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Fuss & O'Neill Inc.

DRAFT

REMEDIAL INVESTIGATION REPORT

LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT

VOLUME III OF V
APPENDICES (H-W)

AUGUST 1992

REVISED DECEMBER 1992

Disclaimer:

This document is a DRAFT document prepared by the Respondent pursuant to a government administrative order which has not received final acceptance from the U.S. Environmental Protection Agency. The opinions, findings, and conclusions expressed are those of the authors and not those of the U.S. Environmental Protection Agency.

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SDMS DocID 466977

APPENDIX H
PILOT PUMPING TEST REPORT

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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FUSS&O'NEILL inc
consulting engineers

May 30, 1991

Ms. Naomi Davidson
Department of Environmental Protection
Bureau of Water Management
Engineering and Enforcement Division
122 Washington Street
Hartford, CT 06106

Re: Linemaster Switch Corporation
Progress Report
Interim Removal Actions

Dear Naomi:

The following is a progress report for the Interim Removal Actions at the above referenced site. These Interim Removal Actions are being conducted to mitigate current conditions at the site and also to satisfy requirements for interim remedial measures as requested in a DEP letter dated March 1, 1991. A copy of this letter is included as Attachment A. Primary activities conducted at the site were: 1) installation of the Phase III monitoring wells consisting of till wells, shallow bedrock wells and deep bedrock wells, as shown on Plate 1, attached; 2) performance of three short-term pilot pumping tests at two previously existing deep bedrock supply wells and one newly installed till well; 3) development of all till and shallow bedrock Phase III monitoring wells and 4) conductive borehole geophysical surveys at each of the nine Phase III deep bedrock wells.

This progress report will emphasize reporting of the results of the pilot pumping tests and will present a projected schedule for the submission of a plan for implementing interim removal actions at the site.

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146 HARTFORD RD. / MANCHESTER, CT 06040-5921 / TEL: (203) 646-2469, FAX: (203) 643-6313

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As part of the Interim Removal Actions at the site, a Pilot Pumping Test Plan was submitted to the DEP and the EPA at the end of March, 1991. The pilot pumping tests were conducted on former supply wells GW-10db, GW-12db, and a test de-watering well located in zone 1 designated DW-1t.

These tests were conducted between April 2 to April 11, 1991. This report contains the findings of these pilot pumping tests and also includes analytical results for the ground-water samples collected at the end of each of the pumping tests. The analytical results for the other samples are being completed at the laboratory.

<u>Pilot Pumping Tests Results Summary</u>

The pilot pumping tests were conducted on April 2, April 3 and April 11 for GW-10db, GW-12db and DW-1t, respectively. The purposes of the pilot pumping tests as stated in the pilot pumping test plan were as follows;

1) Determine the approximate yield of the three wells.

2) On a preliminary basis, identify areas of possible hydraulic influence.

3) Examine the water chemistry with respect to volatile organic contamination and metals concentrations over the pumping test period.

4) Provide the information necessary to design and install an interim removal system incorporating these three wells. During the start up period of the interim removal system, which will most likely consist of a pump and treat system, full scale constant rate pumping tests will be conducted.

Each pumping test was conducted over a seven hour period. During this time period, water levels were recorded in selected site monitoring wells. In addition, the discharge rate and drawdown in the pumping well were monitored. Ground-water samples were collected from the pumping well each hour. Analyses included halogenated volatile organics, aromatic volatile organics, arsenic, barium, beryllium, cadmium, chromium, lead, nickel and total suspended solids. Total metals samples were collected every hour and filtered samples were

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collected every other hour. At the time of writing this report, only the 7th hour sample analytical result has been received from the laboratory. The physical and chemical results of the pilot pumping tests are discussed in the next sections.

GW-10db

Step Test - Step tests were conducted a 5, 10 and 15 gpm at GW-10db. During these tests, drawdown vs. time was plotted on semi-log paper to approximate the long-term drawdown for each of the pumping rates.

The maximum drawdown at GW-10db was 206 feet which allows 20 feet of water above the pump. The pump was set at 300 feet with approximately 25 feet of well bore beneath the pump for settling of solids.

The step test was started at 5 gpm and was continued for a period of 88 minutes. The drawdown for this pumping rate and time period was 35.60 feet. The field plot indicated that the maximum drawdown of 206 feet would not be reached with continued pumping at 5 gpm. The pumping rate was increased to 10 gpm and was maintained for 93 minutes. The drawdown at 93 minutes was 106.90 feet. The field plot of the drawdown and time data indicated that the maximum drawdown of 206 feet would be reached within a few hours. It was decided to increase the pumping rate in order to attain close to the maximum drawdown of 206 feet so that the remaining test could be conducted at the probable well yield. The pumping rate was increased to 15 gpm and was maintained for a period of 85 minutes. The drawdown at the end of this time period of pumping at 15 gpm was 142.40 feet having increased 35.5 feet during 10 minutes. The plot of drawdown versus time data on the semi-log graph indicated that the maximum drawdown of 206 feet would be achieved within 2 hours. The pumping rate was then decreased to 10 gpm, the probable well yield, and was maintained for the duration of the test. During a short time period the pumping rate had decreased to 8 gpm and was adjusted back to 10 gpm. The test lasted another 281 minutes. The drawdown at the end of this time period was 117.9 feet having recovered 24.5 feet after it was decreased from 15 gpm to 10 gpm. The drawdown was still decreasing when the test was concluded. The yield of the well appears to be in the range of 5 to 10 gpm. A table and plot of drawdown and time for GW-10db are provided in Attachment B.

Water Level Monitoring - Water levels were monitored in selected site wells during the pilot pumping test. Deep bedrock wells MW-12db, MW-13db, MW-14db and GW-12db, shallow bedrock wells

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MW-5sb, MW-8sb, MW-9sb, MW-10sb and MW-11sb, and till wells MW-EPA-At, MW-4t, DW-1t and MW-10t were monitored during the pilot pumping test at GW-10db. Tables and graphs of time and drawdown data for the wells are provided in Attachment B.

At the end of the pilot pumping test at GW-10db, maximum drawdowns of 0.21 ft, 1.00 ft, 0.20 ft and 2.50 ft were recorded at MW-12db, MW-13db, MW-14db and GW-12db respectively. These results seem to indicate that hydraulic influence is induced by the pumping of GW-10db in the deep bedrock at significant distances from the well. At this time, however, the background water level fluctuation for the site is not know. In particular, production well GW-08db was pumping intermittently throughout the pilot pumping test. The impact of this pumping has not been determined. This information will be collected in conjunction with more detailed investigations of the deep bedrock aquifer to be conducted as part of the continuing RI/FS and Interim Removal Actions.

At the end of the pilot pumping test at GW-10db, maximum drawdowns of -0.03 ft, 0.04 ft, 0 ft, 0.42 ft and 0.05 ft were recorded at MW-5sb, MW-8sb, MW-9sb, MW-10sb and MW-11sb. This data indicates minimal or no effect on the shallow bedrock at MW-5sb, MW-8sb, MW-9sb and MW-11sb. A significant effect was induced at MW-10sb which is located in zone 1 where the release of solvents occurred.

At the end of the pilot pumping test at GW-10db, maximum drawdowns of -0.08 ft, 0.07 ft, 0.01 ft and 0.02 ft were observed at MW-EPA-At, MW-4t, DW-1t and MW-10t. Little of no influence was observed at MW-EPA-At, DW-1t and MW-10t. An effect may have been observed at MW-4t which is located immediately downgradient of zone 1.

Sampling Results - At this time, only the last sample analytical results for the pilot pumping test at GW-10db have been received from the laboratory. This laboratory report is provided in Attachment B. Beryllium, cadmium, chromium, lead or nickel were not detected. However, arsenic, barium, calcium, iron, manganese, potassium and sodium were detected. The arsenic concentration is above the MCL of 50 ug/l, but significantly less than previously observed.

Volatile organic compound analysis indicates toluene, xylenes, 1,2-dichloroethene and trichloroethene at concentrations of 760 ug/l, 230 ug/l, 6,500 ug/l and 29,000 ug/l respectively. No acid/base/neutral extractables, PCB's or pesticides were detected.

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GW-12db

Step Test - Step tests were conducted at 5 to 21 gpm intervals at GW-12db. During these tests drawdown and time information was plotted on semi-log paper in order to project the maximum long-term drawdown for each of the pumping rates.

The maximum drawdown at GW-12b was 47 ft which allows approximately 15 feet of water above the pump. The pump was set at 100 feet with approximately 20 feet of well bore beneath the pump for settling of solids.

The step test was started at 21 gpm and was decreased to 8 gpm in order to approach the maximum drawdown level. This continued for a period of 29 minutes. The drawdown at the end of this time period was 26.7 ft. The maximum drawdown that would be allowed at this well is 47 ft. The pumping rate was then maintained at a rate of 8 gpm for a period of 190 minutes. The field plot indicated that the maximum drawdown of 47 feet would be reached within 2 hours at 8 gpm. The pumping rate was decreased to 5 gpm for the duration of the test which was 229 minutes. The drawdown at the end of the test was 38.15 ft. The field plot of the drawdown and time data indicated that the maximum drawdown of 47 feet would not be reached within 16 hours at 5 gpm. The maximum yield of the well appears to be 5 gpm. A table and plot of drawdown and time for GW-10db are provided in Attachment C.

Water Level Monitoring - Water levels were monitored in selected site wells during the pilot pumping test at GW-12db. Deep bedrock wells MW-12db, MW-13db, MW-14db and GW-10db, shallow bedrock wells MW-6sb, MW-10sb and MW-11sb, and till wells MW-EPA-At, MW-1t, DW-1t and MW-10t were monitored during the pilot pumping test. Tables and graphs of time and drawdown data for the wells are provided in Attachment C.

At the end of the pilot pumping test at GW-12db, maximum drawdowns of 0.45 ft, 2.02 ft, 0.48 ft and 10.73 ft were recorded at MW-12db, MW-13db, MW-14db and GW-10db respectively. These results seem to indicate that hydraulic influence is induced by the pumping of GW-12db in the deep bedrock at significant distances from the well. A detailed evaluation of the area of influence of GW-12db will be conducted as part of the RI/FS investigation and implementation of interim removal actions at the site.

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At the end of the pilot pumping test at GW-12db, maximum drawdowns of 0 ft, 0.26 ft and 0.02 were recorded at MW-6sb, MW-10sb and MW-11sb respectively. This data indicates minimal or no affect on the shallow bedrock at MW-6sb and MW-11sb. A significant affect may have been observed at MW-10sb which is located in zone 1 where the release of solvents occurred.

At the end of the pilot pumping test at GW-12db, maximum drawdowns of 0.07 ft, 0.14 ft, -0.19 ft and 0.07 ft were observed at MW-EPA-At, MW-1t, DW-1t and MW-10t. Little or no influence was observed at DW-1t which showed a negative drawdown. The drawdown is believed to be negative due to the fact that DW-1t was drilled on March 27 and may have been still recovering at the time of the pilot pumping test. Pumping of GW-12db may produce a hydraulic influence on the till deposits near the facility.

Sampling Results - At this time, only the last sample analytical results for the pilot pumping test at GW-12db have been received from the laboratory. This laboratory report is provided in Attachment C. Beryllium, cadmium, chromium, lead or nickel were not detected. However, arsenic, barium, calcium, iron, manganese, potassium and sodium were detected. The arsenic concentration is below the MCL of 50 ug/l.

The volatile organic compounds 1,2-dichloroethene and trichloroethene were detected at concentrations of 470 and 4,500 ug/l, respectively. No acid/base/neutral extractables, PCBs or pesticides were detected.

DW-1t

DW-1t was pumped with a bladder pump until the maximum drawdown in the well was achieved. The flow rate on the bladder pump was adjusted to accomplish this task. The pump was set at 35 feet. The maximum drawdown at DW-1t was 30 feet which allowed approximately 5 feet of water above the pump.

The pumping rate was started at 1.25 gpm and was decreased to 0.40 gpm for the first 200 minutes. At that time the drawdown was 28.95 ft. The maximum achievable drawdown at this well is 30 ft. The pumping rate was then maintained at a rate of 0.35 gpm for the remaining 220 minute duration of the test. The drawdown at the end of the test was 30.21 ft. The drawdown was still decreasing at this point and had not stabilized. Because of this, the maximum yield of the well will be less than 1/3 gpm. A table and plot of drawdown and time for DW-1t are provided in Attachment D.

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Water Level Monitoring - Water levels were monitored in wells located in zone 1 during the pilot pumping test on DW-1t. Shallow bedrock well MW-10sb, till well MW-10t, and vapor wells VW-1 and VP-1 were monitored during the test. Tables and graphs of time and drawdown data for the wells are provided in Attachment D.

VW-2

At the end of the pilot pumping test, maximum drawdowns of 1.02 ft, 0.10 ft, 0.62 ft and 0.10 ft were recorded at MW-10t, MW-10sb, VW-1 and VP-2 respectively. These results indicate that hydraulic influence in the till and shallow bedrock at zone 1 is induced by the pumping of DW-1t.

Sampling Results - At this time, only the analytical results for the last sample of the pilot pumping test at DW-1t have been received from the laboratory. This laboratory report is provided in Attachment D. Beryllium, cadmium, lead or nickel were not detected. However, arsenic, barium, calcium, chromium, iron, manganese, potassium and sodium were detected. The arsenic concentration is below the MCL of 50 ug/l.

The volatile organic compounds 1,1-dichloroethane, tetrachloroethene, 1,1,1-trichloroethane, toluene, ethylbenzene, xylenes, 1,2-dichloroethene and trichloroethene were detected at concentrations of 120 ug/l, 770 ug/l, 920 ug/l, 6,200 ug/l, 160 ug/l, 600 ug/l, 600 ug/l, and 160,000 ug/l, respectively.

Remaining Tasks - Interim Removal Actions

As was discussed previously, the current conceptual plan for interim removal actions would include a pump and treat system incorporating a number of on-site deep bedrock wells. Two of the Phase III deep bedrock wells, MW-1db and MW-15db appear to exhibit well yields on the order of 30 and 100 gpm, respectively. Should testing indicate that contamination is present in the productive zones of these wells, they would be incorporated into the interim removal system.

In order to complete the investigatory work required to provide design parameters for the pump and treat system, a number of additional tasks must be completed. Table 1 is a summary of these tasks and the estimated completion date of each. Also included in Table 1 are engineering design tasks and a projected date for submission of the interim removal action plan is presented.

The schedule presented includes time allowance for DEP review of the system design. It also includes allowance for "bidding" the construction of the system. Although there is opportunity to

expedite activation of the system, the interim removal activities should be consistent with the alternatives developed in the Feasibility Study.

Should you have any questions regarding this report, please contact either of the undersigned.

Very truly yours,

David L. Bramley
Senior Environmental Engineer

Robert S. Potterton, Jr.
Associate

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TABLE 1

SUMMARY OF REMAINING WORK ELEMENTS
AND ESTIMATED SCHEDULE
INTERIM REMOVAL ACTIONS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
MAY 1991

TASK	ANTICIPATED COMPLETION DATE
A. WELL DEVELOPMENT - MW-1db	JUNE 3
B. PACKER TESTS - MW-1db AND MW-15db	JUNE 5
C. WATER QUALITY ANALYSIS	JUNE 21
D. SUBMIT INTERIM REMOVAL ACTION PLAN AND PRELIMINARY PUMPING AND TREATMENT SYSTEM DESIGN	JULY 8
E. COMPLETE FINAL DESIGN PLANS	AUGUST 12
F. IMPLEMENT SYSTEM INSTALLATION	OCTOBER 7
G. ACTIVATE TREATMENT SYSTEM	DECEMBER 16

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ATTACHMENT A

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STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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March 1, 1991

Mr. R. Bradford Fawley
Murtha, Cullina, Richter and Pinney
City Place I
185 Asylum Street
Hartford, CT 06103-3469

RE: Linemaster Switch Corporation
Woodstock, Connecticut

Dear Mr. Fawley:

This is to confirm discussions during our meeting of February 28, 1991 with representatives of EPA and Fuss and O'Neill.

The DEP is requesting that Linemaster Switch implement interim remedial action to prevent further offsite migration of contaminated groundwater. This will require that Fuss and O'Neill, as a first step, evaluate existing data and determine what additional data is needed to design an effective network of pumping wells to maintain hydraulic control of the contaminated groundwater at the Linemaster site. Please be advised that if additional pump tests are necessary, the appropriate authorizations must be obtained prior to discharge of any water that is pumped.

A proposal for the installation of the pumping wells, including documentation supporting the proposed locations, an evaluation of the expected effectiveness and a schedule for installation and start-up of the wells should be submitted to the DEP for review by May 31, 1991.

Please contact me at 566-7295 if you have any questions.

Sincerely,

Naomi Davidson

Naomi Davidson
Senior Environmental Analyst
Water Enforcement/Groundwater Section

cc: Lucy Conley
Douglas Luckerman
Gary Kennett
Robert Potterton

Phone:
165 Capitol Avenue • Hartford, Connecticut 06106

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ATTACHMENT B

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DRAWDOWN AT MONITORING WELL GW-10db DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)	INSTANTANEOUS FLOW RATE (gals/min)
09:47	0	74.10	500.15	0.00	5.00
09:52	5	86.40	487.85	12.30	7.00
09:55	8	90.80	483.45	16.70	5.00
09:56	9	91.60	482.65	17.50	5.00
09:58	11	92.75	481.50	18.65	5.00
10:00	13	94.35	479.90	20.25	5.00
10:01	14	95.25	479.00	21.15	5.00
10:02	15	96.05	478.20	21.95	5.00
10:10	23	99.70	474.55	25.60	5.00
10:15	28	101.75	472.50	27.65	5.00
10:21	34	103.35	470.90	29.25	5.00
10:30	43	105.00	469.25	30.90	5.00
10:37	50	106.30	467.95	32.20	5.00
11:02	75	109.00	465.25	34.90	5.00
11:15	88	109.70	464.55	35.60	5.00
11:20	93	124.80	449.45	50.70	10.00
11:26	99	125.90	448.35	51.80	10.00
11:28	101	126.40	447.85	52.30	10.00
11:29	102	127.00	447.25	52.90	10.00
11:30	103	127.50	446.75	53.40	10.00
11:31	104	128.00	446.25	53.90	10.00
11:32	105	128.60	445.65	54.50	10.00
11:33	106	129.00	445.25	54.90	10.00
11:34	107	129.50	444.75	55.40	10.00
11:35	108	130.10	444.15	56.00	10.00
11:36	109	130.60	443.65	56.50	10.00
11:37	110	151.70	422.55	77.60	10.00
12:02	135	151.70	422.55	77.60	10.00
12:11	144	163.00	411.25	88.90	10.00
12:18	151	171.00	403.25	96.90	10.00
12:24	157	176.40	397.85	102.30	10.00
12:30	163	181.00	393.25	106.90	10.00
12:35	168	188.70	385.55	114.60	15.00
12:36	169	193.00	381.25	118.90	15.00
12:37	170	195.60	378.65	121.50	15.00
12:38	171	198.60	375.65	124.50	15.00
12:39	172	202.20	372.05	128.10	15.00
12:40	173	204.60	369.65	130.50	15.00
12:41	174	206.60	367.65	132.50	15.00
12:42	175	208.20	366.05	134.10	15.00
12:43	176	211.80	362.45	137.70	15.00
12:44	177	214.10	360.15	140.00	15.00
12:45	178	216.50	357.75	142.40	15.00

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DRAWDOWN AT MONITORING WELL GW-10db DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)	INSTANTANEOUS FLOW RATE (gals/min)
12:52	185	233.00	341.25	158.90	10.00
12:56	189	238.60	335.65	164.50	10.00
13:02	195	247.00	327.25	172.90	10.00
13:04	197	251.00	323.25	176.90	10.00
13:12	205	243.30	330.95	169.20	8.00
13:16	209	236.10	338.15	162.00	8.00
13:20	213	229.05	345.20	154.95	8.00
13:29	222	221.00	353.25	146.90	8.00
13:42	235	212.00	362.25	137.90	8.00
14:03	256	207.30	366.95	133.20	8.00
14:33	286	197.40	376.85	123.30	8.00
15:02	315	214.00	360.25	139.90	10.00
15:14	327	215.00	359.25	140.90	10.00
15:22	335	216.00	358.25	141.90	10.00
15:35	348	216.70	357.55	142.60	10.00
15:47	360	217.20	357.05	143.10	10.00
16:04	377	220.05	354.20	145.95	10.00
16:16	389	221.10	353.15	147.00	10.00
16:25	398	221.90	352.35	147.80	10.00
16:36	409	224.10	350.15	150.00	10.00
16:40	413	226.10	348.15	152.00	10.00
16:56	429	230.00	344.25	155.90	10.00
17:08	441	223.80	350.45	149.70	10.00
17:18	451	234.30	339.95	160.20	10.00

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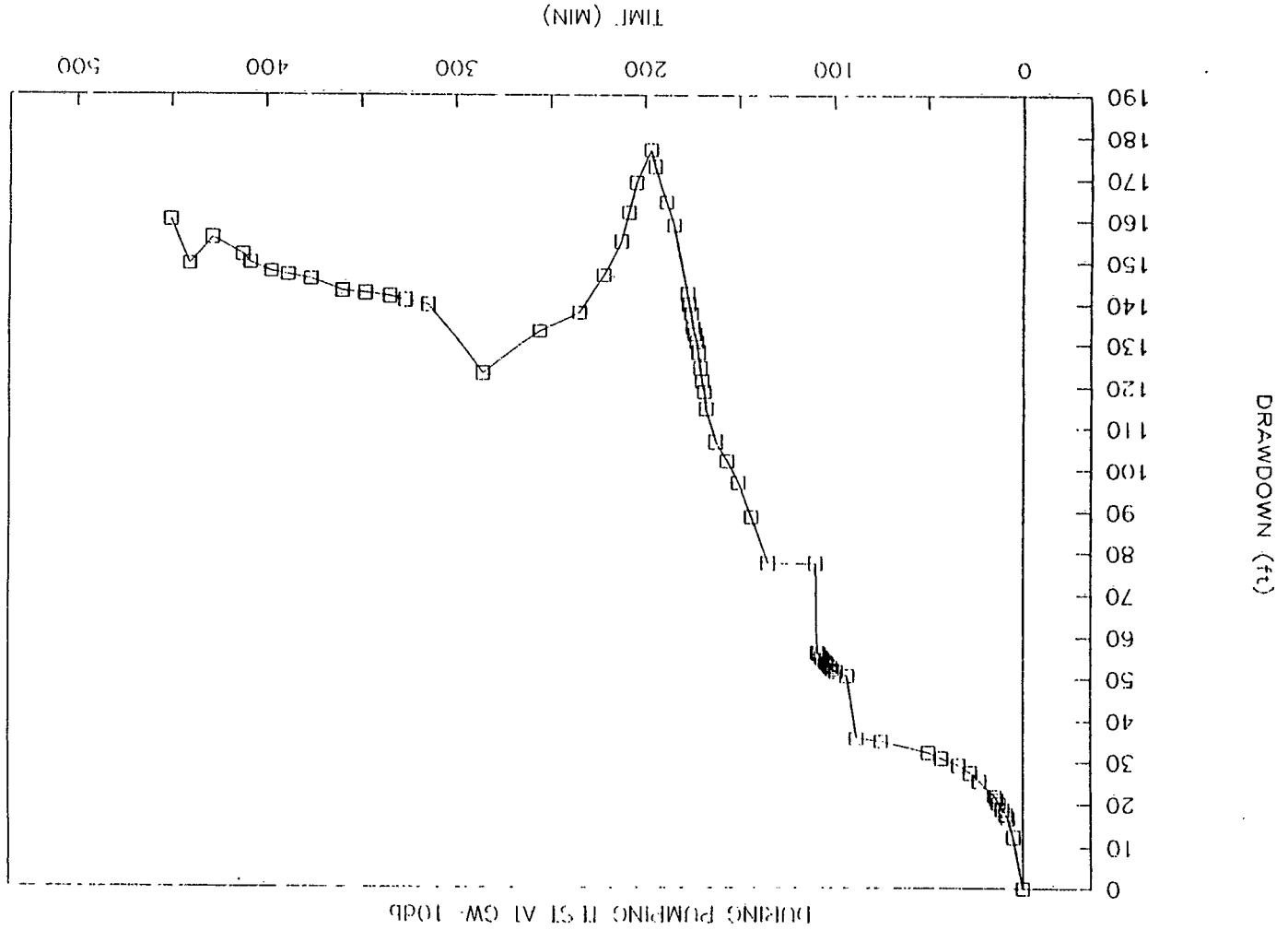

DRAWDOWN AT MONITORING WELL GW-10db

DRAWDOWN AT MONITORING WELL GW-12db DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:45	-62	54.98	498.92	0.32
10:32	45	55.30	485.51	0.00
11:04	77	55.65	485.16	0.35
11:17	90	55.82	484.99	0.52
11:28	101	56.07	484.74	0.77
11:43	116	56.02	484.79	0.72
11:56	129	56.43	484.38	1.13
12:09	142	56.59	484.22	1.29
12:35	168	56.59	484.22	1.29
12:52	185	57.18	483.63	1.88
13:06	199	57.37	483.44	2.07
13:39	232	57.82	482.99	2.52
14:08	261	58.16	482.65	2.86
14:42	295	58.57	482.24	3.27
15:40	353	57.80	483.01	2.50

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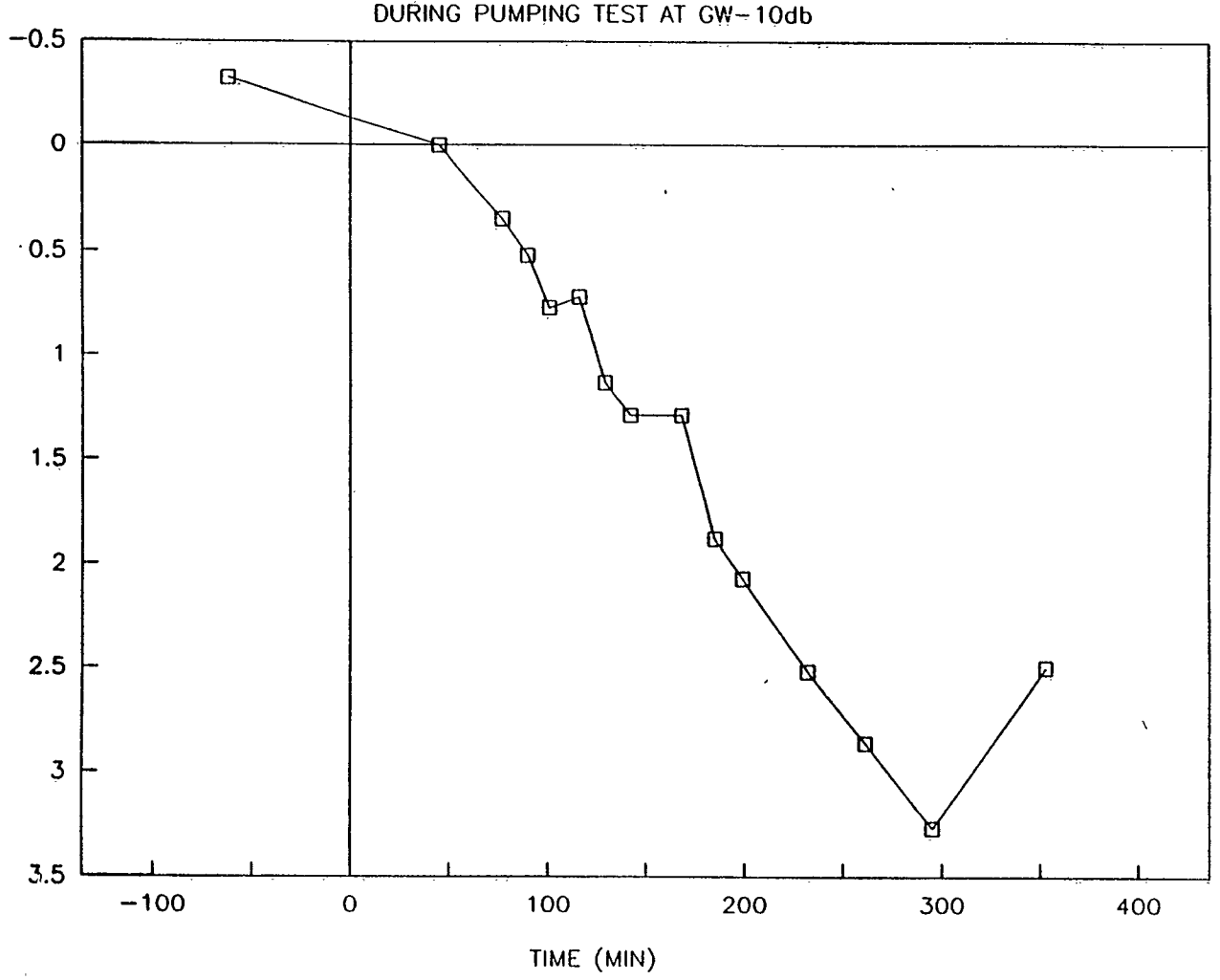
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
250

DRAWDOWN AT MONITORING WELL GW-12db

DURING PUMPING TEST AT GW-10db



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 E 5 0

DRAWDOWN AT MONITORING WELL MW-12db DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:45	-62	30.75	424.27	-0.21
10:57	70	30.96	424.06	0.00
11:30	103	30.98	424.04	0.02
11:57	130	30.98	424.04	0.02
12:45	178	31.16	423.86	0.20
14:11	264	31.27	423.75	0.31
15:11	324	31.25	423.77	0.29
15:54	367	31.17	423.85	0.21

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 0534

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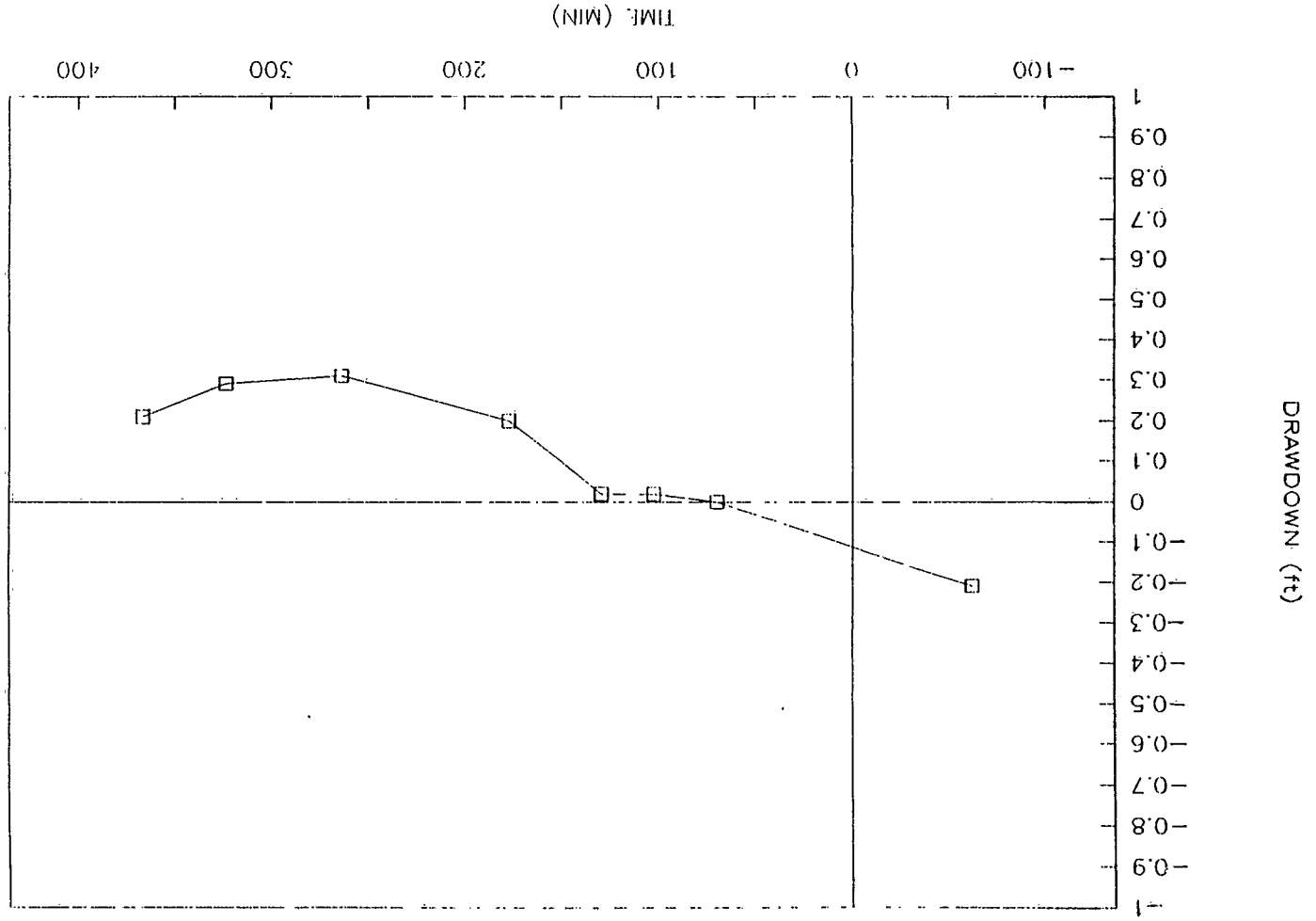
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 055

DRAWDOWN AT MONITORING WELL MW-12db

DURING PUMPING @ 11.5 AT GW= 10db



DRAWDOWN AT MONITORING WELL MW-13db DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:17	-90	39.20	501.61	-0.58
10:30	43	39.78	501.03	0.00
11:03	76	39.81	501.00	0.03
11:35	108	39.91	500.90	0.13
12:17	150	40.13	500.68	0.35
13:47	240	40.43	500.38	0.65
14:47	300	40.69	500.12	0.91
15:30	343	40.78	500.03	1.00

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0556

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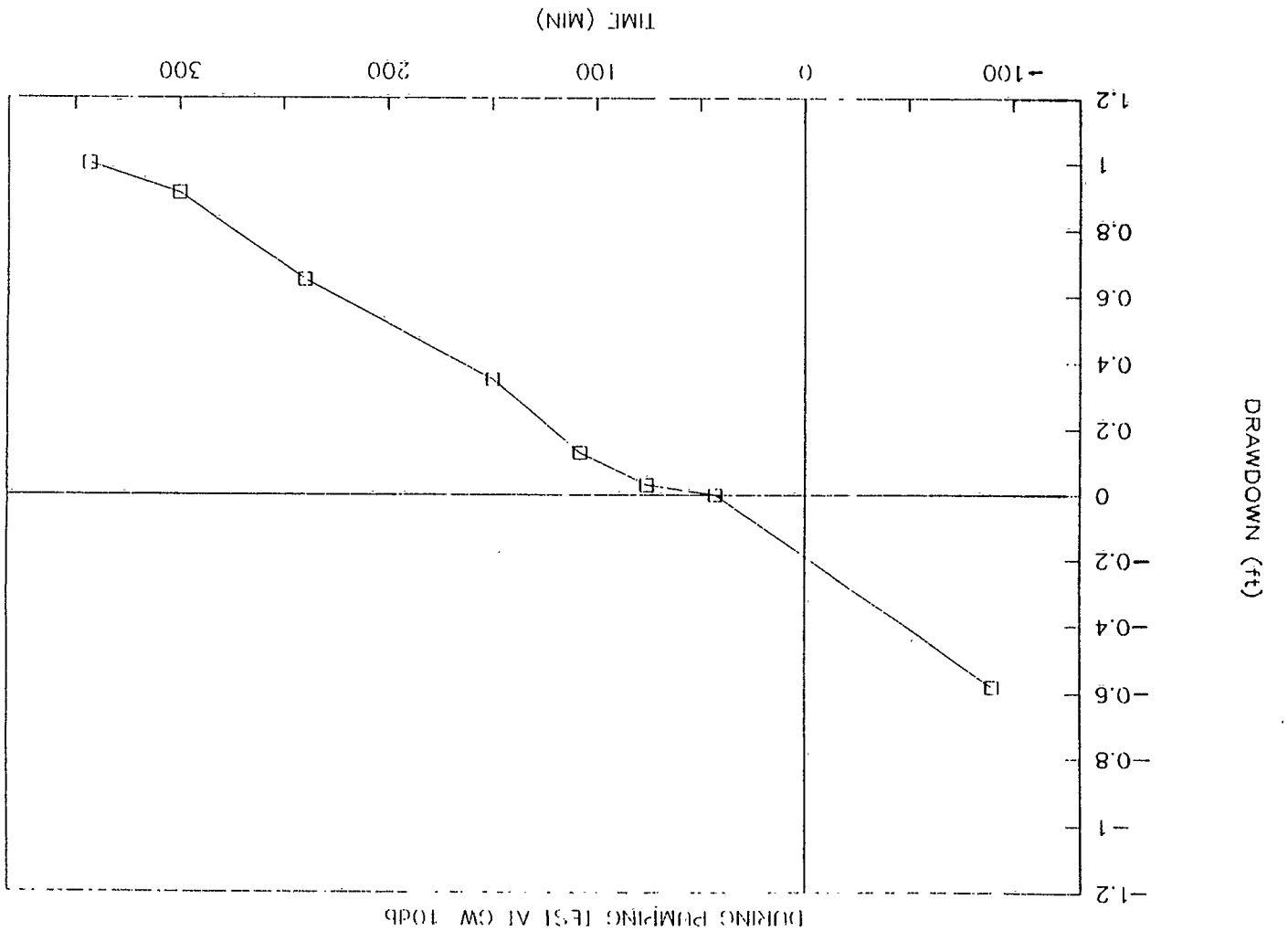
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 057



DURING PUMPING TEST AT GW 10db

DRAWDOWN AT MONITORING WELL MW-13db

DRAWDOWN AT MONITORING WELL MW-14db DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:24	-83	18.24	424.00	-0.18
10:44	57	18.42	423.82	0.00
11:17	90	18.44	423.80	0.02
11:47	120	18.49	423.75	0.07
12:32	165	18.54	423.70	0.12
14:01	254	18.61	423.63	0.19
15:00	313	18.63	423.61	0.21
15:42	355	18.62	423.62	0.20

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LIN003 0588

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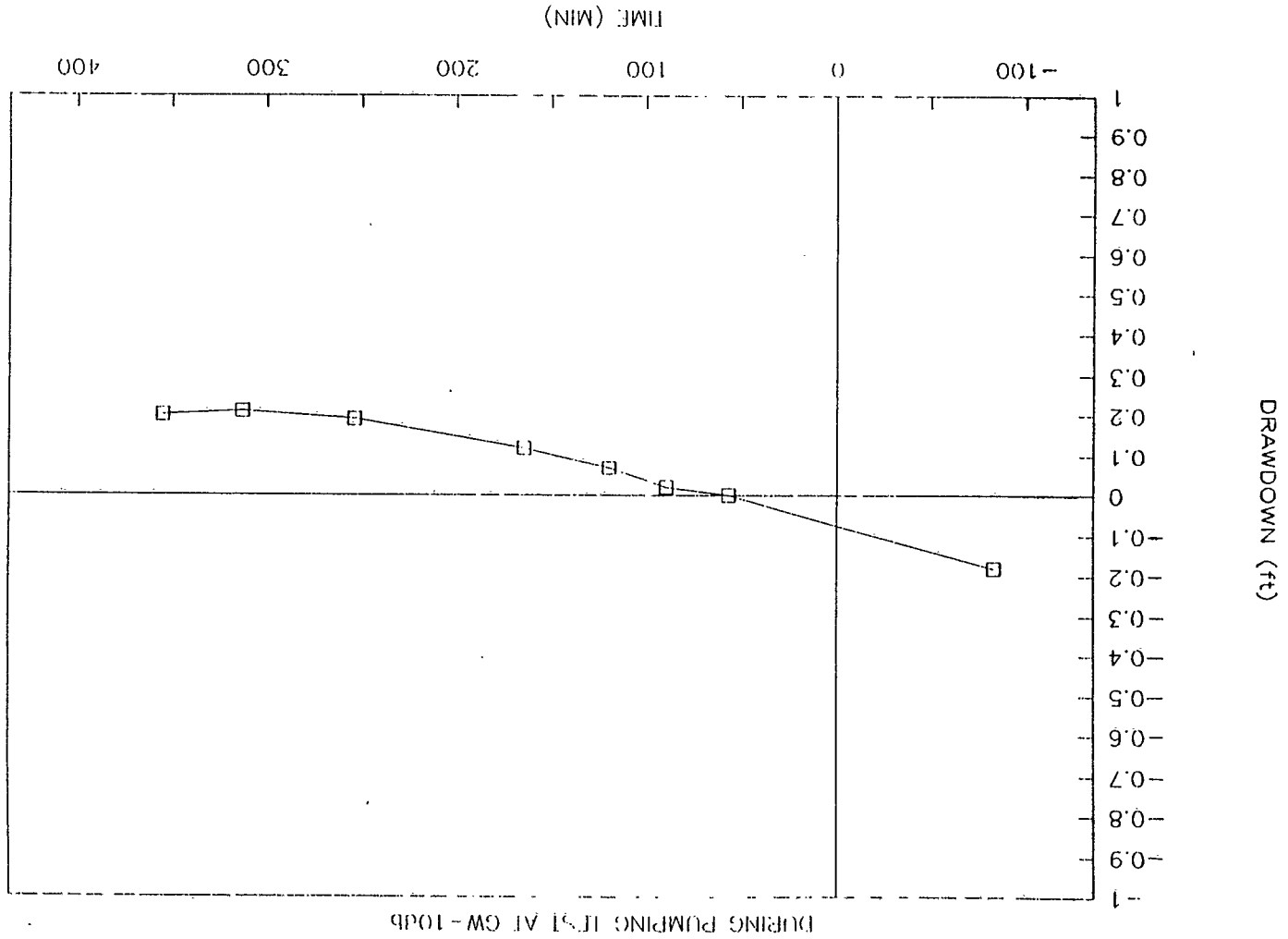
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 059



DRAWDOWN AT MONITORING WELL MW-14dlb

DURING PUMPING LFS1 AT GW-10db

DRAWDOWN AT MONITORING WELL MW-5sb DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:12	-127	16.90	522.50	0.03
10:33	14	16.87	522.53	0.00
11:06	47	16.88	522.52	0.01
11:37	78	16.88	522.52	0.01
12:21	122	16.87	522.53	0.00
13:51	212	16.86	522.54	-0.01
14:49	270	16.85	522.55	-0.02
15:32	313	16.84	522.56	-0.03

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
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DRAWDOWN AT MONITORING WELL MW-8sb DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:29	-78	9.76	427.75	0.00
10:47	60	9.76	427.75	0.00
11:20	93	9.76	427.75	0.00
11:48	121	9.76	427.75	0.00
12:34	167	9.75	427.76	-0.01
14:04	257	9.78	427.73	0.02
15:02	315	9.80	427.71	0.04
15:45	358	9.80	427.71	0.04

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003
0961

DRAWDOWN AT MONITORING WELL MW-9sb DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:51	-56	7.19	461.66	0.00
10:55	68	7.19	461.66	0.00
11:25	98	7.18	461.67	-0.01
11:52	125	7.19	461.66	0.00
12:39	172	7.18	461.67	-0.01
14:08	261	7.18	461.67	-0.01
15:07	320	7.18	461.67	-0.01
15:50	363	7.19	461.66	0.00

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0962

DRAWDOWN AT WELL MW-10sb DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:34	-57	45.52	523.69	0.00
09:39	8	45.53	523.68	0.01
09:44	13	45.53	523.68	0.01
09:49	18	45.53	523.68	0.01
09:54	23	45.51	523.70	-0.01
09:59	28	45.51	523.70	-0.01
10:04	33	45.49	523.72	-0.03
10:09	38	45.47	523.74	-0.05
10:14	43	45.46	523.75	-0.06
10:19	48	45.45	523.76	-0.07
10:24	53	45.44	523.77	-0.08
10:29	58	45.43	523.78	-0.09
10:34	63	45.43	523.78	-0.09
10:39	68	45.42	523.79	-0.10
10:44	73	45.42	523.79	-0.10
10:49	78	45.42	523.79	-0.10
10:54	83	45.43	523.78	-0.09
10:57	86	45.43	523.78	-0.09
11:10	99	45.43	523.78	-0.09
11:21	110	45.44	523.77	-0.08
11:35	124	45.45	523.76	-0.07
11:49	138	45.46	523.75	-0.06
12:01	150	45.46	523.75	-0.06
12:28	177	45.55	523.66	0.03
12:43	192	45.54	523.67	0.02
12:58	207	45.57	523.64	0.05
13:32	241	45.65	523.56	0.13
14:00	269	45.71	523.50	0.19
14:34	303	45.81	523.40	0.29
15:31	360	45.94	523.27	0.42

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LINEMASTER SWITCH
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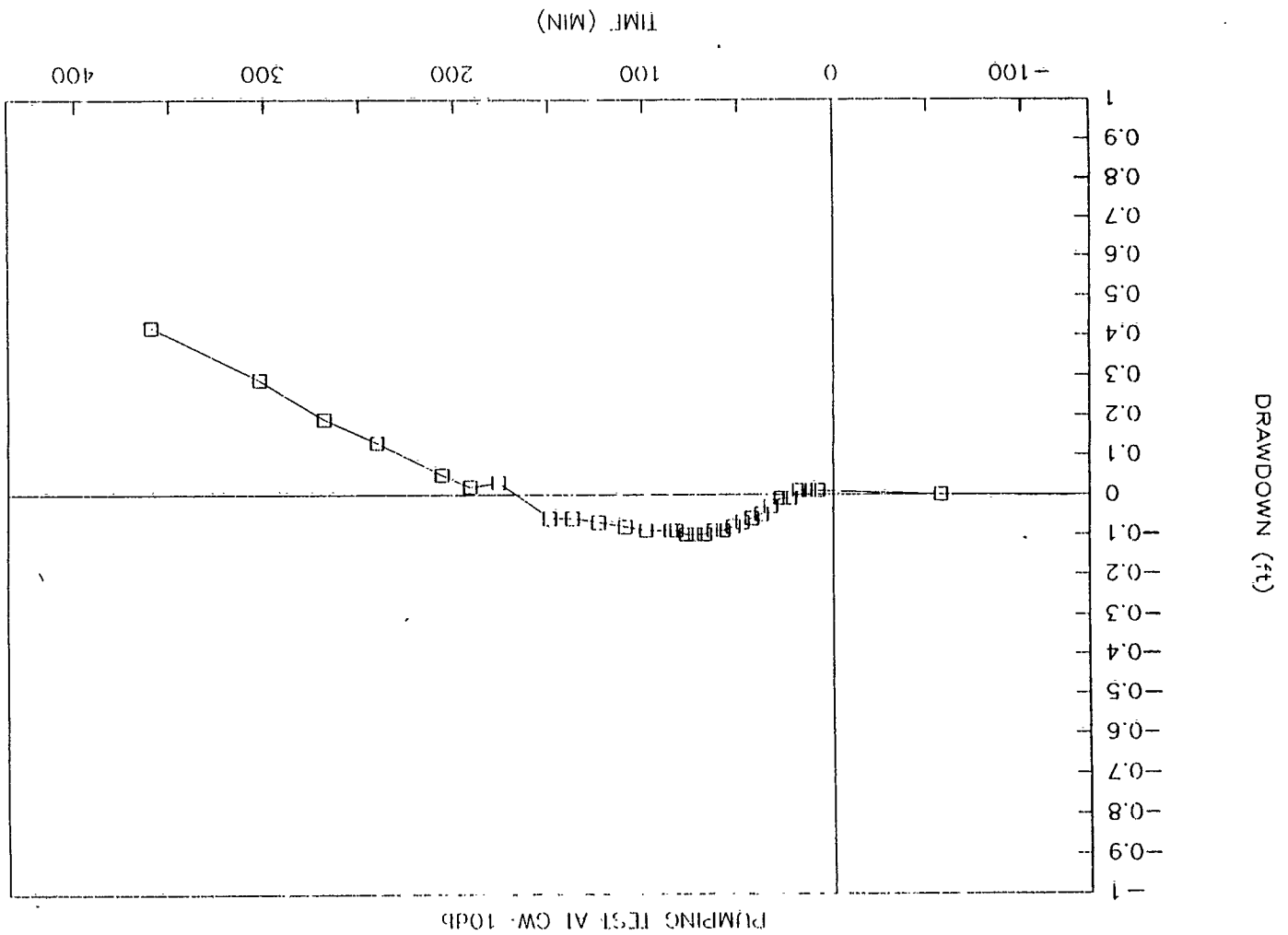
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 064



