7.716E+00 | 22.5 | 7.245E+00 | -6 1 | 7.204E+00 | -6.6 | 6.893E+00 | -10.7 | 7.634E+00 | -1.1 | 6.982E+00 | -9.5 | 7.107E+00 | -7.9 |
| 1,1,2,2-tetrachloroethane | 3.586E+00 | 50.4 | 3.123E+00 | -12.9 | 2.863E+00 | -20.2 | 2.253E+00 | -37.2 | 2.944E+00 | -17.9 | 2.564E+00 | -28.5 | 2.626E+00 | -26.8 |

| | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | | | NUMBER 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | 86532 | 86532 | 100 | 70616 | 70616 | 100 | 46317 | 46317 | 100 | 59375 | 59375 | 100 | 41455 | 41455 | 100 | 67614 | 67614 | 100 |
| PID IS3 AREAS | 67000 | 67000 | 100 | 44969 | 44969 | 100 | 52950 | 52950 | 100 | 46263 | 46263 | 100 | 47817 | 47817 | 100 | 47094 | 47094 | 100 |

| PID COMPOUNDS | 07/14/97 055R0101 | area | conc. | 07/14/97 079R0201 | area | conc. | 07/15/97 086R0101 | area | conc. | 07/15/97 006R0301 | area | conc. | 07/16/97 009R0101 | area | conc. | 07/16/97 013R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 4.620E-01 | 19987 | 50 | 4.278E-01 | 15103 | 50 | 6.864E-01 | 15895 | 50 | 5.153E-01 | 15299 | 50 | 1.703E+00 | 35293 | 50 | 8.458E-01 | 28593 | 50 |
| acetone (coelutes) | 2.362E+00 | 263712 | 129 | 1.858E+00 | 169285 | 129 | 3.422E+00 | 204440 | 129 | 2.344E+00 | 179548 | 129 | 3.996E+00 | 213689 | 129 | 2.183E+00 | 190393 | 129 |
| trans-1,2-dichloroethene | 2.999E+01 | 389324 | 15 | 3.602E+01 | 381526 | 15 | 4.714E+01 | 327522 | 15 | 3.726E+01 | 331805 | 15 | 4.978E+01 | 309540 | 15 | 3.810E+01 | 386416 | 15 |
| cis-1,2-dichloroethene | 2.785E+01 | 361502 | 15 | 2.831E+01 | 299882 | 15 | 3.635E+01 | 252574 | 15 | 2.927E+01 | 260710 | 15 | 3.529E+01 | 219434 | 15 | 3.055E+01 | 309883 | 15 |
| carbon disulfide (coelutes) | 7.049E-01 | [illegible] | 254 | 7.165E-01 | [illegible] | 254 | 1.201E+00 | [illegible] | 254 | 7.409E-01 | [illegible] | 254 | 8.931E-01 | [illegible] | 254 | 7.733E-01 | [illegible] | 254 |
| 2-butanone (coelutes) | 1.085E+00 | 154930 | 165 | 1.103E+00 | 128512 | 165 | 1.849E+00 | 141331 | 165 | 1.140E+00 | 111733 | 165 | 1.375E+00 | 94043 | 165 | 1.190E+00 | 132807 | 165 |
| benzene | 5.315E+01 | 229963 | 5 | 6.650E+01 | 234798 | 5 | 9.811E+01 | 227214 | 5 | 6.361E+01 | 188840 | 5 | 7.668E+01 | 158932 | 5 | 7.609E+01 | 257224 | 5 |
| trichloroethene (PID - MDL N/A) | 2.252E+01 | 77941 | 4 | 2.935E+01 | 82894 | 4 | 3.233E+01 | 59900 | 4 | 2.685E+01 | 63758 | 4 | 3.290E+01 | 54563 | 4 | 3.442E+01 | 93080 | 4 |
| toluene (coelutes) | 3.076E+01 | 585606 | 22 | 2.026E+01 | 314793 | 22 | 3.854E+01 | 392742 | 22 | 2.189E+01 | 285905 | 22 | 4.589E+01 | 418559 | 22 | 1.853E+01 | 275572 | 22 |
| 4-methyl-2-pentanone (coelutes) | 5.246E+00 | 585606 | 129 | 3.456E+00 | 314793 | 129 | 6.573E+00 | 392742 | 129 | 3.733E+00 | 285905 | 129 | 7.827E+00 | 418559 | 129 | 3.159E+00 | 275572 | 129 |
| 2-hexanone | 3.024E+00 | 261710 | 100 | 2.112E+00 | 149112 | 100 | 2.541E+00 | 117682 | 100 | 2.855E+00 | 169495 | 100 | 3.081E+00 | 127705 | 100 | 4.076E+00 | 275572 | 100 |
| tetrachloroethene (PID - MDL N/A) | 1.796E+01 | 62148 | 4 | 1.139E+01 | 32182 | 4 | 2.323E+01 | 43038 | 4 | 1.421E+01 | 33751 | 4 | 2.491E+01 | 41300 | 4 | 4.563E+01 | 123409 | 4 |
| chlorobenzene | 2.327E+01 | 62357 | 4 | 1.720E+01 | 30937 | 4 | 1.963E+01 | 41586 | 4 | 1.678E+01 | 31049 | 4 | 2.058E+01 | 39370 | 4 | 1.376E+01 | 25926 | 4 |
| ethylbenzene | 3.357E+01 | 112456 | 5 | 1.332E+01 | 29948 | 5 | 1.838E+01 | 48670 | 5 | 1.515E+01 | 35054 | 5 | 1.918E+01 | 45853 | 5 | 1.176E+01 | 27688 | 5 |
| m-xylene (coelutes) | 9.262E+00 | 62054 | 10 | 1.771E+01 | 79643 | 10 | 2.495E+01 | 132132 | 10 | 1.250E+01 | 57834 | 10 | 2.497E+01 | 119404 | 10 | 1.356E+01 | 63865 | 10 |
| p-xylene (coelutes) | 9.262E+00 | 62054 | 10 | 1.771E+01 | 79643 | 10 | 2.495E+01 | 132132 | 10 | 1.250E+01 | 57834 | 10 | 2.497E+01 | 119404 | 10 | 1.356E+01 | 63865 | 10 |
| o-xylene (coelutes) | 2.651E+01 | 177590 | 10 | 2.569E+01 | 115540 | 10 | 2.501E+01 | 132421 | 10 | 1.692E+01 | 78291 | 10 | 2.578E+01 | 123259 | 10 | 2.238E+01 | 105379 | 10 |
| styrene (coelutes) | 2.651E+01 | 177590 | 10 | 2.569E+01 | 115540 | 10 | 2.501E+01 | 132421 | 10 | 1.692E+01 | 78291 | 10 | 2.578E+01 | 123259 | 10 | 2.238E+01 | 105379 | 10 |

| | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | | | NUMBER 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 100 | 10738600 | 100 | 10547800 | 10547800 | 100 | 11064500 | 11064500 | 100 | 10438200 | 10438200 | 100 | 10574300 | 10574300 | 100 | 10211800 | 10211800 | 100 |
| ECID IS3 AREAS | 100 | 39773900 | 100 | 39516000 | 39516000 | 100 | 41478700 | 41478700 | 100 | 38709600 | 38709600 | 100 | 42177700 | 42177700 | 100 | 43685500 | 43685500 | 100 |

| ECD COMPOUNDS | 07/14/97 055F0101 | area | conc. | 07/14/97 079F0201 | area | conc. | 07/15/97 086F0101 | area | conc. | 07/15/97 006F0301 | area | conc. | 07/16/97 009F0101 | area | conc. | 07/16/97 013F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 7.973E-01 | 4281184 | 50 | 3.184E-01 | 1679404 | 50 | 7.273E-01 | 4023346 | 50 | 9.442E-01 | 4927890 | 50 | 1.367E+00 | 7227786 | 50 | 1.338E+00 | 6834076 | 50 |
| 1,1-dichloroethene | 3.614E+00 | 5821271 | 15 | 3.477E+00 | 5501940 | 15 | 3.589E+00 | 5957137 | 15 | 3.730E+00 | 5839701 | 15 | 4.579E+00 | 7262770 | 15 | 4.906E+00 | 7515489 | 15 |
| methylene chloride | 4.486E-01 | 2408472 | 50 | 1.057E+00 | 5575041 | 50 | 1.050E+00 | 5810774 | 50 | 1.104E+00 | 5763312 | 50 | 1.260E+00 | 6659626 | 50 | 4.638E-01 | 2368032 | 50 |
| chloroform (coelutes) | 3.650E+01 | 85833300 | 21.9 | 3.108E+01 | 71805300 | 21.9 | 3.007E+01 | 72858600 | 21.9 | 3.117E+01 | 71260100 | 21.9 | 3.023E+01 | 70001300 | 21.9 | 3.451E+01 | 77181900 | 21.9 |
| 1,1,1-trichloroethane (coelutes) | 1.012E+02 | 85833300 | 7.9 | 8.617E+01 | 71805300 | 7.9 | 8.335E+01 | 72858600 | 7.9 | 8.642E+01 | 71260100 | 7.9 | 8.380E+01 | 70001300 | 7.9 | 9.567E+01 | 77181900 | 7.9 |
| carbon tetrachloride (coelutes) | 6.148E+02 | 85833300 | 1.3 | 5.237E+02 | 71805300 | 1.3 | 5.065E+02 | 72858600 | 1.3 | 5.251E+02 | 71260100 | 1.3 | 5.092E+02 | 70001300 | 1.3 | 5.814E+02 | 77181900 | 1.3 |
| 1,2-dichloroethane | 2.388E+00 | 12819500 | 50 | 2.784E-01 | 1468373 | 50 | 1.664E+00 | 9206897 | 50 | 1.488E+00 | 7766614 | 50 | 1.348E+00 | 7129208 | 50 | 1.694E+00 | 8650604 | 50 |
| trichloroethene (ECD) | 6.345E+01 | 27254200 | 4 | 5.993E+01 | 25284000 | 4 | 6.060E+01 | 26821100 | 4 | 6.264E+01 | 26155600 | 4 | 6.014E+00 | 2543800 | 4 | 7.363E+01 | 30074800 | 4 |
| tetrachloroethene (ECD) (coelutes) | 9.641E+01 | 42446500 | 4.1 | 9.711E+01 | 41994800 | 4.1 | 1.008E+02 | 45707900 | 4.1 | 1.022E+02 | 43756500 | 4.1 | 1.033E+02 | 44779200 | 4.1 | 1.053E+02 | 44087900 | 4.1 |
| 1,1,2-trichloroethane (coelutes) | 3.064E+00 | 42446500 | 129 | 3.086E+00 | 41994800 | 129 | 3.202E+00 | 45707900 | 129 | 3.250E+00 | 43756500 | 129 | 3.283E+00 | 44779200 | 129 | 3.347E+00 | 44087900 | 129 |
| bromoform | 7.245E+00 | 11525800 | 4 | 7.204E+00 | 11387500 | 4 | 6.893E+00 | 11435800 | 4 | 7.634E+00 | 11820200 | 4 | 6.982E+00 | 11778900 | 4 | 7.107E+00 | 12418500 | 4 |
| 1,1,2,2-tetrachloroethane | 3.123E+00 | 4968719 | 4 | 2.863E+00 | 4524620 | 4 | 2.253E+00 | 3737549 | 4 | 2.944E+00 | 4558707 | 4 | 2.564E+00 | 4326316 | 4 | 2.626E+00 | 4588102 | 4 |

CONTINUING CALIBRATION SUMMARY
July 23 to August 05 , 1997

| DATE: | | | 07/25/97 | | 07/25/97 | | 07/25/97 | | 07/26/97 | | 07/26/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | |
| | INITIAL CALIBRATION | | 056R0101 | | 078R0101 | | 091R0101 | | 094R0101 | | 025R0201 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 5.599E-01 | 60.1 | 2.687E-01 | -52.0 | 5.709E-01 | 2.0 | 3.759E-01 | -32.9 | 3.852E-01 | -31.2 | 2.485E-01 | -55.6 |
| acetone (coelutes) | 2.146E+00 | 12.7 | 9.467E-01 | -55.9 | 2.377E+00 | 10.8 | 1.501E+00 | -30.1 | 2.641E+00 | 23.1 | 1.460E+00 | -32.0 |
| trans-1,2-dichloroethene | 3.857E+01 | 26.8 | 1.762E+01 | -54.3 | 2.569E+01 | -33.4 | 1.696E+01 | -56.0 | 2.345E+01 | -39.2 | 1.261E+01 | -67.3 |
| cis-1,2-dichloroethene | 1.022E+01 | 61.8 | 6.700E+00 | -34.5 | 5.687E+00 | -44.4 | 7.899E+00 | -22.7 | 9.107E+00 | -10.9 | 4.781E+00 | -53.2 |
| carbon disulfide (coelutes) | 2.221E+00 | 7.0 | 8.000E-01 | -64.0 | 7.351E-01 | -66.9 | 1.399E+00 | -37.0 | 2.401E+00 | 8.1 | 7.683E-01 | -65.4 |
| 2-butanone (coelutes) | 3.419E+00 | 7.0 | 1.231E+00 | -64.0 | 1.132E+00 | -66.9 | 2.154E+00 | -37.0 | 3.697E+00 | 8.1 | 1.183E+00 | -65.4 |
| benzene | 7.283E+01 | 44.6 | 2.552E+01 | -65.0 | 7.371E+01 | 1.2 | 6.136E+01 | -15.8 | 6.963E+01 | -4.4 | 4.766E+01 | -34.6 |
| trichloroethene (PID - MDL N/A) | 5.056E+01 | 44.0 | 3.101E+01 | -38.7 | 3.212E+01 | -36.5 | 2.914E+01 | -42.4 | 4.459E+01 | -11.8 | 3.188E+01 | -36.9 |
| toluene (coelutes) | 1.583E+01 | 22.4 | 7.975E+00 | -49.6 | 1.992E+01 | 25.9 | 1.560E+01 | -1.5 | 1.386E+01 | -12.4 | 7.904E+00 | -50.1 |
| 4-methyl-2-pentanone (coelutes | 2.727E+00 | 20.7 | 1.360E+00 | -50.1 | 3.398E+00 | 24.6 | 2.660E+00 | -2.4 | 2.364E+00 | -13.3 | 1.348E+00 | -50.6 |
| 2-hexanone | 2.773E+00 | 7.9 | 2.207E+00 | -20.4 | 2.226E+00 | -19.7 | 1.630E+00 | -41.2 | 1.076E+00 | -61.2 | 4.853E-01 | -82.5 |
| tetrachloroethene (PID - MDL N/ | 3.428E+01 | 74.3 | 2.875E+01 | -16.1 | 1.417E+01 | -58.7 | 1.215E+01 | -64.6 | 4.088E+01 | 19.2 | 3.181E+01 | -7.2 |
| chlorobenzene | 1.276E+01 | 38.0 | 1.466E+01 | 14.8 | 1.203E+01 | -5.7 | 1.280E+01 | 0.3 | 1.471E+01 | 15.3 | 3.191E+01 | 150.0 |
| ethylbenzene | 1.168E+01 | 16.0 | 1.173E+01 | 0.5 | 1.153E+01 | -1.3 | 1.173E+01 | 0.5 | 1.032E+01 | -11.6 | 2.174E+01 | 86.1 |
| m-xylene (coelutes) | 1.184E+01 | 0.2 | 1.071E+01 | -9.6 | 1.000E+01 | -15.5 | 9.417E+00 | -20.5 | 9.512E+00 | -19.7 | 1.864E+01 | 57.4 |
| p-xylene (coelutes) | 1.184E+01 | 0.2 | 1.071E+01 | -9.6 | 1.000E+01 | -15.5 | 9.417E+00 | -20.5 | 9.512E+00 | -19.7 | 1.864E+01 | 57.4 |
| o-xylene (coelutes) | 7.958E+00 | 15.4 | 7.317E+00 | -8.1 | 1.724E+01 | 116.7 | 1.752E+01 | 120.2 | 9.729E+00 | 22.3 | 1.828E+01 | 129.8 |
| styrene (coelutes) | 7.958E+00 | 15.4 | 7.317E+00 | -8.1 | 1.724E+01 | 116.7 | 1.752E+01 | 120.2 | 9.729E+00 | 22.3 | 1.828E+01 | 129.8 |

| | INITIAL CALIBRATION | | 056F0101 | | 078F0101 | | 091F0101 | | 094F0101 | | 025F0201 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.659E+00 | 76.7 | 1.134E+00 | -31.6 | 8.713E-01 | -47.5 | 8.004E-01 | -51.8 | 6.647E-01 | -59.9 | 6.592E-01 | -60.3 |
| 1,1-dichloroethene | 4.822E+00 | 70.4 | 4.084E+00 | -15.3 | 4.144E+00 | -14.1 | 3.744E+00 | -22.4 | 4.955E+00 | 2.8 | 4.505E+00 | -6.6 |
| methylene chloride | 9.149E-01 | 36.6 | 2.211E+00 | 141.6 | 4.053E-01 | -55.7 | 4.378E-01 | -52.1 | 3.932E-01 | -57.0 | 3.373E-01 | -63.1 |
| chloroform (coelutes) | 4.490E+01 | 23.7 | 3.888E+01 | -13.4 | 3.167E+01 | -29.5 | 2.842E+01 | -36.7 | 2.473E+01 | -44.9 | 2.227E+01 | -50.4 |
| 1,1,1-trichloroethane (coelutes) | 1.238E+02 | 23.5 | 1.078E+02 | -13.0 | 8.780E+01 | -29.1 | 7.879E+01 | -36.4 | 6.855E+01 | -44.6 | 6.173E+01 | -50.1 |
| carbon tetrachloride (coelutes) | 7.710E+02 | 23.5 | 6.550E+02 | -15.0 | 5.336E+02 | -30.8 | 4.788E+02 | -37.9 | 4.166E+02 | -46.0 | 3.751E+02 | -51.3 |
| 1,2-dichloroethane | 2.804E+00 | 65.8 | 1.107E+00 | -60.5 | 5.814E-01 | -79.3 | 4.942E-01 | -82.4 | 1.446E+00 | -48.4 | 1.621E+00 | -42.2 |
| trichloroethene (ECD) | 8.863E+01 | 16.0 | 8.373E+01 | -5.5 | 6.420E+01 | -27.6 | 5.912E+01 | -33.3 | 7.446E+01 | -16.0 | 6.973E+01 | -21.3 |
| tetrachloroethene (ECD) (coelut | 1.519E+02 | 17.6 | 1.376E+02 | -9.4 | 9.085E+01 | -40.2 | 8.337E+01 | -45.1 | 1.130E+02 | -25.6 | 1.034E+02 | -31.9 |
| 1,1,2-trichloroethane (coelutes) | 4.836E+00 | 16.8 | 4.375E+00 | -9.5 | 2.888E+00 | -40.3 | 2.650E+00 | -45.2 | 3.592E+00 | -25.7 | 3.286E+00 | -32.1 |
| bromoform | 2.535E+01 | 133.0 | 1.019E+01 | -59.8 | 9.621E+00 | -62.1 | 1.088E+01 | -57.1 | 3.559E+00 | -86.0 | 5.224E+00 | -79.4 |
| 1,1,2,2-tetrachloroethane | 8.490E+00 | 139.1 | 2.642E+00 | -68.9 | 3.419E+00 | -59.7 | 3.592E+00 | -57.7 | 2.290E+00 | -73.0 | 2.947E+00 | -65.3 |

**CONTINUING CALIBRATION SUMMARY**
**July 23 to August 05 , 1997**

| DATE: | | | 07/27/97 | | 07/28/97 | | 07/28/97 | | 07/29/97 | | 07/30/97 | | 07/30/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | |
| | INITIAL CALIBRATION | | 027R0101 | | 052R0101 | | 055R0101 | | 080R0101 | | 097R0101 | | 100R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 5.599E-01 | 60.1 | 3.142E-01 | -43.9 | 3.644E-01 | -34.9 | 6.818E-01 | 21.8 | 3.331E-01 | -40.5 | 5.462E-01 | -2.4 | 9.493E-01 | 69.6 |
| acetone (coelutes) | 2.146E+00 | 12.7 | 2.140E+00 | -0.3 | 1.892E+00 | -11.8 | 3.053E+00 | 42.3 | 1.645E+00 | -23.3 | 2.651E+00 | 23.6 | 4.263E+00 | 98.7 |
| trans-1,2-dichloroethene | 3.857E+01 | 26.8 | 2.593E+01 | -32.8 | 2.366E+01 | -38.7 | 4.034E+01 | 4.6 | 2.327E+01 | -39.7 | 3.216E+01 | -16.6 | 5.262E+01 | 36.4 |
| cis-1,2-dichloroethene | 1.022E+01 | 61.8 | 1.588E+01 | 55.4 | 1.477E+01 | 44.5 | 1.596E+01 | 56.1 | 1.433E+01 | 40.2 | 1.599E+01 | 56.5 | 1.245E+01 | 21.8 |
| carbon disulfide (coelutes) | 2.221E+00 | 7.0 | 3.720E-01 | -83.3 | 5.249E-01 | -76.4 | 1.111E+00 | -50.0 | 4.217E-01 | -81.0 | 5.096E-01 | -77.1 | 2.206E+00 | -0.7 |
| 2-butanone (coelutes) | 3.419E+00 | 7.0 | 5.727E-01 | -83.3 | 8.080E-01 | -76.4 | 1.710E+00 | -50.0 | 6.491E-01 | -81.0 | 7.845E-01 | -77.1 | 3.396E+00 | -0.7 |
| benzene | 7.283E+01 | 44.6 | 6.619E+01 | -9.1 | 5.579E+01 | -23.4 | 6.441E+01 | -11.6 | 5.355E+01 | -26.5 | 6.840E+01 | -6.1 | 7.287E+01 | 0.1 |
| trichloroethene (PID - MDL N/A) | 5.056E+01 | 44.0 | 4.370E+01 | -13.6 | 3.730E+01 | -26.2 | 2.746E+01 | -45.7 | 2.575E+01 | -49.1 | 3.304E+01 | -34.6 | 3.609E+01 | -28.6 |
| toluene (coelutes) | 1.583E+01 | 22.4 | 9.825E+00 | -37.9 | 9.505E+00 | -40.0 | 3.139E+01 | 98.3 | 2.041E+01 | 28.9 | 2.014E+01 | 27.2 | 3.606E+01 | 127.8 |
| 4-methyl-2-pentanone (coelutes | 2.727E+00 | 20.7 | 1.676E+00 | -38.5 | 1.621E+00 | -40.5 | 5.353E+00 | 96.3 | 3.480E+00 | 27.6 | 3.434E+00 | 26.0 | 6.150E+00 | 125.6 |
| 2-hexanone | 2.773E+00 | 7.9 | 6.480E-01 | -76.6 | 3.674E-01 | -86.8 | 3.600E+00 | 29.8 | 2.987E+00 | 7.7 | 2.557E+00 | -7.8 | 5.525E+00 | 99.2 |
| tetrachloroethene (PID - MDL N/ | 3.428E+01 | 74.3 | 5.251E+01 | 53.2 | 3.751E+01 | 9.4 | 2.712E+01 | -20.9 | 1.200E+01 | -65.0 | 1.637E+01 | -52.2 | 3.152E+01 | -8.1 |
| chlorobenzene | 1.276E+01 | 38.0 | 2.074E+01 | 62.5 | 1.727E+01 | 35.3 | 1.474E+01 | 15.5 | 1.430E+01 | 12.0 | 1.527E+01 | 19.6 | 1.705E+01 | 33.6 |
| ethylbenzene | 1.168E+01 | 16.0 | 1.717E+01 | 47.0 | 1.277E+01 | 9.4 | 1.400E+01 | 19.9 | 1.195E+01 | 2.3 | 1.590E+01 | 36.1 | 1.063E+01 | -9.0 |
| m-xylene (coelutes) | 1.184E+01 | 0.2 | 1.590E+01 | 34.3 | 1.204E+01 | 1.6 | 1.042E+01 | -12.0 | 1.030E+01 | -13.0 | 1.385E+01 | 16.9 | 7.224E+00 | -39.0 |
| p-xylene (coelutes) | 1.184E+01 | 0.2 | 1.590E+01 | 34.3 | 1.204E+01 | 1.6 | 1.042E+01 | -12.0 | 1.030E+01 | -13.0 | 1.385E+01 | 16.9 | 7.224E+00 | -39.0 |
| o-xylene (coelutes) | 7.958E+00 | 15.4 | 1.029E+01 | 29.3 | 1.226E+01 | 54.1 | 1.365E+01 | 71.6 | 1.259E+01 | 58.2 | 1.790E+01 | 124.9 | 9.626E+00 | 21.0 |
| styrene (coelutes) | 7.958E+00 | 15.4 | 1.029E+01 | 29.3 | 1.226E+01 | 54.1 | 1.365E+01 | 71.6 | 1.259E+01 | 58.2 | 1.790E+01 | 124.9 | 9.626E+00 | 21.0 |

| | INITIAL CALIBRATION | | 027F0101 | | 052F0101 | | 055F0101 | | 080F0101 | | 097F0101 | | 100F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.659E+00 | 76.7 | 5.882E-01 | -64.5 | 7.006E-01 | -57.8 | 1.003E+00 | -39.5 | 1.243E+00 | -25.1 | 1.507E+00 | -9.1 | 1.345E+00 | -18.9 |
| 1,1-dichloroethene | 4.822E+00 | 70.4 | 5.210E+00 | 8.1 | 4.944E+00 | 2.5 | 2.764E+00 | -42.7 | 2.146E+00 | -55.5 | 4.019E+00 | -16.7 | 4.028E+00 | -16.5 |
| methylene chloride | 9.149E-01 | 36.6 | 3.111E-01 | -66.0 | 4.061E-01 | -55.6 | 3.844E-01 | -58.0 | 7.986E-01 | -12.7 | 4.511E-01 | -50.7 | 1.233E+00 | 34.8 |
| chloroform (coelutes) | 4.490E+01 | 23.7 | 2.632E+00 | -94.1 | 2.370E+01 | -47.2 | 1.745E+01 | -61.1 | 1.490E+01 | -66.8 | 1.829E+01 | -59.3 | 2.254E+01 | -49.8 |
| 1,1,1-trichloroethane (coelutes) | 1.238E+02 | 23.5 | 7.296E+00 | -94.1 | 6.570E+01 | -46.9 | 4.838E+01 | -60.9 | 4.131E+01 | -66.6 | 5.069E+01 | -59.1 | 6.248E+01 | -49.5 |
| carbon tetrachloride (coelutes) | 7.710E+02 | 23.5 | 4.434E+01 | -94.2 | 3.993E+02 | -48.2 | 2.940E+02 | -61.9 | 2.510E+02 | -67.4 | 3.081E+02 | -60.0 | 3.797E+02 | -50.8 |
| 1,2-dichloroethane | 2.804E+00 | 65.8 | 1.098E+00 | -60.9 | 5.114E-01 | -81.8 | 2.965E-01 | -89.4 | 3.741E-01 | -86.7 | 9.158E-01 | -67.3 | 5.117E-01 | -81.8 |
| trichloroethene (ECD) | 8.863E+01 | 16.0 | 7.759E+01 | -12.5 | 6.967E+01 | -21.4 | 4.259E+01 | -52.0 | 4.135E+01 | -53.3 | 5.561E+01 | -37.3 | 5.261E+01 | -40.6 |
| tetrachloroethene (ECD) (coelut | 1.519E+02 | 17.6 | 1.188E+02 | -21.8 | 1.039E+02 | -31.6 | 6.217E+01 | -59.1 | 4.720E+01 | -68.9 | 8.483E+01 | -44.1 | 8.226E+01 | -45.8 |
| 1,1,2-trichloroethane (coelutes) | 4.836E+00 | 16.8 | 3.775E+00 | -21.9 | 3.303E+00 | -31.7 | 1.976E+00 | -59.1 | 1.500E+00 | -69.0 | 2.696E+00 | -44.2 | 2.614E+00 | -45.9 |
| bromoform | 2.535E+01 | 133.0 | 4.414E+00 | -82.6 | 1.140E+01 | -55.0 | 9.196E+00 | -63.7 | 1.027E+01 | -59.5 | 1.109E+01 | -56.2 | 8.723E+00 | -65.6 |
| 1,1,2,2-tetrachloroethane | 8.490E+00 | 139.1 | 1.946E+00 | -77.1 | 3.205E+00 | -62.2 | 2.942E+00 | -65.3 | 3.829E+00 | -54.9 | 3.945E+00 | -53.5 | 2.741E+00 | -67.7 |

| | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area |
| PID IS2 AREAS | **47554** | 47554 | 100 | **33629** | 33629 | 100 | **43110** | 43110 | 100 | **26090** | 26090 | 100 | **35491** | 35491 |
| PID IS3 AREAS | **37208** | 37208 | 100 | **28286** | 28286 | 100 | **24596** | 24596 | 100 | **31834** | 31834 | 100 | **13226** | 13226 |

| PID COMPOUNDS | 07/25/97 056R0101 | area | conc. | 07/25/97 078R0101 | area | conc. | 07/25/97 091R0101 | area | conc. | 07/26/97 094R0101 | area | conc. | 07/26/97 025R0201 | area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 2.687E-01 | 6388 | 50 | 5.709E-01 | 9600 | 50 | 3.759E-01 | 8103 | 50 | 3.852E-01 | 5025 | 50 | 2.485E-01 | 4409 |
| acetone (coelutes) | 9.467E-01 | 58073 | 129 | 2.377E+00 | 103107 | 129 | 1.501E+00 | 83454 | 129 | 2.641E+00 | 88889 | 129 | 1.460E+00 | 66828 |
| trans-1,2-dichloroethene | 1.762E+01 | 125717 | 15 | 2.569E+01 | 129570 | 15 | 1.696E+01 | 109666 | 15 | 2.345E+01 | 91765 | 15 | 1.261E+01 | 67137 |
| cis-1,2-dichloroethene | 6.700E+00 | 47789 | 15 | 5.687E+00 | 28689 | 15 | 7.899E+00 | 51078 | 15 | 9.107E+00 | 35641 | 15 | 4.781E+00 | 25453 |
| carbon disulfide (coelutes) | 8.000E-01 | [illegible] | 254 | 7.351E-01 | [illegible] | 254 | 1.399E+00 | [illegible] | 254 | 2.401E+00 | [illegible] | 254 | 7.683E-01 | [illegible] |
| 2-butanone (coelutes) | 1.231E+00 | 96628 | 165 | 1.132E+00 | 62788 | 165 | 2.154E+00 | 153233 | 165 | 3.697E+00 | 159133 | 165 | 1.183E+00 | 69258 |
| benzene | 2.552E+01 | 60676 | 5 | 7.371E+01 | 123948 | 5 | 6.136E+01 | 132253 | 5 | 6.963E+01 | 90836 | 5 | 4.766E+01 | 84576 |
| trichloroethene (PID - MDL N/A) | 3.101E+01 | 58977 | 4 | 3.212E+01 | 43205 | 4 | 2.914E+01 | 50241 | 4 | 4.459E+01 | 46533 | 4 | 3.188E+01 | 45257 |
| toluene (coelutes) | 7.975E+00 | 83437 | 22 | 1.992E+01 | 147389 | 22 | 1.560E+01 | 147917 | 22 | 1.386E+01 | 79559 | 22 | 7.904E+00 | 61713 |
| 4-methyl-2-pentanone (coelutes) | 1.360E+00 | 83437 | 129 | 3.398E+00 | 147389 | 129 | 2.660E+00 | 147917 | 129 | 2.364E+00 | 79559 | 129 | 1.348E+00 | 61713 |
| 2-hexanone | 2.207E+00 | 104944 | 100 | 2.226E+00 | 74857 | 100 | 1.630E+00 | 70282 | 100 | 1.076E+00 | 28079 | 100 | 4.853E-01 | 17225 |
| tetrachloroethene (PID - MDL N/A) | 2.875E+01 | 54688 | 4 | 1.417E+01 | 19058 | 4 | 1.215E+01 | 20945 | 4 | 4.088E+01 | 42666 | 4 | 3.181E+01 | 45153 |
| chlorobenzene | 1.466E+01 | 21816 | 4 | 1.203E+01 | 13613 | 4 | 1.280E+01 | 12592 | 4 | 1.471E+01 | 18737 | 4 | 3.191E+01 | 16883 |
| ethylbenzene | 1.173E+01 | 21826 | 5 | 1.153E+01 | 16307 | 5 | 1.173E+01 | 14429 | 5 | 1.032E+01 | 16424 | 5 | 2.174E+01 | 14377 |
| m-xylene (coelutes) | 1.071E+01 | 39848 | 10 | 1.000E+01 | 28299 | 10 | 9.417E+00 | 23163 | 10 | 9.512E+00 | 30279 | 10 | 1.864E+01 | 24651 |
| p-xylene (coelutes) | 1.071E+01 | 39848 | 10 | 1.000E+01 | 28299 | 10 | 9.417E+00 | 23163 | 10 | 9.512E+00 | 30279 | 10 | 1.864E+01 | 24651 |
| o-xylene (coelutes) | 7.317E+00 | 27226 | 10 | 1.724E+01 | 48778 | 10 | 1.752E+01 | 43102 | 10 | 9.729E+00 | 30972 | 10 | 1.828E+01 | 24183 |
| styrene (coelutes) | 7.317E+00 | 27226 | 10 | 1.724E+01 | 48778 | 10 | 1.752E+01 | 43102 | 10 | 9.729E+00 | 30972 | 10 | 1.828E+01 | 24183 |

| | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | **2573453** | 2573453 | 100 | **3298927** | 3298927 | 100 | **3357243** | 3357243 | 100 | **2877377** | 2877377 | 100 | **2769265** | 2769265 |
| ECID IS3 AREAS | **9338273** | 9338273 | 100 | **9563979** | 9563979 | 100 | **8585667** | 8585667 | 100 | **10391600** | 10391600 | 100 | **9134538** | 9134538 |

| ECD COMPOUNDS | 07/25/97 056F0101 | area | conc. | 07/25/97 078F0101 | area | conc. | 07/25/97 091F0101 | area | conc. | 07/26/97 094F0101 | area | conc. | 07/26/97 025F0201 | area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 1.134E+00 | 1459625 | 50 | 8.713E-01 | 1437186 | 50 | 8.004E-01 | 1343489 | 50 | 6.647E-01 | 956368 | 50 | 6.592E-01 | 912711 |
| 1,1-dichloroethene | 4.084E+00 | 1576421 | 15 | 4.144E+00 | 2050424 | 15 | 3.744E+00 | 1885488 | 15 | 4.955E+00 | 2138677 | 15 | 4.505E+00 | 1871453 |
| methylene chloride | 2.211E+00 | 2844707 | 50 | 4.053E-01 | 668512 | 50 | 4.378E-01 | 734939 | 50 | 3.932E-01 | 565723 | 50 | 3.373E-01 | 466972 |
| chloroform (coelutes) | 3.888E+01 | 21914200 | 21.9 | 3.167E+01 | 22882700 | 21.9 | 2.842E+01 | 20896200 | 21.9 | 2.473E+01 | 15582300 | 21.9 | 2.227E+01 | 13504600 |
| 1,1,1-trichloroethane (coelutes) | 1.078E+02 | 21914200 | 7.9 | 8.780E+01 | 22882700 | 7.9 | 7.879E+01 | 20896200 | 7.9 | 6.855E+01 | 15582300 | 7.9 | 6.173E+01 | 13504600 |
| carbon tetrachloride (coelutes) | 6.550E+02 | 21914200 | 1.3 | 5.336E+02 | 22882700 | 1.3 | 4.788E+02 | 20896200 | 1.3 | 4.166E+02 | 15582300 | 1.3 | 3.751E+02 | 13504600 |
| 1,2-dichloroethane | 1.107E+00 | 1424460 | 50 | 5.814E-01 | 959057 | 50 | 4.942E-01 | 829553 | 50 | 1.446E+00 | 2080516 | 50 | 1.621E+00 | 2244561 |
| trichloroethene (ECD) | 8.373E+01 | 8619515 | 4 | 6.420E+01 | 8471468 | 4 | 5.912E+01 | 7939557 | 4 | 7.446E+01 | 8570204 | 4 | 6.973E+01 | 7723540 |
| tetrachloroethene (ECD) (coelutes) | 1.376E+02 | 14523100 | 4.1 | 9.085E+01 | 12288600 | 4.1 | 8.337E+01 | 11475000 | 4.1 | 1.130E+02 | 13331200 | 4.1 | 1.034E+02 | 11737700 |
| 1,1,2-trichloroethane (coelutes) | 4.375E+00 | 14523100 | 129 | 2.888E+00 | 12288600 | 129 | 2.650E+00 | 11475000 | 129 | 3.592E+00 | 13331200 | 129 | 3.286E+00 | 11737700 |
| bromoform | 1.019E+01 | 3807748 | 4 | 9.621E+00 | 3680541 | 4 | 1.088E+01 | 3736172 | 4 | 3.559E+00 | 1479489 | 4 | 5.224E+00 | 1908859 |
| 1,1,2,2-tetrachloroethane | 2.642E+00 | 986884 | 4 | 3.419E+00 | 1308079 | 4 | 3.592E+00 | 1233451 | 4 | 2.290E+00 | 951860 | 4 | 2.947E+00 | 1076705 |

| | | NUMBER 6 | | | | NUMBER 7 | | | | NUMBER 8 | | | | NUMBER 9 | | | | NUMBER 10 | | | | NUMBER 11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | 100 | 27288 | 27288 | 100 | 30149 | 30149 | 100 | 17133 | 17133 | 100 | 24304 | 24304 | 100 | 26122 | 26122 | 100 | 15051 | 15051 | 100 |
| PID IS3 AREAS | 100 | 23871 | 23871 | 100 | 25016 | 25016 | 100 | 26148 | 26148 | 100 | 20786 | 20786 | 100 | 20512 | 20512 | 100 | 24035 | 24035 | 100 |

| PID COMPOUNDS | | 07/27/97 027R0101 | area | | 07/28/97 052R0101 | area | | 07/28/97 055R0101 | area | | 07/29/97 080R0101 | area | | 07/30/97 097R0101 | area | | 07/30/97 100R0101 | area | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | conc. | | | conc. | | | conc. | | | conc. | | | conc. | | | conc. | | | conc. |
| vinyl chloride | 50 | 3.142E-01 | 4287 | 50 | 3.644E-01 | 5493 | 50 | 6.818E-01 | 5841 | 50 | 3.331E-01 | 4048 | 50 | 5.462E-01 | 7134 | 50 | 9.493E-01 | 7144 | 50 |
| acetone (coelutes) | 129 | 2.140E+00 | 75320 | 129 | 1.892E+00 | 73599 | 129 | 3.053E+00 | 67483 | 129 | 1.645E+00 | 51579 | 129 | 2.651E+00 | 89336 | 129 | 4.263E+00 | 82767 | 129 |
| trans-1,2-dichloroethene | 15 | 2.593E+01 | 106129 | 15 | 2.366E+01 | 106983 | 15 | 4.034E+01 | 103678 | 15 | 2.327E+01 | 84849 | 15 | 3.216E+01 | 125997 | 15 | 5.262E+01 | 118807 | 15 |
| cis-1,2-dichloroethene | 15 | 1.588E+01 | 65016 | 15 | 1.477E+01 | 66781 | 15 | 1.596E+01 | 41009 | 15 | 1.433E+01 | 52231 | 15 | 1.599E+01 | 62668 | 15 | 1.245E+01 | 28114 | 15 |
| carbon disulfide (coelutes) | 254 | 3.720E-01 | [illegible] | 254 | 5.249E-01 | [illegible] | 254 | 1.111E+00 | [illegible] | 254 | 4.217E-01 | [illegible] | 254 | 5.096E-01 | [illegible] | 254 | 2.206E+00 | [illegible] | 254 |
| 2-butanone (coelutes) | 165 | 5.727E-01 | 25785 | 165 | 8.080E-01 | 40194 | 165 | 1.710E+00 | 48330 | 165 | 6.491E-01 | 26031 | 165 | 7.845E-01 | 33811 | 165 | 3.396E+00 | 84341 | 165 |
| benzene | 5 | 6.619E+01 | 90311 | 5 | 5.579E+01 | 84106 | 5 | 6.441E+01 | 55179 | 5 | 5.355E+01 | 65068 | 5 | 6.840E+01 | 89343 | 5 | 7.287E+01 | 54835 | 5 |
| trichloroethene (PID - MDL N/A) | 4 | 4.370E+01 | 47699 | 4 | 3.730E+01 | 44981 | 4 | 2.746E+01 | 18817 | 4 | 2.575E+01 | 25030 | 4 | 3.304E+01 | 34527 | 4 | 3.609E+01 | 21725 | 4 |
| toluene (coelutes) | 22 | 9.825E+00 | 58983 | 22 | 9.505E+00 | 63044 | 22 | 3.139E+01 | 118305 | 22 | 2.041E+01 | 109117 | 22 | 2.014E+01 | 115727 | 22 | 3.606E+01 | 119402 | 22 |
| 4-methyl-2-pentanone (coelutes) | 129 | 1.676E+00 | 58983 | 129 | 1.621E+00 | 63044 | 129 | 5.353E+00 | 118305 | 129 | 3.480E+00 | 109117 | 129 | 3.434E+00 | 115727 | 129 | 6.150E+00 | 119402 | 129 |
| 2-hexanone | 100 | 6.480E-01 | 17683 | 100 | 3.674E-01 | 11078 | 100 | 3.600E+00 | 61678 | 100 | 2.987E+00 | 72601 | 100 | 2.557E+00 | 66786 | 100 | 5.525E+00 | 83153 | 100 |
| tetrachloroethene (PID - MDL N/A) | 4 | 5.251E+01 | 57318 | 4 | 3.751E+01 | 45230 | 4 | 2.712E+01 | 18586 | 4 | 1.200E+01 | 11669 | 4 | 1.637E+01 | 17106 | 4 | 3.152E+01 | 18977 | 4 |
| chlorobenzene | 4 | 2.074E+01 | 19808 | 4 | 1.727E+01 | 17277 | 4 | 1.474E+01 | 15417 | 4 | 1.430E+01 | 11890 | 4 | 1.527E+01 | 12526 | 4 | 1.705E+01 | 16391 | 4 |
| ethylbenzene | 5 | 1.717E+01 | 20498 | 5 | 1.277E+01 | 15975 | 5 | 1.400E+01 | 18302 | 5 | 1.195E+01 | 12418 | 5 | 1.590E+01 | 16303 | 5 | 1.063E+01 | 12775 | 5 |
| m-xylene (coelutes) | 10 | 1.590E+01 | 37960 | 10 | 1.204E+01 | 30112 | 10 | 1.042E+01 | 27250 | 10 | 1.030E+01 | 21415 | 10 | 1.385E+01 | 28399 | 10 | 7.224E+00 | 17364 | 10 |
| p-xylene (coelutes) | 10 | 1.590E+01 | 37960 | 10 | 1.204E+01 | 30112 | 10 | 1.042E+01 | 27250 | 10 | 1.030E+01 | 21415 | 10 | 1.385E+01 | 28399 | 10 | 7.224E+00 | 17364 | 10 |
| o-xylene (coelutes) | 10 | 1.029E+01 | 24562 | 10 | 1.226E+01 | 30682 | 10 | 1.365E+01 | 35705 | 10 | 1.259E+01 | 26167 | 10 | 1.790E+01 | 36715 | 10 | 9.626E+00 | 23137 | 10 |
| styrene (coelutes) | 10 | 1.029E+01 | 24562 | 10 | 1.226E+01 | 30682 | 10 | 1.365E+01 | 35705 | 10 | 1.259E+01 | 26167 | 10 | 1.790E+01 | 36715 | 10 | 9.626E+00 | 23137 | 10 |

| | | NUMBER 6 | | | | NUMBER 7 | | | | NUMBER 8 | | | | NUMBER 9 | | | | NUMBER 10 | | | | NUMBER 11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 100 | 2772989 | 2772989 | 100 | 2861860 | 2861860 | 100 | 3859438 | 3859438 | 100 | 3924433 | 3924433 | 100 | 3498157 | 3498157 | 100 | 3582554 | 3582554 | 100 |
| ECID IS3 AREAS | 100 | 10222500 | 10222500 | 100 | 8239330 | 8239330 | 100 | 9102427 | 9102427 | 100 | 8513077 | 8513077 | 100 | 8008656 | 8008656 | 100 | 10736600 | 10736600 | 100 |

| ECD COMPOUNDS | | 07/27/97 027F0101 | area | | 07/28/97 052F0101 | area | | 07/28/97 055F0101 | area | | 07/29/97 080F0101 | area | | 07/30/97 097F0101 | area | | 07/30/97 100F0101 | area | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | conc. | | | conc. | | | conc. | | | conc. | | | conc. | | | conc. | | | conc |
| bromomethane | 50 | 5.882E-01 | 815511 | 50 | 7.006E-01 | 1002552 | 50 | 1.003E+00 | 1936038 | 50 | 1.243E+00 | 2439647 | 50 | 1.507E+00 | 2636697 | 50 | 1.345E+00 | 2408745 | 50 |
| 1,1-dichloroethene | 15 | 5.210E+00 | 2167230 | 15 | 4.944E+00 | 2122378 | 15 | 2.764E+00 | 1600011 | 15 | 2.146E+00 | 1263415 | 15 | 4.019E+00 | 2108717 | 15 | 4.028E+00 | 2164399 | 15 |
| methylene chloride | 50 | 3.111E-01 | 431333 | 50 | 4.061E-01 | 581131 | 50 | 3.844E-01 | 741731 | 50 | 7.986E-01 | 1567075 | 50 | 4.511E-01 | 789050 | 50 | 1.233E+00 | 2209512 | 50 |
| chloroform (coelutes) | 21.9 | 2.632E+00 | 1598300 | 21.9 | 2.370E+01 | 14853900 | 21.9 | 1.745E+01 | 14752000 | 21.9 | 1.490E+01 | 12806100 | 21.9 | 1.829E+01 | 14009500 | 21.9 | 2.254E+01 | 17682200 | 21.9 |
| 1,1,1-trichloroethane (coelutes) | 7.9 | 7.296E+00 | 1598300 | 7.9 | 6.570E+01 | 14853900 | 7.9 | 4.838E+01 | 14752000 | 7.9 | 4.131E+01 | 12806100 | 7.9 | 5.069E+01 | 14009500 | 7.9 | 6.248E+01 | 17682200 | 7.9 |
| carbon tetrachloride (coelutes) | 1.3 | 4.434E+01 | 1598300 | 1.3 | 3.993E+02 | 14853900 | 1.3 | 2.940E+02 | 14752000 | 1.3 | 2.510E+02 | 12806100 | 1.3 | 3.081E+02 | 14009500 | 1.3 | 3.797E+02 | 17682200 | 1.3 |
| 1,2-dichloroethane | 50 | 1.098E+00 | 1521756 | 50 | 5.114E-01 | 731772 | 50 | 2.965E-01 | 572135 | 50 | 3.741E-01 | 734158 | 50 | 9.158E-01 | 1601722 | 50 | 5.117E-01 | 916509 | 50 |
| trichloroethene (ECD) | 4 | 7.759E+01 | 8606302 | 4 | 6.967E+01 | 7975030 | 4 | 4.259E+01 | 6574181 | 4 | 4.135E+01 | 6490884 | 4 | 5.561E+01 | 7781466 | 4 | 5.261E+01 | 7538528 | 4 |
| tetrachloroethene (ECD) (coelutes) | 4.1 | 1.188E+02 | 13503000 | 4.1 | 1.039E+02 | 12192200 | 4.1 | 6.217E+01 | 9837283 | 4.1 | 4.720E+01 | 7594885 | 4.1 | 8.483E+01 | 12167000 | 4.1 | 8.226E+01 | 12082200 | 4.1 |
| 1,1,2-trichloroethane (coelutes) | 129 | 3.775E+00 | 13503000 | 129 | 3.303E+00 | 12192200 | 129 | 1.976E+00 | 9837283 | 129 | 1.500E+00 | 7594885 | 129 | 2.696E+00 | 12167000 | 129 | 2.614E+00 | 12082200 | 129 |
| bromoform | 4 | 4.414E+00 | 1804957 | 4 | 1.140E+01 | 3758266 | 4 | 9.196E+00 | 3348301 | 4 | 1.027E+01 | 3497639 | 4 | 1.109E+01 | 3553521 | 4 | 8.723E+00 | 3746142 | 4 |
| 1,1,2,2-tetrachloroethane | 4 | 1.946E+00 | 795902 | 4 | 3.205E+00 | 1056351 | 4 | 2.942E+00 | 1071346 | 4 | 3.829E+00 | 1303715 | 4 | 3.945E+00 | 1263629 | 4 | 2.741E+00 | 1176969 | 4 |

# INITIAL CALIBRATION SUMMARY
## August 05, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 12143 | 100 | 12014 | 100 | 15011 | 100 | 19703 | 100 | 18799 | 100 |
| 12837 | 100 | 19833 | 100 | 16846 | 100 | 27230 | 100 | 22999 | 100 |

### RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 1.045E+00 | 7.415E-01 | 8.440E-01 | 1.196E-01 | 5.061E-02 | 5.601E-01 | 80.0 | 3172 | 25 | 4454 | 50 | 9502 | 75 | 2356 | 100 | 1427 | 150 |
| acetone (coelutes) | NA | 2.219E+00 | 1.854E+00 | 7.784E-01 | 7.441E-01 | 1.399E+00 | 53.7 | NA | 0 | 5226 | 19.6 | 19207 | 69 | 25611 | 167 | 38186 | 273 |
| trans-1,2-dichloroethene | 3.098E+01 | 2.318E+01 | 3.025E+01 | 8.460E+00 | 6.008E+00 | 1.978E+01 | 60.1 | 9405 | 2.5 | 13923 | 5 | 68116 | 15 | 75006 | 45 | 101656 | 90 |
| cis-1,2-dichloroethene | NA | 7.117E+00 | 8.354E+00 | 1.685E+00 | 1.382E+00 | 4.634E+00 | 78.1 | NA | 0 | 4275 | 5 | 18810 | 15 | 14938 | 45 | 23384 | 90 |
| carbon disulfide (coelutes) | 3.186E+00 | 7.996E+00 | 1.017E+00 | 1.978E+00 | 1.286E+00 | 3.092E+00 | 92.7 | [illegible] | 12.7 | [illegible] | 25.4 | [illegible] | 102 | [illegible] | 203 | [illegible] | 254 |
| 2-butanone (coelutes) | 4.934E+00 | 1.231E+01 | 1.571E+00 | 3.041E+00 | 1.979E+00 | 4.767E+00 | 92.6 | 4913 | 8.2 | 24399 | 16.5 | 15569 | 66 | 79096 | 132 | 61385 | 165 |
| benzene | 3.290E+01 | 5.366E+01 | 3.905E+01 | 3.048E+01 | 3.041E+01 | 3.730E+01 | 26.3 | 3995 | 1 | 32234 | 5 | 58613 | 10 | 90086 | 15 | 142934 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 3.677E+01 | 3.986E+01 | 4.701E+01 | 6.499E+01 | 4.716E+01 | 26.8 | NA | 0 | 4416 | 1 | 11966 | 2 | 37048 | 4 | 97736 | 8 |
| toluene (coelutes) | 5.312E+01 | 2.690E+01 | 2.826E+01 | 9.934E+00 | 1.007E+01 | 2.566E+01 | 69.0 | 12255 | 1.9 | 21653 | 6.7 | 72105 | 17 | 56565 | 28.9 | 80266 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | 9.432E+00 | 4.657E+00 | 4.902E+00 | 1.729E+00 | 1.757E+00 | 4.495E+00 | 70.1 | [illegible] | 10.7 | [illegible] | 38.7 | [illegible] | 98 | [illegible] | 166 | [illegible] | 243 |
| 2-hexanone | NA | NA | 3.713E+00 | 2.069E+00 | 4.527E+00 | 3.436E+00 | 36.4 | NA | 0 | NA | 0 | 22297 | 40 | 32605 | 80 | 85107 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 1.705E+01 | 2.427E+01 | 3.079E+01 | 2.080E+01 | 2.323E+01 | 25.1 | NA | 0 | 2048 | 1 | 7287 | 2 | 24263 | 4 | 31284 | 8 |
| chlorobenzene | NA | 1.337E+01 | 1.730E+01 | 6.691E+00 | 8.566E+00 | 1.148E+01 | 41.7 | NA | 0 | 2651 | 1 | 5829 | 2 | 7288 | 4 | 15761 | 8 |
| ethylbenzene | NA | 1.817E+01 | 1.244E+01 | 4.455E+00 | 7.112E+00 | 1.055E+01 | 57.6 | NA | 0 | 18022 | 5 | 20963 | 10 | 18198 | 15 | 40890 | 25 |
| m-xylene (coelutes) | 2.773E+01 | 3.062E+01 | 1.270E+01 | 5.336E+00 | 1.022E+01 | 1.732E+01 | 64.6 | 7119 | 2 | 60733 | 10 | 42799 | 20 | 43593 | 30 | 117471 | 50 |
| p-xylene (coelutes) | 2.773E+01 | 3.062E+01 | 1.270E+01 | 5.336E+00 | 1.022E+01 | 1.732E+01 | 64.6 | [illegible] | 2 | [illegible] | 10 | [illegible] | 20 | [illegible] | 30 | [illegible] | 50 |
| o-xylene (coelutes) | 3.494E+01 | 3.492E+01 | 2.040E+01 | 5.569E+00 | 8.589E+00 | 2.088E+01 | 66.9 | 8971 | 2 | 69252 | 10 | 68729 | 20 | 45492 | 30 | 98768 | 50 |
| styrene (coelutes) | 3.494E+01 | 3.492E+01 | 2.040E+01 | 5.569E+00 | 8.589E+00 | 2.088E+01 | 66.9 | [illegible] | 2 | [illegible] | 10 | [illegible] | 20 | [illegible] | 30 | [illegible] | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 3441596 | 100 | 3142910 | 100 | 3190978 | 100 | 2020986 | 100 | 2421656 | 100 |
| 6358788 | 100 | 7857977 | 100 | 7100836 | 100 | 6515996 | 100 | 2763660 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 1.516E+00 | 7.165E-01 | 7.685E-01 | 4.237E-01 | 1.358E-01 | 7.122E-01 | 72.5 | 1304760 | 25 | 1125941 | 50 | 1839100 | 75 | 856303 | 100 | 493363 | 150 |
| 1,1-dichloroethene | NA | 6.448E+00 | 3.815E+00 | 2.364E+00 | 1.827E+00 | 3.614E+00 | 57.2 | NA | 0 | 1013260 | 5 | 1828140 | 15 | 2150178 | 45 | 3981551 | 90 |
| methylene chloride | NA | 4.449E+00 | 3.545E+00 | 3.464E+00 | 1.263E+00 | 3.180E+00 | 42.6 | NA | 0 | 1398327 | 10 | 2262409 | 20 | 3500286 | 50 | 3057946 | 100 |
| chloroform (coelutes) | NA | 1.141E+02 | 6.062E+01 | 4.551E+01 | 2.810E+01 | 6.209E+01 | 59.8 | NA | 0 | 19730500 | 5.5 | 21277500 | 11 | 20142800 | 21.9 | 29801700 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 3.139E+02 | 1.667E+02 | 1.262E+02 | 7.740E+01 | 1.710E+02 | 59.6 | [illegible] | 0 | [illegible] | 2 | [illegible] | 4 | [illegible] | 7.9 | [illegible] | 15.9 |
| carbon tetrachloride (coelutes) | NA | 1.962E+03 | 1.042E+03 | 7.667E+02 | 4.923E+02 | 1.066E+03 | 59.9 | [illegible] | 0 | [illegible] | 0.32 | [illegible] | 0.64 | [illegible] | 1.3 | [illegible] | 2.5 |
| 1,2-dichloroethane | NA | NA | 1.112E+00 | 1.152E+00 | 1.291E+00 | 1.185E+00 | 7.9 | NA | 0 | NA | 0 | 709905 | 20 | 1164309 | 50 | 3125649 | 100 |
| trichloroethene (ECD) | 1.165E+02 | 1.170E+02 | 8.775E+01 | 1.060E+02 | 9.829E+01 | 1.051E+02 | 11.8 | 2004030 | 0.5 | 3675649 | 1 | 5599939 | 2 | 8566644 | 4 | 19041200 | 8 |
| tetrachloroethene (ECD) (coelutes) | 1.612E+02 | 1.613E+02 | 1.384E+02 | 1.581E+02 | 1.306E+02 | 1.499E+02 | 9.6 | 2884492 | 0.52 | 5069728 | 1 | 9276418 | 2.1 | 13097500 | 4.1 | 26256100 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 5.206E+00 | 5.010E+00 | 4.472E+00 | 5.024E+00 | 4.202E+00 | 4.783E+00 | 8.9 | [illegible] | 16.1 | [illegible] | 32.2 | [illegible] | 65 | [illegible] | 129 | [illegible] | 258 |
| bromoform | 2.000E+01 | 1.394E+01 | 1.305E+01 | 1.089E+01 | 5.257E+00 | 1.263E+01 | 42.2 | 635875 | 0.5 | 1095794 | 1 | 1852780 | 2 | 2837886 | 4 | 1162226 | 8 |
| 1,1,2,2-tetrachloroethane | 1.311E+01 | 7.276E+00 | 5.933E+00 | 4.258E+00 | 2.045E+00 | 6.524E+00 | 63.9 | 416779 | 0.5 | 571730 | 1 | 842640 | 2 | 1109880 | 4 | 452076 | 8 |

**CONTINUING CALIBRATION SUMMARY**
**August 05 to August 12 , 1997**

| DATE: | | | 08/05/97 | | 08/06/97 | | 08/06/97 | | 08/06/97 | | 08/07/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | |
| | INITIAL CALIBRATION | | 027R0101 | | 049R0301 | | 062R0301 | | 078R0101 | | 098R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 5.601E-01 | 80.0 | 9.222E-01 | 64.6 | 7.298E-01 | 30.3 | 5.293E-01 | -5.5 | 9.597E-01 | 71.3 | 6.002E-01 | 7.2 |
| acetone (coelutes) | 1.399E+00 | 53.7 | 2.514E+00 | 79.7 | 2.569E+00 | 83.6 | 1.395E+00 | -0.3 | 2.628E+00 | 87.8 | 1.439E+00 | 2.9 |
| trans-1,2-dichloroethene | 1.978E+01 | 60.1 | 3.291E+01 | 66.4 | 2.973E+01 | 50.3 | 2.279E+01 | 15.2 | 2.988E+01 | 51.1 | 2.192E+01 | 10.9 |
| cis-1,2-dichloroethene | 4.634E+00 | 78.1 | 1.091E+01 | 135.4 | 1.406E+00 | -69.7 | 7.872E+00 | 69.9 | 9.899E+00 | 113.6 | 1.005E+01 | 117.0 |
| carbon disulfide (coelutes) | 3.092E+00 | 92.7 | 3.239E+00 | 4.7 | 4.692E+00 | 51.7 | 2.380E+00 | -23.0 | 3.129E+00 | 1.2 | 1.348E+00 | -56.4 |
| 2-butanone (coelutes) | 4.767E+00 | 92.6 | 5.005E+00 | 5.0 | 7.252E+00 | 52.1 | 3.678E+00 | -22.8 | 4.835E+00 | 1.4 | 2.084E+00 | -56.3 |
| benzene | 3.730E+01 | 26.3 | 3.737E+01 | 0.2 | 3.496E+01 | -6.3 | 3.072E+01 | -17.6 | 3.406E+01 | -8.7 | 3.783E+01 | 1.4 |
| trichloroethene (PID - MDL N/A) | 4.716E+01 | 26.8 | 3.717E+01 | -21.2 | 3.510E+01 | -25.6 | 3.773E+01 | -20.0 | 2.315E+01 | -50.9 | 4.309E+01 | -8.6 |
| toluene (coelutes) | 2.566E+01 | 69.0 | 2.004E+01 | -21.9 | 2.699E+01 | 5.2 | 1.629E+01 | -36.5 | 3.318E+01 | 29.3 | 1.775E+01 | -30.8 |
| 4-methyl-2-pentanone (coelutes | 4.495E+00 | 70.1 | 3.477E+00 | -22.7 | 4.681E+00 | 4.1 | 2.826E+00 | -37.1 | 5.755E+00 | 28.0 | 3.080E+00 | -31.5 |
| 2-hexanone | 3.436E+00 | 36.4 | 3.834E+00 | 11.6 | 8.585E+00 | 149.8 | 2.641E+00 | -23.2 | 7.982E+00 | 132.3 | 2.971E+00 | -13.5 |
| tetrachloroethene (PID - MDL N/ | 2.323E+01 | 25.1 | 1.849E+01 | -20.4 | 1.425E+01 | -38.6 | 1.339E+01 | -42.4 | 2.405E+01 | 3.5 | 1.446E+01 | -37.8 |
| chlorobenzene | 1.148E+01 | 41.7 | 2.006E+01 | 74.8 | 1.789E+01 | 55.8 | 1.356E+01 | 18.1 | 1.550E+01 | 35.0 | 1.569E+01 | 36.7 |
| ethylbenzene | 1.055E+01 | 57.6 | 1.362E+01 | 29.2 | 1.199E+01 | 13.7 | 9.921E+00 | -5.9 | 1.194E+01 | 13.2 | 1.102E+01 | 4.5 |
| m-xylene (coelutes) | 1.732E+01 | 64.6 | 7.106E+00 | -59.0 | 1.821E+01 | 5.1 | 1.021E+01 | -41.1 | 1.845E+01 | 6.5 | 1.713E+01 | -1.1 |
| p-xylene (coelutes) | 1.732E+01 | 64.6 | 7.106E+00 | -59.0 | 1.821E+01 | 5.1 | 1.021E+01 | -41.1 | 1.845E+01 | 6.5 | 1.713E+01 | -1.1 |
| o-xylene (coelutes) | 2.088E+01 | 66.9 | 2.298E+01 | 10.0 | 2.052E+01 | -1.8 | 1.232E+01 | -41.0 | 1.956E+01 | -6.3 | 2.348E+01 | 12.5 |
| styrene (coelutes) | 2.088E+01 | 66.9 | 2.298E+01 | 10.0 | 2.052E+01 | -1.8 | 1.232E+01 | -41.0 | 1.956E+01 | -6.3 | 2.348E+01 | 12.5 |

| | INITIAL CALIBRATION | | 027F0101 | | 049F0301 | | 062F0301 | | 078F0101 | | 098F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 7.122E-01 | 72.5 | 8.831E-01 | 24.0 | 8.876E-01 | 24.6 | 7.904E-01 | 11.0 | 8.781E-01 | 23.3 | 8.710E-01 | 22.3 |
| 1,1-dichloroethene | 3.614E+00 | 57.2 | 5.144E+00 | 42.4 | 4.595E+00 | 27.2 | 4.109E+00 | 13.7 | 3.728E+00 | 3.2 | 4.370E+00 | 20.9 |
| methylene chloride | 3.180E+00 | 42.6 | 3.663E+00 | 15.2 | 3.635E+00 | 14.3 | 3.099E+00 | -2.6 | 1.703E+00 | -46.4 | 3.380E+00 | 6.3 |
| chloroform (coelutes) | 6.209E+01 | 59.8 | 5.879E+01 | -5.3 | 5.488E+01 | -11.6 | 5.524E+01 | -11.0 | 5.583E+01 | -10.1 | 5.735E+01 | -7.6 |
| 1,1,1-trichloroethane (coelutes) | 1.710E+02 | 59.6 | 1.617E+02 | -5.5 | 1.509E+02 | -11.8 | 1.519E+02 | -11.2 | 1.535E+02 | -10.2 | 1.577E+02 | -7.8 |
| carbon tetrachloride (coelutes) | 1.066E+03 | 59.9 | 1.011E+03 | -5.2 | 9.433E+02 | -11.5 | 9.495E+02 | -10.9 | 9.597E+02 | -9.9 | 9.858E+02 | -7.5 |
| 1,2-dichloroethane | 1.185E+00 | 7.9 | 1.221E+00 | 3.1 | 2.057E+00 | 73.6 | 1.659E+00 | 40.0 | 1.040E+00 | -12.2 | 2.245E+00 | 89.5 |
| trichloroethene (ECD) | 1.051E+02 | 11.8 | 8.121E+01 | -22.7 | 8.001E+01 | -23.9 | 7.380E+01 | -29.8 | 7.463E+01 | -29.0 | 8.140E+01 | -22.5 |
| tetrachloroethene (ECD) (coelut | 1.499E+02 | 9.6 | 1.269E+02 | -15.4 | 1.183E+02 | -21.1 | 9.133E+01 | -39.1 | 9.123E+01 | -39.1 | 9.763E+01 | -34.9 |
| 1,1,2-trichloroethane (coelutes) | 4.783E+00 | 8.9 | 4.098E+00 | -14.3 | 3.820E+00 | -20.1 | 2.951E+00 | -38.3 | 2.947E+00 | -38.4 | 3.154E+00 | -34.1 |
| bromoform | 1.263E+01 | 42.2 | 1.634E+01 | 29.4 | 1.482E+01 | 17.4 | 1.523E+01 | 20.6 | 1.240E+01 | -1.8 | 1.438E+01 | 13.9 |
| 1,1,2,2-tetrachloroethane | 6.524E+00 | 63.9 | 6.975E+00 | 6.9 | 6.264E+00 | -4.0 | 6.333E+00 | -2.9 | 6.788E+00 | 4.0 | 6.001E+00 | -8.0 |

| | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | 15440 | 15440 | 100 | 13939 | 13939 | 100 | 18020 | 18020 | 100 | 8215 | 8215 | 100 | 15314 | 15314 | 100 |
| PID IS3 AREAS | 14052 | 14052 | 100 | 13990 | 13990 | 100 | 12847 | 12847 | 100 | 12261 | 12261 | 100 | 10707 | 10707 | 100 |

| PID COMPOUNDS | 08/05/97 027R0101 | area | conc. | 08/06/97 049R0301 | area | conc. | 08/06/97 062R0301 | area | conc. | 08/06/97 078R0101 | area | conc. | 08/07/97 098R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 9.222E-01 | 10679 | 75 | 7.298E-01 | 7630 | 75 | 5.293E-01 | 7154 | 75 | 9.597E-01 | 5913 | 75 | 6.002E-01 | 6894 | 75 |
| acetone (coelutes) | 2.514E+00 | 26780 | 69 | 2.569E+00 | 24707 | 69 | 1.395E+00 | 17347 | 69 | 2.628E+00 | 14896 | 69 | 1.439E+00 | 15210 | 69 |
| trans-1,2-dichloroethene | 3.291E+01 | 76228 | 15 | 2.973E+01 | 62158 | 15 | 2.279E+01 | 61593 | 15 | 2.988E+01 | 36818 | 15 | 2.192E+01 | 50358 | 15 |
| cis-1,2-dichloroethene | 1.091E+01 | 25270 | 15 | 1.406E+00 | 2940 | 15 | 7.872E+00 | 21279 | 15 | 9.899E+00 | 12198 | 15 | 1.005E+01 | 23096 | 15 |
| carbon disulfide (coelutes) | 3.239E+00 | 51007 | 102 | 4.692E+00 | 66716 | 102 | 2.380E+00 | 43749 | 102 | 3.129E+00 | 26217 | 102 | 1.348E+00 | 21063 | 102 |
| 2-butanone (coelutes) | 5.005E+00 | 51007 | 66 | 7.252E+00 | 66716 | 66 | 3.678E+00 | 43749 | 66 | 4.835E+00 | 26217 | 66 | 2.084E+00 | 21063 | 66 |
| benzene | 3.737E+01 | 57700 | 10 | 3.496E+01 | 48733 | 10 | 3.072E+01 | 55359 | 10 | 3.406E+01 | 27978 | 10 | 3.783E+01 | 57933 | 10 |
| trichloroethene (PID - MDL N/A) | 3.717E+01 | 11479 | 2 | 3.510E+01 | 9785 | 2 | 3.773E+01 | 13599 | 2 | 2.315E+01 | 3803 | 2 | 4.309E+01 | 13199 | 2 |
| toluene (coelutes) | 2.004E+01 | 52610 | 17 | 2.699E+01 | 63947 | 17 | 1.629E+01 | 49908 | 17 | 3.318E+01 | 46335 | 17 | 1.775E+01 | 46223 | 17 |
| 4-methyl-2-pentanone (coelutes) | 3.477E+00 | 52610 | 98 | 4.681E+00 | 63947 | 98 | 2.826E+00 | 49908 | 98 | 5.755E+00 | 46335 | 98 | 3.080E+00 | 46223 | 98 |
| 2-hexanone | 3.834E+00 | 23677 | 40 | 8.585E+00 | 47869 | 40 | 2.641E+00 | 19034 | 40 | 7.982E+00 | 26228 | 40 | 2.971E+00 | 18199 | 40 |
| tetrachloroethene (PID - MDL N/A) | 1.849E+01 | 5710 | 2 | 1.425E+01 | 3974 | 2 | 1.339E+01 | 4825 | 2 | 2.405E+01 | 3951 | 2 | 1.446E+01 | 4428 | 2 |
| chlorobenzene | 2.006E+01 | 5639 | 2 | 1.789E+01 | 5006 | 2 | 1.356E+01 | 3485 | 2 | 1.550E+01 | 3801 | 2 | 1.569E+01 | 3360 | 2 |
| ethylbenzene | 1.362E+01 | 19140 | 10 | 1.199E+01 | 16778 | 10 | 9.921E+00 | 12746 | 10 | 1.194E+01 | 14642 | 10 | 1.102E+01 | 11796 | 10 |
| m-xylene (coelutes) | 7.106E+00 | 19972 | 20 | 1.821E+01 | 50947 | 20 | 1.021E+01 | 26224 | 20 | 1.845E+01 | 45242 | 20 | 1.713E+01 | 36677 | 20 |
| p-xylene (coelutes) | 7.106E+00 | 19972 | 20 | 1.821E+01 | 50947 | 20 | 1.021E+01 | 26224 | 20 | 1.845E+01 | 45242 | 20 | 1.713E+01 | 36677 | 20 |
| o-xylene (coelutes) | 2.298E+01 | 64573 | 20 | 2.052E+01 | 57406 | 20 | 1.232E+01 | 31663 | 20 | 1.956E+01 | 47975 | 20 | 2.348E+01 | 50288 | 20 |
| styrene (coelutes) | 2.298E+01 | 64573 | 20 | 2.052E+01 | 57406 | 20 | 1.232E+01 | 31663 | 20 | 1.956E+01 | 47975 | 20 | 2.348E+01 | 50288 | 20 |

| | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 3140322 | 3140322 | 100 | 3316001 | 3316001 | 100 | 3290517 | 3290517 | 100 | 3022969 | 3022969 | 100 | 2985895 | 2985895 | 100 |
| ECID IS3 AREAS | 5923875 | 5923875 | 100 | 6903670 | 6903670 | 100 | 6854196 | 6854196 | 100 | 7123518 | 7123518 | 100 | 7080686 | 7080686 | 100 |

| ECD COMPOUNDS | 08/05/97 027F0101 | area | conc. | 08/06/97 049F0301 | area | conc. | 08/06/97 062F0301 | area | conc. | 08/06/97 078F0101 | area | conc. | 08/07/97 098F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 8.831E-01 | 2079806 | 75 | 8.876E-01 | 2207384 | 75 | 7.904E-01 | 1950567 | 75 | 8.781E-01 | 1990771 | 75 | 8.710E-01 | 1950465 | 75 |
| 1,1-dichloroethene | 5.144E+00 | 2423152 | 15 | 4.595E+00 | 2285769 | 15 | 4.109E+00 | 2028050 | 15 | 3.728E+00 | 1690330 | 15 | 4.370E+00 | 1957065 | 15 |
| methylene chloride | 3.663E+00 | 2300690 | 20 | 3.635E+00 | 2410728 | 20 | 3.099E+00 | 2039382 | 20 | 1.703E+00 | 1029809 | 20 | 3.380E+00 | 2018329 | 20 |
| chloroform (coelutes) | 5.879E+01 | 20309200 | 11 | 5.488E+01 | 20018400 | 11 | 5.524E+01 | 19996000 | 11 | 5.583E+01 | 18566600 | 11 | 5.735E+01 | 18837600 | 11 |
| 1,1,1-trichloroethane (coelutes) | 1.617E+02 | 20309200 | 4 | 1.509E+02 | 20018400 | 4 | 1.519E+02 | 19996000 | 4 | 1.535E+02 | 18566600 | 4 | 1.577E+02 | 18837600 | 4 |
| carbon tetrachloride (coelutes) | 1.011E+03 | 20309200 | 0.64 | 9.433E+02 | 20018400 | 0.64 | 9.495E+02 | 19996000 | 0.64 | 9.597E+02 | 18566600 | 0.64 | 9.858E+02 | 18837600 | 0.64 |
| 1,2-dichloroethane | 1.221E+00 | 767175 | 20 | 2.057E+00 | 1364278 | 20 | 1.659E+00 | 1092059 | 20 | 1.040E+00 | 628827 | 20 | 2.245E+00 | 1340917 | 20 |
| trichloroethene (ECD) | 8.121E+01 | 5100702 | 2 | 8.001E+01 | 5306387 | 2 | 7.380E+01 | 4856515 | 2 | 7.463E+01 | 4512200 | 2 | 8.140E+01 | 4861065 | 2 |
| tetrachloroethene (ECD) (coelutes) | 1.269E+02 | 8365695 | 2.1 | 1.183E+02 | 8234477 | 2.1 | 9.133E+01 | 6310846 | 2.1 | 9.123E+01 | 5791548 | 2.1 | 9.763E+01 | 6121770 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 4.098E+00 | 8365695 | 65 | 3.820E+00 | 8234477 | 65 | 2.951E+00 | 6310846 | 65 | 2.947E+00 | 5791548 | 65 | 3.154E+00 | 6121770 | 65 |
| bromoform | 1.634E+01 | 1935428 | 2 | 1.482E+01 | 2046111 | 2 | 1.523E+01 | 2088001 | 2 | 1.240E+01 | 1767202 | 2 | 1.438E+01 | 2036710 | 2 |
| 1,1,2,2-tetrachloroethane | 6.975E+00 | 826430 | 2 | 6.264E+00 | 864925 | 2 | 6.333E+00 | 868116 | 2 | 6.788E+00 | 967065 | 2 | 6.001E+00 | 849800 | 2 |

# INITIAL CALIBRATION SUMMARY
## August 12, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 108904 | 100 | 80939 | 100 | 64875 | 100 | 63128 | 100 | 63962 | 100 |
| 82903 | 100 | 100767 | 100 | 138589 | 100 | 144917 | 100 | 165643 | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 8.806E-01 | 9.977E-01 | 4.706E-01 | 8.194E-01 | 4.507E-01 | 7.238E-01 | 34.4 | 23975 | 25 | 40378 | 50 | 22900 | 75 | 51728 | 100 | 43245 | 150 |
| acetone (coelutes) | NA | 5.778E+00 | 2.377E+00 | 2.397E+00 | 2.148E+00 | 3.175E+00 | 54.8 | NA | 0 | 91658 | 19.6 | 106384 | 69 | 252674 | 167 | 375048 | 273 |
| trans-1,2-dichloroethene | 3.940E+01 | 4.667E+01 | 3.627E+01 | 3.632E+01 | 3.142E+01 | 3.802E+01 | 14.8 | 107275 | 2.5 | 188856 | 5 | 352942 | 15 | 1031716 | 45 | 1808825 | 90 |
| cis-1,2-dichloroethene | NA | 3.544E+01 | 2.755E+01 | 2.758E+01 | 2.386E+01 | 2.861E+01 | 17.1 | NA | 0 | 143431.25 | 5 | 268050.33 | 15 | 783561.64 | 45 | 1373755.8 | 90 |
| carbon disulfide (coelutes) | 2.140E+00 | 3.995E+00 | 3.439E+00 | 4.805E+00 | 5.295E+00 | 3.935E+00 | 31.3 | [illegible] | 12.7 | [illegible] | 25.4 | [illegible] | 102 | [illegible] | 203 | [illegible] | 254 |
| 2-butanone (coelutes) | 3.315E+00 | 6.150E+00 | 5.315E+00 | 7.390E+00 | 8.151E+00 | 6.064E+00 | 31.1 | 29604 | 8.2 | 82131 | 16.5 | 227563.5 | 66 | 615789.75 | 132 | 860202 | 165 |
| benzene | 3.597E+01 | 2.564E+01 | 3.933E+01 | 6.066E+01 | 4.994E+01 | 4.231E+01 | 31.8 | 39178 | 1 | 103755 | 5 | 255181 | 10 | 574442 | 15 | 798517 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 1.734E+01 | 5.671E+01 | 5.791E+01 | 6.302E+01 | 4.874E+01 | 43.3 | NA | 0 | 14031 | 1 | 73582 | 2 | 146219 | 4 | 322444 | 8 |
| toluene (coelutes) | 4.026E+01 | 2.953E+01 | 1.303E+01 | 2.750E+01 | 1.561E+01 | 2.519E+01 | 44.0 | 83314 | 1.9 | 160144 | 6.7 | 143734 | 17 | 501720 | 28.9 | 423232 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | 7.150E+00 | 5.113E+00 | 2.261E+00 | 4.788E+00 | 2.723E+00 | 4.407E+00 | 44.8 | [illegible] | 10.7 | [illegible] | 38.7 | [illegible] | 98 | [illegible] | 166 | [illegible] | 243 |
| 2-hexanone | NA | NA | 1.589E+00 | 3.077E+00 | 1.449E+00 | 2.039E+00 | 44.3 | NA | 0 | NA | 0 | 41233 | 40 | 155406 | 80 | 92705 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 3.982E+01 | 4.821E+01 | 2.226E+01 | 3.588E+01 | 3.654E+01 | 29.6 | NA | 0 | 32227 | 1 | 62556 | 2 | 56219 | 4 | 183587 | 8 |
| chlorobenzene | NA | 2.054E+01 | 5.450E+00 | 7.276E+00 | 4.267E+00 | 9.384E+00 | 80.4 | NA | 0 | 20702 | 1 | 15107 | 2 | 42177 | 4 | 56538 | 8 |
| ethylbenzene | NA | 1.323E+01 | 4.079E+00 | 6.040E+00 | 3.587E+00 | 6.734E+00 | 66.2 | NA | 0 | 66658 | 5 | 56525 | 10 | 131294 | 15 | 148547 | 25 |
| m-xylene (coelutes) | 3.391E+01 | 1.992E+01 | 1.088E+01 | 1.284E+01 | 1.083E+01 | 1.768E+01 | 55.5 | 56229 | 2 | 200749 | 10 | 301614 | 20 | 558375 | 30 | 897366 | 50 |
| p-xylene (coelutes) | 3.391E+01 | 1.992E+01 | 1.088E+01 | 1.284E+01 | 1.083E+01 | 1.768E+01 | 55.5 | [illegible] | 2 | [illegible] | 10 | [illegible] | 20 | [illegible] | 30 | [illegible] | 50 |
| o-xylene (coelutes) | 3.475E+01 | 1.995E+01 | 1.622E+01 | 1.553E+01 | 1.439E+01 | 2.017E+01 | 41.7 | 57621 | 2 | 201058 | 10 | 449550 | 20 | 675043 | 30 | 1192175 | 50 |
| styrene (coelutes) | 3.475E+01 | 1.995E+01 | 1.622E+01 | 1.553E+01 | 1.439E+01 | 2.017E+01 | 41.7 | [illegible] | 2 | [illegible] | 10 | [illegible] | 20 | [illegible] | 30 | [illegible] | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 4228264 | 100 | 3822517 | 100 | 2943493 | 100 | 3371480 | 100 | 3059818 | 100 |
| 11078300 | 100 | 12284600 | 100 | 12144100 | 100 | 12099600 | 100 | 12594300 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 1.270E+00 | 1.009E+00 | 4.844E-01 | 5.536E-01 | 3.202E-01 | 7.276E-01 | 54.5 | 1342921 | 25 | 1928818 | 50 | 1069462 | 75 | 1886441 | 100 | 1469778 | 150 |
| 1,1-dichloroethene | NA | 5.504E+00 | 3.553E+00 | 1.986E+00 | 1.952E+00 | 3.249E+00 | 51.7 | NA | 0 | 1051965 | 5 | 1568750 | 15 | 3013804 | 45 | 5376207 | 90 |
| methylene chloride | NA | 1.540E+00 | 3.780E+00 | 2.280E+00 | 1.838E+00 | 2.359E+00 | 42.2 | NA | 0 | 588705 | 10 | 2225491 | 20 | 3842858 | 50 | 5623053 | 100 |
| chloroform (coelutes) | NA | 8.410E+01 | 3.240E+01 | 3.779E+01 | 3.286E+01 | 4.679E+01 | 53.4 | NA | 0 | 17681500 | 5.5 | 10489958 | 11 | 27903900 | 21.9 | 44040100 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 2.313E+02 | 8.909E+01 | 1.048E+02 | 9.052E+01 | 1.289E+02 | 53.2 | [illegible] | 0 | [illegible] | 2 | [illegible] | 4 | [illegible] | 7.9 | [illegible] | 15.9 |
| carbon tetrachloride (coelutes) | NA | 1.446E+03 | 5.568E+02 | 6.367E+02 | 5.757E+02 | 8.037E+02 | 53.4 | [illegible] | 0 | [illegible] | 0.32 | [illegible] | 0.64 | [illegible] | 1.3 | [illegible] | 2.5 |
| 1,2-dichloroethane | NA | NA | 3.550E+00 | 9.156E-01 | 1.404E+00 | 1.957E+00 | 71.6 | NA | 0 | NA | 0 | 2089849 | 20 | 1543472 | 50 | 4297078 | 100 |
| trichloroethene (ECD) | 1.005E+02 | 6.910E+01 | 9.497E+01 | 6.788E+01 | 8.087E+01 | 8.267E+01 | 17.9 | 2125497 | 0.5 | 2841207 | 1 | 5590589 | 2 | 9154140 | 4 | 19794800 | 8 |
| tetrachloroethene (ECD) (coelutes) | 2.014E+02 | 1.387E+02 | 1.779E+02 | 1.333E+02 | 1.491E+02 | 1.601E+02 | 18.0 | 4429075 | 0.52 | 5302417 | 1 | 10998700 | 2.1 | 18427200 | 4.1 | 37874000 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 6.506E+00 | 4.308E+00 | 5.749E+00 | 4.237E+00 | 4.798E+00 | 5.119E+00 | 19.2 | [illegible] | 16.1 | [illegible] | 32.2 | [illegible] | 65 | [illegible] | 129 | [illegible] | 258 |
| bromoform | 2.884E+01 | 1.214E+01 | 9.824E+00 | 9.033E+00 | 8.067E+00 | 1.358E+01 | 63.8 | 1597328 | 0.5 | 1488782 | 1 | 2385982 | 2 | 4371774 | 4 | 8127469 | 8 |
| 1,1,2,2-tetrachloroethane | 1.455E+01 | 5.804E+00 | 3.280E+00 | 3.099E+00 | 1.683E+00 | 5.684E+00 | 91.1 | 806081 | 0.5 | 711898 | 1 | 796746 | 2 | 1499747 | 4 | 1695331 | 8 |

**CONTINUING CALIBRATION SUMMARY**
**August 12 to August 26 , 1997**

| DATE: | | | 08/13/97 | | 08/13/97 | | 08/14/97 | | 08/14/97 | | 08/14/97 | | 08/15/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| | INITIAL CALIBRATION | | 023R0201 | | 042R0501 | | 060R0601 | | 082R0701 | | 085R0101 | | 100R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 7.238E-01 | 34.4 | 2.366E-01 | -67.3 | 3.654E-01 | -49.5 | 7.589E-01 | 4.8 | 8.370E-01 | 15.6 | 1.701E-01 | -76.5 | 9.487E-01 | 31.1 |
| acetone (coelutes) | 3.175E+00 | 54.8 | 1.387E+00 | -56.3 | 1.496E+00 | -52.9 | 1.271E+00 | -60.0 | 9.366E-01 | -70.5 | 1.186E+00 | -62.6 | 1.026E+00 | -67.7 |
| trans-1,2-dichloroethene | 3.802E+01 | 14.8 | 2.694E+01 | -29.1 | 2.670E+01 | -29.8 | 1.715E+01 | -54.9 | 2.406E+01 | -36.7 | 1.769E+01 | -53.5 | 1.283E+01 | -66.3 |
| cis-1,2-dichloroethene | 2.861E+01 | 17.1 | 1.088E+01 | -62.0 | 1.650E+01 | -42.3 | 4.288E+00 | -85.0 | 1.028E+01 | -64.1 | 4.374E+00 | -84.7 | 2.528E+00 | -91.2 |
| carbon disulfide (coelutes) | 3.935E+00 | 31.3 | 1.621E+00 | -58.8 | 1.203E+00 | -69.4 | 2.080E+00 | -47.1 | 1.903E+00 | -51.6 | 2.583E+00 | -34.4 | 1.857E+00 | -52.8 |
| 2-butanone (coelutes) | 6.064E+00 | 31.1 | 2.505E+00 | -58.7 | 1.859E+00 | -69.3 | 3.214E+00 | -47.0 | 2.941E+00 | -51.5 | 3.992E+00 | -34.2 | 2.870E+00 | -52.7 |
| benzene | 4.231E+01 | 31.8 | 2.733E+01 | -35.4 | 3.121E+01 | -26.2 | 2.850E+01 | -32.6 | 2.293E+01 | -45.8 | 2.675E+01 | -36.8 | 2.783E+01 | -34.2 |
| trichloroethene (PID - MDL N/A) | 4.874E+01 | 43.3 | 4.238E+01 | -13.0 | 4.945E+01 | 1.4 | 4.393E+01 | -9.9 | 4.314E+01 | -11.5 | 3.599E+01 | -26.2 | 4.669E+01 | -4.2 |
| toluene (coelutes) | 2.519E+01 | 44.0 | 9.953E+00 | -60.5 | 1.048E+01 | -58.4 | 9.286E+00 | -63.1 | 1.162E+01 | -53.9 | 1.144E+01 | -54.6 | 9.520E+00 | -62.2 |
| 4-methyl-2-pentanone (coelutes | 4.407E+00 | 44.8 | 1.726E+00 | -60.8 | 1.817E+00 | -58.8 | 1.611E+00 | -63.4 | 2.016E+00 | -54.2 | 1.984E+00 | -55.0 | 1.651E+00 | -62.5 |
| 2-hexanone | 2.039E+00 | 44.3 | 1.107E+00 | -45.7 | 1.117E+00 | -45.2 | 9.538E-01 | -53.2 | 1.323E+00 | -35.1 | 1.401E+00 | -31.3 | 1.017E+00 | -50.1 |
| tetrachloroethene (PID - MDL N/ | 3.654E+01 | 29.6 | 1.656E+01 | -54.7 | 4.211E+01 | 15.2 | 2.795E+01 | -23.5 | 2.947E+01 | -19.4 | 1.804E+01 | -50.6 | 3.554E+01 | -2.7 |
| chlorobenzene | 9.384E+00 | 80.4 | 4.382E+00 | -53.3 | 1.024E+01 | 9.1 | 5.668E+00 | -39.6 | 5.743E+00 | -38.8 | 5.137E+00 | -45.3 | 7.577E+00 | -19.3 |
| ethylbenzene | 6.734E+00 | 66.2 | 3.838E+00 | -43.0 | 6.956E+00 | 3.3 | 3.759E+00 | -44.2 | 4.339E+00 | -35.6 | 3.691E+00 | -45.2 | 4.238E+00 | -37.1 |
| m-xylene (coelutes) | 1.768E+01 | 55.5 | 1.019E+01 | -42.4 | 1.969E+01 | 11.4 | 1.266E+01 | -28.4 | 9.495E+00 | -46.3 | 8.578E+00 | -51.5 | 1.277E+01 | -27.8 |
| p-xylene (coelutes) | 1.768E+01 | 55.5 | 1.019E+01 | -42.4 | 1.969E+01 | 11.4 | 1.266E+01 | -28.4 | 9.495E+00 | -46.3 | 8.578E+00 | -51.5 | 1.277E+01 | -27.8 |
| o-xylene (coelutes) | 2.017E+01 | 41.7 | 1.709E+01 | -15.2 | 2.518E+01 | 24.9 | 1.817E+01 | -9.9 | 1.843E+01 | -8.6 | 1.464E+01 | -27.4 | 1.963E+01 | -2.7 |
| styrene (coelutes) | 2.017E+01 | 41.7 | 1.709E+01 | -15.2 | 2.518E+01 | 24.9 | 1.817E+01 | -9.9 | 1.843E+01 | -8.6 | 1.464E+01 | -27.4 | 1.963E+01 | -2.7 |

| | INITIAL CALIBRATION | | 023F0201 | | 042F0501 | | 060F0601 | | 082F0701 | | 085F0101 | | 100F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 7.276E-01 | 54.5 | 5.465E-01 | -24.9 | 4.222E-01 | -42.0 | 5.686E-01 | -21.9 | 5.072E-01 | -30.3 | 4.479E-01 | -38.4 | 4.358E-01 | -40.1 |
| 1,1-dichloroethene | 3.249E+00 | 51.7 | 3.157E+00 | -2.8 | 2.868E+00 | -11.7 | 2.631E+00 | -19.0 | 2.008E+00 | -38.2 | 1.574E+00 | -51.6 | 2.044E+00 | -37.1 |
| methylene chloride | 2.359E+00 | 42.2 | 1.351E+00 | -42.8 | 2.090E+00 | -11.4 | 1.379E+00 | -41.5 | 3.229E+00 | 36.8 | 1.991E+00 | -15.6 | 9.049E-01 | -61.6 |
| chloroform (coelutes) | 4.679E+01 | 53.4 | 2.879E+01 | -38.5 | 2.846E+01 | -39.2 | 2.530E+01 | -45.9 | 2.314E+01 | -50.5 | 1.782E+01 | -61.9 | 1.978E+01 | -57.7 |
| 1,1,1-trichloroethane (coelutes) | 1.289E+02 | 53.2 | 7.917E+01 | -38.6 | 7.825E+01 | -39.3 | 6.958E+01 | -46.0 | 6.363E+01 | -50.6 | 4.900E+01 | -62.0 | 5.441E+01 | -57.8 |
| carbon tetrachloride (coelutes) | 8.037E+02 | 53.4 | 4.948E+02 | -38.4 | 4.891E+02 | -39.1 | 4.349E+02 | -45.9 | 3.977E+02 | -50.5 | 3.063E+02 | -61.9 | 3.400E+02 | -57.7 |
| 1,2-dichloroethane | 1.957E+00 | 71.6 | 2.720E+00 | 39.0 | 1.338E+00 | -31.6 | 2.793E+00 | 42.7 | 2.339E+00 | 19.5 | 6.806E-01 | -65.2 | 1.978E+00 | 1.1 |
| trichloroethene (ECD) | 8.267E+01 | 17.9 | 7.636E+01 | -7.6 | 7.460E+01 | -9.8 | 7.673E+01 | -7.2 | 7.145E+01 | -13.6 | 5.226E+01 | -36.8 | 6.404E+01 | -22.5 |
| tetrachloroethene (ECD) (coelut | 1.601E+02 | 18.0 | 1.373E+02 | -14.3 | 1.129E+02 | -29.5 | 1.479E+02 | -7.6 | 1.340E+02 | -16.3 | 1.051E+02 | -34.4 | 1.211E+02 | -24.4 |
| 1,1,2-trichloroethane (coelutes) | 5.119E+00 | 19.2 | 4.435E+00 | -13.4 | 3.648E+00 | -28.7 | 4.778E+00 | -6.7 | 4.330E+00 | -15.4 | 3.396E+00 | -33.7 | 3.912E+00 | -23.6 |
| bromoform | 1.358E+01 | 63.8 | 9.671E+00 | -28.8 | 2.593E+01 | 91.0 | 9.384E+00 | -30.9 | 5.869E+00 | -56.8 | 9.853E+00 | -27.4 | 1.175E+01 | -13.5 |
| 1,1,2,2-tetrachloroethane | 5.684E+00 | 91.1 | 2.960E+00 | -47.9 | 6.826E+00 | 20.1 | 2.663E+00 | -53.1 | 5.000E+01 | 779.7 | 3.042E+00 | -46.5 | 3.370E+00 | -40.7 |

| | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | | | NUMBER 6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | 105447 | 105447 | 100 | 57803 | 57803 | 100 | 67327 | 67327 | 100 | 57628 | 57628 | 100 | 46084 | 46084 | 100 | 38571 | 38571 | 100 |
| PID IS3 AREAS | 103960 | 103960 | 100 | 67444 | 67444 | 100 | 83448 | 83448 | 100 | 58828 | 58828 | 100 | 68231 | 68231 | 100 | 52462 | 52462 | 100 |

| PID COMPOUNDS | 08/13/97 023R0201 | area | conc. | 08/13/97 042R0501 | area | conc. | 08/14/97 060R0601 | area | conc. | 08/14/97 082R0701 | area | conc. | 08/14/97 085R0101 | area | conc. | 08/15/97 100R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 2.366E-01 | 18709 | 75 | 3.654E-01 | 15841 | 75 | 7.589E-01 | 38322 | 75 | 8.370E-01 | 36178 | 75 | 1.701E-01 | 5879 | 75 | 9.487E-01 | 27445 | 75 |
| acetone (coelutes) | 1.387E+00 | 100888 | 69 | 1.496E+00 | 59677 | 69 | 1.271E+00 | 59022 | 69 | 9.366E-01 | 37243 | 69 | 1.186E+00 | 37706 | 69 | 1.026E+00 | 27311 | 69 |
| trans-1,2-dichloroethene | 2.694E+01 | 426155 | 15 | 2.670E+01 | 231464 | 15 | 1.715E+01 | 173218 | 15 | 2.406E+01 | 208010 | 15 | 1.769E+01 | 122274 | 15 | 1.283E+01 | 74223 | 15 |
| cis-1,2-dichloroethene | 1.088E+01 | 172012 | 15 | 1.650E+01 | 143046 | 15 | 4.288E+00 | 43305 | 15 | 1.028E+01 | 88846 | 15 | 4.374E+00 | 30237 | 15 | 2.528E+00 | 14624 | 15 |
| carbon disulfide (coelutes) | 1.621E+00 | [illegible] | 102 | 1.203E+00 | [illegible] | 102 | 2.080E+00 | [illegible] | 102 | 1.903E+00 | [illegible] | 102 | 2.583E+00 | [illegible] | 102 | 1.857E+00 | [illegible] | 102 |
| 2-butanone (coelutes) | 2.505E+00 | 174353 | 66 | 1.859E+00 | 70911 | 66 | 3.214E+00 | 142832 | 66 | 2.941E+00 | 111844 | 66 | 3.992E+00 | 121416 | 66 | 2.870E+00 | 73057 | 66 |
| benzene | 2.733E+01 | 288139 | 10 | 3.121E+01 | 180430 | 10 | 2.850E+01 | 191902 | 10 | 2.293E+01 | 132165 | 10 | 2.675E+01 | 123281 | 10 | 2.783E+01 | 107335 | 10 |
| trichloroethene (PID - MDL N/A) | 4.238E+01 | 89382 | 2 | 4.945E+01 | 57165 | 2 | 4.393E+01 | 59160 | 2 | 4.314E+01 | 49724 | 2 | 3.599E+01 | 33170 | 2 | 4.669E+01 | 36017 | 2 |
| toluene (coelutes) | 9.953E+00 | 178411 | 17 | 1.048E+01 | 102937 | 17 | 9.286E+00 | 106289 | 17 | 1.162E+01 | 113867 | 17 | 1.144E+01 | 89619 | 17 | 9.520E+00 | 62426 | 17 |
| 4-methyl-2-pentanone (coelutes) | 1.726E+00 | 178411 | 98 | 1.817E+00 | 102937 | 98 | 1.611E+00 | 106289 | 98 | 2.016E+00 | 113867 | 98 | 1.984E+00 | 89619 | 98 | 1.651E+00 | 62426 | 98 |
| 2-hexanone | 1.107E+00 | 46678 | 40 | 1.117E+00 | 25827 | 40 | 9.538E-01 | 25686 | 40 | 1.323E+00 | 30499 | 40 | 1.401E+00 | 25817 | 40 | 1.017E+00 | 15683 | 40 |
| tetrachloroethene (PID - MDL N/A) | 1.656E+01 | 34930 | 2 | 4.211E+01 | 48677 | 2 | 2.795E+01 | 37640 | 2 | 2.947E+01 | 33962 | 2 | 1.804E+01 | 16624 | 2 | 3.554E+01 | 27415 | 2 |
| chlorobenzene | 4.382E+00 | 9112 | 2 | 1.024E+01 | 13810 | 2 | 5.668E+00 | 9459 | 2 | 5.743E+00 | 6757 | 2 | 5.137E+00 | 7010 | 2 | 7.577E+00 | 7950 | 2 |
| ethylbenzene | 3.838E+00 | 39895 | 10 | 6.956E+00 | 46915 | 10 | 3.759E+00 | 31366 | 10 | 4.339E+00 | 25525 | 10 | 3.691E+00 | 25181 | 10 | 4.238E+00 | 22234 | 10 |
| m-xylene (coelutes) | 1.019E+01 | 211888 | 20 | 1.969E+01 | 265595 | 20 | 1.266E+01 | 211222 | 20 | 9.495E+00 | 111712 | 20 | 8.578E+00 | 117055 | 20 | 1.277E+01 | 133978 | 20 |
| p-xylene (coelutes) | 1.019E+01 | 211888 | 20 | 1.969E+01 | 265595 | 20 | 1.266E+01 | 211222 | 20 | 9.495E+00 | 111712 | 20 | 8.578E+00 | 117055 | 20 | 1.277E+01 | 133978 | 20 |
| o-xylene (coelutes) | 1.709E+01 | 355407 | 20 | 2.518E+01 | 339697 | 20 | 1.817E+01 | 303290 | 20 | 1.843E+01 | 216879 | 20 | 1.464E+01 | 199785 | 20 | 1.963E+01 | 205981 | 20 |
| styrene (coelutes) | 1.709E+01 | 355407 | 20 | 2.518E+01 | 339697 | 20 | 1.817E+01 | 303290 | 20 | 1.843E+01 | 216879 | 20 | 1.464E+01 | 199785 | 20 | 1.963E+01 | 205981 | 20 |

| | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | | | NUMBER 6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 3082095 | 3082095 | 100 | 2980516 | 2980516 | 100 | 3112987 | 3112987 | 100 | 3075999 | 3075999 | 100 | 3672924 | 3672924 | 100 | 3066649 | 3066649 | 100 |
| ECID IS3 AREAS | 13022200 | 13022200 | 100 | 4936924 | 4936924 | 100 | 13499800 | 13499800 | 100 | 11658100 | 11658100 | 100 | 13651000 | 13651000 | 100 | 10766200 | 10766200 | 100 |

| ECD COMPOUNDS | 08/13/97 023F0201 | area | conc. | 08/13/97 042F0501 | area | conc. | 08/14/97 060F0601 | area | conc. | 08/14/97 082F0701 | area | conc. | 08/14/97 085F0101 | area | conc. | 08/15/97 100F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 5.465E-01 | 1263274 | 75 | 4.222E-01 | 943773 | 75 | 5.686E-01 | 1327470 | 75 | 5.072E-01 | 1170189 | 75 | 4.479E-01 | 1233870 | 75 | 4.358E-01 | 1002401 | 75 |
| 1,1-dichloroethene | 3.157E+00 | 1459510 | 15 | 2.868E+00 | 1282022 | 15 | 2.631E+00 | 1228571 | 15 | 2.008E+00 | 926676 | 15 | 1.574E+00 | 867070 | 15 | 2.044E+00 | 940434 | 15 |
| methylene chloride | 1.351E+00 | 832572 | 20 | 2.090E+00 | 1245704 | 20 | 1.379E+00 | 858711 | 20 | 3.229E+00 | 1986273 | 20 | 1.991E+00 | 1462429 | 20 | 9.049E-01 | 554977 | 20 |
| chloroform (coelutes) | 2.879E+01 | 9760686 | 11 | 2.846E+01 | 9329194 | 11 | 2.530E+01 | 8664426 | 11 | 2.314E+01 | 7828846 | 11 | 1.782E+01 | 7199199 | 11 | 1.978E+01 | 6673749 | 11 |
| 1,1,1-trichloroethane (coelutes) | 7.917E+01 | 9760686 | 4 | 7.825E+01 | 9329194 | 4 | 6.958E+01 | 8664426 | 4 | 6.363E+01 | 7828846 | 4 | 4.900E+01 | 7199199 | 4 | 5.441E+01 | 6673749 | 4 |
| carbon tetrachloride (coelutes) | 4.948E+02 | 9760686 | 0.64 | 4.891E+02 | 9329194 | 0.64 | 4.349E+02 | 8664426 | 0.64 | 3.977E+02 | 7828846 | 0.64 | 3.063E+02 | 7199199 | 0.64 | 3.400E+02 | 6673749 | 0.64 |
| 1,2-dichloroethane | 2.720E+00 | 1676379 | 20 | 1.338E+00 | 797469 | 20 | 2.793E+00 | 1738773 | 20 | 2.339E+00 | 1438896 | 20 | 6.806E-01 | 499990 | 20 | 1.978E+00 | 1213079 | 20 |
| trichloroethene (ECD) | 7.636E+01 | 4706731 | 2 | 7.460E+01 | 4446809 | 2 | 7.673E+01 | 4777071 | 2 | 7.145E+01 | 4395693 | 2 | 5.226E+01 | 3838628 | 2 | 6.404E+01 | 3927739 | 2 |
| tetrachloroethene (ECD) (coelutes) | 1.373E+02 | 8884574 | 2.1 | 1.129E+02 | 7066692 | 2.1 | 1.479E+02 | 9668086 | 2.1 | 1.340E+02 | 8657158 | 2.1 | 1.051E+02 | 8107226 | 2.1 | 1.211E+02 | 7798076 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 4.435E+00 | 8884574 | 65 | 3.648E+00 | 7066692 | 65 | 4.778E+00 | 9668086 | 65 | 4.330E+00 | 8657158 | 65 | 3.396E+00 | 8107226 | 65 | 3.912E+00 | 7798076 | 65 |
| bromoform | 9.671E+00 | 2518655 | 2 | 2.593E+01 | 2560712 | 2 | 9.384E+00 | 2533741 | 2 | 5.869E+00 | 1368477 | 2 | 9.853E+00 | 2690159 | 2 | 1.175E+01 | 2529509 | 2 |
| 1,1,2,2-tetrachloroethane | 2.960E+00 | 770827 | 2 | 6.826E+00 | 674007 | 2 | 2.663E+00 | 719028 | 2 | 5.000E+01 | 11658100 | 2 | 3.042E+00 | 830535 | 2 | 3.370E+00 | 725693 | 2 |

# INITIAL CALIBRATION SUMMARY
## August 26, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 25155 | 100 | 20675 | 100 | 36406 | 100 | 28186 | 100 | 31643 | 100 |
| 25345 | 100 | 33294 | 100 | 34021 | 100 | 38841 | 100 | 55969 | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 1.106E+00 | 1.354E+00 | 7.265E-01 | 6.813E-01 | 2.807E-01 | 8.298E-01 | 49.9 | 6958 | 25 | 13997 | 50 | 19838 | 75 | 19204 | 100 | 13323 | 150 |
| acetone (coelutes) | NA | 5.228E+00 | 1.419E+00 | 2.427E+00 | 1.250E+00 | 2.581E+00 | 71.3 | NA | 0 | 21187 | 19.6 | 35651 | 69 | 114223 | 167 | 107967 | 273 |
| trans-1,2-dichloroethene | 2.814E+01 | 5.359E+01 | 3.107E+01 | 4.453E+01 | 2.095E+01 | 3.566E+01 | 36.9 | 17696 | 2.5 | 55401 | 5 | 169696 | 15 | 564627 | 45 | 596551 | 90 |
| cis-1,2-dichloroethene | NA | 8.976E+00 | 7.394E+00 | 1.544E+01 | 2.911E+00 | 8.679E+00 | 59.7 | NA | 0 | 9279 | 5 | 40377 | 15 | 195785.4 | 45 | 82900 | 90 |
| carbon disulfide (coelutes) | 3.107E+00 | 5.680E+00 | 1.476E+00 | 2.281E+00 | 5.693E+00 | 3.647E+00 | 53.4 | [illegible] | 12.7 | [illegible] | 25.4 | [illegible] | 102 | [illegible] | 203 | [illegible] | 254 |
| 2-butanone (coelutes) | 4.813E+00 | 8.744E+00 | 2.281E+00 | 3.508E+00 | 8.764E+00 | 5.622E+00 | 53.3 | 9927 | 8.2 | 29828 | 16.5 | 54798 | 66 | 130523.6 | 132 | 457551 | 165 |
| benzene | 3.203E+01 | 3.687E+01 | 3.843E+01 | 6.914E+01 | 4.928E+01 | 4.515E+01 | 32.8 | 8056 | 1 | 38110 | 5 | 139908 | 10 | 292325 | 15 | 389808 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 2.359E+01 | 3.922E+01 | 6.708E+01 | 6.968E+01 | 4.990E+01 | 44.7 | NA | 0 | 4878 | 1 | 28559 | 2 | 75633 | 4 | 176399 | 8 |
| toluene (coelutes) | 4.018E+01 | 3.188E+01 | 1.923E+01 | 2.528E+01 | 1.735E+01 | 2.678E+01 | 35.1 | 19205 | 1.9 | 44156 | 6.7 | 118998 | 17 | 205892 | 28.9 | 232735 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | 7.135E+00 | 5.519E+00 | 3.335E+00 | 4.400E+00 | 3.027E+00 | 4.683E+00 | 36.0 | [illegible] | 10.7 | [illegible] | 38.7 | [illegible] | 98 | [illegible] | 166 | [illegible] | 243 |
| 2-hexanone | NA | NA | 3.202E+00 | 6.308E+00 | 1.747E+00 | 3.752E+00 | 62.1 | NA | 0 | NA | 0 | 46626 | 40 | 142236 | 80 | 55265 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 3.645E+01 | 4.505E+01 | 6.215E+01 | 4.522E+01 | 4.722E+01 | 22.8 | NA | 0 | 7537 | 1 | 32804 | 2 | 70069 | 4 | 114474 | 8 |
| chlorobenzene | NA | 1.740E+01 | 1.042E+01 | 8.355E+00 | 7.125E+00 | 1.083E+01 | 42.4 | NA | 0 | 5794 | 1 | 7090 | 2 | 12981 | 4 | 31903 | 8 |
| ethylbenzene | NA | 1.062E+01 | 8.302E+00 | 8.555E+00 | 5.389E+00 | 8.217E+00 | 26.2 | NA | 0 | 17683 | 5 | 28244 | 10 | 49843 | 15 | 75408 | 25 |
| m-xylene (coelutes) | 1.900E+01 | 1.211E+01 | 1.292E+01 | 1.411E+01 | 1.429E+01 | 1.448E+01 | 18.5 | 9631 | 2 | 40304 | 10 | 87877 | 20 | 164449 | 30 | 399769 | 50 |
| p-xylene (coelutes) | 1.900E+01 | 1.211E+01 | 1.292E+01 | 1.411E+01 | 1.429E+01 | 1.448E+01 | 18.5 | [illegible] | 2 | [illegible] | 10 | [illegible] | 20 | [illegible] | 30 | [illegible] | 50 |
| o-xylene (coelutes) | 1.859E+01 | 1.797E+01 | 2.315E+01 | 2.634E+01 | 1.869E+01 | 2.095E+01 | 17.4 | 9422 | 2 | 59844 | 10 | 157492 | 20 | 306884 | 30 | 523029 | 50 |
| styrene (coelutes) | 1.859E+01 | 1.797E+01 | 2.315E+01 | 2.634E+01 | 1.869E+01 | 2.095E+01 | 17.4 | [illegible] | 2 | [illegible] | 10 | [illegible] | 20 | [illegible] | 30 | [illegible] | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 4598397 | 100 | 4411000 | 100 | 4215840 | 100 | 4139745 | 100 | 3617611 | 100 |
| 12654100 | 100 | 13269900 | 100 | 13221200 | 100 | 12701100 | 100 | 14998800 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 1.294E+00 | 1.078E+00 | 7.928E-01 | 5.685E-01 | 2.425E-01 | 7.951E-01 | 52.1 | 1487587 | 25 | 2377089 | 50 | 2506682 | 75 | 2353370 | 100 | 1315791 | 150 |
| 1,1-dichloroethene | NA | 5.142E+00 | 2.811E+00 | 1.908E+00 | 1.472E+00 | 2.833E+00 | 57.8 | NA | 0 | 1134011 | 5 | 1777839 | 15 | 3555007 | 45 | 4792564 | 90 |
| methylene chloride | NA | 1.488E+00 | 1.339E+00 | 1.114E+00 | 1.210E+00 | 1.288E+00 | 12.6 | NA | 0 | 656381 | 10 | 1128590 | 20 | 2305211 | 50 | 4376720 | 100 |
| chloroform (coelutes) | NA | 9.762E+01 | 5.513E+01 | 4.038E+01 | 2.658E+01 | 5.493E+01 | 56.0 | NA | 0 | 23883300 | 5.5 | 25565300 | 11 | 36606400 | 21.9 | 42124100 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 2.685E+02 | 1.516E+02 | 1.119E+02 | 7.323E+01 | 1.513E+02 | 55.8 | [illegible] | 0 | [illegible] | 2 | [illegible] | 4 | [illegible] | 7.9 | [illegible] | 15.9 |
| carbon tetrachloride (coelutes) | NA | 1.678E+03 | 9.475E+02 | 6.802E+02 | 4.658E+02 | 9.428E+02 | 56.0 | [illegible] | 0 | [illegible] | 0.32 | [illegible] | 0.64 | [illegible] | 1.3 | [illegible] | 2.5 |
| 1,2-dichloroethane | NA | NA | 1.044E+00 | 2.206E+00 | 8.464E-01 | 1.366E+00 | 53.8 | NA | 0 | NA | 0 | 880319 | 20 | 4566513 | 50 | 3061831 | 100 |
| trichloroethene (ECD) | 8.234E+01 | 6.690E+01 | 5.996E+01 | 6.407E+01 | 8.039E+01 | 7.073E+01 | 14.2 | 1893073 | 0.5 | 2950896 | 1 | 5056029 | 2 | 10609800 | 4 | 23264300 | 8 |
| tetrachloroethene (ECD) (coelutes) | 1.619E+02 | 1.261E+02 | 1.251E+02 | 1.327E+02 | 1.339E+02 | 1.359E+02 | 11.1 | 3872078 | 0.52 | 5563967 | 1 | 11074600 | 2.1 | 22525800 | 4.1 | 40191500 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 5.230E+00 | 3.917E+00 | 4.041E+00 | 4.218E+00 | 4.306E+00 | 4.343E+00 | 11.9 | [illegible] | 16.1 | [illegible] | 32.2 | [illegible] | 65 | [illegible] | 129 | [illegible] | 258 |
| bromoform | 1.743E+01 | 1.303E+01 | 1.079E+01 | 1.021E+01 | 7.497E+00 | 1.179E+01 | 31.5 | 1102815 | 0.5 | 1729485 | 1 | 2853307 | 2 | 5189486 | 4 | 8996138 | 8 |
| 1,1,2,2-tetrachloroethane | 9.411E+00 | 6.218E+00 | 4.563E+00 | 3.291E+00 | 1.892E+00 | 5.075E+00 | 57.2 | 595430 | 0.5 | 825098 | 1 | 1206491 | 2 | 1672048 | 4 | 2270668 | 8 |

**CONTINUING CALIBRATION SUMMARY**
**August 26 to September 03 , 1997**

| Date: | | | 08/27/97 | | 08/27/97 | | 08/28/97 | | 08/28/97 | | 08/29/97 | | 08/29/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| | INITIAL CALIBRATION | | 010R0101 | | 035R0101 | | 056R0101 | | 077R0101 | | 098R0101 | | 018R0201 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 8.298E-01 | 49.9 | 1.385E+00 | 66.9 | 1.094E+00 | 31.9 | 8.375E-01 | 0.9 | 2.850E-01 | -65.7 | 1.033E+00 | 24.4 | 8.149E-01 | -1.8 |
| acetone (coelutes) | 2.581E+00 | 71.3 | 4.618E+00 | 78.9 | 4.373E+00 | 69.4 | 3.990E+00 | 54.6 | 5.834E-01 | -77.4 | 5.296E+00 | 105.2 | 3.229E+00 | 25.1 |
| trans-1,2-dichloroethene | 3.566E+01 | 36.9 | 4.660E+01 | 30.7 | 4.512E+01 | 26.5 | 3.833E+01 | 7.5 | 1.358E+01 | -61.9 | 4.902E+01 | 37.5 | 4.425E+01 | 24.1 |
| cis-1,2-dichloroethene | 8.679E+00 | 59.7 | 6.676E+00 | -23.1 | 6.960E+00 | -19.8 | 6.984E+00 | -19.5 | 4.262E+00 | -50.9 | 1.333E+01 | 53.6 | 1.885E+01 | 117.2 |
| carbon disulfide (coelutes) | 3.647E+00 | 53.4 | 4.538E+00 | 24.4 | 5.229E+00 | 43.4 | 4.110E+00 | 12.7 | 1.729E+00 | -52.6 | 3.954E+00 | 8.4 | 2.942E+00 | -19.3 |
| 2-butanone (coelutes) | 5.622E+00 | 53.3 | 7.014E+00 | 24.8 | 8.081E+00 | 43.7 | 6.352E+00 | 13.0 | 2.672E+00 | -52.5 | 6.111E+00 | 8.7 | 4.546E+00 | -19.1 |
| benzene | 4.515E+01 | 32.8 | 5.159E+01 | 14.3 | 2.936E+01 | -35.0 | 5.222E+01 | 15.7 | 1.542E+01 | -65.9 | 3.685E+01 | -18.4 | 4.789E+01 | 6.1 |
| trichloroethene (PID - MDL N/A) | 4.990E+01 | 44.7 | 2.852E+01 | -42.8 | 3.070E+01 | -38.5 | 3.887E+01 | -22.1 | 3.922E+01 | -21.4 | 3.456E+01 | -30.7 | 3.762E+01 | -24.6 |
| toluene (coelutes) | 2.678E+01 | 35.1 | 5.385E+01 | 101.1 | 3.900E+01 | 45.6 | 2.549E+01 | -4.8 | 1.262E+01 | -52.9 | 3.411E+01 | 27.4 | 2.968E+01 | 10.8 |
| 4-methyl-2-pentanone (coelutes | 4.683E+00 | 36.0 | 9.341E+00 | 99.5 | 6.765E+00 | 44.5 | 4.421E+00 | -5.6 | 2.190E+00 | -53.2 | 5.917E+00 | 26.3 | 5.149E+00 | 9.9 |
| 2-hexanone | 3.752E+00 | 62.1 | 8.928E+00 | 137.9 | 1.413E+01 | 276.5 | 6.014E+00 | 60.3 | 1.820E+00 | -51.5 | 7.635E+00 | 103.5 | 7.470E+00 | 99.1 |
| tetrachloroethene (PID - MDL N/ | 4.722E+01 | 22.8 | 4.622E+01 | -2.1 | 4.351E+01 | -7.9 | 2.067E+01 | -56.2 | 1.599E+01 | -66.1 | 2.087E+01 | -55.8 | 1.915E+01 | -59.5 |
| chlorobenzene | 1.083E+01 | 42.4 | 1.618E+01 | 49.5 | 1.989E+01 | 83.7 | 1.163E+01 | 7.5 | 1.436E+01 | 32.7 | 1.189E+01 | 9.9 | 1.622E+01 | 49.8 |
| ethylbenzene | 8.217E+00 | 26.2 | 1.221E+01 | 48.5 | 1.260E+01 | 53.4 | 9.962E+00 | 21.2 | 1.106E+01 | 34.6 | 9.913E+00 | 20.6 | 1.302E+01 | 58.4 |
| m-xylene (coelutes) | 1.448E+01 | 18.5 | 2.210E+01 | 52.6 | 2.173E+01 | 50.0 | 1.883E+01 | 30.0 | 2.655E+01 | 83.3 | 1.721E+01 | 18.8 | 2.314E+01 | 59.8 |
| p-xylene (coelutes) | 1.448E+01 | 18.5 | 2.210E+01 | 52.6 | 2.173E+01 | 50.0 | 1.883E+01 | 30.0 | 2.655E+01 | 83.3 | 1.721E+01 | 18.8 | 2.314E+01 | 59.8 |
| o-xylene (coelutes) | 2.095E+01 | 17.4 | 2.041E+01 | -2.6 | 2.406E+01 | 14.9 | 2.119E+01 | 1.1 | 3.176E+01 | 51.6 | 1.950E+01 | -6.9 | 2.631E+01 | 25.6 |
| styrene (coelutes) | 2.095E+01 | 17.4 | 2.041E+01 | -2.6 | 2.406E+01 | 14.9 | 2.119E+01 | 1.1 | 3.176E+01 | 51.6 | 1.950E+01 | -6.9 | 2.631E+01 | 25.6 |

| | INITIAL CALIBRATION | | 010F0101 | | 035F0101 | | 056F0101 | | 077F0101 | | 098F0101 | | 018F0201 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 7.951E-01 | 52.1 | 8.314E-01 | 4.6 | 6.882E-01 | -13.4 | 6.530E-01 | -17.9 | 6.081E-01 | -23.5 | 7.059E-01 | -11.2 | 5.605E-01 | -29.5 |
| 1,1-dichloroethene | 2.833E+00 | 57.8 | 3.231E+00 | 14.0 | 1.702E+00 | -39.9 | 3.732E+00 | 31.7 | 2.882E+00 | 1.7 | 4.355E+00 | 53.7 | 3.602E+00 | 27.1 |
| methylene chloride | 1.288E+00 | 12.6 | 2.803E+00 | 117.7 | 7.425E-01 | -42.3 | 1.494E+00 | 16.1 | 2.902E+00 | 125.4 | 1.454E+00 | 12.9 | 1.440E+00 | 11.9 |
| chloroform (coelutes) | 5.493E+01 | 56.0 | 4.506E+01 | -18.0 | 3.848E+01 | -29.9 | 4.402E+01 | -19.9 | 4.031E+01 | -26.6 | 3.630E+01 | -33.9 | 3.403E+01 | -38.0 |
| 1,1,1-trichloroethane (coelutes) | 1.513E+02 | 55.8 | 1.239E+02 | -18.1 | 1.058E+02 | -30.1 | 1.211E+02 | -20.0 | 1.109E+02 | -26.7 | 9.982E+01 | -34.0 | 9.358E+01 | -38.1 |
| carbon tetrachloride (coelutes) | 9.428E+02 | 56.0 | 7.744E+02 | -17.9 | 6.614E+02 | -29.9 | 7.566E+02 | -19.8 | 6.928E+02 | -26.5 | 6.239E+02 | -33.8 | 5.849E+02 | -38.0 |
| 1,2-dichloroethane | 1.366E+00 | 53.8 | 2.918E+00 | 113.7 | 8.003E-01 | -41.4 | 9.862E-01 | -27.8 | 2.179E+00 | 59.6 | 8.876E-01 | -35.0 | 2.382E+00 | 74.4 |
| trichloroethene (ECD) | 7.073E+01 | 14.2 | 5.750E+01 | -18.7 | 5.893E+01 | -16.7 | 6.651E+01 | -6.0 | 6.592E+01 | -6.8 | 5.655E+01 | -20.0 | 5.785E+01 | -18.2 |
| tetrachloroethene (ECD) (coelut | 1.359E+02 | 11.1 | 1.263E+02 | -7.1 | 1.005E+02 | -26.1 | 1.017E+02 | -25.2 | 1.001E+02 | -26.4 | 9.412E+01 | -30.8 | 9.163E+01 | -32.6 |
| 1,1,2-trichloroethane (coelutes) | 4.343E+00 | 11.9 | 4.081E+00 | -6.0 | 3.247E+00 | -25.2 | 3.286E+00 | -24.3 | 3.234E+00 | -25.5 | 3.041E+00 | -30.0 | 2.960E+00 | -31.8 |
| bromoform | 1.179E+01 | 31.5 | 1.057E+01 | -10.4 | 1.218E+01 | 3.2 | 9.892E+00 | -16.1 | 1.793E+01 | 52.0 | 1.025E+01 | -13.1 | 1.394E+01 | 18.2 |
| 1,1,2,2-tetrachloroethane | 5.075E+00 | 57.2 | 4.021E+00 | -20.8 | 5.329E+00 | 5.0 | 4.062E+00 | -20.0 | 7.767E+00 | 53.0 | 4.192E+00 | -17.4 | 5.001E+00 | -1.5 |

| | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | | | NUMBER 6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | 17038 | 17038 | 100 | 16418 | 16418 | 100 | 19954 | 19954 | 100 | 48302 | 48302 | 100 | 14698 | 14698 | 100 | 15154 | 15154 | 100 |
| PID IS3 AREAS | 32725 | 32725 | 100 | 28097 | 28097 | 100 | 33949 | 33949 | 100 | 17167 | 17167 | 100 | 28393 | 28393 | 100 | 20486 | 20486 | 100 |

| PID COMPOUNDS | 08/27/97 010R0101 | area | conc. | 08/27/97 035R0101 | area | conc. | 08/28/97 056R0101 | area | conc. | 08/28/97 077R0101 | area | conc. | 08/29/97 098R0101 | area | conc. | 08/29/97 018R0201 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 1.385E+00 | 17695 | 75 | 1.094E+00 | 13474 | 75 | 8.375E-01 | 12533 | 75 | 2.850E-01 | 10323 | 75 | 1.033E+00 | 11383 | 75 | 8.149E-01 | 9262 | 75 |
| acetone (coelutes) | 4.618E+00 | 54295 | 69 | 4.373E+00 | 49535 | 69 | 3.990E+00 | 54935 | 69 | 5.834E-01 | 19443 | 69 | 5.296E+00 | 53711 | 69 | 3.229E+00 | 33759 | 69 |
| trans-1,2-dichloroethene | 4.660E+01 | 119106 | 15 | 4.512E+01 | 111121 | 15 | 3.833E+01 | 114713 | 15 | 1.358E+01 | 98405 | 15 | 4.902E+01 | 108077 | 15 | 4.425E+01 | 100577 | 15 |
| cis-1,2-dichloroethene | 6.676E+00 | 17061 | 15 | 6.960E+00 | 17140 | 15 | 6.984E+00 | 20903 | 15 | 4.262E+00 | 30879 | 15 | 1.333E+01 | 29395 | 15 | 1.885E+01 | 42848 | 15 |
| carbon disulfide (coelutes) | 4.538E+00 | [illegible] | 102 | 5.229E+00 | [illegible] | 102 | 4.110E+00 | [illegible] | 102 | 1.729E+00 | [illegible] | 102 | 3.954E+00 | [illegible] | 102 | 2.942E+00 | [illegible] | 102 |
| 2-butanone (coelutes) | 7.014E+00 | 78868 | 66 | 8.081E+00 | 87561 | 66 | 6.352E+00 | 83647 | 66 | 2.672E+00 | 85166 | 66 | 6.111E+00 | 59278 | 66 | 4.546E+00 | 45472 | 66 |
| benzene | 5.159E+01 | 87902 | 10 | 2.936E+01 | 48207 | 10 | 5.222E+01 | 104194 | 10 | 1.542E+01 | 74458 | 10 | 3.685E+01 | 54159 | 10 | 4.789E+01 | 72580 | 10 |
| trichloroethene (PID - MDL N/A) | 2.852E+01 | 9718 | 2 | 3.070E+01 | 10081 | 2 | 3.887E+01 | 15511 | 2 | 3.922E+01 | 37890 | 2 | 3.456E+01 | 10160 | 2 | 3.762E+01 | 11403 | 2 |
| toluene (coelutes) | 5.385E+01 | 155975 | 17 | 3.900E+01 | 108854 | 17 | 2.549E+01 | 86461 | 17 | 1.262E+01 | 103668 | 17 | 3.411E+01 | 85228 | 17 | 2.968E+01 | 76471 | 17 |
| 4-methyl-2-pentanone (coelutes) | 9.341E+00 | 155975 | 98 | 6.765E+00 | 108854 | 98 | 4.421E+00 | 86461 | 98 | 2.190E+00 | 103668 | 98 | 5.917E+00 | 85228 | 98 | 5.149E+00 | 76471 | 98 |
| 2-hexanone | 8.928E+00 | 60845 | 40 | 1.413E+01 | 92784 | 40 | 6.014E+00 | 47998 | 40 | 1.820E+00 | 35170 | 40 | 7.635E+00 | 44889 | 40 | 7.470E+00 | 45282 | 40 |
| tetrachloroethene (PID - MDL N/A) | 4.622E+01 | 15749 | 2 | 4.351E+01 | 14286 | 2 | 2.067E+01 | 8248 | 2 | 1.599E+01 | 15447 | 2 | 2.087E+01 | 6136 | 2 | 1.915E+01 | 5803 | 2 |
| chlorobenzene | 1.618E+01 | 10591 | 2 | 1.989E+01 | 11176 | 2 | 1.163E+01 | 7899 | 2 | 1.436E+01 | 4931 | 2 | 1.189E+01 | 6754 | 2 | 1.622E+01 | 6644 | 2 |
| ethylbenzene | 1.221E+01 | 39944 | 10 | 1.260E+01 | 35414 | 10 | 9.962E+00 | 33821 | 10 | 1.106E+01 | 18983 | 10 | 9.913E+00 | 28145 | 10 | 1.302E+01 | 26671 | 10 |
| m-xylene (coelutes) | 2.210E+01 | 144612 | 20 | 2.173E+01 | 122092 | 20 | 1.883E+01 | 127854 | 20 | 2.655E+01 | 91170 | 20 | 1.721E+01 | 97750 | 20 | 2.314E+01 | 94812 | 20 |
| p-xylene (coelutes) | 2.210E+01 | 144612 | 20 | 2.173E+01 | 122092 | 20 | 1.883E+01 | 127854 | 20 | 2.655E+01 | 91170 | 20 | 1.721E+01 | 97750 | 20 | 2.314E+01 | 94812 | 20 |
| o-xylene (coelutes) | 2.041E+01 | 133601 | 20 | 2.406E+01 | 135229 | 20 | 2.119E+01 | 143861 | 20 | 3.176E+01 | 109053 | 20 | 1.950E+01 | 110739 | 20 | 2.631E+01 | 107782 | 20 |
| styrene (coelutes) | 2.041E+01 | 133601 | 20 | 2.406E+01 | 135229 | 20 | 2.119E+01 | 143861 | 20 | 3.176E+01 | 109053 | 20 | 1.950E+01 | 110739 | 20 | 2.631E+01 | 107782 | 20 |

| | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | | | NUMBER 6 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 4434804 | 4434804 | 100 | 4267854 | 4267854 | 100 | 4213040 | 4213040 | 100 | 3816769 | 3816769 | 100 | 4137946 | 4137946 | 100 | 4190220 | 4190220 | 100 |
| ECID IS3 AREAS | 13645600 | 13645600 | 100 | 10963000 | 10963000 | 100 | 14553600 | 14553600 | 100 | 7938731 | 7938731 | 100 | 13257700 | 13257700 | 100 | 10023600 | 10023600 | 100 |

| ECD COMPOUNDS | 08/27/97 010F0101 | area | conc. | 08/27/97 035F0101 | area | conc. | 08/28/97 056F0101 | area | conc. | 08/28/97 077F0101 | area | conc. | 08/29/97 098F0101 | area | conc. | 08/29/97 018F0201 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 8.314E-01 | 2765475 | 75 | 6.882E-01 | 2202771 | 75 | 6.530E-01 | 2063404 | 75 | 6.081E-01 | 1740617 | 75 | 7.059E-01 | 2190752 | 75 | 5.605E-01 | 1761462 | 75 |
| 1,1-dichloroethene | 3.231E+00 | 2149123 | 15 | 1.702E+00 | 1089724 | 15 | 3.732E+00 | 2358409 | 15 | 2.882E+00 | 1649990 | 15 | 4.355E+00 | 2703104 | 15 | 3.602E+00 | 2264282 | 15 |
| methylene chloride | 2.803E+00 | 2485779 | 20 | 7.425E-01 | 633776 | 20 | 1.494E+00 | 1259155 | 20 | 2.902E+00 | 2215016 | 20 | 1.454E+00 | 1202961 | 20 | 1.440E+00 | 1206894 | 20 |
| chloroform (coelutes) | 4.506E+01 | 21980500 | 11 | 3.848E+01 | 18064817 | 11 | 4.402E+01 | 20400900 | 11 | 4.031E+01 | 16923859 | 11 | 3.630E+01 | 16522000 | 11 | 3.403E+01 | 15685600 | 11 |
| 1,1,1-trichloroethane (coelutes) | 1.239E+02 | 21980500 | 4 | 1.058E+02 | 18064817 | 4 | 1.211E+02 | 20400900 | 4 | 1.109E+02 | 16923859 | 4 | 9.982E+01 | 16522000 | 4 | 9.358E+01 | 15685600 | 4 |
| carbon tetrachloride (coelutes) | 7.744E+02 | 21980500 | 0.64 | 6.614E+02 | 18064817 | 0.64 | 7.566E+02 | 20400900 | 0.64 | 6.928E+02 | 16923859 | 0.64 | 6.239E+02 | 16522000 | 0.64 | 5.849E+02 | 15685600 | 0.64 |
| 1,2-dichloroethane | 2.918E+00 | 2588428 | 20 | 8.003E-01 | 683077 | 20 | 9.862E-01 | 830995 | 20 | 2.179E+00 | 1663195 | 20 | 8.876E-01 | 734601 | 20 | 2.382E+00 | 1995826 | 20 |
| trichloroethene (ECD) | 5.750E+01 | 5099830 | 2 | 5.893E+01 | 5029734 | 2 | 6.651E+01 | 5603984 | 2 | 6.592E+01 | 5032247 | 2 | 5.655E+01 | 4680013 | 2 | 5.785E+01 | 4848181 | 2 |
| tetrachloroethene (ECD) (coelutes) | 1.263E+02 | 11764700 | 2.1 | 1.005E+02 | 9007035 | 2.1 | 1.017E+02 | 8997266 | 2.1 | 1.001E+02 | 8023529 | 2.1 | 9.412E+01 | 8178484 | 2.1 | 9.163E+01 | 8063110 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 4.081E+00 | 11764700 | 65 | 3.247E+00 | 9007035 | 65 | 3.286E+00 | 8997266 | 65 | 3.234E+00 | 8023529 | 65 | 3.041E+00 | 8178484 | 65 | 2.960E+00 | 8063110 | 65 |
| bromoform | 1.057E+01 | 2885371 | 2 | 1.218E+01 | 2669764 | 2 | 9.892E+00 | 2879404 | 2 | 1.793E+01 | 2846454 | 2 | 1.025E+01 | 2717761 | 2 | 1.394E+01 | 2794885 | 2 |
| 1,1,2,2-tetrachloroethane | 4.021E+00 | 1097323 | 2 | 5.329E+00 | 1168506 | 2 | 4.062E+00 | 1182296 | 2 | 7.767E+00 | 1233199 | 2 | 4.192E+00 | 1111458 | 2 | 5.001E+00 | 1002470 | 2 |

# INITIAL CALIBRATION SUMMARY
## September 2 through 19, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 37023 | 100 | 40906 | 100 | 40073 | 100 | 57131 | 100 | 59443 | 100 |
| 53134 | 100 | 52775 | 100 | 57231 | 100 | 70197 | 100 | 53352 | 100 |

### RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 022R0101 | STD.2 023R0101 | STD.3 024R0101 | STD.4 025R0101 | STD.5 026R0101 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | NA | 7.669E-01 | 6.208E-01 | 3.075E-01 | 1.623E-01 | 4.644E-01 | 59.9 | NA | 25 | 15685 | 50 | 18659 | 75 | 17570 | 100 | 14471 | 150 |
| acetone (coelutes) | NA | 7.312E+00 | 4.684E+00 | 3.072E+00 | 1.859E+00 | 4.232E+00 | 55.7 | NA | 0 | 58623 | 19.6 | 129508 | 69 | 293053 | 167 | 301730 | 273 |
| trans-1,2-dichloroethene | 9.154E+01 | 6.578E+01 | 6.040E+01 | 3.166E+01 | 1.919E+01 | 5.371E+01 | 53.5 | 84728 | 2.5 | 134533 | 5 | 383055 | 15 | 813903 | 45 | 1028517 | 90 |
| cis-1,2-dichloroethene | NA | 1.377E+01 | 1.116E+01 | 9.604E+00 | 7.461E+00 | 1.050E+01 | 25.3 | NA | 0 | 28154 | 5 | 87075 | 15 | 246919 | 45 | 399177 | 90 |
| carbon disulfide (coelutes) | NA | 1.606E+01 | 1.124E+01 | 6.387E+00 | 4.479E+00 | 9.543E+00 | 54.5 | [illegible] | 12.7 | [illegible] | 25.4 | [illegible] | 102 | [illegible] | 203 | [illegible] | 254 |
| 2-butanone (coelutes) | NA | 2.473E+01 | 1.737E+01 | 9.823E+00 | 6.895E+00 | 1.471E+01 | 54.5 | NA | 8.2 | 166909 | 16.5 | 459511 | 66 | 740757 | 132 | 676236 | 165 |
| benzene | 1.466E+02 | 5.902E+01 | 1.032E+02 | 9.322E+01 | 6.021E+01 | 9.244E+01 | 39.0 | 54273 | 1 | 120706 | 5 | 413428 | 10 | 798887 | 15 | 894757 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 6.853E+01 | 1.261E+02 | 1.255E+02 | 1.262E+02 | 1.116E+02 | 25.7 | NA | 0 | 28032 | 1 | 101092 | 2 | 288758 | 4 | 600317 | 8 |
| toluene (coelutes) | NA | 6.002E+01 | 6.382E+01 | 3.966E+01 | 3.070E+01 | 4.855E+01 | 32.8 | NA | 0 | 164502 | 6.7 | 434734 | 17 | 654834 | 28.9 | 773880 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | NA | 1.039E+01 | 1.107E+01 | 6.905E+00 | 5.358E+00 | 8.431E+00 | 32.5 | [illegible] | 0 | [illegible] | 38.7 | [illegible] | 98 | [illegible] | 166 | [illegible] | 243 |
| 2-hexanone | NA | NA | 1.571E+01 | 7.178E+00 | 5.499E+00 | 9.461E+00 | 57.9 | NA | 0 | NA | 0 | 251763 | 40 | 328053 | 80 | 326849 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 6.011E+01 | 7.942E+01 | NA | NA | 6.976E+01 | 19.6 | NA | 0 | 24588 | 1 | 63651 | 2 | NA | 4 | NA | 8 |
| chlorobenzene | NA | 2.042E+01 | 1.889E+01 | 1.810E+01 | 3.108E+01 | 2.212E+01 | 27.3 | NA | 0 | 10778 | 1 | 21622 | 2 | 50822 | 4 | 132643 | 8 |
| ethylbenzene | NA | 6.102E+00 | 9.959E+00 | 8.077E+00 | 1.293E+01 | 9.266E+00 | 31.3 | NA | 0 | 16102 | 5 | 56994 | 10 | 85048 | 15 | 172406 | 25 |
| m-xylene (coelutes) | 3.286E+01 | 5.942E+00 | 1.132E+01 | 1.417E+01 | 2.212E+01 | 1.728E+01 | 60.7 | 34916 | 2 | 31357 | 10 | 129517 | 20 | 298344 | 30 | 590143 | 50 |
| p-xylene (coelutes) | 3.286E+01 | 5.942E+00 | 1.132E+01 | 1.417E+01 | 2.212E+01 | 1.728E+01 | 60.7 | [illegible] | 2 | [illegible] | 10 | [illegible] | 20 | [illegible] | 30 | [illegible] | 50 |
| o-xylene (coelutes) | 2.647E+01 | 9.374E+00 | 2.049E+01 | 1.885E+01 | 2.651E+01 | 2.034E+01 | 34.6 | 28134 | 2 | 49472 | 10 | 234556 | 20 | 396866 | 30 | 707186 | 50 |
| styrene (coelutes) | 2.647E+01 | 9.374E+00 | 2.049E+01 | 1.885E+01 | 2.651E+01 | 2.034E+01 | 34.6 | [illegible] | 2 | [illegible] | 10 | [illegible] | 20 | [illegible] | 30 | [illegible] | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc | area | conc. |
| 4438949 | 100 | 4176709 | 100 | 4239658 | 100 | 3871063 | 100 | 3638339 | 100 |
| 15483400 | 100 | 14864400 | 100 | 13267000 | 100 | 15839900 | 100 | 14862200 | 100 |

| ECD COMPOUNDS | STD.1 022F0101 | STD.2 023F0101 | STD.3 024F0101 | STD.4 025F0101 | STD.5 026F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 2.548E-02 | 8.141E-01 | 5.705E-01 | 3.607E-01 | 2.617E-01 | 4.065E-01 | 73.9 | 28271 | 25 | 1700138 | 50 | 1814167 | 75 | 1396198 | 100 | 1428389.5 | 150 |
| 1,1-dichloroethene | NA | 4.587E+00 | 2.354E+00 | 1.906E+00 | 1.396E+00 | 2.561E+00 | 54.9 | NA | 0 | 957864 | 5 | 1497282 | 15 | 3319625 | 45 | 4570846.4 | 90 |
| methylene chloride | NA | 2.959E+00 | 2.256E+00 | 1.907E+00 | 1.424E+00 | 2.136E+00 | 30.2 | NA | 0 | 1235791 | 10 | 1912682 | 20 | 3690403 | 50 | 5180000 | 100 |
| chloroform (coelutes) | NA | 7.248E+01 | 4.677E+01 | 3.878E+01 | 2.434E+01 | 4.559E+01 | 44.3 | NA | 0 | 16649600 | 5.5 | 21811400 | 11 | 32874200 | 21.9 | 38793320 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 1.993E+02 | 1.286E+02 | 1.075E+02 | 6.706E+01 | 1.256E+02 | 44.1 | [illegible] | 0 | [illegible] | 2 | [illegible] | 4 | [illegible] | 7.9 | [illegible] | 15.9 |
| carbon tetrachloride (coelutes) | NA | 1.246E+03 | 8.038E+02 | 6.533E+02 | 4.265E+02 | 7.823E+02 | 44.2 | [illegible] | 0 | [illegible] | 0.32 | [illegible] | 0.64 | [illegible] | 1.3 | [illegible] | 2.5 |
| 1,2-dichloroethane | NA | NA | 2.597E+00 | 1.715E+00 | 1.882E+00 | 2.064E+00 | 22.7 | NA | 0 | NA | 0 | 2201663 | 20 | 3319625 | 50 | 6845880 | 100 |
| trichloroethene (ECD) | 9.564E+01 | 7.416E+01 | 5.736E+01 | 6.784E+01 | 6.422E+01 | 7.184E+01 | 20.4 | 2122716 | 0.5 | 3097296 | 1 | 4863519 | 2 | 10504600 | 4 | 18692400 | 8 |
| tetrachloroethene (ECD) (coelutes) | 1.892E+02 | 1.754E+02 | 1.130E+02 | 1.275E+02 | 1.277E+02 | 1.466E+02 | 22.9 | 4368242 | 0.52 | 7327265 | 1 | 10062600 | 2.1 | 20237300 | 4.1 | 38556800 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 6.112E+00 | 5.448E+00 | 3.651E+00 | 4.053E+00 | 4.108E+00 | 4.674E+00 | 22.5 | [illegible] | 16.1 | [illegible] | 32.2 | [illegible] | 65 | [illegible] | 129 | [illegible] | 258 |
| bromoform | 1.186E+01 | 1.049E+01 | 1.113E+01 | 8.349E+00 | 7.496E+00 | 9.866E+00 | 18.9 | 918024 | 0.5 | 1559742.3 | 1 | 2954508 | 2 | 5289968 | 4 | 8912577 | 8 |
| 1,1,2,2-tetrachloroethane | 5.065E+00 | 4.533E+00 | 5.355E+00 | 3.243E+00 | 2.385E+00 | 4.116E+00 | 30.7 | 392120 | 0.5 | 673864.12 | 1 | 1420915 | 2 | 2054757 | 4 | 2835521 | 8 |

**CONTINUING CALIBRATION SUMMARY**
**September 2 through September 19, 1997**

| DATE: | | | 09/03/97 | | 09/03/97 | | 09/04/97 | | 09/04/97 | | 09/05/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | |
| | INITIAL CALIBRATION | | 024R0101 | | 041R0101 | | 075R0101 | | 075R0101 | | 094R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 4.644E-01 | 59.9 | 3.104E-01 | -33.2 | 4.830E-01 | 4.0 | 2.660E-01 | -42.7 | 2.660E-01 | -42.7 | 2.182E-01 | -53.0 |
| acetone (coelutes) | 4.232E+00 | 55.7 | 2.342E+00 | -44.7 | 4.668E+00 | 10.3 | 3.414E+00 | -19.3 | 3.414E+00 | -19.3 | 4.617E+00 | 9.1 |
| trans-1,2-dichloroethene | 5.371E+01 | 53.5 | 2.412E+01 | -55.1 | 4.780E+01 | -11.0 | 2.895E+01 | -46.1 | 2.895E+01 | -46.1 | 3.186E+01 | -40.7 |
| cis-1,2-dichloroethene | 1.050E+01 | 25.3 | 8.848E+00 | -15.7 | 9.064E+00 | -13.7 | 1.014E+01 | -3.5 | 1.014E+01 | -3.5 | NA | NA |
| carbon disulfide (coelutes) | 9.543E+00 | 54.5 | 5.203E+00 | -45.5 | 7.681E-01 | -92.0 | 1.490E+00 | -84.4 | 1.490E+00 | -84.4 | NA | NA |
| 2-butanone (coelutes) | 1.471E+01 | 54.5 | 8.040E+00 | -45.3 | 1.343E+01 | -8.6 | 6.910E+00 | -53.0 | 6.910E+00 | -53.0 | NA | NA |
| benzene | 9.244E+01 | 39.0 | 5.158E+01 | -44.2 | 8.784E+01 | -5.0 | 5.323E+01 | -42.4 | 5.323E+01 | -42.4 | NA | NA |
| trichloroethene (PID - MDL N/A) | 1.116E+02 | 25.7 | 6.307E+01 | -43.5 | 1.093E+02 | -2.1 | 5.672E+01 | -49.2 | 5.672E+01 | -49.2 | 5.303E+01 | -52.5 |
| toluene (coelutes) | 4.855E+01 | 32.8 | 5.053E+01 | 4.1 | 7.508E+01 | 54.6 | 6.064E+01 | 24.9 | 6.064E+01 | 24.9 | 3.161E+01 | -34.9 |
| 4-methyl-2-pentanone (coelutes | 8.431E+00 | 32.5 | 8.766E+00 | 4.0 | 1.302E+01 | 54.5 | 1.052E+01 | 24.8 | 1.052E+01 | 24.8 | 5.483E+00 | -35.0 |
| 2-hexanone | 9.461E+00 | 57.9 | 7.853E+00 | -17.0 | 1.358E+01 | 43.6 | 2.697E+01 | 185.1 | 2.697E+01 | 185.1 | 1.323E+01 | 39.8 |
| tetrachloroethene (PID - MDL N/ | 6.976E+01 | 19.6 | 3.650E+01 | -47.7 | 6.751E+01 | -3.2 | 9.095E+01 | 30.4 | 9.095E+01 | 30.4 | 2.293E+01 | -67.1 |
| chlorobenzene | 2.212E+01 | 27.3 | 1.889E+01 | -14.6 | 2.156E+01 | -2.5 | 2.083E+01 | -5.8 | 2.083E+01 | -5.8 | 4.462E+01 | 101.7 |
| ethylbenzene | 9.266E+00 | 31.3 | 9.959E+00 | 7.5 | 1.057E+01 | 14.1 | 1.105E+01 | 19.3 | 1.105E+01 | 19.3 | NA | NA |
| m-xylene (coelutes) | 1.728E+01 | 60.7 | 1.132E+01 | -34.5 | 1.146E+01 | -33.7 | 1.773E+01 | 2.6 | 1.773E+01 | 2.6 | NA | NA |
| p-xylene (coelutes) | 1.728E+01 | 60.7 | 1.132E+01 | -34.5 | 1.146E+01 | -33.7 | 1.773E+01 | 2.6 | 1.773E+01 | 2.6 | NA | NA |
| o-xylene (coelutes) | 2.034E+01 | 34.6 | 2.049E+01 | 0.8 | 8.688E+00 | -57.3 | 2.050E+01 | 0.8 | 2.050E+01 | 0.8 | NA | NA |
| styrene (coelutes) | 2.034E+01 | 34.6 | 2.049E+01 | 0.8 | 8.688E+00 | -57.3 | 2.050E+01 | 0.8 | 2.050E+01 | 0.8 | NA | NA |

| | INITIAL CALIBRATION | | 024F0101 | | 041F0101 | | 075F0101 | | 078F0101 | | 094F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 4.065E-01 | 73.9 | 5.705E-01 | 40.4 | 7.316E-01 | 80.0 | 5.030E-01 | 23.7 | 5.754E-01 | 41.5 | 6.018E-01 | 48.0 |
| 1,1-dichloroethene | 2.561E+00 | 54.9 | 2.354E+00 | -8.1 | 2.651E+00 | 3.5 | 1.650E+00 | -35.6 | 3.167E+00 | 23.7 | 2.496E+00 | -2.5 |
| methylene chloride | 2.136E+00 | 30.2 | 2.256E+00 | 5.6 | 2.296E+00 | 7.5 | 1.835E+00 | -14.1 | 1.937E+00 | -9.3 | 2.210E+00 | 3.5 |
| chloroform (coelutes) | 4.559E+01 | 44.3 | 4.677E+01 | 2.6 | 4.596E+01 | 0.8 | 3.555E+01 | -22.0 | 3.943E+01 | -13.5 | 3.598E+01 | -21.1 |
| 1,1,1-trichloroethane (coelutes) | 1.256E+02 | 44.1 | 1.286E+02 | 2.4 | 1.264E+02 | 0.6 | 9.776E+01 | -22.2 | 1.084E+02 | -13.7 | 9.896E+01 | -21.2 |
| carbon tetrachloride (coelutes) | 7.823E+02 | 44.2 | 8.038E+02 | 2.8 | 7.899E+02 | 1.0 | 6.110E+02 | -21.9 | 6.777E+02 | -13.4 | 6.185E+02 | -20.9 |
| 1,2-dichloroethane | 2.064E+00 | 22.7 | 2.597E+00 | 25.8 | 1.958E+00 | -5.2 | 2.179E+00 | 5.5 | 1.903E+00 | -7.8 | 1.627E+00 | -21.2 |
| trichloroethene (ECD) | 7.184E+01 | 20.4 | 5.736E+01 | -20.2 | 5.967E+01 | -16.9 | 5.093E+01 | -29.1 | 6.418E+01 | -10.7 | 6.812E+01 | -5.2 |
| tetrachloroethene (ECD) (coelut | 1.466E+02 | 22.9 | 1.130E+02 | -22.9 | 9.724E+01 | -33.7 | 8.338E+01 | -43.1 | 1.365E+02 | -6.9 | 1.257E+02 | -14.2 |
| 1,1,2-trichloroethane (coelutes) | 4.674E+00 | 22.5 | 3.651E+00 | -21.9 | 3.142E+00 | -32.8 | 2.694E+00 | -42.4 | 4.409E+00 | -5.7 | 4.062E+00 | -13.1 |
| bromoform | 9.866E+00 | 18.9 | 1.113E+01 | 12.9 | 1.012E+01 | 2.6 | 1.069E+01 | 8.4 | 1.291E+01 | 30.8 | 1.209E+01 | 22.6 |
| 1,1,2,2-tetrachloroethane | 4.116E+00 | 30.7 | 5.355E+00 | 30.1 | 4.544E+00 | 10.4 | 4.963E+00 | 20.6 | 9.442E+00 | 129.4 | 5.265E+00 | 27.9 |

