

SCANNED

Semi Annual Assessment Monitoring Report (AMR)

Fall 2002 Program

General Chemical Corporation

133-135 Leland Street

Framingham, MA 01702

VERTEX Project No: 4109

N/A-C

2-19-03

VERTEX

Prepared By:

VERTEX Engineering Services, Inc.
400 Libbey Parkway
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DEP JAN 22 2003

January 17, 2003

Prepared For:

Mr. Roy Swartz
Manager of Regulatory Compliance
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133-138 Leland Street
Framingham, MA 01702

Submitted To:

Mr. Jeffrey Chormann
Executive Office of Environmental Affairs
Massachusetts Department of
Environmental Protection
One Winter Street
Boston, Massachusetts 02108

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January 17, 2003

Mr. Jeffrey Chormann
Executive Office of Environmental
Massachusetts Department of
Environmental Protection
One Winter Street
Boston, Massachusetts 02108

RE: **Semi Annual Assessment Monitoring Report (AMR)**
Fall 2002 Program
General Chemical Corporation
133-135 Leland Street
Framingham, MA 01702

Dear Mr. Chormann:

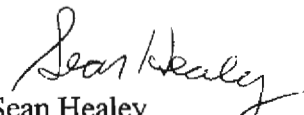
VERTEX Engineering Services, Inc. (VERTEX) is pleased to present this report on behalf of General Chemical Corporation (GCC). This report presents the results of the Fall 2002 Semi Annual Assessment Monitoring Program groundwater collection and analysis performed for the above referenced facility and adjacent areas (the Site).

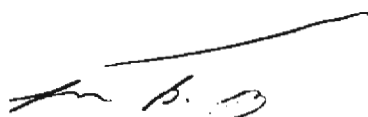
This report contains information that addresses the requirements contained in Attachment I to the Massachusetts Department of Environmental Protection (MADEP) letter to GCC dated April 20, 1999, regarding the Comprehensive Assessment Report (CARP) prepared by CDW Consultants, Inc. (CDW) for the Site. Additionally, this report has been prepared in compliance with the requirements set forth in DEP's November 2, 2000 Decisions with Modifications. As such, this report includes historical data summaries and data quality evaluation for the current (Fall 2002) sampling round.

Please do not hesitate to contact us should you have any questions or comments. Thank you.

Sincerely,

VERTEX Engineering Services, Inc.


Sean Healey
Senior Project Manager


Michael Abramowitz
Division Manager

CC: Roy H. Swartz, GCC
Michael S. Persico, GCC (w/o) attachment
Matt Hoagland, EPA Region I (w/o) attachment
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Dr. Mark C. Smith, Framingham School Admin. (w/o attachment)

Susan Ruch, DEP-OGC
Christopher Davey, AIG Tech Services
Gary Basileco, Site New England
Leon Lataille, MWRA
Robert T. Cooper, Board of Health
Gustav E. Pearson (w/o attachment)
Ralph Fine, DEP Boston

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1.0 INTRODUCTION AND SUMMARY

VERTEX Engineering Services, Inc. (VERTEX) has prepared this Assessment Monitoring Report (AMR) on behalf of General Chemical Corporation (GCC). This report documents the results of the Fall 2002 Assessment Monitoring Program (AMP) at the GCC facility and adjacent areas (the Site). The GCC facility is located at 133-135 Leland Street in Framingham Massachusetts. The Site is shown on Figures 1 through 5.

The AMP is designed to monitor groundwater and surface water conditions at representative locations at the Site. This monitoring round included: the collection and analysis of fifteen (15) groundwater samples and four (4) surface water samples; the gauging of groundwater and surface water elevations at forty-five (45) monitoring wells and five (5) surface water points and the installation of a pressure transducer in monitoring well GZ-7R to implement an automated water level monitoring program.

Please note, pursuant to MADEP approval, the following monitoring well substitutions were implemented. Monitoring well GZ-2 was sampled in lieu of monitoring well CDW-2, which was found damaged. Monitoring well GZ-13 was sampled in lieu of monitoring well GZ-12, which was found damaged during the Spring sampling round (GZ-12 was proposed to be sampled, in lieu of monitoring well CDW-11). GZ-12 was subsequently fixed during the August 2002 gauging event. GZ-13 was again sampled during this sampling round in order to provide comparative data to spring round.

Monitoring well GZ-19DD was sampled in lieu of monitoring well GZ-5D, pursuant to MADEP request. Monitoring well EW-PZ-2S was sampled in lieu of monitoring well CDW-6, which was found damaged.

Monitoring well GZA-16S was not sampled or gauged, as it was found damaged with an obstruction within the well. Additionally, the car wash production well, located adjacent and north of the Site was not sampled, as access could not be secured from the owners of the car wash.

Groundwater Analytical Results

In general, groundwater analytical data obtained from this monitoring round are consistent with historical data to date. Relative to the most recent sampling data obtained during the Spring 2002 sampling round, data generated during this sampling round shows an increase in concentrations of Total Volatile Organic Compounds (VOCs) within samples obtained from monitoring wells GZ-7R, GZ-14S, GZ-15R, GZ-15D and GZ-16M. Relative to the Spring 2002 sampling round, lower concentrations of Total VOCs were identified within samples obtained from monitoring wells GZ-1, GZ-2, GZ-5S, GZ-7, GZ-13, GZ-14-M, PZ-2S, PZ-2D and GZ-19DD. Consistent with the results of the Spring 2002 sampling round, the highest concentrations of Total VOCs were detected in samples from monitoring wells GZ-13, GZ-14M, PZ-2S and GZ-19DD.

Surface Water Analytical Results

Relative to the most recent surface water data generated during the Spring 2002 sampling round, analytical data generated during this sampling round show increasing concentrations of Total VOCs within samples obtained from surface water locations SW-10, SW-DSC-1 and SW-USA-2 and a decrease in Total VOCs in the sample obtained from surface water location SW-3.

Automated Water Level Readings-GZ-7R

As part of this monitoring round, an automated water level monitoring program was implemented within the on-Site bedrock monitoring well GZ-7R. Consistent with the Spring 2002 AMR, analysis of this automated water level monitoring program, indicated that water levels within the monitoring well fluctuate significantly on a daily basis

throughout the daylight hours. This well appears to be influenced from another location. This location may be the car wash production well located north of the Site across Leland Street.

2.0 GROUNDWATER GAUGING, SAMPLING AND RESULTS

The Fall 2002 AMP conducted at the GCC facility included the following tasks: the collection and analyses of fifteen (15) groundwater samples and four (4) surface water samples; the gauging of groundwater and surface water elevations at forty-five (45) monitoring wells and five (5) surface water points and the installation of a pressure transducer in monitoring well GZ-7R to implement an automated water level monitoring program.

2.1 Groundwater Elevations Measurements, August And November 2002

On August 21, 2002 and November 20 2002, VERTEX personnel gauged and recorded depths to water within forty-five (45) Site monitoring wells and five (5) surface water points. Water levels were recorded to the nearest 0.01-foot utilizing an electronic water level indicator.

Free phase product was not identified within any of the monitoring wells during the gauging events.

Groundwater and surface water elevations were calculated using measuring point elevations (provided in previous MADEP submittals for the Site) minus the depth to water at each location. See Table 5a and 5b for a summary of all readings and elevations. See Figure 2 through 5 for groundwater contour maps detailing recorded elevations for monitoring wells screened within the sand and silt geological units at the Site, respectively.

As indicated within Figures 2 through 5, groundwater elevations obtained during this monitoring period indicate that groundwater at the Site within both the sand and silt unit is flowing in a south to southwest direction across the Site.

Consistent with previous AMR's submitted for the Site, groundwater elevations derived as a result of both the August and November 2002 gauging events indicate that a groundwater divide appears to be present at the Site in the area immediately adjacent to Leland Street, which is northwest of the GCC facility.

August 2002 Groundwater Gauging Event-Vertical Gradient

The August 2002 gauging event identified an upward vertical gradient within overburden sand/silt unit well clusters CDW-18S/D, CDW-19S/D, EW-PZ-2S/D, GZ-5S/D, GZA-17S/M, GZA-18S/M and GZA-15S/D.

A downward vertical gradient was identified in overburden/bedrock clusters GZ-4/4R, GZ-7/7R, GZA-15-D/R and overburden well clusters CDW-19D/GZA-19DD and GZA-14S/M.

November 2002 Groundwater Gauging Even-Vertical Gradient

The November 2002 gauging event identified an upward vertical gradient within overburden sand/silt unit well clusters CDW-18S/D, GZA-18S/M and CDW-19D/GZA-19DD.

A downward vertical gradient was identified in overburden/bedrock clusters GZ-4/4R, GZ-7/7R, GZA-15 D/R and overburden sand/silt well clusters GZA-14S/M, CDW-19S/D, GZ-5S/D and GZA-17S/M.

2.1.1 Automated Water Level Readings-GZ-7R

As part of this monitoring round, an automated water level monitoring program was implemented within the on-Site bedrock monitoring well GZ-7R. Analysis of this automated water level monitoring program, indicated that water levels within the monitoring well fluctuate significantly on a daily basis throughout the daylight hours. The water level data reveals a pattern of significant draw down on a daily basis beginning at the early morning hours and continuing throughout the day into the evening hours. Data indicates that water levels within this well appear to be influenced from another location. This location may be the car wash production well located north of the Site across Leland Street. See Appendix A for automated water level graphs and readings.

2.2 Groundwater Sampling Procedures

Between November 21 and December 5, 2002, VERTEX personnel collected groundwater samples from Site monitoring wells; GZ-1, GZ-2, GZ-5S, GZ-7, GZ-7R, GZ-13, GZ-14S, GZ-14M, GZ-15S, GZ-15R, GZ-15D, GZ-16M, GZ-19DD, PZ-2S and PZ-2D. Low flow purging and sampling techniques were employed in accordance with EPA document "*Low Stress Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells*", EPA, Region I, July 30, 1996. Parameters including pH, temperature, specific conductivity, dissolved oxygen, ORP and turbidity were recorded using a YSI 600 XL multi-meter and Lamotte 2020 turbidity meter. Groundwater samples were collected from each monitoring well upon parameter stabilization. Purged water was placed in a 55-gallon drum and disposed of at GCC's facility.

All groundwater samples were placed in preserved laboratory supplied containers, immediately placed on ice and delivered to Groundwater Analytical Inc. Laboratories (GAI) in Buzzards Bay Massachusetts for analysis. Groundwater samples collected from each of the monitoring wells were submitted for laboratory analysis of VOCs via EPA Method 8260 and 1,4 Dioxane.

See Tables 1A through 1D for a summary of analytical results. Complete copies of laboratory data sheets are included within Appendix B. Please note historical data tabulated was obtained from GZA's *Supplemental Investigation Report dated November 28, 2001* and the *July and November 2001 AMR's* for the Site previously submitted to the MADEP.

Quality Assurance/Quality Control (QA/QC) samples were also collected and analyzed for VOCs and/or 1,4 Dioxane during this monitoring round. The samples included four (4) trip blanks and two (2) duplicate samples. The trip blanks were prepared at GAI from analyte free water and were handled and shipped in the same manner as all groundwater, and surface water samples collected during this round. The duplicate samples were collected from monitoring wells GZ-7R (MW-20) and GZ-1 (MW-21). Please see Tables 2 and 3 for a summary of duplicate and trip blank analytical results. Complete copies of laboratory data sheets are included within Appendix B.

2.3 Groundwater Analytical Results

Laboratory analytical results of groundwater samples collected during this sampling round identified nine (9) VOCs above laboratory detection limits. Total VOC concentration detected ranged from 1 ug/l (GZ-2) to 206,100 ug/l (GZ-19DD).

2.3.1 Historical Groundwater Data Trends

In general, as indicated within Tables 1A-1D, groundwater analytical data obtained during this monitoring round are consistent with historical data for the Site.

Relative to the most recent sampling data obtained during the Spring 2002 sampling round, data generated during this sampling round shows an increase in concentrations of Total VOCs within samples obtained from monitoring wells GZ-7R, GZ-14S, GZ-15S, GZ-15R, GZ-15D and GZ-16M. Relative to the Spring 2002 sampling round, lower concentrations of Total VOCs were identified within samples obtained from monitoring wells GZ-1, GZ-2, GZ-5S, GZ-7, GZ-13, GZ-14-M, PZ-2S, PZ-2D and GZ-19DD. Consistent with the results of the Spring 2002 sampling round, the highest concentrations of Total VOCs were detected in samples from monitoring wells GZ-13, GZ-14M, PZ-2S and GZ-19DD.

2.3.2 Seasonal Groundwater Variation

Consistent with observations made in previous reports, historically, groundwater elevations across the Site generally rise during the winter and are highest during the spring.

Historically, total VOCs within Site groundwater have decreased as groundwater elevations have risen within monitoring wells GZ-1, GZ-5S, GZ-7, while Total VOC's have increased as groundwater elevations have risen within monitoring wells GZ-15S, GZ-16M and GZ-19DD. However, results of this sampling round indicate Total VOCs identified in samples obtained from wells GZ-5S and GZ-7 have decreased as groundwater elevations have decreased and concentrations have decreased within

samples obtained from GZ-19DD as the groundwater elevation has decreased. Therefore, as indicated in Tables 1A-1D, there does not appear to be an overall correlation between the seasonal fluctuation in Site groundwater elevations and Total VOC concentrations detected within monitoring wells at the Site.

3.0 SURFACE WATER SAMPLING AND RESULTS

3.1 Surface Water Sampling Procedures

On November 21, 2002, VERTEX collected four (4) surface water samples at the Site (SW-10, SW-3, SW-DSC-1 and SW-USA-2). Each of the samples was collected as grab samples utilizing dedicated disposable bailers.

Each sample was placed in preserved laboratory supplied containers, immediately placed on ice and delivered to GAI for laboratory analysis of VOCs via EPA Method 8260 and 1,4 Dioxane. See Table 4 for a summary of surface water analytical results. Complete copies of laboratory data sheets are included within Appendix B.

3.2 Surface Water Analytical Results

As indicated within Table 4, laboratory analysis of surface water samples collected identified thirteen (13) VOCs above laboratory detection limits. Total VOC concentrations detected ranged from 49 ug/l (SW-3) to 10,940 ug/l (SW-10).

3.2.1 Historical Surface Water Data Trends

Historically, the Total VOC concentrations detected within surface water samples collected at the Site fluctuate between sample events.

As indicated in Table 4, relative to most recent historical Site surface water data collected during the Spring 2002 sampling round, analytical data generated during this

monitoring round show increasing concentrations of Total VOCs within samples obtained from each sample location with the exception of location SW-3.

3.2.2 Seasonal Surface Water Variation

Relative to the four sampling locations included within this monitoring round, as shown in Table 4, historically, Total VOC concentrations have decreased as elevations have dropped at surface water sampling location SW-3.

No correlation between surface water elevation and sample location SW-10 is evident.

Surface water elevations have not been historically measured at the SW-DSC-1 and SW-USA-2 locations.

Overall data for the four sample locations indicate that TOVs concentrations appear to be highest in the winter and lowest in the summer.

4.0 SUMP SAMPLING & RESULTS

During the Fall 2002 groundwater sampling round, inadvertently, a water sample was not collected from the sump located in the basement of the GCC facility. On January 17, 2003, a water sample was collected from the sump. The sample was collected as a grab sample utilizing a dedicated disposable bailer. The sample was placed in preserved laboratory supplied containers, immediately placed on ice and delivered to GAI for laboratory analysis of VOCs via EPA Method 8260 and 1,4 Dioxane. Results of the sump sampling will be submitted as an addendum to this report.

5.0 DATA USABILITY AND QA/QC DATA

Pursuant to the MADEP Decision with Modifications, November 2, 2000, this AMR includes an evaluation of the quality and usability of the data generated during this sampling round. Included within this evaluation is information on potential trip blank contamination and duplicate analysis as well as sample surrogate recoveries and quality control blank analysis, matrix and surrogate recovery. See Table 2 and 3 for a summary of analytical results for all trip blanks and duplicate samples.

Analytical results for duplicate samples collected during the sampling event (MW-20/GZ-7R, MW-21/GZ-1) reveal excellent agreement. Analytical results of compounds detected within sample MW-20 were within 0.1 ug/l of the results obtained from sample GZ-7R. Analytical results of compounds detected within sample MW-21 were within 3 ug/l of the results obtained from sample GZ-1.

Analysis of the four (4) trip blanks did not identify detectable concentrations or targeted analytes above laboratory reporting limits.

All surrogate recoveries results were within method acceptance limits. No compounds were detected in the laboratory method blanks. The quality control spike recoveries and surrogate recoveries were all within acceptable method limits.

Method detection limits for the VOC 8260 and/or 1,4 Dioxane analyses were elevated for five samples analyzed this round (PZ-2S, SW-10, GZA-13, GZ-14M and GZA-19DD). This is expected given the elevated concentrations identified within each of these samples. The elevated detection limits are the result of dilution required for quantifying those compounds exhibiting the highest concentrations. Dilution is performed within the

laboratory to reduce sample concentrations to within the instrument calibration range.
There is potential that dilution can produce a false negative result.

6.0 LIMITATIONS

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This warranty is in lieu of all other warranties either expressed or implied. VERTEX is not responsible for the independent conclusions, opinions or recommendations made by others based on the record review, Site inspection, field exploration, and laboratory test data presented in this report.

It must be recognized that environmental activities are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and Site investigation. The passage of time may result in a change in the environmental characteristics at this Site and surrounding properties. This report does not warrant against future operations or conditions, nor does this warrant operations or conditions present of a type or at a location not investigated.

The conclusions presented in this report are professional opinions based solely upon visual observations and supplemental testing of soil and/or groundwater at the Site. Our interpretation of the available historical information and documents reviewed, as described in this report, were also considered in the conclusions. VERTEX relied upon but did not attempt to independently verify the validity or accuracy of the findings and conclusions noted in the documentation reviewed.

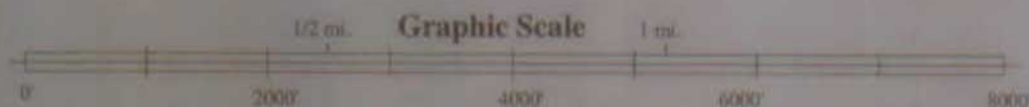
This report is intended for the sole use of GCC. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user.

This report and all supporting documentation has been submitted for review by the Massachusetts Department of Environmental Protection ("the MADEP"). Due to the inherent flexibility in interpreting the applicable regulations, MADEP review is often subjective and dependent on the opinion of the reviewer. As a result, the MADEP could require additional assessment of the Site and/or remedial action. Based on these considerations, VERTEX is not and will not be responsible for costs or other possible ramifications of additional work required by the MADEP. GCC and any other parties with financial or other interests in the subject property are urged to consider these facts.

FIGURES



USGS 7.5 x 7.5 minute Topographic Map, 1979
 Framingham, Massachusetts
 Contour Interval: 10 Feet



SITE LOCUS MAP
 General Chemical Corporation
 Framingham, MA

SCALE: Not to Scale

VERTEX Proj. No. 4109

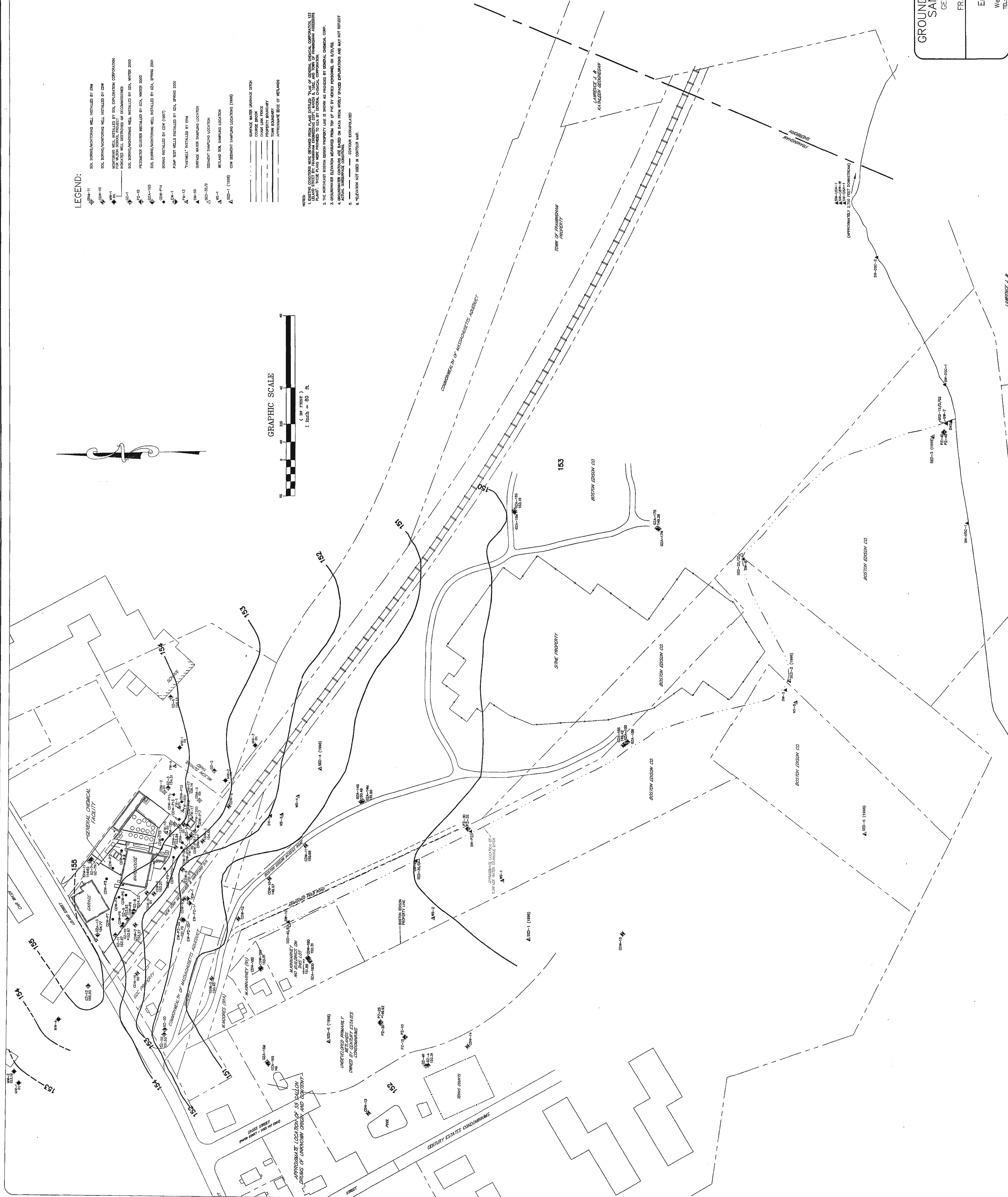
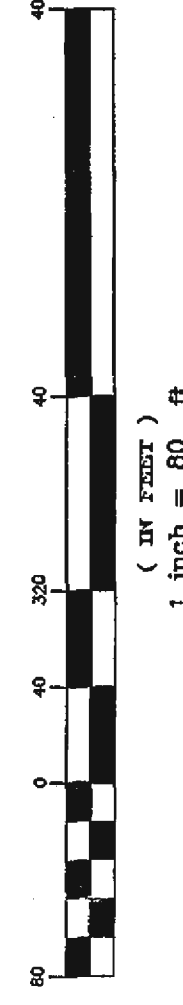
VERTEX
 Engineering Services, Inc.
 FIGURE NO. 1

LEGEND:

- SOIL BORING/MONITORING WELL INSTALLED BY ERM
SOIL BORING/MONITORING WELL INSTALLED BY COW
SOIL BORING/MONITORING WELL INSTALLED BY SOIL EXPLORATION CORPORATION
POUGHES WELLS DESTROYED OR DECOMMISSIONED
SOIL BORING/MONITORING WELL INSTALLED BY GZA, WINTER 2000
PERMETER CLUSTER WELL INSTALLED BY GZA, WINTER 2000
SOIL BORING/MONITORING WELL INSTALLED BY GZA, SPRING 2001
SOIL BORING/MONITORING WELL INSTALLED BY GZA, SPRING 2001
SOIL BORING/MONITORING WELL INSTALLED BY GZA, SPRING 2001
PUMP TEST WELLS INSTALLED BY GZA, SPRING 2001
TUBEWELL INSTALLED BY ERM
SURFACE WATER SAMPLING LOCATION
STRAIGHT SAMPLING LOCATION
WELLS SOIL SAMPLING LOCATION
COW REMOVAL SAMPLING LOCATION (1989)
- SURFACE WATER DRAINAGE DITCH
— COW PROPERTY
— PROPERTY BOUNDARY
— APPROXIMATE EDGE OF WETLANDS

- NOTES:
1. ELEVATION COORDINATES WERE OBTAINED FROM PLANS INSTALLED "IN USE" OF GENERAL CHEMICAL CORPORATION, 133 LAMARQUE STREET, WYOMOUTH, MASSACHUSETTS 02199. THESE PLANS WERE PROVIDED TO GZA BY GENERAL CHEMICAL CORPORATION.
2. THE HORIZONTAL ELEVATION COORDINATE LINE IS SHOWN AS PROVIDED BY GENERAL CHEMICAL CORP.
3. CONTOUR ELEVATION MEASURED FROM TOP OF PACE BY METERS PERFORMED ON 8/23/02.
4. ACTUAL SUBSURFACE CONDITIONS SHOWN IN DATA FROM WELLS SPACED DISCRETELY AND MAY NOT REFLECT
5. "ELEVATION NOT USED IN CONTOUR MAP."
6. "ELEVATION NOT USED IN CONTOUR MAP."

GRAPHIC SCALE



GROUNDWATER CONTOUR PLAN
SAND UNIT (8/21/02)
GENERAL CHEMICAL COMPANY
133-135 LELAND STREET
FRAMINGHAM, MASSACHUSETTS

FIG. NO. 2
SCALE: 1" = 80'
DATE: JAN. 17, 2003
DRAWN BY: LMG
CHECKED BY: SH
PROJ. NO. 4109
DWG. 4109SSWS4

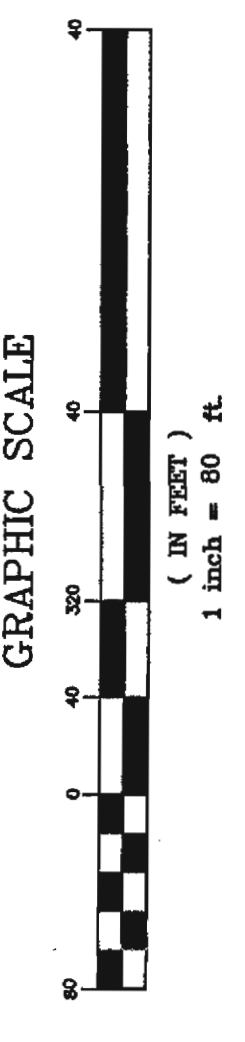
Engineering Services, Inc.
400 Libbey Parkway 02189
Weymouth, Massachusetts
TEL (781) 952-8000 FAX (781) 335-3543

LEGEND:

- SW-11 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-10 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-9 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-8 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-7 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-6 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-5 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-4 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-3 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-2 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-1 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-0 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-11 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-10 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-9 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-8 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-7 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-6 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-5 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-4 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-3 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-2 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-1 SOIL BORING/MONITORING WELL INSTALLED BY ERM
- SW-0 SOIL BORING/MONITORING WELL INSTALLED BY ERM

- SURFACE WATER DRAINAGE DITCH
- COARSE BROOK
- FINE BROOK
- PROPERTY BOUNDARY
- TOWN BOUNDARY
- APPROXIMATE DATE OF WELLINGS

- 1. EXISTING CONDITIONS WERE OBTAINED FROM PLANS DATED: "PLAN OF GENERAL CHEMICAL CORPORATION, 133 LELAND STREET, FRAMINGHAM, MASSACHUSETTS, 1989". THESE PLANS WERE PROVIDED TO GSA BY GENERAL CHEMICAL CORPORATION.
- 2. THE NORTHEAST BOSTON EDITION PROPERTY LINE IS SHOWN AS PROVIDED BY GENERAL CHEMICAL CORP.
- 3. GROUNDWATER ELEVATION MEASURED FROM TOP OF PVC BY VERTY PERSONNEL ON 8/21/02.
- 4. GROUNDWATER ELEVATION MEASURED FROM TOP OF PVC BY VERTY PERSONNEL ON 8/21/02.
- 5. ACTUAL SURFACE DRAINAGE BASED ON DATA FROM WELLS SPACED EXCLUSIONS AND MAY NOT REFLECT
- 6. --- OUTLINE EXTRAPOLATED



GROUNDWATER CONTOUR PLAN
SILT UNIT (8/21/02)

GENERAL CHEMICAL CORPORATION
133-135 LELAND STREET
FRAMINGHAM, MASSACHUSETTS

Engineering Services, Inc.
400 Libbey Parkway 02189
Weymouth, Massachusetts
TEL (781) 952-0000 FAX (781) 335-3543

FIG. NO. 3

SCALE: 1" = 80'

DATE: JAN. 17, 2003

DRAWN BY: LMG

CHECKED BY: SH

PROJ. NO. 4109

DWS: 4109GWS5

TABLES

TABLE 1-A
Summary of Groundwater Analytical Results
VERTEX Project # 4109

					Jan-00					Apr-01					Nov-01					May-02					Nov-02										Jan-00					Apr-01					Nov-01					May-02					Dec-02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
					NM					150.68					150.40					152.83					153.78										NM					151.38					153.19					154.62					152.51					152.35					153.81					153.66					155.02					157.48					153.70					155.09					154.95																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

Notes:
1) ug/l=Parts per billion
2) NL=Not Listed
3) BMQL= Below Method Quantitation Limit
4) BRL=Below Laboratory Reporting Limit
5) NI=Not listed within GZA November 28,2001 "Historical Constituents of Concern" table. *=-TOVs estimated for sampling rounds prior to July 2001
6) ~~Not Measured~~
7) NM=Not Measured
8) Consistent with Previous AMRs, Total VOC does not include compounds not detected above detection limits.

TABLE 1-B
Summary of Groundwater Analytical Results
VERTEX Project # 4109

Analyte	GZA										GZ									
	Jan-00	Apr-01	Nov-01	May-02	Nov-02	Apr-01	May-02	Nov-02	Apr-01	May-02	Nov-02	Apr-01	May-02	Nov-02	Apr-01	May-02	Nov-02	Apr-01	May-02	Nov-02
GW Depth (ft)	149.15	147.59	149.90	149.75	152.05	157.05	NM	155.47	151.90	152.01	151.87	152.01	151.90	151.71	150.38	150.63	150.74	151.99	152.02	150.71
Volatile Organics (ug/l)																				
Trichloroethene	1	<1	<1.0	<0.5	2	450	280	260	6	6	10	4,800	7,200	6,900	<1.0	<0.5	<0.5	<1.0	<0.5	2
Trichlorobenzene	<1.0	<1	<1.0	<0.5	<5	130	91	91	7.0	7	16	2,400	3,900	3,500	<1.0	<0.5	<0.5	<1.0	<0.5	3
cis-1,2-Dichloroethene	<1.0	<1	5.4	<0.5	2	17,000	1,400	1,900	<1.0	<0.5	1	17	<100	<100	<1.0	<0.5	<0.5	<1.0	<0.5	<0.5
Vinyl Chloride	<2.0	<2	<2.0	<0.5	<5	<200	<25	<30	<2.0	<0.5	<0.5	<20	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
Chloroethane	NL	NL	<2.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
1,1,1-Trichloroethane	<1.0	<1	2.9	<0.5	0.9	4,400	640	600	2.6	2	5	240	470	410	2.0	10	8	<1.0	<0.5	<0.5
1,1,1-Dichloroethane	<1.0	<1	<1.0	<0.5	<5	1,200	76	160	<1.0	<0.5	<0.5	250	460	410	1.8	5	7	<1.0	<0.5	<0.5
1,1-Dichloroethane	NL	NL	<1.0	<0.5	<5	NL	28	<50	NL	<0.5	<0.5	NL	440	300	NL	<0.5	<0.5	NL	<0.5	<0.5
1,1,2-Trichloroethane	NL	NL	NL	<1000	NL	NL	860	NL	NL	<5	NL	<1000	<50	NL	NL	<5	<10	NL	<5	<10
1,4-Dioxane	NA	<100	<100	<30	<10	<10000	<10	<200	<100	<30	<10	<100	<50	<10	NL	<10	<10	NL	<50	<10
Acetone	<25	<25	<30	<20	<20	<2500	<1000	<2000	<25.0	<20	<0.5	<25	<4000	<500	<25	<20	<20	<25	<20	<20
Methylene Chloride	<1.0	<1.0	<1.0	<2.5	NL	<100	<130	<250	<1.0	<2.5	<0.5	<10	<500	<500	<1.0	<2.5	<1.0	<1.0	<2.5	<0.5
trans-1,2-Dichloroethene	NL	NL	<1.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
Chloroform	NL	NL	<1.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
Toluene	<1.0	<0.5	<1.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
Benzene	NL	NL	<1.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
Ethylbenzene	NL	NL	<1.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
m,p-Xylene	NL	NL	<1.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
o-Xylene	NL	NL	<1.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
1,2,4-Trichlorobenzene	NL	NL	<1.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
Styrene	NL	NL	1.9	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
MtBE	NL	NL	<2.0	<0.5	<5	NL	<25	<50	NL	<0.5	<0.5	NL	<100	<100	NL	<0.5	<0.5	NL	<0.5	<0.5
Total VOCs*	1	BMQL	10.2	BRL	4.9	23,180	3,375	3,011	15.6	15	32	7,707	12,470	11,520	3.8	15	15	22.4	0.8	5.0

Notes:
1) ug/l=Parts per billion
2) NL=Not Listed
3) BMQL= Below Method Quantitation Limit
4) BRL=Below Laboratory Reporting Limit
5) NL=Not listed within GZA November 28, 2001 "Historical Constituents of Concern" table. *TOVs estimated for sampling rounds prior to July 2001
6) *TOVs=Total Organic Volatiles
7) NM=Not Measured
8) Consistent with Previous AMRs, Total VOC does not include compounds not detected above detection limits.

TABLE 1-C
Summary of Groundwater Analytical Results
VERTEX Project # 4109

	Apr-01	May-02	Nov-02	Jul-00	Dec-00	Apr-01	Jul-01	Nov-01	May-02	Dec-02	Jul-00	Dec-01	Apr-01	Jul-01	Nov-01	May-02	Dec-02	Jul-00	Dec-01	Apr-01	Jul-01	Nov-01	May-02	Dec-02
GW Elevation	151.79	151.76	151.60	150.63	151.07	151.84	151.33	150.50	NM	NM	150.74	148.29	149.29	151.48	150.50		NM							151.47
Analysis																								
Valuable Organics (ug/l)																								
Tetrachloroethene	<1.0	2	4	49	190	250	190	180	360	530	<1.0	<1.0	<1	<1.0	<1.0		88						<0.5	
Trichloroethene	<1.0	<0.5	1	1,100	3,000	3,700	3,600	2,600	5,000	4,400	<1.0	<1.0	<1	<1.0	<1.0		290 e						<0.5	
cis-1,2-Dichloroethene	<1.0	<0.5	<0.5	190	240	430	400	220	390	440	2.3	<1.0	<1	<1.0	<1.0		12						<0.5	
Vinyl Chloride	NL	<0.5	<0.5	<20	<50	<100	31	<50	<100	<100	<2.0	<2.0	<2	<2.0	<2.0		<2.5						<0.5	
Chloroethane	NL	<0.5	<0.5	NL	NL	NL	NL	NL	<100	<100	NL	<1.0	NL	NL	<2.0		<2.5						<0.5	
1,1,1-Trichloroethane	<1.0	<0.5	<0.5	<10	<25	<50	4.9	28	<100	130	<1.0	<1.0	<1	<1.0	<1.0		49						<0.5	
1,1-Dichloroethane	<1.0	<0.5	<0.5	21	32	73	56	37	<100	<100	<1.0	<1.0	<1	<1.0	<1.0		<2.5						<0.5	
1,1-Dichlorobenzene	NL	<0.5	<0.5	NL	NL	NL	180	88	170	170	NL	NL	NL	<1.0	<1.0		6						<0.5	
1,1,2-Trichlorotrifluoroethane	NL	<5	NL	NL	NL	NL	NL	NL	<1000	NL	NL	NL	NL	NL	NL		<25						NL	
1,4-Dioxane	NL	<50	<10	NA	<2500	<5000	190	<2500	250	<1000	NA	<100	<100	<100	<100		<10						<10	
Acetone	<25	<20	<0.5	<250	<630	<1300	<25	<630	<4000	<4000	<25	<25	<25	<25	<25		<100						<20	
Dichloromethane	1.1	<2.5	<0.5	<10	<25	<50	<1.0	<25	<500	<500	<1.0	<1.0	<1.0	<1.0	<1.0		<13						<0.5	
trans-1,2-Dichloroethene	NL	<0.5	<0.5	NL	NL	NL	<1.0	<25	<100	<100	NL	NL	NL	<1.0	<1.0		<2.5						<0.5	
Chloroform	NL	<0.5	<0.5	NL	NL	NL	<1.0	<25	<100	<100	NL	NL	NL	<1.0	<1.0		<2.5						<0.5	
Toluene	<1.0	<0.5	<0.5	NL	NL	NL	<1.0	<25	<100	<100	NL	NL	NL	<1.0	<1.0		<2.5						<0.5	
Benzene	NL	<0.5	<0.5	NL	NL	NL	3	<25	<100	<100	NL	NL	NL	<1.0	<1.0		<2.5						<0.5	
Ethylbenzene	NL	<0.5	<0.5	NL	NL	NL	<1.0	<25	<100	<100	NL	NL	NL	<1.0	<1.0		<2.5						<0.5	
m & p Xylene	NL	<0.5	<0.5	NL	NL	NL	<1.0	<25	<100	<100	NL	NL	NL	<1.0	<1.0		<2.5						<0.5	
o Xylene	NL	<0.5	<0.5	NL	NL	NL	<1.0	<25	<100	<100	NL	NL	NL	<1.0	<1.0		<2.5						<0.5	
1,2,4-Trimethylbenzene	NL	<0.5	<0.5	NL	NL	NL	<1.0	<25	<100	<100	NL	NL	NL	<1.0	<1.0		<2.5						NL	
MTBE	NL	<0.5	<0.5	NL	NL	NL	<2.0	<25	<100	<100	NL	NL	NL	<2.0	<2.0		<45						<0.5	
Total VOCs*	1.1	2	5	1,360	3,462	4,453	4,654.9	3,153	6,170	5,670	2.3	BMQL	BMQL	BMQL	BMQL								BRL	

- Notes:
- 1) ug/l=Parts per billion
 - 2) NL=Not Listed
 - 3) BMQL= Below Method Quantitation Limit
 - 4) BRL=Below Laboratory Reporting Limit
 - 5) NL=Not listed within GZA November 28, 2001 "Historical Constituents of Concern" table. * =TOVs estimated for sampling rounds prior to July 2001
 - 6) * =TOVs estimated for sampling rounds prior to July 2001
 - 7) NM=Not Measured
 - 8) Consistent with Previous AMRs, Total VOC does not include compounds not detected above detection limits.