DRAWDOWN AT MONITORING WELL MW-11sb DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
09:03	-44	6.07	487.27	0.00
10:37	50	6.07	487.27	0.00
11:12	85	6.08	487.26	0.01
11:42	115	6.08	487.26	0.01
12:26	159	6.07	487.27	0.00
13:56	249	6.09	487.25	0.02
14:55	308	6.11	487.23	0.04
15:37	350	6.12	487.22	0.05

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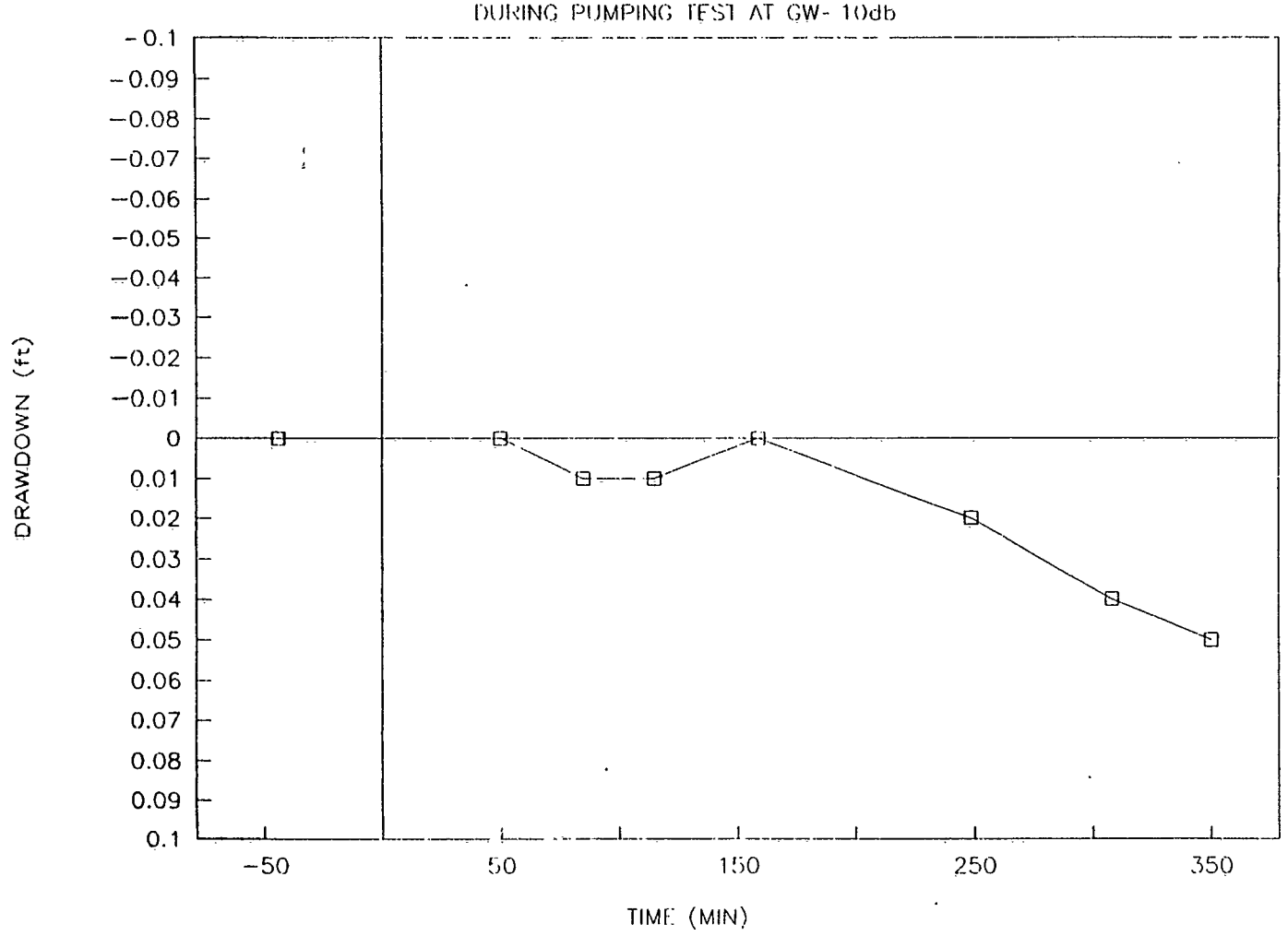
LIN003
0955

DRAWDOWN AT MONITORING WELL MW-11sb

DURING PUMPING TEST AT GW- 10db



LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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LIN003 990

DRAWDOWN AT MONITORING WELL MW-EPA-At DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:50	-57	5.07	565.21	-0.01
10:28	41	5.08	565.20	0.00
11:01	74	5.07	565.21	-0.01
11:15	88	5.07	565.21	-0.01
11:26	99	5.08	565.20	0.00
11:40	113	5.09	565.19	0.01
11:53	126	5.08	565.20	0.00
12:06	139	5.08	565.20	0.00
12:32	165	5.08	565.20	0.00
12:48	181	5.06	565.22	-0.02
13:03	196	5.05	565.23	-0.03
13:36	229	5.05	565.23	-0.03
14:05	258	5.04	565.24	-0.04
14:40	293	5.03	565.25	-0.05
15:41	354	5.00	565.28	-0.08

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ADMINISTRATIVE RECORD

LIN003 0671

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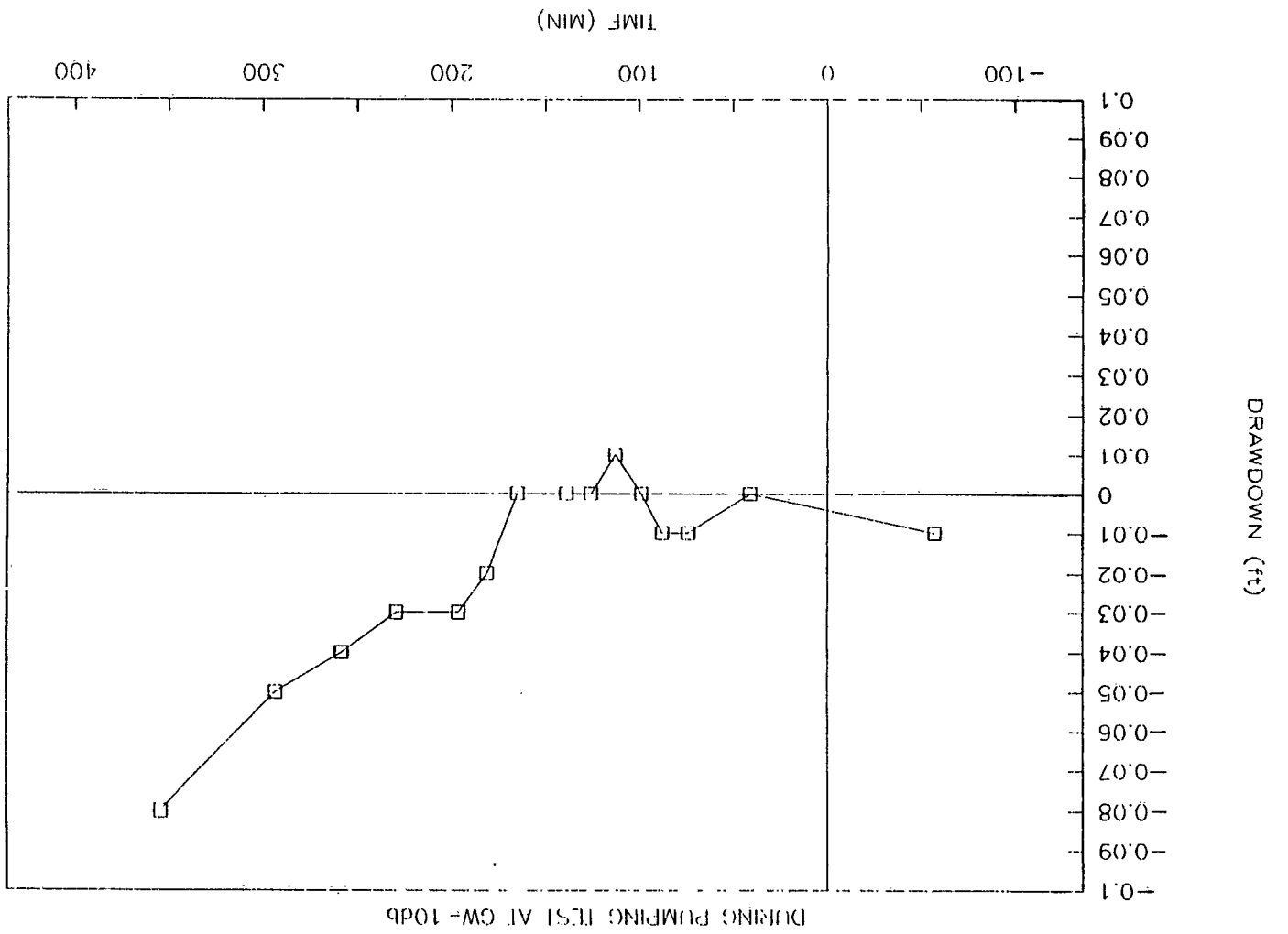
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 068



DRAWDOWN AT MONITORING WELL MW-4t DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:37	-70	9.95	546.53	0.00
10:27	40	9.97	546.51	0.02
10:59	72	9.97	546.51	0.02
11:13	86	9.98	546.50	0.03
11:23	96	9.98	546.50	0.03
11:39	112	9.99	546.49	0.04
11:51	124	9.99	546.49	0.04
12:04	137	9.99	546.49	0.04
12:30	163	10.00	546.48	0.05
12:46	179	10.00	546.48	0.05
13:01	194	10.01	546.47	0.06
13:34	227	10.02	546.46	0.07
14:03	256	10.02	546.46	0.07
14:37	290	10.03	546.45	0.08
15:37	350	10.02	546.46	0.07

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LIN003
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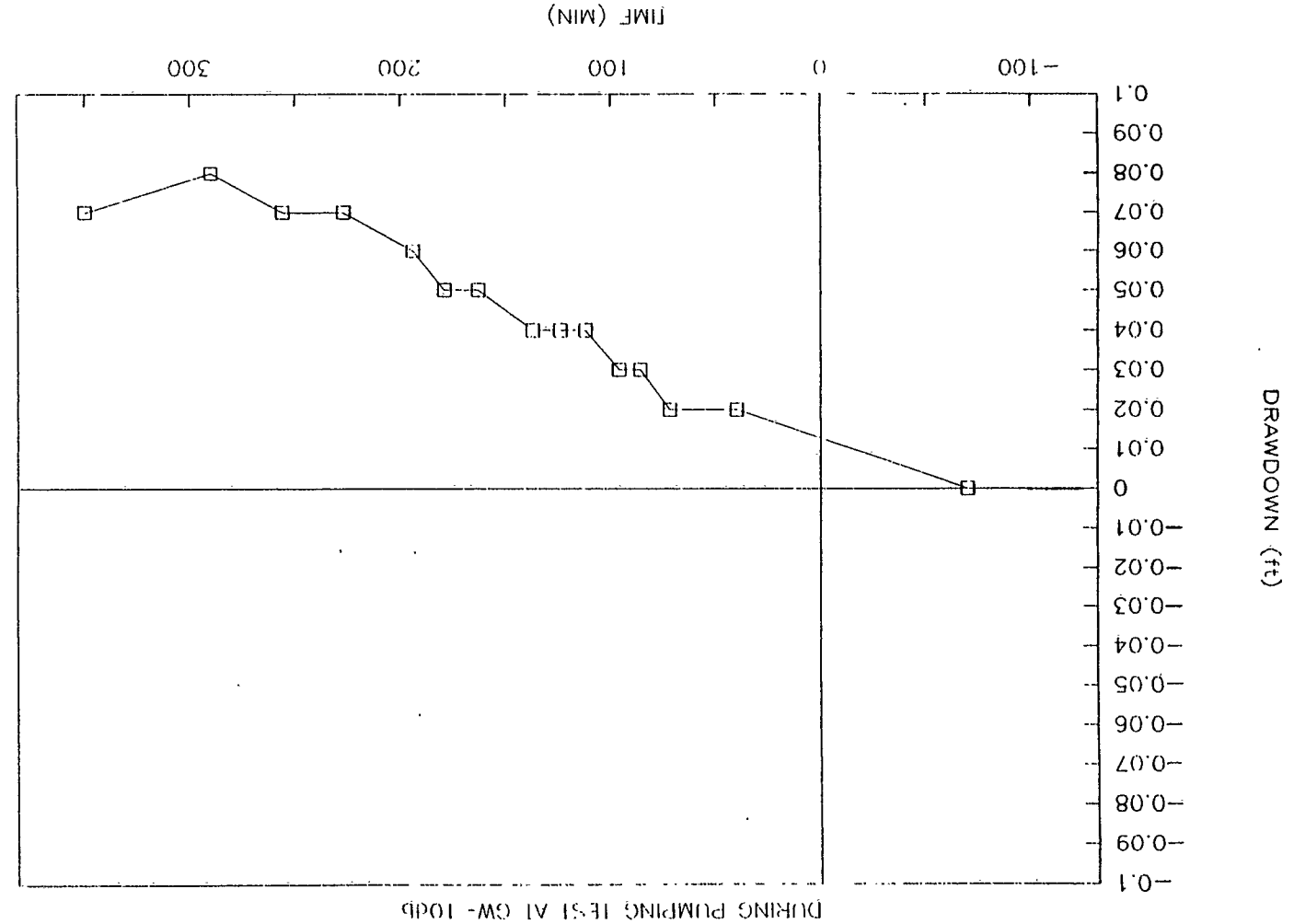
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 070



DRAWDOWN AT MONITORING WELL MW-4t

DURING PUMPING TEST AT GW-10dB

DRAWDOWN AT WELL MW-10t DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:30	-61	14.57	555.30	-0.03
09:39	8	14.60	555.27	0.00
09:44	13	14.61	555.26	0.01
09:49	18	14.61	555.26	0.01
09:54	23	14.61	555.26	0.01
09:59	28	14.61	555.26	0.01
10:04	33	14.61	555.26	0.01
10:09	38	14.61	555.26	0.01
10:14	43	14.62	555.25	0.02
10:19	48	14.62	555.25	0.02
10:24	53	14.62	555.25	0.02
10:29	58	14.62	555.25	0.02
10:34	63	14.62	555.25	0.02
10:39	68	14.62	555.25	0.02
10:44	73	14.62	555.25	0.02
10:49	78	14.63	555.24	0.03
10:54	83	14.63	555.24	0.03
10:57	86	14.63	555.24	0.03
11:10	99	14.63	555.24	0.03
11:21	110	14.63	555.24	0.03
11:35	124	14.63	555.24	0.03
11:49	138	14.64	555.23	0.04
12:01	150	14.63	555.24	0.03
12:28	177	14.64	555.23	0.04
12:43	192	14.63	555.24	0.03
12:58	207	14.64	555.23	0.04
13:32	241	14.63	555.24	0.03
14:00	269	14.64	555.23	0.04
14:34	303	14.64	555.23	0.04
15:31	360	14.62	555.25	0.02

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0011

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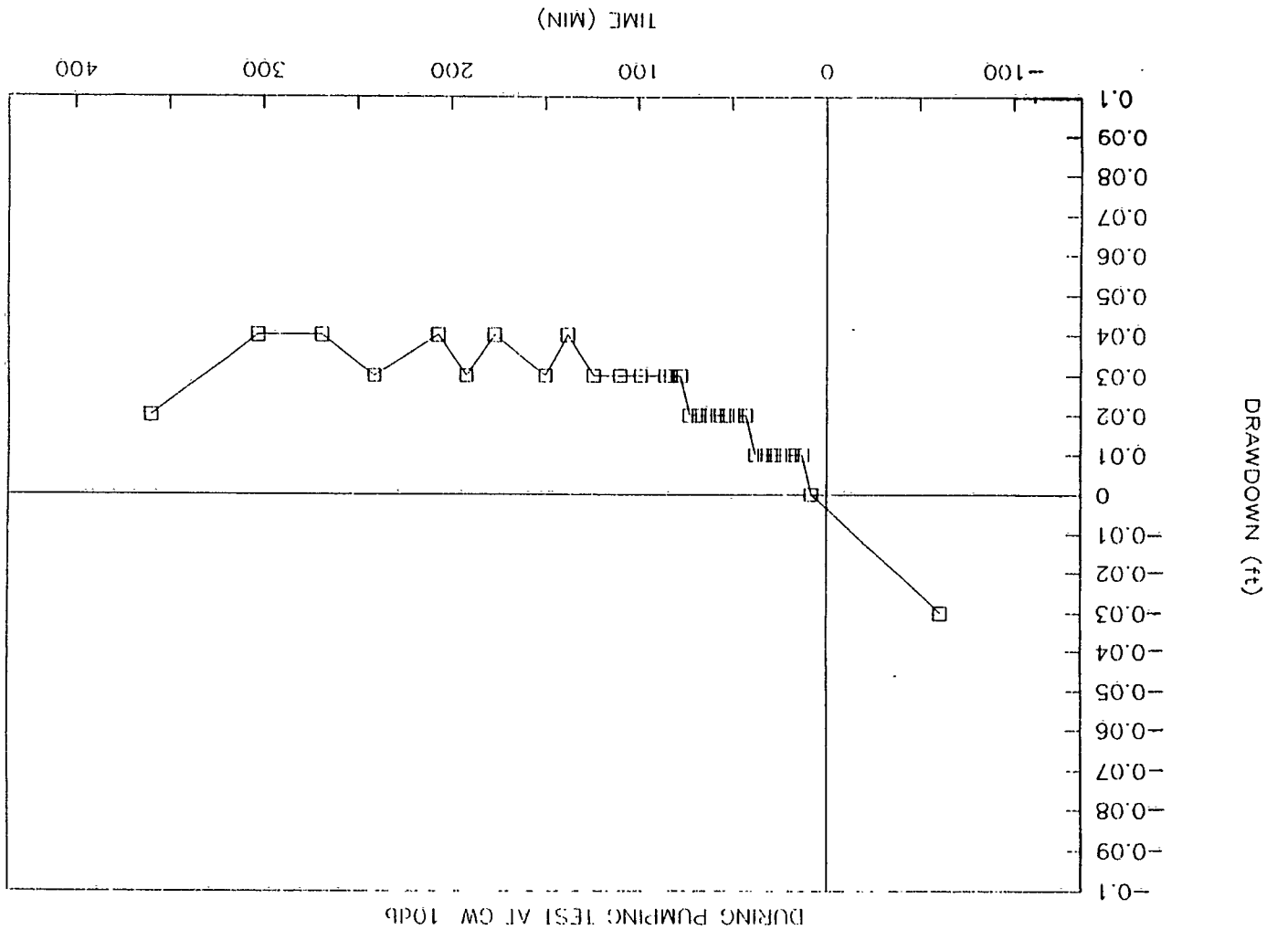
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 072



DRAWDOWN AT WELL MW-101

DURING PUMPING TEST AT GW 10db

DRAWDOWN AT MONITORING WELL DW-1t DURING PUMPING TEST AT GW-10db
APRIL 3, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
08:30	-61	5.62	*	0.00
09:39	8	5.64	*	0.02
09:44	13	5.64	*	0.02
09:49	18	5.64	*	0.02
09:54	23	5.64	*	0.02
09:59	28	5.64	*	0.02
10:04	33	5.64	*	0.02
10:09	38	5.64	*	0.02
10:14	43	5.64	*	0.02
10:19	48	5.64	*	0.02
10:24	53	5.64	*	0.02
10:29	58	5.64	*	0.02
10:34	63	5.64	*	0.02
10:39	68	5.64	*	0.02
10:44	73	5.64	*	0.02
10:49	78	5.64	*	0.02
10:54	83	5.64	*	0.02
10:57	86	5.64	*	0.02
11:10	99	5.64	*	0.02
11:21	110	5.64	*	0.02
11:35	124	5.65	*	0.03
11:49	138	5.65	*	0.03
12:01	150	5.65	*	0.03
12:28	177	5.65	*	0.03
12:43	192	5.66	*	0.04
12:58	207	5.66	*	0.04
13:32	241	5.65	*	0.03
14:00	269	5.65	*	0.03
14:34	303	5.63	*	0.01
15:31	360	5.63	*	0.01

Note: Elevation data not available.

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 074

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ATTACHMENT C

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DRAWDOWN AT WELL GW-12db DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)	INSTANTANEOUS FLOW (gpm)
09:21	-47	48.1	505.9	0	
10:08	0	47.45	506.55	-0.65	
10:09	1	55.8	498.2	7.7	21
10:11	3	67.35	486.65	19.25	18.
10:14	6	71.3	482.7	23.2	15
10:16	8	72.35	481.65	24.25	13.
10:20	12	72.2	481.8	24.1	11.
10:23	15	72.2	481.8	24.1	11.
10:27	19	73.4	480.6	25.3	12.
10:32	24	74.8	479.2	26.7	13
10:37	29	71.5	482.5	23.4	8.6
10:42	34	70.65	483.35	22.55	7.5
10:53	45	71.4	482.6	23.3	7.9
11:07	59	72.9	481.1	24.8	8.1
11:25	77	74.8	479.2	26.7	8.3
11:36	88	76.1	477.9	28	7
11:53	105	77.7	476.3	29.6	7.3
12:00	112	78.3	475.7	30.2	7.5
12:08	120	78.7	475.3	30.6	7.1
12:27	139	79.6	474.4	31.5	6.8
12:38	150	80.1	473.9	32	6.7
12:56	168	83.85	470.15	35.75	8
13:06	178	84.95	469.05	36.85	8
13:21	193	86.35	467.65	38.25	8
13:30	202	87.1	466.9	39	8
13:35	207	87.5	466.5	39.4	7.7
13:47	219	88.35	465.65	40.25	8
13:57	229	84.4	469.6	36.3	5
14:05	237	84.1	469.9	36	5
14:21	253	83.9	470.1	35.8	5
14:30	262	83.95	470.05	35.85	5
14:37	269	84	470	35.9	5
14:49	281	84.15	469.85	36.05	5
14:58	290	84.2	469.8	36.1	5
15:09	301	84.3	469.7	36.2	5
15:25	317	84.5	469.5	36.4	5
15:46	338	84.7	469.3	36.6	5
16:22	374	85.2	468.8	37.1	5
16:30	382	85.3	468.7	37.2	5
16:43	395	85.45	468.55	37.35	5
16:52	404	85.55	468.45	37.45	5
17:04	416	85.7	468.3	37.6	5
17:14	426	85.85	468.15	37.75	5
17:25	437	85.65	468.35	37.55	5
17:46	458	86.25	467.75	38.15	5

G:\ENVIRO\EARTH\PMP2

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0715

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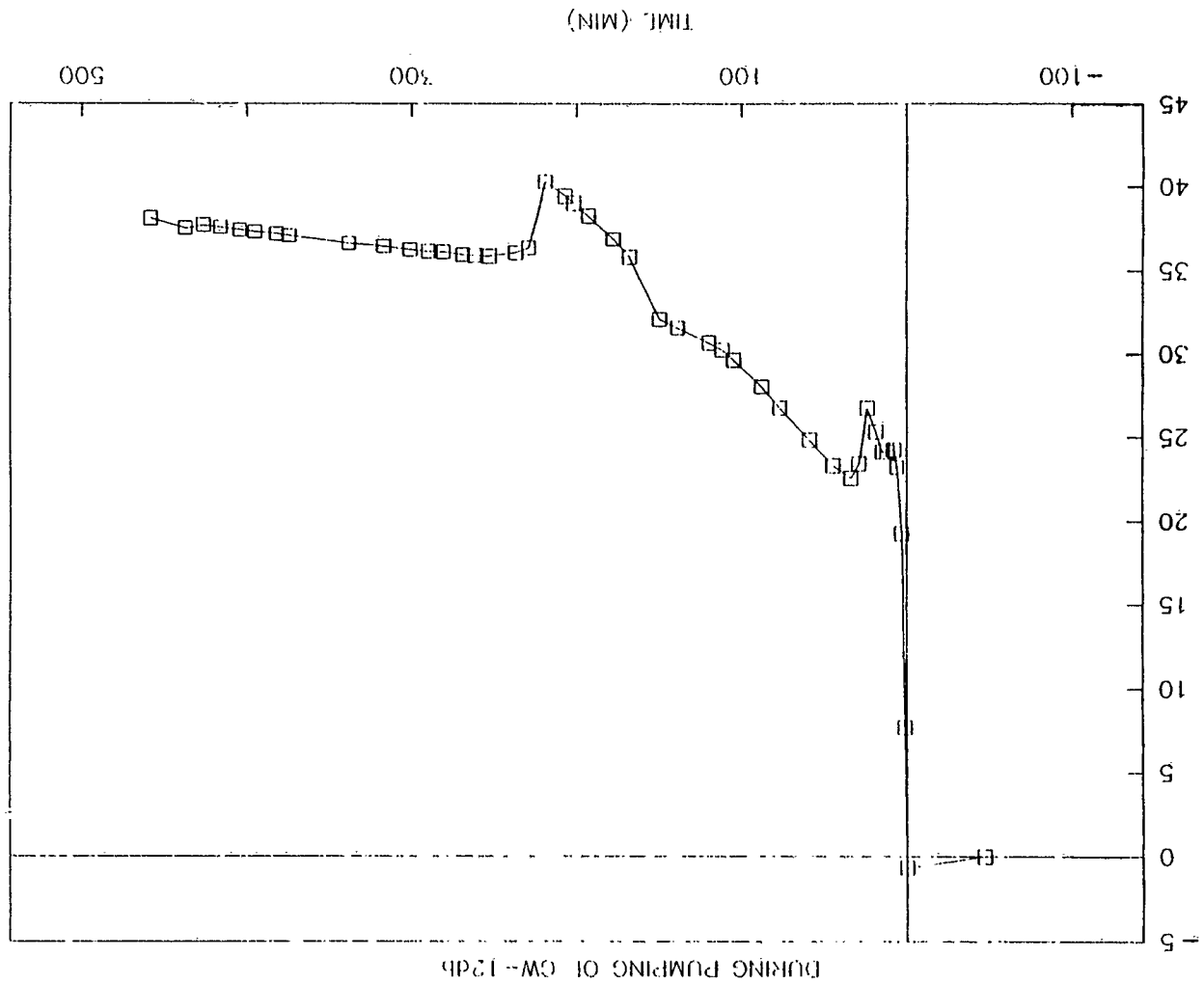
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 076



DRAWDOWN AT MONITORING WELL GW-10db DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
10:08 *	0	68.00 *		0
10:44	36	70.25	504	2.25
11:00	52	72.03	502.22	4.03
11:17	69	72.44	501.81	4.44
11:32	84	72.99	501.26	4.99
11:53	105	73.57	500.68	5.57
12:05	117	73.97	500.28	5.97
12:20	132	74.3	499.95	6.3
12:41	153	74.76	499.49	6.76
12:53	165	75.03	499.22	7.03
13:08	180	75.37	498.88	7.37
13:23	195	75.73	498.52	7.73
13:40	212	76.1	498.15	8.1
13:55	227	76.4	497.85	8.4
14:08	240	76.65	497.6	8.65
14:27	259	76.9	497.35	8.9
14:47	279	77.15	497.1	9.15
15:00	292	77.32	496.93	9.32
15:15	307	77.49	496.76	9.49
15:27	319	77.65	496.6	9.65
15:43	335	77.8	496.45	9.8
15:55	347	77.91	496.34	9.91
16:15	367	78.12	496.13	10.12
16:33	385	78.3	495.95	10.3
16:58	410	78.55	495.7	10.55
17:21	433	78.73	495.52	10.73

* APPROXIMATION

G:\PROJECTS\36088\PMP2

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0171

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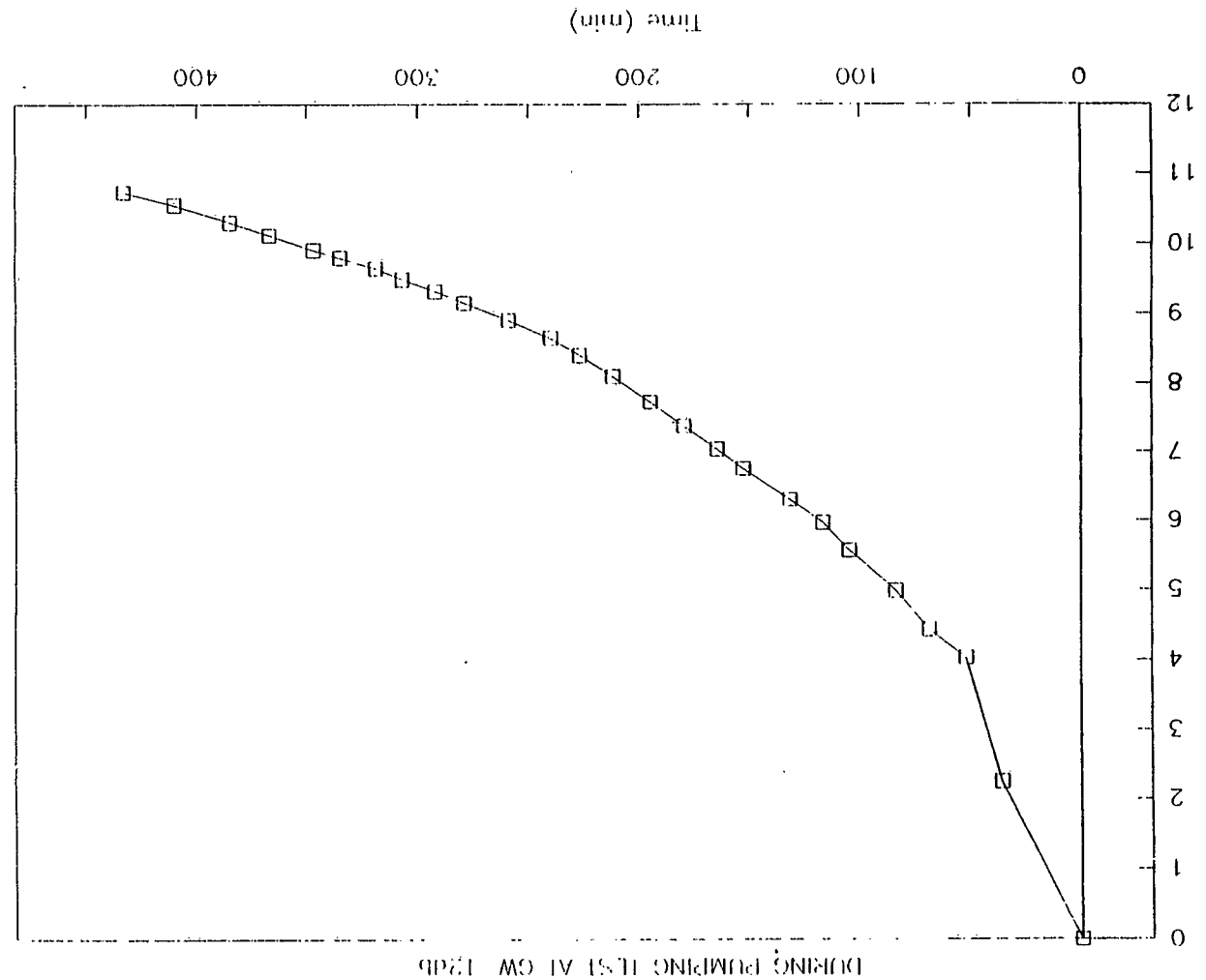
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 078



DRAWDOWN AT MONITORING WELL MW-12db DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
10:00	-8	30.45	414.57	0
10:58	50	30.39	414.63	-0.06
11:38	90	30.62	414.4	0.17
12:07	119	30.78	414.24	0.33
13:35	207	30.83	414.19	0.38
14:33	265	30.9	414.12	0.45
15:35	327	30.93	414.09	0.48
17:07	419	30.9	414.12	0.45

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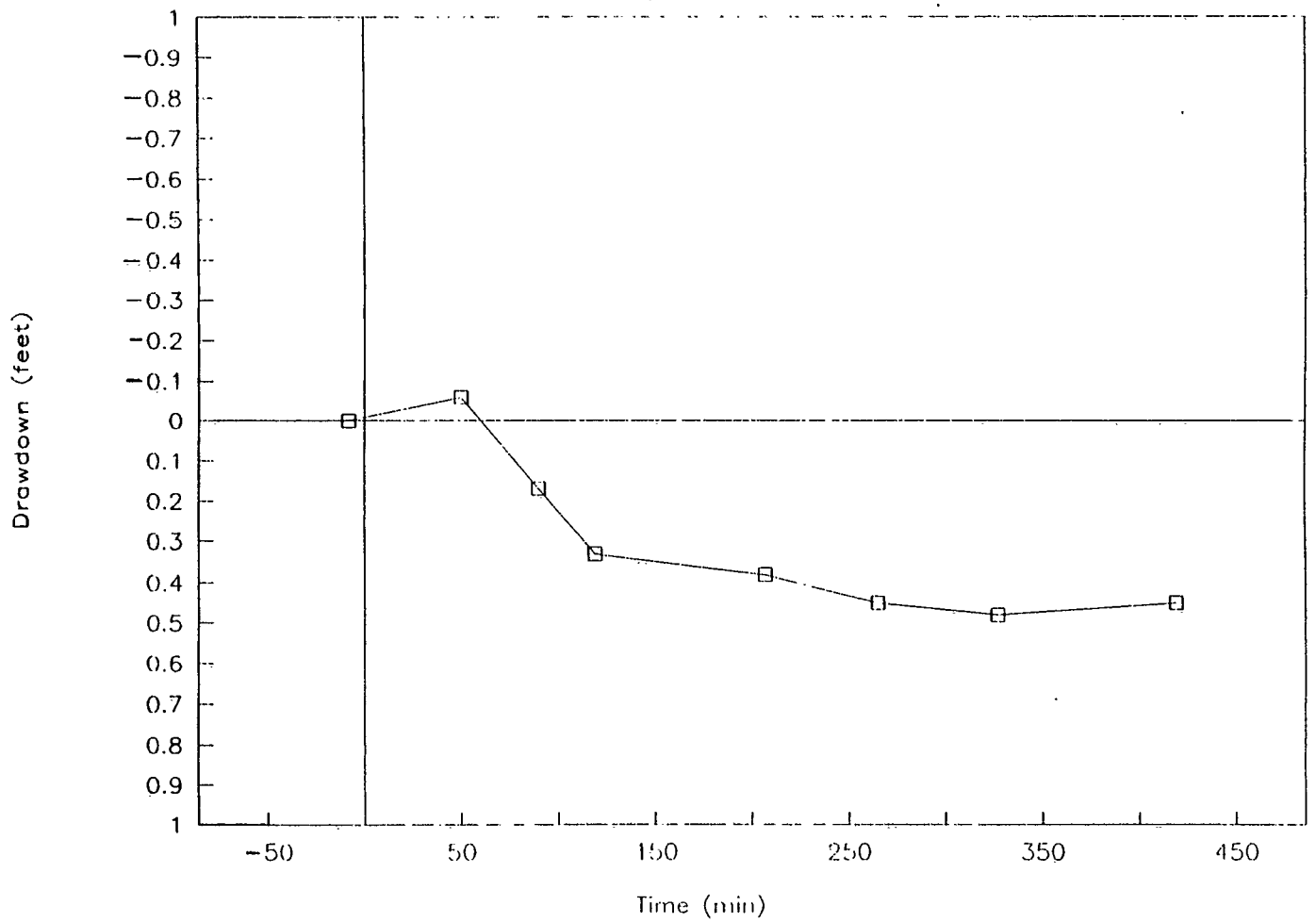
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0179

DRAWDOWN AT MONITORING WELL MW-12db

DURING PUMPING TEST AT GW-12db



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 080

DRAWDOWN AT MONITORING WELL MW-13db DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
10:00	-8	37.23	503.58	0
11:10	62	38.48	502.33	1.25
11:45	97	38.48	502.33	1.25
12:17	129	38.48	502.33	1.25
13:15	187	38.9	501.91	1.67
14:45	277	39.28	501.53	2.05
15:12	304	39.29	501.52	2.06
17:17	429	39.25	501.56	2.02

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
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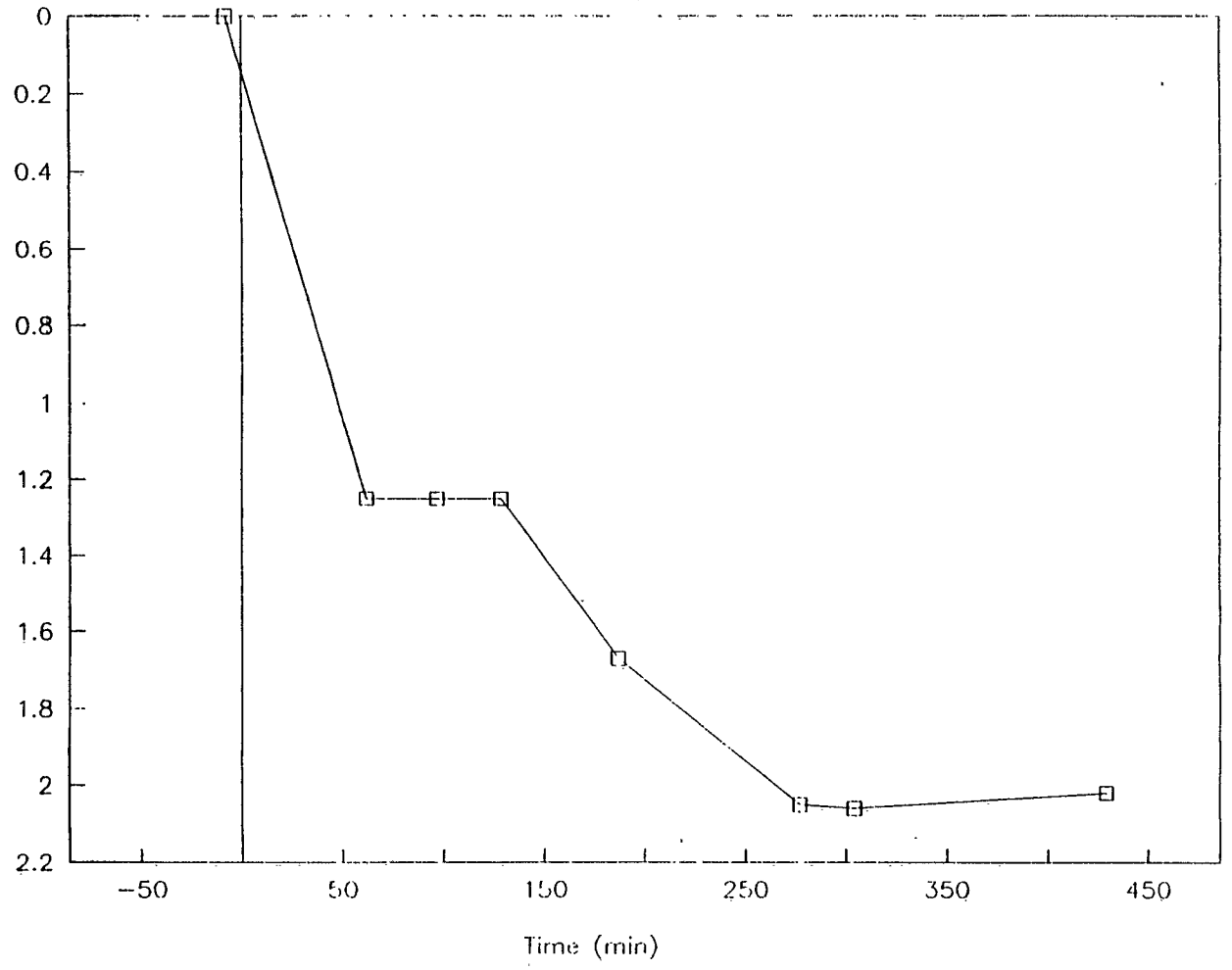
DRAWDOWN AT MONITORING WELL MW-13db

DURING PUMPING TEST AT GW-12db



LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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LIN003 280

DRAWDOWN AT MONITORING WELL MW-14db DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
10:00	-8	17.98	424.26	0
11:03	55	18.33	423.91	0.35
11:33	85	18.33	423.91	0.35
12:03	115	18.38	423.86	0.4
13:31	203	18.39	423.85	0.41
14:25	257	18.39	423.85	0.41
15:28	320	18.43	423.81	0.45
17:05	417	18.46	423.78	0.48

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ADMINISTRATIVE RECORD
LIN003
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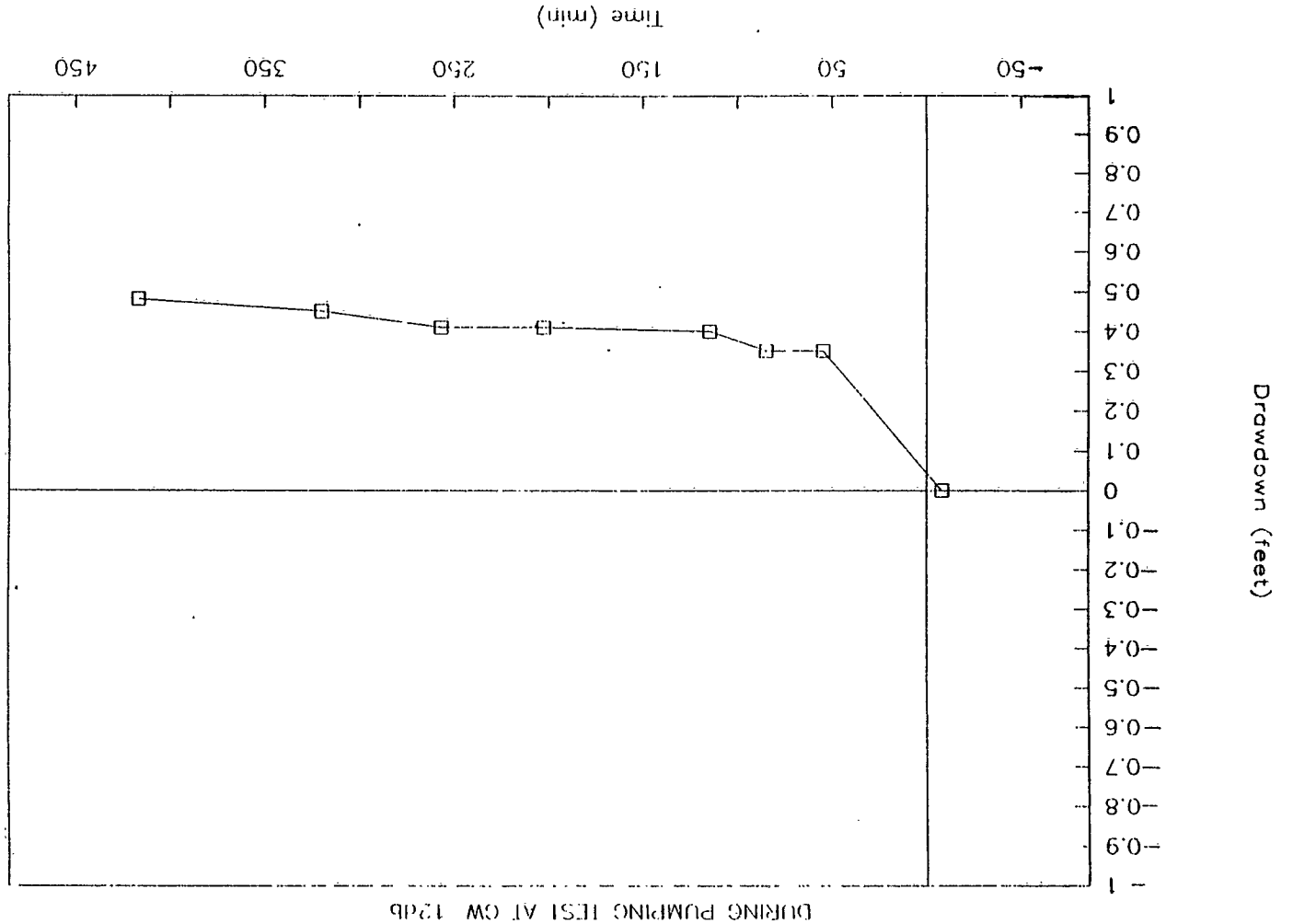
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 084



DRAWDOWN AT MONITORING WELL MW-6sb DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
10:00	-8	4.23	496.55	0
11:22	74	4.23	496.55	0
11:58	110	4.21	496.57	-0.02
14:10	242	4.23	496.55	0
15:16	308	4.23	496.55	0
16:53	405	4.23	496.55	0

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
503

DRAWDOWN AT MONITORING WELL MW-11sb DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
10:00	-8	5.97	487.37	0
10:57	49	5.97	487.37	0
11:27	79	5.97	487.37	0
12:01	113	5.97	487.37	0
13:25	197	5.98	487.36	0.01
14:15	247	5.98	487.36	0.01
15:22	314	5.99	487.35	0.02
17:58	470	5.99	487.35	0.02

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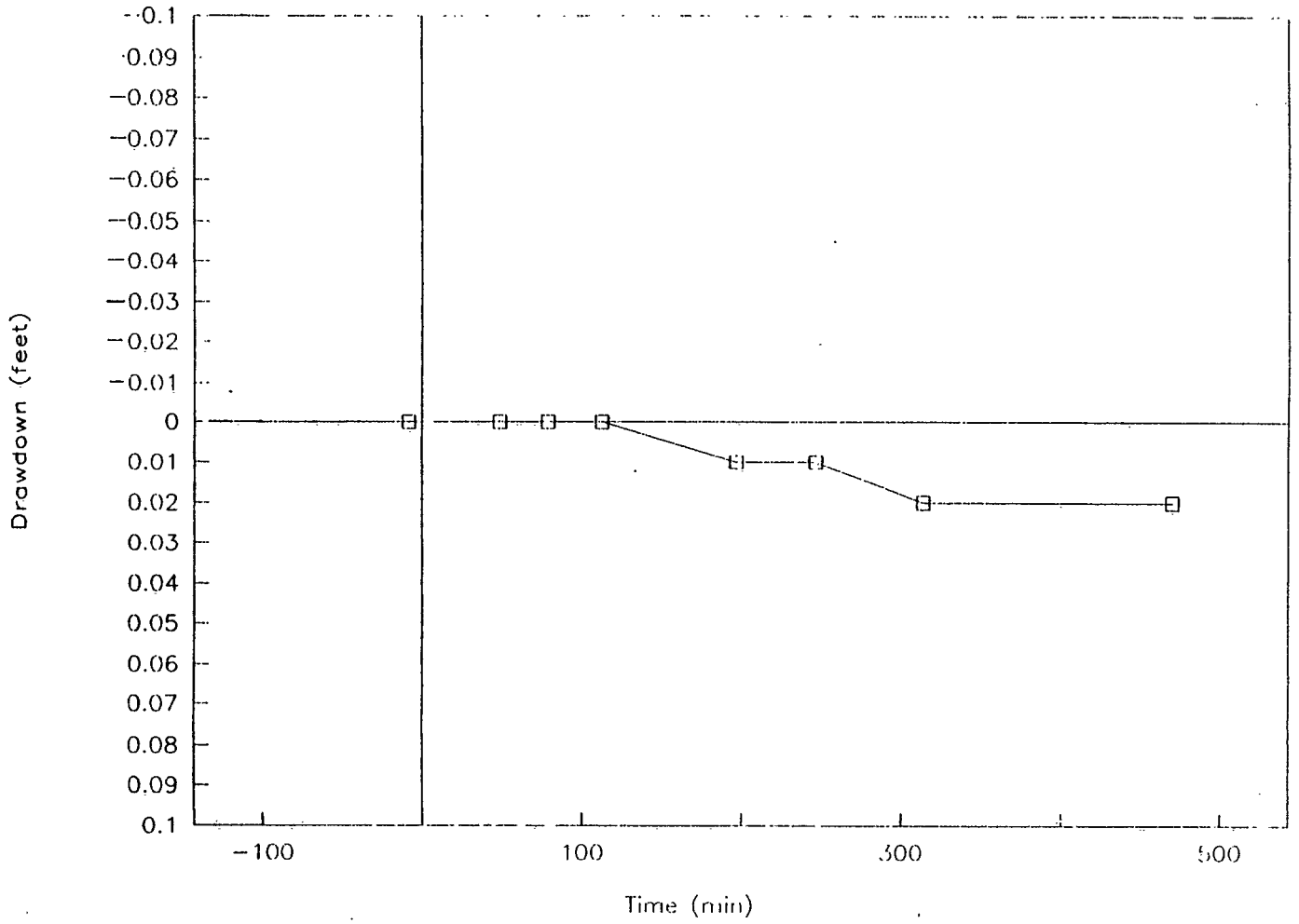
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003
986