**CONTINUING CALIBRATION SUMMARY**
**September 2 through September 19, 1997**

| DATE: | | | 09/05/97 | | 09/07/97 | | 09/09/97 | | 09/09/97 | | 09/10/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | | 7 | | 8 | | 9 | | 10 | |
| | INITIAL CALIBRATION | | 098R0101 | | 023R0201 | | 075R0201 | | 076R0201 | | 016R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 4.644E-01 | 59.9 | 6.955E-01 | 49.8 | 5.097E-01 | 9.8 | 3.778E-01 | -18.6 | 3.778E-01 | -18.6 | 2.162E-01 | -53.5 |
| acetone (coelutes) | 4.232E+00 | 55.7 | 2.472E+01 | 484.2 | 7.611E+00 | 79.9 | 8.201E+00 | 93.8 | 8.201E+00 | 93.8 | 2.566E+00 | -39.4 |
| trans-1,2-dichloroethene | 5.371E+01 | 53.5 | 1.533E+02 | 185.4 | 1.320E+02 | 145.7 | 7.222E+01 | 34.4 | 7.222E+01 | 34.4 | 5.558E+01 | 3.5 |
| cis-1,2-dichloroethene | 1.050E+01 | 25.3 | 1.942E+01 | 85.0 | 2.075E+01 | 97.7 | 1.312E+01 | 25.0 | 1.312E+01 | 25.0 | 1.417E+01 | 34.9 |
| carbon disulfide (coelutes) | 9.543E+00 | 54.5 | 2.824E+00 | -70.4 | 3.305E+00 | -65.4 | 1.930E+00 | -79.8 | 1.930E+00 | -79.8 | 3.093E+00 | -67.6 |
| 2-butanone (coelutes) | 1.471E+01 | 54.5 | 4.833E+00 | -67.1 | 2.483E+01 | 68.9 | 1.178E+01 | -19.9 | 1.178E+01 | -19.9 | 1.276E+01 | -13.2 |
| benzene | 9.244E+01 | 39.0 | 4.852E+01 | -47.5 | 8.718E+01 | -5.7 | 3.729E+01 | -59.7 | 3.729E+01 | -59.7 | 3.513E+01 | -62.0 |
| trichloroethene (PID - MDL N/A) | 1.116E+02 | 25.7 | 7.438E+01 | -33.4 | 9.145E+01 | -18.1 | 7.679E+01 | -31.2 | 7.679E+01 | -31.2 | 1.314E+02 | 17.7 |
| toluene (coelutes) | 4.855E+01 | 32.8 | 1.446E+02 | 197.9 | 8.594E+01 | 77.0 | 5.553E+01 | 14.4 | 5.553E+01 | 14.4 | 5.972E+01 | 23.0 |
| 4-methyl-2-pentanone (coelutes | 8.431E+00 | 32.5 | 2.509E+01 | 197.6 | 1.491E+01 | 76.8 | 9.632E+00 | 14.2 | 9.632E+00 | 14.2 | 1.036E+01 | 22.9 |
| 2-hexanone | 9.461E+00 | 57.9 | 3.182E+01 | 236.3 | 2.935E+01 | 210.2 | 2.751E+01 | 190.7 | 2.751E+01 | 190.7 | 1.993E+01 | 110.7 |
| tetrachloroethene (PID - MDL N/ | 6.976E+01 | 19.6 | 5.483E+01 | -21.4 | 6.723E+01 | -3.6 | 5.140E+01 | -26.3 | 5.140E+01 | -26.3 | 2.781E+01 | -60.1 |
| chlorobenzene | 2.212E+01 | 27.3 | 2.125E+01 | -3.9 | 2.741E+01 | 23.9 | 2.648E+01 | 19.7 | 2.648E+01 | 19.7 | 3.385E+01 | 53.0 |
| ethylbenzene | 9.266E+00 | 31.3 | 1.104E+01 | 19.1 | 1.283E+01 | 38.4 | 1.340E+01 | 44.6 | 1.340E+01 | 44.6 | 1.393E+01 | 50.3 |
| m-xylene (coelutes) | 1.728E+01 | 60.7 | 1.700E+01 | -1.6 | 1.174E+01 | -32.0 | 1.954E+01 | 13.0 | 1.954E+01 | 13.0 | 2.337E+01 | 35.2 |
| p-xylene (coelutes) | 1.728E+01 | 60.7 | 1.700E+01 | -1.6 | 1.174E+01 | -32.0 | 1.954E+01 | 13.0 | 1.954E+01 | 13.0 | 2.337E+01 | 35.2 |
| o-xylene (coelutes) | 2.034E+01 | 34.6 | 1.701E+01 | -16.4 | 1.092E+01 | -46.3 | 2.091E+01 | 2.8 | 2.091E+01 | 2.8 | 3.184E+01 | 56.6 |
| styrene (coelutes) | 2.034E+01 | 34.6 | 1.701E+01 | -16.4 | 1.092E+01 | -46.3 | 2.091E+01 | 2.8 | 2.091E+01 | 2.8 | 3.184E+01 | 56.6 |

| | INITIAL CALIBRATION | | 098F0101 | | 023F0201 | | 075F0201 | | 008F0101 | | 016F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 4.065E-01 | 73.9 | 5.621E-01 | 38.3 | 7.126E-01 | 75.3 | 6.705E-01 | 64.9 | 6.285E-01 | 54.6 | 6.413E-01 | 57.8 |
| 1,1-dichloroethene | 2.561E+00 | 54.9 | 2.925E+00 | 14.2 | 2.668E+00 | 4.2 | 2.301E+00 | -10.1 | 5.058E+00 | 97.5 | 3.706E+00 | 44.7 |
| methylene chloride | 2.136E+00 | 30.2 | 2.716E+00 | 27.2 | 2.539E+00 | 18.8 | 2.117E+00 | -0.9 | 2.275E+00 | 6.5 | 2.337E+00 | 9.4 |
| chloroform (coelutes) | 4.559E+01 | 44.3 | 5.127E+01 | 12.5 | 5.525E+01 | 21.2 | 4.615E+01 | 1.2 | 5.405E+01 | 18.6 | 5.500E+01 | 20.6 |
| 1,1,1-trichloroethane (coelutes) | 1.256E+02 | 44.1 | 1.410E+02 | 12.2 | 1.519E+02 | 20.9 | 1.269E+02 | 1.0 | 1.486E+02 | 18.3 | 1.512E+02 | 20.4 |
| carbon tetrachloride (coelutes) | 7.823E+02 | 44.2 | 8.813E+02 | 12.6 | 9.496E+02 | 21.4 | 7.932E+02 | 1.4 | 9.290E+02 | 18.8 | 9.452E+02 | 20.8 |
| 1,2-dichloroethane | 2.064E+00 | 22.7 | 1.348E+00 | -34.7 | 2.510E+00 | 21.6 | 9.868E-01 | -52.2 | 1.310E+00 | -36.5 | 1.881E+00 | -8.9 |
| trichloroethene (ECD) | 7.184E+01 | 20.4 | 6.166E+01 | -14.2 | 6.739E+01 | -6.2 | 5.861E+01 | -18.4 | 6.285E+01 | -12.5 | 7.339E+01 | 2.1 |
| tetrachloroethene (ECD) (coelut | 1.466E+02 | 22.9 | 1.043E+02 | -28.9 | 8.497E+01 | -42.0 | 8.766E+01 | -40.2 | 1.235E+02 | -15.7 | 1.121E+02 | -23.5 |
| 1,1,2-trichloroethane (coelutes) | 4.674E+00 | 22.5 | 3.368E+00 | -27.9 | 2.745E+00 | -41.3 | 2.832E+00 | -39.4 | 3.991E+00 | -14.6 | 3.622E+00 | -22.5 |
| bromoform | 9.866E+00 | 18.9 | 1.138E+01 | 15.3 | 1.032E+01 | 4.6 | 9.373E+00 | -5.0 | 3.248E+01 | 229.2 | 2.458E+01 | 149.1 |
| 1,1,2,2-tetrachloroethane | 4.116E+00 | 30.7 | 4.943E+00 | 20.1 | 4.345E+00 | 5.6 | 4.304E+00 | 4.5 | 1.224E+01 | 197.4 | 9.961E+00 | 142.0 |

| | NUMBER 1 | | | NUMBER 6 | | | NUMBER 7 | | | NUMBER 8 | | | NUMBER 9 | | | NUMBER 10 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | 80146 | 80146 | 100 | 26553 | 26553 | 100 | 27651 | 27651 | 100 | 46331.67 | 46331.667 | 100 | 46331.67 | 46331.7 | 100 | 50149 | 50149 | 100 |
| PID IS3 AREAS | 57231 | 57231 | 100 | 43740 | 43740 | 100 | 30734 | 30734 | 100 | 33843 | 33843 | 100 | 33843 | 33843 | 100 | 20626 | 20626 | 100 |

| PID COMPOUNDS | 09/03/97 024R0101 | area | conc. | 09/05/97 098R0101 | area | conc. | 09/07/97 023R0201 | area | conc. | 09/09/97 075R0201 | area | conc. | 09/09/97 075R0201 | area | conc. | 09/10/97 016R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 3.104E-01 | 18659 | 75 | 6.955E-01 | 13850 | 75 | 5.097E-01 | 10571 | 75 | 3.778E-01 | 13128 | 75 | 3.778E-01 | 13128 | 75 | 2.162E-01 | 8130 | 75 |
| acetone (coelutes) | 2.342E+00 | 129508 | 69 | 2.472E+01 | 452922 | 69 | 7.611E+00 | 145213 | 69 | 8.201E+00 | 262181 | 69 | 8.201E+00 | 262181 | 69 | 2.566E+00 | 88774 | 69 |
| trans-1,2-dichloroethene | 2.412E+01 | 289915 | 15 | 1.533E+02 | 610561 | 15 | 1.320E+02 | 547434 | 15 | 7.222E+01 | 501877 | 15 | 7.222E+01 | 501877 | 15 | 5.558E+01 | 418108 | 15 |
| cis-1,2-dichloroethene | 8.848E+00 | 106369 | 15 | 1.942E+01 | 77355 | 15 | 2.075E+01 | 86065 | 15 | 1.312E+01 | 91207 | 15 | 1.312E+01 | 91207 | 15 | 1.417E+01 | 106556 | 15 |
| carbon disulfide (coelutes) | 5.203E+00 | 425309 | 102 | 2.824E+00 | 76495 | 102 | 3.305E+00 | 93206 | 102 | 1.930E+00 | 91207 | 102 | 1.930E+00 | 91207 | 102 | 3.093E+00 | 158193 | 102 |
| 2-butanone (coelutes) | 8.040E+00 | 425309 | 66 | 4.833E+00 | 84706 | 66 | 2.483E+01 | 453158 | 66 | 1.178E+01 | 360329 | 66 | 1.178E+01 | 360329 | 66 | 1.276E+01 | 422425 | 66 |
| benzene | 5.158E+01 | 413426 | 10 | 4.852E+01 | 128822 | 10 | 8.718E+01 | 241059 | 10 | 3.729E+01 | 172754 | 10 | 3.729E+01 | 172754 | 10 | 3.513E+01 | 176154 | 10 |
| trichloroethene (PID - MDL N/A) | 6.307E+01 | 101092 | 2 | 7.438E+01 | 39498 | 2 | 9.145E+01 | 50575 | 2 | 7.679E+01 | 71156 | 2 | 7.679E+01 | 71156 | 2 | 1.314E+02 | 131766 | 2 |
| toluene (coelutes) | 5.053E+01 | 688497 | 17 | 1.446E+02 | 652896 | 17 | 8.594E+01 | 403974 | 17 | 5.553E+01 | 437339 | 17 | 5.553E+01 | 437339 | 17 | 5.972E+01 | 509129 | 17 |
| 4-methyl-2-pentanone (coelutes) | 8.766E+00 | 688497 | 98 | 2.509E+01 | 652896 | 98 | 1.491E+01 | 403974 | 98 | 9.632E+00 | 437339 | 98 | 9.632E+00 | 437339 | 98 | 1.036E+01 | 509129 | 98 |
| 2-hexanone | 7.853E+00 | 251763 | 40 | 3.182E+01 | 337962 | 40 | 2.935E+01 | 324582 | 40 | 2.751E+01 | 509767 | 40 | 2.751E+01 | 509767 | 40 | 1.993E+01 | 399778 | 40 |
| tetrachloroethene (PID - MDL N/A) | 3.650E+01 | 58512 | 2 | 5.483E+01 | 29118 | 2 | 6.723E+01 | 37178 | 2 | 5.140E+01 | 47625 | 2 | 5.140E+01 | 47625 | 2 | 2.781E+01 | 27897 | 2 |
| chlorobenzene | 1.889E+01 | 21622 | 2 | 2.125E+01 | 18592 | 2 | 2.741E+01 | 16847 | 2 | 2.648E+01 | 17920 | 2 | 2.648E+01 | 17920 | 2 | 3.385E+01 | 13963 | 2 |
| ethylbenzene | 9.959E+00 | 56994 | 10 | 1.104E+01 | 48270 | 10 | 1.283E+01 | 39427 | 10 | 1.340E+01 | 45352 | 10 | 1.340E+01 | 45352 | 10 | 1.393E+01 | 28729 | 10 |
| m-xylene (coelutes) | 1.132E+01 | 129517 | 20 | 1.700E+01 | 148707 | 20 | 1.174E+01 | 72183 | 20 | 1.954E+01 | 132228 | 20 | 1.954E+01 | 132228 | 20 | 2.337E+01 | 96404 | 20 |
| p-xylene (coelutes) | 1.132E+01 | 129517 | 20 | 1.700E+01 | 148707 | 20 | 1.174E+01 | 72183 | 20 | 1.954E+01 | 132228 | 20 | 1.954E+01 | 132228 | 20 | 2.337E+01 | 96404 | 20 |
| o-xylene (coelutes) | 2.049E+01 | 234556 | 20 | 1.701E+01 | 148819 | 20 | 1.092E+01 | 67151 | 20 | 2.091E+01 | 141503 | 20 | 2.091E+01 | 141503 | 20 | 3.184E+01 | 131355 | 20 |
| styrene (coelutes) | 2.049E+01 | 234556 | 20 | 1.701E+01 | 148819 | 20 | 1.092E+01 | 67151 | 20 | 2.091E+01 | 141503 | 20 | 2.091E+01 | 141503 | 20 | 3.184E+01 | 131355 | 20 |

| | NUMBER 1 | | | NUMBER 6 | | | NUMBER 7 | | | NUMBER 8 | | | NUMBER 9 | | | NUMBER 10 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 4239658 | 4239658 | 100 | 4412568 | 4412568 | 100 | 3869249 | 3869249 | 100 | 4426446 | 4426446 | 100 | 3956711 | 3956711 | 100 | 3685217 | 3685217 | 100 |
| ECID IS3 AREAS | 13267000 | 13267000 | 100 | 15326600 | 15326600 | 100 | 13233600 | 13233600 | 100 | 15160300 | 15160300 | 100 | 3479190 | 3479190 | 100 | 5094564 | 5094564 | 100 |

| ECD COMPOUNDS | 09/03/97 024F0101 | area | conc. | 09/05/97 098F0101 | area | conc. | 09/07/97 023F0201 | area | conc. | 09/09/97 075F0201 | area | conc. | 09/09/97 008F0101 | area | conc. | 09/10/97 016F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 5.705E-01 | 1814167 | 75 | 5.621E-01 | 1860069 | 75 | 7.126E-01 | 2067795 | 75 | 6.705E-01 | 2225852 | 75 | 6.285E-01 | 1864978 | 75 | 6.413E-01 | 1772581 | 75 |
| 1,1-dichloroethene | 2.354E+00 | 1497282 | 15 | 2.925E+00 | 1936164 | 15 | 2.668E+00 | 1548298 | 15 | 2.301E+00 | 1527934 | 15 | 5.058E+00 | 3002178 | 15 | 3.706E+00 | 2048722 | 15 |
| methylene chloride | 2.256E+00 | 1912682 | 20 | 2.716E+00 | 2397173 | 20 | 2.539E+00 | 1964680 | 20 | 2.117E+00 | 1874508 | 20 | 2.275E+00 | 1799937 | 20 | 2.337E+00 | 1722232 | 20 |
| chloroform (coelutes) | 4.677E+01 | 21811400 | 11 | 5.127E+01 | 24886900 | 11 | 5.525E+01 | 23514409 | 11 | 4.615E+01 | 22470900 | 11 | 5.405E+01 | 23525700 | 11 | 5.500E+01 | 22293900 | 11 |
| 1,1,1-trichloroethane (coelutes) | 1.286E+02 | 21811400 | 4 | 1.410E+02 | 24886900 | 4 | 1.519E+02 | 23514409 | 4 | 1.269E+02 | 22470900 | 4 | 1.486E+02 | 23525700 | 4 | 1.512E+02 | 22293900 | 4 |
| carbon tetrachloride (coelutes) | 8.038E+02 | 21811400 | 0.64 | 8.813E+02 | 24886900 | 0.64 | 9.496E+02 | 23514409 | 0.64 | 7.932E+02 | 22470900 | 0.64 | 9.290E+02 | 23525700 | 0.64 | 9.452E+02 | 22293900 | 0.64 |
| 1,2-dichloroethane | 2.597E+00 | 2201663 | 20 | 1.348E+00 | 1189583 | 20 | 2.510E+00 | 1942157 | 20 | 9.868E-01 | 873626 | 20 | 1.310E+00 | 1036747 | 20 | 1.881E+00 | 1386376 | 20 |
| trichloroethene (ECD) | 5.736E+01 | 4863519 | 2 | 6.166E+01 | 5441839 | 2 | 6.739E+01 | 5215051 | 2 | 5.861E+01 | 5188732 | 2 | 6.285E+01 | 4973482 | 2 | 7.339E+01 | 5408862 | 2 |
| tetrachloroethene (ECD) (coelutes) | 1.130E+02 | 10062600 | 2.1 | 1.043E+02 | 9661293 | 2.1 | 8.497E+01 | 6904127 | 2.1 | 8.766E+01 | 8148792 | 2.1 | 1.235E+02 | 10263500 | 2.1 | 1.121E+02 | 8676971 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 3.651E+00 | 10062600 | 65 | 3.368E+00 | 9661293 | 65 | 2.745E+00 | 6904127 | 65 | 2.832E+00 | 8148792 | 65 | 3.991E+00 | 10263500 | 65 | 3.622E+00 | 8676971 | 65 |
| bromoform | 1.113E+01 | 2954508 | 2 | 1.138E+01 | 3487250 | 2 | 1.032E+01 | 2730385 | 2 | 9.373E+00 | 2842077 | 2 | 3.248E+01 | 2259999 | 2 | 2.458E+01 | 2504420 | 2 |
| 1,1,2,2-tetrachloroethane | 5.355E+00 | 1420915 | 2 | 4.943E+00 | 1515156 | 2 | 4.345E+00 | 1150006 | 2 | 4.304E+00 | 1304857 | 2 | 1.224E+01 | 851774 | 2 | 9.961E+00 | 1014937 | 2 |

| | | NUMBER 1 | | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | area | | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area |
| PID IS2 AREAS | 80146 | 80146 | | PID IS2 AREAS | 80146 | 80146 | 100 | 47566 | 47566 | 100 | 57627 | 57627 | 100 | 57627 | 57627 | 100 | 98528 | 98528 |
| PID IS3 AREAS | 57231 | 57231 | | PID IS3 AREAS | 57231 | 57231 | 100 | 48275 | 48275 | 100 | 48387 | 48387 | 100 | 48387 | 48387 | 100 | 30915 | 30915 |

| PID COMPOUNDS | 09/03/97 024R0101 | area | PID COMPOUNDS | 09/03/97 024R0101 | area | conc. | 09/03/97 041R0101 | area | conc. | 09/04/97 075R0101 | area | conc. | 09/04/97 075R0101 | area | conc. | 09/05/97 094R0101 | area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 3.104E-01 | 18659 | vinyl chloride | 3.104E-01 | 18659 | 75 | 4.830E-01 | 17230 | 75 | 2.660E-01 | 11495 | 75 | 2.660E-01 | 11495 | 75 | 2.182E-01 | 1612 |
| acetone (coelutes) | 2.342E+00 | 129508 | acetone (coelutes) | 2.342E+00 | 129508 | 69 | 4.668E+00 | 153217 | 69 | 3.414E+00 | 135761 | 69 | 3.414E+00 | 135761 | 69 | 4.617E+00 | 31386 |
| trans-1,2-dichloroethene | 2.412E+01 | 289915 | trans-1,2-dichloroethene | 2.412E+01 | 289915 | 15 | 4.780E+01 | 341032 | 15 | 2.895E+01 | 250281 | 15 | 2.895E+01 | 250281 | 15 | 3.186E+01 | 47079 |
| cis-1,2-dichloroethene | 8.848E+00 | 106369 | cis-1,2-dichloroethene | 8.848E+00 | 106369 | 15 | 9.064E+00 | 64673 | 15 | 1.014E+01 | 87608 | 15 | 1.014E+01 | 87608 | 15 | 0.000E+00 | N |
| carbon disulfide (coelutes) | 5.203E+00 | 425309 | carbon disulfide (coelutes) | 5.203E+00 | 425309 | 102 | 7.681E-01 | 37265 | 102 | 1.490E+00 | 87608 | 102 | 1.490E+00 | 87608 | 102 | 0.000E+00 | N |
| 2-butanone (coelutes) | 8.040E+00 | 425309 | 2-butanone (coelutes) | 8.040E+00 | 425309 | 66 | 1.343E+01 | 421742 | 66 | 6.910E+00 | 262825 | 66 | 6.910E+00 | 262825 | 66 | 0.000E+00 | N |
| benzene | 5.158E+01 | 413426 | benzene | 5.158E+01 | 413426 | 10 | 8.784E+01 | 417797 | 10 | 5.323E+01 | 306766 | 10 | 5.323E+01 | 306766 | 10 | 0.000E+00 | N |
| trichloroethene (PID - MDL N/A) | 6.307E+01 | 101092 | trichloroethene (PID - MDL N/A) | 6.307E+01 | 101092 | 2 | 1.093E+02 | 103949 | 2 | 5.672E+01 | 65376 | 2 | 5.672E+01 | 65376 | 2 | 5.303E+01 | 10449 |
| toluene (coelutes) | 5.053E+01 | 688497 | toluene (coelutes) | 5.053E+01 | 688497 | 17 | 7.508E+01 | 607114 | 17 | 6.064E+01 | 594018 | 17 | 6.064E+01 | 594018 | 17 | 3.161E+01 | 52938 |
| 4-methyl-2-pentanone (coelutes) | 8.766E+00 | 688497 | 4-methyl-2-pentanone (coelutes) | 8.766E+00 | 688497 | 98 | 1.302E+01 | 607114 | 98 | 1.052E+01 | 594018 | 98 | 1.052E+01 | 594018 | 98 | 5.483E+00 | 52938 |
| 2-hexanone | 7.853E+00 | 251763 | 2-hexanone | 7.853E+00 | 251763 | 40 | 1.358E+01 | 258414 | 40 | 2.697E+01 | 621776 | 40 | 2.697E+01 | 621776 | 40 | 1.323E+01 | 52127 |
| tetrachloroethene (PID - MDL N/A) | 3.650E+01 | 58512 | tetrachloroethene (PID - MDL N/A) | 3.650E+01 | 58512 | 2 | 6.751E+01 | 64227 | 2 | 9.095E+01 | 104827 | 2 | 9.095E+01 | 104827 | 2 | 2.293E+01 | 4518 |
| chlorobenzene | 1.889E+01 | 21622 | chlorobenzene | 1.889E+01 | 21622 | 2 | 2.156E+01 | 20818 | 2 | 2.083E+01 | 20160 | 2 | 2.083E+01 | 20160 | 2 | 4.462E+01 | 2758 |
| ethylbenzene | 9.959E+00 | 56994 | ethylbenzene | 9.959E+00 | 56994 | 10 | 1.057E+01 | 51048 | 10 | 1.105E+01 | 53482 | 10 | 1.105E+01 | 53482 | 10 | 0.000E+00 | N |
| m-xylene (coelutes) | 1.132E+01 | 129517 | m-xylene (coelutes) | 1.132E+01 | 129517 | 20 | 1.146E+01 | 110604 | 20 | 1.773E+01 | 171575 | 20 | 1.773E+01 | 171575 | 20 | 0.000E+00 | N |
| p-xylene (coelutes) | 1.132E+01 | 129517 | p-xylene (coelutes) | 1.132E+01 | 129517 | 20 | 1.146E+01 | 110604 | 20 | 1.773E+01 | 171575 | 20 | 1.773E+01 | 171575 | 20 | 0.000E+00 | N |
| o-xylene (coelutes) | 2.049E+01 | 234556 | o-xylene (coelutes) | 2.049E+01 | 234556 | 20 | 8.688E+00 | 83887 | 20 | 2.050E+01 | 198417 | 20 | 2.050E+01 | 198417 | 20 | 0.000E+00 | N |
| styrene (coelutes) | 2.049E+01 | 234556 | styrene (coelutes) | 2.049E+01 | 234556 | 20 | 8.688E+00 | 83887 | 20 | 2.050E+01 | 198417 | 20 | 2.050E+01 | 198417 | 20 | 0.000E+00 | N |

| | | NUMBER 1 | | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 4239658 | 4239658 | | ECD IS2 AREAS | 4239658 | 4239658 | 100 | 4062635 | 4062635 | 100 | 4621471 | 4621471 | 100 | 3963142 | 3963142 | 100 | 4029188 | 4029188 |
| ECID IS3 AREAS | 13267000 | 13267000 | | ECID IS3 AREAS | 13267000 | 13267000 | 100 | 14082900 | 14082900 | 100 | 13428700 | 13428700 | 100 | 11932800 | 11932800 | 100 | 11644600 | 11644600 |

| ECD COMPOUNDS | 09/03/97 024F0101 | area | ECD COMPOUNDS | 09/03/97 024F0101 | area | conc. | 09/03/97 041F0101 | area | conc. | 09/04/97 075F0101 | area | conc. | 09/04/97 078F0101 | area | conc. | 09/05/97 094F0101 | area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 5.705E-01 | 1814167 | bromomethane | 5.705E-01 | 1814167 | 75 | 7.316E-01 | 2229199 | 75 | 5.030E-01 | 1743621 | 75 | 5.754E-01 | 1710164 | 75 | 6.018E-01 | 181856 |
| 1,1-dichloroethene | 2.354E+00 | 1497282 | 1,1-dichloroethene | 2.354E+00 | 1497282 | 15 | 2.651E+00 | 1615534 | 15 | 1.650E+00 | 1143717 | 15 | 3.167E+00 | 1882740 | 15 | 2.496E+00 | 150829 |
| methylene chloride | 2.256E+00 | 1912682 | methylene chloride | 2.256E+00 | 1912682 | 20 | 2.296E+00 | 1865694 | 20 | 1.835E+00 | 1695881 | 20 | 1.937E+00 | 1535127 | 20 | 2.210E+00 | 178086 |
| chloroform (coelutes) | 4.677E+01 | 21811400 | chloroform (coelutes) | 4.677E+01 | 21811400 | 11 | 4.596E+01 | 20537274 | 11 | 3.555E+01 | 18071800 | 11 | 3.943E+01 | 17187989 | 11 | 3.598E+01 | 1594880 |
| 1,1,1-trichloroethane (coelutes) | 1.286E+02 | 21811400 | 1,1,1-trichloroethane (coelutes) | 1.286E+02 | 21811400 | 4 | 1.264E+02 | 20537274 | 4 | 9.776E+01 | 18071800 | 4 | 1.084E+02 | 17187989 | 4 | 9.896E+01 | 1594880 |
| carbon tetrachloride (coelutes) | 8.038E+02 | 21811400 | carbon tetrachloride (coelutes) | 8.038E+02 | 21811400 | 0.64 | 7.899E+02 | 20537274 | 0.64 | 6.110E+02 | 18071800 | 0.64 | 6.777E+02 | 17187989 | 0.64 | 6.185E+02 | 1594880 |
| 1,2-dichloroethane | 2.597E+00 | 2201663 | 1,2-dichloroethane | 2.597E+00 | 2201663 | 20 | 1.958E+00 | 1590948 | 20 | 2.179E+00 | 2013762 | 20 | 1.903E+00 | 1508478 | 20 | 1.627E+00 | 131113 |
| trichloroethene (ECD) | 5.736E+01 | 4863519 | trichloroethene (ECD) | 5.736E+01 | 4863519 | 2 | 5.967E+01 | 4848361 | 2 | 5.093E+01 | 4707350 | 2 | 6.418E+01 | 5086715 | 2 | 6.812E+01 | 548931 |
| tetrachloroethene (ECD) (coelutes) | 1.130E+02 | 10062600 | tetrachloroethene (ECD) (coelutes) | 1.130E+02 | 10062600 | 2.1 | 9.724E+01 | 8296242 | 2.1 | 8.338E+01 | 8092519 | 2.1 | 1.365E+02 | 11356800 | 2.1 | 1.257E+02 | 1063940 |
| 1,1,2-trichloroethane (coelutes) | 3.651E+00 | 10062600 | 1,1,2-trichloroethane (coelutes) | 3.651E+00 | 10062600 | 65 | 3.142E+00 | 8296242 | 65 | 2.694E+00 | 8092519 | 65 | 4.409E+00 | 11356800 | 65 | 4.062E+00 | 1063940 |
| bromoform | 1.113E+01 | 2954508 | bromoform | 1.113E+01 | 2954508 | 2 | 1.012E+01 | 2850611 | 2 | 1.069E+01 | 2871767 | 2 | 1.291E+01 | 3080458 | 2 | 1.209E+01 | 281611 |
| 1,1,2,2-tetrachloroethane | 5.355E+00 | 1420915 | 1,1,2,2-tetrachloroethane | 5.355E+00 | 1420915 | 2 | 4.544E+00 | 1279980 | 2 | 4.963E+00 | 1332934 | 2 | 9.442E+00 | 2253305 | 2 | 5.265E+00 | 122620 |

**CONTINUING CALIBRATION SUMMARY**
**September 2 through 19, 1997**

| DATE: | | | 09/10/97 | | 09/10/97 | | 09/11/97 | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | |
| | INITIAL CALIBRATION | | 019R0101 | | 033R0101 | | 049R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 4.644E-01 | 59.9 | 6.611E-01 | 42.4 | 4.550E-01 | -2.0 | 2.866E-01 | -38.3 |
| acetone (coelutes) | 4.232E+00 | 55.7 | 9.610E+00 | 127.1 | 2.018E+01 | 376.9 | 8.589E+00 | 103.0 |
| trans-1,2-dichloroethene | 5.371E+01 | 53.5 | 6.709E+01 | 24.9 | 1.146E+02 | 113.3 | 3.951E+01 | -26.4 |
| cis-1,2-dichloroethene | 1.050E+01 | 25.3 | 1.602E+01 | 52.6 | 3.638E+01 | 246.6 | 3.000E+01 | 185.8 |
| carbon disulfide (coelutes) | 9.543E+00 | 54.5 | 2.459E+00 | -74.2 | 1.831E+01 | 91.9 | 1.265E+01 | 32.6 |
| 2-butanone (coelutes) | 1.471E+01 | 54.5 | 4.393E+00 | -70.1 | 2.830E+01 | 92.4 | 1.955E+01 | 32.9 |
| benzene | 9.244E+01 | 39.0 | 4.105E+01 | -55.6 | 9.866E+01 | 6.7 | 7.955E+01 | -13.9 |
| trichloroethene (PID - MDL N/A) | 1.116E+02 | 25.7 | 2.260E+01 | -79.7 | 5.884E+01 | -47.3 | 8.177E+01 | -26.7 |
| toluene (coelutes) | 4.855E+01 | 32.8 | 5.884E+01 | 21.2 | 9.893E+01 | 103.8 | 6.359E+01 | 31.0 |
| 4-methyl-2-pentanone (coelutes | 8.431E+00 | 32.5 | 1.021E+01 | 21.1 | 1.716E+01 | 103.5 | 1.103E+01 | 30.8 |
| 2-hexanone | 9.461E+00 | 57.9 | 5.703E+00 | -39.7 | 4.478E+01 | 373.3 | 2.644E+01 | 179.5 |
| tetrachloroethene (PID - MDL N/ | 6.976E+01 | 19.6 | 4.002E+01 | -42.6 | 5.610E+01 | -19.6 | 4.173E+01 | -40.2 |
| chlorobenzene | 2.212E+01 | 27.3 | 2.332E+01 | 5.4 | 2.184E+01 | -1.3 | 2.921E+01 | 32.1 |
| ethylbenzene | 9.266E+00 | 31.3 | 2.350E+01 | 153.6 | 1.246E+01 | 34.4 | 1.409E+01 | 52.1 |
| m-xylene (coelutes) | 1.728E+01 | 60.7 | 4.177E+01 | 141.7 | 1.193E+01 | -31.0 | 1.297E+01 | -24.9 |
| p-xylene (coelutes) | 1.728E+01 | 60.7 | 4.177E+01 | 141.7 | 1.193E+01 | -31.0 | 1.297E+01 | -24.9 |
| o-xylene (coelutes) | 2.034E+01 | 34.6 | 3.841E+01 | 88.9 | 2.122E+01 | 4.3 | 2.498E+01 | 22.8 |
| styrene (coelutes) | 2.034E+01 | 34.6 | 3.841E+01 | 88.9 | 2.122E+01 | 4.3 | 2.498E+01 | 22.8 |

| | INITIAL CALIBRATION | | 019F0101 | | 033F0101 | | 049F0101 | |
|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 4.065E-01 | 73.9 | 7.970E-01 | 96.1 | 6.357E-01 | 56.4 | 5.900E-01 | 45.1 |
| 1,1-dichloroethene | 2.561E+00 | 54.9 | 3.301E+00 | 28.9 | 3.876E+00 | 51.4 | 2.397E+00 | -6.4 |
| methylene chloride | 2.136E+00 | 30.2 | 2.352E+00 | 10.1 | 2.214E+00 | 3.7 | 2.341E+00 | 9.6 |
| chloroform (coelutes) | 4.559E+01 | 44.3 | 4.959E+01 | 8.8 | 4.944E+01 | 8.4 | 4.356E+01 | -4.5 |
| 1,1,1-trichloroethane (coelutes) | 1.256E+02 | 44.1 | 1.364E+02 | 8.6 | 1.360E+02 | 8.2 | 1.198E+02 | -4.6 |
| carbon tetrachloride (coelutes) | 7.823E+02 | 44.2 | 8.523E+02 | 8.9 | 8.498E+02 | 8.6 | 7.487E+02 | -4.3 |
| 1,2-dichloroethane | 2.064E+00 | 22.7 | 8.851E-01 | -57.1 | 1.002E+00 | -51.5 | 1.207E+00 | -41.5 |
| trichloroethene (ECD) | 7.184E+01 | 20.4 | 5.002E+01 | -30.4 | 6.749E+01 | -6.1 | 6.456E+01 | -10.1 |
| tetrachloroethene (ECD) (coelut | 1.466E+02 | 22.9 | 1.062E+02 | -27.6 | 1.210E+02 | -17.4 | 1.075E+02 | -26.7 |
| 1,1,2-trichloroethane (coelutes) | 4.674E+00 | 22.5 | 3.431E+00 | -26.6 | 3.909E+00 | -16.4 | 3.473E+00 | -25.7 |
| bromoform | 9.866E+00 | 18.9 | 2.278E+01 | 130.9 | 1.276E+01 | 29.4 | 1.521E+01 | 54.1 |
| 1,1,2,2-tetrachloroethane | 4.116E+00 | 30.7 | 1.066E+01 | 158.9 | 5.328E+00 | 29.4 | 6.396E+00 | 55.4 |

| | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | 30370 | 30370 | 100 | 26740 | 26740 | 100 | 40835.88 | 40835.9 | 100 |
| PID IS3 AREAS | 16951 | 16951 | 100 | 33247 | 33247 | 100 | 27301 | 27301 | 100 |

| PID COMPOUNDS | 09/10/97 019R0101 | area | conc. | 09/10/97 033R0101 | area | conc. | 09/11/97 049R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 6.611E-01 | 15058 | 75 | 4.550E-01 | 9125 | 75 | 2.866E-01 | 8778 | 75 |
| acetone (coelutes) | 9.610E+00 | 201370 | 69 | 2.018E+01 | 372371 | 69 | 8.589E+00 | 241997 | 69 |
| trans-1,2-dichloroethene | 6.709E+01 | 305617 | 15 | 1.146E+02 | 459586 | 15 | 3.951E+01 | 241997 | 15 |
| cis-1,2-dichloroethene | 1.602E+01 | 72978 | 15 | 3.638E+01 | 145921 | 15 | 3.000E+01 | 183790 | 15 |
| carbon disulfide (coelutes) | 2.459E+00 | 76176 | 102 | 1.831E+01 | 499415 | 102 | 1.265E+01 | 526882 | 102 |
| 2-butanone (coelutes) | 4.393E+00 | 88055 | 66 | 2.830E+01 | 499415 | 66 | 1.955E+01 | 526882 | 66 |
| benzene | 4.105E+01 | 124671 | 10 | 9.866E+01 | 263816 | 10 | 7.955E+01 | 324849 | 10 |
| trichloroethene (PID - MDL N/A) | 2.260E+01 | 13730 | 2 | 5.884E+01 | 31468 | 2 | 8.177E+01 | 66782 | 2 |
| toluene (coelutes) | 5.884E+01 | 303794 | 17 | 9.893E+01 | 449702 | 17 | 6.359E+01 | 441465 | 17 |
| 4-methyl-2-pentanone (coelutes) | 1.021E+01 | 303794 | 98 | 1.716E+01 | 449702 | 98 | 1.103E+01 | 441465 | 98 |
| 2-hexanone | 5.703E+00 | 69283 | 40 | 4.478E+01 | 478956 | 40 | 2.644E+01 | 431954 | 40 |
| tetrachloroethene (PID - MDL N/A) | 4.002E+01 | 24308 | 2 | 5.610E+01 | 30003 | 2 | 4.173E+01 | 34080 | 2 |
| chlorobenzene | 2.332E+01 | 7905 | 2 | 2.184E+01 | 14522 | 2 | 2.921E+01 | 15951 | 2 |
| ethylbenzene | 2.350E+01 | 39830 | 10 | 1.246E+01 | 41419 | 10 | 1.409E+01 | 38476 | 10 |
| m-xylene (coelutes) | 4.177E+01 | 141624 | 20 | 1.193E+01 | 79299 | 20 | 1.297E+01 | 70838 | 20 |
| p-xylene (coelutes) | 4.177E+01 | 141624 | 20 | 1.193E+01 | 79299 | 20 | 1.297E+01 | 70838 | 20 |
| o-xylene (coelutes) | 3.841E+01 | 130229 | 20 | 2.122E+01 | 141113 | 20 | 2.498E+01 | 136373 | 20 |
| styrene (coelutes) | 3.841E+01 | 130229 | 20 | 2.122E+01 | 141113 | 20 | 2.498E+01 | 136373 | 20 |

| | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | |
|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 3976562 | 3976562 | 100 | 4183159 | 4183159 | 100 | 4008174 | 4008174 | 100 |
| ECID IS3 AREAS | 4129141 | 4129141 | 100 | 10388400 | 10388400 | 100 | 8442631 | 8442631 | 100 |

| ECD COMPOUNDS | 09/10/97 019F0101 | area | conc. | 09/10/97 033F0101 | area | conc. | 09/11/97 049F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 7.970E-01 | 2377101 | 75 | 6.357E-01 | 1994567 | 75 | 5.900E-01 | 1773695 | 75 |
| 1,1-dichloroethene | 3.301E+00 | 1969195 | 15 | 3.876E+00 | 2431854 | 15 | 2.397E+00 | 1440844 | 15 |
| methylene chloride | 2.352E+00 | 1870706 | 20 | 2.214E+00 | 1852619 | 20 | 2.341E+00 | 1876685 | 20 |
| chloroform (coelutes) | 4.959E+01 | 21691200 | 11 | 4.944E+01 | 22751400 | 11 | 4.356E+01 | 19205600 | 11 |
| 1,1,1-trichloroethane (coelutes) | 1.364E+02 | 21691200 | 4 | 1.360E+02 | 22751400 | 4 | 1.198E+02 | 19205600 | 4 |
| carbon tetrachloride (coelutes) | 8.523E+02 | 21691200 | 0.64 | 8.498E+02 | 22751400 | 0.64 | 7.487E+02 | 19205600 | 0.64 |
| 1,2-dichloroethane | 8.851E-01 | 703909 | 20 | 1.002E+00 | 838209 | 20 | 1.207E+00 | 967431 | 20 |
| trichloroethene (ECD) | 5.002E+01 | 3978049 | 2 | 6.749E+01 | 5646389 | 2 | 6.456E+01 | 5175512 | 2 |
| tetrachloroethene (ECD) (coelutes) | 1.062E+02 | 8867806 | 2.1 | 1.210E+02 | 10629700 | 2.1 | 1.075E+02 | 9048417 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 3.431E+00 | 8867806 | 65 | 3.909E+00 | 10629700 | 65 | 3.473E+00 | 9048417 | 65 |
| bromoform | 2.278E+01 | 1881142 | 2 | 1.276E+01 | 2651764 | 2 | 1.521E+01 | 2568049 | 2 |
| 1,1,2,2-tetrachloroethane | 1.066E+01 | 879937 | 2 | 5.328E+00 | 1107008 | 2 | 6.396E+00 | 1080057 | 2 |

## INITIAL CALIBRATION SUMMARY

**September 19, 1997**

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 16790 | 100 | 23446 | 100 | 20290 | 100 | 29199.2308 | 100 | 43698.261 | 100 |
| 14709 | 100 | 21205 | 100 | 18475 | 100 | 24022 | 100 | 24159 | 100 |

### RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 023R0101 | STD.2 024R0101 | STD.3 025R0101 | STD.4 026R0101 | STD.5 027R0101 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 9.479E-01 | 9.654E-01 | 9.741E-01 | 4.701E-01 | 1.363E-01 | 6.988E-01 | 54.4 | 3979 | 25 | 11317 | 50 | 14823 | 75 | 13728 | 100 | 8935 | 150 |
| acetone (coelutes) | NA | 3.419E+00 | 2.754E+00 | 1.083E+00 | 6.034E-01 | 1.965E+00 | 68.1 | NA | 0 | 15714 | 19.6 | 38553 | 69 | 52821 | 167 | 71988 | 273 |
| trans-1,2-dichloroethene | 6.002E+01 | 2.815E+01 | 4.495E+01 | 2.324E+01 | 1.092E+01 | 3.346E+01 | 57.5 | 25195 | 2.5 | 33006 | 5 | 136795 | 15 | 305365 | 45 | 429277 | 90 |
| cis-1,2-dichloroethene | NA | 1.088E+01 | 1.117E+01 | 5.594E+00 | 2.672E+00 | 7.580E+00 | 54.8 | NA | 0 | 12754 | 5 | 34009 | 15 | 73507 | 45 | 105094 | 90 |
| carbon disulfide (coelutes) | 6.634E+00 | 4.885E+00 | 4.269E+00 | 3.116E+00 | 2.105E+00 | 4.202E+00 | 41.2 | 14147 | 12.7 | 28090 | 25.4 | 88345 | 102 | 184677 | 203 | 233614 | 254 |
| 2-butanone (coelutes) | 1.027E+01 | 7.520E+00 | 6.597E+00 | 4.791E+00 | 3.240E+00 | 6.485E+00 | 41.4 | 14146 | 8.2 | 29090 | 16.5 | 88345 | 66 | 184677 | 132 | 233614 | 165 |
| benzene | 5.158E+01 | 4.081E+01 | 5.421E+01 | 5.410E+01 | 3.416E+01 | 4.697E+01 | 19.2 | 8660 | 1 | 47837 | 5 | 109986 | 10 | 236951 | 15 | 373236 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 4.317E+01 | 5.392E+01 | 6.877E+01 | 5.487E+01 | 5.518E+01 | 19.0 | NA | 0 | 10121 | 1 | 21879 | 2 | 80327 | 4 | 191817 | 8 |
| toluene (coelutes) | 2.914E+01 | 2.160E+01 | 2.269E+01 | 1.542E+01 | 1.313E+01 | 2.040E+01 | 31.1 | 9296 | 1.9 | 33931 | 6.7 | 78280 | 17 | 130110 | 28.9 | 243194 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | 5.174E+00 | 3.740E+00 | 3.937E+00 | 2.684E+00 | 2.290E+00 | 3.565E+00 | 31.9 | 6250 | 10.7 | 19531 | 38.7 | 78240 | 98 | 130110 | 166 | 243194 | 243 |
| 2-hexanone | NA | NA | 3.708E+00 | 4.781E+00 | 4.017E+00 | 4.169E+00 | 13.3 | NA | 0 | NA | 0 | 30096 | 40 | 111687 | 80 | 175531 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 2.045E+01 | 3.087E+01 | 2.969E+01 | 3.823E+01 | 2.981E+01 | 24.5 | NA | 0 | 4795 | 1 | 12529 | 2 | 34677 | 4 | 133661 | 8 |
| chlorobenzene | NA | 2.318E+01 | 1.490E+01 | 1.087E+01 | 1.904E+01 | 1.700E+01 | 31.2 | NA | 0 | 4916 | 1 | 5507 | 2 | 10442 | 4 | 36793 | 8 |
| ethylbenzene | NA | 1.106E+01 | 1.044E+01 | 8.435E+00 | 1.353E+01 | 1.087E+01 | 19.3 | NA | 0 | 11723 | 5 | 19296 | 10 | 30393 | 15 | 81706 | 25 |
| m-xylene (coelutes) | 7.506E+00 | 2.200E+01 | 2.246E+01 | 1.703E+01 | 2.351E+01 | 1.850E+01 | 35.9 | 2208 | 2 | 46656 | 10 | 82986 | 20 | 122705 | 30 | 284005 | 50 |
| p-xylene (coelutes) | 7.506E+00 | 2.200E+01 | 2.246E+01 | 1.703E+01 | 2.351E+01 | 1.850E+01 | 35.9 | 2208 | 2 | 46656 | 10 | 82986 | 20 | 122705 | 30 | 284005 | 50 |
| o-xylene (coelutes) | 2.015E+01 | 2.589E+01 | 2.833E+01 | 2.549E+01 | 2.672E+01 | 2.531E+01 | 12.2 | 5927 | 2 | 54899 | 10 | 104668 | 20 | 183706 | 30 | 322719 | 50 |
| styrene (coelutes) | 2.015E+01 | 2.589E+01 | 2.833E+01 | 2.549E+01 | 2.672E+01 | 2.531E+01 | 12.2 | 5927 | 2 | 54899 | 10 | 104668 | 20 | 183706 | 30 | 322719 | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc | area | conc |
| 2748316 | 100 | 2878988 | 100 | 2907018 | 100 | 2887583 | 100 | 2908028 | 100 |
| 9504884 | 100 | 10014900 | 100 | 9335371 | 100 | 10872700 | 100 | 10511700 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 2.811E+00 | 2.066E+00 | 1.116E+00 | 6.263E-01 | 2.819E-01 | 1.380E+00 | 75.7 | 1931233 | 25 | 2974219 | 50 | 2433329 | 75 | 1808522 | 100 | 1229654 | 150 |
| 1,1-dichloroethene | NA | 9.170E+00 | 6.472E+00 | 2.797E+00 | 1.801E+00 | 5.060E+00 | 67.1 | NA | 0 | 1319986 | 5 | 2822283 | 15 | 3634269 | 45 | 4714593 | 90 |
| methylene chloride | NA | 3.727E+00 | 3.909E+00 | 3.302E+00 | 1.990E+00 | 3.232E+00 | 26.8 | NA | 0 | 1073104 | 10 | 2272762 | 20 | 4766807 | 50 | 5785546 | 100 |
| chloroform (coelutes) | NA | 1.424E+02 | 9.391E+01 | 5.140E+01 | 3.126E+01 | 7.973E+01 | 61.8 | NA | 0 | 22540580 | 5.5 | 30029500 | 11 | 32502900 | 21.9 | 39810400 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 3.915E+02 | 2.583E+02 | 1.425E+02 | 8.610E+01 | 2.196E+02 | 61.6 | NA | 0 | [illegible] | 2 | [illegible] | 4 | [illegible] | 7.9 | [illegible] | 15.9 |
| carbon tetrachloride (coelutes) | NA | 2.447E+03 | 1.614E+03 | 8.659E+02 | 5.476E+02 | 1.369E+03 | 61.8 | NA | 0 | [illegible] | 0.32 | [illegible] | 0.64 | [illegible] | 1.3 | [illegible] | 2.5 |
| 1,2-dichloroethane | NA | NA | 1.679E+00 | 1.750E+00 | 1.229E+00 | 1.553E+00 | 18.2 | NA | 0 | NA | 0 | 976060 | 20 | 2527281 | 50 | 3573095 | 100 |
| trichloroethene (ECD) | 9.621E+01 | 1.158E+02 | 1.064E+02 | 9.463E+01 | 8.639E+01 | 9.988E+01 | 11.4 | 1322031 | 0.5 | 3333821 | 1 | 6185530 | 2 | 10930300 | 4 | 20098900 | 8 |
| tetrachloroethene (ECD) (coelutes) | 2.281E+02 | 1.934E+02 | 1.725E+02 | 1.654E+02 | 1.779E+02 | 1.875E+02 | 13.3 | 3260354 | 0.52 | 5567226 | 1 | 10531500 | 2.1 | 19587000 | 4.1 | 42937300 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 7.368E+00 | 6.005E+00 | 5.574E+00 | 5.258E+00 | 5.723E+00 | 5.986E+00 | 13.7 | [illegible] | 16.1 | [illegible] | 32.2 | 10531500 | 65 | 19587000 | 129 | 42937300 | 258 |
| bromoform | 2.040E+01 | 1.586E+01 | 1.529E+01 | 1.176E+01 | 4.796E+00 | 1.362E+01 | 42.7 | 969693 | 0.5 | 1588244 | 1 | 2855617 | 2 | 5115983 | 4 | 4033241 | 8 |
| 1,1,2,2-tetrachloroethane | 1.341E+01 | 8.475E+00 | 5.992E+00 | 3.881E+00 | 2.526E+00 | 6.857E+00 | 62.7 | 637478 | 0.5 | 848750 | 1 | 1118683 | 2 | 1687852 | 4 | 2124442 | 8 |

## CONTINUING CALIBRATION SUMMARY
## September 19 to September 31, 1997

| DATE: | | | 09/20/97 | | 09/21/97 | | 09/21/97 | | 09/22/97 | | 09/22/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | |
| | INITIAL CALIBRATION | | 093R0101 | | 005R0101 | | 025R0101 | | 028R0101 | | 048R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 6.988E-01 | 54.4 | 3.879E-01 | -44.5 | 1.413E+00 | 102.2 | 9.276E-01 | 32.7 | 1.177E+00 | 68.4 | 9.527E-01 | 36.3 |
| acetone (coelutes) | 1.965E+00 | 68.1 | 6.209E-01 | -68.4 | 3.091E+00 | 57.3 | 2.646E+00 | 34.6 | 4.096E+00 | 108.4 | 3.223E+00 | 64.0 |
| trans-1,2-dichloroethene | 3.346E+01 | 57.5 | 9.898E+00 | -70.4 | 3.728E+01 | 11.4 | 3.555E+01 | 6.2 | 5.194E+01 | 55.3 | 3.998E+01 | 19.5 |
| cis-1,2-dichloroethene | 7.580E+00 | 54.8 | 5.192E+00 | -31.5 | 1.068E+01 | 40.9 | 8.023E+00 | 5.8 | 9.345E+00 | 23.3 | 7.694E+00 | 1.5 |
| carbon disulfide (coelutes) | 4.202E+00 | 41.2 | 1.091E+00 | -74.0 | 3.505E+00 | -16.6 | 3.742E+00 | -10.9 | 4.739E+00 | 12.8 | 4.160E+00 | -1.0 |
| 2-butanone (coelutes) | 6.485E+00 | 41.4 | 1.687E+00 | -74.0 | 5.416E+00 | -16.5 | 5.782E+00 | -10.8 | 7.324E+00 | 12.9 | 6.429E+00 | -0.9 |
| benzene | 4.697E+01 | 19.2 | 1.163E+01 | -75.2 | 4.389E+01 | -6.6 | 4.335E+01 | -7.7 | 4.806E+01 | 2.3 | 4.654E+01 | -0.9 |
| trichloroethene (PID - MDL N/A) | 5.518E+01 | 19.0 | 4.398E+01 | -20.3 | 2.777E+01 | -49.7 | 4.461E+01 | -19.2 | 3.747E+01 | -32.1 | 4.824E+01 | -12.6 |
| toluene (coelutes) | 2.040E+01 | 31.1 | 1.068E+01 | -47.6 | 3.796E+01 | 86.1 | 1.831E+01 | -10.2 | 2.641E+01 | 29.5 | 2.193E+01 | 7.5 |
| 4-methyl-2-pentanone (coelutes) | 3.565E+00 | 31.9 | 1.853E+00 | -48.0 | 6.585E+00 | 84.7 | 3.176E+00 | -10.9 | 4.581E+00 | 28.5 | 3.804E+00 | 6.7 |
| 2-hexanone | 4.169E+00 | 13.3 | 2.828E+00 | -32.2 | 1.041E+01 | 149.7 | 3.575E+00 | -14.2 | 5.479E+00 | 31.4 | 4.078E+00 | -2.2 |
| tetrachloroethene (PID - MDL N/A) | 2.981E+01 | 24.5 | 2.548E+01 | -14.5 | 7.505E+01 | 151.7 | 1.580E+01 | -47.0 | 5.044E+01 | 69.2 | 2.964E+01 | -0.6 |
| chlorobenzene | 1.700E+01 | 31.2 | 2.574E+01 | 51.4 | 1.698E+01 | -0.1 | 1.295E+01 | -23.8 | 1.761E+01 | 3.6 | 1.050E+01 | -38.2 |
| ethylbenzene | 1.087E+01 | 19.3 | 1.339E+01 | 23.2 | 1.317E+01 | 21.2 | 1.100E+01 | 1.2 | 1.355E+01 | 24.7 | 7.225E+00 | -33.5 |
| m-xylene (coelutes) | 1.850E+01 | 35.9 | 2.330E+01 | 26.0 | 2.306E+01 | 24.7 | 1.425E+01 | -23.0 | 1.648E+01 | -10.9 | 1.377E+01 | -25.6 |
| p-xylene (coelutes) | 1.850E+01 | 35.9 | 2.330E+01 | 26.0 | 2.306E+01 | 24.7 | 1.425E+01 | -23.0 | 1.648E+01 | -10.9 | 1.377E+01 | -25.6 |
| o-xylene (coelutes) | 2.531E+01 | 12.2 | 2.585E+01 | 2.1 | 2.274E+01 | -10.2 | 2.880E+01 | 13.8 | 2.668E+01 | 5.4 | 1.827E+01 | -27.8 |
| styrene (coelutes) | 2.531E+01 | 12.2 | 2.585E+01 | 2.1 | 2.274E+01 | -10.2 | 2.880E+01 | 13.8 | 2.668E+01 | 5.4 | 1.827E+01 | -27.8 |

| | INITIAL CALIBRATION | | 093F0101 | | 005F0101 | | 025F0101 | | 028F0101 | | 048F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.380E+00 | 75.7 | 1.006E+00 | -27.1 | 9.859E-01 | -28.6 | 8.557E-01 | -38.0 | 1.052E+00 | -23.8 | 5.991E-01 | -56.6 |
| 1,1-dichloroethene | 5.060E+00 | 67.1 | 4.310E+00 | -14.8 | 4.730E+00 | -6.5 | 5.923E+00 | 17.1 | 6.235E+00 | 23.2 | 7.307E+00 | 44.4 |
| methylene chloride | 3.232E+00 | 26.8 | 3.484E+00 | 7.8 | 3.649E+00 | 12.9 | 3.352E+00 | 3.7 | 2.346E+00 | -27.4 | 3.218E+00 | -0.4 |
| chloroform (coelutes) | 7.973E+01 | 61.8 | 3.764E+01 | -52.8 | 6.896E+01 | -13.5 | 7.993E+01 | 0.3 | 7.500E+01 | -5.9 | 7.529E+01 | -5.6 |
| 1,1,1-trichloroethane (coelutes) | 2.196E+02 | 61.6 | 1.035E+02 | -52.9 | 1.896E+02 | -13.6 | 2.198E+02 | 0.1 | 2.063E+02 | -6.1 | 2.071E+02 | -5.7 |
| carbon tetrachloride (coelutes) | 1.369E+03 | 61.8 | 6.469E+02 | -52.7 | 1.185E+03 | -13.4 | 1.374E+03 | 0.4 | 1.289E+03 | -5.8 | 1.294E+03 | -5.4 |
| 1,2-dichloroethane | 1.553E+00 | 18.2 | 1.031E+00 | -33.6 | 1.652E+00 | 6.4 | 4.811E+00 | 209.8 | 2.379E+00 | 53.2 | 6.466E+00 | 316.5 |
| trichloroethene (ECD) | 9.988E+01 | 11.4 | 9.116E+01 | -8.7 | 1.024E+02 | 2.5 | 1.156E+02 | 15.8 | 1.088E+02 | 8.9 | 9.539E+01 | -4.5 |
| tetrachloroethene (ECD) (coelutes) | 1.875E+02 | 13.3 | 1.425E+02 | -24.0 | 1.520E+02 | -18.9 | 1.589E+02 | -15.2 | 1.638E+02 | -12.6 | 1.588E+02 | -15.3 |
| 1,1,2-trichloroethane (coelutes) | 5.986E+00 | 13.7 | 4.602E+00 | -23.1 | 4.912E+00 | -17.9 | 5.133E+00 | -14.2 | 5.293E+00 | -11.6 | 5.131E+00 | -14.3 |
| bromoform | 1.362E+01 | 42.7 | 1.415E+01 | 3.8 | 1.136E+01 | -16.6 | 1.551E+01 | 13.8 | 1.180E+01 | -13.3 | 1.294E+01 | -5.0 |
| 1,1,2,2-tetrachloroethane | 6.857E+00 | 62.7 | 4.953E+00 | -27.8 | 4.459E+00 | -35.0 | 5.435E+00 | -20.7 | 4.800E+00 | -30.0 | 5.267E+00 | -23.2 |

## CONTINUING CALIBRATION SUMMARY
September 19 to September 31, 1997

| DATE: | | | 09/23/97 | | 09/24/97 | | 09/25/97 | | 09/25/97 | | 09/25/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | | 7 | | 8 | | 9 | | 10 | |
| | INITIAL CALIBRATION | | 062R0101 | | 086R0101 | | 006R0201 | | 009R0101 | | 032R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 6.988E-01 | 54.4 | 7.977E-01 | 14.2 | 1.342E+00 | 92.1 | 1.193E+00 | 70.7 | 1.314E+00 | 88.0 | 5.229E-01 | -25.2 |
| acetone (coelutes) | 1.965E+00 | 68.1 | 2.483E+00 | 26.4 | 3.757E+00 | 91.2 | 3.247E+00 | 65.2 | 5.195E+00 | 164.4 | 1.093E+00 | -44.4 |
| trans-1,2-dichloroethene | 3.346E+01 | 57.5 | 3.380E+01 | 1.0 | 5.007E+01 | 49.7 | 4.114E+01 | 23.0 | 6.140E+01 | 83.5 | 1.755E+01 | -47.5 |
| cis-1,2-dichloroethene | 7.580E+00 | 54.8 | 5.380E+00 | -29.0 | 9.353E+00 | 23.4 | 7.789E+00 | 2.8 | 7.804E+00 | 3.0 | 4.411E+00 | -41.8 |
| carbon disulfide (coelutes) | 4.202E+00 | 41.2 | 3.633E+00 | -13.5 | 4.352E+00 | 3.6 | 4.214E+00 | 0.3 | 3.020E+00 | -28.1 | 2.447E+00 | -41.8 |
| 2-butanone (coelutes) | 6.485E+00 | 41.4 | 5.614E+00 | -13.4 | 6.725E+00 | 3.7 | 6.512E+00 | 0.4 | 4.667E+00 | -28.0 | 3.782E+00 | -41.7 |
| benzene | 4.697E+01 | 19.2 | 3.796E+01 | -19.2 | 4.606E+01 | -1.9 | 4.487E+01 | -4.5 | 4.885E+01 | 4.0 | 3.412E+01 | -27.3 |
| trichloroethene (PID - MDL N/A) | 5.518E+01 | 19.0 | 3.666E+01 | -33.6 | 3.739E+01 | -32.2 | 4.121E+01 | -25.3 | 3.026E+01 | -45.2 | 5.117E+01 | -7.3 |
| toluene (coelutes) | 2.040E+01 | 31.1 | 1.797E+01 | -11.9 | 3.556E+01 | 74.3 | 2.232E+01 | 9.4 | 3.894E+01 | 90.9 | 1.384E+01 | -32.1 |
| 4-methyl-2-pentanone (coelutes) | 3.565E+00 | 31.9 | 3.117E+00 | -12.6 | 6.168E+00 | 73.0 | 3.871E+00 | 8.6 | 6.756E+00 | 89.5 | 2.401E+00 | -32.7 |
| 2-hexanone | 4.169E+00 | 13.3 | 3.691E+00 | -11.5 | 6.789E+00 | 62.9 | 4.374E+00 | 4.9 | 1.005E+01 | 141.1 | 2.342E+00 | -43.8 |
| tetrachloroethene (PID - MDL N/A) | 2.981E+01 | 24.5 | 2.538E+01 | -14.9 | 4.973E+01 | 66.8 | 1.912E+01 | -35.9 | 1.168E+02 | 291.8 | 1.826E+01 | -38.8 |
| chlorobenzene | 1.700E+01 | 31.2 | 1.657E+01 | -2.5 | 2.837E+01 | 66.9 | 1.352E+01 | -20.5 | 5.662E+01 | 233.1 | 9.659E+00 | -43.2 |
| ethylbenzene | 1.087E+01 | 19.3 | 9.759E+00 | -10.2 | 1.534E+01 | 41.2 | 1.003E+01 | -7.7 | 2.409E+01 | 121.7 | 7.018E+00 | -35.4 |
| m-xylene (coelutes) | 1.850E+01 | 35.9 | 1.127E+01 | -39.1 | 1.080E+01 | -41.6 | 1.837E+01 | -0.7 | 3.441E+01 | 86.0 | 9.634E+00 | -47.9 |
| p-xylene (coelutes) | 1.850E+01 | 35.9 | 1.127E+01 | -39.1 | 1.080E+01 | -41.6 | 1.837E+01 | -0.7 | 3.441E+01 | 86.0 | 9.634E+00 | -47.9 |
| o-xylene (coelutes) | 2.531E+01 | 12.2 | 2.272E+01 | -10.2 | 8.035E+00 | -68.3 | 2.241E+01 | -11.5 | 2.949E+01 | 16.5 | 1.411E+01 | -44.3 |
| styrene (coelutes) | 2.531E+01 | 12.2 | 2.272E+01 | -10.2 | 8.035E+00 | -68.3 | 2.241E+01 | -11.5 | 2.949E+01 | 16.5 | 1.411E+01 | -44.3 |

| | INITIAL CALIBRATION | | 062F0101 | | 086F0101 | | 006F0201 | | 009F0101 | | 032F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.380E+00 | 75.7 | 6.394E-01 | -53.7 | 7.156E-01 | -48.2 | 6.931E-01 | -49.8 | 6.760E-01 | -51.0 | 6.257E-01 | -54.7 |
| 1,1-dichloroethene | 5.060E+00 | 67.1 | 6.393E+00 | 26.3 | 6.518E+00 | 28.8 | 6.779E+00 | 34.0 | 6.989E+00 | 38.1 | 4.673E+00 | -7.6 |
| methylene chloride | 3.232E+00 | 26.8 | 4.762E+00 | 47.3 | 5.690E+00 | 76.1 | 4.032E+00 | 24.7 | 2.096E+00 | -35.2 | 3.591E+00 | 11.1 |
| chloroform (coelutes) | 7.973E+01 | 61.8 | 7.512E+01 | -5.8 | 7.685E+01 | -3.6 | 7.465E+01 | -6.4 | 4.025E+01 | -49.5 | 3.693E+00 | -95.4 |
| 1,1,1-trichloroethane (coelutes) | 2.196E+02 | 61.6 | 2.066E+02 | -5.9 | 2.113E+02 | -3.8 | 2.053E+02 | -6.5 | 1.107E+02 | -49.6 | 1.016E+01 | -95.4 |
| carbon tetrachloride (coelutes) | 1.369E+03 | 61.8 | 1.291E+03 | -5.7 | 1.321E+03 | -3.5 | 1.283E+03 | -6.2 | 6.917E+02 | -49.5 | 6.348E+01 | -95.4 |
| 1,2-dichloroethane | 1.553E+00 | 18.2 | 2.589E+00 | 66.8 | 2.522E+00 | 62.5 | 2.302E+00 | 48.3 | 1.951E+00 | 25.7 | 1.095E+00 | -29.5 |
| trichloroethene (ECD) | 9.988E+01 | 11.4 | 9.240E+01 | -7.5 | 1.023E+02 | 2.4 | 9.874E+01 | -1.1 | 8.466E+01 | -15.2 | 8.185E+01 | -18.1 |
| tetrachloroethene (ECD) (coelutes) | 1.875E+02 | 13.3 | 1.479E+02 | -21.1 | 1.647E+02 | -12.1 | 1.525E+02 | -18.6 | 1.627E+02 | -13.2 | 1.182E+02 | -36.9 |
| 1,1,2-trichloroethane (coelutes) | 5.986E+00 | 13.7 | 4.779E+00 | -20.2 | 5.322E+00 | -11.1 | 4.928E+00 | -17.7 | 5.255E+00 | -12.2 | 3.819E+00 | -36.2 |
| bromoform | 1.362E+01 | 42.7 | 1.432E+01 | 5.1 | 1.296E+01 | -4.9 | 1.201E+01 | -11.9 | 1.253E+01 | -8.0 | 1.247E+01 | -8.5 |
| 1,1,2,2-tetrachloroethane | 6.857E+00 | 62.7 | 5.811E+00 | -15.3 | 5.186E+00 | -24.4 | 4.905E+00 | -28.5 | 4.605E+00 | -32.8 | 5.217E+00 | -23.9 |

**CONTINUING CALIBRATION SUMMARY**
**September 19 to September 31, 1997**

| DATE: | | | 09/26/97 | | 09/27/97 | | 09/28/97 | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | |
| | INITIAL CALIBRATION | | 043R0101 | | 046R0101 | | 062R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 6.988E-01 | 54.4 | 3.509E-01 | -49.8 | 1.516E+00 | 116.9 | 6.718E-01 | -3.9 |
| acetone (coelutes) | 1.965E+00 | 68.1 | 1.003E+00 | -49.0 | 4.610E+00 | 134.6 | 1.585E+00 | -19.3 |
| trans-1,2-dichloroethene | 3.346E+01 | 57.5 | 1.838E+01 | -45.1 | 5.997E+01 | 79.3 | 2.184E+01 | -34.7 |
| cis-1,2-dichloroethene | 7.580E+00 | 54.8 | 4.921E+00 | -35.1 | 1.153E+01 | 52.1 | 5.253E+00 | -30.7 |
| carbon disulfide (coelutes) | 4.202E+00 | 41.2 | 1.847E+00 | -56.0 | 3.621E+00 | -13.8 | 2.673E+00 | -36.4 |
| 2-butanone (coelutes) | 6.485E+00 | 41.4 | 2.854E+00 | -56.0 | 5.596E+00 | -13.7 | 4.132E+00 | -36.3 |
| benzene | 4.697E+01 | 19.2 | 3.071E+01 | -34.6 | 6.729E+01 | 43.3 | 3.810E+01 | -18.9 |
| trichloroethene (PID - MDL N/A) | 5.518E+01 | 19.0 | 4.660E+01 | -15.6 | 4.478E+01 | -18.8 | 5.322E+01 | -3.6 |
| toluene (coelutes) | 2.040E+01 | 31.1 | 1.275E+01 | -37.5 | 3.792E+01 | 85.9 | 1.764E+01 | -13.5 |
| 4-methyl-2-pentanone (coelutes | 3.565E+00 | 31.9 | 2.212E+00 | -38.0 | 6.579E+00 | 84.5 | 3.059E+00 | -14.2 |
| 2-hexanone | 4.169E+00 | 13.3 | 1.781E+00 | -57.3 | 1.222E+01 | 193.2 | 2.619E+00 | -37.2 |
| tetrachloroethene (PID - MDL N/ | 2.981E+01 | 24.5 | 1.955E+01 | -34.4 | 9.762E+01 | 227.4 | 2.145E+01 | -28.0 |
| chlorobenzene | 1.700E+01 | 31.2 | 1.544E+01 | -9.2 | 4.701E+01 | 176.6 | 8.757E+00 | -48.5 |
| ethylbenzene | 1.087E+01 | 19.3 | 2.475E+01 | 127.8 | 2.324E+01 | 113.8 | 7.517E+00 | -30.8 |
| m-xylene (coelutes) | 1.850E+01 | 35.9 | 4.884E+01 | 164.0 | 3.457E+01 | 86.8 | 1.582E+01 | -14.5 |
| p-xylene (coelutes) | 1.850E+01 | 35.9 | 4.884E+01 | 164.0 | 3.457E+01 | 86.8 | 1.582E+01 | -14.5 |
| o-xylene (coelutes) | 2.531E+01 | 12.2 | 4.909E+01 | 93.9 | 3.163E+01 | 25.0 | 2.043E+01 | -19.3 |
| styrene (coelutes) | 2.531E+01 | 12.2 | 4.909E+01 | 93.9 | 3.163E+01 | 25.0 | 2.043E+01 | -19.3 |

| | INITIAL CALIBRATION | | 043F0101 | | 046F0101 | | 062F0101 | |
|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.380E+00 | 75.7 | 5.935E-01 | -57.0 | 8.203E-01 | -40.6 | 7.838E-01 | -43.2 |
| 1,1-dichloroethene | 5.060E+00 | 67.1 | 5.645E+00 | 11.6 | 6.281E+00 | 24.1 | 6.432E+00 | 27.1 |
| methylene chloride | 3.232E+00 | 26.8 | 4.054E+00 | 25.4 | 4.304E+00 | 33.2 | 4.368E+00 | 35.1 |
| chloroform (coelutes) | 7.973E+01 | 61.8 | 3.882E+01 | -51.3 | 3.889E+01 | -51.2 | 3.831E+01 | -51.9 |
| 1,1,1-trichloroethane (coelutes) | 2.196E+02 | 61.6 | 1.068E+02 | -51.4 | 1.070E+02 | -51.3 | 1.054E+02 | -52.0 |
| carbon tetrachloride (coelutes) | 1.369E+03 | 61.8 | 6.673E+02 | -51.2 | 6.685E+02 | -51.2 | 6.585E+02 | -51.9 |
| 1,2-dichloroethane | 1.553E+00 | 18.2 | 3.314E+00 | 113.4 | 3.668E+00 | 136.2 | 3.524E+00 | 127.0 |
| trichloroethene (ECD) | 9.988E+01 | 11.4 | 8.532E+01 | -14.6 | 8.758E+01 | -12.3 | 8.455E+01 | -15.4 |
| tetrachloroethene (ECD) (coelut | 1.875E+02 | 13.3 | 1.413E+02 | -24.6 | 1.546E+02 | -17.5 | 1.326E+02 | -29.3 |
| 1,1,2-trichloroethane (coelutes) | 5.986E+00 | 13.7 | 4.566E+00 | -23.7 | 4.995E+00 | -16.6 | 4.283E+00 | -28.4 |
| bromoform | 1.362E+01 | 42.7 | 2.847E+01 | 108.9 | 1.335E+01 | -2.0 | 1.592E+01 | 16.9 |
| 1,1,2,2-tetrachloroethane | 6.857E+00 | 62.7 | 9.613E+00 | 40.2 | 5.211E+00 | -24.0 | 5.831E+00 | -15.0 |

| | NUMBER 1 | | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | **61920** | 61920 | 100 | **16968** | 16968 | 100 | **22957** | 22957 | 100 | **17249** | 17249 | 100 | **20812** | 20812 | 100 |
| PID IS3 AREAS | **22799** | 22799 | 100 | **25357** | 25357 | 100 | **19915** | 19915 | 100 | **21426** | 21426 | 100 | **29905** | 29905 | 100 |

| PID COMPOUNDS | 09/20/97 093R0101 | area | conc. | 09/21/97 005R0101 | area | conc. | 09/21/97 025R0101 | area | conc. | 09/22/97 028R0101 | area | conc. | 09/22/97 048R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 3.879E-01 | 18012 | 75 | 1.413E+00 | 17984 | 75 | 9.276E-01 | 15971 | 75 | 1.177E+00 | 15221 | 75 | 9.527E-01 | 14871 | 75 |
| acetone (coelutes) | 6.209E-01 | 26529 | 69 | 3.091E+00 | 36184 | 69 | 2.646E+00 | 41911 | 69 | 4.096E+00 | 48745 | 69 | 3.223E+00 | 46279 | 69 |
| trans-1,2-dichloroethene | 9.898E+00 | 91936 | 15 | 3.728E+01 | 94880 | 15 | 3.555E+01 | 122405 | 15 | 5.194E+01 | 134398 | 15 | 3.998E+01 | 124819 | 15 |
| cis-1,2-dichloroethene | 5.192E+00 | 48219 | 15 | 1.068E+01 | 27179 | 15 | 8.023E+00 | 27629 | 15 | 9.345E+00 | 24180 | 15 | 7.694E+00 | 24020 | 15 |
| carbon disulfide (coelutes) | 1.091E+00 | [illegible] | 102 | 3.505E+00 | 60657 | 102 | 3.742E+00 | [illegible] | 102 | 4.739E+00 | [illegible] | 102 | 4.160E+00 | [illegible] | 102 |
| 2-butanone (coelutes) | 1.687E+00 | 68937 | 66 | 5.416E+00 | 60657 | 66 | 5.782E+00 | 87614 | 66 | 7.324E+00 | 83379 | 66 | 6.429E+00 | 88307 | 66 |
| benzene | 1.163E+01 | 72001 | 10 | 4.389E+01 | 74475 | 10 | 4.335E+01 | 99523 | 10 | 4.806E+01 | 82893 | 10 | 4.654E+01 | 96849 | 10 |
| trichloroethene (PID - MDL N/A) | 4.398E+01 | 54460 | 2 | 2.777E+01 | 9425 | 2 | 4.461E+01 | 20483 | 2 | 3.747E+01 | 12925 | 2 | 4.824E+01 | 20078 | 2 |
| toluene (coelutes) | 1.068E+01 | 112448 | 17 | 3.796E+01 | 109501 | 17 | 1.831E+01 | 71450 | 17 | 2.641E+01 | 77432 | 17 | 2.193E+01 | 77581 | 17 |
| 4-methyl-2-pentanone (coelutes) | 1.853E+00 | 112448 | 98 | 6.585E+00 | 109501 | 98 | 3.176E+00 | 71450 | 98 | 4.581E+00 | 77432 | 98 | 3.804E+00 | 77581 | 98 |
| 2-hexanone | 2.828E+00 | 70036 | 40 | 1.041E+01 | 70640 | 40 | 3.575E+00 | 32833 | 40 | 5.479E+00 | 37801 | 40 | 4.078E+00 | 33952 | 40 |
| tetrachloroethene (PID - MDL N/A) | 2.548E+01 | 31556 | 2 | 7.505E+01 | 25469 | 2 | 1.580E+01 | 7253 | 2 | 5.044E+01 | 17401 | 2 | 2.964E+01 | 12337 | 2 |
| chlorobenzene | 2.574E+01 | 11735 | 2 | 1.698E+01 | 8611 | 2 | 1.295E+01 | 5159 | 2 | 1.761E+01 | 7547 | 2 | 1.050E+01 | 6281 | 2 |
| ethylbenzene | 1.339E+01 | 30530 | 10 | 1.317E+01 | 33387 | 10 | 1.100E+01 | 21900 | 10 | 1.355E+01 | 29032 | 10 | 7.225E+00 | 21606 | 10 |
| m-xylene (coelutes) | 2.330E+01 | 106264 | 20 | 2.306E+01 | 116963 | 20 | 1.425E+01 | 56762 | 20 | 1.648E+01 | 70632 | 20 | 1.377E+01 | 82348 | 20 |
| p-xylene (coelutes) | 2.330E+01 | 106264 | 20 | 2.306E+01 | 116963 | 20 | 1.425E+01 | 56762 | 20 | 1.648E+01 | 70632 | 20 | 1.377E+01 | 82348 | 20 |
| o-xylene (coelutes) | 2.585E+01 | 117859 | 20 | 2.274E+01 | 115300 | 20 | 2.880E+01 | 114695 | 20 | 2.668E+01 | 114349 | 20 | 1.827E+01 | 109269 | 20 |
| styrene (coelutes) | 2.585E+01 | 117859 | 20 | 2.274E+01 | 115300 | 20 | 2.880E+01 | 114695 | 20 | 2.668E+01 | 114349 | 20 | 1.827E+01 | 109269 | 20 |

| | NUMBER 1 | | | | NUMBER 2 | | | NUMBER 3 | | | NUMBER 4 | | | NUMBER 5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | **2915495** | 2915495 | 100 | **3131292** | 3131292 | 100 | **3220225** | 3220225 | 100 | **3300546** | 3300546 | 100 | **3122724** | 3122724 | 100 |
| ECID IS3 AREAS | **9805205** | 9805205 | 100 | **12376300** | 12376300 | 100 | **9664880** | 9664880 | 100 | **13149700** | 13149700 | 100 | **11533300** | 11533300 | 100 |

| ECD COMPOUNDS | 09/20/97 093F0101 | area | conc. | 09/21/97 005F0101 | area | conc. | 09/21/97 025F0101 | area | conc. | 09/22/97 028F0101 | area | conc. | 09/22/97 048F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 1.006E+00 | 2200598 | 75 | 9.859E-01 | 2315421 | 75 | 8.557E-01 | 2066584 | 75 | 1.052E+00 | 2604849 | 75 | 5.991E-01 | 1403019 | 75 |
| 1,1-dichloroethene | 4.310E+00 | 1884757 | 15 | 4.730E+00 | 2221422 | 15 | 5.923E+00 | 2861074 | 15 | 6.235E+00 | 3087064 | 15 | 7.307E+00 | 3422486 | 15 |
| methylene chloride | 3.484E+00 | 2031680 | 20 | 3.649E+00 | 2285399 | 20 | 3.352E+00 | 2158740 | 20 | 2.346E+00 | 1548920 | 20 | 3.218E+00 | 2009685 | 20 |
| chloroform (coelutes) | 3.764E+01 | 12070800 | 11 | 6.896E+01 | 23751100 | 11 | 7.993E+01 | 28314100 | 11 | 7.500E+01 | 27230800 | 11 | 7.529E+01 | 25863700 | 11 |
| 1,1,1-trichloroethane (coelutes) | 1.035E+02 | 12070800 | 4 | 1.896E+02 | 23751100 | 4 | 2.198E+02 | 28314100 | 4 | 2.063E+02 | 27230800 | 4 | 2.071E+02 | 25863700 | 4 |
| carbon tetrachloride (coelutes) | 6.469E+02 | 12070800 | 0.64 | 1.185E+03 | 23751100 | 0.64 | 1.374E+03 | 28314100 | 0.64 | 1.289E+03 | 27230800 | 0.64 | 1.294E+03 | 25863700 | 0.64 |
| 1,2-dichloroethane | 1.031E+00 | 600933 | 20 | 1.652E+00 | 1034480 | 20 | 4.811E+00 | 3098199 | 20 | 2.379E+00 | 1570605 | 20 | 6.466E+00 | 4038485 | 20 |
| trichloroethene (ECD) | 9.116E+01 | 5315527 | 2 | 1.024E+02 | 6411383 | 2 | 1.156E+02 | 7446610 | 2 | 1.088E+02 | 7181402 | 2 | 9.539E+01 | 5957745 | 2 |
| tetrachloroethene (ECD) (coelutes) | 1.425E+02 | 8721945 | 2.1 | 1.520E+02 | 9997816 | 2.1 | 1.589E+02 | 10744900 | 2.1 | 1.638E+02 | 11355100 | 2.1 | 1.588E+02 | 10415400 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 4.602E+00 | 8721945 | 65 | 4.912E+00 | 9997816 | 65 | 5.133E+00 | 10744900 | 65 | 5.293E+00 | 11355100 | 65 | 5.131E+00 | 10415400 | 65 |
| bromoform | 1.415E+01 | 2774001 | 2 | 1.136E+01 | 2810839 | 2 | 1.551E+01 | 2997167 | 2 | 1.180E+01 | 3104598 | 2 | 1.294E+01 | 2984544 | 2 |
| 1,1,2,2-tetrachloroethane | 4.953E+00 | 971349 | 2 | 4.459E+00 | 1103785 | 2 | 5.435E+00 | 1050669 | 2 | 4.800E+00 | 1262303 | 2 | 5.267E+00 | 1214879 | 2 |

| | | NUMBER 6 | | | NUMBER 7 | | | NUMBER 8 | | | NUMBER 9 | | | NUMBER 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | **24511** | 24511 | 100 | **15827** | 15827 | 100 | **17978** | 17978 | 100 | **14541** | 14541 | 100 | **31113** | 31113 | 100 |
| PID IS3 AREAS | **24901** | 24901 | 100 | **20094** | 20094 | 100 | **23270** | 23270 | 100 | **18340** | 18340 | 100 | **23269** | 23269 | 100 |

| PID COMPOUNDS | 09/23/97 062R0101 | area | conc. | 09/24/97 086R0101 | area | conc. | 09/25/97 006R0201 | area | conc. | 09/25/97 009R0101 | area | conc. | 09/25/97 032R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 7.977E-01 | 14665 | 75 | 1.342E+00 | 15933 | 75 | 1.193E+00 | 16080 | 75 | 1.314E+00 | 14325 | 75 | 5.229E-01 | 12201 | 75 |
| acetone (coelutes) | 2.483E+00 | 41996 | 69 | 3.757E+00 | 41031 | 69 | 3.247E+00 | 40277 | 69 | 5.195E+00 | 52127 | 69 | 1.093E+00 | 23455 | 69 |
| trans-1,2-dichloroethene | 3.380E+01 | 124275 | 15 | 5.007E+01 | 118870 | 15 | 4.114E+01 | 110947 | 15 | 6.140E+01 | 133922 | 15 | 1.755E+01 | 81928 | 15 |
| cis-1,2-dichloroethene | 5.380E+00 | 19780 | 15 | 9.353E+00 | 22204 | 15 | 7.789E+00 | 21005 | 15 | 7.804E+00 | 17021 | 15 | 4.411E+00 | 20584 | 15 |
| carbon disulfide (coelutes) | 3.633E+00 | [illegible] | 102 | 4.352E+00 | 70252 | 102 | 4.214E+00 | [illegible] | 102 | 3.020E+00 | [illegible] | 102 | 2.447E+00 | [illegible] | 102 |
| 2-butanone (coelutes) | 5.614E+00 | 90821 | 66 | 6.725E+00 | 70252 | 66 | 6.512E+00 | 77269 | 66 | 4.667E+00 | 44790 | 66 | 3.782E+00 | 77669 | 66 |
| benzene | 3.796E+01 | 93032 | 10 | 4.606E+01 | 72892 | 10 | 4.487E+01 | 80664 | 10 | 4.885E+01 | 71034 | 10 | 3.412E+01 | 106173 | 10 |
| trichloroethene (PID - MDL N/A) | 3.666E+01 | 17972 | 2 | 3.739E+01 | 11836 | 2 | 4.121E+01 | 14819 | 2 | 3.026E+01 | 8801 | 2 | 5.117E+01 | 31838 | 2 |
| toluene (coelutes) | 1.797E+01 | 74881 | 17 | 3.556E+01 | 95665 | 17 | 2.232E+01 | 68202 | 17 | 3.894E+01 | 96270 | 17 | 1.384E+01 | 73195 | 17 |
| 4-methyl-2-pentanone (coelutes) | 3.117E+00 | 74881 | 98 | 6.168E+00 | 95665 | 98 | 3.871E+00 | 68202 | 98 | 6.756E+00 | 96270 | 98 | 2.401E+00 | 73195 | 98 |
| 2-hexanone | 3.691E+00 | 36185 | 40 | 6.789E+00 | 42980 | 40 | 4.374E+00 | 31457 | 40 | 1.005E+01 | 58457 | 40 | 2.342E+00 | 29148 | 40 |
| tetrachloroethene (PID - MDL N/A) | 2.538E+01 | 12440 | 2 | 4.973E+01 | 15743 | 2 | 1.912E+01 | 6874 | 2 | 1.168E+02 | 33973 | 2 | 1.826E+01 | 11361 | 2 |
| chlorobenzene | 1.657E+01 | 8253 | 2 | 2.837E+01 | 11400 | 2 | 1.352E+01 | 6293 | 2 | 5.662E+01 | 20769 | 2 | 9.659E+00 | 4495 | 2 |
| ethylbenzene | 9.759E+00 | 24302 | 10 | 1.534E+01 | 30819 | 10 | 1.003E+01 | 23350 | 10 | 2.409E+01 | 44174 | 10 | 7.018E+00 | 16330 | 10 |
| m-xylene (coelutes) | 1.127E+01 | 56149 | 20 | 1.080E+01 | 43393 | 20 | 1.837E+01 | 85501 | 20 | 3.441E+01 | 126203 | 20 | 9.634E+00 | 44837 | 20 |
| p-xylene (coelutes) | 1.127E+01 | 56149 | 20 | 1.080E+01 | 43393 | 20 | 1.837E+01 | 85501 | 20 | 3.441E+01 | 126203 | 20 | 9.634E+00 | 44837 | 20 |
| o-xylene (coelutes) | 2.272E+01 | 113158 | 20 | 8.035E+00 | 32291 | 20 | 2.241E+01 | 104274 | 20 | 2.949E+01 | 108177 | 20 | 1.411E+01 | 65657 | 20 |
| styrene (coelutes) | 2.272E+01 | 113158 | 20 | 8.035E+00 | 32291 | 20 | 2.241E+01 | 104274 | 20 | 2.949E+01 | 108177 | 20 | 1.411E+01 | 65657 | 20 |

| | | NUMBER 6 | | | NUMBER 7 | | | NUMBER 8 | | | NUMBER 9 | | | NUMBER 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | **3227029** | 3227029 | 100 | **3101353** | 3101353 | 100 | **3253601** | 3253601 | 100 | **3505824** | 3505824 | 100 | **3499641** | 3499641 | 100 |
| ECID IS3 AREAS | **10367900** | 10367900 | 100 | **11457600** | 11457600 | 100 | **12955600** | 12955600 | 100 | **11965400** | 11965400 | 100 | **12436800** | 12436800 | 100 |

| ECD COMPOUNDS | 09/23/97 062F0101 | area | conc. | 09/24/97 086F0101 | area | conc. | 09/25/97 006F0201 | area | conc. | 09/25/97 009F0101 | area | conc. | 09/25/97 032F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 6.394E-01 | 1547508 | 75 | 7.156E-01 | 1664499 | 75 | 6.931E-01 | 1691282 | 75 | 6.760E-01 | 1777385 | 75 | 6.257E-01 | 1642371 | 75 |
| 1,1-dichloroethene | 6.393E+00 | 3094629 | 15 | 6.518E+00 | 3032384 | 15 | 6.779E+00 | 3308260 | 15 | 6.989E+00 | 3675370 | 15 | 4.673E+00 | 2453127 | 15 |
| methylene chloride | 4.762E+00 | 3073307 | 20 | 5.690E+00 | 3529456 | 20 | 4.032E+00 | 2623384 | 20 | 2.096E+00 | 1469365 | 20 | 3.591E+00 | 2513544 | 20 |
| chloroform (coelutes) | 7.512E+01 | 26666700 | 11 | 7.685E+01 | 26215900 | 11 | 7.465E+01 | 26717300 | 11 | 4.025E+01 | 15520300 | 11 | 3.693E+00 | 1421700 | 11 |
| 1,1,1-trichloroethane (coelutes) | 2.066E+02 | 26666700 | 4 | 2.113E+02 | 26215900 | 4 | 2.053E+02 | 26717300 | 4 | 1.107E+02 | 15520300 | 4 | 1.016E+01 | 1421700 | 4 |
| carbon tetrachloride (coelutes) | 1.291E+03 | 26666700 | 0.64 | 1.321E+03 | 26215900 | 0.64 | 1.283E+03 | 26717300 | 0.64 | 6.917E+02 | 15520300 | 0.64 | 6.348E+01 | 1421700 | 0.64 |
| 1,2-dichloroethane | 2.589E+00 | 1671137 | 20 | 2.522E+00 | 1564623 | 20 | 2.302E+00 | 1498078 | 20 | 1.951E+00 | 1368029 | 20 | 1.095E+00 | 766507 | 20 |
| trichloroethene (ECD) | 9.240E+01 | 5963420 | 2 | 1.023E+02 | 6346766 | 2 | 9.874E+01 | 6425385 | 2 | 8.466E+01 | 5936269 | 2 | 8.185E+01 | 5728660 | 2 |
| tetrachloroethene (ECD) (coelutes) | 1.479E+02 | 10024800 | 2.1 | 1.647E+02 | 10729400 | 2.1 | 1.525E+02 | 10422300 | 2.1 | 1.627E+02 | 11975500 | 2.1 | 1.182E+02 | 8687555 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 4.779E+00 | 10024800 | 65 | 5.322E+00 | 10729400 | 65 | 4.928E+00 | 10422300 | 65 | 5.255E+00 | 11975500 | 65 | 3.819E+00 | 8687555 | 65 |
| bromoform | 1.432E+01 | 2968560 | 2 | 1.296E+01 | 2969530 | 2 | 1.201E+01 | 3110866 | 2 | 1.253E+01 | 2998596 | 2 | 1.247E+01 | 3100560 | 2 |
| 1,1,2,2-tetrachloroethane | 5.811E+00 | 1204857 | 2 | 5.186E+00 | 1188325 | 2 | 4.905E+00 | 1270842 | 2 | 4.605E+00 | 1101997 | 2 | 5.217E+00 | 1297687 | 2 |

| | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | | 36374 | 36374 | 100 | 10898 | 10898 | 100 | 25433 | 25433 | 100 |
| PID IS3 AREAS | | 5346 | 5346 | 100 | 14896 | 14896 | 100 | 20487 | 20487 | 100 |

| | 09/26/97 | | | 09/27/97 | | | 09/28/97 | | |
|---|---|---|---|---|---|---|---|---|---|
| PID COMPOUNDS | 043R0101 | area | conc. | 046R0101 | area | conc. | 062R0101 | area | conc. |
| vinyl chloride | 3.509E-01 | 9573 | 75 | 1.516E+00 | 12388 | 75 | 6.718E-01 | 12814 | 75 |
| acetone (coelutes) | 1.003E+00 | 25168 | 69 | 4.610E+00 | 34666 | 69 | 1.585E+00 | 27815 | 69 |
| trans-1,2-dichloroethene | 1.838E+01 | 100279 | 15 | 5.997E+01 | 98035 | 15 | 2.184E+01 | 83311 | 15 |
| cis-1,2-dichloroethene | 4.921E+00 | 26851 | 15 | 1.153E+01 | 18852 | 15 | 5.253E+00 | 20041 | 15 |
| carbon disulfide (coelutes) | 1.847E+00 | [illegible] | 102 | 3.621E+00 | [illegible] | 102 | 2.673E+00 | [illegible] | 102 |
| 2-butanone (coelutes) | 2.854E+00 | 68513 | 66 | 5.596E+00 | 40252 | 66 | 4.132E+00 | 69353 | 66 |
| benzene | 3.071E+01 | 111710 | 10 | 6.729E+01 | 73333 | 10 | 3.810E+01 | 96893 | 10 |
| trichloroethene (PID - MDL N/A) | 4.660E+01 | 33898 | 2 | 4.478E+01 | 9761 | 2 | 5.322E+01 | 27070 | 2 |
| toluene (coelutes) | 1.275E+01 | 78833 | 17 | 3.792E+01 | 70259 | 17 | 1.764E+01 | 76250 | 17 |
| 4-methyl-2-pentanone (coelutes) | 2.212E+00 | 78833 | 98 | 6.579E+00 | 70259 | 98 | 3.059E+00 | 76250 | 98 |
| 2-hexanone | 1.781E+00 | 25919 | 40 | 1.222E+01 | 53280 | 40 | 2.619E+00 | 26647 | 40 |
| tetrachloroethene (PID - MDL N/A) | 1.955E+01 | 14222 | 2 | 9.762E+01 | 21277 | 2 | 2.145E+01 | 10912 | 2 |
| chlorobenzene | 1.544E+01 | 1651 | 2 | 4.701E+01 | 14005 | 2 | 8.757E+00 | 3588 | 2 |
| ethylbenzene | 2.475E+01 | 13234 | 10 | 2.324E+01 | 34611 | 10 | 7.517E+00 | 15400 | 10 |
| m-xylene (coelutes) | 4.884E+01 | 52215 | 20 | 3.457E+01 | 102983 | 20 | 1.582E+01 | 64807 | 20 |
| p-xylene (coelutes) | 4.884E+01 | 52215 | 20 | 3.457E+01 | 102983 | 20 | 1.582E+01 | 64807 | 20 |
| o-xylene (coelutes) | 4.909E+01 | 52482 | 20 | 3.163E+01 | 94246 | 20 | 2.043E+01 | 83721 | 20 |
| styrene (coelutes) | 4.909E+01 | 52482 | 20 | 3.163E+01 | 94246 | 20 | 2.043E+01 | 83721 | 20 |

| | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | | 3258832 | 3258832 | 100 | 3228392 | 3228392 | 100 | 3272935 | 3272935 | 100 |
| ECID IS3 AREAS | | 5396204 | 5396204 | 100 | 12302100 | 12302100 | 100 | 10059600 | 10059600 | 100 |

| | 09/26/97 | | | 09/27/97 | | | 09/28/97 | | |
|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | 043F0101 | area | conc. | 046F0101 | area | conc. | 062F0101 | area | conc. |
| bromomethane | 5.935E-01 | 1450468 | 75 | 8.203E-01 | 1986115 | 75 | 7.838E-01 | 1924062 | 75 |
| 1,1-dichloroethene | 5.645E+00 | 2759222 | 15 | 6.281E+00 | 3041725 | 15 | 6.432E+00 | 3157971 | 15 |
| methylene chloride | 4.054E+00 | 2642415 | 20 | 4.304E+00 | 2778810 | 20 | 4.368E+00 | 2858922 | 20 |
| chloroform (coelutes) | 3.882E+01 | 13917400 | 11 | 3.889E+01 | 13811600 | 11 | 3.831E+01 | 13792900 | 11 |
| 1,1,1-trichloroethane (coelutes) | 1.068E+02 | 13917400 | 4 | 1.070E+02 | 13811600 | 4 | 1.054E+02 | 13792900 | 4 |
| carbon tetrachloride (coelutes) | 6.673E+02 | 13917400 | 0.64 | 6.685E+02 | 13811600 | 0.64 | 6.585E+02 | 13792900 | 0.64 |
| 1,2-dichloroethane | 3.314E+00 | 2159905 | 20 | 3.668E+00 | 2368258 | 20 | 3.524E+00 | 2306819 | 20 |
| trichloroethene (ECD) | 8.532E+01 | 5560645 | 2 | 8.758E+01 | 5654874 | 2 | 8.455E+01 | 5534336 | 2 |
| tetrachloroethene (ECD) (coelutes) | 1.413E+02 | 9671997 | 2.1 | 1.546E+02 | 10481800 | 2.1 | 1.326E+02 | 9111490 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 4.566E+00 | 9671997 | 65 | 4.995E+00 | 10481800 | 65 | 4.283E+00 | 9111490 | 65 |
| bromoform | 2.847E+01 | 3072171 | 2 | 1.335E+01 | 3284150 | 2 | 1.592E+01 | 3202873 | 2 |
| 1,1,2,2-tetrachloroethane | 9.613E+00 | 1037442 | 2 | 5.211E+00 | 1282031 | 2 | 5.831E+00 | 1173159 | 2 |

# ATTACHMENT 2b

## CALIBRATION SUMAMRIES
## EXTERNAL STANDARD METHOD

# INITIAL CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
## July 11, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc | area | conc | area | conc | area | conc. | area | conc |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | NA | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | NA | 100 |

### RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc | level 2 area | level 2 conc | level 3 area | level 3 conc | level 4 area | level 4 conc | level 5 area | level 5 conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | NA | 9.464E+04 | 6.610E+04 | 4.802E+04 | NA | 6.959E+04 | 33.8 | NA | 0 | 23659 | 25 | 33052 | 50 | 48019 | 100 | NA | 0 |
| acetone (coelutes) | NA | NA | 3.661E+05 | 3.235E+05 | NA | 3.448E+05 | 8.7 | NA | 0 | NA | 0 | 472227 | 129 | 928523 | 287 | NA | 0 |
| trans-1,2-dichloroethene | NA | 5.284E+06 | 4.773E+06 | 4.826E+06 | NA | 4.961E+06 | 5.7 | NA | 0 | 264182 | 5 | 715972 | 15 | 2171527 | 45 | NA | 0 |
| cis-1,2-dichloroethene | NA | 9.809E+06 | 4.713E+06 | 4.105E+06 | NA | 6.209E+06 | 50.4 | NA | 0 | 490441 | 5 | 706963 | 15 | 1847460 | 45 | NA | 0 |
| carbon disulfide (coelutes) | NA | NA | 6.435E+04 | 1.015E+05 | NA | 8.292E+04 | 31.7 | NA | 0 | NA | 0 | 163452 | 254 | 515591 | 508 | NA | 0 |
| 2-butanone (coelutes) | NA | NA | 9.906E+04 | 1.562E+05 | NA | 1.277E+05 | 31.7 | NA | 0 | NA | 0 | 163452 | 165 | 515591 | 330 | NA | 0 |
| benzene | NA | NA | 8.198E+06 | 9.079E+06 | NA | 8.639E+06 | 7.2 | NA | 0 | NA | 0 | 409923 | 5 | 1815837 | 20 | NA | 0 |
| trichloroethene (PID - MDL N/A) | NA | 1.687E+06 | 2.484E+06 | 7.154E+06 | NA | 3.775E+06 | 78.2 | NA | 0 | 33745 | 2 | 99357 | 4 | 572306 | 8 | NA | 0 |
| toluene (coelutes) | NA | NA | 5.038E+06 | 1.443E+06 | NA | 3.241E+06 | 78.5 | NA | 0 | NA | 0 | 1108454 | 22 | 793630 | 55 | NA | 0 |
| 4-methyl-2-pentanone (coelutes) | NA | NA | 8.593E+05 | 2.519E+05 | NA | 5.556E+05 | 77.3 | NA | 0 | NA | 0 | 1108454 | 129 | 793630 | 315 | NA | 0 |
| 2-hexanone | NA | NA | 6.222E+05 | 4.027E+05 | NA | 5.125E+05 | 30.3 | NA | 0 | NA | 0 | 622234 | 100 | 805349 | 200 | NA | 0 |
| tetrachloroethene (PID - MDL N/A) | NA | 1.522E+06 | 3.554E+06 | 1.097E+07 | NA | 5.347E+06 | 93.0 | NA | 0 | 30433 | 2 | 142176 | 4 | 877257 | 8 | NA | 0 |
| chlorobenzene | NA | 2.960E+06 | 3.932E+06 | 5.425E+06 | NA | 4.106E+06 | 30.2 | NA | 0 | 59207 | 2 | 157288 | 4 | 434026 | 8 | NA | 0 |
| ethylbenzene | NA | NA | 2.889E+06 | 2.605E+06 | NA | 2.747E+06 | 7.3 | NA | 0 | NA | 0 | 144429 | 5 | 520967 | 20 | NA | 0 |
| m-xylene (coelutes) | NA | NA | 2.276E+06 | 3.559E+06 | NA | 2.918E+06 | 31.1 | NA | 0 | NA | 0 | 227647 | 10 | 1423601 | 40 | NA | 0 |
| p-xylene (coelutes) | NA | NA | 2.276E+06 | 3.559E+06 | NA | 2.918E+06 | 31.1 | NA | 0 | NA | 0 | 227647 | 10 | 1423601 | 40 | NA | 0 |
| o-xylene (coelutes) | NA | NA | 2.564E+06 | 2.771E+06 | NA | 2.668E+06 | 5.5 | NA | 0 | NA | 0 | 256439 | 10 | 1108332 | 40 | NA | 0 |
| styrene (coelutes) | NA | NA | 2.564E+06 | 2.771E+06 | NA | 2.668E+06 | 5.5 | NA | 0 | NA | 0 | 256439 | 10 | 1108332 | 40 | NA | 0 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc | area | conc | area | conc. | area | conc. | area | conc |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | | 100 |

| ECD COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | NA | 1.514E+07 | 7.756E+06 | 3.302E+06 | NA | 8.733E+06 | 68.5 | NA | 0 | 3785509 | 25 | 3877933 | 50 | 3301999 | 100 | NA | 0 |
| 1,1-dichloroethene | NA | 6.286E+07 | 4.126E+07 | 3.709E+07 | NA | 4.707E+07 | 29.4 | NA | 0 | 3143229 | 5 | 6189353 | 15 | 16689100 | 45 | NA | 0 |
| methylene chloride | NA | 1.764E+07 | 8.696E+06 | 7.815E+06 | NA | 1.138E+07 | 47.7 | NA | 0 | 3527488 | 20 | 4348175 | 50 | 7814668 | 100 | NA | 0 |
| chloroform (coelutes) | NA | 9.059E+08 | 4.974E+08 | 3.707E+08 | NA | 5.913E+08 | 47.3 | NA | 0 | 99651100 | 11 | 108921100 | 21.9 | 162347025 | 43.8 | NA | 0 |
| 1,1,1-trichloroethane (coelutes) | NA | 2.491E+09 | 1.379E+09 | 1.021E+09 | NA | 1.630E+09 | 47.0 | NA | 0 | [illegible] | 4 | [illegible] | 7.9 | [illegible] | 15.9 | NA | 0 |
| carbon tetrachloride (coelutes) | NA | 1.557E+10 | 8.379E+09 | 6.494E+09 | NA | 1.015E+10 | 47.2 | NA | 0 | [illegible] | 0.64 | [illegible] | 1.3 | [illegible] | 2.5 | NA | 0 |
| 1,2-dichloroethane | NA | NA | 2.824E+07 | 9.465E+06 | NA | 1.885E+07 | 70.4 | NA | 0 | NA | 0 | 14117800 | 50 | 9484771 | 100 | NA | 0 |
| trichloroethene (ECD) | 1.145E+09 | 9.167E+08 | 7.755E+08 | 9.365E+08 | NA | 9.435E+08 | 16.2 | 11452400 | 1 | 18334600 | 2 | 31021800 | 4 | 74921100 | 8 | NA | 0 |
| tetrachloroethene (ECD) (coelutes) | 1.578E+09 | 1.309E+09 | 1.434E+09 | 1.146E+09 | NA | 1.367E+09 | 13.4 | 15775500 | 1 | 27496900 | 2.1 | 58803200 | 4.1 | 95099800 | 8.3 | NA | 0 |
| 1,1,2-trichloroethane (coelutes) | 4.930E+07 | 4.230E+07 | 4.558E+07 | 3.686E+07 | NA | 4.351E+07 | 12.1 | [illegible] | 32 | [illegible] | 65 | [illegible] | 129 | [illegible] | 258 | NA | 0 |
| bromoform | 3.924E+08 | 3.595E+08 | 3.282E+08 | 3.241E+08 | NA | 3.511E+08 | 9.0 | 3924096 | 1 | 7190222 | 2 | 13129800 | 4 | 25929600 | 8 | NA | 0 |
| 1,1,2,2-tetrachloroethane | 2.165E+08 | 1.608E+08 | 1.102E+08 | 7.496E+07 | NA | 1.406E+08 | 43.8 | 2164537 | 1 | 3216402 | 2 | 4409212 | 4 | 5996874 | 8 | NA | 0 |

# INITIAL CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
July 13, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | NA | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | NA | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | NA | 4.508E+04 | 4.124E+04 | 2.868E+04 | NA | 3.833E+04 | 22.4 | NA | 0 | 11269 | 25 | 20618 | 50 | 28682 | 100 | NA | 0 |
| acetone (coelutes) | NA | NA | 2.365E+05 | 2.003E+05 | NA | 2.184E+05 | 11.7 | NA | 0 | NA | 0 | 305044 | 129 | 574861 | 287 | NA | 0 |
| trans-1,2-dichloroethene | NA | 2.371E+06 | 3.146E+06 | 2.520E+06 | NA | 2.679E+06 | 15.3 | NA | 0 | 118538 | 5 | 471838 | 15 | 1133905 | 45 | NA | 0 |
| cis-1,2-dichloroethene | NA | 3.476E+06 | 3.188E+06 | 1.521E+06 | NA | 2.728E+06 | 38.7 | NA | 0 | 173813 | 5 | 478248 | 15 | 684352 | 45 | NA | 0 |
| carbon disulfide (coelutes) | NA | NA | 6.367E+04 | 8.004E+04 | NA | 7.185E+04 | 16.1 | NA | 0 | NA | 0 | 161715 | 254 | 406594 | 508 | NA | 0 |
| 2-butanone (coelutes) | NA | NA | 9.801E+04 | 1.232E+05 | NA | 1.106E+05 | 16.1 | NA | 0 | NA | 0 | 161715 | 165 | 406594 | 330 | NA | 0 |
| benzene | NA | NA | 5.656E+06 | 3.777E+06 | NA | 4.717E+06 | 28.2 | NA | 0 | NA | 0 | 282808 | 5 | 755379 | 20 | NA | 0 |
| trichloroethene (PID - MDL N/A) | NA | 1.364E+06 | 2.258E+06 | 3.173E+06 | NA | 2.265E+06 | 39.9 | NA | 0 | 27272 | 2 | 90323 | 4 | 253830 | 8 | NA | 0 |
| toluene (coelutes) | NA | NA | 2.758E+06 | 1.151E+06 | NA | 1.954E+06 | 58.2 | NA | 0 | NA | 0 | 606758 | 22 | 632815 | 55 | NA | 0 |
| 4-methyl-2-pentanone (coelutes) | NA | NA | 4.704E+05 | 2.009E+05 | NA | 3.356E+05 | 56.8 | NA | 0 | NA | 0 | 606758 | 129 | 632815 | 315 | NA | 0 |
| 2-hexanone | NA | NA | 2.999E+05 | 8.760E+04 | NA | 1.937E+05 | 77.5 | NA | 0 | NA | 0 | 299865 | 100 | 175207 | 200 | NA | 0 |
| tetrachloroethene (PID - MDL N/A) | NA | 6.050E+05 | 1.201E+06 | 4.566E+06 | NA | 2.124E+06 | 100.6 | NA | 0 | 12099 | 2 | 48038 | 4 | 365273 | 8 | NA | 0 |
| chlorobenzene | NA | 1.050E+06 | 1.305E+06 | 1.124E+06 | NA | 1.160E+06 | 11.3 | NA | 0 | 21000 | 2 | 52210 | 4 | 89897 | 8 | NA | 0 |
| ethylbenzene | NA | NA | 1.323E+06 | 8.772E+05 | NA | 1.100E+06 | 28.7 | NA | 0 | NA | 0 | 66153 | 5 | 175440 | 20 | NA | 0 |
| m-xylene (coelutes) | NA | NA | 1.804E+06 | 1.280E+06 | NA | 1.542E+06 | 24.0 | NA | 0 | NA | 0 | 180402 | 10 | 512192 | 40 | NA | 0 |
| p-xylene (coelutes) | NA | NA | 1.804E+06 | 1.280E+06 | NA | 1.542E+06 | 24.0 | NA | 0 | NA | 0 | 180402 | 10 | 512192 | 40 | NA | 0 |
| o-xylene (coelutes) | NA | NA | 1.899E+06 | 1.888E+06 | NA | 1.894E+06 | 0.4 | NA | 0 | NA | 0 | 189949 | 10 | 755136 | 40 | NA | 0 |
| styrene (coelutes) | NA | NA | 1.899E+06 | 1.888E+06 | NA | 1.894E+06 | 0.4 | NA | 0 | NA | 0 | 189949 | 10 | 755136 | 40 | NA | 0 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | NA | 1.369E+07 | 8.225E+06 | 4.146E+06 | 2.396E+07 | 1.251E+07 | 68.6 | NA | 0 | 3421532 | 25 | 4112709 | 50 | 4146166 | 100 | 35946600 | 150 |
| 1,1-dichloroethene | NA | 5.224E+07 | 4.064E+07 | 3.245E+07 | 1.169E+07 | 3.426E+07 | 49.9 | NA | 0 | 2612107 | 5 | 6096673 | 15 | 14601300 | 45 | 14026800 | 120 |
| methylene chloride | NA | 9.881E+06 | 1.190E+07 | 2.958E+06 | 5.783E+06 | 7.632E+06 | 52.7 | NA | 0 | 1976288 | 20 | 5951617 | 50 | 2958412 | 100 | 8674705 | 150 |
| chloroform (coelutes) | NA | 5.946E+08 | 3.268E+08 | 1.973E+08 | NA | 3.729E+08 | 54.3 | NA | 0 | 65407600 | 11 | 71566300 | 21.9 | 86422300 | 43.8 | NA | 0 |
| 1,1,1-trichloroethane (coelutes) | NA | 1.635E+09 | 9.059E+08 | 5.435E+08 | NA | 1.028E+09 | 54.1 | NA | 0 | 65407600 | 4 | 71566300 | 7.9 | 86422300 | 15.9 | NA | 0 |
| carbon tetrachloride (coelutes) | NA | 1.022E+10 | 5.505E+09 | 3.457E+09 | NA | 6.394E+09 | 54.2 | NA | 0 | 65407600 | 0.64 | 71566300 | 1.3 | 86422300 | 2.5 | NA | 0 |
| 1,2-dichloroethane | NA | NA | 4.358E+06 | 1.460E+07 | 6.319E+06 | 8.426E+06 | 64.5 | NA | 0 | NA | 0 | 2179120 | 50 | 14601300 | 100 | 9478838 | 150 |
| trichloroethene (ECD) | 1.318E+09 | 9.109E+08 | 7.981E+08 | 7.143E+08 | NA | 9.352E+08 | 28.6 | 13176200 | 1 | 18217500 | 2 | 31922800 | 4 | 57140600 | 8 | NA | 0 |
| tetrachloroethene (ECD) (coelutes) | 1.866E+09 | 1.535E+09 | 1.070E+09 | 6.929E+08 | NA | 1.291E+09 | 39.9 | 18657800 | 1 | 32227900 | 2.1 | 43871100 | 4.1 | 57514500 | 8.3 | NA | 0 |
| 1,1,2-trichloroethane (coelutes) | 5.831E+07 | 4.958E+07 | 3.401E+07 | 2.229E+07 | NA | 4.105E+07 | 39.1 | 18657800 | 32 | 32227900 | 65 | 43871100 | 129 | 57514500 | 258 | NA | 0 |
| bromoform | 3.679E+08 | 3.360E+08 | 2.850E+08 | 2.662E+08 | NA | 3.138E+08 | 14.9 | 3679498 | 1 | 6719692 | 2 | 11398800 | 4 | 21292000 | 8 | NA | 0 |
| 1,1,2,2-tetrachloroethane | 2.178E+08 | 1.672E+08 | 1.141E+08 | 7.479E+07 | NA | 1.435E+08 | 43.5 | 2177666 | 1 | 3344276 | 2 | 4562751 | 4 | 5983588 | 8 | NA | 0 |

**CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD**
**July 13 to July 23 , 1997**

| DATE: | | | 07/14/97 | | 07/14/97 | | 07/15/97 | | 07/15/97 | | 07/16/97 | | 07/16/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| | INITIAL CALIBRATION | | 055R0101 | | 079R0201 | | 086R0101 | | 006R0301 | | 009R0101 | | 013R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 3 833E+04 | 22 4 | 3 997E+04 | 4.3 | 3.021E+04 | -21 2 | 3 179E+04 | -17 1 | 3.060E+04 | -20.2 | 7.059E+04 | 84.1 | 5 719E+04 | 49 2 |
| acetone (coelutes) | 2 184E+05 | 11 7 | 2.044E+05 | -6.4 | 1 312E+05 | -39 9 | 1.585E+05 | -27 4 | 1.392E+05 | -36 3 | 1.657E+05 | -24.1 | 1 476E+05 | -32 4 |
| trans-1,2-dichloroethene | 2 679E+06 | 15 3 | 2.595E+06 | -3.1 | 2.544E+06 | -5 0 | 2 183E+06 | -18 5 | 2 212E+06 | -17.4 | 2.064E+06 | -23.0 | 2 576E+06 | -3 8 |
| cis-1,2-dichloroethene | 2 728E+06 | 33 7 | 2 410E+06 | -11 7 | 1 999E+06 | -26 7 | 1 684E+06 | -38 3 | 1 738E+06 | -36 3 | 1 463E+06 | -46 4 | 2 066E+06 | -24 2 |
| carbon disulfide (coelutes) | 7 185E+04 | 16 1 | 6 100E+04 | -15 1 | 5 060E+04 | -29 6 | 5 564E+04 | -22 6 | 4 399E+04 | -38 8 | 3 702E+04 | -48 5 | 5 229E+04 | -27 2 |
| 2-butanone (coelutes) | 1 106E+05 | 16 1 | 9 390E+04 | -15.1 | 7 789E+04 | -29.6 | 8 566E+04 | -22 6 | 6.772E+04 | -38.8 | 5.700E+04 | -48.5 | 8.049E+04 | -27 2 |
| benzene | 4 717E+06 | 28 2 | 4.599E+06 | -2.5 | 4.696E+06 | -0.4 | 4 544E+06 | -3 7 | 3.777E+06 | -19.9 | 3.179E+06 | -32.6 | 5 144E+06 | 9 1 |
| trichloroethene (PID - MDL N/A) | 2.265E+06 | 39 9 | 1 949E+06 | -14 0 | 2 072E+06 | -8 5 | 1 498E+06 | -33 9 | 1 594E+06 | -29 6 | 1.364E+06 | -39.8 | 2 327E+06 | 2 7 |
| toluene (coelutes) | 1.954E+06 | 58.2 | 2.662E+06 | 36.2 | 1.431E+06 | -26 8 | 1.785E+06 | -8 7 | 1 300E+06 | -33.5 | 1.903E+06 | -2.6 | 1.253E+06 | -35 9 |
| 4-methyl-2-pentanone (coelutes | 3.356E+05 | 56.8 | 4.540E+05 | 35.3 | 2.440E+05 | -27.3 | 3.045E+05 | -9.3 | 2.216E+05 | -34.0 | 3.245E+05 | -3.3 | 2.136E+05 | -36 4 |
| 2-hexanone | 1.937E+05 | 77.5 | 2.617E+05 | 35.1 | 1.491E+05 | -23.0 | 1.177E+05 | -39.3 | 1.695E+05 | -12.5 | 1.277E+05 | -34.1 | 2.756E+05 | 42.2 |
| tetrachloroethene (PID - MDL N/ | 2.124E+06 | 100.6 | 1.554E+06 | -26.8 | 8.046E+05 | -62 1 | 1.076E+06 | -49 3 | 8.438E+05 | -60.3 | 1.033E+06 | -51.4 | 3.085E+06 | 45.3 |
| chlorobenzene | 1.160E+06 | 11.3 | 1.559E+06 | 34.4 | 7.734E+05 | -33.3 | 1.040E+06 | -10.3 | 7.762E+05 | -33.1 | 9.843E+05 | -15.1 | 6.482E+05 | -44 1 |
| ethylbenzene | 1.100E+06 | 28.7 | 2.249E+06 | 104.4 | 5.990E+05 | -45.6 | 9.734E+05 | -11.5 | 7.011E+05 | -36.3 | 9.171E+05 | -16.6 | 5.538E+05 | -49 7 |
| m-xylene (coelutes) | 1.542E+06 | 24.0 | 6.205E+05 | -59.8 | 7.964E+05 | -48.4 | 1.321E+06 | -14.3 | 5.783E+05 | -62.5 | 1.194E+06 | -22.6 | 6.387E+05 | -58.6 |
| p-xylene (coelutes) | 1.542E+06 | 24.0 | 6.205E+05 | -59.8 | 7.964E+05 | -48.4 | 1.321E+06 | -14.3 | 5.783E+05 | -62.5 | 1.194E+06 | -22.6 | 6.387E+05 | -58.6 |
| o-xylene (coelutes) | 1.894E+06 | 0.4 | 1.776E+06 | -6.2 | 1.155E+06 | -39.0 | 1.324E+06 | -30.1 | 7.829E+05 | -58.7 | 1.233E+06 | -34.9 | 1.054E+06 | -44.4 |
| styrene (coelutes) | 1.894E+06 | 0.4 | 1.776E+06 | -6.2 | 1.155E+06 | -39.0 | 1.324E+06 | -30.1 | 7.829E+05 | -58.7 | 1.233E+06 | -34.9 | 1.054E+06 | -44.4 |

| | INITIAL CALIBRATION | | 055F0101 | | 079F0201 | | 086F0101 | | 006F0301 | | 009F0101 | | 013F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.251E+07 | 68.6 | 8.562E+06 | -31.5 | 3.359E+06 | -73.1 | 8.047E+06 | -35.7 | 9.856E+06 | -21.2 | 1.446E+07 | 15.6 | 1.367E+07 | 9.3 |
| 1,1-dichloroethene | 3.426E+07 | 49.9 | 3.881E+07 | 13.3 | 3.668E+07 | 7.1 | 3.971E+07 | 15.9 | 3.893E+07 | 13.6 | 4.842E+07 | 41.3 | 5.010E+07 | 46.3 |
| methylene chloride | 7.632E+06 | 52.7 | 4.817E+06 | -36.9 | 1.115E+07 | 46.1 | 1.162E+07 | 52.3 | 1.153E+07 | 51.0 | 1.332E+07 | 74.5 | 4.736E+06 | -37.9 |
| chloroform (coelutes) | 3.729E+08 | 54.3 | 3.919E+08 | 5.1 | 3.279E+08 | -12.1 | 3.327E+08 | -10.8 | 3.254E+08 | -12.7 | 3.196E+08 | -14.3 | 3.524E+08 | -5.5 |
| 1,1,1-trichloroethane (coelutes) | 1.028E+09 | 54.1 | 1.086E+09 | 5.7 | 9.089E+08 | -11.6 | 9.222E+08 | -10.3 | 9.020E+08 | -12.3 | 8.861E+08 | -13.8 | 9.770E+08 | -5.0 |
| carbon tetrachloride (coelutes) | 6.394E+09 | 54.2 | 6.603E+09 | 3.3 | 5.523E+09 | -13.6 | 5.604E+09 | -12.3 | 5.482E+09 | -14.3 | 5.385E+09 | -15.8 | 5.937E+09 | -7.1 |
| 1,2-dichloroethane | 8.426E+06 | 64.5 | 2.564E+07 | 204.3 | 2.937E+06 | -65.1 | 1.841E+07 | 118.5 | 1.553E+07 | 84.3 | 1.426E+07 | 69.2 | 1.730E+07 | 105.3 |
| trichloroethene (ECD) | 9.352E+08 | 28.6 | 6.814E+08 | -27.1 | 6.321E+08 | -32.4 | 6.705E+08 | -28.3 | 6.539E+08 | -30.1 | 6.360E+07 | -93.2 | 7.519E+08 | -19.6 |
| tetrachloroethene (ECD) (coelut | 1.291E+09 | 39.9 | 1.035E+09 | -19.8 | 1.024E+09 | -20.7 | 1.115E+09 | -13.6 | 1.067E+09 | -17.3 | 1.092E+09 | -15.4 | 1.075E+09 | -16.7 |
| 1,1,2-trichloroethane (coelutes) | 4.105E+07 | 39.1 | 3.290E+07 | -19.8 | 3.255E+07 | -20.7 | 3.543E+07 | -13.7 | 3.392E+07 | -17.4 | 3.471E+07 | -15.4 | 3.418E+07 | -16 7 |
| bromoform | 3.138E+08 | 14.9 | 2.881E+08 | -8.2 | 2.847E+08 | -9.3 | 2.859E+08 | -8.9 | 2.955E+08 | -5.8 | 2.945E+08 | -6.1 | 3.105E+08 | -1.1 |
| 1,1,2,2-tetrachloroethane | 1.435E+08 | 43.5 | 1.242E+08 | -13.4 | 1.131E+08 | -21.2 | 9.344E+07 | -34.9 | 1.140E+08 | -20.6 | 1.082E+08 | -24.6 | 1.147E+08 | -20.0 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | | NUMBER 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| PID IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| PID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| PID COMPOUNDS | 07/14/97 055R0101 | area | conc. | 07/14/97 079R0201 | area | conc. | 07/15/97 086R0101 | area | conc. | 07/15/97 006R0301 | area | conc. | 07/16/97 009R0101 | area | conc. | 07/16/97 013R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 3.997E+04 | 19987 | 50 | 3.021E+04 | 15103 | 50 | 3.179E+04 | 15895 | 50 | 3.060E+04 | 15299 | 50 | 7.059E+04 | 35293 | 50 | 5.719E+04 | 28593 | 50 |
| acetone (coelutes) | 2.044E+05 | 263712 | 129 | 1.312E+05 | 169265 | 129 | 1.585E+05 | 204440 | 129 | 1.392E+05 | 179548 | 129 | 1.657E+05 | 213689 | 129 | 1.476E+05 | 190393 | 129 |
| trans-1,2-dichloroethene | 2.595E+06 | 389324 | 15 | 2.544E+06 | 381526 | 15 | 2.183E+06 | 327522 | 15 | 2.212E+06 | 331805 | 15 | 2.064E+06 | 309540 | 15 | 2.576E+06 | 386416 | 15 |
| cis-1,2-dichloroethene | 2.410E+06 | 361502 | 15 | 1.999E+06 | 299862 | 15 | 1.684E+06 | 252574 | 15 | 1.738E+06 | 260710 | 15 | 1.463E+06 | 219434 | 15 | 2.066E+06 | 309883 | 15 |
| carbon disulfide (coelutes) | 6.100E+04 | 154930 | 254 | 5.060E+04 | 128512 | 254 | 5.564E+04 | 141331 | 254 | 4.399E+04 | 111733 | 254 | 3.702E+04 | 94043 | 254 | 5.229E+04 | 132807 | 254 |
| 2-butanone (coelutes) | 9.390E+04 | 154930 | 165 | 7.789E+04 | 128512 | 165 | 8.566E+04 | 141331 | 165 | 6.772E+04 | 111733 | 165 | 5.700E+04 | 94043 | 165 | 8.049E+04 | 132807 | 165 |
| benzene | 4.599E+06 | 229963 | 5 | 4.696E+06 | 234798 | 5 | 4.544E+06 | 227214 | 5 | 3.777E+06 | 188840 | 5 | 3.179E+06 | 158932 | 5 | 5.144E+06 | 257224 | 5 |
| trichloroethene (PID - MDL N/A) | 1.949E+06 | 77941 | 4 | 2.072E+06 | 82894 | 4 | 1.498E+06 | 59900 | 4 | 1.594E+06 | 63758 | 4 | 1.364E+06 | 54563 | 4 | 2.327E+06 | 93080 | 4 |
| toluene (coelutes) | 2.662E+06 | 585606 | 22 | 1.431E+06 | 314793 | 22 | 1.785E+06 | 392742 | 22 | 1.300E+06 | 285905 | 22 | 1.903E+06 | 418559 | 22 | 1.253E+06 | 275572 | 22 |
| 4-methyl-2-pentanone (coelutes) | 4.540E+05 | 585606 | 129 | 2.440E+05 | 314793 | 129 | 3.045E+05 | 392742 | 129 | 2.216E+05 | 285905 | 129 | 3.245E+05 | 418559 | 129 | 2.136E+05 | 275572 | 129 |
| 2-hexanone | 2.617E+05 | 261710 | 100 | 1.491E+05 | 149112 | 100 | 1.177E+05 | 117682 | 100 | 1.695E+05 | 169495 | 100 | 1.277E+05 | 127705 | 100 | 2.756E+05 | 275572 | 100 |
| tetrachloroethene (PID - MDL N/A) | 1.554E+06 | 62148 | 4 | 8.046E+05 | 32182 | 4 | 1.076E+06 | 43038 | 4 | 8.438E+05 | 33751 | 4 | 1.033E+06 | 41300 | 4 | 3.085E+06 | 123409 | 4 |
| chlorobenzene | 1.559E+06 | 62357 | 4 | 7.734E+05 | 30937 | 4 | 1.040E+06 | 41586 | 4 | 7.762E+05 | 31049 | 4 | 9.843E+05 | 39370 | 4 | 6.482E+05 | 25926 | 4 |
| ethylbenzene | 2.249E+06 | 112456 | 5 | 5.990E+05 | 29948 | 5 | 9.734E+05 | 48670 | 5 | 7.011E+05 | 35054 | 5 | 9.171E+05 | 45853 | 5 | 5.538E+05 | 27688 | 5 |
| m-xylene (coelutes) | 6.205E+05 | 62054 | 10 | 7.964E+05 | 79643 | 10 | 1.321E+06 | 132132 | 10 | 5.783E+05 | 57834 | 10 | 1.194E+06 | 119404 | 10 | 6.387E+05 | 63865 | 10 |
| p-xylene (coelutes) | 6.205E+05 | 62054 | 10 | 7.964E+05 | 79643 | 10 | 1.321E+06 | 132132 | 10 | 5.783E+05 | 57834 | 10 | 1.194E+06 | 119404 | 10 | 6.387E+05 | 63865 | 10 |
| o-xylene (coelutes) | 1.776E+06 | 177590 | 10 | 1.155E+06 | 115540 | 10 | 1.324E+06 | 132421 | 10 | 7.829E+05 | 78291 | 10 | 1.233E+06 | 123259 | 10 | 1.054E+06 | 105379 | 10 |
| styrene (coelutes) | 1.776E+06 | 177590 | 10 | 1.155E+06 | 115540 | 10 | 1.324E+06 | 132421 | 10 | 7.829E+05 | 78291 | 10 | 1.233E+06 | 123259 | 10 | 1.054E+06 | 105379 | 10 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | | NUMBER 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| ECD IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | 07/14/97 055F0101 | area | conc. | 07/14/97 079F0201 | area | conc. | 07/15/97 086F0101 | area | conc. | 07/15/97 006F0301 | area | conc. | 07/16/97 009F0101 | area | conc. | 07/16/97 013F0101 | area | conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 8.562E+06 | 4281184 | 50 | 3.359E+06 | 1679404 | 50 | 8.047E+06 | 4023346 | 50 | 9.856E+06 | 4927890 | 50 | 1.446E+07 | 7227786 | 50 | 1.367E+07 | 6834076 | 50 |
| 1,1-dichloroethene | 3.881E+07 | 5821271 | 15 | 3.668E+07 | 5501940 | 15 | 3.971E+07 | 5957137 | 15 | 3.893E+07 | 5839701 | 15 | 4.842E+07 | 7262770 | 15 | 5.010E+07 | 7515489 | 15 |
| methylene chloride | 4.817E+06 | 2408472 | 50 | 1.115E+07 | 5575041 | 50 | 1.162E+07 | 5810774 | 50 | 1.153E+07 | 5763312 | 50 | 1.332E+07 | 6659626 | 50 | 4.736E+06 | 2368032 | 50 |
| chloroform (coelutes) | 3.919E+08 | 85833300 | 21.9 | 3.279E+08 | 71805300 | 21.9 | 3.327E+08 | 72856600 | 21.9 | 3.254E+08 | 71260100 | 21.9 | 3.196E+08 | 70001300 | 21.9 | 3.524E+08 | 77181900 | 21.9 |
| 1,1,1-trichloroethane (coelutes) | 1.086E+09 | 85833300 | 7.9 | 9.089E+08 | 71805300 | 7.9 | 9.222E+08 | 72856600 | 7.9 | 9.020E+08 | 71260100 | 7.9 | 8.861E+08 | 70001300 | 7.9 | 9.770E+08 | 77181900 | 7.9 |
| carbon tetrachloride (coelutes) | 6.603E+09 | 85833300 | 1.3 | 5.523E+09 | 71805300 | 1.3 | 5.604E+09 | 72856600 | 1.3 | 5.482E+09 | 71260100 | 1.3 | 5.385E+09 | 70001300 | 1.3 | 5.937E+09 | 77181900 | 1.3 |
| 1,2-dichloroethane | 2.564E+07 | 12819500 | 50 | 2.937E+06 | 1468373 | 50 | 1.841E+07 | 9206897 | 50 | 1.553E+07 | 7766614 | 50 | 1.426E+07 | 7129208 | 50 | 1.730E+07 | 8650604 | 50 |
| trichloroethene (ECD) | 6.814E+08 | 27254200 | 4 | 6.321E+08 | 25284000 | 4 | 6.705E+08 | 26821100 | 4 | 6.539E+08 | 26155600 | 4 | 6.360E+07 | 2543800 | 4 | 7.519E+08 | 30074800 | 4 |
| tetrachloroethene (ECD) (coelutes) | 1.035E+09 | 42446500 | 4.1 | 1.024E+09 | 41994800 | 4.1 | 1.115E+09 | 45707900 | 4.1 | 1.067E+09 | 43756500 | 4.1 | 1.092E+09 | 44779200 | 4.1 | 1.075E+09 | 44087900 | 4.1 |
| 1,1,2-trichloroethane (coelutes) | 3.290E+07 | 42446500 | 129 | 3.255E+07 | 41994800 | 129 | 3.543E+07 | 45707900 | 129 | 3.392E+07 | 43756500 | 129 | 3.471E+07 | 44779200 | 129 | 3.418E+07 | 44087900 | 129 |
| bromoform | 2.881E+08 | 11525800 | 4 | 2.847E+08 | 11387500 | 4 | 2.859E+08 | 11435800 | 4 | 2.955E+08 | 11820200 | 4 | 2.945E+08 | 11778900 | 4 | 3.105E+08 | 12418500 | 4 |
| 1,1,2,2-tetrachloroethane | 1.242E+08 | 4968719 | 4 | 1.131E+08 | 4524620 | 4 | 9.344E+07 | 3737549 | 4 | 1.140E+08 | 4558707 | 4 | 1.082E+08 | 4326316 | 4 | 1.147E+08 | 4588102 | 4 |

# INITIAL CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
July 23, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | NA | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | NA | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | NA | 2 101E+04 | 8 164E+03 | 1 455E+04 | NA | 1.457E+04 | 44.1 | NA | 0 | 5253 | 25 | 4082 | 50 | 14546 | 100 | NA | 0 |
| acetone (coelutes) | NA | NA | 5 975E+04 | 6 830E+04 | NA | 6.403E+04 | 9 4 | NA | 0 | NA | 0 | 77080 | 129 | 196034 | 287 | NA | 0 |
| trans-1,2-dichloroethene | NA | 1 042E+06 | 1 070E+06 | 9 443E+05 | NA | 1 019E+06 | 6 5 | NA | 0 | 52122 | 5 | 160474 | 15 | 424949 | 45 | NA | 0 |
| cis-1,2-dichloroethene | NA | 3 809E+05 | 2 254E+05 | 1 651E+05 | NA | 2 572E+05 | 43 3 | NA | 0 | 19047 | 5 | 33813 | 15 | 74302 | 45 | NA | 0 |
| carbon disulfide (coelutes) | NA | NA | 5 954E+04 | 7 386E+04 | NA | 6 670E+04 | 15 2 | NA | 0 | NA | 0 | 151242 | 254 | 375191 | 508 | NA | 0 |
| 2-butanone (coelutes) | NA | NA | 9 166E+04 | 1 137E+05 | NA | 1.027E+05 | 15 2 | NA | 0 | NA | 0 | 151242 | 165 | 375191 | 330 | NA | 0 |
| benzene | NA | NA | 2 448E+06 | 1 744E+06 | NA | 2 096E+06 | 23 8 | NA | 0 | NA | 0 | 122386 | 5 | 348717 | 20 | NA | 0 |
| trichloroethene (PID - MDL N/A) | NA | 5 796E+05 | 1.773E+06 | 1.968E+06 | NA | 1.440E+06 | 52.2 | NA | 0 | 11591 | 2 | 70907 | 4 | 157422 | 8 | NA | 0 |
| toluene (coelutes) | NA | NA | 4 683E+05 | 4 662E+05 | NA | 4 672E+05 | 0 3 | NA | 0 | NA | 0 | 103025 | 22 | 256404 | 55 | NA | 0 |
| 4-methyl-2-pentanone (coelutes) | NA | NA | 7.986E+04 | 8 140E+04 | NA | 8.063E+04 | 1 3 | NA | 0 | NA | 0 | 103025 | 129 | 256404 | 315 | NA | 0 |
| 2-hexanone | NA | NA | 7.479E+04 | 9.161E+04 | NA | 8.320E+04 | 14.3 | NA | 0 | NA | 0 | 74790 | 100 | 183224 | 200 | NA | 0 |
| tetrachloroethene (PID - MDL N/A) | NA | 1.090E+05 | 1.285E+06 | 1.667E+06 | NA | 1.020E+06 | 79.6 | NA | 0 | 2179 | 2 | 51390 | 4 | 133399 | 8 | NA | 0 |
| chlorobenzene | NA | 3.119E+05 | 6.268E+05 | 5.721E+05 | NA | 5.036E+05 | 33.4 | NA | 0 | 6237 | 2 | 25070 | 4 | 45771 | 8 | NA | 0 |
| ethylbenzene | NA | NA | 5.337E+05 | 3.738E+05 | NA | 4.538E+05 | 24.9 | NA | 0 | NA | 0 | 26687 | 5 | 74757 | 20 | NA | 0 |
| m-xylene (coelutes) | NA | NA | 4.855E+05 | 4.280E+05 | NA | 4.568E+05 | 8.9 | NA | 0 | NA | 0 | 48552 | 10 | 171195 | 40 | NA | 0 |
| p-xylene (coelutes) | NA | NA | 4.855E+05 | 4.280E+05 | NA | 4.568E+05 | 8.9 | NA | 0 | NA | 0 | 48552 | 10 | 171195 | 40 | NA | 0 |
| o-xylene (coelutes) | NA | NA | 2.913E+05 | 3.183E+05 | NA | 3.048E+05 | 6.3 | NA | 0 | NA | 0 | 29127 | 10 | 127325 | 40 | NA | 0 |
| styrene (coelutes) | NA | NA | 2.913E+05 | 3.183E+05 | NA | 3.048E+05 | 6.3 | NA | 0 | NA | 0 | 29127 | 10 | 127325 | 40 | NA | 0 |

| | level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | area | conc | area | conc. | area | conc | area | conc | area | conc. |
| | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | NA | 1.014E+07 | 2.386E+06 | 1.313E+06 | 4.658E+06 | 4.623E+06 | 85.0 | NA | 0 | 2533849 | 25 | 1192861 | 50 | 1313406 | 100 | 6987101 | 150 |
| 1,1-dichloroethene | NA | 2.803E+07 | 1.489E+07 | 9.800E+06 | 2.732E+06 | 1.386E+07 | 77.0 | NA | 0 | 1401495 | 5 | 2233338 | 15 | 4410036 | 45 | 3278081 | 120 |
| methylene chloride | NA | 3.714E+06 | 1.724E+06 | 1.734E+06 | 2.817E+06 | 2.498E+06 | 38.4 | NA | 0 | 742884 | 20 | 862181 | 50 | 1734407 | 100 | 4225541 | 150 |
| chloroform (coelutes) | NA | 1.742E+08 | 1.110E+08 | 1.040E+08 | NA | 1.298E+08 | 29.8 | NA | 0 | 19167400 | 11 | 24317400 | 21.9 | 45571500 | 43.8 | NA | 0 |
| 1,1,1-trichloroethane (coelutes) | NA | 4.792E+08 | 3.078E+08 | 2.866E+08 | NA | 3.579E+08 | 29.5 | NA | 0 | 11672000 | 4 | 11672000 | 7.9 | 23571500 | 15.9 | NA | 0 |
| carbon tetrachloride (coelutes) | NA | 2.995E+09 | 1.871E+09 | 1.823E+09 | NA | 2.229E+09 | 29.8 | NA | 0 | 11672000 | 0.84 | 11672000 | 1.3 | 23571500 | 2.5 | NA | 0 |
| 1,2-dichloroethane | NA | NA | 6.261E+06 | 3.547E+06 | 1.139E+07 | 7.065E+06 | 56.4 | NA | 0 | NA | 0 | 3130698 | 50 | 3548533 | 100 | 17079700 | 150 |
| trichloroethene (ECD) | 3.424E+08 | 2.656E+08 | 2.343E+08 | 2.086E+08 | NA | 2.627E+08 | 22.1 | 3423722 | 1 | 5312441 | 2 | 9370829 | 4 | 16687500 | 8 | NA | 0 |
| tetrachloroethene (ECD) (coelutes) | 5.724E+08 | 5.038E+08 | 3.915E+08 | 3.354E+08 | NA | 4.508E+08 | 23.8 | 5724389 | 1 | 10579800 | 2.1 | 16051400 | 4.1 | 27837200 | 8.3 | NA | 0 |
| 1,1,2-trichloroethane (coelutes) | 1.789E+07 | 1.628E+07 | 1.244E+07 | 1.079E+07 | NA | 1.435E+07 | 23.0 | 1789E+07 | 32 | 1628E+07 | 65 | 1244E+07 | 129 | 2787E+07 | 258 | NA | 0 |
| bromoform | 9.538E+07 | 1.197E+08 | 9.725E+07 | 8.433E+07 | NA | 9.916E+07 | 15.0 | 953767 | 1 | 2394070 | 2 | 3889953 | 4 | 6748215 | 8 | NA | 0 |
| 1,1,2,2-tetrachloroethane | 3.287E+07 | 4.302E+07 | 2.562E+07 | 2.301E+07 | NA | 3.113E+07 | 28.8 | 328670 | 1 | 860443 | 2 | 1024745 | 4 | 1840513 | 8 | NA | 0 |

**CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD**
**July 23 to August 05 , 1997**

| DATE: | | | 07/25/97 | | 07/25/97 | | 07/25/97 | | 07/26/97 | | 07/26/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | |
| | INITIAL CALIBRATION | | 056R0101 | | 078R0101 | | 091R0101 | | 094R0101 | | 025R0201 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 1.457E+04 | 44.1 | 1.278E+04 | -12.3 | 1.920E+04 | 31.7 | 1.621E+04 | 11.2 | 1.005E+04 | -31.0 | 8.818E+03 | 39.5 |
| acetone (coelutes) | 6.403E+04 | 9.4 | 4.502E+04 | -29.7 | 7.993E+04 | 24.8 | 6.469E+04 | 1.0 | 6.891E+04 | 7.6 | 5.180E+04 | -19.1 |
| trans-1,2-dichloroethene | 1.019E+06 | 6.5 | 8.381E+05 | -17.7 | 8.638E+04 | 15.2 | 7.311E+05 | -28.2 | 6.118E+05 | -40.0 | 4.476E+05 | -56.1 |
| cis-1,2-dichloroethene | 2.572E+05 | 43.3 | 3.186E+05 | 23.9 | 1.913E+05 | 25.6 | 3.405E+05 | 32.4 | 2.376E+05 | -7.6 | 1.697E+05 | -34.0 |
| carbon disulfide (coelutes) | 6.670E+04 | 15.2 | 3.804E+04 | -43.0 | 2.472E+04 | -62.9 | 6.033E+04 | -9.6 | 6.265E+04 | -6.1 | 2.727E+04 | -59.1 |
| 2-butanone (coelutes) | 1.027E+05 | 15.2 | 5.856E+04 | -43.0 | 3.805E+04 | -62.9 | 9.287E+04 | -9.6 | 9.644E+04 | -6.1 | 4.197E+04 | -59.1 |
| benzene | 2.096E+06 | 23.8 | 1.214E+06 | -42.1 | 2.479E+06 | 18.3 | 2.645E+06 | 26.2 | 1.817E+06 | -13.3 | 1.692E+06 | -19.3 |
| trichloroethene (PID - MDL N/A) | 1.440E+06 | 52.2 | 1.474E+06 | 2.4 | 1.080E+06 | -25.0 | 1.256E+06 | -12.8 | 1.163E+06 | -19.2 | 1.131E+06 | -21.4 |
| toluene (coelutes) | 4.672E+05 | 0.3 | 3.793E+05 | -18.8 | 6.700E+05 | 43.4 | 6.724E+05 | 43.9 | 3.616E+05 | -22.6 | 2.805E+05 | -40.0 |
| 4-methyl-2-pentanone (coelutes | 8.063E+04 | 1.3 | 6.468E+04 | -19.8 | 1.143E+05 | 41.7 | 1.147E+05 | 42.2 | 6.167E+04 | -23.5 | 4.784E+04 | -40.7 |
| 2-hexanone | 8.320E+04 | 14.3 | 1.049E+05 | 26.1 | 7.486E+04 | -10.0 | 7.028E+04 | -15.5 | 2.808E+04 | -66.3 | 1.723E+04 | -79.3 |
| tetrachloroethene (PID - MDL N/ | 1.020E+06 | 79.6 | 1.367E+06 | 34.0 | 4.765E+05 | -53.3 | 5.236E+05 | -48.7 | 1.067E+06 | 4.5 | 1.129E+06 | 10.6 |
| chlorobenzene | 5.036E+05 | 33.4 | 5.454E+05 | 8.3 | 3.403E+05 | -32.4 | 3.148E+05 | -37.5 | 4.684E+05 | -7.0 | 4.221E+05 | -16.2 |
| ethylbenzene | 4.538E+05 | 24.9 | 4.365E+05 | -3.8 | 3.261E+05 | -28.1 | 2.886E+05 | -36.4 | 3.285E+05 | -27.6 | 2.875E+05 | -36.6 |
| m-xylene (coelutes) | 4.568E+05 | 8.9 | 3.985E+05 | -12.8 | 2.830E+05 | -38.0 | 2.316E+05 | -49.3 | 3.028E+05 | -33.7 | 2.465E+05 | -46.0 |
| p-xylene (coelutes) | 4.568E+05 | 8.9 | 3.985E+05 | -12.8 | 2.830E+05 | -38.0 | 2.316E+05 | -49.3 | 3.028E+05 | -33.7 | 2.465E+05 | -46.0 |
| o-xylene (coelutes) | 3.048E+05 | 6.3 | 2.723E+05 | -10.7 | 4.878E+05 | 60.0 | 4.310E+05 | 41.4 | 3.097E+05 | 1.6 | 2.418E+05 | -20.7 |
| styrene (coelutes) | 3.048E+05 | 6.3 | 2.723E+05 | -10.7 | 4.878E+05 | 60.0 | 4.310E+05 | 41.4 | 3.097E+05 | 1.6 | 2.418E+05 | -20.7 |

| | INITIAL CALIBRATION | | 056F0101 | | 078F0101 | | 091F0101 | | 094F0101 | | 025F0201 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 4.623E+06 | 85.0 | 2.919E+06 | -36.9 | 2.874E+06 | -37.8 | 2.687E+06 | -41.9 | 1.913E+06 | -58.6 | 1.825E+06 | -60.5 |
| 1,1-dichloroethene | 1.386E+07 | 77.0 | 1.051E+07 | -24.2 | 1.367E+07 | -1.4 | 1.257E+07 | -9.3 | 1.426E+07 | 2.9 | 1.248E+07 | -10.0 |
| methylene chloride | 2.498E+06 | 38.4 | 5.689E+06 | 127.8 | 1.337E+06 | -46.5 | 1.470E+06 | -41.1 | 1.131E+06 | -54.7 | 9.339E+05 | -62.6 |
| chloroform (coelutes) | 1.298E+08 | 29.8 | 1.001E+08 | -22.9 | 1.045E+08 | -19.5 | 9.542E+07 | -26.5 | 7.115E+07 | -45.2 | 6.166E+07 | -52.5 |
| 1,1,1-trichloroethane (coelutes) | 3.579E+08 | 29.5 | 2.774E+08 | -22.5 | 2.897E+08 | -19.1 | 2.645E+08 | -26.1 | 1.972E+08 | -44.9 | 1.709E+08 | -52.2 |
| carbon tetrachloride (coelutes) | 2.229E+09 | 29.8 | 1.686E+09 | -24.4 | 1.760E+09 | -21.0 | 1.607E+09 | -27.9 | 1.199E+09 | -46.2 | 1.039E+09 | -53.4 |
| 1,2-dichloroethane | 7.065E+06 | 56.4 | 2.849E+06 | -59.7 | 1.918E+06 | -72.8 | 1.659E+06 | -76.5 | 4.161E+06 | -41.1 | 4.489E+06 | -36.5 |
| trichloroethene (ECD) | 2.627E+08 | 22.1 | 2.155E+08 | -18.0 | 2.118E+08 | -19.4 | 1.985E+08 | -24.4 | 2.143E+08 | -18.4 | 1.931E+08 | -26.5 |
| tetrachloroethene (ECD) (coelut | 4.508E+08 | 23.8 | 3.542E+08 | -21.4 | 2.997E+08 | -33.5 | 2.799E+08 | -37.9 | 3.252E+08 | -27.9 | 2.863E+08 | -36.5 |
| 1,1,2-trichloroethane (coelutes) | 1.435E+07 | 23.0 | 1.126E+07 | -21.5 | 9.526E+06 | -33.6 | 8.895E+06 | -38.0 | 1.033E+07 | -28.0 | 9.099E+06 | -36.6 |
| bromoform | 9.916E+07 | 15.0 | 9.519E+07 | -4.0 | 9.201E+07 | -7.2 | 9.340E+07 | -5.8 | 3.699E+07 | -62.7 | 4.772E+07 | -51.9 |
| 1,1,2,2-tetrachloroethane | 3.113E+07 | 28.8 | 2.467E+07 | -20.7 | 3.270E+07 | 5.1 | 3.084E+07 | -0.9 | 2.380E+07 | -23.6 | 2.692E+07 | -13.5 |

**CONTINUING CALIBRATION SUMMARY - EXTERNAL STAND**
**July 23 to August 05 , 1997**

| DATE: | | | 07/27/97 | | 07/28/97 | | 07/28/97 | | 07/29/97 | | 07/30/97 | | 07/30/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | | 7 | | 8 | | 9 | | 10 | | 11 | |
| | INITIAL CALIBRATION | | 027R0101 | | 052R0101 | | 055R0101 | | 080R0101 | | 097R0101 | | 100R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 1.457E+03 | 44.1 | 8.574E+03 | 41.2 | 1.099E+03 | -24.6 | 1.168E+03 | -19.8 | 8.096E+03 | -44.4 | 1.427E+04 | -2.1 | 1.429E+04 | 2.0 |
| acetone (coelutes) | 6.403E+04 | 9.4 | 5.839E+04 | -8.8 | 5.705E+04 | -10.9 | 5.231E+04 | -18.3 | 3.998E+04 | -37.6 | 6.925E+04 | 8.2 | 6.416E+04 | 0.2 |
| trans-1,2-dichloroethene | 1.019E+06 | 6.5 | 7.075E+05 | 30.6 | 7.132E+05 | -30.0 | 6.912E+05 | -32.2 | 5.657E+05 | -44.5 | 8.400E+05 | -17.6 | 7.920E+05 | -22.3 |
| cis-1,2-dichloroethene | 2.572E+05 | 43.3 | 4.334E+05 | 68.5 | 4.452E+05 | 73.1 | 2.734E+05 | [illegible] | 3.482E+05 | 35.4 | 4.178E+05 | 62.5 | 1.874E+05 | [illegible] |
| carbon disulfide (coelutes) | 6.[illegible]0E+03 | 15.2 | 1.015E+04 | -84.8 | 1.582E+04 | -76.3 | 1.903E+04 | -71.5 | 1.025E+04 | -84.6 | 1.331E+04 | -80.0 | 3.321E+04 | -50.2 |
| 2-butanone (coelutes) | 1.027E+05 | 15.2 | 1.563E+04 | -84.8 | 2.436E+04 | -76.3 | 2.929E+04 | -71.5 | 1.578E+04 | -84.6 | 2.049E+04 | -80.0 | 5.112E+04 | -50.2 |
| benzene | 2.096E+06 | 23.8 | 1.806E+06 | -13.8 | 1.682E+06 | -19.7 | 1.104E+06 | -47.3 | 1.301E+06 | -37.9 | 1.787E+06 | -14.7 | 1.097E+06 | -47.7 |
| trichloroethene (PID - MDL N/A) | 1.440E+06 | 52.2 | 1.192E+06 | -17.2 | 1.125E+06 | -21.9 | 4.704E+05 | -67.3 | 6.258E+05 | -56.5 | 8.632E+05 | -40.1 | 5.431E+05 | -62.3 |
| toluene (coelutes) | 4.672E+05 | 0.3 | 2.681E+05 | -42.6 | 2.866E+05 | -38.7 | 5.378E+05 | 15.1 | 4.960E+05 | 6.2 | 5.260E+05 | 12.6 | 5.427E+05 | 16.2 |
| 4-methyl-2-pentanone (coelutes | 8.063E+04 | 1.3 | 4.572E+04 | -43.3 | 4.887E+04 | -39.4 | 9.171E+04 | 13.7 | 8.459E+04 | 4.9 | 8.971E+04 | 11.3 | 9.256E+04 | 14.8 |
| 2-hexanone | 8.320E+04 | 14.3 | 1.768E+04 | -78.7 | 1.108E+04 | -86.7 | 6.168E+04 | -25.9 | 7.260E+04 | -12.7 | 6.679E+04 | -19.7 | 8.315E+04 | -0.1 |
| tetrachloroethene (PID - MDL N/ | 1.020E+06 | 79.6 | 1.433E+06 | 40.4 | 1.131E+06 | 10.8 | 4.647E+05 | -54.5 | 2.917E+05 | -71.4 | 4.277E+05 | -58.1 | 4.744E+05 | -53.5 |
| chlorobenzene | 5.036E+05 | 33.4 | 4.952E+05 | -1.7 | 4.319E+05 | -14.2 | 3.854E+05 | -23.5 | 2.973E+05 | -41.0 | 3.132E+05 | -37.8 | 4.098E+05 | -18.6 |
| ethylbenzene | 4.538E+05 | 24.9 | 4.100E+05 | -9.7 | 3.195E+05 | -29.6 | 3.660E+05 | -19.3 | 2.484E+05 | -45.3 | 3.261E+05 | -28.1 | 2.555E+05 | -43.7 |
| m-xylene (coelutes) | 4.568E+05 | 8.9 | 3.796E+05 | -16.9 | 3.011E+05 | -34.1 | 2.725E+05 | -40.3 | 2.142E+05 | -53.1 | 2.840E+05 | -37.8 | 1.736E+05 | -62.0 |
| p-xylene (coelutes) | 4.568E+05 | 8.9 | 3.796E+05 | -16.9 | 3.011E+05 | -34.1 | 2.725E+05 | -40.3 | 2.142E+05 | -53.1 | 2.840E+05 | -37.8 | 1.736E+05 | -62.0 |
| o-xylene (coelutes) | 3.048E+05 | 6.3 | 2.456E+05 | -19.4 | 3.068E+05 | 0.7 | 3.571E+05 | 17.1 | 2.617E+05 | -14.1 | 3.672E+05 | 20.5 | 2.314E+05 | -24.1 |
| styrene (coelutes) | 3.048E+05 | 6.3 | 2.456E+05 | -19.4 | 3.068E+05 | 0.7 | 3.571E+05 | 17.1 | 2.617E+05 | -14.1 | 3.672E+05 | 20.5 | 2.314E+05 | -24.1 |

| | INITIAL CALIBRATION | | 027F0101 | | 052F0101 | | 055F0101 | | 080F0101 | | 097F0101 | | 100F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 4.623E+06 | 85.0 | 1.631E+06 | -64.7 | 2.005E+06 | -56.6 | 3.872E+06 | -16.2 | 4.879E+06 | 5.5 | 5.273E+06 | 14.1 | 4.817E+06 | 4.2 |
| 1,1-dichloroethene | 1.386E+07 | 77.0 | 1.445E+07 | 4.2 | 1.415E+07 | 2.1 | 1.067E+07 | -23.1 | 8.423E+06 | -39.2 | 1.406E+07 | 1.4 | 1.443E+07 | 4.1 |
| methylene chloride | 2.498E+06 | 38.4 | 8.627E+05 | -65.5 | 1.162E+06 | -53.5 | 1.483E+06 | -40.6 | 3.134E+06 | 25.5 | 1.578E+06 | -36.8 | 4.419E+06 | 76.9 |
| chloroform (coelutes) | 1.298E+08 | 29.8 | 7.298E+06 | -94.4 | 6.783E+07 | -47.7 | 6.736E+07 | -48.1 | 5.848E+07 | -54.9 | 6.397E+07 | -50.7 | 8.074E+07 | -37.8 |
| 1,1,1-trichloroethane (coelutes) | 3.579E+08 | 29.5 | 2.023E+07 | -94.3 | 1.880E+08 | -47.5 | 1.867E+08 | -47.8 | 1.621E+08 | -54.7 | 1.773E+08 | -50.4 | 2.238E+08 | -37.5 |
| carbon tetrachloride (coelutes) | 2.229E+09 | 29.8 | 1.229E+08 | -94.5 | 1.143E+09 | -48.7 | 1.135E+09 | -49.1 | 9.851E+08 | -55.8 | 1.078E+09 | -51.7 | 1.360E+09 | -39.0 |
| 1,2-dichloroethane | 7.065E+06 | 56.4 | 3.044E+06 | -56.9 | 1.464E+06 | -79.3 | 1.144E+06 | -83.8 | 1.468E+06 | -79.2 | 3.203E+06 | -54.7 | 1.833E+06 | -74.1 |
| trichloroethene (ECD) | 2.627E+08 | 22.1 | 2.152E+08 | -18.1 | 1.994E+08 | -24.1 | 1.644E+08 | -37.4 | 1.623E+08 | -38.2 | 1.945E+08 | -26.0 | 1.885E+08 | -28.3 |
| tetrachloroethene (ECD) (coelut | 4.508E+08 | 23.8 | 3.293E+08 | -26.9 | 2.974E+08 | -34.0 | 2.399E+08 | -46.8 | 1.852E+08 | -58.9 | 2.968E+08 | -34.2 | 2.947E+08 | -34.6 |
| 1,1,2-trichloroethane (coelutes) | 1.435E+07 | 23.0 | 1.047E+07 | -27.1 | 9.451E+06 | -34.1 | 7.626E+06 | -46.9 | 5.888E+06 | -59.0 | 9.432E+06 | -34.3 | 9.366E+06 | -34.7 |
| bromoform | 9.916E+07 | 15.0 | 4.512E+07 | -54.5 | 9.396E+07 | -5.3 | 8.371E+07 | -15.6 | 8.744E+07 | -11.8 | 8.884E+07 | -10.4 | 9.365E+07 | -5.6 |
| 1,1,2,2-tetrachloroethane | 3.113E+07 | 28.8 | 1.990E+07 | -36.1 | 2.641E+07 | -15.2 | 2.678E+07 | -14.0 | 3.259E+07 | 4.7 | 3.159E+07 | 1.5 | 2.942E+07 | -5.5 |

| | | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | area | conc. | area | conc. | area | conc. | area |
| PID IS2 AREAS | PID IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 |
| PID IS3 AREAS | PID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 |

| PID COMPOUNDS | PID COMPOUNDS | 07/25/97 056R0101 | area | conc. | 07/25/97 078R0101 | area | conc. | 07/25/97 091R0101 | area | conc. | 07/26/97 094R0101 | area | conc. | 07/26/97 025R0201 | area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | vinyl chloride | 1.278E+04 | 6388 | 50 | 1.920E+04 | 9600 | 50 | 1.621E+04 | 8103 | 50 | 1.005E+04 | 5025 | 50 | 8.818E+03 | 4409 |
| acetone (coelutes) | acetone (coelutes) | 4.502E+04 | 58073 | 129 | 7.993E+04 | 103107 | 129 | 6.469E+04 | 83454 | 129 | 6.891E+04 | 88889 | 129 | 5.180E+04 | 66828 |
| trans-1,2-dichloroethene | trans-1,2-dichloroethene | 8.381E+05 | 125717 | 15 | 8.638E+05 | 129570 | 15 | 7.311E+05 | 109666 | 15 | 6.118E+05 | 91765 | 15 | 4.476E+05 | 67137 |
| cis-1,2-dichloroethene | cis-1,2-dichloroethene | 3.186E+05 | 47789 | 15 | 1.913E+05 | 28689 | 15 | 3.405E+05 | [illegible] | 15 | 2.376E+05 | 35641 | 15 | 1.697E+05 | 25453 |
| carbon disulfide (coelutes) | carbon disulfide (coelutes) | 3.804E+04 | 96828 | 254 | 2.472E+04 | 62788 | [illegible] | 6.033E+04 | [illegible] | [illegible] | 6.255E+04 | 159133 | 254 | 2.72[illegible]E+04 | 69258 |
| 2-butanone (coelutes) | 2-butanone (coelutes) | 5.856E+04 | 96828 | 165 | 3.805E+04 | 62788 | 165 | 9.287E+04 | [illegible] | 165 | 9.644E+04 | 159133 | 165 | 4.197E+04 | 69258 |
| benzene | benzene | 1.214E+06 | 60675 | 5 | 2.479E+06 | 123948 | 5 | 2.645E+06 | [illegible] | 5 | 1.817E+06 | 90836 | 5 | 1.692E+06 | [illegible] |
| trichloroethene (PID - MDL N/A) | trichloroethene (PID - MDL N/A) | 1.474E+06 | 58977 | 4 | 1.080E+06 | 43205 | 4 | 1.256E+06 | 50241 | 4 | 1.163E+06 | 46533 | 4 | 1.131E+06 | 45257 |
| toluene (coelutes) | toluene (coelutes) | 3.793E+05 | 83437 | 22 | 6.700E+05 | 147389 | 22 | 6.724E+05 | 147917 | 22 | 3.616E+05 | 79559 | 22 | 2.805E+05 | 61713 |
| 4-methyl-2-pentanone (coelutes) | 4-methyl-2-pentanone (coelutes) | 6.468E+04 | 83437 | 129 | 1.143E+05 | 147389 | 129 | 1.147E+05 | 147917 | 129 | 6.167E+04 | 79559 | 129 | 4.784E+04 | 61713 |
| 2-hexanone | 2-hexanone | 1.049E+05 | 104944 | 100 | 7.486E+04 | 74857 | 100 | 7.028E+04 | 70282 | 100 | 2.808E+04 | 28079 | 100 | 1.723E+04 | 17225 |
| tetrachloroethene (PID - MDL N/A) | tetrachloroethene (PID - MDL N/A) | 1.367E+06 | 54688 | 4 | 4.765E+05 | 19058 | 4 | 5.236E+05 | 20945 | 4 | 1.067E+06 | 42666 | 4 | 1.129E+06 | 45153 |
| chlorobenzene | chlorobenzene | 5.454E+05 | 21816 | 4 | 3.403E+05 | 13613 | 4 | 3.148E+05 | 12592 | 4 | 4.684E+05 | 18737 | 4 | 4.221E+05 | 16883 |
| ethylbenzene | ethylbenzene | 4.365E+05 | 21826 | 5 | 3.261E+05 | 16307 | 5 | 2.886E+05 | 14429 | 5 | 3.285E+05 | 16424 | 5 | 2.875E+05 | 14377 |
| m-xylene (coelutes) | m-xylene (coelutes) | 3.985E+05 | 39848 | 10 | 2.830E+05 | 28299 | 10 | 2.316E+05 | 23163 | 10 | 3.028E+05 | 30279 | 10 | 2.465E+05 | 24651 |
| p-xylene (coelutes) | p-xylene (coelutes) | 3.985E+05 | 39848 | 10 | 2.830E+05 | 28299 | 10 | 2.316E+05 | 23163 | 10 | 3.028E+05 | 30279 | 10 | 2.465E+05 | 24651 |
| o-xylene (coelutes) | o-xylene (coelutes) | 2.723E+05 | 27226 | 10 | 4.878E+05 | 48778 | 10 | 4.310E+05 | 43102 | 10 | 3.097E+05 | 30972 | 10 | 2.418E+05 | 24183 |
| styrene (coelutes) | styrene (coelutes) | 2.723E+05 | 27226 | 10 | 4.878E+05 | 48778 | 10 | 4.310E+05 | 43102 | 10 | 3.097E+05 | 30972 | 10 | 2.418E+05 | 24183 |

| | | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | ECD IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 |
| ECID IS3 AREAS | ECID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 |

| ECD COMPOUNDS | ECD COMPOUNDS | 07/25/97 056F0101 | area | conc. | 07/25/97 078F0101 | area | conc. | 07/25/97 091F0101 | area | conc. | 07/26/97 094F0101 | area | conc. | 07/26/97 025F0201 | area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | bromomethane | 2.919E+06 | 1459625 | 50 | 2.874E+06 | 1437186 | 50 | 2.687E+06 | 1343489 | 50 | 1.913E+06 | 956368 | 50 | 1.825E+06 | 912711 |
| 1,1-dichloroethene | 1,1-dichloroethene | 1.051E+07 | 1576421 | 15 | 1.367E+07 | 2050424 | 15 | 1.257E+07 | 1885488 | 15 | 1.426E+07 | 2138677 | 15 | 1.248E+07 | 1871453 |
| methylene chloride | methylene chloride | 5.689E+06 | 2844707 | 50 | 1.337E+06 | 668512 | 50 | 1.470E+06 | 734939 | 50 | 1.131E+06 | 565723 | 50 | 9.339E+05 | 466972 |
| chloroform (coelutes) | chloroform (coelutes) | 1.001E+08 | 21914200 | 21.9 | 1.045E+08 | 22882700 | 21.9 | 9.542E+07 | 20896200 | 21.9 | 7.115E+07 | 15582300 | 21.9 | 6.166E+07 | 13504600 |
| 1,1,1-trichloroethane (coelutes) | 1,1,1-trichloroethane (coelutes) | 2.774E+08 | 21914200 | 7.9 | 2.897E+08 | 22882700 | 7.9 | 2.645E+08 | 20896200 | 7.9 | 1.972E+08 | 15582300 | 7.9 | 1.709E+08 | 13504600 |
| carbon tetrachloride (coelutes) | carbon tetrachloride (coelutes) | 1.686E+09 | 21914200 | 1.3 | 1.760E+09 | 22882700 | 1.3 | 1.607E+09 | 20896200 | 1.3 | 1.199E+09 | 15582300 | 1.3 | 1.039E+09 | 13504600 |
| 1,2-dichloroethane | 1,2-dichloroethane | 2.849E+06 | 1424460 | 50 | 1.918E+06 | 959057 | 50 | 1.659E+06 | 829553 | 50 | 4.161E+06 | 2080516 | 50 | 4.489E+06 | 2244561 |
| trichloroethene (ECD) | trichloroethene (ECD) | 2.155E+08 | 8619515 | 4 | 2.118E+08 | 8471468 | 4 | 1.985E+08 | 7939557 | 4 | 2.143E+08 | 8570204 | 4 | 1.931E+08 | 7723540 |
| tetrachloroethene (ECD) (coelutes) | tetrachloroethene (ECD) (coelutes) | 3.542E+08 | 14523100 | 4.1 | 2.997E+08 | 12288600 | 4.1 | 2.799E+08 | 11475000 | 4.1 | 3.252E+08 | 13331200 | 4.1 | 2.863E+08 | 11737700 |
| 1,1,2-trichloroethane (coelutes) | 1,1,2-trichloroethane (coelutes) | 1.126E+07 | 14523100 | 129 | 9.526E+06 | 12288600 | 129 | 8.895E+06 | 11475000 | 129 | 1.033E+07 | 13331200 | 129 | 9.099E+06 | 11737700 |
| bromoform | bromoform | 9.519E+07 | 3807748 | 4 | 9.201E+07 | 3680541 | 4 | 9.340E+07 | 3736172 | 4 | 3.699E+07 | 1479489 | 4 | 4.772E+07 | 1908859 |
| 1,1,2,2-tetrachloroethane | 1,1,2,2-tetrachloroethane | 2.467E+07 | 986884 | 4 | 3.270E+07 | 1308079 | 4 | 3.084E+07 | 1233451 | 4 | 2.380E+07 | 951860 | 4 | 2.692E+07 | 1076705 |

| | | NUMBER 6 | | NUMBER 7 | | NUMBER 8 | | NUMBER 9 | | NUMBER 10 | | NUMBER 11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | conc. | area | conc | area | conc | area | conc | area | conc. | area | conc | area | conc |
| PID IS2 AREAS | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| PID IS3 AREAS | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| PID COMPOUNDS | 07/27/97 conc | 027R0101 | area | 07/28/97 conc. | 052R0101 | area | 07/28/97 conc | 055R0101 | area | 07/29/97 conc | 080R0101 | area | 07/30/97 conc. | 097R0101 | area | 07/30/97 conc | 100R0101 | area | conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 50 | 8.574E+03 | 4287 | 50 | 1.099E+04 | 5493 | 50 | 1.168E+04 | 5841 | 50 | 8.096E+03 | 4048 | 50 | 1.427E+04 | 7134 | 50 | 1.429E+04 | 7144 | 50 |
| acetone (coelutes) | 129 | 5.839E+04 | 75320 | 129 | 5.705E+04 | 73599 | 129 | 5.231E+04 | 67483 | 129 | 3.998E+04 | 51579 | 129 | 6.925E+04 | 89336 | 129 | 6.416E+04 | 82767 | 129 |
| trans-1,2-dichloroethene | 15 | 7.075E+05 | 106129 | 15 | 7.132E+05 | 106983 | 15 | 6.912E+05 | 103678 | 15 | 5.657E+05 | 84849 | 15 | 8.400E+05 | 125997 | 15 | 7.920E+05 | 118807 | 15 |
| cis-1,2-dichloroethene | 15 | 4.334E+05 | 65016 | 15 | 4.452E+05 | 66781 | 15 | 2.734E+05 | 41009 | 15 | 3.482E+05 | 52231 | 15 | 4.178E+05 | 62668 | 15 | 1.874E+05 | 28114 | 15 |
| carbon disulfide (coelutes) | | 1.515E+04 | 25785 | 164 | 1.582E+04 | 40194 | 164 | 1.903E+04 | 48330 | 164 | 1.025E+04 | 26031 | 164 | 1.331E+04 | 33811 | 164 | [illegible] | 84341 | [illegible] |
| 2-butanone (coelutes) | 165 | 1.563E+04 | 25785 | 165 | 2.436E+04 | 40194 | 165 | 2.929E+04 | 48330 | 165 | 1.578E+04 | 26031 | 165 | 2.049E+04 | 33811 | 165 | 5.112E+04 | 84341 | 165 |
| benzene | 5 | 1.806E+06 | 90311 | 5 | 1.682E+06 | 84106 | 5 | 1.104E+06 | 55179 | 5 | 1.301E+06 | 65068 | 5 | 1.787E+06 | [illegible] | 5 | 1.097E+06 | 51825 | [illegible] |
| trichloroethene (PID - MDL N/A) | 4 | 1.192E+06 | 47699 | 4 | 1.125E+06 | 44981 | 4 | 4.704E+05 | 18817 | 4 | 6.258E+05 | 25030 | 4 | 8.632E+05 | 34527 | 4 | 5.431E+05 | 21725 | 4 |
| toluene (coelutes) | 22 | 2.681E+05 | 58983 | 22 | 2.866E+05 | 63044 | 22 | 5.378E+05 | 118305 | 22 | 4.960E+05 | 109117 | 22 | 5.260E+05 | 115727 | 22 | 5.427E+05 | 119402 | 22 |
| 4-methyl-2-pentanone (coelutes) | 129 | 4.572E+04 | 58983 | 129 | 4.887E+04 | 63044 | 129 | 9.171E+04 | 118305 | 129 | 8.459E+04 | 109117 | 129 | 8.971E+04 | 115727 | 129 | 9.256E+04 | 119402 | 129 |
| 2-hexanone | 100 | 1.768E+04 | 17683 | 100 | 1.108E+04 | 11078 | 100 | 6.168E+04 | 61678 | 100 | 7.260E+04 | 72601 | 100 | 6.679E+04 | 66786 | 100 | 8.315E+04 | 83153 | 100 |
| tetrachloroethene (PID - MDL N/A) | 4 | 1.433E+06 | 57318 | 4 | 1.131E+06 | 45230 | 4 | 4.647E+05 | 18586 | 4 | 2.917E+05 | 11669 | 4 | 4.277E+05 | 17106 | 4 | 4.744E+05 | 18977 | 4 |
| chlorobenzene | 4 | 4.952E+05 | 19808 | 4 | 4.319E+05 | 17277 | 4 | 3.854E+05 | 15417 | 4 | 2.973E+05 | 11890 | 4 | 3.132E+05 | 12526 | 4 | 4.098E+05 | 16391 | 4 |
| ethylbenzene | 5 | 4.100E+05 | 20498 | 5 | 3.195E+05 | 15975 | 5 | 3.660E+05 | 18302 | 5 | 2.484E+05 | 12418 | 5 | 3.261E+05 | 16303 | 5 | 2.555E+05 | 12775 | 5 |
| m-xylene (coelutes) | 10 | 3.796E+05 | 37960 | 10 | 3.011E+05 | 30112 | 10 | 2.725E+05 | 27250 | 10 | 2.142E+05 | 21415 | 10 | 2.840E+05 | 28399 | 10 | 1.736E+05 | 17364 | 10 |
| p-xylene (coelutes) | 10 | 3.796E+05 | 37960 | 10 | 3.011E+05 | 30112 | 10 | 2.725E+05 | 27250 | 10 | 2.142E+05 | 21415 | 10 | 2.840E+05 | 28399 | 10 | 1.736E+05 | 17364 | 10 |
| o-xylene (coelutes) | 10 | 2.456E+05 | 24562 | 10 | 3.068E+05 | 30682 | 10 | 3.571E+05 | 35705 | 10 | 2.617E+05 | 26167 | 10 | 3.672E+05 | 36715 | 10 | 2.314E+05 | 23137 | 10 |
| styrene (coelutes) | 10 | 2.456E+05 | 24562 | 10 | 3.068E+05 | 30682 | 10 | 3.571E+05 | 35705 | 10 | 2.617E+05 | 26167 | 10 | 3.672E+05 | 36715 | 10 | 2.314E+05 | 23137 | 10 |

| | | NUMBER 6 | | NUMBER 7 | | NUMBER 8 | | NUMBER 9 | | NUMBER 10 | | NUMBER 11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| ECID IS3 AREAS | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | 07/27/97 conc. | 027F0101 | area | 07/28/97 conc. | 052F0101 | area | 07/28/97 conc. | 055F0101 | area | 07/29/97 conc. | 080F0101 | area | 07/30/97 conc. | 097F0101 | area | 07/30/97 conc | 100F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 50 | 1.631E+06 | 815511 | 50 | 2.005E+06 | 1002552 | 50 | 3.872E+06 | 1936038 | 50 | 4.879E+06 | 2439647 | 50 | 5.273E+06 | 2636697 | 50 | 4.817E+06 | 2408745 | 50 |
| 1,1-dichloroethene | 15 | 1.445E+07 | 2167230 | 15 | 1.415E+07 | 2122378 | 15 | 1.067E+07 | 1600011 | 15 | 8.423E+06 | 1263415 | 15 | 1.406E+07 | 2108717 | 15 | 1.443E+07 | 2164399 | 15 |
| methylene chloride | 50 | 8.627E+05 | 431333 | 50 | 1.162E+06 | 581131 | 50 | 1.483E+06 | 741731 | 50 | 3.134E+06 | 1567075 | 50 | 1.578E+06 | 789050 | 50 | 4.419E+06 | 2209512 | 50 |
| chloroform (coelutes) | 21.9 | 7.298E+06 | 1598300 | 21.9 | 6.783E+07 | 14853900 | 21.9 | 6.736E+07 | 14752000 | 21.9 | 5.848E+07 | 12806100 | 21.9 | 6.397E+07 | 14009500 | 21.9 | 8.074E+07 | 17682200 | 21.9 |
| 1,1,1-trichloroethane (coelutes) | 7.9 | 2.023E+07 | 1598300 | 7.9 | 1.880E+08 | 14853900 | 7.9 | 1.867E+08 | 14752000 | 7.9 | 1.621E+08 | 12806100 | 7.9 | 1.773E+08 | 14009500 | 7.9 | 2.238E+08 | 17682200 | 7.9 |
| carbon tetrachloride (coelutes) | 1.3 | 1.229E+08 | 1598300 | 1.3 | 1.143E+09 | 14853900 | 1.3 | 1.135E+09 | 14752000 | 1.3 | 9.851E+08 | 12806100 | 1.3 | 1.078E+09 | 14009500 | 1.3 | 1.360E+09 | 17682200 | 1.3 |
| 1,2-dichloroethane | 50 | 3.044E+06 | 1521756 | 50 | 1.464E+06 | 731772 | 50 | 1.144E+06 | 572135 | 50 | 1.468E+06 | 734158 | 50 | 3.203E+06 | 1601722 | 50 | 1.833E+06 | 916509 | 50 |
| trichloroethene (ECD) | 4 | 2.152E+08 | 8606302 | 4 | 1.994E+08 | 7975030 | 4 | 1.644E+08 | 6574181 | 4 | 1.623E+08 | 6490884 | 4 | 1.945E+08 | 7781466 | 4 | 1.885E+08 | 7538528 | 4 |
| tetrachloroethene (ECD) (coelutes) | 4.1 | 3.293E+08 | 13503000 | 4.1 | 2.974E+08 | 12192200 | 4.1 | 2.399E+08 | 9837283 | 4.1 | 1.852E+08 | 7594885 | 4.1 | 2.968E+08 | 12167000 | 4.1 | 2.947E+08 | 12082200 | 4.1 |
| 1,1,2-trichloroethane (coelutes) | 129 | 1.047E+07 | 13503000 | 129 | 9.451E+06 | 12192200 | 129 | 7.626E+06 | 9837283 | 129 | 5.888E+06 | 7594885 | 129 | 9.432E+06 | 12167000 | 129 | 9.366E+06 | 12082200 | 129 |
| bromoform | 4 | 4.512E+07 | 1804957 | 4 | 9.396E+07 | 3758266 | 4 | 8.371E+07 | 3348301 | 4 | 8.744E+07 | 3497639 | 4 | 8.884E+07 | 3553521 | 4 | 9.365E+07 | 3746142 | 4 |
| 1,1,2,2-tetrachloroethane | 4 | 1.990E+07 | 795902 | 4 | 2.641E+07 | 1056351 | 4 | 2.678E+07 | 1071346 | 4 | 3.259E+07 | 1303715 | 4 | 3.159E+07 | 1263629 | 4 | 2.942E+07 | 1176969 | 4 |