TABLE 2

**Summary of Groundwater Analytical Results-Duplicate Sample Analysis
VERTEX Project # 4109**

Analysis	MW-20	MW-21
	Nov-02	Nov-02
Volatile Organics (ug/l)		
Tetrachloroethene	2	22
Trichloroethene	<0.5	24
cis-1,2-Dichloroethene	2.0	25
Vinyl Chloride	<0.5	3
Chloroethane	<0.5	<0.5
1,1,1-Trichloroethane	1	6
1,1-Dichloroethane	<0.5	7
1,1-Dichloroethene	<0.5	<0.5
1,1,2-Trichlorotrifluoroethane	<0.5	<0.5
1-4-Dioxane	<10	<10
Acetone	<20	<20
Dichloromethane	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5
Chloroform	<0.5	<0.5
Toluene	<0.5	<0.5
Benzene	<0.5	<0.5
Ethylbenzene	<0.5	<0.5
m&p Xylene	<0.5	<0.5
o-Xylene	<0.5	<0.5
1,2,4-Trimethylbenzene	<0.5	<0.5
MTBE	<0.5	<0.5
Methylene Chloride	<2.5	<0.5
Total VOCs	5	87

1) ug/l=Parts per billion

2) Consistent with Previous AMRs, Total VOC does not include compounds not detected above detection limits.

TABLE 3

**Summary of Groundwater Analytical Results-Trip Blanks
VERTEX Project # 4109**

Analysis	TB-3 Nov-02	TB-2 Nov-02	TB-1
Volatile Organics (ug/l)			
Tetrachloroethene	<0.5	<0.5	NA
Trichloroethene	<0.5	<0.5	NA
cis-1,2-Dichloroethene	<0.5	<0.5	NA
Vinyl Chloride	<0.5	<0.5	NA
Chloroethane	<0.5	<0.5	NA
1,1,1-Trichloroethane	<0.5	<0.5	NA
1,1-Dichloroethane	<0.5	<0.5	NA
1,1-Dichloroethene	<0.5	<0.5	NA
1,1,2-Trichlorotrifluoroethane	<5	<5	NA
1-4-Dioxane	NA	NA	<10
Acetone	<20	<20	NA
Dichloromethane	<2.5	<2.5	NA
trans-1,2-Dichloroethene	<0.5	<0.5	NA
Chloroform	<0.5	<0.5	NA
Toluene	<0.5	<0.5	NA
Benzene	<0.5	<0.5	NA
Ethylbenzene	<0.5	<0.5	NA
m&p Xylene	<0.5	<0.5	NA
o-Xylene	<0.5	<0.5	NA
1,2,4 Trimethylbenzene	<0.5	<0.5	NA
MTBE	<0.5	<0.5	NA
Total VOCs	BRI	BRI	BRI

Analysis	TB-4 Nov-02
Volatile Organics (ug/l)	
Tetrachloroethene	NA
Trichloroethene	NA
cis-1,2-Dichloroethene	NA
Vinyl Chloride	NA
Chloroethane	NA
1,1,1-Trichloroethane	NA
1,1-Dichloroethane	NA
1,1,2-Trichlorotrifluoroethane	NA
1-4-Dioxane	<10
Acetone	NA
Dichloromethane	NA
trans-1,2-Dichloroethene	NA
Chloroform	NA
Toluene	NA
Benzene	NA
Ethylbenzene	NA
m&p Xylene	NA
o-Xylene	NA
1,2,4 Trimethylbenzene	NA
MTBE	NA
Total VOCs	BRI

1) ug/l=Parts per billion

2) NA=Not Analyzed

TABLE 4
Summary of Surface Water Analytical Results
VERTeX Project # 4109

Analyte	SW-10				SW-3				SW-DSC-1				SW-USA-2				
	Jan-00	Jul-01	May-02	Nov-02	Jan-00	Jul-01	May-02	Nov-02	Dec-99	Jul-01	May-02	Nov-02	Dec-99	Jul-01	Nov-01	May-02	Nov-02
Water Elevation	150.44	150.87	151.99	NM	151.33	150.00	150.70	150.60	NM	NM	NM	NM	NM	NM	NM	NM	NM
Volatile Organics (ug/l)																	
Tetrachloroethene	<25	<2.5	<100	<130	43	6.3	20	3	4.5	<1.0	2	15	4	<1.0	<1.0	5	1
Trichloroethene	110	<2.5	180	600	79	7.8	22	4	13	<1.0	2	22	5.9	<1.0	<1.0	4	2
cis-1,2-Dichloroethene	2,300	420	5,000	6,800	600	37	110 e	27	120	4.3	9	150	39	<1.0	<1.0	17	33
Vinyl Chloride	140	300	140	170	110	2.1	6	3	18	<2.0	<0.5	13	5.7	<2.0	<1.0	<0.5	<0.5
Chloroethane	NL	NL	210	<130	NL	NL	<1	<0.5	NL	NL	<0.5	<5	NL	NL	NL	<0.5	<0.5
1,1,1-Trichloroethane	240	26	2,200	2,500	99	5.8	34	9	36	<1.0	3	50	11	<1.0	<1.0	12	18
1,1-Dichloroethane	210	420	690	650	85	12	16	2	17	1.4	1	12	6.2	<1.0	<1.0	<0.5	<0.5
1,1,2-Trichloroethane	290	3.0	<100	220	27	1.7	5	1	6.3	<1.0	<0.5	6	2	<1.0	<1.0	0.8	1
1,1,2-Dichloroethane	NL	NL	<1000	NL	NL	NL	25	<0.5	NL	NL	<5	<5	NL	NL	NL	<5	NL
1,4-Dioxane	<100	880	620 e	<1000	NA	84	100	<10	NA	<100	<10	78	<100	<100	<100	16	23
Acetone	<30	<63	<4000	<5000	<130	<25	<40	<20	NA	<25	<20	<200	<25	<25	<25	<20	<20
Dichloromethane	<25	4.3	<500	NL	210	<1.0	12	<0.5	30	<1.0	<2.5	NL	7.9	<1.0	<1.0	<2.5	NL
trans-1,2-Dichloroethene	<25	9.9	<100	<130	2.2	<1.0	<1	<0.5	<2.5	<1.0	<0.5	<5	<1.0	<1.0	<1.0	<0.5	0.7
Chloroform	NL	NL	<100	<130	NL	NL	<1	<0.5	NL	NL	<0.5	<5	NL	NL	NL	<0.5	<0.5
Toluene	<25	21.0	<100	<130	<5.0	<1.0	<1	<0.5	<2.5	<1.0	<0.5	<5	<1.0	<1.0	<1.0	<0.5	<0.5
Benzene	NL	<2.5	<100	<130	NL	<1.0	<1	<0.5	NL	<1.0	<0.5	<5	NL	<1.0	<1.0	<0.5	<0.5
Ethylbenzene	<25	<2.5	<100	<130	<5.0	<1.0	<1	<0.5	<2.5	<1.0	<0.5	<5	<1.0	<1.0	<1.0	<0.5	<0.5
m,pg Xylene	<25	<2.5	<100	<130	<5.0	<1.0	<1	<0.5	<2.5	<1.0	<0.5	<5	<1.0	<1.0	<1.0	<0.5	<0.5
o-Xylene	<25	<2.5	<100	<130	<5.0	<1.0	<1	<0.5	<2.5	<1.0	<0.5	<5	<1.0	<1.0	<1.0	<0.5	<0.5
1,2,4-Trimethylbenzene	NL	NL	<100	NL	NL	NL	<1	<0.5	NL	NL	<0.5	<5	NL	NL	<1.0	<0.5	NL
MTBE	NL	<5.0	<100	<130	NL	<2.0	<1	<0.5	NL	<2.0	<0.5	<5	NL	<2.0	<2.0	1	1
Methylene Chloride	NL	NL	NL	<630	NL	NL	NL	<2.5	NL	NL	NL	<25	NL	NL	NL	NL	3
Total VOCs	3,290	2,088.3	9,040	1,255	156.7	350	49	245	5.7	26	82	BMQL	BMQL	BMQL	55.8	3	3

1) ug/l=Parts per billion
2) NL=Not Listed
3) BMQL= Below Method Quantitation Limit
4) Concentration exceeds instrument calibration range
5) NL=Not listed within GZA Summary Table
6) Consistent with Previous AMRs, Total VOC does not include compounds not detected above detection limits.

Table 5A

General Chemical
Groundwater/Surface Water Elevation Data-November 2002

Monitoring Well/Surface Water Identification	Measuring Point Elevation	Depth to Water	Groundwater/Surface Water Elevation
GZA 16 S	158.54	****	NA
GZA 16M	158.77	6.29	152.48
GZA 17S	158.18	5.57	152.61
GZA 17M	158.06	5.62	152.44
GZA 18S	158.35	5.24	153.11
GZA 18M	158.31	4.68	153.63
GZA 19DD	154.15	1.97	152.18
EW-1	159.07	4.80	154.27
EW-PZ-1	156.85	****	NA
EW-PZ-2S	158.52	4.62	153.90
EW-PZ-2D	158.37	4.14	154.23
PZ-1S	153.03	1.93	151.10
PZ-1D	154.34	2.60	151.74
PZ-2S	154.29	****	NA
PZ-2D	154.72	3.30	151.47
PZ-3S	154.02	3.07	150.95
PZ-3D	154.06	****	NA
PZ-4S	103.18	****	NA
PZ-4D	103.37	****	NA
CDW-13	161.15	****	NA

Notes:

Sand Unit

Silt Unit

Clay

Bedrock

Surface Water

1) Groundwater and surface water locations gauged by VERTEX on November 20, 2002

2) Measure Point Elevation obtained from previous GZA reports

3) **: Monitoring Well could not be located was inaccessible, or is damaged and/or could not be gauged

4) NA: Not Available in Previous Reports or Not Applicable

Table 5A

General Chemical
Groundwater/Surface Water Elevation Data-November 2002

Monitoring Well/Surface Water Identification	Measuring Point Elevation	Depth to Water	Groundwater/Surface Water Elevation
SW-1	154.60	****	NA
SW-2	NA	2.45	NA
SW-3	154.01	3.41	150.60
SW-10	152.60	1.63	150.97
SW-PZ3	153.88	****	NA
ERM-4	159.53	****	NA
ERM-11	161.17	6.11	155.06
ERM-12D	160.32	****	NA
MW-1	159.88	****	NA
MW-2	160.00	3.95	156.05
MW-4	160.90	****	NA
CDW-1	159.59	4.46	155.13
CDW-2	157.21	****	NA
CDW-3	157.65	2.84	154.81
CDW-4	158.21	3.96	154.25
CDW-5	158.93	1.85	157.08
CDW-6	157.07	****	NA
CDW-7	158.42	1.65	156.77
CDW-9	155.25	2	153.25
CDW-10	153.12	1.60	151.52
CDW-11	152.99	0.72	152.27
CDW-12	154.20	1.64	152.56

Notes:

Sand Unit

Silt Unit

Top

Base

Surface Water

1) Groundwater and surface water locations gauged by VERTEX on November 20, 2002

2) Measure Point Elevation obtained from previous GZA reports.

3) ** : Monitoring Well could not be located was inaccessible, or is damaged and/or could not be gauged.

4) NA : Not Available in Previous Reports or Not Applicable

Table 5A

General Chemical
Groundwater/Surface Water Elevation Data-November 2002

Monitoring Well/Surface Water Identification	Measuring Point Elevation	Depth to Water	Groundwater/Surface Water Elevation
CDW-14	158.10	****	NA
CDW-15	154.62	3.65	150.97
CDW-17	160.03	4.60	155.43
CDW-18S	153.57	1.45	152.12
CDW-18D	153.78	1.59	152.19
CDW-19S	152.63	0.83	151.80
CDW-19D	154.91	3.47	151.44
GZ-1	159.66	5.88	153.78
GZ-2	161.18	6.56	154.62
GZ-3	160.21	5.30	154.91
GZ-4	158.84	7.12	151.72
GZ-5S	158.65	7.50	151.15
GZ-5D	156.12	2.46	153.66
GZ-6	156.07	2.42	153.65
GZ-7	165.42	****	NA
GZ-8	161.40	6.45	154.95
GZ-9	161.74	9.69	152.05
GZ-10	158.72	1.99	156.73
GZ-11	158.71	****	NA
GZ-12	158.84	2.35	156.49
GZ-13	158.94	3.18	155.76
GZ-14	159.85	2.48	157.37
GZA-13	159.75	4.28	155.47
GZA-14S	155.35	3.48	151.87
GZA-14M	155.35	3.64	151.71
GZA-15S	156.47	5.73	150.74
GZA-15D	156.68	5.08	151.60
GZA-16	156.51	5.80	150.71

Notes:

Sand Unit

Silt Unit

Clay

Unconsolidated

1) Groundwater and surface water locations gauged by VERTEX on November 20, 2002

2) Measure Point Elevation obtained from previous GZA reports.

3) ** : Monitoring Well could not be located was inaccessible, or is damaged and/or could not be gauged.

4) NA : Not Available in Previous Reports or Not Applicable

Table 5B

General Chemical
Groundwater/Surface Water Elevation Data-August 2002

Monitoring Well/Surface Water Identification	Measuring Point Elevation	Depth to Water	Groundwater/Surface Water Elevation
		****	NA
GZA 16 S	158.54		150.52
GZA 16M	158.77	8.25	149.26
GZA 17S	158.18	8.92	150.17
GZA 17M	158.06	7.89	149.90
GZA 18S	158.35	8.45	151.98
GZA 18M	158.31	6.33	149.24
GZA 19DD	154.15	4.91	152.71
EW-1	159.07	6.36	
		****	NA
EW-PZ-1	156.85		151.75
EW-PZ-2S	158.52	6.77	152.69
EW-PZ-2D	158.37	5.68	151.94
PZ-1S	153.03	1.09	NA
PZ-1D	154.34	****	149.92
PZ-2S	154.29	4.37	149.95
PZ-2D	154.72	4.77	NA
PZ-3S	154.02	****	NA
PZ-3D	154.06	****	NA
PZ-4S	103.18	****	NA
PZ-4D	103.37	****	NA
CDW-13	161.15	****	NA

Notes:

Sand Unit

Silt Unit

PZ

Surface Water

- 1) Measure Point Elevation obtained from previous GZA reports.
- 2) Groundwater and surface water locations gauged by VERTEX on August 22, 2002
- 3) NA : Not Available in Previous Reports or Not Applicable

Table 5B

General Chemical
Groundwater/Surface Water Elevation Data-August 2002

Monitoring Well/Surface Water Identification	Measuring Point Elevation	Depth to Water	Groundwater/Surface Water Elevation
SW-1	154.60	****	NA
SW-2	NA	dry	NA
SW-3	154.01	dry	NA
SW-10	152.60	2.29	150.31
SW-PZ3	153.88	****	NA
ERM-4	159.53	4.23	155.28
ERM-11	161.17	6.35	154.82
ERM-12D	160.32	6.29	NA
MW-1	159.88	****	NA
MW-2	160.00	6.84	153.16
MW-4	160.90	****	NA
CDW-1	159.59	5.75	153.84
CDW-2	157.21	****	NA
CDW-3	157.65	****	NA
CDW-4	158.21	6.51	151.70
CDW-5	158.93	5.73	153.20
CDW-6	157.07	****	NA
CDW-7	158.42	5.15	153.27
CDW-9	155.25	4.80	150.45
CDW-10	153.12	3.15	149.97
CDW-11	152.99	2.31	150.68
CDW-12	154.20	3.48	150.72

Notes:

Sand Unit

Silt Unit

Till

Bedrock

Surface Water

1) Groundwater and surface water locations gauged by VERTEX on August 22, 2002

2) Measure Point Elevation obtained from previous GZA reports.

3) ** - Monitoring Well could not be located was inaccessible, or is damaged and/or could not be gauged.

4) NA : Not Available in Previous Reports or Not Applicable

5) ERM-4 located within puddle, therefore elevation not utilized in schematic.

Table 5B

General Chemical
Groundwater/Surface Water Elevation Data-August 2002

Monitoring Well/Surface Water Identification	Measuring Point Elevation	Depth to Water	Groundwater/Surface Water Elevation
CDW-14	158.10	****	NA
CDW-15	154.62	****	NA
CDW-17	160.03	8.97	151.06
CDW-18S	153.57	3.26	150.31
CDW-18D	153.78	3.46	150.32
CDW-19S	152.63	2.32	150.31
CDW-19D	154.91	3.15	151.76
CDW-20	159.66	****	NA
GZ-2	161.18	11.30	149.88
GZ-3	160.21	5.70	154.51
GZ-4	158.84	8.53	150.31
GZ-4B	158.65	8.83	149.82
GZ-5S	156.12	4.62	151.50
GZ-5D	156.07	4.42	151.65
GZ-6	165.42	11.30	154.12
GZ-7	161.40	6.79	154.61
GZ-7B	161.74	11.07	150.67
GZ-8	158.72	4.50	154.22
GZ-9	158.71	4.78	153.93
GZ-10	158.84	4.97	153.87
GZ-11	158.94	4.97	153.97
GZ-12	159.85	4.05	155.80
GZA-13	159.75	4.98	154.77
GZA-14S	155.35	4.86	150.49
GZA-14M	155.35	4.94	150.41
GZA-15S	156.47	7.05	149.42
GZA-15D	156.68	6.92	149.76
GZA-15B	156.51	6.86	149.65

Notes:

Sand Unit

Silt Unit

Clay

Bedrock

1) Groundwater and surface water locations gauged by VERTEX on August 22, 2002

2) Measure Point Elevation obtained from previous GZA reports.

3) ** - Monitoring Well could not be located was inaccessible, or is damaged and/or could not be gauged.

4) NA - Not Available in Previous Reports or Not Applicable

Appendix A: Automated Water Level Readings-GZ-7R

In-Situ Inc. MiniTroll Adv

Report generated: 01/16/03 10:47:30
Report from file: P:\5) Projects\4109-General Chemical\SN08627 2002-06-05 113024 GZ-7R Test 1.bi
DataMgr Version 3.70
Serial number: 00008627
Firmware Version 3.04
Unit name: miniTROLL

Test name: GZ-7R Test 1

Test defined on: 06/05/02 11:29:50
Test started on: 06/05/02 11:30:24
Test stopped on: N/A N/A
Test extracted on: N/A

Data gathered using Linear testing

Time between data points: 60.0000 Minutes.

Number of data samples: 1875

TOTAL DATA SAMPLES 1875

Channel number [1]

Measurement type: Pressure

Channel name: OnBoard Pressure

Sensor Range: 100 PSI.

Density: 1.000 g/cm3

Latitude: 45 degrees

Elevation: 0.000 meters (0.000 feet)

Date	Time	ET (min)	Chan[1] Feet H2O
06/05/02	11:30:24	0.0000	41.617
06/05/02	12:30:24	60.0000	44.991
06/05/02	13:30:24	120.0000	45.167
06/05/02	14:30:24	180.0000	45.331
06/05/02	15:30:24	240.0000	45.435
06/05/02	16:30:24	300.0000	45.131
06/05/02	17:30:24	360.0000	45.167
06/05/02	18:30:24	420.0000	44.560
06/05/02	19:30:24	480.0000	44.469
06/05/02	20:30:24	540.0000	44.281
06/05/02	21:30:24	600.0000	44.706
06/05/02	22:30:24	660.0000	45.046
06/05/02	23:30:24	720.0000	45.259
06/06/02	00:30:24	780.0000	45.423
06/06/02	01:30:24	840.0000	45.599
06/06/02	02:30:24	900.0000	45.690
06/06/02	03:30:24	960.0000	45.787
06/06/02	04:30:24	1020.0000	45.872
06/06/02	05:30:24	1080.0000	45.927
06/06/02	06:30:24	1140.0000	45.914
06/06/02	07:30:24	1200.0000	45.951
06/06/02	08:30:24	1260.0000	45.963
06/06/02	09:30:24	1320.0000	45.993
06/06/02	10:30:24	1380.0000	46.055
06/06/02	11:30:24	1440.0000	46.109
06/06/02	12:30:24	1500.0000	39.898
06/06/02	13:30:24	1560.0000	45.762
06/06/02	14:30:24	1620.0000	45.860
06/06/02	15:30:24	1680.0000	45.957
06/06/02	16:30:24	1740.0000	45.999
06/06/02	17:30:24	1800.0000	46.042
06/06/02	18:30:24	1860.0000	46.084
06/06/02	19:30:24	1920.0000	46.127
06/06/02	20:30:24	1980.0000	46.127

06/06/02	21:30:24	2040.0000	46.169
06/06/02	22:30:24	2100.0000	46.206
06/06/02	23:30:24	2160.0000	46.236
06/07/02	00:30:24	2220.0000	46.285
06/07/02	01:30:24	2280.0000	46.352
06/07/02	02:30:24	2340.0000	46.394
06/07/02	03:30:24	2400.0000	46.424
06/07/02	04:30:24	2460.0000	46.437
06/07/02	05:30:24	2520.0000	46.455
06/07/02	06:30:24	2580.0000	46.449
06/07/02	07:30:24	2640.0000	46.455
06/07/02	08:30:24	2700.0000	46.437
06/07/02	09:30:24	2760.0000	46.437
06/07/02	10:30:24	2820.0000	46.467
06/07/02	11:30:24	2880.0000	46.394
06/07/02	12:30:24	2940.0000	46.370
06/07/02	13:30:24	3000.0000	46.431
06/07/02	14:30:24	3060.0000	46.443
06/07/02	15:30:24	3120.0000	46.291
06/07/02	16:30:24	3180.0000	45.811
06/07/02	17:30:24	3240.0000	46.151
06/07/02	18:30:24	3300.0000	45.684
06/07/02	19:30:24	3360.0000	45.605
06/07/02	20:30:24	3420.0000	45.562
06/07/02	21:30:24	3480.0000	45.526
06/07/02	22:30:24	3540.0000	45.787
06/07/02	23:30:24	3600.0000	45.993
06/08/02	00:30:24	3660.0000	46.127
06/08/02	01:30:24	3720.0000	46.218
06/08/02	02:30:24	3780.0000	46.321
06/08/02	03:30:24	3840.0000	46.388
06/08/02	04:30:24	3900.0000	46.449
06/08/02	05:30:24	3960.0000	46.473
06/08/02	06:30:24	4020.0000	46.503
06/08/02	07:30:24	4080.0000	46.467
06/08/02	08:30:24	4140.0000	45.871
06/08/02	09:30:24	4200.0000	45.410
06/08/02	10:30:24	4260.0000	45.289
06/08/02	11:30:24	4320.0000	44.590
06/08/02	12:30:24	4380.0000	43.448
06/08/02	13:30:24	4440.0000	43.498
06/08/02	14:30:24	4500.0000	42.689
06/08/02	15:30:24	4560.0000	42.355
06/08/02	16:30:24	4620.0000	41.821
06/08/02	17:30:24	4680.0000	41.281
06/08/02	18:30:24	4740.0000	41.597
06/08/02	19:30:24	4800.0000	40.795
06/08/02	20:30:24	4860.0000	41.536
06/08/02	21:30:24	4920.0000	42.369
06/08/02	22:30:24	4980.0000	43.200
06/08/02	23:30:24	5040.0000	43.704
06/09/02	00:30:24	5100.0000	44.063
06/09/02	01:30:24	5160.0000	44.360
06/09/02	02:30:24	5220.0000	44.597
06/09/02	03:30:24	5280.0000	44.822
06/09/02	04:30:24	5340.0000	44.985
06/09/02	05:30:24	5400.0000	45.131
06/09/02	06:30:24	5460.0000	45.210
06/09/02	07:30:24	5520.0000	44.925
06/09/02	08:30:24	5580.0000	44.524
06/09/02	09:30:24	5640.0000	42.416
06/09/02	10:30:24	5700.0000	42.058
06/09/02	11:30:24	5760.0000	42.052
06/09/02	12:30:24	5820.0000	42.362
06/09/02	13:30:24	5880.0000	41.809
06/09/02	14:30:24	5940.0000	41.639
06/09/02	15:30:24	6000.0000	41.615
06/09/02	16:30:24	6060.0000	41.512
06/09/02	17:30:24	6120.0000	41.913
06/09/02	18:30:24	6180.0000	41.627

06/09/02	19:30:24	6240.0000	42.058
06/09/02	20:30:24	6300.0000	42.660
06/09/02	21:30:24	6360.0000	42.878
06/09/02	22:30:24	6420.0000	43.230
06/09/02	23:30:24	6480.0000	43.734
06/10/02	00:30:24	6540.0000	44.026
06/10/02	01:30:24	6600.0000	44.275
06/10/02	02:30:24	6660.0000	44.499
06/10/02	03:30:24	6720.0000	44.688
06/10/02	04:30:24	6780.0000	44.846
06/10/02	05:30:24	6840.0000	44.961
06/10/02	06:30:24	6900.0000	45.064
06/10/02	07:30:24	6960.0000	45.052
06/10/02	08:30:24	7020.0000	44.803
06/10/02	09:30:24	7080.0000	44.609
06/10/02	10:30:24	7140.0000	44.706
06/10/02	11:30:24	7200.0000	44.056
06/10/02	12:30:24	7260.0000	44.141
06/10/02	13:30:24	7320.0000	43.430
06/10/02	14:30:24	7380.0000	43.777
06/10/02	15:30:24	7440.0000	43.334
06/10/02	16:30:24	7500.0000	43.382
06/10/02	17:30:24	7560.0000	43.096
06/10/02	18:30:24	7620.0000	42.028
06/10/02	19:30:24	7680.0000	42.520
06/10/02	20:30:24	7740.0000	42.417
06/10/02	21:30:24	7800.0000	43.249
06/10/02	22:30:24	7860.0000	43.753
06/10/02	23:30:24	7920.0000	44.068
06/11/02	00:30:24	7980.0000	44.348
06/11/02	01:30:24	8040.0000	44.560
06/11/02	02:30:24	8100.0000	44.761
06/11/02	03:30:24	8160.0000	44.937
06/11/02	04:30:24	8220.0000	45.089
06/11/02	05:30:24	8280.0000	45.216
06/11/02	06:30:24	8340.0000	45.234
06/11/02	07:30:24	8400.0000	45.216
06/11/02	08:30:24	8460.0000	45.331
06/11/02	09:30:24	8520.0000	45.295
06/11/02	10:30:24	8580.0000	44.925
06/11/02	11:30:24	8640.0000	44.809
06/11/02	12:30:24	8700.0000	44.621
06/11/02	13:30:24	8760.0000	44.189
06/11/02	14:30:24	8820.0000	44.141
06/11/02	15:30:24	8880.0000	44.068
06/11/02	16:30:24	8940.0000	43.691
06/11/02	17:30:24	9000.0000	43.187
06/11/02	18:30:24	9060.0000	43.504
06/11/02	19:30:24	9120.0000	44.075
06/11/02	20:30:24	9180.0000	44.549
06/11/02	21:30:24	9240.0000	44.736
06/11/02	22:30:24	9300.0000	44.918
06/11/02	23:30:24	9360.0000	45.064
06/12/02	00:30:24	9420.0000	45.137
06/12/02	01:30:24	9480.0000	45.295
06/12/02	02:30:24	9540.0000	45.416
06/12/02	03:30:24	9600.0000	45.514
06/12/02	04:30:24	9660.0000	45.635
06/12/02	05:30:24	9720.0000	45.720
06/12/02	06:30:24	9780.0000	45.799
06/12/02	07:30:24	9840.0000	45.860
06/12/02	08:30:24	9900.0000	45.532
06/12/02	09:30:24	9960.0000	44.049
06/12/02	10:30:24	10020.0000	43.254
06/12/02	11:30:24	10080.0000	43.527
06/12/02	12:30:24	10140.0000	44.275
06/12/02	13:30:24	10200.0000	44.378
06/12/02	14:30:24	10260.0000	44.645
06/12/02	15:30:24	10320.0000	44.912
06/12/02	16:30:24	10380.0000	44.833

06/12/02	17:30:24	10440.0000	44.846
06/12/02	18:30:24	10500.0000	45.198
06/12/02	19:30:24	10560.0000	45.010
06/12/02	20:30:24	10620.0000	45.331
06/12/02	21:30:24	10680.0000	45.483
06/12/02	22:30:24	10740.0000	45.580
06/12/02	23:30:24	10800.0000	45.665
06/13/02	00:30:24	10860.0000	45.726
06/13/02	01:30:24	10920.0000	45.781
06/13/02	02:30:24	10980.0000	45.878
06/13/02	03:30:24	11040.0000	45.927
06/13/02	04:30:24	11100.0000	46.005
06/13/02	05:30:24	11160.0000	46.066
06/13/02	06:30:24	11220.0000	46.151
06/13/02	07:30:24	11280.0000	46.176
06/13/02	08:30:24	11340.0000	46.169
06/13/02	09:30:24	11400.0000	46.200
06/13/02	10:30:24	11460.0000	46.133
06/13/02	11:30:24	11520.0000	46.060
06/13/02	12:30:24	11580.0000	45.592
06/13/02	13:30:24	11640.0000	45.568
06/13/02	14:30:24	11700.0000	45.033
06/13/02	15:30:24	11760.0000	45.070
06/13/02	16:30:24	11820.0000	44.991
06/13/02	17:30:24	11880.0000	44.863
06/13/02	18:30:24	11940.0000	45.046
06/13/02	19:30:24	12000.0000	45.076
06/13/02	20:30:24	12060.0000	45.240
06/13/02	21:30:24	12120.0000	45.453
06/13/02	22:30:24	12180.0000	45.593
06/13/02	23:30:24	12240.0000	45.750
06/14/02	00:30:24	12300.0000	45.860
06/14/02	01:30:24	12360.0000	45.908
06/14/02	02:30:24	12420.0000	45.786
06/14/02	03:30:24	12480.0000	45.951
06/14/02	04:30:24	12540.0000	46.060
06/14/02	05:30:24	12600.0000	46.151
06/14/02	06:30:24	12660.0000	46.212
06/14/02	07:30:24	12720.0000	46.285
06/14/02	08:30:24	12780.0000	46.321
06/14/02	09:30:24	12840.0000	46.254
06/14/02	10:30:24	12900.0000	46.230
06/14/02	11:30:24	12960.0000	45.805
06/14/02	12:30:24	13020.0000	45.744
06/14/02	13:30:24	13080.0000	45.550
06/14/02	14:30:24	13140.0000	45.659
06/14/02	15:30:24	13200.0000	45.848
06/14/02	16:30:24	13260.0000	45.799
06/14/02	17:30:24	13320.0000	45.574
06/14/02	18:30:24	13380.0000	45.653
06/14/02	19:30:24	13440.0000	45.927
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06/14/02	22:30:24	13620.0000	46.261
06/14/02	23:30:24	13680.0000	46.333
06/15/02	00:30:24	13740.0000	46.376
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06/15/02	02:30:24	13860.0000	46.437
06/15/02	03:30:24	13920.0000	46.461
06/15/02	04:30:24	13980.0000	46.509
06/15/02	05:30:24	14040.0000	46.540
06/15/02	06:30:24	14100.0000	46.582
06/15/02	07:30:24	14160.0000	46.643
06/15/02	08:30:24	14220.0000	46.691
06/15/02	09:30:24	14280.0000	46.703
06/15/02	10:30:24	14340.0000	46.722
06/15/02	11:30:24	14400.0000	46.558
06/15/02	12:30:24	14460.0000	46.521
06/15/02	13:30:24	14520.0000	46.503
06/15/02	14:30:24	14580.0000	46.418

06/15/02	15:30:24	14640.0000	46.515
06/15/02	16:30:24	14700.0000	46.339
06/15/02	17:30:24	14760.0000	46.351
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06/15/02	19:30:24	14880.0000	46.139
06/15/02	20:30:24	14940.0000	46.370
06/15/02	21:30:24	15000.0000	46.467
06/15/02	22:30:24	15060.0000	46.491
06/15/02	23:30:24	15120.0000	46.497
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06/16/02	02:30:24	15300.0000	46.655
06/16/02	03:30:24	15360.0000	46.673
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06/16/02	15:30:24	16080.0000	45.337
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06/16/02	17:30:24	16200.0000	44.730
06/16/02	18:30:24	16260.0000	45.283
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06/16/02	20:30:24	16380.0000	45.908
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06/16/02	23:30:24	16560.0000	46.309
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06/17/02	06:30:24	16980.0000	46.612
06/17/02	07:30:24	17040.0000	46.442
06/17/02	08:30:24	17100.0000	46.582
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06/17/02	12:30:24	17340.0000	46.005
06/17/02	13:30:24	17400.0000	45.635
06/17/02	14:30:24	17460.0000	45.720
06/17/02	15:30:24	17520.0000	45.689
06/17/02	16:30:24	17580.0000	45.404
06/17/02	17:30:24	17640.0000	44.851
06/17/02	18:30:24	17700.0000	43.989
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06/17/02	20:30:24	17820.0000	44.129
06/17/02	21:30:24	17880.0000	44.906
06/17/02	22:30:24	17940.0000	45.331
06/17/02	23:30:24	18000.0000	45.568
06/18/02	00:30:24	18060.0000	45.744
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06/18/02	05:30:24	18360.0000	46.139
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06/18/02	07:30:24	18480.0000	46.254
06/18/02	08:30:24	18540.0000	46.285
06/18/02	09:30:24	18600.0000	46.224
06/18/02	10:30:24	18660.0000	46.199
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06/18/02	12:30:24	18780.0000	45.695

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06/18/02	17:30:24	19080.0000	44.487
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06/18/02	19:30:24	19200.0000	44.256
06/18/02	20:30:24	19260.0000	43.314
06/18/02	21:30:24	19320.0000	42.634
06/18/02	22:30:24	19380.0000	43.898
06/18/02	23:30:24	19440.0000	44.554
06/19/02	00:30:24	19500.0000	44.918
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06/19/02	02:30:24	19620.0000	45.271
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06/19/02	05:30:24	19800.0000	45.617
06/19/02	06:30:24	19860.0000	45.647
06/19/02	07:30:24	19920.0000	45.714
06/19/02	08:30:24	19980.0000	45.781
06/19/02	09:30:24	20040.0000	45.842
06/19/02	10:30:24	20100.0000	45.848
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06/19/02	15:30:24	20400.0000	45.628
06/19/02	16:30:24	20460.0000	45.641
06/19/02	17:30:24	20520.0000	45.137
06/19/02	18:30:24	20580.0000	44.821
06/19/02	19:30:24	20640.0000	45.027
06/19/02	20:30:24	20700.0000	45.082
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06/19/02	22:30:24	20820.0000	45.599
06/19/02	23:30:24	20880.0000	45.781
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06/20/02	01:30:24	21000.0000	45.993
06/20/02	02:30:24	21060.0000	46.090
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06/20/02	04:30:24	21180.0000	46.182
06/20/02	05:30:24	21240.0000	46.188
06/20/02	06:30:24	21300.0000	46.206
06/20/02	07:30:24	21360.0000	46.151
06/20/02	08:30:24	21420.0000	45.987
06/20/02	09:30:24	21480.0000	45.732
06/20/02	10:30:24	21540.0000	44.973
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06/20/02	13:30:24	21720.0000	45.095
06/20/02	14:30:24	21780.0000	45.137
06/20/02	15:30:24	21840.0000	45.307
06/20/02	16:30:24	21900.0000	44.214
06/20/02	17:30:24	21960.0000	44.068
06/20/02	18:30:24	22020.0000	44.609
06/20/02	19:30:24	22080.0000	44.420
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06/21/02	01:30:24	22440.0000	41.275
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06/21/02	05:30:24	22680.0000	40.734
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06/21/02	10:30:24	22980.0000	41.950