DRAWDOWN AT MONITORING WELL MW-11sb

DURING PUMPING TEST AT GW-12db



LINEMASTER SWITCH
ADMINISTRATIVE RECORD

NOTICE
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DRAWDOWN AT MONITORING WELL MW-10sb DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
09:28	-40	44.91	524.3	0.02
09:33	-35	44.91	524.3	0.02
09:38	-30	44.91	524.3	0.02
10:11	3	44.89	524.32	0
10:16	8	44.89	524.32	0
10:21	13	44.89	524.32	0
10:26	18	44.89	524.32	0
10:31	23	44.9	524.31	0.01
10:36	28	44.9	524.31	0.01
10:41	33	44.92	524.29	0.03
10:46	38	44.91	524.3	0.02
10:51	43	44.91	524.3	0.02
10:56	48	44.93	524.28	0.04
11:01	53	44.93	524.28	0.04
11:06	58	44.93	524.28	0.04
11:11	63	44.93	524.28	0.04
11:27	79	44.94	524.27	0.05
11:48	100	44.95	524.26	0.06
12:00	112	44.95	524.26	0.06
12:15	127	44.97	524.24	0.08
12:35	147	44.98	524.23	0.09
12:49	161	45	524.21	0.11
13:03	175	45	524.21	0.11
13:18	190	45.01	524.2	0.12
13:35	207	45.02	524.19	0.13
13:51	223	45.02	524.19	0.13
14:04	236	45.03	524.18	0.14
14:24	256	45.05	524.16	0.16
14:42	274	45.04	524.17	0.15
14:55	287	45.06	524.15	0.17
15:11	303	45.07	524.14	0.18
15:22	314	45.08	524.13	0.19
15:37	329	45.09	524.12	0.2
15:50	342	45.1	524.11	0.21
16:10	362	45.1	524.11	0.21
16:28	380	45.12	524.09	0.23
16:53	405	45.13	524.08	0.24
17:17	429	45.15	524.06	0.26

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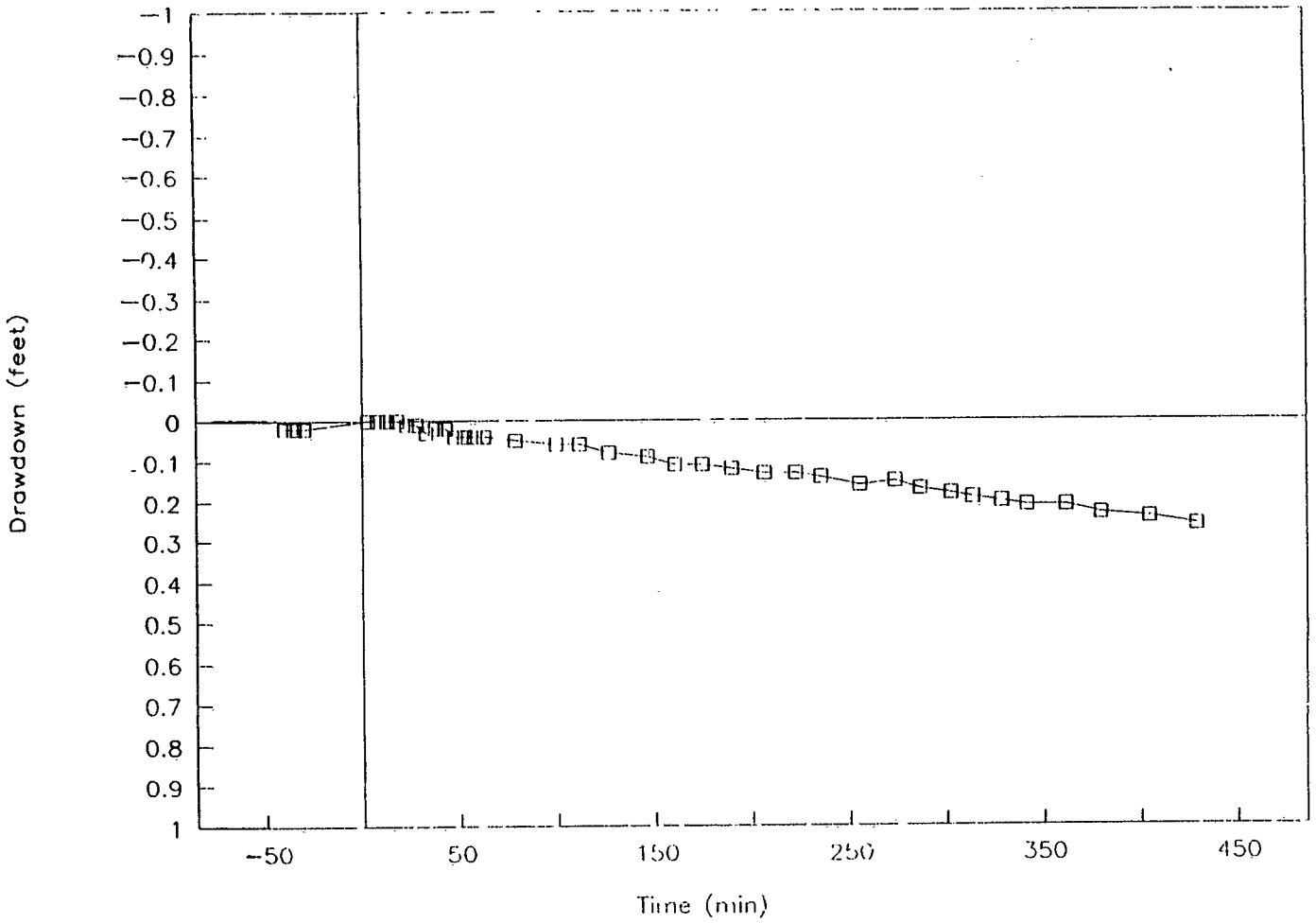
LIN003 0800

DRAWDOWN AT MONITORING WELL MW-10sb

DURING PUMPING TEST AT GW-12db



LIN003 6 8 0
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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DRAWDOWN AT MONITORING WELL MW-EPA-At DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
10:28	20	4.3	565.98	0
10:43	35	4.31	565.97	0.01
10:58	50	4.34	565.94	0.04
11:15	67	4.34	565.94	0.04
11:30	82	4.34	565.94	0.04
11:51	103	4.34	565.94	0.04
12:03	115	4.34	565.94	0.04
12:18	130	4.34	565.94	0.04
12:39	151	4.34	565.94	0.04
12:51	163	4.34	565.94	0.04
13:06	178	4.33	565.95	0.03
13:21	193	4.33	565.95	0.03
13:38	210	4.33	565.95	0.03
13:54	226	4.33	565.95	0.03
14:07	239	4.33	565.95	0.03
14:26	258	4.33	565.95	0.03
14:45	277	4.34	565.94	0.04
14:59	291	4.34	565.94	0.04
15:14	306	4.35	565.93	0.05
15:25	317	4.34	565.94	0.04
15:42	334	4.35	565.93	0.05
15:54	346	4.35	565.93	0.05
16:13	365	4.35	565.93	0.05
16:31	383	4.35	565.93	0.05
16:56	408	4.36	565.92	0.06
17:20	432	4.37	565.91	0.07

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LINEMASTER SWITCH
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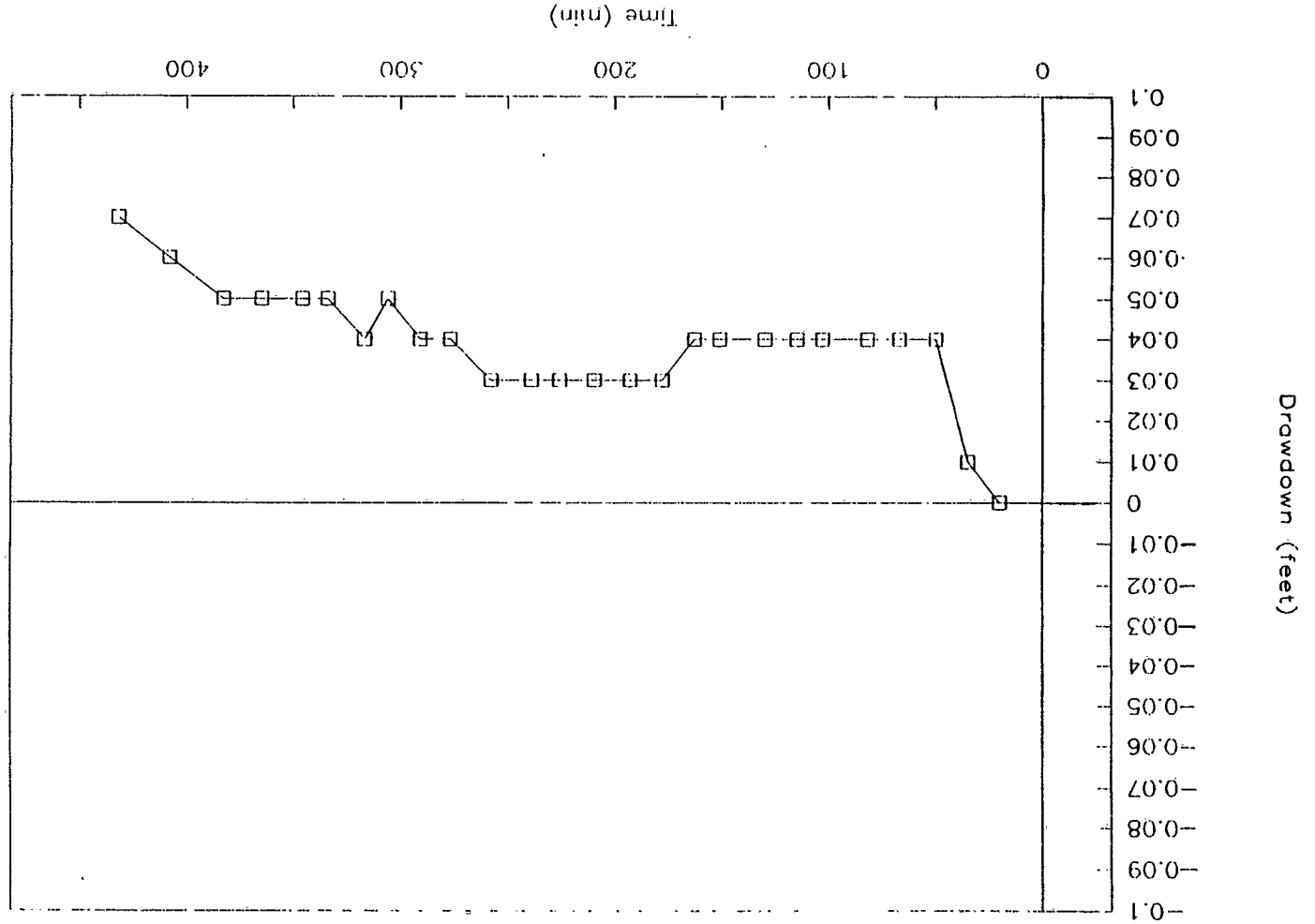
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0 9 1



DRAWDOWN AT MONITORING WELL MW-1t DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
10:00	-8	11.41	517.02	0
10:32	24	11.41	517.02	0
10:45	37	11.41	517.02	0
10:52	44	11.41	517.02	0
13:08	180	11.46	516.97	0.05
14:08	240	11.46	516.97	0.05
15:07	299	11.53	516.9	0.12
17:55	467	11.55	516.88	0.14

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LIN003
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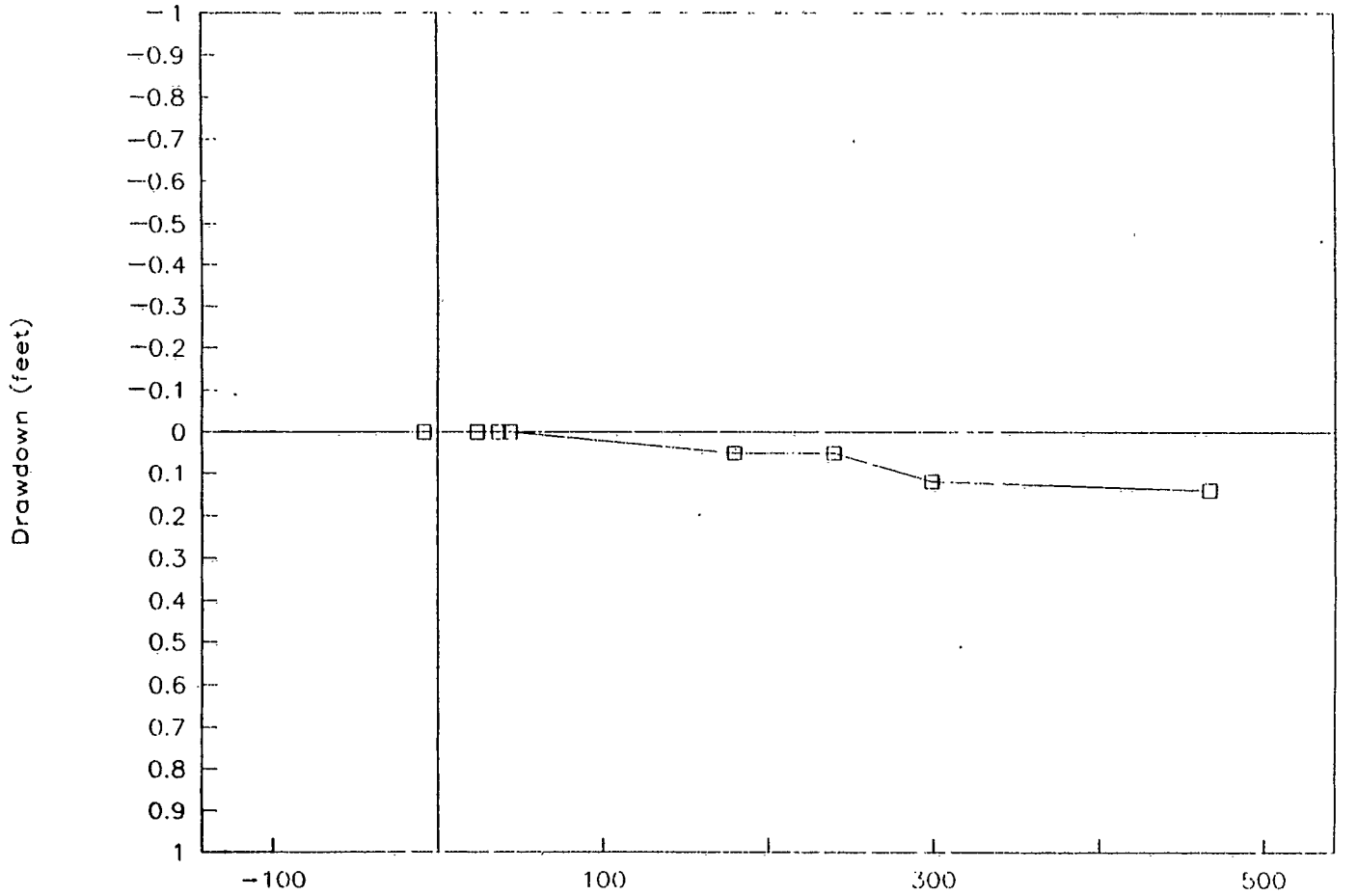
DRAWDOWN AT MONITORING WELL MW-1t

DURING PUMPING TEST AT GW-12db



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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DRAWDOWN AT MONITORING WELL MW-10t DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
09:28	-40	14.4	555.47	0
09:33	-35	14.4	555.47	0
09:38	-30	14.4	555.47	0
10:11	3	14.4	555.47	0
10:16	8	14.4	555.47	0
10:21	13	14.4	555.47	0
10:26	18	14.4	555.47	0
10:31	23	14.4	555.47	0
10:36	28	14.41	555.46	0.01
10:41	33	14.41	555.46	0.01
10:46	38	14.41	555.46	0.01
10:51	43	14.41	555.46	0.01
10:56	48	14.41	555.46	0.01
11:01	53	14.41	555.46	0.01
11:06	58	14.41	555.46	0.01
11:11	63	14.41	555.46	0.01
11:27	79	14.41	555.46	0.01
11:48	100	14.41	555.46	0.01
12:00	112	14.42	555.45	0.02
12:15	127	14.42	555.45	0.02
12:35	147	14.42	555.45	0.02
12:49	161	14.43	555.44	0.03
13:03	175	14.43	555.44	0.03
13:18	190	14.43	555.44	0.03
13:35	207	14.44	555.43	0.04
13:51	223	14.44	555.43	0.04
14:04	236	14.44	555.43	0.04
14:24	256	14.44	555.43	0.04
14:42	274	14.44	555.43	0.04
14:55	287	14.44	555.43	0.04
15:11	303	14.44	555.43	0.04
15:22	314	14.44	555.43	0.04
15:37	329	14.45	555.42	0.05
15:50	342	14.45	555.42	0.05
16:10	362	14.45	555.42	0.05
16:28	380	14.46	555.41	0.06
16:53	405	14.47	555.4	0.07
17:17	429	14.47	555.4	0.07

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 469

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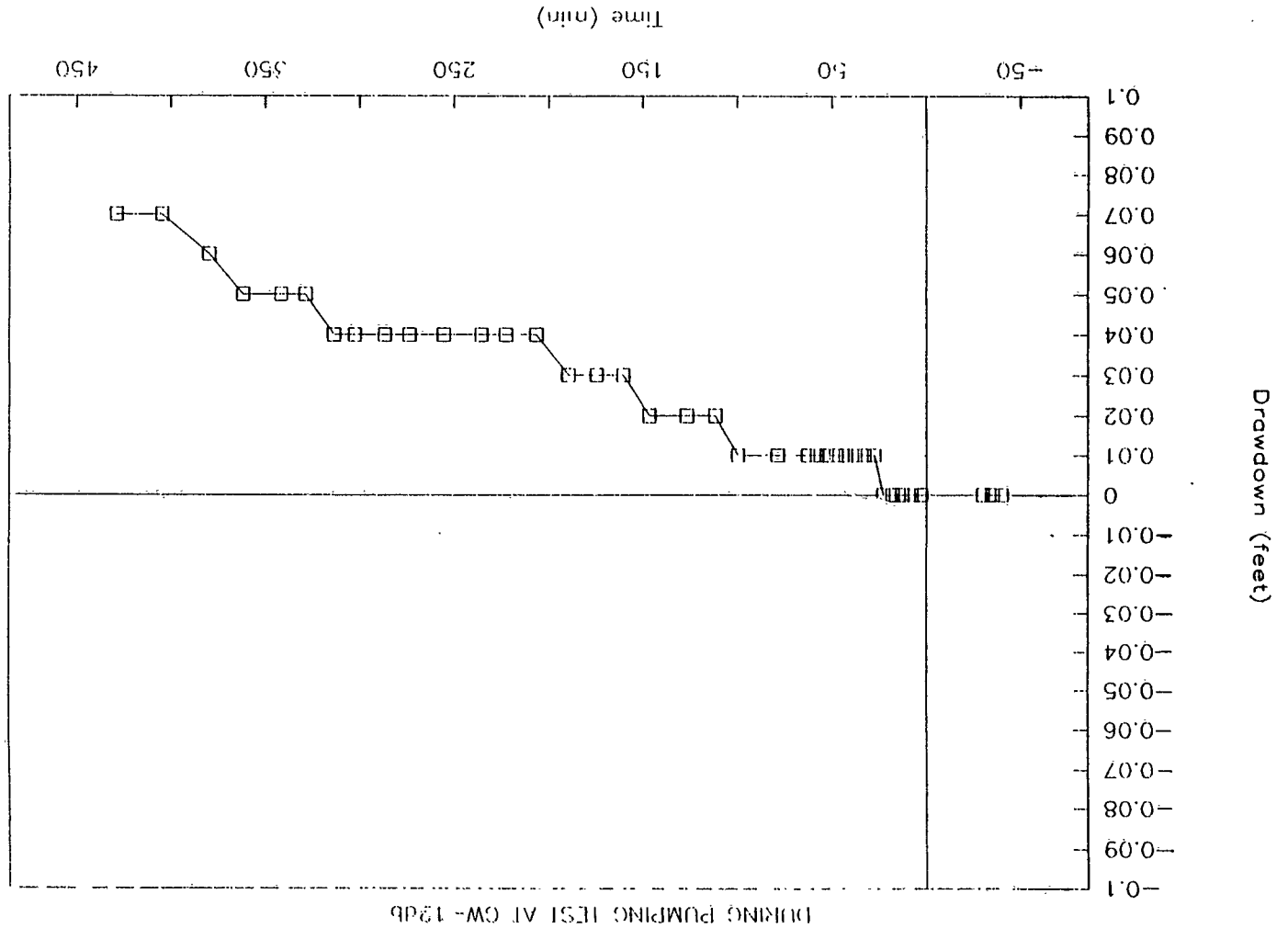
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 095



DRAWDOWN AT WELL DW-1t DURING PUMPING TEST AT GW-12db
APRIL 2, 1991
LINEMASTER SWITCH SITE
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
09:28	-40	5.68		0
09:33	-35	5.68		0
09:38	-30	5.68		0
10:11	3	5.68		0
10:16	8	5.68		0
10:21	13	5.68		0
10:26	18	5.68		0
10:31	23	5.68		0
10:36	28	5.68		0
10:41	33	5.68		0
10:46	38	5.68		0
10:51	43	5.68		0
10:56	48	5.68		0
11:01	53	5.68		0
11:06	58	5.68		0
11:11	63	5.68		0
11:27	79	5.68		0
11:48	100	5.68		0
12:00	112	5.68		0
12:15	127	5.68		0
12:35	147	5.68		0
12:49	161	5.69		0.01
13:03	175	5.69		0.01
13:18	190	5.69		0.01
13:35	207	5.69		0.01
13:51	223	5.67		-0.01
14:04	236	5.67		-0.01
14:24	256	5.67		-0.01
14:42	274	5.64		-0.04
14:55	287	5.62		-0.06
15:11	303	5.6		-0.08
15:22	314	5.58		-0.1
15:37	329	5.56		-0.12
15:50	342	5.54		-0.14
16:10	362	5.53		-0.15
16:28	380	5.51		-0.17
16:53	405	5.5		-0.18
17:17	429	5.49		-0.19

G:\PROJECTS\86088\PMP2

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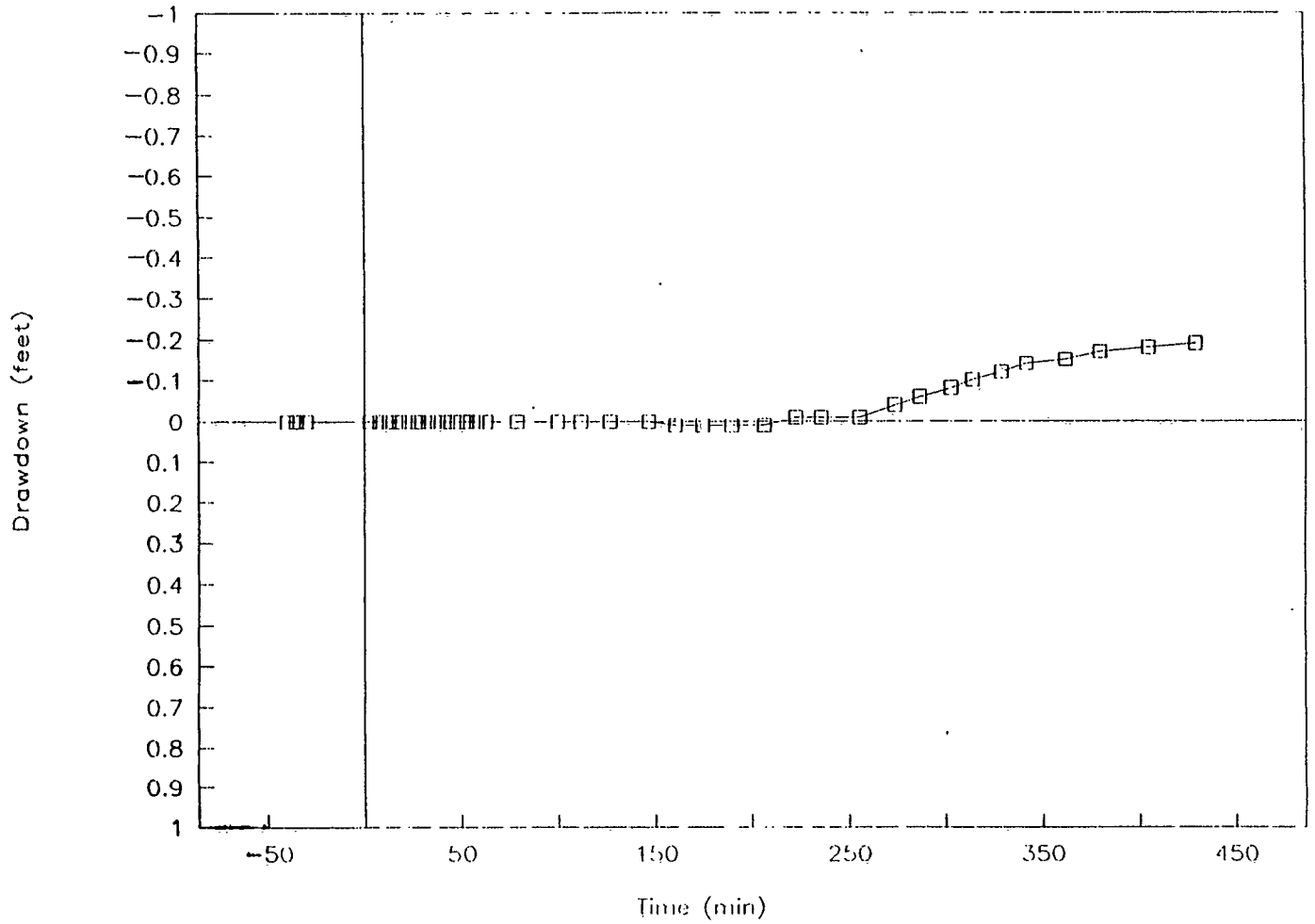
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0096

DRAWDOWN AT WELL DW-1t

DURING PUMPING TEST AT GW-12db



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ATTACHMENT D

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DRAWDOWN AT PUMPING WELL DW-1t DURING PUMPING TEST AT DW-1t
APRIL 11,1991
LINEMASTER SWITCH
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	DRAWDOWN (feet)	INSTANTANEOUS FLOW (gpm)
09:40	0	6.25	0.00	
09:58	18	7.25	1.00	
10:20	40	12.80	6.55	1.25
11:00	80	28.15	21.90	0.64
11:12	92	30.60	24.35	
11:30	110	33.32	27.07	0.57
12:00	140	35.23	28.98	0.55
12:30	170	35.70	29.45	0.41
13:00	200	35.20	28.95	0.40
13:30	230	35.20	28.95	0.35
14:00	260	35.28	29.03	0.35
14:30	290	35.40	29.15	0.35
15:00	320	35.55	29.30	0.35
15:30	350	35.62	29.37	0.34
16:00	380	35.90	29.65	0.35
16:30	410	36.31	30.06	0.35
17:00	440	36.46	30.21	0.34

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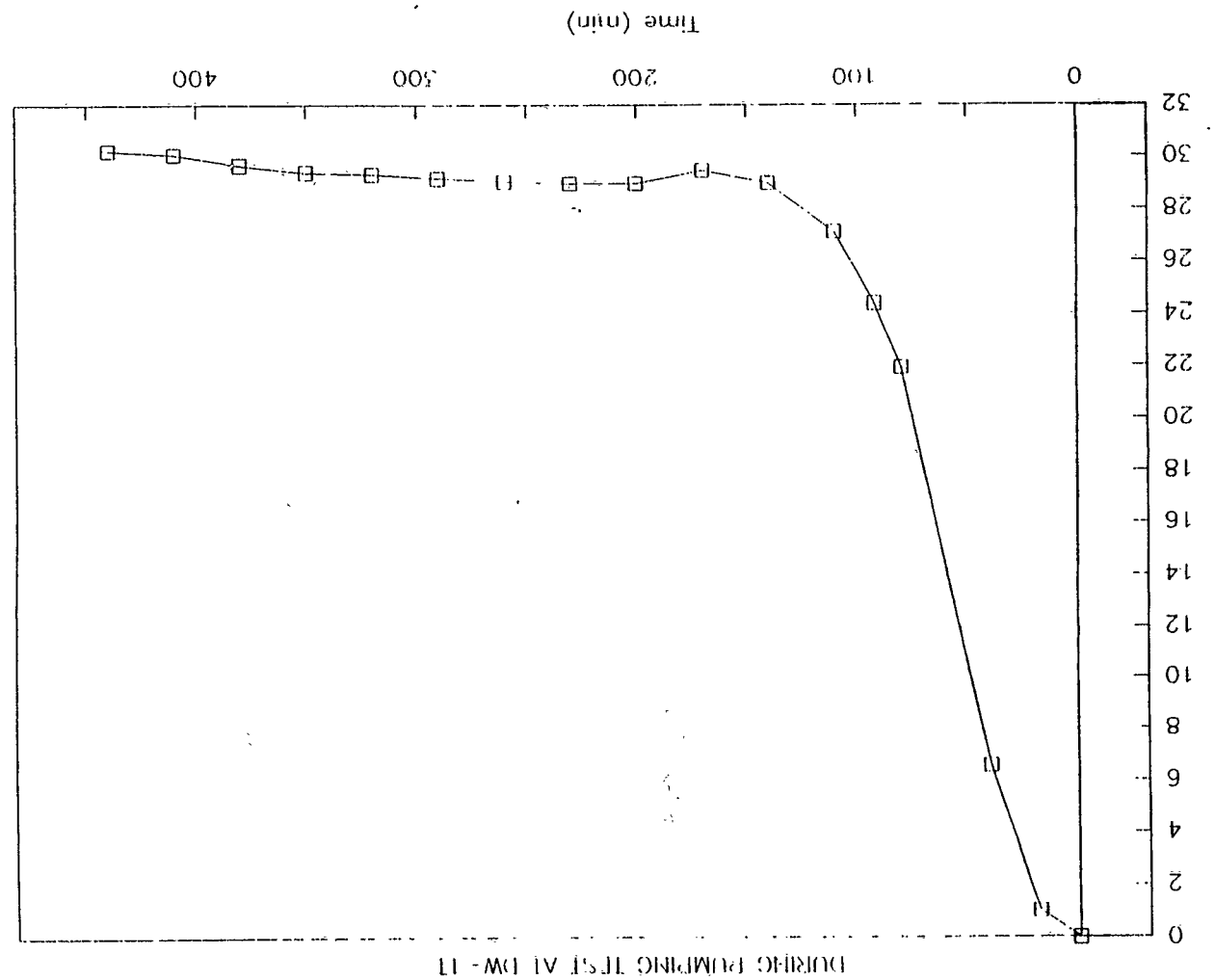

DRAWDOWN / MONITORING WELL MW-10sb DURING PUMPING TEST AT DW-1t
APRIL 11,1991
LINEMASTER SWITCH
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
09:40	0	45.80	523.41	0.00
11:00	80	45.83	523.38	0.03
11:30	110	45.85	523.36	0.05
12:00	140	45.85	523.36	0.05
12:30	170	45.85	523.36	0.05
13:00	200	45.85	523.36	0.05
13:30	230	45.85	523.36	0.05
14:00	260	45.85	523.36	0.05
14:30	290	45.90	523.31	0.1
15:30	350	45.88	523.33	0.08
16:00	380	45.90	523.31	0.1
16:30	410	45.90	523.31	0.1
17:00	440	45.90	523.31	0.1

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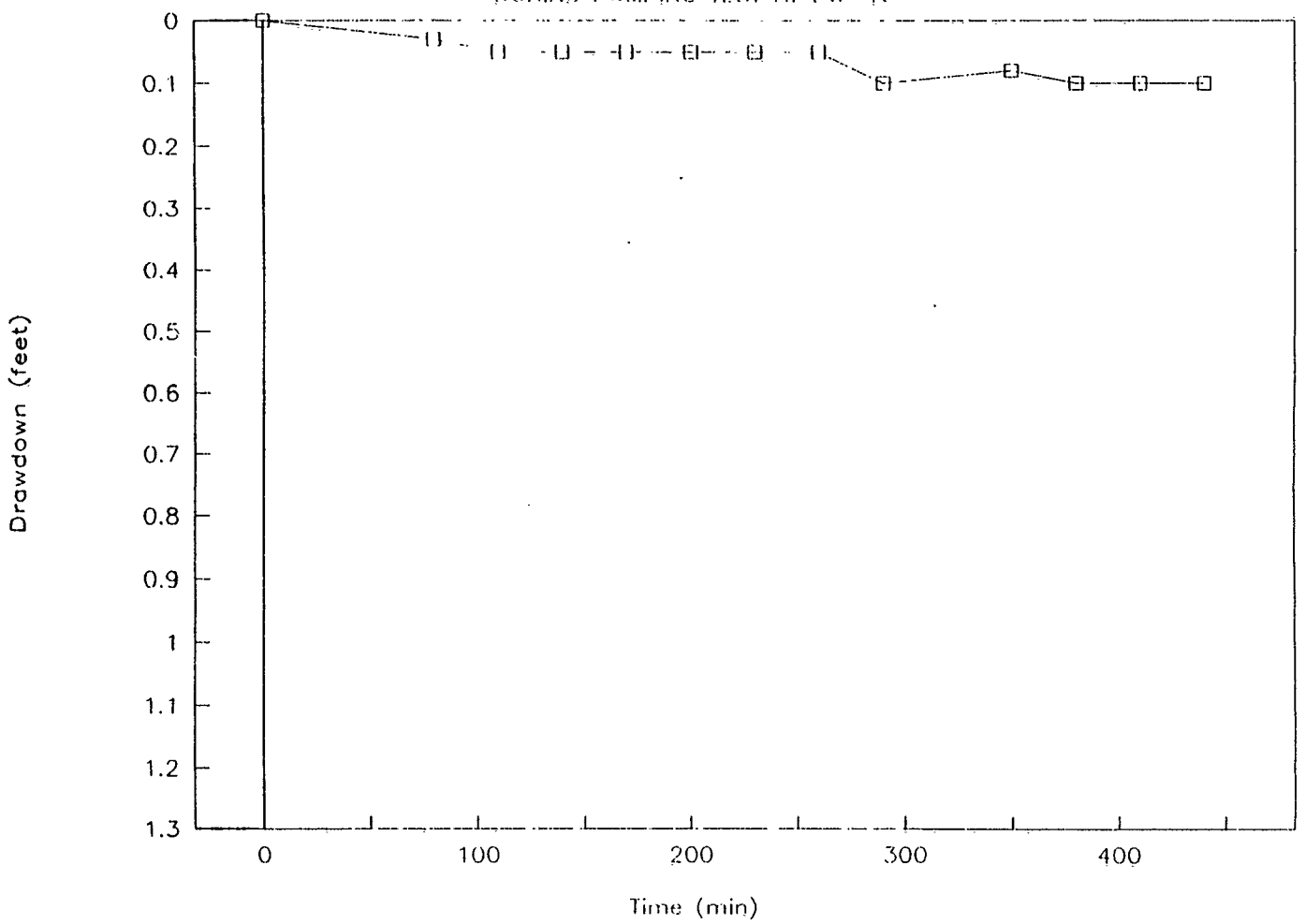
DRAWDOWN AT MONITORING WELL MW-10sb

DURING PUMPING TEST AT DW-11



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DRAWDOWN AT MONITORING WELL MW-10t DURING PUMPING TEST AT DW-1t
APRIL 11,1991
LINEMASTER SWITCH
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION (ft-MSL)	DRAWDOWN (feet)
09:40	0	15.15	554.72	0.00
11:00	80	15.15	554.72	0.00
11:30	110	15.30	554.57	0.15
12:00	140	15.40	554.47	0.25
12:30	170	15.48	554.39	0.33
13:00	200	15.53	554.34	0.38
13:30	230	15.57	554.30	0.42
14:00	260	15.63	554.24	0.48
14:30	290	15.86	554.01	0.71
15:00	320	15.87	554.00	0.72
15:30	350	15.92	553.95	0.77
16:00	380	16.03	553.84	0.88
16:30	410	16.08	553.79	0.93
17:00	440	16.17	553.70	1.02

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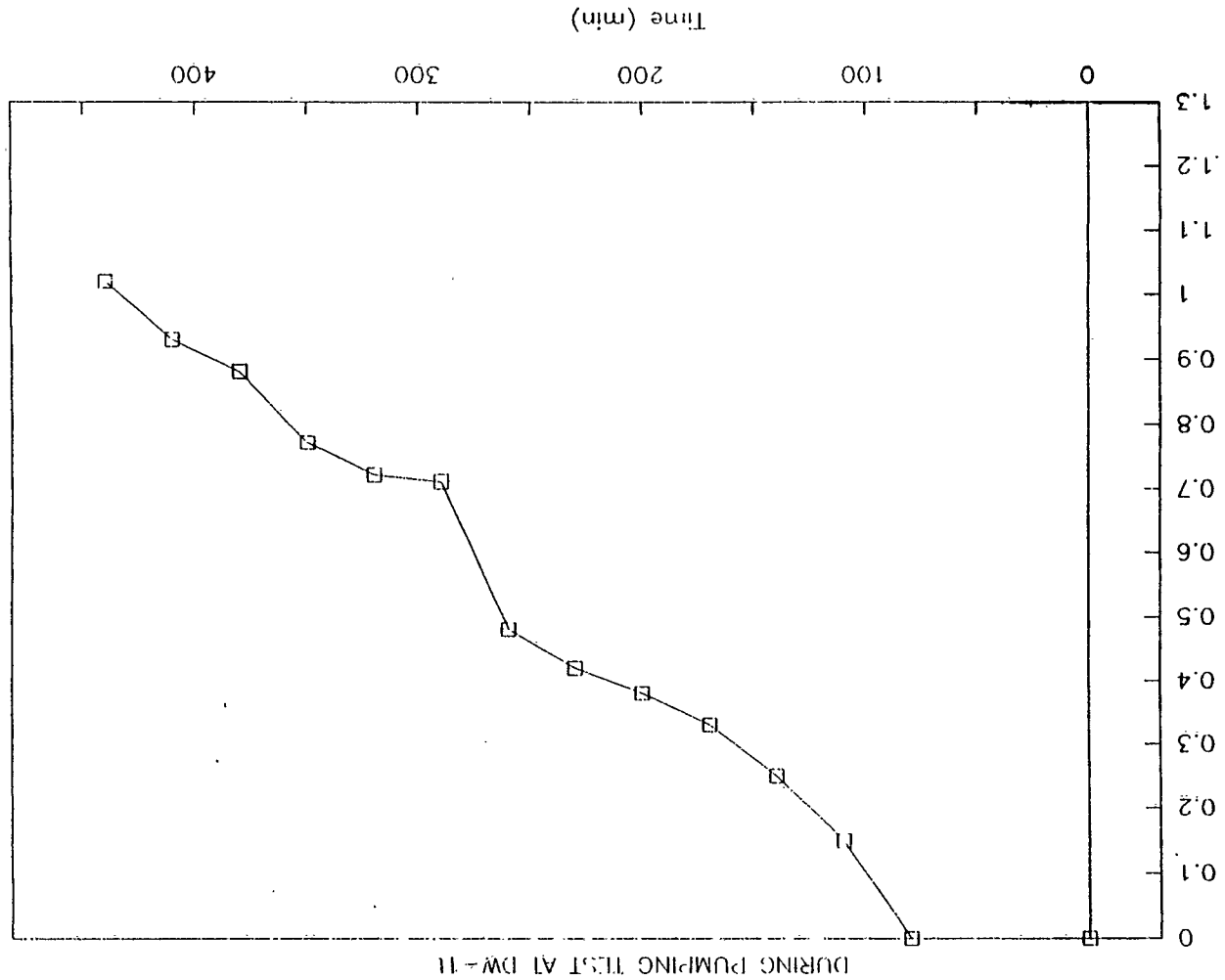

DRAWDOWN AT MONITORING WELL VW-1 DURING PUMPING TEST AT DW-1c
APRIL 11,1991
LINEMASTER SWITCH
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	DRAWDOWN (feet)
09:40	0	5.05	0.00
10:20	40	5.15	0.10
11:00	80	5.35	0.30
11:30	110	5.40	0.35
12:00	140	5.49	0.44
12:30	170	5.54	0.49
13:00	200	5.54	0.49
13:30	230	5.54	0.49
14:00	260	5.56	0.51
14:30	290	5.62	0.57
15:00	320	5.67	0.62
15:30	350	5.67	0.62
16:00	380	5.67	0.62
16:30	410	5.67	0.62
17:00	440	5.67	0.62

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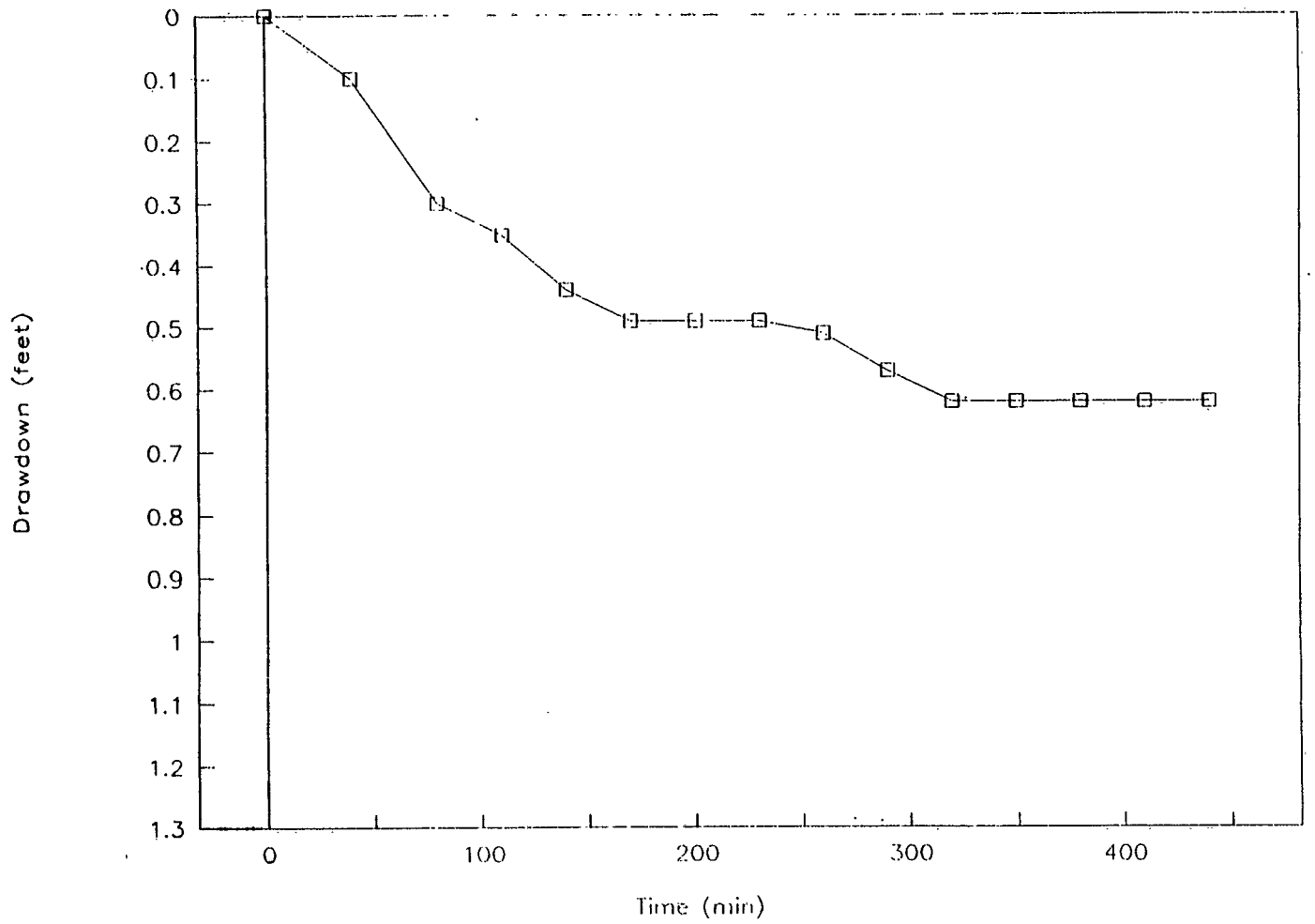
DRAWDOWN AT MONITORING WELL VW-1

DURING PUMPING TEST AT DW-1t



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DRAWDOWN AT MONITORING WELL VP-2 DURING PUMPING TEST AT DW-1t
APRIL 11,1991
LINEMASTER SWITCH
WOODSTOCK, CONNECTICUT

HR:MN	DELTA TIME (min)	DEPTH TO WATER (feet)	DRAWDOWN (feet)
09:40	0	3.45	0.00
10:20	40	3.45	0.00
11:00	80	3.50	0.05
11:30	110	3.53	0.08
12:00	140	3.50	0.05
12:30	170	3.53	0.08
13:00	200	3.53	0.08
13:30	230	3.53	0.08
14:00	260	3.53	0.08
14:30	290	3.55	0.10
15:00	320	3.55	0.10
15:30	350	3.57	0.12
16:00	380	3.56	0.11
16:30	410	3.57	0.12
17:00	440	3.55	0.10

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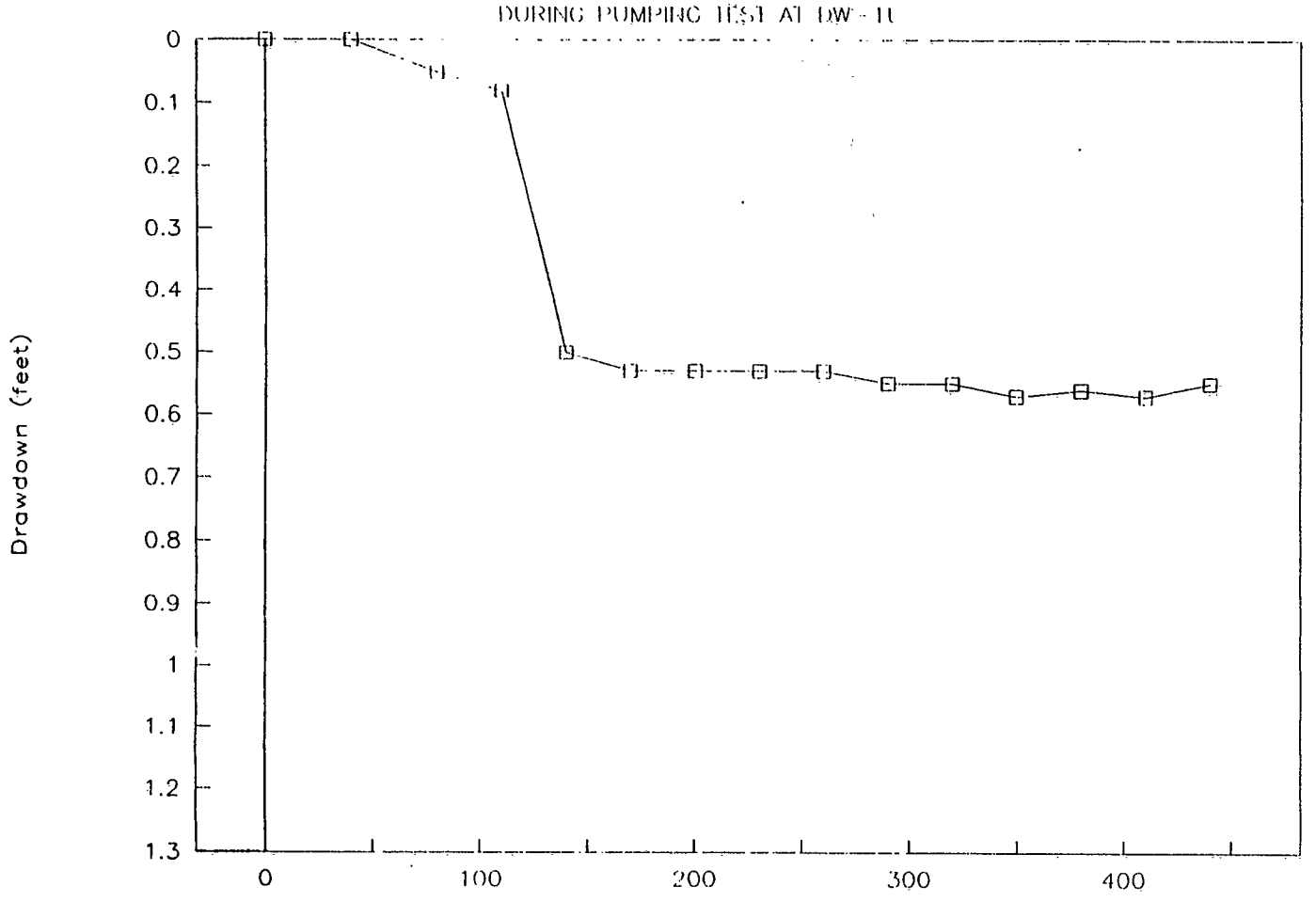
DRAWDOWN AT MONITORING WELL VP-2

DURING PUMPING TEST AT DW-1C



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APPENDIX I
BACKGROUND WATER-LEVEL STUDY

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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BACKGROUND WATER-LEVEL STUDY

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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BACKGROUND WATER-LEVEL STUDY

LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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Figure 5 Water-Level Fluctuations GW-40db and MW-1db 11/18/91-11/20/91

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List of Attachments

Attachment A Deep Bedrock Water-Level Fluctuation Graphs
Attachment B Shallow Bedrock Water-Level Data
Attachment C Till Water-Level Data

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BACKGROUND WATER-LEVEL STUDY

LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

1.0 INTRODUCTION

Water levels were measured in monitoring and supply wells over a several day time period at the Linemaster Switch site in order to determine the background ground water fluctuations in the Site area aquifers. These conditions must be known prior to the start-up of the Interim Removal Action Ground-water Treatment System. The water levels in the aquifers are expected to vary due to natural conditions, such as precipitation and induced conditions such as water supply well pumping. The background water-level studies were designed to investigate the aquifer effects caused primarily by on-site production well pumping and, to a lesser extent, off-site supply wells. Most of the water supply wells in the area are completed in the bedrock aquifer; therefore, the bedrock aquifer was studied in the greatest detail.