# INITIAL CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
August 05, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 1.269E+04 | 8.908E+03 | 1.267E+04 | 2.356E+03 | 9.513E+02 | 7.515E+03 | 74.4 | 3172 | 25 | 4454 | 50 | 9502 | 75 | 2356 | 100 | 1427 | 150 |
| acetone (coelutes) | NA | 2.666E+04 | 2.784E+04 | 1.534E+04 | 1.399E+04 | 2.096E+04 | 34.9 | NA | 0 | 5226 | 19.6 | 19207 | 69 | 25611 | 167 | 38186 | 273 |
| trans-1,2-dichloroethene | 3.762E+05 | 2.785E+05 | 4.541E+05 | 1.667E+05 | 1.130E+05 | 2.777E+05 | 51.0 | 9405 | 2.5 | 13923 | 5 | 68116 | 15 | 75008 | 45 | 101656 | 90 |
| cis-1,2-dichloroethene | NA | 8.550E+04 | 1.254E+05 | 3.320E+04 | 2.598E+04 | 6.752E+04 | 69.3 | NA | 0 | 4275 | 5 | 18810 | 15 | 14938 | 45 | 23384 | 90 |
| carbon disulfide (coelutes) | 3.869E+04 | 9.606E+04 | 1.526E+04 | 3.896E+04 | 2.417E+04 | 4.263E+04 | 73.9 | 4913 | 12.7 | 24399 | 25.4 | 15569 | 102 | 79096 | 203 | 61385 | 254 |
| 2-butanone (coelutes) | 5.991E+04 | 1.479E+05 | 2.359E+04 | 5.992E+04 | 3.720E+04 | 6.570E+04 | 73.8 | 4913 | 8.2 | 24399 | 16.5 | 15569 | 66 | 79096 | 132 | 61385 | 165 |
| benzene | 3.995E+05 | 6.447E+05 | 5.861E+05 | 6.006E+05 | 5.717E+05 | 5.605E+05 | 16.8 | 3995 | 1 | 32234 | 5 | 58613 | 10 | 90088 | 15 | 142934 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 4.418E+05 | 5.983E+05 | 9.262E+05 | 1.222E+06 | 7.970E+05 | 43.6 | NA | 0 | 4418 | 1 | 11968 | 2 | 37048 | 4 | 97736 | 8 |
| toluene (coelutes) | 6.450E+05 | 3.232E+05 | 4.241E+05 | 1.957E+05 | 1.893E+05 | 3.555E+05 | 53.1 | 12255 | 1.9 | 21653 | 6.7 | 72105 | 17 | 56565 | 28.9 | 80266 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | 1.145E+05 | 5.595E+04 | 7.358E+04 | 3.408E+04 | 3.303E+04 | 6.223E+04 | 54.2 | 12255 | 10.7 | 21653 | 38.7 | 72105 | 98 | 56565 | 166 | 80266 | 243 |
| 2-hexanone | NA | NA | 5.574E+04 | 4.076E+04 | 8.511E+04 | 6.054E+04 | 37.3 | NA | 0 | NA | 0 | 22297 | 40 | 32605 | 80 | 85107 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 2.048E+05 | 3.644E+05 | 6.066E+05 | 3.911E+05 | 3.917E+05 | 42.2 | NA | 0 | 2048 | 1 | 7287 | 2 | 24263 | 4 | 31284 | 8 |
| chlorobenzene | NA | 2.651E+05 | 2.915E+05 | 1.822E+05 | 1.970E+05 | 2.339E+05 | 22.5 | NA | 0 | 2651 | 1 | 5829 | 2 | 7288 | 4 | 15761 | 8 |
| ethylbenzene | NA | 3.604E+05 | 2.096E+05 | 1.213E+05 | 1.636E+05 | 2.137E+05 | 48.8 | NA | 0 | 18022 | 5 | 20963 | 10 | 18198 | 15 | 40890 | 25 |
| m-xylene (coelutes) | 3.560E+05 | 6.073E+05 | 2.140E+05 | 1.453E+05 | 2.349E+05 | 3.115E+05 | 58.4 | 7119 | 2 | 60733 | 10 | 42799 | 20 | 43593 | 30 | 117471 | 50 |
| p-xylene (coelutes) | 3.560E+05 | 6.073E+05 | 2.140E+05 | 1.453E+05 | 2.349E+05 | 3.115E+05 | 58.4 | 7119 | 2 | 60733 | 10 | 42799 | 20 | 43593 | 30 | 117471 | 50 |
| o-xylene (coelutes) | 4.486E+05 | 6.925E+05 | 3.436E+05 | 1.516E+05 | 1.975E+05 | 3.668E+05 | 59.1 | 8971 | 2 | 69252 | 10 | 68729 | 20 | 45492 | 30 | 98768 | 50 |
| styrene (coelutes) | 4.486E+05 | 6.925E+05 | 3.436E+05 | 1.516E+05 | 1.975E+05 | 3.668E+05 | 59.1 | 8971 | 2 | 69252 | 10 | 68729 | 20 | 45492 | 30 | 98768 | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 5.219E+06 | 2.252E+06 | 2.452E+06 | 8.563E+05 | 3.289E+05 | 2.222E+06 | 85.7 | 1304760 | 25 | 1125941 | 50 | 1839100 | 75 | 856303 | 100 | 493363 | 150 |
| 1,1-dichloroethene | NA | 2.027E+07 | 1.217E+07 | 4.778E+06 | 4.424E+06 | 1.041E+07 | 71.8 | NA | 0 | 1013260 | 5 | 1826140 | 15 | 2150178 | 45 | 3981551 | 90 |
| methylene chloride | NA | 1.398E+07 | 1.131E+07 | 7.001E+06 | 3.058E+06 | 8.838E+06 | 54.4 | NA | 0 | 1398327 | 10 | 2262409 | 20 | 3500286 | 50 | 3057946 | 100 |
| chloroform (coelutes) | NA | 3.587E+08 | 1.934E+08 | 9.198E+07 | 6.804E+07 | 1.780E+08 | 74.2 | NA | 0 | 19730500 | 5.5 | 21277500 | 11 | 20142800 | 21.9 | 29801700 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 9.865E+08 | 5.319E+08 | 2.550E+08 | 1.874E+08 | 4.902E+08 | 74.0 | NA | 0 | 19730500 | 2 | 21277500 | 4 | 20142800 | 7.9 | 29801700 | 15.9 |
| carbon tetrachloride (coelutes) | NA | 6.166E+09 | 3.325E+09 | 1.549E+09 | 1.192E+09 | 3.058E+09 | 74.3 | NA | 0 | 19730500 | 0.32 | 21277500 | 0.64 | 20142800 | 1.3 | 29801700 | 2.5 |
| 1,2-dichloroethane | NA | NA | 3.550E+06 | 2.329E+06 | 3.126E+06 | 3.001E+06 | 20.7 | NA | 0 | NA | 0 | 709905 | 20 | 1164309 | 50 | 3125649 | 100 |
| trichloroethene (ECD) | 4.008E+08 | 3.676E+08 | 2.800E+08 | 2.142E+08 | 2.380E+08 | 3.001E+08 | 27.0 | 2004030 | 0.5 | 3675649 | 1 | 5599939 | 2 | 8566644 | 4 | 19041200 | 8 |
| tetrachloroethene (ECD) (coelutes) | 5.547E+08 | 5.070E+08 | 4.417E+08 | 3.195E+08 | 3.163E+08 | 4.278E+08 | 25.3 | 2884492 | 0.52 | 5069728 | 1 | 9276418 | 2.1 | 13097500 | 4.1 | 26256100 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 1.792E+07 | 1.574E+07 | 1.427E+07 | 1.015E+07 | 1.018E+07 | 1.365E+07 | 25.2 | 2884492 | 16.1 | 5069728 | 32.2 | 9276418 | 65 | 13097500 | 129 | 26256100 | 258 |
| bromoform | 1.272E+08 | 1.096E+08 | 9.264E+07 | 7.095E+07 | 1.453E+07 | 8.297E+07 | 52.5 | 635875 | 0.5 | 1095794 | 1 | 1852780 | 2 | 2837888 | 4 | 1162226 | 8 |
| 1,1,2,2-tetrachloroethane | 8.336E+07 | 5.717E+07 | 4.213E+07 | 2.775E+07 | 5.651E+06 | 4.321E+07 | 68.0 | 416779 | 0.5 | 571730 | 1 | 842640 | 2 | 1109880 | 4 | 452076 | 8 |

CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
August 05 to August 12 , 1997

| DATE: | | | 08/05/97 | | 08/06/97 | | 08/06/97 | | 08/06/97 | | 08/07/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | |
| | INITIAL CALIBRATION | | 027R0101 | | 049R0301 | | 062R0301 | | 078R0101 | | 098R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 7.515E+03 | 74.4 | 1.424E+04 | 89.5 | 1.017E+04 | 35.4 | 9.539E+03 | 26.9 | 7.884E+03 | 4.9 | 9.192E+03 | 22.3 |
| acetone (coelutes) | 2.096E+04 | 34.9 | 3.881E+04 | 85.2 | 3.581E+04 | 70.9 | 2.514E+04 | 20.0 | 2.159E+04 | 3.0 | 2.204E+04 | 5.2 |
| trans-1,2-dichloroethene | 2.777E+05 | 51.0 | 5.082E+05 | 83.0 | 4.144E+05 | 49.2 | 4.106E+05 | 47.9 | 2.455E+05 | -11.6 | 3.357E+05 | 20.9 |
| cis-1,2-dichloroethene | 6.752E+04 | 69.3 | 1.685E+05 | 149.5 | 1.960E+04 | -71.0 | 1.419E+05 | 110.1 | 8.132E+04 | 20.4 | 1.540E+05 | 128.0 |
| carbon disulfide (coelutes) | 4.263E+04 | 73.9 | 5.001E+04 | 17.3 | 6.541E+04 | 53.4 | 4.289E+04 | 0.6 | 2.570E+04 | -39.7 | 2.065E+04 | -51.6 |
| 2-butanone (coelutes) | 6.570E+04 | 73.8 | 7.728E+04 | 17.6 | 1.011E+05 | 53.9 | 6.629E+04 | 0.9 | 3.972E+04 | -39.5 | 3.191E+04 | -51.4 |
| benzene | 5.605E+05 | 16.8 | 5.770E+05 | 2.9 | 4.873E+05 | -13.1 | 5.536E+05 | -1.2 | 2.798E+05 | -50.1 | 5.793E+05 | 3.4 |
| trichloroethene (PID - MDL N/A) | 7.970E+05 | 43.6 | 5.740E+05 | -28.0 | 4.893E+05 | -38.6 | 6.800E+05 | -14.7 | 1.902E+05 | -76.1 | 6.600E+05 | -17.2 |
| toluene (coelutes) | 3.555E+05 | 53.1 | 3.095E+05 | -12.9 | 3.762E+05 | 5.8 | 2.936E+05 | -17.4 | 2.726E+05 | -23.3 | 2.719E+05 | -23.5 |
| 4-methyl-2-pentanone (coelutes | 6.223E+04 | 54.2 | 5.368E+04 | -13.7 | 6.525E+04 | 4.9 | 5.093E+04 | -18.2 | 4.728E+04 | -24.0 | 4.717E+04 | -24.2 |
| 2-hexanone | 6.054E+04 | 37.3 | 5.919E+04 | -2.2 | 1.197E+05 | 97.7 | 4.759E+04 | -21.4 | 6.557E+04 | 8.3 | 4.550E+04 | -24.8 |
| tetrachloroethene (PID - MDL N/ | 3.917E+05 | 42.2 | 2.855E+05 | -27.1 | 1.987E+05 | -49.3 | 2.413E+05 | -38.4 | 1.976E+05 | -49.6 | 2.214E+05 | -43.5 |
| chlorobenzene | 2.339E+05 | 22.5 | 2.820E+05 | 20.5 | 2.503E+05 | 7.0 | 1.743E+05 | -25.5 | 1.901E+05 | -18.8 | 1.680E+05 | -28.2 |
| ethylbenzene | 2.137E+05 | 48.8 | 1.914E+05 | -10.5 | 1.678E+05 | -21.5 | 1.275E+05 | -40.4 | 1.464E+05 | -31.5 | 1.180E+05 | -44.8 |
| m-xylene (coelutes) | 3.115E+05 | 58.4 | 9.986E+04 | -67.9 | 2.547E+05 | -18.2 | 1.311E+05 | -57.9 | 2.262E+05 | -27.4 | 1.834E+05 | -41.1 |
| p-xylene (coelutes) | 3.115E+05 | 58.4 | 9.986E+04 | -67.9 | 2.547E+05 | -18.2 | 1.311E+05 | -57.9 | 2.262E+05 | -27.4 | 1.834E+05 | -41.1 |
| o-xylene (coelutes) | 3.668E+05 | 59.1 | 3.229E+05 | -12.0 | 2.870E+05 | -21.7 | 1.583E+05 | -56.8 | 2.399E+05 | -34.6 | 2.514E+05 | -31.4 |
| styrene (coelutes) | 3.668E+05 | 59.1 | 3.229E+05 | -12.0 | 2.870E+05 | -21.7 | 1.583E+05 | -56.8 | 2.399E+05 | -34.6 | 2.514E+05 | -31.4 |

| | INITIAL CALIBRATION | | 027F0101 | | 049F0301 | | 062F0301 | | 078F0101 | | 098F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 2.222E+06 | 85.7 | 2.773E+06 | 24.8 | 2.943E+06 | 32.5 | 2.601E+06 | 17.1 | 2.654E+06 | 19.5 | 2.601E+06 | 17.1 |
| 1,1-dichloroethene | 1.041E+07 | 71.8 | 1.615E+07 | 55.2 | 1.524E+07 | 46.4 | 1.352E+07 | 29.9 | 1.127E+07 | 8.2 | 1.305E+07 | 25.3 |
| methylene chloride | 8.838E+06 | 54.4 | 1.150E+07 | 30.2 | 1.205E+07 | 36.4 | 1.020E+07 | 15.4 | 5.149E+06 | -41.7 | 1.009E+07 | 14.2 |
| chloroform (coelutes) | 1.780E+08 | 74.2 | 1.846E+08 | 3.7 | 1.820E+08 | 2.2 | 1.818E+08 | 2.1 | 1.688E+08 | -5.2 | 1.713E+08 | -3.8 |
| 1,1,1-trichloroethane (coelutes) | 4.902E+08 | 74.0 | 5.077E+08 | 3.6 | 5.005E+08 | 2.1 | 4.999E+08 | 2.0 | 4.642E+08 | -5.3 | 4.709E+08 | -3.9 |
| carbon tetrachloride (coelutes) | 3.058E+09 | 74.3 | 3.173E+09 | 3.8 | 3.128E+09 | 2.3 | 3.124E+09 | 2.2 | 2.901E+09 | -5.1 | 2.943E+09 | -3.7 |
| 1,2-dichloroethane | 3.001E+06 | 20.7 | 3.836E+06 | 27.8 | 6.821E+06 | 127.3 | 5.460E+06 | 81.9 | 3.144E+06 | 4.8 | 6.705E+06 | 123.4 |
| trichloroethene (ECD) | 3.001E+08 | 27.0 | 2.550E+08 | -15.0 | 2.653E+08 | -11.6 | 2.428E+08 | -19.1 | 2.256E+08 | -24.8 | 2.431E+08 | -19.0 |
| tetrachloroethene (ECD) (coelut | 4.278E+08 | 25.3 | 3.984E+08 | -6.9 | 3.921E+08 | -8.3 | 3.005E+08 | -29.8 | 2.758E+08 | -35.5 | 2.915E+08 | -31.9 |
| 1,1,2-trichloroethane (coelutes) | 1.365E+07 | 25.2 | 1.287E+07 | -5.7 | 1.267E+07 | -7.2 | 9.709E+06 | -28.9 | 8.910E+06 | -34.7 | 9.418E+06 | -31.0 |
| bromoform | 8.297E+07 | 52.5 | 9.677E+07 | 16.6 | 1.023E+08 | 23.3 | 1.044E+08 | 25.8 | 8.836E+07 | 6.5 | 1.018E+08 | 22.7 |
| 1,1,2,2-tetrachloroethane | 4.321E+07 | 68.0 | 4.132E+07 | -4.4 | 4.325E+07 | 0.1 | 4.341E+07 | 0.4 | 4.835E+07 | 11.9 | 4.249E+07 | -1.7 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| PID IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| PID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| PID COMPOUNDS | 08/05/97 027R0101 | area | conc. | 08/06/97 049R0301 | area | conc. | 08/06/97 062R0301 | area | conc. | 08/06/97 078R0101 | area | conc. | 08/07/97 098R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 1.424E+04 | 10679 | 75 | 1.017E+04 | 7630 | 75 | 9.539E+03 | 7154 | 75 | 7.884E+03 | 5913 | 75 | 9.192E+03 | 6894 | 75 |
| acetone (coelutes) | 3.881E+04 | 26780 | 69 | 3.581E+04 | 24707 | 69 | 2.514E+04 | 17347 | 69 | 2.159E+04 | 14896 | 69 | 2.204E+04 | 15210 | 69 |
| trans-1,2-dichloroethene | 5.082E+05 | 76228 | 15 | 4.144E+05 | 62158 | 15 | 4.106E+05 | 61593 | 15 | 2.455E+05 | 36818 | 15 | 3.357E+05 | 50358 | 15 |
| cis-1,2-dichloroethene | 1.685E+05 | 25270 | 15 | 1.960E+04 | 2940 | 15 | 1.419E+05 | 21279 | 15 | 8.132E+04 | 12198 | 15 | 1.540E+05 | 23096 | 15 |
| carbon disulfide (coelutes) | 5.001E+04 | 51007 | 102 | 6.541E+04 | 66716 | 102 | 4.289E+04 | 43749 | 102 | 2.570E+04 | 26217 | 102 | 2.065E+04 | 21063 | 102 |
| 2-butanone (coelutes) | 7.728E+04 | 51007 | 66 | 1.011E+05 | 66716 | 66 | 6.629E+04 | 43749 | 66 | 3.972E+04 | 26217 | 66 | 3.191E+04 | 21063 | 66 |
| benzene | 5.770E+05 | 57700 | 10 | 4.873E+05 | 48733 | 10 | 5.536E+05 | 55359 | 10 | 2.798E+05 | 27978 | 10 | 5.793E+05 | 57933 | 10 |
| trichloroethene (PID - MDL N/A) | 5.740E+05 | 11479 | 2 | 4.893E+05 | 9785 | 2 | 6.800E+05 | 13599 | 2 | 1.902E+05 | 3803 | 2 | 6.600E+05 | 13199 | 2 |
| toluene (coelutes) | 3.095E+05 | 52610 | 17 | 3.762E+05 | 63947 | 17 | 2.936E+05 | 49908 | 17 | 2.726E+05 | 46335 | 17 | 2.719E+05 | 46223 | 17 |
| 4-methyl-2-pentanone (coelutes) | 5.368E+04 | 52610 | 98 | 6.525E+04 | 63947 | 98 | 5.093E+04 | 49908 | 98 | 4.728E+04 | 46335 | 98 | 4.717E+04 | 46223 | 98 |
| 2-hexanone | 5.919E+04 | 23677 | 40 | 1.197E+05 | 47869 | 40 | 4.759E+04 | 19034 | 40 | 6.557E+04 | 26228 | 40 | 4.550E+04 | 18199 | 40 |
| tetrachloroethene (PID - MDL N/A) | 2.855E+05 | 5710 | 2 | 1.987E+05 | 3974 | 2 | 2.413E+05 | 4825 | 2 | 1.976E+05 | 3951 | 2 | 2.214E+05 | 4428 | 2 |
| chlorobenzene | 2.820E+05 | 5639 | 2 | 2.503E+05 | 5006 | 2 | 1.743E+05 | 3485 | 2 | 1.901E+05 | 3801 | 2 | 1.680E+05 | 3360 | 2 |
| ethylbenzene | 1.914E+05 | 19140 | 10 | 1.678E+05 | 16778 | 10 | 1.275E+05 | 12746 | 10 | 1.464E+05 | 14642 | 10 | 1.180E+05 | 11796 | 10 |
| m-xylene (coelutes) | 9.986E+04 | 19972 | 20 | 2.547E+05 | 50947 | 20 | 1.311E+05 | 26224 | 20 | 2.262E+05 | 45242 | 20 | 1.834E+05 | 36677 | 20 |
| p-xylene (coelutes) | 9.986E+04 | 19972 | 20 | 2.547E+05 | 50947 | 20 | 1.311E+05 | 26224 | 20 | 2.262E+05 | 45242 | 20 | 1.834E+05 | 36677 | 20 |
| o-xylene (coelutes) | 3.229E+05 | 64573 | 20 | 2.870E+05 | 57406 | 20 | 1.583E+05 | 31663 | 20 | 2.399E+05 | 47975 | 20 | 2.514E+05 | 50288 | 20 |
| styrene (coelutes) | 3.229E+05 | 64573 | 20 | 2.870E+05 | 57406 | 20 | 1.583E+05 | 31663 | 20 | 2.399E+05 | 47975 | 20 | 2.514E+05 | 50288 | 20 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| ECID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | 08/05/97 027F0101 | area | conc. | 08/06/97 049F0301 | area | conc. | 08/06/97 062F0301 | area | conc. | 08/06/97 078F0101 | area | conc. | 08/07/97 098F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 2.773E+06 | 2079806 | 75 | 2.943E+06 | 2207384 | 75 | 2.601E+06 | 1950567 | 75 | 2.654E+06 | 1990771 | 75 | 2.601E+06 | 1950465 | 75 |
| 1,1-dichloroethene | 1.615E+07 | 2423152 | 15 | 1.524E+07 | 2285769 | 15 | 1.352E+07 | 2028050 | 15 | 1.127E+07 | 1690330 | 15 | 1.305E+07 | 1957065 | 15 |
| methylene chloride | 1.150E+07 | 2300690 | 20 | 1.205E+07 | 2410728 | 20 | 1.020E+07 | 2039382 | 20 | 5.149E+06 | 1029809 | 20 | 1.009E+07 | 2018329 | 20 |
| chloroform (coelutes) | 1.846E+08 | 20309200 | 11 | 1.820E+08 | 20018400 | 11 | 1.818E+08 | 19996000 | 11 | 1.688E+08 | 18566600 | 11 | 1.713E+08 | 18837600 | 11 |
| 1,1,1-trichloroethane (coelutes) | 5.077E+08 | 20309200 | 4 | 5.005E+08 | 20018400 | 4 | 4.999E+08 | 19996000 | 4 | 4.642E+08 | 18566600 | 4 | 4.709E+08 | 18837600 | 4 |
| carbon tetrachloride (coelutes) | 3.173E+09 | 20309200 | 0.64 | 3.128E+09 | 20018400 | 0.64 | 3.124E+09 | 19996000 | 0.64 | 2.901E+09 | 18566600 | 0.64 | 2.943E+09 | 18837600 | 0.64 |
| 1,2-dichloroethane | 3.836E+06 | 767175 | 20 | 6.821E+06 | 1364278 | 20 | 5.460E+06 | 1092059 | 20 | 3.144E+06 | 628827 | 20 | 6.705E+06 | 1340917 | 20 |
| trichloroethene (ECD) | 2.550E+08 | 5100702 | 2 | 2.653E+08 | 5306387 | 2 | 2.428E+08 | 4856515 | 2 | 2.256E+08 | 4512200 | 2 | 2.431E+08 | 4861065 | 2 |
| tetrachloroethene (ECD) (coelutes) | 3.984E+08 | 8365695 | 2.1 | 3.921E+08 | 8234477 | 2.1 | 3.005E+08 | 6310846 | 2.1 | 2.758E+08 | 5791548 | 2.1 | 2.915E+08 | 6121770 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 1.287E+07 | 8365695 | 65 | 1.267E+07 | 8234477 | 65 | 9.709E+06 | 6310846 | 65 | 8.910E+06 | 5791548 | 65 | 9.418E+06 | 6121770 | 65 |
| bromoform | 9.677E+07 | 1935428 | 2 | 1.023E+08 | 2046111 | 2 | 1.044E+08 | 2088001 | 2 | 8.836E+07 | 1767202 | 2 | 1.018E+08 | 2036710 | 2 |
| 1,1,2,2-tetrachloroethane | 4.132E+07 | 826430 | 2 | 4.325E+07 | 864925 | 2 | 4.341E+07 | 868116 | 2 | 4.835E+07 | 967065 | 2 | 4.249E+07 | 849800 | 2 |

# INITIAL CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
August 12, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc | area | conc |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 9.590E+04 | 8.076E+04 | 3.053E+04 | 5.173E+04 | 2.883E+04 | 5.755E+04 | 52.1 | 23975 | 25 | 40378 | 50 | 22900 | 75 | 51728 | 100 | 43245 | 150 |
| acetone (coelutes) | NA | 4.676E+05 | 1.542E+05 | 1.513E+05 | 1.374E+05 | 2.276E+05 | 70.4 | NA | 0 | 91658 | 19.6 | 108384 | 89 | 252674 | 167 | 375048 | 273 |
| trans-1,2-dichloroethene | 4.291E+06 | 3.777E+06 | 2.353E+06 | 2.293E+06 | 2.010E+06 | 2.945E+06 | 34.6 | 107275 | 2.5 | 188856 | 5 | 352942 | 15 | 1031716 | 45 | 1808825 | 90 |
| cis-1,2-dichloroethene | NA | 2.869E+06 | 1.787E+06 | 1.741E+06 | 1.526E+06 | 1.981E+06 | 30.4 | NA | 0 | 143431.25 | 5 | 268050.33 | 15 | 783561.64 | 45 | 1373755.8 | 90 |
| carbon disulfide (coelutes) | 2.331E+05 | 3.234E+05 | 2.231E+05 | 3.033E+05 | 3.387E+05 | 2.843E+05 | 18.6 | 29604 | 12.7 | 82131 | 25.4 | 227563.5 | 102 | 615789.75 | 203 | 860202 | 254 |
| 2-butanone (coelutes) | 3.610E+05 | 4.978E+05 | 3.448E+05 | 4.665E+05 | 5.213E+05 | 4.383E+05 | 18.4 | 29604 | 8.2 | 82131 | 16.5 | 227563.5 | 66 | 615789.75 | 132 | 860202 | 165 |
| benzene | 3.918E+06 | 2.075E+06 | 2.552E+06 | 3.830E+06 | 3.194E+06 | 3.114E+06 | 25.7 | 39178 | 1 | 103755 | 5 | 255181 | 10 | 574442 | 15 | 798517 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 1.403E+06 | 3.679E+06 | 3.655E+06 | 4.031E+06 | 3.192E+06 | 37.7 | NA | 0 | 14031 | 1 | 73582 | 2 | 146219 | 4 | 322444 | 8 |
| toluene (coelutes) | 4.385E+06 | 2.390E+06 | 8.455E+05 | 1.736E+06 | 9.982E+05 | 2.071E+06 | 69.2 | 83314 | 1.9 | 160144 | 6.7 | 143734 | 17 | 501720 | 28.9 | 423232 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | 7.786E+05 | 4.138E+05 | 1.467E+05 | 3.022E+05 | 1.742E+05 | 3.631E+05 | 70.4 | 83314 | 10.7 | 160144 | 38.7 | 143734 | 98 | 501720 | 166 | 423232 | 243 |
| 2-hexanone | NA | NA | 1.031E+05 | 1.943E+05 | 9.271E+04 | 1.300E+05 | 43.0 | NA | 0 | NA | 0 | 41233 | 40 | 155406 | 80 | 92705 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 3.223E+06 | 3.128E+06 | 1.405E+06 | 2.295E+06 | 2.513E+06 | 33.7 | NA | 0 | 32227 | 1 | 62556 | 2 | 56219 | 4 | 183587 | 8 |
| chlorobenzene | NA | 2.070E+06 | 7.554E+05 | 1.054E+06 | 7.067E+05 | 1.147E+06 | 55.3 | NA | 0 | 20702 | 1 | 15107 | 2 | 42177 | 4 | 56538 | 8 |
| ethylbenzene | NA | 1.333E+06 | 5.653E+05 | 8.753E+05 | 5.942E+05 | 8.420E+05 | 42.3 | NA | 0 | 86658 | 5 | 56525 | 10 | 131294 | 15 | 148547 | 25 |
| m-xylene (coelutes) | 2.811E+06 | 2.007E+06 | 1.508E+06 | 1.861E+06 | 1.795E+06 | 1.997E+06 | 24.6 | 56229 | 2 | 200749 | 10 | 301614 | 20 | 558375 | 30 | 897366 | 50 |
| p-xylene (coelutes) | 2.811E+06 | 2.007E+06 | 1.508E+06 | 1.861E+06 | 1.795E+06 | 1.997E+06 | 24.6 | 56229 | 2 | 200749 | 10 | 301614 | 20 | 558375 | 30 | 897366 | 50 |
| o-xylene (coelutes) | 2.881E+06 | 2.011E+06 | 2.248E+06 | 2.250E+06 | 2.384E+06 | 2.355E+06 | 13.7 | 57621 | 2 | 201058 | 10 | 449550 | 20 | 675043 | 30 | 1192175 | 50 |
| styrene (coelutes) | 2.881E+06 | 2.011E+06 | 2.248E+06 | 2.250E+06 | 2.384E+06 | 2.355E+06 | 13.7 | 57621 | 2 | 201058 | 10 | 449550 | 20 | 675043 | 30 | 1192175 | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc | area | conc. | area | conc |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 5.372E+06 | 3.858E+06 | 1.426E+06 | 1.866E+06 | 9.799E+05 | 2.700E+06 | 68.7 | 1342921 | 25 | 1928818 | 50 | 1069462 | 75 | 1866441 | 100 | 1469778 | 150 |
| 1,1-dichloroethene | NA | 2.104E+07 | 1.046E+07 | 6.697E+06 | 5.974E+06 | 1.104E+07 | 62.9 | NA | 0 | 1051965 | 5 | 1568750 | 15 | 3013804 | 45 | 5376207 | 90 |
| methylene chloride | NA | 5.887E+06 | 1.113E+07 | 7.686E+06 | 5.623E+06 | 7.581E+06 | 33.5 | NA | 0 | 588705 | 10 | 2225491 | 20 | 3842858 | 50 | 5623053 | 100 |
| chloroform (coelutes) | NA | 3.215E+08 | 9.536E+07 | 1.274E+08 | 1.005E+08 | 1.612E+08 | 66.9 | NA | 0 | 17681500 | 5.5 | 10489958 | 11 | 27903900 | 21.9 | 44040100 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 8.841E+08 | 2.622E+08 | 3.532E+08 | 2.770E+08 | 4.441E+08 | 66.6 | NA | 0 | 17681500 | 2 | 10489958 | 4 | 27903900 | 7.9 | 44040100 | 15.9 |
| carbon tetrachloride (coelutes) | NA | 5.525E+09 | 1.639E+09 | 2.146E+09 | 1.762E+09 | 2.768E+09 | 66.9 | NA | 0 | 17681500 | 0.32 | 10489958 | 0.64 | 27903900 | 1.3 | 44040100 | 2.5 |
| 1,2-dichloroethane | NA | NA | 1.045E+07 | 3.087E+06 | 4.297E+06 | 5.944E+06 | 66.4 | NA | 0 | NA | 0 | 2089849 | 20 | 1543472 | 50 | 4297078 | 100 |
| trichloroethene (ECD) | 4.251E+08 | 2.641E+08 | 2.795E+08 | 2.289E+08 | 2.474E+08 | 2.890E+08 | 27.1 | 2125497 | 0.5 | 2641207 | 1 | 5590589 | 2 | 9154140 | 4 | 19794800 | 8 |
| tetrachloroethene (ECD) (coelutes) | 8.517E+08 | 5.302E+08 | 5.237E+08 | 4.494E+08 | 4.563E+08 | 5.623E+08 | 29.5 | 4429075 | 0.52 | 5302417 | 1 | 10998700 | 2.1 | 18427200 | 4.1 | 37874000 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 2.751E+07 | 1.647E+07 | 1.692E+07 | 1.428E+07 | 1.468E+07 | 1.797E+07 | 30.3 | 4429075 | 16.1 | 5302417 | 32.2 | 10998700 | 65 | 18427200 | 129 | 37874000 | 258 |
| bromoform | 3.195E+08 | 1.489E+08 | 1.193E+08 | 1.093E+08 | 1.016E+08 | 1.597E+08 | 57.0 | 1597328 | 0.5 | 1488782 | 1 | 2385982 | 2 | 4371774 | 4 | 8127489 | 8 |
| 1,1,2,2-tetrachloroethane | 1.612E+08 | 7.119E+07 | 3.984E+07 | 3.749E+07 | 2.119E+07 | 6.619E+07 | 84.8 | 806081 | 0.5 | 711898 | 1 | 796746 | 2 | 1499747 | 4 | 1695331 | 8 |

CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
August 12 to August 26 , 1997

| DATE: | | | 08/13/97 | | 08/13/97 | | 08/14/97 | | 08/14/97 | | 08/14/97 | | 08/15/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| | INITIAL CALIBRATION | | 023R0201 | | 042R0501 | | 060R0601 | | 082R0701 | | 085R0101 | | 100R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 5.755E+04 | 52.1 | 2.495E+04 | -56.7 | 2.112E+04 | -63.3 | 5.110E+04 | -11.2 | 4.824E+04 | -16.2 | 7.839E+03 | -86.4 | 3.659E+04 | -36.4 |
| acetone (coelutes) | 2.276E+05 | 70.4 | 1.462E+05 | -35.8 | 8.649E+04 | -62.0 | 8.554E+04 | -62.4 | 5.398E+04 | -76.3 | 5.465E+04 | -76.0 | 3.958E+04 | -82.6 |
| trans-1,2-dichloroethene | 2.945E+06 | 34.6 | 2.841E+06 | -3.5 | 1.543E+06 | -47.6 | 1.155E+06 | -60.8 | 1.387E+06 | -52.9 | 8.152E+05 | -72.3 | 4.948E+05 | -83.2 |
| cis-1,2-dichloroethene | 1.981E+06 | 30.4 | 1.147E+06 | -42.1 | 9.536E+05 | -51.9 | 2.887E+05 | -85.4 | 5.923E+05 | -70.1 | 2.016E+05 | -89.8 | 9.749E+04 | -95.1 |
| carbon disulfide (coelutes) | 2.843E+05 | 18.6 | 1.709E+05 | -39.9 | 6.952E+04 | -75.5 | 1.400E+05 | -50.7 | 1.097E+05 | -61.4 | 1.190E+05 | -58.1 | 7.162E+04 | -74.8 |
| 2-butanone (coelutes) | 4.383E+05 | 18.4 | 2.642E+05 | -39.7 | 1.074E+05 | -75.5 | 2.164E+05 | -50.6 | 1.695E+05 | -61.3 | 1.840E+05 | -58.0 | 1.107E+05 | -74.7 |
| benzene | 3.114E+06 | 25.7 | 2.881E+06 | -7.5 | 1.804E+06 | -42.1 | 1.919E+06 | -38.4 | 1.322E+06 | -57.6 | 1.233E+06 | -60.4 | 1.073E+06 | -65.5 |
| trichloroethene (PID - MDL N/A) | 3.192E+06 | 37.7 | 4.469E+06 | 40.0 | 2.858E+06 | -10.5 | 2.958E+06 | -7.3 | 2.486E+06 | -22.1 | 1.659E+06 | -48.0 | 1.801E+06 | -43.6 |
| toluene (coelutes) | 2.071E+06 | 69.2 | 1.049E+06 | -49.3 | 6.055E+05 | -70.8 | 6.252E+05 | -69.8 | 6.698E+05 | -67.7 | 5.272E+05 | -74.5 | 3.672E+05 | -82.3 |
| 4-methyl-2-pentanone (coelutes | 3.631E+05 | 70.4 | 1.821E+05 | -49.9 | 1.050E+05 | -71.1 | 1.085E+05 | -70.1 | 1.162E+05 | -68.0 | 9.145E+04 | -74.8 | 6.370E+04 | -82.5 |
| 2-hexanone | 1.300E+05 | 43.0 | 1.167E+05 | -10.2 | 6.457E+04 | -50.3 | 6.422E+04 | -50.6 | 7.625E+04 | -41.4 | 6.454E+04 | -50.4 | 3.921E+04 | -69.8 |
| tetrachloroethene (PID - MDL N/ | 2.513E+06 | 33.7 | 1.747E+06 | -30.5 | 2.434E+06 | -3.1 | 1.882E+06 | -25.1 | 1.698E+06 | -32.4 | 8.312E+05 | -66.9 | 1.371E+06 | -45.4 |
| chlorobenzene | 1.147E+06 | 55.3 | 4.556E+05 | -60.3 | 6.905E+05 | -39.8 | 4.730E+05 | -58.8 | 3.379E+05 | -70.5 | 3.505E+05 | -69.4 | 3.975E+05 | -65.3 |
| ethylbenzene | 8.420E+05 | 42.3 | 3.990E+05 | -52.6 | 4.692E+05 | -44.3 | 3.137E+05 | -62.7 | 2.553E+05 | -69.7 | 2.518E+05 | -70.1 | 2.223E+05 | -73.6 |
| m-xylene (coelutes) | 1.997E+06 | 24.6 | 1.059E+06 | -46.9 | 1.328E+06 | -33.5 | 1.056E+06 | -47.1 | 5.586E+05 | -72.0 | 5.853E+05 | -70.7 | 6.699E+05 | -66.4 |
| p-xylene (coelutes) | 1.997E+06 | 24.6 | 1.059E+06 | -46.9 | 1.328E+06 | -33.5 | 1.056E+06 | -47.1 | 5.586E+05 | -72.0 | 5.853E+05 | -70.7 | 6.699E+05 | -66.4 |
| o-xylene (coelutes) | 2.355E+06 | 13.7 | 1.777E+06 | -24.5 | 1.698E+06 | -27.9 | 1.516E+06 | -35.6 | 1.084E+06 | -53.9 | 9.989E+05 | -57.6 | 1.030E+06 | -56.3 |
| styrene (coelutes) | 2.355E+06 | 13.7 | 1.777E+06 | -24.5 | 1.698E+06 | -27.9 | 1.516E+06 | -35.6 | 1.084E+06 | -53.9 | 9.989E+05 | -57.6 | 1.030E+06 | -56.3 |

| | INITIAL CALIBRATION | | 023F0201 | | 042F0501 | | 060F0601 | | 082F0701 | | 085F0101 | | 100F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 2.700E+06 | 68.7 | 1.684E+06 | -37.6 | 1.258E+06 | -53.4 | 1.770E+06 | -34.5 | 1.560E+06 | -42.2 | 1.645E+06 | -39.1 | 1.337E+06 | -50.5 |
| 1,1-dichloroethene | 1.104E+07 | 62.9 | 9.730E+06 | -11.9 | 8.547E+06 | -22.6 | 8.190E+06 | -25.8 | 6.178E+06 | -44.1 | 5.780E+06 | -47.7 | 6.270E+06 | -43.2 |
| methylene chloride | 7.581E+06 | 33.5 | 4.163E+06 | -45.1 | 6.229E+06 | -17.8 | 4.294E+06 | -43.4 | 9.931E+06 | 31.0 | 7.312E+06 | -3.5 | 2.775E+06 | -63.4 |
| chloroform (coelutes) | 1.612E+08 | 66.9 | 8.873E+07 | -45.0 | 8.481E+07 | -47.4 | 7.877E+07 | -51.1 | 7.117E+07 | -55.8 | 6.545E+07 | -59.4 | 6.067E+07 | -62.4 |
| 1,1,1-trichloroethane (coelutes) | 4.441E+08 | 66.6 | 2.440E+08 | -45.1 | 2.332E+08 | -47.5 | 2.166E+08 | -51.2 | 1.957E+08 | -55.9 | 1.800E+08 | -59.5 | 1.668E+08 | -62.4 |
| carbon tetrachloride (coelutes) | 2.768E+09 | 66.9 | 1.525E+09 | -44.9 | 1.458E+09 | -47.3 | 1.354E+09 | -51.1 | 1.223E+09 | -55.8 | 1.125E+09 | -59.4 | 1.043E+09 | -62.3 |
| 1,2-dichloroethane | 5.944E+06 | 66.4 | 8.382E+06 | 41.0 | 3.987E+06 | -32.9 | 8.694E+06 | 46.3 | 7.194E+06 | 21.0 | 2.500E+06 | -57.9 | 6.065E+06 | 2.0 |
| trichloroethene (ECD) | 2.890E+08 | 27.1 | 2.353E+08 | -18.6 | 2.223E+08 | -23.1 | 2.389E+08 | -17.4 | 2.198E+08 | -24.0 | 1.919E+08 | -33.6 | 1.964E+08 | -32.0 |
| tetrachloroethene (ECD) (coelut | 5.623E+08 | 29.5 | 4.231E+08 | -24.8 | 3.365E+08 | -40.2 | 4.604E+08 | -18.1 | 4.122E+08 | -26.7 | 3.861E+08 | -31.3 | 3.713E+08 | -34.0 |
| 1,1,2-trichloroethane (coelutes) | 1.797E+07 | 30.3 | 1.367E+07 | -23.9 | 1.087E+07 | -39.5 | 1.487E+07 | -17.2 | 1.332E+07 | -25.9 | 1.247E+07 | -30.6 | 1.200E+07 | -33.2 |
| bromoform | 1.597E+08 | 57.0 | 1.259E+08 | -21.1 | 1.280E+08 | -19.8 | 1.267E+08 | -20.7 | 6.842E+07 | -57.2 | 1.345E+08 | -15.8 | 1.265E+08 | -20.8 |
| 1,1,2,2-tetrachloroethane | 6.619E+07 | 84.8 | 3.854E+07 | -41.8 | 3.370E+07 | -49.1 | 3.595E+07 | -45.7 | 5.829E+08 | 780.7 | 4.153E+07 | -37.3 | 3.628E+07 | -45.2 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | | NUMBER 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| PID IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| PID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| PID COMPOUNDS | 08/13/97 023R0201 | area | conc. | 08/13/97 042R0501 | area | conc. | 08/14/97 060R0601 | area | conc. | 08/14/97 082R0701 | area | conc. | 08/14/97 085R0101 | area | conc. | 08/15/97 100R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 2.495E+04 | 18709 | 75 | 2.112E+04 | 15841 | 75 | 5.110E+04 | 38322 | 75 | 4.824E+04 | 36178 | 75 | 7.839E+03 | 5879 | 75 | 3.659E+04 | 27445 | 75 |
| acetone (coelutes) | 1.462E+05 | 100888 | 69 | 8.649E+04 | 59677 | 69 | 8.554E+04 | 59022 | 69 | 5.398E+04 | 37243 | 69 | 5.465E+04 | 37706 | 69 | 3.958E+04 | 27311 | 69 |
| trans-1,2-dichloroethene | 2.841E+06 | 426155 | 15 | 1.543E+06 | 231464 | 15 | 1.155E+06 | 173218 | 15 | 1.387E+06 | 208010 | 15 | 8.152E+05 | 122274 | 15 | 4.948E+05 | 74223 | 15 |
| cis-1,2-dichloroethene | 1.147E+06 | 172012 | 15 | 9.536E+05 | 143046 | 15 | 2.887E+05 | 43305 | 15 | 5.923E+05 | 88846 | 15 | 2.016E+05 | 30237 | 15 | 9.749E+04 | 14624 | 15 |
| carbon disulfide (coelutes) | 1.709E+05 | 174353 | 102 | 6.952E+04 | 70911 | 102 | 1.400E+05 | 142832 | 102 | 1.097E+05 | 111844 | 102 | 1.190E+05 | 121416 | 102 | 7.162E+04 | 73057 | 102 |
| 2-butanone (coelutes) | 2.642E+05 | 174353 | 66 | 1.074E+05 | 70911 | 66 | 2.164E+05 | 142832 | 66 | 1.695E+05 | 111844 | 66 | 1.840E+05 | 121416 | 66 | 1.107E+05 | 73057 | 66 |
| benzene | 2.881E+06 | 288139 | 10 | 1.804E+06 | 180430 | 10 | 1.919E+06 | 191902 | 10 | 1.322E+06 | 132165 | 10 | 1.233E+06 | 123281 | 10 | 1.073E+06 | 107335 | 10 |
| trichloroethene (PID - MDL N/A) | 4.469E+06 | 89382 | 2 | 2.858E+06 | 57165 | 2 | 2.958E+06 | 59160 | 2 | 2.486E+06 | 49724 | 2 | 1.659E+06 | 33170 | 2 | 1.801E+06 | 36017 | 2 |
| toluene (coelutes) | 1.049E+06 | 178411 | 17 | 6.055E+05 | 102937 | 17 | 6.252E+05 | 106289 | 17 | 6.698E+05 | 113867 | 17 | 5.272E+05 | 89619 | 17 | 3.672E+05 | 62426 | 17 |
| 4-methyl-2-pentanone (coelutes) | 1.821E+05 | 178411 | 98 | 1.050E+05 | 102937 | 98 | 1.085E+05 | 106289 | 98 | 1.162E+05 | 113867 | 98 | 9.145E+04 | 89619 | 98 | 6.370E+04 | 62426 | 98 |
| 2-hexanone | 1.167E+05 | 46678 | 40 | 6.457E+04 | 25827 | 40 | 6.422E+04 | 25686 | 40 | 7.625E+04 | 30499 | 40 | 6.454E+04 | 25817 | 40 | 3.921E+04 | 15683 | 40 |
| tetrachloroethene (PID - MDL N/A) | 1.747E+06 | 34930 | 2 | 2.434E+06 | 48677 | 2 | 1.882E+06 | 37640 | 2 | 1.698E+06 | 33962 | 2 | 8.312E+05 | 16624 | 2 | 1.371E+06 | 27415 | 2 |
| chlorobenzene | 4.556E+05 | 9112 | 2 | 6.905E+05 | 13810 | 2 | 4.730E+05 | 9459 | 2 | 3.379E+05 | 6757 | 2 | 3.505E+05 | 7010 | 2 | 3.975E+05 | 7950 | 2 |
| ethylbenzene | 3.990E+05 | 39895 | 10 | 4.692E+05 | 46915 | 10 | 3.137E+05 | 31366 | 10 | 2.553E+05 | 25525 | 10 | 2.518E+05 | 25181 | 10 | 2.223E+05 | 22234 | 10 |
| m-xylene (coelutes) | 1.059E+06 | 211888 | 20 | 1.328E+06 | 265595 | 20 | 1.056E+06 | 211222 | 20 | 5.586E+05 | 111712 | 20 | 5.853E+05 | 117055 | 20 | 6.699E+05 | 133978 | 20 |
| p-xylene (coelutes) | 1.059E+06 | 211888 | 20 | 1.328E+06 | 265595 | 20 | 1.056E+06 | 211222 | 20 | 5.586E+05 | 111712 | 20 | 5.853E+05 | 117055 | 20 | 6.699E+05 | 133978 | 20 |
| o-xylene (coelutes) | 1.777E+06 | 355407 | 20 | 1.698E+06 | 339697 | 20 | 1.516E+06 | 303290 | 20 | 1.084E+06 | 216879 | 20 | 9.989E+05 | 199785 | 20 | 1.030E+06 | 205981 | 20 |
| styrene (coelutes) | 1.777E+06 | 355407 | 20 | 1.698E+06 | 339697 | 20 | 1.516E+06 | 303290 | 20 | 1.084E+06 | 216879 | 20 | 9.989E+05 | 199785 | 20 | 1.030E+06 | 205981 | 20 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | | NUMBER 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| ECID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | 08/13/97 023F0201 | area | conc. | 08/13/97 042F0501 | area | conc. | 08/14/97 060F0601 | area | conc. | 08/14/97 082F0701 | area | conc. | 08/14/97 085F0101 | area | conc. | 08/15/97 100F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 1.684E+06 | 1263274 | 75 | 1.258E+06 | 943773 | 75 | 1.770E+06 | 1327470 | 75 | 1.560E+06 | 1170189 | 75 | 1.645E+06 | 1233870 | 75 | 1.337E+06 | 1002401 | 75 |
| 1,1-dichloroethene | 9.730E+06 | 1459510 | 15 | 8.547E+06 | 1282022 | 15 | 8.190E+06 | 1228571 | 15 | 6.178E+06 | 926676 | 15 | 5.780E+06 | 867070 | 15 | 6.270E+06 | 940434 | 15 |
| methylene chloride | 4.163E+06 | 832572 | 20 | 6.229E+06 | 1245704 | 20 | 4.294E+06 | 858711 | 20 | 9.931E+06 | 1986273 | 20 | 7.312E+06 | 1462429 | 20 | 2.775E+06 | 554977 | 20 |
| chloroform (coelutes) | 8.873E+07 | 9760686 | 11 | 8.481E+07 | 9329194 | 11 | 7.877E+07 | 8664426 | 11 | 7.117E+07 | 7828846 | 11 | 6.545E+07 | 7199199 | 11 | 6.067E+07 | 6673749 | 11 |
| 1,1,1-trichloroethane (coelutes) | 2.440E+08 | 9760686 | 4 | 2.332E+08 | 9329194 | 4 | 2.166E+08 | 8664426 | 4 | 1.957E+08 | 7828846 | 4 | 1.800E+08 | 7199199 | 4 | 1.668E+08 | 6673749 | 4 |
| carbon tetrachloride (coelutes) | 1.525E+09 | 9760686 | 0.64 | 1.458E+09 | 9329194 | 0.64 | 1.354E+09 | 8664426 | 0.64 | 1.223E+09 | 7828846 | 0.64 | 1.125E+09 | 7199199 | 0.64 | 1.043E+09 | 6673749 | 0.64 |
| 1,2-dichloroethane | 8.382E+06 | 1676379 | 20 | 3.987E+06 | 797469 | 20 | 8.694E+06 | 1738773 | 20 | 7.194E+06 | 1438896 | 20 | 2.500E+06 | 499990 | 20 | 6.065E+06 | 1213079 | 20 |
| trichloroethene (ECD) | 2.353E+08 | 4706731 | 2 | 2.223E+08 | 4446809 | 2 | 2.389E+08 | 4777071 | 2 | 2.198E+08 | 4395693 | 2 | 1.919E+08 | 3838628 | 2 | 1.964E+08 | 3927739 | 2 |
| tetrachloroethene (ECD) (coelutes) | 4.231E+08 | 8884574 | 2.1 | 3.365E+08 | 7066692 | 2.1 | 4.604E+08 | 9668086 | 2.1 | 4.122E+08 | 8657158 | 2.1 | 3.861E+08 | 8107226 | 2.1 | 3.713E+08 | 7798076 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 1.367E+07 | 8884574 | 65 | 1.087E+07 | 7066692 | 65 | 1.487E+07 | 9668086 | 65 | 1.332E+07 | 8657158 | 65 | 1.247E+07 | 8107226 | 65 | 1.200E+07 | 7798076 | 65 |
| bromoform | 1.259E+08 | 2518655 | 2 | 1.280E+08 | 2560712 | 2 | 1.267E+08 | 2533741 | 2 | 6.842E+07 | 1368477 | 2 | 1.345E+08 | 2690159 | 2 | 1.265E+08 | 2529509 | 2 |
| 1,1,2,2-tetrachloroethane | 3.854E+07 | 770827 | 2 | 3.370E+07 | 674007 | 2 | 3.595E+07 | 719028 | 2 | 5.829E+08 | 11658100 | 2 | 4.153E+07 | 830535 | 2 | 3.628E+07 | 725693 | 2 |

# INITIAL CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
## August 26, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 | STD.2 | STD.3 | STD.4 | STD.5 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 2.783E+04 | 2.799E+04 | 2.645E+04 | 1.920E+04 | 8.882E+03 | 2.207E+04 | 37.2 | 6958 | 25 | 13997 | 50 | 19836 | 75 | 19204 | 100 | 13323 | 150 |
| acetone (coelutes) | NA | 1.081E+05 | 5.167E+04 | 6.840E+04 | 3.955E+04 | 6.693E+04 | 44.7 | NA | 0 | 21187 | 19.8 | 35651 | 69 | 114223 | 167 | 107967 | 273 |
| trans-1,2-dichloroethene | 7.078E+05 | 1.108E+06 | 1.131E+06 | 1.255E+06 | 6.628E+05 | 9.730E+05 | 27.6 | 17696 | 2.5 | 55401 | 5 | 169696 | 15 | 564827 | 45 | 596551 | 90 |
| cis-1,2-dichloroethene | NA | 1.856E+05 | 2.692E+05 | 4.351E+05 | 9.211E+04 | 2.455E+05 | 59.3 | NA | 0 | 9279 | 5 | 40377 | 15 | 195785.4 | 45 | 82900 | 90 |
| carbon disulfide (coelutes) | 7.817E+04 | 1.174E+05 | 5.372E+04 | 6.430E+04 | 1.801E+05 | 9.875E+04 | 52.2 | 9927 | 12.7 | 29828 | 25.4 | 54798 | 102 | 130523.6 | 203 | 457551 | 254 |
| 2-butanone (coelutes) | 1.211E+05 | 1.808E+05 | 8.303E+04 | 9.888E+04 | 2.773E+05 | 1.522E+05 | 52.0 | 9927 | 8.2 | 29828 | 16.5 | 54798 | 66 | 130523.6 | 132 | 457551 | 165 |
| benzene | 8.056E+05 | 7.622E+05 | 1.399E+06 | 1.949E+06 | 1.559E+06 | 1.295E+06 | 39.2 | 8056 | 1 | 38110 | 5 | 139908 | 10 | 292325 | 15 | 389808 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 4.878E+05 | 1.428E+06 | 1.891E+06 | 2.205E+06 | 1.503E+06 | 49.8 | NA | 0 | 4878 | 1 | 28559 | 2 | 75633 | 4 | 176399 | 8 |
| toluene (coelutes) | 1.011E+06 | 6.590E+05 | 7.000E+05 | 7.124E+05 | 5.489E+05 | 7.262E+05 | 23.6 | 19205 | 1.9 | 44156 | 6.7 | 118998 | 17 | 205892 | 28.9 | 232735 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | 1.795E+05 | 1.141E+05 | 1.214E+05 | 1.240E+05 | 9.578E+04 | 1.270E+05 | 24.7 | 19205 | 10.7 | 44156 | 38.7 | 118998 | 98 | 205892 | 166 | 232735 | 243 |
| 2-hexanone | NA | NA | 1.166E+05 | 1.778E+05 | 5.527E+04 | 1.165E+05 | 52.6 | NA | 0 | NA | 0 | 46626 | 40 | 142236 | 80 | 55265 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 7.537E+05 | 1.640E+06 | 1.752E+06 | 1.431E+06 | 1.394E+06 | 32.1 | NA | 0 | 7537 | 1 | 32804 | 2 | 70069 | 4 | 114474 | 8 |
| chlorobenzene | NA | 5.794E+05 | 3.545E+05 | 3.245E+05 | 3.988E+05 | 4.143E+05 | 27.6 | NA | 0 | 5794 | 1 | 7090 | 2 | 12981 | 4 | 31903 | 8 |
| ethylbenzene | NA | 3.537E+05 | 2.824E+05 | 3.323E+05 | 3.016E+05 | 3.175E+05 | 10.0 | NA | 0 | 17683 | 5 | 28244 | 10 | 49843 | 15 | 75408 | 25 |
| m-xylene (coelutes) | 4.816E+05 | 4.030E+05 | 4.394E+05 | 5.482E+05 | 7.995E+05 | 5.343E+05 | 29.5 | 9631 | 2 | 40304 | 10 | 87877 | 20 | 164449 | 30 | 399769 | 50 |
| p-xylene (coelutes) | 4.816E+05 | 4.030E+05 | 4.394E+05 | 5.482E+05 | 7.995E+05 | 5.343E+05 | 29.5 | 9631 | 2 | 40304 | 10 | 87877 | 20 | 164449 | 30 | 399769 | 50 |
| o-xylene (coelutes) | 4.711E+05 | 5.984E+05 | 7.875E+05 | 1.023E+06 | 1.046E+06 | 7.852E+05 | 32.4 | 9422 | 2 | 59844 | 10 | 157492 | 20 | 306884 | 30 | 523029 | 50 |
| styrene (coelutes) | 4.711E+05 | 5.984E+05 | 7.875E+05 | 1.023E+06 | 1.046E+06 | 7.852E+05 | 32.4 | 9422 | 2 | 59844 | 10 | 157492 | 20 | 306884 | 30 | 523029 | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc | area | conc. | area | conc. | area | conc. |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 5.950E+06 | 4.754E+06 | 3.342E+06 | 2.353E+06 | 8.772E+05 | 3.455E+06 | 57.5 | 1487587 | 25 | 2377089 | 50 | 2506682 | 75 | 2353370 | 100 | 1315791 | 150 |
| 1,1-dichloroethene | NA | 2.268E+07 | 1.185E+07 | 7.900E+06 | 5.325E+06 | 1.194E+07 | 64.1 | NA | 0 | 1134011 | 5 | 1777839 | 15 | 3555007 | 45 | 4792564 | 90 |
| methylene chloride | NA | 6.564E+06 | 5.643E+06 | 4.610E+06 | 4.377E+06 | 5.298E+06 | 19.0 | NA | 0 | 656381 | 10 | 1128590 | 20 | 2305211 | 50 | 4376720 | 100 |
| chloroform (coelutes) | NA | 4.306E+08 | 2.324E+08 | 1.672E+08 | 9.617E+07 | 2.316E+08 | 62.1 | NA | 0 | 23683300 | 5.5 | 25565300 | 11 | 36606400 | 21.9 | 42124100 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 1.184E+09 | 6.391E+08 | 4.634E+08 | 2.649E+08 | 6.379E+08 | 61.9 | NA | 0 | 23683300 | 2 | 25565300 | 4 | 36606400 | 7.9 | 42124100 | 15.9 |
| carbon tetrachloride (coelutes) | NA | 7.401E+09 | 3.995E+09 | 2.816E+09 | 1.685E+09 | 3.974E+09 | 62.2 | NA | 0 | 23683300 | 0.32 | 25565300 | 0.64 | 36606400 | 1.3 | 42124100 | 2.5 |
| 1,2-dichloroethane | NA | NA | 4.402E+06 | 9.133E+06 | 3.062E+06 | 5.532E+06 | 57.7 | NA | 0 | NA | 0 | 880319 | 20 | 4566513 | 50 | 3061831 | 100 |
| trichloroethene (ECD) | 3.786E+08 | 2.951E+08 | 2.528E+08 | 2.652E+08 | 2.908E+08 | 2.965E+08 | 16.6 | 1893073 | 0.5 | 2950896 | 1 | 5056029 | 2 | 10609800 | 4 | 23264300 | 8 |
| tetrachloroethene (ECD) (coelutes) | 7.446E+08 | 5.564E+08 | 5.274E+08 | 5.494E+08 | 4.842E+08 | 5.724E+08 | 17.5 | 3872078 | 0.52 | 5563967 | 1 | 11074600 | 2.1 | 22525800 | 4.1 | 40191500 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 2.405E+07 | 1.728E+07 | 1.704E+07 | 1.746E+07 | 1.558E+07 | 1.828E+07 | 18.1 | 3872078 | 16.1 | 5563967 | 32.2 | 11074600 | 65 | 22525800 | 129 | 40191500 | 258 |
| bromoform | 2.206E+08 | 1.729E+08 | 1.427E+08 | 1.297E+08 | 1.125E+08 | 1.557E+08 | 27.3 | 1102815 | 0.5 | 1729485 | 1 | 2853307 | 2 | 5189486 | 4 | 8996138 | 8 |
| 1,1,2,2-tetrachloroethane | 1.191E+08 | 8.251E+07 | 6.032E+07 | 4.180E+07 | 2.838E+07 | 6.642E+07 | 53.9 | 595430 | 0.5 | 825098 | 1 | 1206491 | 2 | 1672048 | 4 | 2270668 | 8 |

CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
August 26 to September 03 , 1997

| Date: | | | 08/27/97 | | 08/27/97 | | 08/28/97 | | 08/28/97 | | 08/29/97 | | 08/29/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| | INITIAL CALIBRATION | | 010R0101 | | 035R0101 | | 056R0101 | | 077R0101 | | 098R0101 | | 018R0201 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 2.207E+04 | 37.2 | 2.359E+04 | 6.9 | 1.797E+04 | -18.6 | 1.671E+04 | -24.3 | 1.376E+04 | -37.6 | 1.518E+04 | -31.2 | 1.235E+04 | -44.1 |
| acetone (coelutes) | 6.693E+04 | 44.7 | 7.869E+04 | 17.6 | 7.179E+04 | 7.3 | 7.962E+04 | 19.0 | 2.818E+04 | -57.9 | 7.784E+04 | 16.3 | 4.893E+04 | -26.9 |
| trans-1,2-dichloroethene | 9.730E+05 | 27.6 | 7.940E+05 | -18.4 | 7.408E+05 | -23.9 | 7.648E+05 | -21.4 | 6.560E+05 | -32.6 | 7.205E+05 | -26.0 | 6.705E+05 | -31.1 |
| cis-1,2-dichloroethene | 2.455E+05 | 59.3 | 1.137E+05 | -53.7 | 1.143E+05 | -53.5 | 1.394E+05 | -43.2 | 2.059E+05 | -16.1 | 1.960E+05 | -20.2 | 2.857E+05 | 16.4 |
| carbon disulfide (coelutes) | 9.875E+04 | 52.2 | 7.732E+04 | -21.7 | 8.584E+04 | -13.1 | 8.201E+04 | -17.0 | 8.350E+04 | -15.4 | 5.812E+04 | -41.1 | 4.458E+04 | -54.9 |
| 2-butanone (coelutes) | 1.522E+05 | 52.0 | 1.195E+05 | -21.5 | 1.327E+05 | -12.8 | 1.267E+05 | -16.7 | 1.290E+05 | -15.2 | 8.982E+04 | -41.0 | 6.890E+04 | -54.7 |
| benzene | 1.295E+06 | 39.2 | 8.790E+05 | -32.1 | 4.821E+05 | -62.8 | 1.042E+06 | -19.5 | 7.446E+05 | -42.5 | 5.416E+05 | -58.2 | 7.258E+05 | -44.0 |
| trichloroethene (PID - MDL N/A) | 1.503E+06 | 49.8 | 4.859E+05 | -67.7 | 5.041E+05 | -66.5 | 7.756E+05 | -48.4 | 1.895E+06 | 26.1 | 5.080E+05 | -66.2 | 5.702E+05 | -62.1 |
| toluene (coelutes) | 7.262E+05 | 23.6 | 9.175E+05 | 26.3 | 6.403E+05 | -11.8 | 5.086E+05 | -30.0 | 6.098E+05 | -16.0 | 5.013E+05 | -31.0 | 4.498E+05 | -38.1 |
| 4-methyl-2-pentanone (coelutes | 1.270E+05 | 24.7 | 1.592E+05 | 25.4 | 1.111E+05 | -12.5 | 8.823E+04 | -30.5 | 1.058E+05 | -16.7 | 8.697E+04 | -31.5 | 7.803E+04 | -38.5 |
| 2-hexanone | 1.165E+05 | 52.6 | 1.521E+05 | 30.5 | 2.320E+05 | 99.0 | 1.200E+05 | 3.0 | 8.793E+04 | -24.6 | 1.122E+05 | -3.7 | 1.132E+05 | -2.9 |
| tetrachloroethene (PID - MDL N/ | 1.394E+06 | 32.1 | 7.875E+05 | -43.5 | 7.143E+05 | -48.8 | 4.124E+05 | -70.4 | 7.724E+05 | -44.6 | 3.068E+05 | -78.0 | 2.902E+05 | -79.2 |
| chlorobenzene | 4.143E+05 | 27.6 | 5.296E+05 | 27.8 | 5.588E+05 | 34.9 | 3.950E+05 | -4.7 | 2.466E+05 | -40.5 | 3.377E+05 | -18.5 | 3.322E+05 | -19.8 |
| ethylbenzene | 3.175E+05 | 10.0 | 3.994E+05 | 25.8 | 3.541E+05 | 11.5 | 3.382E+05 | 6.5 | 1.898E+05 | -40.2 | 2.815E+05 | -11.4 | 2.667E+05 | -16.0 |
| m-xylene (coelutes) | 5.343E+05 | 29.5 | 7.231E+05 | 35.3 | 6.105E+05 | 14.2 | 6.393E+05 | 19.6 | 4.559E+05 | -14.7 | 4.888E+05 | -8.5 | 4.741E+05 | -11.3 |
| p-xylene (coelutes) | 5.343E+05 | 29.5 | 7.231E+05 | 35.3 | 6.105E+05 | 14.2 | 6.393E+05 | 19.6 | 4.559E+05 | -14.7 | 4.888E+05 | -8.5 | 4.741E+05 | -11.3 |
| o-xylene (coelutes) | 7.852E+05 | 32.4 | 6.680E+05 | -14.9 | 6.761E+05 | -13.9 | 7.193E+05 | -8.4 | 5.453E+05 | -30.6 | 5.537E+05 | -29.5 | 5.389E+05 | -31.4 |
| styrene (coelutes) | 7.852E+05 | 32.4 | 6.680E+05 | -14.9 | 6.761E+05 | -13.9 | 7.193E+05 | -8.4 | 5.453E+05 | -30.6 | 5.537E+05 | -29.5 | 5.389E+05 | -31.4 |

| | INITIAL CALIBRATION | | 010F0101 | | 035F0101 | | 056F0101 | | 077F0101 | | 098F0101 | | 018F0201 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 3.455E+06 | 57.5 | 3.687E+06 | 6.7 | 2.937E+06 | -15.0 | 2.751E+06 | -20.4 | 2.321E+06 | -32.8 | 2.921E+06 | -15.5 | 2.349E+06 | -32.0 |
| 1,1-dichloroethene | 1.194E+07 | 64.1 | 1.433E+07 | 20.0 | 7.265E+06 | -39.2 | 1.572E+07 | 31.7 | 1.100E+07 | -7.9 | 1.802E+07 | 50.9 | 1.510E+07 | 26.4 |
| methylene chloride | 5.298E+06 | 19.0 | 1.243E+07 | 134.6 | 3.169E+06 | -40.2 | 6.296E+06 | 18.8 | 1.108E+07 | 109.0 | 6.015E+06 | 13.5 | 6.034E+06 | 13.9 |
| chloroform (coelutes) | 2.316E+08 | 62.1 | 1.998E+08 | -13.7 | 1.642E+08 | -29.1 | 1.855E+08 | -19.9 | 1.539E+08 | -33.6 | 1.502E+08 | -35.1 | 1.426E+08 | -38.4 |
| 1,1,1-trichloroethane (coelutes) | 6.379E+08 | 61.9 | 5.495E+08 | -13.9 | 4.516E+08 | -29.2 | 5.100E+08 | -20.0 | 4.231E+08 | -33.7 | 4.131E+08 | -35.2 | 3.921E+08 | -38.5 |
| carbon tetrachloride (coelutes) | 3.974E+09 | 62.2 | 3.434E+09 | -13.6 | 2.823E+09 | -29.0 | 3.188E+09 | -19.8 | 2.644E+09 | -33.5 | 2.582E+09 | -35.0 | 2.451E+09 | -38.3 |
| 1,2-dichloroethane | 5.532E+06 | 57.7 | 1.294E+07 | 133.9 | 3.415E+06 | -38.3 | 4.155E+06 | -24.9 | 8.316E+06 | 50.3 | 3.673E+06 | -33.6 | 9.979E+06 | 80.4 |
| trichloroethene (ECD) | 2.965E+08 | 16.6 | 2.550E+08 | -14.0 | 2.515E+08 | -15.2 | 2.802E+08 | -5.5 | 2.516E+08 | -15.1 | 2.340E+08 | -21.1 | 2.424E+08 | -18.2 |
| tetrachloroethene (ECD) (coelut | 5.724E+08 | 17.5 | 5.602E+08 | -2.1 | 4.289E+08 | -25.1 | 4.284E+08 | -25.2 | 3.821E+08 | -33.3 | 3.895E+08 | -32.0 | 3.840E+08 | -32.9 |
| 1,1,2-trichloroethane (coelutes) | 1.828E+07 | 18.1 | 1.810E+07 | -1.0 | 1.386E+07 | -24.2 | 1.384E+07 | -24.3 | 1.234E+07 | -32.5 | 1.258E+07 | -31.2 | 1.240E+07 | -32.1 |
| bromoform | 1.557E+08 | 27.3 | 1.443E+08 | -7.3 | 1.335E+08 | -14.3 | 1.440E+08 | -7.5 | 1.423E+08 | -8.6 | 1.359E+08 | -12.7 | 1.397E+08 | -10.2 |
| 1,1,2,2-tetrachloroethane | 6.642E+07 | 53.9 | 5.487E+07 | -17.4 | 5.843E+07 | -12.0 | 5.911E+07 | -11.0 | 6.166E+07 | -7.2 | 5.557E+07 | -16.3 | 5.012E+07 | -24.5 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | | NUMBER 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| PID IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| PID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| PID COMPOUNDS | 08/27/97 010R0101 | area | conc. | 08/27/97 035R0101 | area | conc. | 08/28/97 056R0101 | area | conc. | 08/28/97 077R0101 | area | conc. | 08/29/97 098R0101 | area | conc. | 08/29/97 018R0201 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 2.359E+04 | 17695 | 75 | 1.797E+04 | 13474 | 75 | 1.671E+04 | 12533 | 75 | 1.376E+04 | 10323 | 75 | 1.518E+04 | 11383 | 75 | 1.235E+04 | 9262 | 75 |
| acetone (coelutes) | 7.869E+04 | 54295 | 69 | 7.179E+04 | 49535 | 69 | 7.962E+04 | 54935 | 69 | 2.818E+04 | 19443 | 69 | 7.784E+04 | 53711 | 69 | 4.893E+04 | 33759 | 69 |
| trans-1,2-dichloroethene | 7.940E+05 | 119106 | 15 | 7.408E+05 | 111121 | 15 | 7.648E+05 | 114713 | 15 | 6.560E+05 | 98405 | 15 | 7.205E+05 | 108077 | 15 | 6.705E+05 | 100577 | 15 |
| cis-1,2-dichloroethene | 1.137E+05 | 17061 | 15 | 1.143E+05 | 17140 | 15 | 1.394E+05 | 20903 | 15 | 2.059E+05 | 30879 | 15 | 1.960E+05 | 29395 | 15 | 2.857E+05 | 42848 | 15 |
| carbon disulfide (coelutes) | 7.732E+04 | 78868 | 102 | 8.584E+04 | 87561 | 102 | 8.201E+04 | [illegible] | 102 | 8.350E+04 | 85166 | 102 | 5.812E+04 | 59278 | 102 | 4.458E+04 | 45472 | 102 |
| 2-butanone (coelutes) | 1.195E+05 | 78868 | 66 | 1.327E+05 | 87561 | 66 | 1.267E+05 | 83647 | 66 | 1.290E+05 | 85166 | 66 | 8.982E+04 | 59278 | 66 | 6.890E+04 | 45472 | 66 |
| benzene | 8.790E+05 | 87902 | 10 | 4.821E+05 | 48207 | 10 | 1.042E+06 | 104194 | 10 | 7.446E+05 | 74458 | 10 | 5.416E+05 | 54159 | 10 | 7.258E+05 | 72580 | 10 |
| trichloroethene (PID - MDL N/A) | 4.859E+05 | 9718 | 2 | 5.041E+05 | 10081 | 2 | 7.756E+05 | 15511 | 2 | 1.895E+06 | 37890 | 2 | 5.080E+05 | 10160 | 2 | 5.702E+05 | 11403 | 2 |
| toluene (coelutes) | 9.175E+05 | 155975 | 17 | 6.403E+05 | 108854 | 17 | 5.086E+05 | 86461 | 17 | 6.098E+05 | 103668 | 17 | 5.013E+05 | 85228 | 17 | 4.498E+05 | 76471 | 17 |
| 4-methyl-2-pentanone (coelutes) | 1.592E+05 | 155975 | 98 | 1.111E+05 | 108854 | 98 | 8.823E+04 | 86461 | 98 | 1.058E+05 | 103668 | 98 | 8.697E+04 | 85228 | 98 | 7.803E+04 | 76471 | 98 |
| 2-hexanone | 1.521E+05 | 60845 | 40 | 2.320E+05 | 92784 | 40 | 1.200E+05 | 47998 | 40 | 8.793E+04 | 35170 | 40 | 1.122E+05 | 44889 | 40 | 1.132E+05 | 45282 | 40 |
| tetrachloroethene (PID - MDL N/A) | 7.875E+05 | 15749 | 2 | 7.143E+05 | 14286 | 2 | 4.124E+05 | 8248 | 2 | 7.724E+05 | 15447 | 2 | 3.068E+05 | 6136 | 2 | 2.902E+05 | 5803 | 2 |
| chlorobenzene | 5.296E+05 | 10591 | 2 | 5.588E+05 | 11176 | 2 | 3.950E+05 | 7899 | 2 | 2.466E+05 | 4931 | 2 | 3.377E+05 | 6754 | 2 | 3.322E+05 | 6644 | 2 |
| ethylbenzene | 3.994E+05 | 39944 | 10 | 3.541E+05 | 35414 | 10 | 3.382E+05 | 33821 | 10 | 1.898E+05 | 18983 | 10 | 2.815E+05 | 28145 | 10 | 2.667E+05 | 26671 | 10 |
| m-xylene (coelutes) | 7.231E+05 | 144612 | 20 | 6.105E+05 | 122092 | 20 | 6.393E+05 | 127854 | 20 | 4.559E+05 | 91170 | 20 | 4.888E+05 | 97750 | 20 | 4.741E+05 | 94812 | 20 |
| p-xylene (coelutes) | 7.231E+05 | 144612 | 20 | 6.105E+05 | 122092 | 20 | 6.393E+05 | 127854 | 20 | 4.559E+05 | 91170 | 20 | 4.888E+05 | 97750 | 20 | 4.741E+05 | 94812 | 20 |
| o-xylene (coelutes) | 6.680E+05 | 133601 | 20 | 6.761E+05 | 135229 | 20 | 7.193E+05 | 143861 | 20 | 5.453E+05 | 109053 | 20 | 5.537E+05 | 110739 | 20 | 5.389E+05 | 107782 | 20 |
| styrene (coelutes) | 6.680E+05 | 133601 | 20 | 6.761E+05 | 135229 | 20 | 7.193E+05 | 143861 | 20 | 5.453E+05 | 109053 | 20 | 5.537E+05 | 110739 | 20 | 5.389E+05 | 107782 | 20 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | | NUMBER 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| ECD IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | 08/27/97 010F0101 | area | conc. | 08/27/97 035F0101 | area | conc. | 08/28/97 056F0101 | area | conc. | 08/28/97 077F0101 | area | conc. | 08/29/97 098F0101 | area | conc. | 08/29/97 018F0201 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 3.687E+06 | 2765475 | 75 | 2.937E+06 | 2202771 | 75 | 2.751E+06 | 2063404 | 75 | 2.321E+06 | 1740617 | 75 | 2.921E+06 | 2190752 | 75 | 2.349E+06 | 1761462 | 75 |
| 1,1-dichloroethene | 1.433E+07 | 2149123 | 15 | 7.265E+06 | 1089724 | 15 | 1.572E+07 | 2358409 | 15 | 1.100E+07 | 1649990 | 15 | 1.802E+07 | 2703104 | 15 | 1.510E+07 | 2264282 | 15 |
| methylene chloride | 1.243E+07 | 2485779 | 20 | 3.169E+06 | 633776 | 20 | 6.296E+06 | 1259155 | 20 | 1.108E+07 | 2215016 | 20 | 6.015E+06 | 1202961 | 20 | 6.034E+06 | 1206894 | 20 |
| chloroform (coelutes) | 1.998E+08 | 21980500 | 11 | 1.642E+08 | 18064817 | 11 | 1.855E+08 | 20400900 | 11 | 1.539E+08 | 16923859 | 11 | 1.502E+08 | 16522000 | 11 | 1.426E+08 | 15685600 | 11 |
| 1,1,1-trichloroethane (coelutes) | 5.495E+08 | 21980500 | 4 | 4.516E+08 | 18064817 | 4 | 5.100E+08 | 20400900 | 4 | 4.231E+08 | 16923859 | 4 | 4.131E+08 | 16522000 | 4 | 3.921E+08 | 15685600 | 4 |
| carbon tetrachloride (coelutes) | 3.434E+09 | 21980500 | 0.64 | 2.823E+09 | 18064817 | 0.64 | 3.188E+09 | 20400900 | 0.64 | 2.644E+09 | 16923859 | 0.64 | 2.582E+09 | 16522000 | 0.64 | 2.451E+09 | 15685600 | 0.64 |
| 1,2-dichloroethane | 1.294E+07 | 2588426 | 20 | 3.415E+06 | 683077 | 20 | 4.155E+06 | 830995 | 20 | 8.316E+06 | 1663195 | 20 | 3.673E+06 | 734601 | 20 | 9.979E+06 | 1995826 | 20 |
| trichloroethene (ECD) | 2.550E+08 | 5099830 | 2 | 2.515E+08 | 5029734 | 2 | 2.802E+08 | 5603984 | 2 | 2.516E+08 | 5032247 | 2 | 2.340E+08 | 4680013 | 2 | 2.424E+08 | 4848181 | 2 |
| tetrachloroethene (ECD) (coelutes) | 5.602E+08 | 11764700 | 2.1 | 4.289E+08 | 9007035 | 2.1 | 4.284E+08 | 8997266 | 2.1 | 3.821E+08 | 8023529 | 2.1 | 3.895E+08 | 8178484 | 2.1 | 3.840E+08 | 8063110 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 1.810E+07 | 11764700 | 65 | 1.386E+07 | 9007035 | 65 | 1.384E+07 | 8997266 | 65 | 1.234E+07 | 8023529 | 65 | 1.258E+07 | 8178484 | 65 | 1.240E+07 | 8063110 | 65 |
| bromoform | 1.443E+08 | 2885371 | 2 | 1.335E+08 | 2669764 | 2 | 1.440E+08 | 2879404 | 2 | 1.423E+08 | 2846454 | 2 | 1.359E+08 | 2717761 | 2 | 1.397E+08 | 2794885 | 2 |
| 1,1,2,2-tetrachloroethane | 5.487E+07 | 1097323 | 2 | 5.843E+07 | 1168506 | 2 | 5.911E+07 | 1182296 | 2 | 6.166E+07 | 1233199 | 2 | 5.557E+07 | 1111458 | 2 | 5.012E+07 | 1002470 | 2 |

# INITIAL CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
## September 2 through 19, 1997

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc | area | conc. | area | conc |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 022R0101 | STD.2 023R0101 | STD.3 024R0101 | STD.4 025R0101 | STD.5 026R0101 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | NA | 3.137E+04 | 2.488E+04 | 1.757E+04 | 9.647E+03 | 2.087E+04 | 44.9 | NA | 25 | 15685 | 50 | 18659 | 75 | 17570 | 100 | 14471 | 150 |
| acetone (coelutes) | NA | 2.991E+05 | 1.877E+05 | 1.755E+05 | 1.105E+05 | 1.932E+05 | 40.5 | NA | 0 | 58623 | 19.6 | 129508 | 69 | 293053 | 167 | 301730 | 273 |
| trans-1,2-dichloroethene | 3.389E+06 | 2.691E+06 | 2.420E+06 | 1.809E+06 | 1.141E+06 | 2.290E+06 | 37.4 | 84728 | 2.5 | 134533 | 5 | 363055 | 15 | 813903 | 45 | 1026517 | 90 |
| cis-1,2-dichloroethene | NA | 5.631E+05 | 4.472E+05 | 5.487E+05 | 4.435E+05 | 5.006E+05 | 12.8 | NA | 0 | 28154 | 5 | 67075 | 15 | 246919 | 45 | 399177 | 90 |
| carbon disulfide (coelutes) | NA | 6.571E+05 | 4.505E+05 | 3.649E+05 | 2.662E+05 | 4.347E+05 | 38.3 | NA | 12.7 | 166909 | 25.4 | 459511 | 102 | 740757 | 203 | 676236 | 254 |
| 2-butanone (coelutes) | NA | 1.012E+06 | 6.962E+05 | 5.612E+05 | 4.098E+05 | 6.697E+05 | 38.3 | NA | 8.2 | 166909 | 16.5 | 459511 | 66 | 740757 | 132 | 676236 | 165 |
| benzene | 5.427E+06 | 2.414E+06 | 4.134E+06 | 5.326E+06 | 3.579E+06 | 4.176E+06 | 30.2 | 54273 | 1 | 120706 | 5 | 413426 | 10 | 798887 | 15 | 894757 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 2.803E+06 | 5.055E+06 | 7.169E+06 | 7.504E+06 | 5.633E+06 | 38.6 | NA | 0 | 28032 | 1 | 101092 | 2 | 286756 | 4 | 600317 | 8 |
| toluene (coelutes) | NA | 2.455E+06 | 2.557E+06 | 2.266E+06 | 1.825E+06 | 2.276E+06 | 14.2 | NA | 0 | 164502 | 6.7 | 434734 | 17 | 654834 | 28.9 | 773880 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | NA | 4.251E+05 | 4.436E+05 | 3.945E+05 | 3.185E+05 | 3.954E+05 | 13.9 | NA | 0 | 164502 | 38.7 | 434734 | 98 | 654834 | 166 | 773880 | 243 |
| 2-hexanone | NA | NA | 6.294E+05 | 4.101E+05 | 3.268E+05 | 4.554E+05 | 34.3 | NA | 0 | NA | 0 | 251763 | 40 | 328053 | 80 | 326849 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 2.459E+06 | 3.183E+06 | NA | NA | 2.821E+06 | 18.1 | NA | 0 | 24588 | 1 | 63651 | 2 | NA | 4 | NA | 8 |
| chlorobenzene | NA | 1.078E+06 | 1.081E+06 | 1.271E+06 | 1.658E+06 | 1.272E+06 | 21.4 | NA | 0 | 10776 | 1 | 21622 | 2 | 50822 | 4 | 132643 | 8 |
| ethylbenzene | NA | 3.220E+05 | 5.699E+05 | 5.670E+05 | 6.896E+05 | 5.371E+05 | 28.7 | NA | 0 | 16102 | 5 | 56994 | 10 | 85048 | 15 | 172406 | 25 |
| m-xylene (coelutes) | 1.746E+06 | 3.136E+05 | 6.476E+05 | 9.945E+05 | 1.180E+06 | 9.763E+05 | 55.7 | 34916 | 2 | 31357 | 10 | 129517 | 20 | 298344 | 30 | 590143 | 50 |
| p-xylene (coelutes) | 1.746E+06 | 3.136E+05 | 6.476E+05 | 9.945E+05 | 1.180E+06 | 9.763E+05 | 55.7 | 34916 | 2 | 31357 | 10 | 129517 | 20 | 298344 | 30 | 590143 | 50 |
| o-xylene (coelutes) | 1.407E+06 | 4.947E+05 | 1.173E+06 | 1.323E+06 | 1.414E+06 | 1.162E+06 | 33.2 | 28134 | 2 | 49472 | 10 | 234556 | 20 | 396886 | 30 | 707188 | 50 |
| styrene (coelutes) | 1.407E+06 | 4.947E+05 | 1.173E+06 | 1.323E+06 | 1.414E+06 | 1.162E+06 | 33.2 | 28134 | 2 | 49472 | 10 | 234556 | 20 | 396886 | 30 | 707188 | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc | area | conc. | area | conc. | area | conc | area | conc |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | STD.1 022F0101 | STD.2 023F0101 | STD.3 024F0101 | STD.4 025F0101 | STD.5 026F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 1.131E+05 | 3.400E+06 | 2.419E+06 | 1.396E+06 | 9.523E+05 | 1.656E+06 | 77.4 | 28271 | 25 | 1700138 | 50 | 1814167 | 75 | 1396198 | 100 | 1428389.5 | 150 |
| 1,1-dichloroethene | NA | 1.916E+07 | 9.982E+06 | 7.377E+06 | 5.079E+06 | 1.040E+07 | 59.4 | NA | 0 | 957864 | 5 | 1497282 | 15 | 3319625 | 45 | 4570846.4 | 90 |
| methylene chloride | NA | 1.236E+07 | 9.563E+06 | 7.381E+06 | 5.180E+06 | 8.621E+06 | 35.6 | NA | 0 | 1235791 | 10 | 1912682 | 20 | 3690403 | 50 | 5180000 | 100 |
| chloroform (coelutes) | NA | 3.027E+08 | 1.983E+08 | 1.501E+08 | 8.857E+07 | 1.849E+08 | 48.9 | NA | 0 | 16649600 | 5.5 | 21811400 | 11 | 32874200 | 21.9 | 38793320 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 8.325E+08 | 5.453E+08 | 4.161E+08 | 2.440E+08 | 5.095E+08 | 48.7 | NA | 0 | 16649600 | 2 | 21811400 | 4 | 32874200 | 7.9 | 38793320 | 15.9 |
| carbon tetrachloride (coelutes) | NA | 5.203E+09 | 3.408E+09 | 2.529E+09 | 1.552E+09 | 3.173E+09 | 48.9 | NA | 0 | 16649600 | 0.32 | 21811400 | 0.64 | 32874200 | 1.3 | 38793320 | 2.5 |
| 1,2-dichloroethane | NA | NA | 1.101E+07 | 6.639E+06 | 6.846E+06 | 8.164E+06 | 30.2 | NA | 0 | NA | 0 | 2201663 | 20 | 3319625 | 50 | 6845880 | 100 |
| trichloroethene (ECD) | 4.245E+08 | 3.097E+08 | 2.432E+08 | 2.626E+08 | 2.337E+08 | 2.947E+08 | 26.6 | 2122716 | 0.5 | 3097296 | 1 | 4863519 | 2 | 10504600 | 4 | 18692400 | 8 |
| tetrachloroethene (ECD) (coelutes) | 8.400E+08 | 7.327E+08 | 4.792E+08 | 4.936E+08 | 4.645E+08 | 6.020E+08 | 28.7 | 4368242 | 0.52 | 7327265 | 1 | 10062600 | 2.1 | 20237300 | 4.1 | 38556800 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 2.713E+07 | 2.276E+07 | 1.548E+07 | 1.569E+07 | 1.494E+07 | 1.920E+07 | 28.5 | 3388222 | 16.1 | 7327265 | 32.2 | 10062600 | 65 | 20237300 | 129 | 38556800 | 258 |
| bromoform | 1.836E+08 | 1.560E+08 | 1.477E+08 | 1.322E+08 | 1.114E+08 | 1.462E+08 | 18.4 | 918024 | 0.5 | 1559742.3 | 1 | 2954508 | 2 | 5289968 | 4 | 8912577 | 8 |
| 1,1,2,2-tetrachloroethane | 7.842E+07 | 6.739E+07 | 7.105E+07 | 5.137E+07 | 3.544E+07 | 6.073E+07 | 28.4 | 392120 | 0.5 | 673864.12 | 1 | 1420915 | 2 | 2054757 | 4 | 2835521 | 8 |

CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
September 2 through September 19, 1997

| DATE: | | | 09/03/97 | | 09/03/97 | | 09/04/97 | | 09/04/97 | | 09/05/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | |
| | INITIAL CALIBRATION | | 024R0101 | | 041R0101 | | 075R0101 | | 075R0101 | | 094R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 2.087E+04 | 44.9 | 2.488E+04 | 19.2 | 2.297E+04 | 10.1 | 1.533E+04 | -26.5 | 1.533E+04 | -26.5 | 2.150E+04 | 3.0 |
| acetone (coelutes) | 1.932E+05 | 40.5 | 1.877E+05 | -2.8 | 2.221E+05 | 14.9 | 1.968E+05 | 1.8 | 1.968E+05 | 1.8 | 4.549E+05 | 135.4 |
| trans-1,2-dichloroethene | 2.290E+06 | 37.4 | 1.933E+06 | -15.6 | 2.274E+06 | -0.7 | 1.669E+06 | -27.1 | 1.669E+06 | -27.1 | 3.139E+06 | 37.1 |
| cis-1,2-dichloroethene | 5.006E+05 | 12.8 | 7.091E+05 | 41.6 | 4.312E+05 | -13.9 | 5.841E+05 | 16.7 | 5.841E+05 | 16.7 | NA | NA |
| carbon disulfide (coelutes) | 4.347E+05 | 38.3 | 4.170E+05 | -4.1 | 3.653E+04 | -91.6 | 8.589E+04 | -80.2 | 8.589E+04 | -80.2 | NA | NA |
| 2-butanone (coelutes) | 6.697E+05 | 38.3 | 6.444E+05 | -3.8 | 6.390E+05 | -4.6 | 3.982E+05 | -40.5 | 3.982E+05 | -40.5 | NA | NA |
| benzene | 4.176E+06 | 30.2 | 4.134E+06 | -1.0 | 4.178E+06 | 0.0 | 3.068E+06 | -26.5 | 3.068E+06 | -26.5 | NA | NA |
| trichloroethene (PID - MDL N/A) | 5.633E+06 | 38.6 | 5.055E+06 | -10.3 | 5.197E+06 | -7.7 | 3.269E+06 | -42.0 | 3.269E+06 | -42.0 | 5.225E+06 | -7.2 |
| toluene (coelutes) | 2.276E+06 | 14.2 | 4.050E+06 | 78.0 | 3.571E+06 | 56.9 | 3.494E+06 | 53.5 | 3.494E+06 | 53.5 | 3.114E+06 | 36.8 |
| 4-methyl-2-pentanone (coelutes | 3.954E+05 | 13.9 | 7.025E+05 | 77.7 | 6.195E+05 | 56.7 | 6.061E+05 | 53.3 | 6.061E+05 | 53.3 | 5.402E+05 | 36.6 |
| 2-hexanone | 4.554E+05 | 34.3 | 6.294E+05 | 38.2 | 6.460E+05 | 41.8 | 1.554E+06 | 241.3 | 1.554E+06 | 241.3 | 1.303E+06 | 186.1 |
| tetrachloroethene (PID - MDL N/ | 2.821E+06 | 18.1 | 2.926E+06 | 3.7 | 3.211E+06 | 13.9 | 5.241E+06 | 85.8 | 5.241E+06 | 85.8 | 2.259E+06 | -19.9 |
| chlorobenzene | 1.272E+06 | 21.4 | 1.081E+06 | -15.0 | 1.041E+06 | -18.2 | 1.008E+06 | -20.7 | 1.008E+06 | -20.7 | 1.379E+06 | 8.5 |
| ethylbenzene | 5.371E+05 | 28.7 | 5.699E+05 | 6.1 | 5.105E+05 | -5.0 | 5.348E+05 | -0.4 | 5.348E+05 | -0.4 | NA | NA |
| m-xylene (coelutes) | 9.763E+05 | 55.7 | 6.476E+05 | -33.7 | 5.530E+05 | -43.4 | 8.579E+05 | -12.1 | 8.579E+05 | -12.1 | NA | NA |
| p-xylene (coelutes) | 9.763E+05 | 55.7 | 6.476E+05 | -33.7 | 5.530E+05 | -43.4 | 8.579E+05 | -12.1 | 8.579E+05 | -12.1 | NA | NA |
| o-xylene (coelutes) | 1.162E+06 | 33.2 | 1.173E+06 | 0.9 | 4.194E+05 | -63.9 | 9.921E+05 | -14.6 | 9.921E+05 | -14.6 | NA | NA |
| styrene (coelutes) | 1.162E+06 | 33.2 | 1.173E+06 | 0.9 | 4.194E+05 | -63.9 | 9.921E+05 | -14.6 | 9.921E+05 | -14.6 | NA | NA |

| | INITIAL CALIBRATION | | 024F0101 | | 041F0101 | | 075F0101 | | 078F0101 | | 094F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.656E+06 | 77.4 | 2.419E+06 | 46.1 | 2.972E+06 | 79.5 | 2.325E+06 | 40.4 | 2.280E+06 | 37.7 | 2.425E+06 | 46.4 |
| 1,1-dichloroethene | 1.040E+07 | 59.4 | 9.982E+06 | -4.0 | 1.077E+07 | 3.6 | 7.625E+06 | -26.7 | 1.255E+07 | 20.7 | 1.006E+07 | -3.3 |
| methylene chloride | 8.621E+06 | 35.6 | 9.563E+06 | 10.9 | 9.328E+06 | 8.2 | 8.479E+06 | -1.6 | 7.676E+06 | -11.0 | 8.904E+06 | 3.3 |
| chloroform (coelutes) | 1.849E+08 | 48.9 | 1.983E+08 | 7.2 | 1.867E+08 | 1.0 | 1.643E+08 | -11.2 | 1.563E+08 | -15.5 | 1.450E+08 | -21.6 |
| 1,1,1-trichloroethane (coelutes) | 5.095E+08 | 48.7 | 5.453E+08 | 7.0 | 5.134E+08 | 0.8 | 4.518E+08 | -11.3 | 4.297E+08 | -15.7 | 3.987E+08 | -21.7 |
| carbon tetrachloride (coelutes) | 3.173E+09 | 48.9 | 3.408E+09 | 7.4 | 3.209E+09 | 1.1 | 2.824E+09 | -11.0 | 2.686E+09 | -15.4 | 2.492E+09 | -21.5 |
| 1,2-dichloroethane | 8.164E+06 | 30.2 | 1.101E+07 | 34.8 | 7.955E+06 | -2.6 | 1.007E+07 | 23.3 | 7.542E+06 | -7.6 | 6.556E+06 | -19.7 |
| trichloroethene (ECD) | 2.947E+08 | 26.6 | 2.432E+08 | -17.5 | 2.424E+08 | -17.8 | 2.354E+08 | -20.1 | 2.543E+08 | -13.7 | 2.745E+08 | -6.9 |
| tetrachloroethene (ECD) (coelut | 6.020E+08 | 28.7 | 4.792E+08 | -20.4 | 3.951E+08 | -34.4 | 3.854E+08 | -36.0 | 5.408E+08 | -10.2 | 5.066E+08 | -15.8 |
| 1,1,2-trichloroethane (coelutes) | 1.920E+07 | 28.5 | 1.548E+07 | -19.4 | 1.276E+07 | -33.5 | 1.245E+07 | -35.2 | 1.747E+07 | -9.0 | 1.637E+07 | -14.7 |
| bromoform | 1.462E+08 | 18.4 | 1.477E+08 | 1.0 | 1.425E+08 | -2.5 | 1.436E+08 | -1.8 | 1.540E+08 | 5.4 | 1.408E+08 | -3.7 |
| 1,1,2,2-tetrachloroethane | 6.073E+07 | 28.4 | 7.105E+07 | 17.0 | 6.400E+07 | 5.4 | 6.665E+07 | 9.7 | 1.127E+08 | 85.5 | 6.131E+07 | 0.9 |

CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD
September 2 through September 19, 1997

| DATE: | | | 09/05/97 | | 09/07/97 | | 09/09/97 | | 09/09/97 | | 09/10/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | | 7 | | 8 | | 9 | | 10 | |
| | INITIAL CALIBRATION | | 098R0101 | | 023R0201 | | 075R0201 | | 075R0201 | | 016R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 2.087E+04 | 44.9 | 1.847E+04 | -11.5 | 1.409E+04 | -32.5 | 1.750E+04 | -16.1 | 1.750E+04 | -16.1 | 1.084E+04 | -48.1 |
| acetone (coelutes) | 1.932E+05 | 40.5 | 6.564E+05 | 239.8 | 2.105E+05 | 8.9 | 3.800E+05 | 96.7 | 3.800E+05 | 96.7 | 1.287E+05 | -33.4 |
| trans-1,2-dichloroethene | 2.290E+06 | 37.4 | 4.070E+06 | 77.8 | 3.650E+06 | 59.4 | 3.346E+06 | 46.1 | 3.346E+06 | 46.1 | 2.787E+06 | 21.7 |
| cis-1,2-dichloroethene | 5.006E+05 | 12.8 | 5.157E+05 | 3.0 | 5.738E+05 | 14.6 | 6.080E+05 | 21.5 | 6.080E+05 | 21.5 | 7.104E+05 | 41.9 |
| carbon disulfide (coelutes) | 4.347E+05 | 38.3 | 7.500E+04 | -82.7 | 9.138E+04 | -79.0 | 8.942E+04 | -79.4 | 8.942E+04 | -79.4 | 1.551E+05 | -64.3 |
| 2-butanone (coelutes) | 6.697E+05 | 38.3 | 1.283E+05 | -80.8 | 6.866E+05 | 2.5 | 5.460E+05 | -18.5 | 5.460E+05 | -18.5 | 6.400E+05 | -4.4 |
| benzene | 4.176E+06 | 30.2 | 1.288E+06 | -69.2 | 2.411E+06 | -42.3 | 1.728E+06 | -58.6 | 1.728E+06 | -58.6 | 1.762E+06 | -57.8 |
| trichloroethene (PID - MDL N/A) | 5.633E+06 | 38.6 | 1.975E+06 | -64.9 | 2.529E+06 | -55.1 | 3.558E+06 | -36.8 | 3.558E+06 | -36.8 | 6.588E+06 | 17.0 |
| toluene (coelutes) | 2.276E+06 | 14.2 | 3.841E+06 | 68.7 | 2.376E+06 | 4.4 | 2.573E+06 | 13.0 | 2.573E+06 | 13.0 | 2.995E+06 | 31.6 |
| 4-methyl-2-pentanone (coelutes | 3.954E+05 | 13.9 | 6.662E+05 | 68.5 | 4.122E+05 | 4.3 | 4.463E+05 | 12.9 | 4.463E+05 | 12.9 | 5.195E+05 | 31.4 |
| 2-hexanone | 4.554E+05 | 34.3 | 8.449E+05 | 85.5 | 8.115E+05 | 78.2 | 1.274E+06 | 179.8 | 1.274E+06 | 179.8 | 9.994E+05 | 119.4 |
| tetrachloroethene (PID - MDL N/ | 2.821E+06 | 18.1 | 1.456E+06 | -48.4 | 1.859E+06 | -34.1 | 2.381E+06 | -15.6 | 2.381E+06 | -15.6 | 1.395E+06 | -50.5 |
| chlorobenzene | 1.272E+06 | 21.4 | 9.296E+05 | -26.9 | 8.424E+05 | -33.8 | 8.960E+05 | -29.5 | 8.960E+05 | -29.5 | 6.982E+05 | -45.1 |
| ethylbenzene | 5.371E+05 | 28.7 | 4.827E+05 | -10.1 | 3.943E+05 | -26.6 | 4.535E+05 | -15.6 | 4.535E+05 | -15.6 | 2.873E+05 | -46.5 |
| m-xylene (coelutes) | 9.763E+05 | 55.7 | 7.435E+05 | -23.8 | 3.609E+05 | -63.0 | 6.611E+05 | -32.3 | 6.611E+05 | -32.3 | 4.820E+05 | -50.6 |
| p-xylene (coelutes) | 9.763E+05 | 55.7 | 7.435E+05 | -23.8 | 3.609E+05 | -63.0 | 6.611E+05 | -32.3 | 6.611E+05 | -32.3 | 4.820E+05 | -50.6 |
| o-xylene (coelutes) | 1.162E+06 | 33.2 | 7.441E+05 | -36.0 | 3.358E+05 | -71.1 | 7.075E+05 | -39.1 | 7.075E+05 | -39.1 | 6.568E+05 | -43.5 |
| styrene (coelutes) | 1.162E+06 | 33.2 | 7.441E+05 | -36.0 | 3.358E+05 | -71.1 | 7.075E+05 | -39.1 | 7.075E+05 | -39.1 | 6.568E+05 | -43.5 |

| | INITIAL CALIBRATION | | 098F0101 | | 023F0201 | | 075F0201 | | 008F0101 | | 016F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.656E+06 | 77.4 | 2.480E+06 | 49.8 | 2.757E+06 | 66.5 | 2.968E+06 | 79.2 | 2.487E+06 | 50.1 | 2.363E+06 | 42.7 |
| 1,1-dichloroethene | 1.040E+07 | 59.4 | 1.291E+07 | 24.1 | 1.032E+07 | -0.7 | 1.019E+07 | -2.0 | 2.001E+07 | 92.5 | 1.366E+07 | 31.3 |
| methylene chloride | 8.621E+06 | 35.6 | 1.199E+07 | 39.0 | 9.823E+06 | 14.0 | 9.373E+06 | 8.7 | 9.000E+06 | 4.4 | 8.611E+06 | -0.1 |
| chloroform (coelutes) | 1.849E+08 | 48.9 | 2.262E+08 | 22.3 | 2.138E+08 | 15.6 | 2.043E+08 | 10.5 | 2.139E+08 | 15.7 | 2.027E+08 | 9.6 |
| 1,1,1-trichloroethane (coelutes) | 5.095E+08 | 48.7 | 6.222E+08 | 22.1 | 5.879E+08 | 15.4 | 5.618E+08 | 10.3 | 5.881E+08 | 15.4 | 5.573E+08 | 9.4 |
| carbon tetrachloride (coelutes) | 3.173E+09 | 48.9 | 3.889E+09 | 22.6 | 3.674E+09 | 15.8 | 3.511E+09 | 10.7 | 3.676E+09 | 15.9 | 3.483E+09 | 9.8 |
| 1,2-dichloroethane | 8.164E+06 | 30.2 | 5.948E+06 | -27.1 | 9.711E+06 | 18.9 | 4.368E+06 | -46.5 | 5.184E+06 | -36.5 | 6.932E+06 | -15.1 |
| trichloroethene (ECD) | 2.947E+08 | 26.6 | 2.721E+08 | -7.7 | 2.608E+08 | -11.5 | 2.594E+08 | -12.0 | 2.487E+08 | -15.6 | 2.704E+08 | -8.2 |
| tetrachloroethene (ECD) (coelut | 6.020E+08 | 28.7 | 4.601E+08 | -23.6 | 3.288E+08 | -45.4 | 3.880E+08 | -35.5 | 4.887E+08 | -18.8 | 4.132E+08 | -31.4 |
| 1,1,2-trichloroethane (coelutes) | 1.920E+07 | 28.5 | 1.486E+07 | -22.6 | 1.062E+07 | -44.7 | 1.254E+07 | -34.7 | 1.579E+07 | -17.8 | 1.335E+07 | -30.5 |
| bromoform | 1.462E+08 | 18.4 | 1.744E+08 | 19.3 | 1.365E+08 | -6.6 | 1.421E+08 | -2.8 | 1.130E+08 | -22.7 | 1.252E+08 | -14.3 |
| 1,1,2,2-tetrachloroethane | 6.073E+07 | 28.4 | 7.576E+07 | 24.7 | 5.750E+07 | -5.3 | 6.524E+07 | 7.4 | 4.259E+07 | -29.9 | 5.075E+07 | -16.4 |

CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
September 2 through 19, 1997

| DATE: | | | 09/10/97 | | 09/10/97 | | 09/11/97 | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | |
| | INITIAL CALIBRATION | | 019R0101 | | 033R0101 | | 049R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 2.087E+04 | 44.9 | 2.008E+04 | -3.8 | 1.217E+04 | -41.7 | 1.170E+04 | -43.9 |
| acetone (coelutes) | 1.932E+05 | 40.5 | 2.918E+05 | 51.1 | 5.397E+05 | 179.3 | 3.507E+05 | 81.5 |
| trans-1,2-dichloroethene | 2.290E+06 | 37.4 | 2.037E+06 | -11.0 | 3.064E+06 | 33.8 | 1.613E+06 | -29.5 |
| cis-1,2-dichloroethene | 5.006E+05 | 12.8 | 4.865E+05 | -2.8 | 9.728E+05 | 94.3 | 1.225E+06 | 144.7 |
| carbon disulfide (coelutes) | 4.347E+05 | 38.3 | 7.468E+04 | -82.8 | 4.896E+05 | 12.6 | 5.166E+05 | 18.8 |
| 2-butanone (coelutes) | 6.697E+05 | 38.3 | 1.334E+05 | -80.1 | 7.567E+05 | 13.0 | 7.983E+05 | 19.2 |
| benzene | 4.176E+06 | 30.2 | 1.247E+06 | -70.1 | 2.638E+06 | -36.8 | 3.248E+06 | -22.2 |
| trichloroethene (PID - MDL N/A) | 5.633E+06 | 38.6 | 6.865E+05 | -87.8 | 1.573E+06 | -72.1 | 3.339E+06 | -40.7 |
| toluene (coelutes) | 2.276E+06 | 14.2 | 1.787E+06 | -21.5 | 2.645E+06 | 16.2 | 2.597E+06 | 14.1 |
| 4-methyl-2-pentanone (coelutes | 3.954E+05 | 13.9 | 3.100E+05 | -21.6 | 4.589E+05 | 16.1 | 4.505E+05 | 13.9 |
| 2-hexanone | 4.554E+05 | 34.3 | 1.732E+05 | -62.0 | 1.197E+06 | 162.9 | 1.080E+06 | 137.1 |
| tetrachloroethene (PID - MDL N/ | 2.821E+06 | 18.1 | 1.215E+06 | -56.9 | 1.500E+06 | -46.8 | 1.704E+06 | -39.6 |
| chlorobenzene | 1.272E+06 | 21.4 | 3.953E+05 | -68.9 | 7.261E+05 | -42.9 | 7.976E+05 | -37.3 |
| ethylbenzene | 5.371E+05 | 28.7 | 3.983E+05 | -25.8 | 4.142E+05 | -22.9 | 3.848E+05 | -28.4 |
| m-xylene (coelutes) | 9.763E+05 | 55.7 | 7.081E+05 | -27.5 | 3.965E+05 | -59.4 | 3.542E+05 | -63.7 |
| p-xylene (coelutes) | 9.763E+05 | 55.7 | 7.081E+05 | -27.5 | 3.965E+05 | -59.4 | 3.542E+05 | -63.7 |
| o-xylene (coelutes) | 1.162E+06 | 33.2 | 6.511E+05 | -44.0 | 7.056E+05 | -39.3 | 6.819E+05 | -41.3 |
| styrene (coelutes) | 1.162E+06 | 33.2 | 6.511E+05 | -44.0 | 7.056E+05 | -39.3 | 6.819E+05 | -41.3 |

| | INITIAL CALIBRATION | | 019F0101 | | 033F0101 | | 049F0101 | |
|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 1.656E+06 | 77.4 | 3.169E+06 | 91.4 | 2.659E+06 | 60.6 | 2.365E+06 | 42.8 |
| 1,1-dichloroethene | 1.040E+07 | 59.4 | 1.313E+07 | 26.2 | 1.621E+07 | 55.9 | 9.606E+06 | -7.6 |
| methylene chloride | 8.621E+06 | 35.6 | 9.354E+06 | 8.5 | 9.263E+06 | 7.5 | 9.383E+06 | 8.8 |
| chloroform (coelutes) | 1.849E+08 | 48.9 | 1.972E+08 | 6.6 | 2.068E+08 | 11.8 | 1.746E+08 | -5.6 |
| 1,1,1-trichloroethane (coelutes) | 5.095E+08 | 48.7 | 5.423E+08 | 6.4 | 5.688E+08 | 11.6 | 4.801E+08 | -5.8 |
| carbon tetrachloride (coelutes) | 3.173E+09 | 48.9 | 3.389E+09 | 6.8 | 3.555E+09 | 12.0 | 3.001E+09 | -5.4 |
| 1,2-dichloroethane | 8.164E+06 | 30.2 | 3.520E+06 | -56.9 | 4.191E+06 | -48.7 | 4.837E+06 | -40.8 |
| trichloroethene (ECD) | 2.947E+08 | 26.6 | 1.989E+08 | -32.5 | 2.823E+08 | -4.2 | 2.588E+08 | -12.2 |
| tetrachloroethene (ECD) (coelut | 6.020E+08 | 28.7 | 4.223E+08 | -29.9 | 5.062E+08 | -15.9 | 4.309E+08 | -28.4 |
| 1,1,2-trichloroethane (coelutes) | 1.920E+07 | 28.5 | 1.364E+07 | -28.9 | 1.635E+07 | -14.8 | 1.392E+07 | -27.5 |
| bromoform | 1.462E+08 | 18.4 | 9.406E+07 | -35.7 | 1.326E+08 | -9.3 | 1.284E+08 | -12.2 |
| 1,1,2,2-tetrachloroethane | 6.073E+07 | 28.4 | 4.400E+07 | -27.6 | 5.535E+07 | -8.9 | 5.400E+07 | -11.1 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 |
|---|---|---|---|---|---|---|---|---|---|
| | area | conc. | area | conc. | area | conc. | area | conc. | area |
| PID IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 |
| PID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 |

| PID COMPOUNDS | 09/03/97 024R0101 | area | conc. | 09/03/97 041R0101 | area | conc. | 09/04/97 075R0101 | area | conc. | 09/04/97 075R0101 | area | conc. | 09/05/97 094R0101 | area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 2.488E+04 | 18659 | 75 | 2.297E+04 | 17230 | 75 | 1.533E+04 | 11495 | 75 | 1.533E+04 | 11495 | 75 | 2.150E+04 | 16126 |
| acetone (coelutes) | 1.877E+05 | 129508 | 69 | 2.221E+05 | 153217 | 69 | 1.968E+05 | 135761 | 69 | 1.968E+05 | 135761 | 69 | 4.549E+05 | 313862 |
| trans-1,2-dichloroethene | 1.933E+06 | 289915 | 15 | 2.274E+06 | 341032 | 15 | 1.669E+06 | 250281 | 15 | 1.669E+06 | 250281 | 15 | 3.139E+06 | 470794 |
| cis-1,2-dichloroethene | 7.091E+05 | 106369 | 15 | 4.312E+05 | 64673 | 15 | 5.841E+05 | 87608 | 15 | 5.841E+05 | 87608 | 15 | 0.000E+00 | NA |
| carbon disulfide (coelutes) | 4.170E+05 | 425309 | 102 | 3.653E+04 | 37265 | 102 | 8.589E+04 | 87608 | 102 | 8.589E+04 | 87608 | 102 | 0.000E+00 | NA |
| 2-butanone (coelutes) | 6.444E+05 | 425309 | 66 | 6.390E+05 | 421742 | 66 | 3.982E+05 | 262825 | 66 | 3.982E+05 | 262825 | 66 | 0.000E+00 | NA |
| benzene | 4.134E+06 | 413426 | 10 | 4.178E+06 | 417797 | 10 | 3.068E+06 | 306766 | 10 | 3.068E+06 | 306766 | 10 | 0.000E+00 | NA |
| trichloroethene (PID - MDL N/A) | 5.055E+06 | 101092 | 2 | 5.197E+06 | 103949 | 2 | 3.269E+06 | 65376 | 2 | 3.269E+06 | 65376 | 2 | 5.225E+06 | 104498 |
| toluene (coelutes) | 4.050E+06 | 688497 | 17 | 3.571E+06 | 607114 | 17 | 3.494E+06 | 594018 | 17 | 3.494E+06 | 594018 | 17 | 3.114E+06 | 529381 |
| 4-methyl-2-pentanone (coelutes) | 7.025E+05 | 688497 | 98 | 6.195E+05 | 607114 | 98 | 6.061E+05 | 594018 | 98 | 6.061E+05 | 594018 | 98 | 5.402E+05 | 529381 |
| 2-hexanone | 6.294E+05 | 251763 | 40 | 6.460E+05 | 258414 | 40 | 1.554E+06 | 621776 | 40 | 1.554E+06 | 621776 | 40 | 1.303E+06 | 521273 |
| tetrachloroethene (PID - MDL N/A) | 2.926E+06 | 58512 | 2 | 3.211E+06 | 64227 | 2 | 5.241E+06 | 104827 | 2 | 5.241E+06 | 104827 | 2 | 2.259E+06 | 45182 |
| chlorobenzene | 1.081E+06 | 21622 | 2 | 1.041E+06 | 20818 | 2 | 1.008E+06 | 20160 | 2 | 1.008E+06 | 20160 | 2 | 1.379E+06 | 27588 |
| ethylbenzene | 5.699E+05 | 56994 | 10 | 5.105E+05 | 51048 | 10 | 5.348E+05 | 53482 | 10 | 5.348E+05 | 53482 | 10 | 0.000E+00 | NA |
| m-xylene (coelutes) | 6.476E+05 | 129517 | 20 | 5.530E+05 | 110604 | 20 | 8.579E+05 | 171575 | 20 | 8.579E+05 | 171575 | 20 | 0.000E+00 | NA |
| p-xylene (coelutes) | 6.476E+05 | 129517 | 20 | 5.530E+05 | 110604 | 20 | 8.579E+05 | 171575 | 20 | 8.579E+05 | 171575 | 20 | 0.000E+00 | NA |
| o-xylene (coelutes) | 1.173E+06 | 234556 | 20 | 4.194E+05 | 83887 | 20 | 9.921E+05 | 198417 | 20 | 9.921E+05 | 198417 | 20 | 0.000E+00 | NA |
| styrene (coelutes) | 1.173E+06 | 234556 | 20 | 4.194E+05 | 83887 | 20 | 9.921E+05 | 198417 | 20 | 9.921E+05 | 198417 | 20 | 0.000E+00 | NA |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 |
|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 |
| ECID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 |

| ECD COMPOUNDS | 09/03/97 024F0101 | area | conc. | 09/03/97 041F0101 | area | conc. | 09/04/97 075F0101 | area | conc. | 09/04/97 078F0101 | area | conc. | 09/05/97 094F0101 | area |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 2.419E+06 | 1814167 | 75 | 2.972E+06 | 2229199 | 75 | 2.325E+06 | 1743621 | 75 | 2.280E+06 | 1710164 | 75 | 2.425E+06 | 1818565 |
| 1,1-dichloroethene | 9.982E+06 | 1497282 | 15 | 1.077E+07 | 1615534 | 15 | 7.625E+06 | 1143717 | 15 | 1.255E+07 | 1882740 | 15 | 1.006E+07 | 1508290 |
| methylene chloride | 9.563E+06 | 1912682 | 20 | 9.328E+06 | 1865694 | 20 | 8.479E+06 | 1695881 | 20 | 7.676E+06 | 1535127 | 20 | 8.904E+06 | 1780860 |
| chloroform (coelutes) | 1.983E+08 | 21811400 | 11 | 1.867E+08 | 20537274 | 11 | 1.643E+08 | 18071800 | 11 | 1.563E+08 | 17187989 | 11 | 1.450E+08 | 15948800 |
| 1,1,1-trichloroethane (coelutes) | 5.453E+08 | 21811400 | 4 | 5.134E+08 | 20537274 | 4 | 4.518E+08 | 18071800 | 4 | 4.297E+08 | 17187989 | 4 | 3.987E+08 | 15948800 |
| carbon tetrachloride (coelutes) | 3.408E+09 | 21811400 | 0.64 | 3.209E+09 | 20537274 | 0.64 | 2.824E+09 | 18071800 | 0.64 | 2.686E+09 | 17187989 | 0.64 | 2.492E+09 | 15948800 |
| 1,2-dichloroethane | 1.101E+07 | 2201663 | 20 | 7.955E+06 | 1590948 | 20 | 1.007E+07 | 2013762 | 20 | 7.542E+06 | 1508478 | 20 | 6.556E+06 | 1311133 |
| trichloroethene (ECD) | 2.432E+08 | 4863519 | 2 | 2.424E+08 | 4848361 | 2 | 2.354E+08 | 4707350 | 2 | 2.543E+08 | 5086715 | 2 | 2.745E+08 | 5489313 |
| tetrachloroethene (ECD) (coelutes) | 4.792E+08 | 10062600 | 2.1 | 3.951E+08 | 8296242 | 2.1 | 3.854E+08 | 8092519 | 2.1 | 5.408E+08 | 11356800 | 2.1 | 5.066E+08 | 10639400 |
| 1,1,2-trichloroethane (coelutes) | 1.548E+07 | 10062600 | 65 | 1.276E+07 | 8296242 | 65 | 1.245E+07 | 8092519 | 65 | 1.747E+07 | 11356800 | 65 | 1.637E+07 | 10639400 |
| bromoform | 1.477E+08 | 2954508 | 2 | 1.425E+08 | 2850611 | 2 | 1.436E+08 | 2871767 | 2 | 1.540E+08 | 3080458 | 2 | 1.408E+08 | 2816117 |
| 1,1,2,2-tetrachloroethane | 7.105E+07 | 1420915 | 2 | 6.400E+07 | 1279980 | 2 | 6.665E+07 | 1332934 | 2 | 1.127E+08 | 2253305 | 2 | 6.131E+07 | 1226202 |

| | | NUMBER 6 | | | NUMBER 7 | | | NUMBER 8 | | | NUMBER 9 | | | NUMBER 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 |
| PID IS3 AREAS | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 |

| PID COMPOUNDS | conc. | 09/05/97 098R0101 | area | conc. | 09/07/97 023R0201 | area | conc. | 09/09/97 075R0201 | area | conc. | 09/09/97 075R0201 | area | conc. | 09/10/97 016R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 75 | 1.847E+04 | 13850 | 75 | 1.409E+04 | 10571 | 75 | 1.750E+04 | 13128 | 75 | 1.750E+04 | 13128 | 75 | 1.084E+04 | 8130 | 75 |
| acetone (coelutes) | 69 | 6.564E+05 | 452922 | 69 | 2.105E+05 | 145213 | 69 | 3.800E+05 | 262181 | 69 | 3.800E+05 | 262181 | 69 | 1.287E+05 | 88774 | 69 |
| trans-1,2-dichloroethene | 15 | 4.070E+06 | 610561 | 15 | 3.650E+06 | 547434 | 15 | 3.346E+06 | 501877 | 15 | 3.346E+06 | 501877 | 15 | 2.787E+06 | 418108 | 15 |
| cis-1,2-dichloroethene | 15 | 5.157E+05 | 77355 | 15 | 5.738E+05 | 86065 | 15 | 6.080E+05 | 91207 | 15 | 6.080E+05 | 91207 | 15 | 7.104E+05 | 106556 | 15 |
| carbon disulfide (coelutes) | 102 | 7.500E+04 | 76495 | 102 | 9.138E+04 | 93206 | 102 | 8.942E+04 | 91207 | 102 | 8.942E+04 | 91207 | 102 | 1.551E+05 | 158193 | 102 |
| 2-butanone (coelutes) | 66 | 1.283E+05 | 84706 | 66 | 6.866E+05 | 453158 | 66 | 5.460E+05 | 360329 | 66 | 5.460E+05 | 360329 | 66 | 6.400E+05 | 422425 | 66 |
| benzene | 10 | 1.288E+06 | 128822 | 10 | 2.411E+06 | 241059 | 10 | 1.728E+06 | 172754 | 10 | 1.728E+06 | 172754 | 10 | 1.762E+06 | 176154 | 10 |
| trichloroethene (PID - MDL N/A) | 2 | 1.975E+06 | 39498 | 2 | 2.529E+06 | 50575 | 2 | 3.558E+06 | 71156 | 2 | 3.558E+06 | 71156 | 2 | 6.588E+06 | 131766 | 2 |
| toluene (coelutes) | 17 | 3.841E+06 | 652896 | 17 | 2.376E+06 | 403974 | 17 | 2.573E+06 | 437339 | 17 | 2.573E+06 | 437339 | 17 | 2.995E+06 | 509129 | 17 |
| 4-methyl-2-pentanone (coelutes) | 98 | 6.662E+05 | 652896 | 98 | 4.122E+05 | 403974 | 98 | 4.463E+05 | 437339 | 98 | 4.463E+05 | 437339 | 98 | 5.195E+05 | 509129 | 98 |
| 2-hexanone | 40 | 8.449E+05 | 337962 | 40 | 8.115E+05 | 324582 | 40 | 1.274E+06 | 509767 | 40 | 1.274E+06 | 509767 | 40 | 9.994E+05 | 399778 | 40 |
| tetrachloroethene (PID - MDL N/A) | 2 | 1.456E+06 | 29118 | 2 | 1.859E+06 | 37178 | 2 | 2.381E+06 | 47625 | 2 | 2.381E+06 | 47625 | 2 | 1.395E+06 | 27897 | 2 |
| chlorobenzene | 2 | 9.296E+05 | 18592 | 2 | 8.424E+05 | 16847 | 2 | 8.960E+05 | 17920 | 2 | 8.960E+05 | 17920 | 2 | 6.982E+05 | 13963 | 2 |
| ethylbenzene | 10 | 4.827E+05 | 48270 | 10 | 3.943E+05 | 39427 | 10 | 4.535E+05 | 45352 | 10 | 4.535E+05 | 45352 | 10 | 2.873E+05 | 28729 | 10 |
| m-xylene (coelutes) | 20 | 7.435E+05 | 148707 | 20 | 3.609E+05 | 72183 | 20 | 6.611E+05 | 132228 | 20 | 6.611E+05 | 132228 | 20 | 4.820E+05 | 96404 | 20 |
| p-xylene (coelutes) | 20 | 7.435E+05 | 148707 | 20 | 3.609E+05 | 72183 | 20 | 6.611E+05 | 132228 | 20 | 6.611E+05 | 132228 | 20 | 4.820E+05 | 96404 | 20 |
| o-xylene (coelutes) | 20 | 7.441E+05 | 148819 | 20 | 3.358E+05 | 67151 | 20 | 7.075E+05 | 141503 | 20 | 7.075E+05 | 141503 | 20 | 6.568E+05 | 131355 | 20 |
| styrene (coelutes) | 20 | 7.441E+05 | 148819 | 20 | 3.358E+05 | 67151 | 20 | 7.075E+05 | 141503 | 20 | 7.075E+05 | 141503 | 20 | 6.568E+05 | 131355 | 20 |

| | | NUMBER 6 | | | NUMBER 7 | | | NUMBER 8 | | | NUMBER 9 | | | NUMBER 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 |
| ECID IS3 AREAS | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 |

| ECD COMPOUNDS | conc. | 09/05/97 098F0101 | area | conc. | 09/07/97 023F0201 | area | conc. | 09/09/97 075F0201 | area | conc. | 09/09/97 008F0101 | area | conc. | 09/10/97 016F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 75 | 2.480E+06 | 1860069 | 75 | 2.757E+06 | 2067795 | 75 | 2.968E+06 | 2225852 | 75 | 2.487E+06 | 1864978 | 75 | 2.363E+06 | 1772581 | 75 |
| 1,1-dichloroethene | 15 | 1.291E+07 | 1936164 | 15 | 1.032E+07 | 1548298 | 15 | 1.019E+07 | 1527934 | 15 | 2.001E+07 | 3002178 | 15 | 1.366E+07 | 2048722 | 15 |
| methylene chloride | 20 | 1.199E+07 | 2397173 | 20 | 9.823E+06 | 1964680 | 20 | 9.373E+06 | 1874508 | 20 | 9.000E+06 | 1799937 | 20 | 8.611E+06 | 1722232 | 20 |
| chloroform (coelutes) | 11 | 2.262E+08 | 24886900 | 11 | 2.138E+08 | 23514409 | 11 | 2.043E+08 | 22470900 | 11 | 2.139E+08 | 23525700 | 11 | 2.027E+08 | 22293900 | 11 |
| 1,1,1-trichloroethane (coelutes) | 4 | 6.222E+08 | 24886900 | 4 | 5.879E+08 | 23514409 | 4 | 5.618E+08 | 22470900 | 4 | 5.881E+08 | 23525700 | 4 | 5.573E+08 | 22293900 | 4 |
| carbon tetrachloride (coelutes) | 0.64 | 3.889E+09 | 24886900 | 0.64 | 3.674E+09 | 23514409 | 0.64 | 3.511E+09 | 22470900 | 0.64 | 3.676E+09 | 23525700 | 0.64 | 3.483E+09 | 22293900 | 0.64 |
| 1,2-dichloroethane | 20 | 5.948E+06 | 1189583 | 20 | 9.711E+06 | 1942157 | 20 | 4.368E+06 | 873626 | 20 | 5.184E+06 | 1036747 | 20 | 6.932E+06 | 1386376 | 20 |
| trichloroethene (ECD) | 2 | 2.721E+08 | 5441839 | 2 | 2.608E+08 | 5215051 | 2 | 2.594E+08 | 5188732 | 2 | 2.487E+08 | 4973482 | 2 | 2.704E+08 | 5408862 | 2 |
| tetrachloroethene (ECD) (coelutes) | 2.1 | 4.601E+08 | 9661293 | 2.1 | 3.288E+08 | 6904127 | 2.1 | 3.880E+08 | 8148792 | 2.1 | 4.887E+08 | 10263500 | 2.1 | 4.132E+08 | 8676971 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 65 | 1.486E+07 | 9661293 | 65 | 1.062E+07 | 6904127 | 65 | 1.254E+07 | 8148792 | 65 | 1.579E+07 | 10263500 | 65 | 1.335E+07 | 8676971 | 65 |
| bromoform | 2 | 1.744E+08 | 3487250 | 2 | 1.365E+08 | 2730385 | 2 | 1.421E+08 | 2842077 | 2 | 1.130E+08 | 2259999 | 2 | 1.252E+08 | 2504420 | 2 |
| 1,1,2,2-tetrachloroethane | 2 | 7.576E+07 | 1515156 | 2 | 5.750E+07 | 1150006 | 2 | 6.524E+07 | 1304857 | 2 | 4.259E+07 | 851774 | 2 | 5.075E+07 | 1014937 | 2 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | |
|---|---|---|---|---|---|---|
| | area | conc. | area | conc. | area | conc. |
| PID IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 |
| PID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 |

| PID COMPOUNDS | 09/10/97 019R0101 | area | conc. | 09/10/97 033R0101 | area | conc. | 09/11/97 049R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 2.008E+04 | 15058 | 75 | 1.217E+04 | 9125 | 75 | 1.170E+04 | 8778 | 75 |
| acetone (coelutes) | 2.918E+05 | 201370 | 69 | 5.397E+05 | 372371 | 69 | 3.507E+05 | 241997 | 69 |
| trans-1,2-dichloroethene | 2.037E+06 | 305617 | 15 | 3.064E+06 | 459586 | 15 | 1.613E+06 | 241997 | 15 |
| cis-1,2-dichloroethene | 4.865E+05 | 72978 | 15 | 9.728E+05 | 145921 | 15 | 1.225E+06 | 183790 | 15 |
| carbon disulfide (coelutes) | 7.468E+04 | 76176 | 102 | 4.896E+05 | 499415 | 102 | 5.166E+05 | 526882 | 102 |
| 2-butanone (coelutes) | 1.334E+05 | 88055 | 66 | 7.567E+05 | 499415 | 66 | 7.983E+05 | 526882 | 66 |
| benzene | 1.247E+06 | 124671 | 10 | 2.638E+06 | 263816 | 10 | 3.248E+06 | 324849 | 10 |
| trichloroethene (PID - MDL N/A) | 6.865E+05 | 13730 | 2 | 1.573E+06 | 31468 | 2 | 3.339E+06 | 66782 | 2 |
| toluene (coelutes) | 1.787E+06 | 303794 | 17 | 2.645E+06 | 449702 | 17 | 2.597E+06 | 441465 | 17 |
| 4-methyl-2-pentanone (coelutes) | 3.100E+05 | 303794 | 98 | 4.589E+05 | 449702 | 98 | 4.505E+05 | 441465 | 98 |
| 2-hexanone | 1.732E+05 | 69283 | 40 | 1.197E+06 | 478956 | 40 | 1.080E+06 | 431954 | 40 |
| tetrachloroethene (PID - MDL N/A) | 1.215E+06 | 24308 | 2 | 1.500E+06 | 30003 | 2 | 1.704E+06 | 34080 | 2 |
| chlorobenzene | 3.953E+05 | 7905 | 2 | 7.261E+05 | 14522 | 2 | 7.976E+05 | 15951 | 2 |
| ethylbenzene | 3.983E+05 | 39830 | 10 | 4.142E+05 | 41419 | 10 | 3.848E+05 | 38476 | 10 |
| m-xylene (coelutes) | 7.081E+05 | 141624 | 20 | 3.965E+05 | 79299 | 20 | 3.542E+05 | 70838 | 20 |
| p-xylene (coelutes) | 7.081E+05 | 141624 | 20 | 3.965E+05 | 79299 | 20 | 3.542E+05 | 70838 | 20 |
| o-xylene (coelutes) | 6.511E+05 | 130229 | 20 | 7.056E+05 | 141113 | 20 | 6.819E+05 | 136373 | 20 |
| styrene (coelutes) | 6.511E+05 | 130229 | 20 | 7.056E+05 | 141113 | 20 | 6.819E+05 | 136373 | 20 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | |
|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 |
| ECID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | 09/10/97 019F0101 | area | conc. | 09/10/97 033F0101 | area | conc. | 09/11/97 049F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 3.169E+06 | 2377101 | 75 | 2.659E+06 | 1994567 | 75 | 2.365E+06 | 1773695 | 75 |
| 1,1-dichloroethene | 1.313E+07 | 1969195 | 15 | 1.621E+07 | 2431854 | 15 | 9.606E+06 | 1440844 | 15 |
| methylene chloride | 9.354E+06 | 1870706 | 20 | 9.263E+06 | 1852619 | 20 | 9.383E+06 | 1876685 | 20 |
| chloroform (coelutes) | 1.972E+08 | 21691200 | 11 | 2.068E+08 | 22751400 | 11 | 1.746E+08 | 19205600 | 11 |
| 1,1,1-trichloroethane (coelutes) | 5.423E+08 | 21691200 | 4 | 5.688E+08 | 22751400 | 4 | 4.801E+08 | 19205600 | 4 |
| carbon tetrachloride (coelutes) | 3.389E+09 | 21691200 | 0.64 | 3.555E+09 | 22751400 | 0.64 | 3.001E+09 | 19205600 | 0.64 |
| 1,2-dichloroethane | 3.520E+06 | 703909 | 20 | 4.191E+06 | 838209 | 20 | 4.837E+06 | 967431 | 20 |
| trichloroethene (ECD) | 1.989E+08 | 3978049 | 2 | 2.823E+08 | 5646389 | 2 | 2.588E+08 | 5175512 | 2 |
| tetrachloroethene (ECD) (coelutes) | 4.223E+08 | 8867806 | 2.1 | 5.062E+08 | 10629700 | 2.1 | 4.309E+08 | 9048417 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 1.364E+07 | 8867806 | 65 | 1.635E+07 | 10629700 | 65 | 1.392E+07 | 9048417 | 65 |
| bromoform | 9.406E+07 | 1881142 | 2 | 1.326E+08 | 2651764 | 2 | 1.284E+08 | 2568049 | 2 |
| 1,1,2,2-tetrachloroethane | 4.400E+07 | 879937 | 2 | 5.535E+07 | 1107008 | 2 | 5.400E+07 | 1080057 | 2 |

## INITIAL CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD

**September 19, 1997**

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

### RELATIVE RESPONSE FACTORS

| PID COMPOUNDS | STD.1 023R0101 | STD.2 024R0101 | STD.3 025R0101 | STD.4 026R0101 | STD.5 027R0101 | AVE. RRF | % RSD | level 1 area | level 1 conc. | level 2 area | level 2 conc. | level 3 area | level 3 conc. | level 4 area | level 4 conc. | level 5 area | level 5 conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 1.592E+04 | 2.263E+04 | 1.976E+04 | 1.373E+04 | 5.957E+03 | 1.560E+04 | 41.0 | 3979 | 25 | 11317 | 50 | 14823 | 75 | 13728 | 100 | 8935 | 150 |
| acetone (coelutes) | NA | 8.017E+04 | 5.587E+04 | 3.163E+04 | 2.637E+04 | 4.851E+04 | 50.9 | NA | 0 | 15714 | 19.6 | 38553 | 69 | 52821 | 167 | 71988 | 273 |
| trans-1,2-dichloroethene | 1.008E+06 | 6.601E+05 | 9.120E+05 | 6.786E+05 | 4.770E+05 | 7.471E+05 | 28.4 | 25195 | 2.5 | 33006 | 5 | 136795 | 15 | 305365 | 45 | 428277 | 90 |
| cis-1,2-dichloroethene | NA | 2.551E+05 | 2.267E+05 | 1.633E+05 | 1.168E+05 | 1.905E+05 | 32.7 | NA | 0 | 12754 | 5 | 34009 | 15 | 73507 | 45 | 105094 | 90 |
| carbon disulfide (coelutes) | 1.114E+05 | 1.145E+05 | 8.661E+04 | 9.097E+04 | 9.197E+04 | 9.909E+04 | 13.0 | 11115 | 12.7 | 25050 | 25.4 | 83345 | 102 | 102677 | 203 | 253514 | 254 |
| 2-butanone (coelutes) | 1.725E+05 | 1.763E+05 | 1.339E+05 | 1.399E+05 | 1.416E+05 | 1.528E+05 | 13.1 | 14146 | 8.2 | 29090 | 16.5 | 88345 | 66 | 184677 | 132 | 233614 | 165 |
| benzene | 8.660E+05 | 9.567E+05 | 1.100E+06 | 1.580E+06 | 1.493E+06 | 1.199E+06 | 26.7 | 8660 | 1 | 47837 | 5 | 109986 | 10 | 236951 | 15 | 373236 | 25 |
| trichloroethene (PID - MDL N/A) | NA | 1.012E+06 | 1.094E+06 | 2.008E+06 | 2.398E+06 | 1.628E+06 | 42.0 | NA | 0 | 10121 | 1 | 21879 | 2 | 80327 | 4 | 191817 | 8 |
| toluene (coelutes) | 4.893E+05 | 5.064E+05 | 4.605E+05 | 4.502E+05 | 5.736E+05 | 4.960E+05 | 9.8 | 9296 | 1.9 | 33931 | 6.7 | 78280 | 17 | 130110 | 28.9 | 243194 | 42.4 |
| 4-methyl-2-pentanone (coelutes) | 8.688E+04 | 8.768E+04 | 7.988E+04 | 7.838E+04 | 1.001E+05 | 8.658E+04 | 9.9 | 9296 | 10.7 | 33931 | 38.7 | 78280 | 98 | 130110 | 166 | 243194 | 243 |
| 2-hexanone | NA | NA | 7.524E+04 | 1.396E+05 | 1.755E+05 | 1.301E+05 | 39.0 | NA | 0 | NA | 0 | 30096 | 40 | 111687 | 80 | 175531 | 100 |
| tetrachloroethene (PID - MDL N/A) | NA | 4.795E+05 | 6.265E+05 | 8.669E+05 | 1.671E+06 | 9.109E+05 | 58.3 | NA | 0 | 4795 | 1 | 12529 | 2 | 34677 | 4 | 133661 | 8 |
| chlorobenzene | NA | 4.916E+05 | 2.754E+05 | 2.611E+05 | 4.599E+05 | 3.720E+05 | 32.4 | NA | 0 | 4916 | 1 | 5507 | 2 | 10442 | 4 | 36793 | 8 |
| ethylbenzene | NA | 2.345E+05 | 1.930E+05 | 2.026E+05 | 3.268E+05 | 2.392E+05 | 25.5 | NA | 0 | 11723 | 5 | 19296 | 10 | 30393 | 15 | 81706 | 25 |
| m-xylene (coelutes) | 1.104E+05 | 4.666E+05 | 4.149E+05 | 4.090E+05 | 5.680E+05 | 3.938E+05 | 43.4 | 2208 | 2 | 46656 | 10 | 82986 | 20 | 122705 | 30 | 284005 | 50 |
| p-xylene (coelutes) | 1.104E+05 | 4.666E+05 | 4.149E+05 | 4.090E+05 | 5.680E+05 | 3.938E+05 | 43.4 | 2208 | 2 | 46656 | 10 | 82986 | 20 | 122705 | 30 | 284005 | 50 |
| o-xylene (coelutes) | 2.964E+05 | 5.490E+05 | 5.233E+05 | 6.124E+05 | 6.454E+05 | 5.253E+05 | 26.1 | 5927 | 2 | 54899 | 10 | 104668 | 20 | 183706 | 30 | 322719 | 50 |
| styrene (coelutes) | 2.964E+05 | 5.490E+05 | 5.233E+05 | 6.124E+05 | 6.454E+05 | 5.253E+05 | 26.1 | 5927 | 2 | 54899 | 10 | 104668 | 20 | 183706 | 30 | 322719 | 50 |

| level 1 | | level 2 | | level 3 | | level 4 | | level 5 | |
|---|---|---|---|---|---|---|---|---|---|
| area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | STD.1 023F0101 | STD.2 024F0101 | STD.3 025F0101 | STD.4 026F0101 | STD.5 027F0101 | AVE. RRF | % RSD | area | conc. | area | conc. | area | conc. | area | conc. | | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 7.725E+06 | 5.948E+06 | 3.244E+06 | 1.809E+06 | 8.198E+05 | 3.909E+06 | 73.6 | 1931233 | 25 | 2974219 | 50 | 2433329 | 75 | 1808522 | 100 | 1229654 | 150 |
| 1,1-dichloroethene | NA | 2.640E+07 | 1.882E+07 | 8.076E+06 | 5.238E+06 | 1.463E+07 | 66.9 | NA | 0 | 1319986 | 5 | 2822283 | 15 | 3634269 | 45 | 4714593 | 90 |
| methylene chloride | NA | 1.073E+07 | 1.136E+07 | 9.534E+06 | 5.786E+06 | 9.354E+06 | 26.7 | NA | 0 | 1073104 | 10 | 2272762 | 20 | 4766807 | 50 | 5785546 | 100 |
| chloroform (coelutes) | NA | 4.098E+08 | 2.730E+08 | 1.484E+08 | 9.089E+07 | 2.305E+08 | 61.4 | NA | 0 | 22540580 | 5.5 | 30029500 | 11 | 32502900 | 21.9 | 39810400 | 43.8 |
| 1,1,1-trichloroethane (coelutes) | NA | 1.127E+09 | 7.507E+08 | 4.114E+08 | 2.504E+08 | 6.349E+08 | 61.2 | NA | 0 | 22540580 | 2 | 30029500 | 4 | 32502900 | 7.9 | 39810400 | 15.9 |
| carbon tetrachloride (coelutes) | NA | 7.044E+09 | 4.692E+09 | 2.500E+09 | 1.592E+09 | 3.957E+09 | 61.5 | NA | 0 | 22540580 | 0.32 | 30029500 | 0.64 | 32502900 | 1.3 | 39810400 | 2.5 |
| 1,2-dichloroethane | NA | NA | 4.880E+06 | 5.055E+06 | 3.573E+06 | 4.503E+06 | 18.0 | NA | 0 | NA | 0 | 976060 | 20 | 2527281 | 50 | 3573095 | 100 |
| trichloroethene (ECD) | 2.644E+08 | 3.334E+08 | 3.093E+08 | 2.733E+08 | 2.512E+08 | 2.863E+08 | 11.9 | 1322031 | 0.5 | 3333821 | 1 | 6185530 | 2 | 10930300 | 4 | 20098900 | 8 |
| tetrachloroethene (ECD) (coelutes) | 6.270E+08 | 5.567E+08 | 5.015E+08 | 4.777E+08 | 5.173E+08 | 5.361E+08 | 10.9 | 3260354 | 0.52 | 5567226 | 1 | 10531500 | 2.1 | 19587000 | 4.1 | 42937300 | 8.3 |
| 1,1,2-trichloroethane (coelutes) | 2.025E+07 | 1.729E+07 | 1.620E+07 | 1.518E+07 | 1.664E+07 | 1.711E+07 | 11.2 | 1322031 | 16.1 | 5567226 | 32.2 | 10531500 | 65 | 19587000 | 129 | 42937300 | 258 |
| bromoform | 1.939E+08 | 1.588E+08 | 1.428E+08 | 1.279E+08 | 5.042E+07 | 1.348E+08 | 39.4 | 969693 | 0.5 | 1588244 | 1 | 2855617 | 2 | 5115983 | 4 | 4033241 | 8 |
| 1,1,2,2-tetrachloroethane | 1.275E+08 | 8.488E+07 | 5.593E+07 | 4.220E+07 | 2.656E+07 | 6.741E+07 | 59.1 | 637478 | 0.5 | 848750 | 1 | 1118683 | 2 | 1687852 | 4 | 2124442 | 8 |

## CONTINUING CALIBRATION SUMMARY - EXTER AL STANDARD METHOD
### September 19 to September 31, 1997

| DATE: | | | 09/20/97 | | 09/21/97 | | 09/21/97 | | 09/22/97 | | 09/22/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | | 4 | | 5 | |
| | INITIAL CALIBRATION | | 093R0101 | | 005R0101 | | 025R0101 | | 028R0101 | | 048R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 1.560E+04 | 41.0 | 2.402E+04 | 54.0 | 2.398E+04 | 53.7 | 2.129E+04 | 36.5 | 2.029E+04 | 30.1 | 1.983E+04 | 27.1 |
| acetone (coelutes) | 4.851E+04 | 50.9 | 3.845E+04 | -20.7 | 5.244E+04 | 8.1 | 6.074E+04 | 25.2 | 7.064E+04 | 45.6 | 6.707E+04 | 38.3 |
| trans-1,2-dichloroethene | 7.471E+05 | 28.4 | 6.129E+05 | -18.0 | 6.325E+05 | -15.3 | 8.160E+05 | 9.2 | 8.960E+05 | 19.9 | 8.321E+05 | 11.4 |
| cis-1,2-dichloroethene | 1.905E+05 | 32.7 | 3.215E+05 | 68.8 | 1.812E+05 | -4.9 | 1.842E+05 | -3.3 | 1.612E+05 | -15.4 | 1.601E+05 | -15.9 |
| carbon disulfide (coelutes) | 9.909E+04 | 13.0 | 6.759E+04 | -31.8 | 5.947E+04 | -40.0 | 8.590E+04 | -13.3 | 8.174E+04 | -17.5 | 8.658E+04 | -12.6 |
| 2-butanone (coelutes) | 1.528E+05 | 13.1 | 1.045E+05 | -31.7 | 9.190E+04 | -39.9 | 1.327E+05 | -13.1 | 1.263E+05 | -17.3 | 1.338E+05 | -12.5 |
| benzene | 1.199E+06 | 26.7 | 7.200E+05 | -40.0 | 7.448E+05 | -37.9 | 9.952E+05 | -17.0 | 8.289E+05 | -30.9 | 9.685E+05 | -19.2 |
| trichloroethene (PID - MDL N/A) | 1.628E+06 | 42.0 | 2.723E+06 | 67.3 | 4.713E+05 | -71.1 | 1.024E+06 | -37.1 | 6.463E+05 | -60.3 | 1.004E+06 | -38.3 |
| toluene (coelutes) | 4.960E+05 | 9.8 | 6.615E+05 | 33.4 | 6.441E+05 | 29.9 | 4.203E+05 | -15.3 | 4.555E+05 | -8.2 | 4.564E+05 | -8.0 |
| 4-methyl-2-pentanone (coelutes) | 8.658E+04 | 9.9 | 1.147E+05 | 32.5 | 1.117E+05 | 29.1 | 7.291E+04 | -15.8 | 7.901E+04 | -8.7 | 7.916E+04 | -8.6 |
| 2-hexanone | 1.301E+05 | 39.0 | 1.751E+05 | 34.6 | 1.766E+05 | 35.7 | 8.208E+04 | -36.9 | 9.450E+04 | -27.4 | 8.488E+04 | -34.8 |
| tetrachloroethene (PID - MDL N/A) | 9.109E+05 | 58.3 | 1.578E+06 | 73.2 | 1.273E+06 | 39.8 | 3.627E+05 | -60.2 | 8.701E+05 | -4.5 | 6.169E+05 | -32.3 |
| chlorobenzene | 3.720E+05 | 32.4 | 5.868E+05 | 57.7 | 4.306E+05 | 15.7 | 2.580E+05 | -30.7 | 3.774E+05 | 1.4 | 3.141E+05 | -15.6 |
| ethylbenzene | 2.392E+05 | 25.5 | 3.053E+05 | 27.6 | 3.339E+05 | 39.6 | 2.190E+05 | -8.5 | 2.903E+05 | 21.4 | 2.161E+05 | -9.7 |
| m-xylene (coelutes) | 3.938E+05 | 43.4 | 5.313E+05 | 34.9 | 5.848E+05 | 48.5 | 2.838E+05 | -27.9 | 3.532E+05 | -10.3 | 4.117E+05 | 4.6 |
| p-xylene (coelutes) | 3.938E+05 | 43.4 | 5.313E+05 | 34.9 | 5.848E+05 | 48.5 | 2.838E+05 | -27.9 | 3.532E+05 | -10.3 | 4.117E+05 | 4.6 |
| o-xylene (coelutes) | 5.253E+05 | 26.1 | 5.893E+05 | 12.2 | 5.765E+05 | 9.7 | 5.735E+05 | 9.2 | 5.717E+05 | 8.8 | 5.463E+05 | 4.0 |
| styrene (coelutes) | 5.253E+05 | 26.1 | 5.893E+05 | 12.2 | 5.765E+05 | 9.7 | 5.735E+05 | 9.2 | 5.717E+05 | 8.8 | 5.463E+05 | 4.0 |

| | INITIAL CALIBRATION | | 093F0101 | | 005F0101 | | 025F0101 | | 028F0101 | | 048F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 3.909E+06 | 73.6 | 2.934E+06 | -24.9 | 3.087E+06 | -21.0 | 2.755E+06 | -29.5 | 3.473E+06 | -11.2 | 1.871E+06 | -52.1 |
| 1,1-dichloroethene | 1.463E+07 | 66.9 | 1.257E+07 | -14.1 | 1.481E+07 | 1.2 | 1.907E+07 | 30.4 | 2.058E+07 | 40.6 | 2.282E+07 | 55.9 |
| methylene chloride | 9.354E+06 | 26.7 | 1.016E+07 | 8.6 | 1.143E+07 | 22.2 | 1.079E+07 | 15.4 | 7.745E+06 | -17.2 | 1.005E+07 | 7.4 |
| chloroform (coelutes) | 2.305E+08 | 61.4 | 1.097E+08 | -52.4 | 2.159E+08 | -6.3 | 2.574E+08 | 11.7 | 2.476E+08 | 7.4 | 2.351E+08 | 2.0 |
| 1,1,1-trichloroethane (coelutes) | 6.349E+08 | 61.2 | 3.018E+08 | -52.5 | 5.938E+08 | -6.5 | 7.079E+08 | 11.5 | 6.808E+08 | 7.2 | 6.466E+08 | 1.8 |
| carbon tetrachloride (coelutes) | 3.957E+09 | 61.5 | 1.886E+09 | -52.3 | 3.711E+09 | -6.2 | 4.424E+09 | 11.8 | 4.255E+09 | 7.5 | 4.041E+09 | 2.1 |
| 1,2-dichloroethane | 4.503E+06 | 18.0 | 3.005E+06 | -33.3 | 5.172E+06 | 14.9 | 1.549E+07 | 244.0 | 7.853E+06 | 74.4 | 2.019E+07 | 348.5 |
| trichloroethene (ECD) | 2.863E+08 | 11.9 | 2.658E+08 | -7.2 | 3.206E+08 | 12.0 | 3.723E+08 | 30.0 | 3.591E+08 | 25.4 | 2.979E+08 | 4.0 |
| tetrachloroethene (ECD) (coelutes) | 5.361E+08 | 10.9 | 4.153E+08 | -22.5 | 4.761E+08 | -11.2 | 5.117E+08 | -4.6 | 5.407E+08 | 0.9 | 4.960E+08 | -7.5 |
| 1,1,2-trichloroethane (coelutes) | 1.711E+07 | 11.2 | 1.342E+07 | -21.6 | 1.538E+07 | -10.1 | 1.653E+07 | -3.4 | 1.747E+07 | 2.1 | 1.602E+07 | -6.4 |
| bromoform | 1.348E+08 | 39.4 | 1.387E+08 | 2.9 | 1.405E+08 | 4.3 | 1.499E+08 | 11.2 | 1.552E+08 | 15.2 | 1.492E+08 | 10.7 |
| 1,1,2,2-tetrachloroethane | 6.741E+07 | 59.1 | 4.857E+07 | -28.0 | 5.519E+07 | -18.1 | 5.253E+07 | -22.1 | 6.312E+07 | -6.4 | 6.074E+07 | -9.9 |