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06/21/02	15:30:24	23280.0000	42.593
06/21/02	16:30:24	23340.0000	42.775
06/21/02	17:30:24	23400.0000	42.611
06/21/02	18:30:24	23460.0000	41.997
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06/21/02	20:30:24	23580.0000	42.234
06/21/02	21:30:24	23640.0000	42.915
06/21/02	22:30:24	23700.0000	43.400
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06/22/02	02:30:24	23940.0000	44.402
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06/22/02	07:30:24	24240.0000	44.779
06/22/02	08:30:24	24300.0000	43.940
06/22/02	09:30:24	24360.0000	42.294
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06/22/02	11:30:24	24480.0000	42.920
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06/22/02	13:30:24	24600.0000	42.428
06/22/02	14:30:24	24660.0000	42.270
06/22/02	15:30:24	24720.0000	43.000
06/22/02	16:30:24	24780.0000	42.847
06/22/02	17:30:24	24840.0000	42.768
06/22/02	18:30:24	24900.0000	42.592
06/22/02	19:30:24	24960.0000	43.218
06/22/02	20:30:24	25020.0000	43.589
06/22/02	21:30:24	25080.0000	43.874
06/22/02	22:30:24	25140.0000	44.147
06/22/02	23:30:24	25200.0000	44.360
06/23/02	00:30:24	25260.0000	44.524
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06/23/02	02:30:24	25380.0000	44.736
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06/23/02	07:30:24	25680.0000	45.155
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06/23/02	12:30:24	25980.0000	43.637
06/23/02	13:30:24	26040.0000	43.455
06/23/02	14:30:24	26100.0000	43.740
06/23/02	15:30:24	26160.0000	43.776
06/23/02	16:30:24	26220.0000	43.558
06/23/02	17:30:24	26280.0000	42.896
06/23/02	18:30:24	26340.0000	43.516
06/23/02	19:30:24	26400.0000	43.631
06/23/02	20:30:24	26460.0000	43.382
06/23/02	21:30:24	26520.0000	43.819
06/23/02	22:30:24	26580.0000	44.299
06/23/02	23:30:24	26640.0000	44.530
06/24/02	00:30:24	26700.0000	44.615
06/24/02	01:30:24	26760.0000	44.785
06/24/02	02:30:24	26820.0000	44.997
06/24/02	03:30:24	26880.0000	45.143
06/24/02	04:30:24	26940.0000	45.246
06/24/02	05:30:24	27000.0000	45.337
06/24/02	06:30:24	27060.0000	45.410
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06/24/02	08:30:24	27180.0000	45.288

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06/24/02	12:30:24	27420.0000	44.129
06/24/02	13:30:24	27480.0000	43.588
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06/24/02	18:30:24	27780.0000	43.406
06/24/02	19:30:24	27840.0000	43.382
06/24/02	20:30:24	27900.0000	43.461
06/24/02	21:30:24	27960.0000	43.819
06/24/02	22:30:24	28020.0000	44.208
06/24/02	23:30:24	28080.0000	44.512
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06/25/02	01:30:24	28200.0000	44.785
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06/25/02	04:30:24	28380.0000	45.216
06/25/02	05:30:24	28440.0000	45.319
06/25/02	06:30:24	28500.0000	45.404
06/25/02	07:30:24	28560.0000	45.313
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06/25/02	11:30:24	28800.0000	44.748
06/25/02	12:30:24	28860.0000	44.681
06/25/02	13:30:24	28920.0000	44.687
06/25/02	14:30:24	28980.0000	44.293
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06/25/02	16:30:24	29100.0000	44.335
06/25/02	17:30:24	29160.0000	44.445
06/25/02	18:30:24	29220.0000	44.742
06/25/02	19:30:24	29280.0000	43.697
06/25/02	20:30:24	29340.0000	44.159
06/25/02	21:30:24	29400.0000	43.934
06/25/02	22:30:24	29460.0000	44.506
06/25/02	23:30:24	29520.0000	44.767
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06/26/02	03:30:24	29760.0000	45.301
06/26/02	04:30:24	29820.0000	45.410
06/26/02	05:30:24	29880.0000	45.501
06/26/02	06:30:24	29940.0000	45.580
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06/26/02	10:30:24	30180.0000	44.809
06/26/02	11:30:24	30240.0000	44.475
06/26/02	12:30:24	30300.0000	44.699
06/26/02	13:30:24	30360.0000	44.293
06/26/02	14:30:24	30420.0000	44.779
06/26/02	15:30:24	30480.0000	45.052
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06/26/02	22:30:24	30900.0000	44.918
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06/27/02	23:30:24	32400.0000	45.459
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06/28/02	02:30:24	32580.0000	45.702
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06/28/02	04:30:24	32700.0000	45.829
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06/29/02	21:30:24	35160.0000	41.245
06/29/02	22:30:24	35220.0000	42.466
06/29/02	23:30:24	35280.0000	42.763
06/30/02	00:30:24	35340.0000	43.267
06/30/02	01:30:24	35400.0000	43.589
06/30/02	02:30:24	35460.0000	43.819
06/30/02	03:30:24	35520.0000	44.008
06/30/02	04:30:24	35580.0000	44.196

06/30/02	05:30:24	35640.0000	44.329
06/30/02	06:30:24	35700.0000	44.414
06/30/02	07:30:24	35760.0000	44.342
06/30/02	08:30:24	35820.0000	44.323
06/30/02	09:30:24	35880.0000	42.902
06/30/02	10:30:24	35940.0000	42.629
06/30/02	11:30:24	36000.0000	42.829
06/30/02	12:30:24	36060.0000	42.471
06/30/02	13:30:24	36120.0000	42.993
06/30/02	14:30:24	36180.0000	43.048
06/30/02	15:30:24	36240.0000	42.756
06/30/02	16:30:24	36300.0000	43.400
06/30/02	17:30:24	36360.0000	42.732
06/30/02	18:30:24	36420.0000	42.598
06/30/02	19:30:24	36480.0000	42.915
06/30/02	20:30:24	36540.0000	42.884
06/30/02	21:30:24	36600.0000	42.896
06/30/02	22:30:24	36660.0000	43.491
06/30/02	23:30:24	36720.0000	43.880
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07/01/02	01:30:24	36840.0000	44.269
07/01/02	02:30:24	36900.0000	44.421
07/01/02	03:30:24	36960.0000	44.536
07/01/02	04:30:24	37020.0000	44.633
07/01/02	05:30:24	37080.0000	44.736
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07/01/02	07:30:24	37200.0000	44.536
07/01/02	08:30:24	37260.0000	44.560
07/01/02	09:30:24	37320.0000	44.700
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07/01/02	11:30:24	37440.0000	44.165
07/01/02	12:30:24	37500.0000	44.275
07/01/02	13:30:24	37560.0000	44.202
07/01/02	14:30:24	37620.0000	44.257
07/01/02	15:30:24	37680.0000	44.524
07/01/02	16:30:24	37740.0000	43.995
07/01/02	17:30:24	37800.0000	44.293
07/01/02	18:30:24	37860.0000	43.892
07/01/02	19:30:24	37920.0000	44.105
07/01/02	20:30:24	37980.0000	44.263
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07/01/02	22:30:24	38100.0000	44.421
07/01/02	23:30:24	38160.0000	44.682
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07/02/02	01:30:24	38280.0000	44.979
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07/02/02	03:30:24	38400.0000	45.119
07/02/02	04:30:24	38460.0000	45.180
07/02/02	05:30:24	38520.0000	45.228
07/02/02	06:30:24	38580.0000	45.295
07/02/02	07:30:24	38640.0000	45.192
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07/02/02	14:30:24	39060.0000	44.432
07/02/02	15:30:24	39120.0000	44.535
07/02/02	16:30:24	39180.0000	44.481
07/02/02	17:30:24	39240.0000	44.031
07/02/02	18:30:24	39300.0000	44.190
07/02/02	19:30:24	39360.0000	44.050
07/02/02	20:30:24	39420.0000	44.013
07/02/02	21:30:24	39480.0000	43.363
07/02/02	22:30:24	39540.0000	44.080
07/02/02	23:30:24	39600.0000	44.189
07/03/02	00:30:24	39660.0000	44.572
07/03/02	01:30:24	39720.0000	44.767
07/03/02	02:30:24	39780.0000	44.925

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07/03/02	04:30:24	39900.0000	45.101
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07/03/02	07:30:24	40080.0000	45.197
07/03/02	08:30:24	40140.0000	45.058
07/03/02	09:30:24	40200.0000	44.724
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07/03/02	11:30:24	40320.0000	43.758
07/03/02	12:30:24	40380.0000	44.336
07/03/02	13:30:24	40440.0000	43.995
07/03/02	14:30:24	40500.0000	43.776
07/03/02	15:30:24	40560.0000	44.056
07/03/02	16:30:24	40620.0000	43.740
07/03/02	17:30:24	40680.0000	43.625
07/03/02	18:30:24	40740.0000	43.187
07/03/02	19:30:24	40800.0000	43.255
07/03/02	20:30:24	40860.0000	43.224
07/03/02	21:30:24	40920.0000	43.455
07/03/02	22:30:24	40980.0000	43.929
07/03/02	23:30:24	41040.0000	44.202
07/04/02	00:30:24	41100.0000	44.439
07/04/02	01:30:24	41160.0000	44.566
07/04/02	02:30:24	41220.0000	44.627
07/04/02	03:30:24	41280.0000	44.767
07/04/02	04:30:24	41340.0000	44.852
07/04/02	05:30:24	41400.0000	44.949
07/04/02	06:30:24	41460.0000	44.991
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07/04/02	08:30:24	41580.0000	44.365
07/04/02	09:30:24	41640.0000	43.436
07/04/02	10:30:24	41700.0000	43.060
07/04/02	11:30:24	41760.0000	43.029
07/04/02	12:30:24	41820.0000	43.467
07/04/02	13:30:24	41880.0000	43.363
07/04/02	14:30:24	41940.0000	42.306
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07/04/02	16:30:24	42060.0000	42.938
07/04/02	17:30:24	42120.0000	43.334
07/04/02	18:30:24	42180.0000	43.540
07/04/02	19:30:24	42240.0000	43.072
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07/04/02	21:30:24	42360.0000	43.419
07/04/02	22:30:24	42420.0000	43.874
07/04/02	23:30:24	42480.0000	44.153
07/05/02	00:30:24	42540.0000	44.336
07/05/02	01:30:24	42600.0000	44.487
07/05/02	02:30:24	42660.0000	44.627
07/05/02	03:30:24	42720.0000	44.706
07/05/02	04:30:24	42780.0000	44.785
07/05/02	05:30:24	42840.0000	44.870
07/05/02	06:30:24	42900.0000	44.894
07/05/02	07:30:24	42960.0000	44.900
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07/05/02	09:30:24	43080.0000	44.256
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07/05/02	12:30:24	43260.0000	43.327
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07/05/02	14:30:24	43380.0000	42.932
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07/05/02	16:30:24	43500.0000	42.787
07/05/02	17:30:24	43560.0000	42.052
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07/05/02	19:30:24	43680.0000	41.530
07/05/02	20:30:24	43740.0000	42.368
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07/05/02	22:30:24	43860.0000	43.036
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07/06/02	00:30:24	43980.0000	43.771

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07/06/02	04:30:24	44220.0000	44.402
07/06/02	05:30:24	44280.0000	44.493
07/06/02	06:30:24	44340.0000	44.572
07/06/02	07:30:24	44400.0000	44.286
07/06/02	08:30:24	44460.0000	44.056
07/06/02	09:30:24	44520.0000	42.561
07/06/02	10:30:24	44580.0000	42.963
07/06/02	11:30:24	44640.0000	42.447
07/06/02	12:30:24	44700.0000	42.046
07/06/02	13:30:24	44760.0000	41.833
07/06/02	14:30:24	44820.0000	42.009
07/06/02	15:30:24	44880.0000	42.271
07/06/02	16:30:24	44940.0000	42.672
07/06/02	17:30:24	45000.0000	42.581
07/06/02	18:30:24	45060.0000	41.439
07/06/02	19:30:24	45120.0000	42.052
07/06/02	20:30:24	45180.0000	42.568
07/06/02	21:30:24	45240.0000	43.060
07/06/02	22:30:24	45300.0000	43.394
07/06/02	23:30:24	45360.0000	43.595
07/07/02	00:30:24	45420.0000	43.704
07/07/02	01:30:24	45480.0000	43.716
07/07/02	02:30:24	45540.0000	43.917
07/07/02	03:30:24	45600.0000	44.129
07/07/02	04:30:24	45660.0000	44.238
07/07/02	05:30:24	45720.0000	44.366
07/07/02	06:30:24	45780.0000	44.414
07/07/02	07:30:24	45840.0000	44.299
07/07/02	08:30:24	45900.0000	44.226
07/07/02	09:30:24	45960.0000	42.804
07/07/02	10:30:24	46020.0000	42.653
07/07/02	11:30:24	46080.0000	42.538
07/07/02	12:30:24	46140.0000	42.064
07/07/02	13:30:24	46200.0000	42.289
07/07/02	14:30:24	46260.0000	41.876
07/07/02	15:30:24	46320.0000	42.125
07/07/02	16:30:24	46380.0000	41.578
07/07/02	17:30:24	46440.0000	41.694
07/07/02	18:30:24	46500.0000	42.241
07/07/02	19:30:24	46560.0000	42.532
07/07/02	20:30:24	46620.0000	42.793
07/07/02	21:30:24	46680.0000	43.091
07/07/02	22:30:24	46740.0000	43.388
07/07/02	23:30:24	46800.0000	43.528
07/08/02	00:30:24	46860.0000	43.753
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07/08/02	02:30:24	46980.0000	44.080
07/08/02	03:30:24	47040.0000	44.220
07/08/02	04:30:24	47100.0000	44.329
07/08/02	05:30:24	47160.0000	44.402
07/08/02	06:30:24	47220.0000	44.463
07/08/02	07:30:24	47280.0000	44.517
07/08/02	08:30:24	47340.0000	44.463
07/08/02	09:30:24	47400.0000	44.250
07/08/02	10:30:24	47460.0000	43.315
07/08/02	11:30:24	47520.0000	43.309
07/08/02	12:30:24	47580.0000	43.151
07/08/02	13:30:24	47640.0000	42.179
07/08/02	14:30:24	47700.0000	43.054
07/08/02	15:30:24	47760.0000	43.364
07/08/02	16:30:24	47820.0000	42.938
07/08/02	17:30:24	47880.0000	43.346
07/08/02	18:30:24	47940.0000	41.742
07/08/02	19:30:24	48000.0000	41.955
07/08/02	20:30:24	48060.0000	42.392
07/08/02	21:30:24	48120.0000	42.751
07/08/02	22:30:24	48180.0000	43.200

07/08/02	23:30:24	48240.0000	43.540
07/09/02	00:30:24	48300.0000	43.765
07/09/02	01:30:24	48360.0000	43.959
07/09/02	02:30:24	48420.0000	44.129
07/09/02	03:30:24	48480.0000	44.275
07/09/02	04:30:24	48540.0000	44.384
07/09/02	05:30:24	48600.0000	44.475
07/09/02	06:30:24	48660.0000	44.548
07/09/02	07:30:24	48720.0000	44.621
07/09/02	08:30:24	48780.0000	44.657
07/09/02	09:30:24	48840.0000	44.280
07/09/02	10:30:24	48900.0000	44.286
07/09/02	11:30:24	48960.0000	44.268
07/09/02	12:30:24	49020.0000	44.104
07/09/02	13:30:24	49080.0000	43.600
07/09/02	14:30:24	49140.0000	43.904
07/09/02	15:30:24	49200.0000	44.159
07/09/02	16:30:24	49260.0000	44.317
07/09/02	17:30:24	49320.0000	44.378
07/09/02	18:30:24	49380.0000	43.813
07/09/02	19:30:24	49440.0000	44.068
07/09/02	20:30:24	49500.0000	44.354
07/09/02	21:30:24	49560.0000	44.536
07/09/02	22:30:24	49620.0000	44.676
07/09/02	23:30:24	49680.0000	44.761
07/10/02	00:30:24	49740.0000	44.851
07/10/02	01:30:24	49800.0000	44.931
07/10/02	02:30:24	49860.0000	44.997
07/10/02	03:30:24	49920.0000	45.070
07/10/02	04:30:24	49980.0000	45.143
07/10/02	05:30:24	50040.0000	45.216
07/10/02	06:30:24	50100.0000	45.246
07/10/02	07:30:24	50160.0000	45.270
07/10/02	08:30:24	50220.0000	45.258
07/10/02	09:30:24	50280.0000	45.222
07/10/02	10:30:24	50340.0000	43.928
07/10/02	11:30:24	50400.0000	44.250
07/10/02	12:30:24	50460.0000	41.442
07/10/02	13:30:24	50520.0000	41.825
07/10/02	14:30:24	50580.0000	41.868
07/10/02	15:30:24	50640.0000	41.856
07/10/02	16:30:24	50700.0000	41.886
07/10/02	17:30:24	50760.0000	41.522
07/10/02	18:30:24	50820.0000	41.249
07/10/02	19:30:24	50880.0000	41.085
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07/10/02	21:30:24	51000.0000	41.729
07/10/02	22:30:24	51060.0000	41.862
07/10/02	23:30:24	51120.0000	42.063
07/11/02	00:30:24	51180.0000	42.196
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07/11/02	02:30:24	51300.0000	42.402
07/11/02	03:30:24	51360.0000	42.505
07/11/02	04:30:24	51420.0000	42.603
07/11/02	05:30:24	51480.0000	42.663
07/11/02	06:30:24	51540.0000	42.736
07/11/02	07:30:24	51600.0000	42.761
07/11/02	08:30:24	51660.0000	42.712
07/11/02	09:30:24	51720.0000	42.451
07/11/02	10:30:24	51780.0000	42.250
07/11/02	11:30:24	51840.0000	42.293
07/11/02	12:30:24	51900.0000	42.408
07/11/02	13:30:24	51960.0000	42.469
07/11/02	14:30:24	52020.0000	42.111
07/11/02	15:30:24	52080.0000	41.680
07/11/02	16:30:24	52140.0000	41.370
07/11/02	17:30:24	52200.0000	41.261
07/11/02	18:30:24	52260.0000	41.182
07/11/02	19:30:24	52320.0000	41.200
07/11/02	20:30:24	52380.0000	40.240

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07/11/02	22:30:24	52500.0000	41.553
07/11/02	23:30:24	52560.0000	41.698
07/12/02	00:30:24	52620.0000	41.850
07/12/02	01:30:24	52680.0000	42.020
07/12/02	02:30:24	52740.0000	42.148
07/12/02	03:30:24	52800.0000	42.281
07/12/02	04:30:24	52860.0000	42.397
07/12/02	05:30:24	52920.0000	42.487
07/12/02	06:30:24	52980.0000	42.573
07/12/02	07:30:24	53040.0000	42.633
07/12/02	08:30:24	53100.0000	42.675
07/12/02	09:30:24	53160.0000	42.669
07/12/02	10:30:24	53220.0000	42.439
07/12/02	11:30:24	53280.0000	42.420
07/12/02	12:30:24	53340.0000	41.807
07/12/02	13:30:24	53400.0000	41.795
07/12/02	14:30:24	53460.0000	41.765
07/12/02	15:30:24	53520.0000	41.151
07/12/02	16:30:24	53580.0000	41.188
07/12/02	17:30:24	53640.0000	41.030
07/12/02	18:30:24	53700.0000	41.212
07/12/02	19:30:24	53760.0000	41.206
07/12/02	20:30:24	53820.0000	41.619
07/12/02	21:30:24	53880.0000	41.613
07/12/02	22:30:24	53940.0000	41.856
07/12/02	23:30:24	54000.0000	42.044
07/13/02	00:30:24	54060.0000	42.166
07/13/02	01:30:24	54120.0000	42.281
07/13/02	02:30:24	54180.0000	42.348
07/13/02	03:30:24	54240.0000	42.433
07/13/02	04:30:24	54300.0000	42.512
07/13/02	05:30:24	54360.0000	42.603
07/13/02	06:30:24	54420.0000	42.669
07/13/02	07:30:24	54480.0000	42.408
07/13/02	08:30:24	54540.0000	41.771
07/13/02	09:30:24	54600.0000	40.629
07/13/02	10:30:24	54660.0000	40.143
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07/13/02	12:30:24	54780.0000	40.083
07/13/02	13:30:24	54840.0000	39.645
07/13/02	14:30:24	54900.0000	40.040
07/13/02	15:30:24	54960.0000	39.797
07/13/02	16:30:24	55020.0000	39.518
07/13/02	17:30:24	55080.0000	39.111
07/13/02	18:30:24	55140.0000	39.099
07/13/02	19:30:24	55200.0000	39.093
07/13/02	20:30:24	55260.0000	39.318
07/13/02	21:30:24	55320.0000	39.980
07/13/02	22:30:24	55380.0000	40.526
07/13/02	23:30:24	55440.0000	40.763
07/14/02	00:30:24	55500.0000	41.030
07/14/02	01:30:24	55560.0000	41.206
07/14/02	02:30:24	55620.0000	41.364
07/14/02	03:30:24	55680.0000	41.497
07/14/02	04:30:24	55740.0000	41.613
07/14/02	05:30:24	55800.0000	41.740
07/14/02	06:30:24	55860.0000	41.856
07/14/02	07:30:24	55920.0000	41.916
07/14/02	08:30:24	55980.0000	41.491
07/14/02	09:30:24	56040.0000	40.872
07/14/02	10:30:24	56100.0000	39.973
07/14/02	11:30:24	56160.0000	39.791
07/14/02	12:30:24	56220.0000	39.913
07/14/02	13:30:24	56280.0000	39.591
07/14/02	14:30:24	56340.0000	39.506
07/14/02	15:30:24	56400.0000	39.542
07/14/02	16:30:24	56460.0000	40.186
07/14/02	17:30:24	56520.0000	40.168
07/14/02	18:30:24	56580.0000	40.228

07/14/02	19:30:24	56640.0000	40.496
07/14/02	20:30:24	56700.0000	40.532
07/14/02	21:30:24	56760.0000	40.726
07/14/02	22:30:24	56820.0000	41.121
07/14/02	23:30:24	56880.0000	41.340
07/15/02	00:30:24	56940.0000	41.413
07/15/02	01:30:24	57000.0000	41.534
07/15/02	02:30:24	57060.0000	41.643
07/15/02	03:30:24	57120.0000	41.746
07/15/02	04:30:24	57180.0000	41.819
07/15/02	05:30:24	57240.0000	41.916
07/15/02	06:30:24	57300.0000	41.965
07/15/02	07:30:24	57360.0000	42.068
07/15/02	08:30:24	57420.0000	41.971
07/15/02	09:30:24	57480.0000	41.995
07/15/02	10:30:24	57540.0000	41.965
07/15/02	11:30:24	57600.0000	41.534
07/15/02	12:30:24	57660.0000	41.570
07/15/02	13:30:24	57720.0000	41.558
07/15/02	14:30:24	57780.0000	41.334
07/15/02	15:30:24	57840.0000	41.419
07/15/02	16:30:24	57900.0000	41.649
07/15/02	17:30:24	57960.0000	40.459
07/15/02	18:30:24	58020.0000	40.842
07/15/02	19:30:24	58080.0000	41.164
07/15/02	20:30:24	58140.0000	41.474
07/15/02	21:30:24	58200.0000	41.771
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07/15/02	23:30:24	58320.0000	41.996
07/16/02	00:30:24	58380.0000	42.093
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07/16/02	02:30:24	58500.0000	42.221
07/16/02	03:30:24	58560.0000	42.269
07/16/02	04:30:24	58620.0000	42.318
07/16/02	05:30:24	58680.0000	42.360
07/16/02	06:30:24	58740.0000	42.427
07/16/02	07:30:24	58800.0000	42.506
07/16/02	08:30:24	58860.0000	42.518
07/16/02	09:30:24	58920.0000	42.554
07/16/02	10:30:24	58980.0000	42.093
07/16/02	11:30:24	59040.0000	42.360
07/16/02	12:30:24	59100.0000	42.335
07/16/02	13:30:24	59160.0000	42.244
07/16/02	14:30:24	59220.0000	42.293
07/16/02	15:30:24	59280.0000	42.305
07/16/02	16:30:24	59340.0000	40.714
07/16/02	17:30:24	59400.0000	41.066
07/16/02	18:30:24	59460.0000	41.528
07/16/02	19:30:24	59520.0000	41.783
07/16/02	20:30:24	59580.0000	41.771
07/16/02	21:30:24	59640.0000	41.862
07/16/02	22:30:24	59700.0000	42.062
07/16/02	23:30:24	59760.0000	42.238
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07/17/02	01:30:24	59880.0000	42.335
07/17/02	02:30:24	59940.0000	42.402
07/17/02	03:30:24	60000.0000	42.439
07/17/02	04:30:24	60060.0000	42.499
07/17/02	05:30:24	60120.0000	42.524
07/17/02	06:30:24	60180.0000	42.560
07/17/02	07:30:24	60240.0000	42.603
07/17/02	08:30:24	60300.0000	42.603
07/17/02	09:30:24	60360.0000	41.667
07/17/02	10:30:24	60420.0000	42.001
07/17/02	11:30:24	60480.0000	41.607
07/17/02	12:30:24	60540.0000	41.929
07/17/02	13:30:24	60600.0000	42.105
07/17/02	14:30:24	60660.0000	42.257
07/17/02	15:30:24	60720.0000	42.293
07/17/02	16:30:24	60780.0000	42.208

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07/17/02	18:30:24	60900.0000	41.303
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07/17/02	20:30:24	61020.0000	41.577
07/17/02	21:30:24	61080.0000	41.680
07/17/02	22:30:24	61140.0000	42.008
07/17/02	23:30:24	61200.0000	42.148
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07/18/02	02:30:24	61380.0000	42.476
07/18/02	03:30:24	61440.0000	42.500
07/18/02	04:30:24	61500.0000	42.554
07/18/02	05:30:24	61560.0000	42.585
07/18/02	06:30:24	61620.0000	42.590
07/18/02	07:30:24	61680.0000	42.615
07/18/02	08:30:24	61740.0000	42.536
07/18/02	09:30:24	61800.0000	41.935
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07/18/02	11:30:24	61920.0000	41.971
07/18/02	12:30:24	61980.0000	42.269
07/18/02	13:30:24	62040.0000	42.457
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07/18/02	17:30:24	62280.0000	41.722
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07/18/02	19:30:24	62400.0000	41.820
07/18/02	20:30:24	62460.0000	41.661
07/18/02	21:30:24	62520.0000	41.728
07/18/02	22:30:24	62580.0000	42.069
07/18/02	23:30:24	62640.0000	42.257
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07/19/02	01:30:24	62760.0000	42.469
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07/19/02	03:30:24	62880.0000	42.603
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07/19/02	06:30:24	63060.0000	42.646
07/19/02	07:30:24	63120.0000	42.682
07/19/02	08:30:24	63180.0000	42.694
07/19/02	09:30:24	63240.0000	42.712
07/19/02	10:30:24	63300.0000	42.700
07/19/02	11:30:24	63360.0000	42.639
07/19/02	12:30:24	63420.0000	42.675
07/19/02	13:30:24	63480.0000	42.797
07/19/02	14:30:24	63540.0000	42.742
07/19/02	15:30:24	63600.0000	42.639
07/19/02	16:30:24	63660.0000	42.791
07/19/02	17:30:24	63720.0000	42.348
07/19/02	18:30:24	63780.0000	41.923
07/19/02	19:30:24	63840.0000	42.324
07/19/02	20:30:24	63900.0000	42.524
07/19/02	21:30:24	63960.0000	42.621
07/19/02	22:30:24	64020.0000	42.712
07/19/02	23:30:24	64080.0000	42.803
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07/20/02	01:30:24	64200.0000	42.901
07/20/02	02:30:24	64260.0000	42.943
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07/20/02	06:30:24	64500.0000	42.961
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07/20/02	08:30:24	64620.0000	42.597
07/20/02	09:30:24	64680.0000	42.603
07/20/02	10:30:24	64740.0000	42.615
07/20/02	11:30:24	64800.0000	42.518
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07/20/02	14:30:24	64980.0000	41.631

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07/20/02	19:30:24	65280.0000	38.085
07/20/02	20:30:24	65340.0000	38.668
07/20/02	21:30:24	65400.0000	39.701
07/20/02	22:30:24	65460.0000	40.356
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07/21/02	05:30:24	65880.0000	41.820
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07/21/02	08:30:24	66060.0000	41.941
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07/21/02	10:30:24	66180.0000	40.477
07/21/02	11:30:24	66240.0000	40.562
07/21/02	12:30:24	66300.0000	39.852
07/21/02	13:30:24	66360.0000	39.791
07/21/02	14:30:24	66420.0000	40.083
07/21/02	15:30:24	66480.0000	39.852
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07/21/02	17:30:24	66600.0000	39.737
07/21/02	18:30:24	66660.0000	39.044
07/21/02	19:30:24	66720.0000	39.591
07/21/02	20:30:24	66780.0000	39.688
07/21/02	21:30:24	66840.0000	40.326
07/21/02	22:30:24	66900.0000	40.666
07/21/02	23:30:24	66960.0000	40.945
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07/22/02	01:30:24	67080.0000	41.340
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07/22/02	03:30:24	67200.0000	41.613
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07/22/02	05:30:24	67320.0000	41.808
07/22/02	06:30:24	67380.0000	41.880
07/22/02	07:30:24	67440.0000	41.899
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07/22/02	09:30:24	67560.0000	41.553
07/22/02	10:30:24	67620.0000	41.006
07/22/02	11:30:24	67680.0000	40.957
07/22/02	12:30:24	67740.0000	40.939
07/22/02	13:30:24	67800.0000	40.720
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07/22/02	16:30:24	67980.0000	40.817
07/22/02	17:30:24	68040.0000	41.000
07/22/02	18:30:24	68100.0000	40.738
07/22/02	19:30:24	68160.0000	41.036
07/22/02	20:30:24	68220.0000	41.085
07/22/02	21:30:24	68280.0000	41.157
07/22/02	22:30:24	68340.0000	41.443
07/22/02	23:30:24	68400.0000	41.553
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07/23/02	02:30:24	68580.0000	41.929
07/23/02	03:30:24	68640.0000	42.057
07/23/02	04:30:24	68700.0000	42.129
07/23/02	05:30:24	68760.0000	42.196
07/23/02	06:30:24	68820.0000	42.250
07/23/02	07:30:24	68880.0000	42.202
07/23/02	08:30:24	68940.0000	42.020
07/23/02	09:30:24	69000.0000	42.093
07/23/02	10:30:24	69060.0000	41.862
07/23/02	11:30:24	69120.0000	41.607
07/23/02	12:30:24	69180.0000	41.838

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07/23/02	14:30:24	69300.0000	41.473
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07/23/02	16:30:24	69420.0000	41.917
07/23/02	17:30:24	69480.0000	41.297
07/23/02	18:30:24	69540.0000	41.802
07/23/02	19:30:24	69600.0000	42.002
07/23/02	20:30:24	69660.0000	42.111
07/23/02	21:30:24	69720.0000	42.196
07/23/02	22:30:24	69780.0000	42.250
07/23/02	23:30:24	69840.0000	42.318
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07/24/02	03:30:24	70080.0000	42.554
07/24/02	04:30:24	70140.0000	42.584
07/24/02	05:30:24	70200.0000	42.639
07/24/02	06:30:24	70260.0000	42.676
07/24/02	07:30:24	70320.0000	42.694
07/24/02	08:30:24	70380.0000	42.670
07/24/02	09:30:24	70440.0000	42.408
07/24/02	10:30:24	70500.0000	42.457
07/24/02	11:30:24	70560.0000	42.117
07/24/02	12:30:24	70620.0000	41.983
07/24/02	13:30:24	70680.0000	41.995
07/24/02	14:30:24	70740.0000	41.995
07/24/02	15:30:24	70800.0000	41.965
07/24/02	16:30:24	70860.0000	42.239
07/24/02	17:30:24	70920.0000	41.485
07/24/02	18:30:24	70980.0000	41.637
07/24/02	19:30:24	71040.0000	41.534
07/24/02	20:30:24	71100.0000	41.661
07/24/02	21:30:24	71160.0000	41.844
07/24/02	22:30:24	71220.0000	42.032
07/24/02	23:30:24	71280.0000	42.099
07/25/02	00:30:24	71340.0000	42.190
07/25/02	01:30:24	71400.0000	42.190
07/25/02	02:30:24	71460.0000	42.342
07/25/02	03:30:24	71520.0000	42.421
07/25/02	04:30:24	71580.0000	42.506
07/25/02	05:30:24	71640.0000	42.585
07/25/02	06:30:24	71700.0000	42.633
07/25/02	07:30:24	71760.0000	42.639
07/25/02	08:30:24	71820.0000	42.621
07/25/02	09:30:24	71880.0000	42.621
07/25/02	10:30:24	71940.0000	42.627
07/25/02	11:30:24	72000.0000	42.105
07/25/02	12:30:24	72060.0000	42.208
07/25/02	13:30:24	72120.0000	42.171
07/25/02	14:30:24	72180.0000	42.068
07/25/02	15:30:24	72240.0000	42.154
07/25/02	16:30:24	72300.0000	41.163
07/25/02	17:30:24	72360.0000	41.528
07/25/02	18:30:24	72420.0000	41.516
07/25/02	19:30:24	72480.0000	41.607
07/25/02	20:30:24	72540.0000	41.704
07/25/02	21:30:24	72600.0000	41.717
07/25/02	22:30:24	72660.0000	41.850
07/25/02	23:30:24	72720.0000	41.959
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07/26/02	01:30:24	72840.0000	42.233
07/26/02	02:30:24	72900.0000	42.324
07/26/02	03:30:24	72960.0000	42.427
07/26/02	04:30:24	73020.0000	42.494
07/26/02	05:30:24	73080.0000	42.561
07/26/02	06:30:24	73140.0000	42.609
07/26/02	07:30:24	73200.0000	42.639
07/26/02	08:30:24	73260.0000	42.646
07/26/02	09:30:24	73320.0000	42.463
07/26/02	10:30:24	73380.0000	41.765

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07/26/02	13:30:24	73560.0000	41.394
07/26/02	14:30:24	73620.0000	41.668
07/26/02	15:30:24	73680.0000	41.480
07/26/02	16:30:24	73740.0000	41.419
07/26/02	17:30:24	73800.0000	41.522
07/26/02	18:30:24	73860.0000	41.601
07/26/02	19:30:24	73920.0000	39.851
07/26/02	20:30:24	73980.0000	39.816
07/26/02	21:30:24	74040.0000	40.709
07/26/02	22:30:24	74100.0000	41.091
07/26/02	23:30:24	74160.0000	41.395
07/27/02	00:30:24	74220.0000	41.607
07/27/02	01:30:24	74280.0000	41.577
07/27/02	02:30:24	74340.0000	41.777
07/27/02	03:30:24	74400.0000	41.929
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07/27/02	05:30:24	74520.0000	42.135
07/27/02	06:30:24	74580.0000	42.257
07/27/02	07:30:24	74640.0000	42.336
07/27/02	08:30:24	74700.0000	41.886
07/27/02	09:30:24	74760.0000	41.771
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07/27/02	18:30:24	75300.0000	40.241
07/27/02	19:30:24	75360.0000	39.986
07/27/02	20:30:24	75420.0000	40.362
07/27/02	21:30:24	75480.0000	40.860
07/27/02	22:30:24	75540.0000	41.121
07/27/02	23:30:24	75600.0000	41.267
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07/28/02	03:30:24	75840.0000	41.814
07/28/02	04:30:24	75900.0000	41.899
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07/28/02	07:30:24	76080.0000	42.196
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07/28/02	10:30:24	76260.0000	40.751
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07/28/02	22:30:24	76980.0000	41.389
07/28/02	23:30:24	77040.0000	41.522
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07/29/02	01:30:24	77160.0000	41.802
07/29/02	02:30:24	77220.0000	41.899
07/29/02	03:30:24	77280.0000	41.947
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07/29/02	08:30:24	77580.0000	42.306