2.0 METHODOLOGY

The background water-level studies were conducted during the time periods from September 16-24, 1991 and November 18-20, 1991. The studies involved on-site monitoring wells and the Linemaster production well, GW-08db, and selected off-site water supply

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wells GW-17db and GW-40db as depicted on Figure 2-1 (RI Report). Water levels were measured with fiberglass tapes and data loggers. The fiberglass tapes were used to measure the water levels in the till and shallow bedrock monitoring wells. The data loggers were used to measure water levels in the deep bedrock monitoring and supply wells. Provided on Table 1 is a list of wells, dates of measurements and where the data loggers were used.

Two types of data loggers were used to record water levels 24 hours a day. The first type was an Insitu Hermit data logger which has a vented pressure transducer. The production well, GW-08db, was equipped with this type of data logger. The second data logger that was used is the Sinco data logger which has an unvented probe. The Sinco data loggers were used in the on-site deep bedrock monitoring wells and selected off-site supply wells. Barometric pressure was recorded or obtained for correction of the data because the unvented probes are affected by changes in barometric pressure. The water-level data obtained with the Sinco data loggers were subsequently corrected using the barometric pressure data.

A rain gauge was maintained on Site to record any precipitation events. On Thursday, 9/19/91, a precipitation event occurred which produced 0.15 inch of precipitation.

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TABLE 1

DATA LOGGER LOCATIONS AND DATES

BACKGROUND WATER-LEVEL STUDY
LINEMASTER SWITCH CORPORATION
AUGUST 1992

Well	Date (1991)*
GW-08db	9/17-9/24
GW-10db	9/16 - 9/18, 9/20 - 9/24
GW-12db	9/17 - 9/18, 9/20 - 9/24
GW-17db	11/18 - 11/20
GW-40db	11/18 - 11/20
MW-1db	9/16 - 9/18, 11/18 - 11/20
MW-6db	9/19 - 9/20
MW-11db	9/19 - 9/24, 11/18 - 11/20
MW-12db	9/19 - 9/20
MW-13db	9/18 - 9/19
Mw-14db	9/18 - 9/19
MW-15db	9/16 - 9/18, 9/20 - 9/24
MW-18db	9/19 - 9/20
MW-21db	9/18 - 9/19
MW-2[illegible]b	9/18 - 9/19

* Days of Week:

9/16 - Monday
9/17 - Tuesday
9/18 - Wednesday
9/19 - Thursday
9/20 - Friday
9/21 - Saturday

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3.0 DISCUSSION OF RESULTS

The following is a discussion of the water-level data collected from the study area wells. The water-level graphs for the deep bedrock monitoring wells are provided in Attachment A. Water-level data for the shallow bedrock and till wells are provided in Attachments B and C, respectively. The locations of Site monitoring wells and off-site water supply wells are shown on Figure 2-1 (RI Report).

3.1 Deep Bedrock

GW-08db

The water level in Linemaster's production well, GW-08db, was monitored with a Hermit data logger 24 hours a day from Tuesday, 9/17/91, to Tuesday, 9/24/91. The monitoring was conducted during facility operations, at night, and on the weekend. In this way, the production well water-level fluctuations during operational and non-operational periods could be recorded. Facility operations begin at 7:00 in the morning and cease at 15:30 in the afternoon. GW-08db also supplies the Blakely Residence.

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The graphs in Attachment A depict the water-level changes in GW-08db during the monitored time period. The production well cycles frequently in response to the facility water demands from 7:00 until shutdown at 15:30 as evident from the graphs. The water table recovers in the evening and into the early morning with occasional depressions caused by water usage at the Blakely residence. Increased cycling was observed during the early morning of Thursday, 9/19/91, which was due to a facet being left on at the facility. The water level recovers throughout the weekend although occasional pumping due to usage at the Blakely residence occurs as indicated by the graphs for Saturday, 9/21/91, and Sunday, 9/22/91. On Monday, 9/23/91, the facility resumed operations and water levels decreased as indicated. The maximum observed drawdown at any one cycle is approximately 100 feet.

GW-10db

The water level in GW-10db, Linemaster's former production well, was monitored during the following time periods: Monday, 9/16/91, to Wednesday, 9/18/91, and Friday, 9/20/91, to Tuesday, 9/24/91. The water level was measured with a Sinco data logger. GW-10db is located underneath the manufacturing facility and near the Zone 1 source area. The highest levels of volatile organic compounds (VOCs) in the deep bedrock have been found at GW-10db.

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The water level appears to respond to the influences of production well GW-08db as indicated on Figures 1 and 2. It begins to decrease around 7:00 when the facility begins operations. Recovery of the water level begins to occur around 15:30 when the facility shuts down although a slight off-site influence appears to be present during non-facility use periods. The maximum drawdown measured at GW-10db during facility production well use was approximately 0.5 feet. The water level at GW-10db recovers during the weekend as seen by the graphs for Saturday, 9/21/91, and Sunday, 9/22/91 in Attachment A. The amount of recovery that occurred during this time period was approximately 1.2 feet.

GW-12db

The water level in GW-12db was monitored with a Sinco data logger during the following time periods: Tuesday, 9/17/91, to Wednesday, 9/18/91, and Friday, 9/20/91, to Tuesday, 9/24/91. This well was formerly used as the supply well for the Blakely Residence. It is believed that past use of this well has induced migration of VOCs in the deep bedrock to the north of Zone 1.

The fluctuation of the water level at GW-12db does not show a noticeable correlation with the pumping cycles at the facility production well as indicated on Figures 3 and 4. A small correlation is seen on Figure 3 for Tuesday, 9/17/91, and in

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FIGURE 1

WATER-LEVELS: GW-08db AND GW-10db (9/17/91-9/18/91)

BACKGROUND WATER-LEVEL STUDY
LINEMASTER SWITCH CORP.

AUGUST 1992

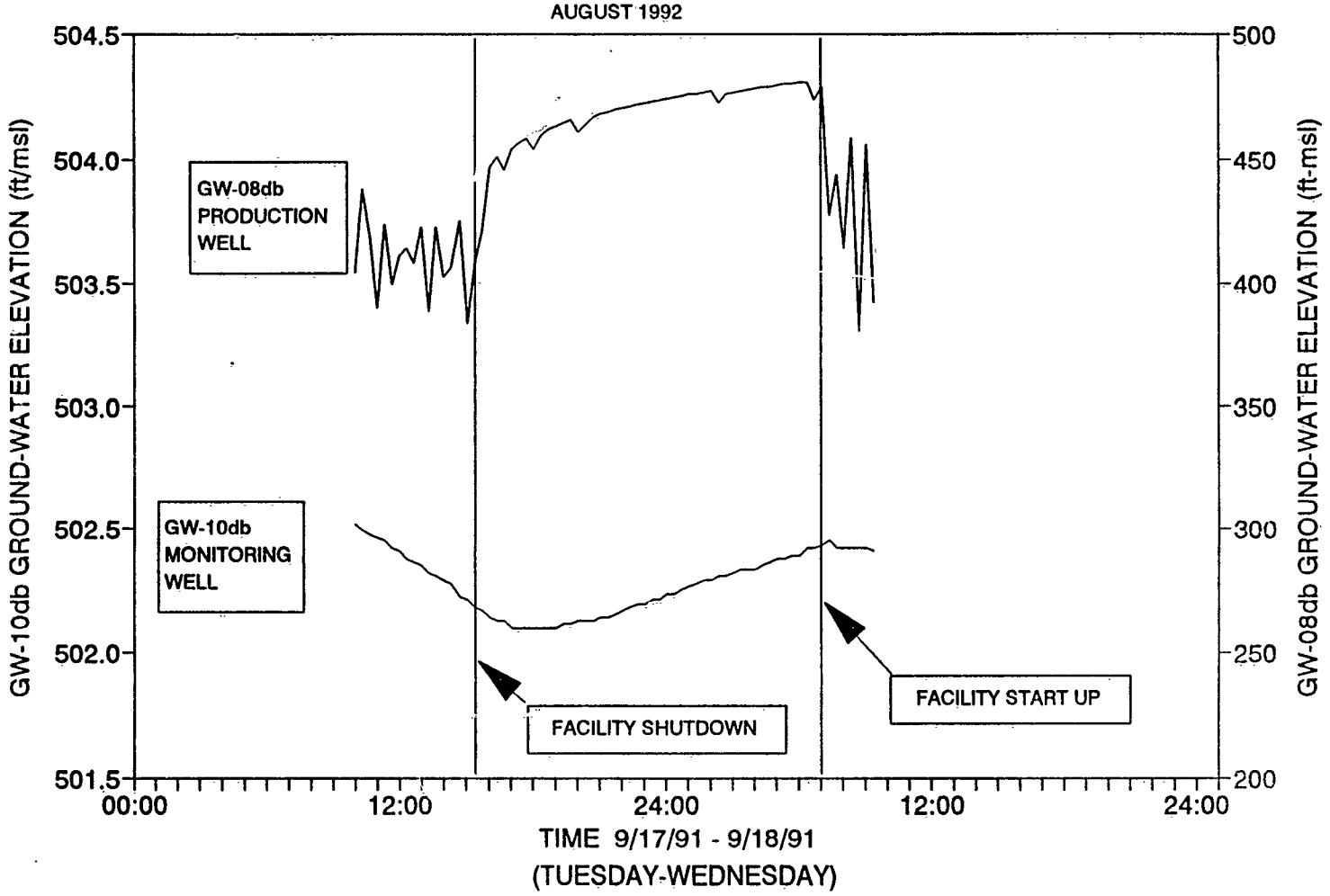

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FIGURE 2

WATER-LEVELS: GW-08db AND GW-10db (9/20/91)

BACKGROUND WATER-LEVEL STUDY
LINEMASTER SWITCH CORP.

AUGUST 1992

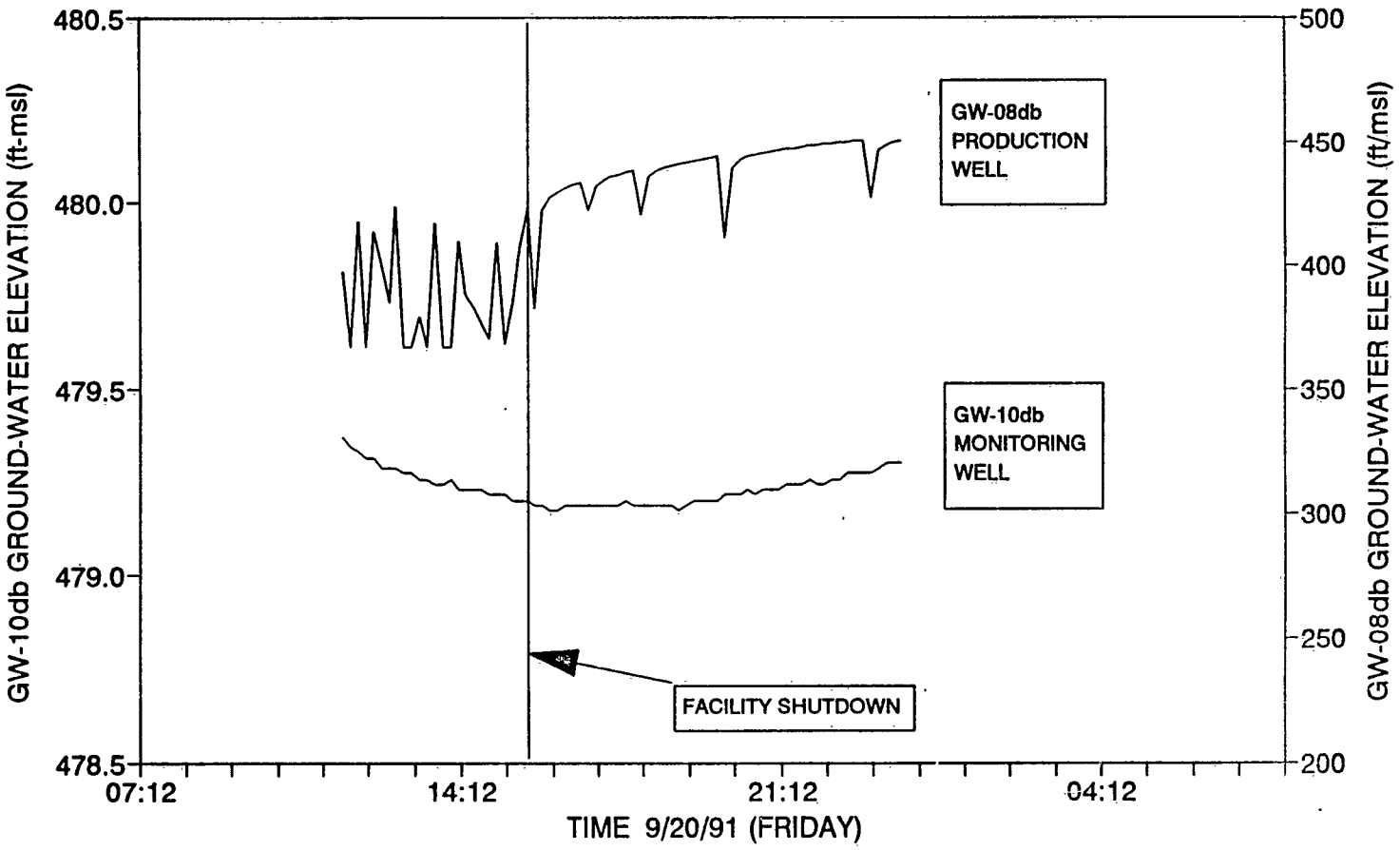

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FIGURE 3

WATER-LEVELS: GW-08db AND GW-12db (9/17/91-9/18/91)

BACKGROUND WATER-LEVEL STUDY
LINEMASTER SWITCH CORP.

AUGUST 1992

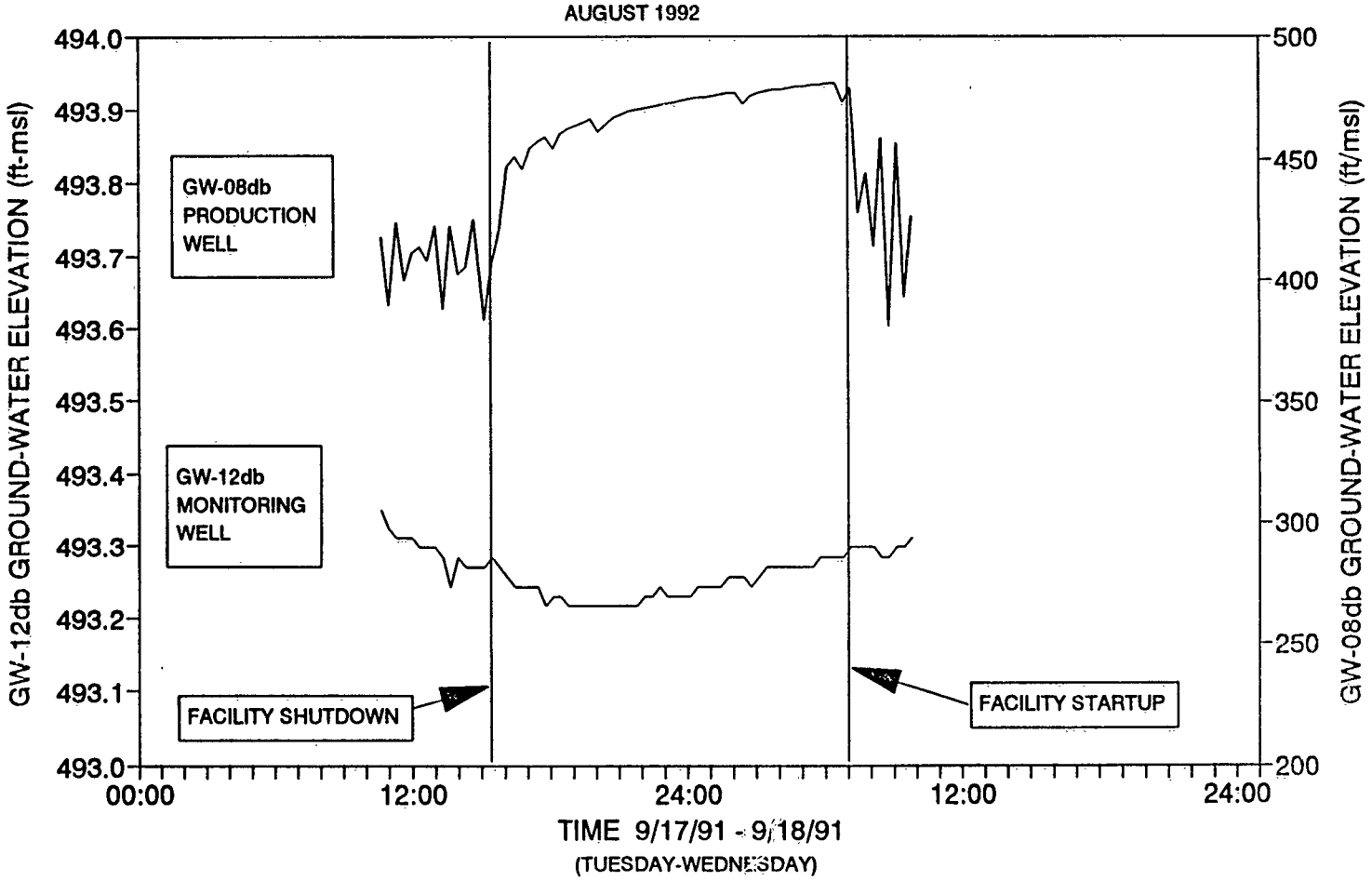

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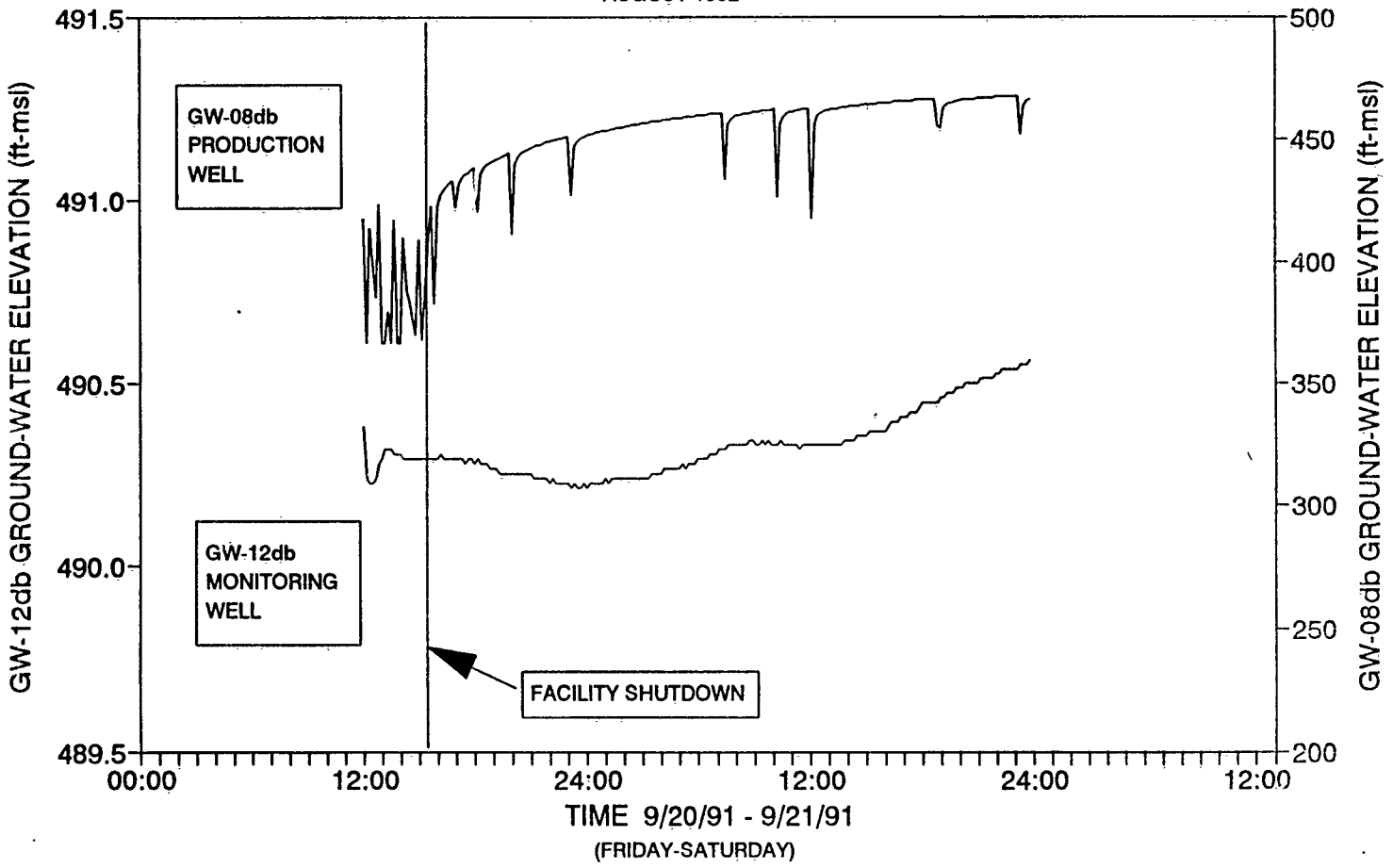
FIGURE 4

WATER-LEVELS: GW-08db AND GW-12db (9/20/91-9/21/91)

BACKGROUND WATER-LEVEL STUDY
LINEMASTER SWITCH CORP.

AUGUST 1992



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addition, the water level shows recovery in GW-12db during the weekend as indicated by the graphs for Saturday, 9/21/91, and Sunday, 9/22/91 (Attachment A).

GW-17db

The water level in GW-17db was monitored with a Sinco data logger from Monday, 11/18/91, to Wednesday, 11/20/91. This well is used as the supply well for the Harding Residence and is located north of the facility.

The fluctuation of the water level shows the typical water usage during the day at the residence. The water use begins to occur at 8:00 and discontinues in the evening as indicated by the graphs in Attachment A. The water levels in the well do not appear to be influenced by the facility production well.

GW-40db

The water level in GW-40 was monitored with a Sinco data logger from Monday, 11/18/91, to Wednesday, 11/20/91. This well is used as the supply well for the Woodstock Town Hall. The town hall well also supplies the fire department which is located adjacent to the town hall. This well has been impacted by VOCs.

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The fluctuation of the water level shows the typical water usage during the day at the town hall. The water use begins to occur at 8:00 and discontinues in the evening. The water levels in the well do not appear to be influenced by the facility production well as indicated by the graphs in Attachment A.

MW-1db

The water level in MW-1db was monitored with a Sinco data logger during the following time periods: Monday, 9/16/91, to Wednesday, 9/18/91, and Monday, 11/18/91, to Wednesday, 11/20/91. MW-1db is located northeast of the Linemaster facility.

The water level in MW-1db appears to be influenced by the facility production well as depicted on the water-level fluctuation graphs (Attachment A). The water level in MW-1db begins to decrease around the time of the facility start-up at 7:00 and increases when the facility shuts down at 15:30. The water level in MW-1db also may be influenced by GW-40db, the off-site town hall well. For instance, at approximately 22:00 on Tuesday 11/19/91 a significant amount of pumping occurred at GW-40db as indicated on Figure 5. As seen on Figure 5, a substantial decrease in the water table occurred at MW-1db, at this time.

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FIGURE 5

WATER-LEVELS: GW-40db AND MW-1db (11/18/91-11/20/91)

BACKGROUND WATER-LEVEL STUDY
LINEMASTER SWITCH CORP.

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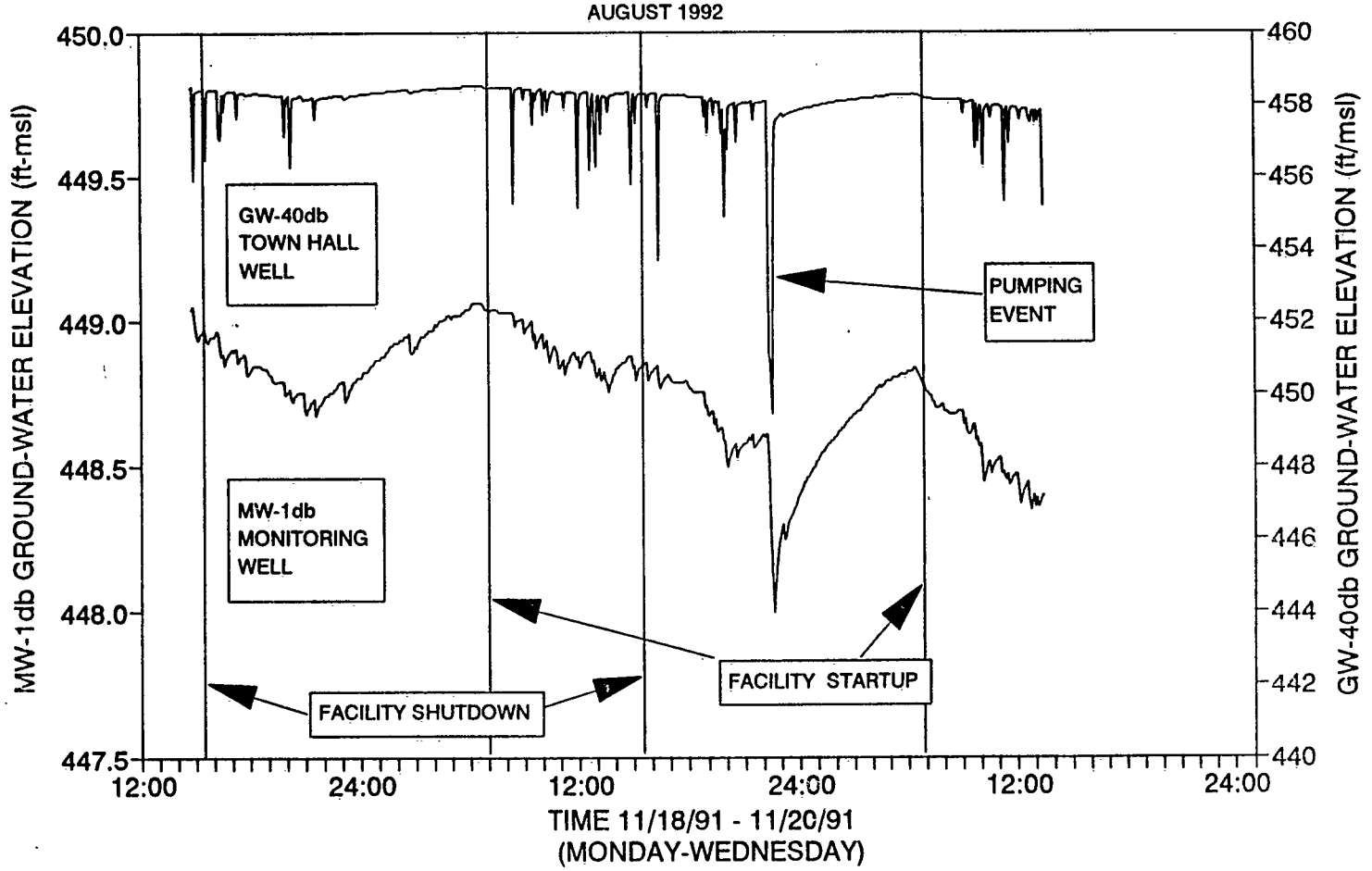

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MW-6db

The water level in MW-6db was monitored with a Sinco data logger from Thursday, 9/19/19, to Friday, 9/20/91, as indicated on Table 1. MW-6db is located northeast of the facility. Elevated levels of VOCs have been found at this well.

The water level in MW-6db appears to be influenced by the production well pumping as shown on Figure 6. The water level in MW-6db begins to decrease near the time of facility start-up and recovers after the facility shutdown.

MW-11db

The water level in MW-11db was monitored with a Sinco data logger during the following time periods: Thursday, 9/19/91, to Tuesday, 9/24/91, and Monday, 11/18/91, to Wednesday, 11/20/91. MW-11db is located northeast of the Linemaster facility.

The water level in MW-11db appears to be influenced by the facility production well in addition to off-site pumping wells. The water level in MW-1db begins to decrease around the time of the facility start-up at 7:00 and increases when the facility shuts down at 15:30 as indicated on Figures 7 and 8. The water level in MW-1db also appears to be influenced by GW-40db, the off-site town hall well. For instance, at approximately 22:00 on

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FIGURE 6
WATER-LEVELS: GW-08db AND MW-6db (9/19/91-9/20/91)

BACKGROUND WATER-LEVEL STUDY
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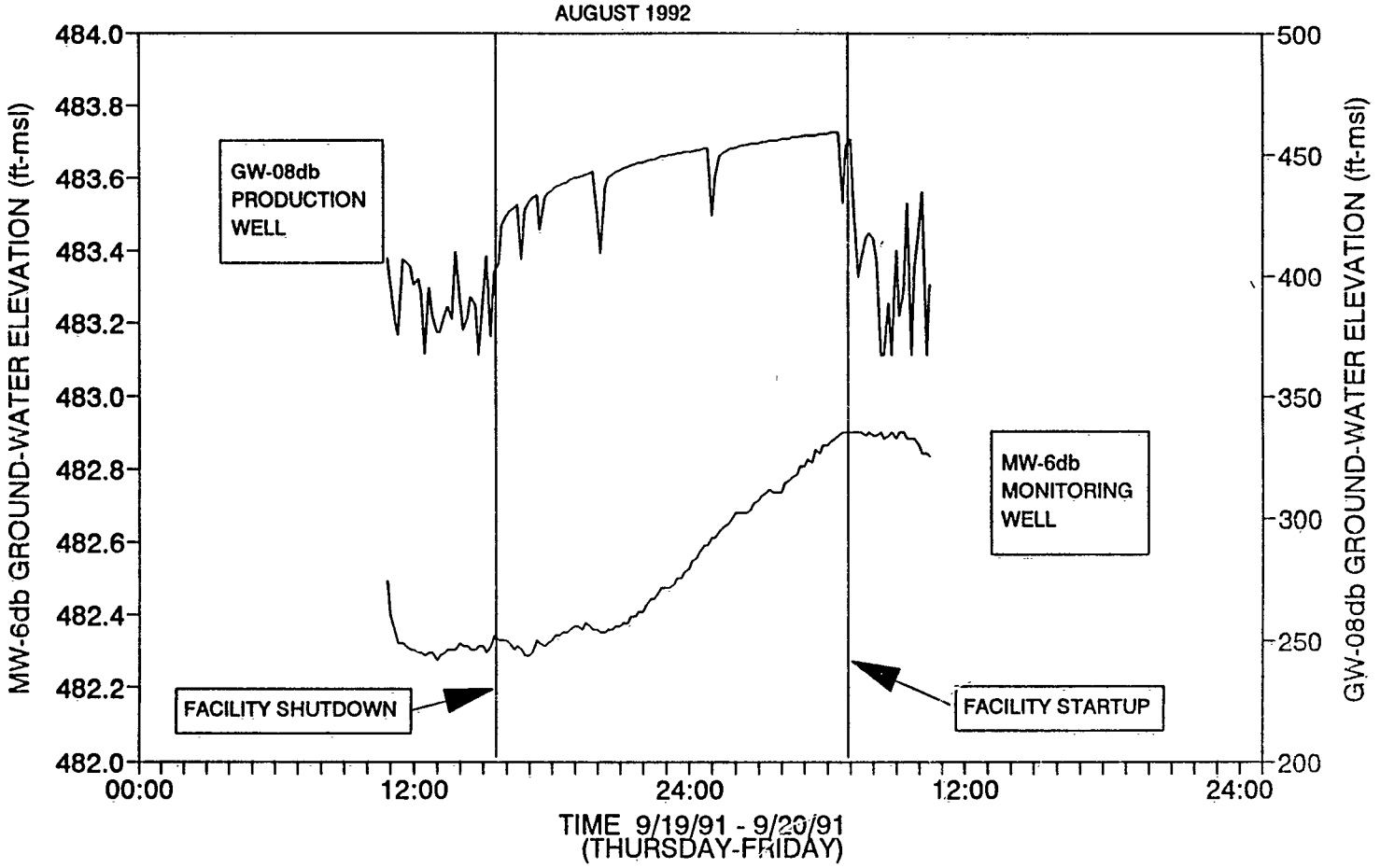

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FIGURE 7

WATER-LEVELS: GW-08db AND MW-11db (9/19/91-9/20/91)

BACKGROUND WATER-LEVEL STUDY
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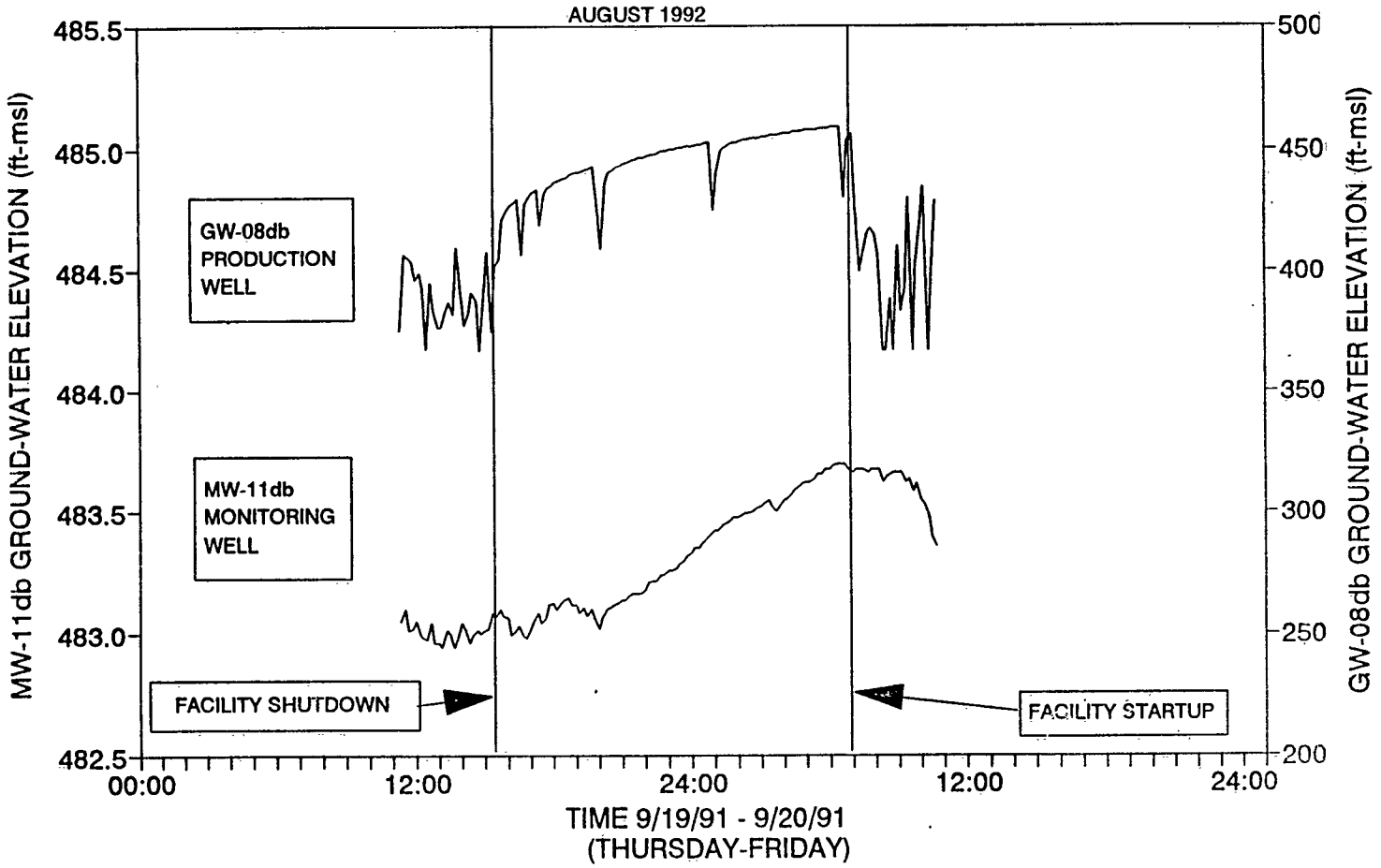

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FIGURE 8

WATER-LEVELS: GW-08db AND MW-11db (9/20/91-9/23/91)

BACKGROUND WATER-LEVEL STUDY
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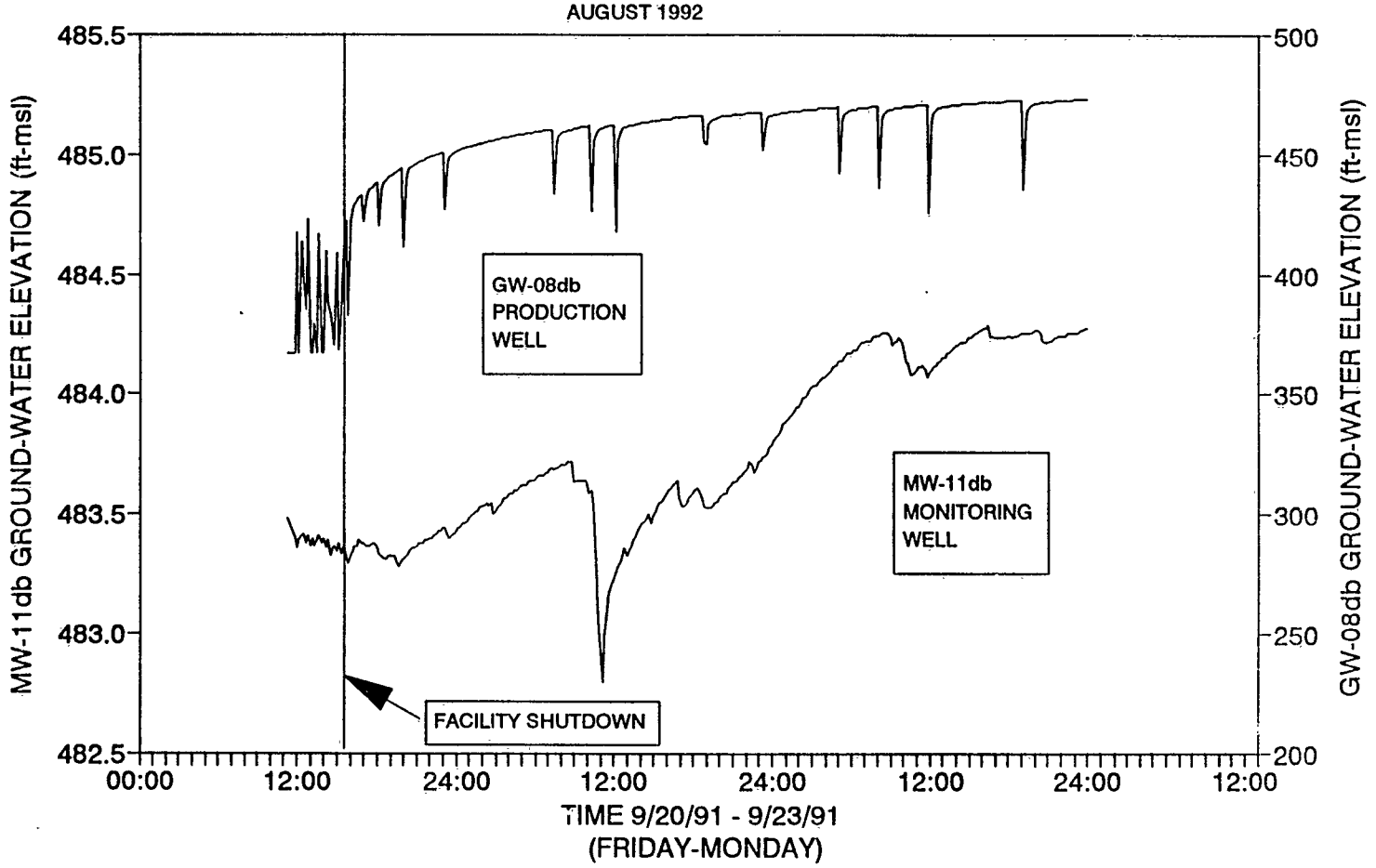

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Tuesday, 11/19/91, a significant amount of pumping occurred at GW-40db, as indicated on Figure 9. This pumping appears to have decreased the water level at MW-11db. As seen on Figure 9, a substantial decrease in the water table occurred at MW-11db. Effects of the pumping of GW-40db were seen at MW-1db which is located in the same vicinity as MW-11db (Figure 5).

MW-12db

The water level in MW-12db was monitored with a Sinco data logger from Thursday, 9/19/19, to Friday, 9/20/91. MW-12db is located east of the facility.

The water level in MW-12db does not appear to be influenced by the facility production well pumping as indicated on Figure 10.

MW-13db

The water level in MW-13db was monitored with a Sinco data logger from Wednesday, 9/18/19, to Thursday, 9/19/91. MW-13db is located southeast of the facility.

The water level in MW-13db appears to be influenced by the facility production well pumping as indicated on Figure 11. The water level in MW-13db begins to decrease near the time of facility start-up and recovers after the facility shutdown.