## CONTINUING CALIBRATION SUMMARY - EXTER
### September 19 to September 31, 1997

| DATE: | | | 09/23/97 | | 09/24/97 | | 09/25/97 | | 09/25/97 | | 09/25/97 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | | 7 | | 8 | | 9 | | 10 | |
| | INITIAL CALIBRATION | | 062R0101 | | 086R0101 | | 006R0201 | | 009R0101 | | 032R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 1.560E+04 | 41.0 | 1.955E+04 | 25.3 | 2.124E+04 | 36.2 | 2.144E+04 | 37.4 | 1.910E+04 | 22.4 | 1.627E+04 | 4.3 |
| acetone (coelutes) | 4.851E+04 | 50.9 | 6.086E+04 | 25.5 | 5.947E+04 | 22.6 | 5.837E+04 | 20.3 | 7.555E+04 | 55.7 | 3.399E+04 | -29.9 |
| trans-1,2-dichloroethene | 7.471E+05 | 28.4 | 8.285E+05 | 10.9 | 7.925E+05 | 6.1 | 7.396E+05 | -1.0 | 8.928E+05 | 19.5 | 5.462E+05 | -26.9 |
| cis-1,2-dichloroethene | 1.905E+05 | 32.7 | 1.319E+05 | -30.8 | 1.480E+05 | -22.3 | 1.400E+05 | -26.5 | 1.135E+05 | -40.4 | 1.372E+05 | -28.0 |
| carbon disulfide (coelutes) | 9.909E+04 | 13.0 | 8.904E+04 | -10.1 | 6.887E+04 | -30.5 | 7.575E+04 | -23.6 | 4.391E+04 | -55.7 | 7.615E+04 | -23.2 |
| 2-butanone (coelutes) | 1.528E+05 | 13.1 | 1.376E+05 | -10.0 | 1.064E+05 | -30.4 | 1.171E+05 | -23.4 | 6.786E+04 | -55.6 | 1.177E+05 | -23.0 |
| benzene | 1.199E+06 | 26.7 | 9.303E+05 | -22.4 | 7.289E+05 | -39.2 | 8.066E+05 | -32.7 | 7.103E+05 | -40.8 | 1.062E+06 | -11.5 |
| trichloroethene (PID - MDL N/A) | 1.628E+06 | 42.0 | 8.986E+05 | -44.8 | 5.918E+05 | -63.6 | 7.410E+05 | -54.5 | 4.401E+05 | -73.0 | 1.592E+06 | -2.2 |
| toluene (coelutes) | 4.960E+05 | 9.8 | 4.405E+05 | -11.2 | 5.627E+05 | 13.5 | 4.012E+05 | -19.1 | 5.663E+05 | 14.2 | 4.306E+05 | -13.2 |
| 4-methyl-2-pentanone (coelutes) | 8.658E+04 | 9.9 | 7.641E+04 | -11.7 | 9.762E+04 | 12.8 | 6.959E+04 | -19.6 | 9.823E+04 | 13.5 | 7.469E+04 | -13.7 |
| 2-hexanone | 1.301E+05 | 39.0 | 9.046E+04 | -30.5 | 1.075E+05 | -17.4 | 7.864E+04 | -39.6 | 1.461E+05 | 12.3 | 7.287E+04 | -44.0 |
| tetrachloroethene (PID - MDL N/A) | 9.109E+05 | 58.3 | 6.220E+05 | -31.7 | 7.872E+05 | -13.6 | 3.437E+05 | -62.3 | 1.699E+06 | 86.5 | 5.681E+05 | -37.6 |
| chlorobenzene | 3.720E+05 | 32.4 | 4.127E+05 | 10.9 | 5.700E+05 | 53.2 | 3.147E+05 | -15.4 | 1.038E+06 | 179.2 | 2.248E+05 | -39.6 |
| ethylbenzene | 2.392E+05 | 25.5 | 2.430E+05 | 1.6 | 3.082E+05 | 28.8 | 2.335E+05 | -2.4 | 4.417E+05 | 84.7 | 1.633E+05 | -31.7 |
| m-xylene (coelutes) | 3.938E+05 | 43.4 | 2.807E+05 | -28.7 | 2.170E+05 | -44.9 | 4.275E+05 | 8.6 | 6.310E+05 | 60.2 | 2.242E+05 | -43.1 |
| p-xylene (coelutes) | 3.938E+05 | 43.4 | 2.807E+05 | -28.7 | 2.170E+05 | -44.9 | 4.275E+05 | 8.6 | 6.310E+05 | 60.2 | 2.242E+05 | -43.1 |
| o-xylene (coelutes) | 5.253E+05 | 26.1 | 5.658E+05 | 7.7 | 1.615E+05 | -69.3 | 5.214E+05 | -0.7 | 5.409E+05 | 3.0 | 3.283E+05 | -37.5 |
| styrene (coelutes) | 5.253E+05 | 26.1 | 5.658E+05 | 7.7 | 1.615E+05 | -69.3 | 5.214E+05 | -0.7 | 5.409E+05 | 3.0 | 3.283E+05 | -37.5 |

| | INITIAL CALIBRATION | | 062F0101 | | 086F0101 | | 006F0201 | | 009F0101 | | 032F0101 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 3.909E+06 | 73.6 | 2.063E+06 | -47.2 | 2.219E+06 | -43.2 | 2.255E+06 | -42.3 | 2.370E+06 | -39.4 | 2.190E+06 | -44.0 |
| 1,1-dichloroethene | 1.463E+07 | 66.9 | 2.063E+07 | 41.0 | 2.022E+07 | 38.2 | 2.206E+07 | 50.7 | 2.450E+07 | 67.5 | 1.635E+07 | 11.8 |
| methylene chloride | 9.354E+06 | 26.7 | 1.537E+07 | 64.3 | 1.765E+07 | 88.7 | 1.312E+07 | 40.2 | 7.347E+06 | -21.5 | 1.257E+07 | 34.4 |
| chloroform (coelutes) | 2.305E+08 | 61.4 | 2.424E+08 | 5.2 | 2.383E+08 | 3.4 | 2.429E+08 | 5.4 | 1.411E+08 | -38.8 | 1.292E+07 | -94.4 |
| 1,1,1-trichloroethane (coelutes) | 6.349E+08 | 61.2 | 6.667E+08 | 5.0 | 6.554E+08 | 3.2 | 6.679E+08 | 5.2 | 3.880E+08 | -38.9 | 3.554E+07 | -94.4 |
| carbon tetrachloride (coelutes) | 3.957E+09 | 61.5 | 4.167E+09 | 5.3 | 4.096E+09 | 3.5 | 4.175E+09 | 5.5 | 2.425E+09 | -38.7 | 2.221E+08 | -94.4 |
| 1,2-dichloroethane | 4.503E+06 | 18.0 | 8.356E+06 | 85.6 | 7.823E+06 | 73.7 | 7.490E+06 | 66.4 | 6.840E+06 | 51.9 | 3.833E+06 | -14.9 |
| trichloroethene (ECD) | 2.863E+08 | 11.9 | 2.982E+08 | 4.1 | 3.173E+08 | 10.8 | 3.213E+08 | 12.2 | 2.968E+08 | 3.7 | 2.864E+08 | 0.0 |
| tetrachloroethene (ECD) (coelutes) | 5.361E+08 | 10.9 | 4.774E+08 | -10.9 | 5.109E+08 | -4.7 | 4.963E+08 | -7.4 | 5.703E+08 | 6.4 | 4.137E+08 | -22.8 |
| 1,1,2-trichloroethane (coelutes) | 1.711E+07 | 11.2 | 1.542E+07 | -9.9 | 1.651E+07 | -3.5 | 1.603E+07 | -6.3 | 1.842E+07 | 7.7 | 1.337E+07 | -21.9 |
| bromoform | 1.348E+08 | 39.4 | 1.484E+08 | 10.1 | 1.485E+08 | 10.2 | 1.555E+08 | 15.4 | 1.499E+08 | 11.2 | 1.550E+08 | 15.0 |
| 1,1,2,2-tetrachloroethane | 6.741E+07 | 59.1 | 6.024E+07 | -10.6 | 5.942E+07 | -11.9 | 6.354E+07 | -5.7 | 5.510E+07 | -18.3 | 6.488E+07 | -3.7 |

CONTINUING CALIBRATION SUMMARY - EXTERNAL STANDARD METHOD
September 19 to September 31, 1997

| DATE: | | | 09/26/97 | | 09/27/97 | | 09/28/97 | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 2 | | 3 | |
| | INITIAL CALIBRATION | | 043R0101 | | 046R0101 | | 062R0101 | |
| PID COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D |
| vinyl chloride | 1.560E+04 | 41.0 | 1.276E+04 | -18.2 | 1.652E+04 | 5.9 | 1.709E+04 | 9.5 |
| acetone (coelutes) | 4.851E+04 | 50.9 | 3.648E+04 | -24.8 | 5.024E+04 | 3.6 | 4.031E+04 | -16.9 |
| trans-1,2-dichloroethene | 7.471E+05 | 28.4 | 6.685E+05 | -10.5 | 6.536E+05 | -12.5 | 5.554E+05 | -25.7 |
| cis-1,2-dichloroethene | 1.905E+05 | 32.7 | 1.790E+05 | -6.0 | 1.257E+05 | -34.0 | 1.336E+05 | -29.9 |
| carbon disulfide (coelutes) | 9.909E+04 | 13.0 | 6.717E+04 | -32.2 | 3.946E+04 | -60.2 | 6.799E+04 | -31.4 |
| 2-butanone (coelutes) | 1.528E+05 | 13.1 | 1.038E+05 | -32.1 | 6.099E+04 | -60.1 | 1.051E+05 | -31.2 |
| benzene | 1.199E+06 | 26.7 | 1.117E+06 | -6.8 | 7.333E+05 | -38.8 | 9.689E+05 | -19.2 |
| trichloroethene (PID - MDL N/A) | 1.628E+06 | 42.0 | 1.695E+06 | 4.1 | 4.881E+05 | -70.0 | 1.354E+06 | -16.9 |
| toluene (coelutes) | 4.960E+05 | 9.8 | 4.637E+05 | -6.5 | 4.133E+05 | -16.7 | 4.485E+05 | -9.6 |
| 4-methyl-2-pentanone (coelutes | 8.658E+04 | 9.9 | 8.044E+04 | -7.1 | 7.169E+04 | -17.2 | 7.781E+04 | -10.1 |
| 2-hexanone | 1.301E+05 | 39.0 | 6.480E+04 | -50.2 | 1.332E+05 | 2.4 | 6.662E+04 | -48.8 |
| tetrachloroethene (PID - MDL N/ | 9.109E+05 | 58.3 | 7.111E+05 | -21.9 | 1.064E+06 | 16.8 | 5.456E+05 | -40.1 |
| chlorobenzene | 3.720E+05 | 32.4 | 8.255E+04 | -77.8 | 7.003E+05 | 88.3 | 1.794E+05 | -51.8 |
| ethylbenzene | 2.392E+05 | 25.5 | 1.323E+05 | -44.7 | 3.461E+05 | 44.7 | 1.540E+05 | -35.6 |
| m-xylene (coelutes) | 3.938E+05 | 43.4 | 2.611E+05 | -33.7 | 5.149E+05 | 30.8 | 3.240E+05 | -17.7 |
| p-xylene (coelutes) | 3.938E+05 | 43.4 | 2.611E+05 | -33.7 | 5.149E+05 | 30.8 | 3.240E+05 | -17.7 |
| o-xylene (coelutes) | 5.253E+05 | 26.1 | 2.624E+05 | -50.0 | 4.712E+05 | -10.3 | 4.186E+05 | -20.3 |
| styrene (coelutes) | 5.253E+05 | 26.1 | 2.624E+05 | -50.0 | 4.712E+05 | -10.3 | 4.186E+05 | -20.3 |

| | INITIAL CALIBRATION | | 043F0101 | | 046F0101 | | 062F0101 | |
|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | AVERAGE RRF | % RSD | RRF | % D | RRF | % D | RRF | % D |
| bromomethane | 3.909E+06 | 73.6 | 1.934E+06 | -50.5 | 2.648E+06 | -32.3 | 2.565E+06 | -34.4 |
| 1,1-dichloroethene | 1.463E+07 | 66.9 | 1.839E+07 | 25.7 | 2.028E+07 | 38.6 | 2.105E+07 | 43.9 |
| methylene chloride | 9.354E+06 | 26.7 | 1.321E+07 | 41.3 | 1.389E+07 | 48.5 | 1.429E+07 | 52.8 |
| chloroform (coelutes) | 2.305E+08 | 61.4 | 1.265E+08 | -45.1 | 1.256E+08 | -45.5 | 1.254E+08 | -45.6 |
| 1,1,1-trichloroethane (coelutes) | 6.349E+08 | 61.2 | 3.479E+08 | -45.2 | 3.453E+08 | -45.6 | 3.448E+08 | -45.7 |
| carbon tetrachloride (coelutes) | 3.957E+09 | 61.5 | 2.175E+09 | -45.0 | 2.158E+09 | -45.5 | 2.155E+09 | -45.5 |
| 1,2-dichloroethane | 4.503E+06 | 18.0 | 1.080E+07 | 139.8 | 1.184E+07 | 163.0 | 1.153E+07 | 156.2 |
| trichloroethene (ECD) | 2.863E+08 | 11.9 | 2.780E+08 | -2.9 | 2.827E+08 | -1.2 | 2.767E+08 | -3.4 |
| tetrachloroethene (ECD) (coelut | 5.361E+08 | 10.9 | 4.606E+08 | -14.1 | 4.991E+08 | -6.9 | 4.339E+08 | -19.1 |
| 1,1,2-trichloroethane (coelutes) | 1.711E+07 | 11.2 | 1.488E+07 | -13.1 | 1.613E+07 | -5.8 | 1.402E+07 | -18.1 |
| bromoform | 1.348E+08 | 39.4 | 1.536E+08 | 14.0 | 1.642E+08 | 21.8 | 1.601E+08 | 18.8 |
| 1,1,2,2-tetrachloroethane | 6.741E+07 | 59.1 | 5.187E+07 | -23.1 | 6.410E+07 | -4.9 | 5.866E+07 | -13.0 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | area | conc. | area | conc. | area | conc. | area | conc. | area | conc. |
| PID IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| PID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| PID COMPOUNDS | 09/20/97 093R0101 | area | conc. | 09/21/97 005R0101 | area | conc. | 09/21/97 025R0101 | area | conc. | 09/22/97 028R0101 | area | conc. | 09/22/97 048R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 2.402E+04 | 18012 | 75 | 2.398E+04 | 17984 | 75 | 2.129E+04 | 15971 | 75 | 2.029E+04 | 15221 | 75 | 1.983E+04 | 14871 | 75 |
| acetone (coelutes) | 3.845E+04 | 26529 | 69 | 5.244E+04 | 36184 | 69 | 6.074E+04 | 41911 | 69 | 7.064E+04 | 48745 | 69 | 6.707E+04 | 46279 | 69 |
| trans-1,2-dichloroethene | 6.129E+05 | 91936 | 15 | 6.325E+05 | 94880 | 15 | 8.160E+05 | 122405 | 15 | 8.960E+05 | 134398 | 15 | 8.321E+05 | 124819 | 15 |
| cis-1,2-dichloroethene | 3.215E+05 | 48219 | 15 | 1.812E+05 | 27179 | 15 | 1.842E+05 | 27629 | 15 | 1.612E+05 | 24180 | 15 | 1.601E+05 | 24020 | 15 |
| carbon disulfide (coelutes) | 6.759E+04 | [illegible] | 102 | 5.947E+04 | [illegible] | 102 | 8.590E+04 | [illegible] | 102 | 8.174E+04 | [illegible] | 102 | 8.658E+04 | [illegible] | 102 |
| 2-butanone (coelutes) | 1.045E+05 | 68937 | 66 | 9.190E+04 | 60657 | 66 | 1.327E+05 | 87614 | 66 | 1.263E+05 | 83379 | 66 | 1.338E+05 | 88307 | 66 |
| benzene | 7.200E+05 | 72001 | 10 | 7.448E+05 | 74475 | 10 | 9.952E+05 | 99523 | 10 | 8.289E+05 | 82893 | 10 | 9.685E+05 | 96849 | 10 |
| trichloroethene (PID - MDL N/A) | 2.723E+06 | 54460 | 2 | 4.713E+05 | 9425 | 2 | 1.024E+06 | 20483 | 2 | 6.463E+05 | 12925 | 2 | 1.004E+06 | 20078 | 2 |
| toluene (coelutes) | 6.615E+05 | 112448 | 17 | 6.441E+05 | 109501 | 17 | 4.203E+05 | 71450 | 17 | 4.555E+05 | 77432 | 17 | 4.564E+05 | 77581 | 17 |
| 4-methyl-2-pentanone (coelutes) | 1.147E+05 | 112448 | 98 | 1.117E+05 | 109501 | 98 | 7.291E+04 | 71450 | 98 | 7.901E+04 | 77432 | 98 | 7.916E+04 | 77581 | 98 |
| 2-hexanone | 1.751E+05 | 70036 | 40 | 1.766E+05 | 70640 | 40 | 8.208E+04 | 32833 | 40 | 9.450E+04 | 37801 | 40 | 8.488E+04 | 33952 | 40 |
| tetrachloroethene (PID - MDL N/A) | 1.578E+06 | 31556 | 2 | 1.273E+06 | 25469 | 2 | 3.627E+05 | 7253 | 2 | 8.701E+05 | 17401 | 2 | 6.169E+05 | 12337 | 2 |
| chlorobenzene | 5.868E+05 | 11735 | 2 | 4.306E+05 | 8611 | 2 | 2.580E+05 | 5159 | 2 | 3.774E+05 | 7547 | 2 | 3.141E+05 | 6281 | 2 |
| ethylbenzene | 3.053E+05 | 30530 | 10 | 3.339E+05 | 33387 | 10 | 2.190E+05 | 21900 | 10 | 2.903E+05 | 29032 | 10 | 2.161E+05 | 21606 | 10 |
| m-xylene (coelutes) | 5.313E+05 | 106264 | 20 | 5.848E+05 | 116963 | 20 | 2.838E+05 | 56762 | 20 | 3.532E+05 | 70632 | 20 | 4.117E+05 | 82348 | 20 |
| p-xylene (coelutes) | 5.313E+05 | 106264 | 20 | 5.848E+05 | 116963 | 20 | 2.838E+05 | 56762 | 20 | 3.532E+05 | 70632 | 20 | 4.117E+05 | 82348 | 20 |
| o-xylene (coelutes) | 5.893E+05 | 117859 | 20 | 5.765E+05 | 115300 | 20 | 5.735E+05 | 114695 | 20 | 5.717E+05 | 114349 | 20 | 5.463E+05 | 109269 | 20 |
| styrene (coelutes) | 5.893E+05 | 117859 | 20 | 5.765E+05 | 115300 | 20 | 5.735E+05 | 114695 | 20 | 5.717E+05 | 114349 | 20 | 5.463E+05 | 109269 | 20 |

| | NUMBER 1 | | NUMBER 2 | | NUMBER 3 | | NUMBER 4 | | NUMBER 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| ECID IS3 AREAS | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |

| ECD COMPOUNDS | 09/20/97 093F0101 | area | conc. | 09/21/97 005F0101 | area | conc. | 09/21/97 025F0101 | area | conc. | 09/22/97 028F0101 | area | conc. | 09/22/97 048F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 2.934E+06 | 2200598 | 75 | 3.087E+06 | 2315421 | 75 | 2.755E+06 | 2068584 | 75 | 3.473E+06 | 2604849 | 75 | 1.871E+06 | 1403019 | 75 |
| 1,1-dichloroethene | 1.257E+07 | 1884757 | 15 | 1.481E+07 | 2221422 | 15 | 1.907E+07 | 2861074 | 15 | 2.058E+07 | 3087064 | 15 | 2.282E+07 | 3422486 | 15 |
| methylene chloride | 1.016E+07 | 2031680 | 20 | 1.143E+07 | 2285399 | 20 | 1.079E+07 | 2158740 | 20 | 7.745E+06 | 1548920 | 20 | 1.005E+07 | 2009685 | 20 |
| chloroform (coelutes) | 1.097E+08 | 12070800 | 11 | 2.159E+08 | 23751100 | 11 | 2.574E+08 | 28314100 | 11 | 2.476E+08 | 27230800 | 11 | 2.351E+08 | 25863700 | 11 |
| 1,1,1-trichloroethane (coelutes) | 3.018E+08 | 12070800 | 4 | 5.938E+08 | 23751100 | 4 | 7.079E+08 | 28314100 | 4 | 6.808E+08 | 27230800 | 4 | 6.466E+08 | 25863700 | 4 |
| carbon tetrachloride (coelutes) | 1.886E+09 | 12070800 | 0.64 | 3.711E+09 | 23751100 | 0.64 | 4.424E+09 | 28314100 | 0.64 | 4.255E+09 | 27230800 | 0.64 | 4.041E+09 | 25863700 | 0.64 |
| 1,2-dichloroethane | 3.005E+06 | 600933 | 20 | 5.172E+06 | 1034480 | 20 | 1.549E+07 | 3098199 | 20 | 7.853E+06 | 1570605 | 20 | 2.019E+07 | 4038485 | 20 |
| trichloroethene (ECD) | 2.658E+08 | 5315527 | 2 | 3.206E+08 | 6411383 | 2 | 3.723E+08 | 7446610 | 2 | 3.591E+08 | 7181402 | 2 | 2.979E+08 | 5957745 | 2 |
| tetrachloroethene (ECD) (coelutes) | 4.153E+08 | 8721945 | 2.1 | 4.761E+08 | 9997816 | 2.1 | 5.117E+08 | 10744900 | 2.1 | 5.407E+08 | 11355100 | 2.1 | 4.960E+08 | 10415400 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 1.342E+07 | 8721945 | 65 | 1.538E+07 | 9997816 | 65 | 1.653E+07 | 10744900 | 65 | 1.747E+07 | 11355100 | 65 | 1.602E+07 | 10415400 | 65 |
| bromoform | 1.387E+08 | 2774001 | 2 | 1.405E+08 | 2810839 | 2 | 1.499E+08 | 2997167 | 2 | 1.552E+08 | 3104598 | 2 | 1.492E+08 | 2984544 | 2 |
| 1,1,2,2-tetrachloroethane | 4.857E+07 | 971349 | 2 | 5.519E+07 | 1103785 | 2 | 5.253E+07 | 1050669 | 2 | 6.312E+07 | 1262303 | 2 | 6.074E+07 | 1214879 | 2 |

| | NUMBER 6 | | | NUMBER 7 | | | NUMBER 8 | | | NUMBER 9 | | | NUMBER 10 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 |
| PID IS3 AREAS | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 |

| PID COMPOUNDS | 09/23/97 062R0101 | area | conc. | 09/24/97 086R0101 | area | conc. | 09/25/97 006R0201 | area | conc. | 09/25/97 009R0101 | area | conc. | 09/25/97 032R0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| vinyl chloride | 1.955E+04 | 14665 | 75 | 2.124E+04 | 15933 | 75 | 2.144E+04 | 16080 | 75 | 1.910E+04 | 14325 | 75 | 1.627E+04 | 12201 | 75 |
| acetone (coelutes) | 6.086E+04 | 41996 | 69 | 5.947E+04 | 41031 | 69 | 5.837E+04 | 40277 | 69 | 7.555E+04 | 52127 | 69 | 3.399E+04 | 23455 | 69 |
| trans-1,2-dichloroethene | 8.285E+05 | 124275 | 15 | 7.925E+05 | 118870 | 15 | 7.396E+05 | 110947 | 15 | 8.928E+05 | 133922 | 15 | 5.462E+05 | 81928 | 15 |
| cis-1,2-dichloroethene | 1.319E+05 | 19780 | 15 | 1.480E+05 | 22204 | 15 | 1.400E+05 | 21005 | 15 | 1.135E+05 | 17021 | 15 | 1.372E+05 | 20584 | 15 |
| carbon disulfide (coelutes) | 8.904E+04 | [illegible] | 102 | 6.887E+04 | [illegible] | 102 | 7.575E+04 | [illegible] | 102 | 4.391E+04 | [illegible] | 102 | 7.615E+04 | [illegible] | 102 |
| 2-butanone (coelutes) | 1.376E+05 | 90821 | 66 | 1.064E+05 | 70252 | 66 | 1.171E+05 | 77269 | 66 | 6.786E+04 | 44790 | 66 | 1.177E+05 | 77669 | 66 |
| benzene | 9.303E+05 | 93032 | 10 | 7.289E+05 | 72892 | 10 | 8.066E+05 | 80664 | 10 | 7.103E+05 | 71034 | 10 | 1.062E+06 | 106173 | 10 |
| trichloroethene (PID - MDL N/A) | 8.986E+05 | 17972 | 2 | 5.918E+05 | 11836 | 2 | 7.410E+05 | 14819 | 2 | 4.401E+05 | 8801 | 2 | 1.592E+06 | 31838 | 2 |
| toluene (coelutes) | 4.405E+05 | 74881 | 17 | 5.627E+05 | 95665 | 17 | 4.012E+05 | 68202 | 17 | 5.663E+05 | 96270 | 17 | 4.306E+05 | 73195 | 17 |
| 4-methyl-2-pentanone (coelutes) | 7.641E+04 | 74881 | 98 | 9.762E+04 | 95665 | 98 | 6.959E+04 | 68202 | 98 | 9.823E+04 | 96270 | 98 | 7.469E+04 | 73195 | 98 |
| 2-hexanone | 9.046E+04 | 36185 | 40 | 1.075E+05 | 42980 | 40 | 7.864E+04 | 31457 | 40 | 1.461E+05 | 58457 | 40 | 7.287E+04 | 29148 | 40 |
| tetrachloroethene (PID - MDL N/A) | 6.220E+05 | 12440 | 2 | 7.872E+05 | 15743 | 2 | 3.437E+05 | 6874 | 2 | 1.699E+06 | 33973 | 2 | 5.681E+05 | 11361 | 2 |
| chlorobenzene | 4.127E+05 | 8253 | 2 | 5.700E+05 | 11400 | 2 | 3.147E+05 | 6293 | 2 | 1.038E+06 | 20769 | 2 | 2.248E+05 | 4495 | 2 |
| ethylbenzene | 2.430E+05 | 24302 | 10 | 3.082E+05 | 30819 | 10 | 2.335E+05 | 23350 | 10 | 4.417E+05 | 44174 | 10 | 1.633E+05 | 16330 | 10 |
| m-xylene (coelutes) | 2.807E+05 | 56149 | 20 | 2.170E+05 | 43393 | 20 | 4.275E+05 | 85501 | 20 | 6.310E+05 | 126203 | 20 | 2.242E+05 | 44837 | 20 |
| p-xylene (coelutes) | 2.807E+05 | 56149 | 20 | 2.170E+05 | 43393 | 20 | 4.275E+05 | 85501 | 20 | 6.310E+05 | 126203 | 20 | 2.242E+05 | 44837 | 20 |
| o-xylene (coelutes) | 5.658E+05 | 113158 | 20 | 1.615E+05 | 32291 | 20 | 5.214E+05 | 104274 | 20 | 5.409E+05 | 108177 | 20 | 3.283E+05 | 65657 | 20 |
| styrene (coelutes) | 5.658E+05 | 113158 | 20 | 1.615E+05 | 32291 | 20 | 5.214E+05 | 104274 | 20 | 5.409E+05 | 108177 | 20 | 3.283E+05 | 65657 | 20 |

| | NUMBER 6 | | | NUMBER 7 | | | NUMBER 8 | | | NUMBER 9 | | | NUMBER 10 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 |
| ECID IS3 AREAS | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 | | 1 | 100 |

| ECD COMPOUNDS | 09/23/97 062F0101 | area | conc. | 09/24/97 086F0101 | area | conc. | 09/25/97 006F0201 | area | conc. | 09/25/97 009F0101 | area | conc. | 09/25/97 032F0101 | area | conc. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bromomethane | 2.063E+06 | 1547508 | 75 | 2.219E+06 | 1664499 | 75 | 2.255E+06 | 1691282 | 75 | 2.370E+06 | 1777385 | 75 | 2.190E+06 | 1642371 | 75 |
| 1,1-dichloroethene | 2.063E+07 | 3094629 | 15 | 2.022E+07 | 3032384 | 15 | 2.206E+07 | 3308260 | 15 | 2.450E+07 | 3675370 | 15 | 1.635E+07 | 2453127 | 15 |
| methylene chloride | 1.537E+07 | 3073307 | 20 | 1.765E+07 | 3529456 | 20 | 1.312E+07 | 2623384 | 20 | 7.347E+06 | 1469365 | 20 | 1.257E+07 | 2513544 | 20 |
| chloroform (coelutes) | 2.424E+08 | 26666700 | 11 | 2.383E+08 | 26215900 | 11 | 2.429E+08 | 26717300 | 11 | 1.411E+08 | 15520300 | 11 | 1.292E+07 | 1421700 | 11 |
| 1,1,1-trichloroethane (coelutes) | 6.667E+08 | 26666700 | 4 | 6.554E+08 | 26215900 | 4 | 6.679E+08 | 26717300 | 4 | 3.880E+08 | 15520300 | 4 | 3.554E+07 | 1421700 | 4 |
| carbon tetrachloride (coelutes) | 4.167E+09 | 26666700 | 0.64 | 4.096E+09 | 26215900 | 0.64 | 4.175E+09 | 26717300 | 0.64 | 2.425E+09 | 15520300 | 0.64 | 2.221E+08 | 1421700 | 0.64 |
| 1,2-dichloroethane | 8.356E+06 | 1671137 | 20 | 7.823E+06 | 1564623 | 20 | 7.490E+06 | 1498078 | 20 | 6.840E+06 | 1368029 | 20 | 3.833E+06 | 766507 | 20 |
| trichloroethene (ECD) | 2.982E+08 | 5963420 | 2 | 3.173E+08 | 6346766 | 2 | 3.213E+08 | 6425385 | 2 | 2.968E+08 | 5936269 | 2 | 2.864E+08 | 5728660 | 2 |
| tetrachloroethene (ECD) (coelutes) | 4.774E+08 | 10024800 | 2.1 | 5.109E+08 | 10729400 | 2.1 | 4.963E+08 | 10422300 | 2.1 | 5.703E+08 | 11975500 | 2.1 | 4.137E+08 | 8687555 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 1.542E+07 | 10024800 | 65 | 1.651E+07 | 10729400 | 65 | 1.603E+07 | 10422300 | 65 | 1.842E+07 | 11975500 | 65 | 1.337E+07 | 8687555 | 65 |
| bromoform | 1.484E+08 | 2968560 | 2 | 1.485E+08 | 2969530 | 2 | 1.555E+08 | 3110866 | 2 | 1.499E+08 | 2998596 | 2 | 1.550E+08 | 3100560 | 2 |
| 1,1,2,2-tetrachloroethane | 6.024E+07 | 1204857 | 2 | 5.942E+07 | 1188325 | 2 | 6.354E+07 | 1270842 | 2 | 5.510E+07 | 1101997 | 2 | 6.488E+07 | 1297687 | 2 |

| | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | |
|---|---|---|---|---|---|---|---|---|---|
| | | area | conc. | | area | conc. | | area | conc. |
| PID IS2 AREAS | | 1 | 100 | | 1 | 100 | | 1 | 100 |
| PID IS3 AREAS | | 1 | 100 | | 1 | 100 | | 1 | 100 |

| | 09/26/97 | | | 09/27/97 | | | 09/28/97 | | |
|---|---|---|---|---|---|---|---|---|---|
| PID COMPOUNDS | 043R0101 | area | conc. | 046R0101 | area | conc. | 062R0101 | area | conc. |
| vinyl chloride | 1.276E+04 | 9573 | 75 | 1.652E+04 | 12388 | 75 | 1.709E+04 | 12814 | 75 |
| acetone (coelutes) | 3.648E+04 | 25168 | 69 | 5.024E+04 | 34666 | 69 | 4.031E+04 | 27815 | 69 |
| trans-1,2-dichloroethene | 6.685E+05 | 100279 | 15 | 6.536E+05 | 98035 | 15 | 5.554E+05 | 83311 | 15 |
| cis-1,2-dichloroethene | 1.790E+05 | 26851 | 15 | 1.257E+05 | 18852 | 15 | 1.336E+05 | 20041 | 15 |
| carbon disulfide (coelutes) | 6.717E+04 | 68513 | 102 | 3.946E+04 | 40252 | 102 | 6.799E+04 | [illegible] | 102 |
| 2-butanone (coelutes) | 1.038E+05 | 68513 | 66 | 6.099E+04 | 40252 | 66 | 1.051E+05 | 69353 | 66 |
| benzene | 1.117E+06 | 111710 | 10 | 7.333E+05 | 73333 | 10 | 9.689E+05 | 96893 | 10 |
| trichloroethene (PID - MDL N/A) | 1.695E+06 | 33898 | 2 | 4.881E+05 | 9761 | 2 | 1.354E+06 | 27070 | 2 |
| toluene (coelutes) | 4.637E+05 | 78833 | 17 | 4.133E+05 | 70259 | 17 | 4.485E+05 | 76250 | 17 |
| 4-methyl-2-pentanone (coelutes) | 8.044E+04 | 78833 | 98 | 7.169E+04 | 70259 | 98 | 7.781E+04 | 76250 | 98 |
| 2-hexanone | 6.480E+04 | 25919 | 40 | 1.332E+05 | 53280 | 40 | 6.662E+04 | 26647 | 40 |
| tetrachloroethene (PID - MDL N/A) | 7.111E+05 | 14222 | 2 | 1.064E+06 | 21277 | 2 | 5.456E+05 | 10912 | 2 |
| chlorobenzene | 8.255E+04 | 1651 | 2 | 7.003E+05 | 14005 | 2 | 1.794E+05 | 3588 | 2 |
| ethylbenzene | 1.323E+05 | 13234 | 10 | 3.461E+05 | 34611 | 10 | 1.540E+05 | 15400 | 10 |
| m-xylene (coelutes) | 2.611E+05 | 52215 | 20 | 5.149E+05 | 102983 | 20 | 3.240E+05 | 64807 | 20 |
| p-xylene (coelutes) | 2.611E+05 | 52215 | 20 | 5.149E+05 | 102983 | 20 | 3.240E+05 | 64807 | 20 |
| o-xylene (coelutes) | 2.624E+05 | 52482 | 20 | 4.712E+05 | 94246 | 20 | 4.186E+05 | 83721 | 20 |
| styrene (coelutes) | 2.624E+05 | 52482 | 20 | 4.712E+05 | 94246 | 20 | 4.186E+05 | 83721 | 20 |

| | | NUMBER 1 | | | NUMBER 2 | | | NUMBER 3 | |
|---|---|---|---|---|---|---|---|---|---|
| ECD IS2 AREAS | | 1 | 100 | | 1 | 100 | | 1 | 100 |
| ECID IS3 AREAS | | 1 | 100 | | 1 | 100 | | 1 | 100 |

| | 09/26/97 | | | 09/27/97 | | | 09/28/97 | | |
|---|---|---|---|---|---|---|---|---|---|
| ECD COMPOUNDS | 043F0101 | area | conc. | 046F0101 | area | conc. | 062F0101 | area | conc. |
| bromomethane | 1.934E+06 | 1450468 | 75 | 2.648E+06 | 1986115 | 75 | 2.565E+06 | 1924062 | 75 |
| 1,1-dichloroethene | 1.839E+07 | 2759222 | 15 | 2.028E+07 | 3041725 | 15 | 2.105E+07 | 3157971 | 15 |
| methylene chloride | 1.321E+07 | 2642415 | 20 | 1.389E+07 | 2778810 | 20 | 1.429E+07 | 2858922 | 20 |
| chloroform (coelutes) | 1.265E+08 | 13917400 | 11 | 1.256E+08 | 13811600 | 11 | 1.254E+08 | 13792900 | 11 |
| 1,1,1-trichloroethane (coelutes) | 3.479E+08 | 13917400 | 4 | 3.453E+08 | 13811600 | 4 | 3.448E+08 | 13792900 | 4 |
| carbon tetrachloride (coelutes) | 2.175E+09 | 13917400 | 0.64 | 2.158E+09 | 13811600 | 0.64 | 2.155E+09 | 13792900 | 0.64 |
| 1,2-dichloroethane | 1.080E+07 | 2159905 | 20 | 1.184E+07 | 2368258 | 20 | 1.153E+07 | 2306819 | 20 |
| trichloroethene (ECD) | 2.780E+08 | 5560645 | 2 | 2.827E+08 | 5654874 | 2 | 2.767E+08 | 5534336 | 2 |
| tetrachloroethene (ECD) (coelutes) | 4.606E+08 | 9671997 | 2.1 | 4.991E+08 | 10481800 | 2.1 | 4.339E+08 | 9111490 | 2.1 |
| 1,1,2-trichloroethane (coelutes) | 1.488E+07 | 9671997 | 65 | 1.613E+07 | 10481800 | 65 | 1.402E+07 | 9111490 | 65 |
| bromoform | 1.536E+08 | 3072171 | 2 | 1.642E+08 | 3284150 | 2 | 1.601E+08 | 3202873 | 2 |
| 1,1,2,2-tetrachloroethane | 5.187E+07 | 1037442 | 2 | 6.410E+07 | 1282031 | 2 | 5.866E+07 | 1173159 | 2 |

# ATTACHMENT 3

## QUALITYCONTROL
## CHECK STANDARD RESULTS

## QC Check Standard Results

| Compound | Area | Area IS | RRF (ICAL) | Conc. Found | True Conc. | % Recovery |
|---|---|---|---|---|---|---|
| **July 11, 1997 Calibration** | | | | | | |
| 1,1-DICHLOROETHENE | 2269989 | 13578400 | 4.098 | 4.1 | 2.0 | 204.0 |
| BENZENE | 45689 | 72990 | 125.4 | 0.5 | 2.0 | 25.0 |
| CHLOROBENZENE | 115779 | 72990 | 37.65 | 4.2 | 2.0 | 210.7 |
| TOLUENE | 101940 | 72990 | 48.08 | 2.9 | 2.0 | 145.2 |
| TRICHLOROETHENE | 20760100 | 13578400 | 80.84 | 1.9 | 2.0 | 94.6 |
| **August 5, 1997 Calibration** | | | | | | |
| 1,1-DICHLOROETHENE | 722438 | 5113024 | 3.614 | 3.9 | 2.0 | 195.5 |
| BENZENE | 16139 | 12601 | 37.3 | 3.4 | 2.0 | 171.7 |
| CHLOROBENZENE | 9685 | 12601 | 11.48 | 6.7 | 2.0 | 334.8 |
| TOLUENE | 9644 | 12601 | 25.66 | 3.0 | 2.0 | 149.1 |
| TRICHLOROETHENE | 6306906 | 5113024 | 105.1 | 1.2 | 2.0 | 58.7 |
| **August 12, 1997 Calibration** | | | | | | |
| 1,1-DICHLOROETHENE | 954232 | 6794223 | 3.249 | 4.3 | 2.0 | 216.1 |
| BENZENE | 142811 | 91018 | 42.31 | 3.7 | 2.0 | 185.4 |
| CHLOROBENZENE | 52092 | 91018 | 9.384 | 6.1 | 2.0 | 304.9 |
| TOLUENE | 75587 | 91018 | 25.19 | 3.3 | 2.0 | 164.8 |
| TRICHLOROETHENE | 7647522 | 6794223 | 82.67 | 1.4 | 2.0 | 68.1 |
| **August 26, 1997 Calibration** | | | | | | |
| 1,1-DICHLOROETHENE | 1521302 | 6950560 | 2.833 | 7.7 | 4.0 | 193.1 |
| BENZENE | 71551 | 29499 | 45.15 | 5.4 | 4.0 | 134.3 |
| CHLOROBENZENE | 70002 | 29499 | 10.83 | 21.9 | 4.0 | 547.8 |
| TOLUENE | 61178 | 29499 | 26.78 | 7.7 | 4.0 | 193.6 |
| TRICHLOROETHENE | 13505800 | 6950560 | 70.73 | 2.7 | 4.0 | 68.7 |
| **September 2, 1997 Calibration** | | | | | | |
| 1,1-DICHLOROETHENE | 1230740 | 6837005 | 2.561 | 7.0 | 4.0 | 175.7 |
| BENZENE | 97245 | 38538 | 92.44 | 2.7 | 4.0 | 68.2 |
| CHLOROBENZENE | 106465 | 38538 | 22.12 | 12.5 | 4.0 | 312.2 |
| TOLUENE | 85046 | 38538 | 48.55 | 4.5 | 4.0 | 113.6 |
| TRICHLOROETHENE | 13241300 | 6837005 | 71.84 | 2.7 | 4.0 | 67.4 |
| **September 19, 1997 Calibration** | | | | | | |
| 1,1-DICHLOROETHENE | 1731832 | 5481924 | 5.06 | 6.2 | 4.0 | 156.1 |
| BENZENE | 196902 | 53562 | 46.97 | 7.8 | 4.0 | 195.7 |
| CHLOROBENZENE | 44861 | 53562 | 17 | 4.9 | 4.0 | 123.2 |
| TOLUENE | 50302 | 53562 | 20.4 | 4.6 | 4.0 | 115.1 |
| TRICHLOROETHENE | 13712000 | 5481924 | 99.88 | 2.5 | 4.0 | 62.6 |

# ATTACHMENT 4

## IS AREA SUMMARY FOR
## DILUTED AND REANALYZED SAMPLES

# FRIDLEY ON-SITE LABORATORY
## IS AREA SUMMARY FOR DILUTED AND REANALYZED SAMPLES

| Sample ID | ANALYSIS DATE | ANALYSIS RUN # | Contcal DATE | Contcal RUN # | Contcal ECD IS2 AREA | Sample ECD IS2 AREA | % R | Contcal ECD IS3 AREA | Sample ECD IS3 AREA | % R | Contcal PID IS2 AREA | Sample PID IS2 AREA | % R | Contcal PID IS3 AREA | Sample PID IS3 AREA | % R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003-SB-035-01RE | 08/06/97 | 071F/R0101 | 08/06/97 | 062F/R0301 | 3290517 | 3091260 | 93.9 | 6854196 | 5592576 | 81.6 | 18020 | 9001 | 50.0 | 12847 | 7494 | 58.3 |
| 003-SB-035-01 | 08/05/97 | 045F/R0301 | 08/05/97 | 027F/R0101 | 3140322 | 3199592 | 101.9 | 5923875 | 3750507 | 63.3 * | 15440 | 9078 | 58.8 | 14052 | 5356 | 38.1 |
| | | | | | | | | | | | | | | | | |
| 003-SB-073-01RE | 08/06/97 | 072F/R0301 | 08/06/97 | 062F/R0301 | 3290517 | 3264400 | 99.2 | 6854196 | 5595930 | 81.6 | 18020 | 8268 | 45.9 | 12847 | 7592 | 59.1 |
| 003-SB-073-01 | 07/26/97 | 013F/R0201 | 07/26/97 | 094F/R0101 | 2877377 | 3635351 | 126.3 | 10391600 | 5147391 | 49.5 | 26090 | 15174 | 58.2 | 31834 | 9735 | 30.6 |
| | | | | | | | | | | | | | | | | |
| 003-SB-16-10RE | 08/06/97 | 073F/R0301 | 08/06/97 | 062F/R0301 | 3290517 | 3301842 | 100.3 | 6854196 | 6327521 | 92.3 | 18020 | 10076 | 55.9 | 12847 | 8979 | 69.9 |
| 003-SB-16-10 | 07/29/97 | 071F/R0101 | 07/28/97 | 055F/R0101 | 3859438 | 4863357 | 126.0 | 9102427 | 2262525 | 24.9 | 17133 | 13936 | 81.3 | 26148 | 4412 | 16.9 |
| | | | | | | | | | | | | | | | | |
| 003-SB-074-11DL | 08/06/97 | 074F/R0301 | 08/06/97 | 062F/R0301 | 3290517 | 3443400 | 104.6 | 6854196 | 6754568 | 98.5 | 18020 | 11442 | 63.5 | 12847 | 9103 | 70.9 |
| 003-SB-074-11 | 08/05/97 | 043F/R0301 | 08/05/97 | 027F/R0101 | 3140322 | 4615546 | 147.0 ~ | 5923875 | 4577944 | 77.3 | 15440 | 19683 | 127.5 | 14052 | 6860 | 48.8 |
| | | | | | | | | | | | | | | | | |
| 003-SB-DP1-14DL | 08/06/97 | 075F/R0301 | 08/06/97 | 062F/R0301 | 3290517 | 3623666 | 110.1 | 6854196 | 7131569 | 104.0 | 18020 | 11570 | 64.2 | 12847 | 9932 | 77.3 |
| 003-SB-DP1-14 | 08/05/97 | 044F/R0101 | 08/05/97 | 027F/R0101 | 3140322 | 5520772 | 175.8 ~ | 5923875 | 3670909 | 62.0 | 15440 | 15005 | 97.2 | 14052 | 5185 | 36.9 |
| | | | | | | | | | | | | | | | | |
| 003-SB-003-10 | 07/15/97 | 089F/R0101 | 07/15/97 | 086F/R0101 | 11064500 | 29074700 | 262.8 ~ | 41478700 | 15162500 | 36.6 | 46317 | 203750 | 439.9 ~ | 52950 | 13488 | 25.6 |
| 003-SB-003-10DL | 07/15/97 | 002F/R0301 | 07/15/97 | 086F/R0101 | 11064500 | 21305600 | 192.6 ~ | 41478700 | 33972300 | 81.9 | 46317 | 78867 | 170.3 ~ | 52950 | 25474 | 48.1 |
| | | | | | | | | | | | | | | | | |
| 003-SB-074-09DL | 08/14/97 | 080F/R0701 | 08/14/97 | 060F/R0601 | 3112987 | 4561224 | 146.5 | 13499800 | 11911400 | 88.2 | 67327 | 57117 | 84.8 | 83448 | 53189 | 63.7 |
| 003-SB-074-09 | 08/05/97 | 041F/R0301 | 08/05/97 | 027F/R0101 | 3140322 | 4092302 | 130.3 | 5923875 | 6141597 | 103.7 | 15440 | 13035 | 84.4 | 14052 | 10189 | 72.5 |
| | | | | | | | | | | | | | | | | |
| 003-SB-054-02RE | 08/14/97 | 081F/R0701 | 08/14/97 | 060F/R0601 | 3112987 | 3694612 | 118.7 | 13499800 | 5344516 | 39.6 | 67327 | 38593 | 57.3 | 83448 | 18534 | 22.2 |
| 003-SB-054-02 | 08/06/97 | 060F/R0301 | 08/06/97 | 049F/R0301 | 3316001 | 3329245 | 100.4 | 6903670 | 3403591 | 49.5 | 13939 | 10749 | 77.1 | 13990 | 4050 | 28.9 |
| | | | | | | | | | | | | | | | | |
| 003-SB-023-02RE | 08/14/97 | 093F/R0101 | 08/14/97 | 085F/R0101 | 3672924 | 4735041 | 128.9 | 13651000 | 10967000 | 80.3 | 46084 | 47466 | 103.0 | 68231 | 41579 | 60.9 |
| 003-SB-023-02 | 08/13/97 | 007F/R0101 | 08/12/97 | 096F/R0101 | 2943493 | 3715901 | 126.2 | 12144100 | 10842400 | 89.3 | 64875 | 63209 | 97.4 | 138589 | 93120 | 67.2 |
| | | | | | | | | | | | | | | | | |
| 003-SB-023-10DL | 08/14/97 | 094F/R0701 | 08/14/97 | 085F/R0101 | 3672924 | 4633788 | 126.2 | 13651000 | 10584200 | 77.5 | 46084 | 46924 | 101.8 | 68231 | 39771 | 58.3 |
| 003-SB-023-10 | 08/14/97 | 052F/R0601 | 08/12/97 | 042F/R0501 | 2980516 | 6460998 | 216.8 * | 10079478 | 11100400 | 110.1 | 57803 | 93079 | 161.0 ~ | 67444 | 58625 | 86.9 |
| | | | | | | | | | | | | | | | | |
| 003-SB-023-13DL | 08/14/97 | 095F/R0701 | 08/14/97 | 085F/R0101 | 3672924 | 4718647 | 128.4 | 13651000 | 10492000 | 76.9 | 46084 | 51175 | 111.0 | 68231 | 40281 | 59.0 |
| 003-SB-023-13 | 08/14/97 | 054F/R0601 | 08/12/97 | 042F/R0501 | 2980516 | 7596696 | 254.9 ~ | 10079478 | 10649700 | 105.7 | 57803 | 165660 | 286.6 ~ | 67444 | 55545 | 82.4 |
| | | | | | | | | | | | | | | | | |
| 003-SB-023-14DL | 08/15/97 | 096F/R0701 | 08/14/97 | 085F/R0101 | 3672924 | 4754671 | 129.4 | 13651000 | 9900536 | 72.5 | 46084 | 46516 | 100.9 | 68231 | 37700 | 55.3 |
| 003-SB-023-14 | 08/14/97 | 055F/R0601 | 08/12/97 | 042F/R0501 | 2980516 | 6160572 | 206.7 | 10079478 | 10056200 | 99.8 | 57803 | 82774 | 143.2 ~ | 67444 | 51662 | 76.6 |
| | | | | | | | | | | | | | | | | |
| 003-SB-DP1-21DL | 08/15/97 | 097F/R0701 | 08/14/97 | 085F/R0101 | 3672924 | 4703350 | 128.1 | 13651000 | 9893603 | 72.5 | 46084 | 51968 | 112.8 | 68231 | 37358 | 54.8 |
| 003-SB-DP1-21 | 08/14/97 | 056F/R0601 | 08/12/97 | 042F/R0501 | 2980516 | 6683331 | 224.2 | 10079478 | 9824348 | 97.4 | 57803 | 110359 | 190.9 | 67444 | 49323 | 73.1 |
| | | | | | | | | | | | | | | | | |

* = IS inaccurately measured due to partial chromatographic overlap with sample peak(s). ~ = Any results are calculated using external standard method to avoid potential bias.

# FRIDLEY ON-SITE LABORATORY
## IS AREA SUMMARY FOR DILUTED AND REANALYZED SAMPLES

| Sample ID | ANALYSIS DATE | ANALYSIS RUN # | Contcal DATE | Contcal RUN # | Contcal ECD IS2 AREA | Sample ECD IS2 AREA | % R | Contcal ECD IS3 AREA | Sample ECD IS3 AREA | % R | Contcal PID IS2 AREA | Sample PID IS2 AREA | % R | Contcal PID IS3 AREA | Sample PID IS3 AREA | % R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003-SB-P12-08RE | 08/15/97 | 098F/R0701 | 08/14/97 | 085F/R0101 | 3672924 | 4642739 | 126.4 | 13651000 | 7561827 | 55.4 | 46084 | 40360 | 87.6 | 68231 | 28762 | 42.2 |
| 003-SB-P12-08 | 08/14/97 | 069F/R0701 | 08/14/97 | 060F/R0601 | 3112987 | 4074637 | 130.9 | 13499800 | 6155021 | 45.6 | 67327 | 47496 | 70.5 | 83448 | 27214 | 32.6 |
| | | | | | | | | | | | | | | | | |
| 003-SB-036-01RE | 08/15/97 | 099F/R0701 | 08/14/97 | 085F/R0101 | 3672924 | 4358185 | 118.7 | 13651000 | 7395452 | 54.2 | 46084 | 39288 | 85.3 | 68231 | 25446 | 37.3 |
| 003-SB-036-01 | 08/14/97 | 072F/R0701 | 08/14/97 | 060F/R0601 | 3112987 | 3991466 | 128.2 | 13499800 | 6162078 | 45.6 | 67327 | 47765 | 70.9 | 83448 | 25071 | 30.0 |
| | | | | | | | | | | | | | | | | |
| 003-SB-032-02DL | 09/03/97 | 047F/R0101 | 09/03/97 | 044F/R0101 | 4396786 | 4705495 | 107.0 | 12725400 | 11734600 | 92.2 | 63198 | 38568 | 61.0 | 56142 | 69587 | 123.9 |
| 003-SB-032-02 | 08/27/97 | 014F/R0101 | 08/27/97 | 010F/R0101 | 4434804 | 2162503 | 48.8 | 13645600 | 8873900 | 65.0 | 17038 | 19157 | 112.4 | 32725 | 0 | 0.0* |
| | | | | | | | | | | | | | | | | |
| 003-SB-032-03DL | 09/03/97 | 049F/R0101 | 09/03/97 | 044F/R0101 | 4396786 | 6533640 | 148.6 | 12725400 | 13668900 | 107.4 | 63198 | 39015 | 61.7 | 56142 | 71014 | 126.5 |
| 003-SB-032-03 | 08/27/97 | 018F/R0201 | 08/27/97 | 010F/R0101 | 4434804 | 4769025 | 107.6 | 13645600 | 10868100 | 79.6 | 17038 | 27762 | 162.9* | 32725 | 37055 | 113.2 |
| | | | | | | | | | | | | | | | | |
| 003-SB-007-06RE | 09/03/97 | 052F/R0101 | 09/03/97 | 044F/R0101 | 4396786 | 6238995 | 141.9 | 12725400 | 14475100 | 113.7 | 63198 | 38891 | 61.5 | 56142 | 53223 | 94.8 |
| 003-SB-007-06 | 08/28/97 | 062F/R0101 | 08/28/97 | 056F/R0101 | 4213040 | 4276349 | 101.5 | 14553600 | 7413194 | 50.9 | 19954 | 13635 | 68.3 | 33949 | 11442 | 33.7 |
| | | | | | | | | | | | | | | | | |
| 003-SB-027-03RE | 09/03/97 | 053F/R0101 | 09/03/97 | 044F/R0101 | 4396786 | 5622278 | 127.9 | 12725400 | 12811000 | 100.7 | 63198 | 32252 | 51.0 | 56142 | 43377 | 77.3 |
| 003-SB-027-03 | 08/28/97 | 071F/R0101 | 08/28/97 | 056F/R0101 | 4213040 | 4318827 | 102.5 | 14553600 | 8923828 | 61.3 | 19954 | 14953 | 74.9 | 33949 | 12907 | 38.0 |
| | | | | | | | | | | | | | | | | |
| 003-SB-027-04RE | 09/03/97 | 054F/R0101 | 09/03/97 | 044F/R0101 | 4396786 | 6076759 | 138.2 | 12725400 | 13786700 | 108.3 | 63198 | 35684 | 56.5 | 56142 | 45066 | 80.3 |
| 003-SB-027-04 | 08/28/97 | 072F/R0101 | 08/28/97 | 056F/R0101 | 4213040 | 3583576 | 85.1 | 14553600 | 7773592 | 53.4 | 19954 | 15154 | 75.9 | 33949 | 12453 | 36.7 |
| | | | | | | | | | | | | | | | | |
| 003-SB-032-04DL2 | 09/04/97 | 069F/R0101 | 09/04/97 | 075F/R0101 | 4621471 | 4398872 | 95.2 | 13428700 | 12265600 | 91.3 | 57627 | 39052 | 67.8 | 48387 | 64243 | 132.8 |
| 003-SB-032-04DL1 | 09/04/97 | 051F/R0101 | 09/04/97 | 044F/R0101 | 4396786 | 4253659 | 96.7 | 12725400 | 13273800 | 104.3 | 63198 | 47112 | 74.6 | 208791 | 96770 | 46.3 |
| | | | | | | | | | | | | | | | | |
| 003-SB-P09-01DL | 09/04/97 | 070F/R0101 | 09/04/97 | 075F/R0101 | 4621471 | 6354207 | 137.5 | 13428700 | 12894800 | 96.0 | 57627 | 32986 | 57.2 | 48387 | 43384 | 89.7 |
| 003-SB-P09-01 | 08/29/97 | 080F/R0101 | 08/28/97 | 077F/R0101 | 3816769 | 4841847 | 126.9 | 7938731 | 7715655 | 97.2 | 48302 | 16686 | 34.5 | 17167 | 10824 | 63.1 |
| | | | | | | | | | | | | | | | | |
| 003-SB-P09-08RE | 09/04/97 | 072F/R0101 | 09/04/97 | 075F/R0101 | 4621471 | 6521793 | 141.1 | 13428700 | 12245800 | 91.2 | 57627 | 49583 | 86.0 | 48387 | 36031 | 74.5 |
| 003-SB-P09-08 | 08/29/97 | 086F/R0101 | 08/28/97 | 077F/R0101 | 3816769 | 4468703 | 117.1 | 7938731 | 9769979 | 123.1 | 48302 | 17352 | 36.9 | 17167 | 18212 | 106.1 |
| | | | | | | | | | | | | | | | | |
| 003-SB-032-01DL | 09/04/97 | 073F/R0101 | 09/04/97 | 075F/R0101 | 4621471 | 4266042 | 92.3 | 13428700 | 13352500 | 99.4 | 57627 | 51657 | 89.6 | 48387 | 45787 | 94.6 |
| 003-SB-032-01 | 08/29/97 | 009F/R0201 | 08/29/97 | 098F/R0101 | 4137946 | 3734936 | 90.3 | 13257700 | 9681319 | 73.0 | 14698 | 19615 | 133.5 | 28393 | 20825 | 73.3 |
| | | | | | | | | | | | | | | | | |
| 003-SB-DP1-33DL2 | 09/04/97 | 074F/R0101 | 09/04/97 | 075F/R0101 | 4621471 | 4355806 | 94.3 | 13428700 | 12073700 | 89.9 | 57627 | 43424 | 75.4 | 48387 | 34335 | 71.0 |
| 003-SB-DP1-33DL1 | 08/29/97 | 014F/R0201 | 08/29/97 | 098F/R0101 | 4137946 | 4283747 | 103.5 | 13257700 | 8256519 | 62.3 | 14698 | 17718 | 120.5 | 28393 | 48945 | 172.4~ |
| | | | | | | | | | | | | | | | | |
| 003-SB-P08-12DL | 09/07/97 | 034F/R0201 | 09/07/97 | 023F/R0201 | 3869249 | 6426835 | 166.1 | 13233600 | 12284500 | 92.8 | 27651 | 34071 | 123.2 | 30734 | 26550 | 86.4 |
| 003-SB-P08-12 | 09/04/97 | 083F/R0101 | 09/04/97 | 078F/R0101 | 3963142 | 7564807 | 190.9 | 11932800 | 13319400 | 111.6 | 76108 | 144134 | 189.4* | 35330 | 36816 | 104.2 |
| | | | | | | | | | | | | | | | | |

* = IS inac[illegible]tely measured due to partial chromatographic overlap with sample peak[illegible] ~ = Any results are calculated using external standard method to avoid [illegible]tential bias.

# FRIDLEY ON-SITE LABORATORY
## IS AREA SUMMARY FOR DILUTED AND REANALYZED SAMPLES

| Sample ID | ANALYSIS DATE | ANALYSIS RUN # | Contcal DATE | Contcal RUN # | Contcal ECD IS2 AREA | Sample ECD IS2 AREA | % R | Contcal ECD IS3 AREA | Sample ECD IS3 AREA | % R | Contcal PID IS2 AREA | Sample PID IS2 AREA | % R | Contcal PID IS3 AREA | Sample PID IS3 AREA | % R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003-SB-P08-14DL | 09/07/97 | 035F/R0201 | 09/07/97 | 023F/R0201 | 3869249 | 6309646 | 163.1 | 13233600 | 12558400 | 94.9 | 27651 | 38008 | 137.5 | 30734 | 26867 | 87.4 |
| 003-SB-P08-14 | 09/04/97 | 085F/R0101 | 09/04/97 | 078F/R0101 | 3963142 | 7058256 | 178.1 | 11932800 | 13516000 | 113.3 | 76108 | 58798 | 77.3 | 35330 | 34078 | 96.5 |
| 003-SB-P08-15DL | 09/07/97 | 036F/R0201 | 09/07/97 | 023F/R0201 | 3869249 | 6120756 | 158.2 | 13233600 | 11835400 | 89.4 | 27651 | 23152 | 83.7 | 30734 | 25159 | 81.9 |
| 003-SB-P08-15 | 09/05/97 | 091F/R0101 | 09/04/97 | 078F/R0101 | 3963142 | 7616876 | 192.2* | 11932800 | 11628700 | 97.5 | 76108 | 92458 | 121.5 | 35330 | 27382 | 77.5 |
| 003-SB-P10-08DL | 09/10/97 | 024F/R0101 | 09/10/97 | 019F/R0101 | 3976562 | 6682884 | 168.1~ | 4129141 | 8465886 | 205.0 | 30370 | 13810 | 45.5 | 16951 | 17275 | 101.9 |
| 003-SB-P10-08DL2 | 09/10/97 | 040F/R0101 | 09/10/97 | 033F/R0101 | 4183159 | 8225481 | 196.6~ | 10388400 | 7610561 | 73.3 | 26740 | 83610 | 312.7~ | 33247 | 14957 | 45.0 |
| 003-SB-P10-09DL2 | 09/10/97 | 041F/R0101 | 09/10/97 | 033F/R0101 | 4183159 | 7297371 | 174.4~ | 10388400 | 7227489 | 69.6 | 26740 | 50991 | 190.7~ | 33247 | 14680 | 44.2 |
| 003-SB-P10-09 | 09/09/97 | 010F/R0101 | 09/09/97 | 008F/R0101 | 3956711 | 0 | 0.0~ | 3479190 | 9372973 | 269.4~ | 128937 | 748741 | 580.7~ | 18400 | 8846 | 48.1 |
| 003-SB-P10-10DL2 | 09/10/97 | 042F/R0101 | 09/10/97 | 033F/R0101 | 4183159 | 5533730 | 132.3 | 10388400 | 7118248 | 68.5 | 26740 | 45645 | 170.7~ | 33247 | 14893 | 44.8 |
| 003-SB-P10-10 | 09/09/97 | 011F/R0101 | 09/09/97 | 008F/R0101 | 3956711 | 0 | 0.0~ | 3479190 | 4458395 | 128.1 | 128937 | 0 | 0.0~ | 18400 | 7489 | 40.7 |
| 003-SB-DP1-38DL2 | 09/10/97 | 045F/R0101 | 09/10/97 | 033F/R0101 | 4183159 | 7835623 | 187.3~ | 10388400 | 6755760 | 65.0 | 26740 | 98362 | 367.8~ | 33247 | 13143 | 39.5 |
| 003-SB-DP1-38 | 09/09/97 | 012F/R0101 | 09/09/97 | 008F/R0101 | 3956711 | 0 | 0.0~ | 3479190 | 4052950 | 116.5 | 128937 | 0 | 0.0~ | 18400 | 9624 | 52.3 |
| 003-SB-P11-08DL | 09/10/97 | 046F/R0101 | 09/10/97 | 033F/R0101 | 4183159 | 4502595 | 107.6 | 10388400 | 7096767 | 68.3 | 26740 | 21767 | 81.4 | 33247 | 14780 | 44.5 |
| 003-SB-P11-08 | 09/10/97 | 030F/R0101 | 09/10/97 | 019F/R0101 | 3976562 | 4501194 | 113.2 | 4129141 | 9863625 | 238.9 | 30370 | 33714 | 111.0 | 16951 | 21218 | 125.2 |
| 003-SB-P11-09DL | 09/10/97 | 047F/R0101 | 09/10/97 | 033F/R0101 | 4183159 | 5185793 | 124.0 | 10388400 | 7421561 | 71.4 | 26740 | 22668 | 84.8 | 33247 | 15622 | 47.0 |
| 003-SB-P11-09 | 09/10/97 | 031F/R0101 | 09/10/97 | 019F/R0101 | 3976562 | 6923425 | 174.1 | 4129141 | 9768584 | 236.6 | 30370 | 38052 | 125.3 | 16951 | 21024 | 124.0 |
| 003-SB-028-04RE | 09/21/97 | 009F/R0101 | 09/21/97 | 005F/R0101 | 3131292 | 3576312 | 114.2 | 12376300 | 10119300 | 81.8 | 16968 | 15359 | 90.5 | 25357 | 14473 | 57.1 |
| 003-SB-028-04 | 09/20/97 | 088F/R0101 | 09/20/97 | 073F/R0101 | 2858333 | 2968788 | 103.9 | 8667777 | 5437043 | 62.7 | 16019 | 15509 | 96.8 | 16945 | 25518 | 150.6 |
| 003-SB-026-05DL | 09/29/97 | 057F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 3053053 | 94.6 | 12302100 | 10070000 | 81.9 | 10898 | 13735 | 126.0 | 14896 | 1248972 | 8384.6* |
| 003-SB-026-05 | 09/22/97 | 036F/R0101 | 09/22/97 | 028F/R0101 | 3300546 | 1785403 | 54.1 | 13149700 | 10063900 | 76.5 | 17249 | 20718 | 120.1 | 21426 | 0 | 0.0* |
| 003-SB-026-06DL | 09/29/97 | 058F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 3163693 | 98.0 | 12302100 | 10338100 | 84.0 | 10898 | 16427 | 150.7 | 14896 | 0 | 0.0* |
| 003-SB-026-06 | 09/22/97 | 038F/R0101 | 09/22/97 | 028F/R0101 | 3300546 | 1010772 | 30.6 | 13149700 | 1169025 | 8.9 | 17249 | 0 | 0.0* | 21426 | 0 | 0.0 |
| 003-SB-026-07DL | 09/29/97 | 059F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 2645960 | 82.0 | 12302100 | 9459067 | 76.9 | 10898 | 0 | 0.0~ | 14896 | 0 | 0.0* |
| 003-SB-026-07 | 09/22/97 | 040F/R0101 | 09/22/97 | 028F/R0101 | 3300546 | 1366825 | 41.4 | 13149700 | 8255568 | 62.8 | 17249 | 0 | 0.0~ | 21426 | 0 | 0.0* |
| 003-SB-050-10DL | 09/29/97 | 054F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 4179967 | 129.5 | 12302100 | 10949400 | 89.0 | 10898 | 15424 | 141.5 | 14896 | 10289 | 69.1 |
| 003-SB-050-10 | 09/25/97 | 031F/R0101 | 09/25/97 | 009F/R0101 | 3505824 | 5406442 | 154.2 | 11965400 | 9448147 | 79.0 | 14541 | 24243 | 166.7 | 18340 | 13623 | 74.3 |

* = IS inaccurately measured due to partial chromatographic overlap with sample peak(s). ~ = Any results are calculated using external standard method to avoid potential bias.

# FRIDLEY ON-SITE LABORATORY
## IS AREA SUMMARY FOR DILUTED AND REANALYZED SAMPLES

| Sample ID | ANALYSIS DATE | ANALYSIS RUN # | Contcal DATE | Contcal RUN # | Contcal ECD IS2 AREA | Sample ECD IS2 AREA | % R | Contcal ECD IS3 AREA | Sample ECD IS3 AREA | % R | Contcal PID IS2 AREA | Sample PID IS2 AREA | % R | Contcal PID IS3 AREA | Sample PID IS3 AREA | % R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 003-SB-050-11DL | 09/29/97 | 055F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 4275021 | 132.4 | 12302100 | 9644781 | 78.4 | 10898 | 14828 | 136.1 | 14896 | 9227 | 61.9 |
| 003-SB-050-11 | 09/26/97 | 034F/R0101 | 09/25/97 | 032F/R0101 | 3499641 | 4541339 | 129.8 | 12436800 | 4646303 | 37.4 | 31113 | 31412 | 101.0 | 23269 | 4856 | 20.9 |
| | | | | | | | | | | | | | | | | |
| 003-SB-047-08DL2 | 09/29/97 | 050F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 4461049 | 138.2 | 12302100 | 12477500 | 101.4 | 10898 | 21167 | 194.2 | 14896 | 11265 | 75.6 |
| 003-SB-047-08DL | 09/25/97 | 015F/R0101 | 09/25/97 | 009F/R0101 | 3505824 | 5389417 | 153.7~ | 11965400 | 10475500 | 87.5 | 14541 | 23828 | 163.9~ | 18340 | 12757 | 69.6 |
| 003-SB-047-08 | 09/25/97 | 005F/R0201 | 09/24/97 | 086F/R0101 | 3101353 | 5279951 | 170.2~ | 11457600 | 9403800 | 82.1 | 15827 | 27240 | 172.1~ | 20094 | 12137 | 60.4 |
| | | | | | | | | | | | | | | | | |
| 003-SB-050-08DL | 09/25/97 | 036F/R0101 | 09/25/97 | 032F/R0101 | 3499641 | 5172661 | 147.8 | 12436800 | 7525797 | 60.5 | 31113 | 15432 | 49.6 | 23269 | 9439 | 40.6 |
| 003-SB-050-08 | 09/25/97 | 029F/R0101 | 09/25/97 | 009F/R0101 | 3505824 | 5263039 | 150.1 | 11965400 | 11021900 | 92.1 | 14541 | 21047 | 144.7* | 18340 | 14323 | 78.1 |
| | | | | | | | | | | | | | | | | |
| 003-SB-050-09DL | 09/25/97 | 040F/R0101 | 09/25/97 | 032F/R0101 | 3499641 | 5172661 | 147.8 | 12436800 | 7525797 | 60.5 | 31113 | 15432 | 49.6 | 23269 | 9439 | 40.6 |
| 003-SB-050-09 | 09/25/97 | 030F/R0101 | 09/25/97 | 009F/R0101 | 3505824 | 5071936 | 144.7 | 11965400 | 10259900 | 85.7 | 14541 | 29181 | 200.7* | 18340 | 14313 | 78.0 |
| | | | | | | | | | | | | | | | | |
| 003-SB-DP1-48DL | 09/29/97 | 049F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 4455798 | 138.0 | 12302100 | 11225500 | 91.2 | 10898 | 15741 | 144.4 | 14896 | 9858 | 66.2 |
| 003-SB-DP1-48 | 09/25/97 | 014F/R0101 | 09/25/97 | 009F/R0101 | 3505824 | 5627557 | 160.5 | 11965400 | 12127300 | 101.4 | 14541 | 21752 | 149.6 | 18340 | 16371 | 89.3 |
| | | | | | | | | | | | | | | | | |
| 003-SB-047-09DL | 09/29/97 | 051F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 4194974 | 129.9 | 12302100 | 12507600 | 101.7 | 10898 | 13085 | 120.1 | 14896 | 11317 | 76.0 |
| 003-SB-047-09 | 09/25/97 | 016F/R0101 | 09/25/97 | 009F/R0101 | 3505824 | 4850117 | 138.3 | 11965400 | 10702800 | 89.4 | 14541 | 21192 | 145.7 | 18340 | 14580 | 79.5 |
| | | | | | | | | | | | | | | | | |
| 003-SB-047-10DL | 09/29/97 | 052F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 4552528 | 141.0 | 12302100 | 12325300 | 100.2 | 10898 | 16609 | 152.4 | 14896 | 11701 | 78.6 |
| 003-SB-047-10 | 09/25/97 | 017F/R0101 | 09/25/97 | 009F/R0101 | 3505824 | 5473841 | 156.1 | 11965400 | 10702400 | 89.4 | 14541 | 16549 | 113.8 | 18340 | 13543 | 73.8 |
| | | | | | | | | | | | | | | | | |
| 003-SB-047-12DL | 09/29/97 | 053F/R0101 | 09/29/97 | 046F/R0101 | 3228392 | 4355370 | 134.9 | 12302100 | 11333700 | 92.1 | 10898 | 15384 | 141.2 | 14896 | 10892 | 73.1 |
| 003-SB-047-12 | 09/25/97 | 019F/R0101 | 09/25/97 | 009F/R0101 | 3505824 | 5621569 | 160.3~ | 11965400 | 9319143 | 77.9 | 14541 | 23430 | 161.1~ | 18340 | 11717 | 63.9 |
| | | | | | | | | | | | | | | | | |
| 003-SB-074-01RE | 08/05/97 | 034F/R0201 | 08/05/97 | 027F/R0101 | 3140322 | 3094899 | 98.6 | 5923875 | 5862973 | 99.0 | 15440 | 9940 | 64.4 | 14052 | 9836 | 70.0 |
| 003-SB-074-01 | 07/30/97 | 006F/R0101 | 07/30/97 | 100F/R0101 | 3582554 | 2897025 | 80.9 | 10736600 | 2843367 | 26.5 | 15051 | 12775 | 84.9 | 24035 | 11101 | 46.2 |

* = [illegible] accurately measured due to partial chromatographic overlap with sampl[illegible] [illegible]ak(s). ~ = Any results are calculated using external standard method to avoid potential bias.

# ATTACHMENT 5

## SUMMARY OF BLANK ANALYSIS RESULTS FOR EACH SAMPLE GROUP

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG071197

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG071197 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | | ug/L | | |
| | | | | FIELD QC BLANK ID: | 003TB00101 | | 003TB00201 | | |
| | | | | PID Data File ID: | 081R0101 | | 082R0101 | | |
| | | | | ECD Data File ID: | 081F0101 | | 082F0101 | | |
| | | 40 | 20 | vinyl chloride | | U | | U | |
| | | 44 | 22 | bromomethane | | U | | U | |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U | | U | |
| | | 36 | 18 | acetone | | U | | U | |
| | | 8.6 | 4.3 | methylene chloride | | U | | U | |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U | | U | |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | 4.7 | U | 6.3 | U | |
| | | 22 | 11 | carbon disulfide | | U | | U | |
| | | 13.8 | 6.9 | 2-butanone | | U | | U | |
| 65.1597 | 65.1597 | 7.6 | 3.8 | chloroform | 12.381 | B | 13.032 | B | |
| 23.5051 | 23.5051 | 2.8 | 1.4 | 1,1,1-trichloroethane | 4.466 | B | 4.701 | B | |
| 3.77867 | 3.77867 | 0.44 | 0.22 | carbon tetrachloride | 0.718 | B | 0.756 | B | |
| | | 1.78 | 0.89 | benzene | | U | | U | |
| | | 24 | 12 | 1,2-dichloroethane | | U | | U | |
| | | 0.66 | 0.33 | trichloroethene | | U | | U | |
| | | 2.2 | 1.1 | toluene | | U | | U | |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U | | U | |
| | | 0.3 | 0.15 | tetrachloroethene | | U | | U | |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U | | U | |
| | | 13.8 | 6.9 | 2-hexanone | | U | | U | |
| | | 1.12 | 0.56 | chlorobenzene | | U | | U | |
| | | 2.2 | 1.1 | ethylbenzene | | U | | U | |
| | | 3.4 | 1.7 | m,p-xylene | | U | | U | |
| | | 11.2 | 5.6 | o-xylene/styrene | | U | | U | |
| | | 0.56 | 0.28 | bromoform | | U | | U | |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U | | U | |
| | | | | Date Sampled: | 07/08/97 | | 07/09/97 | | |
| | | | | Reviewed by: | DEK | | DEK | | |

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG071197

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG071197: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG071197: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | ug/L | |
|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | |
| | | | | PID Data File ID: | 80R0101 | |
| | | | | ECD Data File ID: | 80F0101 | |
| 40 | 20 | | | vinyl chloride | | U |
| 44 | 22 | | | bromomethane | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U |
| 36 | 18 | | | acetone | | U |
| 8.6 | 4.3 | | | methylene chloride | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | 4.0 | U |
| 22 | 11 | | | carbon disulfide | | U |
| 13.8 | 6.9 | | | 2-butanone | | U |
| 7.6 | 3.8 | 65.1597 | 57.5237 | chloroform | 11.505 | |
| 2.8 | 1.4 | 23.5051 | 20.7506 | 1,1,1-trichloroethane | 4.150 | |
| 0.44 | 0.22 | 3.77867 | 3.33585 | carbon tetrachloride | 0.667 | |
| 1.78 | 0.89 | | | benzene | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U |
| 0.66 | 0.33 | | | trichloroethene | | U |
| 2.2 | 1.1 | | | toluene | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U |
| 0.56 | 0.28 | | | bromoform | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U |

Date Analyzed: 07/11/97
Reviewed by: RS

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG071297

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG071297 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | | ug/L | |
| | | | | FIELD QC BLANK ID: | 003TB00301 | | 003TB00401 | |
| | | | | PID Data File ID: | 001R0201 | | 002R0201 | |
| | | | | ECD Data File ID: | 001F0201 | | 002F0201 | |
| | | 40 | 20 | vinyl chloride | | U | | U |
| | | 44 | 22 | bromomethane | | U | | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U | | U |
| | | 36 | 18 | acetone | | U | | U |
| | | 8.6 | 4.3 | methylene chloride | | U | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | 5.1 | U | 5.5 | U |
| | | 22 | 11 | carbon disulfide | | U | | U |
| | | 13.8 | 6.9 | 2-butanone | | U | | U |
| 68.65 | 44.5 | 7.6 | 3.8 | chloroform | 8.900 | B | 6.300 | B |
| 24.5 | 16 | 2.8 | 1.4 | 1,1,1-trichloroethane | 3.200 | B | 2.300 | B |
| 3.95 | 2.6 | 0.44 | 0.22 | carbon tetrachloride | 0.520 | B | 0.370 | B |
| | | 1.78 | 0.89 | benzene | | U | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U | | U |
| | | 0.66 | 0.33 | trichloroethene | | U | | U |
| | | 2.2 | 1.1 | toluene | | U | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U | | U |
| | | 0.56 | 0.28 | bromoform | | U | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Sampled: | 07/10/97 | | 07/11/97 | |
| | | | | Reviewed by: | DEK | | DEK | |

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG071297

LABORATORY BLANK SUMMARY; p. 1 of 1

LABORATORY BLANK ID: METH.BLK.
PID Data File ID: 100R0101
ECD Data File ID: 100F0101

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG071297: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG071297: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | ug/L | |
|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U |
| 44 | 22 | | | bromomethane | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U |
| 36 | 18 | | | acetone | | U |
| 8.6 | 4.3 | | | methylene chloride | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | 4.1 | U |
| 22 | 11 | | | carbon disulfide | | U |
| 13.8 | 6.9 | | | 2-butanone | | U |
| 7.6 | 3.8 | 68.65 | 68.65 | chloroform | 13.730 | |
| 2.8 | 1.4 | 24.5 | 24.5 | 1,1,1-trichloroethane | 4.900 | |
| 0.44 | 0.22 | 3.95 | 3.95 | carbon tetrachloride | 0.790 | |
| 1.78 | 0.89 | | | benzene | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U |
| 0.66 | 0.33 | | | trichloroethene | | U |
| 2.2 | 1.1 | | | toluene | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U |
| 0.56 | 0.28 | | | bromoform | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U |

Date Analyzed: 07/12/97
Reviewed by: RS

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG071397

## PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB00501
PID Data File ID: 039R0101
ECD Data File ID: 039F0101

| BLANK ACTION LEVELS SDG071397 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 137.446 | 137.446 | 44 | 22 | bromomethane | 27.489 | B |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | 11.2 | U |
| | | 22 | 11 | carbon disulfide | | U |
| | | 13.8 | 6.9 | 2-butanone | | U |
| 82.7771 | 51.5276 | 7.6 | 3.8 | chloroform | 10.306 | B |
| 29.8602 | 18.5876 | 2.8 | 1.4 | 1,1,1-trichloroethane | 3.718 | B |
| 4.80032 | 2.98813 | 0.44 | 0.22 | carbon tetrachloride | 0.598 | B |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| 2.46414 | | 0.66 | 0.33 | trichloroethene | | U |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 07/12/97
Reviewed by: DEK

COMMENTS:

03:51:48 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG071397

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG071397: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG071397: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 036R0701 ug/L | | METH.BLK. 056R0101 ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | | METH.BLK. | |
| | | | | PID Data File ID: | 036R0701 | | 056R0101 | |
| | | | | ECD Data File ID: | 036F0701 | | 056F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 137.446 | 107.369 | bromomethane | 21.474 | J | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | 7.9 | U | 10.3 | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 82.7771 | 82.7771 | chloroform | 16.555 | | 15.545 | |
| 2.8 | 1.4 | 29.8602 | 29.8602 | 1,1,1-trichloroethane | 5.972 | | 5.608 | |
| 0.44 | 0.22 | 4.80032 | 4.80032 | carbon tetrachloride | 0.960 | | 0.901 | |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | 2.46414 | 2.46414 | trichloroethene | 0.493 | J | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 07/13/97 | | 07/13/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

03 51:48 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG071497

## PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB00601
PID Data File ID: 042R0102
ECD Data File ID: 042F0102

| BLANK ACTION LEVELS SDG071497 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 186.33 | 186.33 | 44 | 22 | bromomethane | 37.266 | B |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| | | 22 | 11 | carbon disulfide | | U |
| | | 13.8 | 6.9 | 2-butanone | | U |
| 52.7707 | | 7.6 | 3.8 | chloroform | | U |
| 19.036 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 3.06022 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| | | 0.66 | 0.33 | trichloroethene | | U |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 07/13/97
Reviewed by: DEK

COMMENTS:

04:21:36 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG071497

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG071497: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG071497: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. ug/L | | METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | | METH.BLK. | |
| | | | | PID Data File ID: | 060R0101 | | 080R0101 | |
| | | | | ECD Data File ID: | 060F0101 | | 080F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 186.33 | 180.5 | bromomethane | 32.619 | J | 36.100 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 52.7707 | 52.7707 | chloroform | 10.554 | | 7.675 | |
| 2.8 | 1.4 | 19.036 | 19.036 | 1,1,1-trichloroethane | 3.807 | | 2.769 | J |
| 0.44 | 0.22 | 3.06022 | 3.06022 | carbon tetrachloride | 0.612 | | 0.445 | |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 07/14/97 | | 07/14/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

04:21:36 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG071597

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG071597 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | | |
| | | | | FIELD QC BLANK ID: | 003TB00701 | 003TB00801 |
| | | | | PID Data File ID: | 088R0101 | 003R0301 |
| | | | | ECD Data File ID: | 088F0101 | 003F0301 |
| | | | | | ug/L | ug/L |
| | | 40 | 20 | vinyl chloride | U | U |
| 112.5 | | 44 | 22 | bromomethane | U | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U |
| | | 36 | 18 | acetone | U | U |
| | | 8.6 | 4.3 | methylene chloride | U | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U |
| 365.496 | 365.496 | 22 | 11 | carbon disulfide | 73.099 | U |
| | | 13.8 | 6.9 | 2-butanone | U | U |
| 52.5819 | | 7.6 | 3.8 | chloroform | U | U |
| 18.9679 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U |
| 3.04927 | | 0.44 | 0.22 | carbon tetrachloride | U | U |
| | | 1.78 | 0.89 | benzene | U | U |
| | | 24 | 12 | 1,2-dichloroethane | U | U |
| | | 0.66 | 0.33 | trichloroethene | U | U |
| | | 2.2 | 1.1 | toluene | U | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U |
| | | 0.3 | 0.15 | tetrachloroethene | U | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U |
| | | 13.8 | 6.9 | 2-hexanone | U | U |
| | | 1.12 | 0.56 | chlorobenzene | U | U |
| | | 2.2 | 1.1 | ethylbenzene | U | U |
| | | 3.4 | 1.7 | m,p-xylene | U | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U |
| | | 0.56 | 0.28 | bromoform | U | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U |
| | | | | Date Sampled: | 07/14/97 | 07/15/97 |
| | | | | Reviewed by: | DEK | DEK |

COMMENTS:

04:22:36 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG071597

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG071597: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG071597: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. ug/L | | METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | | METH.BLK. | |
| | | | | PID Data File ID: | 087R0101 | | 001R0301 | |
| | | | | ECD Data File ID: | 087F0101 | | 001F0301 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 112.5 | 112.5 | bromomethane | 22.500 | J | 22.500 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | 365.496 | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 52.5819 | 52.5819 | chloroform | 10.516 | | 6.277 | J |
| 2.8 | 1.4 | 18.9679 | 18.9679 | 1,1,1-trichloroethane | 3.794 | | 2.264 | J |
| 0.44 | 0.22 | 3.04927 | 3.04927 | carbon tetrachloride | 0.610 | | 0.364 | J |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 07/15/97 | | 07/15/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

04:22:36 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG071697

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG071697 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | ug/L |
| | | | | FIELD QC BLANK ID: | 003SW00101 | 003SW00202 |
| | | | | PID Data File ID: | 011R0101 | 012R0101 |
| | | | | ECD Data File ID: | 011F0101 | 012F0101 |
| | | 40 | 20 | vinyl chloride | U | U |
| | | 44 | 22 | bromomethane | U | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U |
| | | 36 | 18 | acetone | U | U |
| | | 8.6 | 4.3 | methylene chloride | U | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U |
| | | 22 | 11 | carbon disulfide | U | U |
| | | 13.8 | 6.9 | 2-butanone | U | U |
| 41.2955 | | 7.6 | 3.8 | chloroform | U | U |
| 14.8965 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U |
| 2.39476 | | 0.44 | 0.22 | carbon tetrachloride | U | U |
| | | 1.78 | 0.89 | benzene | U | U |
| | | 24 | 12 | 1,2-dichloroethane | U | U |
| | | 0.66 | 0.33 | trichloroethene | U | U |
| | | 2.2 | 1.1 | toluene | U | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U |
| | | 0.3 | 0.15 | tetrachloroethene | U | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U |
| | | 13.8 | 6.9 | 2-hexanone | U | U |
| | | 1.12 | 0.56 | chlorobenzene | U | U |
| | | 2.2 | 1.1 | ethylbenzene | U | U |
| | | 3.4 | 1.7 | m,p-xylene | U | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U |
| | | 0.56 | 0.28 | bromoform | U | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U |
| | | | | Date Sampled: | 07/16/97 | 07/16/97 |
| | | | | Reviewed by: | DEK | DEK |

COMMENTS:

12:18:57 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG071697

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG071697: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG071697: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | ug/L |
|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. |
| | | | | PID Data File ID: | 010R0101 |
| | | | | ECD Data File ID: | 010F0101 |
| 40 | 20 | | | vinyl chloride | U |
| 44 | 22 | | | bromomethane | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U |
| 36 | 18 | | | acetone | U |
| 8.6 | 4.3 | | | methylene chloride | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U |
| 22 | 11 | | | carbon disulfide | U |
| 13.8 | 6.9 | | | 2-butanone | U |
| 7.6 | 3.8 | 41.2955 | 41.2955 | chloroform | 8.259 |
| 2.8 | 1.4 | 14.8965 | 14.8965 | 1,1,1-trichloroethane | 2.979 |
| 0.44 | 0.22 | 2.39476 | 2.39476 | carbon tetrachloride | 0.479 |
| 1.78 | 0.89 | | | benzene | U |
| 24 | 12 | | | 1,2-dichloroethane | U |
| 0.66 | 0.33 | | | trichloroethene | U |
| 2.2 | 1.1 | | | toluene | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U |
| 0.3 | 0.15 | | | tetrachloroethene | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U |
| 13.8 | 6.9 | | | 2-hexanone | U |
| 1.12 | 0.56 | | | chlorobenzene | U |
| 2.2 | 1.1 | | | ethylbenzene | U |
| 3.4 | 1.7 | | | m,p-xylene | U |
| 11.2 | 5.6 | | | o-xylene/styrene | U |
| 0.56 | 0.28 | | | bromoform | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U |

Date Analyzed: 07/16/97
Reviewed by: RS

COMMENTS:

04:34:23 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG072397

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG072397: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG072397: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | ug/L | |
|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | |
| | | | | PID Data File ID: | 042R0101 | |
| | | | | ECD Data File ID: | 042F0101 | |
| 40 | 20 | | | vinyl chloride | | U |
| 44 | 22 | 124.885 | 124.885 | bromomethane | 24.977 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U |
| 36 | 18 | | | acetone | | U |
| 8.6 | 4.3 | | | methylene chloride | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U |
| 22 | 11 | | | carbon disulfide | | U |
| 13.8 | 6.9 | | | 2-butanone | | U |
| 7.6 | 3.8 | 33.6727 | 33.6727 | chloroform | 6.735 | J |
| 2.8 | 1.4 | 12.1468 | 12.1468 | 1,1,1-trichloroethane | 2.429 | J |
| 0.44 | 0.22 | 1.95271 | 1.95271 | carbon tetrachloride | 0.391 | J |
| 1.78 | 0.89 | | | benzene | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U |
| 0.66 | 0.33 | | | trichloroethene | | U |
| 2.2 | 1.1 | | | toluene | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U |
| 0.56 | 0.28 | | | bromoform | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U |

Date Analyzed: 07/23/97
Reviewed by: RS

COMMENTS:

04:35:35 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG072497

## PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB00901
PID Data File ID: 054R0101
ECD Data File ID: 054F0101

| BLANK ACTION LEVELS SDG072497 | | | | | |
|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L |
| | | 40 | 20 | vinyl chloride | U |
| | | 44 | 22 | bromomethane | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U |
| | | 36 | 18 | acetone | U |
| | | 8.6 | 4.3 | methylene chloride | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U |
| | | 22 | 11 | carbon disulfide | U |
| | | 13.8 | 6.9 | 2-butanone | U |
| 64.9522 | | 7.6 | 3.8 | chloroform | U |
| 23.4302 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U |
| 3.76663 | | 0.44 | 0.22 | carbon tetrachloride | U |
| | | 1.78 | 0.89 | benzene | U |
| | | 24 | 12 | 1,2-dichloroethane | U |
| | | 0.66 | 0.33 | trichloroethene | U |
| | | 2.2 | 1.1 | toluene | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U |
| | | 0.3 | 0.15 | tetrachloroethene | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U |
| | | 13.8 | 6.9 | 2-hexanone | U |
| | | 1.12 | 0.56 | chlorobenzene | U |
| | | 2.2 | 1.1 | ethylbenzene | U |
| | | 3.4 | 1.7 | m,p-xylene | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U |
| | | 0.56 | 0.28 | bromoform | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U |

Date Sampled: 07/21/97
Reviewed by: RS

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG072497

LABORATORY BLANK SUMMARY; p. 1 of 1

LABORATORY BLANK ID: METH.BLK.
PID Data File ID: 053R0101
ECD Data File ID: 053F0101

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG072497 MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG072497 MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | ug/L |
|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | U |
| 44 | 22 | | | bromomethane | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U |
| 36 | 18 | | | acetone | U |
| 8.6 | 4.3 | | | methylene chloride | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U |
| 22 | 11 | | | carbon disulfide | U |
| 13.8 | 6.9 | | | 2-butanone | U |
| 7.6 | 3.8 | 64.9522 | 64.9522 | chloroform | 12.990 |
| 2.8 | 1.4 | 23.4302 | 23.4302 | 1,1,1-trichloroethane | 4.686 |
| 0.44 | 0.22 | 3.76663 | 3.76663 | carbon tetrachloride | 0.753 |
| 1.78 | 0.89 | | | benzene | U |
| 24 | 12 | | | 1,2-dichloroethane | U |
| 0.66 | 0.33 | | | trichloroethene | U |
| 2.2 | 1.1 | | | toluene | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U |
| 0.3 | 0.15 | | | tetrachloroethene | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U |
| 13.8 | 6.9 | | | 2-hexanone | U |
| 1.12 | 0.56 | | | chlorobenzene | U |
| 2.2 | 1.1 | | | ethylbenzene | U |
| 3.4 | 1.7 | | | m,p-xylene | U |
| 11.2 | 5.6 | | | o-xylene/styrene | U |
| 0.56 | 0.28 | | | bromoform | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U |

Date Analyzed: 07/24/97
Reviewed by: RS

COMMENTS:

04 36 27 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG072597

## PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB01001
PID Data File ID: 080R0101
ECD Data File ID: 080F0101

| BLANK ACTION LEVELS SDG072597 | | | | | |
|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L |
| | | 40 | 20 | vinyl chloride | U |
| | | 44 | 22 | bromomethane | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U |
| | | 36 | 18 | acetone | U |
| | | 8.6 | 4.3 | methylene chloride | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U |
| | | 22 | 11 | carbon disulfide | U |
| | | 13.8 | 6.9 | 2-butanone | U |
| 56.4759 | | 7.6 | 3.8 | chloroform | U |
| 20.3726 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U |
| 3.27509 | | 0.44 | 0.22 | carbon tetrachloride | U |
| | | 1.78 | 0.89 | benzene | U |
| | | 24 | 12 | 1,2-dichloroethane | U |
| | | 0.66 | 0.33 | trichloroethene | U |
| | | 2.2 | 1.1 | toluene | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U |
| | | 0.3 | 0.15 | tetrachloroethene | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U |
| | | 13.8 | 6.9 | 2-hexanone | U |
| | | 1.12 | 0.56 | chlorobenzene | U |
| | | 2.2 | 1.1 | ethylbenzene | U |
| | | 3.4 | 1.7 | m,p-xylene | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U |
| | | 0.56 | 0.28 | bromoform | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U |

Date Sampled: 07/22/97
Reviewed by: RS

COMMENTS:

04:37:18 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG072597

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG072597: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG072597: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 079R0101 079F0101 ug/L | METH.BLK. 092R0101 092F0101 ug/L |
|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | U | U |
| 44 | 22 | | | bromomethane | U | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U | U |
| 36 | 18 | | | acetone | U | U |
| 8.6 | 4.3 | | | methylene chloride | U | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U | U |
| 22 | 11 | | | carbon disulfide | U | U |
| 13.8 | 6.9 | | | 2-butanone | U | U |
| 7.6 | 3.8 | 56.4759 | 56.4759 | chloroform | 9.350 | 11.295 |
| 2.8 | 1.4 | 20.3726 | 20.3726 | 1,1,1-trichloroethane | 3.373 | 4.075 |
| 0.44 | 0.22 | 3.27509 | 3.27509 | carbon tetrachloride | 0.542 | 0.655 |
| 1.78 | 0.89 | | | benzene | U | U |
| 24 | 12 | | | 1,2-dichloroethane | U | U |
| 0.66 | 0.33 | | | trichloroethene | U | U |
| 2.2 | 1.1 | | | toluene | U | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U | U |
| 0.3 | 0.15 | | | tetrachloroethene | U | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U | U |
| 13.8 | 6.9 | | | 2-hexanone | U | U |
| 1.12 | 0.56 | | | chlorobenzene | U | U |
| 2.2 | 1.1 | | | ethylbenzene | U | U |
| 3.4 | 1.7 | | | m,p-xylene | U | U |
| 11.2 | 5.6 | | | o-xylene/styrene | U | U |
| 0.56 | 0.28 | | | bromoform | U | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U | U |

| | | |
|---|---|---|
| LABORATORY BLANK ID: | METH.BLK. | METH.BLK. |
| PID Data File ID: | 079R0101 | 092R0101 |
| ECD Data File ID: | 079F0101 | 092F0101 |
| Date Analyzed: | 07/25/97 | 07/25/97 |
| Reviewed by: | RS | RS |

COMMENTS:

04:37:18 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG072697

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG072697 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | | ug/L | |
| | | | | FIELD QC BLANK ID: | 003TB01101 | | 003TB01201 | |
| | | | | PID Data File ID: | 096R0101 | | 097R0101 | |
| | | | | ECD Data File ID: | 096F0101 | | 097F0101 | |
| | | 40 | 20 | vinyl chloride | | U | | U |
| 154.773 | 154.773 | 44 | 22 | bromomethane | 30.955 | B | 28.790 | B |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U | | U |
| | | 36 | 18 | acetone | | U | | U |
| | | 8.6 | 4.3 | methylene chloride | | U | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U | | U |
| | | 22 | 11 | carbon disulfide | | U | | U |
| | | 13.8 | 6.9 | 2-butanone | | U | | U |
| 79.0102 | | 7.6 | 3.8 | chloroform | | U | | U |
| 28.5014 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U | | U |
| 4.58187 | | 0.44 | 0.22 | carbon tetrachloride | | U | | U |
| | | 1.78 | 0.89 | benzene | | U | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U | | U |
| | | 0.66 | 0.33 | trichloroethene | | U | | U |
| | | 2.2 | 1.1 | toluene | | U | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U | | U |
| | | 0.56 | 0.28 | bromoform | | U | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Sampled: | 07/23/97 | | 07/24/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

04:38:13 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG072697

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG072697: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG072697: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. ug/L | | LABORATORY BLANK ID: METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | PID Data File ID: | 095R0101 | | 019R0201 | |
| | | | | ECD Data File ID: | 095F0101 | | 019F0201 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 154.773 | 151.406 | bromomethane | 30.281 | J | 22.600 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 79.0102 | 79.0102 | chloroform | | U | 15.802 | |
| 2.8 | 1.4 | 28.5014 | 28.5014 | 1,1,1-trichloroethane | | U | 5.700 | |
| 0.44 | 0.22 | 4.58187 | 4.58187 | carbon tetrachloride | | U | 0.916 | |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 07/26/97 | | 07/27/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

04:38:13 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG072797

## PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB01301
PID Data File ID: 029R0101
ECD Data File ID: 029F0101

| BLANK ACTION LEVELS SDG072797 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 125.672 | 112.644 | 44 | 22 | bromomethane | 22.529 | B |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| | | 22 | 11 | carbon disulfide | | U |
| 2487.72 | 2487.72 | 13.8 | 6.9 | 2-butanone | 248.772 | |
| 39.6407 | | 7.6 | 3.8 | chloroform | | U |
| 14.2996 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 2.2988 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| 3.735 | | 0.66 | 0.33 | trichloroethene | | U |
| 7.79441 | | 2.2 | 1.1 | toluene | | U |
| 44.8875 | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 07/25/97
Reviewed by: RS

COMMENTS:

04:39:17 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG072797

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG072797: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG072797: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. ug/L | | LABORATORY BLANK ID: METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | PID Data File ID: | 028R0101 | | 048R0101 | |
| | | | | ECD Data File ID: | 028F0101 | | 048F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 125.672 | 125.672 | bromomethane | 25.134 | J | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | 2487.72 | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 39.6407 | 39.6407 | chloroform | | U | 7.928 | |
| 2.8 | 1.4 | 14.2996 | 14.2996 | 1,1,1-trichloroethane | | U | 2.860 | |
| 0.44 | 0.22 | 2.2988 | 2.2988 | carbon tetrachloride | | U | 0.460 | |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | 3.735 | 3.735 | trichloroethene | | U | 0.747 | |
| 2.2 | 1.1 | 7.79441 | 7.79441 | toluene | | U | 1.559 | J |
| 13.2 | 6.6 | 44.8875 | 44.8875 | 4-methyl-2-pentanone | | U | 8.977 | J |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 07/27/97 | | 07/27/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG072897

PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB01401
PID Data File ID: 057R0101
ECD Data File ID: 057F0101

| BLANK ACTION LEVELS SDG072897 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 150.9 | 150.9 | 44 | 22 | bromomethane | 30.180 | B |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| | | 22 | 11 | carbon disulfide | | U |
| | | 13.8 | 6.9 | 2-butanone | | U |
| 55.05 | | 7.6 | 3.8 | chloroform | | U |
| 19.85 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 3.2 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| | | 0.66 | 0.33 | trichloroethene | | U |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 07/26/97
Reviewed by: RS

COMMENTS:

04:40:11 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG072897

LABORATORY BLANK SUMMARY; p. 1 of 1

LABORATORY BLANK ID: METH.BLK.
PID Data File ID: 056R0101
ECD Data File ID: 056F0101

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG072897: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG072897: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | ug/L | |
|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U |
| 44 | 22 | 150.9 | 112 | bromomethane | 22.400 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U |
| 36 | 18 | | | acetone | | U |
| 8.6 | 4.3 | | | methylene chloride | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U |
| 22 | 11 | | | carbon disulfide | | U |
| 13.8 | 6.9 | | | 2-butanone | | U |
| 7.6 | 3.8 | 55.05 | 55.05 | chloroform | 11.010 | |
| 2.8 | 1.4 | 19.85 | 19.85 | 1,1,1-trichloroethane | 4.0 | |
| 0.44 | 0.22 | 3.2 | 3.2 | carbon tetrachloride | 0.640 | |
| 1.78 | 0.89 | | | benzene | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U |
| 0.66 | 0.33 | | | trichloroethene | | U |
| 2.2 | 1.1 | | | toluene | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U |
| 0.56 | 0.28 | | | bromoform | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U |

Date Analyzed: 07/28/97
Reviewed by: RS

COMMENTS:

04:40:11 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG073097

## PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG073097 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | ug/L |
| | | | | FIELD QC BLANK ID: | 003BB00101 | 003TB01501 |
| | | | | PID Data File ID: | 085R0101 | 086R0101 |
| | | | | ECD Data File ID: | 085F0101 | 086F0101 |
| | | 40 | 20 | vinyl chloride | U | U |
| 114.808 | 114.808 | 44 | 22 | bromomethane | 22.962 J | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U |
| 361.045 | | 36 | 18 | acetone | U | U |
| | | 8.6 | 4.3 | methylene chloride | U | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U |
| | | 22 | 11 | carbon disulfide | U | U |
| 1292.38 | 1292.38 | 13.8 | 6.9 | 2-butanone | 129.238 | U |
| | | 7.6 | 3.8 | chloroform | U | U |
| | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U |
| | | 0.44 | 0.22 | carbon tetrachloride | U | U |
| | | 1.78 | 0.89 | benzene | U | U |
| | | 24 | 12 | 1,2-dichloroethane | U | U |
| | | 0.66 | 0.33 | trichloroethene | U | U |
| | | 2.2 | 1.1 | toluene | U | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U |
| | | 0.3 | 0.15 | tetrachloroethene | U | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U |
| | | 13.8 | 6.9 | 2-hexanone | U | U |
| | | 1.12 | 0.56 | chlorobenzene | U | U |
| | | 2.2 | 1.1 | ethylbenzene | U | U |
| | | 3.4 | 1.7 | m,p-xylene | U | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U |
| | | 0.56 | 0.28 | bromoform | U | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U |
| | | | | Date Sampled: | 07/26/97 | 07/27/97 |
| | | | | Reviewed by: | RS | RS |

COMMENTS:

04:41:07 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG073097

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG073097: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG073097: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 078R0101 078F0101 ug/L | METH.BLK. 098R0101 098F0101 ug/L | METH.BLK. 001R0101 001F0101 ug/L |
|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | U | U | U |
| 44 | 22 | 114.808 | | bromomethane | U | U | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U | U | U |
| 36 | 18 | 361.045 | 361.045 | acetone | U | 36.104 | U |
| 8.6 | 4.3 | | | methylene chloride | U | U | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U | U | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U | U | U |
| 22 | 11 | | | carbon disulfide | U | U | U |
| 13.8 | 6.9 | 1292.38 | | 2-butanone | U | U | U |
| 7.6 | 3.8 | | | chloroform | U | U | U |
| 2.8 | 1.4 | | | 1,1,1-trichloroethane | U | U | U |
| 0.44 | 0.22 | | | carbon tetrachloride | U | U | U |
| 1.78 | 0.89 | | | benzene | U | U | U |
| 24 | 12 | | | 1,2-dichloroethane | U | U | U |
| 0.66 | 0.33 | | | trichloroethene | U | U | U |
| 2.2 | 1.1 | | | toluene | U | U | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U | U | U |
| 0.3 | 0.15 | | | tetrachloroethene | U | U | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U | U | U |
| 13.8 | 6.9 | | | 2-hexanone | U | U | U |
| 1.12 | 0.56 | | | chlorobenzene | U | U | U |
| 2.2 | 1.1 | | | ethylbenzene | U | U | U |
| 3.4 | 1.7 | | | m,p-xylene | U | U | U |
| 11.2 | 5.6 | | | o-xylene/styrene | U | U | U |
| 0.56 | 0.28 | | | bromoform | U | U | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U | U | U |

| | | | |
|---|---|---|---|
| Date Analyzed: | 07/30/97 | 07/30/97 | 07/30/97 |
| Reviewed by: | RS | RS | RS |

COMMENTS:

04:41:07 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG080597

PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB01601
PID Data File ID: 029R0101
ECD Data File ID: 029F0101

| BLANK ACTION LEVELS SDG080597 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 163.22 | | 44 | 22 | bromomethane | | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| 13.8829 | 13.8829 | 5 | 2.5 | trans-1,2-dichloroethene | 2.777 | J |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| | | 22 | 11 | carbon disulfide | | U |
| | | 13.8 | 6.9 | 2-butanone | | U |
| 31.5716 | | 7.6 | 3.8 | chloroform | | U |
| 11.4806 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 1.83689 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| | | 0.66 | 0.33 | trichloroethene | | U |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 07/28/97
Reviewed by: RS

COMMENTS:

04:58:33 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG080597

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG080597: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG080597: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. 026R0101 / PID Data File ID: 026R0101 / ECD Data File ID: 026F0101 ug/L | | LABORATORY BLANK ID: METH.BLK. 028R0101 / PID Data File ID: 028R0101 / ECD Data File ID: 028F0101 ug/L | |
|---|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 163.22 | 163.22 | bromomethane | 22.015 | J | 32.644 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | 13.8829 | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 31.5716 | 31.5716 | chloroform | 5.293 | J | 6.314 | J |
| 2.8 | 1.4 | 11.4806 | 11.4806 | 1,1,1-trichloroethane | 1.925 | J | 2.296 | J |
| 0.44 | 0.22 | 1.83689 | 1.83689 | carbon tetrachloride | 0.308 | J | 0.367 | J |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 08/05/97 | | 08/05/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

04:58:33 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG081397

PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB01901
PID Data File ID: 003R0201
ECD Data File ID: 003F0201

| BLANK ACTION LEVELS SDG081397 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 553.867 | 553.867 | 44 | 22 | bromomethane | 110.773 | B |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| 17.9416 | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| | | 22 | 11 | carbon disulfide | | U |
| | | 13.8 | 6.9 | 2-butanone | | U |
| 47.469 | | 7.6 | 3.8 | chloroform | | U |
| 17.2615 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 2.76183 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| | | 0.66 | 0.33 | trichloroethene | | U |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 08/05/97
Reviewed by: RS

COMMENTS:

05:01:08 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG081397

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG081397: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG081397: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 002R0201 ug/L | | METH.BLK. 024R0201 ug/L | | METH.BLK. 043R0501 ug/L | |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U | | U | | U |
| 44 | 22 | 553.867 | 347.763 | bromomethane | 69.553 | | 29.237 | J | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U | | U |
| 36 | 18 | | | acetone | | U | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U | | U |
| 5 | 2.5 | 17.9416 | 17.9416 | trans-1,2-dichloroethene | 3.588 | J | 2.662 | J | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U | | U |
| 7.6 | 3.8 | 47.469 | 47.469 | chloroform | | U | 7.208 | J | 9.494 | |
| 2.8 | 1.4 | 17.2615 | 17.2615 | 1,1,1-trichloroethane | | U | 2.621 | J | 3.452 | |
| 0.44 | 0.22 | 2.76183 | 2.76183 | carbon tetrachloride | | U | 0.419 | J | 0.552 | |
| 1.78 | 0.89 | | | benzene | | U | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U | | U |

| | | | |
|---|---|---|---|
| Date Analyzed: | 08/12/97 | 08/13/97 | 08/13/97 |
| Reviewed by: | RS | RS | RS |

COMMENTS:

05:01:08 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG081497

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG081497 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common | | | FIELD QC BLANK ID: | 003TB02001R | | 003TB02101R | | 003TB02201R | | 003TB02301R | | 003TB02401R | | 003TB02401RE | |
| | | | | PID Data File ID: | 087R0601 | | 088R0601 | | 089R0601 | | 090R0601 | | 091R0601 | | 092R0601 | |
| | | | | ECD Data File ID: | 087F0601 | | 088F0601 | | 089F0601 | | 090F0601 | | 091F0601 | | 092F0601 | |
| ug/L | ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | | ug/L | |
| | | 40 | 20 | vinyl chloride | | U | | U | | U | | U | | U | | U |
| 364.03 | 364.03 | 44 | 22 | bromomethane | 60.544 | B | 47.954 | B | 72.806 | B | 59.883 | B | 55.872 | B | 53.669 | B |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U | | U | | U | | U | | U | | U |
| | | 36 | 18 | acetone | | U | | U | | U | | U | | U | | U |
| | | 8.6 | 4.3 | methylene chloride | | U | | U | | U | | U | | U | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U | | U | | U | | U | | U | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U | | U | | U | | U | | U | | U |
| | | 22 | 11 | carbon disulfide | | U | | U | | U | | U | | U | | U |
| | | 13.8 | 6.9 | 2-butanone | | U | | U | | U | | U | | U | | U |
| 36.5601 | | 7.6 | 3.8 | chloroform | | U | | U | | U | | U | | U | | U |
| 13.2946 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U | | U | | U | | U | | U | | U |
| 2.12713 | | 0.44 | 0.22 | carbon tetrachloride | | U | | U | | U | | U | | U | | U |
| 7.7172 | 7.7172 | 1.78 | 0.89 | benzene | | U | | U | | U | | U | 1.543 | J | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U | | U | | U | | U | | U | | U |
| | | 0.66 | 0.33 | trichloroethene | | U | | U | | U | | U | | U | | U |
| | | 2.2 | 1.1 | toluene | | U | | U | | U | | U | | U | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U | | U | | U | | U | | U | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U | | U | | U | | U | | U | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U | | U | | U | | U | | U | | U |
| 49.515 | | 13.8 | 6.9 | 2-hexanone | | U | | U | | U | | U | | U | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U | | U | | U | | U | | U | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U | | U | | U | | U | | U | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U | | U | | U | | U | | U | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U | | U | | U | | U | | U | | U |
| | | 0.56 | 0.28 | bromoform | | U | | U | | U | | U | | U | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U | | U | | U | | U | | U | | U |
| | | | | Date Sampled: | 08/06/97 | | 08/07/97 | | 08/08/97 | | 08/09/97 | | 08/10/97 | | 08/11/97 | |
| | | | | Reviewed by: | RS | | RS | | RS | | RS | | RS | | RS | |

COMMENTS:

05:02:03 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG081497

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG081497: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG081497: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 061R0601 061F0601 ug/L | | METH.BLK. 083R0601 083F0601 ug/L | | METH.BLK. 086R0601 086F0601 ug/L | |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U | | U | | U |
| 44 | 22 | 364.03 | 246.78 | bromomethane | 49.356 | | 30.319 | J | 28.126 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U | | U |
| 36 | 18 | | | acetone | | U | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U | | U |
| 7.6 | 3.8 | 36.5601 | 36.5601 | chloroform | 7.312 | J | | U | | U |
| 2.8 | 1.4 | 13.2946 | 13.2946 | 1,1,1-trichloroethane | 2.659 | J | | U | | U |
| 0.44 | 0.22 | 2.12713 | 2.12713 | carbon tetrachloride | 0.425 | J | | U | | U |
| 1.78 | 0.89 | 7.7172 | | benzene | | U | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U | | U |
| 13.8 | 6.9 | 49.515 | 49.515 | 2-hexanone | | U | 9.9 | J | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U | | U |

| | | | |
|---|---|---|---|
| Date Analyzed: | 08/14/97 | 08/14/97 | 08/14/97 |
| Reviewed by: | RS | RS | RS |

COMMENTS:

05:02:03 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG082797

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG082797 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | | ug/L | |
| | | | | FIELD QC BLANK ID: | 003TB02601 | | 003TB02701 | |
| | | | | PID Data File ID: | 012R0101 | | 013R0101 | |
| | | | | ECD Data File ID: | 012F0101 | | 013F0101 | |
| | | 40 | 20 | vinyl chloride | | U | | U |
| 135.833 | 135.833 | 44 | 22 | bromomethane | 27.167 | B | 22.284 | B |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U | | U |
| | | 36 | 18 | acetone | | U | | U |
| | | 8.6 | 4.3 | methylene chloride | | U | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U | | U |
| | | 22 | 11 | carbon disulfide | | U | | U |
| | | 13.8 | 6.9 | 2-butanone | | U | | U |
| 39.4859 | | 7.6 | 3.8 | chloroform | | U | | U |
| 14.3585 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U | | U |
| 2.29736 | | 0.44 | 0.22 | carbon tetrachloride | | U | | U |
| | | 1.78 | 0.89 | benzene | | U | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U | | U |
| | | 0.66 | 0.33 | trichloroethene | | U | | U |
| | | 2.2 | 1.1 | toluene | | U | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U | | U |
| | | 0.56 | 0.28 | bromoform | | U | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Sampled: | 08/18/97 | | 08/19/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

05:19:23 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG082797

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG082797: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG082797: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. ug/L | | LABORATORY BLANK ID: METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | PID Data File ID: | 011R0101 | | 017R0101 | |
| | | | | ECD Data File ID: | 011F0101 | | 017F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 135.833 | 110 | bromomethane | 22.000 | J | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 39.4859 | 39.4859 | chloroform | 7.897 | | 4.306 | J |
| 2.8 | 1.4 | 14.3585 | 14.3585 | 1,1,1-trichloroethane | 2.872 | | 1.566 | J |
| 0.44 | 0.22 | 2.29736 | 2.29736 | carbon tetrachloride | 0.459 | | 0.251 | J |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 08/27/97 | | 08/27/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

03:15:37 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG082897

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG082897 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| | | | | FIELD QC BLANK ID: | 003TB02601 | 003TB02701 | 003TB02801 | 003TB02901 | 003TB03001 | 003TB03101 |
| | | | | PID Data File ID: | 012R0101 | 013R0101 | 058R0101 | 059R0101 | 060R0101 | 061R0101 |
| | | | | ECD Data File ID: | 012F0101 | 013F0101 | 058F0101 | 059F0101 | 060F0101 | 061F0101 |
| | | 40 | 20 | vinyl chloride | U | U | U | U | U | U |
| 238.5 | 238.5 | 44 | 22 | bromomethane | 27.167 J | 22.284 J | 45.500 | 47.700 | U | 37.530 J |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U | U | U | U | U |
| | | 36 | 18 | acetone | U | U | U | U | U | U |
| | | 8.6 | 4.3 | methylene chloride | U | U | U | U | U | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U | U | U | U | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U | U | U | U | U |
| | | 22 | 11 | carbon disulfide | U | U | U | U | U | U |
| | | 13.8 | 6.9 | 2-butanone | U | U | U | U | U | U |
| 35.8652 | | 7.6 | 3.8 | chloroform | U | U | U | U | U | U |
| 13.0419 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U | U | U | U | U |
| 2.0867 | | 0.44 | 0.22 | carbon tetrachloride | U | U | U | U | U | U |
| | | 1.78 | 0.89 | benzene | U | U | U | U | U | U |
| | | 24 | 12 | 1,2-dichloroethane | U | U | U | U | U | U |
| | | 0.66 | 0.33 | trichloroethene | U | U | U | U | U | U |
| | | 2.2 | 1.1 | toluene | U | U | U | U | U | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U | U | U | U | U |
| | | 0.3 | 0.15 | tetrachloroethene | U | U | U | U | U | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U | U | U | U | U |
| | | 13.8 | 6.9 | 2-hexanone | U | U | U | U | U | U |
| | | 1.12 | 0.56 | chlorobenzene | U | U | U | U | U | U |
| | | 2.2 | 1.1 | ethylbenzene | U | U | U | U | U | U |
| | | 3.4 | 1.7 | m,p-xylene | U | U | U | U | U | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U | U | U | U | U |
| | | 0.56 | 0.28 | bromoform | U | U | U | U | U | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U | U | U | U | U |
| | | | | Date Sampled: | 08/18/97 | 08/19/97 | 08/20/97 | 08/21/97 | 08/22/97 | 08/23/97 |
| | | | | Reviewed by: | RS | RS | RS | RS | RS | RS |

COMMENTS:

05:20:31 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG082897

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG082897: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG082897: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. ug/L | | LABORATORY BLANK ID: METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | PID Data File ID: | 036R0101 | | 078R0101 | |
| | | | | ECD Data File ID: | 036F0101 | | 078F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 238.5 | | bromomethane | | U | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 35.8652 | 35.8652 | chloroform | 7.173 | J | | U |
| 2.8 | 1.4 | 13.0419 | 13.0419 | 1,1,1-trichloroethane | 2.608 | J | | U |
| 0.44 | 0.22 | 2.0867 | 2.0867 | carbon tetrachloride | 0.417 | J | | U |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 08/28/97 | | 08/28/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

05:20:31 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG082997

## PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG082997 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | 003TP03201 ug/L | | 003TP03301 ug/L | |
| | | | | FIELD QC BLANK ID: | 003TP03201 | | 003TP03301 | |
| | | | | PID Data File ID: | 100R0101 | | 001R0201 | |
| | | | | ECD Data File ID: | 100F0101 | | 001F0201 | |
| | | 40 | 20 | vinyl chloride | | U | | U |
| 189.579 | 189.579 | 44 | 22 | bromomethane | 30.845 | J | 37.916 | J |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U | | U |
| | | 36 | 18 | acetone | | U | | U |
| | | 8.6 | 4.3 | methylene chloride | | U | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U | | U |
| | | 22 | 11 | carbon disulfide | | U | | U |
| | | 13.8 | 6.9 | 2-butanone | | U | | U |
| 46.4358 | | 7.6 | 3.8 | chloroform | | U | | U |
| 16.8857 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U | | U |
| 2.70172 | | 0.44 | 0.22 | carbon tetrachloride | | U | | U |
| | | 1.78 | 0.89 | benzene | | U | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U | | U |
| | | 0.66 | 0.33 | trichloroethene | | U | | U |
| | | 2.2 | 1.1 | toluene | | U | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U | | U |
| | | 0.56 | 0.28 | bromoform | | U | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Sampled: | 08/24/97 | | 08/25/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

05:21:30 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG082997

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG082997: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG082997: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. ug/L | PID Data File ID: 078R0101 / ECD Data File ID: 078F0101 | LABORATORY BLANK ID: METH.BLK. ug/L | PID Data File ID: 099R0101 / ECD Data File ID: 099F0101 | LABORATORY BLANK ID: METH.BLK. ug/L | PID Data File ID: 019R0201 / ECD Data File ID: 019F0201 |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | U | | U | | U | |
| 44 | 22 | 189.579 | | bromomethane | U | | U | | U | |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U | | U | | U | |
| 36 | 18 | | | acetone | U | | U | | U | |
| 8.6 | 4.3 | | | methylene chloride | U | | U | | U | |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U | | U | | U | |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U | | U | | U | |
| 22 | 11 | | | carbon disulfide | U | | U | | U | |
| 13.8 | 6.9 | | | 2-butanone | U | | U | | U | |
| 7.6 | 3.8 | 46.4358 | 46.4358 | chloroform | U | 9.287 | | 5.891 | J | |
| 2.8 | 1.4 | 16.8857 | 16.8857 | 1,1,1-trichloroethane | U | 3.377 | | 2.142 | J | |
| 0.44 | 0.22 | 2.70172 | 2.70172 | carbon tetrachloride | U | 0.540 | | 0.343 | J | |
| 1.78 | 0.89 | | | benzene | U | | U | | U | |
| 24 | 12 | | | 1,2-dichloroethane | U | | U | | U | |
| 0.66 | 0.33 | | | trichloroethene | U | | U | | U | |
| 2.2 | 1.1 | | | toluene | U | | U | | U | |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U | | U | | U | |
| 0.3 | 0.15 | | | tetrachloroethene | U | | U | | U | |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U | | U | | U | |
| 13.8 | 6.9 | | | 2-hexanone | U | | U | | U | |
| 1.12 | 0.56 | | | chlorobenzene | U | | U | | U | |
| 2.2 | 1.1 | | | ethylbenzene | U | | U | | U | |
| 3.4 | 1.7 | | | m,p-xylene | U | | U | | U | |
| 11.2 | 5.6 | | | o-xylene/styrene | U | | U | | U | |
| 0.56 | 0.28 | | | bromoform | U | | U | | U | |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U | | U | | U | |
| | | | | Date Analyzed: | 08/28/97 | | 08/29/97 | | 08/29/97 | |
| | | | | Reviewed by: | RS | | RS | | RS | |

COMMENTS:

05:21:30 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA
SDG090297

## PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: b03TB03401
PID Data File ID: 030R0101
ECD Data File ID: 030F0101

| BLANK ACTION LEVELS SDG090297 | | | | | |
|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L |
| | | 40 | 20 | vinyl chloride | U |
| 115.903 | | 44 | 22 | bromomethane | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U |
| | | 36 | 18 | acetone | U |
| | | 8.6 | 4.3 | methylene chloride | U |
| 16.5 | | 5 | 2.5 | trans-1,2-dichloroethene | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U |
| 83 | | 22 | 11 | carbon disulfide | U |
| 107 | | 13.8 | 6.9 | 2-butanone | U |
| 28.1326 | | 7.6 | 3.8 | chloroform | U |
| 10.2301 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U |
| 1.63681 | | 0.44 | 0.22 | carbon tetrachloride | U |
| | | 1.78 | 0.89 | benzene | U |
| | | 24 | 12 | 1,2-dichloroethane | U |
| | | 0.66 | 0.33 | trichloroethene | U |
| | | 2.2 | 1.1 | toluene | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U |
| | | 0.3 | 0.15 | tetrachloroethene | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U |
| | | 13.8 | 6.9 | 2-hexanone | U |
| | | 1.12 | 0.56 | chlorobenzene | U |
| | | 2.2 | 1.1 | ethylbenzene | U |
| | | 3.4 | 1.7 | m,p-xylene | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U |
| | | 0.56 | 0.28 | bromoform | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U |

Date Sampled: 08/26/97
Reviewed by: RS

COMMENTS:

05:22:14 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG090297

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG090297: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG090297: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK 024R0101 024F0101 ug/L | | METH.BLK 027R0101 027F0101 ug/L | | METH.BLK 042R0101 042F0101 ug/L | |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U | | U | | U |
| 44 | 22 | 115.903 | 115.903 | bromomethane | | U | | U | 23.181 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U | | U |
| 36 | 18 | | | acetone | | U | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U | | U |
| 5 | 2.5 | 16.5 | 16.5 | trans-1,2-dichloroethene | | U | 3.3 | J | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U | | U |
| 22 | 11 | 83 | 83 | carbon disulfide | | U | 16.6 | J | | U |
| 13.8 | 6.9 | 107 | 107 | 2-butanone | | U | 10.7 | J | | U |
| 7.6 | 3.8 | 28.1326 | 28.1326 | chloroform | 4.3 | J | 4.7 | J | 5.627 | J |
| 2.8 | 1.4 | 10.2301 | 10.2301 | 1,1,1-trichloroethane | 1.6 | J | 1.7 | J | 2.046 | J |
| 0.44 | 0.22 | 1.63681 | 1.63681 | carbon tetrachloride | 0.3 | J | 0.3 | J | 0.327 | J |
| 1.78 | 0.89 | | | benzene | | U | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U | | U |

| | | | |
|---|---|---|---|
| Date Analyzed: | 09/02/97 | 09/02/97 | 09/02/97 |
| Reviewed by: | RS | RS | RS |

COMMENTS:

05:22:14 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG090397

PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB03501
PID Data File ID: 046R0101
ECD Data File ID: 046F0101

| BLANK ACTION LEVELS SDG090397 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 177 | 177 | 44 | 22 | bromomethane | 35.400 | J |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| | | 22 | 11 | carbon disulfide | | U |
| | | 13.8 | 6.9 | 2-butanone | | U |
| 30.6678 | | 7.6 | 3.8 | chloroform | | U |
| 11.1519 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 1.78431 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| | | 0.66 | 0.33 | trichloroethene | | U |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 08/25/97
Reviewed by: RS

COMMENTS:

05:23:25 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG090397

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG090397: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG090397: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK 048R0101 048F0101 ug/L | METH.BLK 050R0101 050F0101 ug/L | METH.BLK 066R0101 066F0101 ug/L | METH.BLK 076R0101 076F0101 ug/L |
|---|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | U | U | U | U |
| 44 | 22 | 177 | | bromomethane | U | U | U | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U | U | U | U |
| 36 | 18 | | | acetone | U | U | U | U |
| 8.6 | 4.3 | | | methylene chloride | U | U | U | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U | U | U | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U | U | U | U |
| 22 | 11 | | | carbon disulfide | U | U | U | U |
| 13.8 | 6.9 | | | 2-butanone | U | U | U | U |
| 7.6 | 3.8 | 30.6678 | 30.6678 | chloroform | U | U | U | 6.134 J |
| 2.8 | 1.4 | 11.1519 | 11.1519 | 1,1,1-trichloroethane | U | U | U | 2.230 J |
| 0.44 | 0.22 | 1.78431 | 1.78431 | carbon tetrachloride | U | U | U | 0.357 J |
| 1.78 | 0.89 | | | benzene | U | U | U | U |
| 24 | 12 | | | 1,2-dichloroethane | U | U | U | U |
| 0.66 | 0.33 | | | trichloroethene | U | U | U | U |
| 2.2 | 1.1 | | | toluene | U | U | U | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U | U | U | U |
| 0.3 | 0.15 | | | tetrachloroethene | U | U | U | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U | U | U | U |
| 13.8 | 6.9 | | | 2-hexanone | U | U | U | U |
| 1.12 | 0.56 | | | chlorobenzene | U | U | U | U |
| 2.2 | 1.1 | | | ethylbenzene | U | U | U | U |
| 3.4 | 1.7 | | | m,p-xylene | U | U | U | U |
| 11.2 | 5.6 | | | o-xylene/styrene | U | U | U | U |
| 0.56 | 0.28 | | | bromoform | U | U | U | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U | U | U | U |

| | | | | |
|---|---|---|---|---|
| Date Analyzed: | 09/03/97 | 09/03/97 | 09/03/97 | 09/03/97 |
| Reviewed by: | RS | RS | RS | RS |

COMMENTS:

05:23:25 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG090497

PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB03601
PID Data File ID: 080R0101
ECD Data File ID: 080F0101

| BLANK ACTION LEVELS SDG090497 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 148 | 148 | 44 | 22 | bromomethane | 29.600 | J |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| 1540 | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| 192 | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| 535 | | 22 | 11 | carbon disulfide | | U |
| 690.823 | | 13.8 | 6.9 | 2-butanone | | U |
| 40.5725 | | 7.6 | 3.8 | chloroform | | U |
| 14.7536 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 2.36058 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| | | 0.66 | 0.33 | trichloroethene | | U |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 09/03/97
Reviewed by: RS

COMMENTS:

05:24:29 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG090497

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG090497: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG090497: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 079R0101 ug/L | | METH.BLK. 095R0101 ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | | METH.BLK. | |
| | | | | PID Data File ID: | 079R0101 | | 095R0101 | |
| | | | | ECD Data File ID: | 079F0101 | | 095F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 148 | | bromomethane | | U | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | 1540 | 1540 | acetone | 154.0 | | 90.281 | |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | 192 | 192 | trans-1,2-dichloroethene | 38.4 | | 11.249 | |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | 535 | 535 | carbon disulfide | 107 | | | U |
| 13.8 | 6.9 | 690.823 | 690.823 | 2-butanone | 69 | | | U |
| 7.6 | 3.8 | 40.5725 | 40.5725 | chloroform | 8.114 | | 5.238 | J |
| 2.8 | 1.4 | 14.7536 | 14.7536 | 1,1,1-trichloroethane | 2.951 | | 1.905 | J |
| 0.44 | 0.22 | 2.36058 | 2.36058 | carbon tetrachloride | 0.472 | | 0.305 | J |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 09/04/97 | | 09/04/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

05:24:29 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG090797

## PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG090797 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | | | | | |
| | | | | FIELD QC BLANK ID: | 003TB03701R | 003TB03901 | 003BB00201R | 003BB00301RE | |
| | | | | PID Data File ID: | 025R0201 | 029R0201 | 026R0201 | 027R0201 | |
| | | | | ECD Data File ID: | 025F0201 | 029F0201 | 026F0201 | 027F0201 | |
| | | | | | ug/L | ug/L | ug/L | ug/L | |
| | | 40 | 20 | vinyl chloride | U | U | U | U | |
| 167.938 | 167.938 | 44 | 22 | bromomethane | 33.588 B | U | U | U | |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U | U | U | |
| | | 36 | 18 | acetone | U | U | U | U | |
| | | 8.6 | 4.3 | methylene chloride | U | U | U | U | |
| 43.6579 | | 5 | 2.5 | trans-1,2-dichloroethene | U | U | U | U | |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U | U | U | |
| 271.08 | | 22 | 11 | carbon disulfide | U | U | U | U | |
| 350.809 | | 13.8 | 6.9 | 2-butanone | U | U | U | U | |
| 22.8511 | | 7.6 | 3.8 | chloroform | U | U | U | U | |
| 8.3095 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U | U | U | |
| 1.32952 | | 0.44 | 0.22 | carbon tetrachloride | U | U | U | U | |
| | | 1.78 | 0.89 | benzene | U | U | U | U | |
| | | 24 | 12 | 1,2-dichloroethane | U | U | U | U | |
| | | 0.66 | 0.33 | trichloroethene | U | U | U | U | |
| | | 2.2 | 1.1 | toluene | U | U | U | U | |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U | U | U | |
| | | 0.3 | 0.15 | tetrachloroethene | U | U | U | U | |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U | U | U | |
| | | 13.8 | 6.9 | 2-hexanone | U | U | U | U | |
| | | 1.12 | 0.56 | chlorobenzene | U | U | U | U | |
| | | 2.2 | 1.1 | ethylbenzene | U | U | U | U | |
| | | 3.4 | 1.7 | m,p-xylene | U | U | U | U | |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U | U | U | |
| | | 0.56 | 0.28 | bromoform | U | U | U | U | |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U | U | U | |
| | | | | Date Sampled: | 09/04/97 | 09/06/97 | 09/04/97 | 09/04/97 | |
| | | | | Reviewed by: | RS | RS | RS | RS | |

COMMENTS:

12 19.33 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG090797

LABORATORY BLANK SUMMARY; p. 1 of 1

LABORATORY BLANK ID: METH.BLK.
PID Data File ID: 024R0201
ECD Data File ID: 024F0201

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG090797: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG090797: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | ug/L | |
|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U |
| 44 | 22 | 167.938 | 112.041 | bromomethane | 22.408 | J |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U |
| 36 | 18 | | | acetone | | U |
| 8.6 | 4.3 | | | methylene chloride | | U |
| 5 | 2.5 | 43.6579 | 43.6579 | trans-1,2-dichloroethene | 8.732 | |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U |
| 22 | 11 | 271.08 | 271.08 | carbon disulfide | 54.216 | |
| 13.8 | 6.9 | 350.809 | 350.809 | 2-butanone | 35.081 | |
| 7.6 | 3.8 | 22.8511 | 22.8511 | chloroform | 4.570 | J |
| 2.8 | 1.4 | 8.3095 | 8.3095 | 1,1,1-trichloroethane | 1.662 | J |
| 0.44 | 0.22 | 1.32952 | 1.32952 | carbon tetrachloride | 0.266 | J |
| 1.78 | 0.89 | | | benzene | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U |
| 0.66 | 0.33 | | | trichloroethene | | U |
| 2.2 | 1.1 | | | toluene | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U |
| 0.56 | 0.28 | | | bromoform | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U |

Date Analyzed: 09/07/97
Reviewed by: RS

COMMENTS:

12:19:33 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG090897

## PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB04001
PID Data File ID: 077R0201
ECD Data File ID: 077F0201

| BLANK ACTION LEVELS SDG090897 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 175.296 | 175.296 | 44 | 22 | bromomethane | 35.059 | J |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| 177.6 | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| 743.99 | | 22 | 11 | carbon disulfide | | U |
| 962.81 | | 13.8 | 6.9 | 2-butanone | | U |
| 29.747 | | 7.6 | 3.8 | chloroform | | U |
| 10.8171 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 1.73073 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| | | 0.66 | 0.33 | trichloroethene | | U |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 09/07/97
Reviewed by: RS

COMMENTS:

12:20:25 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG090897

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG090897: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG090897: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. ug/L | | METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | | METH.BLK. | |
| | | | | PID Data File ID: | 076R0201 | | 017R0101 | |
| | | | | ECD Data File ID: | 076F0201 | | 017F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 175.296 | | bromomethane | | U | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | 177.6 | 177.6 | trans-1,2-dichloroethene | 35.520 | | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | 743.99 | 743.99 | carbon disulfide | 148.8 | | 83.723 | |
| 13.8 | 6.9 | 962.81 | 962.81 | 2-butanone | 96.281 | | 54.174 | |
| 7.6 | 3.8 | 29.747 | 29.747 | chloroform | 5.949 | J | 5.509 | J |
| 2.8 | 1.4 | 10.8171 | 10.8171 | 1,1,1-trichloroethane | 2.163 | J | 2.003 | J |
| 0.44 | 0.22 | 1.73073 | 1.73073 | carbon tetrachloride | 0.346 | J | 0.321 | J |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 09/09/97 | | 09/09/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

12:20:25 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG090997

PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB04101
PID Data File ID: 078R0201
ECD Data File ID: 078F0201

| BLANK ACTION LEVELS SDG090997 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | |
| | | 40 | 20 | vinyl chloride | | U |
| 163.088 | 163.088 | 44 | 22 | bromomethane | 32.618 | J |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U |
| | | 36 | 18 | acetone | | U |
| | | 8.6 | 4.3 | methylene chloride | | U |
| 177.6 | | 5 | 2.5 | trans-1,2-dichloroethene | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U |
| 743.99 | | 22 | 11 | carbon disulfide | | U |
| 962.81 | | 13.8 | 6.9 | 2-butanone | | U |
| 29.747 | | 7.6 | 3.8 | chloroform | | U |
| 10.8171 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U |
| 1.73073 | | 0.44 | 0.22 | carbon tetrachloride | | U |
| | | 1.78 | 0.89 | benzene | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U |
| 4.53249 | 4.53249 | 0.66 | 0.33 | trichloroethene | 0.906 | |
| | | 2.2 | 1.1 | toluene | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U |
| | | 0.56 | 0.28 | bromoform | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U |

Date Sampled: 09/08/97
Reviewed by: RS

COMMENTS:

03:21:02 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG090997

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG090997: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG090997: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 076R0201 076F0201 ug/L | | METH.BLK. 017R0101 017F0101 ug/L | | METH.BLK. 009R0101 009F0101 ug/L | |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U | | U | | U |
| 44 | 22 | 163.088 | | bromomethane | | U | | U | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U | | U |
| 36 | 18 | | | acetone | | U | | U | | UR |
| 8.6 | 4.3 | | | methylene chloride | | U | | U | | U |
| 5 | 2.5 | 177.6 | 177.6 | trans-1,2-dichloroethene | 35.520 | | | U | | UR |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U | | UR |
| 22 | 11 | 743.99 | 743.99 | carbon disulfide | 148.8 | | 83.723 | | | UR |
| 13.8 | 6.9 | 962.81 | 962.81 | 2-butanone | 96.281 | | 54.174 | | | UR |
| 7.6 | 3.8 | 29.747 | 29.747 | chloroform | 5.949 | J | 5.509 | J | 5.608 | J |
| 2.8 | 1.4 | 10.8171 | 10.8171 | 1,1,1-trichloroethane | 2.163 | J | 2.003 | J | 2.039 | J |
| 0.44 | 0.22 | 1.73073 | 1.73073 | carbon tetrachloride | 0.346 | J | 0.321 | J | 0.326 | J |
| 1.78 | 0.89 | | | benzene | | U | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U | | U |
| 0.66 | 0.33 | 4.53249 | | trichloroethene | | U | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U | | U |
| | | | | Date Analyzed: | 09/09/97 | | 09/09/97 | | 09/09/97 | |
| | | | | Reviewed by: | RS | | RS | | RS | |

COMMENTS:

03:21:02 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG091097

## PURGE & TRAP FIELD QC BLANK SUMMARY

FIELD QC BLANK ID: 003TB04201
PID Data File ID: 021R0101
ECD Data File ID: 021F0101

| BLANK ACTION LEVELS SDG091097 | | | | | |
|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L |
| | | 40 | 20 | vinyl chloride | U |
| 109.298 | | 44 | 22 | bromomethane | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U |
| | | 36 | 18 | acetone | U |
| | | 8.6 | 4.3 | methylene chloride | U |
| 175.073 | | 5 | 2.5 | trans-1,2-dichloroethene | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U |
| 1555.92 | | 22 | 11 | carbon disulfide | U |
| 2013.54 | | 13.8 | 6.9 | 2-butanone | U |
| 26.8496 | | 7.6 | 3.8 | chloroform | U |
| 9.76351 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U |
| 1.56216 | | 0.44 | 0.22 | carbon tetrachloride | U |
| | | 1.78 | 0.89 | benzene | U |
| | | 24 | 12 | 1,2-dichloroethane | U |
| 7.145 | 7.145 | 0.66 | 0.33 | trichloroethene | 1.429 |
| | | 2.2 | 1.1 | toluene | U |
| 242.355 | | 13.2 | 6.6 | 4-methyl-2-pentanone | U |
| | | 0.3 | 0.15 | tetrachloroethene | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U |
| 443.5 | | 13.8 | 6.9 | 2-hexanone | U |
| | | 1.12 | 0.56 | chlorobenzene | U |
| | | 2.2 | 1.1 | ethylbenzene | U |
| | | 3.4 | 1.7 | m,p-xylene | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U |
| | | 0.56 | 0.28 | bromoform | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U |

Date Sampled: 09/09/97
Reviewed by: RS

COMMENTS:

12:22:10 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG091097

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG091097 MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG091097 MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. ug/L | | METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | | METH.BLK. | |
| | | | | PID Data File ID: | 020R0101 | | 034R0101 | |
| | | | | ECD Data File ID: | 020F0101 | | 034F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 109.298 | 109.298 | bromomethane | 21.860 | J | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | UR |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | 175.073 | 175.073 | trans-1,2-dichloroethene | 35.015 | | 15.267 | |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | 1555.92 | 1555.92 | carbon disulfide | 311.2 | | 74.724 | |
| 13.8 | 6.9 | 2013.54 | 2013.54 | 2-butanone | 201.4 | | 48.351 | |
| 7.6 | 3.8 | 26.8496 | 26.8496 | chloroform | 5.370 | J | | U |
| 2.8 | 1.4 | 9.76351 | 9.76351 | 1,1,1-trichloroethane | 1.953 | J | | U |
| 0.44 | 0.22 | 1.56216 | 1.56216 | carbon tetrachloride | 0.312 | J | | U |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | 7.145 | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | 242.355 | 242.355 | 4-methyl-2-pentanone | 48.471 | | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | 443.5 | 443.5 | 2-hexanone | 88.7 | | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 09/10/97 | | 09/10/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

03:24:45 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG092097

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG092097 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | | | | | |
| | | | | FIELD QC BLANK ID: | 003TB04301 | 003TB04601R | 003TB04401R | 003TB04501 | |
| | | | | PID Data File ID: | 076R0101 | 007R0101 | 008R0101 | 095R0101 | |
| | | | | ECD Data File ID: | 076F0101 | 007F0101 | 008F0101 | 095F0101 | |
| | | | | | ug/L | ug/L | ug/L | ug/L | |
| | | 40 | 20 | vinyl chloride | U | U | U | U | |
| 129.764 | 129.764 | 44 | 22 | bromomethane | 24.928 J | U | U | 25.953 J | |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U | U | U | |
| | | 36 | 18 | acetone | U | U | U | U | |
| | | 8.6 | 4.3 | methylene chloride | U | U | U | U | |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U | U | U | |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U | U | U | |
| | | 22 | 11 | carbon disulfide | U | U | U | U | |
| | | 13.8 | 6.9 | 2-butanone | U | U | U | U | |
| 63.5099 | | 7.6 | 3.8 | chloroform | U | U | U | U | |
| 23.0945 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U | U | U | |
| 3.69512 | | 0.44 | 0.22 | carbon tetrachloride | U | U | U | U | |
| | | 1.78 | 0.89 | benzene | U | U | U | U | |
| | | 24 | 12 | 1,2-dichloroethane | U | U | U | U | |
| | | 0.66 | 0.33 | trichloroethene | U | U | U | U | |
| | | 2.2 | 1.1 | toluene | U | U | U | U | |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U | U | U | |
| | | 0.3 | 0.15 | tetrachloroethene | U | U | U | U | |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U | U | U | |
| | | 13.8 | 6.9 | 2-hexanone | U | U | U | U | |
| | | 1.12 | 0.56 | chlorobenzene | U | U | U | U | |
| | | 2.2 | 1.1 | ethylbenzene | U | U | U | U | |
| | | 3.4 | 1.7 | m,p-xylene | U | U | U | U | |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U | U | U | |
| | | 0.56 | 0.28 | bromoform | U | U | U | U | |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U | U | U | |
| | | | | Date Sampled: | 09/15/97 | 09/18/97 | 09/16/97 | 09/17/97 | |
| | | | | Reviewed by: | RS | RS | RS | RS | |

COMMENTS:

12:23:54 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG092097

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG092097: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG092097: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. ug/L | | LABORATORY BLANK ID: METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | PID Data File ID: | 094R0101 | | 074R0101 | |
| | | | | ECD Data File ID: | 094F0101 | | 074F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 129.764 | | bromomethane | | U | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 63.5099 | 63.5099 | chloroform | 12.702 | | 5.134 | J |
| 2.8 | 1.4 | 23.0945 | 23.0945 | 1,1,1-trichloroethane | 4.619 | | 1.867 | J |
| 0.44 | 0.22 | 3.69512 | 3.69512 | carbon tetrachloride | 0.739 | | 0.299 | J |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 09/20/97 | | 09/20/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

12:23:54 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG092197

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG092197 | | | | | | | |
|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | | | |
| | | | | FIELD QC BLANK ID: | 003TB04801 | 003TB04601R | 003TB04401RE |
| | | | | PID Data File ID: | 030R0101 | 007R0101 | 008R0101 |
| | | | | ECD Data File ID: | 030F0101 | 007F0101 | 008F0101 |
| | | | | | ug/L | ug/L | ug/L |
| | | 40 | 20 | vinyl chloride | U | U | U |
| 168.5 | 168.5 | 44 | 22 | bromomethane | 33.700 J | U | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U | U |
| | | 36 | 18 | acetone | U | U | U |
| | | 8.6 | 4.3 | methylene chloride | U | U | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U | U |
| | | 22 | 11 | carbon disulfide | U | U | U |
| | | 13.8 | 6.9 | 2-butanone | U | U | U |
| 23.2965 | | 7.6 | 3.8 | chloroform | U | U | U |
| 8.47146 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U | U |
| 1.35543 | | 0.44 | 0.22 | carbon tetrachloride | U | U | U |
| | | 1.78 | 0.89 | benzene | U | U | U |
| | | 24 | 12 | 1,2-dichloroethane | U | U | U |
| | | 0.66 | 0.33 | trichloroethene | U | U | U |
| | | 2.2 | 1.1 | toluene | U | U | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U | U |
| | | 0.3 | 0.15 | tetrachloroethene | U | U | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U | U |
| | | 13.8 | 6.9 | 2-hexanone | U | U | U |
| | | 1.12 | 0.56 | chlorobenzene | U | U | U |
| | | 2.2 | 1.1 | ethylbenzene | U | U | U |
| | | 3.4 | 1.7 | m,p-xylene | U | U | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U | U |
| | | 0.56 | 0.28 | bromoform | U | U | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U | U |
| | | | | Date Sampled: | 09/20/97 | 09/18/97 | 09/16/97 |
| | | | | Reviewed by: | RS | RS | RS |

COMMENTS:

12:24:44 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG092197

LABORATORY BLANK SUMMARY; p. 1 of 1

| QL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG092197: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG092197: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. ug/L | | LABORATORY BLANK ID: METH.BLK. ug/L | |
|---|---|---|---|---|---|---|---|---|
| | | | | PID Data File ID: | 006R0101 | | 026R0101 | |
| | | | | ECD Data File ID: | 006F0101 | | 026F0101 | |
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | 168.5 | | bromomethane | | U | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 23.2965 | 23.2965 | chloroform | 4.659 | J | | U |
| 2.8 | 1.4 | 8.47146 | 8.47146 | 1,1,1-trichloroethane | 1.694 | J | | U |
| 0.44 | 0.22 | 1.35543 | 1.35543 | carbon tetrachloride | 0.271 | J | | U |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Analyzed: | 09/21/97 | | 09/21/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

12:24:44 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG092297

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG092297 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | ug/L | | ug/L | |
| | | | | FIELD QC BLANK ID: | 003TB04801 | | 003TB04901 | |
| | | | | PID Data File ID: | 030R0101 | | 031R0101 | |
| | | | | ECD Data File ID: | 030F0101 | | 031F0101 | |
| | | 40 | 20 | vinyl chloride | | U | | U |
| 189 | 189 | 44 | 22 | bromomethane | 33.700 | J | 37.800 | J |
| | | 7.2 | 3.6 | 1,1-dichloroethene | | U | | U |
| | | 36 | 18 | acetone | | U | | U |
| | | 8.6 | 4.3 | methylene chloride | | U | | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | | U | | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | | U | | U |
| | | 22 | 11 | carbon disulfide | | U | | U |
| | | 13.8 | 6.9 | 2-butanone | | U | | U |
| 27 | | 7.6 | 3.8 | chloroform | | U | | U |
| 10 | | 2.8 | 1.4 | 1,1,1-trichloroethane | | U | | U |
| 1.6 | | 0.44 | 0.22 | carbon tetrachloride | | U | | U |
| | | 1.78 | 0.89 | benzene | | U | | U |
| | | 24 | 12 | 1,2-dichloroethane | | U | | U |
| | | 0.66 | 0.33 | trichloroethene | | U | | U |
| | | 2.2 | 1.1 | toluene | | U | | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | | U | | U |
| | | 0.3 | 0.15 | tetrachloroethene | | U | | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | | U | | U |
| | | 13.8 | 6.9 | 2-hexanone | | U | | U |
| | | 1.12 | 0.56 | chlorobenzene | | U | | U |
| | | 2.2 | 1.1 | ethylbenzene | | U | | U |
| | | 3.4 | 1.7 | m,p-xylene | | U | | U |
| | | 11.2 | 5.6 | o-xylene/styrene | | U | | U |
| | | 0.56 | 0.28 | bromoform | | U | | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | | U | | U |
| | | | | Date Sampled: | 09/20/97 | | 09/21/97 | |
| | | | | Reviewed by: | RS | | RS | |

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG092297

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG092297: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG092297: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. ug/L | METH.BLK. ug/L |
|---|---|---|---|---|---|---|
| | | | | LABORATORY BLANK ID: | METH.BLK. | METH.BLK. |
| | | | | PID Data File ID: | 029R0101 | 063R0101 |
| | | | | ECD Data File ID: | 029F0101 | 063F0101 |
| 40 | 20 | | | vinyl chloride | U | U |
| 44 | 22 | 189 | | bromomethane | U | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U | U |
| 36 | 18 | | | acetone | U | U |
| 8.6 | 4.3 | | | methylene chloride | U | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U | U |
| 22 | 11 | | | carbon disulfide | U | U |
| 13.8 | 6.9 | | | 2-butanone | U | U |
| 7.6 | 3.8 | 27 | 27 | chloroform | 5.400 J | U |
| 2.8 | 1.4 | 10 | 10 | 1,1,1-trichloroethane | 2.000 J | U |
| 0.44 | 0.22 | 1.6 | 1.6 | carbon tetrachloride | 0.320 J | U |
| 1.78 | 0.89 | | | benzene | U | U |
| 24 | 12 | | | 1,2-dichloroethane | U | U |
| 0.66 | 0.33 | | | trichloroethene | U | U |
| 2.2 | 1.1 | | | toluene | U | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U | U |
| 0.3 | 0.15 | | | tetrachloroethene | U | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U | U |
| 13.8 | 6.9 | | | 2-hexanone | U | U |
| 1.12 | 0.56 | | | chlorobenzene | U | U |
| 2.2 | 1.1 | | | ethylbenzene | U | U |
| 3.4 | 1.7 | | | m,p-xylene | U | U |
| 11.2 | 5.6 | | | o-xylene/styrene | U | U |
| 0.56 | 0.28 | | | bromoform | U | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U | U |
| | | | | Date Analyzed: | 09/22/97 | 09/22/97 |
| | | | | Reviewed by: | RS | RS |

COMMENTS:

03:27:24 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG092497

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG092497 | | | | | | | |
|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | 003TB05001 ug/L | 003TB05101 ug/L | 003TB04701 ug/L |
| | | | | FIELD QC BLANK ID: | 003TB05001 | 003TB05101 | 003TB04701 |
| | | | | PID Data File ID: | 088R0101 | 089R0101 | 090R0101 |
| | | | | ECD Data File ID: | 088F0101 | 089F0101 | 090F0101 |
| | | 40 | 20 | vinyl chloride | U | U | U |
| | | 44 | 22 | bromomethane | U | U | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U | U |
| | | 36 | 18 | acetone | U | U | U |
| | | 8.6 | 4.3 | methylene chloride | U | U | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U | U |
| | | 22 | 11 | carbon disulfide | U | U | U |
| | | 13.8 | 6.9 | 2-butanone | U | U | U |
| 27.2357 | | 7.6 | 3.8 | chloroform | U | U | U |
| 9.9039 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U | U |
| 1.58462 | | 0.44 | 0.22 | carbon tetrachloride | U | U | U |
| | | 1.78 | 0.89 | benzene | U | U | U |
| | | 24 | 12 | 1,2-dichloroethane | U | U | U |
| | | 0.66 | 0.33 | trichloroethene | U | U | U |
| | | 2.2 | 1.1 | toluene | U | U | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U | U |
| | | 0.3 | 0.15 | tetrachloroethene | U | U | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U | U |
| | | 13.8 | 6.9 | 2-hexanone | U | U | U |
| | | 1.12 | 0.56 | chlorobenzene | U | U | U |
| | | 2.2 | 1.1 | ethylbenzene | U | U | U |
| | | 3.4 | 1.7 | m,p-xylene | U | U | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U | U |
| | | 0.56 | 0.28 | bromoform | U | U | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U | U |
| | | | | Date Sampled: | 09/22/97 | 09/23/97 | 09/19/97 |
| | | | | Reviewed by: | RS | RS | RS |

COMMENTS:

12:26:15 PM

PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG092497

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG092497: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG092497: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 087R0101 087F0101 ug/L | | METH.BLK. 007R0201 007F0201 ug/L | |
|---|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | | U | | U |
| 44 | 22 | | | bromomethane | | U | | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | | U | | U |
| 36 | 18 | | | acetone | | U | | U |
| 8.6 | 4.3 | | | methylene chloride | | U | | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | | U | | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | | U | | U |
| 22 | 11 | | | carbon disulfide | | U | | U |
| 13.8 | 6.9 | | | 2-butanone | | U | | U |
| 7.6 | 3.8 | 27.2357 | 27.2357 | chloroform | 5.447 | J | 4.758 | J |
| 2.8 | 1.4 | 9.9039 | 9.9039 | 1,1,1-trichloroethane | 1.981 | J | 1.730 | J |
| 0.44 | 0.22 | 1.58462 | 1.58462 | carbon tetrachloride | 0.317 | J | 0.277 | J |
| 1.78 | 0.89 | | | benzene | | U | | U |
| 24 | 12 | | | 1,2-dichloroethane | | U | | U |
| 0.66 | 0.33 | | | trichloroethene | | U | | U |
| 2.2 | 1.1 | | | toluene | | U | | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | | U | | U |
| 0.3 | 0.15 | | | tetrachloroethene | | U | | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | | U | | U |
| 13.8 | 6.9 | | | 2-hexanone | | U | | U |
| 1.12 | 0.56 | | | chlorobenzene | | U | | U |
| 2.2 | 1.1 | | | ethylbenzene | | U | | U |
| 3.4 | 1.7 | | | m,p-xylene | | U | | U |
| 11.2 | 5.6 | | | o-xylene/styrene | | U | | U |
| 0.56 | 0.28 | | | bromoform | | U | | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | | U | | U |

| | | |
|---|---|---|
| LABORATORY BLANK ID: | METH.BLK. | METH.BLK. |
| PID Data File ID: | 087R0101 | 007R0201 |
| ECD Data File ID: | 087F0101 | 007F0201 |
| Date Analyzed: | 09/24/97 | 09/24/97 |
| Reviewed by: | RS | RS |