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07/29/02	12:30:24	77820.0000	41.267
07/29/02	13:30:24	77880.0000	41.498
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07/29/02	16:30:24	78060.0000	40.957
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07/29/02	18:30:24	78180.0000	40.891
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07/29/02	21:30:24	78360.0000	41.091
07/29/02	22:30:24	78420.0000	41.261
07/29/02	23:30:24	78480.0000	41.498
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07/30/02	02:30:24	78660.0000	41.856
07/30/02	03:30:24	78720.0000	41.935
07/30/02	04:30:24	78780.0000	42.020
07/30/02	05:30:24	78840.0000	42.063
07/30/02	06:30:24	78900.0000	42.166
07/30/02	07:30:24	78960.0000	42.245
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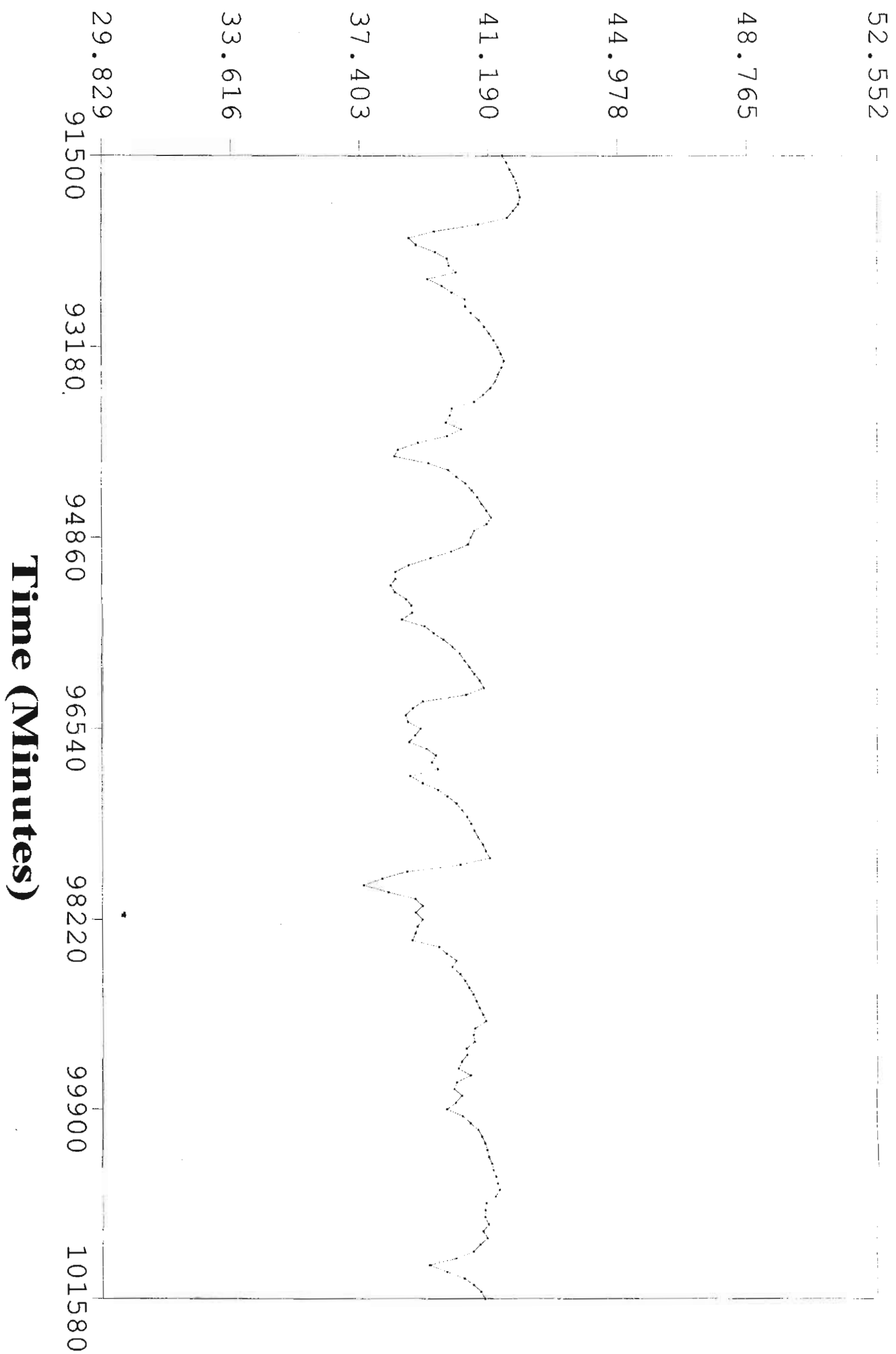
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08/14/02	07:30:24	100560.0000	41.444
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08/14/02	09:30:24	100680.0000	41.377
08/14/02	10:30:24	100740.0000	41.109
08/14/02	11:30:24	100800.0000	41.085
08/14/02	12:30:24	100860.0000	41.073
08/14/02	13:30:24	100920.0000	41.177
08/14/02	14:30:24	100980.0000	41.019
08/14/02	15:30:24	101040.0000	41.146
08/14/02	16:30:24	101100.0000	40.928
08/14/02	17:30:24	101160.0000	40.745
08/14/02	18:30:24	101220.0000	40.223
08/14/02	19:30:24	101280.0000	39.446
08/14/02	20:30:24	101340.0000	39.950
08/14/02	21:30:24	101400.0000	40.472
08/14/02	22:30:24	101460.0000	40.745
08/14/02	23:30:24	101520.0000	40.958
08/15/02	00:30:24	101580.0000	41.067
08/15/02	01:30:24	101640.0000	41.183
08/15/02	02:30:24	101700.0000	41.255
08/15/02	03:30:24	101760.0000	41.280
08/15/02	04:30:24	101820.0000	41.328
08/15/02	05:30:24	101880.0000	41.395
08/15/02	06:30:24	101940.0000	41.456
08/15/02	07:30:24	102000.0000	41.523
08/15/02	08:30:24	102060.0000	41.438
08/15/02	09:30:24	102120.0000	40.763
08/15/02	10:30:24	102180.0000	40.952
08/15/02	11:30:24	102240.0000	40.509
08/15/02	12:30:24	102300.0000	40.709
08/15/02	13:30:24	102360.0000	40.357
08/15/02	14:30:24	102420.0000	40.284
08/15/02	15:30:24	102480.0000	40.326
08/15/02	16:30:24	102540.0000	39.938
08/15/02	17:30:24	102600.0000	39.045
08/15/02	18:30:24	102660.0000	38.371
08/15/02	19:30:24	102720.0000	38.997
08/15/02	20:30:24	102780.0000	39.416

08/15/02	21:30:24	102840.0000	39.968
08/15/02	22:30:24	102900.0000	40.248
08/15/02	23:30:24	102960.0000	40.521
08/16/02	00:30:24	103020.0000	40.679
08/16/02	01:30:24	103080.0000	40.824
08/16/02	02:30:24	103140.0000	40.909
08/16/02	03:30:24	103200.0000	41.007
08/16/02	04:30:24	103260.0000	41.067
08/16/02	05:30:24	103320.0000	41.110
08/16/02	06:30:24	103380.0000	41.177
08/16/02	07:30:24	103440.0000	41.219
08/16/02	08:30:24	103500.0000	41.055
08/16/02	09:30:24	103560.0000	40.958
08/16/02	10:30:24	103620.0000	41.019
08/16/02	11:30:24	103680.0000	40.733
08/16/02	12:30:24	103740.0000	40.284
08/16/02	13:30:24	103800.0000	40.351
08/16/02	14:30:24	103860.0000	39.914
08/16/02	15:30:24	103920.0000	39.659
08/16/02	16:30:24	103980.0000	39.002
08/16/02	17:30:24	104040.0000	39.136
08/16/02	18:30:24	104100.0000	38.316
08/16/02	19:30:24	104160.0000	38.122
08/16/02	20:30:24	104220.0000	38.808
08/16/02	21:30:24	104280.0000	39.507
08/16/02	22:30:24	104340.0000	39.914
08/16/02	23:30:24	104400.0000	40.053
08/17/02	00:30:24	104460.0000	40.339
08/17/02	01:30:24	104520.0000	40.436
08/17/02	02:30:24	104580.0000	40.594
08/17/02	03:30:24	104640.0000	40.727
08/17/02	04:30:24	104700.0000	40.794
08/17/02	05:30:24	104760.0000	40.885
08/17/02	06:30:24	104820.0000	40.946
08/17/02	07:30:24	104880.0000	40.594
08/17/02	08:30:24	104940.0000	39.895
08/17/02	09:30:24	105000.0000	38.018
08/17/02	10:30:24	105060.0000	38.213
08/17/02	11:30:24	105120.0000	37.539
08/17/02	12:30:24	105180.0000	37.078
08/17/02	13:30:24	105240.0000	36.908
08/17/02	14:30:24	105300.0000	37.035
08/17/02	15:30:24	105360.0000	36.950
08/17/02	16:30:24	105420.0000	36.489
08/17/02	17:30:24	105480.0000	36.501
08/17/02	18:30:24	105540.0000	36.617
08/17/02	19:30:24	105600.0000	36.392
08/17/02	20:30:24	105660.0000	35.511
08/17/02	21:30:24	105720.0000	35.791
08/17/02	22:30:24	105780.0000	37.036
08/17/02	23:30:24	105840.0000	37.813
08/18/02	00:30:24	105900.0000	38.360
08/18/02	01:30:24	105960.0000	38.669
08/18/02	02:30:24	106020.0000	39.027
08/18/02	03:30:24	106080.0000	39.313
08/18/02	04:30:24	106140.0000	39.507
08/18/02	05:30:24	106200.0000	39.665
08/18/02	06:30:24	106260.0000	39.731
08/18/02	07:30:24	106320.0000	39.719
08/18/02	08:30:24	106380.0000	38.729
08/18/02	09:30:24	106440.0000	37.442
08/18/02	10:30:24	106500.0000	36.950
08/18/02	11:30:24	106560.0000	37.667
08/18/02	12:30:24	106620.0000	37.418
08/18/02	13:30:24	106680.0000	37.448
08/18/02	14:30:24	106740.0000	37.424
08/18/02	15:30:24	106800.0000	37.467
08/18/02	16:30:24	106860.0000	37.807
08/18/02	17:30:24	106920.0000	38.007
08/18/02	18:30:24	106980.0000	37.801

08/18/02	19:30:24	107040.0000	37.667
08/18/02	20:30:24	107100.0000	37.618
08/18/02	21:30:24	107160.0000	38.469
08/18/02	22:30:24	107220.0000	38.796
08/18/02	23:30:24	107280.0000	39.191
08/19/02	00:30:24	107340.0000	39.465
08/19/02	01:30:24	107400.0000	39.652
08/19/02	02:30:24	107460.0000	39.829
08/19/02	03:30:24	107520.0000	39.907
08/19/02	04:30:24	107580.0000	40.059
08/19/02	05:30:24	107640.0000	40.175
08/19/02	06:30:24	107700.0000	40.241
08/19/02	07:30:24	107760.0000	40.326
08/19/02	08:30:24	107820.0000	40.138
08/19/02	09:30:24	107880.0000	38.322
08/19/02	10:30:24	107940.0000	38.255
08/19/02	11:30:24	108000.0000	38.475
08/19/02	12:30:24	108060.0000	38.614
08/19/02	13:30:24	108120.0000	38.481
08/19/02	14:30:24	108180.0000	38.438
08/19/02	15:30:24	108240.0000	38.675
08/19/02	16:30:24	108300.0000	38.572
08/19/02	17:30:24	108360.0000	38.371
08/19/02	18:30:24	108420.0000	37.940
08/19/02	19:30:24	108480.0000	38.256
08/19/02	20:30:24	108540.0000	38.402
08/19/02	21:30:24	108600.0000	38.930
08/19/02	22:30:24	108660.0000	39.337
08/19/02	23:30:24	108720.0000	39.543
08/20/02	00:30:24	108780.0000	39.665
08/20/02	01:30:24	108840.0000	39.914
08/20/02	02:30:24	108900.0000	40.071
08/20/02	03:30:24	108960.0000	40.223
08/20/02	04:30:24	109020.0000	40.357
08/20/02	05:30:24	109080.0000	40.448
08/20/02	06:30:24	109140.0000	40.515
08/20/02	07:30:24	109200.0000	40.575
08/20/02	08:30:24	109260.0000	40.594
08/20/02	09:30:24	109320.0000	40.636
08/20/02	10:30:24	109380.0000	40.673
08/20/02	11:30:24	109440.0000	40.630
08/20/02	12:30:24	109500.0000	40.436
08/20/02	13:30:24	109560.0000	40.612
08/20/02	14:30:24	109620.0000	40.630
08/20/02	15:30:24	109680.0000	40.454
08/20/02	16:30:24	109740.0000	40.138
08/20/02	17:30:24	109800.0000	40.035
08/20/02	18:30:24	109860.0000	40.059
08/20/02	19:30:24	109920.0000	40.144
08/20/02	20:30:24	109980.0000	40.369
08/20/02	21:30:24	110040.0000	40.600
08/20/02	22:30:24	110100.0000	40.363
08/20/02	23:30:24	110160.0000	40.588
08/21/02	00:30:24	110220.0000	40.745
08/21/02	01:30:24	110280.0000	40.861
08/21/02	02:30:24	110340.0000	40.964
08/21/02	03:30:24	110400.0000	41.067
08/21/02	04:30:24	110460.0000	41.122
08/21/02	05:30:24	110520.0000	41.201
08/21/02	06:30:24	110580.0000	41.219
08/21/02	07:30:24	110640.0000	41.237
08/21/02	08:30:24	110700.0000	41.128
08/21/02	09:30:24	110760.0000	40.843
08/21/02	10:30:24	110820.0000	40.563
08/21/02	11:30:24	110880.0000	40.715
08/21/02	12:30:24	110940.0000	40.709
08/21/02	13:30:24	111000.0000	40.472
08/21/02	14:30:24	111060.0000	40.527
08/21/02	15:30:24	111120.0000	40.211
08/21/02	16:30:24	111180.0000	40.090

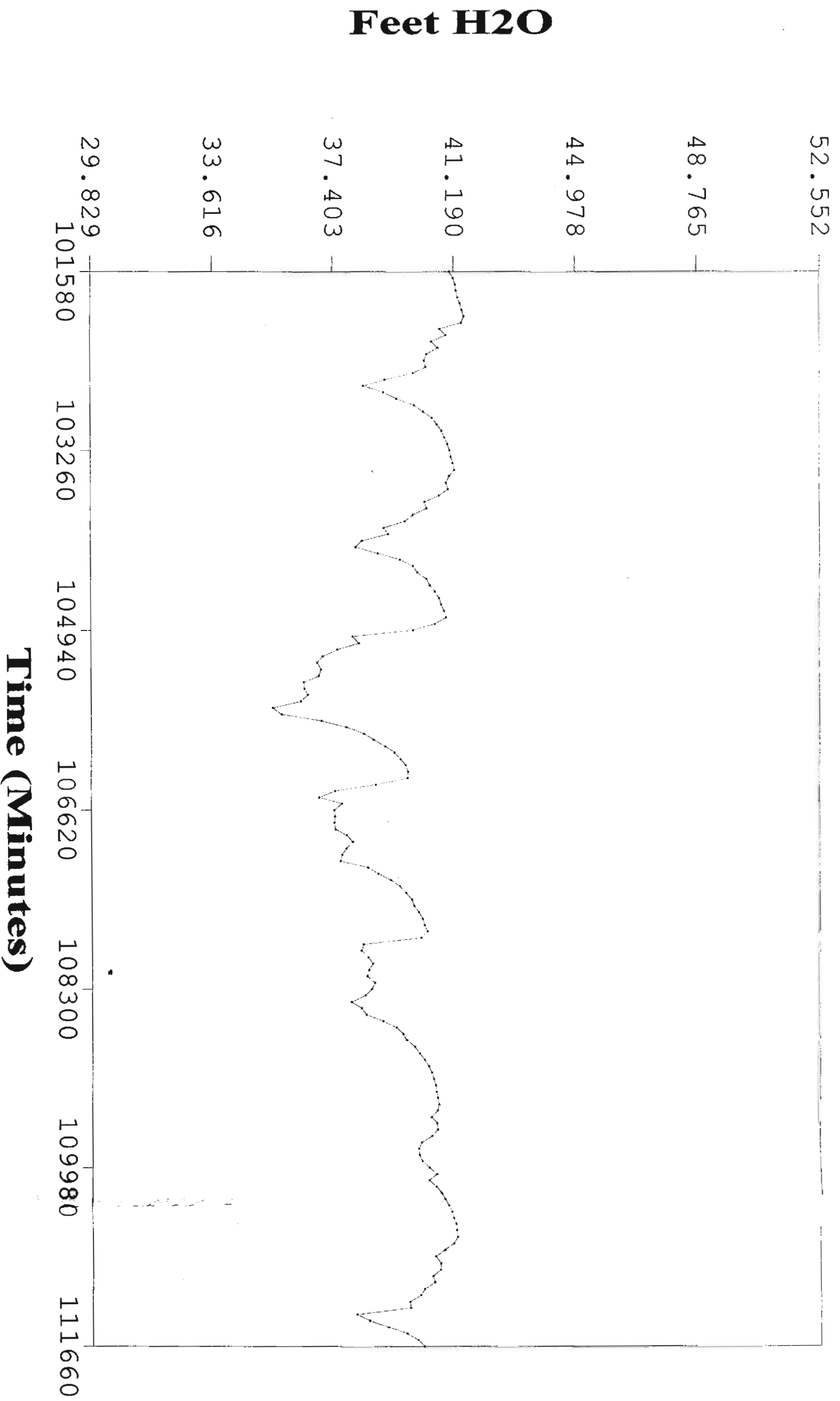
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08/21/02	18:30:24	111300.0000	39.768
08/21/02	19:30:24	111360.0000	38.085
08/21/02	20:30:24	111420.0000	38.487
08/21/02	21:30:24	111480.0000	39.076
08/21/02	22:30:24	111540.0000	39.653
08/21/02	23:30:24	111600.0000	39.981
08/22/02	00:30:24	111660.0000	40.205
08/22/02	01:30:24	111720.0000	40.399
08/22/02	02:30:24	111780.0000	40.545
08/22/02	03:30:24	111840.0000	40.709
08/22/02	04:30:24	111900.0000	40.818
08/22/02	05:30:24	111960.0000	40.915
08/22/02	06:30:24	112020.0000	40.988
08/22/02	07:30:24	112080.0000	41.055
08/22/02	08:30:24	112140.0000	41.025
08/22/02	09:30:24	112200.0000	40.982
08/22/02	10:30:24	112260.0000	39.634
08/22/02	11:30:24	112320.0000	40.217
08/22/02	12:30:24	112380.0000	40.296
08/22/02	13:30:24	112440.0000	39.445

GZ-7R Test 1

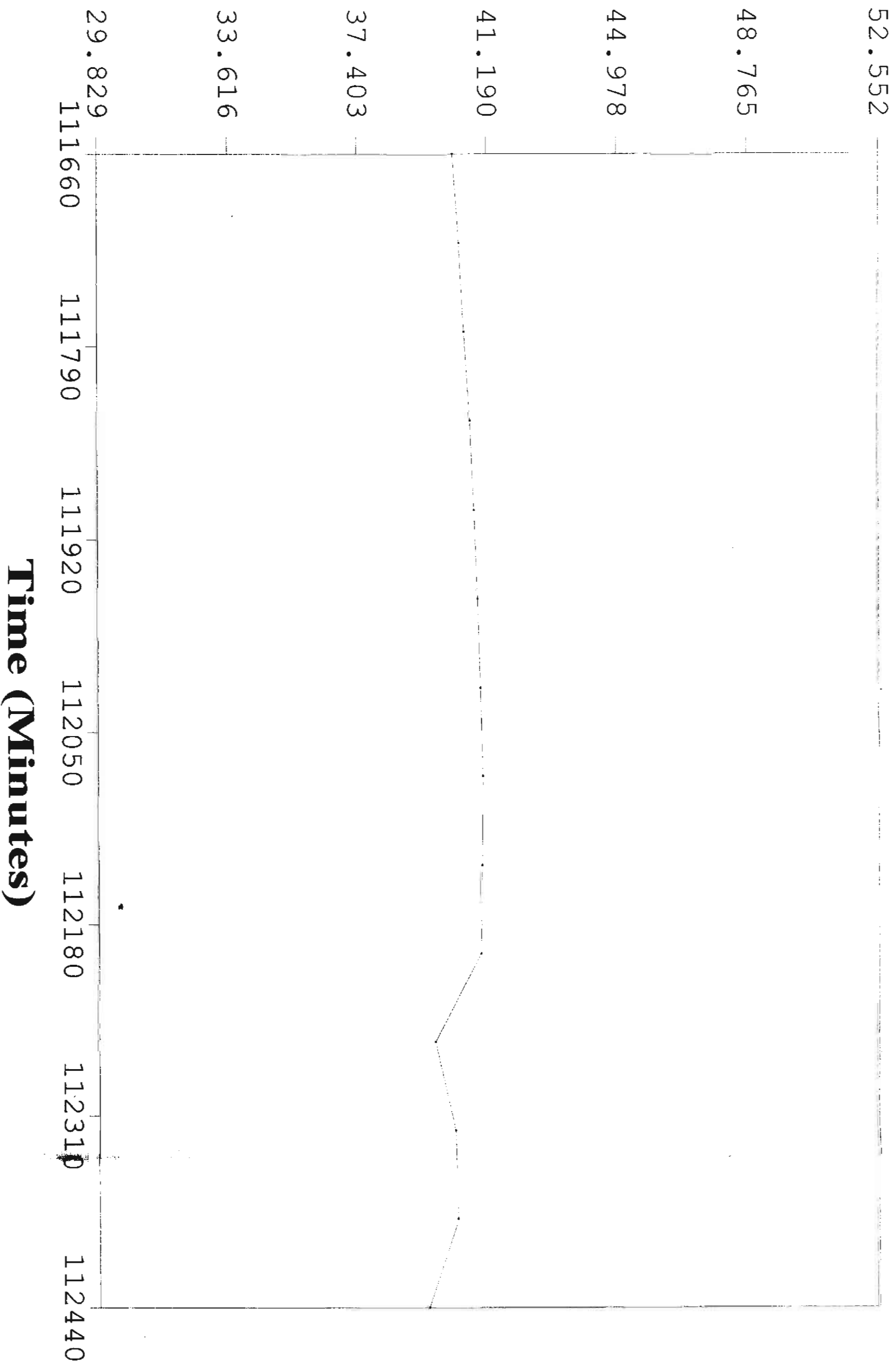


[1] - OnBoard Pressure

GZ-7K Test 1

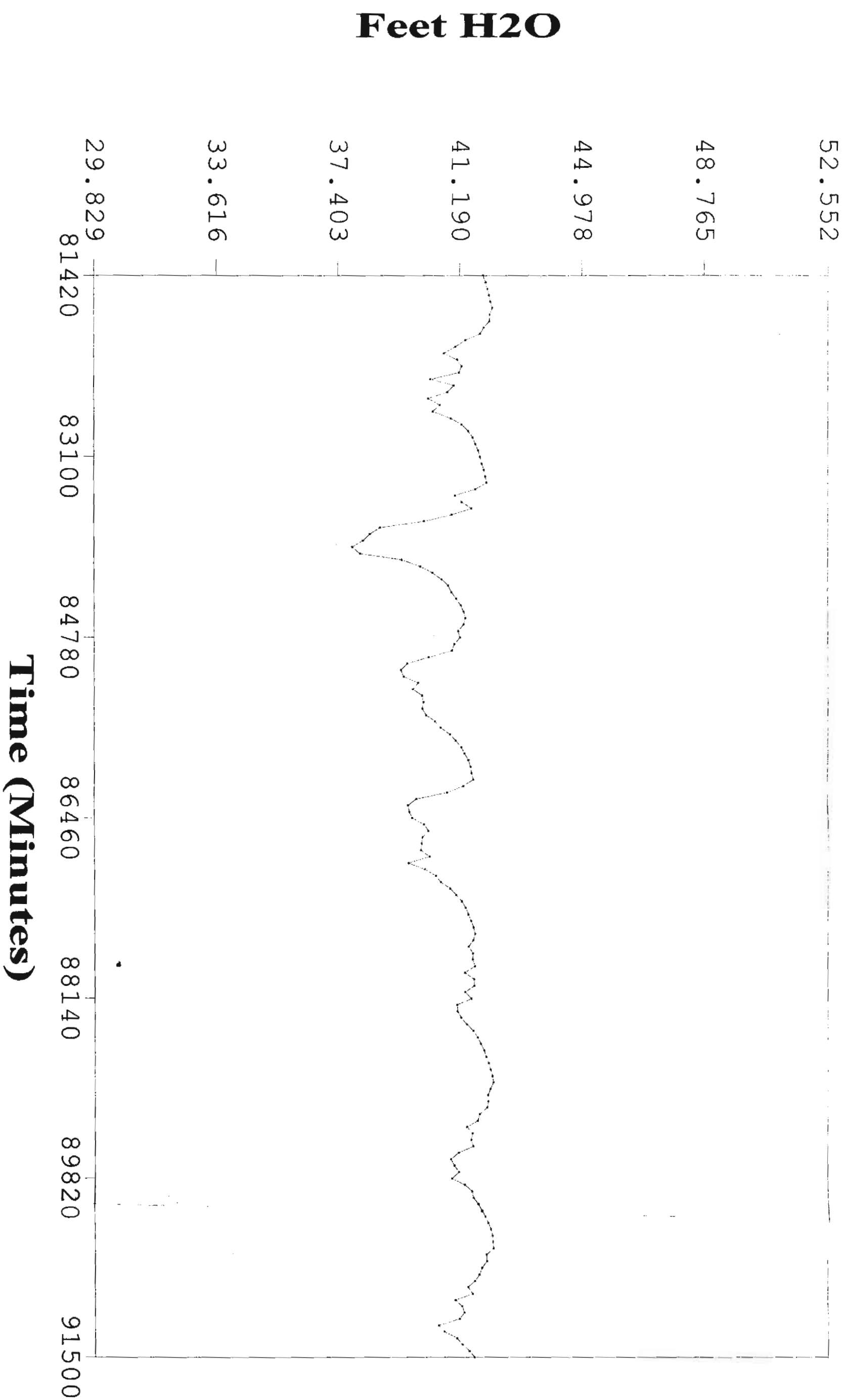


GZ-7R Test 1



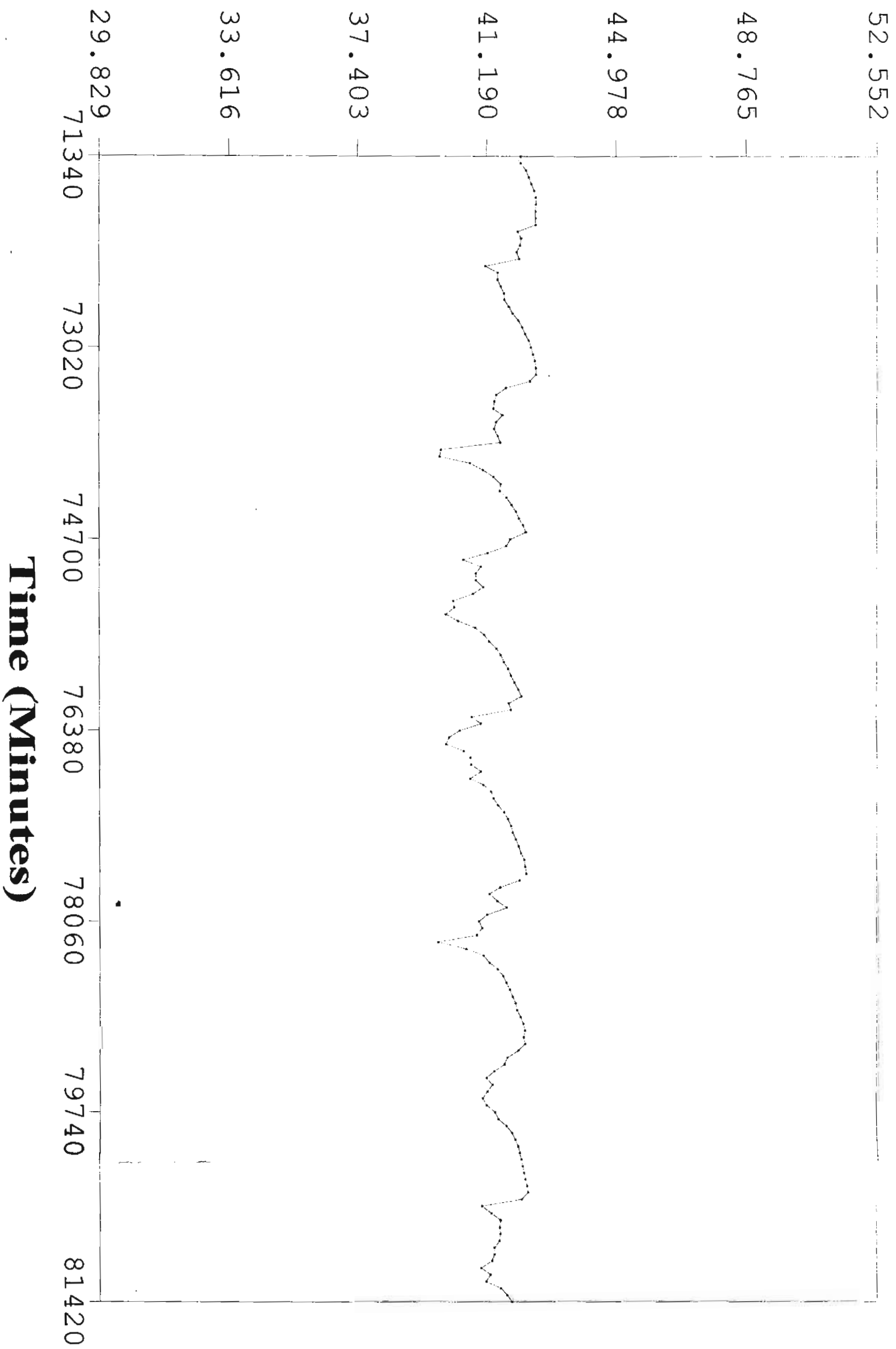
[1] - OnBoard Pressure

GZ-7R Test 1

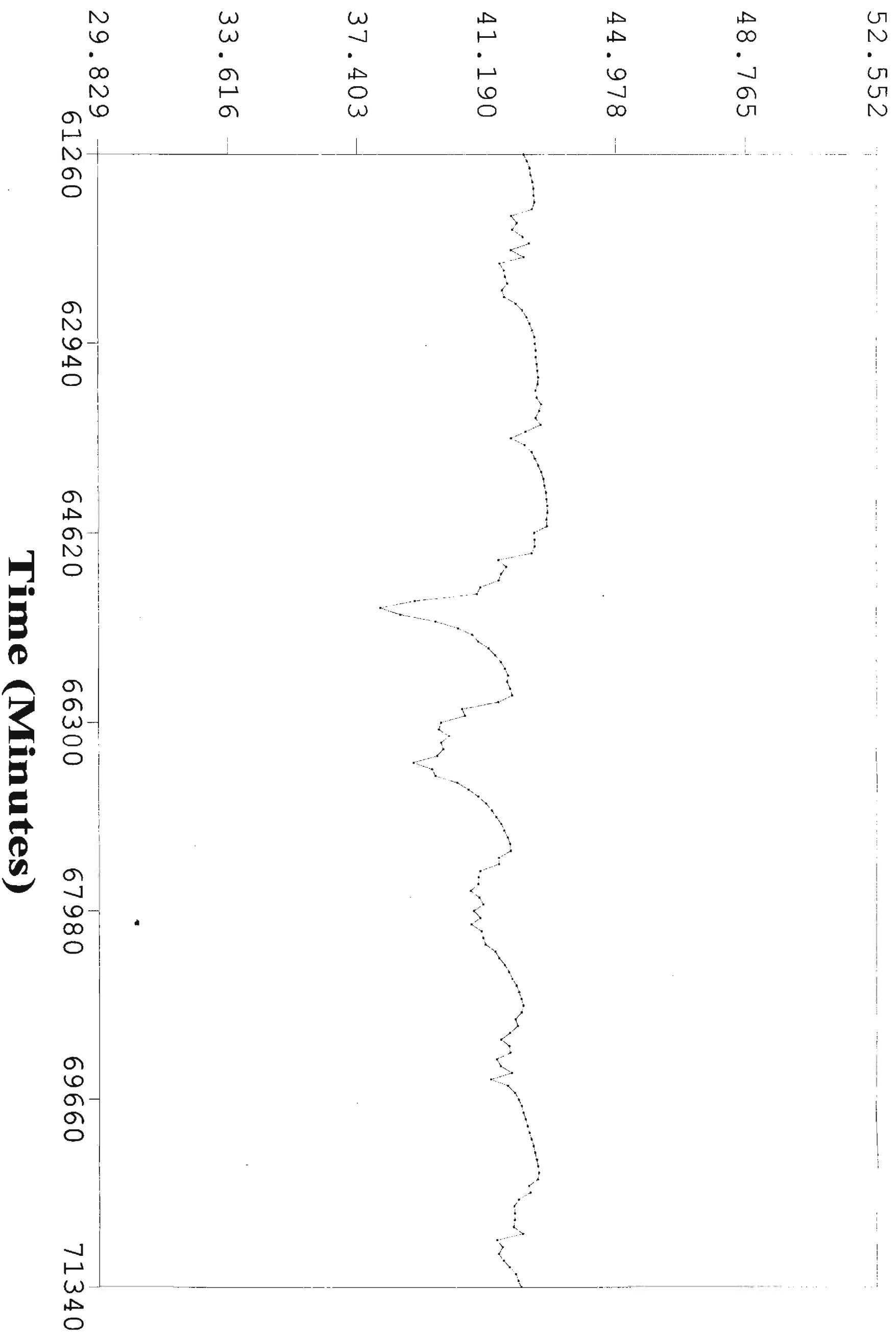


[1] - OnBoard Pressure

GZ-7R Test 1



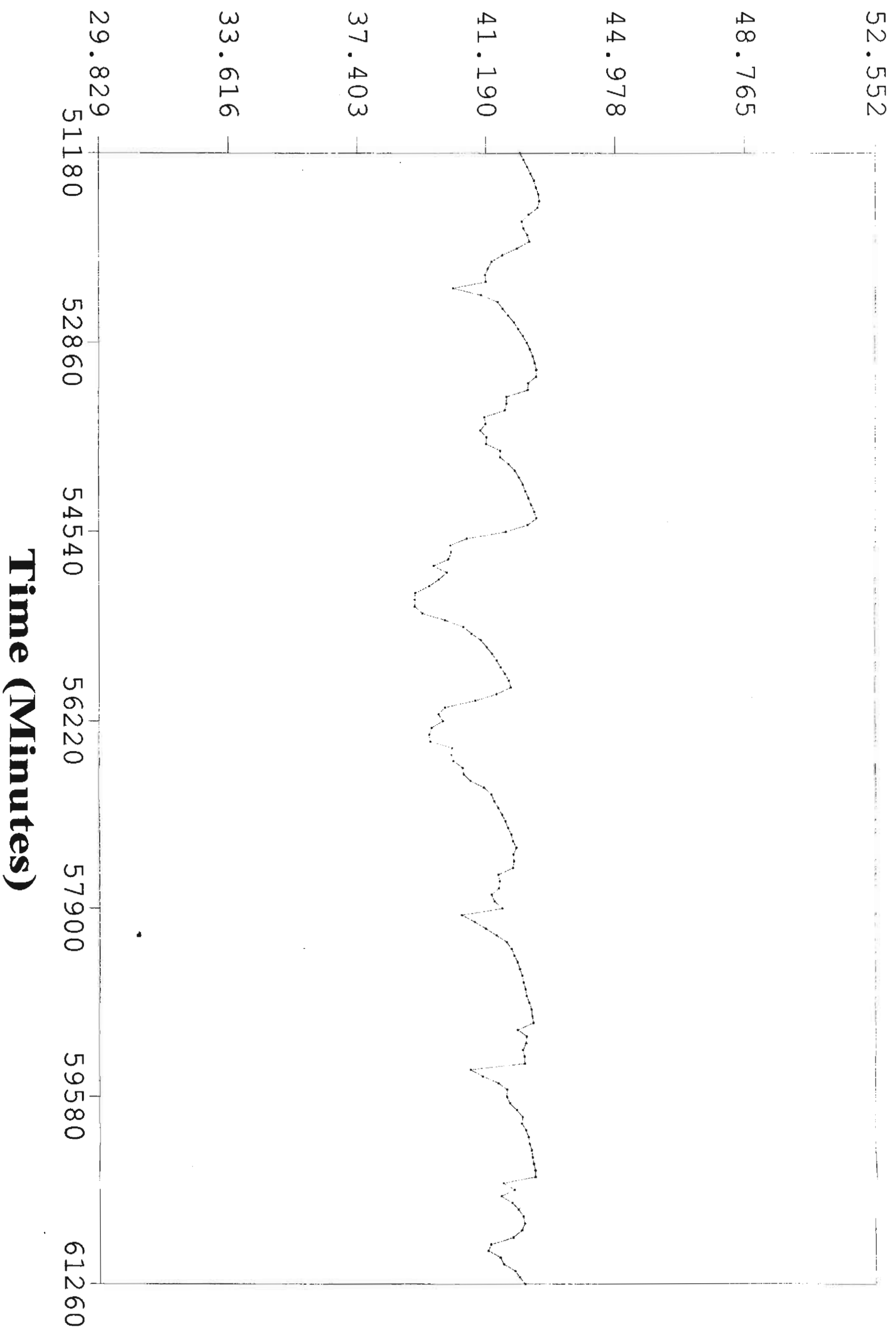
GZ-7R Test 1



[11] - Onboard Pressure

Time (Minutes)

GZ-7R Test 1



[1] - Onboard Pressure

Time (Minutes)