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FIGURE 9
WATER-LEVELS: GW-40db AND MW-11db (11/18/91-11/20/91)
BACKGROUND WATER-LEVEL STUDY
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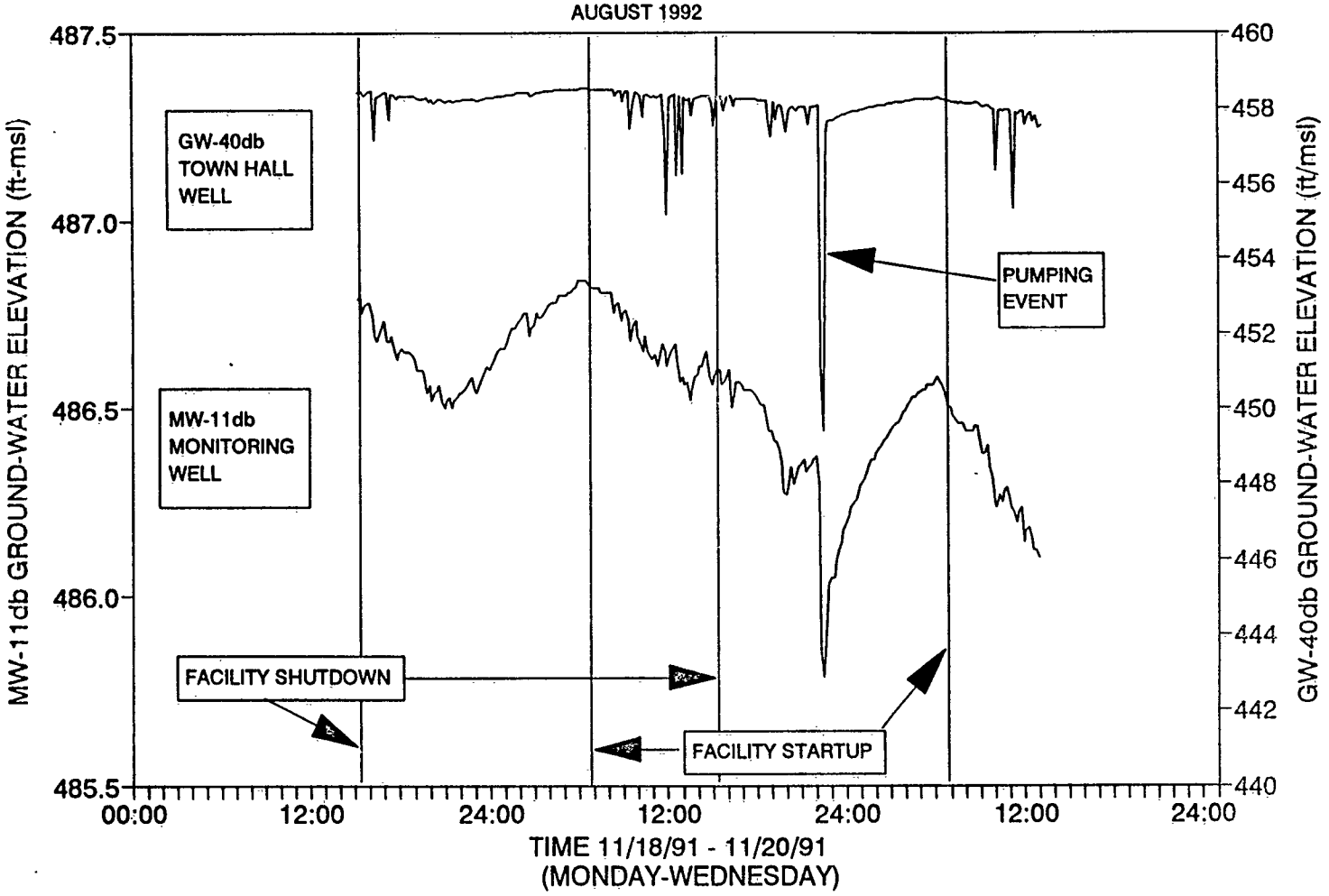

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FIGURE 10

WATER-LEVELS: GW-08db AND MW-12db (9/19/91-9/20/91)

BACKGROUND WATER-LEVEL STUDY
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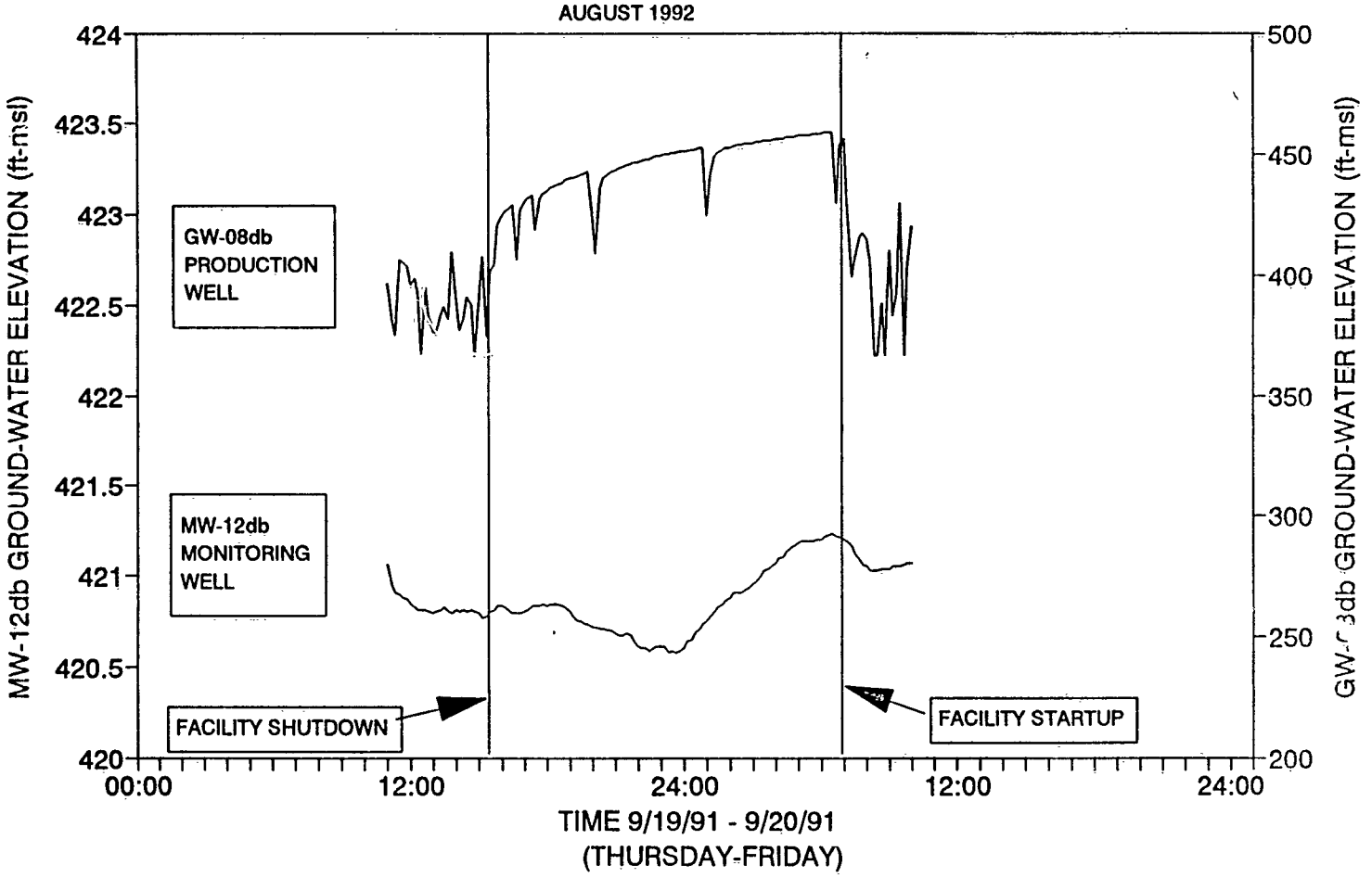

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FIGURE 11

WATER-LEVELS: GW-08db AND MW-13db (9/18/91-9/19/91)

BACKGROUND WATER-LEVEL STUDY
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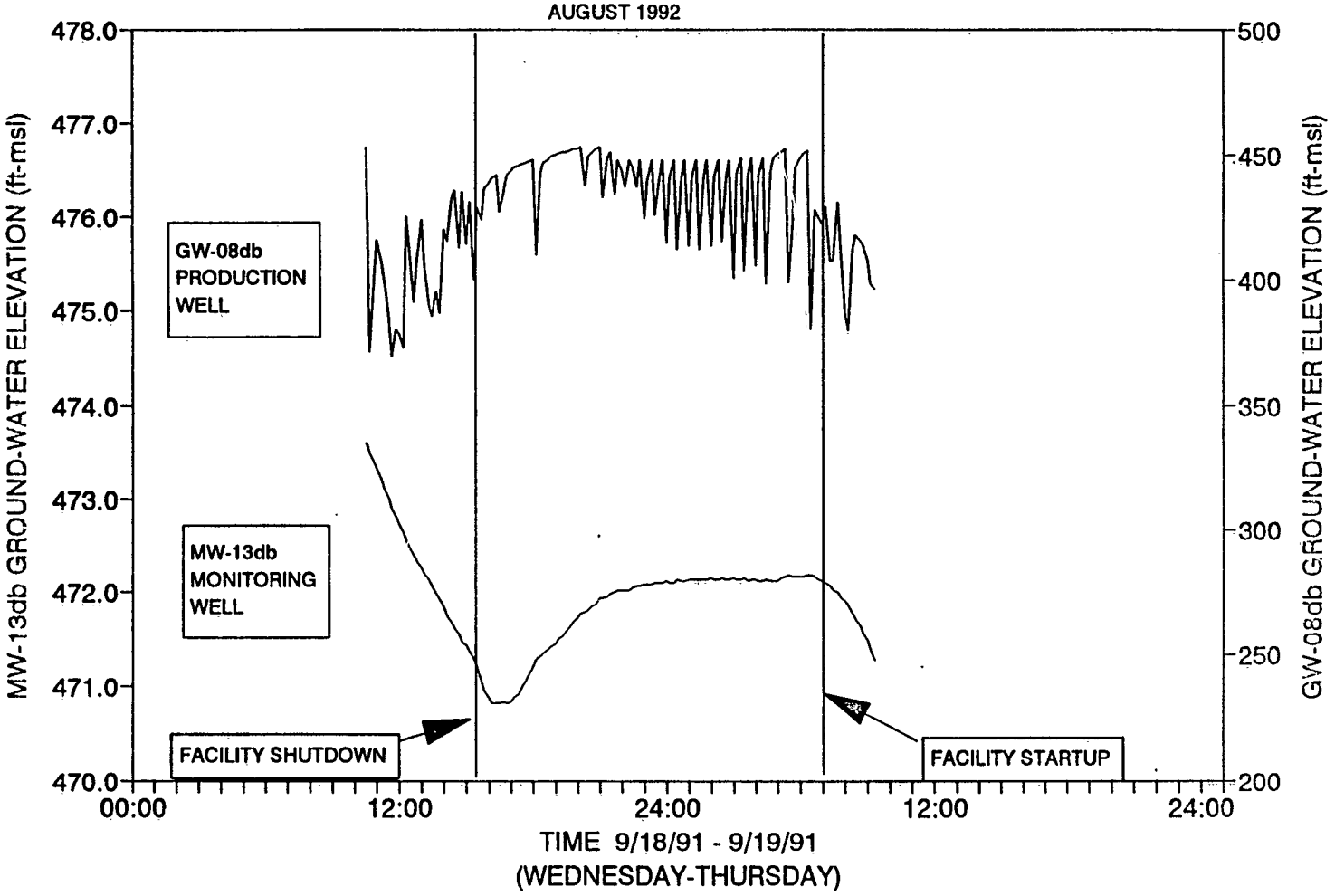

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MW-14db

The water level in MW-14db was monitored with a Sinco data logger from Wednesday, 9/18/19, to Thursday, 9/19/91. MW-14db is located southeast of the facility.

The water level in MW-14db may be influenced by the facility production well pumping as indicated on Figure 12. The water level in MW-14db begins to decrease near the time of facility start-up. MW-14db also appears to be influenced by off-site supply well pumping because the water level continues to decrease past facility shutdown.

MW-15db

The water level in MW-15db was monitored with a Sinco data logger during the following time periods: Monday, 9/16/91, to Wednesday, 9/18/19, and Friday, 9/20/91, to Tuesday, 9/24/91. MW-15db is located north of the facility.

The water level in MW-15db may be influenced by the facility production well pumping as indicated on Figures 13 and 14. The water level in MW-15db begins to decrease near the time of facility start-up. MW-15db also appears to be influenced by off-site pumping sources because water level continues to decrease after facility shutdown. Influences from off-site

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FIGURE 12

WATER-LEVELS: GW-08db AND MW-14db (9/18/91-9/19/91)

BACKGROUND WATER-LEVEL STUDY
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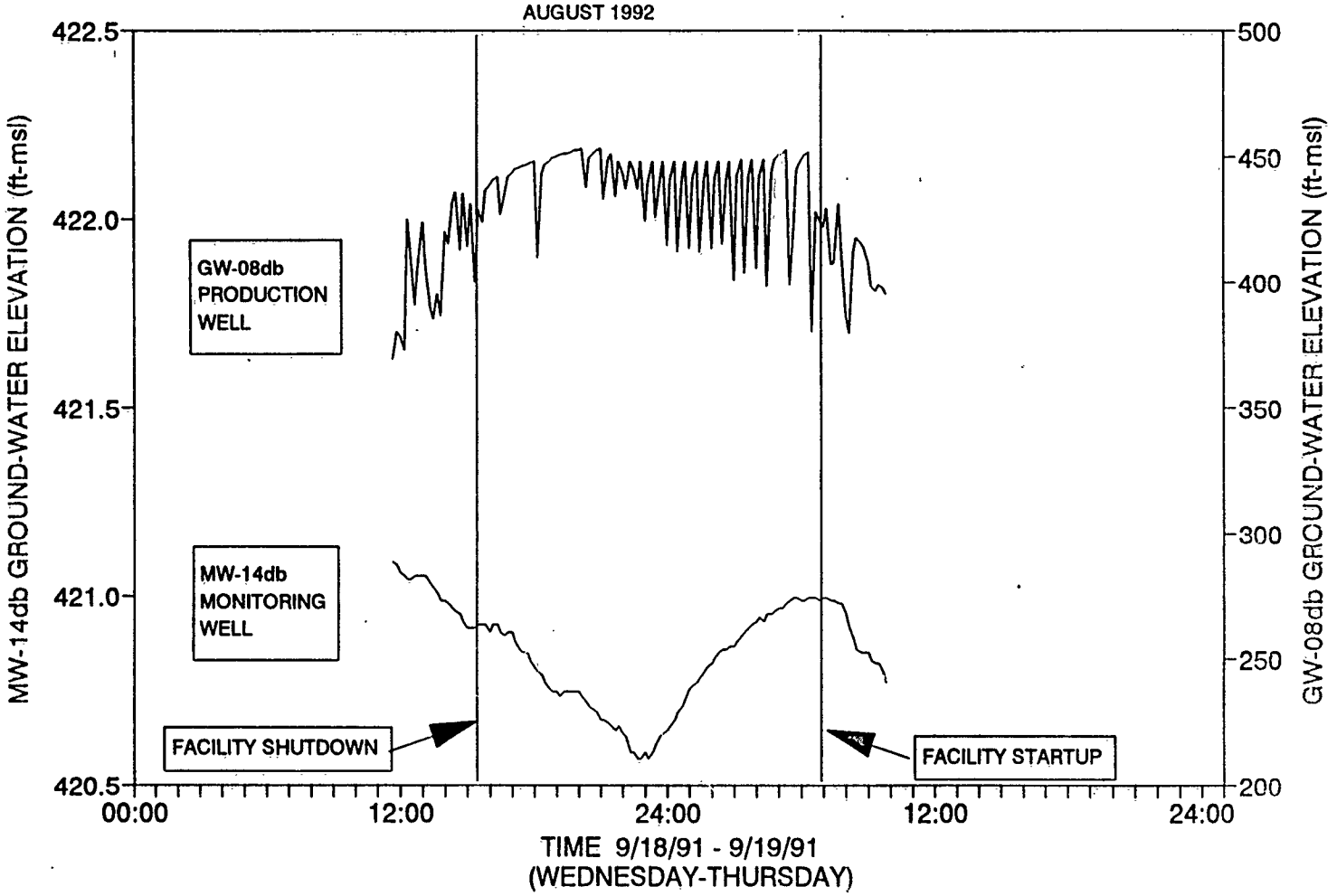

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FIGURE 13

WATER-LEVELS: GW-08db AND MW-15db (9/17/91-9/18/91)

BACKGROUND WATER-LEVEL STUDY
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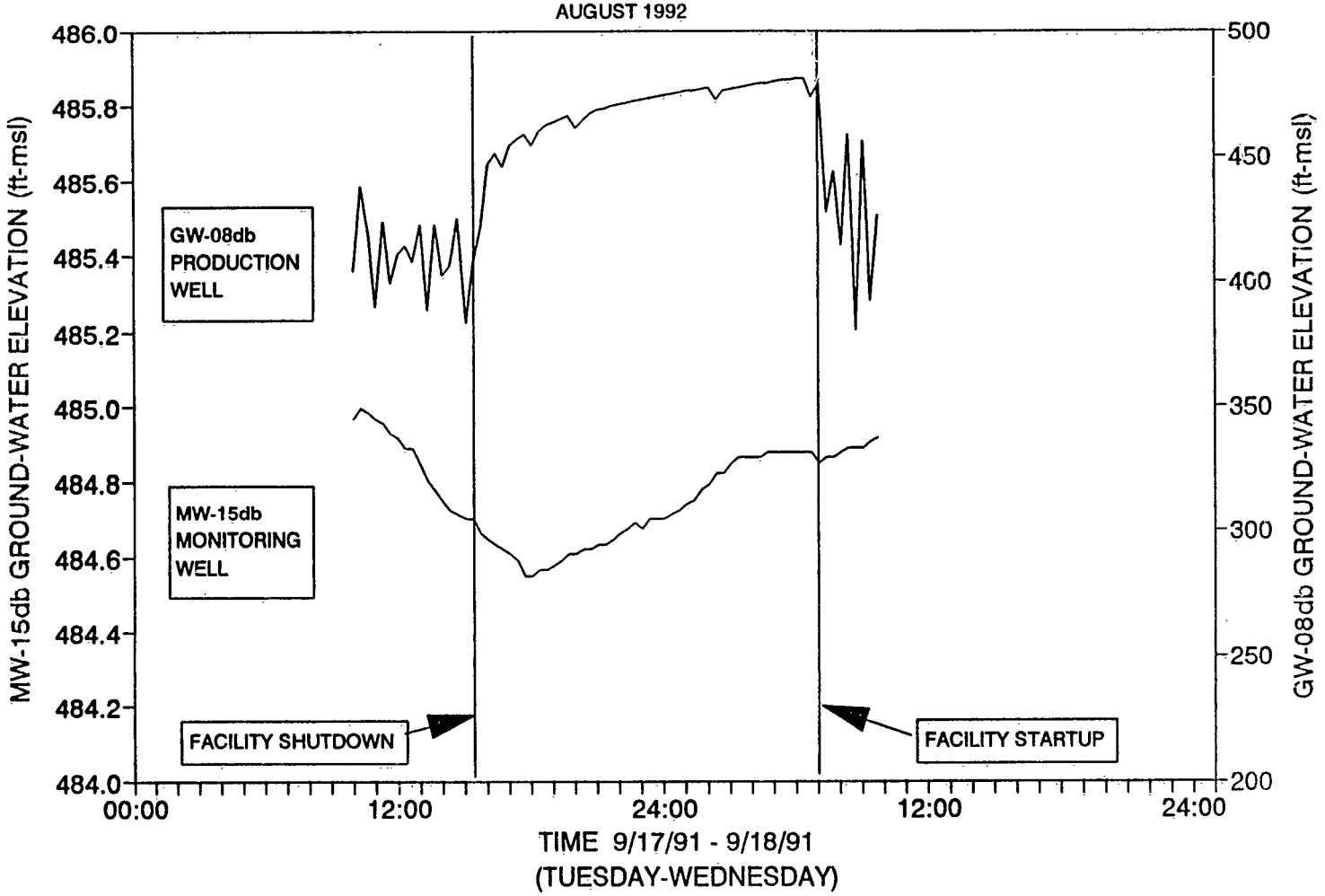

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FIGURE 14
WATER-LEVELS: GW-08db AND MW-15db (9/20/91-9/23/91)
BACKGROUND WATER-LEVEL STUDY
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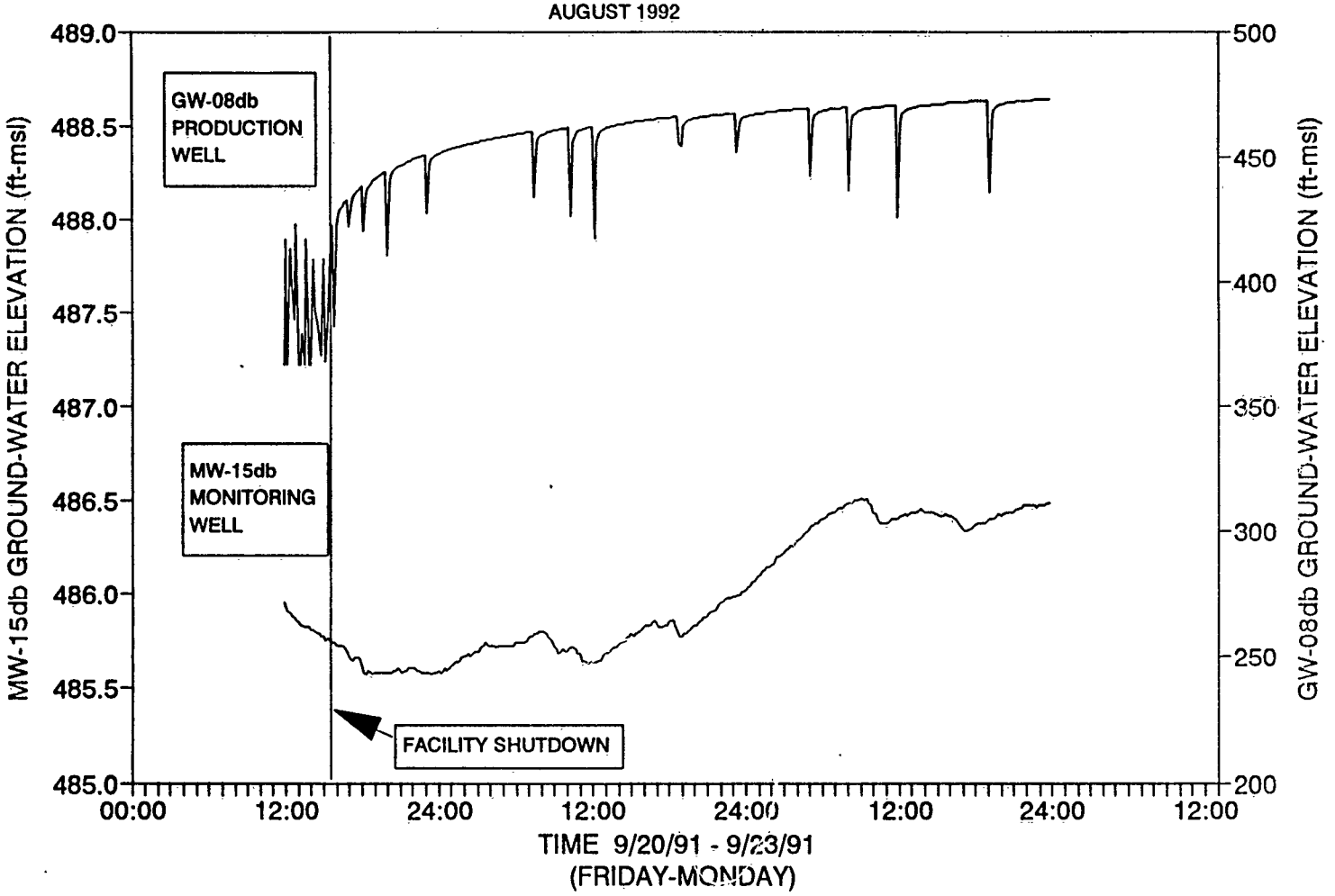

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pumping sources are also evident in MW-15db as indicated by the graphs for Saturday, 9/21/91, and Sunday, 9/22/91 (Attachment A).

MW-18db

The water level in MW-18db was monitored with a Sinco data logger Thursday, 9/19/91, to Friday, 9/20/91. MW-18db is located northeast of the Linemaster facility.

The water level in MW-18db does not appear to be influenced by the facility production well as indicated on Figure 15. However, the water level does appear to be influenced by off-site supply well pumping because the water level shows fluctuations not related to facility well pumping.

MW-21db

The water level in MW-21db was monitored with a Sinco data logger from Wednesday, 9/18/91, to Thursday, 9/19/19. MW-21db is located south of the facility.

The water level in MW-21db appears to be significantly influenced by the facility production well pumping as indicated on Figure 16. The water level in MW-21db begins to decrease near the time of facility start-up and recovers after the facility shutdown.

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FIGURE 15
WATER-LEVELS: GW-08db AND MW-18db (9/19/91-9/20/91)
BACKGROUND WATER-LEVEL STUDY
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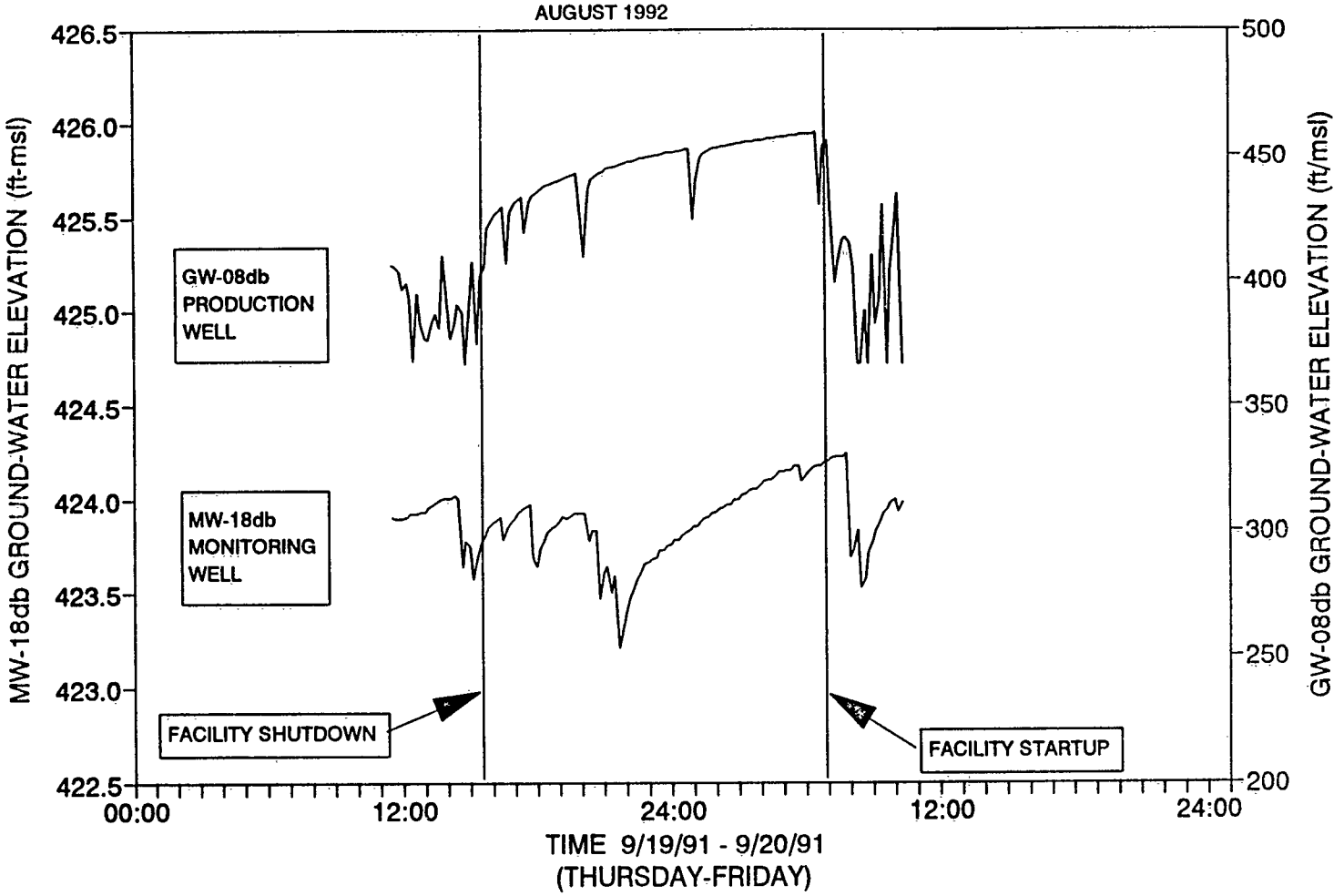

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FIGURE 16
WATER-LEVELS: GW-08db AND MW-21db (9/18/91-9/19/91)
BACKGROUND WATER-LEVEL STUDY
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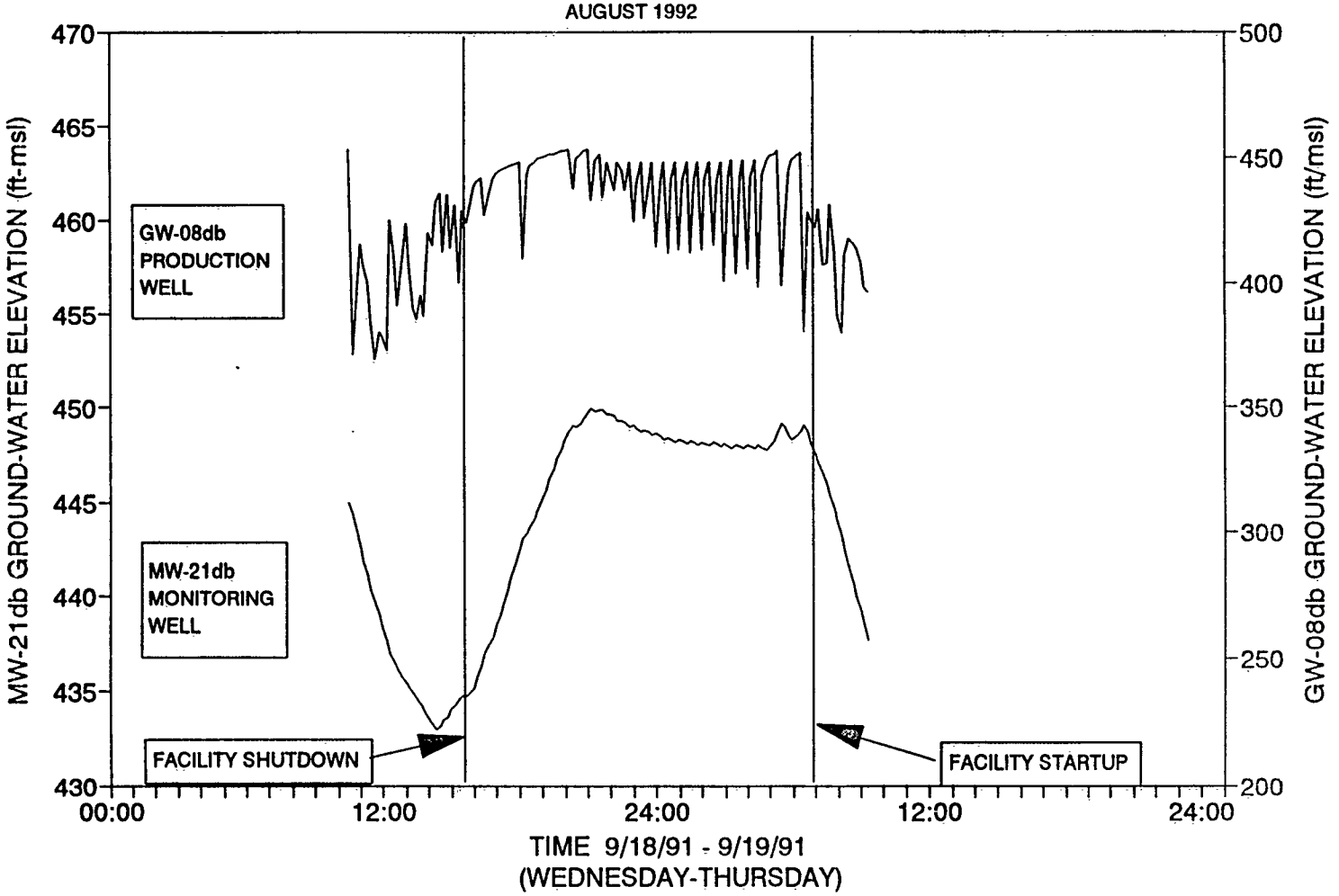

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MW-22db

The water level in MW-22db was monitored with a Sinco data logger from Wednesday, 9/18/19, to Thursday, 9/19/91. MW-22db is located south of the facility.

The water level in MW-22db does not appear to be influenced by facility production well pumping as indicated on Figure 17. The water level in MW-22db does not decrease near facility start-up nor does it recover after the facility shutdown.

3.2 Shallow Bedrock

The fluctuations of the water levels in the shallow bedrock wells did not show a direct correlation with the pumping cycles of the production well. The water levels did not decrease during facility production well use periods nor did they increase after facility shutdown. Provided in Attachment B is a compilation of the data for the shallow bedrock wells. The maximum change at any one well was less than one foot. The water levels in all of the shallow bedrock wells with the exception of MW-5sb, MW-8sb and MW-14sb increased, as expected, after the 9/19/91 precipitation event. The precipitation event had the greatest effect on the water levels in the shallow bedrock wells.

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FIGURE 17
WATER-LEVELS: GW-08db AND MW-22db (9/18/91-9/19/91)
BACKGROUND WATER-LEVEL STUDY
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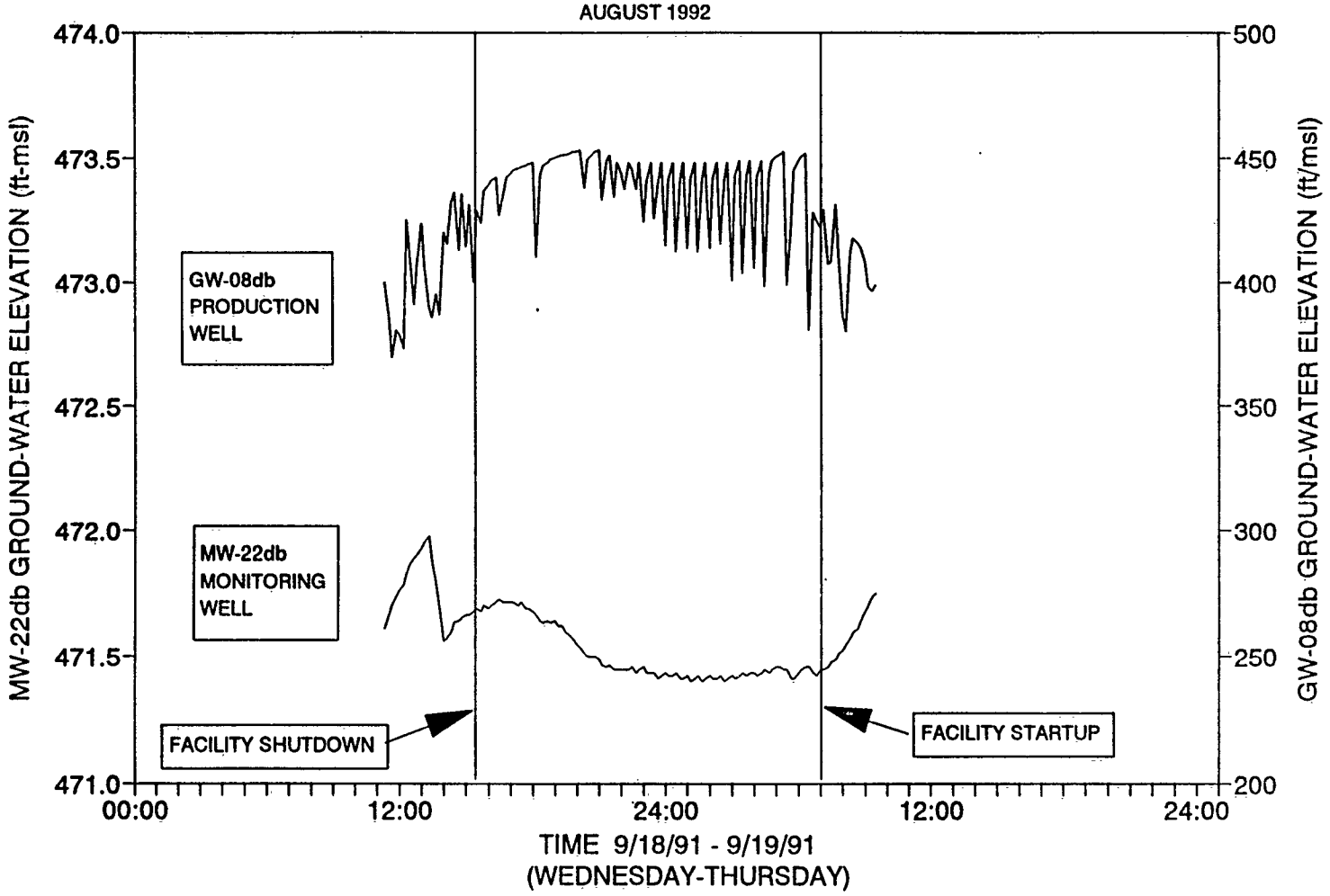

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The lack of a direct correlation between the water levels in the shallow bedrock and pumping of the production well indicates that the production well is drawing water from deep, high-producing fractures. However, due to the fractured nature of the bedrock and the vertical distribution of contaminants at the Site, a hydraulic connection exists between the deep bedrock and the shallow bedrock. The influence of deep bedrock pumping on the shallow bedrock, while not seen from this study, will be examined as part of the Interim Removal Action water-level monitoring program.

3.3 Till

The change of water levels in the till wells at the Site does show a direct correlation with the pumping cycles of the production well, GW-08db. The water levels did not decrease during facility start-up and use periods nor did they increase after shutdown. Provided in Attachment C is a compilation of the data for the till wells. The maximum change at any one well was less than one foot. The precipitation event that occurred on 9/19/91 appears to have had a significant influence on the water levels within the till wells. The water levels in all of the till wells with the exception of MW-3t, MW-11t, and DW-1t increased, as expected, after the precipitation event.

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Due to the vertical distribution of contaminants at the Site, a hydraulic connection exists between the deep bedrock and the till. The till is characterized by a low hydraulic conductivity and is not expected to be readily influenced by pumping of the deep bedrock. The influence of deep bedrock pumping on the till, while not seen from this study, will be examined as part of the Interim Removal Action water-level monitoring program.

4.0 SUMMARY OF RESULTS

Pumping of the production well hydraulically affects a large area of the deep bedrock at the Site. This is shown by the water-level decrease in deep bedrock monitoring wells during facility operation and water-level increase after facility shutdown. The following deep bedrock wells were monitored with data loggers during the background water-level study: GW-08db, GW-10db, GW-12db, GW-17, GW-40, MW-1db, MW-6db, MW-11db, MW-13db, MW-14db, MW-15db, MW-18db, MW-21db, and MW-22db. The following wells appear to be affected by the production well GW-08db: GW-10db, MW-1db, MW-6db, MW-11db, MW-13db, MW-14db, MW-15db and MW-21db.

A number of on-site deep bedrock monitoring wells also appear to be affected by off-site supply well pumping. This is shown by water-level decrease in the wells after facility shutdown.

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On-site deep bedrock wells that appear to be affected by off-site pumping sources include: MW-1db, MW-11db, MW-14db, MW-15db, and MW-18db.

The distribution of VOCs in the deep bedrock at the Site is better understood based on the findings of the background water-level studies. It appears that GW-08db has a hydraulic effect on GW-10db located under the facility in an area of highly contaminated bedrock. The VOCs at the production well originated from the deep bedrock in the vicinity of the facility. The VOCs may have followed along a fracture set to the south being pulled by production well pumping. Evidence of preferential migration along a fracture set from the facility to the production well was seen from the data gathered from GW-10db and MW-21db. Significant water level fluctuations were seen in GW-10db and MW-21db during operation of the production well. GW-10db is located underneath the facility and MW-21db is located between the facility and the production well.

The pumping of GW-40db appears to affect the water levels in on-site deep bedrock monitoring wells MW-1db and MW-11db. This is expected due to the presence of VOCs at GW-40db. Water appears to be drawn from the Site area in the deep bedrock during the pumping of GW-40db.

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No obvious production well pumping influence was seen at the till or shallow bedrock monitoring wells. These wells were most affected by a precipitation event that occurred during the background water-level studies. The deep bedrock is hydraulically connected to the till and shallow bedrock at the Site due to the fractured nature of the bedrock and as evident by the VOC distribution. The background water-level studies may have not been performed over a time period long enough to show the hydraulic connection. Further investigation into this hydraulic connection will be conducted during the Interim Removal Action water-level monitoring program.

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ATTACHMENT A

DEEP BEDROCK WATER-LEVEL FLUCTUATION GRAPHS

BACKGROUND WATER-LEVEL STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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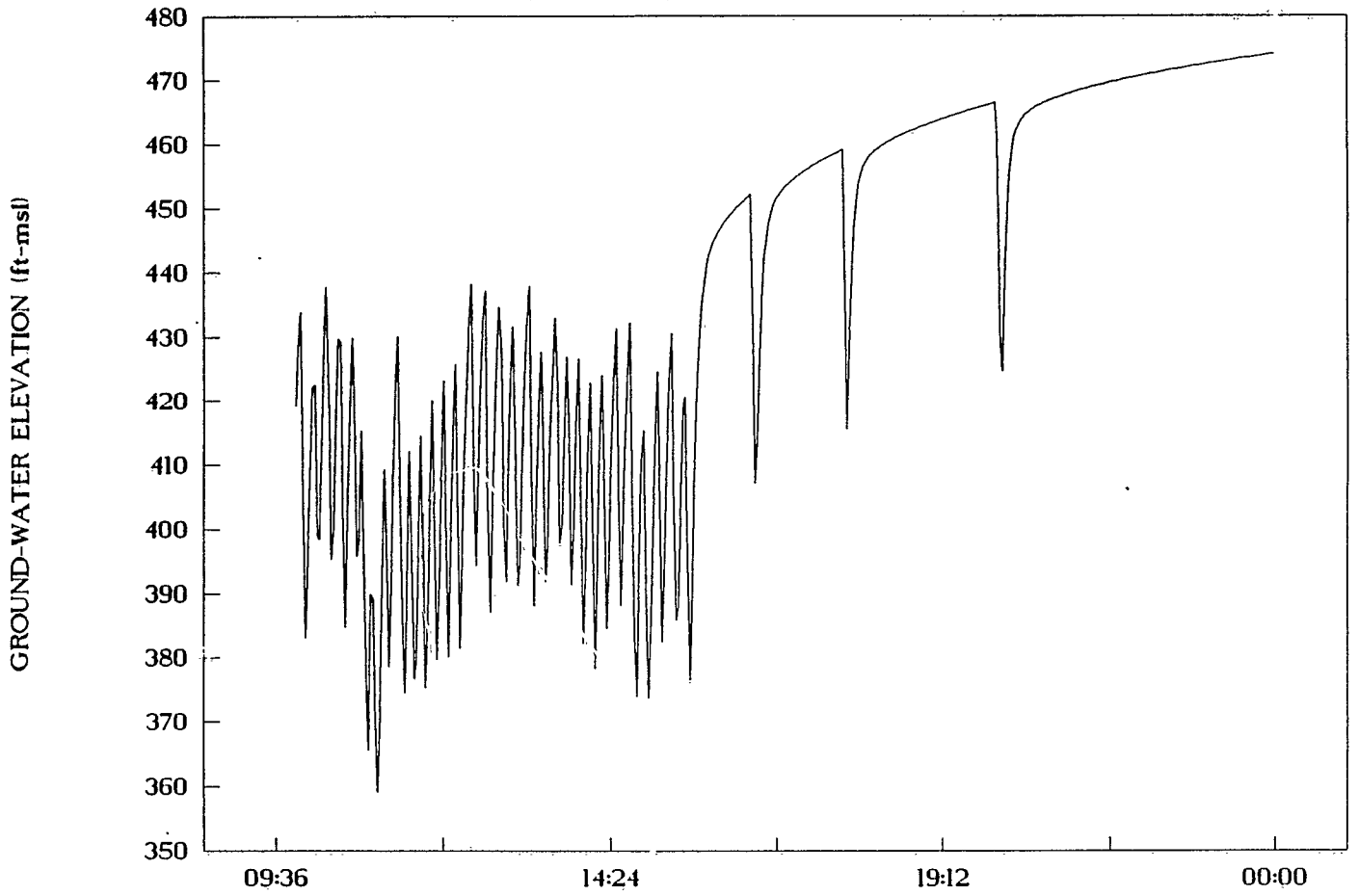
BACKGROUND WATER LEVEL STUDY GW-08db



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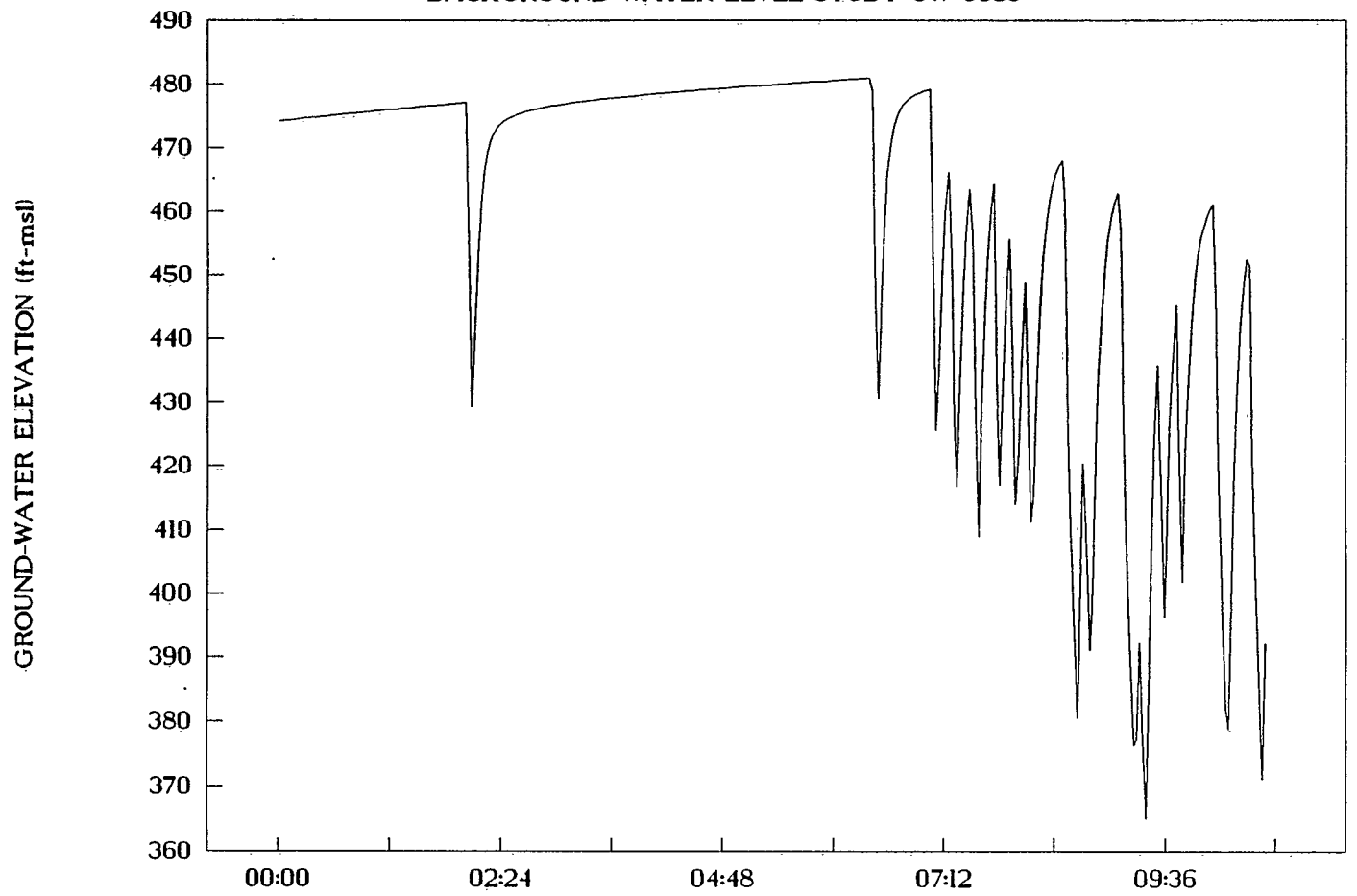
BACKGROUND WATER LEVEL STUDY GW-08db