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG092597

PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG092597 | | | | | | | |
|---|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | | | |
| | | | | FIELD QC BLANK ID: | 003TB05201 | 003BB00401 | 003SW0301 |
| | | | | PID Data File ID: | 011R0101 | 012R0101 | 013R0101 |
| | | | | ECD Data File ID: | 011F0101 | 012F0101 | 013F0101 |
| | | | | | ug/L | ug/L | ug/L |
| | | 40 | 20 | vinyl chloride | U | U | U |
| | | 44 | 22 | bromomethane | U | U | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U | U |
| | | 36 | 18 | acetone | U | U | U |
| | | 8.6 | 4.3 | methylene chloride | U | U | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U | U |
| | | 22 | 11 | carbon disulfide | U | U | U |
| | | 13.8 | 6.9 | 2-butanone | U | U | U |
| 45.0468 | | 7.6 | 3.8 | chloroform | U | U | U |
| 16.3807 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U | U |
| 2.62091 | | 0.44 | 0.22 | carbon tetrachloride | U | U | U |
| | | 1.78 | 0.89 | benzene | U | U | U |
| | | 24 | 12 | 1,2-dichloroethane | U | U | U |
| | | 0.66 | 0.33 | trichloroethene | U | U | U |
| | | 2.2 | 1.1 | toluene | U | U | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U | U |
| | | 0.3 | 0.15 | tetrachloroethene | U | U | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U | U |
| | | 13.8 | 6.9 | 2-hexanone | U | U | U |
| | | 1.12 | 0.56 | chlorobenzene | U | U | U |
| | | 2.2 | 1.1 | ethylbenzene | U | U | U |
| | | 3.4 | 1.7 | m,p-xylene | U | U | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U | U |
| | | 0.56 | 0.28 | bromoform | U | U | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U | U |
| | | | | Date Sampled: | 09/24/97 | 09/24/97 | 09/24/97 |
| | | | | Reviewed by: | RS | RS | RS |

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG092597

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG092597: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG092597: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | METH.BLK. 010R0101 010F0101 ug/L | METH.BLK. 033R0101 033F0101 ug/L | METH.BLK. 044R0101 044F0101 ug/L |
|---|---|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | U | U | U |
| 44 | 22 | | | bromomethane | U | U | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U | U | U |
| 36 | 18 | | | acetone | U | U | U |
| 8.6 | 4.3 | | | methylene chloride | U | U | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U | U | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U | U | U |
| 22 | 11 | | | carbon disulfide | U | U | U |
| 13.8 | 6.9 | | | 2-butanone | U | U | U |
| 7.6 | 3.8 | 45.0468 | 45.0468 | chloroform | 9.009 | U | 8.380 |
| 2.8 | 1.4 | 16.3807 | 16.3807 | 1,1,1-trichloroethane | 3.276 | U | 3.047 |
| 0.44 | 0.22 | 2.62091 | 2.62091 | carbon tetrachloride | 0.524 | U | 0.488 |
| 1.78 | 0.89 | | | benzene | U | U | U |
| 24 | 12 | | | 1,2-dichloroethane | U | U | U |
| 0.66 | 0.33 | | | trichloroethene | U | U | U |
| 2.2 | 1.1 | | | toluene | U | U | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U | U | U |
| 0.3 | 0.15 | | | tetrachloroethene | U | U | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U | U | U |
| 13.8 | 6.9 | | | 2-hexanone | U | U | U |
| 1.12 | 0.56 | | | chlorobenzene | U | U | U |
| 2.2 | 1.1 | | | ethylbenzene | U | U | U |
| 3.4 | 1.7 | | | m,p-xylene | U | U | U |
| 11.2 | 5.6 | | | o-xylene/styrene | U | U | U |
| 0.56 | 0.28 | | | bromoform | U | U | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U | U | U |

| | | | |
|---|---|---|---|
| Date Analyzed: | 09/25/97 | 09/25/97 | 09/25/97 |
| Reviewed by: | RS | RS | RS |

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO003, FRIDLEY, MINNESOTA
SDG092997

## PURGE & TRAP FIELD QC BLANK SUMMARY

| BLANK ACTION LEVELS SDG092997 | | | | | | |
|---|---|---|---|---|---|---|
| MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common ug/L | MAX. of ALL FIELD QC BLANK VALUES X 5 (10 for common ug/L | PQL ug/L | MDL ug/L | COMPOUND | 003TB04801 ug/L | 003TB05301 ug/L |
| | | | | FIELD QC BLANK ID: | 003TB04801 | 003TB05301 |
| | | | | PID Data File ID: | 030R0101 | 048R0101 |
| | | | | ECD Data File ID: | 030F0101 | 048F0101 |
| | | 40 | 20 | vinyl chloride | U | U |
| 168.5 | 168.5 | 44 | 22 | bromomethane | 33.700 J | U |
| | | 7.2 | 3.6 | 1,1-dichloroethene | U | U |
| | | 36 | 18 | acetone | U | U |
| | | 8.6 | 4.3 | methylene chloride | U | U |
| | | 5 | 2.5 | trans-1,2-dichloroethene | U | U |
| | | 6.4 | 3.2 | cis-1,2-dichloroethene | U | U |
| | | 22 | 11 | carbon disulfide | U | U |
| | | 13.8 | 6.9 | 2-butanone | U | U |
| 57.507 | | 7.6 | 3.8 | chloroform | U | U |
| 20.9116 | | 2.8 | 1.4 | 1,1,1-trichloroethane | U | U |
| 3.34586 | | 0.44 | 0.22 | carbon tetrachloride | U | U |
| | | 1.78 | 0.89 | benzene | U | U |
| | | 24 | 12 | 1,2-dichloroethane | U | U |
| | | 0.66 | 0.33 | trichloroethene | U | U |
| | | 2.2 | 1.1 | toluene | U | U |
| | | 13.2 | 6.6 | 4-methyl-2-pentanone | U | U |
| | | 0.3 | 0.15 | tetrachloroethene | U | U |
| | | 9.2 | 4.6 | 1,1,2-trichloroethane | U | U |
| | | 13.8 | 6.9 | 2-hexanone | U | U |
| | | 1.12 | 0.56 | chlorobenzene | U | U |
| | | 2.2 | 1.1 | ethylbenzene | U | U |
| | | 3.4 | 1.7 | m,p-xylene | U | U |
| | | 11.2 | 5.6 | o-xylene/styrene | U | U |
| | | 0.56 | 0.28 | bromoform | U | U |
| | | 0.34 | 0.17 | 1,1,2,2-tetrachloroethane | U | U |
| | | | | Date Sampled: | 09/20/97 | 09/25/97 |
| | | | | Reviewed by: | RS | RS |

COMMENTS:

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PURGE & TRAP ANALYSIS: SDG BLANK ANALYSIS SUMMARY
CTO 003, FRIDLEY, MINNESOTA

SDG092997

LABORATORY BLANK SUMMARY; p. 1 of 1

| PQL ug/L | MDL ug/L | BLANK ACTION LEVELS SDG092997: MAX. of ALL FIELD AND LAB. BLANK VALUES X 5 (10 for common) ug/L | BLANK ACTION LEVELS SDG092997: MAX. of ALL LABORATORY BLANK VALUES X 5 (10 for common) ug/L | COMPOUND | LABORATORY BLANK ID: METH.BLK. / PID Data File ID: 047R0101 / ECD Data File ID: 047F0101 ug/L |
|---|---|---|---|---|---|
| 40 | 20 | | | vinyl chloride | U |
| 44 | 22 | 168.5 | | bromomethane | U |
| 7.2 | 3.6 | | | 1,1-dichloroethene | U |
| 36 | 18 | | | acetone | U |
| 8.6 | 4.3 | | | methylene chloride | U |
| 5 | 2.5 | | | trans-1,2-dichloroethene | U |
| 6.4 | 3.2 | | | cis-1,2-dichloroethene | U |
| 22 | 11 | | | carbon disulfide | U |
| 13.8 | 6.9 | | | 2-butanone | U |
| 7.6 | 3.8 | 57.507 | 57.507 | chloroform | 11.501 |
| 2.8 | 1.4 | 20.9116 | 20.9116 | 1,1,1-trichloroethane | 4.182 |
| 0.44 | 0.22 | 3.34586 | 3.34586 | carbon tetrachloride | 0.669 |
| 1.78 | 0.89 | | | benzene | U |
| 24 | 12 | | | 1,2-dichloroethane | U |
| 0.66 | 0.33 | | | trichloroethene | U |
| 2.2 | 1.1 | | | toluene | U |
| 13.2 | 6.6 | | | 4-methyl-2-pentanone | U |
| 0.3 | 0.15 | | | tetrachloroethene | U |
| 9.2 | 4.6 | | | 1,1,2-trichloroethane | U |
| 13.8 | 6.9 | | | 2-hexanone | U |
| 1.12 | 0.56 | | | chlorobenzene | U |
| 2.2 | 1.1 | | | ethylbenzene | U |
| 3.4 | 1.7 | | | m,p-xylene | U |
| 11.2 | 5.6 | | | o-xylene/styrene | U |
| 0.56 | 0.28 | | | bromoform | U |
| 0.34 | 0.17 | | | 1,1,2,2-tetrachloroethane | U |

Date Analyzed: 09/29/97
Reviewed by: RS

COMMENTS:

12:27:35 PM

# ATTACHMENT 6

# MATRIX SPIKE RECOVERIES

# Matrix Spike Recoveries
## CTO 003, Fridley, Minnesota

| Sample I.D. | Compound | Concentration Original Sample | Spiked Sample Concentration | Concentration Spike Added | Percent Recovery |
|---|---|---|---|---|---|
| 003SB00308 | 1,1-DICHLOROETHENE | 7.3 U | 6.3 J | 6.1 | 103.3 |
| | BENZENE | 1.8 U | 1.3 J | 6.1 | 21.3 |
| | CHLOROBENZENE | 1.1 U | 11.0 | 6.1 | 180.3 |
| | TOLUENE | 2.2 U | 4.3 | 6.1 | 70.5 |
| | TRICHLOROETHENE | 8.5 J | 12.0 | 6.1 | 57.4 |
| 003SB00703 | 1,1-DICHLOROETHENE | 5.9 U | 4.6 J | 9.2 | 50.0 |
| | BENZENE | 1.5 U | 4.2 | 9.2 | 45.7 |
| | CHLOROBENZENE | 0.9 U | 20.0 | 9.2 | 217.4 |
| | TOLUENE | 1.8 U | 5.4 | 9.2 | 58.7 |
| | TRICHLOROETHENE | 0.5 U | 2.9 | 9.2 | 31.5 |
| 003SB00805 | 1,1-DICHLOROETHENE | 7.0 U | 3.7 J | 5.1 | 72.5 |
| | BENZENE | 1.7 U | 1.5 J | 5.1 | 29.4 |
| | CHLOROBENZENE | 1.1 U | 5.2 | 5.1 | 102.0 |
| | TOLUENE | 2.1 U | 2.2 J | 5.1 | 43.1 |
| | TRICHLOROETHENE | 0.6 U | 2.3 | 5.1 | 45.1 |
| 003SB00812 | 1,1-DICHLOROETHENE | 9.0 U | 4.9 J | 6.5 | 75.4 |
| | BENZENE | 2.2 U | 2.2 J | 6.5 | 33.8 |
| | CHLOROBENZENE | 1.4 U | 11.0 | 6.5 | 169.2 |
| | TOLUENE | 2.7 U | 4.1 | 6.5 | 63.1 |
| | TRICHLOROETHENE | 8.9 | 12.0 | 6.5 | 47.7 |
| 003SB01309 | 1,1-DICHLOROETHENE | 8.4 U | 5.7 J | 6.3 | 90.5 |
| | BENZENE | 2.1 U | 1.7 J | 6.3 | 27.0 |
| | CHLOROBENZENE | 1.3 U | 9.2 | 6.3 | 146.0 |
| | TOLUENE | 2.6 U | 1.9 J | 6.3 | 30.2 |
| | TRICHLOROETHENE | 17.0 J | 22.0 | 6.3 | 79.4 |
| 003SB01703 | 1,1-DICHLOROETHENE | 7.1 U | 8.5 | 5.6 | 151.8 |
| | BENZENE | 1.8 U | 5.6 | 5.6 | 100.0 |
| | CHLOROBENZENE | 1.1 U | 15.0 | 5.6 | 267.9 |
| | TOLUENE | 2.2 U | 19.0 J | 5.6 | 339.3 |
| | TRICHLOROETHENE | 0.7 U | 4.0 J | 5.6 | 71.4 |
| 003SB01802 | 1,1-DICHLOROETHENE | 6.5 U | 6.8 | 4.6 | 147.8 |
| | BENZENE | 1.6 U | 3.9 | 4.6 | 84.8 |
| | CHLOROBENZENE | 1.0 U | 12.0 | 4.6 | 260.9 |
| | TOLUENE | 2.0 U | 16.0 J | 4.6 | 347.8 |
| | TRICHLOROETHENE | 10.0 J | 6.9 J | 4.6 | -67.4 |
| 003SB01812 | 1,1-DICHLOROETHENE | 7.9 U | 17.0 | 6.0 | 283.3 |
| | BENZENE | 2.0 U | 2.5 | 6.0 | 41.7 |
| | CHLOROBENZENE | 1.2 U | 24.0 | 6.0 | 400.0 |
| | TOLUENE | 2.4 U | 5.0 | 6.0 | 83.3 |
| | TRICHLOROETHENE | 24.0 J | 29.0 J | 6.0 | 83.3 |

## Matrix Spike Recoveries
## CTO 003, Fridley, Minnesota

| Sample I.D. | Compound | Concentration Original Sample | Spiked Sample Concentration | Concentration Spike Added | Percent Recovery |
|---|---|---|---|---|---|
| 003SB02806 | 1,1-DICHLOROETHENE | 9.1 U | 11.0 | 13.5 | 81.5 |
| | BENZENE | 2.2 U | 5.1 | 13.5 | 37.8 |
| | CHLOROBENZENE | 1.4 U | 4.1 | 13.5 | 30.4 |
| | TOLUENE | 2.8 U | 4.5 | 13.5 | 33.3 |
| | TRICHLOROETHENE | 1.3 | 6.5 | 13.5 | 38.5 |
| 003SB03002 | 1,1-DICHLOROETHENE | 7.4 U | 6.3 J | 9.9 | 63.6 |
| | BENZENE | 1.8 U | 17.0 | 9.9 | 171.7 |
| | CHLOROBENZENE | 1.2 U | 25.0 | 9.9 | 252.5 |
| | TOLUENE | 2.3 U | 19.0 | 9.9 | 191.9 |
| | TRICHLOROETHENE | 0.7 U | 4.6 | 9.9 | 46.5 |
| 003SB03510 | 1,1-DICHLOROETHENE | 7.8 U | 16.0 | 12.6 | 127.0 |
| | BENZENE | 1.9 U | 7.0 | 12.6 | 55.6 |
| | CHLOROBENZENE | 1.2 U | 19.0 | 12.6 | 150.8 |
| | TOLUENE | 2.4 U | 12.0 | 12.6 | 95.2 |
| | TRICHLOROETHENE | 0.7 U | 4.1 | 12.6 | 32.5 |
| 003SB05005 | 1,1-DICHLOROETHENE | 8.4 U | 8.0 U | 11.1 | 0.0 |
| | BENZENE | 2.1 U | 7.7 | 11.1 | 69.4 |
| | CHLOROBENZENE | 1.3 U | 4.8 | 11.1 | 43.2 |
| | TOLUENE | 2.6 U | 5.3 | 11.1 | 47.7 |
| | TRICHLOROETHENE | 0.8 U | 3.3 | 11.1 | 29.7 |
| 003SB05501 | 1,1-DICHLOROETHENE | 8.5 U | 6.1 J | 10.6 | 57.5 |
| | BENZENE | 2.1 U | 5.9 | 10.6 | 55.7 |
| | CHLOROBENZENE | 1.3 U | 28.0 | 10.6 | 264.2 |
| | TOLUENE | 2.6 U | 8.2 | 10.6 | 77.4 |
| | TRICHLOROETHENE | 0.8 U | 5.4 | 10.6 | 50.9 |
| 003SB05512 | 1,1-DICHLOROETHENE | 7.8 U | 16.0 | 11.3 | 141.6 |
| | BENZENE | 1.9 U | 7.3 | 11.3 | 64.6 |
| | CHLOROBENZENE | 1.2 U | 20.0 | 11.3 | 177.0 |
| | TOLUENE | 2.4 U | 4.7 | 11.3 | 41.6 |
| | TRICHLOROETHENE | 4.2 | 11.0 | 11.3 | 60.2 |
| 003SB07010 | 1,1-DICHLOROETHENE | 8.6 U | 8.1 U | 11.2 | 0.0 |
| | BENZENE | 2.1 U | 11.0 | 11.2 | 98.2 |
| | CHLOROBENZENE | 1.3 U | 11.0 | 11.2 | 98.2 |
| | TOLUENE | 2.6 U | 2.9 | 11.2 | 25.9 |
| | TRICHLOROETHENE | 16.0 J | 20.0 | 11.2 | 35.7 |
| 003SB07107 | 1,1-DICHLOROETHENE | 9.0 U | 8.6 J | 12.8 | 67.2 |
| | BENZENE | 2.2 U | 6.2 | 12.8 | 48.4 |
| | CHLOROBENZENE | 1.4 U | 22.0 | 12.8 | 171.9 |
| | TOLUENE | 2.8 U | 6.3 | 12.8 | 49.2 |
| | TRICHLOROETHENE | 0.8 U | 4.3 | 12.8 | 33.6 |

## Matrix Spike Recoveries
## CTO 003, Fridley, Minnesota

| Sample I.D. | Compound | Concentration Original Sample | Spiked Sample Concentration | Concentration Spike Added | Percent Recovery |
|---|---|---|---|---|---|
| 003SB07307 | 1,1-DICHLOROETHENE | 6.5 U | 3.5 J | 4.9 | 71.4 |
| | BENZENE | 1.6 U | 1.3 J | 4.9 | 26.5 |
| | CHLOROBENZENE | 1.0 U | 6.3 | 4.9 | 128.6 |
| | TOLUENE | 2.0 U | 4.8 | 4.9 | 98.0 |
| | TRICHLOROETHENE | 3.0 | 4.2 | 4.9 | 24.5 |
| 003SBP0108 | 1,1-DICHLOROETHENE | 8.4 U | 8.1 | 9.6 | 84.4 |
| | BENZENE | 2.1 U | 10.0 | 9.6 | 104.2 |
| | CHLOROBENZENE | 1.3 U | 75.0 | 9.6 | 781.3 |
| | TOLUENE | 2.6 U | 20.0 | 9.6 | 208.3 |
| | TRICHLOROETHENE | 0.8 U | 3.8 | 9.6 | 39.6 |
| 003SBP0201 | 1,1-DICHLOROETHENE | 6.1 U | 7.0 | 8.7 | 80.5 |
| | BENZENE | 1.5 U | 4.0 | 8.7 | 46.0 |
| | CHLOROBENZENE | 0.9 U | 12.0 | 8.7 | 137.9 |
| | TOLUENE | 1.9 U | 4.5 | 8.7 | 51.7 |
| | TRICHLOROETHENE | 0.5 J | 3.6 | 8.7 | 35.3 |
| 003SBP0210 | 1,1-DICHLOROETHENE | 9.9 U | 16.0 | 12.9 | 124.0 |
| | BENZENE | 2.5 U | 5.8 | 12.9 | 45.0 |
| | CHLOROBENZENE | 1.5 U | 9.3 | 12.9 | 72.1 |
| | TOLUENE | 3.0 U | 3.4 | 12.9 | 26.4 |
| | TRICHLOROETHENE | 1.7 | 4.9 | 12.9 | 24.8 |
| 003SBP0309 | 1,1-DICHLOROETHENE | 8.5 U | 4.7 J | 6.0 | 78.3 |
| | BENZENE | 2.1 U | 2.7 | 6.0 | 45.0 |
| | CHLOROBENZENE | 1.3 U | 11.0 | 6.0 | 183.3 |
| | TOLUENE | 2.6 U | 3.3 | 6.0 | 55.0 |
| | TRICHLOROETHENE | 0.8 U | 2.2 J | 6.0 | 36.7 |
| 003SBP0606 | 1,1-DICHLOROETHENE | 6.1 U | 11.0 | 11.3 | 97.3 |
| | BENZENE | 1.5 U | 6.0 | 11.3 | 53.1 |
| | CHLOROBENZENE | 1.0 U | 40.0 | 11.3 | 354.0 |
| | TOLUENE | 1.9 U | 12.0 | 11.3 | 106.2 |
| | TRICHLOROETHENE | 0.9 | 3.0 | 11.3 | 18.9 |
| 003SBP0705 | 1,1-DICHLOROETHENE | 7.0 U | 5.7 J | 5.2 | 109.6 |
| | BENZENE | 1.7 U | 1.9 | 5.2 | 36.5 |
| | CHLOROBENZENE | 1.1 U | 2.7 | 5.2 | 51.9 |
| | TOLUENE | 2.1 U | 2.2 J | 5.2 | 42.3 |
| | TRICHLOROETHENE | 1.0 | 3.2 | 5.2 | 42.3 |
| 003SBP0708 | 1,1-DICHLOROETHENE | 8.0 U | 9.0 | 6.0 | 150.0 |
| | BENZENE | 2.0 U | 1.9 J | 6.0 | 31.7 |
| | CHLOROBENZENE | 1.2 U | 16.0 | 6.0 | 266.7 |
| | TOLUENE | 2.4 U | 4.0 | 6.0 | 66.7 |
| | TRICHLOROETHENE | 9.8 J | 16.0 | 6.0 | 103.3 |

## Matrix Spike Recoveries
## CTO 003, Fridley, Minnesota

| Sample I.D. | Compound | Concentration Original Sample | Spiked Sample Concentration | Concentration Spike Added | Percent Recovery |
|---|---|---|---|---|---|
| 003SBP0807 | 1,1-DICHLOROETHENE | 8.8 U | 8.3 J | 11.7 | 70.9 |
| | BENZENE | 2.2 U | 3.9 | 11.7 | 33.3 |
| | CHLOROBENZENE | 1.4 U | 14.0 | 11.7 | 119.7 |
| | TOLUENE | 2.7 U | 2.3 J | 11.7 | 19.7 |
| | TRICHLOROETHENE | 2.3 | 5.9 | 11.7 | 30.8 |
| 003SBP0815 | 1,1-DICHLOROETHENE | 9.2 U | 8.1 J | 12.7 | 63.8 |
| | BENZENE | 2.3 U | 8.4 | 12.7 | 66.1 |
| | CHLOROBENZENE | 1.4 U | 18.0 | 12.7 | 141.7 |
| | TOLUENE | 2.8 U | 3.2 | 12.7 | 25.2 |
| | TRICHLOROETHENE | 17.0 J | 45.0 | 12.7 | 220.5 |
| 003SBP1206 | 1,1-DICHLOROETHENE | 15.0 U | 23.0 | 19.9 | 115.6 |
| | BENZENE | 3.8 U | 20.0 | 19.9 | 100.5 |
| | CHLOROBENZENE | 2.4 U | 110.0 | 19.9 | 552.8 |
| | TOLUENE | 4.7 U | 38.0 | 19.9 | 191.0 |
| | TRICHLOROETHENE | 1.4 U | 7.0 | 19.9 | 35.2 |

# ATTACHMENT 7

# FIELD DUPLICATE RESULTS

## Field Duplicate Results
## CTO 003, Fridley, Minnesota

| Sample I.D. | Compound | Original Result | Duplicate Sample I.D. | Duplicate Result | Relative Percent Difference (RPD) |
|---|---|---|---|---|---|
| 003SB00308 | TETRACHLOROETHENE | 1.7 | 003SBDP105 | 1.8 | 5.7 |
| | TRICHLOROETHENE | 8.5 J | | 11.0 J | 25.6 |
| 003SB00612 | CIS-1,2-DICHLOROETHENE | 11.0 J | 003SBDP101 | 7.4 UJ | IN |
| | TRICHLOROETHENE | 31.0 J | | 14.0 J | 75.6 |
| 003SB00807 | TETRACHLOROETHENE | 0.7 | 003SBDP107 | 1.2 | 51.3 |
| | TRICHLOROETHENE | 0.7 U | | 0.4 J | IN |
| 003SB01311 | 1,1,2-TRICHLOROETHANE | 17.0 | 003SBDP106 | 17.0 | 0.0 |
| | ACETONE | 45.0 U | | 22.0 J | IN |
| | CIS-1,2-DICHLOROETHENE | 4.9 J | | 6.2 J | 23.4 |
| | TETRACHLOROETHENE | 0.5 | | 0.6 | 3.6 |
| | TRICHLOROETHENE | 9.9 | | 10.0 J | 1.0 |
| 003SB01608 | 1,1,1-TRICHLOROETHANE | 4.1 U | 003SBDP111 | 5.8 | IN |
| | 1,1,2-TRICHLOROETHANE | 78.0 U | | 21.0 | IN |
| | CARBON TETRACHLORIDE | 0.7 U | | 0.9 | IN |
| | CHLOROFORM | 11.0 U | | 16.0 | IN |
| | CIS-1,2-DICHLOROETHENE | 9.0 | | 3.7 J | 83.5 |
| | TETRACHLOROETHENE | 2.5 | | 0.7 | 114.5 |
| | TRICHLOROETHENE | 37.0 J | | 10.0 J | 114.9 |
| 003SB01705 | 1,1,2-TRICHLOROETHANE | 220.0 U | 003SBDP110 | 23.0 | IN |
| | M+P-XYLENES | 2.6 J | | 3.7 U | IN |
| | TETRACHLOROETHENE | 6.9 | | 0.7 | 161.3 |
| 003SB01804 | 1,1,1-TRICHLOROETHANE | 6.1 U | 003SBDP112 | 4.7 | IN |
| | CARBON TETRACHLORIDE | 1.0 U | | 0.8 | IN |
| | CHLOROFORM | 17.0 U | | 13.0 | IN |
| 003SB01806 | 1,1,1-TRICHLOROETHANE | 6.6 U | 003SBDP113 | 6.2 | IN |
| | 1,1,2-TRICHLOROETHANE | 8.0 U | | 14.0 | IN |
| | CARBON TETRACHLORIDE | 1.1 U | | 1.0 | IN |
| | CHLOROFORM | 18.0 U | | 17.0 | IN |
| | TETRACHLOROETHENE | 0.3 U | | 0.5 | IN |
| | TRICHLOROETHENE | 0.6 J | | 1.3 | 78.1 |
| 003SB02310 | TRICHLOROETHENE | 5.8 | 003SBDP121 | 24.0 | 122.1 |
| 003SB02606 | 1,1,2-TRICHLOROETHANE | 7300.0 | 003SBDP145 | 5300.0 J | 31.7 |
| | TETRACHLOROETHENE | 240.0 | | 170.0 J | 34.1 |
| | TRICHLOROETHENE | 69.0 | | 12.0 | 140.7 |
| 003SB02805 | TRICHLOROETHENE | 0.7 U | 003SBDP141 | 0.5 J | IN |
| 003SB03204 | 2-BUTANONE | 74.0 U | 003SBDP133 | 240.0 | IN |
| | CARBON DISULFIDE | 120.0 U | | 380.0 | IN |
| | CIS-1,2-DICHLOROETHENE | 530.0 J | | 1200.0 J | 77.5 |
| | ETHYLBENZENE | 9.5 J | | 44.0 | 129.0 |
| | M+P-XYLENES | 35.0 | | 150.0 | 124.3 |
| | O-XYLENE/STYRENE | 35.0 J | | 200.0 | 140.4 |
| | TETRACHLOROETHENE | 55.0 J | | 27.0 | 68.3 |
| | TRANS-1,2-DICHLOROETHENE | 27.0 U | | 150.0 | IN |
| | TRICHLOROETHENE | 3.3 | | 14.0 | 123.7 |
| 003SB03807 | TRICHLOROETHENE | 1.8 | 003SBDP108 | 3.3 | 58.8 |
| 003SB04604 | TRICHLOROETHENE | 0.9 | 003SBDP144 | 0.6 J | 46.2 |

IN – RPD is indeterminate because one or both values were not detected.
Only duplicated samples having positive results in either the original or duplicate analysis are shown.

## Field Duplicate Results
## CTO 003, Fridley, Minnesota

| Sample I.D. | Compound | Original Result | Duplicate Sample I.D. | Duplicate Result | Relative Percent Difference (RPD) |
|---|---|---|---|---|---|
| 003SB04709 | CIS-1,2-DICHLOROETHENE | 10.0 | 003SBDP148 | 5.2 J | 63.2 |
| | TRANS-1,2-DICHLOROETHENE | 7.6 | | 4.3 J | 55.5 |
| | TRICHLOROETHENE | 8.2 | | 5.9 | 32.6 |
| 003SB05006 | CIS-1,2-DICHLOROETHENE | 8.9 U | 003SBDP149 | 16.0 | IN |
| | TRANS-1,2-DICHLOROETHENE | 6.9 U | | 42.0 | IN |
| | TRICHLOROETHENE | 2.3 | | 1.8 | 24.4 |
| 003SB05407 | TRICHLOROETHENE | 2.3 | 003SBDP116 | 1.1 | 70.6 |
| 003SB05415 | TRICHLOROETHENE | 5.1 | 003SBDP117 | 4.4 | 14.7 |
| 003SB05508 | TRICHLOROETHENE | 0.7 U | 003SBDP131 | 0.9 | IN |
| 003SB05514 | TRICHLOROETHENE | 2.1 | 003SBDP132 | 2.3 | 9.1 |
| 003SB05812 | TRICHLOROETHENE | 6.9 | 003SBDP126 | 5.7 | 19.0 |
| 003SB06308 | 2-HEXANONE | 8.9 J | 003SBDP118 | 11.0 U | IN |
| 003SB06806 | 1,1,2-TRICHLOROETHANE | 15.0 | 003SBDP146 | 12.0 J | 22.2 |
| | TETRACHLOROETHENE | 0.5 | | 0.4 J | 25.9 |
| | TRICHLOROETHENE | 4.5 | | 1.7 | 90.3 |
| 003SB06811 | CIS-1,2-DICHLOROETHENE | 15.0 | 003SBDP147 | 8.8 U | IN |
| | TRICHLOROETHENE | 3.6 | | 1.1 | 106.4 |
| 003SB07007 | 2-HEXANONE | 8.8 J | 003SBDP136 | 18.0 U | IN |
| | CIS-1,2-DICHLOROETHENE | 18.0 | | 8.0 J | 76.9 |
| | TRICHLOROETHENE | 8.1 | | 5.5 | 38.2 |
| 003SB07014 | CIS-1,2-DICHLOROETHENE | 9.3 | 003SBDP137 | 7.7 | 18.8 |
| | TRICHLOROETHENE | 16.0 J | | 18.0 J | 11.8 |
| 003SB07305 | 1,1,2-TRICHLOROETHANE | 11.0 | 003SBDP109 | 11.0 U | IN |
| | TETRACHLOROETHENE | 0.4 | | 0.4 U | IN |
| | TRICHLOROETHENE | 0.8 | | 0.8 U | IN |
| 003SB07411 | 1,1,2-TRICHLOROETHANE | 24.0 | 003SBDP114 | 16.0 U | IN |
| | CIS-1,2-DICHLOROETHENE | 11.0 J | | 12.0 | 8.7 |
| | TETRACHLOROETHENE | 0.8 | | 0.5 U | IN |
| | TRICHLOROETHENE | 140.0 | | 95.0 | 38.3 |
| 003SBP0213 | TRICHLOROETHENE | 2.6 | 003SBDP124 | 4.4 | 51.4 |
| 003SBP0606 | CIS-1,2-DICHLOROETHENE | 5.4 U | 003SBDP119 | 5.0 J | IN |
| | TRICHLOROETHENE | 0.9 | | 1.5 | 54.2 |
| 003SBP0707 | 1,1,2-TRICHLOROETHANE | 6.8 J | 003SBDP102 | 7.5 J | 9.8 |
| | TETRACHLOROETHENE | 0.2 J | | 0.2 J | 8.7 |
| | TRICHLOROETHENE | 4.4 | | 3.6 | 20.0 |
| 003SBP0710 | TRICHLOROETHENE | 6.4 J | 003SBDP103 | 6.8 J | 6.1 |
| 003SBP0805 | TRICHLOROETHENE | 0.4 J | 003SBDP134 | 0.5 U | IN |
| 003SBP0813 | CIS-1,2-DICHLOROETHENE | 28.0 | 003SBDP135 | 21.0 | 28.6 |
| | TRICHLOROETHENE | 12.0 J | | 15.0 J | 22.2 |
| 003SBP0904 | TRICHLOROETHENE | 5.3 | 003SBDP129 | 5.1 | 3.8 |
| 003SBP0907 | TETRACHLOROETHENE | 90.0 J | 003SBDP130 | 0.4 U | IN |
| | TRICHLOROETHENE | 4.8 U | | 0.6 J | IN |

IN -- RPD is indeterminate because one or both values were not detected.
Only duplicated samples having positive results in either the original or duplicate analysis are shown.

## Field Duplicate Results
## CTO 003, Fridley, Minnesota

| Sample I.D. | Compound | Original Result | Duplicate Sample I.D. | Duplicate Result | Relative Percent Difference (RPD) |
|---|---|---|---|---|---|
| 003SBP1009 | 1,2-DICHLOROETHANE | 280.0 U | 003SBDP138 | 860.0 | IN |
| | CIS-1,2-DICHLOROETHENE | 6.1 J | | 11.0 | 57.3 |
| | METHYLENE CHLORIDE | 15.0 | | 12.0 | 22.2 |
| | TRICHLOROETHENE | 640.0 J | | 1400.0 J | 74.5 |
| 003SBP1106 | 1,1,2-TRICHLOROETHANE | 38.0 U | 003SBDP140 | 22.0 | IN |
| | TETRACHLOROETHENE | 1.2 | | 0.7 | 51.3 |
| | TRICHLOROETHENE | 23.0 J | | 15.0 J | 42.1 |

IN -- RPD is indeterminate because one or both values were not detected.
Only duplicated samples having positive results in either the original or duplicate analysis are shown.

# ATTACHMENT 8

# LABORATORY DUPLICATE RESULTS

## Laboratory Duplicate Results
## CTO 003, Fridley, Minnesota

| Sample I.D. | Compound | Original Result | Duplicate Result | Relative Percent Difference (RPD) |
|---|---|---|---|---|
| 003SB00308 | TETRACHLOROETHENE | 1.7 | 3.3 | 64.0 |
| | TRICHLOROETHENE | 8.5 J | 15.0 J | 55.3 |
| 003SB00805 | 1,1,2-TRICHLOROETHANE | 7.6 J | 13.0 | 52.4 |
| | TETRACHLOROETHENE | 0.2 J | 0.4 | 50.0 |
| 003SB00812 | TRICHLOROETHENE | 8.9 | 7.9 | 11.9 |
| 003SB01309 | CIS-1,2-DICHLOROETHENE | 11.0 | 5.1 J | 73.3 |
| | TRICHLOROETHENE | 17.0 J | 11.0 J | 42.9 |
| 003SB01703 | 1,1,2-TRICHLOROETHANE | 59.0 U | 37.0 | IN |
| | TETRACHLOROETHENE | 1.9 | 1.2 | 45.2 |
| 003SB01802 | TETRACHLOROETHENE | 2.9 | 1.9 | 41.7 |
| | TRICHLOROETHENE | 10.0 J | 6.5 J | 42.4 |
| 003SB01812 | CIS-1,2-DICHLOROETHENE | 13.0 | 16.0 | 20.7 |
| | TRICHLOROETHENE | 24.0 J | 29.0 J | 18.9 |
| 003SB02806 | TRICHLOROETHENE | 1.3 | 1.0 | 26.1 |
| 003SB05415 | TRICHLOROETHENE | 5.1 | 3.7 | 31.8 |
| 003SB05512 | TRICHLOROETHENE | 4.2 | 4.6 | 9.1 |
| 003SB07010 | CIS-1,2-DICHLOROETHENE | 8.6 | 7.2 U | IN |
| | TRICHLOROETHENE | 16.0 J | 15.0 J | 6.5 |
| 003SB07307 | CIS-1,2-DICHLOROETHENE | 5.6 J | 7.8 U | IN |
| | TRICHLOROETHENE | 3.0 | 3.1 | 3.3 |
| 003SBP0201 | TRICHLOROETHENE | 0.5 J | 0.5 J | 16.3 |
| 003SBP0606 | TRICHLOROETHENE | 0.9 | 0.4 J | 75.2 |
| 003SBP0705 | 1,1,2-TRICHLOROETHANE | 5.4 J | 6.1 J | 12.2 |
| | TETRACHLOROETHENE | 0.2 J | 0.2 J | 11.1 |
| | TRICHLOROETHENE | 1.0 | 1.0 | 2.0 |
| 003SBP0708 | TRICHLOROETHENE | 9.8 J | 10.0 J | 2.0 |
| 003SBP0807 | CIS-1,2-DICHLOROETHENE | 12.0 | 8.2 | 37.6 |
| | TRICHLOROETHENE | 2.3 | 1.9 | 19.0 |
| 003SBP0815 | CIS-1,2-DICHLOROETHENE | 10.0 | 31.0 | 102.4 |
| | TRICHLOROETHENE | 17.0 J | 100.0 J | 141.9 |
| 003SBP1106 | 1,1,2-TRICHLOROETHANE | 38.0 U | 24.0 | IN |
| | TETRACHLOROETHENE | 1.2 | 0.8 | 42.4 |
| | TRICHLOROETHENE | 23.0 J | 20.0 J | 14.0 |
| 003SBP1206 | 2-HEXANONE | 21.0 J | 27.0 U | IN |

IN -- RPD is indeterminate because one or both values were not detected.
Only duplicated samples having positive results in either the original or duplicate analysis are shown.

# ATTACHMENT 9

# INSTRUMENT LOGBOOK PHOTOCOPIES

1222

TRAILER PHONE
612-572-7684
612-572-7696 FAX

KORRY MORROW X6360

ON-SITE INSTRUMENTS
1-800-766-7483

Gas Co. Minnesota Oxygen
612-588-8855


Minnesota Pollution Control Agency

LUKE CHARPENTIER
Quality Assurance Coordinator
Manager's Office
Ground Water and Solid Waste Division

520 Lafayette Road, St. Paul, MN 55155
(612) 296-8445 Fax (612) 296-9707


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Minnesota Pollution Control Agency

520 Lafayette Road, St. Paul MN 55155-4194

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Purge + Trap Method
Field Gas Chromatography

6966-005-0100
1222

6/30/97 Instrumentation and equipment used.

~~Hew~~ Hewlett Packard Series II 5890 Gas Chromatograph (GC)
with Photoionization (PID) and electron Capture (ECD)
detectors
Tekmar ALS 3000 Purge + Trap (P+T) Controller
Tekmar LCS 2016 P+T 16 port autosampler
Hewlett Packard 3365 Chem Station data collection
software Version A.03.21 Series II
Okidata Laser printer OL810e
Power Spec PC tower w/ 3½" disk + 120mb colorado drives
VWR ~~100~~ oven 1310 model S/N 10000492
GE refrigerator for standards
Sanyo refrigerator for samples
Sartorius portable balance PT-1200-OUE S/N 40100074
ECD S/N K0054 7/94 Hewlett Packard manu.
PID OIC 4430 power ~~sp~~ supply

Flow measurements

| | |
|---|---|
| column | RTX 624, 30 meter x 0.25 mm ID |
| Carrier gas | UHP helium |
| Carrier EPC | 70 psi |
| Carrier flow | 4.9 14.7 in operation |
| anode purge | 4.2 |
| inlet pressure | ~~70 psi~~ 45 psi - not set |
| ECD aux | 29.4 ml/min |
| PID sweep | 20.1 ml/min |
| PID aux | 20.1 ml/min |
| inlet B temp | 200°C |
| PID temp | 220°C |
| ECD temp | 300°C |
| Oven max | 240°C (column max temp) |

temp = temperature

Using VOCARB 3000 purge trap

Work continued to Page

DATE

DATE WITNESS DATE

P+T GC Fridley 6966
Daily Log 1222 3
Start up

6/30/97
1130 D. KILMARTIN ARRIVES ON SITE AT TRAILER. BEGINS UNPACKING LAB INSTRUMENTS PRIOR TO ARRIVAL OF INSTALLER FROM ON-SITE INSTRUMENTS
1530 ~~330~~ MITCHELL BAKER FROM ON-SITE INSTRUMENTS (ON-SITE) HOME. BEGINS INSTRUMENT SETUP.
1830 ~~630~~ LEAVE SITE FOR DAY, SETTING INSTRUMENTS FOR OVERNIGHT BAKEOUT.

7/1/97
0715 ARRIVE ON SITE. D. KILMARTIN + M. BAKER. GC ~~DID~~ DIDN'T BAKE OUT OVER NIGHT. BEGIN LEAK TESTING. NO FLOW FROM PID TO OCD. MITCH TO TRY DIFFERENT TRANSFER LINE. THE REST OF SYSTEM SEEMS OK
1030 TRANSFER LINE SUCCESSFUL, INSTALLED - USING 0.53 mm fused silica column.
UHP = ULTRA HIGH PURITY 99.999 PURE
1100 Setting flow ~~RATES~~ RATES
Column is RTx624, 30m x 0.25

| | | |
|---|---|---|
| CARRIER FLOW | 4.9 | mL/min |
| ANODE PURGE | 4.2 | |
| OCD AUX | 29.4 | |
| PID SWEEP | 20.1 | |
| PID AUX | 20.1 | |
| CARRIER GAS | UPH HELIUM | (PURGE GAS) |
| MAKE UP GAS | UPH NITROGEN | |

1300 Leak testing completed
Systems in operation
Run each of 16 ports 2X then repeat. Using decon water since HPLC not yet available, nor MeOH

| | | | |
|---|---|---|---|
| Purge gas | helium | | |
| Purge flow | 40 mL/min | Bake time | 300 |
| Purge time | 10 min. | Bake temp | 190 |
| purge heater temp | 40°C | BGB on delay | 0 |
| dry purge time | 4.0 min | MCS Bake temp | 180 |
| desorb preheat | 220°C | line temp | 150 |
| desorb time | 2.0 min | valve temp | 150 |
| desorb temp | 220.°C | 20XX line | 150 |
| heater preheat | 40°C | 20XX valve | 150 |
| heater preheat time | 2.0 min | | |

DATE WITNESS DATE

not used
7/21/97

3
purge ready temp 40°C
purge temp 40°C
sample heater ON
regional operating conditions

the Vocarb 3000 purge trap (Supelco # 2-4920) consists of carbo pack B/ Carboxen 1000 and 1001 packing. Supelco's recommended operating conditions are ~~times~~ temp °C / time min
desorb 250/6
bake 260/4
precond. 270/60
~~1900~~ 1700 M. Baker leaves site to return to On-Site
1900 D. Kilmartin leaves site for day

7/2/97
0730 D. Kilmartin on site. Weather cloudy and raining. Instrument ok. Continue with set up. Install refrigerators. thermometer in spl refrigerator, other one on order
1100 Prepared rough matrix spike solution because no 5ml syringes or 10ml syringes (both to come) 500 PPB solution was prepared containing 1,1-dichloroethene, benzene, trichloroethene, toluene, chlorobenzene. ECD overloaded but working, PID overloaded on GC Compound, poor separation but good sensitivity
1230 Leave site until Monday, July 7.

7/7/97
1200 D. KILMARTIN ON SITE. IMPORTANT SUPPLIES NOT YET HERE, including PT Trade methanol (MeOH) and HPLC grade water ($H_2O$) testtubes and 5ml syringes.
1300 ~~0100~~ Begin testing standards prepared in old purged water. Increased and changed parameters to get off gases
1700 reliably
~~0500~~ Instrument seems, but filename not automatically generated

Work continued to Page 6

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7/7/97

1700 (cont.)
file now continuously being re-written. Need to fix.
PID lamp gone out, unable to restart at first. Restarted then stopped

1800 Changing out PID lamp for new. Now not restarting either
loose connection? bad 4430 power supply?

2100 Left site for day, PID on but may go out.

7/8/97

0715 D. Kilmartin on site. Weather clear and cool.
Prepare individual standards to verify concentrations
attempting to turn operation of scheduling program and 3000 concentrator.
Run #6 gases three times. Unable to determine peaks rerun with fuel.
PID needed to be restarted. Power light on now.
See p. 35 for run log.

2100 Gases undeterminable. Peaks all over the place, possibly later than program allows. To run 2nd program at original parameters 40 hold 7, 75°C @ 4°C/min hold 0, to 138°C @ 10°C/min 40. Called as method 12 line @ 100°C, prepurge 1.0 preheat 10 MCS des. temp 50, desorb @ 250 for 6 min, bake @ 260 for 4 min. (recommended by Supelco.) To have to run overnight.

7/9/97

2nd method (#12) didn't run overnight. to initials as seq #
Added 5 min. hold to end of program for file 018F0101/018R0101 - run #5 BTX - deleted it before reached.
Bake out trap @ 260 to condition trap for 30 min.
Bake out first 3 ports then repeat injection of mixture #. No match on PID/OCD for TCO + PCO, so analyze matrix spike solution from Supelco.

7/10/97

Found fine between PID + OCD ~~determined~~, uncertain if OCD OK. Baked out trap for 1 hr at 225°C, while baking line in oven at 220°C for same period.

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7/10/87
Running 3 consecutive blanks (ports 10-12) to verify clean and reverting to program #16 Tekmar then running Supelco Mixture Spike compounds to see if line + OCD OK.
Left running overnight @ 7.5 ml/min. Runs #58 to 61

7/11/87
Peak shape poor, with double ~~pe~~ peaks @ 40H2, 58 @ 8H0, 138 @ 22H2, flow @ 7.5 ml
Decide to use 40H7, 75 @ 4H0, 138 @ 10H0, total 27.05 min. flow at 15 ml/min, pressure @ 70.9 for initial calibration, external standard this time, no internal std. Calibrate & no coelutions. See run log on pages 38
Begin running samples before completion of calibration work up. Will attempt to modify program to prevent co-el. and delete use of IS1 in OCD to further this end.

⇒ Purge and trap Method 12 parameters:

| | | | |
|---|---|---|---|
| line temp | 100°C | purge time | 11.00 |
| valve temp | 100° | dry purge time | 0.00 |
| 2000 line | 100° | MCS des. temp | 50 |
| 2000 valve | 100° | GC start | des start |
| MCS line temp | 100° | cryo focuser | OFF |
| purge ready temp | 30° | GC cycle time | 0.00 |
| purge temp | 30 | Cryo standby | 100 |
| turbo cool temp | -20 | Cryo focus temp | -150 |
| sample heater | ON | Expand time | 1.00 |
| prepurge time | 1.00 | Cryo inj. temp | 180 |
| pre heat time | 2.00 | | |
| sample temp | 40 | | |
| ~~pre~~ | | | |
| desorb preheat | 220° | Bake time | 4.00 |
| desorb time | 6.00 | Bake temp | 200° |
| desorb temp | 250° | BGB ON | Delay 2.00 |
| sample drain | OFF | MCS Bake temp | 180° |

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7/12/97
machine didn't run bakeout. Not true. bakeout doesn't go to GC, prot demo PID units.
Attempting method to resolve coelutions 42H2, 140@8H0, total 14.25 min. pressure set at 20.0psi, flow @ 14.5 ml/min.
7/13/97
moved data into directories so that sequence files can remain sequential.
→ Begin new initial w/program 42H2, 140@8H0.
7/14/97
Used new IS solution without IS1 for either PID or ECD as they cause co-elutions. Despite bakeouts, new programs etc.. still have co-elution problem w/ chloroform ($CHCl_3$), 111Trichloroethane (111TCA), and carbon tetrachloride ($CCl_4$). along with massive contamination peak. Requested supplies from on site to attempt to fix it.
7/15/97
Normal operations. Solvent + new transfer line rec'd @ 2PM. Running samples, contamination disappearing. All samples to be run tonight.
07/16/97
Decided not to change out transfer line. Running source waters today while attempting to ID all peaks. Leave site for home at 1230 PM.

---

07/21/97 D. Kilmartin arrives on site at 1130 AM. Continue with peak id and reprocessing data using CAPIS/DAPIS to determine lower high IS areas (QC is -50/200). These samples will be re run as soon as possible.
Begin new initial (3 above) with all fast standards. Save old Copnew + dopnew to ECDinstrument PID init2 respectively. Created Control and Control for continuing calibration determination from control book of initial programs

07/22/97 Rain in bucket last night. Determined that software determined the quantitation based on the calibration curve but not following CLP internal standard calculations, which are same as SOP's. Need to look at linearity of all compounds, especially PID. Use different program to achieve better separation?

7/23/97 Had audit from Nm state officer Luke Charpentier. He requires surrogate + recoveries, wants calibration information, especially MDL study, not yet performed.
Changed out He cylinder with fresh, left message w/ Sharon Hooper for 2 more UHP He cylinders. Continuing work on ~~cor~~ initcals.

7/23/97 Gas cylinders awaiting our call, FAX to come this week. Need to perform new initcal prior to sample analysis today. Need to perform analysis as soon as possible.
Spoke to Mark Sladik. Use of ~~surro~~ surrogates would delay sample analysis and were not required under SOP approved by Perry, and also EPA. To address this issue in memo to Mark later today concerning draft memo from State.
Found poor chromatography on beginning initcal - large peaks in early part of chromatogram. Voided rest of flow after initcals 1, 2 + 3 all had same pattern. Think mix #1 gone bad. Tossed out all standards, baked all glassware and syringes, baked out trap and oven, then allowed GC parts to cool, installed new fused aluminized silica transfer line between PID and ECD, leak tested all replaced parts, baked out oven + trap again while detectors were re-heated, and ran old mix #3 as initcal (saved in VOA vial when last tossed). Found same chromatography but still not in method blank that followed. Method blank ran without "control" electronic pick because I still have difficulties operating the sequencing function of the HP ChemStation software.
Repeating initcal after informing Terry Rogan Rogan of the situation.

7/24/97 Asked to record information on samples left by state. No ice was visible in the cooler although the samples were cool. No temperature blank nor chain of custody was provided until I insisted on a chain. No duplicate sample nor % solids (or moisture) information, nor weight of soil and volume of methanol in methanol-

Work continued to Page 10

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10 7/24/97 (cont.)
preserved soil samples. Told him at the time that method preservation was not the method being used but P&T and would have to spike an aliquot into 5 mL water for ~~quant~~ analysis, making quantitation difficult.

7/25/97
Discussed my draft comments w/ Doreen Resnick at Pittsburgh to clarify technical language. Told to expect Paul B. from state to question audit results. Proceeding w/ spl analysis and data reduction when responding to state allows.

7/26/97
Paul B of state here. We spoke of the miscommunication of the audit. Continued w/ spl analysis and data reduction

7/27/97
Continued w/ spl analysis and data reduction

7/28/97
Continued w/ spl analysis and data reduction. Prepared fresh internal standard solution per p. 176.

7/29/97
Paul Estvesta and Luke Carpenter here to review audit items ~~fr~~ from L. Carpenter's memo of 7/23/97. L. Carpenter was shown proof that samples were analyzed prior to his audit on 7/22/97. Seems Mr. Carpenter assumed samples not run because refrigerator full of samples. Seems Minnesota tosses out samples after analysis. Must resume to put in final report. L. Carpenter has requested initial and cont cal info on 7/11/97 and 7/29/97. He requested that study in beginning of next shift. He also asked for determination of reason of initial (i.e. ~~7/29~~ # of 96D out before new initial and how HP does calculations.

The MCPA (state) requires the following compounds, Chlorobenzene, benzene, trichloroethene, chloromethane, methyl chloride, chloroethane, 1,2-dichloroethane, 1,1-dichloroethane, cis/trans 1,2 dichloroethene

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7/29/97 (cont)
1,1-dichloroethane, 1,1,1-trichloroethane, carbon tetrachloride, 1,2-dichloroethane, 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethane and styrene. Told Mr. Charpentier that styrene coelutes with o-xylene and $CCl_4$, $CHCl_3$, 1,1,1 TCEa are believed to be in large contamination peak at 3 minutes, that individual standards are to arrive next shift to verify.
Handed a copy of Mr. Charpentier's June 30th comments referenced in 7/23/97 memo. Mr. Charpentier agreed that surrogate recoveries not needed & IS % recoveries would serve same purpose. He asked for a table of such recoveries by Monday (Cpu sample, std ...) and was told no.
Requires MDL study prior to run prior to start of ~~an~~ analysis next shift and send them on to him. Draft document called "Guidance Document Quality Assurance/Quality Control Plan Outline for a Mobile Laboratory dated 7/28/97 Rev 0. Prepared by the Minnesota Department of Agriculture and the Minnesota Pollution Control Agency. States only 3 to 5 calibration points necessary but MDL required prior to sample analysis. No one had this document as I know. Note that date is 7/28/97, being handed to me 7/29/97. D. Gilmartin

7/30/97
Attempted to run more samples, got a perfect control but unable to get decent internal standard (IS) response. Gave up after several tries.

7/31/97
Tried to catch up on paperwork while ~~[illegible]~~ running samples. Unable to run samples because of IS problem persists. Abandoned attempt to run and focused on initial data

8/1/97
In office, working on initial data for Luke Charpentier. Worked 2PM to 5AM Saturday, didn't complete.

Work continued to Page 12

DATE

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 Daily Log
(Cont from p. 11)

8/4/97 D. Kilmartin returned to site. Syringes not arrived yet but need to do MDL and initial prior to tackling backlog and may not work without new 10 ml syringes

Did trap oven bakeout, then remembered was supposed to replace trap prior to work. Had to replace and bakeout old trap because leaked ½ inch (½ inch?) valco ferrule and had nothing else suitable for substitution and unable to release old ferrule.

Preparing all fresh intermediate standards, will have to use last of old syringes.

New syringes have arrived, using new MeOH, HPLC grade water, ferrules, etc. Got ~~the~~ Only one set of new standards shipped, not 10 as I wanted.

Prepared MDL standards and new IS, run method blank - IS areas OK, then run MDL standard (see p. 170 for actual concentrations used.)

Prepared and run new 5 point initial calibration standards. See p. 182 for actual concentration run.

To continue running after shift.

8/5/97 Experienced yesterday's work, low OCI IS areas on initials for IS, need to re-run prior to analysis. Methanol and other supplies are not here, possibly late due to UPS strike although sent Fedex. Not enough methanol to prepare fresh gases. To use original gases concentration and dress (although normally would 4) and new initials and IS for test - HP system allows this. Deplorable work taken place but samples are left from last shift and more than 28 more obtained last night. ~~We~~ Unable to delay any longer.

Run content and samples today. Issued out all samples from all but yesterday and last shift (prior to 7/31/97) Unable to perform reanalyses for these, with the exception of 003-SB-003-10, which was attempted but run diluted reanalysis.

8/6/97 Methanol found, was shipped here on 8/1/97 - but under old company name of Halliburton NUS

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8/6/97 (cont.) 12

not Brown + Root Environmental. Reanalyzed and diluted + reanalyzed spiked samples 003-SB-003-10 to get in analyte range, and 003-SB-073-01RE, 003-SB-016-10RE, yesterday's 3 - 003-SB-035-01 (carryover + low TS), 003-SB-074-11DL, 003-SB-D01-10DL (guess what it's a dup of.). Need to reanalyze 003-SB-074-09 diluted and 003-SB-054-02 (low TS). Still unable to complete work requested by L Carpenter, have requested assistance for finding the machine so I can complete his requests, then get caught up on the paperwork. To pick up Marty Ray from airport. Phone lines repaired - lineman bitten by dog chewed by normal - unbitten pig or rat.
Work continues on sample analysis, only those of 8/4 & 5 and those collected tonight remain to be completed.

8/7/97
Came in to find machine waiting on post bakeout blank - PID detector temperature only at 51°C, not 200. Affects only this non-sample, contact smith blk preceding it OK. Called Mitch Baker off-site to ~~look~~ ~~at~~ seek cause. Processed last night's TS areas - no sample requiring reanalysis. 003-SB-074-09 from 8/5 needs dilution and rerun and 003-SB-054-02 needs re-run - low TS. To continue processing TS areas before releasing last shift's samples.

8/8/97
Called Mitch Baker - violation of leads not important - no polarity involved. Did paperwork until parts come ~~until~~ ~~at~~ 2PM. Picked up Marty Ray of Arkwat airport yesterday ~~noon~~ afternoon - he's to ~~assist~~ assist. Waiting on heated parts to come in today from On-site. Parts arrived approx 1:30PM, begin replacement. Marty does percent solids and transferring results to ~~the~~ original chromatograms. Had to remove PID base, disconnect, column to PID junction on oven, makeup line on right side, and transfer line to OCD to raise base enough to pull heater thermo-

Work continued to Page

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8/8/97

Couples out of base. Ran lines into J7 and J9 junctions on motherboard. All power pulled, all gases cooled prior to starting work. Difficulty in reassembly, no new ferrules for vent gas fitting nor "OCD" fitting serving as port into OCD. Had to chop graphite ferrule out of OCD port, difficult to remove all the pieces. Unable to reassemble leak-free. Approximately 6 hours after start (after 7PM) called on-site for replacement parts - told no ferrules available for OCD port and nothing could be done until Monday at earliest. At app. 9PM, left everything heating up, hoping that leaks will seal when heated to proper temperatures.

8/9/97

Low flow at OCD exhaust ~ 32 ml/min, down from app. 48 ml/min earlier, prior to heater failure. Marty begins sample prep and a test case of leaks fatal. Low to no response on PID, low response on OCD. Worked on reducing leaks all day. Chopped out old ferrule in OCD port and carefully replaced with new. Wrapped vent line and in then sheet of aluminum foil and replaced - still leaking but leaks a lot less. Unable to get either leak free or response on OCD, although tried all day. Samples left on machine but are unusable.

8/10/97

Still unable to get rid of leaks nor get due response. On-site said nothing they could do until Monday (yesterday). Got out phonebook and called Tekmar, Valco, Supelco then every instrument sales company, repairs etc.

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8/10/97 (cont.)
used equipment sales co, etc... in book. Left considerable messages but no one available with parts on Saturday. Chopped out ferrule on OCD port of PID, replaced line, replaced ferrules, added foil (aluminum foil) to nut on PID vent inlet to try to stop leaks, found leak on top of PID tower, replaced lamp seal and re seated lamp several times, replaced PID lamp until leak gone. Still leak at PID vent and OCD port. Unable to stop leaks.

8/11/97
Continued with attempts to fix instrument while Marty removes samples on 2016 and calculates out percent solids. Mark Coy big help - cleaned more test tubes, syringes, etc. to solids & put them on chromatograms, helped installed new PID/OCD transfer line, etc... but not enough work to keep busy with Macfarlane Brown. Take Marty to airport today. Called Mark Slagle and Sheron Hooper. They are to make arrangements for On-site to come out on Wed. or possibly tomorrow. Continued working on material for Luke Carpenter on MDL study.

8/12/97
Mitch Baker here at 930AM from On-site to make repairs, replaced leaky parts but no response on OCD (as we had on PID either (new). Taking system apart while I prepare some fresh standards for testing. Mitch continues to look for leaks. Test solution shows no response on PID or OCD. Prepared fresh TS solution (see p. 176 back cover). Unsuccessfull runs not being saved.

8/13/97
Yesterday, performed initial sequence and sample analysis around the ~~ext~~ clock. Continuing today

8/14/97
Continuing sample analysis. Completed several resamples and diluted analysis, cleaned glassware, completed total solids

Work continued to Page 16

by

DATE

DATE

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Daily Log



Continued from p. 15
up to calibration stages, worked on requirements for L. Chen - Pentwood left site at 12:45 PM visited 8/19/97. D. Kilmartin
8/26/97
D. Kilmartin returned to site today after death of father. Quickly samples sent to laboratory - Lawrence, the final based lab, all other still here. Last night's quickly samples still here - none sent to lab. Bakeout given to new initial calibration begun initiated. Left after meth. blk + bakeout purge machine, no samples run.
8/27/97
Arnold Lant from KC office here to take over duties D. Kilmartin's vacation. Sample analysis begun after meth control run.
8/28/97
Continued with continuous running of machine, samples being prepared by Arnold Lant, software by D. Kilmartin.
8/29/97
Continued with continuous running of machine, samples being prepared by Arnold Lant, software by D. Kilmartin. Arnold prepared new cancel and started with new F.S. Both A. Lant + D. Kilmartin leave site while machine runs.
9/2/97 D. KILMARTIN arrives on site app 1330. Changed helium and nitrogen cylinders, cleaned PID ~~bank~~ lamp and replaced w/ PID Reel # 255679. Had trouble getting purge flow - regulator not quite open had jiggle it and it became ok.
~~Bakeout Trap + did just bakeout blk run to start initial sequence~~
~~Had to restart initial sequence - sequence function off ("jumped sequence") and manual file information remained the same, so same file rewritten each injection ~~had~~ had data lost.

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9/3/97 Continued with reanalysis of last shift's sample and analyzed yesterday's collection. Cleaned test tubes and spatulas for use. Used batch sequence reprocessing to determine IS and Hydrocarbon (HC) problems and tacked these samples onto end of run. estimating appropriate dilutions where necessary.

9/4/97 continued with reanalysis of ~~9/3 sam~~ samples run on 9/3 and run last night samples. Used batch sequence reprocessing to determine IS and Hydrocarbon problem. Left system running

9/5/97 MK onsite at 08:00, analyzed last nights data, and determined those that will require reanalysis due to off-scale (need dilution). Run last nights samples. Used batch sequence reprocessing to assess IS areas.

9/6/97 Arrived at site at 08:20, analyzed last nights data to find that NO ECD data was produced from the GC runs. While I was investigating the reason for this the power was lost to the trailor. After contacting plant security, I found out that the plant was scheduled for a power outage today and it would last to approximately 17:00 hours. I packed all samples from the sample refrigerator in a cooler and covered with ice pillows. All samples were placed inside sealed containers (tupper-ware) to protect from any moisture. All standard solutions were packed into containers and placed in a seperate cooler and covered in ice pillows. I calculated % solids for yesterday's samples and caught up on paper work.

9/7/97 Marty Ray arrived at site at 08:25, power has been restored, and the field team had unpacked sample & standard coolers and

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placed in the appropriate refrigerators, samples & standards were kept iced until proper temperature was achieved in the refrigerators. GC re-booted and self-test was passed. I set up a sequence to run a Continuing cal & Method blank as a test and a post bakeout to clean the purge & trap. The software posted a notice when I "ran sequence" which stated "The directory C:\HPCHEM\1\DATA\ contains data files which may destroyed." I continued with with sequence. GC appears to be functioning properly, all Cromatograms as of 1700 look good. Left site at 2220.

9/8/97 Marty Ray arrived at site 08:00. Print was paused on last nights GC run due to low toner. ~~[illegible]~~ at site Purchased new toner and printing resumed. Printouts showed a problem with the GC run starting at vial #17 sample 003-SB 070-07 RE, ~~apparently~~ me Arnold Lamb arrived at site. GC was loaded and ran. Left site.

9/9/97 Marty Ray & Arnold Lamb on site. Began making files of daily data and reintegrating sample data. Had problems opening the Lotus spreadsheets. Called Russ Sloboda, he is sending new files for data reporting. Off-site.

new shift 9/16/97 Marty Ray on site 7:30, No internal standards or initial Calibration Solutions. Called Pittsburg to follow-up on Order of Solutions. Began reprocessing data, and looking over Spreadsheets to familiarize myself with the use of them. 13:30 Arnold Lamb on site, continued to reprocess data.

9/17/97 Marty Ray & Arnold Lamb on site. Began reprocessing data from the previous shift. Talked with Sharon Hooper in Pittsburg about Solutions, Learned that we may not receive them until tomorrow. Received new Spreadsheets from Russ Sloboda.

9/18/97 Marty Ray & Arnold Lamb on site at 7:30. Continued reprocessing data from the previous shift. Received initial cal solutions & internal standards at 3:30 pm. Mix new initial cal & loaded GC to run init. Cal.

9/19/97 Marty Ray & Arnold Lamb on site @ 7:30. Initial Cal. run over-night had low IS so we mixed new init Cal solution and reran. Init Cal successful, so began running samples collected on ~~the~~ 9/15, 9/16, 9/17.

9/20/97 Marty Ray & Arnold Lamb on site @ 7:30. Began to run more samples. Deb Kilmartin on site at ~~11:00~~ 10:30. Reprocessing data and updating Software to new initial calibration. Continued to run samples.

9/21/97 Marty Ray, Arnold Lamb, and Deb Kilmartin on site @ 7:00. Sequence on samples run over-night did not load so, re-run samples. Continued to reprocess data. Changed out Helium cylinder @ 0845. Reprocessed data and went over the batch reprocess procedure. Deb Kilmartin off site @ 1620, Con

9/22/97 Marty Ray and Arnold Lamb on site. Continue to run samples and reprocess data. Called Sharon Hooper to confirm gases supply order had been placed, given that the supplies have not been received. Sharon indicated the supplies had not been ordered, however, the supplies would be shipped via FedEx.

9/23/97 Marty Ray and Arnold Lamb on site. Continue to run samples and reprocess data.

9/24/97 Arnold Lamb on site. Made new IS solution. Made new control solution.

9/25/97 Arnold Lamb on site. Continue to analyze samples.

9/26/97 Arnold Lamb on site. Continue to analyze samples

9/29/97 Arnold Lamb on site. Make new int. standard #6. Continue to run samples.

9/30/97 Arnold Lamb on site Prepared 100 ug/L standard of 1,1,1 TCA and a 100 ug/L standard of Vinyl Chloride. The instrument date of 9/30/97 is printing 9/28/97. Apparently the computer has lost 2 days of time.

10/1/97 Small fault on-site. Continue to reprocess data.

10/2/97 Small fault on-site. Continue to reprocess data

10/3/97 Small fault on-site. Continue to reprocess data.

CTO

Run Log
7/2/96

6966
1222



| Run# | Auto# | Sample ID | file ID | Time | Aplot Vol | Comments |
|---|---|---|---|---|---|---|
| 1 | 1 | 500ug/L MS solution | 6/P0702P01 | | 10mL | Not saved |

peaks seen on both detectors but run + hardcopy not saved. Cleaning purge run ports 1-16 2x each, then repeat. No printouts being saved. DI water being used - quality not good enough.

7/7/97

| | | | |
|---|---|---|---|
| | | 50ug/L | |
| 1 | 1 | ~~50ug/mL~~ MIX#1 | No IS - OK |
| 2 | 2 | 250ug/L MIX#2 | |
| 3 | 3 | 250ug/L MIX#3 | |
| 4 | 4 | 5000ug/L MIX#4 | |
| 5 | 5 | 500ug/L MIX#5 | |
| 6 | 6 | 500ug/L MIX#6 | |

PID out - need to redo. All stds prepared in DI $H_2O$ all OCD overloaded.

7/8/97
Changed run parameters to try to maximize gases.
30°C hold 5.0, 100°C @ 6.0°/min hold 0, 138°C @ 10°C/min.
total time 20.47 min.

| | | | | | |
|---|---|---|---|---|---|
| 1 | 1 | HPLC water | 001F0101/001R0101 | 1503 | |
| 2 | 2 | Mix#6 gases @ 5PPB | 002F/R0101 | 1539 | old |
| 3 | 3 | " " @ 50PPB | 003F/R0101 | 1615 | |
| 4 | 4 | " " @ 100PPB | 004F/R0101 | 1651 | |
| 5 | 5 | Mix #1 @ 5PPB | 005F/R0101 | 1727 | |
| 6 | 6 | Mix #2 @ 25PPB | 006F/R0201 | 1803 | |
| 7 | 7 | Mix #3 @ 25PPB | 007F/R0301 | 1839 | |
| 8 | 8 | Mix#4 @ 50PPB | 008F/R0301 | 1915 | |
| 9 | 9 | Mix#5 @ 50PPB | 009F/R0301 | 1951 | |
| 10 | 10 | Mix#6 @ 50PPB | 010F/R0301 | 2027 | fresh |
| 11 | 11 | All mixes No IS | 011F/R0301 | 2103 | poor inj |
| 12 | 12 | All mixes + IS | 012F/R0401 | 2139 | |
| 13 | 13 | Blank + IS | 013F/R0501 | 2214 | |

Consider some peaks missed - need longer RT try different program.

36

Run Log

| DATE | Run # | Auto # | Sample ID | File ID | Time Sample inj | Time Sample Vol | Comments |
|---|---|---|---|---|---|---|---|
| 7/8 | 14 | 14 | mix #1 @ 5PPB | 010F/R0502 | 0903 | 5mL | method CAPISB/DAPISB |
| 7/9 | 15 | 16 | mix #2 @ 25PPB | 010F/R0503 | 0931 | | |
| DC | 16 | 1 | mix #3 @ 25PPB | 010F/R0504 | 0959 | | |
| | 17 | 2 | mix #4 @ 100PPB | 017F/R0101 | 1030 | | |
| | 18 | 3 | mix #5 @ 50PPB | 018F/R0101 | 1057 | | |
| | 19 | 4 | mix #6 @ 50PPB | 019F/R0101 | 1125 | | |
| | 20 | 5 | Blank+IS Only | 020F/R0101 | 1153 | | |
| 7/9 | 21 | 1 | Blank - HPLC water only | 021F/R0101 | 1354 | 5mL | |
| DC | 22 | 2 | " " | 022F/R0101 | 1423 | | |
| | 23 | 3 | " " | 023F/R0101 | 1453 | | |
| | 24 | 1 | mix #1 @ 5PPB | 024F/R0101 | 1522 | | |
| | 25 | 2 | " " | 025F/R0101 | 1552 | | |
| | 26 | 3 | " " | 026F/R0101 | 1621 | | |
| | 27 | 4 | MS SPIKE @ 5PPB | 027F/R0101 | 1706 | | |
| | 28 | 5 | " " | 028F/R0101 | 1735 | | |
| | 29 | 6 | " " | 029F/R0101 | 1804 | | |
| | ~~30~~ | ~~1~~ | ~~mix #6 @ 200PPB~~ | | | | POOR PORT - FIXED LOOK |
| | ~~31~~ | ~~2~~ | ~~" "~~ | | | | ~~mix #6 @ 200~~ |
| | ~~32~~ | ~~3~~ | ~~" "~~ | | | | |
| | 30 | 1 | mix #6 @ 200 | 030F/R0101 | 1946 | | |
| | 31 | 2 | " " | 031F/R0101 | 2015 | | |
| | 32 | 3 | " " | 032F/R0101 | 2044 | | |
| | 33 | 4 | mix #2 @ 12.5 #4 @ 100 | 033F/R0101 | 2113 | | |
| | 34 | 5 | ↓ ↓ | 034F/R0101 | 2142 | | |
| | 35 | 6 | | | | | |
| | 36 | 7 | #3 @ 100 #5 @ 20 | 035F/R0101 | 2211 | | |
| | 37 | 8 | ↓ ↓ | 036F/R0101 | 2240 | | |
| | 38 | 9 | | 037F/R0101 | 2309 | | |
| 7/10 | 39 | 10 | Blank | 038F/R0101 | 2338 | | |
| DC | | | | 039F/R0101 | 0007 | | |

7/10/97 LMH. RC

| Run # | Acc # | Sample ID | File ID | Time inj | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| 40 | 11 | Blank | 040F/R0101 | 0936 | 5mL | |
| 41 | 12 | Blank | 041F/R0101 | 0106 | ↓ | |
| | | Results indicate no change in OCD response for any results, even blanks, to return to previous method after a extended search for leaks between FID and OCD. None found, clean transfer line | | | | |
| 42 | 10 | Blank | 042F/R0101 | 1101 | 5mL | |
| 43 | 11 | " | 043F/R0101 | 1145 | ↓ | |
| 44 ~~48~~ | 12 | " | 044F/R0101 | 1221 | ↓ | |
| 45 ~~49~~ | 1 | MS @ 5PPB | 045F/R0101 | 1408 | 5mL | |
| ~~46~~ | 2 | " " | 046F/R0101 | 1444 | ↓ | |
| ~~47~~ | 3 | " " | 047F/R0101 | 1520 | ↓ | lines to 150 bake @4 from 10 min. |
| ~~48~~ | 4 | Blank ramp to 220° (~26 min) | 048F/R0101 | 1547 | 5mL | lines 100, preheat @ 1.0 min |
| ~~49~~ | 5 | Blank ramp to 160 (23 min) | 042F/R0102 | 1619 | | |
| ~~50~~ | 6 | Blank 1 MeOH (25uL) | 042F/R0103 | 1647 | ↓ | |
| | | Changed program to 40H2, 5 @ 8 H0, 13 @ 22 H2.0 total 9.89 min, flow 7.5 mL/min @ psi 46.7, ~~lines~~ rem + trap bakeout for 20 min. | | | | |
| 51 | 1 | MS @ 5PPB flow @ 7.5 | 042F/R0104 | 1804 | 5mL | 40H2, 5 @ 8 H0, 13 @ 22 H2.0 |
| 52 | 2 | ↓ flow @ ~~10 mL/min~~ | 052F/R0101 | 1839 | ↓ | changed purge to 0 and preheat to 1 |
| 53 | 3 | ↓ flow @ ~~7.5~~ 10 mL | 053F/R0101 | 1906 | ↓ | flow @ 10 mL/min rest same |
| 54 | 4 | Blank flow @ 10 mL | 054F/R0101 | 1935 | 5mL | Clean |
| 55 | 5 | Mix #5 @ 5PPB | 055F/R0101 | 2004 | 5mL | mystery OCD present |
| VOID 56 | 6 | Mix #5 @ 5PPB | 056F/R0101 | VOID | ↓ | 40H2, 5 @ 8 H0, 13 @ 22 H2, 2.0 @ 30 H0 |
| 57 | 7 | ~~Blank~~ Mix #5 @ 5PPB | 057F/R0101 | 2115 | 5mL | Mix #5 and above |
| 58 | 8 | ~~Initial 1~~ ~~Blank~~ + IS | 058F/R0101 | 2151 | ↓ | Blank only flow @ 7.5 mL |
| 59 | 9 | ~~Initial 2~~ 3 Blank + IS | 059F/R0101 | 2226 | ↓ | Blank + IS |
| 60 | 10 | ~~Initial 3~~ ~~Init 3 + IS~~ | ~~054~~ 060F/R0101 | 2302 | ↓ | Init 3. |
| 61 | 11 | ~~Initial 4~~ Init 3 | 061F/R0101 | 2337 | ↓ | Init 3 + IS |
| 62 | 12 | ~~Initial 5~~ Init 3 + IS | 042F/R0105 | 0013 | ↓ | blank only |
| ~~63~~ | 13 | ~~blank~~ delete | | | | |
| ~~64~~ | 14 | ~~QC Check~~ delete | | | | |

| Run # | Auto # | Sample ID | File ID | Time Inj | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| 7/11/97 ~~65~~ 61 | ~~74~~ 1 | ~~Blank~~ MS@5PPB | #61 061F/R0101 | 1127 | 5mL | 40H7,75@440, 138@1040 / 22.05 min. flow at 5mL/min |
| ~~66~~ 62 | X2 | ~~Blank~~ MS@5PPB+IS | 62 062F/R0101 | 1156 | | IS@5uL ~~+25uL~~ 1/20 of intro. |
| ~~67~~ 63 | 23 | ~~Blank~~ Blank | 63 063F/R0101 | 1225 | | |
| 65 64 | 4 | Blank + IS | 64 064F/R0101 | 1254 | | |
| 65 | 5 | Initial Calibration Std #1 | 065F/R0101 | 1324 | | Initial = Initial Calibration Std. |
| 66 | 6 | Initial 1 + IS | 066F/R0101 | 1353 | | |
| 67 | 7 | Initial 2 | 067F/R0101 | 1423 | | |
| 68 | 8 | Initial 2 + IS | 068F/R0101 | 1453 | | |
| 69 | 9 | Initial 3 | 069F/R0101 | 1523 | | |
| 70 | 10 | Initial 3 + IS | 070F/R0101 | 1553 | | Initial #1 |
| 71 | 11 | Initial 4 | 071F/R0101 | 1624 | | |
| 72 | 12 | Initial 4 + IS | 072F/R0101 | 1655 | | |
| 73 | 13 | Initial 5 | 073F/R0101 | 1725 | | |
| 74 | 14 | Initial 5 + IS | 074F/R0101 | 1755 | | |
| 75 | 16 | Blank | 075F/R0101 | 1826 | | Baheout after blank |
| 76 | 1 | Blank + IS | 076F/R0101 | 1918 | | |
| 77 | 2 | QC Check no IS | 077F/R0101 | 1948 | 5mL | |
| 78 | 3 | QC Check + IS | 078F/R0101 | 2019 | | |
| 79 | 4 | Blank | 079F/R0101 | 2049 | | |
| 80 | 5 | Blank | 080F/R0101 | 2119 | | |
| 81 | 6 | 003-TB-001-01 | 081F/R0101 | 2148 | 5mL | |
| 82 | 7 | 003-TB-002-01 | 082F/R0101 | 2218 | 5mL | |
| 83 | 8 | 003-SB-006-02 | 083F/R0101 | 2248 | 4.99 | |
| 84 | 9 | 003-SB-006-03 | 084F/R0101 | 2317 | 5.29 | |
| 85 | 10 | 003-SB-006-01 | 085F/R0101 | 2347 | 5.19 | |
| 7/12/97 86 | 11 | 003-SB-006-04 | 086F/R0101 | 0017 | 5.29 | |
| 87 | 12 | 003-SB-006-05 | 087F/R0101 | 0046 | 4.99 | |
| 88 | 13 | 003-SB-006-06 | 088F/R0101 | 0116 | 5.29 | |

deleting of (grams)

| | Run # | Lab # | Sample ID | File ID | Time Inj | Sample vol/wt | Comments |
|---|---|---|---|---|---|---|---|
| 7/12/97 JC | 89 | 14 | 003-SB-006-07 | 089F/R0101 | 0145 | 5.1 | |
| | 90 | 16 | 003-SB-P07-05 | 090F/R0101 | 0214 | 5.3 | |
| | 91 | 1 | 003-SB-P07-05D | 091F/R0101 | 0244 | 5.6 | |
| | 92 | 2 | 003-SB-P07-05S | 092F/R0101 | 0313 | 4.9 | |
| | 93 | 3 | CONTCAL | 093F/R0101 | 0341 | 5mL | |
| | ~~94~~ | ~~4~~ | ~~INST. BLANK~~ | | | ↓ | ~~Method 13 not run~~ |
| | | | #94 not run with found effluent not sent to GC | not acceptance of method | | | method, edited method for record only |
| | | | 7/12/97 | | | | |
| 7/12/97 JC | 94 | 4 | Inst. Blank | 094F/R0101 | 1209 | 5mL | CAPNOW 42H2 140@8H0 |
| | 95 | 1 | Contcal - new prog #13 | 095F/R0101 | 1238 | | CAPNOW 42H2 140@8H0 |
| | 96 | 2 | Contcal - new prog. NO #13 | 096F/R0101 | 1307 | | ↓ added final hold 5 plunge @ 16.62 |
| | 97 | 3 | Inst. blank NO #5 | 068F/R0106 | 1337 | | ~~CAPISC~~ CAPNOW |
| | ~~98~~ | ~~5~~ | ~~Contcal~~ | | | | ~~CAPISC~~ |
| | ~~99~~ | ~~6~~ | ~~Contcal~~ | | | | not done JC 7/12/97 |
| | ~~100~~ | ~~7~~ | ~~Meth Blank~~ | | | | |
| | ~~98~~ | ~~1~~ | ~~MSD SPAB~~ | | | | CAPNOW |
| | ~~99~~ | ~~2~~ | ~~Mix #2~~ | | | | |
| | ~~100~~ | ~~3~~ | ~~Mix #3~~ | | | | |
| | ~~101~~ | ~~4~~ | ~~Mix #1~~ | | | | |
| | 98 | 5 | Contcal | 098F/R0101 | 1503 | 5mL | CAPISC 40H7, 75@4138@10 |
| | 99 | 6 | Contcal | 099F/R0101 | 1533 | | |
| | 100 | 7 | Blank, method | 100F/R0101 | 1604 | | |
| | 1 | 8 | 003-TB-003-01 | 001F/R0101 | 1635 | 5mL | Repeatin, TAS-system not >100 ng/ml |
| | 2 | 9 | 003-TB-004-01 | 002F/R0101 | 1705 | | |
| | 3 | 10 | 003-SB-006-08 | 003F0201 | 1735 | 5.09 | |
| VOID | 4 | 11 | 003-SB-006-09 | ~~006F/R0201~~ | ~~1804~~ 1805 | 5.7 | ~~VOID 1/8/97~~ 004F/R0201 |
| | 5 | 12 | 003-SB-006-10 | 005F/R0201 | 1834 | 5.5 | |
| VOID | 6 | 13 | 003-SB-006-11 | 006F/R0201 | 1904 | 5.5 | VOID - oven baked out during run |
| | 7 | 14 | 003-SB-006-12 | 100F/R0202 | 1933 | 6.2 | mislabeled as method blank |

Work continued on page

WITNESS

DATE

DATE

| Run # | Auto # | Sample ID | File ID | Time | Sample w/Prep | Comments |
|---|---|---|---|---|---|---|
| 8 | 16 | 003-SB-DP1-01 | 009F/R0203 | 2003 | 5.1 | mistakes osmetic blk - Aqueous off |
| 9 | 1 | 003-SB-006-13 | data lost | | 5.6 | data lost |
| 10 | 2 | 003-SB-006-14 | 010F/R0101 | 2101 | 5.1 | |
| 11 | 3 | 003-SB-P07-01 | 011F/R0101 | 2130 | 5.0 | |
| 12 | 4 | 003-SB-P07-02 | 012F/R0101 | 2159 | 5.2 | |
| 13 | 5 | 003-SB-P07-03 | 013F/R0101 | 2227 | 5.3 | |
| 14 | 6 | 003-SB-P07-04 | 014F/R0101 | 2256 | 5.1 | |
| 15 | 7 | 003-SB-P07-06 | 015F/R0101 | 2325 | 5.3 | |
| 16 | 8 | 003-SB-P07-07 | 016F/R0101 | 2354 | 5.2 | |
| 7/13 17 | 9 | 003-SB-DP1-02 | ~~DATA LOST~~ | | 5.1 | |
| 18 | 10 | 003-SB-P07-08 | 017F/R0101 | 0023 | 5.4 | |
| 19 | 11 | 003-SB-P07-08D | 018F/R0101 | 0052 | 5.6 | |
| 20 | 12 | 003-SB-P07-08S | 019F/R0101 | 0121 | 5.0 | |
| 21 | 13 | 003-SB-006-11 | 020F/R0101 | 0150 | 5.7 | |
| 22 | 14 | Critical | 021F/R0101 | 0219 | 5mL | |
| 23 | 16 | Meth. Blank | 022F/R0101 | 0248 | | |
| 24 | 16 | Reheat blank | 023F/R0101 | 0316 | | |
| 7/13/97 25 | 1 | Meth Blank | 024F/R0101 | 0435 | | |
| 26 | 2 | Mix#1@5PPB | 025F/R0101 | 1054 | 5mL | using OAPNOW 40#2 140@8:40 |
| 27 | 3 | Mix#2@25PPB | 026F/R0101 | 1123 | | |
| 28 | 4 | matrix spike@5PPB | 027F/R0101 | 1152 | | |
| ~~29~~ | 5 | Initial 1 | 028F/R0101 | 1221 | | |
| ~~30~~ | 6 | Initial 2 | 029F/R0201 | 1250 | | |
| 31 | 7 | Initial 3 | 030F/R0301 | 1318 | | initial 2 |
| 32 | 8 | Initial 4 | 031F/R0401 | 1348 | | |
| 33 | 9 | Initial 5 | 032F/R0501 | 1417 | | |
| 34 | 10 | inst. blank - no IS | 033F/R0601 | 1447 | | |
| 35 | 11 | QC Check - [illegible] | 034F/R0701 | 1519 | | |
| | | | 035F/R0701 | 1550 | | matrix spike@5PPB |

#2

| | Run Log # | Run Log # | Sample ID | File ID | Time hrs | Sample Volume | Comments |
|---|---|---|---|---|---|---|---|
| 7/13/97 | 36 | 12 | Meth blank | 036F/R0701 | 1620 | 5mL | |
| | 37 | 13 | Meth blk | 037F/R0701 | 1657 | ↓ | |
| | 38 | 14 | 003-SB-DP1-02 | 038F/R0701 | 1744 | 5.29 | VOID - GC data blank mix |
| | 39 | 16 | 003-SB-TB-005-01 | 039F/R0101 | 1751 | 5mL | |
| | 40 | 1 | 003-SB-P03-02 | 040F/R0101 | 1821 | 4.9 | |
| | 41 | 2 | 003-SB-P03-03 | 041F/R0101 | 1850 | 5.3 | |
| | 42 | 3 | 003-SB-P07-10 | 042F/R0101 | 1920 | 5.5 | |
| | 43 | 4 | 003-SB-P07-11 | 043F/R0101 | 1949 | 5.9 | |
| | 44 | 5 | 003-SB-P07-12 | 044F/R0101 | 2018 | 5.8 | |
| | 45 | 6 | 003-SB-P07-14 | 045F/R0101 | 2047 | 4.8 | |
| | 46 | 7 | 003-SB-DP1-03 | 046F/R0101 | 2115 | 5.0 | |
| | 47 | 8 | 003-SB-P03-01 | 047F/R0101 | 2144 | 5.5 | |
| | 48 | 9 | 003-SB-P03-04 | 048F/R0101 | 2212 | 4.7 | |
| | 49 | 10 | 003-SB-P03-05 | 049F/R0101 | 2241 | 5.5 | |
| | 50 | 11 | 003-SB-P03-06 | 050F/R0101 | 2309 | ~~5.4~~ | 5.0g |
| | 51 | 12 | 003-SB-P03-07 | 051F/R0101 | 2338 | 5.4 | |
| 7/14/97 | 52 | 13 | 003-SB-P03-09 | 052F/R0101 | 0006 | 5.0 | |
| | 53 | 14 | 003-SB-P03-09D | 053F/R0101 | 0035 | 5.0 | |
| | 54 | 16 | 003-SB-P03-09S | 054F/R0101 | 0103 | 4.9 | 5 PPB of IS solution |
| | 55 | 1 | Critical | 055F/R0101 | 0132 | 5mL | |
| | 56 | 2 | meth blk | 056F/R0101 | 0200 | 5mL | |
| | 57 | 2 | blank after bakeout | 057F/R0101 | 0321 | 5mL | |
| 7/14/97 | | | prepared new IS solution without IS1 for GC/MS/PID | | | | |
| | 58 | 1 | Meth blk - new IS | 058F/R0101 | 5mL ↔ | 1119 | 5ul new IS file lost during sig. |
| | 59 | 2 | Critical | 059F/R0101 | ↔ | 1148 | Critical lost during sequence problem |
| | 60 | 3 | Meth blk | 060F/R0101 | ↔ | 1218 | |
| | 61 | 4 | 003-TB-006-01 | 042F/R0102 | ↔ | 1247 | |
| | 62 | 5 | 003-SB-006-13 | 058F/R0101 | 4.9 ↔ | 1317 | overwrote meth blk. |
| | 63 | 6 | 003-SB-P03-10 | 059F/R0101 | 5.4 ↔ | 1346 | overwrote critical |
| | 64 | 7 | 003-SB-DP1-04 | 064F/R0201 | 4.3 ↔ | 1416 | |

Continued to Page

DATE

| | Run # | Auto # | Sample ID | File ID | Time inj | Sample vol/wt | Comments |
|---|---|---|---|---|---|---|---|
| 7/14 PC | 65 | 8 | 003-SB-P03-11 | 065F/R0201 | ~~4.9~~ | 4.9 | Time 1446 |
| | 66 | 9 | 003-SB-P03-12 | 066F/R0201 | 1516 | 5.1 | |
| | 67 | 10 | 003-SB-P03-13 | 067F/R0201 | 1546 | 5.1 | |
| | 68 | 11 | 003-SB-P03-15 | 068F/R0201 | 1616 | 5.7 | |
| | 69 | 12 | 003-SB-003-01 | 069F/R0201 | 1645 | 5.0 | |
| | 70 | 13 | 003-SB-003-02* | 070F/R0201 | 1715 | 5.1 | sent to lab |
| | 71 | 14 | 003-SB-003-03* | ~~071F/R0101~~ | 1744 | 5.4 | 071F/R0201 |
| | 72 | 16 | 003-SB-003-04 | 072F/R0201 | 1814 | 5.0 | |
| | 73 | 1 | 003-SB-003-05 | 073F/R0201 | 1843 | 4.9 | |
| | 74 | 2 | 003-SB-003-06 | ~~075~~ 074F/R0201 | 1912 | 5.1 | |
| | 75 | 3 | 003-SB-DP1-05 | 075F/R0201 | 1942 | 4.9 | |
| | 76 | 4 | 003-SB-003-08 | 076F/R0201 | 2011 | 5.7 | |
| | 77 | 5 | 003-SB-003-08D | 077F/R0201 | 2040 | 6.0 | |
| | 78 | 6 | 003-SB-003-08S | 078F/R0201 | 2109 | 4.8 | |
| | 79 | 7 | Control | 079F/R0201 | 2138 | 5mL | |
| | 80 | 8 | Meth Blk | 080F/R0201 | 2207 | ↓ | |
| | 81 | 9 | Mix #4 gases @ 100PPB | 081F/R0201 | 2236 | 5mL | pull back cover + p.177 Auspled |
| | 82 | 10 | Performance Check @ 20PPB | 082F/R0201 | 2305 | | " " " " " |
| | 83 | 11 | Meth. Blk | 083F/R0201 | 2334 | | |
| 7/15 PC | 84 | 12 | Post Bakeout Blk. | 084F/R0201 | 0003 | | |
| | 85 | 12 | " " " | 073F/R0202 | 0120 | | stolen blk 085F/R |
| | | | 7/15/97 | | | | |
| | 86 | 1 | Control | 086F/R0101 | 1104 | 5mL | |
| | 87 | 2 | Meth Blk | 087F/R0101 | 1133 | | |
| | 88 | 3 | 003-TB-007-01 | 088F/R0101 | 1202 | | |
| | 89 | 4 | 003-SB-003-10 ✓ | 089F/R0101 | 1231 | 4.9 | wrong name - misdefined 003-SB-01301 |
| | 25 | 2 | Inst Blank | 025F/R0101 | 1300 | 5mL | out of range - blank to follow |
| | 90 | 5 | 003-SB-013-01 | 090F/R0201 | 1330 | 6.1 | |

| | Run # | Data # | Sample ID | File ID | Time inj | Sample Vol/wt | Comments |
|---|---|---|---|---|---|---|---|
| | 91 | 6 | 003-SB-013-02* | 091F/R0201 | 1359 | 5.3 | priority and folat |
| | 92 | 7 | 003-SB-013-03* | 092F/R0201 | 1428 | 5.4 | priority |
| | 93 | 8 | 003-SB-013-04 | 093F/R0201 | 1458 | 5.6 | |
| | 94 | 9 | 003-SB-013-05 | 094F/R0201 | 1528 | 4.9 | |
| | 95 | 10 | 003-SB-013-06 | 095F/R0201 | 1558 | 5.1 | |
| | 96 | 11 | 003-SB-013-07 | 096F/R0201 | 1627 | 4.9 | |
| | 97 | 12 | 003-SB-013-08 | 097F/R0201 | 1657 | 5.1 | |
| | 98 | 13 | 003-SB-013-09 | 098F/R0201 | 1726 | 5.2 | |
| | 99 | 14 | 003-SB-013-09D | 099F/R0201 | 1756 | 5.3 | |
| | 100 | 16 | 003-SB-013-09S | 100F/R0201 | 1825 | 4.8 | |
| | 1 | 1 | Meth Blk | 001F/R0301 | 1854 | 5mL | |
| | 2 | 2 | 003-SB-003-10-DL | 002F/R0301 | 1923 | 1.0 | Dilution |
| 6 | ~~3~~ | 3 | Control | 006F/R0301 | 2120 | 5mL | |
| 7 | ~~4~~ | 4 | Meth Blk | 007F/R0301 | 2149 | | |
| 8 | ~~5~~ | 15 | Clean port #15 | 008F/R0301 | 2213 | | |
| 9 | ~~6~~ | 4 | Meth blk | — | — | | not done 7/16 |
| 10 | ~~7~~ | 4 | Post Rx heat blk. | — | — | | not done 7/16 |
| | 3 | 9 | 003-TB-008-01 | 003F/R0301 | 1953 | 5mL | Change order to insert these |
| | 4 | 10 | 003-SB-013-11 | 004F/R0301 | 2022 | 4.6 | |
| | 5 | 11 | 003-SB-DPI-06 | 005F/R0301 | 2051 | 4.7 | |
| | | | 7/16/97 | | | | |
| 9 | ~~11~~ | 1 | Control | 009F/R0101 | 1122 | 5mL | updated CAPIS/DAPIS |
| 10 | ~~12~~ | 2 | Meth Blk | 010F/R0101 | 1151 | | |
| 11 | ~~13~~ | 3 | 003-SW-001-01 | 011F/R0101 | 1221 | | |
| 12 | ~~14~~ | 4 | 003-SW-002-02 | 012F/R0101 | 1250 | | |
| 13 | ~~15~~ | 5 | Control | 013F/R0101 | 1320 | | |
| 14 | ~~16~~ | 6 | Meth Blk | 014F/R0101 | 1349 | | |
| 15 | ~~17~~ | 6 | Post heat | 015F/R0101 | 1511 | | |
| 15 | ~~16~~ | 1 | HPLC water | 015F/R0101 | 1136 | 5mL | HPLC water only, no ZS large contam |
| 16 | ~~17~~ | 2 | Meth Blank | 016F/R0101 | 1206 | 5mL | |

7/16/97 Deh

7/23/97 Hc

PROJECT NO

BOOK NO.

| | Run # | Auto # | Sample ID | File ID | time inj | sample wt/vol | Comments |
|---|---|---|---|---|---|---|---|
| 7/23/93 | — | — | Bakeout | — | — | — | no output from bakeout |
| Ok | 16 | 1 | "Meth Blk" - Post Bakeout | 016F/R0201 | 1325 | 5mL | |
| | 16 | 2 | Meth Blk - after purge | 016/F/R0301 | 1354 | 5mL | post purged + not replaced - no 228 Blk |
| | 17 | 3 | Mix #2 @ 50 PPB | 017F/R0101 | 1424 | 5mL | |
| | 18 | 4 | Mix #2 @ 50 PPB | 018F/R0101 | 1454 | 5mL | |
| | 19 | 5 | Mix #2 @ 100 PPB | 019F/R0101 | 1523 | 5mL | |
| | 20 | 6 | Mix #6 @ 25 PPB - Supelco | 020F/R0101 | 1553 | 5mL | Saturation of early eluters |
| | 21 | 7 | Inst. Blk | 021F/R0101 | 1623 | 5mL | no IS added HPLC water only |
| | 22 | 8 | meth Blk | 022F/R0101 | 1653 | 5mL | updated IS areas to this C/DAP/S 7/23 |
| VOID | 23 | 9 | initcal 1 VOID | 023F/R0101 | 1723 | 5mL | large interference - redo |
| VOID | 24 | 10 | initcal 2 VOID | 024F/R0101 | 1753 | 5mL | large interference OCD - redo |
| VOID | 25 | 11 | initcal 3 VOID | 025F/R0101 | 1822 | 5mL | stop to take care of problems |
| | Changed | | PID-OCD transfer line to | 0.32mm ID bleminized fused | | | silica and shortened length |
| | 22 | 1 | Critcal from old std | 022F/R0101 | 2106 | 5mL | from old std prep. still art. peak |
| | 22 | 2 | meth blk | 022F/R0101 | 2136 | 5mL | previous data unnoticed, overwritten updated IS to this blank |
| | 23 | 3 | initcal 1 | 023F/R0101 | 2206 | 5mL | initcal 3 |
| | 24 | 4 | initcal 2 | 024F/R0101 | 2235 | 5mL | |
| | 25 | 5 | initcal 3 | 025F/R0101 | 2305 | 5mL | |
| | 26 | 6 | initcal 4 | 026F/R0101 | 2334 | 5mL | |
| 7/24 | 27 | 7 | initcal 5 | 027F/R0101 | 0004 | 5mL | |
| | 28 | 8 | inst blk | 028F/R0101 | 0033 | 5mL | |
| | 29 | 9 | meth blk. | 029F/R0101 | 0102 | 5mL | |
| | 30 | 10 | QC Check | 030F/R0101 | 0131 | | |
| | 31 | 11 | meth blk. | 031F/R0101 | 0201 | | |
| | 32 | 12 | A-blind $H_2O$ | 032F/R0101 | 0230 | | |
| | 33 | 13 | B-blind $H_2O$ | 033F/R0101 | 0259 | | |
| | 34 | 14 | C-blind $H_2O$ | 034F/R0101 | 0328 | | |
| | 35 | 15 | A-blind soil container wt 136.1 | 035F/R0101 | 0357 | 100uL/5mL | prepared in MeOH, no vol soil given |

| Run | Auto | Sample ID | File ID | Time | Sample | Comments |
|---|---|---|---|---|---|---|

| | Run # | Auto # | Sample ID | File ID | Time hrs | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|---|
| 7/24 cont. | 36 | 16 | B-Blind Soil ~~wt~~ wt 132.4 | 036F/R0101 | 0426 | 100 ml/5 ml | prepared in MeOH, sonicated, nitrogen |
| | 37 | 1 | 003-SB-008-02* | 037F/R0101 | 0455 | 4.9 | |
| | 38 | 2 | 003-SB-008-03* | 038F/R0101 | 0524 | 5.1 | |
| | 39 | 3 | 003-SB-004-02* | 039F/R0101 | 0553 | 5.3 | |
| | 40 | 4 | 003-SB-004-03* | 040F/R0101 | 0622 | 5.5 | |
| | 41 | 5 | Control | 041F/R0101 | 0651 | 5 mL | |
| | 42 | 6 | Mult. blk. | 042F/R0101 | 0720 | ↓ | |
| | 43 | 7 | Post Baseout Blk | 043F/R0101 | 0838 | | |
| ~~7/24~~ 7/24 | 44 | 4 | Mix #3 @ 100 | 044F/R0101 | 1427 | 5 mL | |
| | 45 | 5 | Mix #3 @ 100 | 045F/R0101 | 1456 | | |
| | 46 | 6 | Mix #3 @ 200 | 046F/R0101 | 1526 | | |
| | 47 | 7 | Mix #4 @ 200 | 047F/R0101 | 1533 | | |
| | 48 | 8 | Mix #4 @ 200 | 048F/R0101 | 1625 | | |
| | 49 | 9 | Mix #4 @ 400 | 049F/R0101 | 1654 | | |
| | 50 | 10 | Inter. blk | 050F/R0101 | 1723 | | |
| | 51 | 11 | Meth. blk | 051F/R0101 | 1753 | | |
| | 52 | 12 | Control | 052F/R0101 | 1822 | | |
| | 53 | 13 | Meth. blk | 053F/R0101 | 1852 | ↓ | |
| | 57 ~~54~~ | 14 | 003-SB-008-01 | 057F/R0101 | 2049 | 4.9 | out of sequence in book, see next page |
| | 58 ~~55~~ | 15 | 003-SB-008-04 | 058F/R0101 | 2119 | 5.0 | |
| | 59 ~~56~~ | 16 | 003-SB-008-06 | 059F/R0101 | 2141 | 5.1 | |
| | 60 ~~57~~ | 1 | 003-SB-008-07 | 060F/R0101 | 2218 | 5.5 | |
| | 61 ~~58~~ | 2 | 003-SB-008-08 | 061F/R0101 | 2247 | 5.1 | |
| | 62 ~~59~~ | 3 | 003-SB-008-09 | 062F/R0101 | 2316 | 5.1 | |
| | 63 ~~60~~ | 4 | 003-SB-008-10 | 063F/R0101 | 2345 | 5.0 | |
| 7/25 | 64 ~~61~~ | 5 | 003-SB-008-11 | 064F/R0101 | 0014 | 4.9 | |
| | 65 ~~62~~ | 6 | 003-SB-DP1-07 | 065F/R0101 | 0044 | 6.4 | listed in chronic ~~wrong~~ as 003-SB-DP1-01 |
| | 66 ~~63~~ | 7 | 003-SB-008-13 | 066F/R0101 | 0113 | 5.4 | |
| | 67 ~~64~~ | 8 | 003-SB-008-05 | 067F/R0101 | 0142 | 5.2 | |
| | 68 ~~65~~ | 9 | 003-SB-008-05D | 068F/R0101 | 0211 | 5.0 | |
| | 69 ~~66~~ | 10 | 003-SB-008-05S | 069F/R 1 | 0240 | 4.9 | |

| Date | Run # | Subrun | Sample ID | File ID | Time Sample | Sample Wt/Vol | Comments |
|---|---|---|---|---|---|---|---|
| 7/24 | ~~70~~ 67 | 11 | Control | 070F/R0101 | 0309 | 5mL | |
| | 71 | 12 | Smith blk | 071F/R0101 | 0338 | ↓ | |
| | 72 | 12 | Post Bakeout blk | 072F/R0101 | 0455 | | |
| | 54 ~~73~~ | ~~12~~ 11 | 003-TB-009-01 | 054F/R0101 | 1921 | 5mL | out of sequence in book |
| | 55 | ~~14~~ 12 | BLIND SOIL B @ 50uL/5mL | 055F/R0101 | 1951 | 50uL/5mL | |
| | 56 | ~~12~~ 13 | Inst. blk | 056F/R0101 | 2020 | 5mL | |
| 7/25 | 73 | 1 | mix #6 @ 100 | 073F/R0101 | 1723 | 5mL | |
| | 74 | 2 | mix #6 @ 100 | 074F/R0101 | 1752 | ↓ | |
| | 75 | 3 | mix #6 @ 300 | 075F/R0101 | 1821 | | |
| | 76 | 4 | inst. blk | 076F/R0101 | 1850 | | |
| | 77 | 5 | meth blk | 077F/R0101 | 1919 | | |
| | 78 | 6 | Control | 078F/R0101 | 1949 | | |
| | 79 | 7 | meth blk ~~Inst. blk~~ | 079F/R0101 | 2018 | | mislabeling on files begins here forgot to mark inst. blank. all entries in logbook before this verified |
| | 80 | 8 | ~~meth blk~~ 003-TB-010-01 | 080F/R0101 | 2047 | ↓ | |
| | 81 | 9 | ~~003-TB-010-01~~ 003-SB-038-02 | 081F/R0101 | 2117 | 5.0 | |
| | 82 | 10 | ~~003-SB-038-02~~ ~~003-SB-038-03~~ | 082F/R0101 | 2146 | 4.5 | |
| | 83 | 11 | ~~003-SB-038-03~~ 003-SB-073-02 | 083F/R0101 | 2216 | 5.4 | |
| | 84 | 12 | ~~003-SB-073-02~~ 003-SB-073-03 | 084F/R0101 | 2246 | 2.5 | |
| | 85 | 13 | ~~003-SB-073-03~~ 003-SB-008-14 | 085F/R0101 | 2315 | 5.6 | |
| 7/26 | 14 | | ~~003-SB-008-14~~ 003-SB-008-15 | 086F/R0101 | 2345 | 5.1 | |
| 7/26 | 15 | | ~~003-SB-008-15~~ 003-TB-004-01 | 087F/R0101 | 0014 | 5.6 | |
| | 88 | 16 | ~~003-TB-004-01~~ 003-SB-008-12 | 088F/R0101 | 0043 | 4.7 | |
| | 89 | 1 | ~~003-SB-008-12~~ 003-SB-008-12D | 089F/R0101 | 0112 | 4.6 | |
| | 90 | 2 | ~~003-SB-008-12D~~ 003-SB-008-12S | 090F/R0101 | 0142 | 4.5 | |
| | 91 | 3 | ~~003-SB-008-12S~~ Control | 091F/R0101 | 0211 | 5mL | |
| | 92 | 4 | ~~Control~~ meth blk | 092F/R0101 | 0240 | ↓ | |
| | 93 | 4 | ~~meth blk~~ Post Bakeout | 093F/R0101 | 0357 | | |

| Lab # | Bottle # | Sample ID | File ID | Time inj | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| 94 | 1 | Control | 094F/R0101 | 1300 | 5mL | |
| 95 | 2 | Meth. blk | 053F/R0102 | 1330 | ↓ | Off sequence, different filename |
| 96 | 3 | 003-TB-011-01 | 096F/R0101 | 1400 | ↓ | |
| 97 | 4 | 003-TB-012-01 | 097F/R0101 | 1429 | 5mL | |
| 98 | 5 | 003-SB-004-04 | 098F/R0101 | 1459 | 5.0g | |
| 99 | 6 | 003-SB-004-05 | 099F/R0101 | 1528 | 5.0 | |
| 100 | 7 | 003-SB-004-06 | 100F/R0101 | 1558 | 6.1 | |
| 1 | 8 | 003-SB-004-07 | 001F/R0201 | 1627 | 5.8 | |
| 2 | 9 | 003-SB-004-08 | 002F/R0201 | 1657 | 5.3 | Apl bad green spots |
| 3 | 10 | 003-SB-038-01 | 003F/R0201 | 1726 | 4.9 | |
| 4 | 11 | 003-SB-038-04 | 004F/R0201 | 1756 | 5.2 | FID 2.5 |
| 5 | 12 | 003-SB-038-05 | 005F/R0201 | 1826 | 5.2 | FID 11.8 |
| 6 | 13 | 003-SB-038-07 | 006F/R0201 | 1855 | 5.1 | |
| 7 | 14 | 003-SB-038-08 | 007F/R0201 | 1925 | 5.6 | |
| 8 | 15 | 003-SB-038-10 | 008F/R0201 | 1954 | 5.3 | |
| 9 | 16 | 003-SB-038-11 | 009F/R0201 | 2023 | 5.5 | |
| 10 | 1 | 003-SB-038-12 | 010F/R0201 | 2053 | 4.9 | |
| 11 | 2 | 003-SB-038-14 | 011F/R0201 | 2122 | 5.0 | |
| 12 | 3 | 003-SB-DP1-08 | 012F/R0201 | 2152 | 6.3 | |
| 13 | 4 | 003-SB-073-01 | 013F/R0201 | 2221 | 5.0 | low IS - re run |
| 14 | 5 | 003-SB-073-07 | 014F/R0201 | 2250 | 5.7 | |
| 15 | 6 | 003-SB-073-07D | 015F/R0201 | 2320 | 4.8 | |
| 16 | 7 | 003-SB-073-07S | 016F/R0201 | 2349 | 5.3 | |
| 17 | 8 | 003-SB-008-12S | 017F/R0201 | 0019 | 5.4 | |
| 18 | 9 | Control | 018F/R0201 | 0048 | 5mL | |
| 19 | 10 | Meth blk | 019F/R0201 | 0117 | 5mL | |
| 20 | 11 | 003-SB-073-04 | 020F/R0201 | 0146 | 5.4g | |
| 21 | 12 | 003-SB-073-05 | 021F/R0201 | 0215 | 5.4g | |
| 22 | 13 | 003-SB-073-06 | 022F/R0201 | 0244 | 4.9g | |
| 23 | 14 | 003-SB-073-08 | 023F/R0201 | 0314 | 5.6g | |
| 24 | 15 | 003-SB-073-09 | 024F/R02[illegible] | 0343 | 5.1g | |

7/27/91

continued to Page

SIGNATURE

TITLE

WITNESS

DATE

DATE

PROJECT NO.

| | Run# | Aliq# | Sample ID | File ID | time in | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|---|
| 7/27 | 25 | 16 | Control | 025F/R0201 | 0412 | 5mL | |
| | 26 | 1 | meth blk | 026F/R0201 | 0530 | ↓ | |
| | ~~27~~ | ~~1~~ | ~~Post Bakeout blank~~ | 0 | | | VOID, not run |
| 7/27 | 27 | 1 | Control | 027F/R0201 | 1559 | 5mL | |
| | 28 | 2 | meth blk | 028F/R0201 | 1628 | 5mL | |
| | 29 | 3 | 003-TB-013-01 | 029F/R0201 | 1658 | 5mL | |
| | 30 | 4 | 003-SB-017-02* | 030F/R0101 | 1830 | 5.3g | |
| | 31 | 5 | 003-SB-016-02* | 031F/R0101 | 1900 | 4.9 | |
| | 32 | 6 | 003-SB-016-03* | 032F/R0101 | 1929 | 5.0 | sent to lab |
| | 33 | 7 | 003-SB-018-03* | 033F/R0101 | 1959 | 5.2 | |
| | 34 | 8 | 003-SB-073-10 | 034F/R0101 | 2028 | 4.8 | |
| | 35 | 9 | 003-SB-073-11 | 035F/R0101 | 2058 | 4.9 | |
| | 36 | 10 | 003-SB-073-12 | 036F/R0101 | 2127 | 5.6 | |
| | 37 | 11 | 003-SB-DP1-09 | 037F/R0101 | 2156 | 5.0 | |
| | 38 | 12 | 003-SB-073-14 | 038F/R0101 | 2226 | 4.9 | |
| | 39 | 13 | 003-SB-017-01 | 039F/R0101 | 2255 | 4.9 | |
| | 40 | 14 | 003-SB-017-04 | 040F/R0101 | 2324 | 5.3 | |
| | 41 | 15 | 003-SB-017-05 | 041F/R0101 | 2353 | 5.5 | |
| 7/28 | 42 | 16 | 003-SB-017-06 | 042F/R0101 | 0023 | 6.6 | |
| | 43 | 1 | 003-SB-017-07 | 043F/R0101 | 0052 | 5.6 | |
| | 44 | 2 | 003-SB-017-08 | 044F/R0101 | 0121 | ~~6.2~~ 5.6 | |
| | 45 | 3 | 003-SB-017-03* | 045F/R0101 | 0150 | ~~5.0~~ 6.2 | sent to lab |
| | 46 | 4 | 003-SB-017-03D | 046F/R0101 | 0219 | 5.0 | |
| | 47 | 5 | 003-SB-017-03S | 047F/R0101 | 0248 | 5.4 | |
| | 48 | 6 | meth blk | 048F/R0101 | 0317 | 5mL | |
| | 49 | 7 | 003-SB-018-02* | 049F/R0101 | 0346 | 5.7g | sent to lab |
| | 50 | 8 | 003-SB-018-02D | 050F/R0101 | 0415 | 5.1 | |
| | 51 | 9 | 003-SB-018-02S | 051F/R0101 | 0444 | 5.6 | |
| | 52 | 10 | Control | 052F/R0101 | 0513 | 5mL | |
| | 53 | 11 | meth blk | 053F/R0101 | 0541 | ↓ | |
| | 54 | 11 | Post bakeout blk | | | | |
| 7/28 | 55 | 1 | Control | 055F/R0101 | 1144 | 5mL | VOID, low IS area, reloads group |

| Type # | Aux # | Sample ID | File ID | Time | Sample Weight | Comments |
|---|---|---|---|---|---|---|
| 56 2 | 2 | meth blk | 056F/R0101 | 1213 | 5mL | VOID } FS ans low; prepare again |
| 5287 3 | 3 | ~~Control~~ 003-TB-014-01 | 057F/R0101 | 1242 | 5mL | VOID } |
| 27 | 1 | Control | 027F/R0102 | 1316 | 5mL | popped off during purge - redo |
| 28 | 2 | meth blk | 028F/R0103 | 1345 | 5mL | no IS - syringe? |
| 55 | 1 | Control | 055F/R0101 | 1414 | 5mL | VOID, replace syringe redo |
| 56 | 2 | meth blk | 056F/R0101 | 1443 | 5mL | VOID, redo for control |
| 55 | 1 | control | 055F/R0101 | 1603 | 5mL | VOID, no IS2-P |
| 55 | 1 | control | 055F/R0101 | 1713 | 5mL | new IS updated to C/Control + C/D728-1 |
| 56 | 2 | meth blk | 056F/R0101 | 1743 | ↓ | updated C/DAPIS + C/DAPIS728. |
| 57 | 3 | 003-TB-014-01 | 057F/R0101 | 1811 | | |
| 58 | 4 | 003-SB-074-02* | 058F/R0101 | 1840 | 5.6 | |
| 59 | 5 | 003-SB-074-03* | 059F/R0101 | 1909 | 4.9 | send to lab |
| 60 | 6 | 003-SB-017-10 | 060F/R0101 | 1937 | 6.3 | TCO |
| 61 | 7 | 003-SB-017-11 | 061F/R0101 | 2006 | 5.6 | TCO |
| 62 | 8 | 003-SB-017-12 | 062F/R0101 | 2035 | 5.2 | TCO |
| 63 | 9 | 003-SB-DP1-10 | 063F/R0101 | 2103 | 5.0 | listed as 003-SB-DP1-10 |
| 64 | 10 | 003-SB-016-01 | 064F/R0101 | 2132 | 5.0 | |
| 65 | 11 | 003-SB-016-04 | 065F/R0101 | 2201 | 5.1 | |
| 66 | 12 | 003-SB-016-05 | 066F/R0101 | 2230 | 5.0 | |
| 67 | 13 | 003-SB-016-06 | 067F/R0101 | 2259 | 4.5 | |
| 68 | 14 | 003-SB-016-~~08~~ DW 7/29/97 | 068F/R0101 | ~~2357~~ 2328 | 5.0 | 003-SB-016-07 |
| 69 | 15 | 003-SB-016-08 | 069F/R0101 | 2357 | 4.6 | |
| 7/29/97 70 | 16 | 003-SB-016-09 | 070F/R0101 | 0026 | 5.3 | |
| 71 | 1 | 003-SB-016-10 ✓ | 071F/R0101 | 0055 | 5.2 | clay redo low IS |
| 72 | 2 | 003-SB-018-01 | 072F/R0101 | 0125 | 5.1 | |
| 73 | 3 | 003-SB-018-04 | 073F/R0101 | 0154 | 6.4 | |
| 74 | 4 | 003-SB-018-05 | 074F/R0101 | 0223 | 5.1 | |
| 75 | 5 | 003-SB-018-06 | 075F/R0101 | 0252 | 6.4 | |
| 76 | 6 | 003-SB-018-07 | 076F/R0101 | 0321 | 5.1 | |
| 77 | 7 | 003-SB-018-12 | 077F/R0101 | 0349 | 5.3 | |
| 78 | 8 | 003-SB-018-12D | 078F/R[illegible]31 | 0418 | 6.2 | |

Work continued to Page

REVIEWED TO AND UNDERSTOOD BY

DATE

WITNESS

DATE

DATE

PROJECT NO.

BOX NO.

| | Run # | Subr # | Sample ID | File ID | Time In | Sample Ml/Pol | Comments |
|---|---|---|---|---|---|---|---|
| 7/29/89 | 79 | 9 | 003-SB-018-12S | 079F/R0101 | 0447 | 4.9 | |
| | 80 | 10 | Contcal | 080F/R0101 | 0516 | 5mL | |
| | 81 | 11 | meth blk | 081F/R0101 | 0545 | ↓ | |
| | 82 | 12 | Post bakeout blk | ~~082F/R0101~~ | — | | no run, reason unknown triggered next workday |
| 7/29/89 | 83 | 1 | Contcal | 083F/R0101 | 2049 | 5mL | |
| VOID | 84 | 2 | Meth Blk | 084F/R0101 | 2119 | | poor IS recovery - bad syringe |
| | 85 | 3 | 003-BB-001-01 | 085F/R0101 | 2148 | | First batch blank updated IS |
| | 86 | 4 | 003-TB-015-01 | 086F/R0101 | 2217 | ↓ | |
| | 87 | 5 | 003-SB-035-02* | 087F/R0101 | 2246 | 4.29 | send to lab, TCO+PCB |
| | 88 | 6 | 003-SB-035-03* | 088F/R0101 | 2316 | 5.1 | |
| | 89 | 7 | 003-SB-034-02* | 089F/R0101 | 2344 | 5.4 | |
| 7/30/89 | 90 | 8 | 003-SB-034-03* | 090F/R0101 | 0014 | 5.2 | send to lab |
| | 91 | 9 | 003-SB-018-08 | 091F/R0101 | 0043 | 4.9 | |
| | 92 | 10 | 003-SB-DP1-11 | 092F/R0101 | 0112 | 5.1 | |
| | 93 | 11 | 003-SB-DP1-12 | 093F/R0101 | 0141 | 5.1 | |
| | 94 | 12 | 003-SB-DP1-13 | 094F/R0201 | 0210 | 4.5 | |
| | 95 | 13 | 003-SB-018-09 | 095F/R0101 | 0239 | 6.6 | |
| | 96 | 14 | 003-SB-018-10 | 096F/R0101 | 0308 | 5.1 | |
| | 97 | 15 | Contcal | 097F/R0101 | 0337 | 5mL | |
| | 98 | 16 | meth blk | 098F/R0101 | 0406 | | |
| | 99 | 16 | post bakeout | 099F/R0101 | 0526 | ↓ | |
| 7/30 | 100 | 1 | Contcal | 100F/R0101 | 1534 | 5mL | OK |
| | 1 | 2 | meth blk | 001F/R0101 | 1653 | 5mL | VOID NO IS present |
| | 2 | 2 | 003-TB-016-01 | 002F/R0201 | 1729 | 5mL | VOID NO IS |
| | 21 | 2 | meth blk | 001F/R0101 | 1758 | 5mL | VOID NO IS |
| | 2 | 3 | 003-TB-016-01 | 002F/R0101 | 1828 | 5mL | VOID POOR IS |
| | 22 | 2 | meth blk | 001F/R0101 | 1900 | 5mL | VOID POOR IS |
| | 21 | 2 | 003-TB-016-01 | 002F/R0101 | 1934 | 5mL | VOID |
| | 21 | 2 | meth blk | 001F/R0202 | 2004 | 5mL | VOID |
| | X1 | 2 | meth blk | 001F/R0201 | 2100 | 5mL | OK IS upkt to CLASSES |
| | 2 | 2 | 003-TB-016-01 | 002F/R0101 | 2129 | 5mL | OK |

| | Exp # | Det # | Sample ID | File ID | time Exp | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|---|
| | 4 | 4 | 003-SB-018-13 | 004F/R0101 | 2158 | 5.2g | VOID poor IS |
| | 5 | 5 | 003-SB-018-15 | 005F/R0101 | 2227 | 6.3g | VOID poor IS |
| | 6 | 6 | 003-SB-074-01 | 006F/R0101 | 2257 | 5.3g | OK |
| | | | program terminated due to IS problems during run #6 | | | | |
| | | | run #6 and Critical OK. Repeat all. | | | | |
| 8/4/97 RC | 1 | ~~7~~ 2 | 2 Inst. blk | 001F/R0101 | 1558 | 5mL | just IS post bakeout after top replace |
| | 7 | ~~8~~ 1 | meth blk | 007F/R0101 | 1726 | 5mL | updated C/DAPS |
| | 8 | ~~9~~ 2 | MDL #1 | 008F/R0101 | 1755 | 5mL | see p. 170 for C.I.C. |
| | 9 | ~~10~~ 3 | MDL #2 | 009F/R0101 | 1824 | 5mL | " |
| | 10 | ~~11~~ 4 | MDL #3 | 007F/R0101 | 1853 | 5mL | meth file lost by mistake MDL#3 |
| | 11 | ~~12~~ 5 | MDL #4 VOID | 011F/R0101 | 1922 | 5mL | VOID poor IS |
| | 12 | ~~13~~ 6 | MDL #5 | 012F/R0101 | 1957 | 5mL | ~~VOID poor IS~~. OK |
| | 13 | ~~14~~ 7 | MDL #6 | 013F/R0101 | 2020 | 5mL | |
| | 14 | ~~15~~ 8 | MDL #7 | 014F/R0101 | 2049 | 5mL | |
| | 15 | ~~16~~ 9 | MDL #8 | 015F/R0101 | 2118 | 5mL | |
| | 16 | ~~17~~ 10 | meth blk | 016F/R0101 | 2147 | 5mL | |
| | 17 | ~~18~~ 11 | initial #1 - Now | 017F/R0101 | 2216 | 5mL | see p. 182 for new calcs. |
| | 18 | ~~19~~ 12 | initial #2 - Now | 018F/R0101 | 2246 | 5mL | use DIP CONTS for ~~samples~~ MDLs |
| | 19 | ~~20~~ 13 | initial #3 - Now | 019F/R0101 | 2315 | 5mL | |
| | 20 | ~~21~~ 14 | initial #4 - Now | 020F/R0101 | 2343 | 5mL | use OCD CONTS for printout |
| 8/5/97 RC | 21 | ~~22~~ 15 | initial #5 - Now | 021F/R0101 | 0012 | 5mL | |
| | 22 | ~~23~~ 16 | MDL #4 - Re | 022F/R0101 | 0041 | 5mL | repeated |
| | 23 | ~~24~~ 1 | meth blk | 023F/R0101 | 0110 | 5mL | |
| | 24 | 2 | QC Check | 024F/R0101 | 0139 | 5mL | 2PPB |
| | 25 | 3 | meth blk | 025F/R0101 | 0208 | 5mL | |
| | 26 | 3 | Bakeout blk | 026F/R0101 | 0427 | 5mL | IS purged out - OK |
| 8/5/97 | 24 | 1 | initial #4 - Now | 024F/R0101 | 1413 | 5mL | no new #6 intermediate used |
| | 25 | 2 | initial #5 - Now | 025F/R0101 | 1442 | 5mL | |
| | 26 | 3 | meth blk | 026F/R0101 | 1511 | 5mL | updated IS areas C/DAP15805 |
| | 27 | 4 | Critical | 027F/R0101 | 1540 | 5mL | updated to C/D805-1 |
| | 28 | 5 | meth blk | 028F/R0101 | 1609 | 5mL | |

Work continued to Page

SIGNATURE

DATE

WITNESS

PROJECT NO.

51

| | Lab # | Auto # | Sample ID | File ID | time In | sample Vol/ml | Comments |
|---|---|---|---|---|---|---|---|
| 8/6/97 | 29 | 6 | 003-SB-016-01 | 029F/R0101 | 1638 | 5mL | freshly opened 2nd vial |
| 8/6/97 | 30 | 7 | 003-SB-018-11 | 030F/R0101 | 1707 | 5.79 | |
| | 31 | 8 | 003-SB-018-13 | 032F/R0101 | 1737 | 5.89 | |
| | 33 | 9 | 003-SB-018-15 | 033F/R0101 | 1806 | 5.09 | |
| | 34 | 10 | 003-SB-074-01 | 034F/R0101 | 1835 | 4.8 | |
| | 35 | 11 | 003-SB-074-04 | 035F/R0101 | 1904 | 5.3 | |
| 8/6/97 | 37 | 12 | 003-SB-074-05 | 037F/R0101 | 1933 | 5.0 | |
| | 38 | 13 | 003-SB-074-06 | 038F/R0101 | 2002 | 5.4 | |
| | 39 | 14 | 003-SB-074-07 | 039F/R0101 | 2031 | 5.4 | |
| | 40 | 15 | 003-SB-074-08 | 040F/R0101 | 2101 | 5.6 | |
| | 41 | 16 | 003-SB-074-09 ✓ | 041F/R0101 | 2130 | 5.9 | |
| | 42 | 1 | 003-SB-074-10 | 042F/R0101 | 2200 | 4.7 | |
| | 43 | 2 | 003-SB-074-11 | 043F/R0101 | 2230 | 2.8 | TCO OVERRANGE - DILUTE + RODO CLAY |
| | 44 | 3 | 003-SB-DP1-14 ✓ | 044F/R0101 | 2259 | 3.4 | TCO OVERRANGE - RODO - CLAY |
| | 45 | 4 | 003-SB-035-01 | 045F/R0301 | 2329 | 5.0 | TCO DUE TO PREV. SPL? - RODO |
| | 46 | 5 | 003-SB-035-10 | 046F/R0301 | 2359 | 5.6 | |
| 8/6/97 | 47 | 6 | 003-SB-035-10D | 047F/R0301 | 0027 | 4.6 | |
| SPL | 48 | 7 | 003-SB-035-10S | 048F/R0301 | 0056 | 4.8 | 10ug/L spike added. |
| | 49 | 8 | Control | 049F/R0301 | 0126 | 5mL | |
| | 50 | 9 | matrix blk | 050F/R0301 | 0156 | 5mL | |
| | 51 | 10 | 003-SB-035-04 | 051F/R0301 | 0225 | 4.8 | |
| | 52 | 11 | 003-SB-035-05 | 052F/R0301 | 0254 | 5.1 | |
| | 53 | 12 | 003-SB-035-06 | 053F/R0301 | 0323 | 4.9 | |
| | 54 | 13 | 003-SB-035-07 | 054F/R0301 | 0352 | 5.4 | |
| | 55 | 14 | 003-SB-035-08 | 055F/R0301 | 0421 | 4.8 | |
| | 56 | 15 | 003-SB-035-09 | 056F/R0301 | 0451 | 5.4 | |
| | 57 | 16 | 003-SB-035-11 | 057F/R0301 | 0520 | 4.8 | |
| | 58 | 1 | 003-SB-035-12 | 058F/R0301 | 0549 | 5.8 | |
| | 59 | 2 | 003-SB-DP1-15 | 059F/R0301 | 0618 | 5.7 | |
| | 60 | 3 | 003-SB-054-02* ✓ | 060F/R0301 | 0647 | 4.9 | |
| | 61 | 4 | 003-SB-054-03* | 061F/R0301 | 0716 | 4.7 | |

| Page # | Line # | Sample ID | Kule ID | time inj | sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| 62 | 5 | Control | 062F/R0301 | 0746 | 5mL | updated meth to C/D805-6 |
| 63 | 6 | meth blk | 063F/R0301 | 0814 | 5mL | updated C/DAP15806 |
| 64 | 6 | post bakeout blk | 064F/R0301 | 1034 | 5mL | post baked out 10:13 |
| | | Using end of day initial C # 062F/R0301 as begin., initial 8/6/97 DC | | | | |
| 65 | 1 | 003-TB-017-01 | 065F/R0101 | 1229 | 5mL | |
| 66 | 2 | 003-TB-018-01 | 066F/R0101 | 1258 | 5mL | |
| 67 | 3 | 003-SB-063-02* | 067F/R0101 | 1327 | 5.5g | |
| 68 | 4 | 003-SB-063-03* | 068F/R0101 | 1357 | 5.1g | send to lab |
| 69 | 5 | 003-SB-034-01 | 069F/R0101 | 1426 | 5.2 | |
| 70 | 6 | 003-SB-034-04 | 070F/R0101 | 1456 | 5.0 | |
| 71 | 7 | 003-SB-035-01RE | 071F/R0101 | 1526 | 5.5 | initial 8/5/97 |
| 72 | 8 | 003-SB-073-01RE | 072F/R0101 | 1555 | 4.7 | FBOK init 7/25 |
| 73 | 9 | 003-SB-016-10-RE | 073F/R0101 | 1624 | 1.6 | clay FBOK init 7/29 |
| 74 | 10 | 003-SB-074-11DL | 074F/R0101 | 1653 | 0.2g | clay 0.2g/5mL TCO1 IN RANGE |
| 75 | 11 | 003-SB-DP1-14DL | 075F/R0101 | 1722 | 0.2g | clay 0.2g/5mL TCO1 IN RANGE |
| 76 | 12 | meth blk | 076F/R0101 | 1751 | 5mL | |
| 77 | 13 | 003-SB-054-01 | 077F/R0101 | 1820 | 5.0g | |
| 78 | 14 | Control | 078F/R0101 | 1849 | 5mL | |
| 79 | 15 | meth blk | 079F/R0101 | 1918 | ↓ | |
| 80 | 16 | 003-SB-003-10DL | 080F/R0101 | 1947 | → | 2.5g/50mL used 5mL |
| 81 | 1 | meth blk | 081F/R0101 | 2047 | 5mL | |
| 82 | 2 | 003-SB-054-04 | 082F/R0101 | 2116 | 4.7g | |
| 83 | 3 | 003-SB-054-05 | 083F/R0101 | 2145 | 4.8 | |
| 84 | 4 | 003-SB-054-06 | 084F/R0101 | 2214 | 6.2 | |
| 85 | 5 | 003-SB-054-07 | 085F/R0101 | 2243 | 4.7 | |
| 86 | 6 | 003-SB-054-08 | 086F/R0101 | 2313 | 5.1 | |
| 87 | 7 | 003-SB-054-09 | 087F/R0101 | 2342 | 5.0 | |
| 88 | 8 | 003-SB-054-10 | 088F/R0101 | 0011 | 5.9 | |
| 89 | 9 | 003-SB-054-11 | 089F/R0101 | 0041 | 5.3 | |
| 90 | 10 | 003-SB-054-12 | 090F/R0101 | 0110 | 4.5 | |
| 91 | 11 | 003-SB-054-13 | 091F/R0101 | 0139 | 6.1 | |

8/6/97 DC

8/7/97 DC

Work continued on Page

PROCESSED TO AND UNDERSTOOD BY

SIGNATURE DATE WITNESS DATE

| | Lab # | Index # | Sample ID | File ID | Time | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|---|
| 8/6/97 | 92 | 12 | 003-SB-054-14 | 092F/R0101 | 0208 | 5.1 | |
| 8/7/97 | 93 | 13 | 003-SB-DP1-16 | 093F/R0101 | 0238 | 5.2 | |
| | 94 | 14 | 003-SB-DP1-17 | 094F/R0101 | 0307 | 2.6 | Clay |
| | 95 | 15 | 003-SB-054-15 | 095F/R0101 | 0336 | 2.7 | |
| | 96 | 16 | 003-SB-054-15D | 096F/R0101 | 0405 | 3.3 | |
| | 97 | 1 | 003-SB-054-15S | 097F/R0101 | 0434 | 2.6 | 2ul spike added |
| | 98 | 2 | Control | 098F/R0101 | 0523 | 5mL | |
| | 99 | 3 | Meth blk | 099F/R0101 | 0533 | | |
| | 100 | 3 | Postbakeout blk | 100F/R0101 | 1003 | | PID detector @ 51°C, rest 220°C |
| 8/8/97 | | | Instrument down - needs PID heater elements | | | | |
| 8/9/97 | | | Elements installed - instrument down because of leaks | | | | |
| 8/10/97 | | | Same as above | | | | |
| 8/11/97 | | | Same as above | | | | |
| 8/12/97 | | | Repaired at 3PM by Mitch Baker, On-site Instruments | | | | |
| 8/12/97 | 94 | 11 | Initial #1 | 094F/R0101 | 1953 | 5mL | OCD INITG / PID INITG. meth |
| | 95 | 12 | initial #2 | 095F/R0101 | 2022 | | |
| | 96 | 13 | initial #3 | 096F/R0101 | 2052 | | |
| | 97 | 14 | initial #4 | 097F/R0101 | 2122 | | |
| | 98 | 15 | initial #5 | 098F/R0101 | 2151 | | |
| | 99 | 16 | meth blk | 099F/R0101 | 2221 | | Copis 8/12 / dopis 8/12 |
| | 100 | 1 | QCcheck | 100F/R0101 | 2251 | | |
| | 02 | 2 | meth blk | 002F/R0101 | 2320 | | Copis 8/22 / dopis 8/22 |
| | 03 | 3 | 003-TB-019-01 | 003F/R0101 | 2349 | | surrogate (RB4) not recd |
| 8/13 | 04 | 4 | 003-TB-020-01 | 004F/R0101 | 0019 | | #019-010K |
| | 05 | 5 | 003-TB-021-01 | 005F/R0101 | 0048 | | |
| | 06 | 6 | 003-TB-022-01 | 006F/R0101 | 0118 | | |
| | 07 | 7 | 003-SB-023-02* ✓ | 007F/R0101 | 0147 | 4.9 g | low ES - redo |
| | 08 | 8 | 003-SB-023-03* | 008F/R0101 | 0216 | 5.2 | |
| | 09 | 9 | 003-SB-P12-02* | 009F/R0101 | 0246 | 5.4 | |
| | 10 | 10 | 003-SB-P12-03* | 010F/R0201 | 0315 | 4.7 | |
| | 11 | 11 | 003-SB-063-01 | 011F/R0201 | 0344 | 4.8 | |
| | 12 | 12 | 003-SB-063-06 | 012F/R0201 | 0414 | 5.8 | |
| | 13 | 13 | 003-SB-063-07 | 013F/R0201 | 0443 | 5.6 | |

8/12/97 [illegible]

8/12/97 cont.

| Page # | Line # | Sample ID | Field ID | Time | Sample Wt/Vol | Comments |
|---|---|---|---|---|---|---|
| 8/13 14 | 14 | 003-SB-063-08 | 014F/R0201 | 0512 | 4.8g | |
| 15 | 15 | 003-SB-063-09 | 015F/R0201 | 0541 | ~~5.2~~ 4.6 | 4.6g. used |
| 16 | 16 | 003-SB-063-10 | 016F/R0201 | 0611 | 5.2 | |
| 17 | 1 | 003-SB-063-11 | 017F/R0201 | 0640 | 5.2 | |
| 18 | 2 | 003-SB-063-12 | 018F/R0201 | 0709 | 6.2 | |
| 19 | 3 | 003-SB-DP1-18 | 019F/R0201 | 0738 | 7.4 | |
| 20 | 4 | 003-SB-P06-06 | 020F/R0201 | 0807 | 6.8 | |
| 21 | 5 | 003-SB-P06-06D | 021F/R0201 | 0836 | 5.2 | |
| 22 | 6 | 003-SB-P06-06S | 022F/R0201 | 0906 | 5.1 | 2ml spike |
| 23 | 7 | Control | 023F/R0201 | 0935 | 5mL | C/D 812-1. meth |
| 24 | 8 | meth blk | 024F/R0201 | 1005 | 5mL | capis 8/23/DAPI 8/23 |
| 25 | 9 | 003-SB-037-01 | 025F/R0201 | 1034 | 2.8g | clayey sand |
| 26 | 10 | 003-SB-037-04 | 026F/R0201 | 1104 | 5.1g | |
| 27 | 11 | 003-SB-037-06 | 027F/R0201 | 1133 | 5.6 | |
| 28 | 12 | 003-SB-037-08 | 028F/R0201 | 1203 | 7.2 | |
| 29 | 13 | 003-SB-037-09 | 029F/R0201 | 1233 | 4.8 | |
| 30 | 14 | 003-SB-P06-01 | 030F/R0201 | 1302 | 5.7 | |
| 31 | 15 | 003-SB-P06-03 | 031F/R0201 | 1332 | 4.8 | |
| 32 | 16 | 003-SB-P06-04 | 032F/R0201 | 1401 | 5.0 | |
| 33 | 1 | 003-SB-DP1-19 | 033F/R0201 | 1431 | 5.3 | |
| 34 | 2 | 003-SB-P01-01 | 034F/R0201 | 1500 | 6.8 | fine sand |
| 35 | 3 | 003-SB-P01-02 | 035F/R0201 | 1530 | 6.7 | fine sand |
| 36 | 4 | 003-SB-P01-04 | 037F/R0301 | 1559 | 4.5 | |
| 37 | 5 | 003-SB-P01-06 | 038F/R0301 | 1629 | 4.9 | |
| 38 | 6 | 003-SB-P01-07 | 036F/R0401 | 1658 | 4.5 | |
| 39 | 7 | 003-SB-P01-08 | 039F/R0501 | 1728 | 5.1 | |
| 40 | 8 | 003-SB-P01-08D | 040F/R0501 | 1757 | 5.4 | |
| 41 | 9 | 003-SB-P01-08S | 041F/R0501 | 1826 | 6.2 | 2ml spike |
| 42 | 10 | Control | 042F/R0501 | 1856 | 5mL | 5mL C/D 812-2. meth/new ID |
| 43 | 11 | meth blk | 043F/R0501 | 1925 | 5mL | Capis 124/Dapis 124 |
| 44 | 12 | 003-SB-DP1-20 | 044F/R0501 | 1954 | 4.9g | |

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PROJECT NO

BOOK NO

55

SIGNATURE

DATE

WITNESS

DATE

DATE

| Run # | Index # | Sample ID | File ID | Run time | Sample weight | Comments |
|---|---|---|---|---|---|---|
| 45 | 13 | 003-SB-023-01 | 045F/R0501 | 2023 | 5.1g | |
| 46 | 14 | 003-SB-023-04 | 046F/R0501 | 2052 | 5.0 | |
| 47 | 15 | 003-SB-023-06 | 048F/R0601 | 2121 | 5.1 | |
| 48 | 16 | 003-SB-023-07 | 049F/R0601 | 2150 | 4.6 | |
| 49 | 1 | 003-SB-023-08 | 050F/R0601 | 2219 | 6.7 | |
| 50 | 2 | 003-SB-023-09 | 051F/R0601 | 2249 | 5.6 | |
| 51 | 3 | 003-SB-023-10 ✓ | 052F/R0601 | 2318 | 5.7 | high ADZS - redo |
| 52 | 4 | 003-SB-023-12 | 053F/R0601 | 2348 | 5.6 | |
| 8/14 53 | 5 | 003-SB-023-13 ✓ | 054F/R0601 | 0017 | 5.0 | dilute & redo |
| 54 | 6 | 003-SB-023-14 ✓ | 055F/R0601 | 0047 | 5.0 | dilute & redo |
| 55 | 7 | 003-SB-DP1-21 ✓ | 056F/R0601 | 0116 | 4.8 | " " |
| 56 | 8 | 003-SB-P12-06 | 057F/R0601 | 0146 | 2.7 | clay no urun dup low tod |
| 57 | 9 | 003-SB-P12-06D | 058F/R0601 | 0215 | 3.0 | clay - sig low tod |
| 58 | 10 | 003-SB-P12-06S | 059F/R0601 | 0244 | 2.9 | 2ul low TS - sig dup low tod |
| 59 | 11 | Control | 060F/R0601 | 0314 | 5mL | |
| 60 | 12 | meth. blk | 061F/R0601 | 0343 | 5mL | Capi125, dupi125 |
| 61 | 13 | 003-TB-023-01 | 062F/R0601 | 0413 | 5mL | surrout redo |
| 62 | 14 | 003-TB-024-01 | 063F/R0601 | 0442 | 5mL | " " " |
| 63 | 15 | 003-TB-025-01 | 064F/R0601 | 0512 | 5mL | " " " |
| 64 | 16 | 003-SB-P12-01 | 065F/R0601 | 0541 | 5.5g | |
| 65 | 1 | 003-SB-P12-04 | 066F/R0601 | 0610 | 5.0g | clay and sand |
| 66 | 2 | 003-SB-P12-08 ✓ | 069F/R0701 | 0640 | 3.1g | clay - low PID TS - redo |
| 67 | 3 | 003-SB-P12-09 | 070F/R0701 | 0709 | 7.4 | |
| 68 | 4 | 003-SB-P12-10 | 071F/R0701 | 0739 | 7.0 | |
| 69 | 5 | 003-SB-036-01 ✓ | 072F/R0701 | 0808 | 4.8 | low PID TS - rerun |
| 70 | 6 | 003-SB-036-02 | 073F/R0701 | 0838 | 7.6 | |
| 71 | 7 | 003-SB-036-03 | 074F/R0701 | 0907 | 6.2 | |
| 72 | 8 | 003-SB-036-04 | 075F/R0701 | 0937 | 5.0 | |
| 73 | 9 | 003-SB-036-06 | 076F/R0701 | 1006 | 4.4 | |
| 74 | 10 | 003-SB-036-06D | 077F/R0701 | 1036 | 4.8 | |
| 75 | 11 | 003-SB-036-06S | 078F/R0701 | 1106 | 4.7 | 2ul spike |
| 76 | 12 | meth blk | 079F/R0701 | 1135 | 5mL | |
| 77 | 13 | 003-SB-074-09DL ✓ | 080F/R0701 | 1205 | 1.4g | |
| 78 | 14 | 003-SB-054-02 RE | 081F/R0701 | 1234 | 4.5g | |
| 79 | 15 | Control | 082F/R0701 | 1304 | 5mL | |

| Date | Sample # | Date # | Sample ID | File ID | Out Time | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|---|
| | 80 | 16 | Meth blk | 083F/R0701 | 1333 | 5mL | |
| | 81 | 16 | Post Bakeout blk | 084F/R0701 | 1536 | 5mL | no ZS |
| | | | ~~D. Kilmartin returned to site after death of father~~ | | | | ~~8/26/97~~ |
| | 1 | 1 | ~~Post bakeout blank~~ | ~~001F/R0202~~ | ~~1552~~ | ~~5mL~~ | ~~no ZS~~ |
| | | | reporting samples run on 8/14/97 by D. Kilmartin | | | | |
| 8/14/97 | 85 | 1 | Control | 085F/R0101 | 1857 | 5mL | |
| | 86 | 2 | Meth blk | 086F/R0101 | 1927 | | |
| | 87 | 3 | 003-TB-020-01 R6 | 087F/R0101 | 1957 | | fresh VOA vials used for substitution |
| | 88 | 4 | 003-TB-021-01 R6 | 088F/R0101 | 2027 | | " " " |
| | 89 | 5 | 003-TB-022-01 R6 | 089F/R0101 | 2056 | | " " " |
| | 90 | 6 | 003-TB-023-01 R6 | 090F/R0101 | 2126 | | |
| | 91 | 7 | 003-TB-024-01 R6 | 091F/R0101 | 2156 | | |
| | 92 | 8 | ~~003-TB-025-01 R6~~ | 092F/R0101 | 2225 | | |
| | 93 | 9 | 003-SB-023-02 R6 ✓ | 093F/R0101 | 2254 | 5.1 g | all 01C |
| | 94 | 10 | 003-SB-023-13 DL ✓ | 094F/R0101 | 2324 | 1.4 | 10DL all 01C |
| | 95 | 11 | 003-SB-023-13 DL ✓ | 095F/R0101 | 2354 | 1.9 | all 01C |
| 8/14/96 | 96 | 12 | 003-SB-023-14DL ✓ | 096F/R0101 | 0023 | 1.7 | all 01C |
| | 97 | 13 | 003-SB-P1-21 DL ✓ | 097F/R0101 | 0053 | 1.4 | all 01C |
| | 98 | 14 | 003-SB-P12-08 R6 ✓ | 098F/R0101 | 0122 | 1.2 | clay all 01C |
| | 99 | 15 | 003-SB-036-01 R6 ✓ | 099F/R0101 | 0152 | 4.9 | all 01C |
| | 100 | 16 | Control | 100F/R0101 | 0221 | 5mL | |
| | 1 | 1 | Meth blk | 001F/R0201 | 0251 | | |
| | 2 | 1 | Post Bakeout blk | 002F/R0201 | 1108 | | no ZS |
| 8/26/97 | | | D. Kilmartin returned to site after death of father | | | | 8/26/97 |
| | 1 | 1 | Post bakeout blk | 001F/R0202 | 1552 | 5mL | no ZS run @ 200°C for 1 degree |
| | 2 | 1 | Initial 1 | 002F/R0101 | 2014 | | OCDINIT 7. meth PIDINIT 7. meth. |
| | 3 | 2 | Initial 2 | 003F/R0101 | 2043 | | |
| | 4 | 3 | Initial 3 | 004F/R0101 | 2112 | | |
| | 5 | 4 | Initial 4 | 005F/R0101 | 2142 | | |
| | 6 | 5 | Initial 5 | 006F/R0101 | 2211 | | |

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PROJECT NO.
BOOK NO.