08/21/02	17:30:24	111240.0000	39.744
08/21/02	18:30:24	111300.0000	39.768
08/21/02	19:30:24	111360.0000	38.085
08/21/02	20:30:24	111420.0000	38.487
08/21/02	21:30:24	111480.0000	39.076
08/21/02	22:30:24	111540.0000	39.653
08/21/02	23:30:24	111600.0000	39.981
08/22/02	00:30:24	111660.0000	40.205
08/22/02	01:30:24	111720.0000	40.399
08/22/02	02:30:24	111780.0000	40.545
08/22/02	03:30:24	111840.0000	40.709
08/22/02	04:30:24	111900.0000	40.818
08/22/02	05:30:24	111960.0000	40.915
08/22/02	06:30:24	112020.0000	40.988
08/22/02	07:30:24	112080.0000	41.055
08/22/02	08:30:24	112140.0000	41.025
08/22/02	09:30:24	112200.0000	40.982
08/22/02	10:30:24	112260.0000	39.634
08/22/02	11:30:24	112320.0000	40.217
08/22/02	12:30:24	112380.0000	40.296
08/22/02	13:30:24	112440.0000	39.445
08/22/02	14:30:24	112500.0000	40.630
08/22/02	15:30:24	112560.0000	40.849
08/22/02	16:30:24	112620.0000	40.521
08/22/02	17:30:24	112680.0000	40.606
08/22/02	18:30:24	112740.0000	40.636
08/22/02	19:30:24	112800.0000	40.958
08/22/02	20:30:24	112860.0000	41.056
08/22/02	21:30:24	112920.0000	41.147
08/22/02	22:30:24	112980.0000	41.249
08/22/02	23:30:24	113040.0000	41.317
08/23/02	00:30:24	113100.0000	41.383
08/23/02	01:30:24	113160.0000	41.432
08/23/02	02:30:24	113220.0000	41.523
08/23/02	03:30:24	113280.0000	41.577
08/23/02	04:30:24	113340.0000	41.645
08/23/02	05:30:24	113400.0000	41.668
08/23/02	06:30:24	113460.0000	41.735
08/23/02	07:30:24	113520.0000	41.772
08/23/02	08:30:24	113580.0000	41.747
08/23/02	09:30:24	113640.0000	41.741
08/23/02	10:30:24	113700.0000	41.559
08/23/02	11:30:24	113760.0000	41.571
08/23/02	12:30:24	113820.0000	41.073
08/23/02	13:30:24	113880.0000	41.104
08/23/02	14:30:24	113940.0000	41.043
08/23/02	15:30:24	114000.0000	41.043
08/23/02	16:30:24	114060.0000	40.855
08/23/02	17:30:24	114120.0000	40.484
08/23/02	18:30:24	114180.0000	40.357
08/23/02	19:30:24	114240.0000	39.907
08/23/02	20:30:24	114300.0000	40.254
08/23/02	21:30:24	114360.0000	40.655
08/23/02	22:30:24	114420.0000	40.904
08/23/02	23:30:24	114480.0000	41.056
08/24/02	00:30:24	114540.0000	41.164
08/24/02	01:30:24	114600.0000	41.243
08/24/02	02:30:24	114660.0000	41.347
08/24/02	03:30:24	114720.0000	41.444
08/24/02	04:30:24	114780.0000	41.535
08/24/02	05:30:24	114840.0000	41.626
08/24/02	06:30:24	114900.0000	41.668
08/24/02	07:30:24	114960.0000	41.638
08/24/02	08:30:24	115020.0000	41.614
08/24/02	09:30:24	115080.0000	40.879
08/24/02	10:30:24	115140.0000	39.907
08/24/02	11:30:24	115200.0000	40.211
08/24/02	12:30:24	115260.0000	40.436
08/24/02	13:30:24	115320.0000	40.472
08/24/02	14:30:24	115380.0000	40.399

08/24/02	15:30:24	115440.0000	40.071
08/24/02	16:30:24	115500.0000	40.114
08/24/02	17:30:24	115560.0000	40.156
08/24/02	18:30:24	115620.0000	40.509
08/24/02	19:30:24	115680.0000	40.703
08/24/02	20:30:24	115740.0000	40.946
08/24/02	21:30:24	115800.0000	41.080
08/24/02	22:30:24	115860.0000	41.189
08/24/02	23:30:24	115920.0000	41.256
08/25/02	00:30:24	115980.0000	41.328
08/25/02	01:30:24	116040.0000	41.371
08/25/02	02:30:24	116100.0000	41.444
08/25/02	03:30:24	116160.0000	41.498
08/25/02	04:30:24	116220.0000	41.584
08/25/02	05:30:24	116280.0000	41.675
08/25/02	06:30:24	116340.0000	41.736
08/25/02	07:30:24	116400.0000	41.389
08/25/02	08:30:24	116460.0000	40.600
08/25/02	09:30:24	116520.0000	40.812
08/25/02	10:30:24	116580.0000	39.847
08/25/02	11:30:24	116640.0000	39.215
08/25/02	12:30:24	116700.0000	39.410
08/25/02	13:30:24	116760.0000	39.489
08/25/02	14:30:24	116820.0000	38.560
08/25/02	15:30:24	116880.0000	38.602
08/25/02	16:30:24	116940.0000	38.815
08/25/02	17:30:24	117000.0000	39.210
08/25/02	18:30:24	117060.0000	39.459
08/25/02	19:30:24	117120.0000	39.404
08/25/02	20:30:24	117180.0000	39.689
08/25/02	21:30:24	117240.0000	39.944
08/25/02	22:30:24	117300.0000	40.284
08/25/02	23:30:24	117360.0000	40.339
08/26/02	00:30:24	117420.0000	40.430
08/26/02	01:30:24	117480.0000	40.588
08/26/02	02:30:24	117540.0000	40.734
08/26/02	03:30:24	117600.0000	40.837
08/26/02	04:30:24	117660.0000	40.958
08/26/02	05:30:24	117720.0000	41.043
08/26/02	06:30:24	117780.0000	40.915
08/26/02	07:30:24	117840.0000	40.642
08/26/02	08:30:24	117900.0000	40.879
08/26/02	09:30:24	117960.0000	40.958
08/26/02	10:30:24	118020.0000	40.770
08/26/02	11:30:24	118080.0000	40.739
08/26/02	12:30:24	118140.0000	40.430
08/26/02	13:30:24	118200.0000	40.521
08/26/02	14:30:24	118260.0000	40.211
08/26/02	15:30:24	118320.0000	40.333
08/26/02	16:30:24	118380.0000	40.357
08/26/02	17:30:24	118440.0000	40.442
08/26/02	18:30:24	118500.0000	39.288
08/26/02	19:30:24	118560.0000	39.561
08/26/02	20:30:24	118620.0000	40.072
08/26/02	21:30:24	118680.0000	40.448
08/26/02	22:30:24	118740.0000	40.649
08/26/02	23:30:24	118800.0000	40.794
08/27/02	00:30:24	118860.0000	40.898
08/27/02	01:30:24	118920.0000	40.952
08/27/02	02:30:24	118980.0000	41.031
08/27/02	03:30:24	119040.0000	41.122
08/27/02	04:30:24	119100.0000	41.195
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08/27/02	07:30:24	119280.0000	41.438
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09/10/02	20:30:24	140220.0000	39.793
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09/11/02	02:30:24	140580.0000	40.776

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09/25/02	23:30:24	162000.0000	41.420
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09/26/02	03:30:24	162240.0000	41.627
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09/27/02	08:30:24	163980.0000	42.161
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09/28/02	05:30:24	165240.0000	42.167
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09/28/02	07:30:24	165360.0000	42.179
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09/28/02	12:30:24	165660.0000	40.260
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09/30/02	07:30:24	168240.0000	41.432
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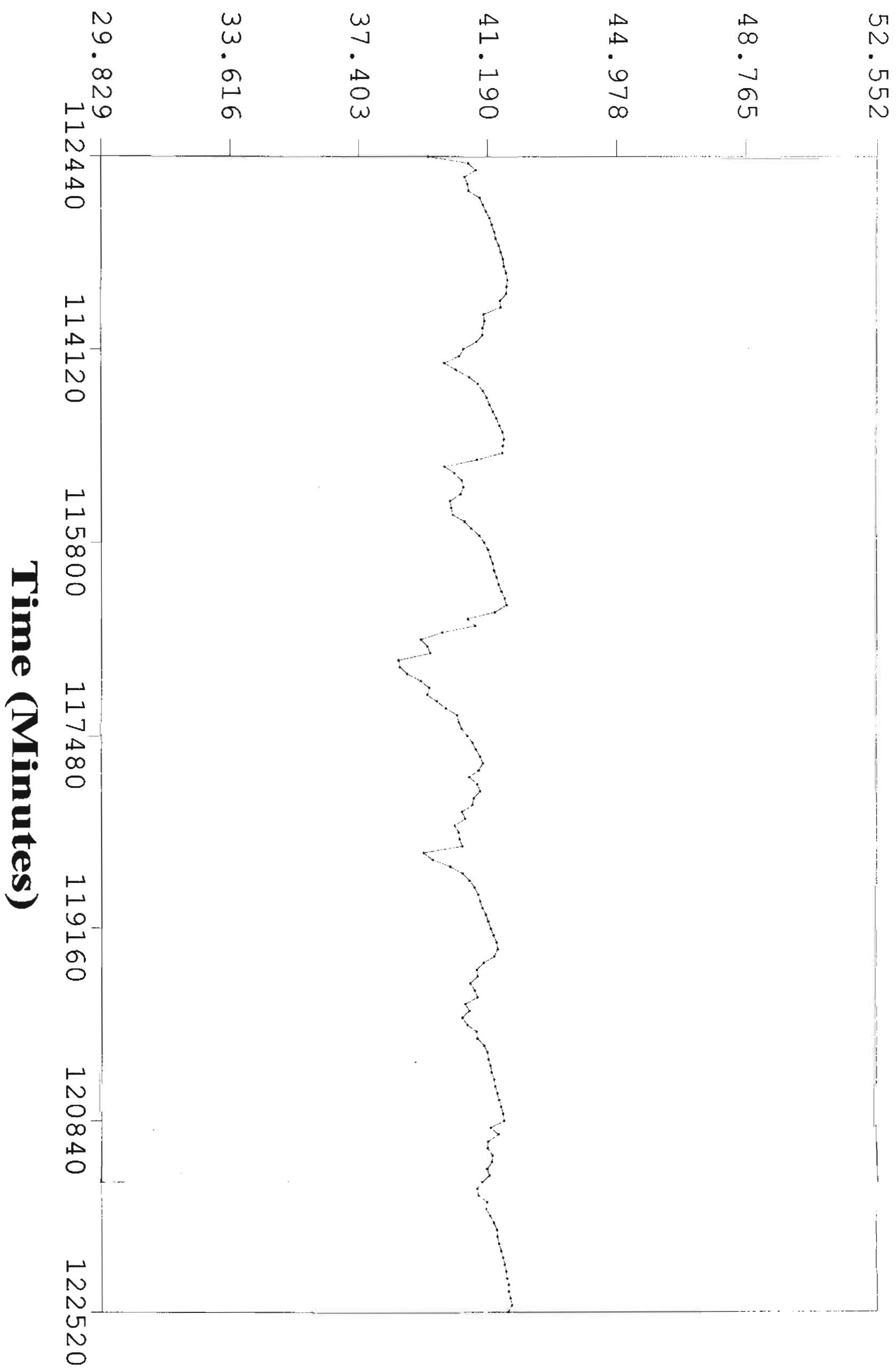
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10/25/02	07:30:24	204240.0000	41.955
0/25/02	08:30:24	204300.0000	41.924
0/25/02	09:30:24	204360.0000	42.040
10/25/02	10:30:24	204420.0000	41.858
10/25/02	11:30:24	204480.0000	41.840
0/25/02	12:30:24	204540.0000	41.269
0/25/02	13:30:24	204600.0000	41.190
10/25/02	14:30:24	204660.0000	40.995
10/25/02	15:30:24	204720.0000	41.001
0/25/02	16:30:24	204780.0000	40.522
0/25/02	17:30:24	204840.0000	40.194
10/25/02	18:30:24	204900.0000	40.504
10/25/02	19:30:24	204960.0000	40.334
0/25/02	20:30:24	205020.0000	40.899
0/25/02	21:30:24	205080.0000	41.226
10/25/02	22:30:24	205140.0000	41.384
0/25/02	23:30:24	205200.0000	41.512
0/26/02	00:30:24	205260.0000	41.573
10/26/02	01:30:24	205320.0000	41.639
10/26/02	02:30:24	205380.0000	41.724
0/26/02	03:30:24	205440.0000	41.803
0/26/02	04:30:24	205500.0000	41.864
10/26/02	05:30:24	205560.0000	41.949
10/26/02	06:30:24	205620.0000	42.034
0/26/02	07:30:24	205680.0000	42.131
0/26/02	08:30:24	205740.0000	42.016
10/26/02	09:30:24	205800.0000	42.162
10/26/02	10:30:24	205860.0000	42.259
0/26/02	11:30:24	205920.0000	42.252
0/26/02	12:30:24	205980.0000	42.307
10/26/02	13:30:24	206040.0000	42.362
10/26/02	14:30:24	206100.0000	42.423
0/26/02	15:30:24	206160.0000	41.906
0/26/02	16:30:24	206220.0000	42.222
10/26/02	17:30:24	206280.0000	42.368
0/26/02	18:30:24	206340.0000	42.453
0/26/02	19:30:24	206400.0000	42.502
10/26/02	20:30:24	206460.0000	42.550
10/26/02	21:30:24	206520.0000	42.587
0/26/02	22:30:24	206580.0000	42.581
0/26/02	23:30:24	206640.0000	42.575
10/27/02	00:30:24	206700.0000	42.574
10/27/02	01:30:24	206760.0000	42.568
0/27/02	02:30:24	206820.0000	42.593
0/27/02	03:30:24	206880.0000	42.586
10/27/02	04:30:24	206940.0000	42.610
10/27/02	05:30:24	207000.0000	42.635
0/27/02	06:30:24	207060.0000	42.684
0/27/02	07:30:24	207120.0000	42.714
10/27/02	08:30:24	207180.0000	42.155
10/27/02	09:30:24	207240.0000	41.584
0/27/02	10:30:24	207300.0000	41.779
0/27/02	11:30:24	207360.0000	41.627
10/27/02	12:30:24	207420.0000	40.673
0/27/02	13:30:24	207480.0000	40.097
0/27/02	14:30:24	207540.0000	40.012
10/27/02	15:30:24	207600.0000	40.254
10/27/02	16:30:24	207660.0000	40.212
0/27/02	17:30:24	207720.0000	40.480
0/27/02	18:30:24	207780.0000	40.771

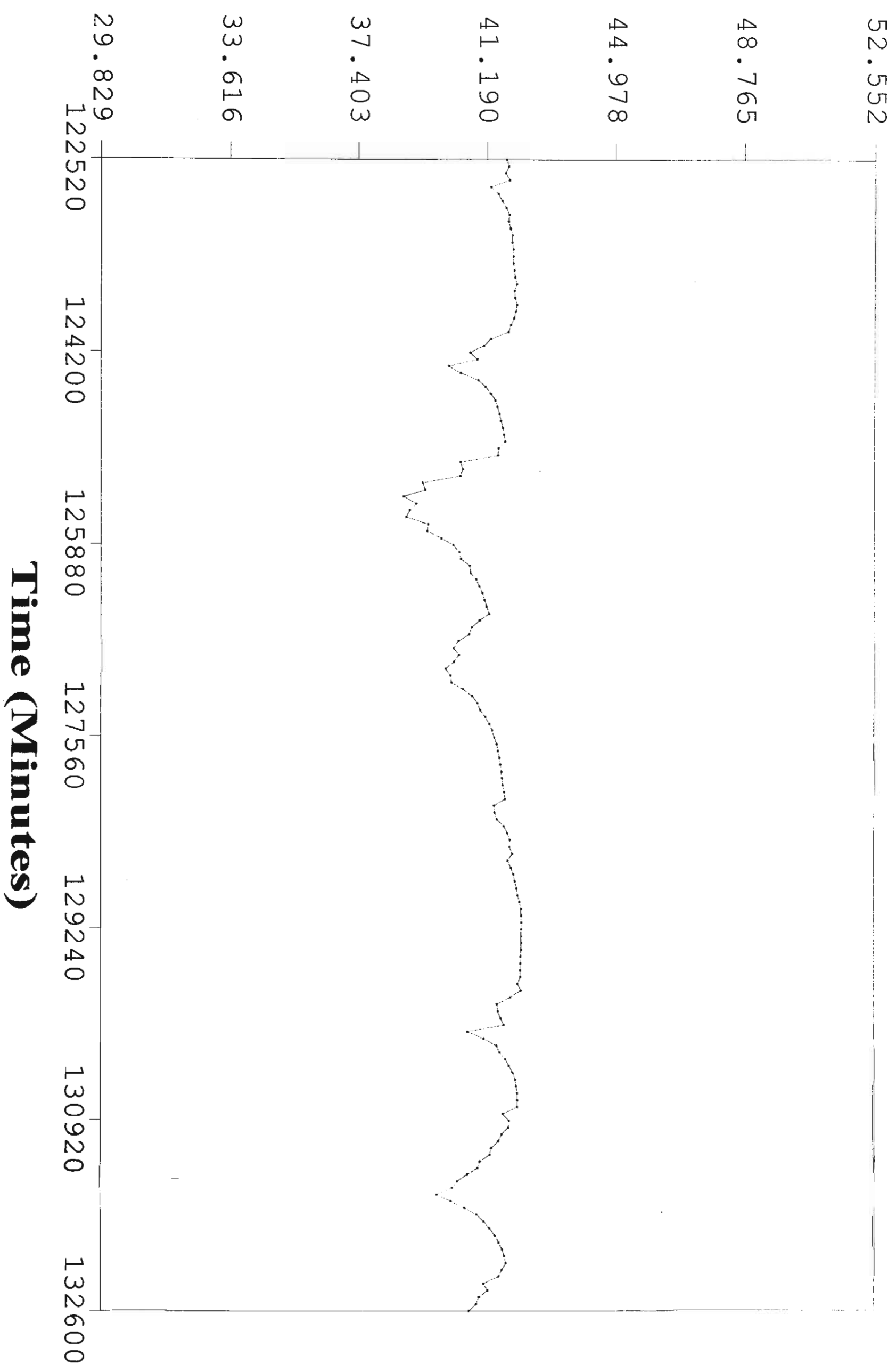
10/27/02	19:30:24	207840.0000	41.044
10/27/02	20:30:24	207900.0000	41.336
10/27/02	21:30:24	207960.0000	41.536
10/27/02	22:30:24	208020.0000	41.664
10/27/02	23:30:24	208080.0000	41.755
10/28/02	00:30:24	208140.0000	41.840
10/28/02	01:30:24	208200.0000	41.852
10/28/02	02:30:24	208260.0000	41.937
10/28/02	03:30:24	208320.0000	41.973
10/28/02	04:30:24	208380.0000	42.034
10/28/02	05:30:24	208440.0000	42.107
10/28/02	06:30:24	208500.0000	42.174
10/28/02	07:30:24	208560.0000	42.210
10/28/02	08:30:24	208620.0000	42.228
10/28/02	09:30:24	208680.0000	42.307
10/28/02	10:30:24	208740.0000	42.234
10/28/02	11:30:24	208800.0000	42.216
10/28/02	12:30:24	208860.0000	42.319
10/28/02	13:30:24	208920.0000	42.077
10/28/02	14:30:24	208980.0000	42.234
10/28/02	15:30:24	209040.0000	41.809
10/28/02	16:30:24	209100.0000	41.888
10/28/02	17:30:24	209160.0000	41.743
10/28/02	18:30:24	209220.0000	41.579
10/28/02	19:30:24	209280.0000	41.724
10/28/02	20:30:24	209340.0000	41.943
10/28/02	21:30:24	209400.0000	42.040
10/28/02	22:30:24	209460.0000	42.174
10/28/02	23:30:24	209520.0000	42.247
10/29/02	00:30:24	209580.0000	42.326
10/29/02	01:30:24	209640.0000	42.368
10/29/02	02:30:24	209700.0000	42.411
10/29/02	03:30:24	209760.0000	42.417
10/29/02	04:30:24	209820.0000	42.435
10/29/02	05:30:24	209880.0000	42.337
10/29/02	06:30:24	209940.0000	42.210
10/29/02	07:30:24	210000.0000	42.119
10/29/02	08:30:24	210060.0000	42.083
10/29/02	09:30:24	210120.0000	41.925
10/29/02	10:30:24	210180.0000	42.040
10/29/02	11:30:24	210240.0000	42.204
10/29/02	12:30:24	210300.0000	42.289
10/29/02	13:30:24	210360.0000	42.338
10/29/02	14:30:24	210420.0000	42.271
10/29/02	15:30:24	210480.0000	42.191
10/29/02	16:30:24	210540.0000	42.259
10/29/02	17:30:24	210600.0000	42.028
10/29/02	18:30:24	210660.0000	42.180
10/29/02	19:30:24	210720.0000	42.156
10/29/02	20:30:24	210780.0000	42.332
10/29/02	21:30:24	210840.0000	42.332
10/29/02	22:30:24	210900.0000	42.404
10/29/02	23:30:24	210960.0000	42.423
10/30/02	00:30:24	211020.0000	42.489
10/30/02	01:30:24	211080.0000	42.556
10/30/02	02:30:24	211140.0000	42.538
10/30/02	03:30:24	211200.0000	42.556
10/30/02	04:30:24	211260.0000	42.581
10/30/02	05:30:24	211320.0000	42.587
10/30/02	06:30:24	211380.0000	42.593
10/30/02	07:30:24	211440.0000	42.617
10/30/02	08:30:24	211500.0000	42.653
10/30/02	09:30:24	211560.0000	42.647
10/30/02	10:30:24	211620.0000	42.538
10/30/02	11:30:24	211680.0000	42.180
10/30/02	12:30:24	211740.0000	42.435
10/30/02	13:30:24	211800.0000	42.520
10/30/02	14:30:24	211860.0000	42.386
10/30/02	15:30:24	211920.0000	38.279
10/30/02	16:30:24	211980.0000	38.072