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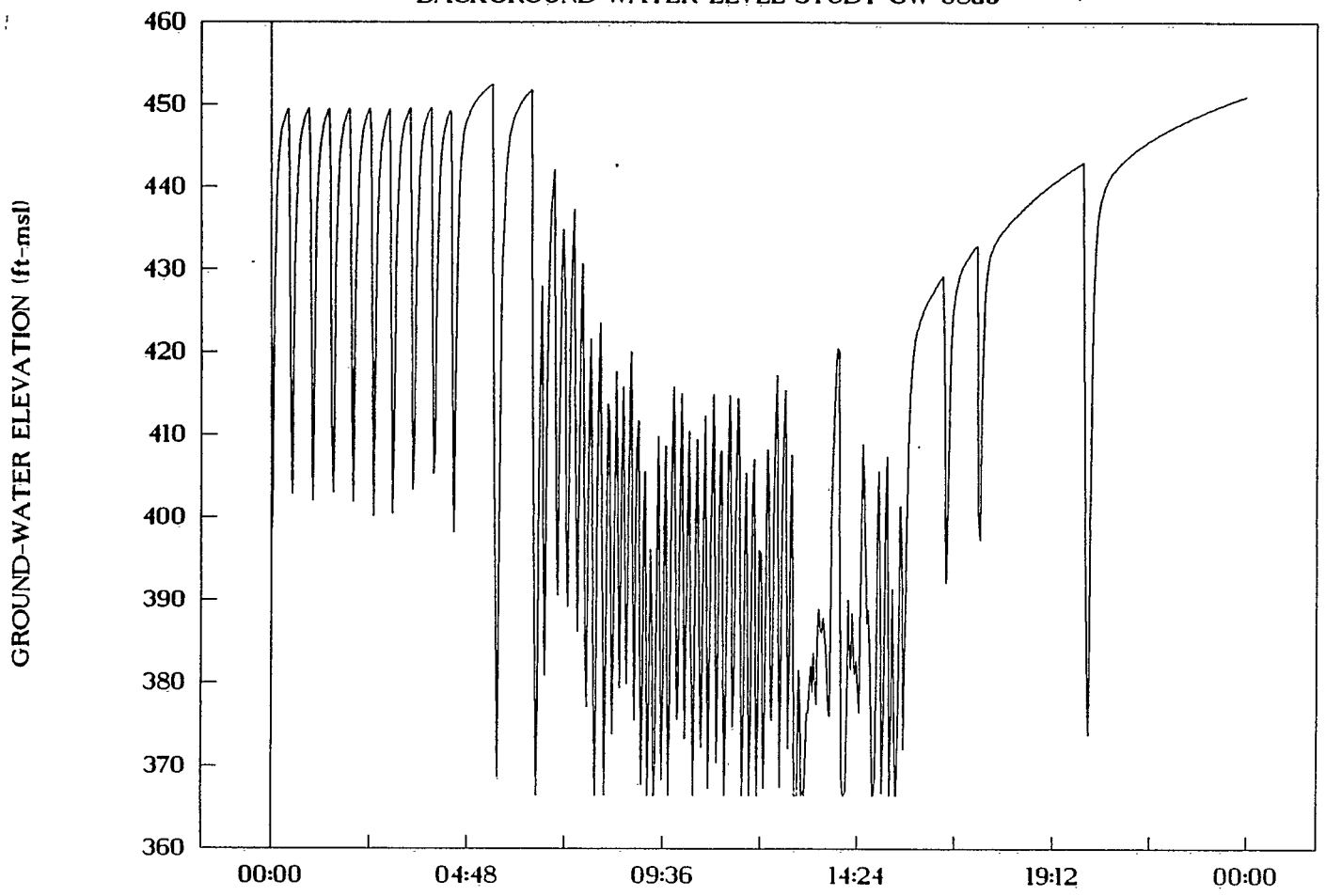
BACKGROUND WATER LEVEL STUDY GW-08db



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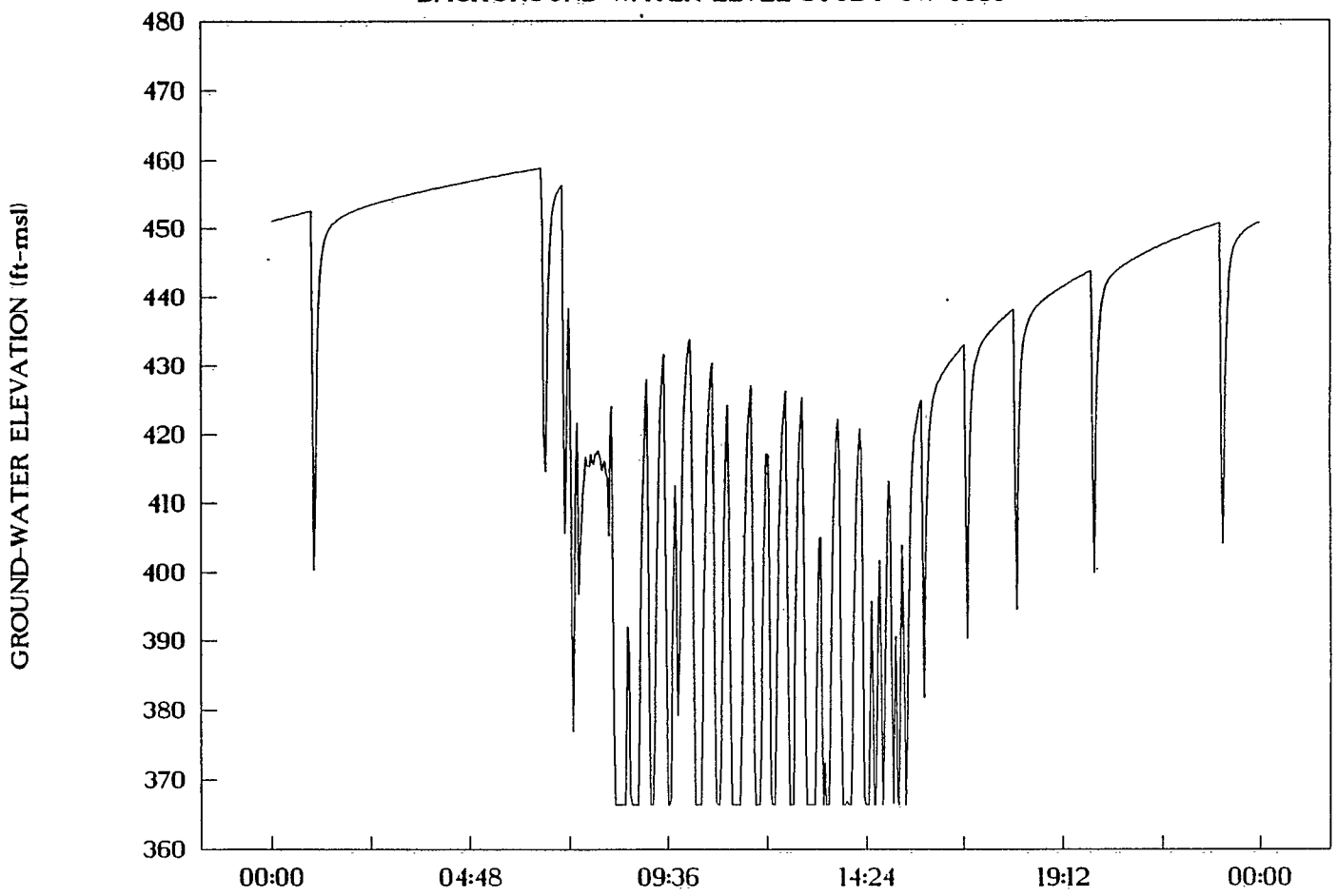
BACKGROUND WATER LEVEL STUDY GW-08db



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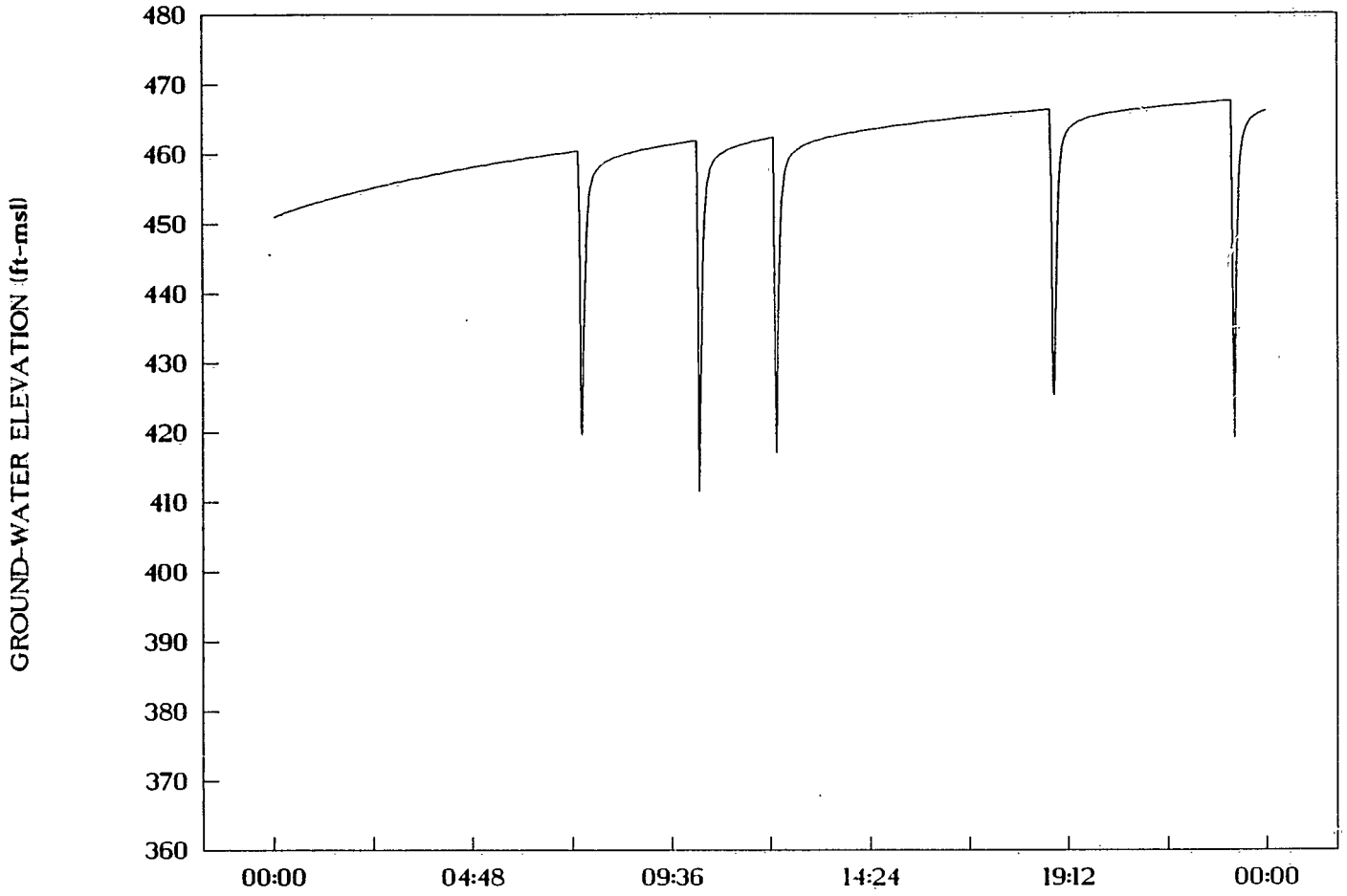
BACKGROUND WATER LEVEL STUDY GW-08db



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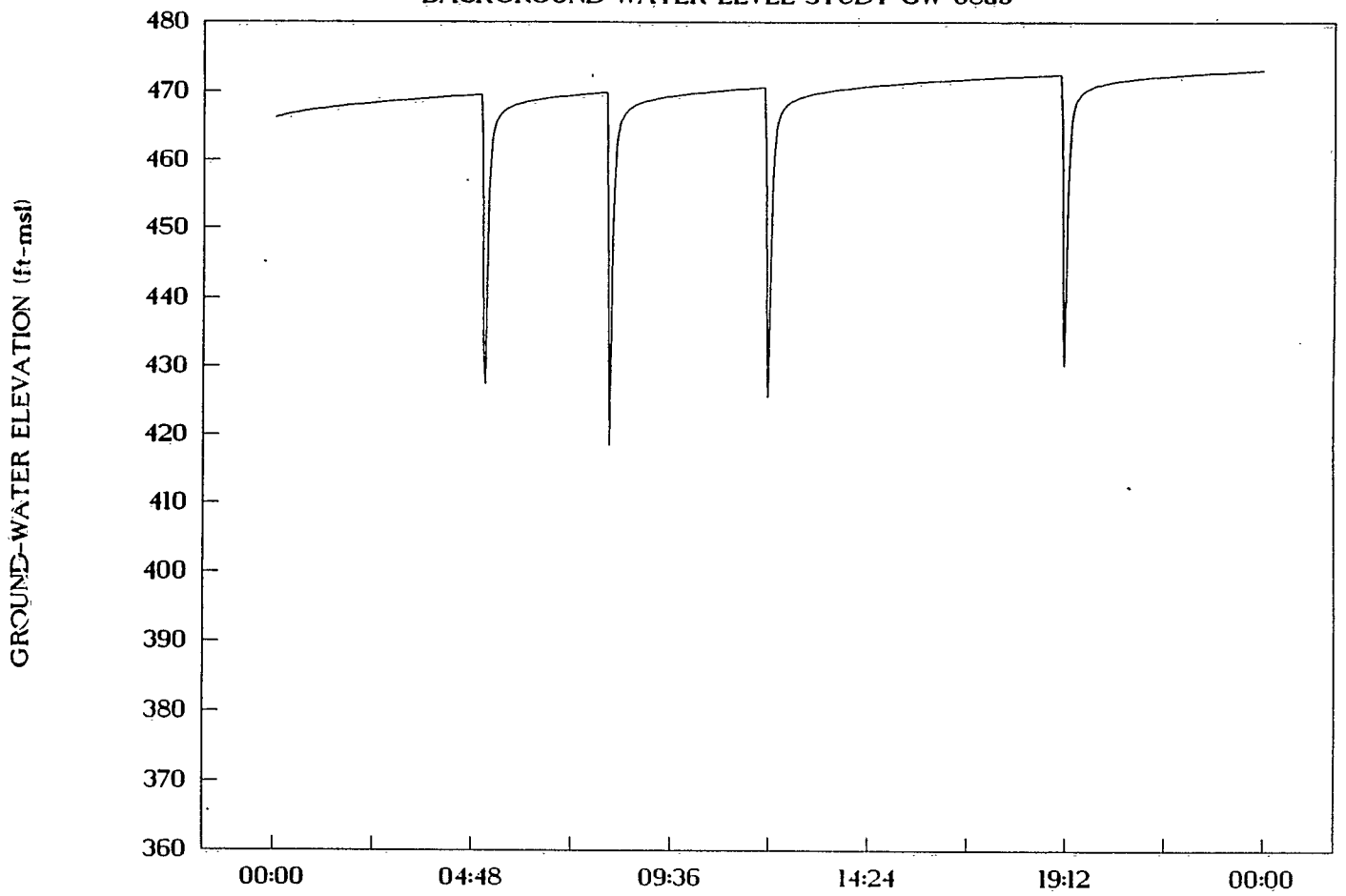
BACKGROUND WATER LEVEL STUDY GW-08db



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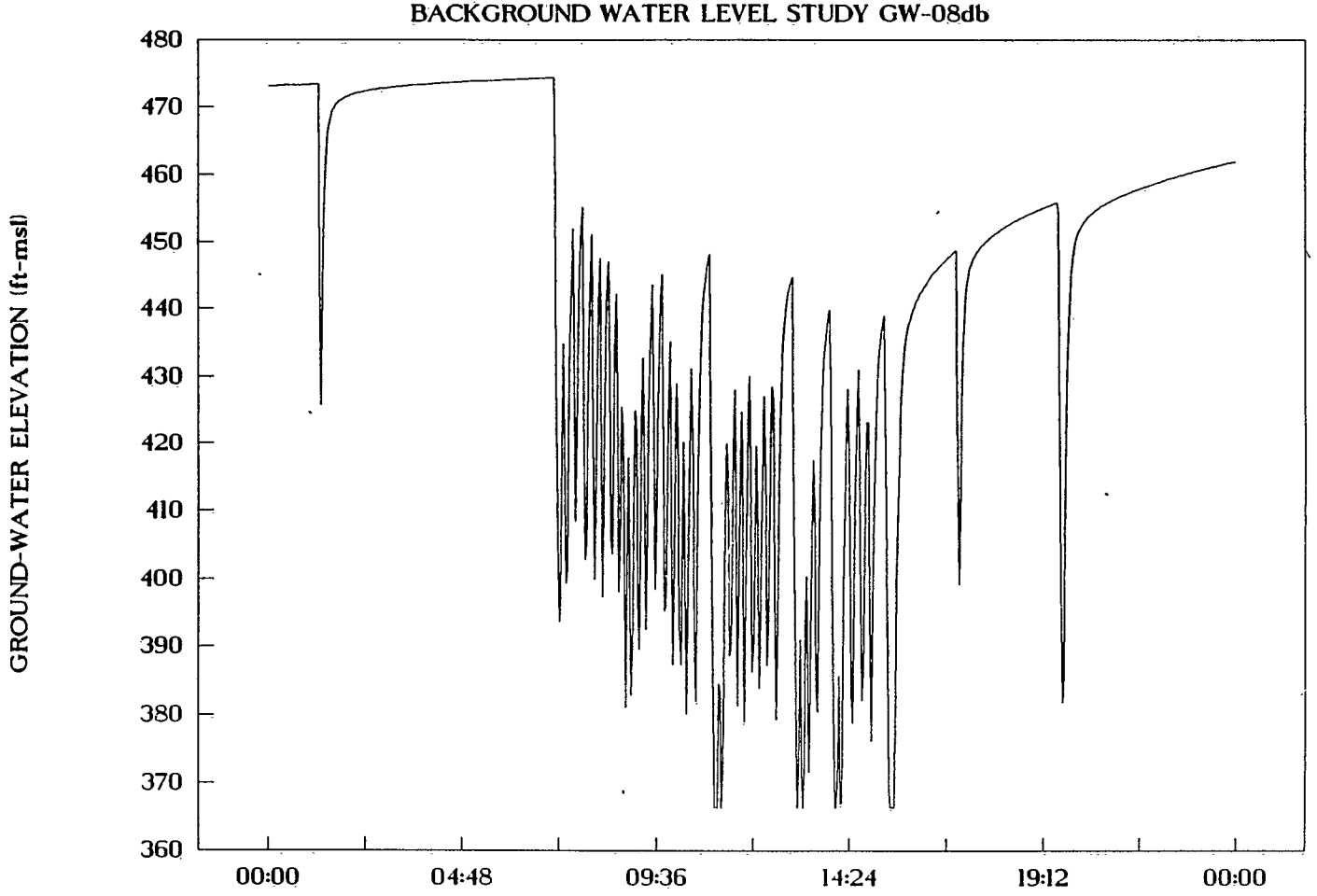
BACKGROUND WATER LEVEL STUDY GW-08db



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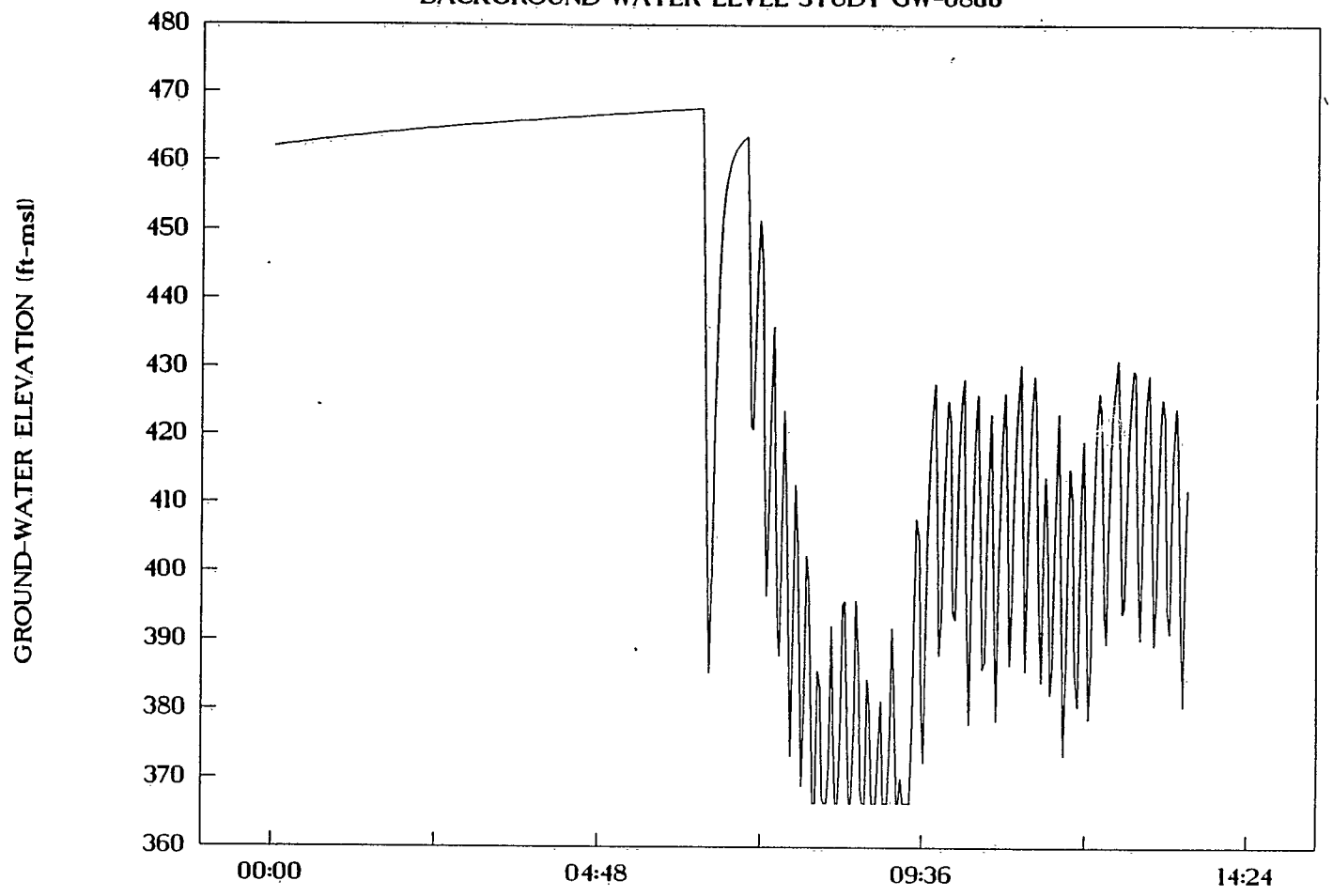
LIN003 1 5 4

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-08db



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SS&ONEILL,INC,

LIN003 551

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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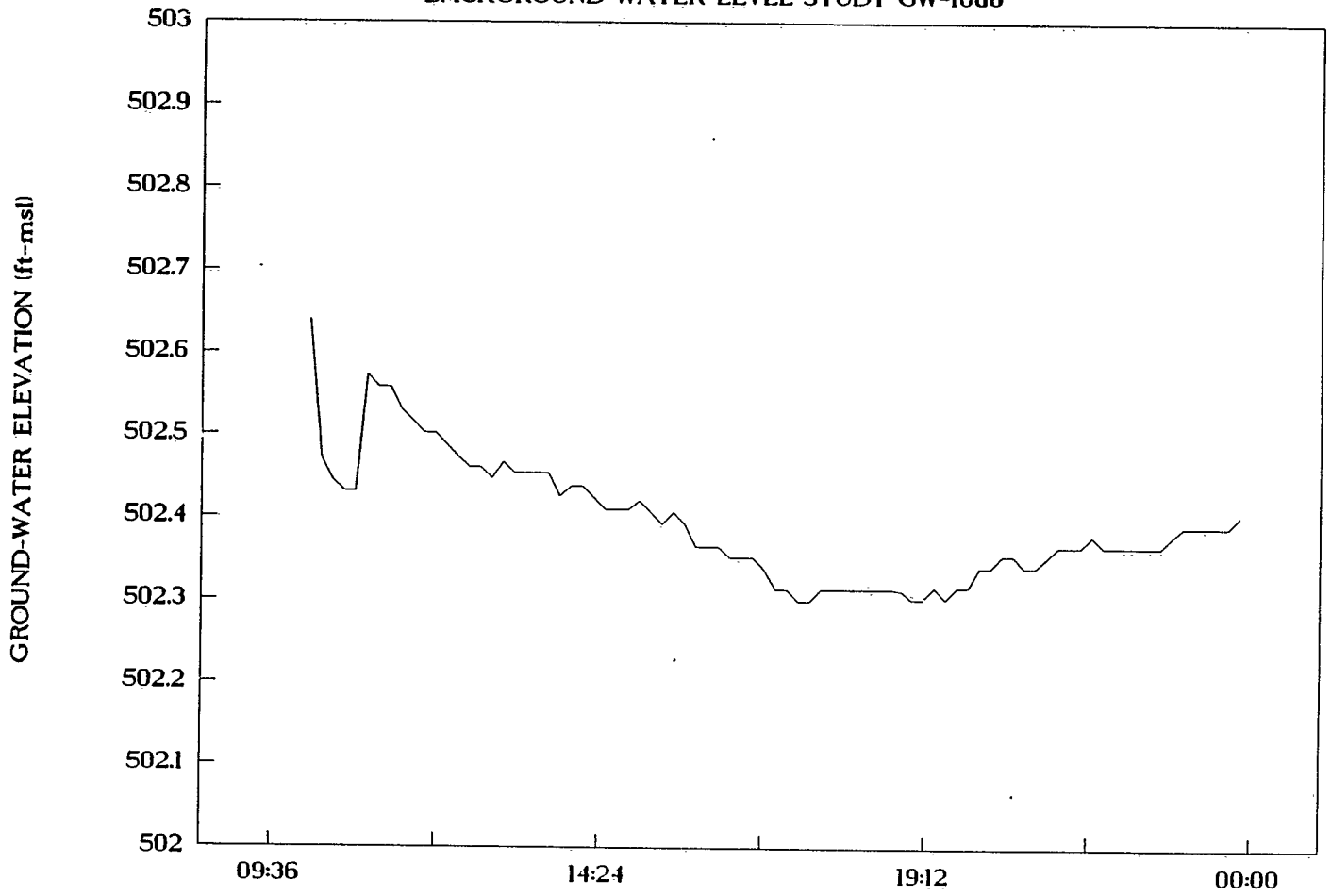
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-10db



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LINE003 951

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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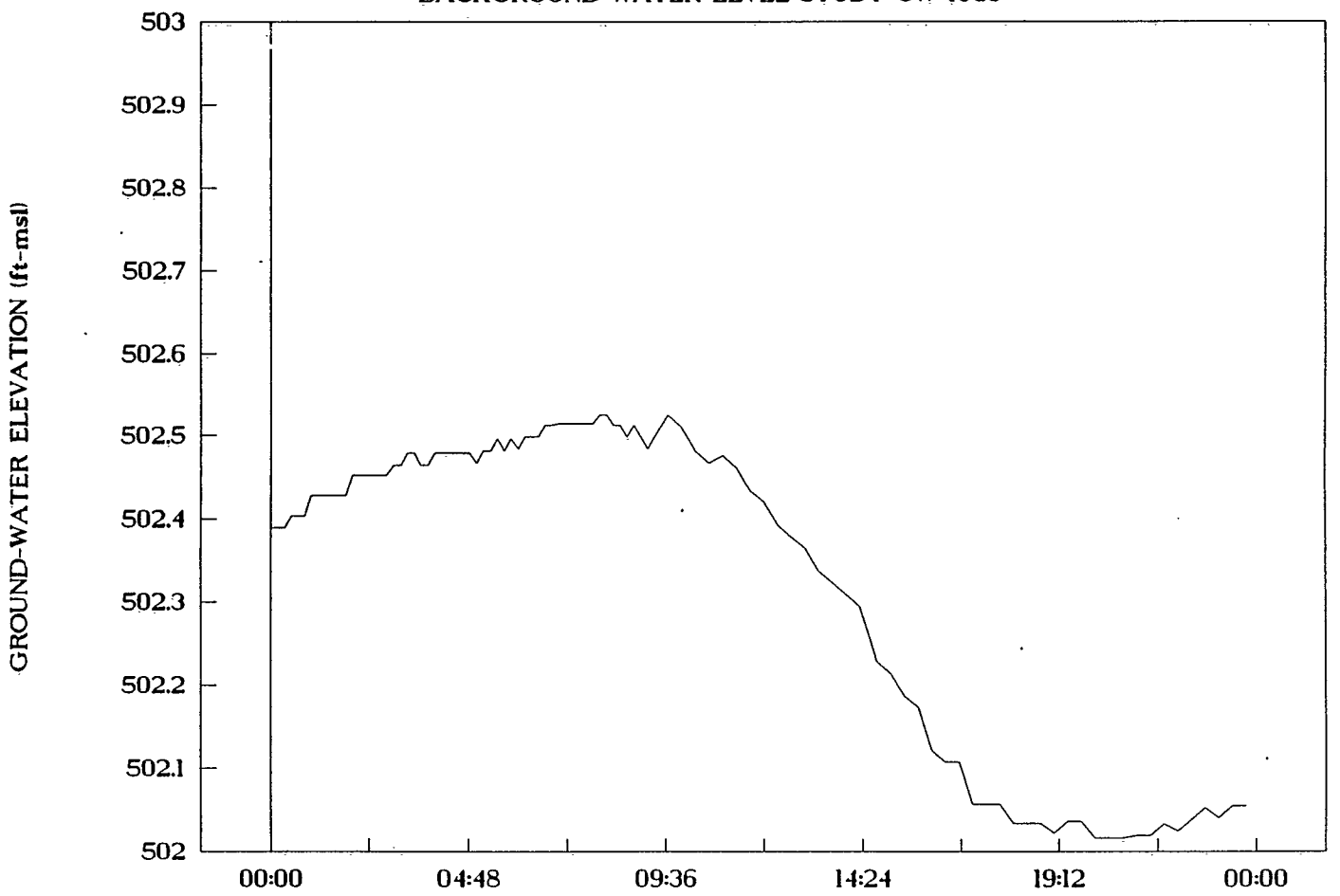
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-10db



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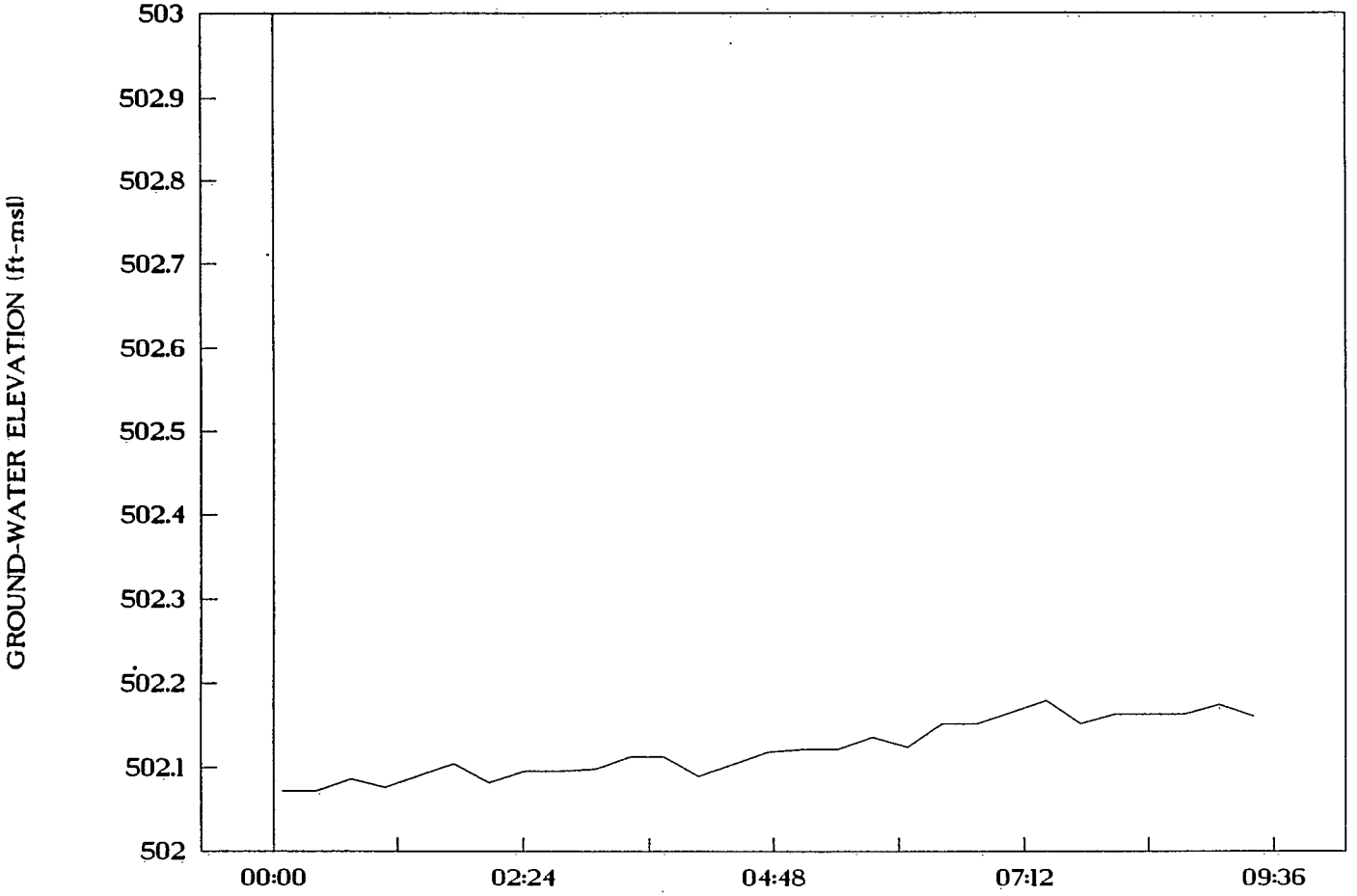
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 1 5 1

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-10db



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LIN003 851

LINEMASTER SWITCH
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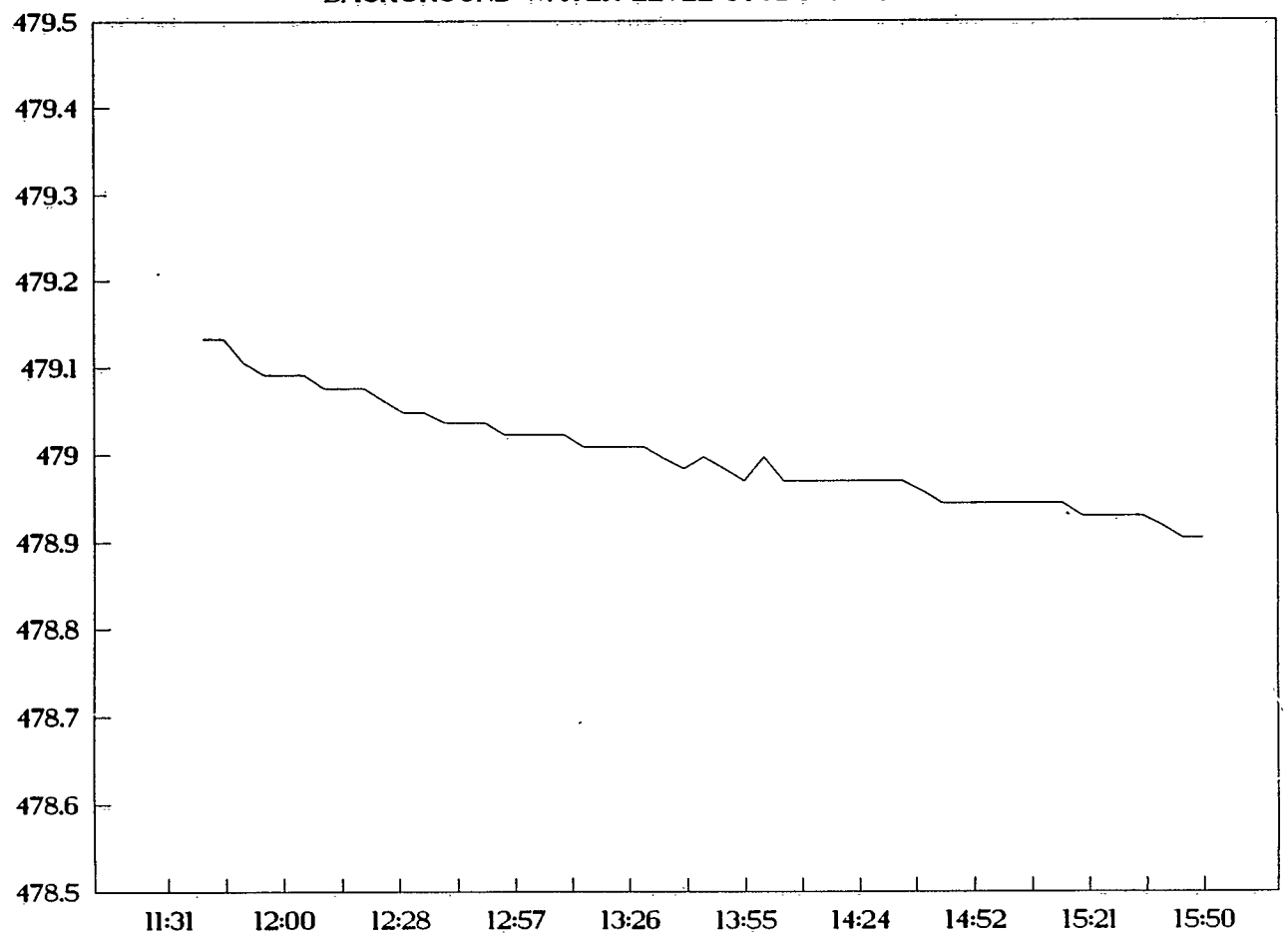
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-10db



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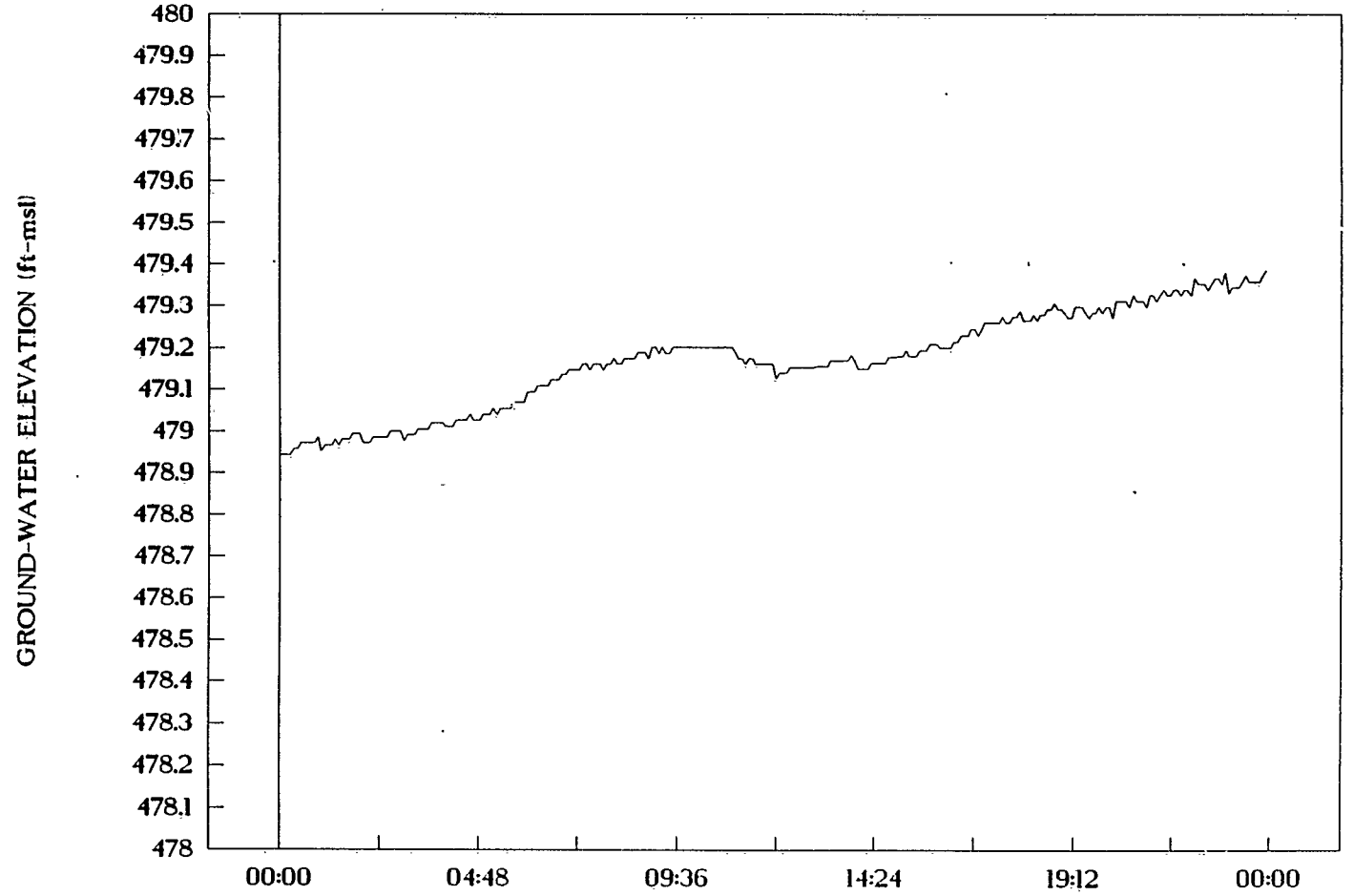
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-10db



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FUSS&O'NEILL,INC.

LINO03 0 9 1

LINEMASTER SWITCH
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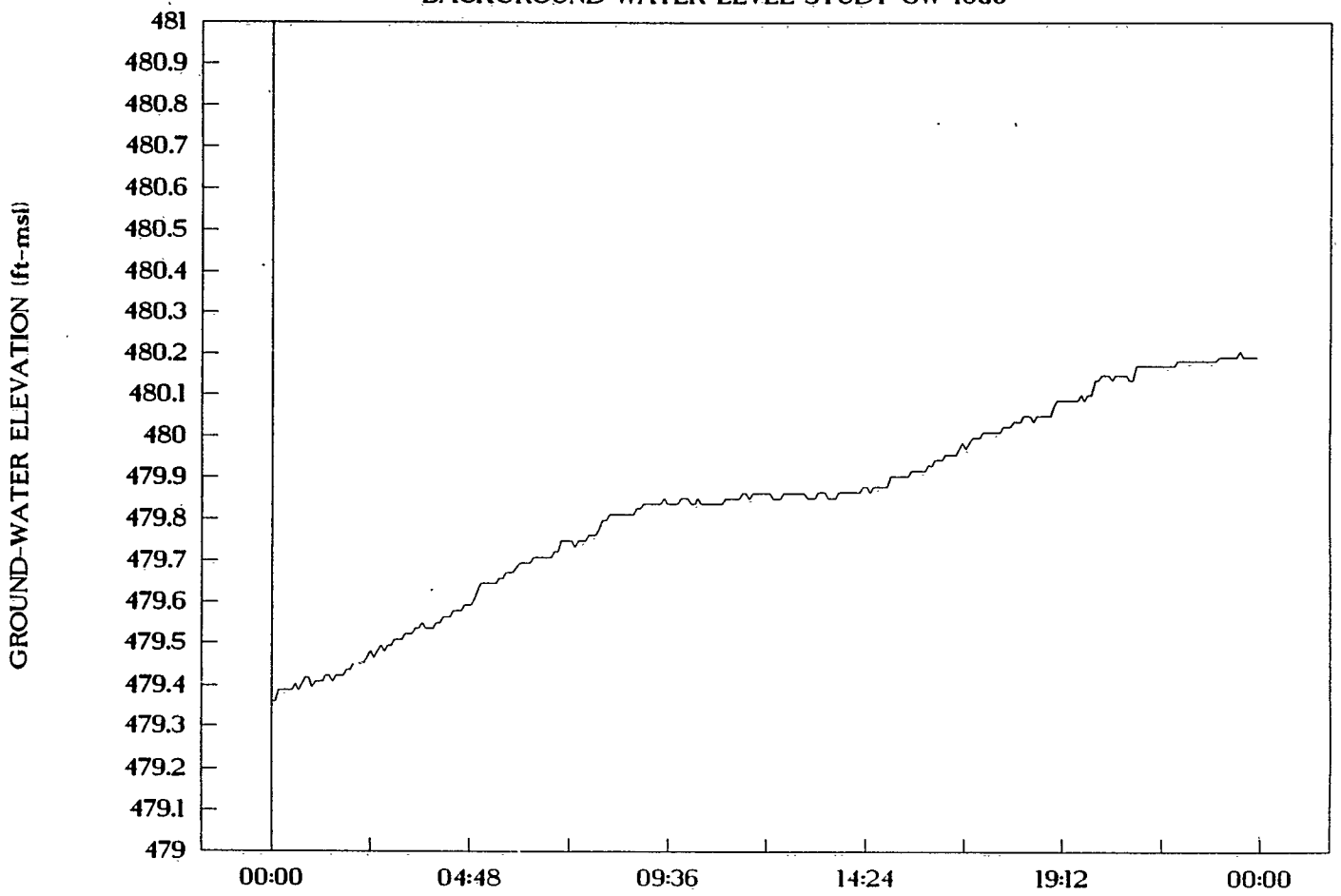
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-10db



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LIN003 191

LINEMASTER SWITCH
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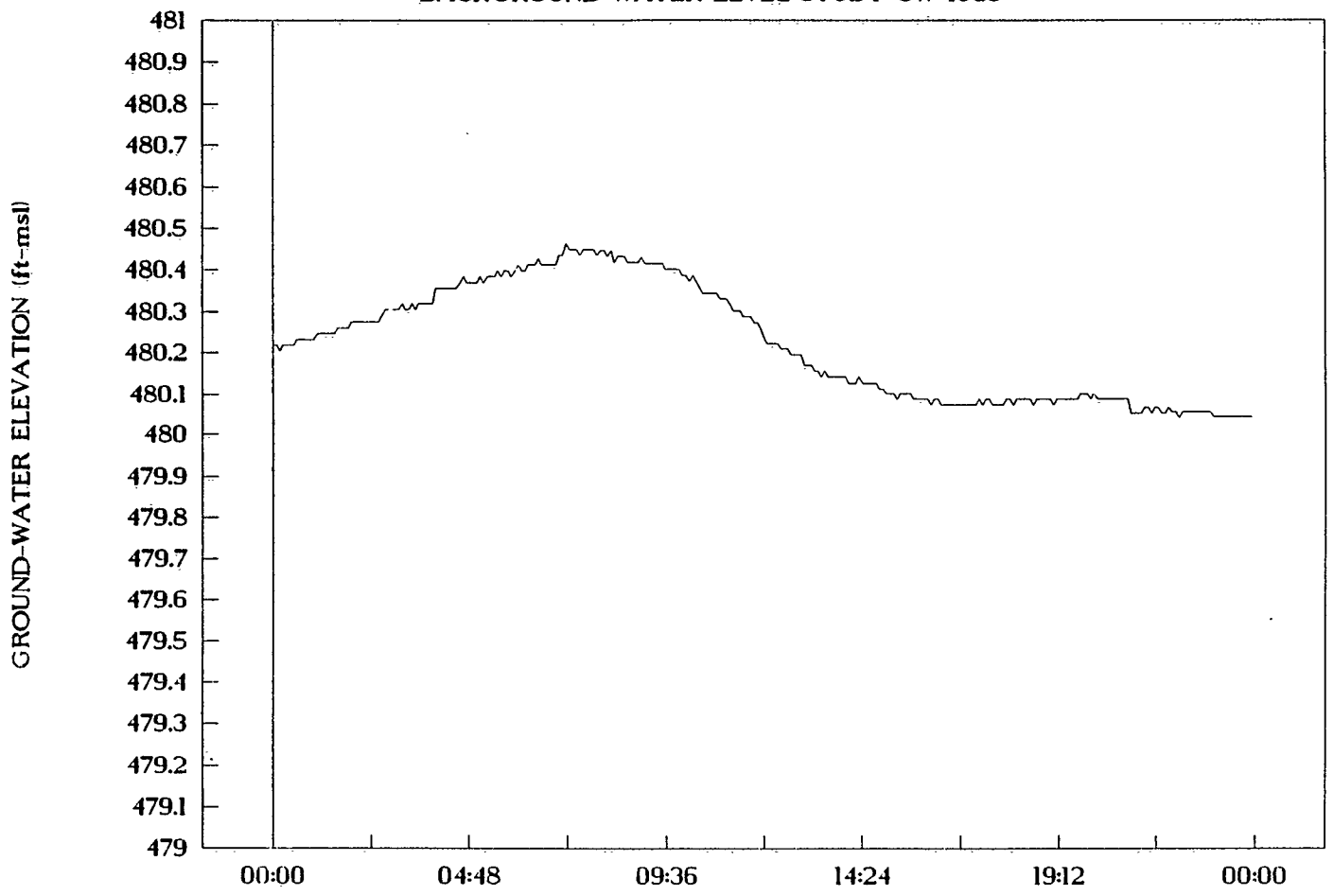
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-10db



TIME MONDAY 9/23/91

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FUSS&O'NEILL,INC,

LINO03 291

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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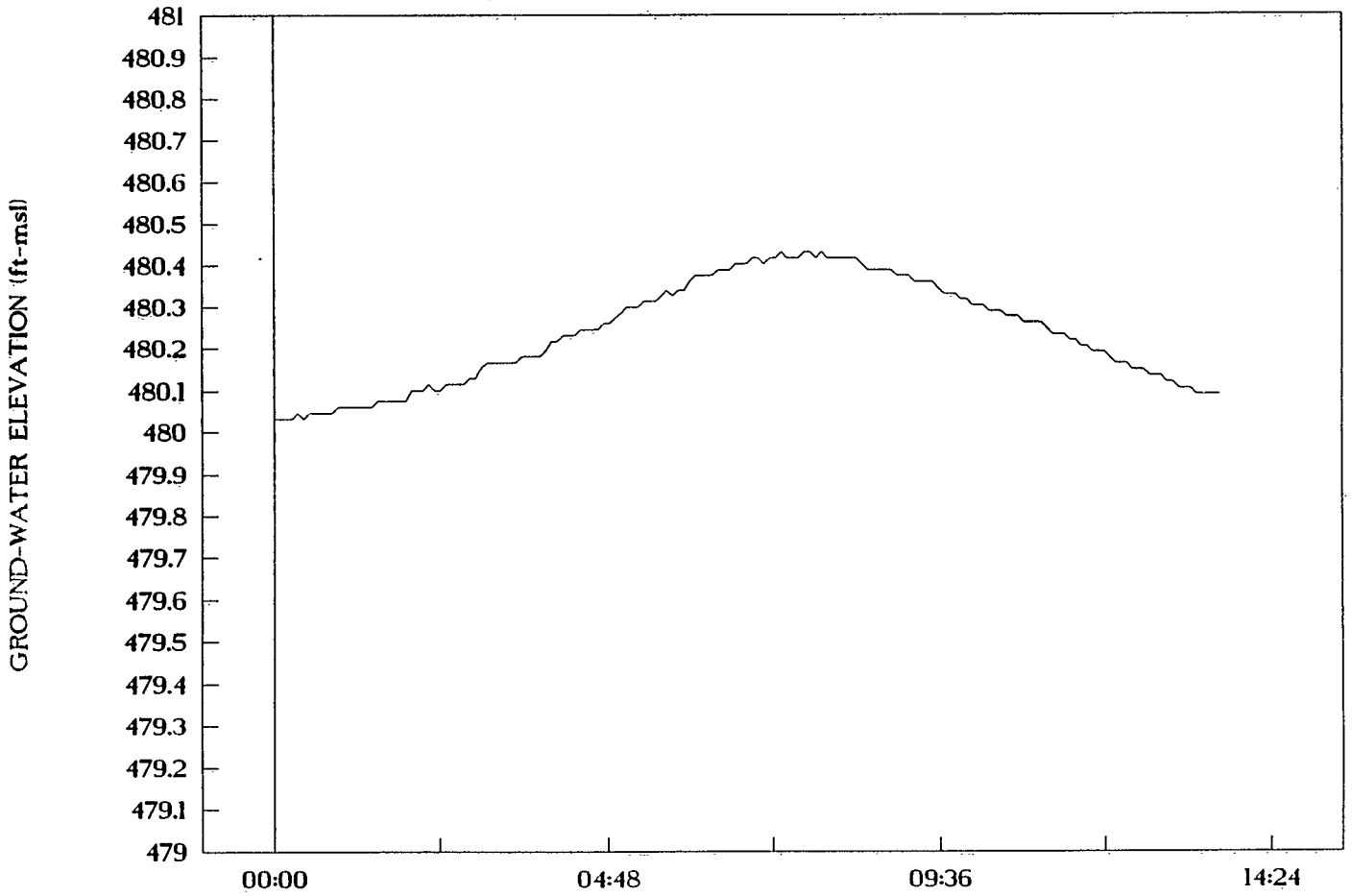
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-10db



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FUGRO&O'NEILL,INC.