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| | Run | Vial | Sample ID | File ID | Run time | Sample volume | Comments |
|---|---|---|---|---|---|---|---|
| 8/26 | 7 | 6 | meth. blk | 007F/R0101 | 2240 | 5mL | |
| | 8 | 7 | QCCheck | 008F/R0101 | 2309 | 5mL | 40uL |
| | 9 | 8 | methblk | 009F/R0101 | 2338 | 5mL | |
| 8/27 | 10 | 9 | Pastbreakout | 010F/R0101 | 0205 | 5mL | marked/removed as control |
| | | | 8/27/97 begin continuous operation | | | | |
| 8/27 | 10 | 1 | Control | 010F/R0101 | 1209 | 5mL | C/D 827-1 |
| | 11 | 2 | methblk | 011F/R010 | 1238 | ↓ | C/DAP18271 |
| | 12 | 3 | 003-TB-026-01 | 012F/R0101 | 1307 | | |
| | 13 | 4 | 003-TB-027-01 | 013F/R0101 | 1336 | ↓ | |
| | 14 | 5 | 003-SB-032-02* ✓ | 014F/R0101 | 1405 | 5.0g | sph high, chg sig for blanks, rel. to PID |
| | 15 | 6 | methblk | 016F/R0201 | 1438 | 5.0mL | chromat inst. |
| | 16 | 7 | methblk | 017F/R0201 | 1507 | ↓ | ↓ |
| | 17 | 8 | 003-SB-032-03* ✓ | 018F/R0201 | 1536 | 0.4g | redo-PID 28 observed |
| | 18 | 9 | meth blk | 019F/R0201 | 1606 | 5.0mL | Chromatorist-no $H_2S$ PID |
| | 19 | 10 | methblk | 020F/R0201 | 1635 | ↓ | ↓ |
| | 20 | 11 | 003-SB-P02-09 | 021F/R0201 | 1704 | 4.9g | |
| | 21 | 12 | 003-SB-P02-11 | 022F/R0201 | 1734 | 5.5 | |
| | 22 | 13 | 003-SB-P02-12 | 023F/R0201 | 1803 | 5.3 | |
| | 23 | 14 | 003-SB-P02-13 | 024F/R0201 | 1833 | 4.8 | |
| | 24 | 15 | 003-SB-P02-14 | 025F/R0201 | 1902 | 5.1 | |
| | 25 | 16 | 003-SB-058-01 | 026F/R0201 | 1931 | 2.8 | Bad smell |
| | 26 | 1 | 003-SB-058-02 | 027F/R0201 | 2000 | 5.3 | mislabeled as 003-SB-058-01 |
| | 27 | 2 | 003-SB-058-03 | 028F/R0202 | 2030 | 5.2 | " " 003-SB-P02-12-pg. 4 |
| | 28 | 3 | 003-SB-058-04 | 029F/R0203 | 2059 | 4.5 | |
| | 29 | 4 | 003-SB-058-06 | 030F/R0101 | 2129 | 5.5 | |
| | 30 | 5 | 003-SB-P02-02 | 031F/R0101 | 2159 | 5.2 | |
| | 31 | 6 | 003-SB-P02-01 | 032F/R0101 | 2228 | 6.0 | |
| | 32 | 7 | 003-SB-P02-010 | 033F/R0101 | 2257 | 6.1 | |
| | 33 | 8 | 003-SB-P02-015 | 034F/R0101 | 2325 | 5.8 | 2uL MSadded |
| | 34 | 9 | Control | 035F/R0101 | 2354 | 5.0mL | C 827-2. mth, D827-2. mth |
| 8/28 | 35 | 10 | meth blk | 036F/R0101 | 0023 | 5.0mL | updated 28 - C/Dapi 8272. mth |
| | 36 | 11 | 003-SB-P02-03 | 037F/R0101 | 0051 | 5.2g | |
| | 37 | 12 | 003-SB-P02-04 | 038F/R0101 | 0120 | 5.5 | |
| | 38 | 13 | 003-SB-P02-07 | 039F/R0101 | 0148 | 4.9 | |

| Run # | Out # | Sample ID | File ID | Inj time | Sample vol/vol | Comments |
|---|---|---|---|---|---|---|
| 8/28 cont. 39 | 14 | 003-SB-P02-08 | 040F/R0101 | 0217 | 5.19 | |
| 40 | 15 | 003-SB-058-07 | 041F/R0101 | 0245 | 5.2 | |
| 41 | 16 | 003-SB-058-08 | 042F/R0101 | 0314 | 4.7 | |
| 42 | 1 | 003-SB-DP1-24 | 043F/R0101 | 0342 | 5.1 | |
| 43 | 2 | 003-SB-058-09 | 044F/R0101 | 0411 | 5.1 | |
| 44 | 3 | 003-SB-058-11 | 045F/R0101 | 0439 | 5.9 | |
| 45 | 4 | 003-SB-058-12 | 046F/R0101 | 0508 | 5.2 | |
| 46 | 5 | 003-SB-058-13 | 047F/R0101 | 0537 | 5.3 | |
| 47 | 6 | 003-SB-058-14 | 048F/R0101 | 0606 | 5.1 | |
| 48 | 7 | 003-SB-DP1-26 | 049F/R0101 | 0636 | 4.8 | |
| 49 | 8 | 003-SB-007-01 | 050F/R0101 | 0705 | 4.9 | |
| 50 | 9 | 003-SB-007-02 | 051F/R0101 | 0733 | 5.3 | |
| 51 | 10 | 003-SB-007-04 | 052P/R0101 | 0804 | 5.1 | |
| 52 | 11 | 003-SB-P02-10 | 053P/R0101 | 0834 | ~~4.8~~ 4.8 | file lost - but trace as MS+DUP |
| 53 | 12 | 003-SB-P02-10D | 054P/R0101 | 0904 | 4.3 | unweighing. |
| 54 | 13 | 003-SB-P02-10S | 055F/R0101 | 0934 | 4.6 | for trace |
| 55 | 14 | Control | 056F/R0101 | 1004 | 5mL | surr used C/D827-3 |
| 56 | 15 | meth. blk | 057F/R0101 | 1035 | 5mL | updated IS C/dapi8273 |
| 57 | 16 | 003-SB-TB-028-01 | 058F/R0101 | 1106 | 5mL | |
| 58 | 1 | 003-TB-029-01 | 059F/R0101 | 1138 | 5mL | |
| 59 | 2 | 003-TB-030-01 | 060F/R0101 | 1208 | 5mL | |
| 60 | 3 | 003-TB-031-01 | 061F/R0101 | 1240 | 5mL | |
| 61 | 4 | 003-SB-007-06 ✓ | 062F/R0101 | 1313 | 5.29 | solo-bottle |
| 62 | 5 | 003-SB-007-07 | 063F/R0101 | 1343 | 5.29 | |
| 63 | 6 | 003-SB-007-08 | 064F/R0101 | 1412 | 5.3 | |
| 64 | 7 | 003-SB-007-09 | 065F/R0101 | 1442 | 5.6 | |
| 65 | 8 | 003-SB-007-10 | 066F/R0101 | 1512 | 5.6 | |
| 66 | 9 | 003-SB-DP1-27 | 067F/R0101 | 1541 | 6.3 | |
| 67 | 10 | 003-SB-DP1-28 | 068F/R0101 | 1611 | 5.1 | |
| 68 | 11 | 003-SB-027-01 | 069F/R0101 | 1640 | 5.0 | |
| 69 | 12 | 003-SB-027-02 | 070F/R0101 | 1711 | 5.2 | |

note files 54 to 80 in 072897 data

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| | Run | Aliq# | Sample ID | File ID | Inj time | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|---|
| 8/28/92 cont | 70 | 13 | 003-SB-027-03 | 071F/R0101 | 1753 | 4.7 | Grots-nulls |
| | 71 | 14 | 003-SB-027-04 | 072F/R0101 | 1826 | 5.2 | Loads-nulls |
| | 72 | 15 | 003-SB-030-01 | 073F/R0101 | 1859 | 6.3 | |
| | 73 | 16 | 003-SB-007-03 | 074F/R0101 | 1930 | 6.3 | |
| | 74 | 1 | 003-SB-007-03D | 075F/R0101 | 2003 | 6.3 | |
| | 75 | 2 | 003-SB-007-03S | 076F/R0101 | 2037 | 5.6 | Grots-nulls 2uL IS added |
| | 76 | 3 | Critical | 077F/R0101 | 2202 | 5mL | |
| | 77 | 4 | Multilevel | 078F/R0101 | 2249 | 5mL | C/DAP 18281 |
| | 78 | 5 | 003-SB-030-03 | 079F/R0101 | 2321 | 5.2g | |
| | 79 | 6 | 003-SB-P09-01 | 080F/R0101 | 2352 | 5.3g | |
| 8/29/92 | 80 | 7 | 003-SB-P09-02 | 081F/R0101 | 0043 | 5.0g | |
| | 81 | 8 | 003-SB-P09-03 | 082F/R0101 | 0116 | 4.9 | |
| | 82 | 9 | 003-SB-P09-04 | 083F/R0101 | 0147 | 4.9 | |
| | 83 | 10 | 003-SB-P09-06 | 084F/R0101 | 0217 | 2.6/50mL | 5mL used - HC |
| | 84 | 11 | 003-SB-P09-07 | 085F/R0101 | 0246 | 3.7g/50mL | 5mL used - HC |
| | 85 | 12 | 003-SB-P09-08 | 086F/R0101 | 0316 | 3.6g | |
| | 86 | 13 | 003-SB-DP1-29 | 087F/R0101 | 0345 | 3.2g | |
| | 87 | 14 | 003-SB-DP1-30 | 088F/R0101 | 0414 | 4.5g | |
| | 88 | 15 | 003-SB-055-02 | 089F/R0101 | 0443 | 4.9 | |
| | 89 | 16 | 003-SB-055-03 | 090F/R0101 | 0513 | 5.4 | |
| | 90 | 1 | 003-SB-055-04 | 091F/R0101 | 0542 | 4.7 | |
| | 91 | 2 | 003-SB-055-06 | 092F/R0101 | 0611 | 5.6 | |
| | 92 | 3 | 003-SB-055-07 | 093F/R0101 | 0641 | 4.8 | |
| | 93 | 4 | 003-SB-055-08 | 094F/R0101 | 0710 | 5.4 | |
| | 94 | 5 | 003-SB-030-02 | 095F/R0101 | 0739 | 5.4 | Grots-nulls |
| | 95 | 6 | 003-SB-030-02D | 096F/R0101 | 0809 | 4.6 | |
| | 96 | 7 | 003-SB-030-02S | 097F/R0101 | 0838 | 5.1 | 2uL IS added |
| | 97 | 8 | Critical | 098F/R0101 | 0907 | 5.0mL | |
| | 98 | 9 | Multilevel | 099F/R0101 | 0937 | 5.0mL | C/DAP 18282 |
| | 99 | 10 | 003-TB-032-01 | 100F/R0101 | 1006 | 5.0mL | |
| | 100 | 11 | 003-TB-033-01 | 001F/R0201 | 1036 | 5.0mL | |
| | 101 | 12 | 003-SB-055-09 | 002F/R0201 | 1105 | 4.5g | |
| | 102 | 13 | 003-SB-055-10 | 003F/R0201 | 1135 | 4.5g | |
| | 103 | 14 | 003-SB-DP1-31 | 004F/R0201 | 1204 | 4.5 | |
| | 104 | 15 | 003-SB-055-11 | 005F/R0201 | 1234 | 4.5 | |

| | Lab Seq | Field Seq | Sample ID | File ID | Start Time | Sample Vol/Wt | Comments |
|---|---|---|---|---|---|---|---|
| 8/29/97 Cont. | 105 | 16 | 003-SB-055-12 | 006F/R0201 | 1304 | 5.6g | |
| | 106 | 1 | 003-SB-055-13 | 007F/R0201 | 1334 | 5.7 | |
| | 107 | 2 | 003-SB-055-14 | 008F/R0201 | 1404 | 5.5 | |
| | 108 | 3 | 003-SB-032-01 | 009F/R0201 | 1434 | 1.2 | redo - HC |
| | 109 | 4 | 003-SB-032-05 | 010F/R0201 | 1504 | 4.2 | |
| | 110 | 5 | 003-SB-032-06 | 011F/R0201 | 1535 | 5.9 | |
| | 111 | 6 | 003-SB-032-08 | 012F/R0201 | 1605 | 4.8 | |
| | 112 | 7 | 003-SB-DP1-32 | 013F/R0201 | 1635 | 5.0 | |
| | 113 | 8 | 003-SB-DP1-33 | 014F/R0201 | 1705 | 0.59 | FS coel - HC redo |
| | 114 | 9 | 003-SB-055-01 | 015F/R0201 | 1734 | 4.8 | |
| | 115 | 10 | 003-SB-055-01D | 016F/R0201 | 1804 | 5.3 | low IS - lab dup non-det |
| | 116 | 11 | 003-SB-055-01S | 017F/R0201 | 1834 | 5.3 | 2ul MS added |
| | 117 | 12 | Critical | 018F/R0201 | 1923 | 5.0ml | |
| | 118 | 13 | Meth Blk | 019F/R0201 | 1933 | 5.0ml | |
| | 119 | 13 | Post Baked Blk | 020F/R0201 | 2055 | 5.0ml | no IS |
| | | | Instrument shutdown for shift | | | | |
| 9/2/97 | | | See daily log. Instrument problem, file written over, seq. & initial restarted unused data purged. Lamp cleaned cylinders changed. | | | | |
| | 1 | 1 | Meth Blk | 021F/R0101 ✓ | 2323 | 5.0ml | C/DAP19021 |
| | 2 | 2 | Initial 1 | 022F/R0101 ✓ | 2353 | 5.0ml | initial 8 begins |
| 9/3 | 3 | 3 | Initial 2 | 023F/R0101 ✓ | 0022 | 5.0ml | |
| | 4 | 4 | Initial 3 | 024F/R0101 ✓ | 0051 | | |
| | 5 | 5 | Initial 4 | 025F/R0101 ✓ | 0120 | | |
| | 6 | 6 | Initial 5 | 026F/R0101 ✓ | 0149 | | |
| | 7 | 7 | Meth blk | 027F/R0101 ✓ | 0218 | | C/DAP19022 |
| | 8 | 8 | QC Check | 028F/R0101 ✓ | 0247 | | |
| | 9 | 9 | Meth blk | 029F/R0101 ✓ | 0316 | | |
| | 10 | 10 | 003-TB-034-01 | 030F/R0101 ✓ | 0345 | | |
| | 11 | 11 | 003-SB-032-09 | 031F/R0101 ✓ | 0414 | 4.6g | |
| | 12 | 12 | 003-SB-032-10 | 032F/R0101 ✓ | 0443 | 4.6g | |
| | 13 | 13 | 003-SB-032-11 | 033F/R[illegible]01 ✓ | 0512 | 5.0g | |

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PROJECT NO.
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| Run # | Autos # | Sample ID | File ID | Log Time | Sample Weight | Comments |
|---|---|---|---|---|---|---|
| | 14 | 003-SB-032-12 | 034 F/R0101 ✓ | 0541 | 4.8g | |
| | 15 | 003-SB-032-13 | 035 F/R0101 ✓ | 0610 | 4.9g | |
| | 16 | 003-SB-032-14 | 036 F/R0101 ✓ | 0639 | 5.0g | |
| | 17 | 003-SB-055-12 | 038 F/R0101 ✓ | 0736 | 5.1g | |
| | 18 | 003-SB-055-12D | 039 F/R0101 ✓ | 0805 | 5.7g | |
| | 19 | 003-SB-055-12S | 040 F/R0101 ✓ | 0834 | 5.4g | 2.0 ug/ml MS |
| | 20 | Cont Cal | 041 F/R0101 ✓ | 0903 | 5.0 ml | |
| | 21 | Method blank | 042 F/R0101 ✓ | 0932 | 5.0 ml | |
| | 22 | Post Bakeout | 043 F/R0101 ✓ | 1154 | 5.0 ml | |
| | 1 | Cont Cal | 044 F/R0101 ✓ | 1419 | 5.0 ml | |
| | 2 | Method blank | 045 F/R0101 ✓ | 1449 | | no IS void use trip blank |
| | 3 | 003-TB-035-01 | 046 F/R0101 ✓ | 1518 | 5 ml | |
| | 4 | 003-SB-032-02DL✓ | 047 F/R0101 ✓ | 1547 | 1.0g | 1.g / 5.0 mL |
| | 5 | Method blank | 048 F/R0101 ✓ | 1616 | 5 mL | |
| | 6 | 003-SB-032-03DL✓ | 049 F/R0101 ✓ | 1645 | 1.1g | 1.1g / 5mL |
| | 7 | Method blank | 050 F/R0101 ✓ | 1714 | 5 mL | |
| | 8 | 003-SB-032-04✓ | 051 F/R0101 ✓ | 1743 | 1.3g | dilute to redo TIC |
| | 9 | 003-SB-007-06RE✓ | 052 F/R0101 ✓ | 1812 | 5.3g | |
| | 10 | 003-SB-027-03RE✓ | 053 F/R0101 ✓ | 1841 | 5.8g | |
| | 11 | 003-SB-027-04RE✓ | 054 F/R0101 ✓ | 1910 | 5.0g | |
| | 12 | 003-SB-030-02RE✓ | 055 F/R0101 ✓ | 1939 | 4.9g | |
| | 13 | 003-SB-P08-01 | 056 F/R0101 ✓ | 2007 | 5.8g | |
| | 14 | 003-SB-P08-02 * | 057 F/R0101 ✓ | 2036 | 5.0g | |
| | 15 | 003-SB-P08-03 * | 058 F/R0101 ✓ | 2105 | 5.1g | send to lab |

| No | Sample ID | File ID | | Inj time | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| 16 | 003-SB-P08-04 | 059 F/R 0101 | ✓ | 2134 | 4.9g | |
| 17 | 003-SB-P08-05 | 060 F/R 0101 | ✓ | 2203 | 5.3g | |
| 18 | 003-SB-P08-06 | 061 F/R 0101 | ✓ | 2232 | 5.2g | Void No IS redo |
| 19 | 003-SB-P08-07 | 062 F/R 0101 | ✓ | 2301 | 4.8g | |
| 20 | 003-SB-P08-07D | 063 F/R 0101 | ✓ | 2330 | 5.2g | Low IS, last dup. don't redo |
| 21 | 003-SB-P08-07S | 064 F/R 0101 | ✓ | 0000 | 5.0g | 2 ul of MS |
| 21 | ~~003-SB~~ Cont Cal | 065 F/R 0101 | ✓ | 0029 | 5mL | |
| 22 | Method Blank | 066 F/R 0101 | ✓ | 0058 | 5mL | C/DAPI 9032 |
| 23 | 003-SB-P08-08 | 067 F/R 0101 | ✓ | 0127 | 6.0g | |
| 24 | 003-SB-DP1-034 | 068 F/R 0101 | ✓ | 0156 | 6.6g | |
| 25 | 003-SB-032-04 DL | 069 F/R 0101 | ✓ | 0225 | 1.2g | 1.2g / 5.0mL |
| 26 | 003-SB-P09-01 DL | 070 F/R 0101 | ✓ | 0254 | 1.2g | 1.2g / 5.0mL |
| 27 | 003-SB-P09-07 RE | 071 F/R 0101 | ✓ | 0323 | 0.8g | 0.8g / 5.0mL |
| 28 | 003-SB-P09-08 RE | 072 F/R 0101 | ✓ | 0351 | 1.0g | |
| 29 | 003-SB-032-01 DL | 073 F/R 0101 | ✓ | 0420 | 1.0g | 1.0g / 5.0mL |
| 30 | 003-SB-DP1-33DL | 074 F/R 0101 | ✓ | 0449 | 1.2g | |
| 31 | Cont Cal | 075 F/R 0101 | ✓ | 0518 | 5mL | |
| 32 | Method blank | 076 F/R 0101 | ✓ | 0547 | 5mL | C/DAPI 9033 |
| 33 | Post bakeout blank | 077 F/R 0101 | ✓ | 0808 | 5mL | |
| 1 | Cont Cal | 078 F/R 0101 | ✓ | 1759 | 5mL | C/DAPI 9041 BTEX missing but not in sample |
| 2 | Method blank | 079 F/R 0101 | ✓ | 1828 | 5mL | C/DAPI 9041 |
| 3 | 003-TB-036-01 | 080 F/R 0101 | ✓ | 1857 | 5mL | |
| 4 | 003-SB-P08-06 RE | 081 F/R 0101 | ✓ | 1927 | 4.8g | |
| 5 | 003-SB-P08-09 | 082 F/R 0101 | ✓ | 1956 | 4.8g | |
| 6 | 003-SB-P08-12 | 083 F/R 0101 | ✓ | 2025 | 6.3g | |
| 7 | 003-SB-P08-13 | 084 F/R 0101 | ✓ | 2055 | 5.0g | |
| 8 | 003-SB-P08-14 | 085 F/R 0101 | ✓ | 2124 | 5.3g | |
| 9 | 003-SB-070-01 | 086 F/R 0101 | ✓ | 2153 | 4.8g | |
| 10 | 003-SB-070-02 * | 087 F/R 0101 | ✓ | 2223 | 4.7g | |
| 11 | 003-SB-070-03 * | 088 F/R 0101 | ✓ | 2252 | 5.0g | Send to Lab |

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| Run# | Auto# | Sample ID | File ID | Inj time | Sample wt/vol | comments |
|---|---|---|---|---|---|---|
| | 12 | 003-SB-070-04 | 089F/R0101 ✓ | 2321 | 4.9g | |
| | 13 | 003-DP1-35 | 090F/R0101 ✓ | 2350 | 4.6g | |
| | 14 | 003-SB-P08-15 ✓ | 091F/R0101 ✓ | 0019 | 4.7g | |
| | 15 | 003-SB-P08-15D | 092F/R0101 ✓ | 0049 | 4.7g | |
| | 16 | 003-SB-P08-15S | 093F/R0101 ✓ | 0118 | 4.7g | 2ug MS |
| | 17 | Cont Cal | 094F/R0101 ✓ | 0147 | 5 mL | |
| | 18 | Method blank | 095F/R0101 ✓ | 0216 | 5mL | |
| | 19 | Post bakeout blank | 096F/R0101 ✓ | 0442 | 5mL | |
| | | | 097F/R0101 | | | Not used in sequence |
| | 1 | Cont Cal | 098 R0101 ✓ | 1555 | 5mL | No ECD, no IS will redo |
| | 2 | Method blank | 099 R0101 ✓ | 1625 | 5mL | No ECD, no IS will redo |
| | 3 | 003TB-037-01 | 100 R0101 ✓ | 1654 | 5mL | No IS will redo |
| | 4 | 003SB-070-05 | 001 R0201 ✓ | 1725 | 4.9g | No IS will redo |
| | 5 | 003SB-070-06 | 002 R0201 ✓ | 1755 | 4.9g | No IS will redo |
| | 6 | 003-SB-070-07 | 003 R0201 ✓ | 1825 | 5.3g | No IS will redo |
| | 7 | 003-SB-070-08 | 004 R0201 ✓ | 1855 | 4.8g | No IS will redo |
| | 8 | 003-SB-070-09 | 005 R0201 ✓ | 1925 | 4.8g | No IS will redo |
| | 9 | 003-SB-070-10 | 006 R0201 ✓ | 1954 | 5.1g | No IS will redo |
| | 10 | 003-SB-070-11 | 007 R0201 ✓ | 2024 | 4.7g | No IS will redo |
| | 11 | 003-SB-070-12 | 008 R0201 ✓ | 2053 | 5.1g | No IS will redo |
| | 12 | 003-SB-070-13 | 009 R0201 ✓ | 2123 | 4.8g | No IS will redo |
| | 13 | 003-SB-070-14 | 010 R0201 ✓ | 2152 | 4.7g | No IS will redo |
| | 14 | 003-SB-070-15 | 011 R0201 ✓ | 2222 | 5.0g | No IS will redo |

| Run # | Auto # | Sample ID | File ID | inj time | sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| | 15 | 003-SB-DP1-036 | 012 R0201 ✓ | 2251 | 5.0g | no IS will redo |
| | 16 | 003-SB-DP1-037 | 013 R0201 ✓ | 2320 | 4.9g | no IS will redo |
| | 17 | 003-BB-002-01 | 014 R0201 ✓ | 2350 | 5mL | no IS will redo |
| | 18 | 003-BB-003-01 | 015 R0201 ✓ | 0019 | 5mL | no IS will redo |
| | 19 | 003-SB-070-10D | 016 R0201 ✓ | 0048 | 4.8g | no IS will redo |
| | 20 | 003-SB-070-10S | 017 R0201 ✓ | 0118 | 5.0g | no IS will redo (2nd oFMS) |
| | 21 | Cont Cal | 018 R0201 ✓ | 0147 | 5mL | |
| | 22 | Method blank | 019 R0201 ✓ | 0216 | 5mL | |
| | 23 | Post bakeout blank | 020 R0201 ✓ | 0441 | 5mL | |
| | 24 | Cont Cal | 021F/R0201 ✓ | 1157 | 5mL | no IS added. |
| | 25 | Method blank | 022F/R0201 ✓ | 1226 | 5mL | rerun |
| | 26 | Cont Cal | 023F/R0201 ✓ | 1541 | 5mL | |
| | 27 | Method blank | 024F/R0201 ✓ | 1610 | 5mL | |
| | 28 | 003-TB-037-01 RE ✓ | 025F/R0201 ✓ | 1640 | 5mL | |
| | 29 | 003-BB-002-01 RE ✓ | 026F/R0201 ✓ | 1710 | 5mL | |
| | 30 | 003-BB-003-01 RE ✓ | 027F/R0201 ✓ | 1740 | 5mL | |
| | 31 | 003-TB-038-01 RE ✓ | 028F/R0201 ✓ | 1809 | 5mL | |
| | 32 | 003-TB-039-01 | 029F/R0201 ✓ | 1839 | 5mL | |
| | 33 | 003-SB-P10-02* | 030F/R0201 ✓ | 1908 | 4.4g | |
| | 34 | 003-SB-P10-03* | 031F/R0201 ✓ | 1938 | 4.5g | |
| | 35 | 003-SB-P04-02* | 032F/R0201 ✓ | 2007 | 4.6g | |
| | 36 | 003-SB-P04-03* | 033F/R0201 ✓ | 2037 | 4.8g | |
| | 37 | 003-SB-P08-17 DL ✓ | 034F/R0201 ✓ | 21:06 | 0.9g | |
| | 38 | 003-SB-P08-14 DL ✓ | 035F/R0201 ✓ | 21:36 | 0.4g | |
| | 39 | 003-SB-P08-15 DL ✓ | 036F/R0201 ✓ | 22:05 | 0.9g | |
| | 40 | 003-SB-070-05 RE ✓ | 037F/R0201 ✓ | 22:35 | 4.4g | |
| | 41 | 003-SB-070-06 RE ✓ | 038F/R0201 ✓ | 23:04 | 4.5g | |
| | 42 | 003-SB-070-07 RE ✓ | 039F/R0201 ✓ | 2334 | 4.6g | did not purge |
| | 43 | 003-SB-070-08 RE ✓ | 040F/R0201 ✓ | 00:03 | 5.4g | did not purge |
| | 44 | 003-SB-070-09 RE ✓ | 041F/R0201 ✓ | 00:32 | 4.7g | did not purge |
| | 45 | 003-SB-070-10 RE ✓ | 042F/R0201 ✓ | 0101 | 4.6g | did not purge |

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| Run# | Auto # | Sample ID | File ID | inj time | sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| | 46 | Cont Cal | 043F/R0201 ✓ | 0130 | 5 mL | did not purge |
| | 47 | Method blank | 044F/R0201 ✓ | 0159 | 5 mL | did not purge |
| | 48 | 003-SB-070-10D RE ✓ | 045F/R0201 ✓ | 0229 | 4.7g | did not purge |
| | 49 | 003-SB-070-10S RE ✓ | 046F/R0201 ✓ | 0258 | 4.4g | did not purge |
| | 50 | 003-SB-070-11 RE ✓ | 047F/R0201 ✓ | 0327 | 4.5g | did not purge |
| | 51 | 003-SB-070-12 RE ✓ | 048F/R0201 ✓ | 0356 | 4.5g | did not purge |
| | 52 | Cont Cal | 049F/R0201 ✓ | 0426 | 5 mL | did not purge |
| | 53 | Method blank | 050F/R0201 ✓ | 0455 | 5 mL | did not purge |
| | 54 | Post bakeout blank | 051F/R0201 ✓ | 0655 | 5 mL | did not purge |
| | 1 | Cont Cal | 052F/R0201 ✓ | 1335 | 5 mL | |
| | 2 | Method blank | 053F/R0201 ✓ | 1404 | 5 mL | |
| | 3 | 003-SB-070-07 RE | 052F/R0201 ✓ | 1637 | 4.8g | reprogrammed sequence & overwrote 52 & 53 |
| | 4 | 003-SB-070-08 RE | 053F/R0201 ✓ | 1708 | 5.0g | " " |
| | 5 | 003-SB-070-09 RE ✓ | 054F/R0201 ✓ | 1738 | 4.8g | |
| | 6 | 003-SB-070-10 RE ✓ | 055F/R0201 ✓ | 1807 | 4.9g | |
| | 7 | 003-SB-070-11 RE ✓ | 056F/R0201 ✓ | 1837 | 4.9g | |
| | 8 | 003-SB-070-12 RE ✓ | 057F/R0201 ✓ | 1907 | 4.9g | |
| | 9 | 003-SB-070-13 RE ✓ | 058F/R0201 ✓ | 1936 | 4.9g | |
| | 10 | 003-SB-070-14 RE ✓ | 059F/R0201 ✓ | 2006 | 4.9g | |
| | 11 | 003-SB-070-15 RE ✓ | 060F/R0201 ✓ | 2035 | 5.1g | |
| | 12 | ~~003-SB-070-15 RE~~ 003-SB-DP1-36RE | 061F/R0201 ✓ | 2105 | 4.6g | |
| | 13 | ~~003-SB-DP1-36 RE~~ 003-SB-DP1-37RE | 063F/R0301 ✓ | 2134 | 5.0g | 061F/R0201 was deleted from sequence no sample was run with this # |
| 9/08/99 | 14 | 003-SB-070-10D RE | 064F/R0301 ✓ | 2204 | 5.2g | |
| | 15 | 003-SB-070-10S RE | 065F/R0401 ✓ | 2233 | 5.2g | |
| | 16 | 003-SB-033-02 * | 067F/R0401 ✓ | 2302 | 4.9g | |
| | 17 | 003-SB-033-03 * | 068F/R0401 ✓ | 2332 | 4.5g | did not purge |
| | 18 | 003-SB-033-01 | 069F/R0401 ✓ | 0001 | 4.5g | did not purge |
| | 19 | 003-SB-~~[illegible]~~-P10-01 | 070F/R0401 ✓ | 00:30 | 4.8g | did not purge |
| | 20 | 003-SB-P10-04 | 071 F/R0401 ✓ | 0100 | 4.6g | did not purge |
| | 21 | Cont Cal | 072F/R0401 ✓ | 0124 | 5 mL | did not purge |

Rerun due to IS not spiked into samples

| Run # | Auto # | Sample ID | File ID | Inj time | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| | 22 | Method blank | 073F0401 ✓ | 0158 | 5mL | did not purge |
| | 23 | Post Bakeout blank | 074F0401 ✓ | 0359 | 5mL | did not purge |
| | 1 | Cont Cal | 075F/R0201 ✓ | 10:43 | 5mL | |
| | 2 | Method blank | 076F/R0201 ✓ | 11:13 | 5mL | |
| | 3 | 003-TB-040-01 | 077F/R0201 ✓ | 11:43 | 5mL | |
| | ~~4~~ | ~~003-TB-040-01~~ mk | | | | |
| | 4 | 003-TB-041-01 | 078F/R0201 ✓ | 12:13 | 5mL | |
| | 5 | 003-SB-033-03 * | 079F/R0201 ✓ | 12:42 | 5.0g | |
| | 6 | 003-SB-P11-02 * | 080F/R0201 ✓ | 1312 | 4.7g | |
| | 7 | 003-SB-P11-03 * | 081F/R0201 ✓ | 1343 | 5.0g | |
| | 8 | 003-SB-P10-01 | 082F/R0201 ✓ | 1416 | 4.5g | |
| | 9 | 003-SB-P10-04 | 083F/R0201 ✓ | 1446 | 4.6g | |
| | 10 | 003-SB-P11-01 | 084F/R0201 ✓ | 1516 | 4.5g | |
| | 11 | 003-SB-P11-04 | 085F/R0201 ✓ | 1546 | 4.6g | |
| | 12 | 003-SB-P11-05 | 086F/R0201 ✓ | 1617 | 4.8g | |
| | 13 | 003-SB-P11-06 | 087F/R0201 ✓ | 1649 | 4.5g | |
| | 14 | 003-SB-P11-06D | 088F/R0201 ✓ | 1720 | 4.8g | |
| | 15 | 003-SB-P11-06S | 089F/R0201 ✓ | 1750 | 4.8g | |
| | 16 | 003-SB-P10-05 | 090F/R0201 ✓ | 1821 | 4.9g | |
| | 17 | 003-SB-P10-06 | 091F/R0201 ✓ | 1859 | 4.6g | did not purge |
| | 18 | 003-SB-P10-06 | 005F/R0101 ✓ | 1942 | 4.6g | did not purge |
| | 19 | 003-SB-P10-07 | 006F/R0101 ✓ | 2014 | 4.8g | did not purge |
| | 20 | 003-SB-P10-08 | 007F/R0101 ✓ | 2044 | 4.9g | |
| | 21 | Cont Cal | 008F/R0101 ✓ | 2114 | 5mL | |
| | 22 | Method Blank | 009F/R0101 ✓ | 2145 | 5mL | |
| | 23 | 003-SB-P10-09 | 010F/R0101 ✓ | 2215 | 5.3g | off scale will rerun |
| | 24 | 003-SB-P10-10 | 011F/R0101 ✓ | 2245 | 4.5g | off scale will rerun |
| | 25 | 003-SB-DP1-38 | 012F/R0101 ✓ | 2315 | 4.5g | off scale will rerun |
| | 26 | 003-SB-P04-04 | 013F/R0101 ✓ | 2345 | 4.7g | |
| | 27 | 003-SB-P04-05 | 014F/R0101 ✓ | 00:15 | 4.9g | |
| | 28 | 003-SB-P04-06 | 015F/R0101 ✓ | 00:45 | 5.2g | |

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| Run # | Auto # | Sample ID | File ID | inj time | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| | 29 | Cont Cal | 016F/R0101 ✓ | 0115 | 5mL | |
| | 30 | Method blank | 017F/R0101 ✓ | 0145 | 5mL | |
| | 31 | Post Bakeout blank | 018F/R0101 ✓ | 0410 | 5mL | |
| | 1 | Cont Cal | 019F/R0101 ✓ | 1033 | 5mL | |
| | 2 | Method blank | 020F/R0101 ✓ | 1126 | 5mL | |
| | 3 | 003-TB-042-01 | 021F/R0101 ✓ | 1158 | 5mL | |
| | 4 | 003-SB-P10-06 RE ✓ | 022F/R0101 ✓ | 1231 | 4.5g | |
| | 5 | 003-SB-P10-07 RE ✓ | 023F/R0101 ✓ | 1302 | 4.5g | |
| | 6 | 003-SB-P10-08 DL ✓ | 024F/R0101 ✓ | 1333 | 1.0g | |
| 9/10/97 | 7 | 003-SB-P10-09 DL ✓ | 025F/R0101 ✓ | 1402 | 0.9g | |
| | 8 | 003-SB-P10-10 DL ✓ | 026F/R0101 ✓ | 1433 | 1.1g | |
| | 9 | 003-SB-DP1-38 DL ✓ | 027F/R0101 ✓ | 1502 | 1.0g | |
| | 10 | 003-SB-P04-06 RE ✓ | 028F/R0101 ✓ | 1531 | 4.7g | |
| | 11 | 003-SB-P11-07 | 029F/R0101 ✓ | 1601 | 4.9g | |
| | 12 | 003-SB-P11-08 ✓ | 030F/R0101 ✓ | 1630 | 4.6g | |
| | 13 | 003-SB-P11-09 | 031F/R0101 ✓ | 1700 | 5.0g | |
| | 14 | 003-SB-P11-10 | 032F/R0101 ✓ | 1729 | 4.7g | |
| | 15 | Cont Cal | 033F/R0101 ✓ | 1559 | 5mL | |
| | 16 | Method blank | 034F/R0101 ✓ | 1829 | 5mL | |
| | 17 | 003-SB-003-01 | 036F/R010 ✓ | 1958 | 4.8g | |
| | 18 | 003-SB-003-04 | 037F/R0101 ✓ | 2028 | 4.4g | |
| | 19 | 003-SB-DP1-39 | 038F/R0101 ✓ | 2057 | 4.5g | |
| | 20 | 003-SB-DP1-40 | 039F/R0101 ✓ | 2126 | 4.8g | |
| | 21 | 003-SB-P10-08 DL 2 ✓ | 040F/R0101 ✓ | 2156 | 0.6g | |
| | 22 | 003-SB-P10-09 DL 2 ✓ | 041F/R0101 ✓ | 2225 | 0.5g | |
| | 23 | 003-SB-P10-10 DL 2 ✓ | 042F/R0101 ✓ | 2254 | 0.5g | |
| | 24 | 003-SB-P11-11 | 043F/R0101 ✓ | 2323 | 4.9g | |
| | 25 | 003-SB-P04-01 | 044F/R0101 ✓ | 2353 | 4.5g | |
| | 26 | 003-SB-DP1-38 DL 2 ✓ | 045F/R0101 ✓ | 0022 | 0.5g | |
| | 27 | 003-SB-P11-08 DL ✓ | 046F/R0101 ✓ | 0051 | 0.9g | |
| | 28 | 003-SB-P11-09 DL ✓ | 047F/R0101 ✓ | 0121 | 0.7g | |
| | 29 | 003-SB-P11-10 DL ✓ | 048F/R0101 ✓ | 0150 | 0.5g | |
| | 30 | Cont Cal | 049F/R0101 ✓ | 0219 | 5mL | |
| | 31 | Method blank | 050F/R0101 ✓ | 0248 | 5mL | |
| | 32 | Post Bakeout blank | 051F/R0101 ✓ | 0512 | 5mL | |

| Run# | Auto# | Sample ID | File ID | Inj time | Sample wt/vol | Comments |
|---|---|---|---|---|---|---|
| | 1 | Blank | 062F/R0101 | 10:52 | 5mL | no IS or MS |
| | 2 | Initial Cal #1 | 063F/R0101 | 11:22 | 5mL | |
| | ~~3~~ | ~~Initcal #2~~ | ~~065F/R0101~~ | ~~12:28~~ | ~~5mL~~ | ~~RMR~~ |
| | ~~4~~ | ~~Initcal #4~~ | | | | ~~RMR~~ |
| | 3 | Initcal #2 | 064F/R0101 | 11:53 | 5mL | |
| | 4 | Initcal #3 | 065F/R0101 | 12:28 | 5mL | |
| | 5 | Initcal #4 | 066F/R0101 | 12:59 | 5mL | |
| | 6 | Initcal #5 | 067F/R0101 | 13:30 | 5mL | |
| | 7 | Method Blank | 068F/R0101 | 14:05 | 5mL | |
| | 8 | QC Check | 069F/R0101 | 14:47 | 5mL | |
| | 9 | Method Blank | 070F/R0101 | 15:26 | 5mL | |
| | 10 | Post Bakeout Blank | 071F/R0101 | 15:50 | 5mL | |
| | 1 | Cont Cal | 073F/R0101 | 18:37 | 5mL | |
| | 2 | Method Blank | 074F/R0101 | 19:21 | 5mL | |
| | 3 | 003-TB-046-01 | 075F/R0101 | 19:51 | 5mL | |
| | 4 | 003-TB-043-01 | 076F/R0101 | 20:32 | 5mL | |
| | 5 | 003-TB-044-01 | 077F/R0101 | 21:05 | 5mL | |
| | 6 | 003-SB-071-02* | 078F/R0101 | 21:39 | 4.4g | |
| | 7 | 003-SB-071-03* | 079F/R0101 | 22:16 | 4.6g | |
| | 8 | 003-SB-P05-02* | 080F/R0101 | 22:47 | 4.9g | |
| | 9 | 003-SB-028-02* | 081F/R0101 | 23:17 | 4.4g | |
| | 10 | 003-SB-P05-03* | 082F/R0101 | 23:48 | 0.8g | |
| | 11 | 003-SB-028-03* | 083F/R0101 | 0018 | 4.4g | |
| | 12 | 003-SB-029-01 | 084F/R0101 | 0048 | 4.5g | |
| | 13 | 003-SB-029-02 | 085F/R0101 | 0117 | 4.6g | |
| | 14 | 003-SB-029-03 | 086F/R0101 | 0147 | 5.1g | |
| | 15 | 003-SB-028-01 | 087F/R0101 | 0217 | 4.6g | |
| | 17 | 003-SB-028-04 ✓ | 088F/R0101 | 0247 | 4.5g | |
| | 18 | 003-SB-028-05 | 089F/R0101 | 0924 | 4.7g | |
| | 19 | 003-SB-028-06 | 090F/R0101 | 0953 | 4.6g | |
| | 20 | 003-SB-028-06D | 091F/R0101 | 1025 | 4.9g | |

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|---|---|---|---|---|---|---|
| ~~21~~ | 21 | 003-SB-028-06MS | 092F/R0101 | 1058 | 4.3g | |
| | 22 | ContCal | 093F/R0101 | 1142 | 5mL | |
| | 23 | Method Blank | 094F/R0101 | 1222 | 5mL | |
| | 24 | 003-TB-045-01 | 095F/R0101 | 1301 ~~0101~~ | 5mL | |
| | 25 | 003-SB-P05-01 | 096F/R0101 | 1337 ~~0137~~ | 4.6g | |
| | 26 | 003-SB-P05-04 | 097F/R0101 | 1406 ~~0106~~ | 4.8g | |
| | 27 | 003-SB-P05-05 | 098F/R0101 | 1436 | 4.9g | |
| | 28 | 003-SB-DP1-42 | 099F/R0101 | 1506 | 5.6g | |
| | 29 | 003-SB-071-01 | 100F/R0101 | 1537 | 4.9g | |
| | 30 | 003-SB-071-04 | 001F/R0201 | 1610 | 4.5g | |
| | 31 | 003-SB-071-05 | 002F/R0201 | 1645 | 4.8g | |
| | 32 | 003-SB-028-07 | 003F/R0201 | 1718 | 5.1g | |
| | 33 | 003-SB-DP1-41 | 004F/R0201 | 1748 | 5.2g | |
| 5 | 1 | ~~Cont Cal~~ | 005F/R0101 | 1133 | 5mL | |
| 6 | 2 | Method Blank | 006F/R0101 | 1202 | 5mL | |
| 7 | 3 | 003-TB-046-01 RE | 007F/R0101 | 1230 | 5mL | |
| 8 | 4 | 003-TB-044-01 RE ✓ | 008F/R0101 | 1259 | 5mL | |
| 9 | 5 | 003-SB-028-04 RE ✓ | 009F/R010 | 1324 | 4.7g | |
| 10 | 6 | 003-SB-046-02* RE ✓ | 010F/R0101 | 1359 | 4.6g | |
| 11 | 7 | 003-SB-046-03* RE ✓ | 011F/R0101 | 1428 | 4.4g | |
| 12 | 8 | 003-SB-071-06 RE ✓ | 012F/R0101 | 1457 | 4.4g | |
| 13 | 9 | 003-SB-071-07 RE ✓ | 013F/R0101 | 1527 | 4.6g | |
| 14 | 10 | 003-SB-071-07D RE | 014F/R0101 | 1556 | 4.6g | |

9/6/97 [illegible]

| Run # | Auto # | Sample ID | File ID | inj time | wt/vol sample | Comments |
|---|---|---|---|---|---|---|
| 15 | 11 | 003-SB-071-07 M RE | 015F/R0101 | 1626 | ~~[illegible]~~ 4.3g | |
| 16 | 12 | 003-SB-071-08 RE ✓ | 016F/R0101 | 1657 | 4.6g | |
| 17 | 13 | 003-SB-071-09 RE ✓ | 017F/R0101 | 1727 | 4.6g | |
| 18 | 14 | 003-SB-071-10 RE ✓ | 018F/R0101 | 1757 | 4.4g | |
| 19 | 15 | 003-SB-026-02* | 019F/R0101 | 1826 | 2.0g | |
| 20 | 16 | 003-SB-026-03* | 020F/R0101 | 1856 | 0.8g | |
| 21 | 17 | 003-SB-DP1-43 | 021F/R0101 | 1926 | 4.7g | |
| 22 | 18 | 003-SB-~~DP1-04~~ DP6 | 022F/R0101 | 1955 | 4.9g | |
| 23 | 19 | 003-SB-DP1-44 | 023F/R0101 | 2025 | 4.7g | |
| 24 | 20 | 003-SB-026-01 | 024F/R0101 | 2054 | 4.6g | |
| 25 | 21 | Cont Cal | 025F/R0101 | 2123 | 5mL | |
| 26 | 22 | Method Blank | 026F/R0101 | 2152 | 5mL | |
| 27 | 23 | Post Bakeout Blank | 027F/R0101 | 0015 | 5mL | |
| 28 | 1 | Control-1 | 028F/R0101 | 1026 | 5mls | C422-1.MTH / D422-1.MTH |
| 29 | 2 | Method Blank | 029F/R0101 | 1056 | 5mls | |
| 30 | 3 | 003-TB-048-01 | 030F/R0101 | 1125 | 5mls | |
| 31 | 4 | 003-TB-049-01 | 031F/R0101 | 1155 | 5mls | |
| 32 | 5 | 003-SB-068-02* | 032F/R0101 | 1225 | 5.0g | |
| 33 | 6 | 003-SB-068-03* | 033F/R0101 | 1254 | 5.0g | |
| 34 | 7 | 003-SB-026-04 ✓ | 034F/R0101 | 1323 | 4.7g | Dilute & RERUN |
| 35 | 8 | Method Blank | 035F/R0101 | 1353 | 5mls | |
| 36 | 9 | 003-SB-026-05 ✓ | 036F/R0101 | 1422 | 0.8g | Dilute and RERUN |
| 37 | 10 | Method Blank | 037F/R0101 | 1451 | 5mls | |
| 38 | 11 | 003-SB-026-06 ✓ | 038F/R0101 | 1520 | 0.9g | Dilute and RERUN |
| 39 | 12 | Method Blank | 039F/R0101 | 1549 | 5mls | |
| 40 | 13 | 003-SB-026-07 ✓ | 040F/R0101 | 1617 | 1.0g | Dilute and RERUN |
| 41 | 14 | Method Blank | 041F/R0101 | 1646 | 5mls | |
| 42 | 15 | 003-SB-026-08 | 042F/R0101 | 1716 | 0.9g | Dilute and RERUN |
| 43 | 16 | Method Blank | 043F/R0101 | 1745 | 5mls | |
| 44 | 17 | 003-SB-026-09 | 044F/R0101 | 1815 | 1.1g | |
| 45 | 18 | Method Blank | 045F/R[illegible] | 1844 | 5mls | |

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| Run# | Auto# | SAMPLE ID | FILE ID | INJ Time | SAMPLE wt./vol. | COMMENTS |
|---|---|---|---|---|---|---|
| 46 | 19 | 003-SB-026-10 | 046 F/R 0101 | 1914 | 0.8g | |
| 47 | 20 | Method Blank | 047 F/R 0101 | 1944 | 5mls | |
| 48 | 21 | Cont-Cal-2 | 048 F/R 0101 | 2014 | 5mls | |
| 49 | 22 | Method Blank | 049 F/R 0101 | 2043 | 5mls | |
| 50 | 23 | 003-SB-DP1-45 | 050 F/R 0101 | 2113 | 0.5g | Dilute and Rerun |
| 51 | 24 | Method Blank | 051 F/R 0101 | 2143 | 5mls | |
| 52 | 25 | 003-SB-068-04 | 052 F/R 0101 | 2212 | 4.8g | |
| 53 | 26 | 003-SB-068-05 | 053 F/R 0101 | 2242 | 4.9g | |
| 54 | 27 | 003-SB-068-06 | 054 F/R 0101 | 2312 | 4.7g | |
| 55 | 28 | 003-SB-068-07 | 055 F/R 0101 | 2342 | 4.5g | |
| 56 | 29 | 003-SB-068-08 | 056 F/R 0101 | 0011 | 5.2g | |
| 57 | 30 | 003-SB-068-01 | 057 F/R 0101 | 0041 | 4.8g | |
| 58 | 31 | 003-SB-068-09 | 058 F/R 0101 | 0110 | 4.8g | |
| 59 | 32 | 003-SB-068-10 | 059 F/R 0101 | 0139 | 4.8g | |
| 60 | 33 | 003-SB-068-11 | 060 F/R 0101 | 0208 | 4.7g | Dilute and Rerun |
| 61 | 34 | 003-SB-068-12 | 061 F/R 0101 | 0238 | 4.8g | |
| 62 | 35 | Cont-Cal-3 | 062 F/R 0101 | 0307 | 5mls | |
| 63 | 36 | Method Blank | 063 F/R 0101 | 0336 | 5mls | |
| 64 | 37 | Post Bake Blank | 064 F/R 0101 | 0602 | 5mls | |
| 65 | 1 | Cont-Cal | 065 F/R 0101 | 0919 | 5mls | Rerun all samples |
| 66 | 2 | Method Blank | 066 F/R 0101 | 0958 | 5mls | |
| 67 | 3 | 003-TB-050-01 | 067 F/R 0101 | 1029 | 5mls | RERUN |
| 68 | 4 | 003-SB-015-02 | 068 F/R 0101 | 1059 | 4.7g | RERUN |

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INT. SAMPLE

| Run # | Auto # | SAMPLE ID | FILE ID | INJ. TIME | SAMPLE wt./vol. | COMMENTS |
|---|---|---|---|---|---|---|
| 69 | 5 | 003-SB-015-03* | 069 F/R 0101 | 1129 | 4.8g | Rerun |
| 70 | 6 | 003-SB-015-01 | 070 F/R 0101 | 1203 | 4.6g | Rerun |
| 71 | 7 | 003-SB-015-04 | 071 F/R 0101 | 1239 | 4.7g | Rerun |
| 72 | 8 | 003-SB-015-05 | 072 F/R 0101 | 1308 | 4.7g | Rerun |
| 73 | 9 | 003-SB-015-06 | 073 F/R 0101 | 1338 | 4.5g | Rerun |
| 74 | 10 | 003-SB-DP1-46 | 074 F/R 0101 | 1409 | 4.4g | Rerun |
| 75 | 11 | 003-SB-DP1-47 | 075 F/R 0101 | 1453 | 4.3g | Rerun |
| 76 | 12 | 003-SB-026-04DL | 076 F/R 0101 | 1524 | 0.4g | Rerun |
| 77 | 13 | Method Blank | 077 F/R 0101 | 1558 | 5ml/s | Rerun |
| 78 | 14 | 003-SB-026-05DL | 078 F/R 0101 | 1638 | 0.4g | Rerun - diluted |
| 79 | 15 | Method Blank | 079 F/R 0101 | 1719 | 5ml/s | Rerun |
| 80 | 16 | 003-SB-026-06DL | 080 F/R 0101 | 1801 | 0.4g | Rerun - diluted |
| 81 | 17 | Method Blank | 081 F/R 0101 | 1831 | 5ml/s | Rerun |
| 82 | 18 | 003-SB-026-07DL | 082 F/R 0101 | 1903 | 0.4g | Rerun - diluted |
| 83 | 19 | Method Blank | 083 F/R 0101 | 1934 | 5ml/s | Rerun |
| 84 | 20 | Contcal | 084 F/R 0101 | 2158 | 5ml/s | Autosampler failure - Rerun all |
| 85 | 1 | Instrument Blank | 085 F/R 0101 | 0940 | 5ml/s | |
| 86 | 2 | Contcal | 086 F/R 0101 | 1703 | 5ml/s | |
| 87 | 3 | Method Blank | 087 F/R 0101 | 1734 | 5ml/s | |
| 88 | 4 | 003-TB-050-01 | 088 F/R 0101 | 1804 | 5ml/s | |
| 89 | 5 | 003-TB-051-01 | 089 F/R 0101 | 1834 | 5ml/s | |
| 90 | 6 | 003-TB-047-01 | 090 F/R 0101 | 1904 | 5ml/s | |
| 91 | 7 | 003-SB-015-01 | 091 F/R 0101 | 1933 | 5.0g | |
| 92 | 8 | 003-SB-015-02* | 092 F/R 0101 | 2003 | 4.4g | |
| 93 | 9 | 003-SB-015-03* | 093 F/R 0101 | 2033 | 4.7g | |
| 94 | 10 | 003-SB-015-04 | 094 F/R 0101 | 2102 | 4.6g | |
| 95 | 11 | 003-SB-015-05 | 095 F/R 0101 | 2132 | 4.4g | |
| 96 | 12 | 003-SB-015-06 | 096 F/R 0101 | 2201 | 4.5g | |
| 97 | 13 | 003-SB-DP1-46 | 097 F/R 0101 | 2230 | 4.3g | |
| 98 | 14 | 003-SB-DP1-47 | 098 F/R 0101 | 2300 | 4.3g | |
| 99 | 15 | 003-SB-047-01 | 099 F/R 0101 | 2329 | 4.4g | |

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| RUN# | AUTO# | SAMPLE ID | FILE ID | INJ. TIME | SAMPLE wt./vol | COMMENTS |
|---|---|---|---|---|---|---|
| 100 | 16 | 003-SB-047-02* | 100 F/R 0101 | 2359 | 4.5g | |
| 001 | 17 | 003-SB-047-03* | 001 F/R 0201 | 0028 | 4.5g | |
| 002 | 18 | 003-SB-047-04 | 002 F/R 0201 | 0058 | 5.1g | |
| 003 | 19 | 003-SB-047-05 | 003 F/R 0201 | 0127 | 5.0g | |
| 004 | 20 | 003-SB-047-06 | 004 F/R 0201 | 0157 | 4.5g | |
| 005 | 21 | 003-SB-047-08 | 005 F/R 0201 | 0226 | 4.6g | RERUN Diluted |
| 006 | 22 | Contcal | 006 F/R 0201 | 0255 | 5ml/s | |
| 007 | 23 | Method Blank | 007 F/R 0201 | 0325 | 5ml/s | |
| 008 | 24 | Post Bake Blank | 008 F/R 0201 | 0354 | 5ml/s | |
| 009 | 1 | Contcal | 009 F/R 0101 | 0903 | 5ml/s | |
| 010 | 2 | Method Blank | 010 F/R 0101 | 0932 | 5ml/s | |
| 011 | 3 | 003-TB-052-01 | 011 F/R 0101 | 1002 | 5ml/s | |
| 012 | 4 | 003-BB-004-01 | 012 F/R 0101 | 1032 | 5ml/s | |
| 013 | 5 | 003-SW-003-01 | 013 F/R 0101 | 1102 | 5ml/s | |
| 014 | 6 | 003-DPI-48 | 014 F/R 0101 | 1134 | 4.6g | |
| 015 | 7 | 003-SB-047-08DL | 015 F/R 0101 | 1212 | 2.2g | |
| 016 | 8 | 003-SB-047-09 | 016 F/R 0101 | 1250 | 4.1g | |
| 017 | 9 | 003-SB-047-10 | 017 F/R 0101 | 1330 | 4.4g | |
| 018 | 10 | 003-SB-047-11 | 018 F/R 0101 | 1420 | 4.5g | |
| 019 | 11 | 003-SB-047-12 | 019 F/R 0101 | 1450 | 4.5g | |
| 020 | 12 | 003-SB-050-01 | 020 F/R 0101 | 1521 | 4.6g | |
| 021 | 13 | 003-SB-050-02 | 021 F/R 0101 | 1551 | 4.4g | |
| 022 | 14 | 003-SB-050-03 | 022 F/R 0101 | 1621 | 4.8g | |

| | INJ. | SAMPLE |
|---|---|---|

| RUN # | AUTO # | SAMPLE ID | FILE ID | INJ TIME | SAMPLE VOLUME | COMMENTS |
|---|---|---|---|---|---|---|
| 023 | 15 | 003-SB-050-04 | 023 F/R 0101 | 1651 | 4.8g | |
| 024 | 16 | 003-SB-050-05 | 024 F/R 0101 | 1720 | 4.6g | |
| 025 | 17 | 003-SB-050-05D | 025 F/R 0101 | 1750 | 4.7g | |
| 026 | 18 | 003-SB-050-05MS | 026 F/R 0101 | 1820 | 4.8g | |
| 027 | 19 | 003-SB-050-06 | 027 F/R 0101 | 1849 | 4.2g | |
| 028 | 20 | 003-SB-050-07 | 028 F/R 0101 | 1919 | 4.5g | |
| 029 | 21 | 003-SB-050-08 | 029 F/R 0101 | 1948 | 4.4g | Dilute and Rerun |
| 030 | 22 | 003-SB-050-09 | 030 F/R 0101 | 2017 | 4.6g | Dilute and Rerun |
| 031 | 23 | 003-SB-050-10 | 031 F/R 0101 | 2047 | 4.5g | Dilute and Rerun |
| 032 | 24 | Control | 032 F/R 0101 | 2119 | 5mls | |
| 033 | 25 | Method Blank | 033 F/R 0101 | 0722 | 5mls | |
| 034 | 26 | 003-SB-050-11 | 034 F/R 0101 | 0751 | 4.3g | Dilute and Rerun |
| 035 | 27 | 003-SB-DP1-49 | 035 F/R 0101 | 2020 | 4.5g | |
| 036 | 28 | 003-SB-050-08DL | 036 F/R 0101 | 2050 | 1.8g | |
| 037 | 29 | 003-SB-039-01 | 037 F/R 0101 | 2120 | 4.3g | |
| 038 | 30 | 003-SB-039-02* | 038 F/R 0101 | 2151 | 4.3g | |
| 039 | 31 | 003-SB-039-03* | 039 F/R 0101 | 2225 | 4.2g | |
| 040 | 32 | 003-SB-050-09DL | 040 F/R 0101 | 2307 | 1.8g | |
| 041 | 33 | 003-SB-039-04 | 041 F/R 0101 | 2344 | 5.0g | |
| 042 | 34 | 003-SB-039-05 | 042 F/R 0101 | 2421 | 4.4g | |
| 043 | 35 | Control | 043 F/R 0101 | 1325 | 5mls | |
| 044 | 36 | Method Blank | 044 F/R 0101 | 1414 | 5mls | |
| 045 | 37 | Post Bake Blank | 045 F/R 0101 | 1448 | 5mls | |
| 046 | 1 | Control | 046 F/R 0101 | 1626 | 5mls | |
| 047 | 2 | Method Blank | 047 F/R 0101 | 1656 | 5mls | |
| 048 | 3 | 003-TB-053-01 | 048 F/R 0101 | 1728 | 5mls | |
| 049 | 4 | 003-DP1-48DL | 049 F/R 0101 | 1800 | 1.1g | |
| 050 | 5 | 003-SB-047-08DL | 050 F/R 0101 | 1833 | 0.7g | |
| 051 | 6 | 003-SB-047-09DL | 051 F/R 0101 | 1914 | 0.6g | |
| 052 | 7 | 003-SB-047-10DL | 052 F/R 0101 | 1947 | 0.6g | |
| 053 | 8 | 003-SB-047-12DL | 053 F/R 0101 | 2019 | 0.7g | |

Work continued to Page

DATE 9/29/01

DATE 7/01

DATE

WITNESS

PROJECT NO.

BOOK NO.

| RUN# | AUTO # | SAMPLE ID | FILE ID | INJ. TIME | SAMPLE WT/VOL | COMMENTS |
|---|---|---|---|---|---|---|
| 054 | 9 | 003-SB-050-10DL | 054 FIR 0101 | 2050 | 0.6g | |
| 055 | 10 | 003-SB-050-11DL | 055 FIR 0101 | 2122 | 0.8g | |
| 056 | 11 | 003-SB-026-04DL | 056 FIR 0101 | 2153 | 0.1g | |
| 057 | 12 | 003-SB-026-05DL | 057 FIR 0101 | 2225 | 0.1g | |
| 058 | 13 | 003-SB-026-06DL | 058 FIR 0101 | 2256 | 0.1g | |
| 059 | 14 | 003-SB-026-07DL | 059 FIR 0101 | 2327 | 0.1g | |
| 060 | 15 | 003-SB-050-08DL | 060 FIR 0101 | 2358 | 0.3g | |
| 061 | 16 | 003-SB-050-09DL | 061 FIR 0101 | 0029 | 0.1g | |
| 062 | 17 | Cont Cal | 062 FIR 0101 | 0100 | 5mls | |
| 063 | 18 | Method Blank | 063 FIR 0101 | 0130 | 5mls | |
| 064 | 19 | Post Bake Blank | 064 FIR 0101 | 0354 | 5mls | |
| 065 | 1 | Cont Cal | 065 FIR 0101 | 0423 | 5mls | |
| 066 | 2 | Method Blank | 066 FIR 0101 | 0453 | 5mls | |
| 067 | 3 | 1,1,1 TCA | 067 FIR 0101 | 1024 | 5mls | Contamination in sample. |
| 068 | 4 | Vinyl Chloride | 068 FIR 0101 | 1056 | 5mls | |
| 069 | 5 | Cont Cal | 069 FIR 0101 | 1127 | 5mls | |
| 070 | 6 | Method Blank | 070 FIR 0101 | 1222 | 5mls | |
| 071 | 7 | Post Bake Blank | 071 FIR 0101 | | 5mls | |

| RUN # | AUTO # | SAMPLE ID | FILE ID | INJ. TIME | SAMPLE WT/VOL | COMMENTS |
|---|---|---|---|---|---|---|

| RUN # | AUTO # | SAMPLE ID | FILE ID | INJ. TIME | SAMPLE WT.(VOL) | COMMENTS |
|---|---|---|---|---|---|---|
| | | | | | | |

Work continued to Page

DATE

WITNESS

DATE

DATE

PROJECT NO.

BOOK NO.

~~159~~ 159

| dish # | wt. dish | wet + dish | wet wt. | dry + dish | dry wt. | % solids | sample ID |
|---|---|---|---|---|---|---|---|
| 11 | 1.0 | 30.7 | 29.7 | 26.6 | 25.6 | 86 | 003-SB-070-15-BR |
| 12 | 1.0 | 33.5 | 32.5 | 27.8 | 26.8 | 84 | 003-SB-DP1-36-BR |
| 13 | 1.0 | 30.6 | 29.6 | 26.2 | 25.2 | 85 | 003-SB-DP1-37-BR |
| ~~14~~ | ~~1.0~~ | | | | | | ~~003-SB-070-10D~~ |
| ~~15~~ | ~~1.0~~ | | | | | | ~~003-SB-070-105~~ |
| 1 | 1.0 | 25.1 | 24.1 | 24.9 | 23.9 | 99 | 003-SB-P10-02 * |
| 2 | 1.0 | 20.5 | 19.5 | 20.2 | 19.2 | 98 | 003-SB-P10-03 * |
| 3 | 1.0 | 21.8 | 20.8 | 20.2 | 19.2 | 92 | 003-SB-P04-02 * |
| 4 | 1.0 | 26.3 | 25.3 | 25.7 | 24.7 | 98 | 003-SB-P04-03 * |
| 1 | 1.0 | 35.8 | 34.8 | 35.3 | 34.3 | 99 | 003-SB-033-02 |
| 2 | 1.0 | 33.9 | 32.9 | 33.1 | 32.1 | 95 | 003-SB-033-03 |
| 3 | 1.0 | 33.0 | 32.0 | 32.4 | 31.4 | ~~95~~ 98 | 003-SB-033-01 |
| 4 | 1.0 | 29.3 | 28.3 | 28.4 | 27.4 | ~~94~~ 97 | 003-SB-P10-01 |
| 5 | 1.0 | 31.4 | 30.4 | 29.5 | 28.5 | 94 | 003-SB-P10-04 |
| 6 | 1.0 | 33.1 | 32.1 | 32.7 | 31.7 | 98 | 003-SB-P11-02 |
| 7 | 1.0 | 29.0 | 28.0 | 28.6 | 27.6 | 99 | 003-SB-P11-03 |
| 8 | 1.0 | 29.2 | 28.2 | 27.5 | 26.5 | 94 | 003-SB-P11-01 |
| 9 | 1.0 | 32.7 | 31.7 | 31.1 | 30.1 | 95 | 003-SB-P11-04 |
| 10 | 1.0 | 36.4 | 35.4 | 35.3 | 34.3 | 97 | 003-SB-P11-05 |
| 11 | 1.0 | 49.7 | 48.7 | 42.0 | 41.0 | 84 | 003-SB-P11-06 |
| 12 | 1.0 | 32.6 | 31.6 | 27.5 | 26.5 | 84 | 003-SB-P11-06 DUP |
| 13 | 1.0 | 44.9 | 43.9 | 38.9 | 37.9 | 86 | 003-SB-P10-05 |
| 14 | 1.0 | 21.1 | 20.1 | 18.5 | 17.5 | 87 | 003-SB-P10-06 |
| 15 | 1.0 | 23.5 | 22.5 | 20.6 | 19.6 | 87 | 003-SB-P10-07 |
| 16 | 1.0 | 26.7 | 25.7 | 22.9 | 21.9 | 85 | 003-SB-P10-08 |
| 17 | 1.0 | 25.4 | 24.4 | 21.8 | 20.8 | 85 | 003-SB-P10-09 |
| 18 | 1.0 | 33.0 | ~~32.0~~ 32.0 | 28.2 | 27.2 | 85 | 003-SB-P10-10 |
| 19 | 1.0 | 30.9 | 29.9 | 26.5 | 25.5 | 85 | 003-SB-DP1-38 |
| 20 | 1.0 | 26.8 | 25.8 | 26.3 | 25.3 | 98 | 003-SB-P04-04 |
| 21 | 1.0 | 27.8 | 26.8 | 24.2 | 23.2 | 87 | 003-SB-P04-05 |
| 22 | 1.0 | 38.2 | 37.2 | 33.3 | 32.3 | 87 | 003-SB-P04-06 |
| 23 | 1.0 | 29.5 | 28.5 | 28.9 | 27.9 | 98 | 003-SB-033-04 |
| 24 | 1.0 | 29.3 | 28.3 | 28.6 | 27.6 | 98 | 003-SB-DP1-39 |

Work continued to Page 142

DATE

WITNESS

DATE

| 142# dish | wght Dish | wet + dish | wet wt. | dry + dish | dry wt | % solid | sample ID |
|---|---|---|---|---|---|---|---|
| 1 | 1.0 | 34.6 | 33.6 | 29.3 | 28.3 | 84 | 003-SB-P11-07 |
| 2 | 1.0 | 39.4 | 38.4 | 35.1 | 34.1 | 89 | 003-SB-P11-08 |
| 3 | 1.0 | 36.3 | 35.3 | 32.0 | 31.0 | 88 | 003-SB-P11-09 |
| 4 | 1.0 | 37.1 | 36.1 | 33.2 | 32.2 | 89 | 003-SB-P11-10 |
| 25 | 1.0 | 49.3 | 48.3 | 44.3 | 43.3 | 96 | 003-SB-DP1-40 |
| 26 | 1.0 | 50.2 | 49.2 | 41.4 | 40.4 | 82 | 003-SB-P11-11 |
| 27 | 1.0 | 33.6 | 32.6 | 31.5 | 30.5 | 94 | 003-SB-P04-01 |
| 1 | 1.0 | 38.5 | 37.5 | 36.7 | 35.7 | 95 | 003-SB-071-02 |
| 2 | 1.0 | 34.6 | 33.6 | ~~34.0~~ 32.1 | 31.1 | 93 | 003-SB-071-03 |
| 3 | 1.0 | 38.4 | 37.4 | 37.8 | 36.8 | 98 | 003-SB-P05-02 |
| 4 | 1.0 | 35.6 | 34.6 | 35.1 | 34.1 | 99 | 003-SB-P05-03 |
| 5 | 1.0 | 34.2 | 33.2 | 33.3 | 32.3 | 97 | 003-SB-028-03 |
| 6 | 1.0 | 37.1 | 36.1 | 34.3 | 33.3 | 92 | 003-SB-029-01 |
| 7 | 1.0 | 36.0 | 35.0 | 35.1 | 34.1 | 97 | 003-SB-029-02 |
| 8 | 1.0 | 38.6 | 37.6 | 37.6 | 36.6 | 97 | 003-SB-029-03 |
| 9 | 1.0 | 39.8 | 38.8 | 38.4 | 37.4 | 96 | 003-SB-028-01 |
| 10 | 1.0 | 37.1 | 36.1 | 35.8 | 34.8 | 96 | 003-SB-028-04 |
| 11 | 1.0 | 37.5 | 36.5 | 36.9 | 35.9 | 98 | 003-SB-028-02 |
| 12 | 1.0 | 38.5 | 37.5 | 37.5 | 36.5 | 97 | 003-SB-028-05 |
| 13 | 1.0 | 49.1 | 48.1 | 42.5 | 41.5 | 86 | 003-SB-028 |
| 14 | 1.0 | 39.9 | 38.9 | 34.7 | 33.7 | 87 | 003-SB-028-06 DUP |
| 15 | 1.0 | 40.4 | 39.4 | 39.6 | 38.6 | 98 | 003-SB-P05-01 |
| 16 | 1.0 | 22.0g | 21.0 | 20.8 | 19.8 | 94 | 003-SB-P05-04 |
| 17 | 1.0 | 24.9g | 23.9 | 24.4 | 23.4 | 98 | 003-SB-P05-05 |
| 18 | 1.0 | 28.1g | 27.1 | 27.6 | 26.6 | 98 | 003-SB-DP1-42 |
| 19 | 1.0 | 22.3g | 21.3 | 20.1 | 19.1 | 90 | 003-SB-SB-071-01 |
| 20 | 1.0 | 26.0g | 25.0 | 24.5 | 23.5 | 94 | 003-SB-071-04 |
| 21 | 1.0 | 24.0g | 24.0 | 23.0 | 22.0 | 92 | 003-SB-071-05 |
| 22 | 1.0 | 29.0g | 29.0 | 25.6 | 24.6 | 85 | 003-SB-071-07 |
| 23 | 1.0 | 24.7 | 24.7 | 24.0 | 23.0 | 93 | 003-SB-DP1-41 |
| ~~1~~ | ~~1.0~~ | | | | | | ~~003-SB-028-03~~ |
| ~~2~~ | ~~1.0~~ | | | | | | ~~003-SB-028-06~~ |
| ~~3~~ | ~~1.0~~ | | | | | | ~~003-SB-028-06 D~~ |
| ~~4~~ | ~~1.0~~ | | | | | | ~~003-SB-P05-01~~ |
| ~~5~~ | ~~1.0~~ | | | | | | ~~003-SB-P05-04~~ |
| ~~6~~ | ~~1.0~~ | | | | | | ~~003-SB-DP1-42~~ |
| ~~7~~ | ~~1.0~~ | | | | | | ~~003-SB-071-01~~ |
| ~~8~~ | ~~1.0~~ | | | | | | ~~003-SB-071-04~~ |
| ~~9~~ | ~~1.0~~ | | | | | | ~~003-SB-071-05~~ |
| 1 | 1.0 | 21.9g | 20.9 | 21.1 | 20.1 | 96 | 003-SB-P16-02 * |
| 2 | 1.0 | 28.3g | 27.3 | 27.1 | 26.1 | 96 | 003-SB-P16-03 * |
| ~~3~~ | ~~1.0~~ | | | | | | ~~003-SB-071-07~~ |
| 4 | 1.0 | 33.3g | ~~29.1~~ 32.3 | 29.1 | 28.1 | 87 | 003-SB-071-01 |
| 5 | 1.0 | 26.2g | 25.2 | 22.9 | 21.9 | 87 | 003-SB-071-07 |
| 7 | 1.0 | ~~25.8g~~ 25.1g | 24.1 | 22.0 | 21.0 | 87 | 003-SB-071-07 D |

Done above mc

| dish # | wt. dish | wet + dish | wet wt. | dry + dish | dry wt | % solid | Sample ID |
|---|---|---|---|---|---|---|---|
| 6 | 1.0 | 25.8 | 24.8 | 22.4 | 21.4 | 86 | 003-SB-071-08 |
| 8 | 1.0 | 34.3 | 33.3 | 29.4 | 28.4 | 85 | 003-SB-071-09 |
| 9 | 1.0 | 28.9 | 27.9 | 24.6 | 23.6 | 85 | 003-SB-071-10 |
| 10 | 1.0 | 37.1 | 36.1 | 31.4 | 30.4 | 84 | 003-SB-026-02* |
| 11 | 1.0 | 34.3 | 33.3 | 31.7 | 30.7 | 92 | 003-SB-026-03* |
| 12 | 1.0 | 35.0 | 34.0 | 30.1 | 29.1 | 86 | 003-SB-DP1-43 |
| 13 | 1.0 | 23.1 | 22.1 | 22.5 | 21.5 | 97 | 003-SB-046-04 |
| 14 | 1.0 | 27.6 | 26.6 | 27.0 | 26.0 | 98 | 003-SB-DP1-44 |
| 15 | 1.0 | 31.4 | 30.4 | 30.9 | 29.9 | 98 | 003-SB-026-01 |
| 16 | 1.0 | 30.2 | 29.2 | 29.2 | 28.2 | 97 | 003-SB-068-02* |
| 17 | 1.0 | 32.4 | 31.4 | 31.1 | 30.1 | 96 | 003-SB-068-03* |
| 18 | 1.0 | 32.5 | 31.5 | 32.1 | 31.1 | 99 | 003-SB-026-04 |
| 19 | 1.0 | 25.1 | 24.1 | 22.4 | 21.4 | 89 | 003-SB-026-05 |
| 20 | 1.0 | 36.3 | 35.3 | 32.8 | 31.8 | 90 | 003-SB-026-06 |
| 21 | 1.0 | 30.8 | 29.8 | 27.2 | 26.2 | 88 | 003-SB-026-07 |
| 22 | 1.0 | 33.2 | 32.2 | 29.8 | 28.8 | 89 | 003-SB-026-08 |
| 23 | 1.0 | 43.7 | 42.7 | 26.3 | 25.3 | 59 | 003-SB-026-09 |
| 24 | 1.0 | 37.8 | 36.8 | 32.7 | 31.7 | 86 | 003-SB-026-10 |
| 25 | 1.0 | 39.6 | 38.6 | 35.7 | 34.7 | 90 | 003-SB-DP1-45 |
| 26 | 1.0 | 32.5 | 31.5 | 31.2 | 30.2 | 96 | 003-SB-068-04 |
| 27 | 1.0 | 32.9 | 31.9 | 31.7 | 30.7 | 96 | 003-SB-068-05 |
| 28 | 1.0 | 37.8 | 36.8 | 34.4 | 33.4 | 91 | 003-SB-068-06 |
| 29 | 1.0 | 33.6 | 32.6 | 29.2 | 28.2 | 87 | 003-SB-068-07 |
| 30 | 1.0 | 34.2 | 33.2 | 28.1 | 27.1 | 82 | 003-SB-068-08 |
| 31 | 1.0 | 26.2 | 25.2 | 25.3 | 24.3 | 96 | 003-SB-068-01 |
| 32 | 1.0 | 43.0 | 42.0 | 31.6 ~~40.2~~ | 38.6 | 92 | 003-SB-068-09 |
| 33 | 1.0 | 46.8 | 45.8 | 41.5 | 40.5 | 88 | 003-SB-068-10 |
| 34 | 1.0 | 47.8 | 46.8 | 40.2 | 39.2 | 84 | 003-SB-068-11 |
| 35 | 1.0 | 46.4 | 45.4 | 39.2 | 38.2 | 84 | 003-SB-068-12 |
| 1 | 1.0 | 40.5 | 39.5 | 40.3 | 39.3 | 99 | 003-SB-015-02* |
| 2 | 1.0 | 44.4 | 43.4 | 43.9 | 42.9 | 99 | 003-SB-015-03* |
| 3 | 1.0 | 32.5 | 31.5 | 32.2 | 31.2 | 99 | 003-SB-015-01 |
| 4 | 1.0 | 36.8 | 35.8 | 36.1 | 35.1 | 98 | 003-SB-015-04 |
| 5 | 1.0 | 27.3 | 26.3 | 25.4 | 24.4 | 93 | 003-SB-015-05 |
| 6 | ~~1.0~~ | 31.6 | 30.6 | 27.1 | 26.1 | 85 | 003-SB-015-06 |

Work continued on Page

DATE

DATE WITNESS DATE

144

9/24/97

| Dish # | Dish | wet + dish wt. | wet wt. | dry + dish wt. | dry wt. | % solid | Sample ID |
|---|---|---|---|---|---|---|---|
| 7 | 0.6 | 25.9 | 25.3 | 22.9 | 22.3 | 88 | 003-SB-DPI-46 |
| 8 | 0.6 | 29.1 | 28.5 | 24.8 | 24.2 | 85 | 003-SB-DPI-47 |
| ~~9~~ | ~~1.0~~ | | | | | | ~~003-SB-015-01~~ |
| 10 | 1.0 | 37.5 | 36.5 | 34.8 | 33.8 | 93 | 003-SB-047-01 |
| 11 | 1.0 | 33.7 | 32.7 | 33.2 | 32.2 | 98 | 003-SB-047-02 |
| 12 | 1.0 | 43.4 | 42.4 | 41.9 | 40.9 | 96 | 003-SB-047-03 |
| 13 | 1.0 | 40.6 | 39.6 | 38.5 | 37.5 | 95 | 003-SB-047-04 |
| 14 | 1.0 | 42.6 | 41.6 | 41.0 | 40.0 | 96 | 003-SB-047-05 |
| 15 | 1.0 | 62.9 | 61.9 | 55.2 | 54.2 | 88 | 003-SB-047-06 |
| 16 | 1.0 | 53.6 | 52.6 | 46.0 | 45.0 | 86 | 003-SB-047-08 |
| 17 | 1.0 | 62.5 | 61.5 | 54.4 | 53.4 | 87 | 003-SB-DPI-48 |
| 18 | 1.0 | 60.3 | 59.3 | 52.3 | 51.3 | 87 | 003-SB-047-09 |
| 19 | 1.0 | 65.8 | 64.8 | 58.2 | 57.2 | 88 | 003-SB-047-10 |
| 20 | 1.0 | 62.4 | 61.4 | 53.8 | 52.8 | 86 | 003-SB-047-11 |
| 21 | 1.0 | 58.8 | 57.8 | 49.1 | 48.1 | 83 | 003-SB-047-12 |
| 22 | 1.0 | 44.5 | 43.5 | 40.9 | 39.9 | 92 | 003-SB-050-01 |
| 23 | 1.0 | 41.3 | 40.3 | 38.4 | 37.4 | 93 | 003-SB-050-02 |
| 24 | 1.0 | 43.6 | 42.6 | 41.8 | 41.8 | 98 | 003-SB-050-03 |
| 25 | 1.0 | 42.2 | 41.2 | 40.7 | 39.7 | 96 | 003-SB-050-04 |
| 26 | 1.0 | 39.5 | 38.5 | 37.0 | 36.0 | 94 | 003-SB-050-05 |
| 27 | 1.0 | 27.3 | 26.3 | 25.5 | 24.5 | 94 | 003-SB-050-05 Dup |
| 28 | 1.0 | 54.0 | 53.0 | 46.5 | 45.5 | 86 | 003-SB-050-06 |
| 29 | 1.0 | 59.6 | 58.6 | 51.2 | 50.2 | 86 | 003-SB-050-07 |
| 30 | 1.0 | 58.1 | 57.1 | 49.5 | 48.5 | 85 | 003-SB-050-08 |
| 31 | 1.0 | 62.6 | 61.6 | 53.7 | 52.7 | 86 | 003-SB-050-[illegible] |
| 32 | 1.0 | 63.6 | 62.6 | 55.6 | 54.6 | 87 | 003-SB-050-[illegible] |
| 33 | 1.0 | 62.7 | 61.7 | 54.5 | 53.5 | 87 | 003-SB-050-11 |
| 34 | 1.0 | 60.5 | 59.5 | 51.9 | 50.9 | 86 | 003-SB-DPI-49 |
| 35 | 1.0 | 43.8 | 42.8 | 40.7 | 39.7 | 93 | 003-SB-039-01 |
| 36 | 1.0 | 34.3 | 33.3 | 31.4 | 30.4 | 91 | 003-SB-039-02 |
| 37 | 1.0 | 33.5 | 32.5 | 31.3 | 30.3 | 93 | 003-SB-039-03 |
| 38 | 1.0 | 35.0 | 34.0 | 34.5 | 33.5 | 99 | 003-SB-039-04 |
| 39 | 1.0 | 32.3 | 31.3 | 31.4 | 30.4 | 97 | 003-SB-039-05 |

% solids (cont from 171)

6966
1222



171

| Dish# | wt dish | wet + dish | wet wt | dry + dish | dry wt | % Solid | Sample ID |
|---|---|---|---|---|---|---|---|
| 15 | 1.0 | 25.9 | 24.9 | 25.2 | 24.2 | 97 | 003-SB-063-02 |
| 16 | 1.0 | 16.1 | 15.1 | 15.6 | 14.6 | 97 | 003-SB-063-03 |
| 17 | 1.0 | 16.5 | 15.5 | 15.6 | 14.6 | 94 | 003-SB-054-01 |
| 18 | 0.7 | 13.4 | 12.7 | 12.6 | 11.9 | 94 | 003-SB-054-04 |
| 19 | 0.7 | 14.8 | 14.1 | 13.8 | 13.1 | 93 | 003-SB-054-05 |
| 20 | 0.7 | 15.9 | 15.2 | 13.6 | 12.9 | 85 | 003-SB-054-06 |
| 21 | 0.7 | 22.6 | 21.9 | 18.5 | 17.8 | 81 | 003-SB-054-07 |
| 22 | 0.7 | 16.9 | 16.2 | 14.2 | 13.5 | 83 | 003-SB-054-08 |
| 23 | 0.7 | 24.6 | 23.9 | 20.5 | 19.8 | 83 | 003-SB-054-09 |
| 24 | 0.7 | 20.9 | 20.2 | 17.1 | 16.4 | 81 | 003-SB-054-10 |
| 25 | 0.7 | 21.6 | 20.9 | 18.0 | 17.3 | 83 | 003-SB-054-11 |
| 26 | 0.7 | 25.3 | 24.6 | 21.2 | 20.5 | 83 | 003-SB-054-12 |
| 27 | 0.7 | 21.4 | 20.7 | 17.8 | 17.1 | 83 | 003-SB-054-13 |
| 28 | 0.7 | 15.9 | 15.2 | 13.4 | 12.7 | 84 | 003-SB-054-1[illegible] |
| 29 | 0.7 | 21.6 | 20.9 | 17.9 | 17.2 | 82 | 003-SB-DP1-16 |
| 30 | 0.7 | 21.3 | 20.6 | 18.5 | 17.8 | 86 | 003-SB-DP1-17 |
| 31 | 0.7 | 15.5 | 14.8 | 13.8 | 13.1 | 89 | 003-SB-054-15 |
| 32 | 0.7 | 15.9 | 15.2 | 13.8 | 13.1 | 86 | 003-SB-054-15 |
| 1 | 1.0 | 21.3 | 20.3 | 17.7 | 16.7 | 82 | 003-SB-073-12 |
| 2 | 1.0 | 27.8 | 26.8 | 26.9 | 25.9 | 93 | 003-SB-037-0[illegible] |
| 3 | 1.0 | 20.4 | 19.4 | 19.7 | 18.7 | 96 | 003-SB-027-03 |
| 4 | 1.0 | 29.9 | 28.8 | 28.3 | 27.3 | mk ~~94~~ 95 | 003-SB-063-0[illegible] |
| 5 | 1.0 | 23.1 | 22.1 | 22.4 | 21.4 | mk ~~96~~ 97 | 003-SB-063-0[illegible] |
| 6 | 1.0 | 24.3 | 23.3 | 20.7 | 19.7 | 85 | 003-SB-063-0[illegible] |
| 7 | 1.0 | 31.9 | 30.9 | 26.6 | 25.6 | 83 | 003-SB-063-0[illegible] |
| 8 | 1.0 | ~~29.9~~ 30.2 mk | ~~28.9~~ 29.2 mk | 26.2 | 25.2 | 86 | 003-SB-063-0[illegible] |
| 9 | 1.0 | 24.5 | 23.5 | 20.7 | 19.7 | 84 | 003-SB-063-0[illegible] |
| 10 | 1.0 | 20.9 | 19.9 | 17.7 | 16.7 | 71 | 003-SB-063-1[illegible] |
| 11 | 1.0 | 28.5 | 27.5 | 24.0 | 23.0 | 84 | 003-SB-063-1[illegible] |
| ~~12~~ 13 | 1.0 | 20.2 | 19.2 | 16.3 | 15.3 | 80 | 003-SB-063-1[illegible] |
| ~~13~~ 14 | 1.0 | 35.3 | 34.3 | 30.7 | 29.7 | 87 | 003-SB-DP1-18 |
| ~~14~~ 12 | 1.0 | 24.0 | 23.0 | 21.0 | 20.0 | 87 | 003-SB-[illegible] |
| 15 | 1.0 | 17.1 | 16.1 | 15.0 | 14.0 | 87 | 003-SB-[illegible] |

Work continued to Page 151

DATE

WITNESS

DATE

% Solids

PROJECT NO 69966
BOOK NO 1222



| Dish # | wt dish | wet+dish | wet wt | dry+dish | dry wt | % Solids | Sp ID |
|---|---|---|---|---|---|---|---|
| 8/13/97 16 | 1.0 | 19.4 | 18.4 | 16.8 | 15.8 | 86 | ~~003-SB-037-04~~ 01 |
| 17 | 1.0 | 22.0 | 21.0 | 21.2 | 20.2 | 96 | ~~003-SB-037-05~~ 02 |
| 18 | 1.0 | 26.8 | 27.8 | 22.8 | 21.8 | 78 | 003-SB-037-06 |
| 19 | 1.0 | 24.9 | 23.9 | 21.5 | 20.5 | 86 | 003-SB-037-08 |
| 20 | 1.0 | 27.6 | 26.6 | 23.2 | 22.2 | 83 | 003-SB-037-09 |
| 21 | 1.0 | 22.3 | 21.3 | ~~16.8~~ 22 | 21.2 | 99 | 003-SB-P06-01 |
| 22 | 1.0 | 36.5 | 35.5 | 35.7 | 34.7 | 98 | 003-SB-P06-03 |
| 23 | 1.0 | 30.2 | 29.2 | 29.6 | 28.6 | 98 | 003-SB-P06-04 |
| 24 | 1.0 | 22.1 | 21.1 | 19.6 | 18.6 | 88 | 003-SB-DP1-19 |
| 25 | 1.0 | 28.7 | 27.7 | 28.6 | 27.6 | 99 | 003-SB-P01-01 |
| 26 | 1.0 | 22.9 | 21.9 | 22.9 | 21.9 | 100 | 003-SB-P01-02 |
| 27 | 1.0 | | ~~sent~~ | ~~to lab~~ | ~~Dlc~~ | | ~~003-SB-P01-03~~ |
| 28 | 1.0 | 22.4 | 21.4 | 22.1 | 21.1 | 99 | 003-SB-P01-04 |
| 8/13/97 29 | 1.0 | 29.6 | 28.6 | 24.7 | 23.7 | 83 | 003-SB-P01-06 |
| 30 | 1.0 | 31.8 | 30.8 | 27.0 | 26.0 | 84 | 003-SB-P01-08 |
| 31 | 1.0 | 23.3 | 22.3 | 19.7 | 18.7 | 84 | 003-SB-P01-(?) |
| 32 | 1.0 | 27.6 | 26.6 | 24.6 | 23.6 | 89 | 003-SB-DP1- |
| 33 | 1.0 | 25.6 | 24.6 | 25.1 | 24.1 | 98 | 003-SB-023-01 |
| 34 | 1.0 | 22.5 | 21.5 | 22.1 | 21.1 | 98 | 003-SB-023-04 |
| 35 | 1.0 | 24.5 | 23.5 | 22.3 | 21.3 | 91 | 003-SB-023-06 |
| 36 | 1.0 | 29.5 | 28.5 | 26.2 | 25.2 | 88 | 003-SB-023-07 |
| 37 | 1.0 | 35.6 | 34.6 | 30.4 | 29.4 | 85 | 003-SB-023-08 |
| 38 | 1.0 | 35.2 | 34.2 | 29.5 | 28.5 | 83 | 003-SB-023-09 |
| 39 | 1.0 | 23.5 | 22.5 | 19.8 | 18.8 | 84 | 003-SB-023-10 |
| 40 | 1.0 | 31.2 | 30.2 | 26.6 | 25.6 | 85 | 003-SB-023-12 |
| 41 | 1.0 | 31.4 | 30.4 | 26.0 | 25.0 | 82 | 003-SB-023-13 |
| 42 | 1.0 | 30.9 | 29.9 | 25.6 | 24.6 | 82 | 003-SB-023-14 |
| 43 | 1.0 | 24.2 | 23.2 | 20.0 | 19.0 | 82 | 003-SB-DP1-21 |
| 44 | 1.0 | 13.8 | 12.8 | 12.1 | 11.1 | 87 | 003-SB-P12-06 |
| 45 | 1.0 | 16.7 | 15.7 | 14.6 | 13.6 | 87 | 003-SB-P12-06D |
| 46 | 1.0 | 28.6 | 27.6 | 27.5 | 26.5 | 96 | 003-SB-P12-01 |
| 47 | 1.0 | 26.4 | 25.4 | 24.0 | 23.0 | 91 | 003-SB-P12-04 |
| 48 | 1.0 | 29.1 | 28.1 | 26.3 | 25.3 | 90 | 003-SB-P12-08 |

Work continued to Page 153

DATE

UNDERSTOOD BY DATE WITNESS DATE

% solids

PROJECT NO. 69666
BOOK NO. 1222



| | Dish # | wt dish / ~~tot dish~~ | 151 wet dish / ~~wet dry dish~~ | dry dish / ~~dry~~ | dry | % solids | Sample ID |
|---|---|---|---|---|---|---|---|
| 8/14/97 | 49 | 1.0 | 36.5 | 35.5 | 32.5 | 31.5 | ~~86~~ 88 | 003-SB-P12-09 |
| | 50 | 1.0 | 31.2 | 30.2 | 26.3 | 25.3 | ~~81~~ 84 | 003-SB-P12-10 |
| | 51 | 1.0 | 20.4 | 19.4 | 20.1 | 19.1 | ~~94~~ 98 | 003-SB-036-01 |
| | 52 | 1.0 | 28.7 | 27.7 | 28.5 | 27.5 | ~~96~~ 99 | 003-SB-036-02 |
| | 53 | 1.0 | 22.3 | 21.3 | 21.9 | 20.9 | ~~94~~ 98 | 003-SB-036-03 |
| | 54 | 1.0 | 20.6 | 19.6 | 20.3 | 19.3 | ~~94~~ 98 | 003-SB-036-04 |
| | 55 | 1.0 | 29.1 | 28.1 | 25.9 | 24.9 | ~~86~~ 87 | 003-SB-036-06 |
| | 56 | 1.0 | 16.4 | 15.4 | 14.6 | 13.6 | ~~83~~ 88 | 003-SB-036-06D |
| | 57 | 1.0 | 22.7 | 21.7 | 22.2 | 21.2 | ~~93~~ 98 | 003-SB-023-02* |
| | 58 | 1.0 | 20.0 | 19.0 | 19.6 | 18.6 | ~~93~~ 98 | 003-SB-023-03* |
| | 59 | 1.0 | 29.1 | 28.1 | 28.2 | 27.2 | ~~93~~ 97 | 003-SB-P12-02* |
| | 60 | 1.0 | 21.1 | 20.1 | 20.5 | 19.5 | ~~92~~ 97 | 003-SB-P12-03* |
| 8/13/97 | 27 | 1.0 | 30.9 | 29.9 | 26.0 | 25.0 | ~~80~~ 84 | 003-SB-P01-07 |
| ~~8/27/97~~ 8/27/97 | 1 | 1.0 | 38.1 | 37.1 | 34.4 | 33.4 | 90 | 003-SB-032-02* |
| | 2 | 1.0 | 11.9 | 10.9 | 6.2 | 5.2 | 48 | 003-SB-032-03* |
| | 3 | 1.0 | 27.7 | 26.7 | 22.9 | 21.9 | 82 | 003-SB-P02-09 |
| | 4 | 1.0 | 30.3 | 29.3 | 27.1 | 26.1 | 89 | 003-SB-P02-11 |
| | 5 | 1.0 | 24.4 | 23.4 | 20.8 | 19.8 | 85 | 003-SB-P02-12 |
| | 6 | 1.0 | 32.6 | 31.6 | 27.6 | 26.6 | 84 | 003-SB-P02-13 |
| | 7 | 1.0 | 33.9 | 32.9 | 28.0 | 27.0 | 82 | 003-SB-P02-14 |
| | 8 | 1.0 | 18.6 | 17.6 | 15.6 | 14.6 | 83 | 003-SB-058-01 |
| | 9 | 1.0 | 26.0 | 25.0 | 25.3 | 24.3 | 97 | 003-SB-058-02 |
| | 10 | 1.0 | 22.4 | 21.4 | 21.8 | 20.8 | 97 | 003-SB-058-03 |
| | 11 | 1.0 | 23.2 | 22.2 | 22.2 | 21.2 | 95 | 003-SB-058-04 |
| | 12 | 1.0 | 37.8 | 36.8 | 32.7 | 31.7 | 86 | 003-SB-058-06 |
| | 13 | 1.0 | 20.5 | 19.5 | 20.0 | 19.0 | 97 | 003-SB-P02-02 |
| | 14 | 1.0 | 21.4 | 20.4 | 21.2 | 20.2 | 99 | 003-SB-P02-01 |
| | 15 | 1.0 | 16.4 | 15.4 | 16.3 | 15.3 | 99 | 003-SB-P02-01 |
| | 16 | 1.0 | 27.1 | 26.1 | 25.2 | 24.2 | 93 | 003-SB-P02-03 |
| | 17 | 1.0 | 27.3 | 26.3 | 26.9 | 25.9 | 98 | 003-SB-P02-04 |
| | 18 | 1.0 | 33.2 | 32.2 | 28.5 | 27.5 | 85 | 003-SB-P02-05 |
| | 19 | 1.0 | 32.2 | 31.2 | 27.2 | 26.2 | 84 | 003-SB-P02-08 |
| | 20 | 1.0 | 40.0 | 39.0 | 33.6 | 32.6 | 84 | 003-SB-058-07 |

Work continued to Page 155

SIGNATURE | DATE

DISCLOSED TO AND UNDERSTOOD BY | DATE | WITNESS | DATE

% Solids

PROJECT NO. 6966
BOOK NO 1222



153

| Dish # | wt dish | wet + dish | wet | dry + dish | dry | % solids | Sample ID's |
|---|---|---|---|---|---|---|---|
| 21 | 1.0 | 42.0 | 41.0 | 36.3 | 35.3 | 86 | 003-SB-058-08 |
| 22 | 1.0 | 40.7 | 39.7 | 35.0 | 34.0 | 84 | 003-SB-DP1-21 |
| 23 | 1.0 | 38.2 | 37.2 | 32.1 | 31.1 | 81 | 003-SB-058-09 |
| 24 | 1.0 | 39.4 | 38.4 | 32.7 | 31.7 | 80 | 003-SB-058-11 |
| 25 | 1.0 | 44.6 | 43.6 | 37.5 | 36.5 | 82 | 003-SB-058-12 |
| 26 | 1.0 | 43.1 | 42.1 | 36.6 | 35.6 | 83 | 003-SB-058-13 |
| 27 | 1.0 | 40.3 | 39.3 | 34.3 | 33.3 | 83 | 003-SB-058-14 |
| 28 | 1.0 | 42.2 | 41.2 | 35.1 | 34.1 | 81 | 003-SB-DP1-26 |
| 29 | 1.0 | 26.3 | 25.3 | 25.2 | 24.2 | 92 | 003-SB-007-01 |
| 30 | 1.0 | 32.1 | 31.1 | 27.4 | 26.4 | 82 | 003-SB-007-02 |
| 31 | 1.0 | 34.1 | 33.1 | 31.6 | 30.6 | 96 | 003-SB-007-04 |
| 32 | 1.0 | 45.4 | 44.4 | 38.4 | 37.4 | 82 | 003-SB-P02-10 |
| 33 | 1.0 | 34.3 | 33.3 | 29.2 | 28.2 | 82 | 003-SB-P07-10D |
| 34 | 1.0 | 38.6 | 37.6 | 33.7 | 32.7 | 85 | 003-SB-007-06 |
| 35 | 1.0 | 41.7 | 40.7 | 35.6 | 34.6 | 83 | 003-SB-007-07 |
| 36 | 1.0 | 40.3 | 39.3 | 34.2 | 33.2 | 82 | 003-SB-007-[illegible] |
| 37 | 1.0 | 41.6 | 40.6 | 35.8 | 34.8 | 84 | 003-SB-007-09 |
| 38 | 1.0 | 43.9 | 42.9 | 37.6 | 36.6 | 85 | 003-SB-007-10 |
| 39 | 1.0 | 37.3 | 36.3 | 31.9 | 30.9 | 85 | 003-SB-DP1-27 |
| 40 | 1.0 | 39.9 | 38.9 | 34.6 | 33.6 | 86 | 003-SB-DP1-28 |
| 41 | 1.0 | 26.6 | 25.6 | 26.5 | 25.5 | 100 | 003-SB-027-01 |
| 42 | 1.0 | 36.1 | 35.1 | 35.9 | 34.1 | 97 | 003-SB-027-02 |
| 43 | 1.0 | 33.1 | 32.1 | 33.0 | 32.0 | 100 | 003-SB-027-03 |
| 44 | 1.0 | 29.3 | 28.3 | 28.8 | 27.8 | 98 | 003-SB-027-04 |
| 45 | 1.0 | 30.6 | 29.6 | 30.3 | 29.3 | 99 | 003-SB-~~007~~ 027-01 |
| 46 | 1.0 | 31.0 | 30.0 | 30.1 | 29.1 | 97 | 003-SB-007-03 |
| 47 | 1.0 | 32.1 | 31.1 | 31.1 | 30.1 | 97 | 003-SB-007-03D |
| 48 | 1.0 | 24.8 ~~26.8~~ | 23.8 | 24.3 | 23.3 | 98 | 003-SB-030-03 |
| 49 | 1.0 | 28.7 | 27.7 | 28.5 | 27.5 | 99 | 003-SB-P09-02 |
| 50 | 1.0 | 28.3 | 27.3 | 27.7 | 26.7 | 98 | 003-SB-P09-03 |
| 51 | 1.0 | 30.3 | 29.3 | 29.9 | 28.9 | 99 | 003-SB-P09-04 |
| 52 | 1.0 | 33.8 | 32.8 | 30.8 | 29.8 | 91 | 003-SB-P09-06 |
| 53 | 1.0 | 51.8 | 50.8 | 44.3 | 43.3 | 85 | 003-SB-P09-07 |

Work continued to Page 157

SIGNATURE | DATE

WITNESSED AND UNDERSTOOD BY | DATE | WITNESS | DATE

% Solids

PROJECT NO 6966
WORK NO 1222



155

| | dish # | wt dish | wet + dish | wet | dry + dish | dry | % solids | Sample ID |
|---|---|---|---|---|---|---|---|---|
| | 54 | [illegible] | 32.5 | 31.5 | VOID | [illegible] | | [illegible] |
| 8/28/97 SC | 55 | 1.0 | 24.8 | 23.8 | 21.1 | 20.1 | 84 | 003-SB-[illegible] |
| | 56 | 1.0 | 16.2 | 15.2 | 14.7 | 13.7 | 96 | 003-SB-DP1-[illegible] |
| | 57 | 1.0 | 29.3 | 28.3 | 28.4 | 27.4 | 97 | 003-SB-[illegible] |
| | 58 | 1.0 | 18.1 | 17.1 | 16.8 | 15.8 | 92 | 003-SB-[illegible]03 |
| | 59 | 1.0 | 21.3 | 20.3 | 19.9 | 18.9 | 93 | 003-SB-055-09 |
| | 60 | 1.0 | 26.6 | 25.6 | 22.5 | 21.5 | 84 | 003-SB-055-06 |
| | 61 | 1.0 | 25.6 | 24.6 | 21.6 | 20.6 | 84 | 003-SB-055-07 |
| | 62 | 1.0 | 26.1 | 25.1 | 22.0 | 21.0 | 84 | 003-SB-055-08 |
| | 63 | 1.0 | 23.2 | 22.2 | 22.9 | 21.9 | 99 | 003-SB-030-02 |
| | 64 | 1.0 | 20.3 | 19.3 | 20.1 | 19.1 | 99 | 003-SB-030-02 |
| | 65 | 1.0 | 41.7 | 40.7 | 34.6 | 33.6 | 83 | 003-SB-055-09 |
| | 66 | 1.0 | 39.0 | 38.0 | 33.0 | 32.0 | 84 | 003-SB-055-10 |
| | 67 | 1.0 | 43.1 | 42.1 | 36.5 | 35.5 | 84 | 003-SB-DP1-31 |
| | 68 | 1.0 | 39.2 | 38.2 | 32.6 | 31.6 | 83 | 003-SB-055-11 |
| | 69 | 1.0 | 20.5 | 19.5 | 17.0 | 16.0 | 82 | 003-SB-055-12 |
| | 70 | 1.0 | 22.2 | 21.2 | 18.5 | 17.5 | 83 | 003-SB-055-13 |
| | 71 | 1.0 | 20.7 | 19.7 | 17.7 | 16.7 | 85 | 003-SB-055-14 |
| | 72 | 1.0 | 14.9 | 13.9 | 13.8 | 12.8 | 92 | 003-SB-032-01 |
| | 73 | 1.0 | 19.1 | 18.1 | 18.6 | 17.6 | 97 | 003-SB-032-03 |
| | 74 | 1.0 | 30.9 | 29.9 | 26.8 | 25.8 | 86 | 003-SB-032-04 |
| | 75 | 1.0 | 26.8 | 25.8 | 23.4 | 22.4 | 87 | 003-SB-032-08 |
| | 76 | 1.0 | 24.9 | 23.9 | 21.4 | 20.4 | 85 | 003-SB-DP1-32 |
| | 77 | 1.0 | 15.0 | 14.0 | 11.5 | 10.5 | 75 | 003-SB-DP1-23 |
| 9/2/97 SC | 78 | 1.0 | 33.5 | 32.5 | 29.4 | 28.4 | 87 | 003-SB-032-09 |
| | 79 | 1.0 | 22.7 | 21.7 | 19.7 | 18.7 | 86 | 003-SB-032-10 |
| 8/29/97 SC | 80 | 1.0 | 21.3 | 20.3 | 19.0 | 18.0 | 89 | 003-SB-055-01 |
| | 81 | 1.0 | 15.3 | 14.3 | 14.0 | 13.0 | 91 | 003-SB-055-01 |
| 9/2/97 SC | 82 | 1.0 | 29.5 | 28.5 | 26.4 | 25.4 | 89 | 003-SB-032-11 |
| | 83 | 1.0 | 25.0 | 24.0 | 22.0 | 21.0 | 86 | 003-SB-032-12 |
| | 84 | 1.0 | 26.3 | 25.3 | 22.2 | 21.2 | 84 | 003-SB-032-13 |
| | 85 | 1.0 | 28.1 | 27.1 | 24.2 | 23.2 | 86 | 003-SB-032-14 |
| | 86 | 1.0 | 23.4 | 22.4 | 19.7 | 18.7 | 83 | 003-SB-032-15 |
| | 87 | 1.0 | 26.6 | 25.6 | 23.4 | 22.4 | 88 | 003-SB-DP1-30 |

Work continued to Page 159

DATE

WITNESS DATE

Percent Solids

PROJECT NO. 6966
BOOK NO. 1222



| | | | | dry + dish | dry | % solid | |
|---|---|---|---|---|---|---|---|
| 88 | 1.0 | 10.3 | 9.3 | 8.7 | 7.7 | 83 | 003-SB-033-12 |
| 89 | 1.0 | 10.1 | 9.1 | 8.7 | 7.7 | 85 | ~~003-SB-033-13~~ |
| 1 | 1.0 | 25.6 | 24.6 | 25.0 | 24.0 | 98 | ~~003-SB-P08-01~~ |
| 2 | 1.0 | 30.2 | 29.2 | 27.2 | 26.2 | 90 | ~~003-SB-P08-02~~ |
| 3 | 1.0 | 27.1 | 26.1 | 26.4 | 25.4 | 97 | ~~003-SB-P08-03~~ |
| 4 | 1.0 | 29.6 | 28.6 | 28.7 | 27.7 | 97 | 003-SB-P08-04 |
| 5 | 1.0 | 24.3 | 23.3 | 23.6 | 22.6 | 97 | 003-SB-P08-05 |
| 6 | 1.0 | 26.5 | 25.5 | 23.0 | 22.0 | 86 | 003-SB-P08-06 |
| 7 | 1.0 | 34.2 | 33.2 | 29.4 | 28.4 | 86 | 003-SB-P08-07 |
| 8 | 1.0 | 16.2 | 15.2 | 13.6 | 12.6 | 83 | 003-SB-P08-07b |
| 9 | 1.0 | 28.4 | 27.4 | 23.8 | 22.8 | 83 | 003-SB-P08-08 |
| 10 | 1.0 | 24.3 | 23.3 | 23.8 | 22.8 | 98 | 003-SB-~~P08~~ DP1-34 |
| 11 | 1.0 | 15.2 | 14.2 | 11.9 | 10.9 | 77 | 003-SB-032-04 |
| 1 | 1.0 | 26.1 | 25.1 | 24.0 | 23.0 | 92 | 003-SB-P08-09 |
| 2 | 1.0 | 28.6 | 27.6 | 24.3 | 23.3 | 84 | 003-SB-P08-12 |
| 3 | 1.0 | 22.3 | 21.3 | 19.3 | 18.3 | 86 | 003-SB-P08-13 |
| 4 | 1.0 | 25.1 | 24.1 | 21.2 | 20.2 | 84 | 003-SB-P08-14 |
| 5 | 1.0 | 22.2 | 21.2 | 18.7 | 17.7 | 83 | 003-SB-1[illegible]15 |
| 6 | 1.0 | 20.2 | 19.2 | 16.9 | 15.9 | 83 | 003-SB-P08-15D |
| 7 | 1.0 | 22.9 | 21.9 | ~~20.9~~ 21.0 ne | ~~19.9~~ 20.0 ne | 91 | 003-SB-~~P08~~ P70-01 |
| 8 | 1.0 | 23.1 | 22.1 | 22.4 | 21.4 | 97 | 003-SB-070-02 |
| 9 | 1.0 | 26.1 | 25.1 | 25.8 | 24.8 | 99 | 003-SB-070-03 |
| 10 | 1.0 | 27.9 | 26.9 | 27.5 | 26.5 | 99 | 003-SB-070-04 |
| 11 | 1.0 | 32.2 | 31.2 | 27.6 | 26.6 | 85 | 003-SB-DP1-35 |
| 1 | 1.0 | 22.7 | 21.7 | 22.2 | 21.2 | 98 | 003-SB-070-05-BR |
| 2 | 1.0 | 24.5 | 23.5 | 21.3 | 20.3 | 86 | 003-SB-070-06-BR |
| 3 | 1.0 | 31.6 | 30.6 | 26.4 | 25.4 | 83 | 003-SB-070-07-BR |
| 4 | 1.0 | 28.7 | 27.7 | 24.1 | 23.1 | 83 | 003-SB-070-08-BR |
| 5 | 1.0 | 32.1 | 31.1 | 26.8 | 25.8 | 83 | 003-SB-070-09-BR |
| 6 | 1.0 | 32.0 | 31.0 | 27.5 | 26.5 | 85 | 003-SB-070-10-BR |
| 7 | 1.0 | 31.6 | 30.6 | 27.0 | 26.0 | 85 | 003-SB-070-11-BR |
| 8 | 1.0 | 32.0 | 31.0 | 26.7 | 25.7 | 83 | 003-SB-070-12-BR |
| 9 | 1.0 | 27.1 | 26.1 | 22.9 | 21.9 | 84 | 003-SB-070-13-BR |
| 10 | 1.0 | 29.0 | 28.0 | 24.3 | 23.3 | 83 | 003-SB-070-14-BR |

Work continued to Page 141

DATE

UNDERSTOOD BY | DATE | WITNESS | DATE

~~Percent~~ Solids

~~dish#~~ - etch in bottom of aluminum pan.

~~wt~~ = weight (grams)

~~g~~ = grams

~~dish~~ = ~~include~~ DC 4/10/97

~~wt~~ dish = weight of empty dish

wet wt + dish = dish not tared before weighing dish plus sample ≈ total weight of wet sample

wet wt = total weight of wet sample minus weight of empty dish

dry wt + dish = total weight of sample plus dish after drying

dry wt = total weight of dried sample minus weight of empty dish

$$\text{Percent solids} = \frac{(\text{dry wt} + \text{dish}) - (\text{wt dish})}{(\text{wet wt} + \text{dish}) - (\text{wt dish})} \times 100$$

Percent Solids determination 6966 1222



160

7/10/97

| | Dish # | wt Dish | wet wt + Dish | Wet wt | dry wt + Dish | dry wt | Percent solids | Sample ID |
|---|---|---|---|---|---|---|---|---|
| 7/11/96 | 1 | 1.0 | 19.8 | 18.8 | 19.1 | 18.1 | 96.3 | 003-SB-006-02 |
| Jdc | ~~2~~ | 1.0 | ~~19.8~~ 10.4 | 9.4 | 9.8 | 8.8 | 93.6 | 003-SB-006-03 |
| | ~~3~~ | 1.0 | ~~10.4~~ 18.5 | 17.5 | 18.1 | 17.1 | 97.7 | 003-SB-P07-05 |
| | ~~4~~ | 1.0 | ~~18.5~~ 17.6 | 16.6 | 17.2 | 16.2 | 97.6 | 003-SB-P07-05D |
| | ~~5~~ | 1.0 | ~~17.4~~ 7.4 | 6.4 | 7.2 | 6.2 | 96.9 | 003-SB-006-01 |
| | ~~6~~ | 1.0 | ~~7.4~~ 16.5 | 15.5 | 16.0 | 15.0 | 96.8 | 003-SB-006-04 |
| | ~~7~~ | 1.0 | ~~16.5~~ 16.4 | 15.4 | 16.0 | 15.0 | 97.4 | 003-SB-006-05 |
| | ~~8~~ | 1.0 20.6 | ~~16.4~~ ~~16.4~~ 20.6 | 19.6 | 18.3 | 17.3 | 88.3 | 003-SB-006-06 |
| | ~~9~~ | 1.0 16.0 | ~~20.6~~ ~~20.6~~ 16.0 | 15.0 | 13.8 | 12.8 | 85.3 | 003-SB-006-07 |
| | ~~9~~ | 1.0 | | Delete | | | | |
| 7/12/97 | 10 | 1.0 | 15.2 | 14.2 | 12.9 | 11.9 | 83.8 | 003-SB-006-08 |
| | 11 | 1.0 | 8.7 | 7.7 | 7.3 | 6.3 | 82 | 003-SB-006-09 |
| | 12 | 1.0 | 11.1 | 10.1 | 9.5 | 8.5 | 84 | 003-SB-006-10 |
| | 13 | 1.0 | 20.5 | 19.5 | 17.7 | 16.7 | 86 | 003-SB-006-11 |
| | 14 | 1.0 | 11.7 | 10.7 | 9.9 | 8.9 | 83 | 003-SB-006- |
| | 15 | 1.0 | 13.8 | 12.8 | 11.8 | 10.8 | 84 | 003-SB-006-DA-01 |
| | 16 | 1.0 | 10.9 | 9.9 | 9.5 | 8.5 | 86 | 003-SB-006-13 |
| | 17 | 1.0 | 18.9 | 17.9 | 16.0 | 15.0 | 84 | 003-SB-006-14 |
| | 18 | 1.0 | 12.8 | 11.8 | 11.9 | 10.9 | 92 | 003-SB-P07-01 |
| | 19 | 1.0 | 11.4 | 10.4 | 11.1 | 10.1 | 97 | 003-SB-P07-02 |
| | 20 | 1.0 | 13.3 | 12.3 | 12.8 | 11.8 | 96 | 003-SB-P07-03 |
| | 21 | 1.0 | 13.1 | 12.1 | 12.6 | 11.6 | 96 | 003-SB-P07-04 |
| | 22 | 1.0 | 14.5 | 13.5 | 13.3 | 12.3 | 91 | 003-SB-P07-06 |
| | 23 | 1.0 | 15.1 | 14.1 | 12.9 | 11.9 | 84 | 003-SB-P07-07 |
| | 24 | 1.0 | 12.7 | 11.7 | 11.0 | 10.0 | 85 | 003-SB-DP1-02 |
| | 25 | 1.0 | 20.1 | 19.1 | 16.9 | 15.9 | 83 | 003-SB-P07-08 |
| | 26 | 0.9 | 19.3 | 18.4 | 16.3 | 15.4 | 84 | 003-SB-P07-08D |
| 7/13/97 | 27 | 0.9 | 13.5 | 12.6 | 12.3 | 11.4 | 90 | 003-SB-P03-02 |
| Jdc | 28 | 0.9 | 10.1 | 9.2 | 9.8 | 8.9 | 97 | 003-SB-P03-03 |
| | 29 | 0.9 | 15.5 | 14.6 | 12.6 | 11.7 | 80 | 003-SB-P07-10 |
| | 30 | 1.0 | 11.4 | 10.4 | 9.7 | 8.8 | 85 | 003-SB-P07-11 |

Work continued on Page

7/13/97

161

| | dish # | wt dish | wet wt + dish | wet wt | dry wt + dish | dry wt | % solid | Spl ID |
|---|---|---|---|---|---|---|---|---|
| 7/13/97 PL | 31 | 1.0 | 11.6 | 10.6 | 9.8 | 8.8 | 83 | 003-SB-P07-12 |
| | 32 | 1.0 | 14.9 | 13.9 | 12.2 | 11.2 | 81 | 003-SB-P07-14 |
| | 33 | 1.0 | 16.7 | 15.7 | 13.8 | 12.8 | 82 | 003-SB-DP1-03 |
| | 34 | 1.0 | 10.7 | 9.7 | 9.6 | 8.6 | 89 | 003-SB-P03-01 |
| | 35 | 1.0 | 10.3 | 9.3 | 9.7 | 8.7 | 94 | 003-SB-P03-04 |
| | 36 | 1.0 | 15.7 | 14.7 | 15.3 | 14.3 | 97 | 003-SB-P03-05 |
| | 37 | 1.0 | 13.8 | 12.8 | 13.1 | 12.1 | 95 | 003-SB-P03-06 |
| | 38 | 1.0 | ~~19.3~~ 19.4 | 18.4 | 17.0 | 16.0 | 87 | 003-SB-P03-07 |
| | 39 | 1.0 | 17.6 | 16.6 | 15.0 | 14.0 | 84 | 003-SB-P03-09 |
| 7/14/97 PL | 40 | 1.0 | 13.2 | 12.2 | 11.4 | 10.4 | 85 | 003-SB-P03-10 |
| | 41 | 1.0 | 11.4 | 10.4 | 11.1 | 10.1 | 97 | 003-SB-P03-04 |
| | 42 | 1.0 | 16.4 | 15.4 | 14.4 | 13.4 | 87 | 003-SB-P03-11 |
| | 43 | 1.0 | 21.6 | 20.5 | 17.7 | 16.7 | 81 | 003-SB-P03-12 |
| | 44 | 1.0 | 21.1 | 20.1 | 18.0 | 17.0 | 85 | ~~003-SB-P03-08~~ ~~003-SB-P03-12~~ |
| | 45 | ~~0.9~~ 1.0 | 20.1 | 19.1 | 16.5 | 15.5 | 81 | 003-SB-P03-13 |
| | 46 | 1.0 | 18.7 | 17.7 | 16.7 | 15.7 | 89 | 003-SB-P03-13 |
| | 47 | 1.0 | 15.1 | 14.1 | 14.8 | 13.8 | 98 | 003-SB-003-01 |
| | 48 | 1.0 | 10.5 | 9.5 | 10.3 | 9.3 | 98 | 003-SB-003-0 |
| | 49 | 1.0 | 15.6 | 14.6 | 15.4 | 14.4 | 99 | 003-SB-003-0 |
| | 50 | 1.0 | 16.4 | 15.4 | 16.0 | 16.0 | 97 | 003-SB-003-0 |
| | 51 | 1.0 | 21.3 | 20.3 | 20.9 | 19.9 | 98 | 003-SB-003-05 |
| | 52 | 1.0 | 21.4 | 20.4 | 19.3 | 18.3 | 90 | 003-SB-003-06 |
| | 53 | 0.9 | 17.2 | 16.3 | 14.5 | 13.6 | 83 | 003-SB-DP1-05 |
| | 54 | 1.0 | 20.9 | 19.9 | 18.1 | 17.1 | 86 | 003-SB-003-08 |
| | 55 | 1.0 | 24.4 | 23.4 | 21.2 | 20.2 | 86 | 003-SB-003-08 |
| 7/15/97 PL | 56 | 1.0 | 10.2 | 9.2 | 8.8 | 7.8 | 85 | 003-SB-003-10 |
| | 57 | 1.0 | 14.5 | 13.5 | 14.3 | 13.3 | 99 | 003-SB-013-01 |
| | 58 | 1.0 | 19.1 | 18.1 | 18.7 | 17.7 | 98 | 003-SB-013-0 |
| | 59 | 1.0 | 20.5 | 19.5 | 20.2 | 19.2 | 98 | 003-SB-013-0 |
| | 60 | 1.0 | 14.0 | 13.0 | 13.9 | 12.9 | 99 | 003-SB-013-04 |
| | 61 | 1.0 | 24.5 | 23.5 | 24.0 | 23.0 | 98 | 003-SB-013-0 |
| | 62 | 1.0 | 12.5 | 11.5 | 10.9 | 9.9 | 86 | 003-SB-013-06 |
| | 63 | 1.0 | 18.0 | 17.0 | 15.4 | 14.4 | 85 | 003-SB-013-0 |

165

Percent Solids

6966
1222



163

| | dish # | wt dish | wet + dish | wet | dry + dish | dry | % solid | Spl ID |
|---|---|---|---|---|---|---|---|---|
| 7/15/97 PC | ~~63~~ 64 | 1.0 | 16.4 | 15.4 | 14.0 | 13.0 | 84 | 003-SB-013-08 |
| | 65 | 1.0 | 16.0 | 15.0 | 13.4 | 12.4 | 83 | 003-SB-013-09 |
| | 66 | 1.0 | 11.4 | 10.4 | 9.6 | 8.6 | 83 | 003-SB-013-09D |
| 7/16/97 PC | 67 | 1.0 | 12.3 | 11.3 | 10.8 | 9.8 | 87 | 003-SB-013-11 |
| | 68 | 1.0 | 16.0 | 15.0 | 14.2 | 13.2 | 88 | 003-SB-DP1-06 |
| 7/23/97 PC | 1 | 1.0 | 13.7 | 12.7 | 13.5 | 12.5 | 98 | 003-SB-008-02* |
| | 2 | 1.0 | 12.2 | 11.2 | 12.1 | 11.1 | 99 | 003-SB-008-03* |
| | 3 | 1.0 | 9.9 | 8.9 | 9.6 | 8.5 | 96 | 003-SB-004-02* |
| | 4 | 1.0 | 12.7 | 11.7 | 12.6 | 11.6 | 99 | 003-SB-004-03* |
| 7/24/97 PC | 5 | 1.0 | 11.2 | 10.2 | 11.0 | 10.0 | 98 | 003-SB-008-01 |
| | 6 | 1.0 | 13.2 | 12.2 | 13.0 | 12.0 | 98 | 003-SB-008-04 |
| | 7 | 1.0 | 13.5 | 12.5 | 12.0 | 11.0 | 88 | 003-SB-008-06 |
| | 8 | 1.0 | 14.3 | 13.3 | 12.3 | 11.3 | 85 | 003-SB-008-07 |
| | 9 | 1.0 | 16.5 | 15.5 | ~~14.0~~ 13.0 PC | 13.4 | 86 | 003-SB-008-08 |
| | 10 | 1.0 | 14.7 | 13.7 | 12.4 | 11.4 | 83 | 003-SB-008-09 |
| | 11 | 1.0 | 15.7 | 14.7 | 13.1 | 12.1 | 82 | 003-SB-008-10 |
| | 12 | 1.0 | 14.2 | 13.2 | ~~11.2~~ 12.1 PC | 11.1 | 84 | 003-SB-008-11 |
| | 13 | 1.0 | 15.9 | 14.9 | 13.5 | 12.5 | 84 | 003-SB-DP1- |
| | 14 | 1.0 | 15.3 | 14.3 | 13.4 | 12.4 | 87 | 003-SB-008-13 |
| | 15 | 1.0 | 12.2 | 11.2 | 12.1 | 11.1 | 99 | 003-SB-008-05 |
| | 16 | 1.0 | 11.4 | 10.4 | 11.2 | 10.2 | 98 | 003-SB-008-05D |
| 7/25/97 PC | 17 | 1.0 | 18.6 | 17.6 | 17.0 | 16.0 | 91 | 003-SB-038-02* |
| | 18 | 1.0 | 23.5 | 22.5 | 22.8 | 21.8 | 97 | 003-SB-038-03* |
| | 19 | 1.0 | 12.6 | 11.6 | 11.7 | 10.7 | 92 | 003-SB-073-02* |
| | 20 | 1.0 | 20.3 | 19.3 | 17.8 | 16.8 | 87 | 003-SB-073-03* |
| | 21 | 1.0 | 16.7 | 15.7 | 15.0 | 14.0 | 89 | 003-SB-008-14 |
| | 22 | 1.0 | 24.0 | 23.0 | 21.0 | 20.0 | 87 | 003-SB-008-15 |
| | 23 | 1.0 | 13.1 | 12.1 | 12.8 | 11.8 | 98 | 003-SB-004-01 |
| | 24 | 1.0 | 18.2 | 17.2 | 15.7 | 14.7 | 85 | 003-SB-008-12 |
| | 25 | 1.0 | 16.6 | 15.6 | 14.2 | 13.2 | 85 | 003-SB-008-12D |
| 7/28/97 PC | 1 | 1.0 | 16.6 | 15.6 | 16.3 | 15.3 | 98 | 003-SB-004-04 |
| | 2 | 1.0 | 13.5 | 12.5 | 12.6 | 11.6 | 93 | 003-SB-004-05 |
| | 3 | 1.0 | 21.0 | 20.0 | 18.1 | 17.1 | 86 | 003-SB-004-06 |

REF. WORKBOOK NO. PAGE 167

DATE

WITNESS DATE

Percent Solids

~~6966~~ 6966
1222



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| Dish # | Wt dish | wet+dish | wet pot | dry+dish | dry pot | % solids | Sample ID |
|---|---|---|---|---|---|---|---|
| 4 | 1.0 | 19.9 | 18.9 | 17.3 | 16.3 | 86 | 003-SB-004-07 |
| 5 | 1.0 | 21.2 | 20.2 | 19.0 | 18.0 | 89 | 003-SB-004-08 |
| 6 | 1.0 | 13.7 | 12.7 | 12.4 | 11.4 | 90 | 003-SB-038-01 |
| 7 | 1.0 | 29.7 | 28.7 | 28.9 | 27.9 | 97 | 003-SB-038-04 |
| 8 | 1.0 | 18.4 | 17.4 | 17.3 | 16.3 | 94 | 003-SB-038-05 |
| 9 | 1.0 | 23.8 | 22.8 | 20.6 | 19.6 | 86 | 003-SB-038-07 |
| 10 | 1.0 | 22.1 | 21.8 | 18.6 | 17.6 | 81 | 003-SB-038-08 |
| 11 | 1.0 | 20.2 | 19.2 | 17.0 | 16.0 | 83 | 003-SB-038-10 |
| 12 | 1.0 | 21.9 | 20.9 | 19.1 | 18.1 | 87 | 003-SB-038-11 |
| 13 | 1.0 | 26.6 | 25.6 | 22.0 | 21.0 | 82 | 003-SB-038-12 |
| 14 | 1.0 | 19.0 | 18.0 | 17.1 | 16.1 | 89 | 003-SB-038-14 |
| 15 | 1.0 | 22.4 | 21.4 | 18.9 | 17.9 | 84 | 003-SB-DP1-08 |
| 16 | 1.0 | 14.7 | 13.7 | 13.7 | 12.7 | 93 | 003-SB-073-01 |
| 17 | 1.0 | 22.5 | 21.5 | 21.8 | 20.8 | 97 | 003-SB-073-07 |
| 18 | 1.0 | 15.6 | 14.6 | 13.5 | 12.5 | 86 | 003-SB-073-07D |
| 19 | 1.0 | 21.1 | 20.1 | 20.6 | 19.6 | 98 | 003-SB-073-04 |
| 20 | 1.0 | 14.3 | 13.3 | 14.1 | 13.1 | 99 | 003-SB-073-05 |
| 21 | 1.0 | 19.1 | 18.1 | 16.9 | 15.9 | 88 | 003-SB-073-06 |
| 22 | 1.0 | 24.5 | 23.5 | 22.1 | 21.1 | 90 | 003-SB-073-08 |
| 23 | 1.0 | 27.8 | 26.8 | 23.4 | 22.4 | 84 | 003-SB-073-09 |
| 1 | 1.0 | 27.5 | 26.5 | 26.0 | 25.0 | 94 | 003-SB-017-02 |
| 2 | 1.0 | 20.4 | 19.4 | 19.6 | 18.6 | 96 | 003-SB-016-02 |
| 3 | 1.0 | 18.9 | 17.9 | 18.3 | 17.3 | 97 | 003-SB-016-03 |
| 4 | 1.0 | 22.6 | 21.6 | 21.5 | 20.5 | 95 | 003-SB-018-03 |
| 5 | 1.0 | 25.9 | 24.9 | 21.3 | 20.3 | 82 | 003-SB-073-10 |
| 6 | 1.0 | 29.3 | 28.3 | 24.7 | 23.7 | 84 | 003-SB-073-11 |
| 7 | 1.0 | 34.8 | 33.8 | 28.9 | 27.9 | 83 | 003-SB-DP1-09 |
| 8 | 1.0 | 17.5 | 16.5 | 16.9 | 15.9 | 96 | 003-SB-073-14 |
| 9 | 1.0 | 30.7 | 29.7 | 27.3 | 26.3 | 89 | 003-SB-017-01 |
| 10 | 1.0 | 19.8 | 18.8 | 17.0 | 16.0 | 85 | 003-SB-017-04 |
| 11 | 1.0 | 22.4 | 21.4 | 21.0 | 20.0 | 93 | 003-SB-017-05 |
| 12 | 1.0 | 23.5 | 22.5 | 22.1 | 21.1 | 94 | 003-SB-017-06 |
| 13 | 1.0 | 23.8 | ~~20~~ 22.8 | 20.3 | 19.3 | 85 | 003-SB-017-07 |

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Standard Preparation

**MDL DETERMINATION CONCENTRATIONS**

| Mix. No. / STOCK CONC. | Compound | INTERMEDIATE CONC. ^ µL inj.^ (10mL) | Int. Conc. | MDL DETERMINATION E/P | µL inj. * (50mL) | Final Conc. (µg/L) |
|---|---|---|---|---|---|---|
| 1 | Tetrachloroethylene | 500 | 5 | E/P | 5.0 | 0.5 |
| | Trichloroethylene | | ug/mL | E/P | | 0.5 |
| 100 | Chlorobenzene | | | E/P | | 0.5 |
| µg/mL | Chloroform | | | E/P | | 0.5 |
| | 1,1,1-trichloroethane | | | E/P | | 0.5 |
| | Bromoform | | | E/P | | 0.5 |
| | 1,1,2-Trichloroethane | | | E/P | | 0.5 |
| | 1,1,2,2-tetrachloroethane | | | E/P | | 0.5 |
| | Carbon tetrachloride | | | E/P | | 0.5 |
| 2 | 1,1-Dichloroethylene | 500 | 25 | EP | 5 | 2.5 |
| 500 | cis-1,2-Dichloroethylene | | ug/mL | P | | 2.5 |
| µg/mL | trans-1,2-Dichloroethylene | | | P | | 2.5 |
| 3 | 1,2-dichloroethane | 500 | 25 | E | 5 | 2.5 |
| 500 | 1,1-dichloroethane | | ug/mL | E | | 2.5 |
| µg/mL | Methylene chloride | | | EP | | 2.5 |
| 4 | Acetone | **100** | 100 | P | 2.5 | 5.0 |
| | 2-Butanone | | ug/mL | P | | 5.0 |
| 10,000 | 2-Hexanone | | | P | | 5.0 |
| µg/mL | 4-Methyl-2-Pentanone | | | P | | 5.0 |
| | Carbon Disulfide | | | P | | 5.0 |
| 5 | Benzene | 500 | 50 | P | 1 | 1.0 |
| | Toluene | | ug/mL | P | | 1.0 |
| 1,000 | Ethyl benzene | | | P | | 1.0 |
| µg/mL | o-Xylene | | | P | | 1.0 |
| | p-Xylene | | | P | | 1.0 |
| | m-Xylene | | | P | | 1.0 |
| | Styrene | | | P | | 1.0 |
| 6 | Bromomethane | 500 | 50 | E | 25 | 25.0 |
| | Chloromethane | | ug/mL | E | | 25.0 |
| 1,000 | Chloroethane | | | E | | 25.0 |
| µg/mL | Vinyl Chloride | | | EP | | 25.0 |

^ All intermediate standards are prepared in purge-and-trap grade methanol for a total volume of 10 mL.

* All working standards are prepared in HPLC grade water for a final volume of 50 mL. Final concentrations are in µg/L.

E = Electron Capture Detector (ECD)

P = Photoionization Detector (PID)

8/4/94 prepared MDL solutions as above.

Kilmartin

Percent Solids

PROJECT NO 6969
BOOK NO 1222



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| | Dish # | Wt dish | wet + dish | wet | dry + dish | dry | % solid | Sample ID |
|---|---|---|---|---|---|---|---|---|
| | 29 | 1.0 | 28.8 | 27.8 | 24.2 | 23.2 | 84 | 003-SB-018-13 |
| | 30 | 1.0 | 30.6 | 29.6 | 26.6 | 25.6 | 86 | 003-SB-018-15 |
| | 31 | 1.0 | 21.6 | 20.6 | 20.8 | 19.8 | 96 | 003-SB-074-01 |
| 7/30/97 | 32 | 1.0 | 15.5 | 14.5 | 15.2 | 14.2 | 98 | 003-SB-074-04 |
| | 33 | 1.0 | 13.9 | 12.9 | 13.6 | 12.6 | 98 | 003-SB-074-04D |
| | 34 | 1.0 | 29.7 | 28.7 | 29.2 | 28.2 | 98 | 003-SB-074-05 |
| | 35 | 1.0 | 23.2 | 22.2 | 18.9 | 17.9 | 81 | 003-SB-074-06 |
| | 36 | 1.0 | 19.1 | 18.1 | 16.5 | 15.9 | 88 | 003-SB-074-07 |
| | 37 | 1.0 | 14.7 | 13.4 | 13.2 | 12.2 | 91 | 003-SB-074-08 |
| 8/5/97 | 38 | 1.0 | 34.8 | 33.8 | 30.5 | 29.5 | 87 | 003-SB-074-09 |
| | 39 | 1.0 | 27.1 | 26.1 | 23.4 | 22.4 | 86 | 003-SB-074-10 |
| | 40 | 1.0 | 14.6 | 13.6 | 12.7 | 11.7 | 86 | 003-SB-074-11 |
| | 41 | 1.0 | 29.1 | 28.1 | 25.3 | 24.3 | 86 | 003-SB-074-14 |
| | 42 | 1.0 | 18.1 | 17.1 | 17.0 | 16.0 | 94 | 003-SB-035-01 |
| | 43 | 1.0 | ~~15.5~~ 14.3 | ~~28.5~~ 13.3 | 13.6 | 12.6 | 95 | 003-SB-035-04 |
| 7/29/97 | 44 | 1.0 | 19.5 | 18.5 | 18.5 | 17.5 | 95 | 003-SB-034-04 |
| | 45 | 1.0 | 18.8 | 17.8 | 18.1 | 17.1 | 96 | 003-SB-034-03 |
| 7/29/97 | 22 | 1.0 | 11.0 | 10.0 | 9.6 | 8.6 | 86 | 003-SB-035-02 |
| | 23 | 1.0 | 17.1 | 16.1 | 16.6 | 15.6 | 97 | 003-SB-035-03 |
| | 1 | 1.0 | 16.9 | 15.9 | 14.9 | 13.9 | 87 | 003-SB-035-05 |
| | 2 | 1.0 | 22.2 | 21.2 | 18.5 | 17.5 | 83 | 003-SB-035-10 |
| | 3 | 1.0 | 19.7 | 18.7 | 16.6 | 15.6 | 83 | 003-SB-035-10D |
| | 4 | 1.0 | 21.4 | 20.4 | 18.2 | 17.2 | 84 | 003-SB-035-06 |
| 8/1/97 | 5 | 1.0 | 22.2 | 21.2 | 18.6 | 17.6 | 83 | 003-SB-035-07 |
| | 6 | 1.0 | 23.5 | 22.5 | 19.9 | 18.9 | 84 | 003-SB-035-08 |
| | 7 | 1.0 | 26.8 | 25.8 | 22.2 | 21.2 | 82 | 003-SB-035-09 |
| | 8 | 1.0 | 23.2 | 22.2 | 19.6 | 18.6 | 84 | 003-SB-035-11 |
| | 9 | 1.0 | 33.4 | 32.4 | 27.8 | 26.8 | 83 | 003-SB-035-12 |
| | 10 | 1.0 | 26.0 | 25.0 | 21.9 | 20.9 | 84 | 003-SB-DP1-15 |
| 8/6/97 | 11 | 1.0 | 18.8 | 17.8 | 18.0 | 17.0 | 96 | 003-SB-034-01 |
| | 12 | 1.0 | 21.6 | 20.6 | 21.0 | 20.0 | 97 | 003-SB-034-04 |
| | 13 | 1.0 | 17.3 | 16.3 | 15.4 | 14.4 | 88 | ~~003-SB-034-02~~ |
| 8/5/97 | 14 | 1.0 | 26.4 | 25.4 | 25.4 | 24.4 | 96 | 003-SB-054-02 |
| | | | | | | | | 003-SB-054-03 |

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DATE

WITNESS

DATE

# Standard Preparation

Lot #2

see back cover pages for other standard lot #2

| | | | |
|---|---|---|---|
| 7/8/97 HPLC water | lot # 973232 | Fisher W5-4 | 4l bottles |
| 7/8/97 P+T grade MeOH | lot # 972093 | Fisher A453-500 | 500ml bottles |
| 7/14/97 P+T MeOH | lot # 972093 | " | " |
| 7/20/97 P+T MeOH | lot # 972093 | " | " |
| 7/21/97 HPLC Water | lot # 973232 | Fisher W5-4 | 4l bottles |
| 7/24/97 P+T MeOH | lot # 972093 | Fisher A453-500 | 500 ml bottle |
| 7/28/97 P+T MeOH | lot # 972093 | " " | " " |
| 8/4/97 HPLC $H_2O$ | lot # 973232 | Fisher W5-4 | 4l bottle |
| 8/6/97 P+T MeOH | lot # 972093 | Fisher A453-500 | 500ml bottle - ~~H2O~~ lot |
| 8/13/97 P+T MeOH | lot # 972093 | Fisher A453-500 | 500 ml |
| 8/20/97 HPLC $H_2O$ | lot # 973232 | Fisher W5-4 | 4l bottle |
| 9/02/97 P+T MeOH | lot # 972093 | Fisher A453-500 | 500mL |
| 9/3/97 HPLC $H_2O$ | lot # 973232 | Fisher W5-4 | 4l bottle |
| 9/29/97 HPLC $H_2O$ | lot # 973232 | Fisher W5-4 | 4l bottle |

Text continued to Page

DATE

DATE WITNESS DATE

174 Composition of mixes and concentration

# Fridley Standard Mixtures
## Brown & Root Environmental

**Standard Mixture #1**

| Compound | CAS Number | Concentration |
|---|---|---|
| Tetrachloroethylene | 127-18-4 | **100** ug/mL each in purge-and-trap grade methanol |
| Trichloroethylene | 79-01-6 | |
| Chlorobenzene | 108-90-7 | |
| Chloroform | 67-66-3 | |
| 1,1,1-trichloroethane | 71-55-6 | |
| Bromoform | 75-25-2 | |
| 1,1,2-Trichloroethane | 79-00-5 | |
| 1,1,2,2-tetrachloroethane | 79-34-5 | |
| Carbon tetrachloride | 56-23-5 | **10** ug/mL in purge-and-trap grade methanol |

**Standard Mixture # 2**

| Compound | CAS Number | Concentration |
|---|---|---|
| 1,1-Dichloroethylene | 75-35-4 | **500** ug/mL each in purge-and-trap grade methanol |
| cis-1,2-Dichloroethylene | 156-59-4 | |
| trans-1,2-Dichloroethylene | 156-60-5 | |

**Standard Mixture #3**

| Compound | CAS Number | Concentration |
|---|---|---|
| 1,2-dichloroethane | 107-06-2 | **500** ug/mL each in purge-and-trap grade methanol |
| 1,1-dichloroethane | 75-34-3 | |
| Methylene chloride | 75-09-2 | |

**Standard Mixture #4**

| Compound | CAS Number | Concentration |
|---|---|---|
| Acetone | 67-61-1 | **10,000** ug/mL each in purge-and-trap grade methanol |
| 2-Butanone | 78-93-3 | |
| 2-Hexanone | 591-78-6 | |
| 4-Methyl-2-Pentanone | 108-10-1 | |
| Carbon Disulfide | 75-15-0 | |

**Standard Mixture #5**

| Compound | CAS Number | Concentration |
|---|---|---|
| Benzene | 71-43-2 | **1,000** ug/mL each in purge-and-trap grade methanol |
| Toluene | 108-88-3 | |
| Ethyl benzene | 100-41-4 | |
| o-Xylene | 95-47-6 | |
| p-Xylene | 106-42-3 | |
| m-Xylene | 108-38-3 | |
| Styrene | 100-42-5 | |

**Standard Mixture #6**

| Compound | CAS Number | Concentration |
|---|---|---|
| Bromomethane | 74-83-9 | **1,000 ug/mL each in purge-and-trap grade methanol** |
| Chloromethane | 74-87-3 | |
| Chloroethane | 75-00-3 | |
| Vinyl Chloride | 75-01-4 | |

Pete

See backcover for lot #

Standard preparation

PROJECT NO.



Standards used 174 7/8/97, 7/9/97

500ul of stock solution was diluted to 10mL in MeOH. 10ul of this intermediate solution for mixes 1,2,3,5,6 were diluted in HPLC grade water to 10mL. 5mL of this solution was transferred to a pre-baked test tube and attached to the indicated port until analysis. Only 2ul of mix #4 was transferred from the intermediate solution to the working solution, not 10ul.

The final concentrations of the working standard are:
5ug/L mix#1, 25ug/L each mix#2+3, 100ug/L mix#4, and 50ug/L mixes #5 and #6 unless otherwise noted.

Sample calculation:
mix #1 stock concentration 100ug/mL

$$\frac{\left(\frac{100\,ug}{mL}\right)(500\,uL)}{10000\,uL\ [10mL]} = \cancel{0.005}\ 5\ ug/mL \times \frac{1000\,mL}{1\,L} = \cancel{5\,ug/L}$$

= 5 ug/mL intermediate

$$\frac{\left(\frac{5\,ug}{mL}\right)(10\,uL)}{10000\,uL\ [10mL]} = 0.005\,ug/mL \times \frac{1000\,mL}{L} = 5\,ug/L$$

7/9/97 Matrix spike 4-7412 Lot# LA63729
1,1 DCE, Ben, TCE, Tol, Chlen @ 25ug/mL each in MeOH

$$\frac{\left(\frac{25\,ug}{mL}\right)(20\,uL)}{100\,000\,uL\ [100\,mL]} = \frac{0.005\,ug}{mL} \times \frac{1000\,mL}{L} = \frac{5\,ug}{L}$$

[100 mL vol class A]*

to test peak I.D.
prepared fresh from new ampule 7/10/97 DL

Work continued to Page 176

DATE

DATE WITNESS DATE

**Fridley Standard Mixtures**
**Brown & Root Environmental**

**Internal Standard Solutions** (IS) See back cover for lot #s

| Compound | CAS Number | Concentration | |
|---|---|---|---|
| print 3-chloro-2-methyl propene IS1-P | 563-47-3 | 2,000 µg/mL | in purge-and-trap grade methanol |

| Compound | CAS Number | Concentration | |
|---|---|---|---|
| 4- bromo-1-butene IS2-P | 5162-44-7 | 2,000 µg/mL | in purge-and-trap grade methanol |

| Compound | CAS Number | Concentration | |
|---|---|---|---|
| print bromochloromethane IS1-C | 74-97-5 | 2,000 µg/mL | in purge-and-trap grade methanol |

| Compound | CAS Number | Concentration | |
|---|---|---|---|
| 1,3-dibromo-1-propene (cis/trans) IS3-P | 627-15-6 | 2,000 µg/mL | in purge-and-trap grade methanol |

| Compound | CAS Number | Concentration | |
|---|---|---|---|
| 2-bromo-1-chloropropane IS2-C | 3017-95-6 | 2,000 µg/mL | in purge-and-trap grade methanol |

use ~~125~~ 75 ul of stock IS to 10 mL (15 ug/mL) in MeOH Kilmartin
add 10 ul to 5 mL actual conc 30 ug/L
7/11/97 - using 5 ul to 5 mL for samples, 15 ug/L actual
7/14/97 - prepared fresh but without IS1 GC DOV IS1 PID, bromochloromethane, or 3-chloro-2-methyl propene
7/23/97 prepared fresh IS but without IS1 PID or IS1 GC.
7/28/97 prepared fresh IS as 7/23 - no good discard
prepared fresh IS again
8/4/97 prepared fresh IS solution, no IS1-P or IS1-C, 75 ul of stock to 10 mL in methanol. Use 5 ul to 5 mL HPLC water.
8/12/97 Prepared fresh IS as above. Use 2 ul directly for testing, 5 ul to 5 mL for spls, stds. DK
8/28/97 Prepared fresh IS as above. DK
75 ul stock IS to 10 mL in MeOH for intermediate
5 ul intermediate to 5 mL DI for IS for samples.
~~9/5/97 prepare fresh IS as described above. MK~~

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7/11/97
Prepared fresh calibration standard for initial, mixes 1 through 6 according to chart on p. 178. DC

7/12/97
Prepared fresh mix #6, prepared control + MS from intermediates according to chart on p. 178 tossed out all old

7/13/97
Prepared all fresh mixes and MS for new initial. Tossed out all old. ~~Prepa~~

7/14/97
Prepared fresh IS w/o IS 17 ID on GCD due to contamination.
Prepared fresh mix 6 and used intermediates for rest of control solution.
Prepared Supelco mix #6 (see back cover for components), 500ul of 2000ug/mL stock = 100 ug/mL intermediate, 10ul intermediate ~~= 100 ug~~ to 10mL = 100ug/L
Prepared Supelco Performance Check Compounds (see back cover for components + concentration). Used 2000 ug/L in 10mL, 50ul aliquot of stock to form 10ug/mL intermediate. Used 20ul of intermediate to final volume of 10 mL for 20 ug/L final concentration.

7/15/97 prepared fresh control from intermediate, opened new mix #6

7/16/97 prepared fresh control, all from intermediates.

7/23/97 Prepared fresh IS solution from stock, tossed out all old
Prepared fresh intermediate standards from stock for use in initial calibration. See chart on p. 174 for mix components, p. 178 for initial calibration sequence, and p. 175 for sample calculation.
Prepared mix #2 from polyscience at 50 and 100 PPB. 500ul stock to 10 mL, 20 ul of intermediate to 10 mL for 50, 40ul of inter. to 10 mL for 100 PPB.
For Supelco mix #6, freeze all components prior to prep. use 50ul of

Work continued to Page 179

DATE

DATE | WITNESS | DATE

Kilmartin



## CALIBRATION CONCENTRATIONS

| Mix. No. | Compound | INTERMEDIATE CONC. ^ | | INITCAL#1 ECD Level 1 | | | INITCAL #2 ECD Level 2 | | | INITCAL #3 /CONTCAL ECD Level 3 PID Level 1 | | | INITCAL #4 ECD Level 4 PID Level 2 | | | INITCAL#5 PID Level 3 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STOCK CONC. | | µL inj.^ | Int. Conc. (10mL) | E/P | µL inj. * | Final Conc. (50mL) | E/P | µL inj. * | Final Conc. (50mL) | E/P | µL inj. * | Final Conc. (50mL) | E/P | µL inj. * | Final Conc. (50mL) | E/P | µL inj. * | Final Conc. (50mL) |
| 1 | Tetrachloroethylene | 500 | 5 | EP | 10 | 1.0 | EP | 20 | 2.0 | EP | 40 | 4.0 | EP | 80 | 8.0 | P | 160.0 | 16.0 |
| | Trichloroethylene | | ug/mL | EP | | 1.0 | EP | | 2.0 | EP | | 4.0 | EP | | 8.0 | P | | 16.0 |
| 100 | Chlorobenzene | | | EP | | 1.0 | EP | | 2.0 | EP | | 4.0 | EP | | 8.0 | P | | 16.0 |
| µg/mL | Chloroform | | | E | | 1.0 | E | | 2.0 | E | | 4.0 | E | | 8.0 | | | |
| | 1,1,1-trichloroethane | | | E | | 1.0 | E | | 2.0 | E | | 4.0 | E | | 8.0 | | | |
| | Bromoform | | | E | | 1.0 | E | | 2.0 | E | | 4.0 | E | | 8.0 | | | |
| | 1,1,2-Trichloroethane | | | E | | 1.0 | E | | 2.0 | E | | 4.0 | E | | 8.0 | | | |
| | 1,1,2,2-tetrachloroethane | | | E | | 1.0 | E | | 2.0 | E | | 4.0 | E | | 8.0 | | | |
| | Carbon tetrachloride | | | E | | 0.1 | E | | 0.2 | E | | 0.4 | E | | 0.8 | | | |
| 2 | 1,1-Dichloroethylene | 500 | 25 | | | | E | 10 | 5.0 | EP | 30 | 15.0 | EP | 90 | 45.0 | EP | 240 | 120.0 |
| 500 | cis-1,2-Dichloroethylene | | ug/mL | | | | | | | P | | 15.0 | P | | 45.0 | P | | 120.0 |
| µg/mL | trans-1,2-Dichloroethylene | | | | | | | | | P | | 15.0 | P | | 45.0 | P | | 120.0 |
| 3 | 1,2-dichloroethane | 500 | 25 | | | | E | 40 | 20 | E | 100 | 50.0 | E | 200 | 100.0 | E | 300 | 150.0 |
| 500 | 1,1-dichloroethane | | ug/mL | | | | E | | 20 | E | | 50.0 | E | | 100.0 | E | | 150.0 |
| µg/mL | Methylene chloride | | | | | | E | | 20 | EP | | 50.0 | EP | | 100.0 | EP | | 150.0 |
| 4 | Acetone | 500 | 500 | | | | | | | P | 10 | 100 | P | 20 | 200.0 | P | 75 | 750 |
| | 2-Butanone | | ug/mL | | | | | | | P | | 100 | P | | 200.0 | P | | 750 |
| 10,00 | 2-Hexanone | | | | | | | | | P | | 100 | P | | 200.0 | P | | 750 |
| µg/mL | 4-Methyl-2-Pentanone | | | | | | | | | P | | 100 | P | | 200.0 | P | | 750 |
| | Carbon Disulfide | | | | | | | | | P | | 100 | P | | 200.0 | P | | 750 |
| 5 | Benzene | 500 | 50 | | | | | | | P | 5 | 5.0 | P | 20 | 20.0 | P | 90 | 90.0 |
| | Toluene | | ug/mL | | | | | | | P | | 5.0 | P | | 20.0 | P | | 90.0 |
| 1,000 | Ethyl benzene | | | | | | | | | P | | 5.0 | P | | 20.0 | P | | 90.0 |
| µg/mL | o-Xylene | | | | | | | | | P | | 5.0 | P | | 20.0 | P | | 90.0 |
| | p-Xylene | | | | | | | | | P | | 5.0 | P | | 20.0 | P | | 90.0 |
| | m-Xylene | | | | | | | | | P | | 5.0 | P | | 20.0 | P | | 90.0 |
| | Styrene | | | | | | | | | P | | 5.0 | P | | 20.0 | P | | 90.0 |
| 6 | Bromomethane | 500 | 50 | | | | E | 25 | 25 | E | 50 | 50.0 | E | 100 | 100.0 | E | 150 | 150.0 |
| | Chloromethane | | ug/mL | | | | E | | 25 | E | | 50.0 | E | | 100.0 | E | | 150.0 |
| 1,000 | Chloroethane | | | | | | E | | 25 | E | | 50.0 | E | | 100.0 | E | | 150.0 |
| µg/mL | Vinyl Chloride | | | | | | E | | 25 | EP | | 50.0 | EP | | 100.0 | EP | | 150.0 |

^ All intermediate standards are prepared in purge-and-trap grade methanol for a total volume of 10 mL.
* All working standards are prepared in HPLC grade water for a final volume of 50 mL. Final concentrations are in µg/L.
E = Electron Capture Detector (ECD)
P = Photoionization Detector (PID)

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7/23/97 (cont.) #6
stock to 10mL for intermediate then 25uL to 10mL for 25 ug/L final concentration. Was unable to use fresh stock, used stock opened 7/12/97 instead.
Tossed out all old standards and recently prepared ones. Prepared all fresh for second attempt at initial. Ran an aliquot of mix #3 - contcal - before analysis. Determined problem was mix #1 of fresh compale.

7/24/97 Prepared contcal standard from intermediate with mix #6
7th (gases) ~~prepared from~~ intermediate prepared from fresh stock
Prepared mix #3 solution with 40uL of intermediate to 10mL for 100 PPB, 80uL to 10mL for 200 PPB
Prepared mix #4 solution with 4uL of intermediate to 10mL final volume for 300 PPB, 8uL to 10mL for 400 PPB.

7/25/97 Prepared fresh intermediate for mix #6 (gases) and used this for mix #6 stds. and contcal standards
20uL of intermediate to 10mL final volume of mix #6 for 100 PPB gases, 40uL of intermediate to final volume of 10 for 300 PPB gases, contcal same as on opposite page.

7/26/97 Prepared fresh contcal, using fresh stock to make fresh intermediate for mix #6, and using intermediate for all other mixes.
Opened new matrix spike solution

7/27/97 Prepared new mix #6 intermediate and used intermediate to prepare contcal according to chart on p. 178

7/28/97 Prepared fresh internal standard solution with 2 IDs on each column, no IS16 or IS1P. See p. 176
Prepared fresh mix #6 intermediate and prepared fresh contcal solution from intermediate see p. 178
Needed to prepare IS again - mix not good. Re-run.

7/29/97 Prepared fresh mix 6 intermediate. Prepared fresh contcal from intermediate as chart on p. 178

7/30/97 Prepared fresh intermediate mix #6 and contcal according to chart on page 178

Work continued to Page 180

DATE

DATE | WITNESS | DATE

 Standard Preparation

8/4/97 MDL preparation table accidently placed on p. 170
See p. 170 for prep + conc. info. This will be new
level 1. New Calibration tables set up (See p. 182)
and run. Source high and standards, Spikes
for each compound, low and MDL for determination
level. Prepared solution for MDL 1-04, again for MDL 5-08.
New internal standard prepared, same as previous
(see p. 170)
New calibration curve prepared and run.
QC check standard @ 2 PPB
8 ul to 100 mL final volume of 25 ug/mL matrix
spike standard (see back cover for compounds.
Ran out of methanol, more to come tomorrow at
latest. Prepared new MDL for rerun #4

8/5/97 Not enough methanol to prepare standards, so
unable to prepare fresh mix #6 (gases). Control
and initial 4, initials with old (yesterday's)
intermediate mix #6.

8/6/97 Methanol has been on site as of since 8/1/97 - shipped
under the name "Halliburton NUS" - our old name, not
"Broom Root." Used new methanol (same lot as old)
to prepare fresh intermediate mix #6, then prepared
new control (see p. 182 for concentration).

8/7/97 to 8/12/97 Instrument down.

8/12/97 Prepared fresh IS from stock to be used today.
Prepared fresh initial solutions (see p. 182 for prep and
final concentration) and begin running samples

8/26/97 Prepared fresh standard intermediate and
working solutions for mixes 1 through 6 according to
page 182.

8/27/97 Prepared control from intermediate stock
solution. New Matrix Spike solution generated.

8/28/97
Prepared fresh internal standard solution from stock
(see p. 170). Used intermediate standards to prepare
control see p. 182

9/2/97 Prepared initial solutions from fresh stock
and intermediate - see p. 182 for concentrations

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9/3/97 Prepared contcal from intermediate stds. See p. 182 for concentration & prep info

9/5/97 Prepared fresh IS as described on p. 176
Prepared fresh Contcal solution from intermediate stands. See p. 182 for prep info.

9/7/97 Prepared fresh calibration intermediate solution #5 see p. 174 for prep info. Prepared fresh Contcal Solution from intermediate solution see page 182 for prep info

9/18/97 Prepare fresh Intial Cal Solutions (#1, #2, #3, #4 & #5) see page 182, Prepare fresh Internal Standard as described on p. 176.

9/19/97 ~~Prepare fresh initial cal solutions (#1~~ See
Prepare contcal solution from intermediate solutions

9/24/97 Prepare new IS solution.

Work continued to Page

SIGNATURE DATE

DATE WITNESS DATE

CALIBRATION CONCENTRATIONS
BEGINING 8/4/97

Begin 8/4/97 DLC

| MIX # STOCK CONC. | COMPOUND | INTERMEDITE SOLUTION^ | | INITCAL 1 | | | INITCAL 2 | | | INITCAL 3 | | | INITCAL 4 | | | INITCAL 5 | | | CONTCAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | uL. inj in 10 mL | INTER. conc. | E/P | uL. inj in 50 mL | final conc | E/P | uL. inj in 50 mL | final conc | E/P | uL. inj in 50 mL | final conc | E/P | uL. inj in 50 mL | final conc | E/P | uL. inj in 50 mL | final conc. | E/P | uL. inj. in 50 mL | final conc. |
| 1 | tetrachloroethylene | 500 | 5 | E/P | 5 | 0.5 | E/P | 10 | 1 | E/P | 20 | 2 | E/P | 40 | 4 | E/P | 80 | 8 | E/P | 20 | 2 |
| 100 ug/mL | trichloroethylene | | ug/mL | E/P | | 0.5 | E/P | | 1 | E/P | | 2 | E/P | | 4 | E/P | | 8 | E/P | | 2 |
| | chlorobenzene | | | E/P | | 0.5 | E/P | | 1 | E/P | | 2 | E/P | | 4 | E/P | | 8 | E/P | | 2 |
| | chloroform | | | E | | 0.5 | E | | 1 | E | | 2 | E | | 4 | E | | 8 | E | | 2 |
| | 1,1,1-trichloroethane | | | E | | 0.5 | E | | 1 | E | | 2 | E | | 4 | E | | 8 | E | | 2 |
| | bromoform | | | E | | 0.5 | E | | 1 | E | | 2 | E | | 4 | E | | 8 | E | | 2 |
| | 1,1,2-trichloroethane | | | E | | 0.5 | E | | 1 | E | | 2 | E | | 4 | E | | 8 | E | | 2 |
| | 1,1,2,2-tetrachloroethane | | | E | | 0.5 | E | | 1 | E | | 2 | E | | 4 | E | | 8 | E | | 2 |
| | carbon tetrachloride | | | E | | 0.5 | E | | 1 | E | | 2 | E | | 4 | E | | 8 | E | | 2 |
| 2 | 1,1-dichloroethylene | 500 | 25 | E | 5 | 2.5 | E | 10 | 5 | E | 30 | 15 | E | 90 | 45 | E | 180 | 90 | E | 30 | 15 |
| 500 ug/mL | cis-1,2-dichloroethylene | | ug/mL | P | | 2.5 | P | | 5 | P | | 15 | P | | 45 | P | | 90 | P | | 15 |
| | trans-1,2-dichloroethylene | | | P | | 2.5 | P | | 5 | P | | 15 | P | | 45 | P | | 90 | P | | 15 |
| 3 | 1,2-dichloroethane | 500 | 25 | E | 5 | 2.5 | E | 20 | 10 | E | 40 | 20 | E | 100 | 50 | E | 200 | 100 | E | 40 | 20 |
| 500 ug/mL | 1,1-dichloroethane | | ug/mL | E | | 2.5 | E | | 10 | E | | 20 | E | | 50 | E | | 100 | E | | 20 |
| | methylene chloride | | | E | | 2.5 | E | | 10 | E | | 20 | E | | 50 | E | | 100 | E | | 20 |
| 4 | acetone | 100 | 100 | P | 2.5 | 5 | P | 5 | 10 | P | 20 | 40 | P | 40 | 80 | P | 50 | 100 | P | 20 | 40 |
| 10,000 ug/mL | 2-butanone | | ug/mL | P | | 5 | P | | 10 | P | | 40 | P | | 80 | P | | 100 | P | | 40 |
| | 2-hexanone | | | P | | 5 | P | | 10 | P | | 40 | P | | 80 | P | | 100 | P | | 40 |
| | 4-methyl-2-pentanone | | | P | | 5 | P | | 10 | P | | 40 | P | | 80 | P | | 100 | P | | 40 |
| | carbon disulfide | | | P | | 5 | P | | 10 | P | | 40 | P | | 80 | P | | 100 | P | | 40 |
| 5 | benzene | 500 | 50 | P | 1 | 1 | P | 5 | 5 | P | 10 | 10 | P | 15 | 15 | P | 25 | 25 | P | 10 | 10 |
| 1,000 ug/mL | toluene | | ug/mL | P | | 1 | P | | 5 | P | | 10 | P | | 15 | P | | 25 | P | | 10 |
| | ethyl benzene | | | P | | 1 | P | | 5 | P | | 10 | P | | 15 | P | | 25 | P | | 10 |
| | o-xylene# | | | P | | 1 | P | | 5 | P | | 10 | P | | 15 | P | | 25 | P | | 10 |
| | m-xylene# | | | P | | 1 | P | | 5 | P | | 10 | P | | 15 | P | | 25 | P | | 10 |
| | p-xylene# | | | P | | 1 | P | | 5 | P | | 10 | P | | 15 | P | | 25 | P | | 10 |
| | styrene# | | | P | | 1 | P | | 5 | P | | 10 | P | | 15 | P | | 25 | P | | 10 |
| 6 | bromomethane | 500 | 50 | E | 25 | 25 | E | 50 | 50 | E | 75 | 75 | E | 100 | 100 | E | 150 | 150 | E | 75 | 75 |
| 1,000 ug/mL | chloromethane | | ug/mL | E | | 25 | E | | 50 | E | | 75 | E | | 100 | E | | 150 | E | | 75 |
| | chloroethane | | | E | | 25 | E | | 50 | E | | 75 | E | | 100 | E | | 150 | E | | 75 |
| | vinyl chloride | | | E | | 25 | E | | 50 | E | | 75 | E | | 100 | E | | 150 | E | | 75 |

^ ALL INTERMEDIATE SOLUTIONS ARE PREPARED IN PURGE-AND-TRAP GRADE METHANOL TO A TOTAL VOLUME OF 10 mL.
* ALL WORKING STANDARDS ARE PREPARED IN HPLC GRADE WATER FOR A FINAL VOLUME OF 50 mL. FINAL CONCENTRATIONS ARE IN ug/L.
CTOR, P = PHOTOIONIZATION DETECTOR.
# M&P-XYLENES AND O-ZYLENE & STRYENE COELUTE

Kelly Delmontin

# Temperature Log.

PROJECT NO. 6966
BOOK NO. 1222



~~7/9/97~~

| OVEN | SAMPLE REFRIGERATOR | STANDARD REFRIGERATOR | BALANCE | |
|---|---|---|---|---|
| 7/9/97 115°C | -4.3 | 2.1 | NA | DL |
| 7/10/97 110°C | -4.2 | -0.4 | NA | DL |
| 7/11/97 100°C | -3.9 | -4.6 | ~~NA~~ 20.0 | DL |
| 7/12/97 100°C | -2.1 | -4.5 | 20.0 | DL |

| Date | Oven | Spl. refrig | Std. refrig | Balance | |
|---|---|---|---|---|---|
| 7/13/97 | 98°C | -0.8 | -4.4 | 20.0 | DL |
| 7/14/97 | 99°C | -1.4 | -6.2 | 20.0 | DL |
| 7/15/97 | 98°C | 0.1 | -4.6 | 20.0 | DL |
| 7/16/97 | 99°C | 0.2 | -4.5 | 20.0 | DL |
| 7/21/97 | 96°C | -0.2 | -8.0 | 20.0 | DL |
| 7/22/97 | 96°C | 2.9 | -8.7 | NA | DL |
| 7/23/97 | 96°C | 2.9 | -4.2 | 20.0 | |
| 7/24/97 | 96°C | 2.2 | -4.1 | 20.0+ 20.0 | DL |
| 7/25/97 | 97°C | -5.2 | -4.9 | 20.0 | DL |
| 7/26/97 | 97°C | 4.0 | -2.2 | 20.0 | DL |
| 7/27/97 | 98°C | 2.3 | -6.6 | 20.0 | DL |
| 7/28/97 | 98°C | 1.9 | -7.9 | 20.0 | DL |
| 7/29/97 | 97°C | 1.3 | -4.9 | 20.0 | DL |
| 7/30/97 | 98°C | 1.8 | -4.2 | 20.0 | DL |
| 7/31/97 | 97°C | 1.5 | -4.1 | 20.0 | DL |
| 8/4/97 | 97°C | 2.8 | -0.3 | 20.0 | DL |
| 8/5/97 | 97°C | 2.9 | -0.6 | 20.0 | DL |
| 8/6/97 | 97°C | 3.7 | -0.3 | 20.0 | DL |
| 8/7/97 | 96°C | 3.4 | -5.2 | 20.0 | DL |
| 8/8/97 | 95°C | 2.8 | -5.3 | 20.0 | DL |
| 8/9/97 | 97°C | 2.6 | -6.7 | 20.0 | DL |
| 8/10/97 | 97°C | 2.7 | 8.1 | 20.0 | DL |

Calibration weight = 20.0g Larson-Davis Labs S/N M2559-1035

Work continued to Page

SIGNATURE | DATE

INSTRUCTED TO AND UNDERSTOOD BY | DATE | WITNESS | DATE

| Date | Oven | Sample Refrigerator | Standard Refrigerator | Balance | Initials |
|---|---|---|---|---|---|
| 8/11/97 | 96°C | 3.2 | -4.5 | 20.0 | DC |
| 8/12/97 | 97°C | 2.8 | -8.1 | 20.0 | DC |
| 8/13/97 | 100°C | 4.7 | -5.2 | 20.0 | DC |
| 8/14/97 | 99°C | 4.1 | -7.0 | 20.0 | DC |
| 8/15/97 | 98°C | 3.8 | -8.2 | 200 ~~DA~~ | DC |
| 8/26/97 | 98°C | 3.1 | -4.8 | 20.0 | DC |
| 8/27/97 | 112°C | 2.7 | -4.7 | 20.0 | DC |
| 8/28/97 | 95°C | 4.3 | -0.1 | 19.9 | DC |
| 8/29/97 | 92°C | 2.2 | -2.5 | 20.0 | DC |
| 8/2/97 | 90°C | 2.3 | -6.7 | 20.0 | DC |
| 9/3/97 | 100°C | 1.5 | -4.0 | 20.0 | DC |
| 9/4/97 | 96°C | 4.3 | -3.4 | 20.0 | MR |
| 9/5/97 | 94°C | 4.6 | -3.2 | 20.0 | MR |
| 9/6/97 | 100°C | 2.7 | -0.1 | 20.0g | MR |
| 9/7/97 | 96°C | 3.2 | -7.2 | 20.0g | MR |
| 9/8/97 | 100°C | -1.2 | -6.7 | 20.0g | MR |
| 9/9/97 | 102°C | -1.5 | -6.7 | 20.0g | DC |
| 9/10/97 | 100°C | 1.3 | -2.3 | 20.0g | MR |
| 9/20/97 | 98°C | 0.9 | -0.4 | 20.0g | DC |
| 9/21/97 | 88°C | 0.2 | -3.6 | 20.0g | |
| 9/22/97 | 96°C | -0.5 | 0.3 | 20.0g | MR |
| 9/23/97 | 94°C | 2.6 | -2.3 | | |
| 9/24/97 | 96°C | -1.6 | -2.5 | 20.0g | DC |
| 9/25/97 | 99°C | -1.5 | -2.2 | 20.0g | DC |
| 9/29/97 | 102°C | -1.7 | -2.6 | 20.0g | DC |
| 9/30/97 | 101°C | -1.6 | -2.4 | 20.0g | DC |

4-Bromo-1-butene
[5162-44-7]
2000ug/mL in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-6]
2000ug/mL in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

2-Bromo-1-chloropropane
[3017-95-6]
2000ug/mL in Methanol
Cat. No: E061-20
Lot No: P7182C
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #1
Var. Conc. in MeOH
Lot. No: P7172C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #2
500 mcg/mL in MeOH
Lot. No: P7173C
Exp: 06/99
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #3
500 mcg/mL in MeOH
Lot. No: P7174C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #5 BTEX
Brown & Root Environmental
10mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7176C
Exp. Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

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16823-0048 USA • PHONE 814-359-3441
4-7412 LA-63729
EPA 8240B/8260A Matrix Spike
25ug/ml each in methanol

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

2-Bromo-1-chloropropane
[3017-95-6]
2000ug/mL in Methanol
Cat. No: E061-20
Lot No: P7182C
Exp Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #3
500 mcg/mL in MeOH
Lot. No: P7174C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #4 Ketones
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7175C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

4-Bromo-1-butene
[5162-44-7]
2000ug/mL in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-6]
2000ug/mL in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

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16823-0048 USA • PHONE 814-359-3441
4-7412 LA-63729
EPA 8240B/8260A Matrix Spike
25ug/ml each in methanol

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #1
Var. Conc. in MeOH
Lot. No: P7172C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #2
500 mcg/mL in MeOH
Lot. No: P7173C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles,

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #3
500 mcg/mL in MeOH
Lot. No: P7174C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #4 Ketones
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7175C
Exp. Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix #5 BTEX
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7176C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

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16823-0048 USA • PHONE 814-359-3441
4-7412 LA-63729
EPA 8240B/8260A Matrix Spike
25ug/ml each in methanol

4-Bromo-1-butene
[5162-44-7]
2000ug/mL in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, I.