GZ-7R Test 1



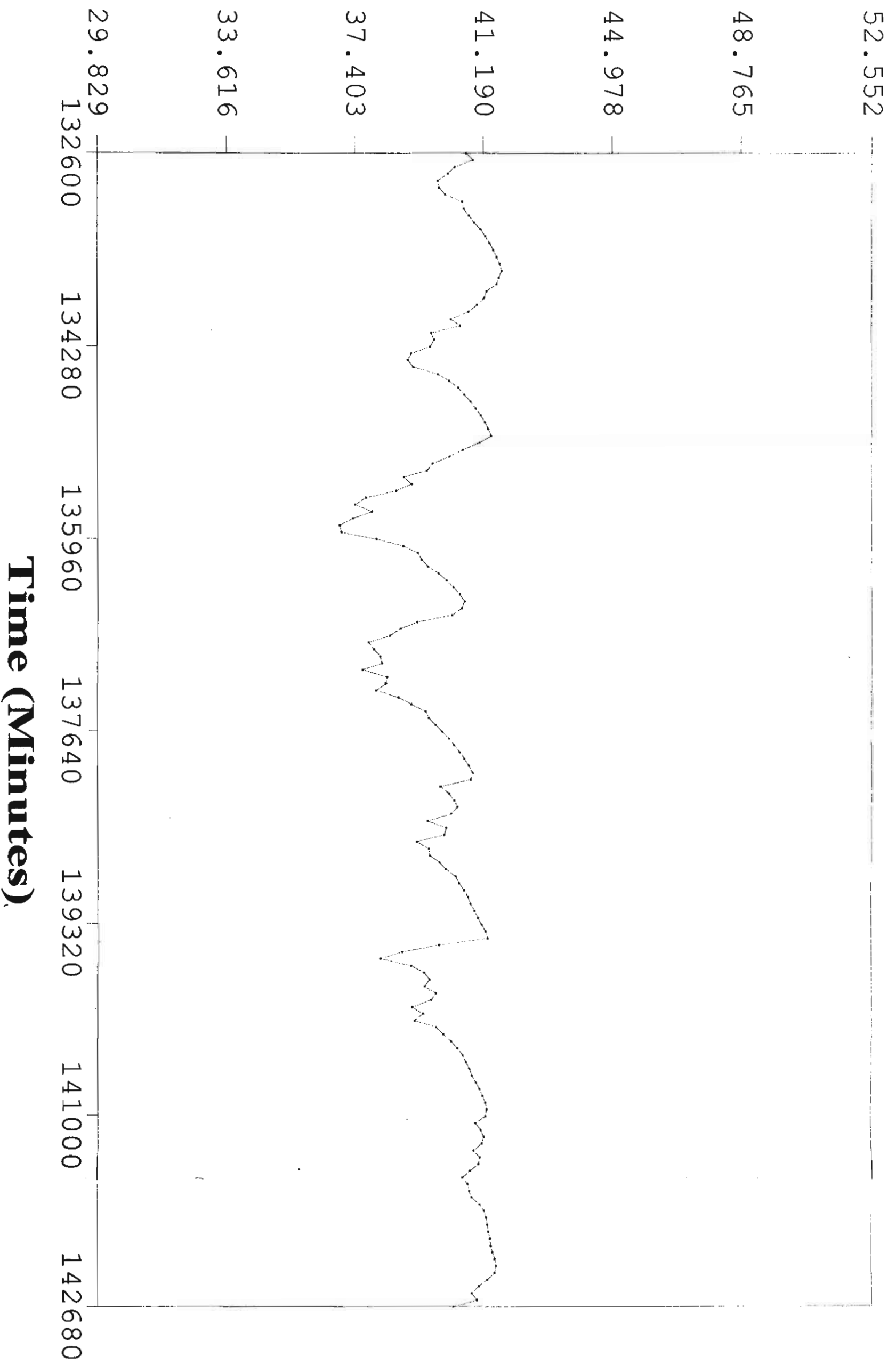
[1] - OnBoard Pressure

GZ-7R Test 1

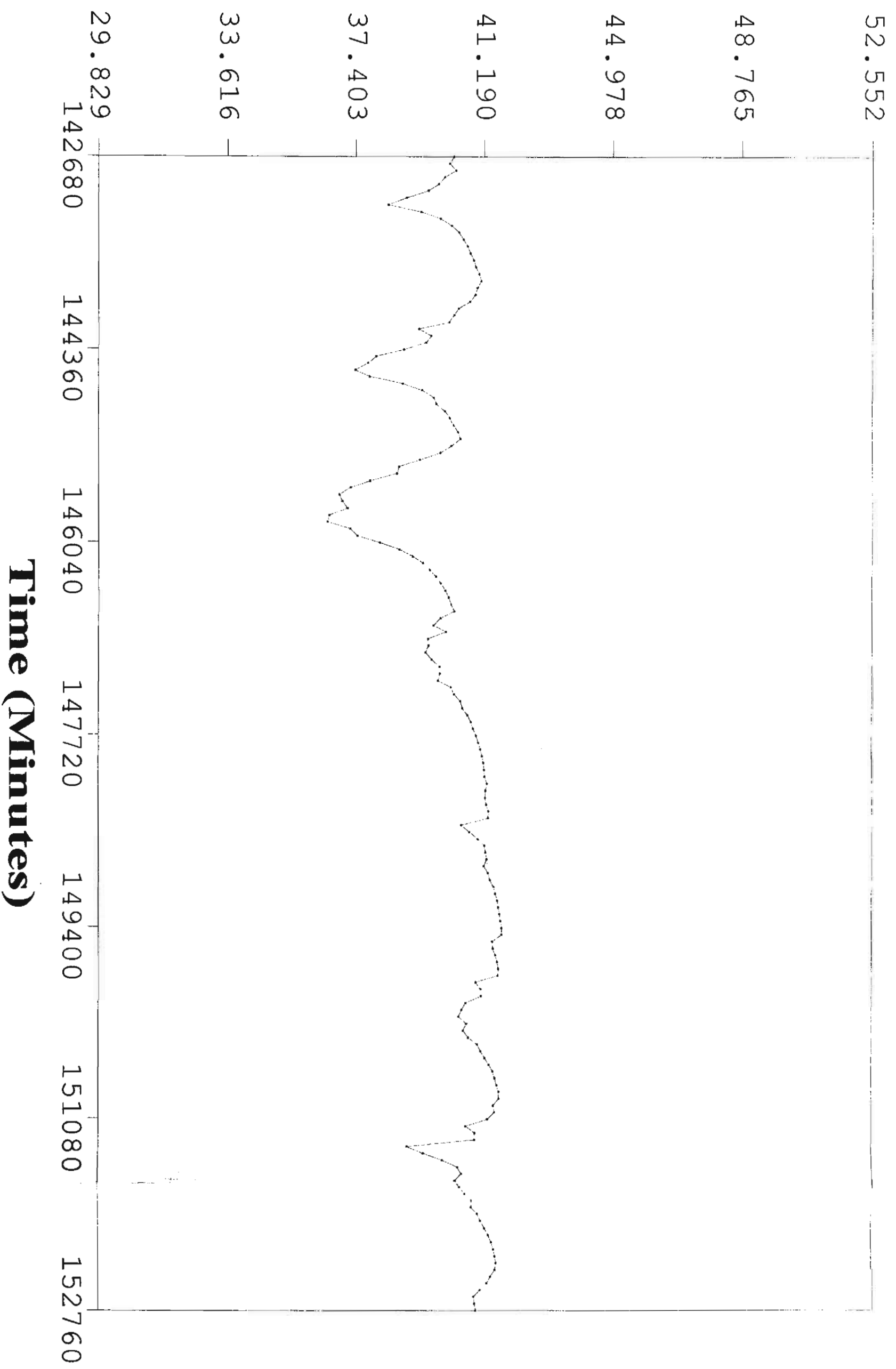


[1] - OnBoard Pressure

GZ-7R Test 1

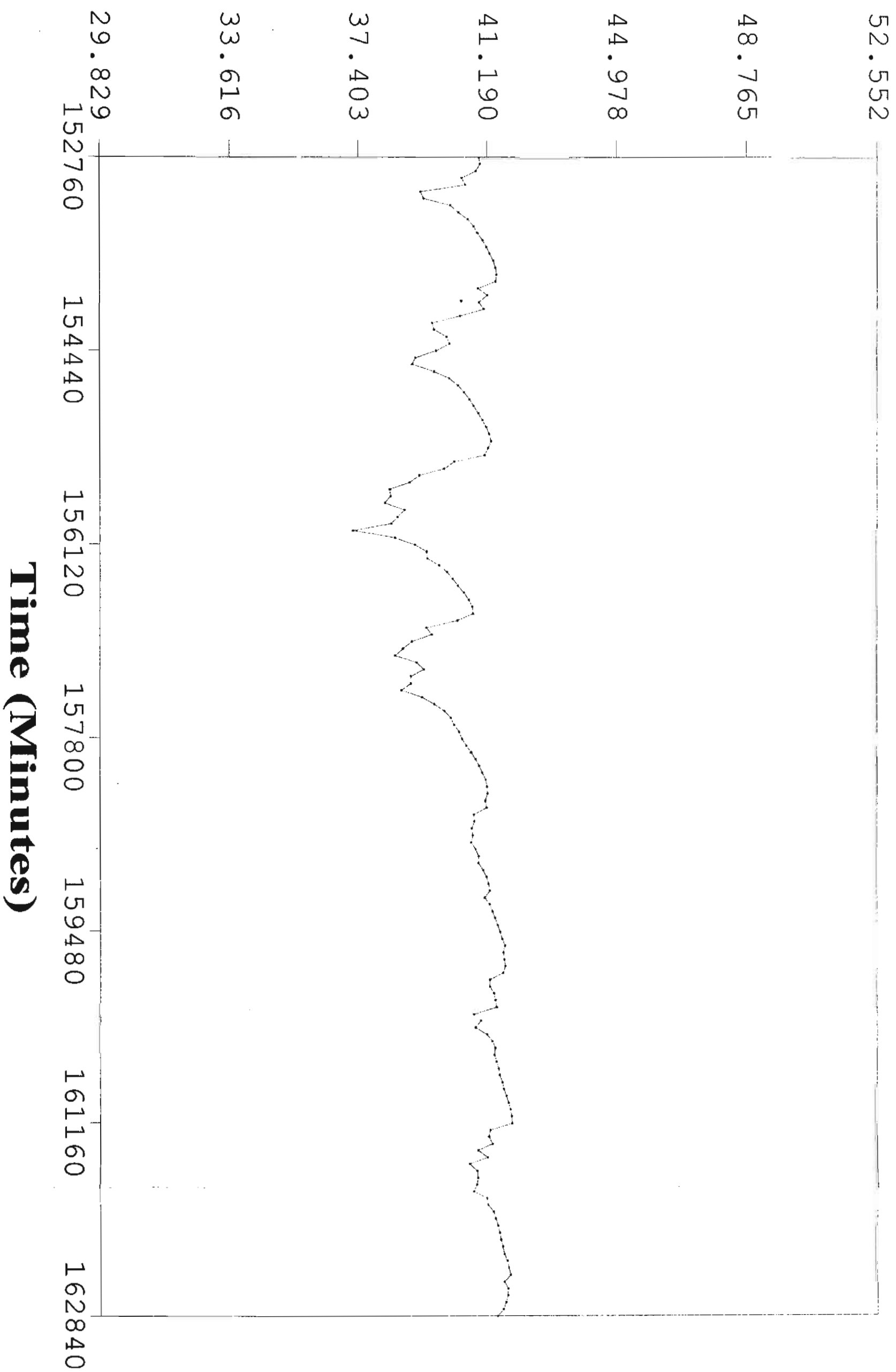


GZ-7R Test 1



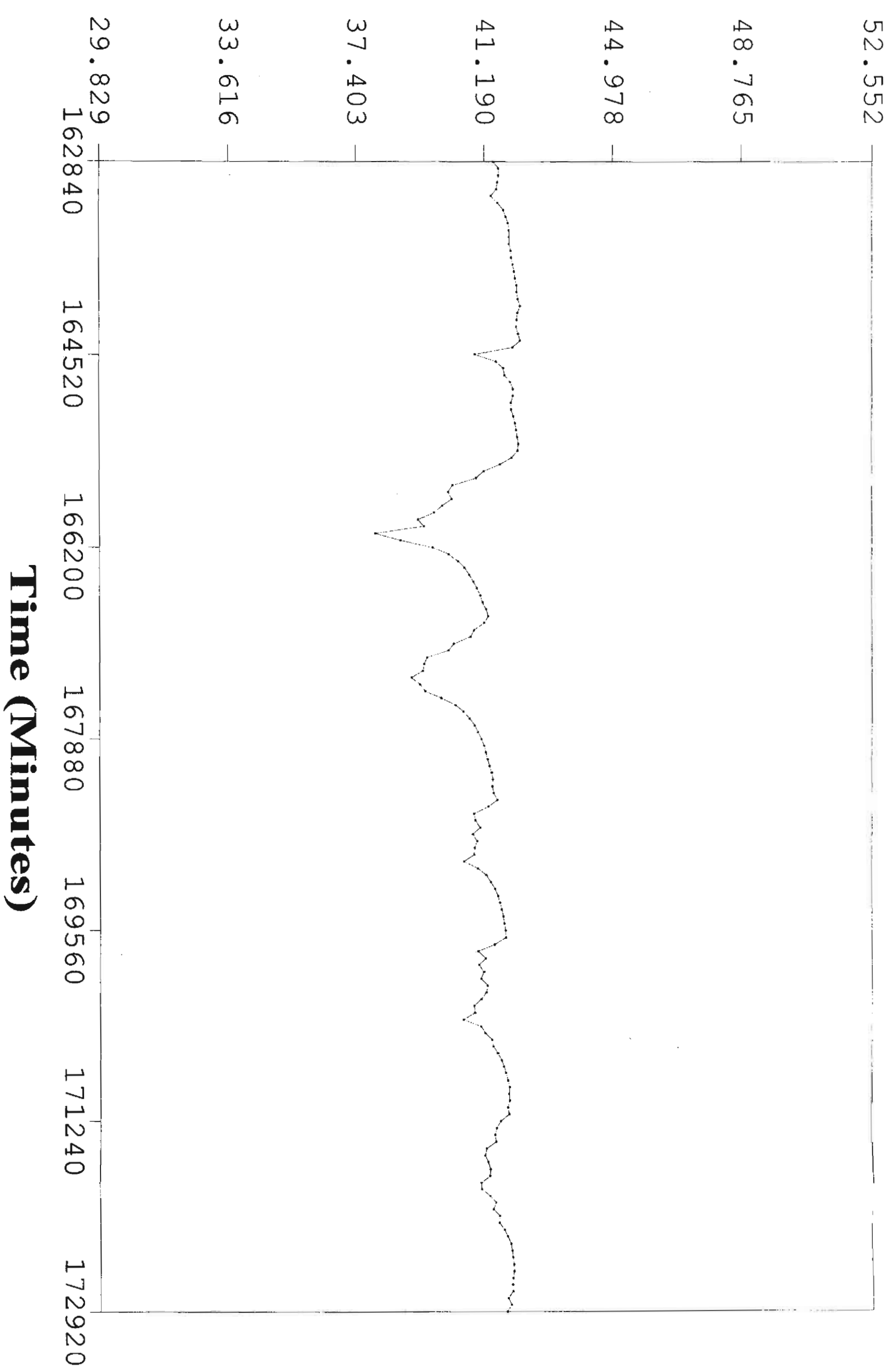
[1] - OnBoard Pressure

GZ-7R Test 1



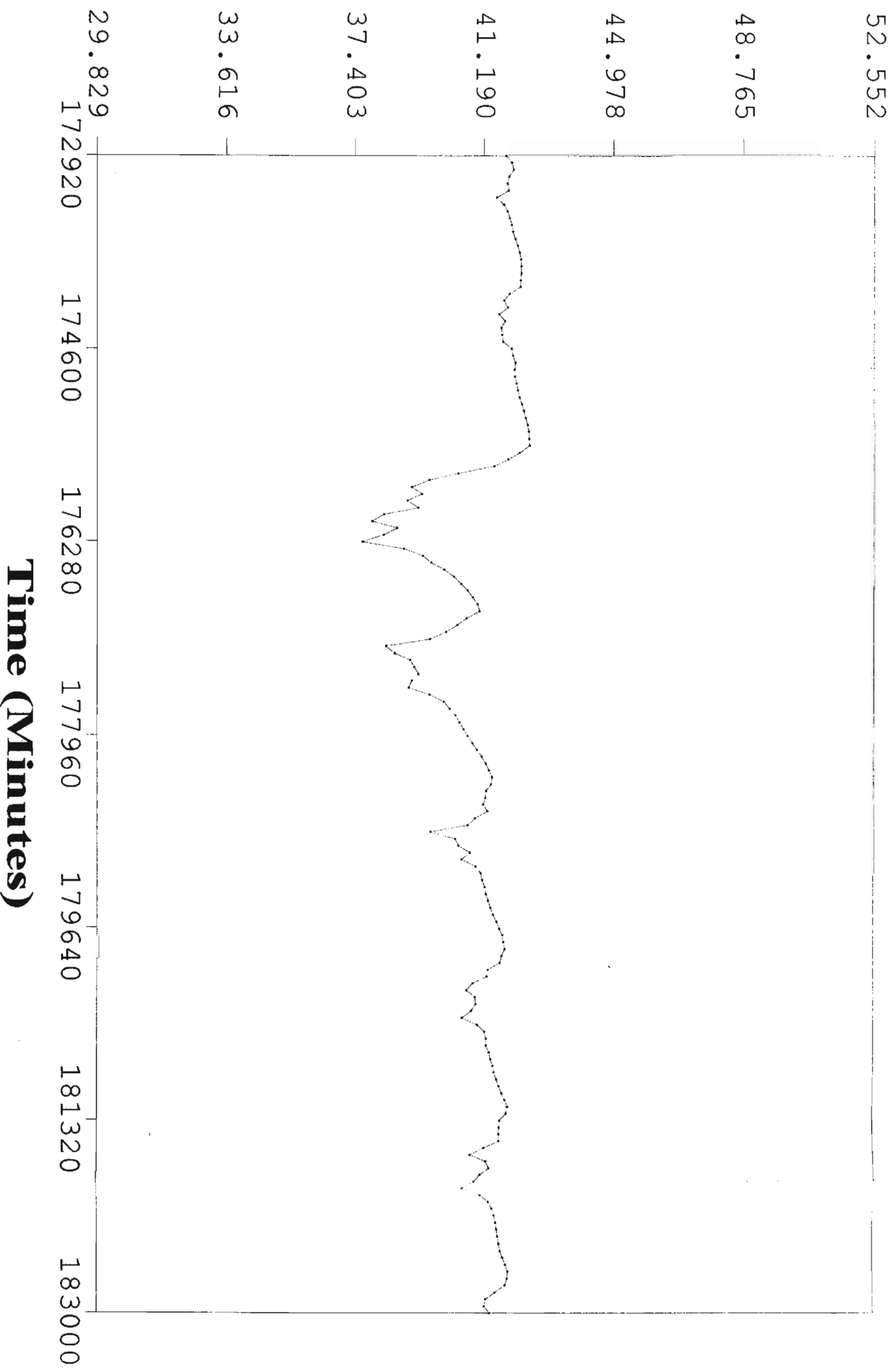
[1] - OnBoard Pressure

GZ-7R Test 1



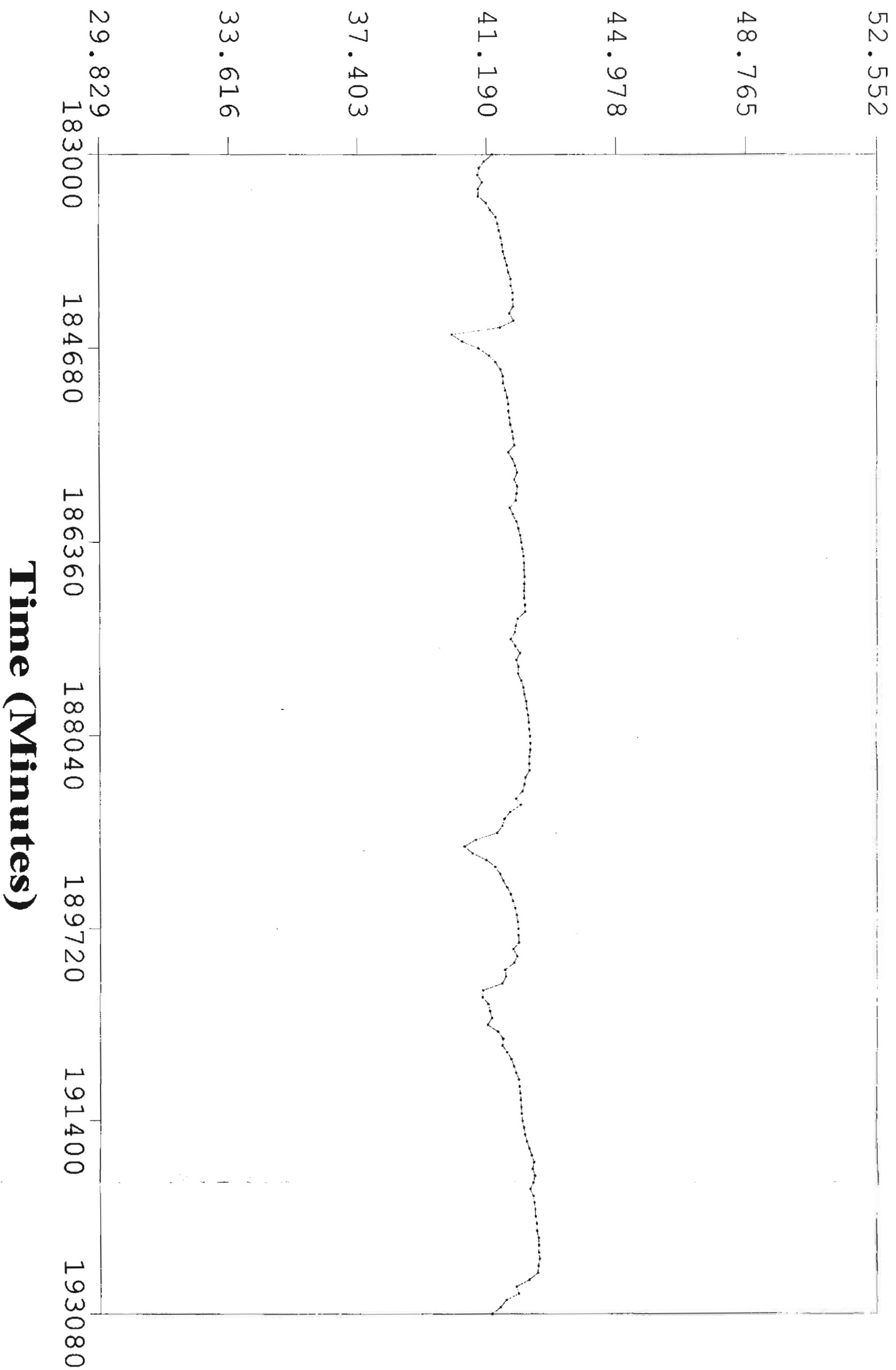
[1] - OnBoard Pressure

GZ-7R Test 1

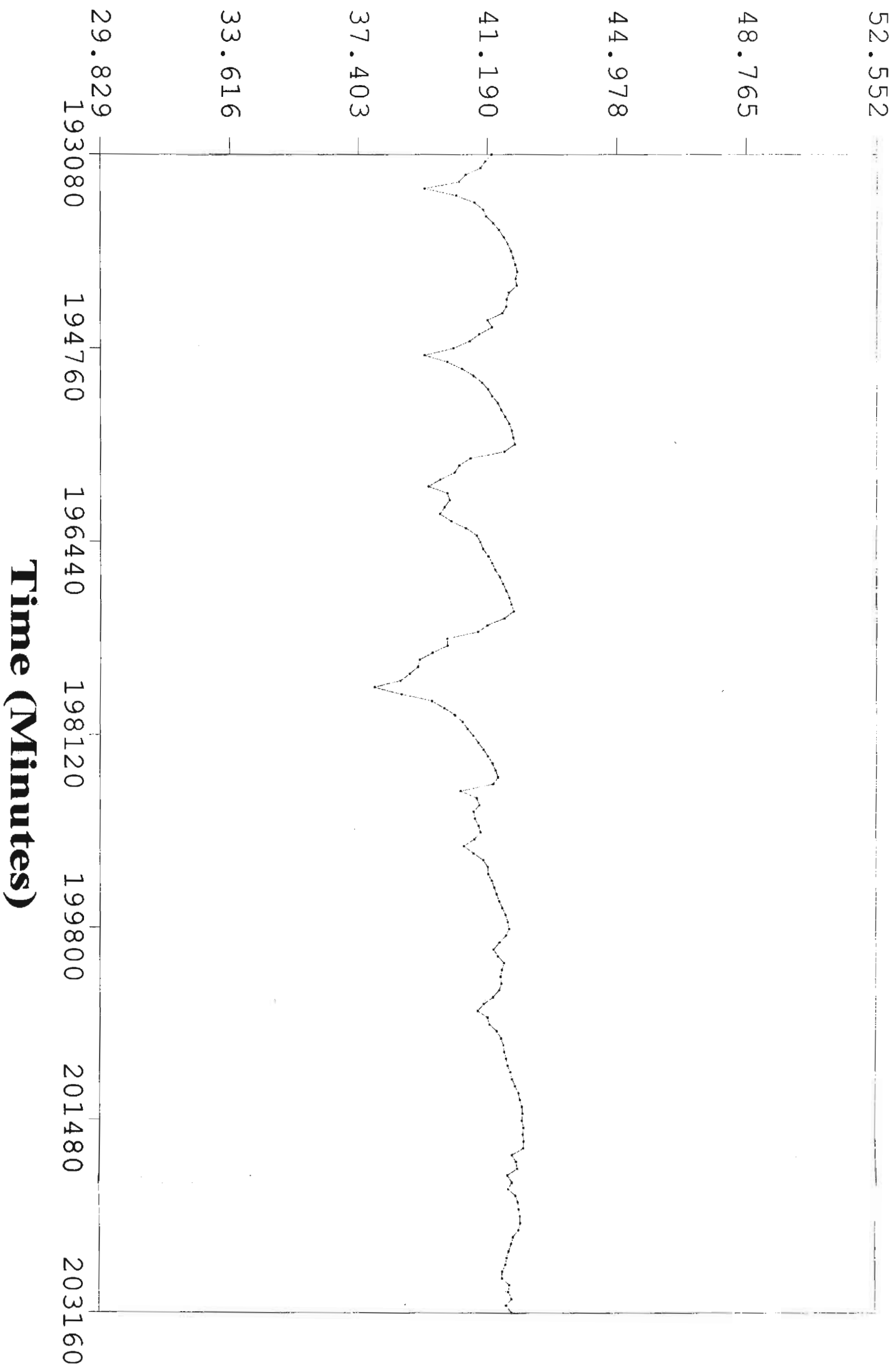


[1] - OnBoard Pressure

GZ-7R Test 1



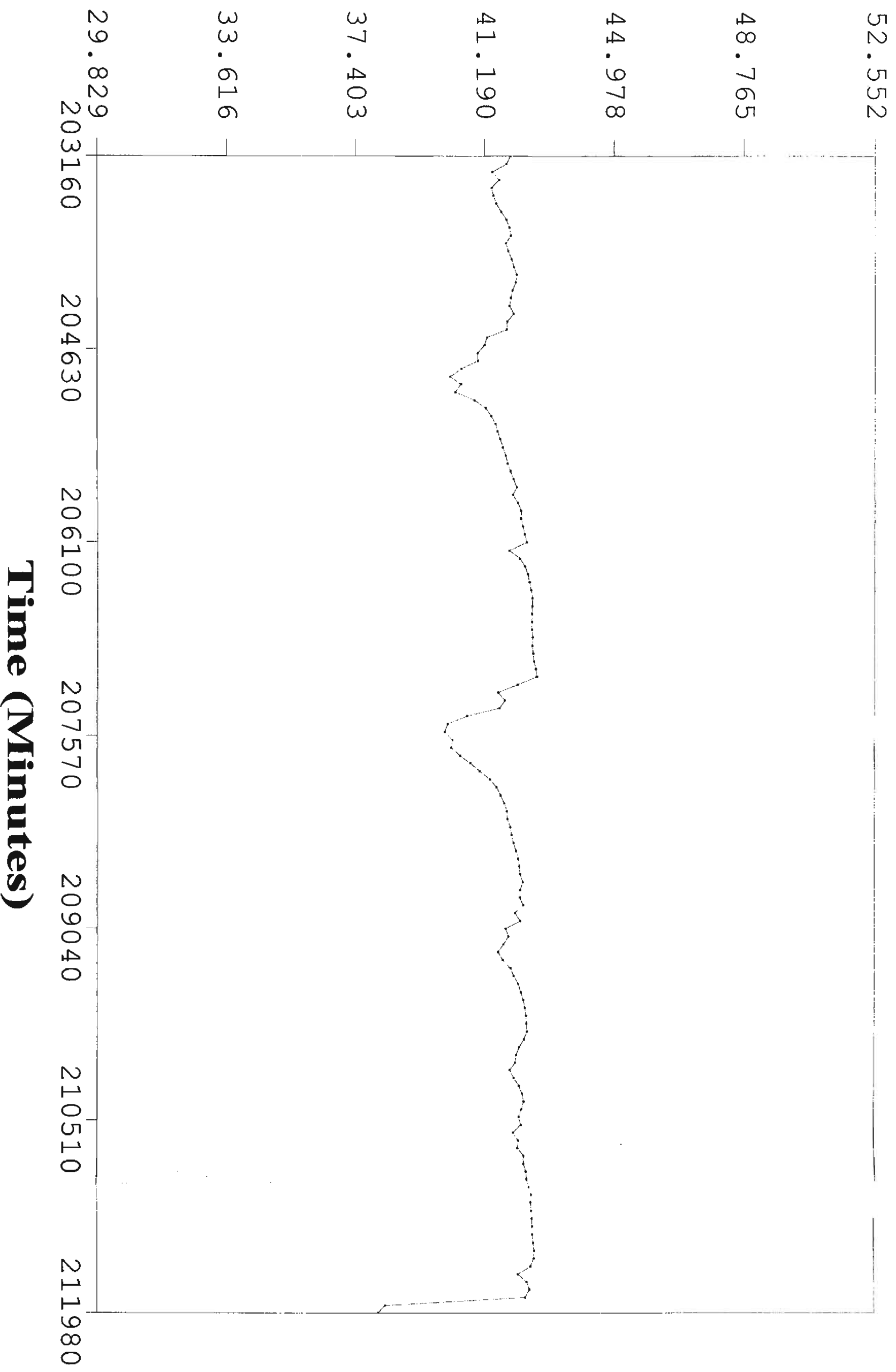
GZ-7R Test 1



[1] - OnBoard Pressure

Fect H2O

GZ-7R Test 1



In-Situ Inc.

MiniTroll Adv

Report generated: 01/16/03 11:17:07
Report from file: P:\5) Projects\4109-General Chemical\SN08627 2002-10-31 131434 GZ-7R Test 2 .b
DataMgr Version 3.70
Serial number: 00008627
Firmware Version 3.04
Unit name: miniTROLL

Test name: GZ-7R Test 2

Test defined on: 10/30/02 18:39:23
Test started on: 10/31/02 13:14:34
Test stopped on: 12/23/02 11:21:26
Test extracted on: N/A

Data gathered using Linear testing

Time between data points: 60.0000 Minutes.
Number of data samples: 1271

TOTAL DATA SAMPLES 1271

Channel number [1]
Measurement type: Pressure
Channel name: OnBoard Pressure
Sensor Range: 100 PSI.
Density: 1.000 g/cm3
Latitude: 45 degrees
Elevation: 0.000 meters (0.000 feet)

Date	Time	ET (min)	Chan[1] Feet H2O
10/31/02	13:14:34	0.0000	38.673
10/31/02	14:14:34	60.0000	41.803
10/31/02	15:14:34	120.0000	41.882
10/31/02	16:14:34	180.0000	41.840
10/31/02	17:14:34	240.0000	41.499
10/31/02	18:14:34	300.0000	41.403
10/31/02	19:14:34	360.0000	41.567
10/31/02	20:14:34	420.0000	41.888
10/31/02	21:14:34	480.0000	42.040
10/31/02	22:14:34	540.0000	42.156
10/31/02	23:14:34	600.0000	42.168
11/01/02	00:14:34	660.0000	42.307
11/01/02	01:14:34	720.0000	42.404
11/01/02	02:14:34	780.0000	42.489
11/01/02	03:14:34	840.0000	42.556
11/01/02	04:14:34	900.0000	42.587
11/01/02	05:14:34	960.0000	42.629
11/01/02	06:14:34	1020.0000	42.623
11/01/02	07:14:34	1080.0000	42.653
11/01/02	08:14:34	1140.0000	42.653
11/01/02	09:14:34	1200.0000	42.550
11/01/02	10:14:34	1260.0000	42.368
11/01/02	11:14:34	1320.0000	42.040
11/01/02	12:14:34	1380.0000	42.082
11/01/02	13:14:34	1440.0000	41.760
11/01/02	14:14:34	1500.0000	42.101
11/01/02	15:14:34	1560.0000	42.216
11/01/02	16:14:34	1620.0000	41.821
11/01/02	17:14:34	1680.0000	41.785
11/01/02	18:14:34	1740.0000	42.125
11/01/02	19:14:34	1800.0000	42.083
11/01/02	20:14:34	1860.0000	42.253
11/01/02	21:14:34	1920.0000	42.344
11/01/02	22:14:34	1980.0000	42.392

11/01/02	23:14:34	2040.0000	42.423
11/02/02	00:14:34	2100.0000	42.501
11/02/02	01:14:34	2160.0000	42.477
11/02/02	02:14:34	2220.0000	42.350
11/02/02	03:14:34	2280.0000	42.168
11/02/02	04:14:34	2340.0000	42.040
11/02/02	05:14:34	2400.0000	41.912
11/02/02	06:14:34	2460.0000	41.797
11/02/02	07:14:34	2520.0000	41.627
11/02/02	08:14:34	2580.0000	41.500
11/02/02	09:14:34	2640.0000	41.184
11/02/02	10:14:34	2700.0000	41.293
11/02/02	11:14:34	2760.0000	40.819
11/02/02	12:14:34	2820.0000	40.698
11/02/02	13:14:34	2880.0000	40.491
11/02/02	14:14:34	2940.0000	39.969
11/02/02	15:14:34	3000.0000	40.078
11/02/02	16:14:34	3060.0000	39.095
11/02/02	17:14:34	3120.0000	39.289
11/02/02	18:14:34	3180.0000	39.447
11/02/02	19:14:34	3240.0000	39.623
11/02/02	20:14:34	3300.0000	39.040
11/02/02	21:14:34	3360.0000	39.830
11/02/02	22:14:34	3420.0000	40.127
11/02/02	23:14:34	3480.0000	40.285
11/03/02	00:14:34	3540.0000	40.382
11/03/02	01:14:34	3600.0000	40.552
11/03/02	02:14:34	3660.0000	40.662
11/03/02	03:14:34	3720.0000	40.716
11/03/02	04:14:34	3780.0000	40.698
11/03/02	05:14:34	3840.0000	40.747
11/03/02	06:14:34	3900.0000	40.765
11/03/02	07:14:34	3960.0000	40.698
11/03/02	08:14:34	4020.0000	40.698
11/03/02	09:14:34	4080.0000	40.376
11/03/02	10:14:34	4140.0000	40.334
11/03/02	11:14:34	4200.0000	40.291
11/03/02	12:14:34	4260.0000	40.218
11/03/02	13:14:34	4320.0000	39.811
11/03/02	14:14:34	4380.0000	39.101
11/03/02	15:14:34	4440.0000	39.514
11/03/02	16:14:34	4500.0000	39.423
11/03/02	17:14:34	4560.0000	39.933
11/03/02	18:14:34	4620.0000	40.364
11/03/02	19:14:34	4680.0000	40.413
11/03/02	20:14:34	4740.0000	40.704
11/03/02	21:14:34	4800.0000	40.899
11/03/02	22:14:34	4860.0000	41.026
11/03/02	23:14:34	4920.0000	41.117
11/04/02	00:14:34	4980.0000	41.087
11/04/02	01:14:34	5040.0000	41.050
11/04/02	02:14:34	5100.0000	40.978
11/04/02	03:14:34	5160.0000	40.996
11/04/02	04:14:34	5220.0000	40.996
11/04/02	05:14:34	5280.0000	41.008
11/04/02	06:14:34	5340.0000	41.032
11/04/02	07:14:34	5400.0000	41.008
11/04/02	08:14:34	5460.0000	40.996
11/04/02	09:14:34	5520.0000	40.667
11/04/02	10:14:34	5580.0000	40.844
11/04/02	11:14:34	5640.0000	40.971
11/04/02	12:14:34	5700.0000	40.832
11/04/02	13:14:34	5760.0000	40.984
11/04/02	14:14:34	5820.0000	41.354
11/04/02	15:14:34	5880.0000	40.984
11/04/02	16:14:34	5940.0000	41.324
11/04/02	17:14:34	6000.0000	41.488
11/04/02	18:14:34	6060.0000	41.579
11/04/02	19:14:34	6120.0000	41.524
11/04/02	20:14:34	6180.0000	41.706

11/04/02	21:14:34	6240.0000	41.779
11/04/02	22:14:34	6300.0000	41.797
11/04/02	23:14:34	6360.0000	41.834
11/05/02	00:14:34	6420.0000	41.888
11/05/02	01:14:34	6480.0000	41.973
11/05/02	02:14:34	6540.0000	42.052
11/05/02	03:14:34	6600.0000	42.137
11/05/02	04:14:34	6660.0000	42.216
11/05/02	05:14:34	6720.0000	42.295
11/05/02	06:14:34	6780.0000	42.362
11/05/02	07:14:34	6840.0000	42.423
11/05/02	08:14:34	6900.0000	42.441
11/05/02	09:14:34	6960.0000	42.441
11/05/02	10:14:34	7020.0000	42.307
11/05/02	11:14:34	7080.0000	42.362
11/05/02	12:14:34	7140.0000	42.271
11/05/02	13:14:34	7200.0000	42.332
11/05/02	14:14:34	7260.0000	42.295
11/05/02	15:14:34	7320.0000	42.247
11/05/02	16:14:34	7380.0000	42.265
11/05/02	17:14:34	7440.0000	41.475
11/05/02	18:14:34	7500.0000	41.846
11/05/02	19:14:34	7560.0000	41.998
11/05/02	20:14:34	7620.0000	42.168
11/05/02	21:14:34	7680.0000	42.222
11/05/02	22:14:34	7740.0000	42.137
11/05/02	23:14:34	7800.0000	42.089
11/06/02	00:14:34	7860.0000	42.137
11/06/02	01:14:34	7920.0000	42.247
11/06/02	02:14:34	7980.0000	42.319
11/06/02	03:14:34	8040.0000	42.429
11/06/02	04:14:34	8100.0000	42.514
11/06/02	05:14:34	8160.0000	42.623
11/06/02	06:14:34	8220.0000	42.714
11/06/02	07:14:34	8280.0000	42.793
11/06/02	08:14:34	8340.0000	42.823
11/06/02	09:14:34	8400.0000	42.884
11/06/02	10:14:34	8460.0000	42.878
11/06/02	11:14:34	8520.0000	42.884
11/06/02	12:14:34	8580.0000	42.817
11/06/02	13:14:34	8640.0000	42.866
11/06/02	14:14:34	8700.0000	42.854
11/06/02	15:14:34	8760.0000	42.641
11/06/02	16:14:34	8820.0000	42.799
11/06/02	17:14:34	8880.0000	42.896
11/06/02	18:14:34	8940.0000	42.951
11/06/02	19:14:34	9000.0000	42.981
11/06/02	20:14:34	9060.0000	42.987
11/06/02	21:14:34	9120.0000	42.975
11/06/02	22:14:34	9180.0000	42.969
11/06/02	23:14:34	9240.0000	42.927
11/07/02	00:14:34	9300.0000	42.915
11/07/02	01:14:34	9360.0000	42.884
11/07/02	02:14:34	9420.0000	42.896
11/07/02	03:14:34	9480.0000	42.915
11/07/02	04:14:34	9540.0000	42.963
11/07/02	05:14:34	9600.0000	43.024
11/07/02	06:14:34	9660.0000	43.066
11/07/02	07:14:34	9720.0000	43.115
11/07/02	08:14:34	9780.0000	43.151
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11/07/02	10:14:34	9900.0000	43.036
11/07/02	11:14:34	9960.0000	43.000
11/07/02	12:14:34	10020.0000	42.902
11/07/02	13:14:34	10080.0000	42.836
11/07/02	14:14:34	10140.0000	42.586
11/07/02	15:14:34	10200.0000	42.392
11/07/02	16:14:34	10260.0000	42.331
11/07/02	17:14:34	10320.0000	42.192
11/07/02	18:14:34	10380.0000	42.174

11/07/02	19:14:34	10440.0000	42.168
11/07/02	20:14:34	10500.0000	42.228
11/07/02	21:14:34	10560.0000	42.198
11/07/02	22:14:34	10620.0000	42.071
11/07/02	23:14:34	10680.0000	41.931
11/08/02	00:14:34	10740.0000	41.852
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11/10/02	02:14:34	13740.0000	41.281
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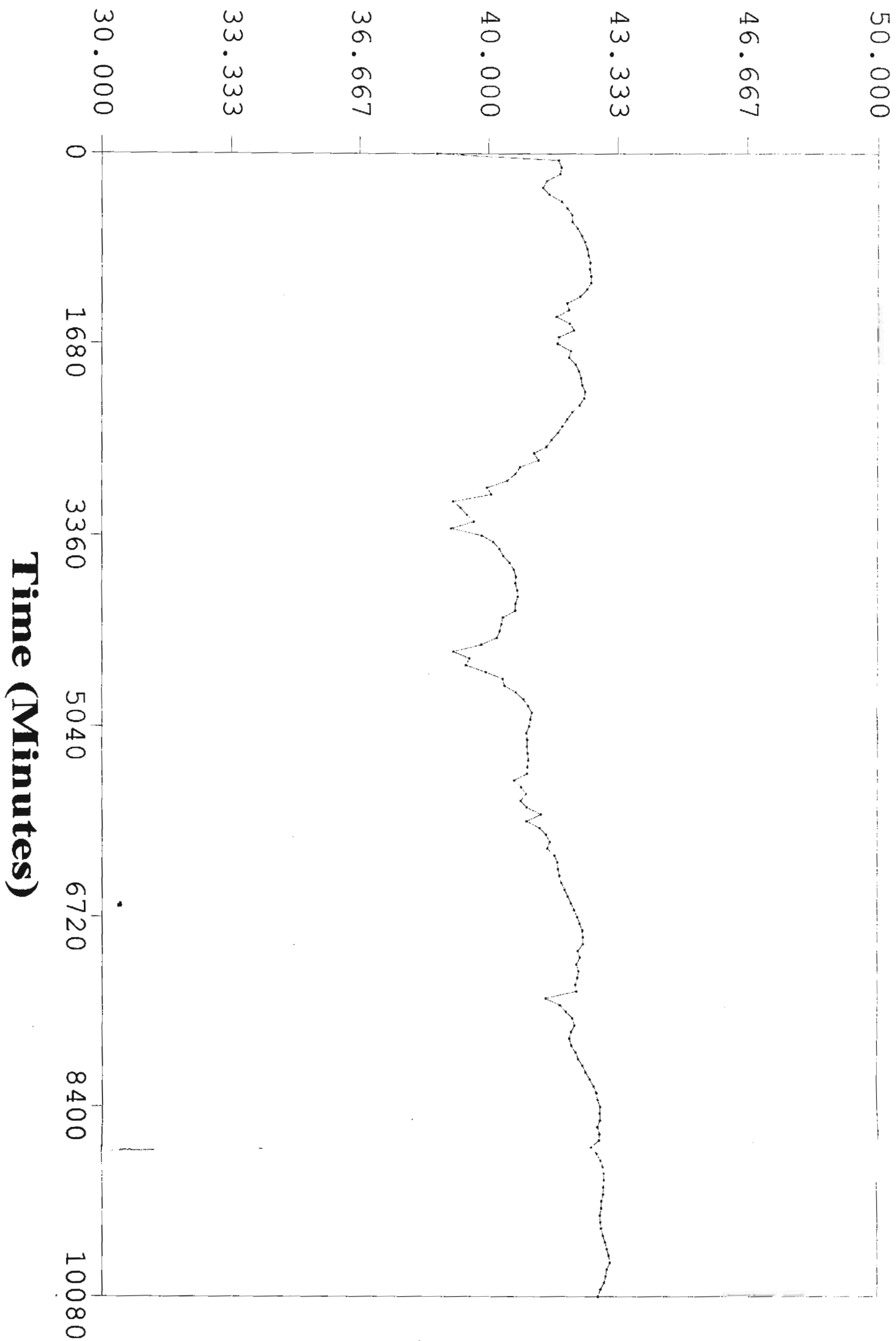
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11/11/02	09:14:34	15600.0000	42.149
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11/12/02	05:14:34	16800.0000	42.532
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11/12/02	09:14:34	17040.0000	42.629
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11/12/02	11:14:34	17160.0000	42.605
11/12/02	12:14:34	17220.0000	42.605
11/12/02	13:14:34	17280.0000	42.660
11/12/02	14:14:34	17340.0000	42.538
11/12/02	15:14:34	17400.0000	42.593
11/12/02	16:14:34	17460.0000	42.678
11/12/02	17:14:34	17520.0000	41.712
11/12/02	18:14:34	17580.0000	42.216
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11/12/02	20:14:34	17700.0000	42.538
11/12/02	21:14:34	17760.0000	42.647
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11/13/02	06:14:34	18300.0000	42.987
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11/13/02	14:14:34	18780.0000	43.079

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11/13/02	16:14:34	18900.0000	43.145
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11/14/02	00:14:34	19380.0000	43.249
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11/14/02	09:14:34	19920.0000	43.267
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11/14/02	11:14:34	20040.0000	42.975
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11/14/02	13:14:34	20160.0000	42.854
11/14/02	14:14:34	20220.0000	42.702
11/14/02	15:14:34	20280.0000	42.526
11/14/02	16:14:34	20340.0000	42.556
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11/14/02	19:14:34	20520.0000	42.362
11/14/02	20:14:34	20580.0000	42.447
11/14/02	21:14:34	20640.0000	42.593
11/14/02	22:14:34	20700.0000	42.726
11/14/02	23:14:34	20760.0000	42.854
11/15/02	00:14:34	20820.0000	42.945
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11/15/02	07:14:34	21240.0000	43.218
11/15/02	08:14:34	21300.0000	43.212
11/15/02	09:14:34	21360.0000	43.079
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11/15/02	11:14:34	21480.0000	43.030
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11/15/02	14:14:34	21660.0000	41.427
11/15/02	15:14:34	21720.0000	42.022
11/15/02	16:14:34	21780.0000	41.882
11/15/02	17:14:34	21840.0000	41.737
11/15/02	18:14:34	21900.0000	41.907
11/15/02	19:14:34	21960.0000	41.913
11/15/02	20:14:34	22020.0000	41.925
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11/15/02	23:14:34	22200.0000	42.271
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11/16/02	17:14:34	23280.0000	42.732
11/16/02	18:14:34	23340.0000	42.823
11/16/02	19:14:34	23400.0000	42.635
11/16/02	20:14:34	23460.0000	42.465
11/16/02	21:14:34	23520.0000	42.380
11/16/02	22:14:34	23580.0000	42.319
11/16/02	23:14:34	23640.0000	42.283
11/17/02	00:14:34	23700.0000	42.295
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11/17/02	02:14:34	23820.0000	42.319
11/17/02	03:14:34	23880.0000	42.344
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11/17/02	07:14:34	24120.0000	42.319
11/17/02	08:14:34	24180.0000	42.368
11/17/02	09:14:34	24240.0000	42.404
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11/17/02	14:14:34	24540.0000	42.441
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11/19/02	04:14:34	26820.0000	42.769
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11/19/02	08:14:34	27060.0000	42.544
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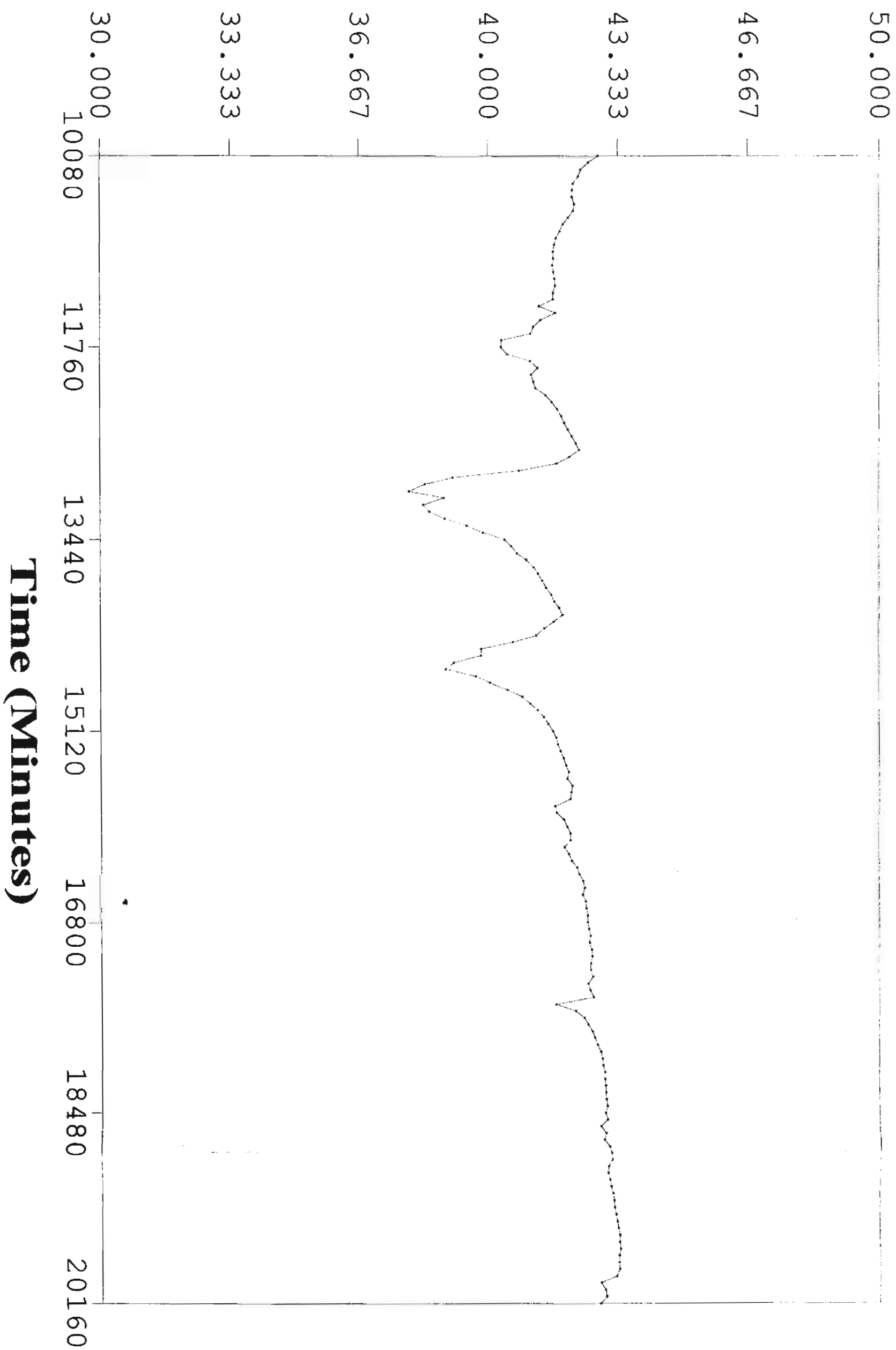
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11/19/02	15:14:34	27480.0000	42.526
11/19/02	16:14:34	27540.0000	42.544
11/19/02	17:14:34	27600.0000	42.477
11/19/02	18:14:34	27660.0000	42.581
11/19/02	19:14:34	27720.0000	42.386
11/19/02	20:14:34	27780.0000	42.641
11/19/02	21:14:34	27840.0000	42.732
11/19/02	22:14:34	27900.0000	42.878
11/19/02	23:14:34	27960.0000	42.945
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11/20/02	18:14:34	29100.0000	37.717
11/20/02	19:14:34	29160.0000	39.241
11/20/02	20:14:34	29220.0000	40.280
11/20/02	21:14:34	29280.0000	40.991
11/20/02	22:14:34	29340.0000	41.391
11/20/02	23:14:34	29400.0000	41.682
11/21/02	00:14:34	29460.0000	41.907
11/21/02	01:14:34	29520.0000	42.138
11/21/02	02:14:34	29580.0000	42.393
11/21/02	03:14:34	29640.0000	42.587
11/21/02	04:14:34	29700.0000	42.781
11/21/02	05:14:34	29760.0000	42.854
11/21/02	06:14:34	29820.0000	42.873
11/21/02	07:14:34	29880.0000	42.927
11/21/02	08:14:34	29940.0000	42.970
11/21/02	09:14:34	30000.0000	42.879
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11/21/02	14:14:34	30300.0000	-0.097
11/21/02	15:14:34	30360.0000	43.046
11/21/02	16:14:34	30420.0000	43.083
11/21/02	17:14:34	30480.0000	43.031
11/21/02	18:14:34	30540.0000	43.203
11/21/02	19:14:34	30600.0000	43.441
11/21/02	20:14:34	30660.0000	43.605
11/21/02	21:14:34	30720.0000	43.709
11/21/02	22:14:34	30780.0000	43.794
11/21/02	23:14:34	30840.0000	43.710
11/22/02	00:14:34	30900.0000	43.789
11/22/02	01:14:34	30960.0000	43.868
11/22/02	02:14:34	31020.0000	43.977
11/22/02	03:14:34	31080.0000	44.056
11/22/02	04:14:34	31140.0000	44.159
11/22/02	05:14:34	31200.0000	44.244
11/22/02	06:14:34	31260.0000	44.323
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GZ-7R Test 2