LIN003 1 6 3

LINEMASTER SWITCH
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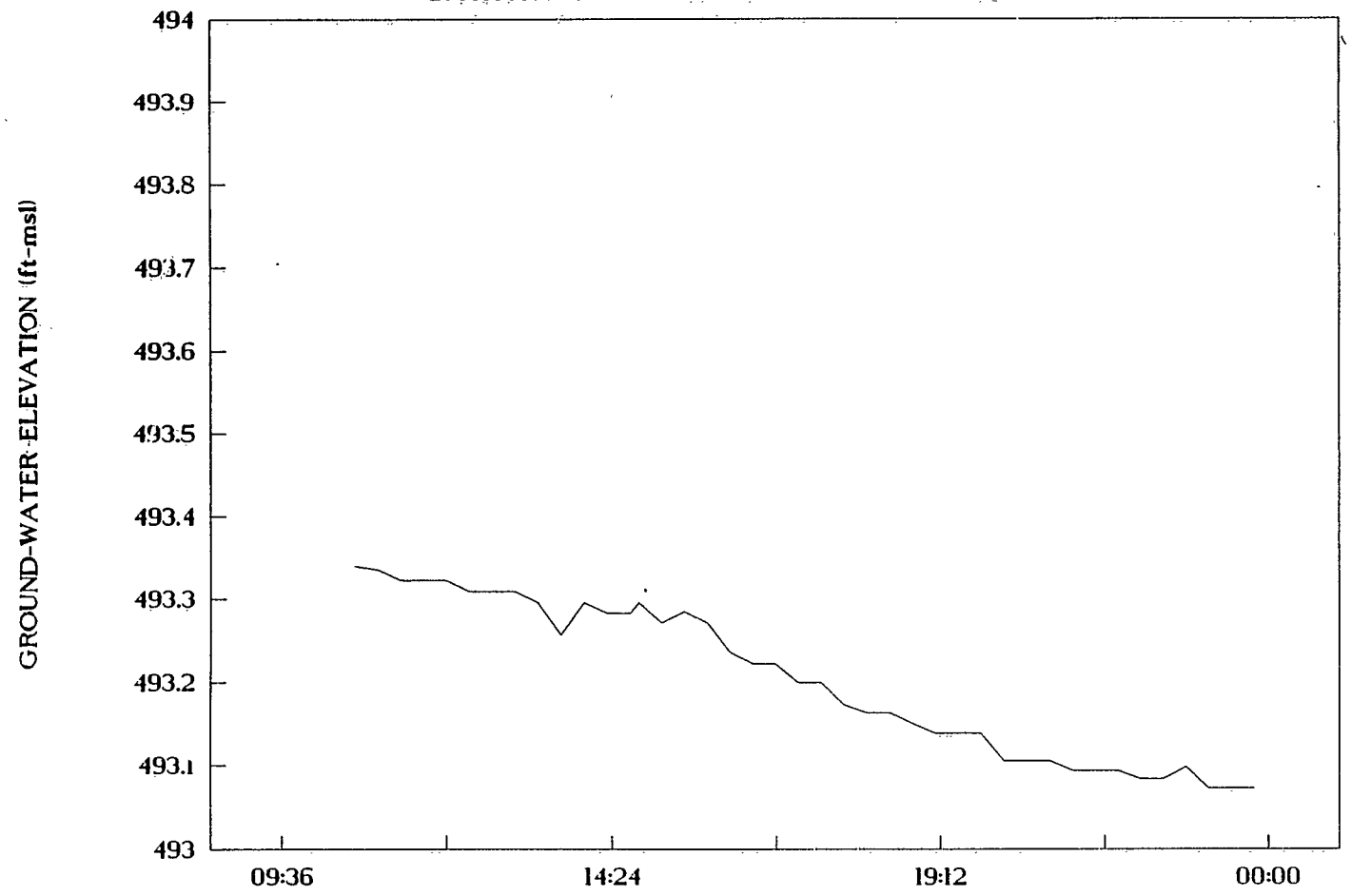
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-12db



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LINEMASTER SWITCH
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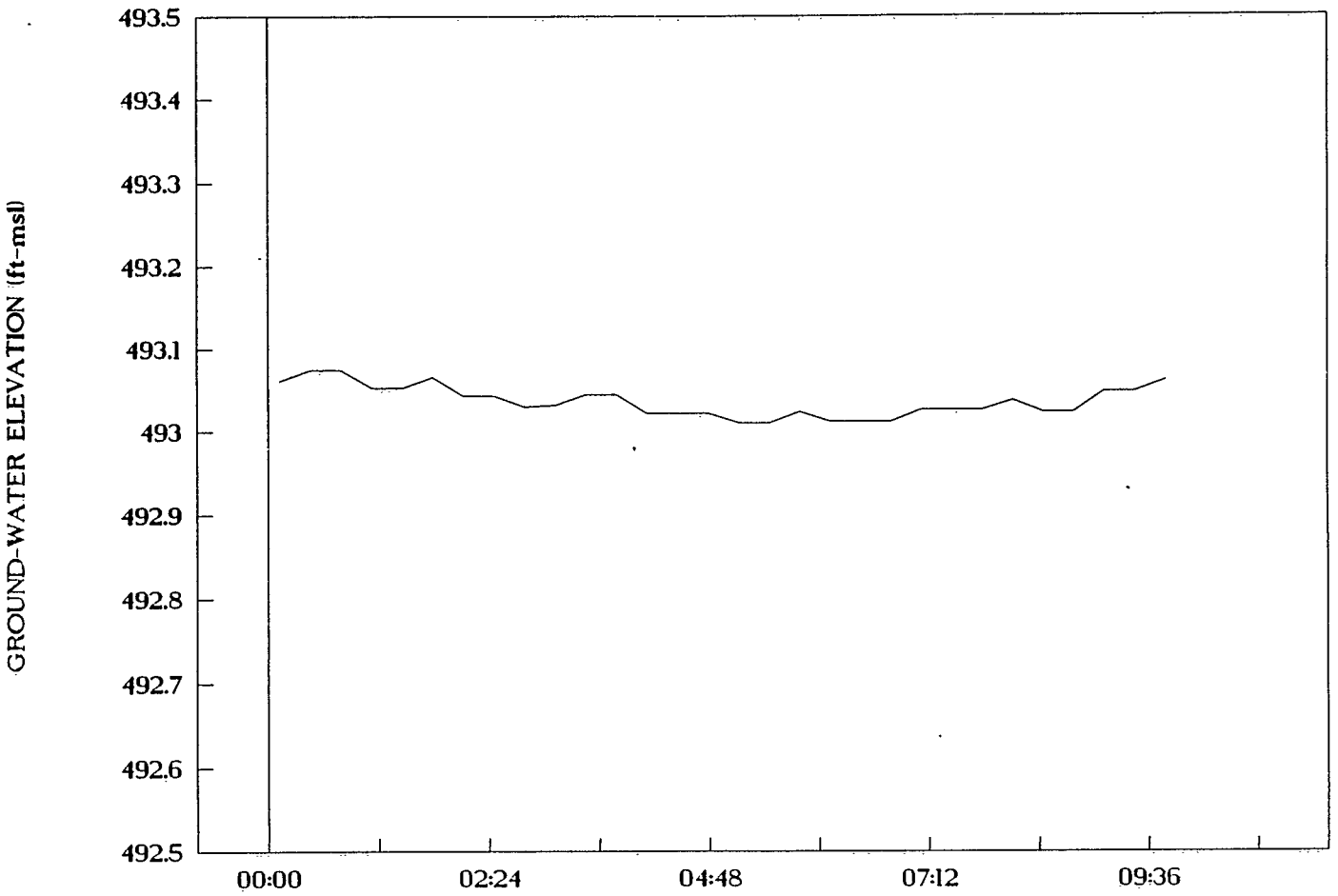
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-12db



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OSS&O'NEILL,INC,

LINO03 591

LINEMASTER SWITCH
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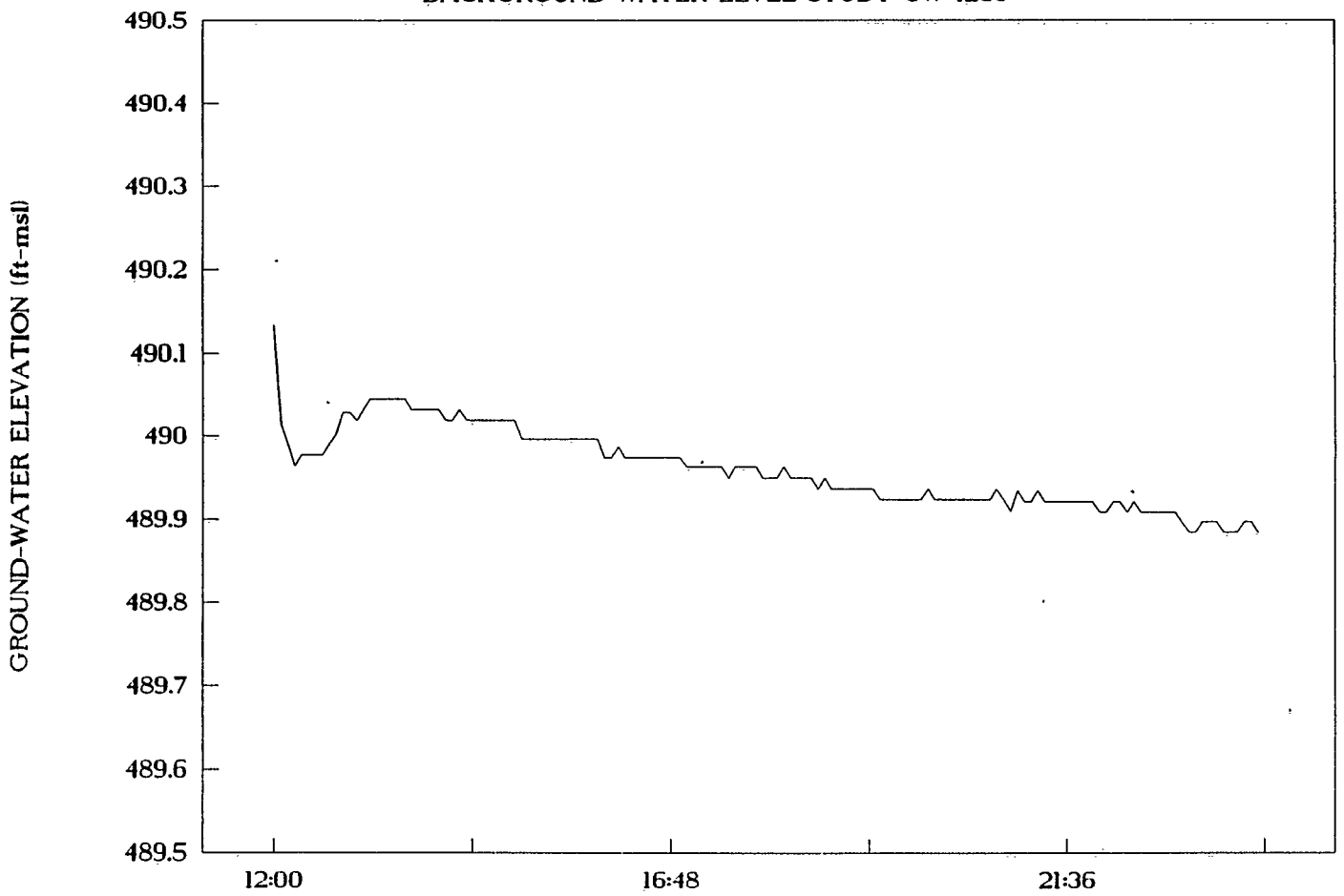
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-12db



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LINO03 991

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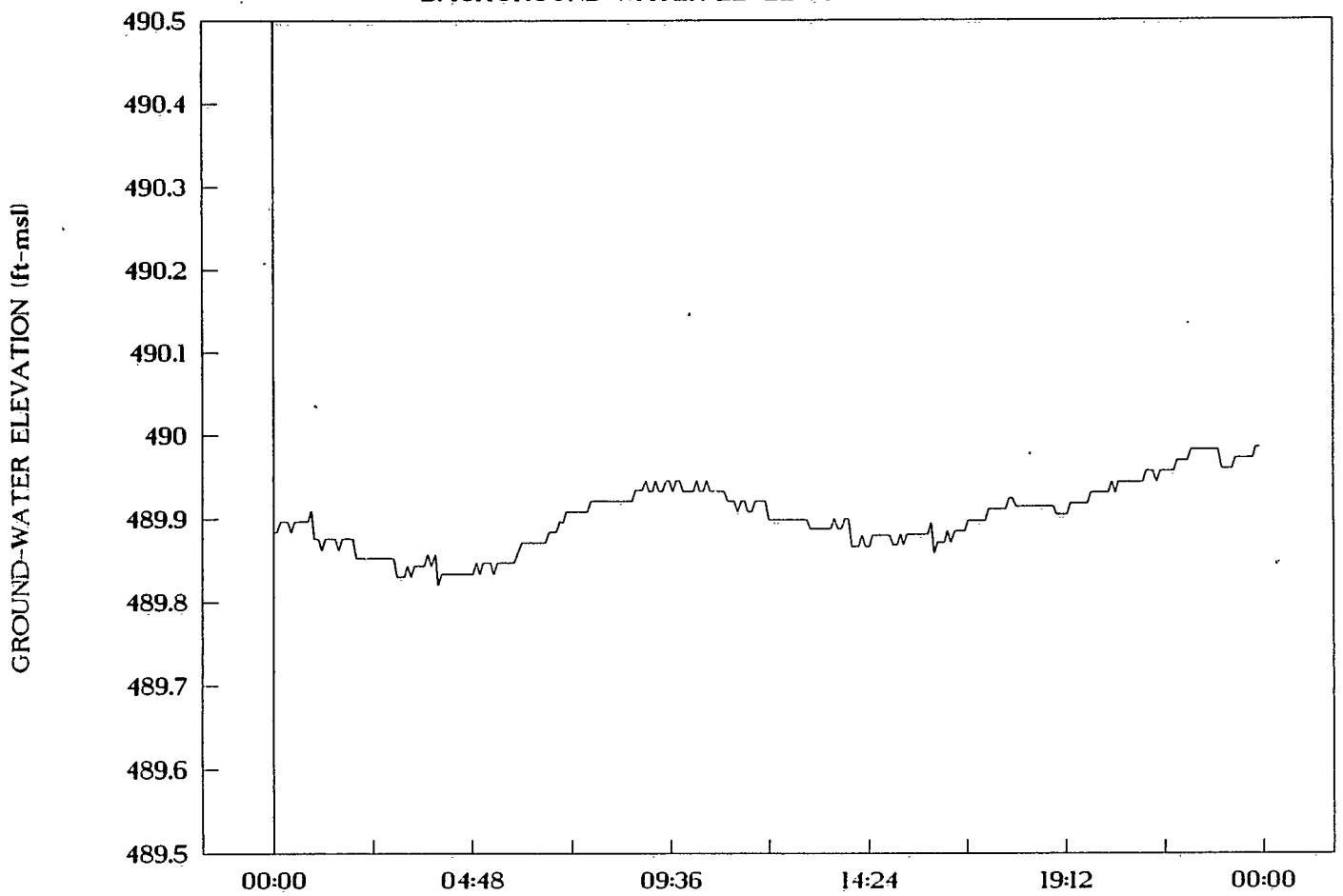
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-12db



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LINEMASTER SWITCH
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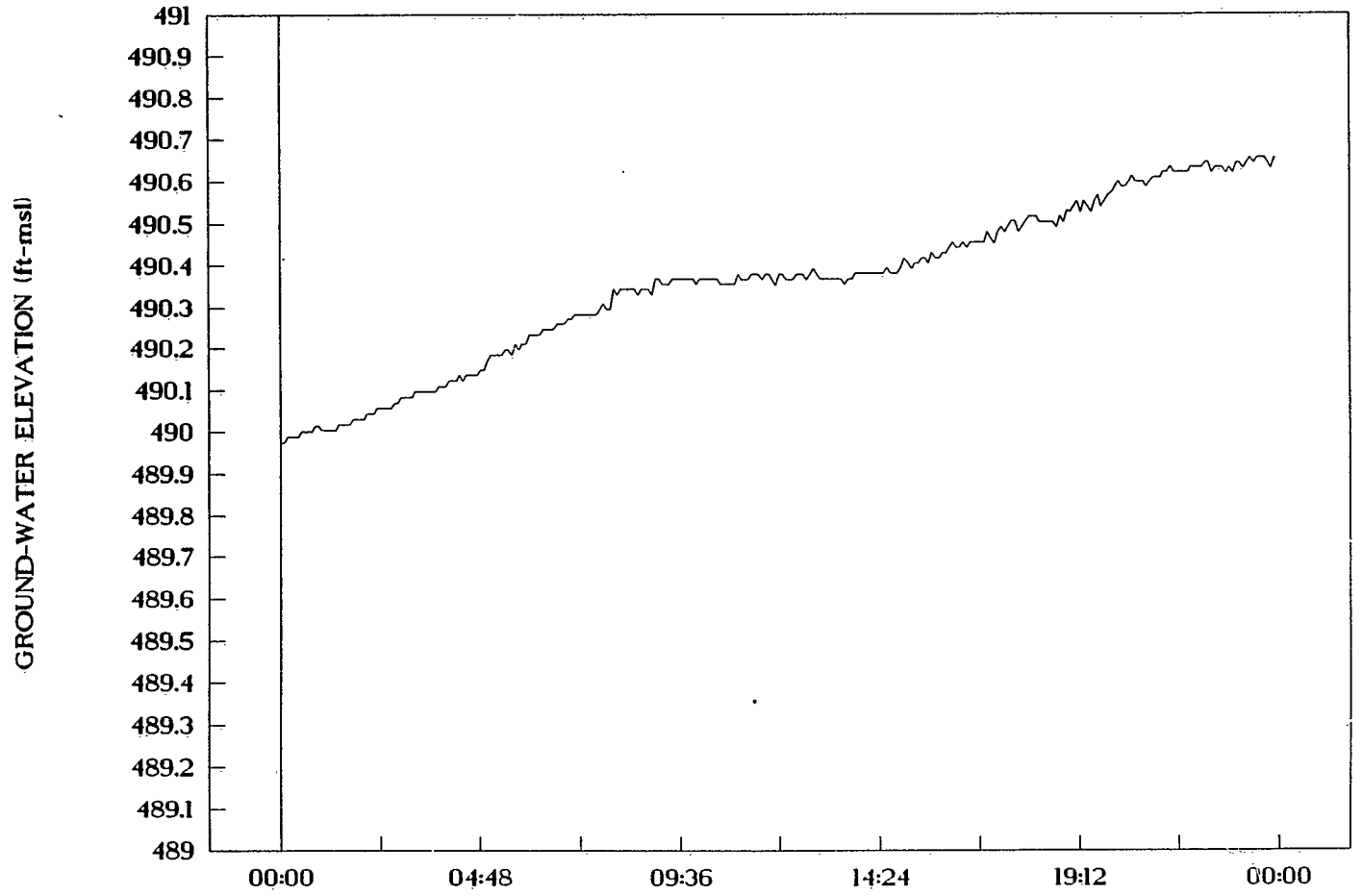
LIN003 1 6 7

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-12db



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LINO03 891

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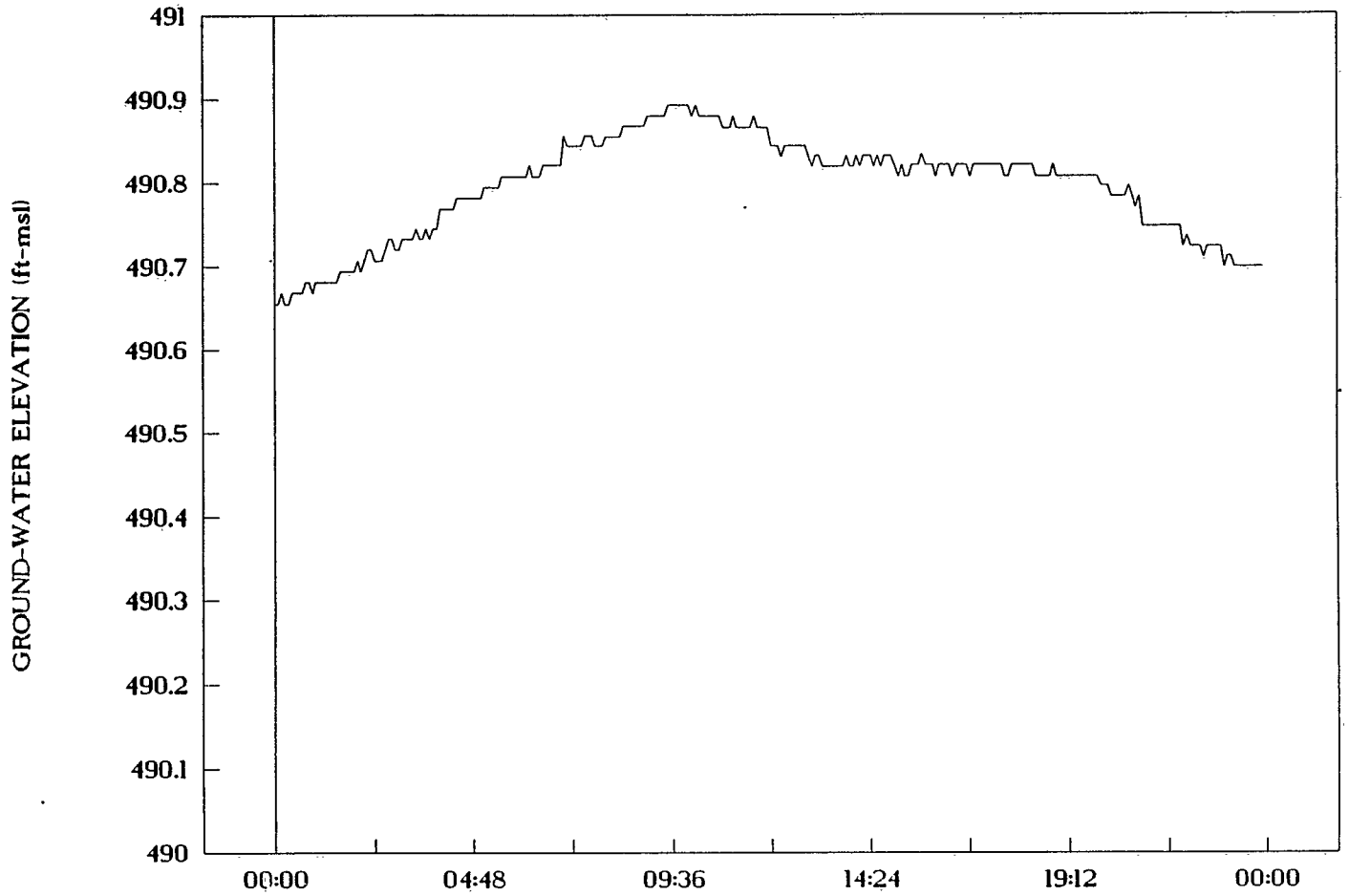
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-12db



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LINEMASTER SWITCH
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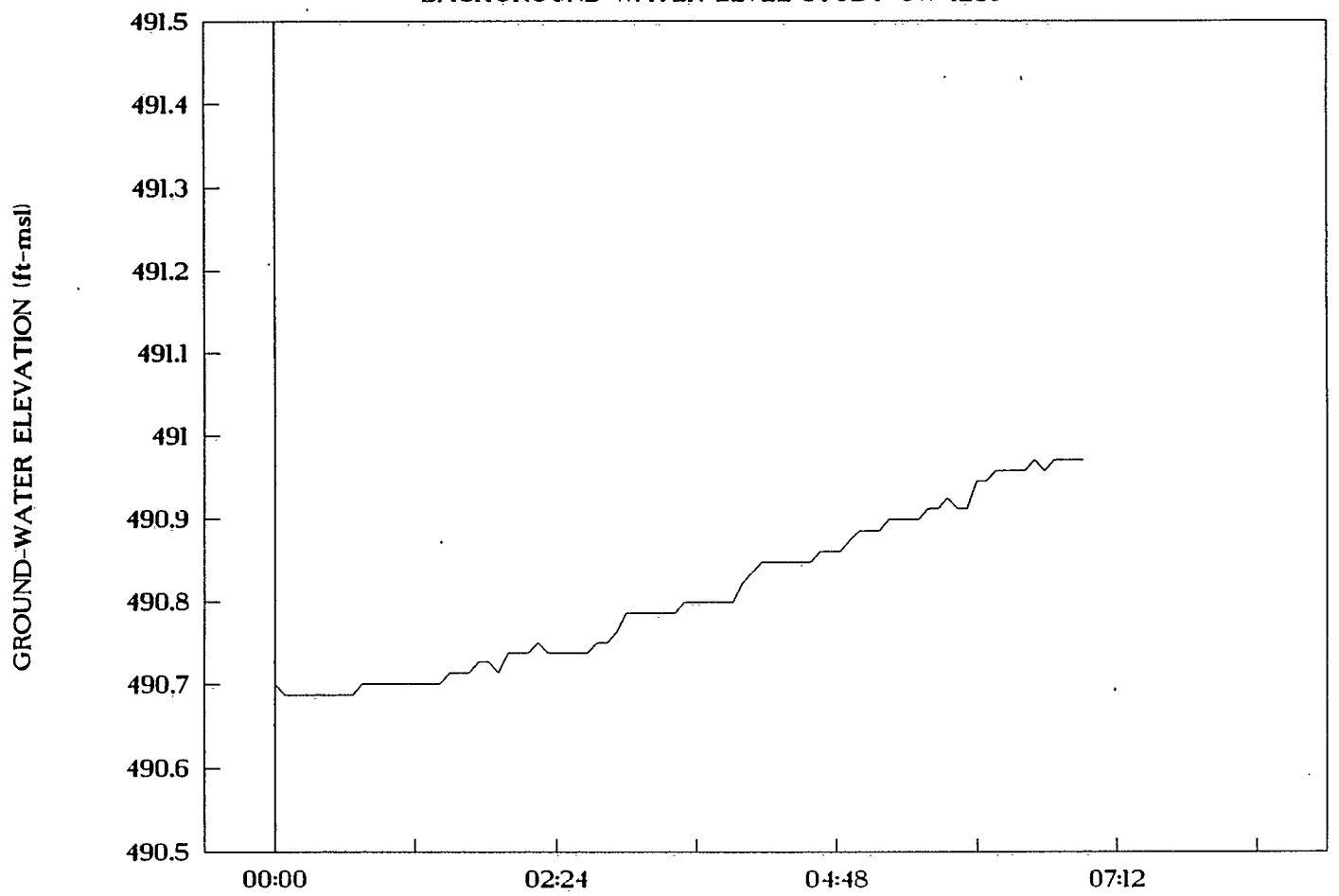
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-12db



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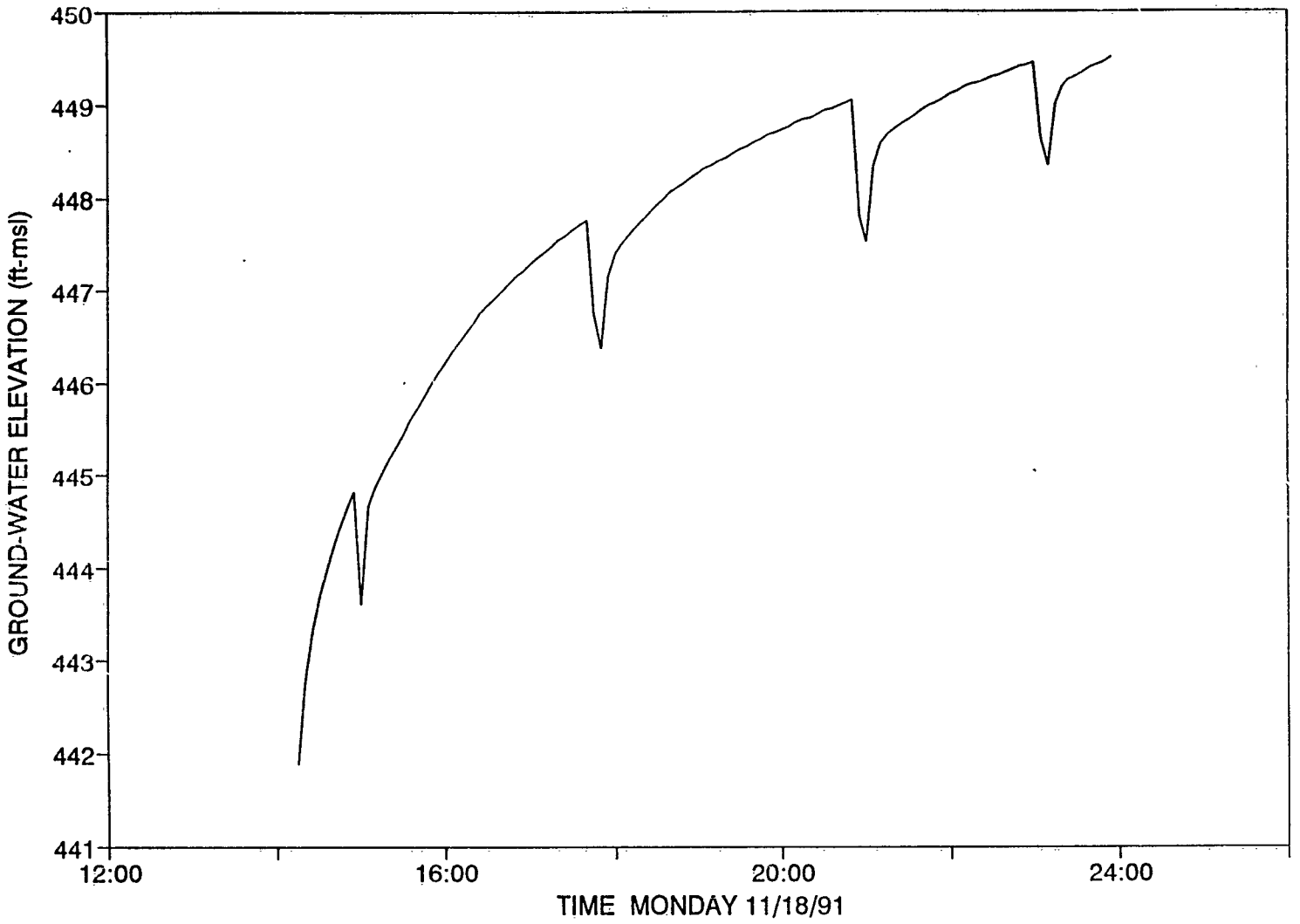
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-17db



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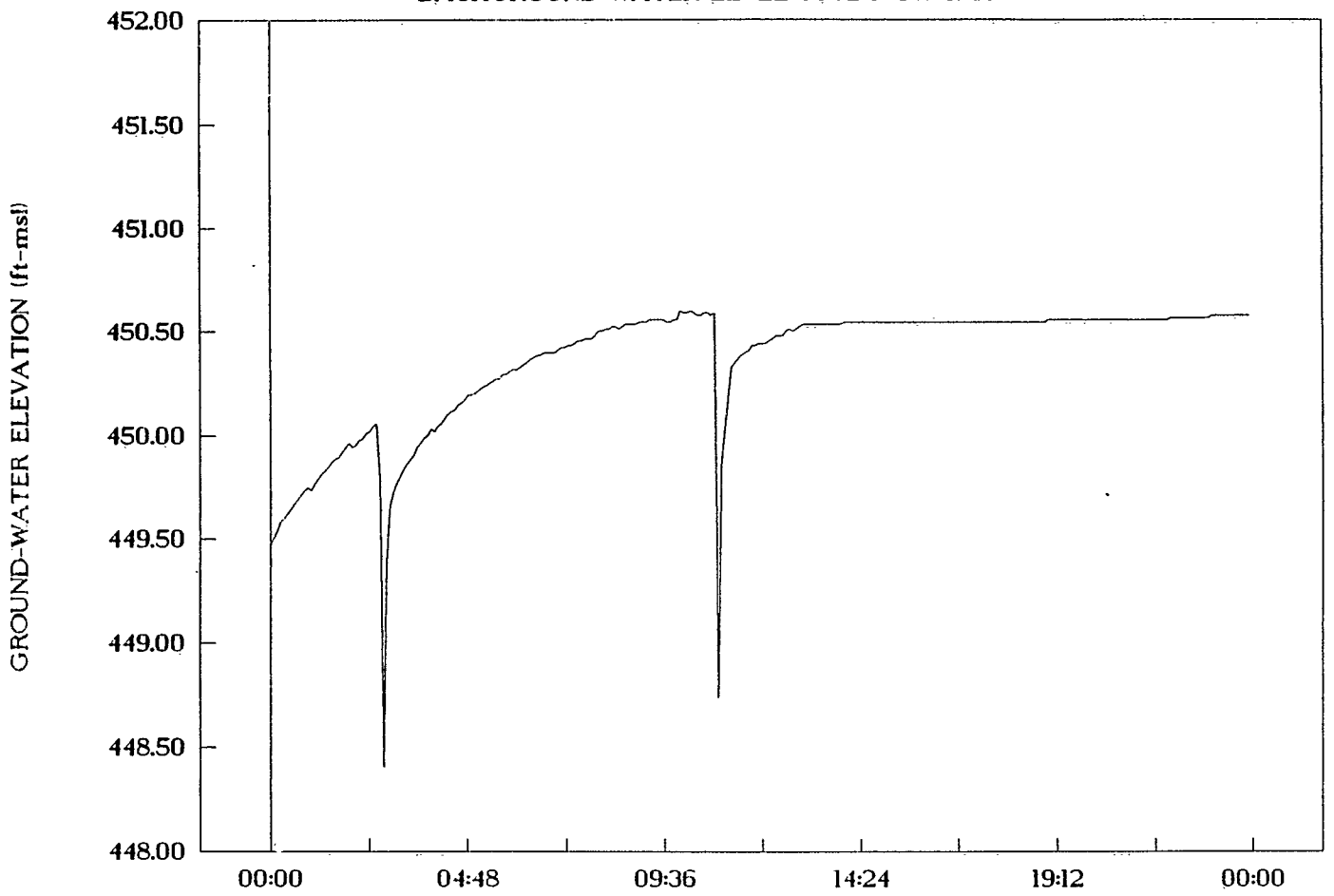
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-17db



LIN003 1 7 2

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LINEMASTER SWITCH CORP.

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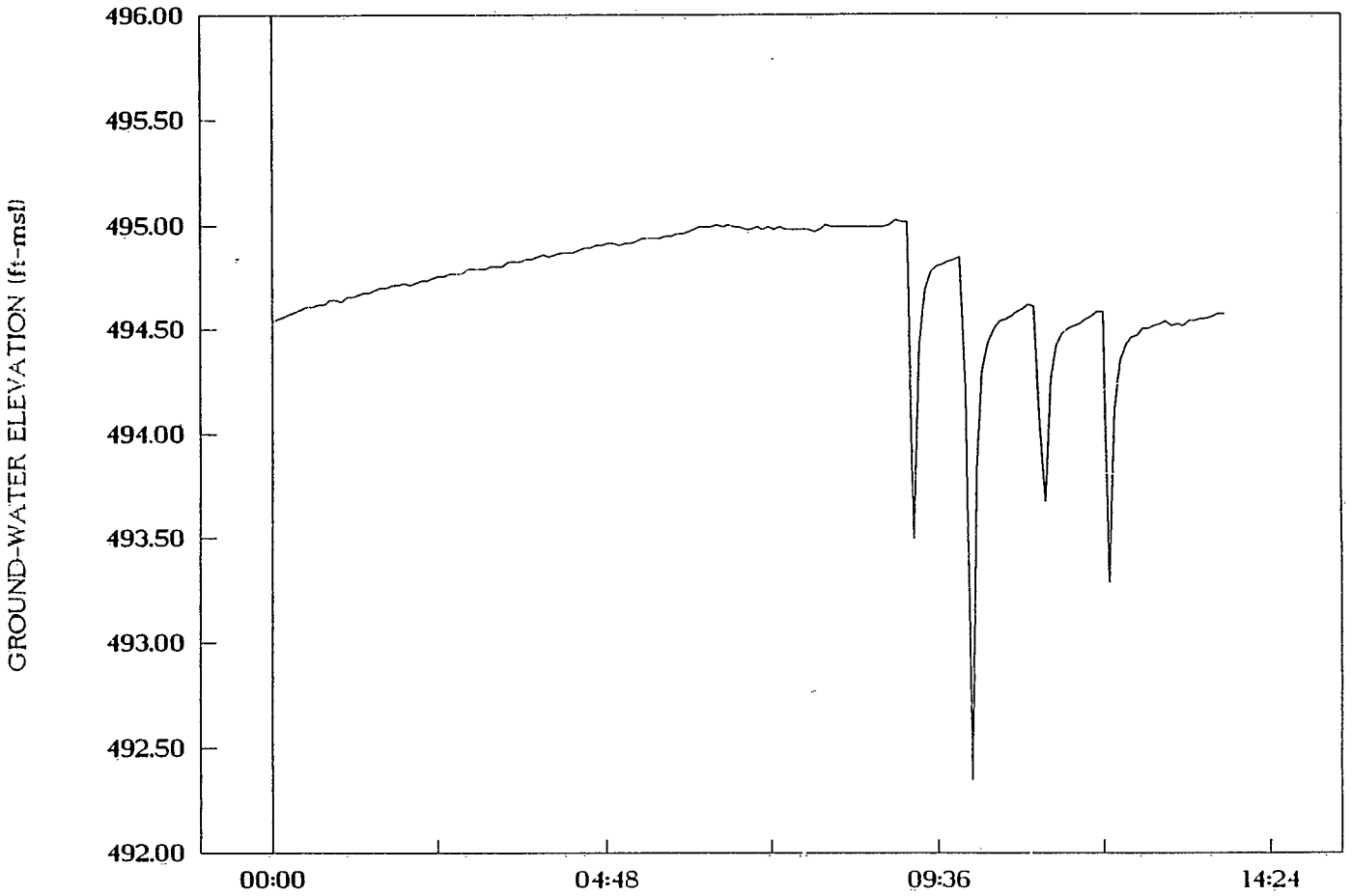

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ADMINISTRATIVE RECORD

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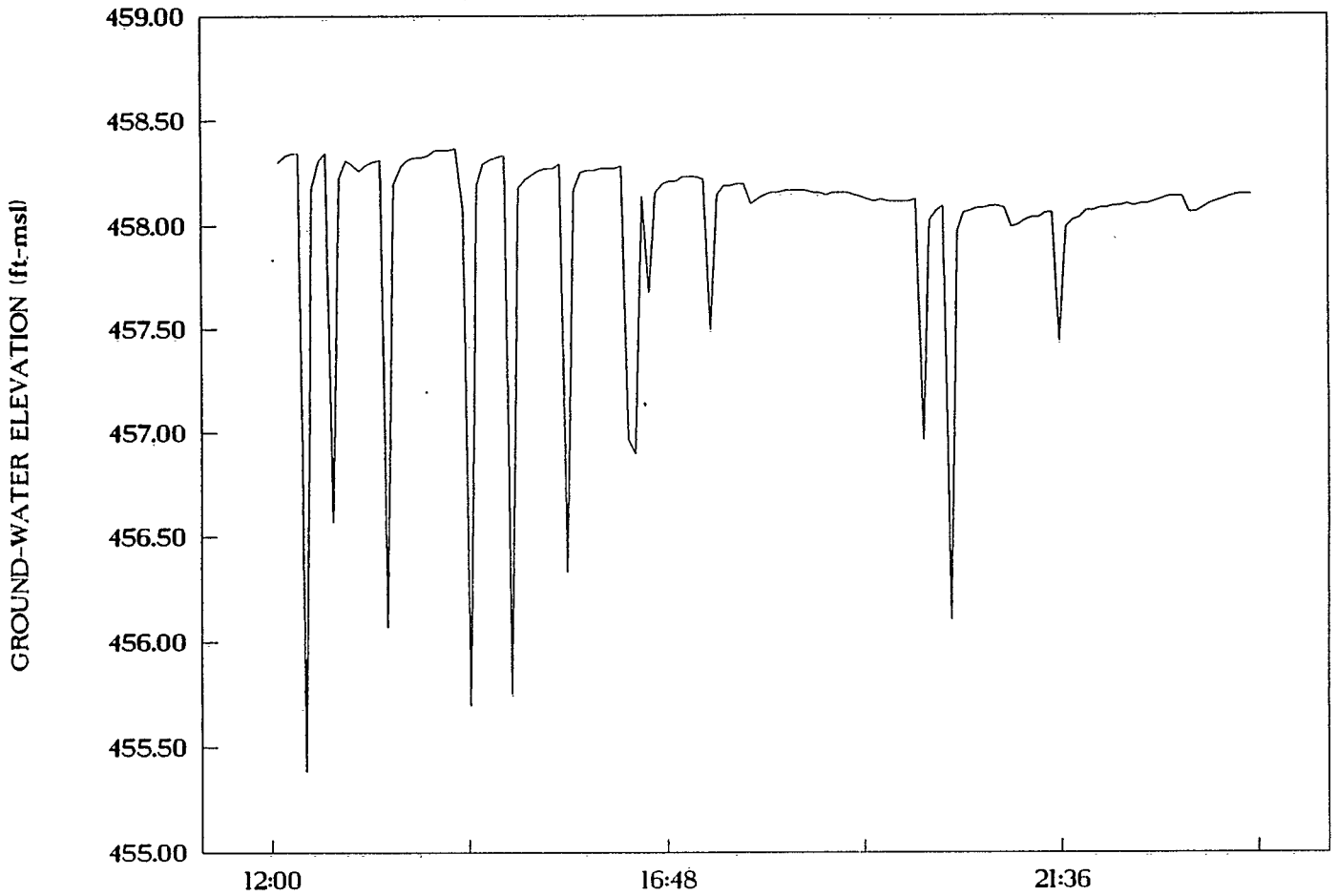
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-40db



TIME MONDAY 11/18/91

LIN003 [redacted]