2-Bromo-1-chloropropane
[3017-95-6]
2000ug/mL in Methanol
Cat. No: E061-20
Lot No: P7182C
Exp Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-6]
2000ug/mL in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #1
Var. Conc. in MeOH
Lot. No: P7172C
Exp: 06/99
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #2
500 mcg/mL in MeOH
Lot. No: P7173C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles,

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #3
500 mcg/mL in MeOH
Lot. No: P7174C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, II

Custom Mix #4 Ketones
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7175C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #5 BTEX
Brown & Root Environmental
10mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7176C
Exp. Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

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16823-0048 USA • PHONE 814-359-3441
4-7412 LA-63729
EPA 8240B/8260A Matrix Spike
25ug/ml each in methanol

2-Bromo-1-chloropropane
[3017-95-6]
2000ug/mL in Methanol
Cat. No: E061-20
Lot No: P7182C
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-6]
2000ug/mL in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

4-Bromo-1-butene
[5162-44-7]
2000ug/mL in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #5 BTEX
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7176C
Exp. Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

4-Bromo-1-butene
[5162-44-7]
2000ug/mL in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-6]
2000ug/mL in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

2-Bromo-1-
Chloropropane
[3017-95-6]
2.0 mg/mL in Methanol
Cat. No: E061-20
Lot No: P7247M
Exp Date: 09/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #1
Var. Conc. in Methanol
Lot No: P7246C
Exp Date: 09/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #2
500 mcg/mL in MeOH
Lot. No: P7173C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles,

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #3
500 mcg/mL in MeOH
Lot. No: P7174C
Exp: 06/99
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix #4 Ketones
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7175C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #5 BTEX
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7176C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, Il

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #6
1000 ug/mL in Methanol
Lot. No: P7248C
Exp.: 09/2000
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #6
1000 ug/mL in Methanol
Lot. No: P7248C
Exp.: 09/2000
PolyScience
600 W. Touhy Ave. Niles, IL

2-Bromo-1-
Chloropropane
[3017-95-6]
2.0 mg/mL in Methanol
Cat. No: E061-20
Lot No: P7247M
Exp Date: 09/99
PolyScience
6600 W. Touhy Ave. Niles, IL

4-Bromo-1-butene
[5162-44-7]
2000ug/mL in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-6]
2000ug/mL in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #6
1000 ug/mL in Methanol
Lot. No: P7248C
Exp.: 09/2000
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix for Brown
& Root Environmental
Quote #2175-Mix #6
1000 ug/mL in Methanol
Lot. No: P7248C
Exp.: 09/2000
PolyScience
600 W. Touhy Ave. Niles, IL

Vinyl Chloride
CAS#:75-01-4
Solvent. 2.0 mg./ml.in MeOH
Cat. No: E126-20
Exp: 7/98
PolyScience
6600 W.Touhy Ave.
Niles, IL 60714

1,1,1-Trichloro...
2.0 mg./ml.in Methanol Solvent
CAS#:71-55-6
Cat. No: E119-20 Lot: 68825
Date: 6/18/96 Exp: 6/98
PolyScience
6600 W.Touhy Ave.
Niles, IL 60714

NOTEBOOK INSERT LABEL

**EPA 8240B/8260A System Performance Check Cmpds** 4-7389

Lot: LA62291 EXP: JAN/1998 STORAGE: REFRIGERATE 1 x 1ml

DATE RECEIVED: 7/14/97

SUPELCO

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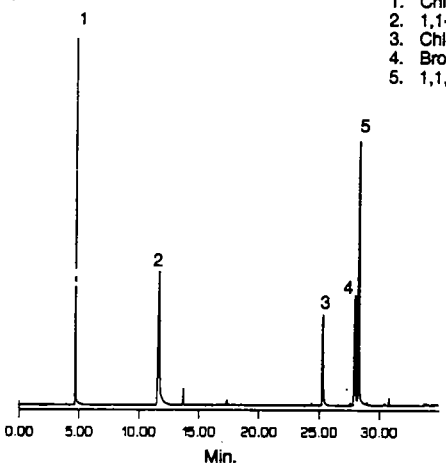
# 8240B/8260A
# System Performance Check Compounds
## Catalog No. 4-7389

This mixture contains 2000µg/ml of each of the following components in methanol:

1. Chloromethane
2. 1,1-Dichloroethane
3. Chlorobenzene
4. Bromoform
5. 1,1,2,2-Tetrachloroethane




713-0232

VOCOL™ fused silica capillary column, 105m x 0.53mm ID, 3.0µm film, Col. Temp.: 40°C for 8 min., then to 200°C at 6°C/min., Flow Rate: 10ml/min., He, Inj. Temp.: 200°C, Det. Temp.: 950°C, Det.: Hall®, Sample: 1µl Cat. No. 4-7389 diluted to 20µg/ml, direct injection.

T713052
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Bellefonte, PA

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Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown & Root Environmental
Quote #2175-Mix #1
Var. Conc. in MeOH
Lot. No: P7172C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #4 Ketones
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7175C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown & Root Environmental
Quote #2175-Mix #3
500 mcg/mL in MeOH
Lot. No: P7174C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #5 BTEX
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7176C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles

label for mix #2 7/23/97
not removable
tour too much

Custom Mix for Brown & Root Environmental
Quote #2175-Mix #1
Var. Conc. in MeOH
Lot. No: P7172C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #4 Ketones
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7175C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave.

Custom Mix for Brown & Root Environmental
Quote #2175-Mix #2
500 mcg/mL in MeOH
Lot. No: P7173C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #5 BTEX
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7176C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown & Root Environmental
Quote #2175-Mix #3
500 mcg/mL in MeOH
Lot. No: P7174C
Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

SUPELCO
SUPELCO INC. • Supelco Park • Bellefonte, PA 16823-0048 USA • PHONE 814-359-3441
4-7412 LA-63729
EPA 8240B/8260A Matrix Spike
25ug/ml each in methanol

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

2-Bromo-1-chloropropane
[3017-95-6]
2000ug/mL. in Methanol
Cat. No: E061-20
Lot No: P7182C
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

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4-7412 LA-63729
EPA 8240B/8260A Matrix Spike
25ug/ml each in methanol

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

SUPELCO
SUPELCO INC. • Supelco Park • Bellefonte, PA 16823-0048 USA • PHONE 814-359-3441
4-7412 LA-63729
EPA 8240B/8260A Matrix Spike
25ug/ml each in methanol

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

4-Bromo-1-butene
[5162-44-7]
2000ug/mL. in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-4]
2000ug/mL. in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

2-Bromo-1-chloropropane
[3017-95-6]
2000ug/mL. in Methanol
Cat. No: E061-20
Lot No: P7182C
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-4]
2000ug/mL. in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

4-Bromo-1-butene
[5162-44-7]
2000ug/mL. in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #6 GASES
Brown & Root Environmental
1.0mg/mL. en cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

NOTEBOOK INSERT LABEL

EPA 8240B/8260A Matrix Spike Mix 4-7412

Lot: LA63729 EXP: DEC/1999 STORAGE: REFRIGERATE 10 x 1ml

DATE RECEIVED: open 7/2/97 AG

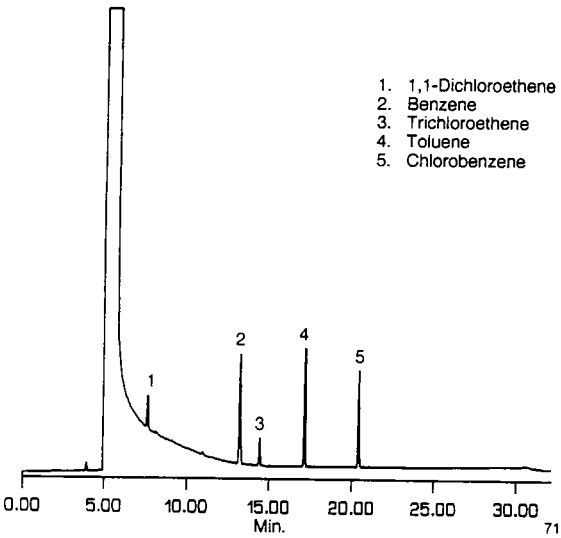
SUPELCO

This Data Sheet Contains Important Information About The Product

# EPA 8240B/8260A Matrix Spike Mix

## Catalog No. 4-7075 (1mL) 4-7412 (10 x 1mL)

This mixture contains 25µg/mL of each of the following components in methanol:




VOCOL™ fused silica capillary column, 105m x 0.53mm ID, 3.0µm film, Col. Temp.: 40°C for 1 min., then to 200°C at 6°C/min., Flow Rate: 10ml/min., He, Inj. Temp.: 200°C, Det. Temp.: 250°C, Det.: FID, Sample: 1µl Cat. No. 4-7412, direct injection.

T713024A

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SUPELCO
Bellefonte, PA

NOTEBOOK INSERT LABEL

SS Volatile Organic Compounds Mix 6 4S-8799

Lot: LA65602 EXP: JUL/1998 STORAGE: REFRIGERATE 1 x 1ml

DATE RECEIVED: open 7/14/97

SUPELCO

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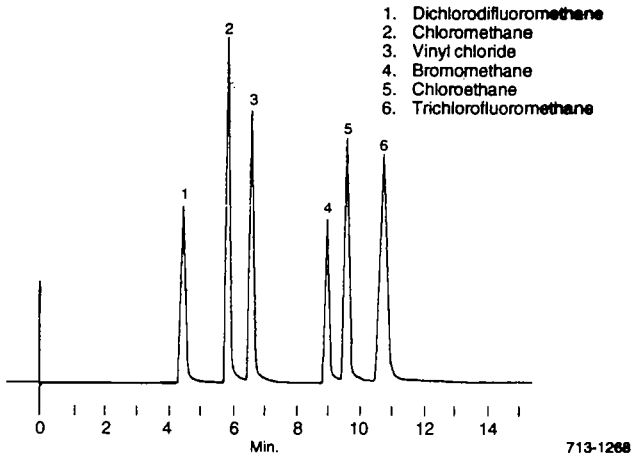
It Contains Important Information About This Product.

# VOC Mix 6

## Catalog Numbers 4-8799/4S-8799

This mixture contains 2000µg/mL of each of the following components in methanol:




Column: VOCOL™, 105m x 0.53mm ID, 3.0µm film
Cat. No.: 2-5358
Col. Temp.: -10°C (3 min) to 60°C at 4°C/min
Carrier: helium, 10mL/min
Det.: Halk®, 250°C
Inj.: 1µL, 200°C

DS97953D

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SUPELCO
Bellefonte, PA

IS16L

Bromochloromethane
CAS#:74-97-5
20 mg./ml. in Methanol Solvent
Gl. No: E060-20 Lot: 6S0225
Date: 6/12/96 Exp: 6/98
7/8/97
PolyScience
6600 W. Touhy Ave.
Niles, IL 60714

IS26

2-Bromo-1-chloropropane
[3017-95-6]
2000ug/mL in Methanol
Cat. No: E061-20
Lot No: P7182C
Exp Date: 07/99
7/8/97
PolyScience
6600 W. Touhy Ave. Niles, IL

3-Chloro-2-methylpropene
[563-47-3]
2000ug/mL in Methanol
Cat. No: E243-20
Lot No: P7178M
Exp Date: 07/99
7/8/97
PolyScience
6600 W. Touhy Ave. Niles, IL

2-Bromo-1-chloropropane
[3017-95-6]
2000ug/mL in Methanol
Cat. No: E061-20
Lot No: P7182C
Exp Date: 07/99
7/28/97
PolyScience
6600 W. Touhy Ave. Niles, IL

4-Bromo-1-butene
[5162-44-7]
2000ug/mL in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
7/28/97
PolyScience
6600 W. Touhy Ave. Niles, IL

4-Bromo-1-butene
[5162-44-7]
2000ug/mL in Methanol
Cat. No: E244-20
Lot No: P7179M
Exp Date: 07/99
7/28/97
PolyScience
6600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-6]
2000ug/mL in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
7/28/97
PolyScience
6600 W. Touhy Ave. Niles, IL

1,3-Dibromo-1-propene
(mix of cis & trans isomers)
[627-15-6]
2000ug/mL in Methanol
Cat. No: E242-20
Lot No: P7181M
Exp Date: 07/99
7/28/97
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix for Brown & Root Environmental
Quote #2175-Mix #1
Var. Conc. in MeOH
Lot. No: P7172C
7/8/97 Exp: 06/99
PolyScience
600 W. Touhy Ave. Niles, IL

Custom Mix for Brown & Root Environmental
Quote #2175-Mix #2
500 mcg/mL in MeOH
Lot. No: P7173C
7/8/97 Exp: 06/99
PolyScience
6600 W. Touhy Ave. Nile

Custom Mix for Brown & Root Environmental
Quote #2175-Mix #3
500 mcg/mL in MeOH
Lot. No: P7174C
7/8/97 Exp: 06/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #4 Ketones
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7175C
7/8/97 Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #5 BTEX
Brown & Root Environmental
1.0mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7176C
7/8/97 Exp. Date: 07/99
PolyScience
6600 W. Touhy Ave. Niles, IL

Custom Mix #6 GASES
Brown & Root Environmental
10mg/mL ea cmpd in Methanol
Cat No: MISC
Lot No: P7177C
Exp. Date: 07/99
7/8/97
PolyScience
600 W. Touhy Ave. Niles, IL

# ATTACHMENT D.2

# RESULTS OF FIELD SCREENING FOR VOLATILE ORGANIC COMPOUNDS

# FIELD GC ANALYTICAL RESULTS FOR SOILS
# NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00301 | 003SB00302 | 003SB00303 | 003SB00304 | 003SB00305 | 003SB00306 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 07/13/97 | 07/13/97 | 07/13/97 | 07/13/97 | 07/13/97 | 07/13/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC03 | AOC03 | AOC03 | AOC03 | AOC03 | AOC03 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.4 U | 3.5 U | 2.9 U | 3.3 U | 3.3 U | 3.6 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.35 U | 0.34 U | 0.32 U | 0.35 U | 0.35 U | 0.37 U |
| 1,1,2-TRICHLOROETHANE | 9.4 U | 9.2 U | 8.6 U | 9.4 U | 9.6 U | 10 U |
| 1,1-DICHLOROETHENE | 7.4 U | 7.2 U | 6.8 U | 7.4 U | 7.5 U | 7.9 U |
| 1,2-DICHLOROETHANE | 25 U | 24 U | 23 U | 25 U | 25 U | 26 U |
| 2-BUTANONE | 14 U | 14 U | 13 U | 14 U | 14 U | 15 U |
| 2-HEXANONE | 14 U | 14 U | 13 U | 14 U | 14 U | 15 U |
| 4-METHYL-2-PENTANONE | 13 U | 13 U | 12 U | 14 U | 14 U | 14 U |
| ACETONE | 37 U | 36 U | 34 U | 37 U | 37 U | 39 U |
| BENZENE | 1.8 U | 1.8 U | 1.7 U | 1.8 U | 1.9 U | 1.9 U |
| BROMOFORM | 0.57 U | 0.56 U | 0.53 U | 0.57 U | 0.58 U | 0.61 U |
| BROMOMETHANE | 52 U | 51 U | 41 U | 47 U | 49 U | 55 U |
| CARBON DISULFIDE | 22 U | 22 U | 21 U | 23 U | 23 U | 24 U |
| CARBON TETRACHLORIDE | 0.55 U | 0.57 U | 0.46 U | 0.53 U | 0.54 U | 0.59 U |
| CHLOROBENZENE | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.2 U | 1.2 U |
| CHLOROFORM | 9.5 U | 9.8 U | 7.9 U | 9.1 U | 9.3 U | 10 U |
| CIS-1,2-DICHLOROETHENE | 6.5 U | 6.4 U | 6 U | 6.6 U | 6.7 U | 7 U |
| ETHYLBENZENE | 2.2 U | 2.2 U | 2.1 U | 2.3 U | 2.3 U | 2.4 U |
| M+P-XYLENES | 3.5 U | 3.4 U | 3.2 U | 3.5 U | 3.5 U | 3.7 U |
| METHYLENE CHLORIDE | 8.8 U | 8.6 U | 8.1 U | 8.8 U | 9 U | 9.4 U |
| O-XYLENE/STYRENE | 11 U | 11 U | 11 U | 11 U | 12 U | 12 U |
| TETRACHLOROETHENE | 0.31 U | 0.3 U | 0.28 U | 0.31 U | 0.31 U | 0.33 U |
| TOLUENE | 2.2 U | 2.2 U | 2.1 U | 2.3 U | 2.3 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 5.1 U | 5 U | 4.7 U | 5.1 U | 5.2 U | 5.5 U |
| TRICHLOROETHENE | 0.67 U | 0.66 U | 0.62 U | 0.68 U | 0.69 U | 0.72 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00301 | 003SB00302 | 003SB00303 | 003SB00304 | 003SB00305 | 003SB00306 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 07/13/97 | 07/13/97 | 07/13/97 | 07/13/97 | 07/13/97 | 07/13/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC03 | AOC03 | AOC03 | AOC03 | AOC03 | AOC03 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 41 U | 40 U | 38 U | 41 U | 42 U | 44 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00308 | 003SBDP105 | 003SB00310 | 003SB00401 | 003SB00402 | 003SB00403 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 28.0 - 32.0' | 36.0 - 40.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 07/13/97 | 07/13/97 | 07/14/97 | 07/22/97 | 07/22/97 | 07/22/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC03 | AOC03 | AOC03 | AOC04 | AOC04 | AOC04 |
| FIELD DUPLICATE OF: | | 003SB00308 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.1 U | 5.2 U | 6.1 U | 3.1 U | 2.7 U | 2.6 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.35 U | 0.42 U | 0.41 U | 0.31 U | 0.33 U | 0.31 U |
| 1,1,2-TRICHLOROETHANE | 53 U | 56 U | 57 | 8.4 U | 9 U | 8.4 U |
| 1,1-DICHLOROETHENE | 7.3 U | 8.8 U | 8.7 U | 6.6 U | 7 U | 6.6 U |
| 1,2-DICHLOROETHANE | 24 U | 29 U | 29 U | 22 U | 23 U | 22 U |
| 2-BUTANONE | 14 U | 17 U | 17 U | 13 U | 13 U | 13 U |
| 2-HEXANONE | 14 U | 17 U | 17 U | 13 U | 13 U | 13 U |
| 4-METHYL-2-PENTANONE | 13 U | 16 U | 16 U | 12 U | 13 U | 12 U |
| ACETONE | 37 U | 44 U | 43 U | 33 U | 35 U | 33 U |
| BENZENE | 1.8 U | 2.2 U | 2.1 U | 1.6 U | 1.7 U | 1.6 U |
| BROMOFORM | 0.57 U | 0.68 U | 0.67 U | 0.51 U | 0.55 U | 0.51 U |
| BROMOMETHANE | 61 U | 71 U | 53 U | 40 U | 43 U | 40 U |
| CARBON DISULFIDE | 22 U | 27 U | 26 U | 20 U | 21 U | 20 U |
| CARBON TETRACHLORIDE | 0.67 U | 0.84 U | 0.98 U | 0.5 U | 0.44 U | 0.4 U |
| CHLOROBENZENE | 1.1 U | 1.4 U | 1.3 U | 1 U | 1.1 U | 1 U |
| CHLOROFORM | 12 U | 14 U | 17 U | 8.6 U | 7.6 U | 7 U |
| CIS-1,2-DICHLOROETHENE | 6.5 U | 7.8 U | 7.4 J | 5.9 U | 6.2 U | 5.9 U |
| ETHYLBENZENE | 2.2 U | 2.7 U | 2.6 U | 2 U | 2.1 U | 2 U |
| M+P-XYLENES | 3.5 U | 4.2 U | 4.1 U | 3.1 U | 3.3 U | 3.1 U |
| METHYLENE CHLORIDE | 8.8 U | 11 U | 10 U | 7.9 U | 8.4 U | 7.9 U |
| O-XYLENE/STYRENE | 11 U | 14 U | 13 U | 10 U | 11 U | 10 U |
| TETRACHLOROETHENE | 1.7 | 1.8 | 1.8 | 0.27 U | 0.29 U | 0.28 U |
| TOLUENE | 2.2 U | 2.7 U | 2.6 U | 2 U | 2.1 U | 2 U |
| TRANS-1,2-DICHLOROETHENE | 5.1 U | 6.1 U | 6 U | 4.6 U | 4.9 U | 4.6 U |
| TRICHLOROETHENE | 8.5 J | 11 J | 280 J | 0.54 J | 0.64 U | 0.61 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00308 | 003SBDP105 | 003SB00310 | 003SB00401 | 003SB00402 | 003SB00403 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 28.0 - 32.0' | 36.0 - 40.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 07/13/97 | 07/13/97 | 07/14/97 | 07/22/97 | 07/22/97 | 07/22/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC03 | AOC03 | AOC03 | AOC04 | AOC04 | AOC04 |
| FIELD DUPLICATE OF: | | 003SB00308 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 41 U | 49 U | 48 U | 37 U | 39 U | 37 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00404 | 003SB00405 | 003SB00406 | 003SB00407 | 003SB00408 | 003SB00601 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 07/22/97 | 07/22/97 | 07/22/97 | 07/22/97 | 07/22/97 | 07/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC04 | AOC04 | AOC04 | AOC04 | AOC04 | AOC06 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.8 U | 4.5 U | 4.7 U | 4.1 U | 4.8 U | 4.7 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.35 U | 0.37 U | 0.33 U | 0.34 U | 0.36 U | 0.34 U |
| 1,1,2-TRICHLOROETHANE | 9.4 U | 9.9 U | 8.8 U | 9.2 U | 9.7 U | 9.3 U |
| 1,1-DICHLOROETHENE | 7.3 U | 7.8 U | 6.9 U | 7.2 U | 7.6 U | 7.3 U |
| 1,2-DICHLOROETHANE | 24 U | 26 U | 23 U | 24 U | 25 U | 24 U |
| 2-BUTANONE | 14 U | 15 U | 13 U | 14 U | 15 U | 14 U |
| 2-HEXANONE | 14 U | 15 U | 13 U | 14 U | 15 U | 14 U |
| 4-METHYL-2-PENTANONE | 13 U | 14 U | 13 U | 13 U | 14 U | 13 U |
| ACETONE | 37 U | 39 U | 35 U | 36 U | 38 U | 36 U |
| BENZENE | 1.8 U | 1.9 U | 1.7 U | 1.8 U | 1.9 U | 1.8 U |
| BROMOFORM | 0.57 U | 0.6 U | 0.54 U | 0.56 U | 0.59 U | 0.57 U |
| BROMOMETHANE | 45 U | 47 U | 42 U | 44 U | 47 U | 45 U |
| CARBON DISULFIDE | 22 U | 24 U | 21 U | 22 U | 23 U | 22 U |
| CARBON TETRACHLORIDE | 0.78 U | 0.73 U | 0.76 U | 0.66 U | 0.77 U | 0.76 U |
| CHLOROBENZENE | 1.1 U | 1.2 U | 1.1 U | 1.1 U | 1.2 U | 1.1 U |
| CHLOROFORM | 13 U | 13 U | 13 U | 11 U | 13 U | 13 U |
| CIS-1,2-DICHLOROETHENE | 6.5 U | 6.9 U | 6.1 U | 6.4 U | 9.9 | 3.6 UJ |
| ETHYLBENZENE | 2.2 U | 2.4 U | 2.1 U | 2.2 U | 2.3 U | 2.2 U |
| M+P-XYLENES | 3.5 U | 3.7 U | 3.3 U | 3.4 U | 3.6 U | 3.4 U |
| METHYLENE CHLORIDE | 8.8 U | 9.3 U | 8.2 U | 8.6 U | 9.1 U | 8.7 U |
| O-XYLENE/STYRENE | 11 U | 12 U | 11 U | 11 U | 12 U | 11 U |
| TETRACHLOROETHENE | 0.31 U | 0.32 U | 0.29 U | 0.3 U | 0.32 U | 0.3 U |
| TOLUENE | 2.2 U | 2.4 U | 2.1 U | 2.2 U | 2.3 U | 2.2 U |
| TRANS-1,2-DICHLOROETHENE | 5.1 U | 5.4 U | 4.8 U | 5 U | 5.4 | 5.1 U |
| TRICHLOROETHENE | 0.67 U | 0.37 J | 3.9 | 1.4 | 7.7 | 0.67 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00404 | 003SB00405 | 003SB00406 | 003SB00407 | 003SB00408 | 003SB00601 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 07/22/97 | 07/22/97 | 07/22/97 | 07/22/97 | 07/22/97 | 07/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC04 | AOC04 | AOC04 | AOC04 | AOC04 | AOC06 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 41 U | 43 U | 38 U | 40 U | 42 U | 40 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00602 | 003SB00603 | 003SB00604 | 003SB00605 | 003SB00606 | 003SB00607 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 07/08/97 | 07/08/97 | 07/08/97 | 07/08/97 | 07/08/97 | 07/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC06 | AOC06 | AOC06 | AOC06 | AOC06 | AOC06 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.2 U | 4.9 U | 4.6 U | 4.7 U | 5.2 U | 5.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.36 U | 0.35 U | 0.34 U | 0.36 U | 0.37 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 9.8 U | 9.4 U | 9.1 U | 9.6 U | 5.9 J | 5.4 J |
| 1,1-DICHLOROETHENE | 7.6 U | 7.4 U | 7.2 U | 7.5 U | 7.8 U | 8.3 U |
| 1,2-DICHLOROETHANE | 25 U | 25 U | 24 U | 25 U | 26 U | 28 U |
| 2-BUTANONE | 15 U | 14 U | 14 U | 14 U | 15 U | 16 U |
| 2-HEXANONE | 15 U | 14 U | 14 U | 14 U | 15 U | 16 U |
| 4-METHYL-2-PENTANONE | 14 U | 14 U | 13 U | 14 U | 14 U | 15 U |
| ACETONE | 38 U | 37 U | 36 U | 38 U | 39 U | 41 U |
| BENZENE | 1.9 U | 1.8 U | 1.8 U | 1.9 U | 1.9 U | 2 U |
| BROMOFORM | 0.59 U | 0.58 U | 0.56 U | 0.59 U | 0.61 U | 0.64 U |
| BROMOMETHANE | 47 U | 45 U | 44 U | 46 U | 48 U | 51 U |
| CARBON DISULFIDE | 23 U | 23 U | 22 U | 23 U | 24 U | 25 U |
| CARBON TETRACHLORIDE | 0.68 U | 0.79 U | 0.74 U | 0.76 U | 0.83 U | 0.84 U |
| CHLOROBENZENE | 1.2 U | 1.2 U | 1.1 U | 1.2 U | 1.2 U | 1.3 U |
| CHLOROFORM | 12 U | 14 U | 13 U | 13 U | 14 U | 14 U |
| CIS-1,2-DICHLOROETHENE | 4.7 UJ | 3.8 UJ | 3.5 UJ | 3.7 UJ | 4.3 UJ | 4.3 UJ |
| ETHYLBENZENE | 2.3 U | 2.3 U | 2.2 U | 2.3 U | 2.4 U | 2.5 U |
| M+P-XYLENES | 3.6 U | 3.5 U | 3.4 U | 3.6 U | 3.7 U | 3.9 U |
| METHYLENE CHLORIDE | 9.1 U | 8.8 U | 8.5 U | 9 U | 9.4 U | 9.9 U |
| O-XYLENE/STYRENE | 12 U | 12 U | 11 U | 12 U | 12 U | 13 U |
| TETRACHLOROETHENE | 0.32 U | 0.31 U | 0.3 U | 0.31 U | 0.19 J | 0.34 J |
| TOLUENE | 2.3 U | 2.3 U | 2.2 U | 2.3 U | 2.4 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 5.3 U | 5.1 U | 5 U | 5.2 U | 5.4 U | 5.7 U |
| TRICHLOROETHENE | 0.7 U | 0.68 U | 0.66 U | 0.69 U | 2.6 | 2.9 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00602 | 003SB00603 | 003SB00604 | 003SB00605 | 003SB00606 | 003SB00607 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 07/08/97 | 07/08/97 | 07/08/97 | 07/08/97 | 07/08/97 | 07/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC06 | AOC06 | AOC06 | AOC06 | AOC06 | AOC06 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 42 U | 41 U | 40 U | 42 U | 44 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00608 | 003SB00609 | 003SB00610 | 003SB00612 | 003SBDP101 | 003SB00613 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 44.0 - 48.0' | 44.0 - 48.0' | 48.0 - 52.0' |
| SAMPLE DATE: | 07/09/97 | 07/09/97 | 07/09/97 | 07/09/97 | 07/09/97 | 07/10/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC06 | AOC06 | AOC06 | AOC06 | AOC06 | AOC06 |
| FIELD DUPLICATE OF: | | | | | 003SB00612 | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 5.7 U | 5.3 U | 5.3 U | 4.5 U | 5.6 U | 7.3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.36 U | 0.37 U | 0.33 U | 0.4 U | 0.4 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 9.9 U | 9.9 U | 8.9 U | 11 U | 11 U |
| 1,1-DICHLOROETHENE | 8.4 U | 7.7 U | 7.8 U | 7 U | 8.4 U | 8.6 U |
| 1,2-DICHLOROETHANE | 28 U | 26 U | 26 U | 23 U | 28 U | 29 U |
| 2-BUTANONE | 16 U | 15 U | 15 U | 13 U | 16 U | 16 U |
| 2-HEXANONE | 16 U | 15 U | 15 U | 13 U | 16 U | 16 U |
| 4-METHYL-2-PENTANONE | 15 U | 14 U | 14 U | 13 U | 15 U | 16 U |
| ACETONE | 42 U | 39 U | 39 U | 35 U | 42 U | 43 U |
| BENZENE | 2.1 U | 1.9 U | 1.9 U | 1.7 U | 2.1 U | 2.1 U |
| BROMOFORM | 0.66 U | 0.6 U | 0.6 U | 0.54 U | 0.65 U | 0.67 U |
| BROMOMETHANE | 52 U | 47 U | 48 U | 43 U | 51 U | 56 U |
| CARBON DISULFIDE | 26 U | 24 U | 24 U | 21 U | 26 U | 26 U |
| CARBON TETRACHLORIDE | 0.91 U | 0.86 U | 0.85 U | 0.72 U | 0.89 U | 1.2 U |
| CHLOROBENZENE | 1.3 U | 1.2 U | 1.2 U | 1.1 U | 1.3 U | 1.3 U |
| CHLOROFORM | 16 U | 15 U | 15 U | 12 U | 15 U | 20 U |
| CIS-1,2-DICHLOROETHENE | 5 UJ | 8.9 J | 8.8 J | 11 J | 5.6 UJ | 9.8 |
| ETHYLBENZENE | 2.6 U | 2.4 U | 2.4 U | 2.1 U | 2.6 U | 2.6 U |
| M+P-XYLENES | 4 U | 3.6 U | 3.7 U | 3.3 U | 4 U | 4 U |
| METHYLENE CHLORIDE | 10 U | 9.2 U | 9.3 U | 8.3 U | 10 U | 10 U |
| O-XYLENE/STYRENE | 13 U | 12 U | 12 U | 11 U | 13 U | 13 U |
| TETRACHLOROETHENE | 0.35 U | 0.32 U | 0.32 U | 0.29 U | 0.35 U | 0.36 U |
| TOLUENE | 2.6 U | 2.4 U | 2.4 U | 2.1 U | 2.6 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 5.9 U | 5.4 U | 5.4 U | 4.8 U | 5.8 U | 5.9 U |
| TRICHLOROETHENE | 2.1 | 13 J | 12 J | 31 J | 14 J | 16 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00608 | 003SB00609 | 003SB00610 | 003SB00612 | 003SBDP101 | 003SB00613 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 44.0 - 48.0' | 44.0 - 48.0' | 48.0 - 52.0' |
| SAMPLE DATE: | 07/09/97 | 07/09/97 | 07/09/97 | 07/09/97 | 07/09/97 | 07/10/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC06 | AOC06 | AOC06 | AOC06 | AOC06 | AOC06 |
| FIELD DUPLICATE OF: | | | | | 003SB00612 | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 43 U | 43 U | 39 U | 46 U | 48 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00614 | 003SB00701 | 003SB00702 | 003SB00703 | 003SB00704 | 003SB00706 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 07/10/97 | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC06 | AOC07 | AOC07 | AOC07 | AOC07 | AOC07 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 7.4 U | 3 U | 3.1 U | 2.3 U | 3 U | 3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.36 U | 0.38 U | 0.28 U | 0.36 U | 0.37 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 9.8 U | 10 U | 7.5 U | 9.8 U | 10 U |
| 1,1-DICHLOROETHENE | 8.4 U | 7.7 U | 8 U | 5.9 U | 7.6 U | 7.8 U |
| 1,2-DICHLOROETHANE | 28 U | 26 U | 27 U | 20 U | 25 U | 26 U |
| 2-BUTANONE | 16 U | 15 U | 15 U | 11 U | 15 U | 15 U |
| 2-HEXANONE | 16 U | 15 U | 15 U | 11 U | 15 U | 15 U |
| 4-METHYL-2-PENTANONE | 15 U | 14 U | 15 U | 11 U | 14 U | 14 U |
| ACETONE | 42 U | 38 U | 40 U | 29 U | 38 U | 39 U |
| BENZENE | 2.1 U | 1.9 U | 2 U | 1.5 U | 1.9 U | 1.9 U |
| BROMOFORM | 0.66 U | 0.6 U | 0.62 U | 0.46 U | 0.59 U | 0.61 U |
| BROMOMETHANE | 51 U | 47 U | 49 U | 36 U | 47 U | 48 U |
| CARBON DISULFIDE | 26 U | 23 U | 24 U | 18 U | 23 U | 24 U |
| CARBON TETRACHLORIDE | 1.2 U | 0.47 U | 0.49 U | 0.36 U | 0.47 U | 0.48 U |
| CHLOROBENZENE | 1.3 U | 1.2 U | 1.2 U | 0.92 U | 1.2 U | 1.2 U |
| CHLOROFORM | 20 U | 8.1 U | 8.4 U | 6.2 U | 8.1 U | 8.2 U |
| CIS-1,2-DICHLOROETHENE | 12 J | 6.8 U | 7.1 U | 5.2 U | 6.8 U | 6.9 U |
| ETHYLBENZENE | 2.6 U | 2.3 U | 2.4 U | 1.8 U | 2.3 U | 2.4 U |
| M+P-XYLENES | 4 U | 3.6 U | 3.8 U | 2.8 U | 3.6 U | 3.7 U |
| METHYLENE CHLORIDE | 10 U | 9.2 U | 9.6 U | 7 U | 9.1 U | 9.3 U |
| O-XYLENE/STYRENE | 13 U | 12 U | 12 U | 9.2 U | 12 U | 12 U |
| TETRACHLOROETHENE | 0.35 U | 0.32 U | 0.33 U | 0.25 U | 0.32 U | 0.33 U |
| TOLUENE | 2.6 U | 2.3 U | 2.4 U | 1.8 U | 2.3 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 3.1 J | 5.3 U | 5.6 U | 4.1 U | 5.3 U | 5.4 U |
| TRICHLOROETHENE | 37 J | 0.7 U | 0.73 U | 0.54 U | 0.7 U | 0.72 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00614 | 003SB00701 | 003SB00702 | 003SB00703 | 003SB00704 | 003SB00706 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 07/10/97 | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC06 | AOC07 | AOC07 | AOC07 | AOC07 | AOC07 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 43 U | 44 U | 33 U | 42 U | 43 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP127 | 003SB00707 | 003SB00708 | 003SB00709 | 003SB00710 | 003SB00711 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC07 | AOC07 | AOC07 | AOC07 | AOC07 | AOC07 |
| FIELD DUPLICATE OF: | 003SB00706 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.6 U | 3.2 U | 3.1 U | 2.9 U | 2.9 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.32 U | 0.38 U | 0.38 U | 0.35 U | 0.36 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 8.6 U | 10 U | 10 U | 9.6 U | 9.6 U | 10 U |
| 1,1-DICHLOROETHENE | 6.7 U | 8.1 U | 8 U | 7.5 U | 7.5 U | 8.2 U |
| 1,2-DICHLOROETHANE | 22 U | 27 U | 27 U | 25 U | 25 U | 27 U |
| 2-BUTANONE | 13 U | 16 U | 15 U | 14 U | 14 U | 16 U |
| 2-HEXANONE | 13 U | 16 U | 15 U | 14 U | 14 U | 16 U |
| 4-METHYL-2-PENTANONE | 12 U | 15 U | 15 U | 14 U | 14 U | 15 U |
| ACETONE | 34 U | 41 U | 40 U | 38 U | 38 U | 41 U |
| BENZENE | 1.7 U | 2 U | 2 U | 1.9 U | 1.9 U | 2 U |
| BROMOFORM | 0.52 U | 0.63 U | 0.63 U | 0.58 U | 0.59 U | 0.64 U |
| BROMOMETHANE | 41 U | 50 U | 49 U | 46 U | 46 U | 50 U |
| CARBON DISULFIDE | 21 U | 25 U | 25 U | 23 U | 23 U | 25 U |
| CARBON TETRACHLORIDE | 0.41 U | 0.5 U | 0.49 U | 0.46 U | 0.46 U | 0.5 U |
| CHLOROBENZENE | 1 U | 1.3 U | 1.3 U | 1.2 U | 1.2 U | 1.3 U |
| CHLOROFORM | 7.1 U | 8.6 U | 8.5 U | 7.9 U | 8 U | 8.6 U |
| CIS-1,2-DICHLOROETHENE | 6 U | 7.2 U | 7.1 U | 6.7 U | 6.7 U | 7.3 U |
| ETHYLBENZENE | 2.1 U | 2.5 U | 2.5 U | 2.3 U | 2.3 U | 2.5 U |
| M+P-XYLENES | 3.2 U | 3.8 U | 3.8 U | 3.5 U | 3.6 U | 3.9 U |
| METHYLENE CHLORIDE | 8 U | 9.7 U | 9.6 U | 9 U | 9 U | 9.8 U |
| O-XYLENE/STYRENE | 10 U | 13 U | 13 U | 12 U | 12 U | 13 U |
| TETRACHLOROETHENE | 0.28 U | 0.34 U | 0.34 U | 0.31 U | 0.31 U | 0.34 U |
| TOLUENE | 2.1 U | 2.5 U | 2.5 U | 2.3 U | 2.3 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 4.7 U | 5.7 U | 5.6 U | 5.2 U | 5.2 U | 5.7 U |
| TRICHLOROETHENE | 0.62 U | 0.5 J | 1.7 | 3.4 | 1.2 | 0.75 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP127 | 003SB00707 | 003SB00708 | 003SB00709 | 003SB00710 | 003SB00711 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 | 08/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC07 | AOC07 | AOC07 | AOC07 | AOC07 | AOC07 |
| FIELD DUPLICATE OF: | 003SB00706 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 37 U | 45 U | 45 U | 42 U | 42 U | 45 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00801 | 003SB00802 | 003SB00803 | 003SB00804 | 003SB00805 | 003SB00806 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC08 | AOC08 | AOC08 | AOC08 | AOC08 | AOC08 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.9 U | 2.9 U | 2.9 U | 3.2 U | 2.7 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.35 U | 0.35 U | 0.34 U | 0.35 U | 0.33 U | 0.38 U |
| 1,1,2-TRICHLOROETHANE | 9.6 U | 15 | 14 | 5.4 J | 8.9 J | 5.2 J |
| 1,1-DICHLOROETHENE | 7.5 U | 7.5 U | 7.1 U | 7.3 U | 7 U | 8 U |
| 1,2-DICHLOROETHANE | 25 U | 25 U | 24 U | 24 U | 23 U | 27 U |
| 2-BUTANONE | 14 U | 14 U | 14 U | 14 U | 13 U | 15 U |
| 2-HEXANONE | 14 U | 14 U | 14 U | 14 U | 13 U | 15 U |
| 4-METHYL-2-PENTANONE | 14 U | 14 U | 13 U | 13 U | 13 U | 15 U |
| ACETONE | 37 U | 37 U | 36 U | 37 U | 35 U | 40 U |
| BENZENE | 1.9 U | 1.8 U | 1.8 U | 1.8 U | 1.7 U | 2 U |
| BROMOFORM | 0.58 U | 0.58 U | 0.55 U | 0.57 U | 0.54 U | 0.62 U |
| BROMOMETHANE | 46 U | 46 U | 44 U | 45 U | 43 U | 49 U |
| CARBON DISULFIDE | 23 U | 23 U | 22 U | 22 U | 21 U | 25 U |
| CARBON TETRACHLORIDE | 0.46 U | 0.46 U | 0.46 U | 0.51 U | 0.43 U | 0.51 U |
| CHLOROBENZENE | 1.2 U | 1.2 U | 1.1 U | 1.1 U | 1.1 U | 1.2 U |
| CHLOROFORM | 8 U | 7.9 U | 8 U | 8.8 U | 7.4 U | 8.9 U |
| CIS-1,2-DICHLOROETHENE | 6.7 U | 6.6 U | 6.3 U | 6.5 U | 6.2 U | 7.1 U |
| ETHYLBENZENE | 2.3 U | 2.3 U | 2.2 U | 2.2 U | 2.1 U | 2.5 U |
| M+P-XYLENES | 3.5 U | 3.5 U | 3.4 U | 3.5 U | 3.3 U | 3.8 U |
| METHYLENE CHLORIDE | 9 U | 8.9 U | 8.5 U | 8.7 U | 8.3 U | 9.6 U |
| O-XYLENE/STYRENE | 12 U | 12 U | 11 U | 11 U | 11 U | 12 U |
| TETRACHLOROETHENE | 0.31 U | 0.46 | 0.45 | 0.17 J | 0.29 J | 0.33 J |
| TOLUENE | 2.3 U | 2.3 U | 2.2 U | 2.2 U | 2.1 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 5.2 U | 5.2 U | 4.9 U | 5.1 U | 4.9 U | 5.6 U |
| TRICHLOROETHENE | 0.69 U | 0.68 U | 0.65 U | 0.67 U | 0.64 U | 0.74 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00801 | 003SB00802 | 003SB00803 | 003SB00804 | 003SB00805 | 003SB00806 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC08 | AOC08 | AOC08 | AOC08 | AOC08 | AOC08 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 42 U | 41 U | 40 U | 41 U | 39 U | 45 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00807 | 003SBDP107 | 003SB00808 | 003SB00809 | 003SB00810 | 003SB00811 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC08 | AOC08 | AOC08 | AOC08 | AOC08 | AOC08 |
| FIELD DUPLICATE OF: | | 003SB00807 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 2.9 U | 3.6 U | 3.6 U | 3.6 U | 3.4 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.36 U | 0.32 U | 0.39 U | 0.4 U | 0.41 U | 0.41 U |
| 1,1,2-TRICHLOROETHANE | 22 U | 37 U | 50 U | 70 U | 34 U | 7.7 J |
| 1,1-DICHLOROETHENE | 7.7 U | 6.7 U | 8.2 U | 8.5 U | 8.7 U | 8.7 U |
| 1,2-DICHLOROETHANE | 26 U | 22 U | 27 U | 28 U | 29 U | 29 U |
| 2-BUTANONE | 15 U | 13 U | 16 U | 16 U | 17 U | 17 U |
| 2-HEXANONE | 15 U | 13 U | 16 U | 16 U | 17 U | 17 U |
| 4-METHYL-2-PENTANONE | 14 U | 12 U | 15 U | 16 U | 16 U | 16 U |
| ACETONE | 39 U | 34 U | 41 U | 42 U | 44 U | 44 U |
| BENZENE | 1.9 U | 1.7 U | 2 U | 2.1 U | 2.2 U | 2.2 U |
| BROMOFORM | 0.6 U | 0.52 U | 0.64 U | 0.66 U | 0.68 U | 0.68 U |
| BROMOMETHANE | 47 U | 41 U | 50 U | 52 U | 53 U | 53 U |
| CARBON DISULFIDE | 24 U | 20 U | 25 U | 26 U | 27 U | 27 U |
| CARBON TETRACHLORIDE | 0.51 U | 0.47 U | 0.58 U | 0.59 U | 0.58 U | 0.55 U |
| CHLOROBENZENE | 1.2 U | 1 U | 1.3 U | 1.3 U | 1.4 U | 1.4 U |
| CHLOROFORM | 8.8 U | 8.1 U | 9.9 U | 10 U | 10 U | 9.5 U |
| CIS-1,2-DICHLOROETHENE | 6.8 U | 6 U | 7.3 U | 7.5 U | 7.8 U | 7.8 U |
| ETHYLBENZENE | 2.4 U | 2 U | 2.5 U | 2.6 U | 2.7 U | 2.7 U |
| M+P-XYLENES | 3.6 U | 3.2 U | 3.9 U | 4 U | 4.1 U | 4.1 U |
| METHYLENE CHLORIDE | 9.2 U | 8 U | 9.8 U | 10 U | 10 U | 10 U |
| O-XYLENE/STYRENE | 12 U | 10 U | 13 U | 13 U | 14 U | 14 U |
| TETRACHLOROETHENE | 0.71 | 1.2 | 1.6 | 2.2 | 1.1 | 0.25 J |
| TOLUENE | 2.4 U | 2 U | 2.5 U | 2.6 U | 2.7 U | 2.7 U |
| TRANS-1,2-DICHLOROETHENE | 5.3 U | 4.7 U | 5.7 U | 5.9 U | 6.1 U | 6.1 U |
| TRICHLOROETHENE | 0.71 U | 0.4 J | 2 | 3 | 3.5 | 13 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00807 | 003SBDP107 | 003SB00808 | 003SB00809 | 003SB00810 | 003SB00811 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 | 07/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC08 | AOC08 | AOC08 | AOC08 | AOC08 | AOC08 |
| FIELD DUPLICATE OF: | | 003SB00807 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 43 U | 37 U | 45 U | 47 U | 49 U | 49 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00812 | 003SB00813 | 003SB00814 | 003SB00815 | 003SB01301 | 003SB01302 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 44.0 - 48.0' | 48.0 - 52.0' | 52.0 - 56.0' | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 07/22/97 | 07/21/97 | 07/22/97 | 07/22/97 | 07/14/97 | 07/14/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC08 | AOC08 | AOC08 | AOC08 | AOC13 | AOC13 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.8 U | 3 U | 2.8 U | 3.2 U | 3.8 U | 4.8 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.42 U | 0.36 U | 0.34 U | 0.38 U | 0.28 U | 0.34 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 9.8 U | 9.2 U | 10 U | 11 | 25 |
| 1,1-DICHLOROETHENE | 9 U | 7.7 U | 7.2 U | 8.1 U | 6 U | 7.1 U |
| 1,2-DICHLOROETHANE | 30 U | 26 U | 24 U | 27 U | 20 U | 24 U |
| 2-BUTANONE | 17 U | 15 U | 14 U | 16 U | 11 U | 14 U |
| 2-HEXANONE | 17 U | 15 U | 14 U | 16 U | 11 U | 14 U |
| 4-METHYL-2-PENTANONE | 16 U | 14 U | 13 U | 15 U | 11 U | 13 U |
| ACETONE | 45 U | 38 U | 36 U | 41 U | 30 U | 36 U |
| BENZENE | 2.2 U | 1.9 U | 1.8 U | 2 U | 1.5 U | 1.8 U |
| BROMOFORM | 0.7 U | 0.6 U | 0.56 U | 0.63 U | 0.47 U | 0.56 U |
| BROMOMETHANE | 55 U | 47 U | 44 U | 50 U | 37 U | 44 U |
| CARBON DISULFIDE | 27 U | 23 U | 22 U | 25 U | 18 U | 22 U |
| CARBON TETRACHLORIDE | 0.62 U | 0.47 U | 0.45 U | 0.5 U | 0.61 U | 0.77 U |
| CHLOROBENZENE | 1.4 U | 1.2 U | 1.1 U | 1.3 U | 0.93 U | 1.1 U |
| CHLOROFORM | 11 U | 8.1 U | 7.7 U | 8.6 U | 11 U | 13 U |
| CIS-1,2-DICHLOROETHENE | 8 U | 4.7 J | 6.4 U | 7.2 U | 5.3 U | 6.4 U |
| ETHYLBENZENE | 2.7 U | 2.3 U | 2.2 U | 2.5 U | 1.8 U | 2.2 U |
| M+P-XYLENES | 4.2 U | 3.6 U | 3.4 U | 3.8 U | 2.8 U | 3.4 U |
| METHYLENE CHLORIDE | 11 U | 9.2 U | 8.6 U | 9.7 U | 7.2 U | 8.5 U |
| O-XYLENE/STYRENE | 14 U | 12 U | 11 U | 13 U | 9.3 U | 11 U |
| TETRACHLOROETHENE | 0.37 U | 0.32 U | 0.3 U | 0.34 U | 0.36 | 0.78 |
| TOLUENE | 2.7 U | 2.3 U | 2.2 U | 2.5 U | 1.8 U | 2.2 U |
| TRANS-1,2-DICHLOROETHENE | 6.2 U | 5.3 U | 5 U | 5.6 U | 4.2 U | 5 U |
| TRICHLOROETHENE | 8.9 | 22 J | 12 J | 16 J | 0.85 | 1.1 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB00812 | 003SB00813 | 003SB00814 | 003SB00815 | 003SB01301 | 003SB01302 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 44.0 - 48.0' | 48.0 - 52.0' | 52.0 - 56.0' | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 07/22/97 | 07/21/97 | 07/22/97 | 07/22/97 | 07/14/97 | 07/14/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC08 | AOC08 | AOC08 | AOC08 | AOC13 | AOC13 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 50 U | 43 U | 40 U | 45 U | 33 U | 40 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01303 | 003SB01304 | 003SB01305 | 003SB01306 | 003SB01307 | 003SB01308 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/14/97 | 07/14/97 | 07/14/97 | 07/14/97 | 07/14/97 | 07/14/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC13 | AOC13 | AOC13 | AOC13 | AOC13 | AOC13 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 3 U | 3.3 U | 3.2 U | 3.4 U | 4.8 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.32 U | 0.31 U | 0.35 U | 0.39 U | 0.41 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 8.7 U | 8.3 U | 9.6 U | 10 U | 11 U | 11 U |
| 1,1-DICHLOROETHENE | 6.8 U | 6.5 U | 7.5 U | 8.2 U | 8.7 U | 8.4 U |
| 1,2-DICHLOROETHANE | 23 U | 22 U | 25 U | 27 U | 29 U | 28 U |
| 2-BUTANONE | 13 U | 12 U | 14 U | 16 U | 17 U | 16 U |
| 2-HEXANONE | 13 U | 12 U | 14 U | 16 U | 17 U | 16 U |
| 4-METHYL-2-PENTANONE | 12 U | 12 U | 14 U | 15 U | 16 U | 15 U |
| ACETONE | 34 U | 32 U | 38 U | 41 U | 43 U | 42 U |
| BENZENE | 1.7 U | 1.6 U | 1.9 U | 2 U | 2.1 U | 2.1 U |
| BROMOFORM | 0.53 U | 0.5 U | 0.58 U | 0.64 U | 0.67 U | 0.65 U |
| BROMOMETHANE | 41 U | 40 U | 46 U | 50 U | 53 U | 51 U |
| CARBON DISULFIDE | 21 U | 20 U | 23 U | 25 U | 27 U | 26 U |
| CARBON TETRACHLORIDE | 0.52 U | 0.48 U | 0.53 U | 0.51 U | 0.53 U | 0.77 U |
| CHLOROBENZENE | 1.1 U | 1 U | 1.2 U | 1.3 U | 1.3 U | 1.3 U |
| CHLOROFORM | 8.9 U | 8.3 U | 9.1 U | 8.8 U | 9.2 U | 13 U |
| CIS-1,2-DICHLOROETHENE | 6 U | 5.8 U | 6.7 U | 7.3 U | 7.7 U | 8.4 |
| ETHYLBENZENE | 2.1 U | 2 U | 2.3 U | 2.5 U | 2.7 U | 2.6 U |
| M+P-XYLENES | 3.2 U | 3.1 U | 3.5 U | 3.9 U | 4.1 U | 3.9 U |
| METHYLENE CHLORIDE | 8.1 U | 7.7 U | 9 U | 9.8 U | 10 U | 10 U |
| O-XYLENE/STYRENE | 11 U | 10 U | 12 U | 13 U | 13 U | 13 U |
| TETRACHLOROETHENE | 0.28 U | 0.27 U | 0.31 U | 0.34 U | 0.36 U | 0.35 U |
| TOLUENE | 2.1 U | 2 U | 2.3 U | 2.5 U | 2.7 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 4.7 U | 4.5 U | 5.2 U | 5.7 U | 6 U | 5.8 U |
| TRICHLOROETHENE | 0.62 U | 0.59 U | 0.69 U | 0.82 | 4.9 | 15 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01303 | 003SB01304 | 003SB01305 | 003SB01306 | 003SB01307 | 003SB01308 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/14/97 | 07/14/97 | 07/14/97 | 07/14/97 | 07/14/97 | 07/14/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC13 | AOC13 | AOC13 | AOC13 | AOC13 | AOC13 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 38 U | 36 U | 42 U | 46 U | 48 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01309 | 003SB01311 | 003SBDP106 | 003SB01501 | 003SB01502 | 003SB01503 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 40.0 - 44.0' | 40.0 - 44.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 07/14/97 | 07/15/97 | 07/15/97 | 09/22/97 | 09/22/97 | 09/22/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC13 | AOC13 | AOC13 | AOC15 | AOC15 | AOC15 |
| FIELD DUPLICATE OF: | | | 003SB01311 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.3 U | 3.5 U | 3.4 U | 2.8 U | 3.2 U | 3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.43 U | 0.41 U | 0.34 U | 0.39 U | 0.37 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 17 | 17 | 9.3 U | 11 U | 9.9 U |
| 1,1-DICHLOROETHENE | 8.4 U | 9 U | 8.7 U | 7.3 U | 8.2 U | 7.7 U |
| 1,2-DICHLOROETHANE | 28 U | 30 U | 29 U | 24 U | 27 U | 26 U |
| 2-BUTANONE | 16 U | 17 U | 17 U | 14 U | 16 U | 15 U |
| 2-HEXANONE | 16 U | 17 U | 17 U | 14 U | 16 U | 15 U |
| 4-METHYL-2-PENTANONE | 15 U | 17 U | 16 U | 13 U | 15 U | 14 U |
| ACETONE | 42 U | 45 U | 22 J | 36 U | 41 U | 39 U |
| BENZENE | 2.1 U | 2.2 U | 2.2 U | 1.8 U | 2 U | 1.9 U |
| BROMOFORM | 0.65 U | 0.7 U | 0.68 U | 0.57 U | 0.64 U | 0.6 U |
| BROMOMETHANE | 51 U | 55 U | 53 U | 44 U | 50 U | 47 U |
| CARBON DISULFIDE | 26 U | 28 U | 27 U | 22 U | 25 U | 24 U |
| CARBON TETRACHLORIDE | 0.69 U | 0.55 U | 0.53 U | 0.44 U | 0.5 U | 0.47 U |
| CHLOROBENZENE | 1.3 U | 1.4 U | 1.4 U | 1.1 U | 1.3 U | 1.2 U |
| CHLOROFORM | 12 U | 9.5 U | 9.2 U | 7.7 U | 8.7 U | 8.2 U |
| CIS-1,2-DICHLOROETHENE | 11 | 4.9 J | 6.2 J | 6.5 U | 7.3 U | 6.9 U |
| ETHYLBENZENE | 2.6 U | 2.8 U | 2.7 U | 2.2 U | 2.5 U | 2.4 U |
| M+P-XYLENES | 4 U | 4.3 U | 4.1 U | 3.4 U | 3.9 U | 3.7 U |
| METHYLENE CHLORIDE | 10 U | 11 U | 10 U | 8.7 U | 9.8 U | 9.3 U |
| O-XYLENE/STYRENE | 13 U | 14 U | 14 U | 11 U | 13 U | 12 U |
| TETRACHLOROETHENE | 0.35 U | 0.54 | 0.56 | 0.3 U | 0.34 U | 0.32 U |
| TOLUENE | 2.6 U | 2.8 U | 2.7 U | 2.2 U | 2.5 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 5.8 U | 6.3 U | 6 U | 5 U | 5.7 U | 5.4 U |
| TRICHLOROETHENE | 17 J | 9.9 | 10 J | 0.67 U | 0.75 U | 0.71 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01309 | 003SB01311 | 003SBDP106 | 003SB01501 | 003SB01502 | 003SB01503 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 40.0 - 44.0' | 40.0 - 44.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 07/14/97 | 07/15/97 | 07/15/97 | 09/22/97 | 09/22/97 | 09/22/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC13 | AOC13 | AOC13 | AOC15 | AOC15 | AOC15 |
| FIELD DUPLICATE OF: | | | 003SB01311 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 50 U | 48 U | 40 U | 46 U | 43 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01504 | 003SB01505 | 003SB01506 | 003SB01601 | 003SB01602 | 003SB01603 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 09/22/97 | 09/22/97 | 09/22/97 | 07/26/97 | 07/26/97 | 07/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC15 | AOC15 | AOC15 | AOC16 | AOC16 | AOC16 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.1 U | 3.4 U | 3.6 U | 3.6 U | 4.4 U | 4 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.38 U | 0.42 U | 0.44 U | 0.35 U | 0.36 U | 0.35 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 11 U | 12 U | 9.6 U | 9.8 U | 9.5 U |
| 1,1-DICHLOROETHENE | 8 U | 8.8 U | 9.4 U | 7.5 U | 7.7 U | 7.4 U |
| 1,2-DICHLOROETHANE | 27 U | 29 U | 31 U | 25 U | 26 U | 25 U |
| 2-BUTANONE | 15 U | 17 U | 18 U | 14 U | 15 U | 14 U |
| 2-HEXANONE | 15 U | 17 U | 18 U | 14 U | 15 U | 14 U |
| 4-METHYL-2-PENTANONE | 15 U | 16 U | 17 U | 14 U | 14 U | 14 U |
| ACETONE | 40 U | 44 U | 47 U | 38 U | 38 U | 37 U |
| BENZENE | 2 U | 2.2 U | 2.3 U | 1.9 U | 1.9 U | 1.8 U |
| BROMOFORM | 0.62 U | 0.69 U | 0.73 U | 0.58 U | 0.6 U | 0.58 U |
| BROMOMETHANE | 49 U | 54 U | 57 U | 46 U | 47 U | 46 U |
| CARBON DISULFIDE | 24 U | 27 U | 29 U | 23 U | 23 U | 23 U |
| CARBON TETRACHLORIDE | 0.49 U | 0.54 U | 0.57 U | 0.58 U | 0.71 U | 0.64 U |
| CHLOROBENZENE | 1.2 U | 1.4 U | 1.5 U | 1.2 U | 1.2 U | 1.2 U |
| CHLOROFORM | 8.4 U | 9.3 U | 9.9 U | 10 U | 12 U | 11 U |
| CIS-1,2-DICHLOROETHENE | 7.1 U | 7.8 U | 8.3 U | 6.7 U | 6.8 U | 6.6 U |
| ETHYLBENZENE | 2.4 U | 2.7 U | 2.9 U | 2.3 U | 2.3 U | 2.3 U |
| M+P-XYLENES | 3.8 U | 4.2 U | 4.4 U | 3.5 U | 3.6 U | 3.5 U |
| METHYLENE CHLORIDE | 9.5 U | 11 U | 11 U | 9 U | 9.2 U | 8.9 U |
| O-XYLENE/STYRENE | 12 U | 14 U | 15 U | 12 U | 12 U | 12 U |
| TETRACHLOROETHENE | 0.33 U | 0.37 U | 0.39 U | 0.31 U | 0.32 U | 0.31 U |
| TOLUENE | 2.4 U | 2.7 U | 2.9 U | 2.3 U | 2.3 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 5.5 U | 6.1 U | 6.5 U | 5.2 U | 5.3 U | 5.2 U |
| TRICHLOROETHENE | 0.73 U | 0.42 J | 0.86 U | 1.6 | 0.7 U | 0.68 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01504 | 003SB01505 | 003SB01506 | 003SB01601 | 003SB01602 | 003SB01603 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 09/22/97 | 09/22/97 | 09/22/97 | 07/26/97 | 07/26/97 | 07/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC15 | AOC15 | AOC15 | AOC16 | AOC16 | AOC16 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 44 U | 49 U | 52 U | 42 U | 43 U | 41 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01604 | 003SB01605 | 003SB01606 | 003SB01607 | 003SB01608 | 003SBDP111 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC16 | AOC16 | AOC16 | AOC16 | AOC16 | AOC16 |
| FIELD DUPLICATE OF: | | | | | | 003SB01608 |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.6 U | 3.5 U | 4.3 U | 3.3 U | 4.1 U | 5.8 |
| 1,1,2,2-TETRACHLOROETHANE | 0.34 U | 0.35 U | 0.42 U | 0.4 U | 0.44 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 9.2 U | 9.5 U | 11 U | 23 | 78 U | 21 |
| 1,1-DICHLOROETHENE | 7.2 U | 7.4 U | 8.9 U | 8.5 U | 9.3 U | 8.4 U |
| 1,2-DICHLOROETHANE | 24 U | 25 U | 30 U | 28 U | 31 U | 28 U |
| 2-BUTANONE | 14 U | 14 U | 17 U | 16 U | 18 U | 16 U |
| 2-HEXANONE | 14 U | 14 U | 17 U | 16 U | 18 U | 16 U |
| 4-METHYL-2-PENTANONE | 13 U | 14 U | 16 U | 16 U | 17 U | 15 U |
| ACETONE | 36 U | 23 J | 45 U | 42 U | 47 U | 42 U |
| BENZENE | 1.8 U | 1.8 U | 2.2 U | 2.1 U | 2.3 U | 2.1 U |
| BROMOFORM | 0.56 U | 0.58 U | 0.69 U | 0.66 U | 0.72 U | 0.65 U |
| BROMOMETHANE | 44 U | 45 U | 55 U | 52 U | 57 U | 51 U |
| CARBON DISULFIDE | 22 U | 23 U | 27 U | 26 U | 28 U | 26 U |
| CARBON TETRACHLORIDE | 0.58 U | 0.57 U | 0.69 U | 0.52 U | 0.66 U | 0.93 |
| CHLOROBENZENE | 1.1 U | 1.2 U | 1.4 U | 1.3 U | 1.4 U | 1.3 U |
| CHLOROFORM | 10 U | 9.8 U | 12 U | 9 U | 11 U | 16 |
| CIS-1,2-DICHLOROETHENE | 6.4 U | 6.6 U | 7.9 U | 6.5 J | 9 | 3.7 J |
| ETHYLBENZENE | 2.2 U | 2.3 U | 2.7 U | 2.6 U | 2.8 U | 2.6 U |
| M+P-XYLENES | 3.4 U | 3.5 U | 4.2 U | 4 U | 4.4 U | 3.9 U |
| METHYLENE CHLORIDE | 8.6 U | 8.9 U | 11 U | 10 U | 11 U | 10 U |
| O-XYLENE/STYRENE | 11 U | 12 U | 14 U | 13 U | 14 U | 13 U |
| TETRACHLOROETHENE | 0.3 U | 0.31 U | 0.37 U | 0.73 | 2.5 | 0.68 |
| TOLUENE | 2.2 U | 2.3 U | 2.7 U | 2.6 U | 2.8 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 5 U | 5.2 U | 6.2 U | 5.9 U | 6.5 U | 5.8 U |
| TRICHLOROETHENE | 0.37 J | 1.4 | 1.8 | 15 J | 37 J | 10 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01604 | 003SB01605 | 003SB01606 | 003SB01607 | 003SB01608 | 003SBDP111 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC16 | AOC16 | AOC16 | AOC16 | AOC16 | AOC16 |
| FIELD DUPLICATE OF: | | | | | | 003SB01608 |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 40 U | 41 U | 50 U | 47 U | 52 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01609 | 003SB01610 | 003SB01701 | 003SB01702 | 003SB01703 | 003SB01704 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 07/26/97 | 07/26/97 | 07/25/97 | 07/25/97 | 07/25/97 | 07/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC16 | AOC16 | AOC17 | AOC17 | AOC17 | AOC17 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 10 U | 6.2 U | 3.9 U | 5.2 U | 5.7 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.36 U | 1.3 U | 0.39 U | 0.34 U | 0.33 U | 0.38 U |
| 1,1,2-TRICHLOROETHANE | 41 | 34 U | 11 U | 9.2 U | 59 U | 28 |
| 1,1-DICHLOROETHENE | 7.7 U | 27 U | 8.3 U | 7.2 U | 7.1 U | 8 U |
| 1,2-DICHLOROETHANE | 26 U | 89 U | 28 U | 24 U | 24 U | 27 U |
| 2-BUTANONE | 15 U | 51 U | 16 U | 14 U | 14 U | 15 U |
| 2-HEXANONE | 15 U | 51 U | 16 U | 14 U | 14 U | 15 U |
| 4-METHYL-2-PENTANONE | 14 U | 49 U | 15 U | 13 U | 13 U | 15 U |
| ACETONE | 38 U | 130 U | 41 U | 36 U | 35 U | 40 U |
| BENZENE | 1.9 U | 6.6 U | 2.1 U | 1.8 U | 1.8 U | 2 U |
| BROMOFORM | 0.6 U | 2.1 U | 0.65 U | 0.56 U | 0.55 U | 0.62 U |
| BROMOMETHANE | 47 U | 160 U | 51 U | 44 U | 43 U | 49 U |
| CARBON DISULFIDE | 24 U | 82 U | 25 U | 22 U | 22 U | 24 U |
| CARBON TETRACHLORIDE | 0.51 U | 1.6 U | 0.99 U | 0.63 U | 0.84 U | 0.92 U |
| CHLOROBENZENE | 1.2 U | 4.2 U | 1.3 U | 1.1 U | 1.1 U | 1.2 U |
| CHLOROFORM | 8.8 U | 28 U | 17 U | 11 U | 14 U | 16 U |
| CIS-1,2-DICHLOROETHENE | 6.8 U | 24 U | 7.4 U | 6.4 U | 6.3 U | 7.1 U |
| ETHYLBENZENE | 2.4 U | 8.2 U | 2.5 U | 2.2 U | 2.2 U | 2.4 U |
| M+P-XYLENES | 3.6 U | 13 U | 3.9 U | 3.4 U | 3.3 U | 3.8 U |
| METHYLENE CHLORIDE | 9.2 U | 32 U | 9.9 U | 8.6 U | 8.5 U | 9.5 U |
| O-XYLENE/STYRENE | 12 U | 42 U | 13 U | 11 U | 11 U | 12 U |
| TETRACHLOROETHENE | 1.3 | 1.1 U | 0.35 U | 0.3 U | 1.9 | 0.88 |
| TOLUENE | 2.4 U | 8.2 U | 2.5 U | 2.2 U | 2.2 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 5.3 U | 19 U | 5.8 U | 5 U | 4.9 U | 5.5 U |
| TRICHLOROETHENE | 22 J | 1.4 J | 0.76 U | 0.66 U | 0.68 U | 0.73 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01609 | 003SB01610 | 003SB01701 | 003SB01702 | 003SB01703 | 003SB01704 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 07/26/97 | 07/26/97 | 07/25/97 | 07/25/97 | 07/25/97 | 07/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC16 | AOC16 | AOC17 | AOC17 | AOC17 | AOC17 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 43 U | 150 U | 46 U | 40 U | 39 U | 44 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01705 | 003SBDP110 | 003SB01706 | 003SB01707 | 003SB01708 | 003SB01710 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 16.0 - 20.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 07/25/97 | 07/25/97 | 07/25/97 | 07/25/97 | 07/25/97 | 07/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC17 | AOC17 | AOC17 | AOC17 | AOC17 | AOC17 |
| FIELD DUPLICATE OF: | | 003SB01705 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 5.8 U | 4.1 U | 4.4 U | 4.1 U | 4.2 U | 3.5 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.33 U | 0.37 U | 0.27 U | 0.36 U | 0.36 U | 0.32 U |
| 1,1,2-TRICHLOROETHANE | 220 U | 23 | 26 | 9.7 U | 9.7 U | 8.6 U |
| 1,1-DICHLOROETHENE | 7 U | 7.9 U | 5.8 U | 7.6 U | 7.6 U | 6.8 U |
| 1,2-DICHLOROETHANE | 23 U | 26 U | 19 U | 25 U | 25 U | 23 U |
| 2-BUTANONE | 13 U | 15 U | 11 U | 15 U | 15 U | 13 U |
| 2-HEXANONE | 13 U | 15 U | 11 U | 15 U | 15 U | 13 U |
| 4-METHYL-2-PENTANONE | 13 U | 14 U | 11 U | 14 U | 14 U | 12 U |
| ACETONE | 35 U | 39 U | 29 U | 38 U | 38 U | 34 U |
| BENZENE | 1.7 U | 1.9 U | 1.4 U | 1.9 U | 1.9 U | 1.7 U |
| BROMOFORM | 0.54 U | 0.61 U | 0.45 U | 0.59 U | 0.59 U | 0.53 U |
| BROMOMETHANE | 43 U | 48 U | 36 U | 46 U | 46 U | 41 U |
| CARBON DISULFIDE | 21 U | 24 U | 18 U | 23 U | 23 U | 21 U |
| CARBON TETRACHLORIDE | 0.93 U | 0.66 U | 0.71 U | 0.66 U | 0.67 U | 0.56 U |
| CHLOROBENZENE | 1.1 U | 1.2 U | 0.9 U | 1.2 U | 1.2 U | 1.1 U |
| CHLOROFORM | 16 U | 11 U | 12 U | 11 U | 12 U | 9.6 U |
| CIS-1,2-DICHLOROETHENE | 6.2 U | 7 U | 5.2 U | 13 | 15 | 4.6 J |
| ETHYLBENZENE | 2.1 U | 2.4 U | 1.8 U | 2.3 U | 2.3 U | 2.1 U |
| M+P-XYLENES | 2.6 J | 3.7 U | 2.7 U | 3.6 U | 3.6 U | 3.2 U |
| METHYLENE CHLORIDE | 8.4 U | 9.4 U | 6.9 U | 9.1 U | 9.1 U | 8.1 U |
| O-XYLENE/STYRENE | 11 U | 12 U | 9 U | 12 U | 12 U | 11 U |
| TETRACHLOROETHENE | 6.9 | 0.74 | 0.83 | 0.32 U | 0.32 U | 0.28 U |
| TOLUENE | 2.1 U | 2.4 U | 1.8 U | 2.3 U | 2.3 U | 2.1 U |
| TRANS-1,2-DICHLOROETHENE | 4.9 U | 5.5 U | 4 U | 5.3 U | 5.3 U | 4.7 U |
| TRICHLOROETHENE | 1.9 U | 0.72 U | 1.5 U | 27 J | 30 J | 20 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01705 | 003SBDP110 | 003SB01706 | 003SB01707 | 003SB01708 | 003SB01710 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 16.0 - 20.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 07/25/97 | 07/25/97 | 07/25/97 | 07/25/97 | 07/25/97 | 07/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC17 | AOC17 | AOC17 | AOC17 | AOC17 | AOC17 |
| FIELD DUPLICATE OF: | | 003SB01705 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 39 U | 44 U | 32 U | 42 U | 42 U | 38 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01711 | 003SB01712 | 003SB01801 | 003SB01802 | 003SB01803 | 003SB01804 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 40.0 - 44.0' | 44.0 - 48.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 07/25/97 | 07/25/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC17 | AOC17 | AOC18 | AOC18 | AOC18 | AOC18 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.8 U | 3.6 U | 2.9 U | 10 U | 4.2 U | 6.1 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.36 U | 0.37 U | 0.34 U | 0.31 U | 0.34 U | 0.27 U |
| 1,1,2-TRICHLOROETHANE | 39 | 26 | 9.3 U | 92 U | 9.3 U | 7.3 U |
| 1,1-DICHLOROETHENE | 7.6 U | 7.8 U | 7.3 U | 6.5 U | 7.3 U | 5.8 U |
| 1,2-DICHLOROETHANE | 25 U | 26 U | 24 U | 22 U | 24 U | 19 U |
| 2-BUTANONE | 15 U | 15 U | 14 U | 12 U | 14 U | 11 U |
| 2-HEXANONE | 15 U | 15 U | 14 U | 12 U | 14 U | 11 U |
| 4-METHYL-2-PENTANONE | 14 U | 14 U | 13 U | 12 U | 13 U | 11 U |
| ACETONE | 38 U | 39 U | 37 U | 32 U | 36 U | 29 U |
| BENZENE | 1.9 U | 1.9 U | 1.8 U | 1.6 U | 1.8 U | 1.4 U |
| BROMOFORM | 0.59 U | 0.61 U | 0.57 U | 0.5 U | 0.57 U | 0.45 U |
| BROMOMETHANE | 46 U | 48 U | 45 U | 40 U | 45 U | 35 U |
| CARBON DISULFIDE | 23 U | 24 U | 22 U | 20 U | 22 U | 18 U |
| CARBON TETRACHLORIDE | 0.61 U | 0.59 U | 0.46 U | 1.6 U | 0.67 U | 0.97 U |
| CHLOROBENZENE | 1.2 U | 1.2 U | 1.1 U | 1 U | 1.1 U | 0.89 U |
| CHLOROFORM | 11 U | 10 U | 8 U | 28 U | 12 U | 17 U |
| CIS-1,2-DICHLOROETHENE | 5.3 J | 6.9 U | 6.5 U | 5.8 U | 6.5 U | 5.1 U |
| ETHYLBENZENE | 2.3 U | 2.4 U | 2.2 U | 2 U | 2.2 U | 1.8 U |
| M+P-XYLENES | 3.6 U | 3.7 U | 3.4 U | 3.1 U | 3.4 U | 2.7 U |
| METHYLENE CHLORIDE | 9.1 U | 9.3 U | 8.7 U | 7.7 U | 8.7 U | 6.9 U |
| O-XYLENE/STYRENE | 12 U | 12 U | 11 U | 10 U | 11 U | 8.9 U |
| TETRACHLOROETHENE | 1.2 | 0.82 | 0.3 U | 2.9 | 0.3 U | 0.24 U |
| TOLUENE | 2.3 U | 2.4 U | 2.2 U | 2 U | 2.2 U | 1.8 U |
| TRANS-1,2-DICHLOROETHENE | 5.3 U | 5.4 U | 5.1 U | 4.5 U | 5.1 U | 4 U |
| TRICHLOROETHENE | 27 J | 18 J | 0.36 J | 10 J | 0.67 U | 0.53 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01711 | 003SB01712 | 003SB01801 | 003SB01802 | 003SB01803 | 003SB01804 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 40.0 - 44.0' | 44.0 - 48.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 07/25/97 | 07/25/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC17 | AOC17 | AOC18 | AOC18 | AOC18 | AOC18 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 42 U | 43 U | 41 U | 36 U | 41 U | 32 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP112 | 003SB01805 | 003SB01806 | 003SBDP113 | 003SB01807 | 003SB01808 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC18 | AOC18 | AOC18 | AOC18 | AOC18 | AOC18 |
| FIELD DUPLICATE OF: | 003SB01804 | | | 003SB01806 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.7 | 5.4 U | 6.6 U | 6.2 | 8.5 U | 6.7 |
| 1,1,2,2-TETRACHLOROETHANE | 0.34 U | 0.34 U | 0.3 U | 0.43 U | 0.41 U | 0.42 U |
| 1,1,2-TRICHLOROETHANE | 9.2 U | 9.2 U | 8 U | 14 | 11 U | 11 U |
| 1,1-DICHLOROETHENE | 7.2 U | 7.2 U | 6.3 U | 9.2 U | 8.6 U | 8.8 U |
| 1,2-DICHLOROETHANE | 24 U | 24 U | 21 U | 31 U | 29 U | 29 U |
| 2-BUTANONE | 14 U | 14 U | 12 U | 18 U | 16 U | 17 U |
| 2-HEXANONE | 14 U | 14 U | 12 U | 18 U | 16 U | 17 U |
| 4-METHYL-2-PENTANONE | 13 U | 13 U | 12 U | 17 U | 16 U | 16 U |
| ACETONE | 36 U | 36 U | 31 U | 46 U | 43 U | 44 U |
| BENZENE | 1.8 U | 1.8 U | 1.6 U | 2.3 U | 2.1 U | 2.2 U |
| BROMOFORM | 0.56 U | 0.56 U | 0.49 U | 0.71 U | 0.67 U | 0.69 U |
| BROMOMETHANE | 44 U | 44 U | 38 U | 56 U | 52 U | 54 U |
| CARBON DISULFIDE | 22 U | 22 U | 19 U | 28 U | 26 U | 27 U |
| CARBON TETRACHLORIDE | 0.76 | 0.86 U | 1.1 U | 0.99 | 1.4 U | 1.1 |
| CHLOROBENZENE | 1.1 U | 1.1 U | 0.98 U | 1.4 U | 1.3 U | 1.4 U |
| CHLOROFORM | 13 | 15 U | 18 U | 17 | 24 U | 19 |
| CIS-1,2-DICHLOROETHENE | 6.4 U | 6.4 U | 5.6 U | 8.1 U | 7 J | 7.8 U |
| ETHYLBENZENE | 2.2 U | 2.2 U | 1.9 U | 2.8 U | 2.6 U | 2.7 U |
| M+P-XYLENES | 3.4 U | 3.4 U | 3 U | 4.3 U | 4.1 U | 4.2 U |
| METHYLENE CHLORIDE | 8.6 U | 8.6 U | 7.5 U | 11 U | 10 U | 11 U |
| O-XYLENE/STYRENE | 11 U | 11 U | 9.8 U | 14 U | 13 U | 14 U |
| TETRACHLOROETHENE | 0.3 U | 0.3 U | 0.26 U | 0.45 | 0.36 U | 0.37 U |
| TOLUENE | 2.2 U | 2.2 U | 1.9 U | 2.8 U | 2.6 U | 2.7 U |
| TRANS-1,2-DICHLOROETHENE | 5 U | 5 U | 4.4 U | 6.4 U | 6 U | 6.1 U |
| TRICHLOROETHENE | 0.66 U | 0.66 U | 0.57 J | 1.3 | 2.1 | 0.81 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP112 | 003SB01805 | 003SB01806 | 003SBDP113 | 003SB01807 | 003SB01808 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 | 07/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC18 | AOC18 | AOC18 | AOC18 | AOC18 | AOC18 |
| FIELD DUPLICATE OF: | 003SB01804 | | | 003SB01806 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 40 U | 40 U | 35 U | 51 U | 48 U | 49 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01809 | 003SB01810 | 003SB01811 | 003SB01812 | 003SB01813 | 003SB01815 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 48.0 - 52.0' | 56.0 - 60.0' |
| SAMPLE DATE: | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC18 | AOC18 | AOC18 | AOC18 | AOC18 | AOC18 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.9 | 5.4 | 2.9 U | 5.8 U | 2.9 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.31 U | 0.4 U | 0.35 U | 0.37 U | 0.35 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 8.4 U | 11 U | 9.5 U | 10 U | 9.5 U | 11 U |
| 1,1-DICHLOROETHENE | 6.6 U | 8.4 U | 7.4 U | 7.9 U | 7.4 U | 8.3 U |
| 1,2-DICHLOROETHANE | 22 U | 28 U | 25 U | 26 U | 25 U | 28 U |
| 2-BUTANONE | 13 U | 16 U | 14 U | 15 U | 14 U | 16 U |
| 2-HEXANONE | 13 U | 16 U | 14 U | 15 U | 14 U | 16 U |
| 4-METHYL-2-PENTANONE | 12 U | 15 U | 14 U | 15 U | 14 U | 15 U |
| ACETONE | 33 U | 42 U | 37 U | 40 U | 37 U | 42 U |
| BENZENE | 1.6 U | 2.1 U | 1.8 U | 2 U | 1.8 U | 2.1 U |
| BROMOFORM | 0.51 U | 0.66 U | 0.58 U | 0.62 U | 0.58 U | 0.65 U |
| BROMOMETHANE | 40 U | 52 U | 110 U | 49 U | 91 U | 80 U |
| CARBON DISULFIDE | 20 U | 26 U | 23 U | 24 U | 23 U | 25 U |
| CARBON TETRACHLORIDE | 0.79 | 0.87 | 0.45 U | 0.93 U | 0.45 U | 0.51 U |
| CHLOROBENZENE | 1 U | 1.3 U | 1.2 U | 1.2 U | 1.2 U | 1.3 U |
| CHLOROFORM | 14 | 15 | 7.8 U | 16 U | 7.9 U | 8.8 U |
| CIS-1,2-DICHLOROETHENE | 13 | 15 | 9 | 13 | 6.3 J | 7.4 U |
| ETHYLBENZENE | 2 U | 2.6 U | 2.3 U | 2.4 U | 2.3 U | 2.5 U |
| M+P-XYLENES | 3.1 U | 4 U | 3.5 U | 3.7 U | 3.5 U | 3.9 U |
| METHYLENE CHLORIDE | 7.8 U | 10 U | 8.9 U | 9.5 U | 8.9 U | 9.9 U |
| O-XYLENE/STYRENE | 10 U | 13 U | 12 U | 12 U | 12 U | 13 U |
| TETRACHLOROETHENE | 0.27 U | 0.35 U | 0.31 U | 0.33 U | 0.31 U | 0.35 U |
| TOLUENE | 2 U | 2.6 U | 2.3 U | 2.4 U | 2.3 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 3.2 J | 5.9 U | 5.2 U | 5.5 U | 5.2 U | 5.8 U |
| TRICHLOROETHENE | 0.49 J | 0.46 J | 2 | 24 J | 14 J | 1.6 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB01809 | 003SB01810 | 003SB01811 | 003SB01812 | 003SB01813 | 003SB01815 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 48.0 - 52.0' | 56.0 - 60.0' |
| SAMPLE DATE: | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC18 | AOC18 | AOC18 | AOC18 | AOC18 | AOC18 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 36 U | 47 U | 41 U | 44 U | 41 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02301 | 003SB02302 | 003SB02303 | 003SB02304 | 003SB02306 | 003SB02307 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC23 | AOC23 | AOC23 | AOC23 | AOC23 | AOC23 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.8 U | 2.8 U | 2.8 U | 3.5 U | 3.8 U | 3.7 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.34 U | 0.34 U | 0.33 U | 0.35 U | 0.37 U | 0.42 U |
| 1,1,2-TRICHLOROETHANE | 9.2 U | 9.2 U | 9 U | 9.4 U | 10 U | 11 U |
| 1,1-DICHLOROETHENE | 7.2 U | 7.2 U | 7.1 U | 7.3 U | 7.8 U | 8.9 U |
| 1,2-DICHLOROETHANE | 24 U | 24 U | 24 U | 24 U | 26 U | 30 U |
| 2-BUTANONE | 14 U | 14 U | 14 U | 14 U | 15 U | 17 U |
| 2-HEXANONE | 11 J | 14 U | 14 U | 9.5 J | 15 U | 17 U |
| 4-METHYL-2-PENTANONE | 13 U | 13 U | 13 U | 13 U | 14 U | 16 U |
| ACETONE | 36 U | 36 U | 35 U | 37 U | 39 U | 44 U |
| BENZENE | 1.8 U | 1.8 U | 1.7 U | 1.8 U | 1.9 U | 2.2 U |
| BROMOFORM | 0.56 U | 0.56 U | 0.55 U | 0.57 U | 0.61 U | 0.69 U |
| BROMOMETHANE | 44 U | 44 U | 150 U | 45 U | 48 U | 54 U |
| CARBON DISULFIDE | 22 U | 22 U | 22 U | 22 U | 24 U | 27 U |
| CARBON TETRACHLORIDE | 0.44 U | 0.44 U | 0.43 U | 0.57 U | 0.6 U | 0.59 U |
| CHLOROBENZENE | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.2 U | 1.4 U |
| CHLOROFORM | 7.6 U | 7.6 U | 7.5 U | 9.7 U | 10 U | 10 U |
| CIS-1,2-DICHLOROETHENE | 6.4 U | 6.4 U | 6.3 U | 6.5 U | 6.9 U | 7.9 U |
| ETHYLBENZENE | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.4 U | 2.7 U |
| M+P-XYLENES | 3.4 U | 3.4 U | 3.3 U | 3.5 U | 3.7 U | 4.2 U |
| METHYLENE CHLORIDE | 8.6 U | 8.6 U | 8.4 U | 8.8 U | 9.3 U | 11 U |
| O-XYLENE/STYRENE | 11 U | 11 U | 11 U | 11 U | 12 U | 14 U |
| TETRACHLOROETHENE | 0.3 U | 0.3 U | 0.29 U | 0.31 U | 0.32 U | 0.37 U |
| TOLUENE | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.4 U | 2.7 U |
| TRANS-1,2-DICHLOROETHENE | 5 U | 5 U | 4.9 U | 5.1 U | 5.4 U | 6.1 U |
| TRICHLOROETHENE | 0.5 J | 0.66 U | 0.36 J | 0.67 U | 1.4 | 0.81 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02301 | 003SB02302 | 003SB02303 | 003SB02304 | 003SB02306 | 003SB02307 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC23 | AOC23 | AOC23 | AOC23 | AOC23 | AOC23 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 40 U | 40 U | 39 U | 41 U | 43 U | 49 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02308 | 003SB02309 | 003SB02310 | 003SBDP121 | 003SB02312 | 003SB02313 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 36.0 - 40.0' | 44.0 - 48.0' | 48.0 - 52.0' |
| SAMPLE DATE: | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC23 | AOC23 | AOC23 | AOC23 | AOC23 | AOC23 |
| FIELD DUPLICATE OF: | | | | 003SB02310 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.1 U | 3.7 U | 3.5 U | 3.8 U | 4.2 U | 8.8 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.3 U | 0.36 U | 0.36 U | 0.43 U | 0.36 U | 0.41 U |
| 1,1,2-TRICHLOROETHANE | 8.1 U | 9.9 U | 9.7 U | 12 U | 9.7 U | 11 U |
| 1,1-DICHLOROETHENE | 6.3 U | 7.7 U | 7.6 U | 9.2 U | 7.6 U | 8.8 U |
| 1,2-DICHLOROETHANE | 21 U | 26 U | 25 U | 100 U | 25 U | 29 U |
| 2-BUTANONE | 12 U | 15 U | 14 U | 18 U | 15 U | 17 U |
| 2-HEXANONE | 12 J | 9.8 J | 14 U | 18 U | 11 J | 17 U |
| 4-METHYL-2-PENTANONE | 12 U | 14 U | 14 U | 17 U | 14 U | 16 U |
| ACETONE | 32 U | 39 U | 38 U | 46 U | 38 U | 44 U |
| BENZENE | 1.6 U | 1.9 U | 1.9 U | 2.3 U | 1.9 U | 2.2 U |
| BROMOFORM | 0.49 U | 0.6 U | 0.59 U | 0.71 U | 0.59 U | 0.68 U |
| BROMOMETHANE | 39 U | 47 U | 46 U | 56 U | 46 U | 94 U |
| CARBON DISULFIDE | 19 U | 24 U | 23 U | 28 U | 23 U | 27 U |
| CARBON TETRACHLORIDE | 0.49 U | 0.6 U | 0.56 U | 0.61 U | 0.67 U | 1.4 U |
| CHLOROBENZENE | 0.98 U | 1.2 U | 1.2 U | 1.4 U | 1.2 U | 1.4 U |
| CHLOROFORM | 8.5 U | 10 U | 9.7 U | 10 U | 11 U | 24 U |
| CIS-1,2-DICHLOROETHENE | 5.6 U | 6.9 U | 6.7 U | 8.1 U | 6.7 U | 7 J |
| ETHYLBENZENE | 1.9 U | 2.4 U | 2.3 U | 2.8 U | 2.3 U | 2.7 U |
| M+P-XYLENES | 3 U | 3.6 U | 3.6 U | 4.3 U | 3.6 U | 4.1 U |
| METHYLENE CHLORIDE | 7.6 U | 9.2 U | 9 U | 11 U | 9.1 U | 10 U |
| O-XYLENE/STYRENE | 9.8 U | 12 U | 12 U | 14 U | 12 U | 14 U |
| TETRACHLOROETHENE | 0.26 U | 0.32 U | 0.31 U | 0.38 U | 0.32 U | 0.36 U |
| TOLUENE | 1.9 U | 2.4 U | 2.3 U | 2.8 U | 2.3 U | 2.7 U |
| TRANS-1,2-DICHLOROETHENE | 4.4 U | 5.4 U | 5.2 U | 6.4 U | 5.3 U | 6.1 U |
| TRICHLOROETHENE | 2.3 | 7.2 | 5.8 | 2.9 | 7.3 | 18 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02308 | 003SB02309 | 003SB02310 | 003SBDP121 | 003SB02312 | 003SB02313 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 36.0 - 40.0' | 44.0 - 48.0' | 48.0 - 52.0' |
| SAMPLE DATE: | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 | 08/09/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC23 | AOC23 | AOC23 | AOC23 | AOC23 | AOC23 |
| FIELD DUPLICATE OF: | | | | 003SB02310 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 35 U | 43 U | 42 U | 51 U | 42 U | 49 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02314 | 003SB02601 | 003SB02602 | 003SB02603 | 003SB02604 | 003SB02605 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 08/09/97 | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC23 | AOC26 | AOC26 | AOC26 | AOC26 | AOC26 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.9 U | 3.1 U | 7.2 U | 18 U | 3 U | 20 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.41 U | 0.38 U | 0.88 U | 2.2 U | 0.37 U | 2.4 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 10 U | 670 U | 60 U | 170 | 16000 J |
| 1,1-DICHLOROETHENE | 8.8 U | 8 U | 19 U | 47 U | 7.8 U | 51 U |
| 1,2-DICHLOROETHANE | 29 U | 27 U | 62 U | 160 U | 26 U | 170 U |
| 2-BUTANONE | 17 U | 15 U | 36 U | 90 U | 15 U | 97 U |
| 2-HEXANONE | 17 U | 15 U | 36 U | 90 U | 15 UR | 97 UR |
| 4-METHYL-2-PENTANONE | 16 U | 15 U | 34 U | 86 U | 14 U | 93 U |
| ACETONE | 44 U | 40 U | 93 U | 230 U | 39 U | 250 U |
| BENZENE | 2.2 U | 2 U | 4.6 U | 12 U | 1.9 U | 13 U |
| BROMOFORM | 0.68 U | 0.62 U | 1.4 U | 3.7 U | 0.6 U | 3.9 U |
| BROMOMETHANE | 53 U | 49 U | 110 U | 290 U | 47 U | 310 U |
| CARBON DISULFIDE | 27 U | 24 U | 57 U | 140 U | 24 U | 150 U |
| CARBON TETRACHLORIDE | 0.63 U | 0.49 U | 1.1 U | 2.9 U | 0.47 U | 3.1 U |
| CHLOROBENZENE | 1.4 U | 1.2 U | 2.9 U | 7.3 U | 1.2 UR | 7.9 UR |
| CHLOROFORM | 11 U | 8.4 U | 20 U | 50 U | 8.2 U | 53 U |
| CIS-1,2-DICHLOROETHENE | 7.8 U | 7.1 U | 17 U | 42 U | 6.9 U | 190 J |
| ETHYLBENZENE | 2.7 U | 2.4 U | 21 | 14 U | 2.4 UR | 15 UR |
| M+P-XYLENES | 4.1 U | 3.8 U | 8.8 U | 570 J | 3.7 UR | 24 UR |
| METHYLENE CHLORIDE | 10 U | 9.5 U | 22 U | 56 U | 9.3 U | 61 U |
| O-XYLENE/STYRENE | 14 U | 12 U | 29 U | 73 U | 12 UR | 79 UR |
| TETRACHLOROETHENE | 0.36 U | 0.33 U | 22 J | 2 J | 5.5 | 520 J |
| TOLUENE | 2.7 U | 2.4 U | 5.7 U | 14 U | 2.4 U | 15 U |
| TRANS-1,2-DICHLOROETHENE | 6.1 U | 5.5 U | 13 U | 33 U | 5.4 U | 520 |
| TRICHLOROETHENE | 11 | 0.73 U | 1.7 U | 4.3 U | 0.71 U | 100 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02314 | 003SB02601 | 003SB02602 | 003SB02603 | 003SB02604 | 003SB02605 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 08/09/97 | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC23 | AOC26 | AOC26 | AOC26 | AOC26 | AOC26 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 49 U | 44 U | 100 U | 260 U | 43 U | 280 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02606 | 003SBDP145 | 003SB02607 | 003SB02608 | 003SB02609 | 003SB02610 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC26 | AOC26 | AOC26 | AOC26 | AOC26 | AOC26 |
| FIELD DUPLICATE OF: | | 003SB02606 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 420 U | 31 U | 16 U | 17 U | 21 U | 20 U |
| 1,1,2,2-TETRACHLOROETHANE | 19 U | 3.8 U | 1.9 U | 2.1 U | 2.6 U | 2.5 U |
| 1,1,2-TRICHLOROETHANE | 7300 | 5300 J | 7000 | 11000 J | 81 | 67 U |
| 1,1-DICHLOROETHENE | 400 U | 80 U | 41 U | 45 U | 55 U | 52 U |
| 1,2-DICHLOROETHANE | 1300 U | 270 U | 140 U | 150 U | 180 U | 170 U |
| 2-BUTANONE | 770 U | 150 U | 78 U | 86 U | 110 U | 100 U |
| 2-HEXANONE | 770 UR | 150 UR | 78 UR | 86 UR | 110 U | 100 U |
| 4-METHYL-2-PENTANONE | 730 U | 150 U | 75 UR | 82 UR | 100 U | 96 U |
| ACETONE | 2000 U | 400 U | 200 U | 220 U | 280 U | 260 U |
| BENZENE | 99 U | 20 U | 10 U | 11 U | 14 U | 13 U |
| BROMOFORM | 31 U | 6.2 U | 3.2 U | 3.5 U | 4.3 U | 4.1 U |
| BROMOMETHANE | 2400 U | 490 U | 250 U | 270 U | 340 U | 320 U |
| CARBON DISULFIDE | 1200 U | 240 U | 130 U | 140 U | 170 U | 160 U |
| CARBON TETRACHLORIDE | 67 U | 4.9 U | 2.5 U | 2.7 U | 3.4 U | 3.2 U |
| CHLOROBENZENE | 62 UR | 12 UR | 6.4 UR | 7 UR | 8.6 U | 8.1 U |
| CHLOROFORM | 1100 U | 85 U | 43 U | 47 U | 58 U | 55 U |
| CIS-1,2-DICHLOROETHENE | 360 U | 71 U | 36 U | 40 U | 49 U | 46 U |
| ETHYLBENZENE | 120 UR | 24 UR | 13 UR | 14 UR | 87 | 16 U |
| M+P-XYLENES | 190 UR | 38 UR | 19 UR | 21 UR | 26 U | 25 U |
| METHYLENE CHLORIDE | 480 U | 96 U | 49 U | 53 U | 66 U | 62 U |
| O-XYLENE/STYRENE | 620 UR | 120 UR | 64 UR | 70 UR | 98 | 81 U |
| TETRACHLOROETHENE | 240 | 170 J | 230 | 350 J | 2.6 | 2.2 U |
| TOLUENE | 120 U | 24 U | 13 UR | 14 UR | 17 U | 16 U |
| TRANS-1,2-DICHLOROETHENE | 280 U | 56 U | 28 U | 31 U | 38 U | 36 U |
| TRICHLOROETHENE | 69 | 12 | 160 | 23 | 18 | 6.8 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02606 | 003SBDP145 | 003SB02607 | 003SB02608 | 003SB02609 | 003SB02610 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 | 09/20/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC26 | AOC26 | AOC26 | AOC26 | AOC26 | AOC26 |
| FIELD DUPLICATE OF: | | 003SB02606 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 2200 U | 440 U | 230 U | 250 U | 310 U | 290 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02701 | 003SB02702 | 003SB02703 | 003SB02704 | 003SB02801 | 003SB02802 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 08/22/97 | 08/22/97 | 08/22/97 | 08/22/97 | 09/16/97 | 09/16/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC27 | AOC27 | AOC27 | AOC27 | AOC28 | AOC28 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.8 U | 2.7 U | 2.4 U | 2.9 U | 3.2 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.34 U | 0.33 U | 0.29 U | 0.35 U | 0.38 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 9.2 U | 8.9 U | 8 U | 9.4 U | 18 U | 11 U |
| 1,1-DICHLOROETHENE | 7.2 U | 7 U | 6.2 U | 7.3 U | 8.1 U | 8.3 U |
| 1,2-DICHLOROETHANE | 24 U | 23 U | 21 U | 24 U | 27 U | 28 U |
| 2-BUTANONE | 14 U | 13 U | 12 U | 14 U | 16 U | 16 U |
| 2-HEXANONE | 14 U | 13 U | 12 U | 14 U | 16 U | 16 U |
| 4-METHYL-2-PENTANONE | 13 U | 13 U | 11 U | 13 U | 15 U | 15 U |
| ACETONE | 36 U | 35 U | 31 U | 37 U | 41 U | 42 U |
| BENZENE | 1.8 U | 1.7 U | 1.5 U | 1.8 U | 2 U | 2.1 U |
| BROMOFORM | 0.56 U | 0.54 U | 0.48 U | 0.57 U | 0.63 U | 0.65 U |
| BROMOMETHANE | 44 U | 43 U | 38 U | 45 U | 50 U | 51 U |
| CARBON DISULFIDE | 22 U | 21 U | 19 U | 22 U | 25 U | 25 U |
| CARBON TETRACHLORIDE | 0.44 U | 0.43 U | 0.38 U | 0.45 U | 0.51 U | 0.51 U |
| CHLOROBENZENE | 1.1 U | 1.1 U | 0.97 U | 1.1 U | 1.3 U | 1.3 U |
| CHLOROFORM | 7.6 U | 7.3 U | 6.6 U | 7.7 U | 8.7 U | 8.8 U |
| CIS-1,2-DICHLOROETHENE | 6.4 U | 6.2 U | 5.5 U | 6.5 U | 7.2 U | 7.4 U |
| ETHYLBENZENE | 2.2 U | 2.1 U | 1.9 U | 2.2 U | 2.5 U | 2.5 U |
| M+P-XYLENES | 3.4 U | 3.3 U | 2.9 U | 3.5 U | 3.8 U | 3.9 U |
| METHYLENE CHLORIDE | 8.6 U | 8.3 U | 7.4 U | 8.8 U | 9.7 U | 9.9 U |
| O-XYLENE/STYRENE | 11 U | 11 U | 9.7 U | 11 U | 13 U | 13 U |
| TETRACHLOROETHENE | 0.3 U | 0.29 U | 0.26 U | 0.31 U | 0.59 | 0.35 U |
| TOLUENE | 2.2 U | 2.1 U | 1.9 U | 2.2 U | 2.5 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 5 U | 4.8 U | 4.3 U | 5.1 U | 5.6 U | 5.8 U |
| TRICHLOROETHENE | 0.66 U | 0.64 U | 0.57 U | 0.67 U | 0.74 U | 0.76 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02701 | 003SB02702 | 003SB02703 | 003SB02704 | 003SB02801 | 003SB02802 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 08/22/97 | 08/22/97 | 08/22/97 | 08/22/97 | 09/16/97 | 09/16/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC27 | AOC27 | AOC27 | AOC27 | AOC28 | AOC28 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 40 U | 39 U | 35 U | 41 U | 45 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02803 | 003SB02804 | 003SB02805 | 003SBDP141 | 003SB02806 | 003SB02807 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 09/16/97 | 09/16/97 | 09/16/97 | 09/16/97 | 09/16/97 | 09/16/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC28 | AOC28 | AOC28 | AOC28 | AOC28 | AOC28 |
| FIELD DUPLICATE OF: | | | | 003SB02805 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.3 U | 3.1 U | 3.1 U | 3.8 U | 3.5 U | 3.7 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.38 U | 0.37 U | 0.34 U | 0.43 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 10 U | 10 U | 9.1 U | 12 U | 10 U |
| 1,1-DICHLOROETHENE | 8.4 U | 7.9 U | 7.9 U | 7.1 U | 9.1 U | 8.2 U |
| 1,2-DICHLOROETHANE | 28 U | 26 U | 26 U | 24 U | 30 U | 27 U |
| 2-BUTANONE | 16 U | 15 U | 15 U | 14 U | 17 U | 16 U |
| 2-HEXANONE | 16 U | 15 U | 15 U | 14 U | 17 U | 16 U |
| 4-METHYL-2-PENTANONE | 15 U | 15 U | 14 U | 13 U | 17 U | 15 U |
| ACETONE | 42 U | 40 U | 39 U | 36 U | 45 U | 41 U |
| BENZENE | 2.1 U | 2 U | 1.9 U | 1.8 U | 2.2 U | 2 U |
| BROMOFORM | 0.65 U | 0.62 U | 0.61 U | 0.55 U | 0.71 U | 0.64 U |
| BROMOMETHANE | 51 U | 49 U | 48 U | 44 U | 55 U | 50 U |
| CARBON DISULFIDE | 26 U | 24 U | 24 U | 22 U | 28 U | 25 U |
| CARBON TETRACHLORIDE | 0.51 U | 0.49 U | 0.48 U | 0.61 U | 0.55 U | 0.59 U |
| CHLOROBENZENE | 1.3 U | 1.2 U | 1.2 U | 1.1 U | 1.4 U | 1.3 U |
| CHLOROFORM | 8.9 U | 8.4 U | 8.3 U | 10 U | 9.6 U | 10 U |
| CIS-1,2-DICHLOROETHENE | 7.5 U | 7.1 U | 7 U | 6.3 U | 8.1 U | 7.3 U |
| ETHYLBENZENE | 2.6 U | 2.4 U | 2.4 U | 2.2 U | 2.8 U | 2.5 U |
| M+P-XYLENES | 4 U | 3.8 U | 3.7 U | 3.4 U | 4.3 U | 3.9 U |
| METHYLENE CHLORIDE | 10 U | 9.5 U | 9.4 U | 8.5 U | 11 U | 9.8 U |
| O-XYLENE/STYRENE | 13 U | 12 U | 12 U | 11 U | 14 U | 13 U |
| TETRACHLOROETHENE | 0.35 U | 0.33 U | 0.33 U | 0.3 U | 0.38 U | 0.34 U |
| TOLUENE | 2.6 U | 2.4 U | 2.4 U | 2.2 U | 2.8 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 5.8 U | 5.5 U | 5.5 U | 5 U | 6.3 U | 5.7 U |
| TRICHLOROETHENE | 0.77 U | 0.73 U | 0.72 U | 0.46 J | 1.3 | 4.4 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02803 | 003SB02804 | 003SB02805 | 003SBDP141 | 003SB02806 | 003SB02807 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 09/16/97 | 09/16/97 | 09/16/97 | 09/16/97 | 09/16/97 | 09/16/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC28 | AOC28 | AOC28 | AOC28 | AOC28 | AOC28 |
| FIELD DUPLICATE OF: | | | | 003SB02805 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 44 U | 44 U | 40 U | 50 U | 45 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02901 | 003SB02902 | 003SB02903 | 003SB03001 | 003SB03002 | 003SB03003 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 09/15/97 | 09/15/97 | 09/15/97 | 08/23/97 | 08/23/97 | 08/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC29 | AOC29 | AOC29 | AOC30 | AOC30 | AOC30 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.4 U | 3.2 U | 2.8 U | 2.2 U | 2.9 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.41 U | 0.38 U | 0.34 U | 0.27 U | 0.35 U | 0.33 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 10 U | 9.3 U | 7.4 U | 9.5 U | 9 U |
| 1,1-DICHLOROETHENE | 8.7 U | 8 U | 7.3 U | 5.8 U | 7.4 U | 7.1 U |
| 1,2-DICHLOROETHANE | 29 U | 27 U | 24 U | 19 U | 25 U | 24 U |
| 2-BUTANONE | 17 U | 15 U | 14 U | 11 U | 14 U | 14 U |
| 2-HEXANONE | 17 U | 15 U | 14 U | 11 U | 14 U | 14 U |
| 4-METHYL-2-PENTANONE | 16 U | 15 U | 13 U | 11 U | 14 U | 13 U |
| ACETONE | 43 U | 40 U | 36 U | 29 U | 37 U | 35 U |
| BENZENE | 2.1 U | 2 U | 1.8 U | 1.4 U | 1.8 U | 1.7 U |
| BROMOFORM | 0.67 U | 0.62 U | 0.56 U | 0.45 U | 0.58 U | 0.55 U |
| BROMOMETHANE | 53 U | 49 U | 44 U | 35 U | 46 U | 43 U |
| CARBON DISULFIDE | 26 U | 25 U | 22 U | 18 U | 23 U | 22 U |
| CARBON TETRACHLORIDE | 0.53 U | 0.52 U | 0.44 U | 0.35 U | 0.46 U | 0.46 U |
| CHLOROBENZENE | 1.3 U | 1.2 U | 1.1 U | 0.9 U | 1.2 U | 1.1 U |
| CHLOROFORM | 9.2 U | 8.9 U | 7.7 U | 6.1 U | 7.9 U | 8 U |
| CIS-1,2-DICHLOROETHENE | 7.7 U | 7.1 U | 6.4 U | 5.1 U | 6.6 U | 6.3 U |
| ETHYLBENZENE | 2.6 U | 2.5 U | 2.2 U | 1.8 U | 2.3 U | 2.2 U |
| M+P-XYLENES | 4.1 U | 3.8 U | 3.4 U | 2.7 U | 3.5 U | 3.3 U |
| METHYLENE CHLORIDE | 10 U | 9.6 U | 8.7 U | 6.9 U | 8.9 U | 8.4 U |
| O-XYLENE/STYRENE | 13 U | 12 U | 11 U | 9 U | 12 U | 11 U |
| TETRACHLOROETHENE | 0.36 U | 0.33 U | 0.3 U | 0.24 U | 0.31 U | 0.29 U |
| TOLUENE | 2.6 U | 2.5 U | 2.2 U | 1.8 U | 2.3 U | 2.2 U |
| TRANS-1,2-DICHLOROETHENE | 6 U | 5.6 U | 5 U | 4 U | 5.2 U | 4.9 U |
| TRICHLOROETHENE | 0.97 | 0.55 J | 0.66 U | 0.53 U | 0.68 U | 0.65 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB02901 | 003SB02902 | 003SB02903 | 003SB03001 | 003SB03002 | 003SB03003 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 09/15/97 | 09/15/97 | 09/15/97 | 08/23/97 | 08/23/97 | 08/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC29 | AOC29 | AOC29 | AOC30 | AOC30 | AOC30 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 48 U | 45 U | 40 U | 32 U | 41 U | 39 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03201 | 003SB03202 | 003SB03204 | 003SBDP133 | 003SB03205 | 003SB03206 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 12.0 - 16.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 08/25/97 | 08/25/97 | 08/25/97 | 08/25/97 | 08/25/97 | 08/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC32 | AOC32 | AOC32 | AOC32 | AOC32 | AOC32 |
| FIELD DUPLICATE OF: | | | | 003SB03204 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 13 U | 3.1 U | 12 U | 22 U | 3.4 U | 2.7 U |
| 1,1,2,2-TETRACHLOROETHANE | 1.5 U | 0.38 U | 1.4 U | 1.9 U | 0.42 U | 0.33 U |
| 1,1,2-TRICHLOROETHANE | 2200 U | 10 UR | 39 U | 830 U | 84 U | 140 U |
| 1,1-DICHLOROETHENE | 33 U | 8 U | 31 U | 40 U | 8.8 U | 7.1 U |
| 1,2-DICHLOROETHANE | 110 U | 27 U | 100 U | 130 U | 29 U | 24 U |
| 2-BUTANONE | 62 U | 15 U | 59 U | 240 | 17 U | 14 U |
| 2-HEXANONE | 62 U | 77 U | 59 U | 77 U | 17 U | 14 U |
| 4-METHYL-2-PENTANONE | 60 U | 140 | 56 U | 73 U | 16 U | 13 U |
| ACETONE | 160 U | 40 U | 150 U | 480 U | 44 U | 35 U |
| BENZENE | 8.1 U | 2 U | 7.6 U | 9.9 U | 2.2 U | 1.7 U |
| BROMOFORM | 2.5 U | 0.62 U | 2.4 U | 3.1 U | 0.69 U | 0.55 U |
| BROMOMETHANE | 200 U | 49 U | 190 U | 240 U | 54 U | 43 U |
| CARBON DISULFIDE | 100 U | 24 U | 94 U | 380 | 27 U | 22 U |
| CARBON TETRACHLORIDE | 2 U | 0.49 U | 2 U | 3.5 U | 0.54 U | 0.43 U |
| CHLOROBENZENE | 5.1 U | 6.2 U | 4.8 U | 6.2 U | 1.4 U | 1.1 U |
| CHLOROFORM | 34 U | 8.4 U | 34 U | 61 U | 9.3 U | 7.5 U |
| CIS-1,2-DICHLOROETHENE | 520 J | 450 J | 530 J | 1200 J | 7.8 U | 6.3 U |
| ETHYLBENZENE | 10 U | 12 U | 9.5 J | 44 | 2.7 U | 2.2 U |
| M+P-XYLENES | 15 U | 19 U | 35 | 150 | 4.2 U | 3.3 U |
| METHYLENE CHLORIDE | 39 U | 9.6 U | 37 U | 48 U | 11 U | 8.4 U |
| O-XYLENE/STYRENE | 51 U | 62 U | 35 J | 200 | 14 U | 11 U |
| TETRACHLOROETHENE | 72 J | 17 J | 1.3 J | 27 | 2.7 | 4.6 |
| TOLUENE | 10 U | 24 | 9.4 U | 12 U | 2.7 U | 2.2 U |
| TRANS-1,2-DICHLOROETHENE | 23 | 23 | 21 U | 150 | 6.1 U | 4.9 U |
| TRICHLOROETHENE | 18 | 2.1 | 3.3 | 14 | 1 | 1.4 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03201 | 003SB03202 | 003SB03204 | 003SBDP133 | 003SB03205 | 003SB03206 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 12.0 - 16.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 08/25/97 | 08/25/97 | 08/25/97 | 08/25/97 | 08/25/97 | 08/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC32 | AOC32 | AOC32 | AOC32 | AOC32 | AOC32 |
| FIELD DUPLICATE OF: | | | | 003SB03204 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 180 U | 44 U | 170 U | 220 U | 49 U | 39 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03208 | 003SB03209 | 003SB03210 | 003SB03211 | 003SB03212 | 003SB03213 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 48.0 - 52.0' |
| SAMPLE DATE: | 08/25/97 | 08/26/97 | 08/26/97 | 08/26/97 | 08/26/97 | 08/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC32 | AOC32 | AOC32 | AOC32 | AOC32 | AOC32 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.4 U | 3.5 U | 3.5 U | 3.1 U | 3.3 U | 3.4 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.41 U | 0.42 U | 0.43 U | 0.38 U | 0.4 U | 0.41 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 15 | 12 U | 15 | 11 U | 16 |
| 1,1-DICHLOROETHENE | 8.6 U | 9 U | 9.1 U | 8.1 U | 8.6 U | 8.8 U |
| 1,2-DICHLOROETHANE | 29 U | 30 U | 30 U | 27 U | 29 U | 29 U |
| 2-BUTANONE | 17 U | 17 U | 17 U | 15 U | 16 U | 17 U |
| 2-HEXANONE | 17 U | 17 U | 17 U | 15 U | 16 U | 17 U |
| 4-METHYL-2-PENTANONE | 16 U | 16 U | 17 U | 15 U | 16 U | 16 U |
| ACETONE | 43 U | 45 U | 45 U | 40 U | 43 U | 44 U |
| BENZENE | 2.1 U | 2.2 U | 2.2 U | 2 U | 2.1 U | 2.2 U |
| BROMOFORM | 0.67 U | 0.7 U | 0.71 U | 0.63 U | 0.67 U | 0.68 U |
| BROMOMETHANE | 53 U | 55 U | 55 U | 49 U | 52 U | 54 U |
| CARBON DISULFIDE | 26 U | 27 U | 28 U | 25 U | 26 U | 27 U |
| CARBON TETRACHLORIDE | 0.53 U | 0.55 U | 0.55 U | 0.49 U | 0.52 U | 0.54 U |
| CHLOROBENZENE | 1.3 U | 1.4 U | 1.4 U | 1.3 U | 1.3 U | 1.4 U |
| CHLOROFORM | 9.1 U | 9.5 U | 9.6 U | 8.5 U | 9 U | 9.3 U |
| CIS-1,2-DICHLOROETHENE | 7.7 U | 8 U | 8.1 U | 7.2 U | 7.6 U | 7.8 U |
| ETHYLBENZENE | 2.6 U | 2.7 U | 2.8 U | 2.5 U | 2.6 U | 2.7 U |
| M+P-XYLENES | 4.1 U | 4.2 U | 4.3 U | 3.8 U | 4 U | 4.1 U |
| METHYLENE CHLORIDE | 10 U | 11 U | 11 U | 9.6 U | 10 U | 10 U |
| O-XYLENE/STYRENE | 13 U | 14 U | 14 U | 13 U | 13 U | 14 U |
| TETRACHLOROETHENE | 0.36 U | 0.49 | 0.38 U | 0.5 | 0.36 U | 0.52 |
| TOLUENE | 2.6 U | 2.7 U | 2.8 U | 2.5 U | 2.6 U | 2.7 U |
| TRANS-1,2-DICHLOROETHENE | 6 U | 6.2 U | 6.3 U | 5.6 U | 6 U | 6.1 U |
| TRICHLOROETHENE | 1.7 | 2.5 | 0.83 U | 1.8 | 3.1 | 5.1 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03208 | 003SB03209 | 003SB03210 | 003SB03211 | 003SB03212 | 003SB03213 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 48.0 - 52.0' |
| SAMPLE DATE: | 08/25/97 | 08/26/97 | 08/26/97 | 08/26/97 | 08/26/97 | 08/26/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC32 | AOC32 | AOC32 | AOC32 | AOC32 | AOC32 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 48 U | 50 U | 50 U | 45 U | 48 U | 49 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03214 | 003SB03215 | 003SB03301 | 003SB03302 | 003SB03303 | 003SB03304 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 52.0 - 56.0' | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 08/26/97 | 08/26/97 | 09/07/97 | 09/07/97 | 09/07/97 | 09/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC32 | AOC32 | AOC33 | AOC33 | AOC33 | AOC33 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.3 U | 3.4 U | 3 U | 2.9 U | 3.1 U | 3.3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.41 U | 0.36 U | 0.35 U | 0.35 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 25 U | 9.8 U | 9.5 U | 9.4 U | 11 U |
| 1,1-DICHLOROETHENE | 8.4 U | 8.6 U | 7.6 U | 7.5 U | 7.4 U | 8.4 U |
| 1,2-DICHLOROETHANE | 28 U | 29 U | 25 U | 25 U | 25 U | 28 U |
| 2-BUTANONE | 16 U | 17 U | 15 UR | 14 U | 66 U | 16 UR |
| 2-HEXANONE | 16 U | 17 U | 15 U | 14 U | 14 U | 16 U |
| 4-METHYL-2-PENTANONE | 15 U | 16 U | 14 U | 14 U | 9.9 J | 15 U |
| ACETONE | 25 J | 26 J | 38 UR | 37 U | 37 U | 42 UR |
| BENZENE | 2.1 U | 2.1 U | 1.9 U | 1.8 U | 1.8 U | 2.1 U |
| BROMOFORM | 0.65 U | 0.67 U | 0.59 U | 0.58 U | 0.57 U | 0.65 U |
| BROMOMETHANE | 51 U | 53 U | 47 U | 46 U | 45 U | 51 U |
| CARBON DISULFIDE | 26 U | 26 U | 23 UR | 23 U | 100 U | 26 UR |
| CARBON TETRACHLORIDE | 0.51 U | 0.53 U | 0.47 U | 0.46 U | 0.5 U | 0.51 U |
| CHLOROBENZENE | 1.3 U | 1.3 U | 1.2 U | 1.2 U | 1.1 U | 1.3 U |
| CHLOROFORM | 8.9 U | 9.1 U | 8.1 U | 7.9 U | 8.5 U | 8.8 U |
| CIS-1,2-DICHLOROETHENE | 7.5 U | 7.7 U | 6.8 UR | 6.6 U | 6.6 U | 7.4 UR |
| ETHYLBENZENE | 2.6 U | 2.6 U | 2.3 U | 2.3 U | 2.3 U | 2.6 U |
| M+P-XYLENES | 4 U | 4.1 U | 3.6 U | 3.5 U | 3.5 U | 3.9 U |
| METHYLENE CHLORIDE | 10 U | 10 U | 9.1 U | 8.9 U | 8.8 U | 10 U |
| O-XYLENE/STYRENE | 13 U | 13 U | 12 U | 12 U | 11 U | 13 U |
| TETRACHLOROETHENE | 0.35 U | 0.8 | 0.32 U | 0.31 U | 0.31 U | 0.35 U |
| TOLUENE | 2.6 U | 2.6 U | 2.3 U | 2.3 U | 1.7 J | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 5.8 U | 6 U | 5.3 UR | 5.2 U | 21 U | 5.8 UR |
| TRICHLOROETHENE | 2.4 | 3.7 | 0.7 U | 0.61 J | 0.68 U | 0.77 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03214 | 003SB03215 | 003SB03301 | 003SB03302 | 003SB03303 | 003SB03304 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 52.0 - 56.0' | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 08/26/97 | 08/26/97 | 09/07/97 | 09/07/97 | 09/07/97 | 09/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC32 | AOC32 | AOC33 | AOC33 | AOC33 | AOC33 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 48 U | 42 U | 41 U | 41 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP139 | 003SB03401 | 003SB03402 | 003SB03403 | 003SB03404 | 003SB03501 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 09/08/97 | 07/29/97 | 07/29/97 | 07/29/97 | 07/29/97 | 07/28/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC33 | AOC34 | AOC34 | AOC34 | AOC34 | AOC35 |
| FIELD DUPLICATE OF: | 003SB03304- | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 2.8 U | 5.6 | 5.9 | 2.9 U | 2.7 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.39 U | 0.34 U | 0.33 U | 0.34 U | 0.35 U | 0.33 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 9.3 U | 9 U | 9.2 U | 9.5 U | 8.9 U |
| 1,1-DICHLOROETHENE | 8.2 U | 7.2 U | 7 U | 7.2 U | 7.4 U | 7 U |
| 1,2-DICHLOROETHANE | 27 U | 24 U | 23 U | 24 U | 25 U | 23 U |
| 2-BUTANONE | 16 UR | 14 U | 14 U | 14 U | 14 U | 13 U |
| 2-HEXANONE | 16 U | 14 U | 14 U | 14 U | 14 U | 13 U |
| 4-METHYL-2-PENTANONE | 15 U | 13 U | 13 U | 13 U | 14 U | 13 U |
| ACETONE | 41 UR | 36 U | 35 U | 36 U | 37 U | 35 U |
| BENZENE | 2 U | 1.8 U | 1.7 U | 1.8 U | 1.8 U | 1.7 U |
| BROMOFORM | 0.64 U | 0.56 U | 0.55 U | 0.56 U | 0.58 U | 0.54 U |
| BROMOMETHANE | 50 U | 44 U | 43 U | 44 U | 45 U | 43 U |
| CARBON DISULFIDE | 25 UR | 22 U | 22 U | 22 U | 23 U | 21 U |
| CARBON TETRACHLORIDE | 0.5 U | 0.44 U | 0.9 | 0.95 | 0.45 U | 0.43 U |
| CHLOROBENZENE | 1.3 U | 1.1 U | 1.1 U | 1.1 U | 1.2 U | 1.1 U |
| CHLOROFORM | 8.7 U | 7.7 U | 16 | 16 | 7.8 U | 7.4 U |
| CIS-1,2-DICHLOROETHENE | 7.3 UR | 6.4 U | 6.3 U | 6.4 U | 6.6 U | 6.2 U |
| ETHYLBENZENE | 2.5 U | 2.2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| M+P-XYLENES | 3.9 U | 3.4 U | 3.3 U | 3.4 U | 3.5 U | 3.3 U |
| METHYLENE CHLORIDE | 9.8 U | 8.7 U | 8.4 U | 8.6 U | 8.9 U | 8.4 U |
| O-XYLENE/STYRENE | 13 U | 11 U | 11 U | 11 U | 12 U | 11 U |
| TETRACHLOROETHENE | 0.34 U | 0.3 U | 0.29 U | 0.3 U | 0.31 U | 0.29 U |
| TOLUENE | 2.5 U | 2.2 U | 2.2 U | 2.2 U | 2.3 U | 2.1 U |
| TRANS-1,2-DICHLOROETHENE | 5.7 UR | 5 U | 4.9 U | 5 U | 5.2 U | 4.9 U |
| TRICHLOROETHENE | 0.75 U | 0.66 U | 0.65 U | 0.66 U | 0.68 U | 1.4 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP139 | 003SB03401 | 003SB03402 | 003SB03403 | 003SB03404 | 003SB03501 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 09/08/97 | 07/29/97 | 07/29/97 | 07/29/97 | 07/29/97 | 07/28/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC33 | AOC34 | AOC34 | AOC34 | AOC34 | AOC35 |
| FIELD DUPLICATE OF: | 003SB03304 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 46 U | 40 U | 39 U | 40 U | 41 U | 39 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03502 | 003SB03503 | 003SB03504 | 003SB03505 | 003SB03506 | 003SBDP115 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC35 | AOC35 | AOC35 | AOC35 | AOC35 | AOC35 |
| FIELD DUPLICATE OF: | | | | | | 003SB03506 |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2 J | 5.2 | 3.1 U | 3.1 U | 3.4 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.47 U | 0.34 U | 0.37 U | 0.38 U | 0.41 U | 0.36 U |
| 1,1,2-TRICHLOROETHANE | 36 | 9.3 U | 10 U | 10 U | 11 U | 9.7 U |
| 1,1-DICHLOROETHENE | 10 U | 7.3 U | 7.9 U | 8.1 U | 8.7 U | 7.6 U |
| 1,2-DICHLOROETHANE | 33 U | 24 U | 26 U | 27 U | 29 U | 25 U |
| 2-BUTANONE | 19 U | 14 U | 15 U | 15 U | 17 U | 14 U |
| 2-HEXANONE | 19 U | 14 U | 15 U | 15 U | 17 U | 14 U |
| 4-METHYL-2-PENTANONE | 18 U | 13 U | 15 U | 15 U | 16 U | 14 U |
| ACETONE | 50 U | 36 U | 40 U | 40 U | 44 U | 38 U |
| BENZENE | 2.5 U | 1.8 U | 2 U | 2 U | 2.2 U | 1.9 U |
| BROMOFORM | 0.78 U | 0.57 U | 0.62 U | 0.63 U | 0.68 U | 0.59 U |
| BROMOMETHANE | 61 U | 45 U | 48 U | 49 U | 53 U | 46 U |
| CARBON DISULFIDE | 30 U | 22 U | 24 U | 25 U | 27 U | 23 U |
| CARBON TETRACHLORIDE | 0.33 J | 0.84 | 0.48 U | 0.49 U | 0.53 U | 0.46 U |
| CHLOROBENZENE | 1.6 U | 1.1 U | 1.2 U | 1.3 U | 1.4 U | 1.2 U |
| CHLOROFORM | 5.6 J | 15 | 8.4 U | 8.5 U | 9.2 U | 8 U |
| CIS-1,2-DICHLOROETHENE | 8.9 U | 6.5 U | 7 U | 7.2 U | 7.7 U | 6.7 U |
| ETHYLBENZENE | 3 U | 2.2 U | 2.4 U | 2.5 U | 2.7 U | 2.3 U |
| M+P-XYLENES | 4.7 U | 3.4 U | 3.7 U | 3.8 U | 4.1 U | 3.6 U |
| METHYLENE CHLORIDE | 12 U | 8.7 U | 9.5 U | 9.6 U | 10 U | 9 U |
| O-XYLENE/STYRENE | 16 U | 11 U | 12 U | 13 U | 14 U | 12 U |
| TETRACHLOROETHENE | 1.1 | 0.3 U | 0.33 U | 0.34 U | 0.36 U | 0.31 U |
| TOLUENE | 3 U | 2.2 U | 2.4 U | 2.5 U | 2.7 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 6.9 U | 5.1 U | 5.5 U | 5.6 U | 6.1 U | 5.2 U |
| TRICHLOROETHENE | 8 | 0.67 U | 0.73 U | 0.74 U | 0.8 U | 0.69 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03502 | 003SB03503 | 003SB03504 | 003SB03505 | 003SB03506 | 003SBDP115 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 20.0 - 24.0' |
| SAMPLE DATE: | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC35 | AOC35 | AOC35 | AOC35 | AOC35 | AOC35 |
| FIELD DUPLICATE OF: | | | | | | 003SB03506 |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 55 U | 40 U | 44 U | 45 U | 48 U | 42 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03507 | 003SB03508 | 003SB03509 | 003SB03510 | 003SB03511 | 003SB03512 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' |
| SAMPLE DATE: | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC35 | AOC35 | AOC35 | AOC35 | AOC35 | AOC35 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.1 U | 3.5 U | 3.2 U | 3 U | 3.5 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.38 U | 0.42 U | 0.38 U | 0.37 U | 0.42 U | 0.35 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 11 U | 10 U | 10 U | 11 U | 9.6 U |
| 1,1-DICHLOROETHENE | 8 U | 8.9 U | 8.1 U | 7.8 U | 9 U | 7.5 U |
| 1,2-DICHLOROETHANE | 27 U | 30 U | 27 U | 26 U | 30 U | 25 U |
| 2-BUTANONE | 15 U | 17 U | 16 U | 15 U | 17 U | 14 U |
| 2-HEXANONE | 15 U | 17 U | 16 U | 15 U | 17 U | 14 U |
| 4-METHYL-2-PENTANONE | 15 U | 16 U | 15 U | 14 U | 16 U | 14 U |
| ACETONE | 40 U | 45 U | 41 U | 39 U | 45 U | 38 U |
| BENZENE | 2 U | 2.2 U | 2 U | 1.9 U | 2.2 U | 1.9 U |
| BROMOFORM | 0.62 U | 0.69 U | 0.63 U | 0.61 U | 0.7 U | 0.58 U |
| BROMOMETHANE | 49 U | 55 U | 50 U | 77 U | 55 U | 46 U |
| CARBON DISULFIDE | 25 U | 27 U | 25 U | 24 U | 27 U | 23 U |
| CARBON TETRACHLORIDE | 0.49 U | 0.55 U | 0.5 U | 0.48 U | 0.55 U | 0.46 U |
| CHLOROBENZENE | 1.2 U | 1.4 U | 1.3 U | 1.2 U | 1.4 U | 1.2 U |
| CHLOROFORM | 8.5 U | 9.4 U | 8.6 U | 8.2 U | 9.4 U | 7.9 U |
| CIS-1,2-DICHLOROETHENE | 7.1 U | 7.9 U | 7.2 U | 6.9 U | 8 U | 6.7 U |
| ETHYLBENZENE | 2.5 U | 2.7 U | 2.5 U | 2.4 U | 2.7 U | 2.3 U |
| M+P-XYLENES | 3.8 U | 4.2 U | 3.8 U | 3.7 U | 4.2 U | 3.5 U |
| METHYLENE CHLORIDE | 9.6 U | 11 U | 9.7 U | 9.3 U | 11 U | 9 U |
| O-XYLENE/STYRENE | 12 U | 14 U | 13 U | 12 U | 14 U | 12 U |
| TETRACHLOROETHENE | 0.33 U | 0.37 U | 0.34 U | 0.32 U | 0.37 U | 0.31 U |
| TOLUENE | 2.5 U | 2.7 U | 2.5 U | 2.4 U | 2.7 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 5.6 U | 6.2 U | 5.6 U | 5.4 U | 6.2 U | 5.2 U |
| TRICHLOROETHENE | 0.74 U | 0.82 U | 0.57 J | 0.71 U | 0.82 U | 0.69 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03507 | 003SB03508 | 003SB03509 | 003SB03510 | 003SB03511 | 003SB03512 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' |
| SAMPLE DATE: | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 | 07/28/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC35 | AOC35 | AOC35 | AOC35 | AOC35 | AOC35 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 45 U | 50 U | 45 U | 43 U | 50 U | 42 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03601 | 003SB03602 | 003SB03603 | 003SB03604 | 003SB03606 | 003SB03701 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 20.0 - 24.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 08/12/97 | 08/12/97 | 08/12/97 | 08/12/97 | 08/12/97 | 08/06/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC36 | AOC36 | AOC36 | AOC36 | AOC36 | AOC37 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.9 U | 1.9 U | 2.3 U | 2.8 U | 3.6 U | 5.8 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.35 U | 0.23 U | 0.28 U | 0.35 U | 0.44 U | 0.71 U |
| 1,1,2-TRICHLOROETHANE | 9.5 U | 6.1 U | 7.6 U | 9.3 U | 12 U | 38 U |
| 1,1-DICHLOROETHENE | 7.5 U | 4.8 U | 5.9 U | 7.3 U | 9.2 U | 15 U |
| 1,2-DICHLOROETHANE | 25 U | 16 U | 20 U | 24 U | 31 U | 50 U |
| 2-BUTANONE | 14 U | 9.1 U | 11 U | 14 U | 18 U | 29 U |
| 2-HEXANONE | 14 U | 9.1 U | 11 U | 14 U | 18 U | 29 U |
| 4-METHYL-2-PENTANONE | 14 U | 8.7 U | 11 U | 13 U | 17 U | 27 U |
| ACETONE | 37 U | 24 U | 30 U | 37 U | 46 U | 75 U |
| BENZENE | 1.8 U | 1.2 U | 1.5 U | 1.8 U | 2.3 U | 3.7 U |
| BROMOFORM | 0.58 U | 0.37 U | 0.46 U | 0.57 U | 0.72 U | 1.2 U |
| BROMOMETHANE | 46 U | 29 U | 36 U | 45 U | 56 U | 92 U |
| CARBON DISULFIDE | 23 U | 15 U | 18 U | 22 U | 28 U | 46 U |
| CARBON TETRACHLORIDE | 0.46 U | 0.29 U | 0.36 U | 0.45 U | 0.56 U | 0.92 U |
| CHLOROBENZENE | 1.2 U | 0.74 U | 0.92 U | 1.1 U | 1.4 U | 2.3 U |
| CHLOROFORM | 7.9 U | 5 U | 6.2 U | 7.7 U | 9.7 U | 16 U |
| CIS-1,2-DICHLOROETHENE | 6.6 U | 4.2 U | 5.3 U | 6.5 U | 8.2 U | 13 U |
| ETHYLBENZENE | 2.3 U | 1.5 U | 1.8 U | 2.2 U | 2.8 U | 4.6 U |
| M+P-XYLENES | 3.5 U | 2.3 U | 2.8 U | 3.5 U | 4.4 U | 7.1 U |
| METHYLENE CHLORIDE | 8.9 U | 5.7 U | 7.1 U | 8.7 U | 11 U | 18 U |
| O-XYLENE/STYRENE | 12 U | 7.4 U | 9.2 U | 11 U | 14 U | 23 U |
| TETRACHLOROETHENE | 0.31 U | 0.2 U | 0.25 U | 0.3 U | 0.38 U | 1.2 |
| TOLUENE | 2.3 U | 1.5 U | 1.8 U | 2.2 U | 2.8 U | 4.6 U |
| TRANS-1,2-DICHLOROETHENE | 3.1 J | 3.3 U | 2.1 J | 5.1 U | 6.4 U | 10 U |
| TRICHLOROETHENE | 0.68 U | 0.44 U | 0.54 U | 0.67 U | 0.85 U | 1.7 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03601 | 003SB03602 | 003SB03603 | 003SB03604 | 003SB03606 | 003SB03701 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 20.0 - 24.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 08/12/97 | 08/12/97 | 08/12/97 | 08/12/97 | 08/12/97 | 08/06/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC36 | AOC36 | AOC36 | AOC36 | AOC36 | AOC37 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 41 U | 27 U | 33 U | 41 U | 51 U | 83 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03704 | 003SB03706 | 003SB03708 | 003SB03709 | 003SB03801 | 003SB03802 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 20.0 - 24.0' | 28.0 - 32.0' | 32.0 - 36.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 08/06/97 | 08/06/97 | 08/06/97 | 08/06/97 | 07/23/97 | 07/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC37 | AOC37 | AOC37 | AOC37 | AOC38 | AOC38 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.9 U | 3 U | 2.3 U | 3.5 U | 5.1 U | 5.1 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.35 U | 0.36 U | 0.28 U | 0.42 U | 0.39 U | 0.37 U |
| 1,1,2-TRICHLOROETHANE | 9.4 U | 9.7 U | 7.4 U | 11 U | 10 U | 28 U |
| 1,1-DICHLOROETHENE | 7.3 U | 7.6 U | 5.8 U | 9 U | 8.2 U | 7.9 U |
| 1,2-DICHLOROETHANE | 24 U | 25 U | 19 U | 30 U | 27 U | 26 U |
| 2-BUTANONE | 14 U | 15 U | 11 U | 17 U | 16 U | 15 U |
| 2-HEXANONE | 14 U | 15 U | 11 U | 17 U | 16 U | 15 U |
| 4-METHYL-2-PENTANONE | 13 U | 14 U | 11 U | 16 U | 15 U | 15 U |
| ACETONE | 37 U | 38 U | 29 U | 45 U | 41 U | 40 U |
| BENZENE | 1.8 U | 1.9 U | 1.4 U | 2.2 U | 2 U | 2 U |
| BROMOFORM | 0.57 U | 0.59 U | 0.45 U | 0.7 U | 0.64 U | 0.62 U |
| BROMOMETHANE | 47 U | 46 U | 36 U | 55 U | 50 U | 28 J |
| CARBON DISULFIDE | 22 U | 23 U | 18 U | 27 U | 25 U | 24 U |
| CARBON TETRACHLORIDE | 0.45 U | 0.46 U | 0.36 U | 0.55 U | 0.81 U | 0.81 U |
| CHLOROBENZENE | 1.1 U | 1.2 U | 0.91 U | 1.4 U | 1.3 U | 1.2 U |
| CHLOROFORM | 7.7 U | 8 U | 6.2 U | 9.5 U | 14 U | 14 U |
| CIS-1,2-DICHLOROETHENE | 6.5 U | 6.8 U | 5.2 U | 8 U | 7.3 U | 7 U |
| ETHYLBENZENE | 2.2 U | 2.3 U | 1.8 U | 2.7 U | 2.5 U | 2.4 U |
| M+P-XYLENES | 3.5 U | 3.6 U | 2.8 U | 4.2 U | 3.9 U | 3.7 U |
| METHYLENE CHLORIDE | 8.8 U | 9.1 U | 7 U | 11 U | 9.8 U | 9.5 U |
| O-XYLENE/STYRENE | 11 U | 12 U | 9.1 U | 14 U | 13 U | 12 U |
| TETRACHLOROETHENE | 0.31 U | 0.32 U | 0.24 U | 0.37 U | 0.34 U | 0.9 |
| TOLUENE | 2.2 U | 2.3 U | 1.8 U | 2.7 U | 2.5 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 5.1 U | 5.3 U | 4 U | 6.2 U | 5.7 U | 5.5 U |
| TRICHLOROETHENE | 0.67 U | 0.7 U | 0.4 J | 0.82 U | 1.3 | 1.8 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03704 | 003SB03706 | 003SB03708 | 003SB03709 | 003SB03801 | 003SB03802 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 20.0 - 24.0' | 28.0 - 32.0' | 32.0 - 36.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 08/06/97 | 08/06/97 | 08/06/97 | 08/06/97 | 07/23/97 | 07/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC37 | AOC37 | AOC37 | AOC37 | AOC38 | AOC38 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 41 U | 42 U | 32 U | 50 U | 45 U | 44 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03803 | 003SB03804 | 003SB03805 | 003SB03807 | 003SBDP108 | 003SB03808 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/23/97 | 07/23/97 | 07/23/97 | 07/23/97 | 07/23/97 | 07/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC38 | AOC38 | AOC38 | AOC38 | AOC38 | AOC38 |
| FIELD DUPLICATE OF: | | | | | 003SB03807 | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4 U | 4.1 U | 4.5 U | 4.8 U | 3.7 U | 4.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.39 U | 0.34 U | 0.35 U | 0.39 U | 0.32 U | 0.36 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 9.1 U | 9.4 U | 10 U | 8.7 U | 16 |
| 1,1-DICHLOROETHENE | 8.3 U | 7.1 U | 7.4 U | 8.2 U | 6.8 U | 7.7 U |
| 1,2-DICHLOROETHANE | 28 U | 24 U | 25 U | 27 U | 23 U | 26 U |
| 2-BUTANONE | 16 U | 14 U | 14 U | 16 U | 13 U | 15 U |
| 2-HEXANONE | 16 U | 14 U | 14 U | 16 U | 13 U | 15 U |
| 4-METHYL-2-PENTANONE | 15 U | 13 U | 14 U | 15 U | 13 U | 14 U |
| ACETONE | 41 U | 36 U | 37 U | 41 U | 34 U | 39 U |
| BENZENE | 2 U | 1.8 U | 1.8 U | 2 U | 1.7 U | 1.9 U |
| BROMOFORM | 0.64 U | 0.55 U | 0.57 U | 0.64 U | 0.53 U | 0.6 U |
| BROMOMETHANE | 50 U | 44 U | 45 U | 50 U | 42 U | 47 U |
| CARBON DISULFIDE | 25 U | 22 U | 23 U | 25 U | 21 U | 24 U |
| CARBON TETRACHLORIDE | 0.64 U | 0.67 U | 0.72 U | 0.77 U | 0.59 U | 0.68 U |
| CHLOROBENZENE | 1.3 U | 1.1 U | 1.1 U | 1.3 U | 1.1 U | 1.2 U |
| CHLOROFORM | 11 U | 11 U | 12 U | 13 U | 10 U | 12 U |
| CIS-1,2-DICHLOROETHENE | 7.3 U | 6.3 U | 6.6 U | 7.3 U | 6.1 U | 6.9 U |
| ETHYLBENZENE | 2.5 U | 2.2 U | 2.3 U | 2.5 U | 2.1 U | 2.4 U |
| M+P-XYLENES | 3.9 U | 3.4 U | 3.5 U | 3.9 U | 3.2 U | 3.6 U |
| METHYLENE CHLORIDE | 9.9 U | 8.5 U | 8.8 U | 9.8 U | 8.2 U | 9.2 U |
| O-XYLENE/STYRENE | 13 U | 11 U | 11 U | 13 U | 11 U | 12 U |
| TETRACHLOROETHENE | 0.34 U | 0.3 U | 0.31 U | 0.34 U | 0.28 U | 0.52 |
| TOLUENE | 2.5 U | 2.2 U | 2.3 U | 2.5 U | 2.1 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 5.7 U | 4.9 U | 5.1 U | 5.7 U | 4.7 U | 5.4 U |
| TRICHLOROETHENE | 0.76 U | 0.65 U | 0.36 J | 1.8 | 3.3 | 14 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03803 | 003SB03804 | 003SB03805 | 003SB03807 | 003SBDP108 | 003SB03808 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/23/97 | 07/23/97 | 07/23/97 | 07/23/97 | 07/23/97 | 07/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC38 | AOC38 | AOC38 | AOC38 | AOC38 | AOC38 |
| FIELD DUPLICATE OF: | | | | | 003SB03807 | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 46 U | 40 U | 41 U | 46 U | 38 U | 43 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03810 | 003SB03811 | 003SB03812 | 003SB03814 | 003SB03901 | 003SB03902 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 07/23/97 | 07/23/97 | 07/23/97 | 07/23/97 | 09/25/97 | 09/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC38 | AOC38 | AOC38 | AOC38 | AOC39 | AOC39 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.6 U | 4.2 U | 5.2 U | 3.7 U | 3.5 U | 3.6 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.38 U | 0.36 U | 0.42 U | 0.38 U | 0.43 U | 0.43 U |
| 1,1,2-TRICHLOROETHANE | 17 U | 11 | 17 | 10 U | 12 U | 12 U |
| 1,1-DICHLOROETHENE | 8.2 U | 7.6 U | 9 U | 8 U | 9 U | 9.2 U |
| 1,2-DICHLOROETHANE | 27 U | 25 U | 30 U | 27 U | 30 U | 31 U |
| 2-BUTANONE | 16 U | 14 U | 17 U | 15 U | 17 U | 18 U |
| 2-HEXANONE | 16 U | 14 U | 17 U | 15 U | 17 U | 18 U |
| 4-METHYL-2-PENTANONE | 15 U | 14 U | 16 U | 15 U | 17 U | 17 U |
| ACETONE | 41 U | 38 U | 45 U | 40 U | 45 U | 46 U |
| BENZENE | 2 U | 1.9 U | 2.2 U | 2 U | 2.2 U | 2.3 U |
| BROMOFORM | 0.63 U | 0.59 U | 0.7 U | 0.63 U | 0.7 U | 0.71 U |
| BROMOMETHANE | 50 U | 46 U | 55 U | 49 U | 55 U | 56 U |
| CARBON DISULFIDE | 25 U | 23 U | 27 U | 25 U | 28 U | 28 U |
| CARBON TETRACHLORIDE | 0.74 U | 0.68 U | 0.83 U | 0.6 U | 0.55 U | 0.56 U |
| CHLOROBENZENE | 1.3 U | 1.2 U | 1.4 U | 1.3 U | 1.4 U | 1.4 U |
| CHLOROFORM | 13 U | 12 U | 14 U | 10 U | 9.5 U | 9.7 U |
| CIS-1,2-DICHLOROETHENE | 7.2 U | 6.7 U | 8 U | 7.2 U | 8 U | 8.2 U |
| ETHYLBENZENE | 2.5 U | 2.3 U | 2.7 U | 2.5 U | 2.8 U | 2.8 U |
| M+P-XYLENES | 3.8 U | 3.6 U | 4.2 U | 3.8 U | 4.3 U | 4.3 U |
| METHYLENE CHLORIDE | 9.7 U | 9 U | 11 U | 9.6 U | 11 U | 11 U |
| O-XYLENE/STYRENE | 13 U | 12 U | 14 U | 13 U | 14 U | 14 U |
| TETRACHLOROETHENE | 0.53 | 0.34 | 0.54 | 0.34 U | 0.38 U | 0.38 U |
| TOLUENE | 2.5 U | 2.3 U | 2.7 U | 2.5 U | 2.8 U | 2.8 U |
| TRANS-1,2-DICHLOROETHENE | 5.7 U | 5.2 U | 6.2 U | 5.6 U | 6.3 U | 6.4 U |
| TRICHLOROETHENE | 11 J | 1.5 | 2.4 | 20 J | 0.88 | 1.1 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03810 | 003SB03811 | 003SB03812 | 003SB03814 | 003SB03901 | 003SB03902 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 07/23/97 | 07/23/97 | 07/23/97 | 07/23/97 | 09/25/97 | 09/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC38 | AOC38 | AOC38 | AOC38 | AOC39 | AOC39 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 45 U | 42 U | 50 U | 45 U | 50 U | 51 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03903 | 003SB03904 | 003SB03905 | 003SB04602 | 003SB04603 | 003SB04604 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/25/97 | 09/25/97 | 09/25/97 | 09/19/97 | 09/19/97 | 09/19/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC39 | AOC39 | AOC39 | AOC46 | AOC46 | AOC46 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.6 U | 3.3 U | 3.6 U | 3.2 U | 3.3 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.43 U | 0.35 U | 0.4 U | 0.38 U | 0.4 U | 0.36 U |
| 1,1,2-TRICHLOROETHANE | 12 U | 9.3 U | 11 U | 10 U | 11 U | 9.6 U |
| 1,1-DICHLOROETHENE | 9.2 U | 7.3 U | 8.4 U | 8.1 U | 8.6 U | 7.6 U |
| 1,2-DICHLOROETHANE | 31 U | 24 U | 28 U | 27 U | 29 U | 25 U |
| 2-BUTANONE | 18 U | 14 U | 16 U | 16 U | 16 U | 14 U |
| 2-HEXANONE | 18 U | 14 U | 16 U | 16 U | 16 U | 14 U |
| 4-METHYL-2-PENTANONE | 17 U | 13 U | 15 U | 15 U | 16 U | 14 U |
| ACETONE | 46 U | 37 U | 42 U | 41 U | 43 U | 38 U |
| BENZENE | 2.3 U | 1.8 U | 2.1 U | 2 U | 2.1 U | 1.9 U |
| BROMOFORM | 0.72 U | 0.57 U | 0.66 U | 0.63 U | 0.67 U | 0.59 U |
| BROMOMETHANE | 56 U | 45 U | 51 U | 50 U | 52 U | 46 U |
| CARBON DISULFIDE | 28 U | 22 U | 26 U | 25 U | 26 U | 23 U |
| CARBON TETRACHLORIDE | 0.73 U | 0.52 U | 0.58 U | 0.5 U | 0.52 U | 0.46 U |
| CHLOROBENZENE | 1.4 U | 1.1 U | 1.3 U | 1.3 U | 1.3 U | 1.2 U |
| CHLOROFORM | 13 U | 9 U | 10 U | 8.6 U | 9 U | 8 U |
| CIS-1,2-DICHLOROETHENE | 8.2 U | 6.5 U | 7.5 U | 7.2 U | 7.6 U | 6.7 U |
| ETHYLBENZENE | 2.8 U | 2.2 U | 2.6 U | 2.5 U | 2.6 U | 2.3 U |
| M+P-XYLENES | 4.3 U | 3.5 U | 4 U | 3.8 U | 4 U | 3.6 U |
| METHYLENE CHLORIDE | 11 U | 8.7 U | 10 U | 9.7 U | 10 U | 9 U |
| O-XYLENE/STYRENE | 14 U | 11 U | 13 U | 13 U | 13 U | 12 U |
| TETRACHLOROETHENE | 0.38 U | 0.3 U | 0.35 U | 0.34 U | 0.36 U | 0.31 U |
| TOLUENE | 2.8 U | 2.2 U | 2.6 U | 2.5 U | 2.6 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 6.4 U | 5.1 U | 5.9 U | 5.7 U | 5.9 U | 5.2 U |
| TRICHLOROETHENE | 4.7 | 0.67 U | 0.8 | 0.75 U | 1.2 | 0.88 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB03903 | 003SB03904 | 003SB03905 | 003SB04602 | 003SB04603 | 003SB04604 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/25/97 | 09/25/97 | 09/25/97 | 09/19/97 | 09/19/97 | 09/19/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC39 | AOC39 | AOC39 | AOC46 | AOC46 | AOC46 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 51 U | 41 U | 47 U | 45 U | 48 U | 42 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP144 | 003SB04701 | 003SB04702 | 003SB04703 | 003SB04704 | 003SB04705 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 09/19/97 | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC46 | AOC47 | AOC47 | AOC47 | AOC47 | AOC47 |
| FIELD DUPLICATE OF: | 003SB04604 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3 U | 3.4 U | 3.2 U | 3.2 U | 2.9 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.37 U | 0.42 U | 0.38 U | 0.39 U | 0.35 U | 0.35 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 11 U | 10 U | 11 U | 9.5 U | 9.6 U |
| 1,1-DICHLOROETHENE | 7.8 U | 8.8 U | 8.1 U | 8.3 U | 7.5 U | 7.5 U |
| 1,2-DICHLOROETHANE | 26 U | 29 U | 27 U | 28 U | 25 U | 25 U |
| 2-BUTANONE | 15 U | 17 U | 16 U | 16 U | 14 U | 14 U |
| 2-HEXANONE | 15 U | 17 U | 16 U | 16 U | 14 U | 14 U |
| 4-METHYL-2-PENTANONE | 14 U | 16 U | 15 U | 15 U | 14 U | 14 U |
| ACETONE | 39 U | 44 U | 41 U | 41 U | 37 U | 37 U |
| BENZENE | 1.9 U | 2.2 U | 2 U | 2.1 U | 1.8 U | 1.9 U |
| BROMOFORM | 0.61 U | 0.69 U | 0.63 U | 0.65 U | 0.58 U | 0.58 U |
| BROMOMETHANE | 48 U | 54 U | 50 U | 51 U | 46 U | 46 U |
| CARBON DISULFIDE | 24 U | 27 U | 25 U | 25 U | 23 U | 23 U |
| CARBON TETRACHLORIDE | 0.48 U | 0.54 U | 0.5 U | 0.51 U | 0.46 U | 0.46 U |
| CHLOROBENZENE | 1.2 U | 1.4 U | 1.3 U | 1.3 U | 1.2 U | 1.2 U |
| CHLOROFORM | 8.3 U | 9.3 U | 8.6 U | 8.8 U | 7.9 U | 7.9 U |
| CIS-1,2-DICHLOROETHENE | 7 U | 7.9 U | 7.2 U | 7.4 U | 6.6 U | 6.7 U |
| ETHYLBENZENE | 2.4 U | 2.7 U | 2.5 U | 2.5 U | 2.3 U | 2.3 U |
| M+P-XYLENES | 3.7 U | 4.2 U | 3.8 U | 3.9 U | 3.5 U | 3.5 U |
| METHYLENE CHLORIDE | 9.4 U | 11 U | 9.7 U | 9.9 U | 8.9 U | 8.9 U |
| O-XYLENE/STYRENE | 12 U | 14 U | 13 U | 13 U | 12 U | 12 U |
| TETRACHLOROETHENE | 0.33 U | 0.37 U | 0.34 U | 0.35 U | 0.31 U | 0.31 U |
| TOLUENE | 2.4 U | 2.7 U | 2.5 U | 2.5 U | 2.3 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 5.4 U | 6.1 U | 5.6 U | 5.8 U | 5.2 U | 5.2 U |
| TRICHLOROETHENE | 0.72 J | 0.81 U | 0.74 U | 0.76 U | 0.68 U | 0.69 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP144 | 003SB04701 | 003SB04702 | 003SB04703 | 003SB04704 | 003SB04705 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 09/19/97 | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC46 | AOC47 | AOC47 | AOC47 | AOC47 | AOC47 |
| FIELD DUPLICATE OF: | 003SB04604 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 44 U | 49 U | 45 U | 46 U | 41 U | 42 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB04706 | 003SB04708 | 003SB04709 | 003SBDP148 | 003SB04710 | 003SB04711 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 28.0 - 32.0' | 32.0 - 36.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC47 | AOC47 | AOC47 | AOC47 | AOC47 | AOC47 |
| FIELD DUPLICATE OF: | | | | 003SB04709 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.6 U | 3.6 U | 3.9 U | 3.5 U | 3.6 U | 3.6 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.43 U | 0.43 U | 0.48 U | 0.43 U | 0.44 U | 0.44 U |
| 1,1,2-TRICHLOROETHANE | 12 U | 12 U | 13 U | 12 U | 12 U | 12 U |
| 1,1-DICHLOROETHENE | 9.1 U | 9.1 U | 10 U | 9 U | 9.3 U | 9.3 U |
| 1,2-DICHLOROETHANE | 30 U | 30 U | 34 U | 30 U | 31 U | 31 U |
| 2-BUTANONE | 18 U | 18 U | 19 U | 17 U | 18 U | 18 U |
| 2-HEXANONE | 18 U | 18 U | 19 U | 17 U | 18 U | 18 U |
| 4-METHYL-2-PENTANONE | 17 U | 17 U | 19 U | 17 U | 17 U | 17 U |
| ACETONE | 46 U | 46 U | 51 U | 45 U | 46 U | 47 U |
| BENZENE | 2.3 U | 2.3 U | 2.5 U | 2.2 U | 2.3 U | 2.3 U |
| BROMOFORM | 0.71 U | 0.71 U | 0.79 U | 0.7 U | 0.72 U | 0.72 U |
| BROMOMETHANE | 56 U | 56 U | 62 U | 55 U | 57 U | 57 U |
| CARBON DISULFIDE | 28 U | 28 U | 31 U | 28 U | 28 U | 28 U |
| CARBON TETRACHLORIDE | 0.56 U | 0.56 U | 0.62 U | 0.55 U | 0.57 U | 0.57 U |
| CHLOROBENZENE | 1.4 U | 1.4 U | 1.6 U | 1.4 U | 1.4 U | 1.4 U |
| CHLOROFORM | 9.6 U | 9.7 U | 11 U | 9.5 U | 9.8 U | 9.8 U |
| CIS-1,2-DICHLOROETHENE | 8.1 U | 9.3 | 10 | 5.2 J | 9.4 | 11 |
| ETHYLBENZENE | 2.8 U | 2.8 U | 3.1 U | 2.8 U | 2.8 U | 2.8 U |
| M+P-XYLENES | 4.3 U | 4.3 U | 4.8 U | 4.3 U | 4.4 U | 4.4 U |
| METHYLENE CHLORIDE | 11 U | 11 U | 12 U | 11 U | 11 U | 11 U |
| O-XYLENE/STYRENE | 14 U | 14 U | 16 U | 14 U | 14 U | 14 U |
| TETRACHLOROETHENE | 0.38 U | 0.38 U | 0.42 U | 0.38 U | 0.39 U | 0.39 U |
| TOLUENE | 2.8 U | 2.8 U | 3.1 U | 2.8 U | 2.8 U | 2.8 U |
| TRANS-1,2-DICHLOROETHENE | 6.3 U | 10 | 7.6 | 4.3 J | 6.6 | 13 |
| TRICHLOROETHENE | 2 | 57 | 8.2 | 5.9 | 10 | 4.4 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB04706 | 003SB04708 | 003SB04709 | 003SBDP148 | 003SB04710 | 003SB04711 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 28.0 - 32.0' | 32.0 - 36.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 | 09/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC47 | AOC47 | AOC47 | AOC47 | AOC47 | AOC47 |
| FIELD DUPLICATE OF: | | | | 003SB04709 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 51 U | 51 U | 56 U | 50 U | 51 U | 52 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB04712 | 003SB05001 | 003SB05002 | 003SB05003 | 003SB05004 | 003SB05005 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 44.0 - 48.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 09/23/97 | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC47 | AOC50 | AOC50 | AOC50 | AOC50 | AOC50 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.7 U | 3.6 U | 3.4 U | 3.2 U | 3.2 U | 3.3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.45 U | 0.4 U | 0.42 U | 0.37 U | 0.37 U | 0.4 U |
| 1,1,2-TRICHLOROETHANE | 12 U | 11 U | 11 U | 10 U | 9.9 U | 11 U |
| 1,1-DICHLOROETHENE | 9.6 U | 8.5 U | 8.8 U | 7.8 U | 7.8 U | 8.4 U |
| 1,2-DICHLOROETHANE | 32 U | 28 U | 29 U | 26 U | 26 U | 28 U |
| 2-BUTANONE | 18 U | 16 U | 17 U | 15 U | 15 U | 16 U |
| 2-HEXANONE | 18 U | 16 U | 17 U | 15 U | 15 U | 16 U |
| 4-METHYL-2-PENTANONE | 18 U | 16 U | 16 U | 14 U | 14 U | 15 U |
| ACETONE | 48 U | 43 U | 44 U | 39 U | 39 U | 42 U |
| BENZENE | 2.4 U | 2.1 U | 2.2 U | 1.9 U | 1.9 U | 2.1 U |
| BROMOFORM | 0.75 U | 0.66 U | 0.69 U | 0.61 U | 0.61 U | 0.65 U |
| BROMOMETHANE | 59 U | 52 U | 54 U | 48 U | 48 U | 51 U |
| CARBON DISULFIDE | 29 U | 26 U | 27 U | 24 U | 24 U | 26 U |
| CARBON TETRACHLORIDE | 0.59 U | 0.57 U | 0.54 U | 0.51 U | 0.51 U | 0.51 U |
| CHLOROBENZENE | 1.5 U | 1.3 U | 1.4 U | 1.2 U | 1.2 U | 1.3 U |
| CHLOROFORM | 10 U | 9.9 U | 9.3 U | 8.8 U | 8.7 U | 8.8 U |
| CIS-1,2-DICHLOROETHENE | 4.8 J | 7.6 U | 7.8 U | 7 U | 6.9 U | 7.4 U |
| ETHYLBENZENE | 2.9 U | 2.6 U | 2.7 U | 2.4 U | 2.4 U | 2.6 U |
| M+P-XYLENES | 4.5 U | 4 U | 4.2 U | 3.7 U | 3.7 U | 4 U |
| METHYLENE CHLORIDE | 11 U | 10 U | 11 U | 9.4 U | 9.3 U | 10 U |
| O-XYLENE/STYRENE | 15 U | 13 U | 14 U | 12 U | 12 U | 13 U |
| TETRACHLOROETHENE | 0.4 U | 0.36 U | 0.37 U | 0.33 U | 0.32 U | 0.35 U |
| TOLUENE | 2.9 U | 2.6 U | 2.7 U | 2.4 U | 2.4 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 7.4 | 5.9 U | 6.1 U | 5.4 U | 5.4 U | 5.8 U |
| TRICHLOROETHENE | 5.2 J | 0.54 J | 0.81 U | 0.72 U | 0.71 U | 0.77 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB04712 | 003SB05001 | 003SB05002 | 003SB05003 | 003SB05004 | 003SB05005 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 44.0 - 48.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 09/23/97 | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC47 | AOC50 | AOC50 | AOC50 | AOC50 | AOC50 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 53 U | 47 U | 49 U | 44 U | 43 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05006 | 003SBDP149 | 003SB05007 | 003SB05008 | 003SB05009 | 003SB05010 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC50 | AOC50 | AOC50 | AOC50 | AOC50 | AOC50 |
| FIELD DUPLICATE OF: | | 003SB05006 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.9 U | 3.6 U | 3.6 U | 3.7 U | 3.6 U | 3.6 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.47 U | 0.44 U | 0.44 U | 0.45 U | 0.43 U | 0.43 U |
| 1,1,2-TRICHLOROETHANE | 13 U | 12 U | 12 U | 12 U | 12 U | 12 U |
| 1,1-DICHLOROETHENE | 10 U | 9.4 U | 9.3 U | 9.6 U | 9.1 U | 9.2 U |
| 1,2-DICHLOROETHANE | 33 U | 31 U | 31 U | 32 U | 30 U | 31 U |
| 2-BUTANONE | 19 U | 18 U | 18 U | 18 U | 18 U | 18 U |
| 2-HEXANONE | 19 U | 18 U | 18 U | 18 U | 18 U | 18 U |
| 4-METHYL-2-PENTANONE | 18 U | 17 U | 17 U | 18 U | 17 U | 17 U |
| ACETONE | 50 U | 47 U | 47 U | 48 U | 46 U | 46 U |
| BENZENE | 2.5 U | 2.3 U | 2.3 U | 2.4 U | 2.3 U | 2.3 U |
| BROMOFORM | 0.78 U | 0.73 U | 0.73 U | 0.75 U | 0.71 U | 0.71 U |
| BROMOMETHANE | 61 U | 57 U | 57 U | 59 U | 56 U | 56 U |
| CARBON DISULFIDE | 31 U | 29 U | 29 U | 29 U | 28 U | 28 U |
| CARBON TETRACHLORIDE | 0.61 U | 0.57 U | 0.57 U | 0.59 U | 0.56 U | 0.56 U |
| CHLOROBENZENE | 1.6 U | 1.5 U | 1.5 U | 1.5 U | 1.4 U | 1.4 U |
| CHLOROFORM | 11 U | 9.9 U | 9.9 U | 10 U | 9.7 U | 9.7 U |
| CIS-1,2-DICHLOROETHENE | 8.9 U | 16 | 8.3 U | 16 J | 46 | 13 |
| ETHYLBENZENE | 3.1 U | 2.9 U | 2.9 U | 2.9 U | 2.8 U | 2.8 U |
| M+P-XYLENES | 4.7 U | 4.4 U | 4.4 U | 4.5 U | 4.3 U | 4.3 U |
| METHYLENE CHLORIDE | 12 U | 11 U | 11 U | 6.6 J | 11 U | 11 U |
| O-XYLENE/STYRENE | 16 U | 15 U | 15 U | 15 U | 14 U | 14 U |
| TETRACHLOROETHENE | 0.42 U | 0.39 U | 0.39 U | 0.4 U | 0.38 U | 0.38 U |
| TOLUENE | 3.1 U | 2.9 U | 2.9 U | 2.9 U | 2.8 U | 2.8 U |
| TRANS-1,2-DICHLOROETHENE | 6.9 U | 42 | 6.5 U | 17 | 23 | 6 J |
| TRICHLOROETHENE | 2.3 | 1.8 | 1.2 | 3 | 12 | 3.7 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05006 | 003SBDP149 | 003SB05007 | 003SB05008 | 003SB05009 | 003SB05010 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 | 09/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC50 | AOC50 | AOC50 | AOC50 | AOC50 | AOC50 |
| FIELD DUPLICATE OF: | | 003SB05006 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 55 U | 52 U | 52 U | 54 U | 51 U | 51 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05011 | 003SB05401 | 003SB05402 | 003SB05403 | 003SB05404 | 003SB05405 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 40.0 - 44.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 09/24/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC50 | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.8 U | 3 U | 3.5 U | 3.1 U | 3.2 U | 3.1 U |
| 1,1,2,2-TETRACHLOROETHANE | 2.5 U | 0.36 U | 0.36 U | 0.38 U | 0.39 U | 0.38 U |
| 1,1,2-TRICHLOROETHANE | 12 U | 9.8 U | 9.8 U | 10 U | 10 U | 10 U |
| 1,1-DICHLOROETHENE | 9.7 U | 7.6 U | 16 | 8 U | 8.2 U | 8.1 U |
| 1,2-DICHLOROETHANE | 32 U | 25 U | 25 U | 27 U | 27 U | 27 U |
| 2-BUTANONE | 19 U | 15 U | 15 U | 15 U | 16 U | 15 U |
| 2-HEXANONE | 99 U | 15 U | 15 U | 15 U | 16 U | 15 U |
| 4-METHYL-2-PENTANONE | 18 U | 14 U | 14 U | 15 U | 15 U | 15 U |
| ACETONE | 48 U | 38 U | 38 U | 40 U | 41 U | 40 U |
| BENZENE | 2.4 U | 1.9 U | 1.9 U | 2 U | 2 U | 2 U |
| BROMOFORM | 4 U | 0.59 U | 0.59 U | 0.62 U | 0.64 U | 0.63 U |
| BROMOMETHANE | 59 U | 47 U | 47 U | 49 U | 50 U | 49 U |
| CARBON DISULFIDE | 30 U | 23 U | 23 U | 24 U | 25 U | 25 U |
| CARBON TETRACHLORIDE | 0.59 U | 0.47 U | 0.55 U | 0.49 U | 0.5 U | 0.49 U |
| CHLOROBENZENE | 8.1 U | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.3 U |
| CHLOROFORM | 10 U | 8.1 U | 9.5 U | 8.4 U | 8.6 U | 8.5 U |
| CIS-1,2-DICHLOROETHENE | 34 | 6.8 U | 6.8 U | 7.1 U | 7.3 U | 7.2 U |
| ETHYLBENZENE | 16 U | 2.3 U | 2.3 U | 2.4 U | 2.5 U | 2.5 U |
| M+P-XYLENES | 25 U | 3.6 U | 3.6 U | 3.8 U | 3.9 U | 3.8 U |
| METHYLENE CHLORIDE | 12 U | 9.1 U | 9.1 U | 9.5 U | 9.8 U | 9.6 U |
| O-XYLENE/STYRENE | 81 U | 12 U | 12 U | 12 U | 13 U | 13 U |
| TETRACHLOROETHENE | 0.4 U | 0.32 U | 0.32 U | 0.33 U | 0.34 U | 0.34 U |
| TOLUENE | 3 U | 2.3 U | 2.3 U | 2.4 U | 2.5 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 24 | 5.3 U | 5.3 U | 5.5 U | 5.7 U | 5.6 U |
| TRICHLOROETHENE | 21 J | 0.7 U | 0.77 | 0.73 U | 0.75 U | 0.74 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05011 | 003SB05401 | 003SB05402 | 003SB05403 | 003SB05404 | 003SB05405 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 40.0 - 44.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 09/24/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC50 | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 54 U | 42 U | 42 U | 44 U | 45 U | 45 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05406 | 003SB05407 | 003SBDP116 | 003SB05408 | 003SB05409 | 003SB05410 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 |
| FIELD DUPLICATE OF: | | | 003SB05407 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.7 U | 3.7 U | 3.3 U | 3.3 U | 3.4 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.32 U | 0.45 U | 0.4 U | 0.4 U | 0.41 U | 0.35 U |
| 1,1,2-TRICHLOROETHANE | 8.7 U | 12 U | 11 U | 11 U | 11 U | 9.6 U |
| 1,1-DICHLOROETHENE | 6.8 U | 9.4 U | 8.4 U | 8.5 U | 8.7 U | 7.5 U |
| 1,2-DICHLOROETHANE | 23 U | 31 U | 28 U | 28 U | 29 U | 25 U |
| 2-BUTANONE | 13 U | 18 U | 16 U | 16 U | 17 U | 14 U |
| 2-HEXANONE | 13 U | 18 U | 16 U | 16 U | 17 U | 14 U |
| 4-METHYL-2-PENTANONE | 13 U | 17 U | 15 U | 16 U | 16 U | 14 U |
| ACETONE | 34 U | 47 U | 42 U | 42 U | 43 U | 38 U |
| BENZENE | 1.7 U | 2.3 U | 2.1 U | 2.1 U | 2.1 U | 1.9 U |
| BROMOFORM | 0.53 U | 0.73 U | 0.65 U | 0.66 U | 0.68 U | 0.58 U |
| BROMOMETHANE | 42 U | 58 U | 51 U | 52 U | 53 U | 46 U |
| CARBON DISULFIDE | 21 U | 29 U | 26 U | 26 U | 27 U | 23 U |
| CARBON TETRACHLORIDE | 0.42 U | 0.58 U | 0.51 U | 0.52 U | 0.53 U | 0.46 U |
| CHLOROBENZENE | 1.1 U | 1.5 U | 1.3 U | 1.3 U | 1.4 U | 1.2 U |
| CHLOROFORM | 7.2 U | 9.9 U | 8.9 U | 8.9 U | 9.2 U | 7.9 U |
| CIS-1,2-DICHLOROETHENE | 6.1 U | 8.4 U | 7.5 U | 7.5 U | 7.7 U | 6.7 U |
| ETHYLBENZENE | 2.1 U | 2.9 U | 2.6 U | 2.6 U | 2.7 U | 2.3 U |
| M+P-XYLENES | 3.2 U | 4.5 U | 4 U | 4 U | 4.1 U | 3.5 U |
| METHYLENE CHLORIDE | 8.2 U | 11 U | 10 U | 10 U | 10 U | 9 U |
| O-XYLENE/STYRENE | 11 U | 15 U | 13 U | 13 U | 14 U | 12 U |
| TETRACHLOROETHENE | 0.29 U | 0.39 U | 0.35 U | 0.35 U | 0.36 U | 0.31 U |
| TOLUENE | 2.1 U | 2.9 U | 2.6 U | 2.6 U | 2.7 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 4.8 U | 6.5 U | 5.8 U | 5.9 U | 6 U | 5.2 U |
| TRICHLOROETHENE | 0.63 U | 2.3 | 1.1 | 1.7 | 1.8 | 1.4 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05406 | 003SB05407 | 003SBDP116 | 003SB05408 | 003SB05409 | 003SB05410 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 |
| FIELD DUPLICATE OF: | | | 003SB05407 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 38 U | 52 U | 47 U | 47 U | 48 U | 42 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05411 | 003SB05412 | 003SB05413 | 003SB05414 | 003SB05415 | 003SBDP117 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 40.0 - 44.0' | 44.0 - 48.0' | 48.0 - 52.0' | 52.0 - 56.0' | 56.0 - 60.0' | 56.0 - 60.0' |
| SAMPLE DATE: | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 |
| FIELD DUPLICATE OF: | | | | | | 003SB05415 |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 3.7 U | 2.8 U | 3.3 U | 6 U | 6.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.39 U | 0.45 U | 0.34 U | 0.4 U | 0.73 U | 0.76 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 12 U | 9.1 U | 11 U | 20 U | 20 U |
| 1,1-DICHLOROETHENE | 8.2 U | 9.6 U | 7.1 U | 8.4 U | 15 U | 16 U |
| 1,2-DICHLOROETHANE | 27 U | 32 U | 24 U | 28 U | 51 U | 53 U |
| 2-BUTANONE | 16 U | 18 U | 14 U | 16 U | 30 U | 31 U |
| 2-HEXANONE | 16 U | 18 U | 14 U | 16 U | 30 U | 31 U |
| 4-METHYL-2-PENTANONE | 15 U | 18 U | 13 U | 15 U | 28 U | 29 U |
| ACETONE | 41 U | 48 U | 36 U | 42 U | 77 U | 80 U |
| BENZENE | 2 U | 2.4 U | 1.8 U | 2.1 U | 3.8 U | 4 U |
| BROMOFORM | 0.64 U | 0.75 U | 0.56 U | 0.66 U | 1.2 U | 1.2 U |
| BROMOMETHANE | 50 U | 59 U | 44 U | 52 U | 94 U | 98 U |
| CARBON DISULFIDE | 25 U | 29 U | 22 U | 26 U | 47 U | 49 U |
| CARBON TETRACHLORIDE | 0.5 U | 0.59 U | 0.44 U | 0.52 U | 0.94 U | 0.98 U |
| CHLOROBENZENE | 1.3 U | 1.5 U | 1.1 U | 1.3 U | 2.4 U | 2.5 U |
| CHLOROFORM | 8.7 U | 10 U | 7.5 U | 8.9 U | 16 U | 17 U |
| CIS-1,2-DICHLOROETHENE | 7.3 U | 8.5 U | 6.4 U | 7.5 U | 14 U | 14 U |
| ETHYLBENZENE | 2.5 U | 2.9 U | 2.2 U | 2.6 U | 4.7 U | 4.9 U |
| M+P-XYLENES | 3.9 U | 4.5 U | 3.4 U | 4 U | 7.3 U | 7.6 U |
| METHYLENE CHLORIDE | 9.8 U | 11 U | 8.5 U | 10 U | 18 U | 19 U |
| O-XYLENE/STYRENE | 13 U | 15 U | 11 U | 13 U | 24 U | 25 U |
| TETRACHLOROETHENE | 0.34 U | 0.4 U | 0.3 U | 0.35 U | 0.64 U | 0.67 U |
| TOLUENE | 2.5 U | 2.9 U | 2.2 U | 2.6 U | 4.7 U | 4.9 U |
| TRANS-1,2-DICHLOROETHENE | 5.7 U | 6.7 U | 5 U | 5.9 U | 11 U | 11 U |
| TRICHLOROETHENE | 1.5 | 1.6 | 6.5 | 10 J | 5.1 | 4.4 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05411 | 003SB05412 | 003SB05413 | 003SB05414 | 003SB05415 | 003SBDP117 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 40.0 - 44.0' | 44.0 - 48.0' | 48.0 - 52.0' | 52.0 - 56.0' | 56.0 - 60.0' | 56.0 - 60.0' |
| SAMPLE DATE: | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 | 08/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 | AOC54 |
| FIELD DUPLICATE OF: | | | | | | 003SB05415 |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 46 U | 53 U | 40 U | 47 U | 86 U | 89 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05501 | 003SB05502 | 003SB05503 | 003SB05504 | 003SB05506 | 003SB05507 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 08/24/97 | 08/24/97 | 08/24/97 | 08/24/97 | 08/24/97 | 08/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC55 | AOC55 | AOC55 | AOC55 | AOC55 | AOC55 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.3 U | 3 U | 2.8 U | 3.2 U | 3 U | 3.5 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.36 U | 0.34 U | 0.39 U | 0.36 U | 0.42 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 9.7 U | 9.2 U | 11 U | 9.8 U | 11 U |
| 1,1-DICHLOROETHENE | 8.5 U | 7.6 U | 7.2 U | 8.2 U | 7.7 U | 9 U |
| 1,2-DICHLOROETHANE | 28 U | 25 U | 24 U | 27 U | 26 U | 30 U |
| 2-BUTANONE | 16 U | 15 U | 14 U | 16 U | 15 U | 17 U |
| 2-HEXANONE | 16 U | 15 U | 14 U | 16 U | 15 U | 17 U |
| 4-METHYL-2-PENTANONE | 16 U | 14 U | 13 U | 15 U | 14 U | 16 U |
| ACETONE | 42 U | 38 U | 36 U | 41 U | 38 U | 45 U |
| BENZENE | 2.1 U | 1.9 U | 1.8 U | 2 U | 1.9 U | 2.2 U |
| BROMOFORM | 0.66 U | 0.59 U | 0.56 U | 0.64 U | 0.6 U | 0.7 U |
| BROMOMETHANE | 52 U | 46 U | 44 U | 50 U | 47 U | 55 U |
| CARBON DISULFIDE | 26 U | 23 U | 22 U | 25 U | 23 U | 27 U |
| CARBON TETRACHLORIDE | 0.52 U | 0.46 U | 0.44 U | 0.5 U | 0.47 U | 0.55 U |
| CHLOROBENZENE | 1.3 U | 1.2 U | 1.1 U | 1.3 U | 1.2 U | 1.4 U |
| CHLOROFORM | 8.9 U | 8 U | 7.6 U | 8.7 U | 8.1 U | 9.5 U |
| CIS-1,2-DICHLOROETHENE | 7.5 U | 6.7 U | 6.4 U | 7.3 U | 6.8 U | 8 U |
| ETHYLBENZENE | 2.6 U | 2.3 U | 2.2 U | 2.5 U | 2.3 U | 2.7 U |
| M+P-XYLENES | 4 U | 3.6 U | 3.4 U | 3.9 U | 3.6 U | 4.2 U |
| METHYLENE CHLORIDE | 10 U | 9.1 U | 8.6 U | 9.8 U | 9.1 U | 11 U |
| O-XYLENE/STYRENE | 13 U | 12 U | 11 U | 13 U | 12 U | 14 U |
| TETRACHLOROETHENE | 0.35 U | 0.32 U | 0.3 U | 0.34 U | 0.32 U | 0.37 U |
| TOLUENE | 2.6 U | 2.3 U | 2.2 U | 2.5 U | 2.3 U | 2.7 U |
| TRANS-1,2-DICHLOROETHENE | 5.9 U | 9.3 | 5 U | 5.7 U | 5.3 U | 6.2 U |
| TRICHLOROETHENE | 0.78 U | 0.7 U | 0.66 U | 0.75 U | 0.7 U | 1.2 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05501 | 003SB05502 | 003SB05503 | 003SB05504 | 003SB05506 | 003SB05507 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 08/24/97 | 08/24/97 | 08/24/97 | 08/24/97 | 08/24/97 | 08/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC55 | AOC55 | AOC55 | AOC55 | AOC55 | AOC55 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 42 U | 40 U | 46 U | 43 U | 50 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05508 | 003SBDP131 | 003SB05509 | 003SB05510 | 003SB05511 | 003SB05512 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' |
| SAMPLE DATE: | 08/24/97 | 08/24/97 | 08/24/97 | 08/24/97 | 08/25/97 | 08/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC55 | AOC55 | AOC55 | AOC55 | AOC55 | AOC55 |
| FIELD DUPLICATE OF: | | 003SB05508 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.1 U | 5.3 U | 4.8 U | 4.9 U | 4.4 U | 3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.38 U | 0.45 U | 0.46 U | 0.45 U | 0.46 U | 0.37 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 12 U | 12 U | 12 U | 12 U | 10 U |
| 1,1-DICHLOROETHENE | 8 U | 9.5 U | 9.7 U | 9.5 U | 9.7 U | 7.8 U |
| 1,2-DICHLOROETHANE | 27 U | 32 U | 32 U | 32 U | 32 U | 26 U |
| 2-BUTANONE | 15 U | 18 U | 19 U | 18 U | 19 U | 15 U |
| 2-HEXANONE | 15 U | 18 U | 19 U | 18 U | 19 U | 15 U |
| 4-METHYL-2-PENTANONE | 15 U | 17 U | 18 U | 17 U | 18 U | 14 U |
| ACETONE | 40 U | 47 U | 48 U | 48 U | 48 U | 39 U |
| BENZENE | 2 U | 2.3 U | 2.4 U | 2.3 U | 2.4 U | 1.9 U |
| BROMOFORM | 0.62 U | 0.74 U | 0.75 U | 0.74 U | 0.75 U | 0.61 U |
| BROMOMETHANE | 49 U | 58 U | 59 U | 58 U | 59 U | 48 U |
| CARBON DISULFIDE | 24 U | 29 U | 30 U | 29 U | 30 U | 24 U |
| CARBON TETRACHLORIDE | 0.49 U | 0.85 U | 0.77 U | 0.79 U | 0.7 U | 0.48 U |
| CHLOROBENZENE | 1.2 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.2 U |
| CHLOROFORM | 8.4 U | 15 U | 13 U | 14 U | 12 U | 8.3 U |
| CIS-1,2-DICHLOROETHENE | 7.1 U | 8.4 U | 8.6 U | 8.4 U | 8.6 U | 7 U |
| ETHYLBENZENE | 2.4 U | 2.9 U | 3 U | 2.9 U | 3 U | 2.4 U |
| M+P-XYLENES | 3.8 U | 4.5 U | 4.6 U | 4.5 U | 4.6 U | 3.7 U |
| METHYLENE CHLORIDE | 9.5 U | 11 U | 12 U | 11 U | 12 U | 9.4 U |
| O-XYLENE/STYRENE | 12 U | 15 U | 15 U | 15 U | 15 U | 12 U |
| TETRACHLOROETHENE | 0.33 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.33 U |
| TOLUENE | 2.4 U | 2.9 U | 3 U | 2.9 U | 3 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 5.5 U | 6.6 U | 6.7 U | 6.6 U | 6.7 U | 5.4 U |
| TRICHLOROETHENE | 0.73 U | 0.9 | 1.6 | 0.71 J | 1 | 4.2 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05508 | 003SBDP131 | 003SB05509 | 003SB05510 | 003SB05511 | 003SB05512 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' |
| SAMPLE DATE: | 08/24/97 | 08/24/97 | 08/24/97 | 08/24/97 | 08/25/97 | 08/25/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC55 | AOC55 | AOC55 | AOC55 | AOC55 | AOC55 |
| FIELD DUPLICATE OF: | | 003SB05508 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 44 U | 53 U | 54 U | 53 U | 54 U | 44 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05513 | 003SB05514 | 003SBDP132 | 003SB05801 | 003SB05802 | 003SB05803 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 48.0 - 52.0' | 52.0 - 56.0' | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 08/25/97 | 08/25/97 | 08/25/97 | 08/19/97 | 08/19/97 | 08/19/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC55 | AOC55 | AOC55 | AOC58 | AOC58 | AOC58 |
| FIELD DUPLICATE OF: | | | 003SB05514 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3 U | 3 U | 3.3 U | 6.2 U | 2.7 U | 2.8 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.36 U | 0.36 U | 0.4 U | 0.73 U | 0.33 U | 0.34 U |
| 1,1,2-TRICHLOROETHANE | 9.8 U | 9.9 U | 11 U | 19 J | 8.9 U | 9.1 U |
| 1,1-DICHLOROETHENE | 7.7 U | 7.7 U | 8.4 U | 15 U | 7 U | 7.1 U |
| 1,2-DICHLOROETHANE | 26 U | 26 U | 28 U | 52 U | 23 U | 24 U |
| 2-BUTANONE | 15 U | 15 U | 16 U | 30 U | 13 U | 14 U |
| 2-HEXANONE | 15 U | 15 U | 16 U | 30 U | 13 U | 14 U |
| 4-METHYL-2-PENTANONE | 14 U | 14 U | 15 U | 28 U | 13 U | 13 U |
| ACETONE | 38 U | 39 U | 42 U | 77 U | 35 U | 36 U |
| BENZENE | 1.9 U | 1.9 U | 2.1 U | 3.8 U | 1.7 U | 1.8 U |
| BROMOFORM | 0.6 U | 0.6 U | 0.66 U | 1.2 U | 0.54 U | 0.55 U |
| BROMOMETHANE | 47 U | 47 U | 52 U | 95 U | 43 U | 44 U |
| CARBON DISULFIDE | 23 U | 24 U | 26 U | 47 U | 21 U | 22 U |
| CARBON TETRACHLORIDE | 0.47 U | 0.47 U | 0.52 U | 1 U | 0.43 U | 0.44 U |
| CHLOROBENZENE | 1.2 U | 1.2 U | 1.3 U | 2.4 U | 1.1 U | 1.1 U |
| CHLOROFORM | 8.1 U | 8.2 U | 8.9 U | 17 U | 7.4 U | 7.5 U |
| CIS-1,2-DICHLOROETHENE | 6.8 U | 6.9 U | 7.5 U | 14 U | 6.2 U | 6.3 U |
| ETHYLBENZENE | 2.3 U | 2.4 U | 2.6 U | 4.7 U | 2.1 U | 2.2 U |
| M+P-XYLENES | 3.6 U | 3.6 U | 4 U | 7.3 U | 3.3 U | 3.4 U |
| METHYLENE CHLORIDE | 9.1 U | 9.2 U | 10 U | 19 U | 8.3 U | 8.5 U |
| O-XYLENE/STYRENE | 12 U | 12 U | 13 U | 24 U | 11 U | 11 U |
| TETRACHLOROETHENE | 0.32 U | 0.32 U | 0.35 U | 0.63 J | 0.29 U | 0.3 U |
| TOLUENE | 2.3 U | 2.4 U | 2.6 U | 4.7 U | 2.1 U | 2.2 U |
| TRANS-1,2-DICHLOROETHENE | 5.3 U | 5.4 U | 5.9 U | 8.1 J | 4.9 U | 4.9 U |
| TRICHLOROETHENE | 1 | 2.1 | 2.3 | 26 J | 0.54 J | 1.5 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05513 | 003SB05514 | 003SBDP132 | 003SB05801 | 003SB05802 | 003SB05803 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 48.0 - 52.0' | 52.0 - 56.0' | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 08/25/97 | 08/25/97 | 08/25/97 | 08/19/97 | 08/19/97 | 08/19/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC55 | AOC55 | AOC55 | AOC58 | AOC58 | AOC58 |
| FIELD DUPLICATE OF: | | | 003SB05514 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 43 U | 43 U | 47 U | 86 U | 39 U | 40 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05804 | 003SB05806 | 003SB05807 | 003SB05808 | 003SB05809 | 003SB05811 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 08/19/97 | 08/19/97 | 08/19/97 | 08/19/97 | 08/20/97 | 08/20/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC58 | AOC58 | AOC58 | AOC58 | AOC58 | AOC58 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.5 U | 3.5 U | 3.2 U | 3.5 U | 3.3 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.36 U | 0.39 U | 0.42 U | 0.4 U | 0.35 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 9.7 U | 11 U | 11 U | 11 U | 9.4 U |
| 1,1-DICHLOROETHENE | 8.4 U | 7.6 U | 8.3 U | 8.9 U | 8.4 U | 7.4 U |
| 1,2-DICHLOROETHANE | 28 U | 25 U | 28 U | 30 U | 28 U | 25 U |
| 2-BUTANONE | 16 U | 15 U | 16 U | 17 U | 16 U | 14 U |
| 2-HEXANONE | 16 U | 15 U | 16 U | 17 U | 16 U | 14 U |
| 4-METHYL-2-PENTANONE | 15 U | 14 U | 15 U | 16 U | 15 U | 14 U |
| ACETONE | 42 U | 38 U | 41 U | 44 U | 42 U | 37 U |
| BENZENE | 2.1 U | 1.9 U | 2 U | 2.2 U | 2.1 U | 1.8 U |
| BROMOFORM | 0.65 U | 0.59 U | 0.64 U | 0.69 U | 0.66 U | 0.57 U |
| BROMOMETHANE | 51 U | 46 U | 51 U | 54 U | 52 U | 45 U |
| CARBON DISULFIDE | 26 U | 23 U | 25 U | 27 U | 26 U | 23 U |
| CARBON TETRACHLORIDE | 0.56 U | 0.57 U | 0.51 U | 0.54 U | 0.52 U | 0.45 U |
| CHLOROBENZENE | 1.3 U | 1.2 U | 1.3 U | 1.4 U | 1.3 U | 1.1 U |
| CHLOROFORM | 9.6 U | 9.7 U | 8.7 U | 9.4 U | 8.9 U | 7.8 U |
| CIS-1,2-DICHLOROETHENE | 7.4 U | 6.8 U | 7.4 U | 7.9 U | 7.5 U | 6.6 U |
| ETHYLBENZENE | 2.6 U | 2.3 U | 2.5 U | 2.7 U | 2.6 U | 2.3 U |
| M+P-XYLENES | 4 U | 3.6 U | 3.9 U | 4.2 U | 4 U | 3.5 U |
| METHYLENE CHLORIDE | 10 U | 9.1 U | 9.9 U | 11 U | 10 U | 8.8 U |
| O-XYLENE/STYRENE | 13 U | 12 U | 13 U | 14 U | 13 U | 11 U |
| TETRACHLOROETHENE | 0.35 U | 0.32 U | 0.35 U | 0.37 U | 0.35 U | 0.31 U |
| TOLUENE | 2.6 U | 2.3 U | 2.5 U | 2.7 U | 2.6 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 5.8 U | 5.3 U | 5.8 U | 6.2 U | 5.9 U | 5.1 U |
| TRICHLOROETHENE | 0.52 J | 1.5 | 7.7 | 0.75 J | 3.1 | 3.6 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05804 | 003SB05806 | 003SB05807 | 003SB05808 | 003SB05809 | 003SB05811 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 08/19/97 | 08/19/97 | 08/19/97 | 08/19/97 | 08/20/97 | 08/20/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC58 | AOC58 | AOC58 | AOC58 | AOC58 | AOC58 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 42 U | 46 U | 49 U | 47 U | 41 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05812 | 003SBDP126 | 003SB05813 | 003SB05814 | 003SB06301 | 003SB06302 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 44.0 - 48.0' | 44.0 - 48.0' | 48.0 - 52.0' | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 08/20/97 | 08/20/97 | 08/20/97 | 08/20/97 | 08/05/97 | 08/05/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC58 | AOC58 | AOC58 | AOC58 | AOC63 | AOC63 |
| FIELD DUPLICATE OF: | | 003SB05812 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 3.5 U | 3.1 U | 3.2 U | 5.4 U | 2.7 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.39 U | 0.43 U | 0.38 U | 0.39 U | 0.37 U | 0.33 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 12 U | 10 U | 11 U | 27 U | 9 U |
| 1,1-DICHLOROETHENE | 8.3 U | 9.1 U | 8 U | 8.3 U | 7.9 U | 7 U |
| 1,2-DICHLOROETHANE | 28 U | 30 U | 27 U | 28 U | 26 U | 23 U |
| 2-BUTANONE | 16 U | 17 U | 15 U | 16 U | 12 J | 13 U |
| 2-HEXANONE | 16 U | 17 U | 15 U | 16 U | 15 U | 13 U |
| 4-METHYL-2-PENTANONE | 15 U | 17 U | 15 U | 15 U | 15 U | 13 U |
| ACETONE | 41 U | 45 U | 40 U | 42 U | 40 U | 35 U |
| BENZENE | 2 U | 2.2 U | 2 U | 2.1 U | 2 U | 1.7 U |
| BROMOFORM | 0.64 U | 0.7 U | 0.62 U | 0.65 U | 0.62 U | 0.54 U |
| BROMOMETHANE | 51 U | 55 U | 49 U | 51 U | 130 U | 43 U |
| CARBON DISULFIDE | 25 U | 28 U | 25 U | 25 U | 18 J | 21 U |
| CARBON TETRACHLORIDE | 0.51 U | 0.55 U | 0.49 U | 0.51 U | 0.87 U | 0.43 U |
| CHLOROBENZENE | 1.3 U | 1.4 U | 1.2 U | 1.3 U | 1.2 U | 1.1 U |
| CHLOROFORM | 8.7 U | 9.6 U | 8.5 U | 8.8 U | 15 U | 7.4 U |
| CIS-1,2-DICHLOROETHENE | 7.4 U | 8.1 U | 7.1 U | 7.4 U | 7.1 U | 6.2 U |
| ETHYLBENZENE | 2.5 U | 2.8 U | 2.5 U | 2.5 U | 2.4 U | 2.1 U |
| M+P-XYLENES | 3.9 U | 4.3 U | 3.8 U | 3.9 U | 3.7 U | 3.3 U |
| METHYLENE CHLORIDE | 9.9 U | 11 U | 9.6 U | 10 U | 9.5 U | 8.4 U |
| O-XYLENE/STYRENE | 13 U | 14 U | 12 U | 13 U | 12 U | 11 U |
| TETRACHLOROETHENE | 0.34 U | 0.38 U | 0.33 U | 0.35 U | 0.87 | 0.29 U |
| TOLUENE | 2.5 U | 2.8 U | 2.5 U | 2.5 U | 2.4 U | 2.1 U |
| TRANS-1,2-DICHLOROETHENE | 5.7 U | 6.3 U | 5.6 U | 5.8 U | 11 U | 4.9 U |
| TRICHLOROETHENE | 6.9 | 5.7 | 8.1 | 0.76 U | 0.43 J | 0.64 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB05812 | 003SBDP126 | 003SB05813 | 003SB05814 | 003SB06301 | 003SB06302 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 44.0 - 48.0' | 44.0 - 48.0' | 48.0 - 52.0' | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 08/20/97 | 08/20/97 | 08/20/97 | 08/20/97 | 08/05/97 | 08/05/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC58 | AOC58 | AOC58 | AOC58 | AOC63 | AOC63 |
| FIELD DUPLICATE OF: | | 003SB05812 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 46 U | 50 U | 45 U | 46 U | 44 U | 39 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB06303 | 003SB06306 | 003SB06307 | 003SB06308 | 003SBDP118 | 003SB06309 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 28.0 - 32.0' | 32.0 - 36.0' |
| SAMPLE DATE: | 08/05/97 | 08/05/97 | 08/05/97 | 08/05/97 | 08/05/97 | 08/05/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC63 | AOC63 | AOC63 | AOC63 | AOC63 | AOC63 |
| FIELD DUPLICATE OF: | | | | | 003SB06308 | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.9 U | 2.9 U | 3 U | 3.4 U | 3.2 U | 3.6 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.35 U | 0.35 U | 0.37 U | 0.41 U | 0.27 U | 0.44 U |
| 1,1,2-TRICHLOROETHANE | 9.4 U | 9.4 U | 9.9 U | 11 U | 7.2 U | 12 U |
| 1,1-DICHLOROETHENE | 7.4 U | 7.3 U | 7.8 U | 8.7 U | 5.6 U | 9.3 U |
| 1,2-DICHLOROETHANE | 25 U | 24 U | 26 U | 29 U | 19 U | 31 U |
| 2-BUTANONE | 14 U | 8.9 J | 15 U | 17 U | 11 U | 18 U |
| 2-HEXANONE | 14 U | 7.8 J | 15 U | 8.9 J | 11 U | 18 U |
| 4-METHYL-2-PENTANONE | 13 U | 13 U | 14 U | 16 U | 10 U | 17 U |
| ACETONE | 37 U | 37 U | 39 U | 43 U | 28 U | 47 U |
| BENZENE | 1.8 U | 1.8 U | 1.9 U | 2.1 U | 1.4 U | 2.3 U |
| BROMOFORM | 0.57 U | 0.57 U | 0.6 U | 0.68 U | 0.44 U | 0.73 U |
| BROMOMETHANE | 45 U | 170 U | 150 U | 120 U | 100 U | 140 U |
| CARBON DISULFIDE | 22 U | 14 J | 24 U | 27 U | 17 U | 29 U |
| CARBON TETRACHLORIDE | 0.45 U | 0.45 U | 0.47 U | 0.53 U | 0.51 U | 0.57 U |
| CHLOROBENZENE | 1.1 U | 1.1 U | 1.2 U | 1.4 U | 0.87 U | 1.5 U |
| CHLOROFORM | 7.8 U | 7.7 U | 8.2 U | 9.2 U | 8.7 U | 9.9 U |
| CIS-1,2-DICHLOROETHENE | 6.5 U | 6.5 U | 6.9 U | 7.7 U | 5 U | 8.3 U |
| ETHYLBENZENE | 2.2 U | 2.2 U | 2.4 U | 2.7 U | 1.7 U | 2.9 U |
| M+P-XYLENES | 3.5 U | 3.5 U | 3.7 U | 4.1 U | 2.7 U | 4.4 U |
| METHYLENE CHLORIDE | 8.8 U | 8.8 U | 9.3 U | 10 U | 6.7 U | 11 U |
| O-XYLENE/STYRENE | 11 U | 11 U | 12 U | 14 U | 8.7 U | 15 U |
| TETRACHLOROETHENE | 0.31 U | 0.31 U | 0.32 U | 0.36 U | 0.23 U | 0.39 U |
| TOLUENE | 2.2 U | 2.2 U | 2.4 U | 2.7 U | 1.7 U | 2.9 U |
| TRANS-1,2-DICHLOROETHENE | 6.1 U | 5.1 U | 5.4 U | 6 U | 3.9 U | 6.5 U |
| TRICHLOROETHENE | 0.67 U | 0.67 U | 0.71 U | 0.8 U | 0.52 U | 0.86 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB06303 | 003SB06306 | 003SB06307 | 003SB06308 | 003SBDP118 | 003SB06309 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 28.0 - 32.0' | 32.0 - 36.0' |
| SAMPLE DATE: | 08/05/97 | 08/05/97 | 08/05/97 | 08/05/97 | 08/05/97 | 08/05/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC63 | AOC63 | AOC63 | AOC63 | AOC63 | AOC63 |
| FIELD DUPLICATE OF: | | | | | 003SB06308 | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 41 U | 41 U | 43 U | 48 U | 31 U | 52 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB06310 | 003SB06311 | 003SB06312 | 003SB06801 | 003SB06802 | 003SB06803 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 08/05/97 | 08/05/97 | 08/05/97 | 09/21/97 | 09/21/97 | 09/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC63 | AOC63 | AOC63 | AOC68 | AOC68 | AOC68 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 3.2 U | 2.8 U | 3 U | 2.9 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.39 U | 0.39 U | 0.34 U | 0.37 U | 0.35 U | 0.35 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 11 U | 9.3 U | 9.9 U | 9.5 U | 9.6 U |
| 1,1-DICHLOROETHENE | 8.2 U | 8.3 U | 7.3 U | 7.8 U | 7.5 U | 7.5 U |
| 1,2-DICHLOROETHANE | 27 U | 28 U | 24 U | 26 U | 25 U | 25 U |
| 2-BUTANONE | 10 J | 16 U | 14 U | 15 U | 14 U | 14 U |
| 2-HEXANONE | 11 J | 16 U | 14 U | 15 U | 14 U | 14 U |
| 4-METHYL-2-PENTANONE | 15 U | 15 U | 13 U | 14 U | 14 U | 14 U |
| ACETONE | 41 U | 41 U | 36 U | 39 U | 37 U | 38 U |
| BENZENE | 2 U | 2 U | 1.8 U | 1.9 U | 1.8 U | 1.9 U |
| BROMOFORM | 0.64 U | 0.64 U | 0.57 U | 0.6 U | 0.58 U | 0.58 U |
| BROMOMETHANE | 170 U | 170 U | 72 U | 48 U | 46 U | 46 U |
| CARBON DISULFIDE | 16 J | 25 U | 22 U | 24 U | 23 U | 23 U |
| CARBON TETRACHLORIDE | 0.5 U | 0.51 U | 0.45 U | 0.48 U | 0.46 U | 0.46 U |
| CHLOROBENZENE | 1.3 U | 1.3 U | 1.1 U | 1.2 U | 1.2 U | 1.2 U |
| CHLOROFORM | 8.7 U | 8.7 U | 7.7 U | 8.2 U | 7.9 U | 7.9 U |
| CIS-1,2-DICHLOROETHENE | 7.3 U | 7.4 U | 6.5 U | 6.9 U | 6.6 U | 6.7 U |
| ETHYLBENZENE | 2.5 U | 2.5 U | 2.2 U | 2.4 U | 2.3 U | 2.3 U |
| M+P-XYLENES | 3.9 U | 3.9 U | 3.4 U | 3.7 U | 3.5 U | 3.5 U |
| METHYLENE CHLORIDE | 9.9 U | 9.9 U | 8.7 U | 9.3 U | 8.9 U | 9 U |
| O-XYLENE/STYRENE | 13 U | 13 U | 11 U | 12 U | 12 U | 12 U |
| TETRACHLOROETHENE | 0.34 U | 0.34 U | 0.3 U | 0.32 U | 0.31 U | 0.31 U |
| TOLUENE | 2.5 U | 2.5 U | 2.2 U | 2.4 U | 2.3 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 5.7 U | 5.7 U | 5.1 U | 5.4 U | 5.2 U | 5.2 U |
| TRICHLOROETHENE | 0.76 U | 0.76 U | 0.67 U | 1.7 | 0.68 U | 0.61 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB06310 | 003SB06311 | 003SB06312 | 003SB06801 | 003SB06802 | 003SB06803 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 08/05/97 | 08/05/97 | 08/05/97 | 09/21/97 | 09/21/97 | 09/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC63 | AOC63 | AOC63 | AOC68 | AOC68 | AOC68 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 46 U | 46 U | 40 U | 43 U | 41 U | 42 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB06804 | 003SB06805 | 003SB06806 | 003SBDP146 | 003SB06807 | 003SB06808 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC68 | AOC68 | AOC68 | AOC68 | AOC68 | AOC68 |
| FIELD DUPLICATE OF: | | | | 003SB06806 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3 U | 3 U | 3.3 U | 3.7 U | 3.6 U | 3.3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.37 U | 0.36 U | 0.4 U | 0.45 U | 0.44 U | 0.4 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 9.8 U | 15 | 12 J | 12 U | 11 U |
| 1,1-DICHLOROETHENE | 7.8 U | 7.6 U | 8.4 U | 9.5 U | 9.2 U | 8.5 U |
| 1,2-DICHLOROETHANE | 26 U | 25 U | 28 U | 32 U | 31 U | 28 U |
| 2-BUTANONE | 15 U | 15 U | 16 U | 18 U | 18 U | 16 U |
| 2-HEXANONE | 15 U | 15 U | 16 U | 18 U | 18 U | 16 U |
| 4-METHYL-2-PENTANONE | 14 U | 14 U | 15 U | 17 U | 17 U | 16 U |
| ACETONE | 39 U | 38 U | 42 U | 47 U | 46 U | 42 U |
| BENZENE | 1.9 U | 1.9 U | 2.1 U | 2.3 U | 2.3 U | 2.1 U |
| BROMOFORM | 0.61 U | 0.59 U | 0.66 U | 0.74 U | 0.72 U | 0.66 U |
| BROMOMETHANE | 48 U | 47 U | 52 U | 58 U | 57 U | 52 U |
| CARBON DISULFIDE | 24 U | 23 U | 26 U | 29 U | 28 U | 26 U |
| CARBON TETRACHLORIDE | 0.48 U | 0.47 U | 0.52 U | 0.58 U | 0.57 U | 0.52 U |
| CHLOROBENZENE | 1.2 U | 1.2 U | 1.3 U | 1.5 U | 1.4 U | 1.3 U |
| CHLOROFORM | 8.3 U | 8.1 U | 8.9 U | 10 U | 9.8 U | 9 U |
| CIS-1,2-DICHLOROETHENE | 7 U | 6.8 U | 7.5 U | 8.4 U | 13 | 21 |
| ETHYLBENZENE | 2.4 U | 2.3 U | 2.6 U | 2.9 U | 2.8 U | 2.6 U |
| M+P-XYLENES | 3.7 U | 3.6 U | 4 U | 4.5 U | 4.4 U | 4 U |
| METHYLENE CHLORIDE | 9.3 U | 9.1 U | 10 U | 11 U | 11 U | 9.1 J |
| O-XYLENE/STYRENE | 12 U | 12 U | 13 U | 15 U | 14 U | 13 U |
| TETRACHLOROETHENE | 0.33 U | 0.32 U | 0.48 | 0.37 J | 0.39 U | 0.35 U |
| TOLUENE | 2.4 U | 2.3 U | 2.6 U | 2.9 U | 2.8 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 5.4 U | 5.3 U | 5.9 U | 6.6 U | 10 | 15 |
| TRICHLOROETHENE | 0.61 J | 0.46 J | 4.5 | 1.7 | 4.8 | 3.4 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB06804 | 003SB06805 | 003SB06806 | 003SBDP146 | 003SB06807 | 003SB06808 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC68 | AOC68 | AOC68 | AOC68 | AOC68 | AOC68 |
| FIELD DUPLICATE OF: | | | | 003SB06806 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 43 U | 42 U | 47 U | 53 U | 51 U | 47 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB06809 | 003SB06810 | 003SB06811 | 003SBDP147 | 003SB06812 | 003SB07001 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 40.0 - 44.0' | 44.0 - 48.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 | 09/03/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC68 | AOC68 | AOC68 | AOC68 | AOC68 | AOC70 |
| FIELD DUPLICATE OF: | | | | 003SB06811 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 3.3 U | 3.6 U | 3.8 U | 3.5 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.39 U | 0.4 U | 0.43 U | 0.47 U | 0.42 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 13 | 11 U | 12 U | 13 U | 11 U | 10 U |
| 1,1-DICHLOROETHENE | 8.2 U | 8.5 U | 9.1 U | 9.9 U | 8.9 U | 8.2 U |
| 1,2-DICHLOROETHANE | 27 U | 28 U | 30 U | 33 U | 30 U | 27 U |
| 2-BUTANONE | 16 U | 16 U | 18 U | 19 U | 17 U | 39 U |
| 2-HEXANONE | 16 U | 16 U | 18 U | 19 U | 17 U | 16 U |
| 4-METHYL-2-PENTANONE | 15 U | 16 U | 17 U | 18 U | 16 U | 15 U |
| ACETONE | 41 U | 42 U | 46 U | 49 U | 45 U | 680 U |
| BENZENE | 2 U | 2.1 U | 2.3 U | 2.4 U | 2.2 U | 2 U |
| BROMOFORM | 0.63 U | 0.66 U | 0.71 U | 0.77 U | 0.69 U | 0.64 U |
| BROMOMETHANE | 50 U | 52 U | 56 U | 60 U | 54 U | 50 U |
| CARBON DISULFIDE | 25 U | 26 U | 28 U | 30 U | 27 U | 25 U |
| CARBON TETRACHLORIDE | 0.5 U | 0.52 U | 0.56 U | 0.6 U | 0.54 U | 0.5 U |
| CHLOROBENZENE | 1.5 | 1.3 U | 1.4 U | 1.5 U | 1.4 U | 1.3 U |
| CHLOROFORM | 8.6 U | 9 U | 9.7 U | 10 U | 9.4 U | 8.7 U |
| CIS-1,2-DICHLOROETHENE | 7.3 U | 14 | 15 | 8.8 U | 10 | 7.3 U |
| ETHYLBENZENE | 2.6 | 2.6 U | 2.8 U | 3 U | 2.7 U | 2.5 U |
| M+P-XYLENES | 3.9 U | 4 U | 4.3 U | 4.7 U | 4.2 U | 3.9 U |
| METHYLENE CHLORIDE | 9.7 U | 10 U | 11 U | 12 U | 11 U | 9.8 U |
| O-XYLENE/STYRENE | 13 U | 13 U | 14 U | 15 U | 14 U | 13 U |
| TETRACHLOROETHENE | 0.43 | 0.35 U | 0.38 U | 0.41 U | 0.37 U | 0.34 U |
| TOLUENE | 2.5 U | 2.6 U | 2.8 U | 3 U | 2.7 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 5.7 U | 5 J | 6.4 U | 6.8 U | 7.4 | 5.7 U |
| TRICHLOROETHENE | 1.2 | 1.9 | 3.6 | 1.1 | 1.1 | 2.2 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB06809 | 003SB06810 | 003SB06811 | 003SBDP147 | 003SB06812 | 003SB07001 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 40.0 - 44.0' | 44.0 - 48.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 | 09/21/97 | 09/03/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC68 | AOC68 | AOC68 | AOC68 | AOC68 | AOC70 |
| FIELD DUPLICATE OF: | | | | 003SB06811 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 45 U | 47 U | 51 U | 55 U | 50 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07002 | 003SB07003 | 003SB07004 | 003SB07005 | 003SB07006 | 003SB07007 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 09/03/97 | 09/03/97 | 09/03/97 | 09/04/97 | 09/04/97 | 09/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC70 | AOC70 | AOC70 | AOC70 | AOC70 | AOC70 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3 U | 2.8 U | 2.9 U | 3.3 U | 3.6 U | 3.6 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.37 U | 0.34 U | 0.35 U | 0.4 U | 0.44 U | 0.43 U |
| 1,1,2-TRICHLOROETHANE | 9.9 U | 9.3 U | 9.5 U | 11 U | 12 U | 12 U |
| 1,1-DICHLOROETHENE | 7.8 U | 7.3 U | 7.5 U | 8.4 U | 9.3 U | 9 U |
| 1,2-DICHLOROETHANE | 26 U | 24 U | 25 U | 28 U | 31 U | 30 U |
| 2-BUTANONE | 26 U | 16 U | 14 U | 21 U | 18 U | 150 U |
| 2-HEXANONE | 15 U | 14 U | 14 U | 16 U | 18 U | 8.8 J |
| 4-METHYL-2-PENTANONE | 14 U | 13 U | 14 U | 15 U | 17 U | 17 U |
| ACETONE | 39 U | 36 U | 37 U | 42 U | 46 U | 45 U |
| BENZENE | 1.9 U | 1.8 U | 1.8 U | 2.1 U | 2.3 U | 2.2 U |
| BROMOFORM | 0.6 U | 0.57 U | 0.58 U | 0.65 U | 0.72 U | 0.7 U |
| BROMOMETHANE | 47 U | 45 U | 46 U | 51 U | 57 U | 55 U |
| CARBON DISULFIDE | 41 U | 24 U | 23 U | 33 U | 28 U | 240 U |
| CARBON TETRACHLORIDE | 0.47 U | 0.45 U | 0.46 U | 0.51 U | 0.57 U | 0.58 U |
| CHLOROBENZENE | 1.2 U | 1.1 U | 1.2 U | 1.3 U | 1.4 U | 1.4 U |
| CHLOROFORM | 8.2 U | 7.7 U | 7.9 U | 8.8 U | 9.8 U | 9.9 U |
| CIS-1,2-DICHLOROETHENE | 6.9 U | 6.5 U | 6.6 U | 7.4 U | 8.2 U | 18 |
| ETHYLBENZENE | 2.4 U | 2.2 U | 2.3 U | 2.6 U | 2.8 U | 2.8 U |
| M+P-XYLENES | 3.7 U | 3.4 U | 3.5 U | 4 U | 4.4 U | 4.3 U |
| METHYLENE CHLORIDE | 9.3 U | 8.7 U | 8.9 U | 10 U | 11 U | 11 U |
| O-XYLENE/STYRENE | 12 U | 11 U | 12 U | 13 U | 14 U | 14 U |
| TETRACHLOROETHENE | 0.32 U | 0.3 U | 0.31 U | 0.35 U | 0.39 U | 0.38 U |
| TOLUENE | 2.4 U | 2.2 U | 2.3 U | 2.6 U | 2.8 U | 2.8 U |
| TRANS-1,2-DICHLOROETHENE | 5.4 U | 5.1 U | 5.2 U | 19 U | 6.4 U | 25 U |
| TRICHLOROETHENE | 0.71 U | 0.67 U | 0.68 U | 0.68 J | 0.65 J | 8.1 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07002 | 003SB07003 | 003SB07004 | 003SB07005 | 003SB07006 | 003SB07007 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 09/03/97 | 09/03/97 | 09/03/97 | 09/04/97 | 09/04/97 | 09/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC70 | AOC70 | AOC70 | AOC70 | AOC70 | AOC70 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 43 U | 40 U | 41 U | 47 U | 51 U | 50 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP136 | 003SB07008 | 003SB07009 | 003SB07010 | 003SB07011 | 003SB07012 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' |
| SAMPLE DATE: | 09/04/97 | 09/04/97 | 09/04/97 | 09/04/97 | 09/04/97 | 09/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC70 | AOC70 | AOC70 | AOC70 | AOC70 | AOC70 |
| FIELD DUPLICATE OF: | 003SB07007 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.7 U | 2.9 U | 3.5 U | 3.3 U | 3.4 U | 3.4 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.45 U | 0.35 U | 0.43 U | 0.41 U | 0.41 U | 0.42 U |
| 1,1,2-TRICHLOROETHANE | 12 U | 9.5 U | 12 U | 11 U | 11 U | 11 U |
| 1,1-DICHLOROETHENE | 9.5 U | 7.5 U | 9 U | 8.6 U | 8.6 U | 8.9 U |
| 1,2-DICHLOROETHANE | 32 U | 25 U | 30 U | 29 U | 29 U | 30 U |
| 2-BUTANONE | 60 U | 14 U | 17 U | 95 U | 73 U | 17 U |
| 2-HEXANONE | 18 U | 14 U | 17 U | 16 U | 17 U | 17 U |
| 4-METHYL-2-PENTANONE | 17 U | 14 U | 8.3 J | 16 U | 16 U | 16 U |
| ACETONE | 47 U | 37 U | 45 U | 43 U | 43 U | 44 U |
| BENZENE | 2.3 U | 1.8 U | 2.2 U | 2.1 U | 2.1 U | 2.2 U |
| BROMOFORM | 0.74 U | 0.58 U | 0.7 U | 0.67 U | 0.67 U | 0.69 U |
| BROMOMETHANE | 58 U | 46 U | 55 U | 53 U | 53 U | 54 U |
| CARBON DISULFIDE | 93 U | 23 U | 28 U | 150 U | 110 U | 27 U |
| CARBON TETRACHLORIDE | 0.58 U | 0.46 U | 0.55 U | 0.53 U | 0.53 U | 0.54 U |
| CHLOROBENZENE | 1.5 U | 1.2 U | 1.4 U | 1.3 U | 1.3 U | 1.4 U |
| CHLOROFORM | 10 U | 7.9 U | 9.5 U | 9.1 U | 9.1 U | 9.4 U |
| CIS-1,2-DICHLOROETHENE | 8 J | 26 | 8.5 | 8.6 | 7 J | 7.9 U |
| ETHYLBENZENE | 2.9 U | 2.3 U | 2.8 U | 2.6 U | 2.6 U | 2.7 U |
| M+P-XYLENES | 4.5 U | 3.5 U | 4.3 U | 4.1 U | 4.1 U | 4.2 U |
| METHYLENE CHLORIDE | 11 U | 8.9 U | 11 U | 10 U | 10 U | 11 U |
| O-XYLENE/STYRENE | 15 U | 12 U | 14 U | 13 U | 13 U | 14 U |
| TETRACHLOROETHENE | 0.4 U | 0.31 U | 0.38 U | 0.36 U | 0.36 U | 0.37 U |
| TOLUENE | 2.9 U | 2.3 U | 1.4 J | 2.6 U | 2.6 U | 2.7 U |
| TRANS-1,2-DICHLOROETHENE | 6.6 U | 15 U | 6.3 U | 27 U | 22 U | 24 U |
| TRICHLOROETHENE | 5.5 | 7.9 | 45 J | 16 J | 17 J | 16 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP136 | 003SB07008 | 003SB07009 | 003SB07010 | 003SB07011 | 003SB07012 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' |
| SAMPLE DATE: | 09/04/97 | 09/04/97 | 09/04/97 | 09/04/97 | 09/04/97 | 09/04/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC70 | AOC70 | AOC70 | AOC70 | AOC70 | AOC70 |
| FIELD DUPLICATE OF: | 003SB07007 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 53 U | 41 U | 50 U | 48 U | 48 U | 49 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07013 | 003SB07014 | 003SBDP137 | 003SB07015 | 003SB07101 | 003SB07102 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 48.0 - 52.0' | 52.0 - 56.0' | 52.0 - 56.0' | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 09/04/97 | 09/04/97 | 09/04/97 | 09/04/97 | 09/18/97 | 09/18/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC70 | AOC70 | AOC70 | AOC70 | AOC71 | AOC71 |
| FIELD DUPLICATE OF: | | | 003SB07014 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.4 U | 3.4 U | 3.3 U | 3.2 U | 3.5 U | 3.3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.41 U | 0.42 U | 0.4 U | 0.39 U | 0.39 U | 0.41 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 11 U | 11 U | 10 U | 10 U | 11 U |
| 1,1-DICHLOROETHENE | 8.8 U | 8.8 U | 8.5 U | 8.2 U | 8.2 U | 8.6 U |
| 1,2-DICHLOROETHANE | 29 U | 29 U | 28 U | 27 U | 27 U | 29 U |
| 2-BUTANONE | 17 U | 61 U | 45 U | 43 U | 16 U | 16 U |
| 2-HEXANONE | 17 U | 17 U | 16 U | 16 U | 16 U | 16 U |
| 4-METHYL-2-PENTANONE | 16 U | 16 U | 16 U | 15 U | 15 U | 16 U |
| ACETONE | 44 U | 44 U | 42 U | 41 U | 41 U | 43 U |
| BENZENE | 2.2 U | 2.2 U | 2.1 U | 2 U | 2 U | 2.1 U |
| BROMOFORM | 0.68 U | 0.69 U | 0.66 U | 0.64 U | 0.64 U | 0.67 U |
| BROMOMETHANE | 54 U | 54 U | 52 U | 50 U | 50 U | 53 U |
| CARBON DISULFIDE | 27 U | 95 U | 70 U | 67 U | 25 U | 26 U |
| CARBON TETRACHLORIDE | 0.54 U | 0.54 U | 0.52 U | 0.5 U | 0.56 U | 0.53 U |
| CHLOROBENZENE | 1.4 U | 1.4 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| CHLOROFORM | 9.2 U | 9.3 U | 8.9 U | 8.6 U | 9.6 U | 9.1 U |
| CIS-1,2-DICHLOROETHENE | 4 J | 9.3 | 7.7 | 7.3 U | 7.3 U | 7.6 U |
| ETHYLBENZENE | 2.7 U | 2.7 U | 2.6 U | 2.5 U | 2.5 U | 2.6 U |
| M+P-XYLENES | 4.1 U | 4.2 U | 4 U | 3.9 U | 3.9 U | 4.1 U |
| METHYLENE CHLORIDE | 10 U | 11 U | 10 U | 9.8 U | 9.8 U | 10 U |
| O-XYLENE/STYRENE | 14 U | 14 U | 13 U | 13 U | 13 U | 13 U |
| TETRACHLOROETHENE | 0.36 U | 0.37 U | 0.35 U | 0.34 U | 0.34 U | 0.36 U |
| TOLUENE | 2.7 U | 2.7 U | 2.6 U | 2.5 U | 2.5 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 6.1 U | 6.1 U | 5.9 U | 5.7 U | 5.7 U | 6 U |
| TRICHLOROETHENE | 27 J | 16 J | 18 J | 10 J | 0.75 U | 0.79 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07013 | 003SB07014 | 003SBDP137 | 003SB07015 | 003SB07101 | 003SB07102 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 48.0 - 52.0' | 52.0 - 56.0' | 52.0 - 56.0' | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 09/04/97 | 09/04/97 | 09/04/97 | 09/04/97 | 09/18/97 | 09/18/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC70 | AOC70 | AOC70 | AOC70 | AOC71 | AOC71 |
| FIELD DUPLICATE OF: | | | 003SB07014 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 49 U | 49 U | 47 U | 45 U | 46 U | 48 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07103 | 003SB07104 | 003SB07105 | 003SB07106 | 003SB07107 | 003SB07108 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 09/18/97 | 09/18/97 | 09/18/97 | 09/18/97 | 09/18/97 | 09/18/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC71 | AOC71 | AOC71 | AOC71 | AOC71 | AOC71 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.3 U | 3.8 U | 4.3 U | 3.7 U | 3.5 U | 3.5 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.4 U | 0.37 U | 0.44 U | 0.43 U | 0.43 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 11 U | 10 U | 12 U | 12 U | 12 U |
| 1,1-DICHLOROETHENE | 8.5 U | 8.5 U | 7.8 U | 9.4 U | 9 U | 9.1 U |
| 1,2-DICHLOROETHANE | 28 U | 28 U | 26 U | 31 U | 30 U | 30 U |
| 2-BUTANONE | 16 U | 16 U | 15 U | 18 U | 17 U | 17 U |
| 2-HEXANONE | 16 U | 16 U | 15 U | 18 U | 17 U | 17 U |
| 4-METHYL-2-PENTANONE | 16 U | 16 U | 14 U | 17 U | 17 U | 17 U |
| ACETONE | 42 U | 43 U | 39 U | 47 U | 45 U | 45 U |
| BENZENE | 2.1 U | 2.1 U | 1.9 U | 2.3 U | 2.2 U | 2.2 U |
| BROMOFORM | 0.66 U | 0.66 U | 0.61 U | 0.73 U | 0.7 U | 0.71 U |
| BROMOMETHANE | 52 U | 52 U | 48 U | 57 U | 55 U | 55 U |
| CARBON DISULFIDE | 26 U | 26 U | 24 U | 29 U | 28 U | 28 U |
| CARBON TETRACHLORIDE | 0.52 U | 0.6 U | 0.69 U | 0.57 U | 0.55 U | 0.55 U |
| CHLOROBENZENE | 1.3 U | 1.3 U | 1.2 U | 1.5 U | 1.4 U | 1.4 U |
| CHLOROFORM | 8.9 U | 10 U | 12 U | 9.9 U | 9.5 U | 9.6 U |
| CIS-1,2-DICHLOROETHENE | 7.5 U | 7.6 U | 7 U | 8.4 U | 8 U | 8.1 U |
| ETHYLBENZENE | 2.6 U | 2.6 U | 2.4 U | 2.9 U | 2.8 U | 2.8 U |
| M+P-XYLENES | 4 U | 4 U | 3.7 U | 4.4 U | 4.3 U | 4.3 U |
| METHYLENE CHLORIDE | 10 U | 10 U | 9.4 U | 11 U | 11 U | 11 U |
| O-XYLENE/STYRENE | 13 U | 13 U | 12 U | 15 U | 14 U | 14 U |
| TETRACHLOROETHENE | 0.35 U | 0.35 U | 0.33 U | 0.39 U | 0.38 U | 0.38 U |
| TOLUENE | 2.6 U | 2.6 U | 2.4 U | 2.9 U | 2.8 U | 2.8 U |
| TRANS-1,2-DICHLOROETHENE | 5.9 U | 5.9 U | 5.4 U | 6.5 U | 6.3 U | 6.3 U |
| TRICHLOROETHENE | 0.78 U | 0.78 U | 0.72 U | 0.86 U | 0.83 U | 0.83 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07103 | 003SB07104 | 003SB07105 | 003SB07106 | 003SB07107 | 003SB07108 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 09/18/97 | 09/18/97 | 09/18/97 | 09/18/97 | 09/18/97 | 09/18/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC71 | AOC71 | AOC71 | AOC71 | AOC71 | AOC71 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 47 U | 44 U | 52 U | 50 U | 50 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP143 | 003SB07109 | 003SB07110 | 003SB07301 | 003SB07302 | 003SB07303 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 09/18/97 | 09/18/97 | 09/18/97 | 07/24/97 | 07/24/97 | 07/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC71 | AOC71 | AOC71 | AOC73 | AOC73 | AOC73 |
| FIELD DUPLICATE OF: | 003SB07108 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.5 U | 3.6 U | 3.8 U | 3.7 U | 3.4 U | 8.7 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.42 U | 0.43 U | 0.46 U | 0.37 U | 0.34 U | 0.78 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 12 U | 12 U | 9.1 J | 10 | 39 |
| 1,1-DICHLOROETHENE | 8.9 U | 9.2 U | 9.7 U | 7.8 U | 7.2 U | 17 U |
| 1,2-DICHLOROETHANE | 30 U | 31 U | 32 U | 26 U | 24 U | 55 U |
| 2-BUTANONE | 17 U | 18 U | 19 U | 15 U | 14 U | 32 U |
| 2-HEXANONE | 17 U | 18 U | 19 U | 15 U | 14 U | 32 U |
| 4-METHYL-2-PENTANONE | 16 U | 17 U | 18 U | 14 U | 13 U | 30 U |
| ACETONE | 45 U | 46 U | 48 U | 39 U | 36 U | 83 U |
| BENZENE | 2.2 U | 2.3 U | 2.4 U | 1.9 U | 1.8 U | 4.1 U |
| BROMOFORM | 0.7 U | 0.71 U | 0.75 U | 0.6 U | 0.56 U | 1.3 U |
| BROMOMETHANE | 55 U | 56 U | 59 U | 47 U | 44 U | 100 U |
| CARBON DISULFIDE | 27 U | 28 U | 30 U | 24 U | 22 U | 51 U |
| CARBON TETRACHLORIDE | 0.55 U | 0.56 U | 0.59 U | 0.59 U | 0.55 U | 1.4 U |
| CHLOROBENZENE | 1.4 U | 1.4 U | 1.5 U | 1.2 U | 1.1 U | 2.6 U |
| CHLOROFORM | 9.4 U | 9.7 U | 10 U | 10 U | 9.5 U | 24 U |
| CIS-1,2-DICHLOROETHENE | 8 U | 8.2 U | 8.6 U | 6.2 J | 6.4 U | 15 U |
| ETHYLBENZENE | 2.7 U | 2.8 U | 3 U | 2.4 U | 2.2 U | 5.1 U |
| M+P-XYLENES | 4.2 U | 4.3 U | 4.6 U | 3.7 U | 3.4 U | 7.8 U |
| METHYLENE CHLORIDE | 11 U | 11 U | 12 U | 9.3 U | 8.6 U | 20 U |
| O-XYLENE/STYRENE | 14 U | 14 U | 15 U | 12 U | 11 U | 26 U |
| TETRACHLOROETHENE | 0.37 U | 0.38 U | 0.4 U | 0.29 J | 0.33 | 1.2 |
| TOLUENE | 2.7 U | 2.8 U | 3 U | 2.4 U | 2.2 U | 5.1 U |
| TRANS-1,2-DICHLOROETHENE | 6.2 U | 6.4 U | 6.7 U | 5.4 U | 5 U | 11 U |
| TRICHLOROETHENE | 0.82 U | 0.51 J | 0.89 U | 3.7 | 3.2 | 6.3 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP143 | 003SB07109 | 003SB07110 | 003SB07301 | 003SB07302 | 003SB07303 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 09/18/97 | 09/18/97 | 09/18/97 | 07/24/97 | 07/24/97 | 07/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC71 | AOC71 | AOC71 | AOC73 | AOC73 | AOC73 |
| FIELD DUPLICATE OF: | 003SB07108 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 50 U | 51 U | 54 U | 43 U | 40 U | 92 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07304 | 003SB07305 | 003SBDP109 | 003SB07306 | 003SB07307 | 003SB07308 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC73 | AOC73 | AOC73 | AOC73 | AOC73 | AOC73 |
| FIELD DUPLICATE OF: | | | 003SB07305 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 5.5 U | 5.3 U | 6.8 U | 4.9 U | 2.5 U | 3.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.32 U | 0.32 U | 0.41 U | 0.39 U | 0.31 U | 0.34 U |
| 1,1,2-TRICHLOROETHANE | 8.7 U | 11 | 11 U | 11 U | 8.3 U | 9.1 U |
| 1,1-DICHLOROETHENE | 6.8 U | 6.8 U | 8.7 U | 8.4 U | 6.5 U | 7.2 U |
| 1,2-DICHLOROETHANE | 23 U | 23 U | 29 U | 28 U | 22 U | 24 U |
| 2-BUTANONE | 13 U | 13 U | 17 U | 16 U | 13 U | 14 U |
| 2-HEXANONE | 13 U | 13 U | 17 U | 16 U | 13 U | 14 U |
| 4-METHYL-2-PENTANONE | 13 U | 12 U | 16 U | 15 U | 12 U | 13 U |
| ACETONE | 34 U | 34 U | 44 U | 42 U | 33 U | 36 U |
| BENZENE | 1.7 U | 1.7 U | 2.2 U | 2.1 U | 1.6 U | 1.8 U |
| BROMOFORM | 0.53 U | 0.53 U | 0.68 U | 0.65 U | 0.51 U | 0.56 U |
| BROMOMETHANE | 42 U | 41 U | 53 U | 51 U | 40 U | 44 U |
| CARBON DISULFIDE | 21 U | 21 U | 27 U | 26 U | 20 U | 22 U |
| CARBON TETRACHLORIDE | 0.89 U | 0.86 U | 1.1 U | 0.79 U | 0.4 U | 0.63 U |
| CHLOROBENZENE | 1.1 U | 1.1 U | 1.4 U | 1.3 U | 1 U | 1.1 U |
| CHLOROFORM | 15 U | 15 U | 19 U | 14 U | 6.9 U | 11 U |
| CIS-1,2-DICHLOROETHENE | 6.1 U | 6 U | 7.8 U | 7.4 U | 5.6 J | 6.4 U |
| ETHYLBENZENE | 2.1 U | 2.1 U | 2.7 U | 2.6 U | 2 U | 2.2 U |
| M+P-XYLENES | 3.2 U | 3.2 U | 4.1 U | 3.9 U | 3.1 U | 3.4 U |
| METHYLENE CHLORIDE | 8.2 U | 8.1 U | 10 U | 10 U | 7.8 U | 8.6 U |
| O-XYLENE/STYRENE | 11 U | 11 U | 14 U | 13 U | 10 U | 11 U |
| TETRACHLOROETHENE | 0.28 U | 0.36 | 0.36 U | 0.35 U | 0.27 U | 0.3 U |
| TOLUENE | 2.1 U | 2.1 U | 2.7 U | 2.6 U | 2 U | 2.2 U |
| TRANS-1,2-DICHLOROETHENE | 4.7 U | 4.7 U | 6.1 U | 5.8 U | 4.5 U | 5 U |
| TRICHLOROETHENE | 0.65 | 0.8 | 0.8 U | 0.7 J | 3 | 2.6 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07304 | 003SB07305 | 003SBDP109 | 003SB07306 | 003SB07307 | 003SB07308 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC73 | AOC73 | AOC73 | AOC73 | AOC73 | AOC73 |
| FIELD DUPLICATE OF: | | | 003SB07305 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 38 U | 38 U | 48 U | 46 U | 36 U | 40 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07309 | 003SB07310 | 003SB07311 | 003SB07312 | 003SB07314 | 003SB07401 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 52.0 - 56.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 | 07/27/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC73 | AOC73 | AOC73 | AOC73 | AOC73 | AOC74 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.7 U | 4.8 U | 4.4 U | 3.9 U | 5.7 U | 3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.4 U | 0.43 U | 0.41 U | 0.37 U | 0.36 U | 0.37 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 12 U | 11 U | 10 U | 20 | 10 U |
| 1,1-DICHLOROETHENE | 8.4 U | 9.2 U | 8.8 U | 7.8 U | 7.6 U | 7.8 U |
| 1,2-DICHLOROETHANE | 28 U | 31 U | 29 U | 26 U | 25 U | 26 U |
| 2-BUTANONE | 16 U | 18 U | 17 U | 15 U | 15 U | 15 U |
| 2-HEXANONE | 16 U | 18 U | 17 U | 15 U | 15 U | 15 U |
| 4-METHYL-2-PENTANONE | 15 U | 17 U | 16 U | 14 U | 14 U | 14 U |
| ACETONE | 42 U | 46 U | 29 J | 39 U | 38 U | 39 U |
| BENZENE | 2.1 U | 2.3 U | 2.2 U | 1.9 U | 1.9 U | 1.9 U |
| BROMOFORM | 0.66 U | 0.72 U | 0.68 U | 0.61 U | 0.59 U | 0.61 U |
| BROMOMETHANE | 52 U | 56 U | 54 U | 48 U | 47 U | 88 U |
| CARBON DISULFIDE | 26 U | 28 U | 27 U | 24 U | 23 U | 24 U |
| CARBON TETRACHLORIDE | 0.75 U | 0.77 U | 0.7 U | 0.63 U | 0.91 U | 0.48 U |
| CHLOROBENZENE | 1.3 U | 1.4 U | 1.4 U | 1.2 U | 1.2 U | 1.2 U |
| CHLOROFORM | 13 U | 13 U | 12 U | 11 U | 16 U | 8.2 U |
| CIS-1,2-DICHLOROETHENE | 7.5 U | 8.2 U | 7.8 U | 6.9 U | 6.8 U | 6.9 U |
| ETHYLBENZENE | 2.6 U | 2.8 U | 2.7 U | 2.4 U | 2.3 U | 2.4 U |
| M+P-XYLENES | 4 U | 4.3 U | 4.1 U | 3.7 U | 3.6 U | 3.7 U |
| METHYLENE CHLORIDE | 10 U | 11 U | 10 U | 9.3 U | 9.1 U | 9.3 U |
| O-XYLENE/STYRENE | 13 U | 14 U | 14 U | 12 U | 12 U | 12 U |
| TETRACHLOROETHENE | 0.35 U | 0.38 U | 0.37 U | 0.33 U | 0.64 | 0.33 U |
| TOLUENE | 2.6 U | 2.8 U | 2.7 U | 2.4 U | 2.3 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 5.9 U | 6.4 U | 6.1 U | 5.4 U | 5.3 U | 5.4 U |
| TRICHLOROETHENE | 11 | 7.4 J | 13 J | 3.3 U | 6.2 J | 0.72 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07309 | 003SB07310 | 003SB07311 | 003SB07312 | 003SB07314 | 003SB07401 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 52.0 - 56.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 | 07/24/97 | 07/27/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC73 | AOC73 | AOC73 | AOC73 | AOC73 | AOC74 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 47 U | 51 U | 49 U | 43 U | 42 U | 43 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07402 | 003SB07403 | 003SB07404 | 003SB07405 | 003SB07406 | 003SB07407 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC74 | AOC74 | AOC74 | AOC74 | AOC74 | AOC74 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.6 U | 4.5 U | 2.7 U | 2.8 U | 3.2 U | 3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.31 U | 0.35 U | 0.33 U | 0.35 U | 0.39 U | 0.36 U |
| 1,1,2-TRICHLOROETHANE | 8.4 U | 9.5 U | 8.9 U | 9.4 U | 11 U | 9.7 U |
| 1,1-DICHLOROETHENE | 6.6 U | 7.5 U | 6.9 U | 7.3 U | 8.3 U | 7.6 U |
| 1,2-DICHLOROETHANE | 22 U | 25 U | 23 U | 24 U | 28 U | 25 U |
| 2-BUTANONE | 13 U | 14 U | 13 U | 14 U | 16 U | 15 U |
| 2-HEXANONE | 13 U | 14 U | 13 U | 14 U | 16 U | 15 U |
| 4-METHYL-2-PENTANONE | 12 U | 14 U | 13 U | 13 U | 15 U | 14 U |
| ACETONE | 33 U | 37 U | 35 U | 37 U | 41 U | 38 U |
| BENZENE | 1.6 U | 1.8 U | 1.7 U | 1.8 U | 2 U | 1.9 U |
| BROMOFORM | 0.51 U | 0.58 U | 0.54 U | 0.57 U | 0.64 U | 0.59 U |
| BROMOMETHANE | 40 U | 46 U | 89 U | 73 U | 69 U | 63 U |
| CARBON DISULFIDE | 20 U | 23 U | 21 U | 22 U | 25 U | 23 U |
| CARBON TETRACHLORIDE | 0.57 U | 0.72 U | 0.42 U | 0.45 U | 0.51 U | 0.46 U |
| CHLOROBENZENE | 1 U | 1.2 U | 1.1 U | 1.1 U | 1.3 U | 1.2 U |
| CHLOROFORM | 9.9 U | 12 U | 7.3 U | 7.7 U | 8.7 U | 8 U |
| CIS-1,2-DICHLOROETHENE | 5.9 U | 6.6 U | 6.2 U | 6.5 U | 7.3 U | 6.7 U |
| ETHYLBENZENE | 2 U | 2.3 U | 2.1 U | 2.2 U | 2.5 U | 2.3 U |
| M+P-XYLENES | 3.1 U | 3.5 U | 3.3 U | 3.5 U | 3.9 U | 3.6 U |
| METHYLENE CHLORIDE | 7.9 U | 8.9 U | 8.3 U | 8.8 U | 9.9 U | 9.1 U |
| O-XYLENE/STYRENE | 10 U | 12 U | 11 U | 11 U | 13 U | 12 U |
| TETRACHLOROETHENE | 0.28 U | 0.31 U | 0.29 U | 0.31 U | 0.34 U | 0.32 U |
| TOLUENE | 2 U | 2.3 U | 2.1 U | 2.2 U | 2.5 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 4.6 U | 5.2 U | 4.8 U | 5.1 U | 5.7 U | 5.3 U |
| TRICHLOROETHENE | 0.61 U | 0.68 U | 0.64 U | 0.67 U | 1.5 | 2 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07402 | 003SB07403 | 003SB07404 | 003SB07405 | 003SB07406 | 003SB07407 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC74 | AOC74 | AOC74 | AOC74 | AOC74 | AOC74 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 37 U | 41 U | 39 U | 41 U | 46 U | 42 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07408 | 003SB07409 | 003SB07410 | 003SB07411 | 003SBDP114 | 003SBP0101 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 40.0 - 44.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 08/07/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC74 | AOC74 | AOC74 | AOC74 | AOC74 | P01 |
| FIELD DUPLICATE OF: | | | | | 003SB07411 | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.7 U | 2.7 U | 3.5 U | 5.8 U | 4.8 U | 2.1 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.33 U | 0.33 U | 0.42 U | 0.71 U | 0.58 U | 0.25 U |
| 1,1,2-TRICHLOROETHANE | 9 U | 8.9 U | 11 U | 24 | 16 U | 6.8 U |
| 1,1-DICHLOROETHENE | 7.1 U | 7 U | 8.9 U | 15 U | 12 U | 5.3 U |
| 1,2-DICHLOROETHANE | 24 U | 23 U | 30 U | 700 U | 640 U | 18 U |
| 2-BUTANONE | 14 U | 13 U | 17 U | 29 U | 23 U | 10 U |
| 2-HEXANONE | 14 U | 13 U | 17 U | 29 U | 23 U | 10 U |
| 4-METHYL-2-PENTANONE | 13 U | 13 U | 16 U | 27 U | 22 U | 9.7 U |
| ACETONE | 35 U | 35 U | 45 U | 75 U | 61 U | 27 U |
| BENZENE | 1.7 U | 1.7 U | 2.2 U | 3.7 U | 3 U | 1.3 U |
| BROMOFORM | 0.55 U | 0.54 U | 0.69 U | 1.2 U | 0.95 U | 0.41 U |
| BROMOMETHANE | 79 U | 57 U | 100 U | 180 U | 90 U | 32 U |
| CARBON DISULFIDE | 22 U | 21 U | 27 U | 46 U | 37 U | 16 U |
| CARBON TETRACHLORIDE | 0.43 U | 0.43 U | 0.55 U | 0.91 U | 0.75 U | 0.32 U |
| CHLOROBENZENE | 1.1 U | 1.1 U | 1.4 U | 2.3 U | 1.9 U | 0.83 U |
| CHLOROFORM | 7.5 U | 7.4 U | 9.4 U | 16 U | 13 U | 5.6 U |
| CIS-1,2-DICHLOROETHENE | 6.3 U | 6.5 | 7.9 U | 11 J | 12 | 4.7 U |
| ETHYLBENZENE | 2.2 U | 2.1 U | 2.7 U | 4.6 U | 3.7 U | 1.6 U |
| M+P-XYLENES | 3.3 U | 3.3 U | 4.2 U | 7.1 U | 5.8 U | 2.5 U |
| METHYLENE CHLORIDE | 8.4 U | 8.4 U | 11 U | 18 U | 15 U | 6.3 U |
| O-XYLENE/STYRENE | 11 U | 11 U | 14 U | 23 U | 19 U | 8.3 U |
| TETRACHLOROETHENE | 0.29 U | 0.29 U | 0.37 U | 0.77 | 0.51 U | 0.22 U |
| TOLUENE | 2.2 U | 2.1 U | 2.7 U | 4.6 U | 3.7 U | 1.6 U |
| TRANS-1,2-DICHLOROETHENE | 4.9 U | 4.9 U | 6.2 U | 10 U | 8.5 U | 3.7 U |
| TRICHLOROETHENE | 2.5 | 16 J | 4.7 | 140 | 88 | 0.49 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SB07408 | 003SB07409 | 003SB07410 | 003SB07411 | 003SBDP114 | 003SBP0101 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 40.0 - 44.0' | 0.0 - 4.0' |
| SAMPLE DATE: | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 07/27/97 | 08/07/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | AOC74 | AOC74 | AOC74 | AOC74 | AOC74 | P01 |
| FIELD DUPLICATE OF: | | | | | 003SB07411 | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 39 U | 39 U | 50 U | 83 U | 68 U | 30 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0102 | 003SBP0104 | 003SBP0105 | 003SBP0106 | 003SBP0107 | 003SBP0108 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 08/07/97 | 08/08/97 | 08/08/97 | 08/08/97 | 08/08/97 | 08/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P01 | P01 | P01 | P01 | P01 | P01 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.1 U | 3.2 U | 4.5 U | 3.4 U | 3.7 U | 3.3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.25 U | 0.38 U | 0.4 U | 0.42 U | 0.45 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 6.9 U | 10 U | 11 U | 11 U | 12 U | 11 U |
| 1,1-DICHLOROETHENE | 5.4 U | 8.1 U | 8.5 U | 8.9 U | 9.6 U | 8.4 U |
| 1,2-DICHLOROETHANE | 18 U | 27 U | 28 U | 30 U | 32 U | 28 U |
| 2-BUTANONE | 10 U | 16 U | 16 U | 17 U | 18 U | 16 U |
| 2-HEXANONE | 10 U | 16 U | 16 U | 17 U | 18 U | 16 U |
| 4-METHYL-2-PENTANONE | 9.9 U | 15 U | 15 U | 16 U | 18 U | 15 U |
| ACETONE | 27 U | 41 U | 42 U | 44 U | 48 U | 42 U |
| BENZENE | 1.3 U | 2 U | 2.1 U | 2.2 U | 2.4 U | 2.1 U |
| BROMOFORM | 0.42 U | 0.63 U | 0.66 U | 0.69 U | 0.74 U | 0.65 U |
| BROMOMETHANE | 33 U | 50 U | 52 U | 54 U | 58 U | 51 U |
| CARBON DISULFIDE | 16 U | 25 U | 26 U | 27 U | 29 U | 26 U |
| CARBON TETRACHLORIDE | 0.33 U | 0.5 U | 0.72 U | 0.54 U | 0.58 U | 0.51 U |
| CHLOROBENZENE | 0.84 U | 1.3 U | 1.3 U | 1.4 U | 1.5 U | 1.3 U |
| CHLOROFORM | 5.7 U | 8.6 U | 12 U | 9.4 U | 10 U | 8.8 U |
| CIS-1,2-DICHLOROETHENE | 4.8 U | 7.2 U | 7.5 U | 7.9 U | 8.5 U | 7.4 U |
| ETHYLBENZENE | 1.6 U | 2.5 U | 2.6 U | 2.7 U | 2.9 U | 2.6 U |
| M+P-XYLENES | 2.5 U | 3.8 U | 4 U | 4.2 U | 4.5 U | 3.9 U |
| METHYLENE CHLORIDE | 6.4 U | 9.7 U | 10 U | 11 U | 11 U | 10 U |
| O-XYLENE/STYRENE | 8.4 U | 13 U | 13 U | 14 U | 15 U | 13 U |
| TETRACHLOROETHENE | 0.22 U | 0.34 U | 0.35 U | 0.37 U | 0.4 U | 0.35 U |
| TOLUENE | 1.6 U | 2.5 U | 2.6 U | 2.7 U | 2.9 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 3.7 U | 5.6 U | 5.9 U | 6.2 U | 6.6 U | 5.8 U |
| TRICHLOROETHENE | 0.49 U | 0.74 U | 0.77 U | 0.81 U | 0.88 U | 0.77 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0102 | 003SBP0104 | 003SBP0105 | 003SBP0106 | 003SBP0107 | 003SBP0108 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 4.0 - 8.0' | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 08/07/97 | 08/08/97 | 08/08/97 | 08/08/97 | 08/08/97 | 08/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P01 | P01 | P01 | P01 | P01 | P01 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 30 U | 45 U | 47 U | 49 U | 53 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0201 | 003SBP0202 | 003SBP0203 | 003SBP0204 | 003SBP0207 | 003SBP0208 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 08/18/97 | 08/18/97 | 08/18/97 | 08/18/97 | 08/18/97 | 08/18/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P02 | P02 | P02 | P02 | P02 | P02 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.4 U | 2.8 U | 2.9 U | 2.6 U | 3.3 U | 3.3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.29 U | 0.34 U | 0.35 U | 0.31 U | 0.41 U | 0.4 U |
| 1,1,2-TRICHLOROETHANE | 7.7 U | 9.1 U | 9.5 U | 8.5 U | 11 U | 11 U |
| 1,1-DICHLOROETHENE | 6.1 U | 7.1 U | 7.5 U | 6.6 U | 8.6 U | 8.4 U |
| 1,2-DICHLOROETHANE | 20 U | 24 U | 25 U | 22 U | 29 U | 28 U |
| 2-BUTANONE | 12 U | 14 U | 14 U | 13 U | 16 U | 16 U |
| 2-HEXANONE | 12 U | 14 U | 14 U | 13 U | 16 U | 16 U |
| 4-METHYL-2-PENTANONE | 11 U | 13 U | 14 U | 12 U | 16 U | 15 U |
| ACETONE | 30 U | 36 U | 37 U | 33 U | 43 U | 42 U |
| BENZENE | 1.5 U | 1.8 U | 1.8 U | 1.6 U | 2.1 U | 2.1 U |
| BROMOFORM | 0.47 U | 0.55 U | 0.58 U | 0.52 U | 0.67 U | 0.65 U |
| BROMOMETHANE | 37 U | 43 U | 46 U | 41 U | 53 U | 51 U |
| CARBON DISULFIDE | 19 U | 22 U | 23 U | 20 U | 26 U | 26 U |
| CARBON TETRACHLORIDE | 0.37 U | 0.43 U | 0.46 U | 0.41 U | 0.53 U | 0.51 U |
| CHLOROBENZENE | 0.94 U | 1.1 U | 1.2 U | 1 U | 1.3 U | 1.3 U |
| CHLOROFORM | 6.4 U | 7.5 U | 7.9 U | 7 U | 9.1 U | 8.9 U |
| CIS-1,2-DICHLOROETHENE | 5.4 U | 6.3 U | 6.6 U | 5.9 U | 7.6 U | 7.5 U |
| ETHYLBENZENE | 1.9 U | 2.2 U | 2.3 U | 2 U | 2.6 U | 2.6 U |
| M+P-XYLENES | 2.9 U | 3.4 U | 3.5 U | 3.1 U | 4.1 U | 4 U |
| METHYLENE CHLORIDE | 7.2 U | 8.5 U | 8.9 U | 7.9 U | 10 U | 10 U |
| O-XYLENE/STYRENE | 9.4 U | 11 U | 12 U | 10 U | 13 U | 13 U |
| TETRACHLOROETHENE | 0.25 U | 0.3 U | 0.31 U | 0.28 U | 0.36 U | 0.35 U |
| TOLUENE | 1.9 U | 2.2 U | 2.3 U | 2 U | 2.6 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 4.2 U | 4.9 U | 5.2 U | 4.6 U | 6 U | 5.8 U |
| TRICHLOROETHENE | 0.53 J | 1.1 | 1.1 | 0.61 U | 2.9 | 0.95 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0201 | 003SBP0202 | 003SBP0203 | 003SBP0204 | 003SBP0207 | 003SBP0208 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 24.0 - 28.0' | 28.0 - 32.0' |
| SAMPLE DATE: | 08/18/97 | 08/18/97 | 08/18/97 | 08/18/97 | 08/18/97 | 08/18/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P02 | P02 | P02 | P02 | P02 | P02 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 34 U | 39 U | 41 U | 37 U | 48 U | 47 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0209 | 003SBP0210 | 003SBP0211 | 003SBP0212 | 003SBP0213 | 003SBDP124 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 48.0 - 52.0' | 48.0 - 52.0' |
| SAMPLE DATE: | 08/19/97 | 08/19/97 | 08/19/97 | 08/19/97 | 08/19/97 | 08/19/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P02 | P02 | P02 | P02 | P02 | P02 |
| FIELD DUPLICATE OF: | | | | | | 003SBP0213 |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.5 U | 3.9 U | 2.9 U | 3.1 U | 3.5 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.42 U | 0.47 U | 0.35 U | 0.38 U | 0.42 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 13 U | 9.4 U | 10 U | 11 U | 11 U |
| 1,1-DICHLOROETHENE | 9 U | 9.9 U | 7.3 U | 8 U | 8.9 U | 8.2 U |
| 1,2-DICHLOROETHANE | 30 U | 33 U | 24 U | 27 U | 30 U | 27 U |
| 2-BUTANONE | 17 U | 19 U | 14 U | 15 U | 17 U | 16 U |
| 2-HEXANONE | 17 U | 19 U | 14 U | 15 U | 17 U | 16 U |
| 4-METHYL-2-PENTANONE | 16 U | 18 U | 13 U | 15 U | 16 U | 15 U |
| ACETONE | 45 U | 50 U | 37 U | 40 U | 45 U | 41 U |
| BENZENE | 2.2 U | 2.5 U | 1.8 U | 2 U | 2.2 U | 2 U |
| BROMOFORM | 0.7 U | 0.77 U | 0.57 U | 0.62 U | 0.69 U | 0.64 U |
| BROMOMETHANE | 55 U | 61 U | 45 U | 49 U | 54 U | 50 U |
| CARBON DISULFIDE | 27 U | 30 U | 22 U | 25 U | 27 U | 25 U |
| CARBON TETRACHLORIDE | 0.55 U | 0.61 U | 0.45 U | 0.49 U | 0.54 U | 0.5 U |
| CHLOROBENZENE | 1.4 U | 1.5 U | 1.1 U | 1.2 U | 1.4 U | 1.3 U |
| CHLOROFORM | 9.5 U | 10 U | 7.8 U | 8.5 U | 9.4 U | 8.7 U |
| CIS-1,2-DICHLOROETHENE | 8 U | 8.8 U | 6.5 U | 7.1 U | 7.9 U | 7.3 U |
| ETHYLBENZENE | 2.7 U | 3 U | 2.2 U | 2.5 U | 2.7 U | 2.5 U |
| M+P-XYLENES | 4.2 U | 4.7 U | 3.5 U | 3.8 U | 4.2 U | 3.9 U |
| METHYLENE CHLORIDE | 11 U | 12 U | 8.8 U | 9.6 U | 11 U | 9.8 U |
| O-XYLENE/STYRENE | 14 U | 15 U | 11 U | 12 U | 14 U | 13 U |
| TETRACHLOROETHENE | 0.37 U | 0.41 U | 0.31 U | 0.33 U | 0.37 U | 0.34 U |
| TOLUENE | 2.7 U | 3 U | 2.2 U | 2.5 U | 2.7 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 6.2 U | 6.9 U | 5.1 U | 5.6 U | 6.2 U | 5.7 U |
| TRICHLOROETHENE | 0.86 | 1.7 | 1.3 | 4.9 | 2.6 | 4.4 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0209 | 003SBP0210 | 003SBP0211 | 003SBP0212 | 003SBP0213 | 003SBDP124 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 48.0 - 52.0' | 48.0 - 52.0' |
| SAMPLE DATE: | 08/19/97 | 08/19/97 | 08/19/97 | 08/19/97 | 08/19/97 | 08/19/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P02 | P02 | P02 | P02 | P02 | P02 |
| FIELD DUPLICATE OF: | | | | | | 003SBP0213 |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 50 U | 55 U | 41 U | 45 U | 49 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0214 | 003SBP0301 | 003SBP0302 | 003SBP0303 | 003SBP0304 | 003SBP0305 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 08/19/97 | 07/12/97 | 07/12/97 | 07/12/97 | 07/12/97 | 07/12/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P02 | P03 | P03 | P03 | P03 | P03 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.3 U | 6.7 U | 7.2 U | 5.8 U | 6.5 U | 5 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.41 U | 0.35 U | 0.38 U | 0.33 U | 0.39 U | 0.32 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 9.4 U | 10 U | 9 U | 10 U | 8.6 U |
| 1,1-DICHLOROETHENE | 8.6 U | 7.4 U | 8.1 U | 7 U | 8.2 U | 6.7 U |
| 1,2-DICHLOROETHANE | 29 U | 25 U | 27 U | 23 U | 27 U | 22 U |
| 2-BUTANONE | 16 U | 14 U | 16 U | 13 U | 16 U | 13 U |
| 2-HEXANONE | 16 U | 14 U | 16 U | 13 U | 16 U | 13 U |
| 4-METHYL-2-PENTANONE | 16 U | 14 U | 15 U | 13 U | 15 U | 12 U |
| ACETONE | 43 U | 44 | 41 U | 35 U | 41 U | 34 U |
| BENZENE | 2.1 U | 1.8 U | 2 U | 1.7 U | 2 U | 1.7 U |
| BROMOFORM | 0.67 U | 0.57 U | 0.63 U | 0.55 U | 0.64 U | 0.52 U |
| BROMOMETHANE | 53 U | 45 U | 50 U | 43 U | 50 U | 41 U |
| CARBON DISULFIDE | 26 U | 23 U | 25 U | 21 U | 25 U | 21 U |
| CARBON TETRACHLORIDE | 0.53 U | 1.1 U | 1.2 U | 0.93 U | 1 U | 0.8 U |
| CHLOROBENZENE | 1.3 U | 1.1 U | 1.3 U | 1.1 U | 1.3 U | 1 U |
| CHLOROFORM | 9.1 U | 19 U | 20 U | 16 U | 18 U | 14 U |
| CIS-1,2-DICHLOROETHENE | 7.6 U | 7.4 U | 7.9 U | 6.5 U | 7.9 U | 6.6 U |
| ETHYLBENZENE | 2.6 U | 2.3 U | 2.5 U | 2.1 U | 2.5 U | 2.1 U |
| M+P-XYLENES | 4.1 U | 3.5 U | 3.8 U | 3.3 U | 3.9 U | 3.2 U |
| METHYLENE CHLORIDE | 10 U | 8.8 U | 9.7 U | 8.4 U | 9.8 U | 8 U |
| O-XYLENE/STYRENE | 13 U | 11 U | 13 U | 11 U | 13 U | 10 U |
| TETRACHLOROETHENE | 0.36 U | 0.31 U | 0.34 U | 0.29 U | 0.34 U | 0.28 U |
| TOLUENE | 2.6 U | 2.3 U | 2.5 U | 2.1 U | 2.5 U | 2.1 U |
| TRANS-1,2-DICHLOROETHENE | 6 U | 5.1 U | 5.6 U | 4.9 U | 5.7 U | 4.7 U |
| TRICHLOROETHENE | 17 J | 0.68 U | 0.74 U | 0.64 U | 0.75 U | 0.62 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0214 | 003SBP0301 | 003SBP0302 | 003SBP0303 | 003SBP0304 | 003SBP0305 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' |
| SAMPLE DATE: | 08/19/97 | 07/12/97 | 07/12/97 | 07/12/97 | 07/12/97 | 07/12/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P02 | P03 | P03 | P03 | P03 | P03 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 48 U | 41 U | 45 U | 39 U | 45 U | 37 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0306 | 003SBDP104 | 003SBP0307 | 003SBP0309 | 003SBP0310 | 003SBP0311 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 07/12/97 | 07/12/97 | 07/12/97 | 07/12/97 | 07/12/97 | 07/13/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P03 | P03 | P03 | P03 | P03 | P03 |
| FIELD DUPLICATE OF: | | 003SBP0306 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 5.5 U | 3.2 U | 5.3 U | 6.3 U | 3.9 U | 4 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.36 U | 0.39 U | 0.36 U | 0.4 U | 0.37 U | 0.4 U |
| 1,1,2-TRICHLOROETHANE | 9.7 U | 11 U | 9.8 U | 11 U | 10 U | 11 U |
| 1,1-DICHLOROETHENE | 7.6 U | 8.2 U | 7.7 U | 8.5 U | 7.8 U | 8.4 U |
| 1,2-DICHLOROETHANE | 25 U | 27 U | 26 U | 28 U | 26 U | 28 U |
| 2-BUTANONE | 15 U | 16 U | 15 U | 16 U | 15 U | 16 U |
| 2-HEXANONE | 15 U | 16 U | 15 U | 16 U | 15 U | 16 U |
| 4-METHYL-2-PENTANONE | 14 U | 15 U | 14 U | 16 U | 14 U | 15 U |
| ACETONE | 38 U | 41 U | 38 U | 43 U | 39 U | 42 U |
| BENZENE | 1.9 U | 2 U | 1.9 U | 2.1 U | 1.9 U | 2.1 U |
| BROMOFORM | 0.59 U | 0.64 U | 0.6 U | 0.66 U | 0.61 U | 0.66 U |
| BROMOMETHANE | 47 U | 50 U | 47 U | 52 U | 48 U | 52 U |
| CARBON DISULFIDE | 23 U | 25 U | 23 U | 26 U | 24 U | 26 U |
| CARBON TETRACHLORIDE | 0.89 U | 0.5 U | 0.84 U | 1 U | 0.63 U | 0.64 U |
| CHLOROBENZENE | 1.2 U | 1.3 U | 1.2 U | 1.3 U | 1.2 U | 1.3 U |
| CHLOROFORM | 15 U | 8.7 U | 15 U | 18 U | 11 U | 11 U |
| CIS-1,2-DICHLOROETHENE | 8.2 U | 7.3 U | 7.4 U | 8 U | 7 U | 7.5 U |
| ETHYLBENZENE | 2.3 U | 2.5 U | 2.3 U | 2.6 U | 2.4 U | 2.6 U |
| M+P-XYLENES | 3.6 U | 3.9 U | 3.6 U | 4 U | 3.7 U | 4 U |
| METHYLENE CHLORIDE | 9.1 U | 9.8 U | 9.2 U | 10 U | 9.3 U | 10 U |
| O-XYLENE/STYRENE | 12 U | 13 U | 12 U | 13 U | 12 U | 13 U |
| TETRACHLOROETHENE | 0.32 U | 0.34 U | 0.32 U | 0.36 U | 0.33 U | 0.35 U |
| TOLUENE | 2.3 U | 2.5 U | 2.3 U | 2.6 U | 2.4 U | 2.6 U |
| TRANS-1,2-DICHLOROETHENE | 5.3 U | 5.7 U | 5.3 U | 5.9 U | 5.4 U | 5.9 U |
| TRICHLOROETHENE | 0.7 U | 0.76 U | 0.7 U | 0.78 U | 1 | 0.77 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0306 | 003SBDP104 | 003SBP0307 | 003SBP0309 | 003SBP0310 | 003SBP0311 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 32.0 - 36.0' | 36.0 - 40.0' | 40.0 - 44.0' |
| SAMPLE DATE: | 07/12/97 | 07/12/97 | 07/12/97 | 07/12/97 | 07/12/97 | 07/13/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P03 | P03 | P03 | P03 | P03 | P03 |
| FIELD DUPLICATE OF: | | 003SBP0306 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 42 U | 46 U | 43 U | 47 U | 43 U | 47 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0312 | 003SBP0313 | 003SBP0315 | 003SBP0401 | 003SBP0402 | 003SBP0403 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 44.0 - 48.0' | 48.0 - 52.0' | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 07/13/97 | 07/13/97 | 07/13/97 | 09/06/97 | 09/06/97 | 09/06/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P03 | P03 | P03 | P04 | P04 | P04 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4 U | 4 U | 3.3 U | 3.3 U | 3.3 U | 3 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.41 U | 0.41 U | 0.34 U | 0.4 U | 0.4 U | 0.36 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 11 U | 9.1 U | 11 U | 11 U | 9.8 U |
| 1,1-DICHLOROETHENE | 8.7 U | 8.7 U | 7.1 U | 8.6 U | 8.5 U | 7.7 U |
| 1,2-DICHLOROETHANE | 29 U | 29 U | 24 U | 130 | 28 U | 26 U |
| 2-BUTANONE | 17 U | 17 U | 14 U | 16 U | 16 U | 15 U |
| 2-HEXANONE | 17 U | 17 U | 14 U | 16 U | 16 U | 15 U |
| 4-METHYL-2-PENTANONE | 16 U | 16 U | 13 U | 16 U | 16 U | 14 U |
| ACETONE | 43 U | 43 U | 36 U | 43 U | 42 U | 38 U |
| BENZENE | 2.1 U | 2.2 U | 1.8 U | 2.1 U | 2.1 U | 1.9 U |
| BROMOFORM | 0.67 U | 0.68 U | 0.55 U | 0.67 U | 0.66 U | 0.6 U |
| BROMOMETHANE | 53 U | 68 U | 56 U | 52 U | 52 U | 47 U |
| CARBON DISULFIDE | 26 U | 27 U | 22 U | 26 U | 26 U | 24 U |
| CARBON TETRACHLORIDE | 0.64 U | 0.65 U | 0.53 U | 0.52 U | 0.52 U | 0.47 U |
| CHLOROBENZENE | 1.3 U | 1.4 U | 1.1 U | 1.3 U | 1.3 U | 1.2 U |
| CHLOROFORM | 11 U | 11 U | 9.1 U | 9 U | 8.9 U | 8.1 U |
| CIS-1,2-DICHLOROETHENE | 7.7 U | 7.7 U | 6.3 U | 7.6 U | 7.5 U | 6.8 U |
| ETHYLBENZENE | 2.6 U | 2.7 U | 2.2 U | 2.6 U | 2.6 U | 2.3 U |
| M+P-XYLENES | 4.1 U | 4.1 U | 3.4 U | 4 U | 4 U | 3.6 U |
| METHYLENE CHLORIDE | 10 U | 10 U | 8.5 U | 10 U | 10 U | 9.2 U |
| O-XYLENE/STYRENE | 13 U | 14 U | 11 U | 13 U | 13 U | 12 U |
| TETRACHLOROETHENE | 0.36 U | 0.36 U | 0.3 U | 0.36 U | 0.35 U | 0.32 U |
| TOLUENE | 2.6 U | 2.7 U | 2.2 U | 2.6 U | 2.6 U | 2.3 U |
| TRANS-1,2-DICHLOROETHENE | 6 U | 6 U | 4.9 U | 5.9 U | 5.9 U | 5.3 U |
| TRICHLOROETHENE | 1.9 | 2.3 | 1.6 | 7.2 U | 0.78 U | 0.7 U |