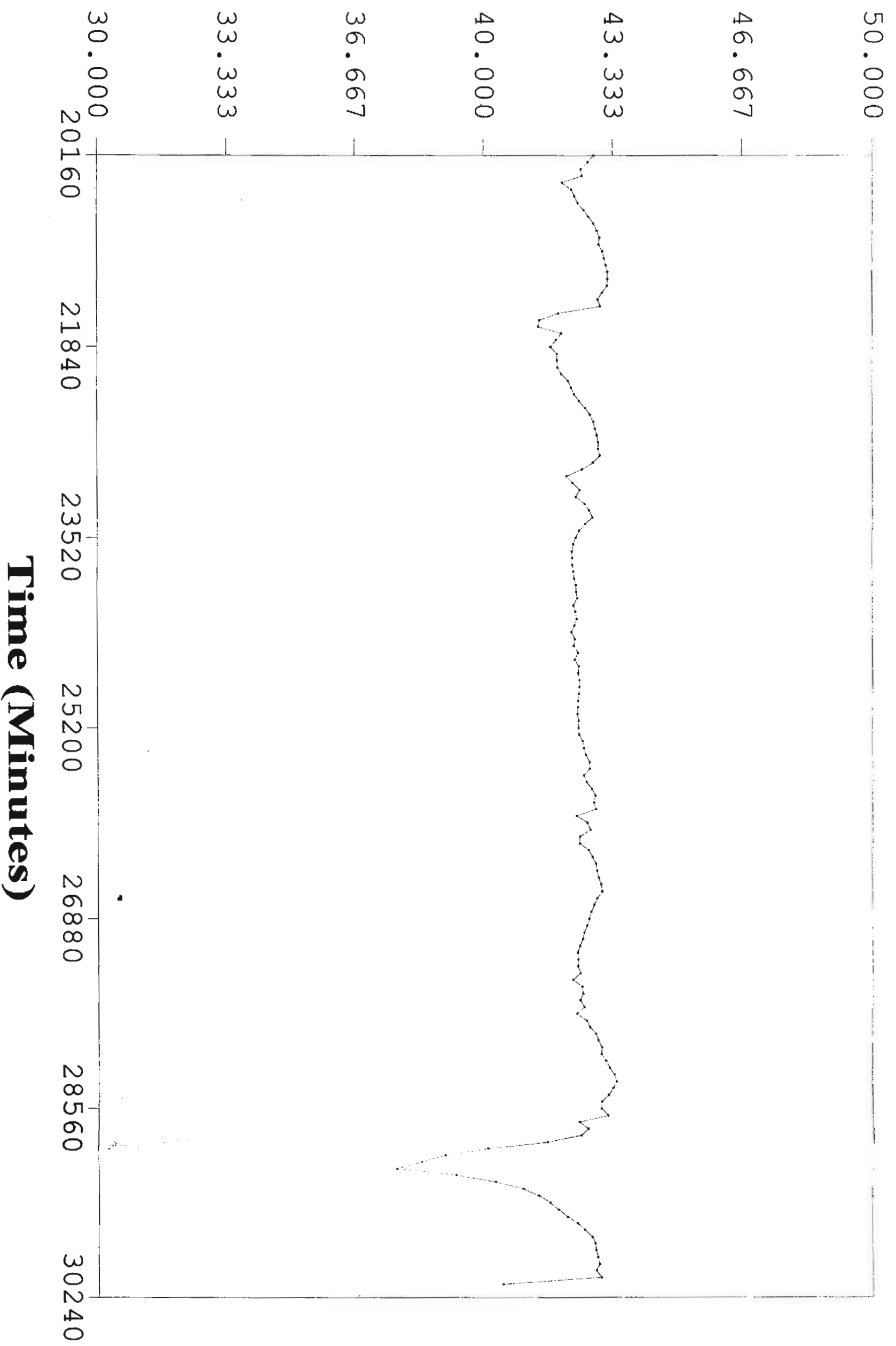


[1] - OnBoard Pressure

GZ-7R Test 2

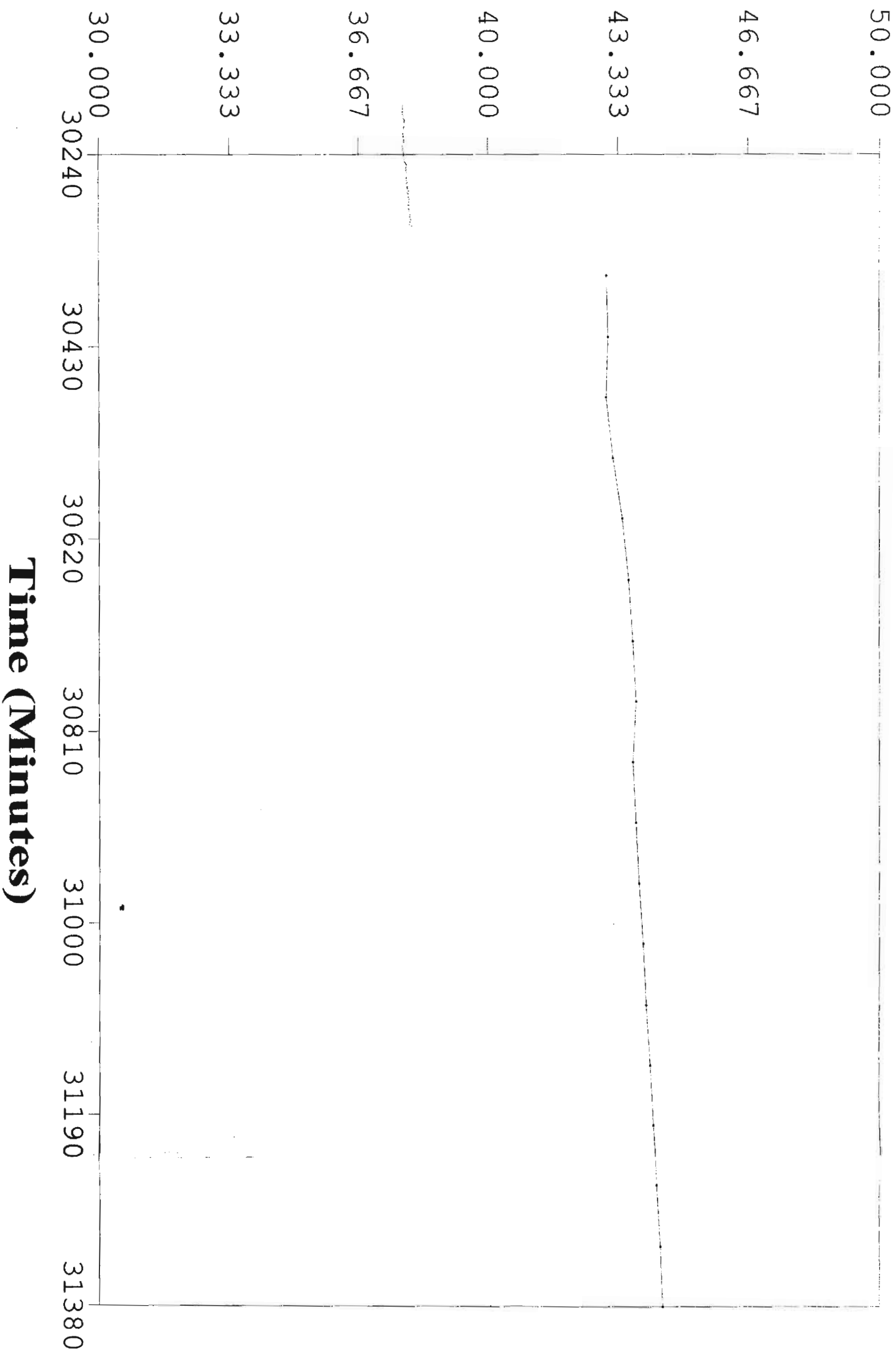


GZ-7R Test 2



[1] - OnBoard Pressure

GZ-7R Test 2



[1] - OnBoard Pressure

Appendix B: Laboratory Analytical Reports

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

December 16, 2002

Mr. Sean Healey
Vertex Engineering, Inc.
400 Libbey Parkway
Weymouth, MA 02189

LABORATORY REPORT

Project: **General Chemical Framingham, MA**
Lab ID: **56624**
Received: **12-02-02**

Dear Sean:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,



Jonathan R. Sanford
President

JRS/smd
Enclosures

Sample Receipt Report

Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Lab ID: 56624

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 12-02-02

Temperature: 8.6°C
Chain of Custody: Present
Custody Seal(s): n/a

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-1	SW-USA-2		Aqueous	11/21/02 0:00	EPA 8260B TCL Volatile Organics			
C270720	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270756	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270768	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-2	SW-DC-1		Aqueous	11/21/02 0:00	EPA 8260B TCL Volatile Organics			
C270732	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270744	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270780	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-3	SW-10		Aqueous	11/21/02 0:00	EPA 8260B TCL Volatile Organics			
C270741	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270743	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270729	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-4	GZ-7R		Aqueous	11/22/02 0:00	EPA 8260B TCL Volatile Organics			
C270747	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270783	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270759	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-5	GZA-19DD		Aqueous	11/26/02 0:00	EPA 8260B TCL Volatile Organics			
C270764	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270788	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270787	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-6	GZ-55		Aqueous	11/25/02 0:00	EPA 8260B TCL Volatile Organics			
C270765	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270767	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270766	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-7	GZA-13		Aqueous	11/22/02 0:00	EPA 8260B TCL Volatile Organics			
C270722	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270721	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270745	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Sample Receipt Report (Continued)

Project: General Chemical Framingham, Ma.
Client: Vertex Engineering, Inc.
Lab ID: 56624

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 12-02-02

Temperature: 8.6'C
Chain of Custody: Present
Custody Seal(s): n/a

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-8	GZ-2	Aqueous	11/25/02 0:00	EPA 8260B TCL Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270775	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270790	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270763	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-9	TB-2	Aqueous	11/20/02 0:00	EPA 8260B TCL Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C114582	40 mL VOA Vial	n/a	n/a	HCl	n/a	n/a	n/a	
C114581	40 mL VOA Vial	n/a	n/a	HCl	n/a	n/a	n/a	

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-10	TB-3	Aqueous	11/20/02 0:00	EPA 8260B TCL Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C259996	40 mL VOA Vial	Industrial	BX5604	HCl	R-3173F	11-13-02	n/a	
C114578	40 mL VOA Vial	n/a	n/a	HCl	n/a	n/a	n/a	

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-11	PZ-2D	Aqueous	12/2/02 0:00	EPA 8260B TCL Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270006	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270017	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270029	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-12	PZ-2S	Aqueous	12/2/02 0:00	EPA 8260B TCL Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270004	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270016	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270027	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-13	GZA-15S	Aqueous	11/27/02 0:00	EPA 8260B TCL Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270031	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270045	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270044	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-14	GZA-15R	Aqueous	11/27/02 0:00	EPA 8260B TCL Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270010	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270020	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270021	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-15	GZA-15D	Aqueous	11/27/02 0:00	EPA 8260B TCL Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270034	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270047	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270022	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Sample Receipt Report (Continued)

Project: General Chemical Framingham, Ma.
Client: Vertex Engineering, Inc.
Lab ID: 56624

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 12-02-02

Temperature: 8.6°C
Chain of Custody: Present
Custody Seal(s): n/a

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-16	GZ-1		Aqueous	11/26/02 0:00	EPA 8260B TCL Volatile Organics			
C270051	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270055	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270066	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-17	GZA-14S		Aqueous	11/27/02 0:00	EPA 8260B TCL Volatile Organics			
C270056	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270069	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270043	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-18	GZA-14M		Aqueous	11/27/02 0:00	EPA 8260B TCL Volatile Organics			
C270040	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270042	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270041	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-19	GZ-16M		Aqueous	11/26/02 0:00	EPA 8260B TCL Volatile Organics			
C270736	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270748	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270724	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-20	MW-20		Aqueous	11/22/02 0:00	EPA 8260B TCL Volatile Organics			
C270733	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270734	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270746	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-21	MW-21		Aqueous	11/26/02 0:00	EPA 8260B TCL Volatile Organics			
C270063	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270062	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270053	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	Notes
56624-22	SW-3		Aqueous	11/22/02 0:00	EPA 8260B TCL Volatile Organics			
C270727	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270761	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270773	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Sample Receipt Report (Continued)

Project: General Chemical Framingham, Ma.
Client: Vertex Engineering, Inc.
Lab ID: 56624

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 12-02-02

Temperature: 8.6°C
Chain of Custody: Present
Custody Seal(s): n/a

		Matrix	Sampled	Method			Notes
56624-23	SW-USA-2		Aqueous	11/21/02 0:00	EPA 8260B Mod 1,4-Dioxane		
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship
C270757	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02
C270781	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02
C270769	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02

				Matrix	Sampled	Method			Notes
56624-24	SW-DC-1			Aqueous	11/21/02 0:00	EPA 8260B Mod 1,4-Dioxane			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270738	40 mL VOA Vial	Industrial	8X5614	HCl	R-3173F	11-04-02	11-18-02		
C270750	40 mL VOA Vial	Industrial	8X5614	HCl	R-3173F	11-04-02	11-18-02		
C270726	40 mL VOA Vial	Industrial	8X5614	HCl	R-3173F	11-04-02	11-18-02		

		Matrix	Sampled	Method				Notes	
56624-25	SW-10	Aqueous	11/21/02 0:00	EPA 8260B Mod 1,4-Dioxane					
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270755	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		
C270754	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		
C270753	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		

					Method			Notes
56624-26	GZ-7R		Aqueous	11/22/02 0:00	EPA 8260B Mod 1,4-Dioxane			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270723	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270771	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270735	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

					Method			Notes
56624-27	GZA-19DD		Aqueous	11/26/02 0:00	EPA 8260B Mod 1,4-Dioxane			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270786	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270777	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270778	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

			Matrix	Sampled	Method				Notes
56624-28	GZ-55		Aqueous	11/25/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270762	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		
C270789	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		
C270731	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		

			Matrix	Sampled	Method			Notes
56624-29	GZA-13		Aqueous	11/22/02 0:00	EPA 8260B Mod 1,4-Dioxane			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270758	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270782	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270770	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

Sample Receipt Report (Continued)

Project: General Chemical Framingham, Ma.
Client: Vertex Engineering, Inc.
Lab ID: 56624

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 12-02-02

Temperature: 8.6°C
Chain of Custody: Present
Custody Seal(s): n/a

			Matrix	Sampled	Method				Notes
56624-30	GZ-2		Aqueous	11/25/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270725	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		
C270749	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		
C270737	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		

Sample ID	Sample Name		Matrix	Sampled	Method				Notes
56624-31	TB-1		Aqueous	11/20/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C259982	40 mL VOA Vial	Industrial	BX5604	HCl	R-3173F	11-13-02	n/a		
C114583	40 mL VOA Vial	n/a	n/a	HCl	n/a	n/a	n/a		

					Method			Notes
56624-32	PZ-2D		Aqueous	12/2/02 0:00	EPA 8260B Mod 1,4-Dioxane			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270015	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270018	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270008	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Sample ID	Sample Name		Matrix	Sampled	Method				Notes
56624-33	PZ-2S		Aqueous	12/2/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270005	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		
C270007	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		
C270009	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		

			Matrix	Sampled	Method			Notes
56624-34	GZA-15S		Aqueous	11/27/02 0:00	EPA 8260B Mod 1,4-Dioxane			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270046	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270033	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270032	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

			Matrix	Sampled	Method				Notes
56624-35	GZA-15R		Aqueous	11/27/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270019	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		
C270023	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		
C270071	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		

Sample ID	Sample Name		Matrix	Sampled	Method				Notes
56624-36	GZA-15D		Aqueous	11/27/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270035	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		
C270059	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		
C270061	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		

Sample Receipt Report (Continued)

Project: General Chemical Framingham, Ma.
Client: Vertex Engineering, Inc.
Lab ID: 56624

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 12-02-02

Temperature: 8.6'C
Chain of Custody: Present
Custody Seal(s): n/a

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-37	GZ-1	Aqueous	11/26/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270050	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270068	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270054	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-38	GZA-14S	Aqueous	11/27/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270058	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270070	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	
C270057	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02	

				Sampled	Method				Notes	
56624-39	GZA-14M			Aqueous	11/27/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship			
C270030	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02			
C270039	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02			
C270028	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02			

					Method			Notes
56624-40	GZ-16M		Aqueous	11/26/02 0:00	EPA 8260B Mod 1,4-Dioxane			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C270760	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270772	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	
C270776	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02	

			Sample	Method					Notes	
56624-41	MW-20		Aqueous	11/22/02 0:00	EPA 8260B Mod 1,4-Dioxane					
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship			
C270728	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02			
C270740	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02			

					Method				Notes
56624-42	MW-21		Aqueous	11/26/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270065	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		
C270067	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		
C270064	40 mL VOA Vial	Industrial	BX5605	HCl	R-3173F	11-04-02	11-18-02		

Sample ID	Sample Name		Matrix	Sampled	Method				Notes
56624-43	SW-3		Aqueous	11/22/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C270739	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		
C270751	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		
C270785	40 mL VOA Vial	Industrial	BX5614	HCl	R-3173F	11-04-02	11-18-02		

Sample ID	Sample Name	Matrix	Sampled	Method	Notes			
56624-44	TB-4	Aqueous	11/20/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C114580	40 mL VOA Vial	n/a	n/a	HCl	n/a	n/a	n/a	
C114579	40 mL VOA Vial	n/a	n/a	HCl	n/a	n/a	n/a	

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: SW-USA-2
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-01
QC Batch ID: VM5-2389-W
Sampled: 11-21-02
Received: 12-02-02
Analyzed: 12-05-02
Dilution Factor: 1

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	1	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	3	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	0.7	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	1	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	33	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	18	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	2	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	1	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

	Recovery	QC Limits
Dibromofluoromethane	105 %	86 - 118 %
1,2-Dichloroethane-d ₄	103 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	92 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
^o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: SW-DC-1
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-02
QC Batch ID: VM5-2389-W
Sampled: 11-21-02
Received: 12-02-02
Analyzed: 12-05-02
Dilution Factor: 10

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	5
75-01-4	Vinyl Chloride	13	ug/L	5
74-83-9	Bromomethane	BRL	ug/L	5
75-00-3	Chloroethane	BRL	ug/L	5
75-35-4	1,1-Dichloroethene	6	ug/L	5
67-64-1	Acetone	BRL	ug/L	200
75-15-0	Carbon Disulfide	BRL	ug/L	50
75-09-2	Methylene Chloride	BRL	ug/L	25
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	5
75-34-3	1,1-Dichloroethane	12	ug/L	5
156-59-2	cis- 1,2-Dichloroethene	150	ug/L	5
78-93-3	2-Butanone (MEK)	BRL	ug/L	50
67-66-3	Chloroform	BRL	ug/L	5
71-55-6	1,1,1-Trichloroethane	50	ug/L	5
56-23-5	Carbon Tetrachloride	BRL	ug/L	5
71-43-2	Benzene	BRL	ug/L	5
107-06-2	1,2-Dichloroethane	BRL	ug/L	5
79-01-6	Trichloroethene	22	ug/L	5
78-87-5	1,2-Dichloropropane	BRL	ug/L	5
75-27-4	Bromodichloromethane	BRL	ug/L	5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	50
108-88-3	Toluene	BRL	ug/L	5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	5
127-18-4	Tetrachloroethene	15	ug/L	5
591-78-6	2-Hexanone	BRL	ug/L	50
124-48-1	Dibromochloromethane	BRL	ug/L	5
108-90-7	Chlorobenzene	BRL	ug/L	5
100-41-4	Ethylbenzene	BRL	ug/L	5
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	5
95-47-6	ortho- Xylene	BRL	ug/L	5
100-42-5	Styrene	BRL	ug/L	5
75-25-2	Bromoform	BRL	ug/L	5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	5

	Recovery	QC Limits
Dibromofluoromethane	106 %	86 - 118 %
1,2-Dichloroethane-d ₄	103 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	94 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

^o Indicates additional target analyte.

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: SW-10
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-03
QC Batch ID: VM5-2390-W
Sampled: 11-21-02
Received: 12-02-02
Analyzed: 12-05-02
Dilution Factor: 250

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	130
75-01-4	Vinyl Chloride	170	ug/L	130
74-83-9	Bromomethane	BRL	ug/L	130
75-00-3	Chloroethane	BRL	ug/L	130
75-35-4	1,1-Dichloroethene	220	ug/L	130
67-64-1	Acetone	BRL	ug/L	5,000
75-15-0	Carbon Disulfide	BRL	ug/L	1,300
75-09-2	Methylene Chloride	BRL	ug/L	630
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	130
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	130
75-34-3	1,1-Dichloroethane	650	ug/L	130
156-59-2	cis-1,2-Dichloroethene	6,800	ug/L	130
78-93-3	2-Butanone (MEK)	BRL	ug/L	1,300
67-66-3	Chloroform	BRL	ug/L	130
71-55-6	1,1,1-Trichloroethane	2,500	ug/L	130
56-23-5	Carbon Tetrachloride	BRL	ug/L	130
71-43-2	Benzene	BRL	ug/L	130
107-06-2	1,2-Dichloroethane	BRL	ug/L	130
79-01-6	Trichloroethene	600	ug/L	130
78-87-5	1,2-Dichloropropane	BRL	ug/L	130
75-27-4	Bromodichloromethane	BRL	ug/L	130
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	130
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	1,300
108-88-3	Toluene	BRL	ug/L	130
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	130
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	130
127-18-4	Tetrachloroethene	BRL	ug/L	130
591-78-6	2-Hexanone	BRL	ug/L	1,300
124-48-1	Dibromochloromethane	BRL	ug/L	130
108-90-7	Chlorobenzene	BRL	ug/L	130
100-41-4	Ethylbenzene	BRL	ug/L	130
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	130
95-47-6	ortho-Xylene	BRL	ug/L	130
100-42-5	Styrene	BRL	ug/L	130
75-25-2	Bromoform	BRL	ug/L	130
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	130

Analyte	Recovery	QC Limits
Dibromofluoromethane	106 %	86 - 118 %
1,2-Dichloroethane-d ₄	101 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	95 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: GZ-7R
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-04
QC Batch ID: VM4-2406-W
Sampled: 11-22-02
Received: 12-02-02
Analyzed: 12-05-02
Dilution Factor: 1

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	2	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	0.9	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	2	ug/L	0.5
591-78-6	2-Hexanone	SRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	0.5
95-47-6	ortho- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

	Recovery	QC Limits
Dibromofluoromethane	102 %	86 - 118 %
1,2-Dichloroethane-d ₄	102 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	100 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: **GZA-19DD**
Project: **General Chemical Framingham, MA**
Client: **Vertex Engineering, Inc.**
Container: **40 mL VOA Vial**
Preservation: **HCl / Cool**
Matrix: **Aqueous**

Laboratory ID: **56624-05**
QC Batch ID: **VM4-2410-W**
Sampled: **11-26-02**
Received: **12-02-02**
Analyzed: **12-08-02**
Dilution Factor: **5,000**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	2,500
75-01-4	Vinyl Chloride	BRL	ug/L	2,500
74-83-9	Bromomethane	BRL	ug/L	2,500
75-00-3	Chloroethane	BRL	ug/L	2,500
75-35-4	1,1-Dichloroethene	4,900	ug/L	2,500
67-64-1	Acetone	BRL	ug/L	100,000
75-15-0	Carbon Disulfide	BRL	ug/L	25,000
75-09-2	Methylene Chloride	23,000	ug/L	13,000
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	2,500
1634-04-4	Methyl tert-butyl Ether (MTBE) ⁰	BRL	ug/L	2,500
75-34-3	1,1-Dichloroethane	BRL	ug/L	2,500
156-59-2	cis-1,2-Dichloroethene	9,200	ug/L	2,500
78-93-3	2-Butanone (MEK)	BRL	ug/L	25,000
67-66-3	Chloroform	BRL	ug/L	2,500
71-55-6	1,1,1-Trichloroethane	29,000	ug/L	2,500
56-23-5	Carbon Tetrachloride	BRL	ug/L	2,500
71-43-2	Benzene	BRL	ug/L	2,500
107-06-2	1,2-Dichloroethane	BRL	ug/L	2,500
79-01-6	Trichloroethene	43,000	ug/L	2,500
78-87-5	1,2-Dichloropropane	BRL	ug/L	2,500
75-27-4	Bromodichloromethane	BRL	ug/L	2,500
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	2,500
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	25,000
108-88-3	Toluene	BRL	ug/L	2,500
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	2,500
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	2,500
127-18-4	Tetrachloroethene	97,000	ug/L	2,500
591-78-6	2-Hexanone	BRL	ug/L	25,000
124-48-1	Dibromochloromethane	BRL	ug/L	2,500
108-90-7	Chlorobenzene	BRL	ug/L	2,500
100-41-4	Ethylbenzene	BRL	ug/L	2,500
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	2,500
95-47-6	ortho-Xylene	BRL	ug/L	2,500
100-42-5	Styrene	BRL	ug/L	2,500
75-25-2	Bromoform	BRL	ug/L	2,500
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	2,500
QC Surrogate Compounds		Recovery	QC Limits	
Dibromofluoromethane		101 %	86 - 118 %	
1,2-Dichloroethane-d ₄		100 %	80 - 120 %	
Toluene-d ₈		100 %	88 - 110 %	
4-Bromofluorobenzene		99 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions.
Reporting limits are adjusted for sample dilution and sample size.
0 Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: GZ-55
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-06
QC Batch ID: VM4-2409-W
Sampled: 11-25-02
Received: 12-02-02
Analyzed: 12-07-02
Dilution Factor: 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	1
75-01-4	Vinyl Chloride	BRL	ug/L	1
74-83-9	Bromomethane	BRL	ug/L	1
75-00-3	Chloroethane	BRL	ug/L	1
75-35-4	1,1-Dichloroethene	BRL	ug/L	1
67-64-1	Acetone	BRL	ug/L	40
75-15-0	Carbon Disulfide	BRL	ug/L	10
75-09-2	Methylene Chloride	BRL	ug/L	5
156-60-5	<i>trans</i> -1,2-Dichloroethene	BRL	ug/L	1
1634-04-4	Methyl <i>tert</i> -butyl Ether (MTBE) ^o	BRL	ug/L	1
75-34-3	1,1-Dichloroethane	BRL	ug/L	1
156-59-2	<i>cis</i> -1,2-Dichloroethene	BRL	ug/L	1
78-93-3	2-Butanone (MEK)	BRL	ug/L	10
67-66-3	Chloroform	BRL	ug/L	1
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	1
56-23-5	Carbon Tetrachloride	BRL	ug/L	1
71-43-2	Benzene	BRL	ug/L	1
107-06-2	1,2-Dichloroethane	BRL	ug/L	1
79-01-6	Trichloroethene	2	ug/L	1
78-87-5	1,2-Dichloropropane	BRL	ug/L	1
75-27-4	Bromodichloromethane	BRL	ug/L	1
10061-01-5	<i>cis</i> -1,3-Dichloropropene	BRL	ug/L	1
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	10
108-88-3	Toluene	BRL	ug/L	1
10061-02-6	<i>trans</i> -1,3-Dichloropropene	BRL	ug/L	1
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	1
127-18-4	Tetrachloroethene	BRL	ug/L	1
591-78-6	2-Hexanone	BRL	ug/L	10
124-48-1	Dibromochloromethane	BRL	ug/L	1
108-90-7	Chlorobenzene	BRL	ug/L	1
100-41-4	Ethylbenzene	BRL	ug/L	1
108-38-3/106-42-3	<i>meta</i> -Xylene and <i>para</i> -Xylene	BRL	ug/L	1
95-47-6	<i>ortho</i> -Xylene	BRL	ug/L	1
100-42-5	Styrene	BRL	ug/L	1
75-25-2	Bromoform	BRL	ug/L	1
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	1

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	102 %	86 - 118 %
1,2-Dichloroethane-d ₄	103 %	80 - 120 %
Toluene-d ₈	103 %	88 - 110 %
4-Bromofluorobenzene	102 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

o Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: GZA-13
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-07
QC Batch ID: VM4-2407-W
Sampled: 11-22-02
Received: 12-02-02
Analyzed: 12-06-02
Dilution Factor: 100

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	50
75-01-4	Vinyl Chloride	BRL	ug/L	50
74-83-9	Bromomethane	BRL	ug/L	50
75-00-3	Chloroethane	BRL	ug/L	50
75-35-4	1,1-Dichloroethene	BRL	ug/L	50
67-64-1	Acetone	BRL	ug/L	2,000
75-15-0	Carbon Disulfide	BRL	ug/L	500
75-09-2	Methylene Chloride	BRL	ug/L	250
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	50
1634-04-4	Methyl tert-butyl Ether (MTBE) ⁰	BRL	ug/L	50
75-34-3	1,1-Dichloroethane	160	ug/L	50
156-59-2	cis-1,2-Dichloroethene	1,900	ug/L	50
78-93-3	2-Butanone (MEK)	BRL	ug/L	500
67-66-3	Chloroform	BRL	ug/L	50
71-55-6	1,1,1-Trichloroethane	600	ug/L	50
56-23-5	Carbon Tetrachloride	BRL	ug/L	50
71-43-2	Benzene	BRL	ug/L	50
107-06-2	1,2-Dichloroethane	BRL	ug/L	50
79-01-6	Trichloroethene	91	ug/L	50
78-87-5	1,2-Dichloropropane	BRL	ug/L	50
75-27-4	Bromodichloromethane	BRL	ug/L	50
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	50
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	500
108-88-3	Toluene	BRL	ug/L	50
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	50
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	50
127-18-4	Tetrachloroethene	260	ug/L	50
591-78-6	2-Hexanone	BRL	ug/L	500
124-48-1	Dibromochloromethane	BRL	ug/L	50
108-90-7	Chlorobenzene	BRL	ug/L	50
100-41-4	Ethylbenzene	BRL	ug/L	50
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	50
95-47-6	ortho-Xylene	BRL	ug/L	50
100-42-5	Styrene	BRL	ug/L	50
75-25-2	Bromoform	BRL	ug/L	50
79-34-5	1,1,1,2-Tetrachloroethane	BRL	ug/L	50

Compounds	Recovery	QC Limits
Dibromofluoromethane	103 %	86 - 118 %
1,2-Dichloroethane-d ₄	103 %	80 - 120 %
Toluene-d ₈	102 %	88 - 110 %
4-Bromofluorobenzene	101 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
0 Indicates additional target analyte.

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: GZ-2
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-08
QC Batch ID: VM4-2409-W
Sampled: 11-25-02
Received: 12-02-02
Analyzed: 12-07-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	1	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	0.5
95-47-6	ortho- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	105 %	86 - 118 %
1,2-Dichloroethane-d ₄	105 %	80 - 120 %
Toluene-d ₈	103 %	88 - 110 %
4-Bromofluorobenzene	99 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: TB-2
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-09
QC Batch ID: VM7-1123-W
Sampled: 11-20-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 1

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
		Recovery	QC Limits	
Dibromofluoromethane		98 %	86 - 118 %	
1,2-Dichloroethane-d ₄		98 %	80 - 120 %	
Toluene-d ₈		99 %	88 - 110 %	
4-Bromofluorobenzene		102 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: TB-3
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-10
QC Batch ID: VM7-1123-W
Sampled: 11-20-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 1

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

Compounds	Recovery	QC Limits
Dibromofluoromethane	97 %	86 - 118 %
1,2-Dichloroethane-d ₄	98 %	80 - 120 %
Toluene-d ₈	99 %	88 - 110 %
4-Bromofluorobenzene	103 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

o Indicates additional target analyte.

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: PZ-2D
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-11
QC Batch ID: VM5-2399-W
Sampled: 12-02-02
Received: 12-02-02
Analyzed: 12-13-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	<i>trans</i> -1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	<i>cis</i> -1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	<i>cis</i> -1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	<i>trans</i> -1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	<i>meta</i> -Xylene and <i>para</i> -Xylene	BRL	ug/L	0.5
95-47-6	<i>ortho</i> -Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
QC Surrogate Compounds		Recovery	QC Limits	
Dibromofluoromethane		106 %	86 - 118 %	
1,2-Dichloroethane-d ₄		102 %	80 - 120 %	
Toluene-d ₈		103 %	88 - 110 %	
4-Bromofluorobenzene		89 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: PZ-25
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-12
QC Batch ID: VM5-2399-W
Sampled: 12-02-02
Received: 12-02-02
Analyzed: 12-13-02
Dilution Factor: 200

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	100
75-01-4	Vinyl Chloride	BRL	ug/L	100
74-83-9	Bromomethane	BRL	ug/L	100
75-00-3	Chloroethane	BRL	ug/L	100
75-35-4	1,1-Dichloroethene	170	ug/L	100
67-64-1	Acetone	BRL	ug/L	4,000
75-15-0	Carbon Disulfide	BRL	ug/L	1,000
75-09-2	Methylene Chloride	BRL	ug/L	500
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	100
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	100
75-34-3	1,1-Dichloroethane	BRL	ug/L	100
156-59-2	cis- 1,2-Dichloroethene	440	ug/L	100
78-93-3	2-Butanone (MEK)	BRL	ug/L	1,000
67-66-3	Chloroform	BRL	ug/L	100
71-55-6	1,1,1-Trichloroethane	130	ug/L	100
56-23-5	Carbon Tetrachloride	BRL	ug/L	100
71-43-2	Benzene	BRL	ug/L	100
107-06-2	1,2-Dichloroethane	BRL	ug/L	100
79-01-6	Trichloroethene	4,400	ug/L	100
78-87-5	1,2-Dichloropropane	BRL	ug/L	100
75-27-4	Bromodichloromethane	BRL	ug/L	100
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	100
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	1,000
108-88-3	Toluene	BRL	ug/L	100
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	100
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	100
127-18-4	Tetrachloroethene	530	ug/L	100
591-78-6	2-Hexanone	BRL	ug/L	1,000
124-48-1	Dibromochloromethane	BRL	ug/L	100
108-90-7	Chlorobenzene	BRL	ug/L	100
100-41-4	Ethylbenzene	BRL	ug/L	100
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	100
95-47-6	ortho- Xylene	BRL	ug/L	100
100-42-5	Styrene	BRL	ug/L	100
75-25-2	Bromoform	BRL	ug/L	100
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	100
QC Surrogate Compounds		Recovery	QC Limits	
Dibromofluoromethane		104 %	86 - 118 %	
1,2-Dichloroethane-d ₄		101 %	80 - 120 %	
Toluene-d ₈		102 %	88 - 110 %	
4-Bromofluorobenzene		91 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: GZA-155
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-13
QC Batch ID: VM5-2393-W
Sampled: 11-27-02
Received: 12-02-02
Analyzed: 12-10-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	7	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	8	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	106 %	86 - 118 %
1,2-Dichloroethane-d ₄	100 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	93 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: GZA-15R
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-14
QC Batch ID: VM5-2393-W
Sampled: 11-27-02
Received: 12-02-02
Analyzed: 12-10-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	3	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	2	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	105 %	86 - 118 %
1,2-Dichloroethane-d ₄	100 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	92 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: GZA-15D
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-15
QC Batch ID: VM5-2393-W
Sampled: 11-27-02
Received: 12-02-02
Analyzed: 12-10-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	1	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	4	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	105 %	86 - 118 %
1,2-Dichloroethane-d ₄	101 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	92 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: GZ-1
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-16
QC Batch ID: VM4-2410-W
Sampled: 11-26-02
Received: 12-02-02
Analyzed: 12-08-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	3	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	6	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	22	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	5	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	21	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	18	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
QC Surrogate Compounds		Recovery	QC Limits	
Dibromofluoromethane		100 %	86 - 118 %	
1,2-Dichloroethane-d ₄		98 %	80 - 120 %	
Toluene-d ₈		100 %	88 - 110 %	
4-Bromofluorobenzene		101 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: GZA-14S
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-17
QC Batch ID: VM5-2393-W
Sampled: 11-27-02
Received: 12-02-02
Analyzed: 12-10-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	1	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	5	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	16	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	10	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	106 %	86 - 118 %
1,2-Dichloroethane-d ₄	104 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	93 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: GZA-14M
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-18
QC Batch ID: VM5-2393-W
Sampled: 11-27-02
Received: 12-02-02
Analyzed: 12-10-02
Dilution Factor: 200

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	100
75-01-4	Vinyl Chloride	BRL	ug/L	100
74-83-9	Bromomethane	BRL	ug/L	100
75-00-3	Chloroethane	BRL	ug/L	100
75-35-4	1,1-Dichloroethene	300	ug/L	100
67-64-1	Acetone	BRL	ug/L	4,000
75-15-0	Carbon Disulfide	BRL	ug/L	1,000
75-09-2	Methylene Chloride	BRL	ug/L	500
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	100
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	100
75-34-3	1,1-Dichloroethane	410	ug/L	100
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	100
78-93-3	2-Butanone (MEK)	BRL	ug/L	1,000
67-66-3	Chloroform	BRL	ug/L	100
71-55-6	1,1,1-Trichloroethane	410	ug/L	100
56-23-5	Carbon Tetrachloride	BRL	ug/L	100
71-43-2	Benzene	BRL	ug/L	100
107-06-2	1,2-Dichloroethane	BRL	ug/L	100
79-01-6	Trichloroethene	3,500	ug/L	100
78-87-5	1,2-Dichloropropane	BRL	ug/L	100
75-27-4	Bromodichloromethane	BRL	ug/L	100
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	100
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	1,000
108-88-3	Toluene	BRL	ug/L	100
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	100
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	100
127-18-4	Tetrachloroethene	6,900	ug/L	100
591-78-6	2-Hexanone	BRL	ug/L	1,000
124-48-1	Dibromochloromethane	BRL	ug/L	100
108-90-7	Chlorobenzene	BRL	ug/L	100
100-41-4	Ethylbenzene	BRL	ug/L	100
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	100
95-47-6	ortho-Xylene	BRL	ug/L	100
100-42-5	Styrene	BRL	ug/L	100
75-25-2	Bromoform	BRL	ug/L	100
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	100
QC Surrogate Compounds		Recovery	QC Limits	
Dibromofluoromethane		107 %	86 - 118 %	
1,2-Dichloroethane-d ₄		105 %	80 - 120 %	
Toluene-d ₈		101 %	88 - 110 %	
4-Bromofluorobenzene		94 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

EPA Method 8260B TCL Volatile Organics by GC/MS

Field ID: GZ-16M
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-19
QC Batch ID: VM4-2410-W
Sampled: 11-26-02
Received: 12-02-02
Analyzed: 12-08-02
Dilution Factor: 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	1
75-01-4	Vinyl Chloride	BRL	ug/L	1
74-83-9	Bromomethane	BRL	ug/L	1
75-00-3	Chloroethane	BRL	ug/L	1
75-35-4	1,1-Dichloroethene	1	ug/L	1
67-64-1	Acetone	BRL	ug/L	40
75-15-0	Carbon Disulfide	BRL	ug/L	10
75-09-2	Methylene Chloride	BRL	ug/L	5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	1
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	1
75-34-3	1,1-Dichloroethane	BRL	ug/L	1
156-59-2	cis- 1,2-Dichloroethene	4	ug/L	1
78-93-3	2-Butanone (MEK)	BRL	ug/L	10
67-66-3	Chloroform	BRL	ug/L	1
71-55-6	1,1,1-Trichloroethane	8	ug/L	1
56-23-5	Carbon Tetrachloride	BRL	ug/L	1
71-43-2	Benzene	BRL	ug/L	1
107-06-2	1,2-Dichloroethane	BRL	ug/L	1
79-01-6	Trichloroethene	16	ug/L	1
78-87-5	1,2-Dichloropropane	BRL	ug/L	1
75-27-4	Bromodichloromethane	BRL	ug/L	1
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	1
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	10
108-88-3	Toluene	BRL	ug/L	1
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	1
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	1
127-18-4	Tetrachloroethene	50	ug/L	1
591-78-6	2-Hexanone	BRL	ug/L	10
124-48-1	Dibromochloromethane	BRL	ug/L	1
108-90-7	Chlorobenzene	BRL	ug/L	1
100-41-4	Ethylbenzene	BRL	ug/L	1
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	1
95-47-6	ortho- Xylene	BRL	ug/L	1
100-42-5	Styrene	BRL	ug/L	1
75-25-2	Bromoform	BRL	ug/L	1
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	1

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	102 %	86 - 118 %
1,2-Dichloroethane-d ₄	101 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	100 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
 o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: MW-20
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-20
QC Batch ID: VM4-2407-W
Sampled: 11-22-02
Received: 12-02-02
Analyzed: 12-05-02
Dilution Factor: 1

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	2	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	1	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	2	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

	Recovery	QC Limits
Dibromofluoromethane	102 %	86 - 118 %
1,2-Dichloroethane-d ₄	103 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	100 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: MW-21
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-21
QC Batch ID: VM4-2410-W
Sampled: 11-26-02
Received: 12-02-02
Analyzed: 12-08-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	3	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	<i>trans</i> -1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	7	ug/L	0.5
156-59-2	<i>cis</i> -1,2-Dichloroethene	25	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	6	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	24	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	<i>cis</i> -1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	<i>trans</i> -1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	22	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	<i>meta</i> -Xylene and <i>para</i> -Xylene	BRL	ug/L	0.5
95-47-6	<i>ortho</i> -Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	100 %	86 - 118 %
1,2-Dichloroethane-d ₄	98 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	101 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

**EPA Method 8260B
TCL Volatile Organics by GC/MS**

Field ID: SW-3
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-22
QC Batch ID: VM4-2406-W
Sampled: 11-22-02
Received: 12-02-02
Analyzed: 12-05-02
Dilution Factor: 1

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	3	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	1	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	2	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	27	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	9	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	4	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	3	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

	Recovery	QC Limits
Dibromofluoromethane	104 %	86 - 118 %
1,2-Dichloroethane-d ₄	104 %	80 - 120 %
Toluene-d ₈	102 %	88 - 110 %
4-Bromofluorobenzene	100 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.
o Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B (Modified) 1,4-Dioxane by GC/MS-SIM

Field ID:	SW-USA-2	Laboratory ID:	56624-23
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2388-W
Client:	Vertex Engineering, Inc.	Sampled:	11-21-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-04-02
Matrix:	Aqueous	Dilution Factor:	1

Lab Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	23	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	101 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID: SW-DC-1
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-24
QC Batch ID: VM5-2388-W
Sampled: 11-21-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	78	ug/L	20

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	99 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	SW-10	Laboratory ID:	56624-25
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2388-W
Client:	Vertex Engineering, Inc.	Sampled:	11-21-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-04-02
Matrix:	Aqueous	Dilution Factor:	100

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	1,000

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	102 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	GZ-7R	Laboratory ID:	56624-26
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2388-W
Client:	Vertex Engineering, Inc.	Sampled:	11-22-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-04-02
Matrix:	Aqueous	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	101 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	GZ-19DD	Laboratory ID:	56624-27
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2388-W
Client:	Vertex Engineering, Inc.	Sampled:	11-26-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-04-02
Matrix:	Aqueous	Dilution Factor:	1,000

Cal Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10,000

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	102 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID: GZ-55
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-28
QC Batch ID: VM5-2388-W
Sampled: 11-25-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 1

Sample Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	98 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	GZ-13	Laboratory ID:	56624-29
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2388-W
Client:	Vertex Engineering, Inc.	Sampled:	11-22-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-04-02
Matrix:	Aqueous	Dilution Factor:	20

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	200

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	101 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

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EPA Method 8260B (Modified) 1,4-Dioxane by GC/MS-SIM

Field ID: GZ-2
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-30
QC Batch ID: VM5-2388-W
Sampled: 11-25-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	100 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	TB-1	Laboratory ID:	56624-31
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2388-W
Client:	Vertex Engineering, Inc.	Sampled:	11-20-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-04-02
Matrix:	Aqueous	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	98 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID: PZ-2D
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-32
QC Batch ID: VM5-2393A-W
Sampled: 12-02-02
Received: 12-02-02
Analyzed: 12-09-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	101 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	PZ-25	Laboratory ID:	56624-33
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2388-W
Client:	Vertex Engineering, Inc.	Sampled:	12-02-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-04-02
Matrix:	Aqueous	Dilution Factor:	100

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	1,000

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	102 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B (Modified) 1,4-Dioxane by GC/MS-SIM

Field ID:	GZA-155	Laboratory ID:	56624-34
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2393A-W
Client:	Vertex Engineering, Inc.	Sampled:	11-27-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-09-02
Matrix:	Aqueous	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	102 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B (Modified) 1,4-Dioxane by GC/MS-SIM

Field ID: GZA-15R
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-35
QC Batch ID: VM5-2393A-W
Sampled: 11-27-02
Received: 12-02-02
Analyzed: 12-09-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	101 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	GZA-15D	Laboratory ID:	56624-36
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2401-W
Client:	Vertex Engineering, Inc.	Sampled:	11-27-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-11-02
Matrix:	Aqueous	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	103 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	GZ-1	Laboratory ID:	56624-37
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2393A-W
Client:	Vertex Engineering, Inc.	Sampled:	11-26-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-09-02
Matrix:	Aqueous	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	102 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID: GZA-145
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-38
QC Batch ID: VM5-2393A-W
Sampled: 11-27-02
Received: 12-02-02
Analyzed: 12-09-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	100 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B (Modified) 1,4-Dioxane by GC/MS-SIM

Field ID: GZA-14M
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-39
QC Batch ID: VM5-2388-W
Sampled: 11-27-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 100

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	1,000

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	102 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID: GZ-16M
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-40
QC Batch ID: VM5-2388-W
Sampled: 11-26-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	99 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID: MW-20
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-41
QC Batch ID: VM5-2388-W
Sampled: 11-22-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	100 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B (Modified) 1,4-Dioxane by GC/MS-SIM

Field ID: MW-21
Project: General Chemical Framingham, MA
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56624-42
QC Batch ID: VM5-2388-W
Sampled: 11-26-02
Received: 12-02-02
Analyzed: 12-04-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	102 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

**EPA Method 8260B (Modified)
1,4-Dioxane by GC/MS-SIM**

Field ID:	SW-3	Laboratory ID:	56624-43
Project:	General Chemical Framingham, MA	QC Batch ID:	VM5-2388-W
Client:	Vertex Engineering, Inc.	Sampled:	11-22-02
Container:	40 mL VOA Vial	Received:	12-02-02
Preservation:	HCl / Cool	Analyzed:	12-04-02
Matrix:	Aqueous	Dilution Factor:	1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

GC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	101 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B (Modified) 1,4-Dioxane by GC/MS-SIM

Field ID: TB-4 Laboratory ID: 56624-44
Project: General Chemical Framingham, MA QC Batch ID: VM5-2388-W
Client: Vertex Engineering, Inc. Sampled: 11-20-02
Container: 40 mL VOA Vial Received: 12-02-02
Preservation: HCl / Cool Analyzed: 12-04-02
Matrix: Aqueous Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	101 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Project Narrative

Project: **General Chemical Framingham, MA**
Client: **Vertex Engineering, Inc.**

Lab ID: **56624**
Received: **12-02-02**

A. Physical Condition of Sample(s)

This project was received by the laboratory in satisfactory condition, and the sample(s) were received undamaged in appropriate containers with the correct preservation, except for the following non-conformance(s):

1. Project 56624 was received at a temperature of 8.6 C. This measurement is outside the recommended range of 2-6 C.

B. Project Documentation

This project was accompanied by satisfactory Chain of Custody documentation. The sample container label(s) agreed with the Chain of Custody.

C. Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these sample(s). All data contained within this report are released without qualification.

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans*, US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste*, US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B
QC Batch ID: VM5-2389-WL
Matrix: Aqueous
Units: ug/L

Sample ID	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	9	86 %	70 - 130 %
71-43-2	Benzene	10	9	90 %	70 - 130 %
79-01-6	Trichloroethene	10	9	88 %	70 - 130 %
108-88-3	Toluene	10	9	89 %	70 - 130 %
108-90-7	Chlorobenzene	10	9	94 %	70 - 130 %

Compounds	Recovery	QC Limits
Dibromofluoromethane	104 %	86 - 118 %
1,2-Dichloroethane-d ₄	103 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	94 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM5-2389-WB
Matrix: Aqueous

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE) ⁰	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	0.5
95-47-6	ortho- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

Compounds	Recovery	QC Limits
Dibromofluoromethane	105 %	86 - 118 %
1,2-Dichloroethane-d ₄	103 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	94 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

⁰ Indicates additional target analyte.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B
QC Batch ID: VM4-2406-WL
Matrix: Aqueous
Units: ug/L

Canister	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	9	87 %	70 - 130 %
71-43-2	Benzene	10	9	90 %	70 - 130 %
79-01-6	Trichloroethene	10	9	86 %	70 - 130 %
108-88-3	Toluene	10	9	89 %	70 - 130 %
108-90-7	Chlorobenzene	10	9	90 %	70 - 130 %

Reference Compounds	Recovery	QC Limits
Dibromofluoromethane	101 %	86 - 118 %
1,2-Dichloroethane-d ₄	100 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	98 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM4-2406-WB
Matrix: Aqueous

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ⁰	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	0.5
95-47-6	ortho- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

Target Compounds	Recovery	QC Limits
Dibromofluoromethane	101 %	86 - 118 %
1,2-Dichloroethane-d ₄	100 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	100 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

⁰ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

Quality Control Report Laboratory Control Sample

Category: EPA Method 8260B
QC Batch ID: VM4-2410-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	9	89 %	70 - 130 %
71-43-2	Benzene	10	10	97 %	70 - 130 %
79-01-6	Trichloroethene	10	10	95 %	70 - 130 %
108-88-3	Toluene	10	10	97 %	70 - 130 %
108-90-7	Chlorobenzene	10	10	98 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	100 %	86 - 118 %
1,2-Dichloroethane-d ₄	100 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	98 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM4-2410-WB
Matrix: Aqueous

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ⁰	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	96 %	86 - 118 %
1,2-Dichloroethane-d ₄	100 %	80 - 120 %
Toluene-d ₈	99 %	88 - 110 %
4-Bromofluorobenzene	100 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

⁰ Indicates additional target analyte.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B
QC Batch ID: VM4-2407-WL
Matrix: Aqueous
Units: ug/L

	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	8	82 %	70 - 130 %
71-43-2	Benzene	10	9	87 %	70 - 130 %
79-01-6	Trichloroethene	10	8	83 %	70 - 130 %
108-88-3	Toluene	10	9	87 %	70 - 130 %
108-90-7	Chlorobenzene	10	9	86 %	70 - 130 %

Compounds	Recovery	QC Limits
Dibromofluoromethane	104 %	86 - 118 %
1,2-Dichloroethane-d ₄	105 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	98 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM4-2407-WB
Matrix: Aqueous

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ⁰	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

Compounds	Recovery	QC Limits
Dibromofluoromethane	101 %	86 - 118 %
1,2-Dichloroethane-d ₄	102 %	80 - 120 %
Toluene-d ₈	101 %	88 - 110 %
4-Bromofluorobenzene	101 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

⁰ Indicates additional target analyte.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B
QC Batch ID: VM4-2409-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	9	94 %	70 - 130 %
71-43-2	Benzene	10	10	101 %	70 - 130 %
79-01-6	Trichloroethene	10	10	96 %	70 - 130 %
108-88-3	Toluene	10	10	101 %	70 - 130 %
108-90-7	Chlorobenzene	10	10	97 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	104 %	86 - 118 %
1,2-Dichloroethane-d ₄	103 %	80 - 120 %
Toluene-d ₈	104 %	88 - 110 %
4-Bromofluorobenzene	98 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM4-2409-WB
Matrix: Aqueous

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	<i>trans</i> -1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	<i>cis</i> -1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	<i>cis</i> -1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	<i>trans</i> -1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	<i>meta</i> -Xylene and <i>para</i> -Xylene	BRL	ug/L	0.5
95-47-6	<i>ortho</i> -Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	102 %	86 - 118 %
1,2-Dichloroethane-d ₄	102 %	80 - 120 %
Toluene-d ₈	103 %	88 - 110 %
4-Bromofluorobenzene	102 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

^o Indicates additional target analyte.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B
QC Batch ID: VM7-1123-WL
Matrix: Aqueous
Units: ug/L

Sample ID	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	10	100 %	70 - 130 %
71-43-2	Benzene	10	10	96 %	70 - 130 %
79-01-6	Trichloroethene	10	10	99 %	70 - 130 %
108-88-3	Toluene	10	10	98 %	70 - 130 %
108-90-7	Chlorobenzene	10	10	98 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	98 %	86 - 118 %
1,2-Dichloroethane-d ₄	98 %	80 - 120 %
Toluene-d ₈	100 %	88 - 110 %
4-Bromofluorobenzene	100 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM7-1123-WB
Matrix: Aqueous

	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ⁰	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
Reference Compounds		Recovery	QC Limits	
Dibromofluoromethane		98 %	86 - 118 %	
1,2-Dichloroethane-d ₄		97 %	80 - 120 %	
Toluene-d ₈		101 %	88 - 110 %	
4-Bromofluorobenzene		101 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

⁰ Indicates additional target analyte.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B
QC Batch ID: VM5-2399-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	11	110 %	70 - 130 %
71-43-2	Benzene	10	11	108 %	70 - 130 %
79-01-6	Trichloroethene	10	11	109 %	70 - 130 %
108-88-3	Toluene	10	11	109 %	70 - 130 %
108-90-7	Chlorobenzene	10	11	114 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	107 %	86 - 118 %
1,2-Dichloroethane-d ₄	107 %	80 - 120 %
Toluene-d ₈	103 %	88 - 110 %
4-Bromofluorobenzene	91 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

**Quality Control Report
Method Blank**

Category: EPA Method 8260B
QC Batch ID: VM5-2399-WB
Matrix: Aqueous

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans-1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis-1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis-1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans-1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta-Xylene and para-Xylene	BRL	ug/L	0.5
95-47-6	ortho-Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
QC Surrogate Compounds		Recovery	QC Limits	
Dibromofluoromethane		108 %	86 - 118 %	
1,2-Dichloroethane-d ₄		106 %	80 - 120 %	
Toluene-d ₈		102 %	88 - 110 %	
4-Bromofluorobenzene		91 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

^o Indicates additional target analyte.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B
QC Batch ID: VM5-2393-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	10	99 %	70 - 130 %
71-43-2	Benzene	10	9	92 %	70 - 130 %
79-01-6	Trichloroethene	10	10	96 %	70 - 130 %
108-88-3	Toluene	10	9	94 %	70 - 130 %
108-90-7	Chlorobenzene	10	10	97 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	106 %	86 - 118 %
1,2-Dichloroethane-d ₄	99 %	80 - 120 %
Toluene-d ₈	103 %	88 - 110 %
4-Bromofluorobenzene	91 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM5-2393-WB
Matrix: Aqueous

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE) ^o	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	0.5
95-47-6	ortho- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
QC Surrogate Compounds		Recovery	QC Limits	
Dibromofluoromethane		107 %	86 - 118 %	
1,2-Dichloroethane-d ₄		101 %	80 - 120 %	
Toluene-d ₈		101 %	88 - 110 %	
4-Bromofluorobenzene		95 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

^o Indicates additional target analyte.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B Mod.
QC Batch ID: VM5-2388-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
123-91-1	1,4-Dioxane	50	57	114 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	100 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

**Quality Control Report
Method Blank**

Category: EPA Method 8260B Mod.
QC Batch ID: VM5-2388-WB
Matrix: Aqueous

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10
QC Surrogate Compounds		Recovery	QC Limits	
1,4-Difluorobenzene		102 %	70 - 130 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B Mod.
QC Batch ID: VM5-2393A-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
123-91-1	1,4-Dioxane	50	52	104 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	100 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

**Quality Control Report
Method Blank**

Category: EPA Method 8260B Mod.
QC Batch ID: VM5-2393A-WB
Matrix: Aqueous

Sample Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10
QC Inorganic Compounds		Recovery	QC Limits	
1,4-Difluorobenzene		102 %	70 - 130 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

Quality Control Report Laboratory Control Sample

Category: EPA Method 8260B Mod.
QC Batch ID: VM5-2401-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
123-91-1	1,4-Dioxane	50	57	114 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	100 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report Method Blank

Category: EPA Method 8260B Mod.
QC Batch ID: VM5-2401-WB
Matrix: Aqueous

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10
QC Surrogate Compounds		Recovery	QC Limits	
1,4-Difluorobenzene		102 %	70 - 130 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Certifications and Approvals**CONNECTICUT, Department of Health Services, PH-0586****Potable Water, Wastewater/Trade Waste, Sewage/Effluent, and Soil**

pH, Conductivity, Acidity, Alkalinity, Hardness, Chloride, Fluoride, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, Orthophosphate, Total Dissolved Solids, Cyanide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Total Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Titanium, Vanadium, Zinc, Purgeable Halocarbons, Purgeable Aromatics, Pesticides, PCBs, PCBs in Oil, Ethylene Dibromide, Phenols, Oil and Grease.

C. MAINE, Department of Human Services, MA103**Drinking Water**

Reciprocal certification in accordance with Massachusetts certification for drinking water analytes.

Waste Water

Reciprocal certification in accordance with Massachusetts certification for waste water analytes.

D. MASSACHUSETTS, Department of Environmental Protection, M-MA-103**Potable Water**

Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Thallium, Nitrate-N, Nitrite-N, Fluoride, Sodium, Sulfate, Cyanide, Turbidity, Residual Free Chlorine, Calcium, Total Alkalinity, Total Dissolved Solids, pH, Trihalomethanes, Volatile Organic Compounds, 1,2-Dibromoethane, 1,2-Dibromo-3-chloropropane, Total Coliform, Fecal Coliform, Heterotrophic Plate Count, E-Coli

Non-Potable Water

Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Strontium, Thallium, Titanium, Vanadium, Zinc, pH, Specific Conductance, Total Dissolved Solids, Total Hardness, Calcium, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Sulfate, Ammonia-N, Nitrate-N, Kjeldahl-N, Orthophosphate, Total Phosphorus, Chemical Oxygen Demand, Biochemical Oxygen Demand, Total Cyanide, Non-Filterable Residue, Total Residual Chlorine, Oil and Grease, Total Phenolics, Volatile Halocarbons, Volatile Aromatics, Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, Polychlorinated Biphenyls (water), Polychlorinated Biphenyls (oil).

E. MICHIGAN, Department of Environmental Quality**Drinking Water**

Trihalomethanes, Regulated and Unregulated Volatile Organic Compounds by EPA Method 524.2; 1,2-Dibromoethane, 1,2-Dibromo-3-chloropropane by EPA Method 504.1

F. NEW HAMPSHIRE, Department of Environmental Services, 202798**Drinking Water**

Metals by Graphite Furnace, Metals by ICP, Mercury, Nitrite-N, Orthophosphate, Residual Free Chlorine, Turbidity, Total Filterable Residue, Calcium Hardness, pH, Alkalinity, Sodium, Sulfate, Total Cyanide, Insecticides, Herbicides, Base/Neutrals, Trihalomethanes, Volatile Organics, Vinyl Chloride, DBCP, EDB, Nitrate-N.

Wastewater

Metals by Graphite Furnace, Metals by ICP, Mercury, pH, Specific Conductivity, TDS, Total Hardness, Calcium, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Sulfate, Ammonia-N, Nitrate-N, Orthophosphate, TKN, Total Phosphorus, COD, BOD, Non-Filterable Residue, Oil & Grease, Total Phenolics, Total Residual Chlorine, PCBs in Water, PCBs in Oil, Pesticides, Volatile Organics, Total Cyanide.

RHODE ISLAND, Department of Health, 54**Surface Water, Air, Wastewater, Potable Water, Sewage**

Chemistry: Organic and Inorganic

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

December 19, 2002

Mr. Sean Healey
Vertex Engineering, Inc.
400 Libbey Parkway
Weymouth, MA 02189

LABORATORY REPORT

Project: **General Chemical/4109**
Lab ID: **56715**
Received: **12-05-02**

Dear Sean:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard turnaround.

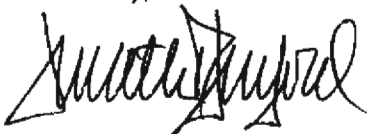
This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,



Jonathan R. Sanford
President

JRS/smd
Enclosures

Sample Receipt Report

Project: General Chemical/4109
Client: Vertex Engineering, Inc.
Lab ID: 56715

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 12-05-02

Temperature: 5.1'C
Chain of Custody: Present
Custody Seal(s): n/a

Lab ID	Field ID		Matrix	Sampled	Method				Notes
56715-1	GZ-7		Aqueous	12/5/02 0:00	EPA 8260B Volatile Organics				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C142498	40 mL VOA Vial	Industrial	BX4637	HCl	R-3173F	07-25-02	08-02-02		
C142499	40 mL VOA Vial	Industrial	BX4637	HCl	R-3173F	07-25-02	08-02-02		
C142519	40 mL VOA Vial	Industrial	BX4637	HCl	R-3173F	07-25-02	08-02-02		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
56715-2	GZ-7		Aqueous	12/5/02 0:00	EPA 8260B Mod 1,4-Dioxane				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C142495	40 mL VOA Vial	Industrial	BX4637	HCl	R-3173F	07-25-02	08-02-02		
C142497	40 mL VOA Vial	Industrial	BX4637	HCl	R-3173F	07-25-02	08-02-02		
C142531	40 mL VOA Vial	Industrial	BX4637	HCl	n/a	n/a	08-02-02		

**EPA Method 8260B
Volatile Organics by GC/MS**

Field ID: GZ-7
Project: General Chemical/4109
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56715-01
QC Batch ID: VM5-2399-W
Sampled: 12-05-02
Received: 12-05-02
Analyzed: 12-13-02
Dilution Factor: 1
Page: 1 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL	ug/L	0.5
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL	ug/L	0.5
60-29-7	Diethyl Ether	BRL	ug/L	2
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL	ug/L	5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert-butyl Ether (MTBE)	28	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
590-20-7	2,2-Dichloropropane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
74-97-5	Bromochloromethane	BRL	ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	0.7	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
74-95-3	Dibromomethane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	0.5	ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5

**EPA Method 8260B (Continued)
Volatile Organics by GC/MS**

Field ID: GZ-7
Project: General Chemical/4109
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56715-01
QC Batch ID: VM5-2399-W
Sampled: 12-05-02
Received: 12-05-02
Analyzed: 12-13-02
Dilution Factor: 1
Page: 2 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
108-38-3/106-42-3	meta- Xylene and para- Xylene	0.6	ug/L	0.5
95-47-6	ortho- Xylene	13	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
98-82-8	Isopropylbenzene	6	ug/L	0.5
108-86-1	Bromobenzene	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL	ug/L	0.5
103-65-1	n-Propylbenzene	BRL	ug/L	0.5
95-49-8	2-Chlorotoluene	BRL	ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL	ug/L	0.5
106-43-4	4-Chlorotoluene	BRL	ug/L	0.5
98-06-6	tert- Butylbenzene	BRL	ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	30	ug/L	0.5
135-98-8	sec-Butylbenzene	BRL	ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL	ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL	ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL	ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL	ug/L	0.5
104-51-8	n-Butylbenzene	BRL	ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL	ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL	ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL	ug/L	0.5
91-20-3	Naphthalene	9	ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL	ug/L	0.5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	106 %	86 - 118 %
1,2-Dichloroethane-d ₄	101 %	80 - 120 %
Toluene-d ₈	105 %	88 - 110 %
4-Bromofluorobenzene	91 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified in Tables 6 and 7 of the method, and additional analytes as specified by MA DEP Method 1 Standards (310 C.M.R. 40.0973) and recommended by NH DES for initial waste site investigations, effective 12/1/97. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8260B (Modified) 1,4-Dioxane by GC/MS-SIM

Field ID: GZ-7
Project: General Chemical/4109
Client: Vertex Engineering, Inc.
Container: 40 mL VOA Vial
Preservation: HCl / Cool
Matrix: Aqueous

Laboratory ID: 56715-02
QC Batch ID: VM5-2392-W
Sampled: 12-05-02
Received: 12-05-02
Analyzed: 12-09-02
Dilution Factor: 1

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	101 %	80 - 120 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Project Narrative

Project: General Chemical/4109
Client: Vertex Engineering, Inc.

Lab ID: 56715
Received: 12-05-02

A. Physical Condition of Sample(s)

This project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged in appropriate containers with the correct preservation.

B. Project Documentation

This project was accompanied by satisfactory Chain of Custody documentation. The sample container label(s) agreed with the Chain of Custody.

C. Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these sample(s). All data contained within this report are released without qualification.

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans*, US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste*, US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

**Quality Control Report
Laboratory Control Sample**

Category: EPA Method 8260B
QC Batch ID: VM5-2399-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	10	11	110 %	70 - 130 %
71-43-2	Benzene	10	11	108 %	70 - 130 %
79-01-6	Trichloroethene	10	11	109 %	70 - 130 %
108-88-3	Toluene	10	11	109 %	70 - 130 %
108-90-7	Chlorobenzene	10	11	114 %	70 - 130 %

QC Spike Compounds	Recovery	QC Limits
Dibromofluoromethane	107 %	86 - 118 %
1,2-Dichloroethane-d ₄	107 %	80 - 120 %
Toluene-d ₈	103 %	88 - 110 %
4-Bromofluorobenzene	91 %	86 - 115 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

**Quality Control Report
Method Blank**

Category: EPA Method 8260B
QC Batch ID: VM5-2399-WB
Matrix: Aqueous
Page: 1 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL	ug/L	0.5
74-87-3	Chloromethane	BRL	ug/L	0.5
75-01-4	Vinyl Chloride	BRL	ug/L	0.5
74-83-9	Bromomethane	BRL	ug/L	0.5
75-00-3	Chloroethane	BRL	ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL	ug/L	0.5
60-29-7	Diethyl Ether	BRL	ug/L	2
75-35-4	1,1-Dichloroethene	BRL	ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL	ug/L	5
67-64-1	Acetone	BRL	ug/L	20
75-15-0	Carbon Disulfide	BRL	ug/L	5
75-09-2	Methylene Chloride	BRL	ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL	ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE)	BRL	ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL	ug/L	0.5
590-20-7	2,2-Dichloropropane	BRL	ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL	ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL	ug/L	5
74-97-5	Bromochloromethane	BRL	ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL	ug/L	5
67-66-3	Chloroform	BRL	ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL	ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL	ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL	ug/L	0.5
71-43-2	Benzene	BRL	ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL	ug/L	0.5
79-01-6	Trichloroethene	BRL	ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL	ug/L	0.5
74-95-3	Dibromomethane	BRL	ug/L	0.5
75-27-4	Bromodichloromethane	BRL	ug/L	0.5
10061-01-5	cis- 1,3-Dichloropropene	BRL	ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/L	5
108-88-3	Toluene	BRL	ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL	ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL	ug/L	0.5
127-18-4	Tetrachloroethene	BRL	ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL	ug/L	0.5
591-78-6	2-Hexanone	BRL	ug/L	5
124-48-1	Dibromochloromethane	BRL	ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL	ug/L	0.5
108-90-7	Chlorobenzene	BRL	ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL	ug/L	0.5
100-41-4	Ethylbenzene	BRL	ug/L	0.5

**Quality Control Report
Method Blank**

Category: EPA Method 8260B
QC Batch ID: VM5-2399-WB
Matrix: Aqueous
Page: 2 of 2

CAS Number	Analyte	Concentration	Units	Reporting Limit
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL	ug/L	0.5
95-47-6	ortho- Xylene	BRL	ug/L	0.5
100-42-5	Styrene	BRL	ug/L	0.5
75-25-2	Bromoform	BRL	ug/L	0.5
98-82-8	Isopropylbenzene	BRL	ug/L	0.5
108-86-1	Bromobenzene	BRL	ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL	ug/L	0.5
103-65-1	n-Propylbenzene	BRL	ug/L	0.5
95-49-8	2-Chlorotoluene	BRL	ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL	ug/L	0.5
106-43-4	4-Chlorotoluene	BRL	ug/L	0.5
98-06-6	tert- Butylbenzene	BRL	ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL	ug/L	0.5
135-98-8	sec- Butylbenzene	BRL	ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL	ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL	ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL	ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL	ug/L	0.5
104-51-8	n- Butylbenzene	BRL	ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL	ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL	ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL	ug/L	0.5
91-20-3	Naphthalene	BRL	ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL	ug/L	0.5
QC Surrogate Compounds		Recovery	QC Limits	
Dibromofluoromethane		108 %	86 - 118 %	
1,2-Dichloroethane-d ₄		106 %	80 - 120 %	
Toluene-d ₈		102 %	88 - 110 %	
4-Bromofluorobenzene		91 %	86 - 115 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified in Tables 6 and 7 of the method, and additional analytes as specified by MA DEP Method 1 Standards (310 C.M.R. 40.0973) and recommended by NH DES for initial waste site investigations, effective 12/1/97. Analysis performed utilizing 25mL sample purge volume.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

Quality Control Report Laboratory Control Sample

Category: EPA Method 8260B Mod.
QC Batch ID: VM5-2392-WL
Matrix: Aqueous
Units: ug/L

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
123-91-1	1,4-Dioxane	50	57	114 %	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
1,4-Difluorobenzene	100 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report Method Blank

Category: EPA Method 8260B Mod.
QC Batch ID: VM5-2392-WB
Matrix: Aqueous

CAS Number	Analyte	Concentration	Units	Reporting Limit
123-91-1	1,4-Dioxane	BRL	ug/L	10
QC Surrogate Compounds		Recovery	QC Limits	
1,4-Difluorobenzene		102 %	70 - 130 %	

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

Certifications and Approvals**CONNECTICUT, Department of Health Services, PH-0586****Potable Water, Wastewater/Trade Waste, Sewage/Effluent, and Soil**

pH, Conductivity, Acidity, Alkalinity, Hardness, Chloride, Fluoride, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, Orthophosphate, Total Dissolved Solids, Cyanide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Total Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Titanium, Vanadium, Zinc, Purgeable Halocarbons, Purgeable Aromatics, Pesticides, PCBs, PCBs in Oil, Ethylene Dibromide, Phenols, Oil and Grease.

C. MAINE, Department of Human Services, MA103**Drinking Water**

Reciprocal certification in accordance with Massachusetts certification for drinking water analytes.

Waste Water

Reciprocal certification in accordance with Massachusetts certification for waste water analytes.

D. MASSACHUSETTS, Department of Environmental Protection, M-MA-103**Potable Water**

Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Thallium, Nitrate-N, Nitrite-N, Fluoride, Sodium, Sulfate, Cyanide, Turbidity, Residual Free Chlorine, Calcium, Total Alkalinity, Total Dissolved Solids, pH, Trihalomethanes, Volatile Organic Compounds, 1,2-Dibromoethane, 1,2-Dibromo-3-chloropropane, Total Coliform, Fecal Coliform, Heterotrophic Plate Count, E-Coli

Non-Potable Water

Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Strontium, Thallium, Titanium, Vanadium, Zinc, pH, Specific Conductance, Total Dissolved Solids, Total Hardness, Calcium, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Sulfate, Ammonia-N, Nitrate-N, Kjeldahl-N, Orthophosphate, Total Phosphorus, Chemical Oxygen Demand, Biochemical Oxygen Demand, Total Cyanide, Non-Filterable Residue, Total Residual Chlorine, Oil and Grease, Total Phenolics, Volatile Halocarbons, Volatile Aromatics, Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, Polychlorinated Biphenyls (water), Polychlorinated Biphenyls (oil).

E. MICHIGAN, Department of Environmental Quality**Drinking Water**

Trihalomethanes, Regulated and Unregulated Volatile Organic Compounds by EPA Method 524.2; 1,2-Dibromoethane, 1,2-Dibromo-3-chloropropane by EPA Method 504.1

F. NEW HAMPSHIRE, Department of Environmental Services, 202798**Drinking Water**

Metals by Graphite Furnace, Metals by ICP, Mercury, Nitrite-N, Orthophosphate, Residual Free Chlorine, Turbidity, Total Filterable Residue, Calcium Hardness, pH, Alkalinity, Sodium, Sulfate, Total Cyanide, Insecticides, Herbicides, Base/Neutrals, Trihalomethanes, Volatile Organics, Vinyl Chloride, DBCP, EDB, Nitrate-N.

Wastewater

Metals by Graphite Furnace, Metals by ICP, Mercury, pH, Specific Conductivity, TDS, Total Hardness, Calcium, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Sulfate, Ammonia-N, Nitrate-N, Orthophosphate, TKN, Total Phosphorus, COD, BOD, Non-Filterable Residue, Oil & Grease, Total Phenolics, Total Residual Chlorine, PCBs in Water, PCBs in Oil, Pesticides, Volatile Organics, Total Cyanide.

RHODE ISLAND, Department of Health, 54**Surface Water, Air, Wastewater, Potable Water, Sewage**

Chemistry: Organic and Inorganic