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## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0312 | 003SBP0313 | 003SBP0315 | 003SBP0401 | 003SBP0402 | 003SBP0403 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 44.0 - 48.0' | 48.0 - 52.0' | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 07/13/97 | 07/13/97 | 07/13/97 | 09/06/97 | 09/06/97 | 09/06/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P03 | P03 | P03 | P04 | P04 | P04 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 48 U | 48 U | 40 U | 48 U | 47 U | 43 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0404 | 003SBP0405 | 003SBP0406 | 003SBP0501 | 003SBP0502 | 003SBP0503 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 09/06/97 | 09/06/97 | 09/06/97 | 09/17/97 | 09/17/97 | 09/17/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P04 | P04 | P04 | P05 | P05 | P05 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3 U | 3.3 U | 3.4 U | 4.6 U | 2.9 U | 18 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.37 U | 0.4 U | 0.42 U | 0.38 U | 0.36 U | 2.2 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 11 U | 11 U | 10 U | 9.6 U | 58 U |
| 1,1-DICHLOROETHENE | 7.8 U | 8.5 U | 8.8 U | 8 U | 7.5 U | 46 U |
| 1,2-DICHLOROETHANE | 26 U | 28 U | 29 U | 27 U | 25 U | 150 U |
| 2-BUTANONE | 15 UR | 16 UR | 17 UR | 15 U | 14 U | 88 U |
| 2-HEXANONE | 15 U | 16 U | 17 U | 15 U | 14 U | 88 U |
| 4-METHYL-2-PENTANONE | 14 U | 16 U | 16 U | 15 U | 14 U | 84 U |
| ACETONE | 39 UR | 42 UR | 44 UR | 40 U | 38 U | 230 U |
| BENZENE | 1.9 U | 2.1 U | 2.2 U | 2 U | 1.9 U | 11 U |
| BROMOFORM | 0.61 U | 0.66 U | 0.69 U | 0.62 U | 0.59 U | 3.6 U |
| BROMOMETHANE | 48 U | 52 U | 54 U | 49 U | 46 U | 280 U |
| CARBON DISULFIDE | 24 UR | 26 UR | 27 UR | 24 U | 23 U | 140 U |
| CARBON TETRACHLORIDE | 0.48 U | 0.52 U | 0.54 U | 0.74 U | 0.46 U | 2.8 U |
| CHLOROBENZENE | 1.2 U | 1.3 U | 1.4 U | 1.2 U | 1.2 U | 7.1 U |
| CHLOROFORM | 8.2 U | 9 U | 9.3 U | 13 U | 8 U | 48 U |
| CIS-1,2-DICHLOROETHENE | 6.9 U | 7.5 U | 7.8 UR | 7.1 U | 6.7 U | 41 U |
| ETHYLBENZENE | 2.4 U | 2.6 U | 2.7 U | 2.4 U | 2.3 U | 14 U |
| M+P-XYLENES | 3.7 U | 4 U | 4.2 U | 3.8 U | 3.6 U | 22 U |
| METHYLENE CHLORIDE | 9.3 U | 10 U | 11 U | 9.5 U | 9 U | 55 U |
| O-XYLENE/STYRENE | 12 U | 13 U | 14 U | 12 U | 12 U | 71 U |
| TETRACHLOROETHENE | 0.33 U | 0.35 U | 0.37 U | 0.33 U | 0.31 U | 1.9 U |
| TOLUENE | 2.4 U | 2.6 U | 2.7 U | 2.4 U | 2.3 U | 14 U |
| TRANS-1,2-DICHLOROETHENE | 5.4 U | 5.9 U | 6.1 UR | 5.5 U | 5.2 U | 32 U |
| TRICHLOROETHENE | 1.2 U | 1.2 U | 0.87 U | 0.73 U | 0.69 U | 4.2 U |

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## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0404 | 003SBP0405 | 003SBP0406 | 003SBP0501 | 003SBP0502 | 003SBP0503 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 09/06/97 | 09/06/97 | 09/06/97 | 09/17/97 | 09/17/97 | 09/17/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P04 | P04 | P04 | P05 | P05 | P05 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 43 U | 47 U | 49 U | 44 U | 42 U | 250 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0504 | 003SBP0505 | 003SBDP142 | 003SBP0601 | 003SBP0603 | 003SBP0604 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 16.0 - 20.0' | 0.0 - 4.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/17/97 | 09/17/97 | 09/17/97 | 08/07/97 | 08/07/97 | 08/07/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P05 | P05 | P05 | P06 | P06 | P06 |
| FIELD DUPLICATE OF: | | | 003SBP0505 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.7 U | 4.2 U | 2.9 U | 2.5 U | 3 U | 2.9 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.38 U | 0.35 U | 0.33 U | 0.3 U | 0.36 U | 0.35 U |
| 1,1,2-TRICHLOROETHANE | 10 U | 9.6 U | 9 U | 8.1 U | 9.8 U | 9.4 U |
| 1,1-DICHLOROETHENE | 8 U | 7.5 U | 7.1 U | 6.3 U | 7.7 U | 7.4 U |
| 1,2-DICHLOROETHANE | 27 U | 25 U | 24 U | 21 U | 26 U | 25 U |
| 2-BUTANONE | 15 U | 14 U | 14 U | 12 U | 11 J | 14 U |
| 2-HEXANONE | 15 U | 14 U | 14 U | 12 U | 15 U | 14 U |
| 4-METHYL-2-PENTANONE | 15 U | 14 U | 13 U | 12 U | 14 U | 13 U |
| ACETONE | 40 U | 38 U | 35 U | 32 U | 38 U | 37 U |
| BENZENE | 2 U | 1.9 U | 1.7 U | 1.6 U | 1.9 U | 1.8 U |
| BROMOFORM | 0.62 U | 0.58 U | 0.55 U | 0.49 U | 0.6 U | 0.57 U |
| BROMOMETHANE | 49 U | 46 U | 43 U | 39 U | 47 U | 45 U |
| CARBON DISULFIDE | 24 U | 23 U | 22 U | 19 U | 17 J | 22 U |
| CARBON TETRACHLORIDE | 0.75 U | 0.68 U | 0.46 U | 0.39 U | 0.47 U | 0.45 U |
| CHLOROBENZENE | 1.2 U | 1.2 U | 1.1 U | 0.99 U | 1.2 U | 1.1 U |
| CHLOROFORM | 13 U | 12 U | 7.8 U | 6.7 U | 8.1 U | 7.8 U |
| CIS-1,2-DICHLOROETHENE | 7.1 U | 6.7 U | 6.3 U | 5.6 U | 6.8 U | 6.5 U |
| ETHYLBENZENE | 2.4 U | 2.3 U | 2.2 U | 1.9 U | 2.3 U | 2.2 U |
| M+P-XYLENES | 3.8 U | 3.5 U | 3.3 U | 3 U | 3.6 U | 3.5 U |
| METHYLENE CHLORIDE | 9.5 U | 9 U | 8.4 U | 7.6 U | 9.2 U | 8.8 U |
| O-XYLENE/STYRENE | 12 U | 12 U | 11 U | 9.9 U | 12 U | 11 U |
| TETRACHLOROETHENE | 0.33 U | 0.31 U | 0.29 U | 0.26 U | 0.32 U | 0.31 U |
| TOLUENE | 2.4 U | 2.3 U | 2.2 U | 1.9 U | 2.3 U | 2.2 U |
| TRANS-1,2-DICHLOROETHENE | 5.5 U | 5.2 U | 4.9 U | 4.4 U | 6.5 U | 5.1 U |
| TRICHLOROETHENE | 0.73 U | 0.69 U | 0.65 U | 0.58 U | 0.7 U | 0.67 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0504 | 003SBP0505 | 003SBDP142 | 003SBP0601 | 003SBP0603 | 003SBP0604 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 16.0 - 20.0' | 0.0 - 4.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/17/97 | 09/17/97 | 09/17/97 | 08/07/97 | 08/07/97 | 08/07/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P05 | P05 | P05 | P06 | P06 | P06 |
| FIELD DUPLICATE OF: | | | 003SBP0505 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 44 U | 42 U | 39 U | 35 U | 43 U | 41 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0606 | 003SBDP119 | 003SBP0701 | 003SBP0702 | 003SBP0703 | 003SBP0704 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 20.0 - 24.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 08/07/97 | 08/07/97 | 07/10/97 | 07/10/97 | 07/10/97 | 07/10/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P06 | P06 | P07 | P07 | P07 | P07 |
| FIELD DUPLICATE OF: | | 003SBP0606 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.6 U | 3 U | 4.8 U | 4.1 U | 4.8 U | 5 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.29 U | 0.36 U | 0.37 U | 0.34 U | 0.33 U | 0.35 U |
| 1,1,2-TRICHLOROETHANE | 7.8 U | 9.8 U | 10 U | 9.1 U | 9 U | 9.4 U |
| 1,1-DICHLOROETHENE | 6.1 U | 7.7 U | 7.8 U | 7.1 U | 7.1 U | 7.4 U |
| 1,2-DICHLOROETHANE | 20 U | 26 U | 26 U | 24 U | 24 U | 25 U |
| 2-BUTANONE | 12 U | 15 U | 15 U | 14 U | 14 U | 14 U |
| 2-HEXANONE | 12 U | 15 U | 15 U | 14 U | 14 U | 14 U |
| 4-METHYL-2-PENTANONE | 11 U | 14 U | 14 U | 13 U | 13 U | 13 U |
| ACETONE | 30 U | 39 U | 39 U | 36 U | 35 U | 37 U |
| BENZENE | 1.5 U | 1.9 U | 1.9 U | 1.8 U | 1.8 U | 1.8 U |
| BROMOFORM | 0.47 U | 0.6 U | 0.61 U | 0.55 U | 0.55 U | 0.57 U |
| BROMOMETHANE | 100 U | 47 U | 48 U | 44 U | 43 U | 45 U |
| CARBON DISULFIDE | 19 U | 24 U | 24 U | 22 U | 22 U | 22 U |
| CARBON TETRACHLORIDE | 0.57 U | 0.47 U | 0.76 U | 0.66 U | 0.78 U | 0.8 U |
| CHLOROBENZENE | 0.95 U | 1.2 U | 1.2 U | 1.1 U | 1.1 U | 1.1 U |
| CHLOROFORM | 9.8 U | 8.1 U | 13 U | 11 U | 13 U | 14 U |
| CIS-1,2-DICHLOROETHENE | 5.4 U | 5 J | 3.9 UJ | 3.4 UJ | 3.4 UJ | 3.5 UJ |
| ETHYLBENZENE | 1.9 U | 2.4 U | 2.4 U | 2.2 U | 2.2 U | 2.2 U |
| M+P-XYLENES | 2.9 U | 3.6 U | 3.7 U | 3.4 U | 3.3 U | 3.5 U |
| METHYLENE CHLORIDE | 7.3 U | 9.2 U | 9.3 U | 8.5 U | 8.5 U | 8.8 U |
| O-XYLENE/STYRENE | 9.5 U | 12 U | 12 U | 11 U | 11 U | 11 U |
| TETRACHLOROETHENE | 0.25 U | 0.32 U | 0.32 U | 0.3 U | 0.3 U | 0.31 U |
| TOLUENE | 1.9 U | 2.4 U | 2.4 U | 2.2 U | 2.2 U | 2.2 U |
| TRANS-1,2-DICHLOROETHENE | 4.2 U | 5.4 U | 5.4 U | 5 U | 4.9 U | 5.1 U |
| TRICHLOROETHENE | 0.86 | 1.5 | 0.71 U | 0.65 U | 0.65 U | 0.67 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0606 | 003SBDP119 | 003SBP0701 | 003SBP0702 | 003SBP0703 | 003SBP0704 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 20.0 - 24.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 08/07/97 | 08/07/97 | 07/10/97 | 07/10/97 | 07/10/97 | 07/10/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P06 | P06 | P07 | P07 | P07 | P07 |
| FIELD DUPLICATE OF: | | 003SBP0606 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 34 U | 43 U | 43 U | 40 U | 39 U | 41 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0705 | 003SBP0706 | 003SBP0707 | 003SBDP102 | 003SBP0708 | 003SBP0710 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 07/10/97 | 07/10/97 | 07/10/97 | 07/10/97 | 07/11/97 | 07/11/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P07 | P07 | P07 | P07 | P07 | P07 |
| FIELD DUPLICATE OF: | | | | 003SBP0707 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4.7 U | 5.3 U | 6.2 U | 5.6 U | 5.6 U | 5.8 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.33 U | 0.35 U | 0.39 U | 0.34 U | 0.38 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 5.4 J | 9.5 | 6.8 J | 7.5 J | 10 U | 10 U |
| 1,1-DICHLOROETHENE | 7 U | 7.5 U | 8.2 U | 7.3 U | 8 U | 8.2 U |
| 1,2-DICHLOROETHANE | 23 U | 25 U | 27 U | 24 U | 27 U | 27 U |
| 2-BUTANONE | 13 U | 14 U | 16 U | 14 U | 15 U | 16 U |
| 2-HEXANONE | 13 U | 14 U | 16 U | 14 U | 15 U | 16 U |
| 4-METHYL-2-PENTANONE | 13 U | 14 U | 15 U | 13 U | 15 U | 15 U |
| ACETONE | 35 U | 37 U | 41 U | 36 U | 40 U | 41 U |
| BENZENE | 1.7 U | 1.8 U | 2 U | 1.8 U | 2 U | 2 U |
| BROMOFORM | 0.54 U | 0.58 U | 0.64 U | 0.57 U | 0.62 U | 0.64 U |
| BROMOMETHANE | 42 U | 46 U | 50 U | 44 U | 49 U | 50 U |
| CARBON DISULFIDE | 21 U | 23 U | 25 U | 22 U | 24 U | 25 U |
| CARBON TETRACHLORIDE | 0.76 U | 0.86 U | 1 U | 0.91 U | 0.91 U | 0.93 U |
| CHLOROBENZENE | 1.1 U | 1.2 U | 1.3 U | 1.1 U | 1.2 U | 1.3 U |
| CHLOROFORM | 13 U | 15 U | 17 U | 16 U | 16 U | 16 U |
| CIS-1,2-DICHLOROETHENE | 3.3 UJ | 3.4 UJ | 4.1 UJ | 3.6 UJ | 3.7 UJ | 8.2 U |
| ETHYLBENZENE | 2.1 U | 2.3 U | 2.5 U | 2.2 U | 2.4 U | 2.5 U |
| M+P-XYLENES | 3.3 U | 3.5 U | 3.9 U | 3.4 U | 3.8 U | 3.9 U |
| METHYLENE CHLORIDE | 8.3 U | 8.9 U | 9.8 U | 8.7 U | 9.6 U | 9.8 U |
| O-XYLENE/STYRENE | 11 U | 12 U | 13 U | 11 U | 12 U | 13 U |
| TETRACHLOROETHENE | 0.17 J | 0.31 | 0.22 J | 0.24 J | 0.33 U | 0.34 U |
| TOLUENE | 2.1 U | 2.3 U | 2.5 U | 2.2 U | 2.4 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 4.8 U | 5.2 U | 5.7 U | 5 U | 5.6 U | 5.7 U |
| TRICHLOROETHENE | 1 | 2.4 | 4.4 | 3.6 | 9.8 J | 6.4 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0705 | 003SBP0706 | 003SBP0707 | 003SBDP102 | 003SBP0708 | 003SBP0710 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' | 36.0 - 40.0' |
| SAMPLE DATE: | 07/10/97 | 07/10/97 | 07/10/97 | 07/10/97 | 07/11/97 | 07/11/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P07 | P07 | P07 | P07 | P07 | P07 |
| FIELD DUPLICATE OF: | | | | 003SBP0707 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 39 U | 41 U | 46 U | 40 U | 44 U | 45 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP103 | 003SBP0711 | 003SBP0712 | 003SBP0714 | 003SBP0801 | 003SBP0802 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 07/11/97 | 07/11/97 | 07/11/97 | 07/11/97 | 09/02/97 | 09/02/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P07 | P07 | P07 | P07 | P08 | P08 |
| FIELD DUPLICATE OF: | 003SBP0710 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 6.2 U | 5.9 U | 8.1 U | 7.8 U | 2.5 U | 3.1 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.42 U | 0.34 U | 0.35 U | 0.44 U | 0.3 U | 0.38 U |
| 1,1,2-TRICHLOROETHANE | 11 U | 9.3 U | 9.6 U | 12 U | 8.1 U | 10 U |
| 1,1-DICHLOROETHENE | 8.8 U | 7.3 U | 7.5 U | 9.3 U | 6.4 U | 8 U |
| 1,2-DICHLOROETHANE | 29 U | 24 U | 25 U | 31 U | 21 U | 27 U |
| 2-BUTANONE | 17 U | 14 U | 14 U | 18 U | 12 U | 15 U |
| 2-HEXANONE | 17 U | 14 U | 14 U | 18 U | 12 U | 15 U |
| 4-METHYL-2-PENTANONE | 16 U | 13 U | 14 U | 17 U | 12 U | 15 U |
| ACETONE | 44 U | 36 U | 37 U | 47 U | 32 U | 40 U |
| BENZENE | 2.2 U | 1.8 U | 1.8 U | 2.3 U | 1.6 U | 2 U |
| BROMOFORM | 0.69 U | 0.57 U | 0.58 U | 0.72 U | 0.49 U | 0.62 U |
| BROMOMETHANE | 54 U | 45 U | 46 U | 57 U | 39 U | 49 U |
| CARBON DISULFIDE | 27 U | 22 U | 23 U | 28 U | 19 U | 25 U |
| CARBON TETRACHLORIDE | 1 U | 0.94 U | 1.3 U | 1.3 U | 0.39 U | 0.49 U |
| CHLOROBENZENE | 1.4 U | 1.1 U | 1.2 U | 1.4 U | 0.99 U | 1.2 U |
| CHLOROFORM | 17 U | 16 U | 23 U | 22 U | 6.7 U | 8.5 U |
| CIS-1,2-DICHLOROETHENE | 7.3 UJ | 6.9 U | 12 J | 7.5 UJ | 5.7 U | 7.1 U |
| ETHYLBENZENE | 2.7 U | 2.2 U | 2.3 U | 2.8 U | 1.9 U | 2.5 U |
| M+P-XYLENES | 4.2 U | 3.4 U | 3.5 U | 4.4 U | 3 U | 3.8 U |
| METHYLENE CHLORIDE | 11 U | 8.7 U | 8.9 U | 11 U | 7.6 U | 9.6 U |
| O-XYLENE/STYRENE | 14 U | 11 U | 12 U | 14 U | 9.9 U | 12 U |
| TETRACHLOROETHENE | 0.37 U | 0.3 U | 0.31 U | 0.39 U | 0.27 U | 0.33 U |
| TOLUENE | 2.7 U | 2.2 U | 2.3 U | 2.8 U | 1.9 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 6.1 U | 5.1 U | 5.2 U | 6.5 U | 4.4 U | 5.6 U |
| TRICHLOROETHENE | 6.8 J | 4.3 J | 200 J | 0.85 U | 0.48 J | 0.4 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP103 | 003SBP0711 | 003SBP0712 | 003SBP0714 | 003SBP0801 | 003SBP0802 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 36.0 - 40.0' | 40.0 - 44.0' | 44.0 - 48.0' | 52.0 - 56.0' | 0.0 - 4.0' | 4.0 - 8.0' |
| SAMPLE DATE: | 07/11/97 | 07/11/97 | 07/11/97 | 07/11/97 | 09/02/97 | 09/02/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P07 | P07 | P07 | P07 | P08 | P08 |
| FIELD DUPLICATE OF: | 003SBP0710 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 49 U | 41 U | 42 U | 52 U | 35 U | 45 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0803 | 003SBP0804 | 003SBP0805 | 003SBDP134 | 003SBP0806 | 003SBP0807 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 09/02/97 | 09/02/97 | 09/02/97 | 09/02/97 | 09/02/97 | 09/02/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P08 | P08 | P08 | P08 | P08 | P08 |
| FIELD DUPLICATE OF: | | | | 003SBP0805 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.8 U | 2.9 U | 2.7 U | 2.2 U | 3.4 U | 3.4 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.34 U | 0.36 U | 0.33 U | 0.26 U | 0.41 U | 0.41 U |
| 1,1,2-TRICHLOROETHANE | 9.3 U | 9.7 U | 8.9 U | 7.1 U | 11 U | 11 U |
| 1,1-DICHLOROETHENE | 7.3 U | 7.6 U | 7 U | 5.6 U | 8.7 U | 8.8 U |
| 1,2-DICHLOROETHANE | 24 U | 25 U | 23 U | 19 U | 29 U | 29 U |
| 2-BUTANONE | 14 U | 15 U | 13 U | 11 U | 59 U | 17 U |
| 2-HEXANONE | 14 U | 15 U | 13 U | 11 U | 17 U | 17 U |
| 4-METHYL-2-PENTANONE | 13 U | 14 U | 13 U | 10 U | 16 U | 16 U |
| ACETONE | 36 U | 38 U | 35 U | 28 U | 140 U | 44 U |
| BENZENE | 1.8 U | 1.9 U | 1.7 U | 1.4 U | 2.1 U | 2.2 U |
| BROMOFORM | 0.56 U | 0.59 U | 0.54 U | 0.43 U | 0.68 U | 0.68 U |
| BROMOMETHANE | 44 U | 46 U | 43 U | 34 U | 53 U | 54 U |
| CARBON DISULFIDE | 22 U | 23 U | 21 U | 17 U | 90 U | 27 U |
| CARBON TETRACHLORIDE | 0.44 U | 0.46 U | 0.43 U | 0.34 U | 0.53 U | 0.54 U |
| CHLOROBENZENE | 1.1 U | 1.2 U | 1.1 U | 0.87 U | 1.4 U | 1.4 U |
| CHLOROFORM | 7.7 U | 8 U | 7.4 U | 5.9 U | 9.2 U | 9.3 U |
| CIS-1,2-DICHLOROETHENE | 6.4 U | 6.7 U | 6.2 U | 5 U | 7.7 U | 12 |
| ETHYLBENZENE | 2.2 U | 2.3 U | 2.1 U | 1.7 U | 2.7 U | 2.7 U |
| M+P-XYLENES | 3.4 U | 3.6 U | 3.3 U | 2.6 U | 4.1 U | 4.1 U |
| METHYLENE CHLORIDE | 8.7 U | 9.1 U | 8.4 U | 6.7 U | 10 U | 10 U |
| O-XYLENE/STYRENE | 11 U | 12 U | 11 U | 8.7 U | 14 U | 14 U |
| TETRACHLOROETHENE | 0.3 U | 0.32 U | 0.29 U | 0.23 U | 0.36 U | 0.37 U |
| TOLUENE | 2.2 U | 2.3 U | 2.1 U | 1.7 U | 2.7 U | 2.7 U |
| TRANS-1,2-DICHLOROETHENE | 5 U | 5.3 U | 4.9 U | 3.9 U | 31 U | 6.1 U |
| TRICHLOROETHENE | 0.66 U | 0.7 U | 0.37 J | 0.51 U | 0.65 J | 2.3 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0803 | 003SBP0804 | 003SBP0805 | 003SBDP134 | 003SBP0806 | 003SBP0807 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 8.0 - 12.0' | 12.0 - 16.0' | 16.0 - 20.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' |
| SAMPLE DATE: | 09/02/97 | 09/02/97 | 09/02/97 | 09/02/97 | 09/02/97 | 09/02/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P08 | P08 | P08 | P08 | P08 | P08 |
| FIELD DUPLICATE OF: | | | | 003SBP0805 | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 40 U | 42 U | 39 U | 31 U | 48 U | 49 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0808 | 003SBP0809 | 003SBP0812 | 003SBP0813 | 003SBDP135 | 003SBP0814 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 44.0 - 48.0' | 48.0 - 52.0' | 48.0 - 52.0' | 52.0 - 56.0' |
| SAMPLE DATE: | 09/02/97 | 09/03/97 | 09/03/97 | 09/03/97 | 09/03/97 | 09/03/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P08 | P08 | P08 | P08 | P08 | P08 |
| FIELD DUPLICATE OF: | | | | | 003SBP0813 | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 2.8 U | 3.2 U | 2.6 U | 3.3 U | 3.6 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.34 U | 0.39 U | 0.32 U | 0.4 U | 0.43 U | 0.38 U |
| 1,1,2-TRICHLOROETHANE | 9.2 U | 10 U | 8.6 U | 11 U | 12 U | 10 U |
| 1,1-DICHLOROETHENE | 7.2 U | 8.2 U | 6.8 U | 8.4 U | 9.2 U | 8.1 U |
| 1,2-DICHLOROETHANE | 24 U | 27 U | 23 U | 28 U | 31 U | 27 U |
| 2-BUTANONE | 14 U | 16 U | 13 U | 16 U | 18 U | 16 U |
| 2-HEXANONE | 14 U | 16 U | 13 U | 16 U | 18 U | 16 U |
| 4-METHYL-2-PENTANONE | 13 U | 15 U | 12 U | 15 U | 17 U | 15 U |
| ACETONE | 36 U | 41 U | 34 U | 42 U | 46 U | 41 U |
| BENZENE | 1.8 U | 2 U | 1.7 U | 2.1 U | 2.3 U | 2 U |
| BROMOFORM | 0.56 U | 0.64 U | 0.53 U | 0.65 U | 0.71 U | 0.63 U |
| BROMOMETHANE | 44 U | 50 U | 41 U | 51 U | 56 U | 50 U |
| CARBON DISULFIDE | 22 U | 25 U | 21 U | 26 U | 28 U | 25 U |
| CARBON TETRACHLORIDE | 0.44 U | 0.52 U | 0.41 U | 0.51 U | 0.56 U | 0.5 U |
| CHLOROBENZENE | 1.1 U | 1.3 U | 1.1 U | 1.3 U | 1.4 U | 1.3 U |
| CHLOROFORM | 7.6 U | 8.9 U | 7.1 U | 8.8 U | 9.7 U | 8.6 U |
| CIS-1,2-DICHLOROETHENE | 15 | 40 | 37 | 28 | 21 | 17 |
| ETHYLBENZENE | 2.2 U | 2.5 U | 2.1 U | 2.6 U | 2.8 U | 2.5 U |
| M+P-XYLENES | 3.4 U | 3.9 U | 3.2 U | 4 U | 4.3 U | 3.8 U |
| METHYLENE CHLORIDE | 8.6 U | 9.8 U | 8.1 U | 10 U | 11 U | 9.7 U |
| O-XYLENE/STYRENE | 11 U | 13 U | 11 U | 13 U | 14 U | 13 U |
| TETRACHLOROETHENE | 0.3 U | 0.34 U | 0.28 U | 0.35 U | 0.38 U | 0.34 U |
| TOLUENE | 2.2 U | 2.5 U | 2.1 U | 2.6 U | 2.8 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 5 U | 14 U | 15 U | 20 U | 21 U | 27 U |
| TRICHLOROETHENE | 2.3 | 4.9 | 11 | 12 J | 15 J | 14 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0808 | 003SBP0809 | 003SBP0812 | 003SBP0813 | 003SBDP135 | 003SBP0814 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 28.0 - 32.0' | 32.0 - 36.0' | 44.0 - 48.0' | 48.0 - 52.0' | 48.0 - 52.0' | 52.0 - 56.0' |
| SAMPLE DATE: | 09/02/97 | 09/03/97 | 09/03/97 | 09/03/97 | 09/03/97 | 09/03/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P08 | P08 | P08 | P08 | P08 | P08 |
| FIELD DUPLICATE OF: | | | | | 003SBP0813 | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 40 U | 45 U | 38 U | 47 U | 51 U | 45 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0815 | 003SBP0901 | 003SBP0902 | 003SBP0903 | 003SBP0904 | 003SBDP129 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/03/97 | 08/23/97 | 08/23/97 | 08/23/97 | 08/23/97 | 08/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P08 | P09 | P09 | P09 | P09 | P09 |
| FIELD DUPLICATE OF: | | | | | | 003SBP0904 |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 4 U | 2.7 U | 3.3 U | 3.2 U | 4.3 U | 4.4 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.48 U | 0.32 U | 0.34 U | 0.35 U | 0.35 U | 0.54 U |
| 1,1,2-TRICHLOROETHANE | 13 U | 8.7 U | 9.3 U | 9.6 U | 9.5 U | 15 U |
| 1,1-DICHLOROETHENE | 10 U | 6.8 U | 7.3 U | 7.5 U | 7.4 U | 11 U |
| 1,2-DICHLOROETHANE | 34 U | 23 U | 24 U | 25 U | 25 U | 38 U |
| 2-BUTANONE | 20 U | 13 U | 14 U | 14 U | 14 U | 22 U |
| 2-HEXANONE | 20 U | 13 U | 14 U | 14 U | 14 U | 22 U |
| 4-METHYL-2-PENTANONE | 19 U | 13 U | 13 U | 14 U | 14 U | 21 U |
| ACETONE | 51 U | 34 U | 36 U | 38 U | 37 U | 57 U |
| BENZENE | 2.5 U | 1.7 U | 1.8 U | 1.9 U | 1.8 U | 2.8 U |
| BROMOFORM | 0.79 U | 0.53 U | 0.56 U | 0.58 U | 0.58 U | 0.89 U |
| BROMOMETHANE | 62 U | 42 U | 44 U | 46 U | 46 U | 70 U |
| CARBON DISULFIDE | 31 U | 21 U | 22 U | 23 U | 23 U | 35 U |
| CARBON TETRACHLORIDE | 0.62 U | 0.42 U | 0.54 U | 0.52 U | 0.69 U | 0.7 U |
| CHLOROBENZENE | 1.6 U | 1.1 U | 1.1 U | 1.2 U | 1.2 U | 1.8 U |
| CHLOROFORM | 11 U | 7.2 U | 9.2 U | 8.9 U | 12 U | 12 U |
| CIS-1,2-DICHLOROETHENE | 11 | 6.1 U | 6.4 U | 6.7 U | 6.6 U | 10 U |
| ETHYLBENZENE | 3.1 U | 2.1 U | 2.2 U | 2.3 U | 2.3 U | 3.5 U |
| M+P-XYLENES | 4.8 U | 3.2 U | 3.4 U | 3.5 U | 3.5 U | 5.4 U |
| METHYLENE CHLORIDE | 12 U | 8.2 U | 8.7 U | 9 U | 8.9 U | 14 U |
| O-XYLENE/STYRENE | 16 U | 11 U | 11 U | 12 U | 12 U | 18 U |
| TETRACHLOROETHENE | 0.43 U | 0.29 U | 0.3 U | 0.31 U | 0.31 U | 0.48 U |
| TOLUENE | 3.1 U | 2.1 U | 2.2 U | 2.3 U | 2.3 U | 3.5 U |
| TRANS-1,2-DICHLOROETHENE | 7.1 U | 4.8 U | 5 U | 5.2 U | 5.2 U | 7.9 U |
| TRICHLOROETHENE | 19 J | 0.63 U | 0.66 U | 0.69 U | 5.3 | 5.1 |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0815 | 003SBP0901 | 003SBP0902 | 003SBP0903 | 003SBP0904 | 003SBDP129 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 56.0 - 60.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/03/97 | 08/23/97 | 08/23/97 | 08/23/97 | 08/23/97 | 08/23/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P08 | P09 | P09 | P09 | P09 | P09 |
| FIELD DUPLICATE OF: | | | | | | 003SBP0904 |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 57 U | 38 U | 40 U | 42 U | 41 U | 63 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0907 | 003SBDP130 | 003SBP0908 | 003SBP1001 | 003SBP1002 | 003SBP1003 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 08/23/97 | 08/23/97 | 08/23/97 | 09/05/97 | 09/05/97 | 09/05/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P09 | P09 | P09 | P10 | P10 | P10 |
| FIELD DUPLICATE OF: | | 003SBP0907 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 22 U | 3.6 U | 4.6 U | 3.2 U | 3.2 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 2.5 U | 0.43 U | 0.56 U | 0.39 U | 0.39 U | 0.38 U |
| 1,1,2-TRICHLOROETHANE | 2800 U | 12 U | 15 U | 11 U | 11 U | 10 U |
| 1,1-DICHLOROETHENE | 53 U | 9.1 U | 12 U | 8.3 U | 8.3 U | 8.1 U |
| 1,2-DICHLOROETHANE | 180 U | 30 U | 39 U | 28 U | 28 U | 27 U |
| 2-BUTANONE | 100 U | 18 U | 23 U | 170 U | 27 U | 16 U |
| 2-HEXANONE | 100 U | 18 U | 23 U | 16 U | 16 U | 16 U |
| 4-METHYL-2-PENTANONE | 97 U | 17 U | 22 U | 15 U | 15 U | 15 U |
| ACETONE | 260 U | 46 U | 59 U | 41 U | 41 U | 41 U |
| BENZENE | 13 U | 2.3 U | 2.9 U | 2 U | 2 U | 2 U |
| BROMOFORM | 4.1 U | 0.71 U | 0.92 U | 0.64 U | 0.64 U | 0.63 U |
| BROMOMETHANE | 320 U | 56 U | 72 U | 50 U | 50 U | 50 U |
| CARBON DISULFIDE | 160 U | 28 U | 36 U | 270 U | 42 U | 25 U |
| CARBON TETRACHLORIDE | 3.5 U | 0.56 U | 0.72 U | 0.5 U | 0.5 U | 0.5 U |
| CHLOROBENZENE | 8.2 U | 1.4 U | 6.6 U | 1.3 U | 1.3 U | 1.3 U |
| CHLOROFORM | 61 U | 9.7 U | 12 U | 8.7 U | 8.7 U | 8.6 U |
| CIS-1,2-DICHLOROETHENE | 47 U | 8.1 U | 11 U | 7.3 U | 7.3 U | 7.2 U |
| ETHYLBENZENE | 16 U | 2.8 U | 13 U | 2.5 U | 2.5 U | 2.5 U |
| M+P-XYLENES | 25 U | 4.3 U | 20 U | 3.9 U | 3.9 U | 3.8 U |
| METHYLENE CHLORIDE | 63 U | 11 U | 14 U | 9.9 U | 9.9 U | 9.7 U |
| O-XYLENE/STYRENE | 82 U | 14 U | 66 U | 13 U | 13 U | 13 U |
| TETRACHLOROETHENE | 90 J | 0.38 U | 0.49 U | 0.34 U | 0.34 U | 0.34 U |
| TOLUENE | 16 U | 2.8 U | 3.6 U | 2.5 U | 2.5 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 37 U | 6.3 U | 8.2 U | 5.7 U | 5.7 U | 5.6 U |
| TRICHLOROETHENE | 4.8 U | 0.58 J | 3.4 | 0.98 U | 0.4 J | 0.66 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP0907 | 003SBDP130 | 003SBP0908 | 003SBP1001 | 003SBP1002 | 003SBP1003 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 24.0 - 28.0' | 24.0 - 28.0' | 28.0 - 32.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' |
| SAMPLE DATE: | 08/23/97 | 08/23/97 | 08/23/97 | 09/05/97 | 09/05/97 | 09/05/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P09 | P09 | P09 | P10 | P10 | P10 |
| FIELD DUPLICATE OF: | | 003SBP0907 | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 290 U | 51 U | 66 U | 46 U | 46 U | 45 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP1004 | 003SBP1005 | 003SBP1006 | 003SBP1007 | 003SBP1008 | 003SBP1009 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' |
| SAMPLE DATE: | 09/05/97 | 09/05/97 | 09/05/97 | 09/05/97 | 09/05/97 | 09/05/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P10 | P10 | P10 | P10 | P10 | P10 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.2 U | 2.9 U | 3.6 U | 3.8 U | 16 U | 3.1 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.39 U | 0.36 U | 0.43 U | 0.43 U | 2 U | 4 U |
| 1,1,2-TRICHLOROETHANE | 39 U | 9.6 U | 12 U | 12 U | 54 U | 110 U |
| 1,1-DICHLOROETHENE | 8.3 U | 7.5 U | 9.2 U | 9.2 U | 42 U | 8 U |
| 1,2-DICHLOROETHANE | 28 U | 25 U | 31 U | 31 U | 140 U | 280 U |
| 2-BUTANONE | 16 U | 14 U | 18 UR | 18 UR | 81 UR | 15 UR |
| 2-HEXANONE | 16 U | 14 U | 18 U | 18 U | 81 U | 15 U |
| 4-METHYL-2-PENTANONE | 15 U | 14 U | 17 U | 17 U | 77 U | 15 U |
| ACETONE | 42 U | 38 U | 46 UR | 46 UR | 210 UR | 40 UR |
| BENZENE | 2.1 U | 1.9 U | 2.3 U | 2.3 U | 10 U | 2 U |
| BROMOFORM | 0.65 U | 0.58 U | 0.71 U | 0.71 U | 3.3 U | 6.6 U |
| BROMOMETHANE | 51 U | 46 U | 56 U | 56 U | 260 U | 49 U |
| CARBON DISULFIDE | 26 U | 23 U | 28 UR | 28 UR | 130 UR | 24 UR |
| CARBON TETRACHLORIDE | 0.51 U | 0.46 U | 0.56 U | 0.6 U | 2.6 U | 0.49 U |
| CHLOROBENZENE | 1.3 U | 1.2 U | 1.4 U | 1.4 U | 6.6 U | 1.2 U |
| CHLOROFORM | 8.8 U | 7.9 U | 9.7 U | 10 U | 45 U | 8.4 U |
| CIS-1,2-DICHLOROETHENE | 7.4 U | 6.7 U | 8.2 UR | 8.2 UR | 38 UR | 6.1 J |
| ETHYLBENZENE | 2.6 U | 2.3 U | 2.8 U | 2.8 U | 13 U | 2.4 U |
| M+P-XYLENES | 3.9 U | 3.6 U | 4.3 U | 4.3 U | 20 U | 3.8 U |
| METHYLENE CHLORIDE | 10 U | 9 U | 11 U | 11 U | 50 U | 15 |
| O-XYLENE/STYRENE | 13 U | 12 U | 14 U | 14 U | 66 U | 12 U |
| TETRACHLOROETHENE | 1.3 | 0.31 U | 0.38 U | 0.38 U | 1.8 U | 3.5 U |
| TOLUENE | 2.6 U | 2.3 U | 2.8 U | 2.8 U | 13 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 29 U | 34 U | 6.4 UR | 6.4 UR | 29 UR | 17 U |
| TRICHLOROETHENE | 21 J | 0.69 U | 1.5 U | 1.7 U | 950 J | 640 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP1004 | 003SBP1005 | 003SBP1006 | 003SBP1007 | 003SBP1008 | 003SBP1009 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 12.0 - 16.0' | 16.0 - 20.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' |
| SAMPLE DATE: | 09/05/97 | 09/05/97 | 09/05/97 | 09/05/97 | 09/05/97 | 09/05/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P10 | P10 | P10 | P10 | P10 | P10 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 46 U | 42 U | 51 U | 51 U | 230 U | 44 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP138 | 003SBP1010 | 003SBP1101 | 003SBP1102 | 003SBP1103 | 003SBP1104 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/05/97 | 09/05/97 | 09/08/97 | 09/08/97 | 09/08/97 | 09/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P10 | P10 | P11 | P11 | P11 | P11 |
| FIELD DUPLICATE OF: | 003SBP1009 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3.6 U | 3.7 U | 3.3 U | 3 U | 2.8 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.44 U | 0.44 U | 0.4 U | 0.37 U | 0.34 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 110 U | 110 U | 19 | 9.9 U | 9.3 U | 11 U |
| 1,1-DICHLOROETHENE | 9.4 U | 9.4 U | 8.5 U | 7.8 U | 7.3 U | 8.2 U |
| 1,2-DICHLOROETHANE | 860 | 29 J | 28 U | 26 U | 24 U | 27 U |
| 2-BUTANONE | 160 U | 18 UR | 35 U | 110 U | 14 U | 160 U |
| 2-HEXANONE | 18 U | 18 U | 16 U | 15 U | 14 U | 16 U |
| 4-METHYL-2-PENTANONE | 17 U | 17 U | 16 U | 14 U | 13 U | 15 U |
| ACETONE | 420 U | 47 UR | 43 U | 39 U | 37 U | 41 U |
| BENZENE | 2.3 U | 2.3 U | 2.1 U | 1.9 U | 1.8 U | 2 U |
| BROMOFORM | 0.73 U | 0.73 U | 0.66 U | 0.6 U | 0.57 U | 0.64 U |
| BROMOMETHANE | 57 U | 58 U | 52 U | 120 U | 45 U | 50 U |
| CARBON DISULFIDE | 260 U | 29 UR | 55 U | 180 U | 22 U | 250 U |
| CARBON TETRACHLORIDE | 0.57 U | 0.58 U | 0.52 U | 0.47 U | 0.45 U | 0.5 U |
| CHLOROBENZENE | 1.5 U | 1.5 U | 1.3 U | 1.2 U | 1.1 U | 1.3 U |
| CHLOROFORM | 9.9 U | 9.9 U | 9 U | 8.2 U | 7.7 U | 8.7 U |
| CIS-1,2-DICHLOROETHENE | 11 | 8.4 U | 7.6 U | 6.9 U | 6.5 U | 7.3 U |
| ETHYLBENZENE | 2.9 U | 2.9 U | 2.6 U | 2.4 U | 2.2 U | 2.5 U |
| M+P-XYLENES | 4.4 U | 4.4 U | 4 U | 3.7 U | 3.4 U | 3.9 U |
| METHYLENE CHLORIDE | 12 | 8.1 J | 10 U | 9.3 U | 8.7 U | 9.8 U |
| O-XYLENE/STYRENE | 15 U | 15 U | 13 U | 12 U | 11 U | 13 U |
| TETRACHLOROETHENE | 3.5 U | 3.5 U | 0.61 | 0.32 U | 0.3 U | 0.34 U |
| TOLUENE | 2.9 U | 2.9 U | 2.6 U | 2.4 U | 2.2 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 6.5 U | 6.5 U | 5.9 U | 26 U | 5.1 U | 60 U |
| TRICHLOROETHENE | 1400 J | 260 J | 6.4 J | 0.71 U | 0.8 U | 1.1 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBDP138 | 003SBP1010 | 003SBP1101 | 003SBP1102 | 003SBP1103 | 003SBP1104 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 32.0 - 36.0' | 36.0 - 40.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/05/97 | 09/05/97 | 09/08/97 | 09/08/97 | 09/08/97 | 09/08/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P10 | P10 | P11 | P11 | P11 | P11 |
| FIELD DUPLICATE OF: | 003SBP1009 | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 52 U | 52 U | 47 U | 43 U | 41 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP1105 | 003SBP1106 | 003SBDP140 | 003SBP1107 | 003SBP1108 | 003SBP1109 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 16.0 - 20.0' | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' |
| SAMPLE DATE: | 09/08/97 | 09/08/97 | 09/08/97 | 09/09/97 | 09/09/97 | 09/09/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P11 | P11 | P11 | P11 | P11 | P11 |
| FIELD DUPLICATE OF: | | | 003SBP1106 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 3 U | 3.7 U | 3.3 U | 3.4 U | 3.4 U | 3.2 U |
| 1,1,2,2-TETRACHLOROETHANE | 0.37 U | 0.45 U | 0.4 U | 0.41 U | 0.42 U | 0.39 U |
| 1,1,2-TRICHLOROETHANE | 9.9 U | 38 U | 22 | 29 U | 64 U | 10 U |
| 1,1-DICHLOROETHENE | 7.7 U | 9.5 U | 8.4 U | 8.7 U | 8.8 U | 8.2 U |
| 1,2-DICHLOROETHANE | 26 U | 32 U | 28 U | 29 U | 29 U | 27 U |
| 2-BUTANONE | 15 U | 84 U | 21 U | 17 UR | 17 U | 16 U |
| 2-HEXANONE | 15 U | 18 U | 16 U | 17 U | 17 U | 16 U |
| 4-METHYL-2-PENTANONE | 14 U | 17 U | 15 U | 16 U | 16 U | 15 U |
| ACETONE | 39 U | 48 U | 42 U | 44 UR | 44 U | 41 U |
| BENZENE | 1.9 U | 2.3 U | 2.1 U | 2.2 U | 2.2 U | 2 U |
| BROMOFORM | 0.6 U | 0.74 U | 0.65 U | 0.68 U | 0.69 U | 0.64 U |
| BROMOMETHANE | 47 U | 58 U | 51 U | 53 U | 54 U | 50 U |
| CARBON DISULFIDE | 24 U | 130 U | 33 U | 27 UR | 27 U | 25 U |
| CARBON TETRACHLORIDE | 0.47 U | 0.58 U | 0.51 U | 0.53 U | 0.54 U | 0.5 U |
| CHLOROBENZENE | 1.2 U | 1.5 U | 1.3 U | 1.4 U | 1.4 U | 1.3 U |
| CHLOROFORM | 8.2 U | 10 U | 8.8 U | 9.2 U | 9.3 U | 8.7 U |
| CIS-1,2-DICHLOROETHENE | 6.9 U | 8.4 U | 7.4 U | 7.8 UR | 11 | 9.9 |
| ETHYLBENZENE | 2.4 U | 2.9 U | 2.6 U | 2.7 U | 2.7 U | 2.5 U |
| M+P-XYLENES | 3.7 U | 4.5 U | 4 U | 4.1 U | 4.2 U | 3.9 U |
| METHYLENE CHLORIDE | 9.2 U | 11 U | 10 U | 10 U | 11 U | 9.8 U |
| O-XYLENE/STYRENE | 12 U | 15 U | 13 U | 14 U | 14 U | 13 U |
| TETRACHLOROETHENE | 0.32 U | 1.2 | 0.71 | 0.94 | 2.1 | 0.34 U |
| TOLUENE | 2.4 U | 2.9 U | 2.6 U | 2.7 U | 2.7 U | 2.5 U |
| TRANS-1,2-DICHLOROETHENE | 45 U | 21 U | 5.8 U | 6.1 UR | 14 U | 23 U |
| TRICHLOROETHENE | 1.9 U | 23 J | 15 J | 7.9 U | 32 J | 18 J |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP1105 | 003SBP1106 | 003SBDP140 | 003SBP1107 | 003SBP1108 | 003SBP1109 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 16.0 - 20.0' | 20.0 - 24.0' | 20.0 - 24.0' | 24.0 - 28.0' | 28.0 - 32.0' | 32.0 - 36.0' |
| SAMPLE DATE: | 09/08/97 | 09/08/97 | 09/08/97 | 09/09/97 | 09/09/97 | 09/09/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P11 | P11 | P11 | P11 | P11 | P11 |
| FIELD DUPLICATE OF: | | | 003SBP1106 | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 43 U | 53 U | 46 U | 48 U | 49 U | 46 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP1110 | 003SBP1111 | 003SBP1201 | 003SBP1202 | 003SBP1203 | 003SBP1204 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 36.0 - 40.0' | 40.0 - 44.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/09/97 | 09/09/97 | 08/10/97 | 08/10/97 | 08/10/97 | 08/10/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P11 | P11 | P12 | P12 | P12 | P12 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 34 U | 3.6 U | 2.8 U | 2.7 U | 3.1 U | 3.5 U |
| 1,1,2,2-TETRACHLOROETHANE | 4.1 U | 0.42 UR | 0.32 U | 0.33 U | 0.37 U | 0.38 U |
| 1,1,2-TRICHLOROETHANE | 110 U | 11 UR | 8.7 U | 9.4 | 10 U | 16 |
| 1,1-DICHLOROETHENE | 88 U | 7.8 J | 6.8 U | 6.9 U | 7.9 U | 8 U |
| 1,2-DICHLOROETHANE | 290 U | 30 UR | 23 U | 23 U | 26 U | 27 U |
| 2-BUTANONE | 170 UR | 17 UR | 13 U | 13 U | 15 U | 15 U |
| 2-HEXANONE | 170 U | 17 UR | 13 U | 13 U | 15 U | 19 U |
| 4-METHYL-2-PENTANONE | 160 U | 16 UR | 12 U | 13 U | 14 U | 15 U |
| ACETONE | 440 UR | 45 UR | 34 U | 34 U | 39 U | 40 U |
| BENZENE | 22 U | 2.2 UR | 1.7 U | 1.7 U | 2 U | 2 U |
| BROMOFORM | 6.8 U | 0.7 UR | 0.53 U | 0.54 U | 0.61 U | 0.62 U |
| BROMOMETHANE | 540 U | 55 U | 42 U | 89 U | 110 U | 76 U |
| CARBON DISULFIDE | 270 UR | 27 UR | 21 U | 21 U | 24 U | 24 U |
| CARBON TETRACHLORIDE | 5.4 U | 0.57 U | 0.44 U | 0.42 U | 0.48 U | 0.56 U |
| CHLOROBENZENE | 14 U | 1.4 UR | 1.1 U | 1.1 U | 1.2 U | 1.2 U |
| CHLOROFORM | 93 U | 9.8 U | 7.6 U | 7.3 U | 8.3 U | 9.7 U |
| CIS-1,2-DICHLOROETHENE | 78 UR | 97 | 6.1 U | 6.1 U | 7 U | 7.1 U |
| ETHYLBENZENE | 27 U | 2.7 UR | 2.1 U | 2.1 U | 2.4 U | 2.4 U |
| M+P-XYLENES | 41 U | 4.2 UR | 3.2 U | 3.3 U | 3.7 U | 3.8 U |
| METHYLENE CHLORIDE | 100 U | 11 UR | 8.1 U | 8.2 U | 9.4 U | 9.5 U |
| O-XYLENE/STYRENE | 140 U | 14 UR | 11 U | 11 U | 12 U | 12 U |
| TETRACHLOROETHENE | 3.7 U | 0.37 UR | 0.28 U | 0.3 | 0.33 U | 0.53 |
| TOLUENE | 27 U | 2.7 UR | 2.1 U | 2.1 U | 2.4 U | 2.4 U |
| TRANS-1,2-DICHLOROETHENE | 61 UR | 92 U | 4.7 U | 4.8 U | 5.5 U | 4.5 J |
| TRICHLOROETHENE | 120 J | 3400 J | 0.62 U | 0.63 U | 0.72 U | 0.73 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP1110 | 003SBP1111 | 003SBP1201 | 003SBP1202 | 003SBP1203 | 003SBP1204 |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 36.0 - 40.0' | 40.0 - 44.0' | 0.0 - 4.0' | 4.0 - 8.0' | 8.0 - 12.0' | 12.0 - 16.0' |
| SAMPLE DATE: | 09/09/97 | 09/09/97 | 08/10/97 | 08/10/97 | 08/10/97 | 08/10/97 |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | OU3 | OU3 |
| LOCATION: | P11 | P11 | P12 | P12 | P12 | P12 |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 490 U | 50 U | 38 U | 38 U | 44 U | 44 U |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP1206 | 003SBP1208 | 003SBP1209 | 003SBP1210 | | |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | | |
| SAMPLE DATE: | 08/10/97 | 08/10/97 | 08/10/97 | 08/11/97 | / / | / / |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | | |
| LOCATION: | P12 | P12 | P12 | P12 | | |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| 1,1,1-TRICHLOROETHANE | 11 U | 5 U | 2.2 U | 2.4 U | | |
| 1,1,2,2-TETRACHLOROETHANE | 0.73 U | 0.61 U | 0.26 U | 0.29 U | | |
| 1,1,2-TRICHLOROETHANE | 20 U | 16 U | 11 U | 9.1 | | |
| 1,1-DICHLOROETHENE | 15 U | 13 U | 5.5 U | 6.1 U | | |
| 1,2-DICHLOROETHANE | 51 U | 43 U | 18 U | 20 U | | |
| 2-BUTANONE | 29 U | 25 U | 11 U | 12 U | | |
| 2-HEXANONE | 21 J | 25 U | 11 U | 12 U | | |
| 4-METHYL-2-PENTANONE | 28 U | 24 U | 10 U | 11 U | | |
| ACETONE | 77 U | 64 U | 27 U | 31 U | | |
| BENZENE | 3.8 U | 3.2 U | 1.4 U | 1.5 U | | |
| BROMOFORM | 1.2 U | 1 U | 0.43 U | 0.48 U | | |
| BROMOMETHANE | 94 U | 110 U | 34 U | 43 U | | |
| CARBON DISULFIDE | 47 U | 39 U | 17 U | 19 U | | |
| CARBON TETRACHLORIDE | 1.7 U | 0.79 U | 0.35 U | 0.38 U | | |
| CHLOROBENZENE | 2.4 U | 2 U | 0.85 U | 0.95 U | | |
| CHLOROFORM | 29 U | 14 U | 6 U | 6.5 U | | |
| CIS-1,2-DICHLOROETHENE | 14 U | 11 U | 4.9 U | 5.5 U | | |
| ETHYLBENZENE | 4.7 U | 3.9 U | 1.7 U | 1.9 U | | |
| M+P-XYLENES | 7.3 U | 6.1 U | 2.6 U | 2.9 U | | |
| METHYLENE CHLORIDE | 18 U | 15 U | 6.5 U | 7.3 U | | |
| O-XYLENE/STYRENE | 24 U | 20 U | 8.5 U | 9.5 U | | |
| TETRACHLOROETHENE | 0.64 U | 0.54 U | 0.35 | 0.29 | | |
| TOLUENE | 4.7 U | 3.9 U | 1.7 U | 1.9 U | | |
| TRANS-1,2-DICHLOROETHENE | 11 U | 9 U | 3.8 U | 2.2 J | | |
| TRICHLOROETHENE | 1.4 U | 1.2 U | 0.65 | 1.5 | | |

**Blank space indicates that the sample was not analyzed for this particular parameter.**

## FIELD GC ANALYTICAL RESULTS FOR SOILS
## NIROP FRIDLEY, MINNESOTA

| SAMPLE NUMBER: | 003SBP1206 | 003SBP1208 | 003SBP1209 | 003SBP1210 | | |
|---|---|---|---|---|---|---|
| DEPTH (feet): | 20.0 - 24.0' | 28.0 - 32.0' | 32.0 - 36.0' | 36.0 - 40.0' | | |
| SAMPLE DATE: | 08/10/97 | 08/10/97 | 08/10/97 | 08/11/97 | / / | / / |
| INVESTIGATION: | OU3 | OU3 | OU3 | OU3 | | |
| LOCATION: | P12 | P12 | P12 | P12 | | |
| FIELD DUPLICATE OF: | | | | | | |
| **VOLATILES (µg/kg)** | | | | | | |
| VINYL CHLORIDE | 85 U | 72 U | 30 U | 34 U | | |

**Blank space indicates that the sample was not analyzed for this particular parameter.**