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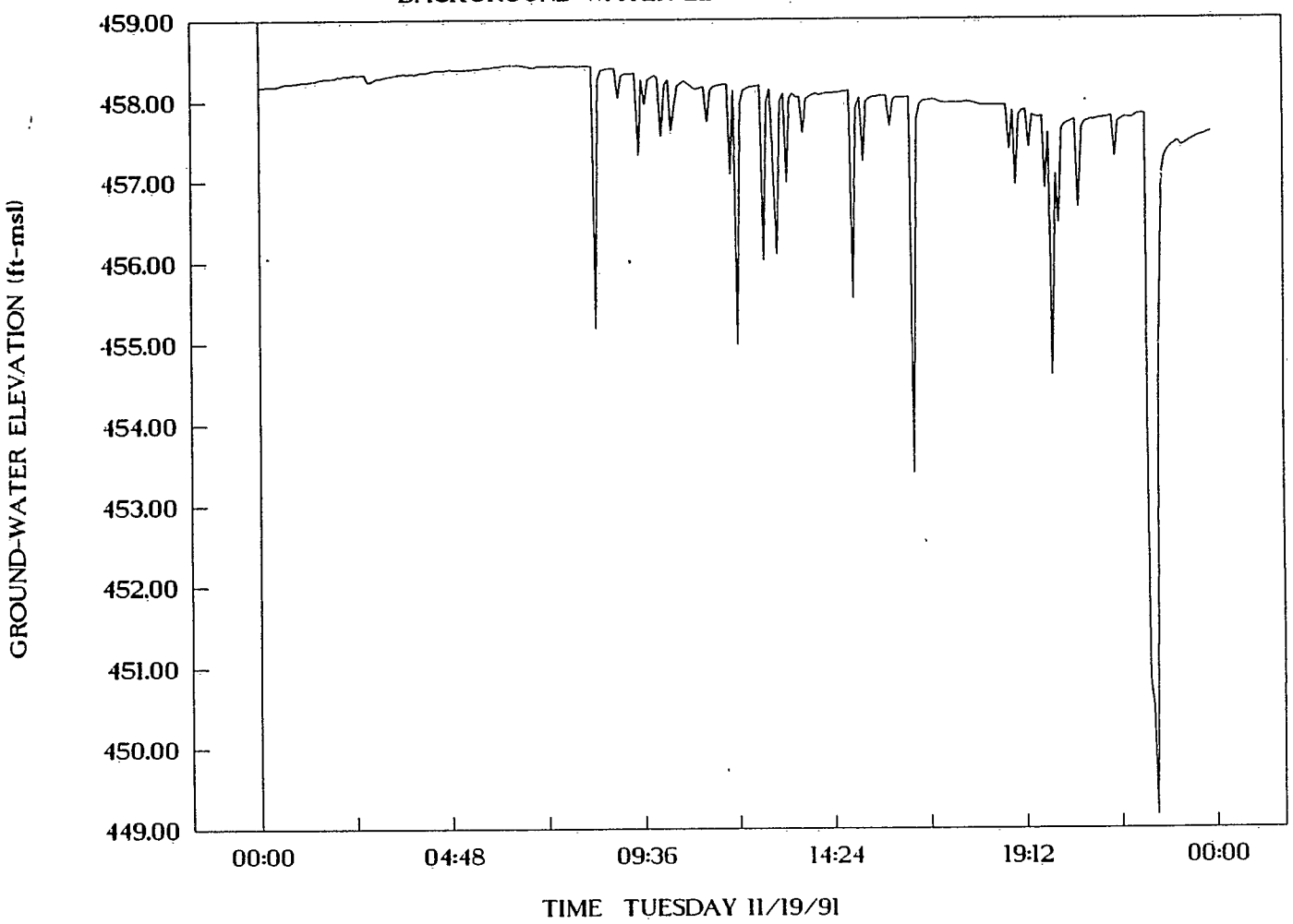
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY GW-40db



LIN003 511

LINEMASTER SWITCH
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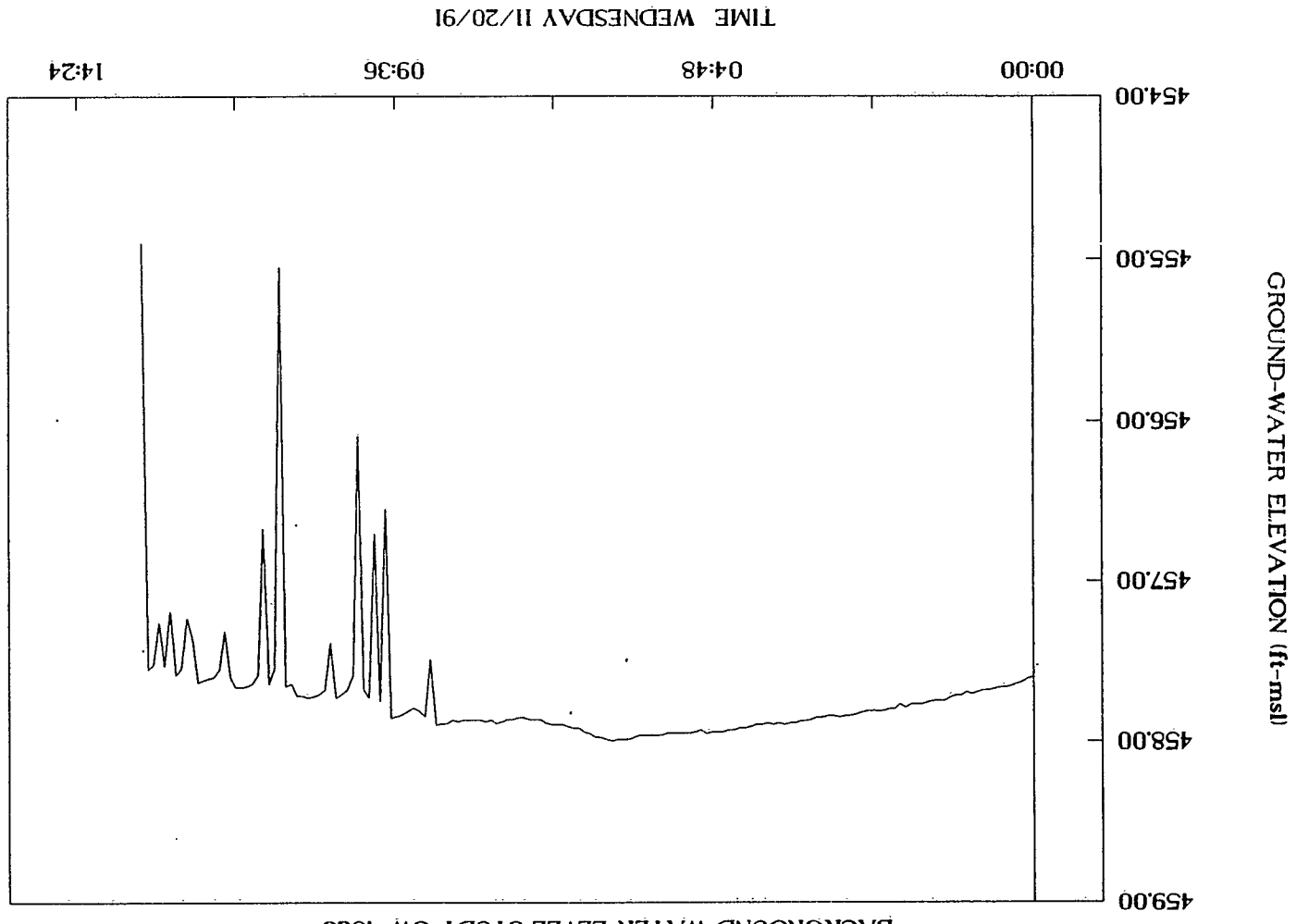
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 176

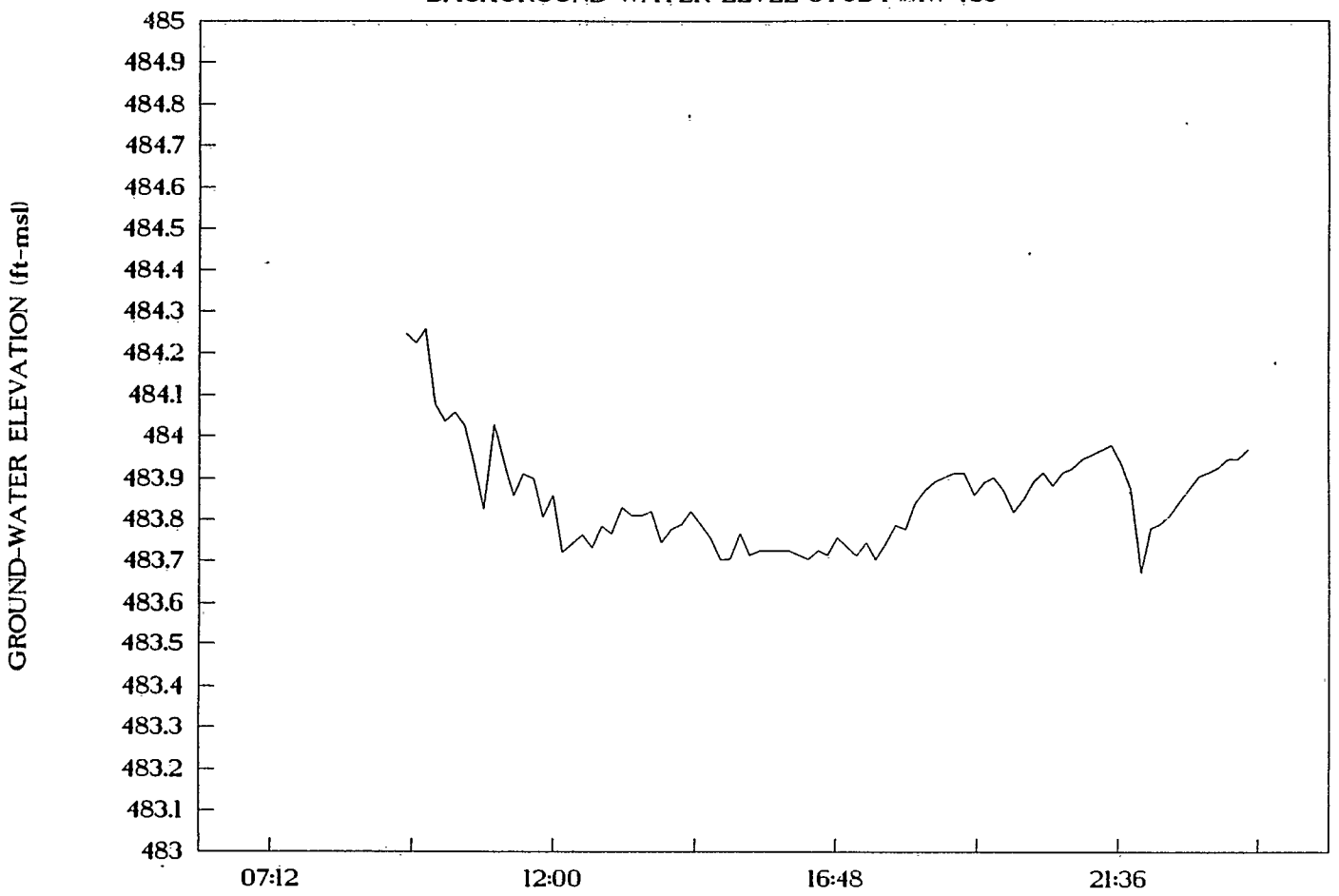


BACKGROUND WATER LEVEL STUDY GW-40db

LINEMASTER SWITCH CORP.

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-1db



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LINO03

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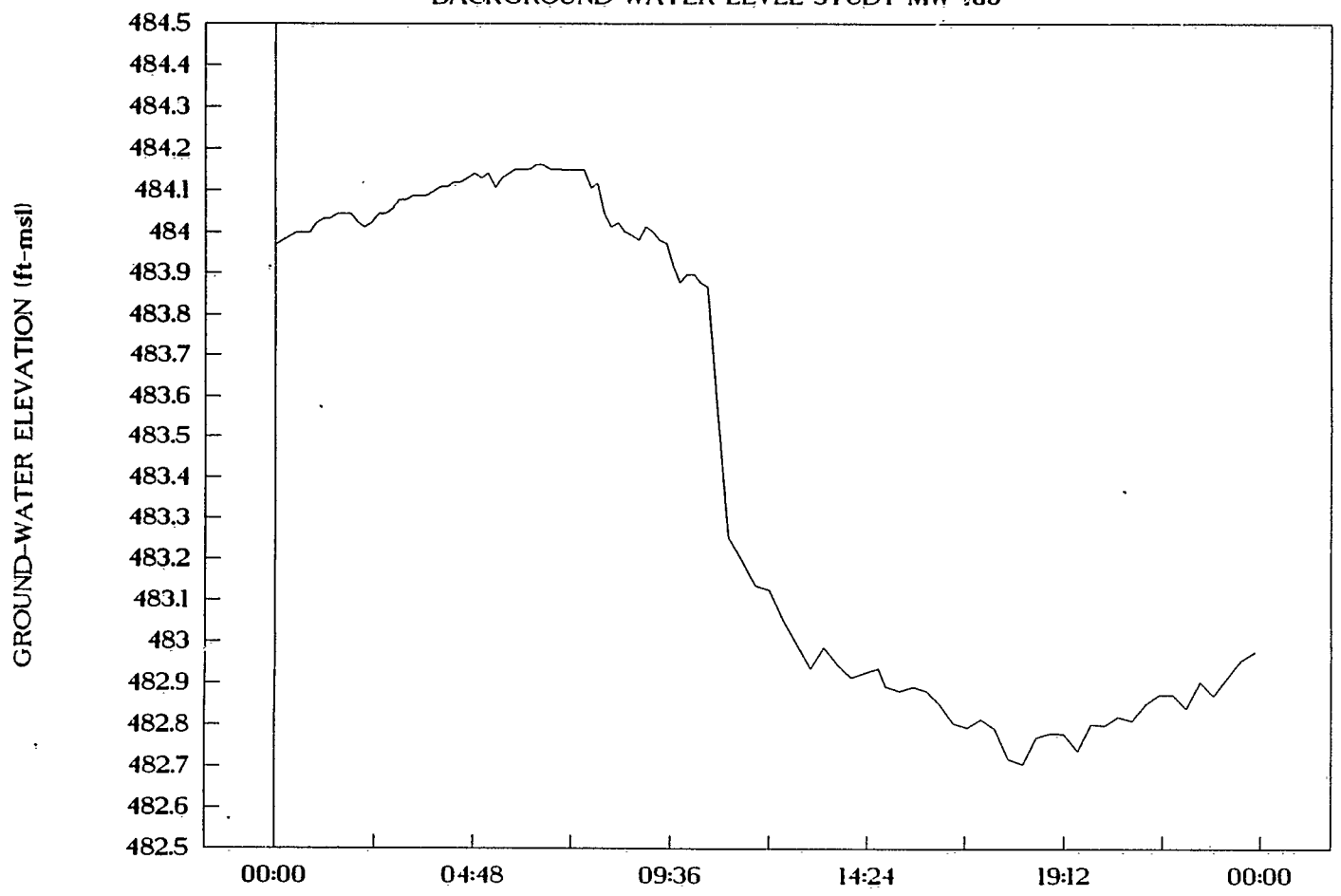
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-1db



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LINE003

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ADMINISTRATIVE RECORD

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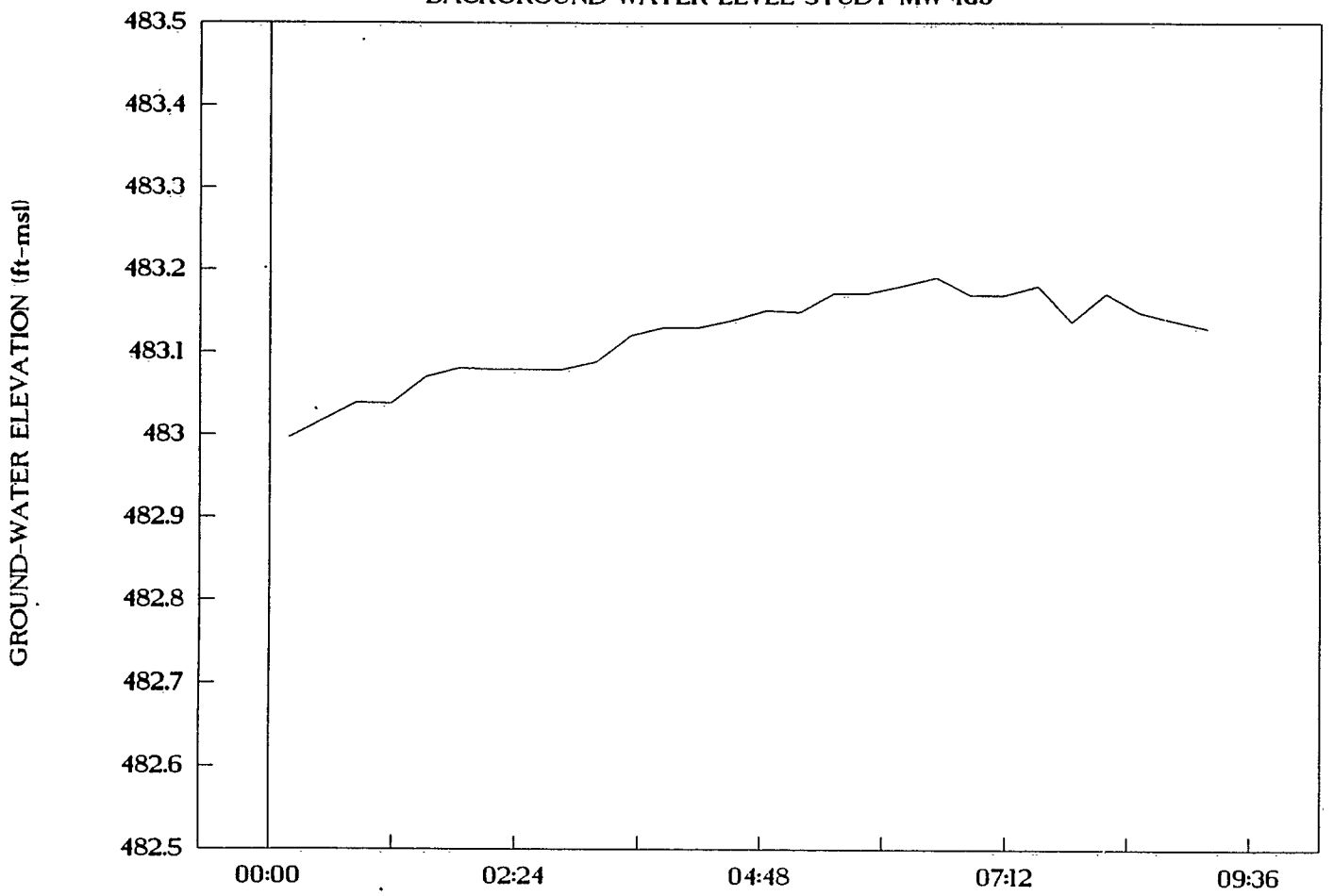
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-1db



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LINEMASTER SWITCH
LIN003

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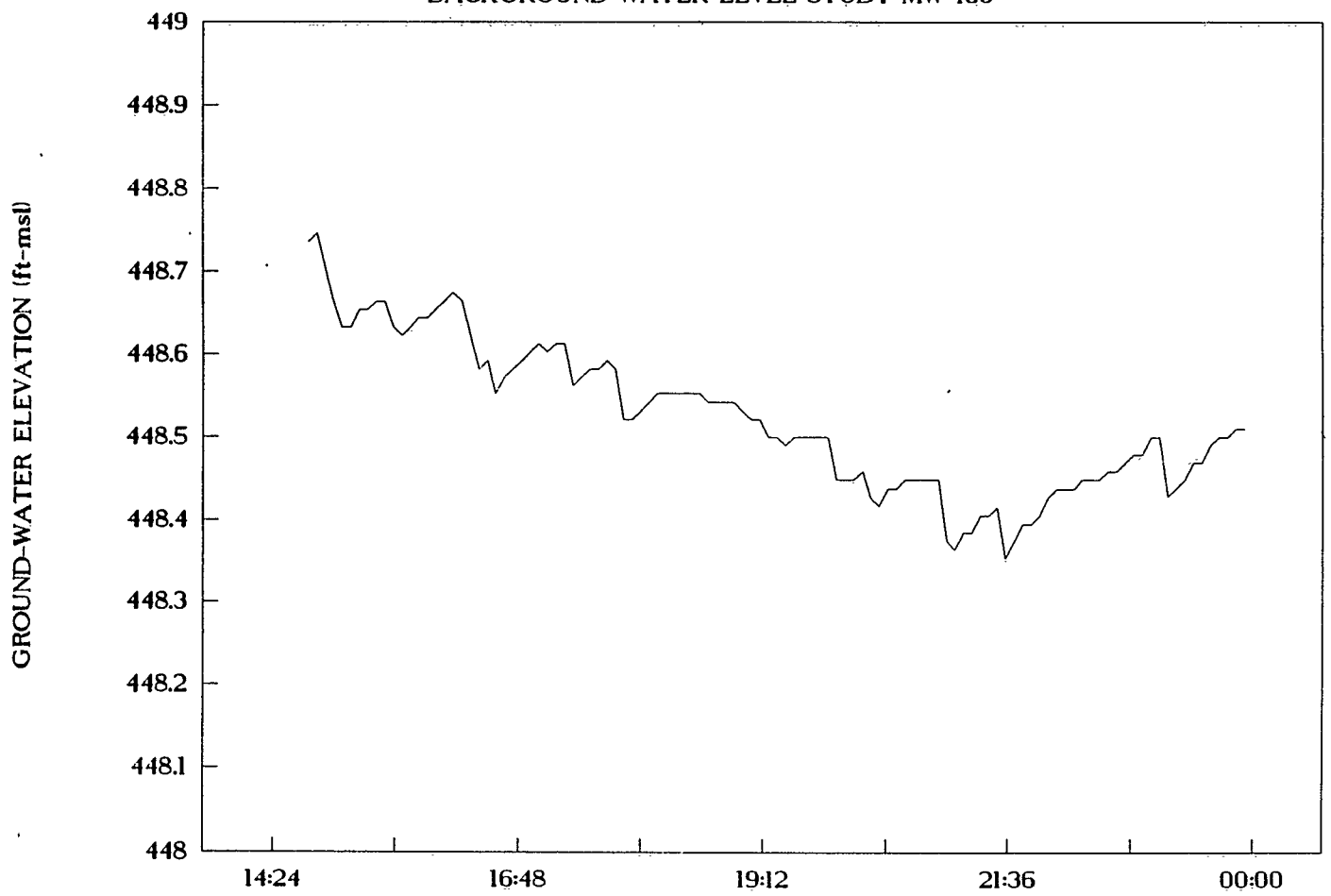
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-1db



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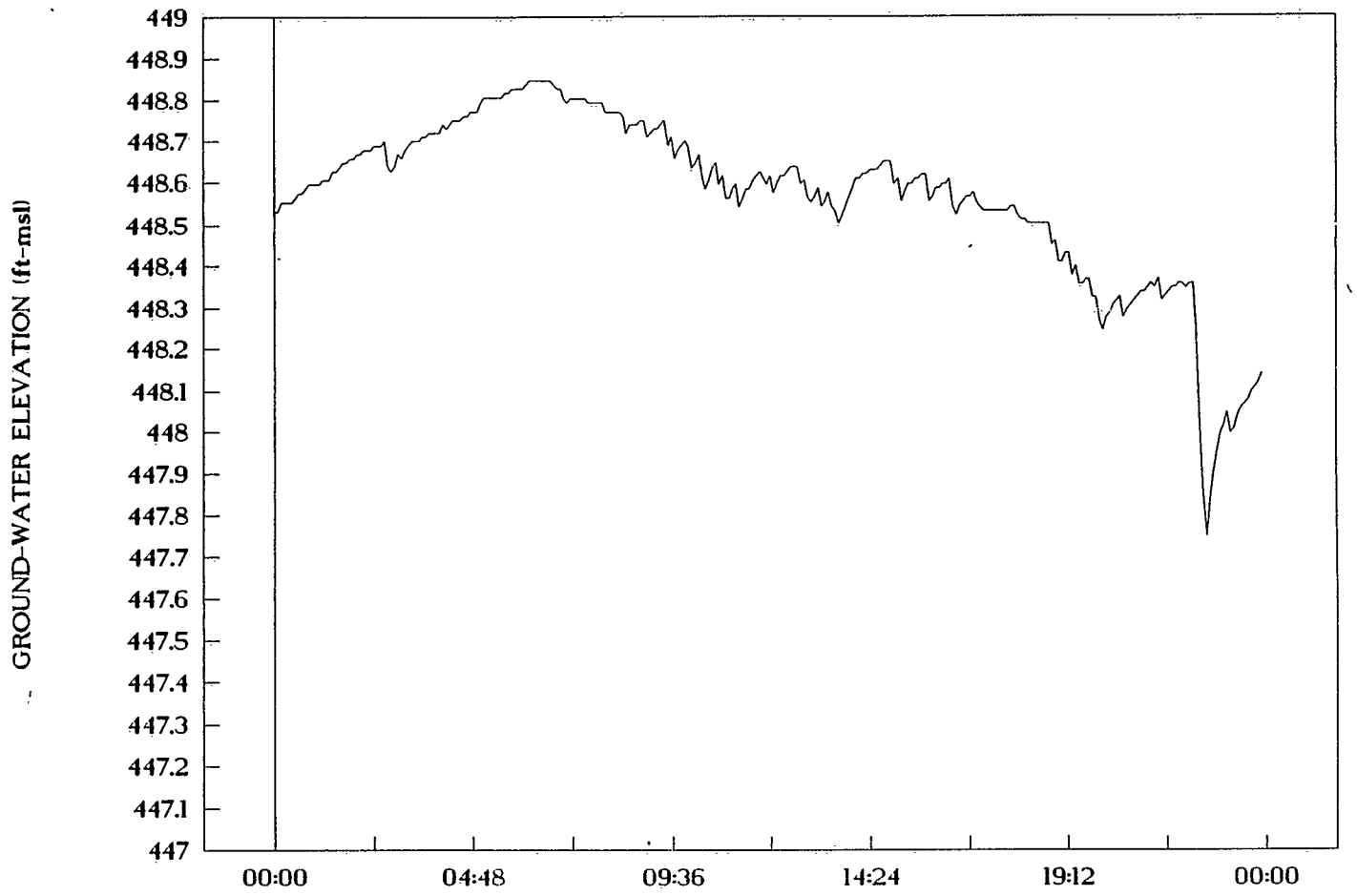
LIN003
0 8 1

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-1db



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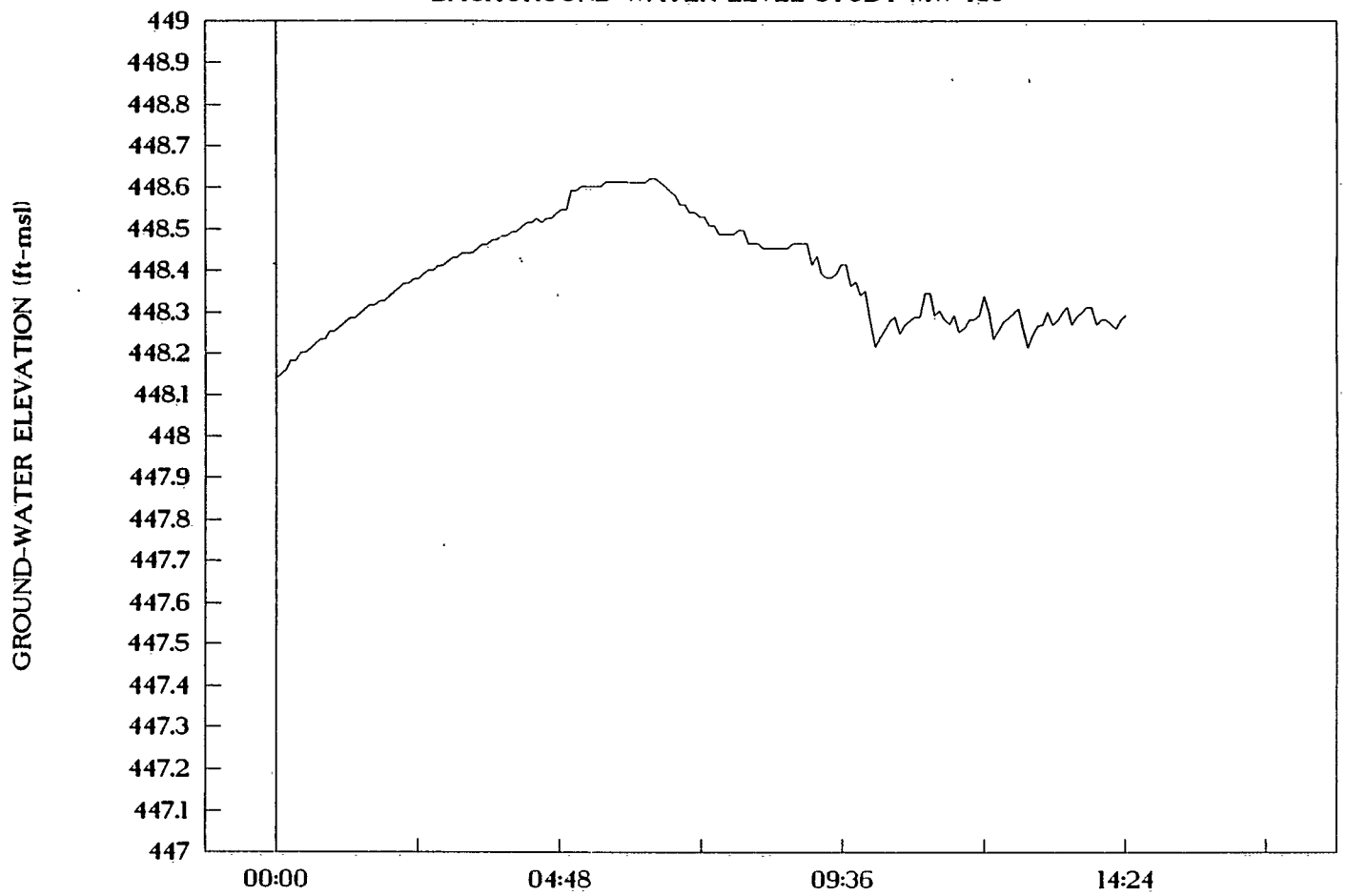
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 181

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-1db



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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LIN003 281

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ADMINISTRATIVE RECORD

LIN003 183

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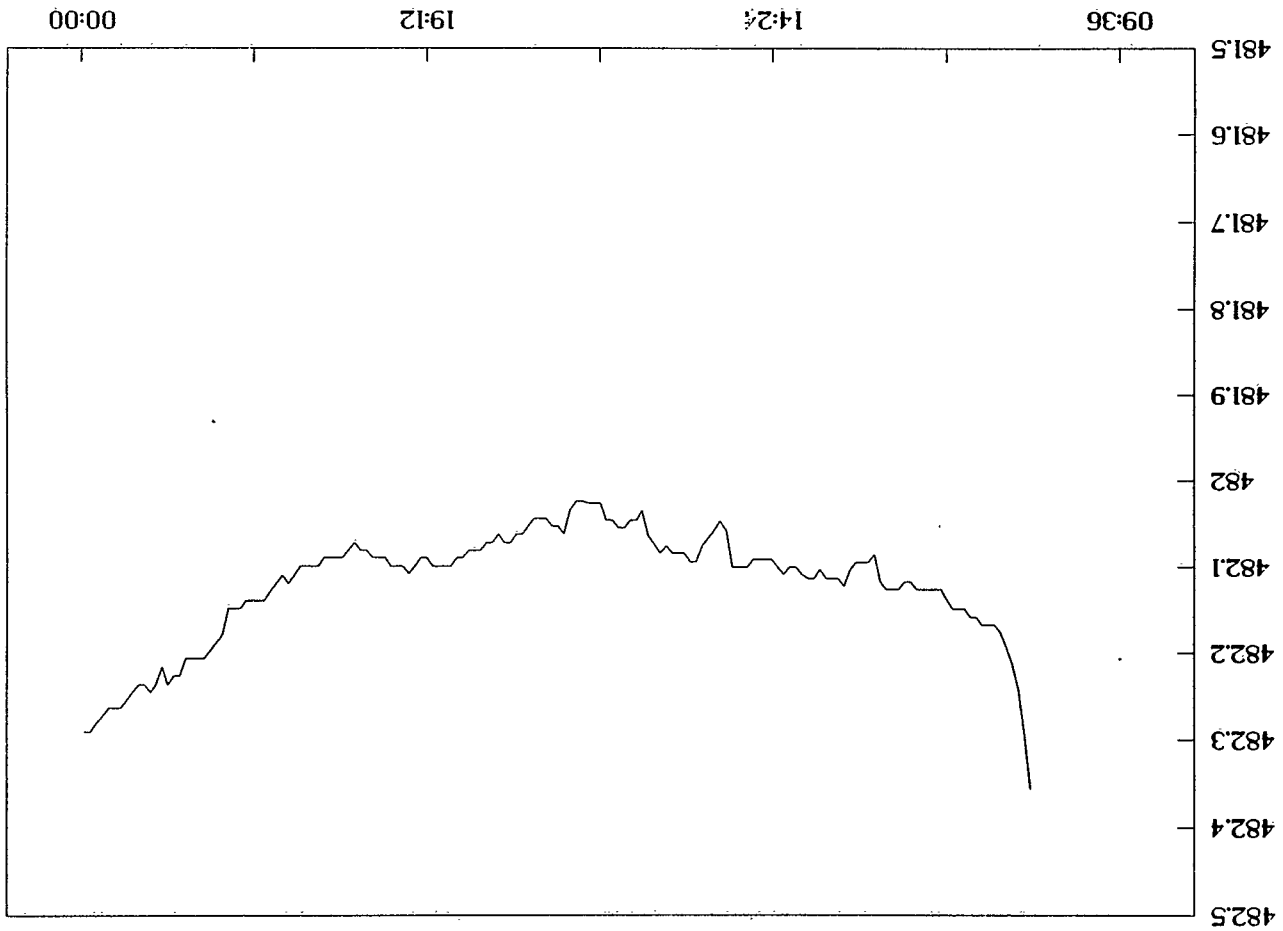
ASSOCIATES, INC.

LINEMASTER SWITCH CORP.

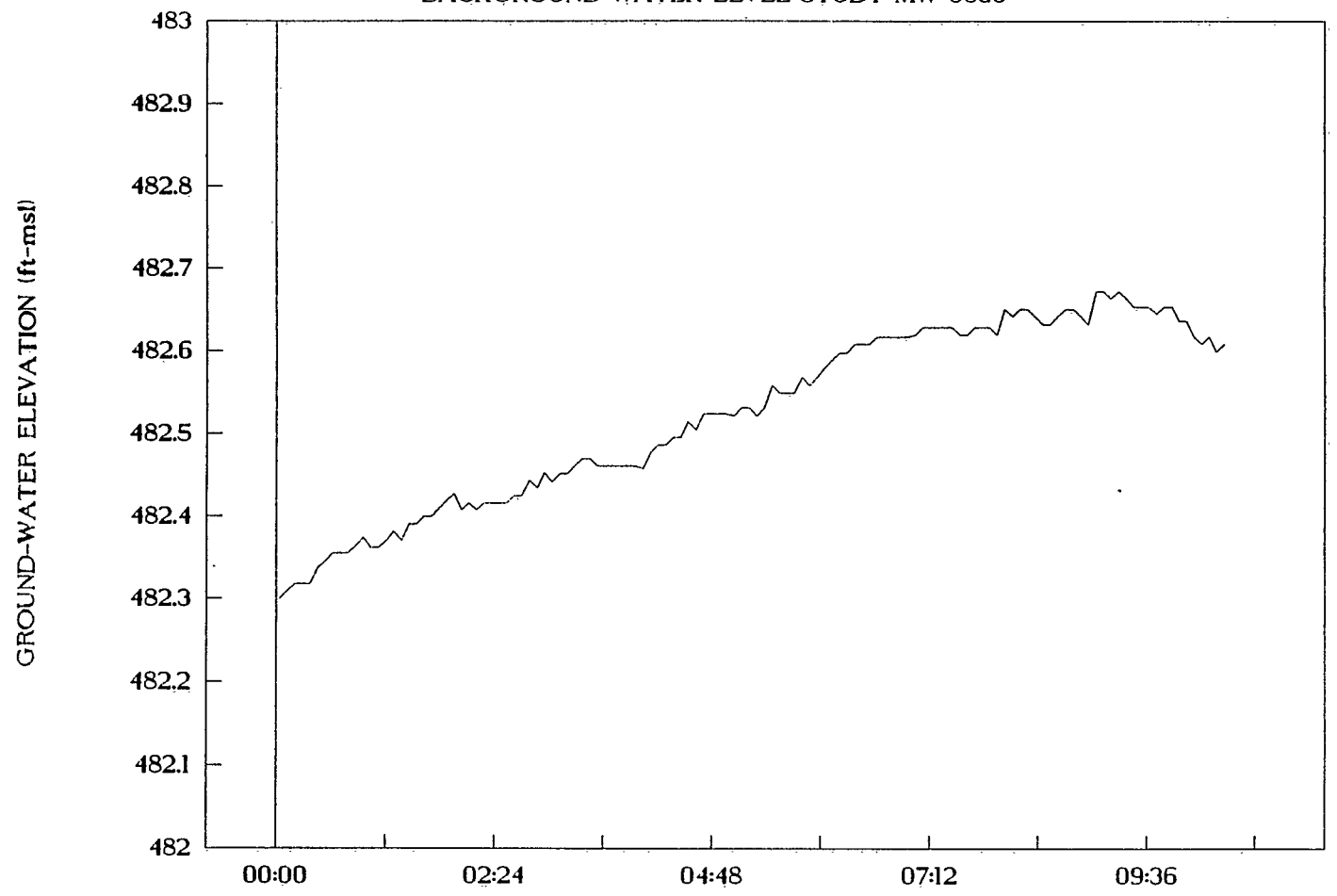
BACKGROUND WATER LEVEL STUDY MW-06db

TIME THURSDAY 9/19/91



LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-06db



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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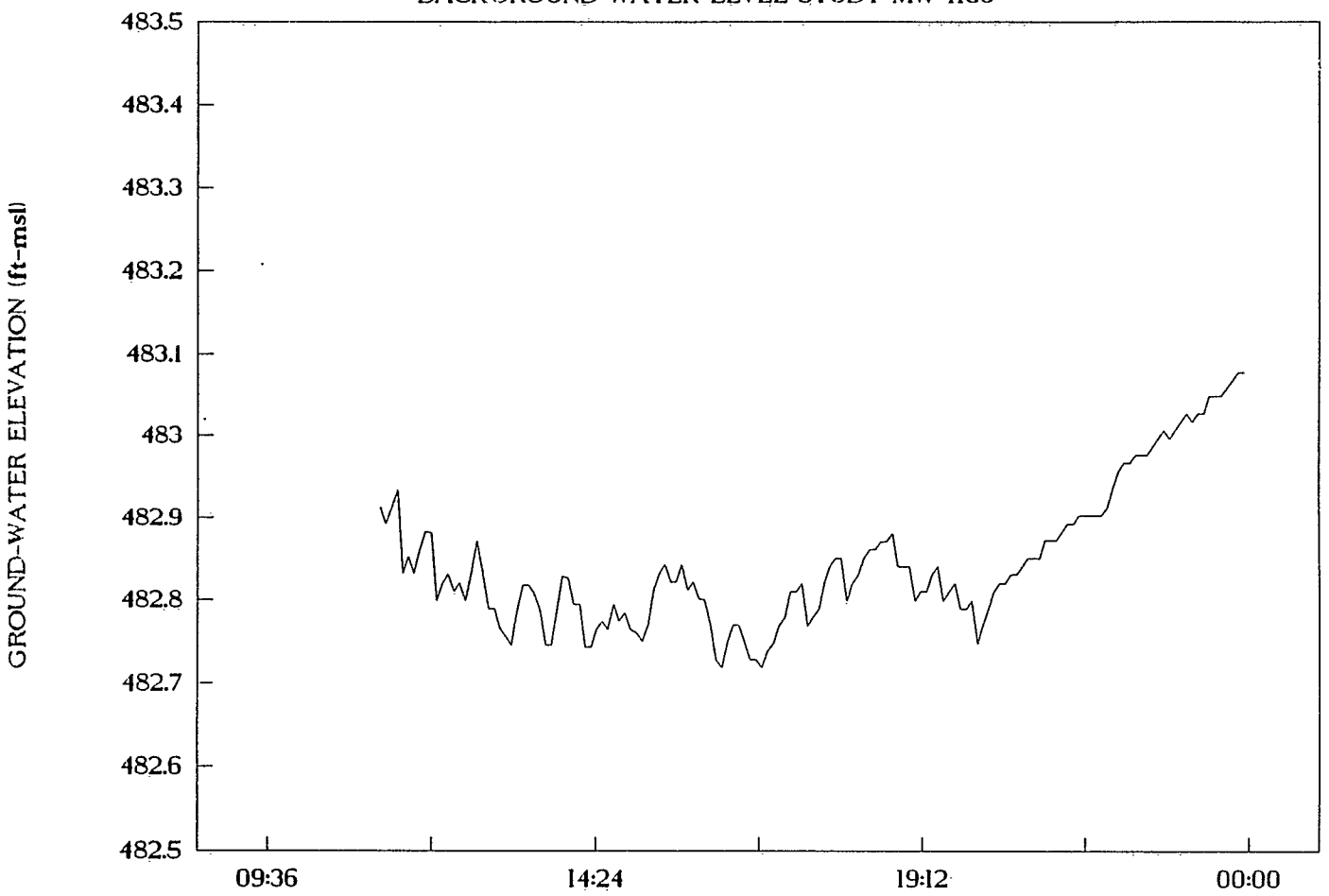
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db



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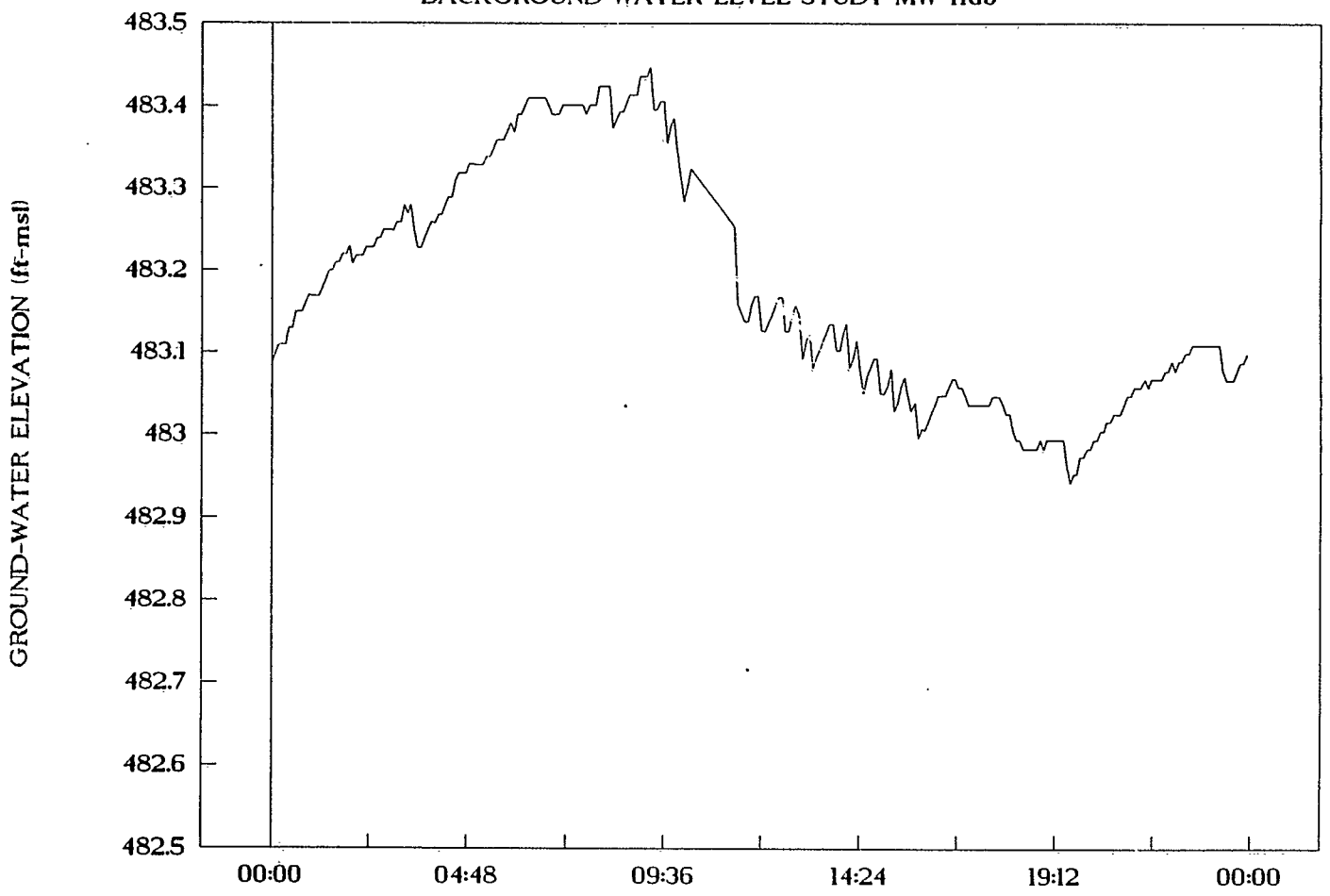
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 1 8 5

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db



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LINO03 9 8 1
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
NOTICE
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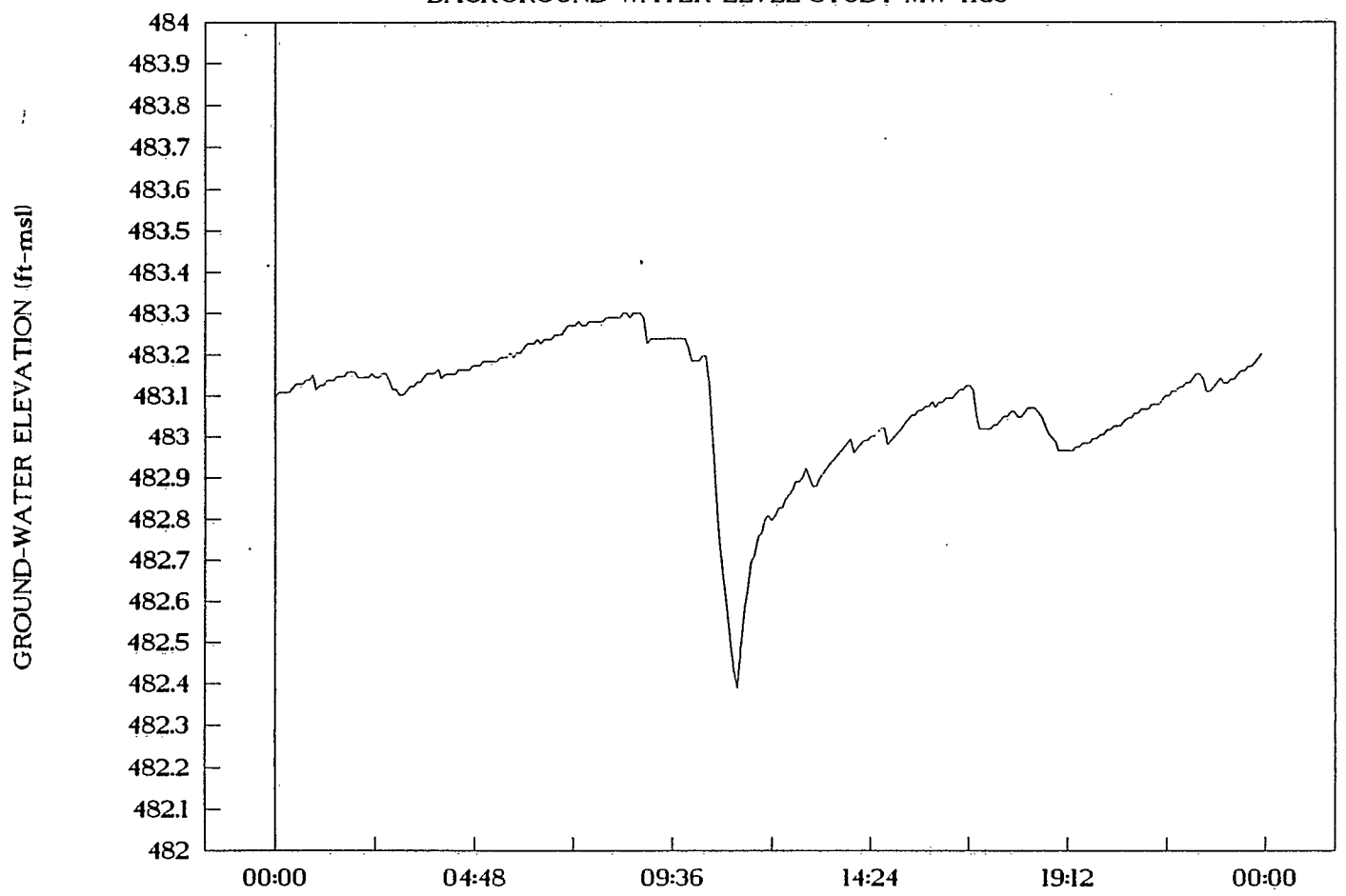
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db



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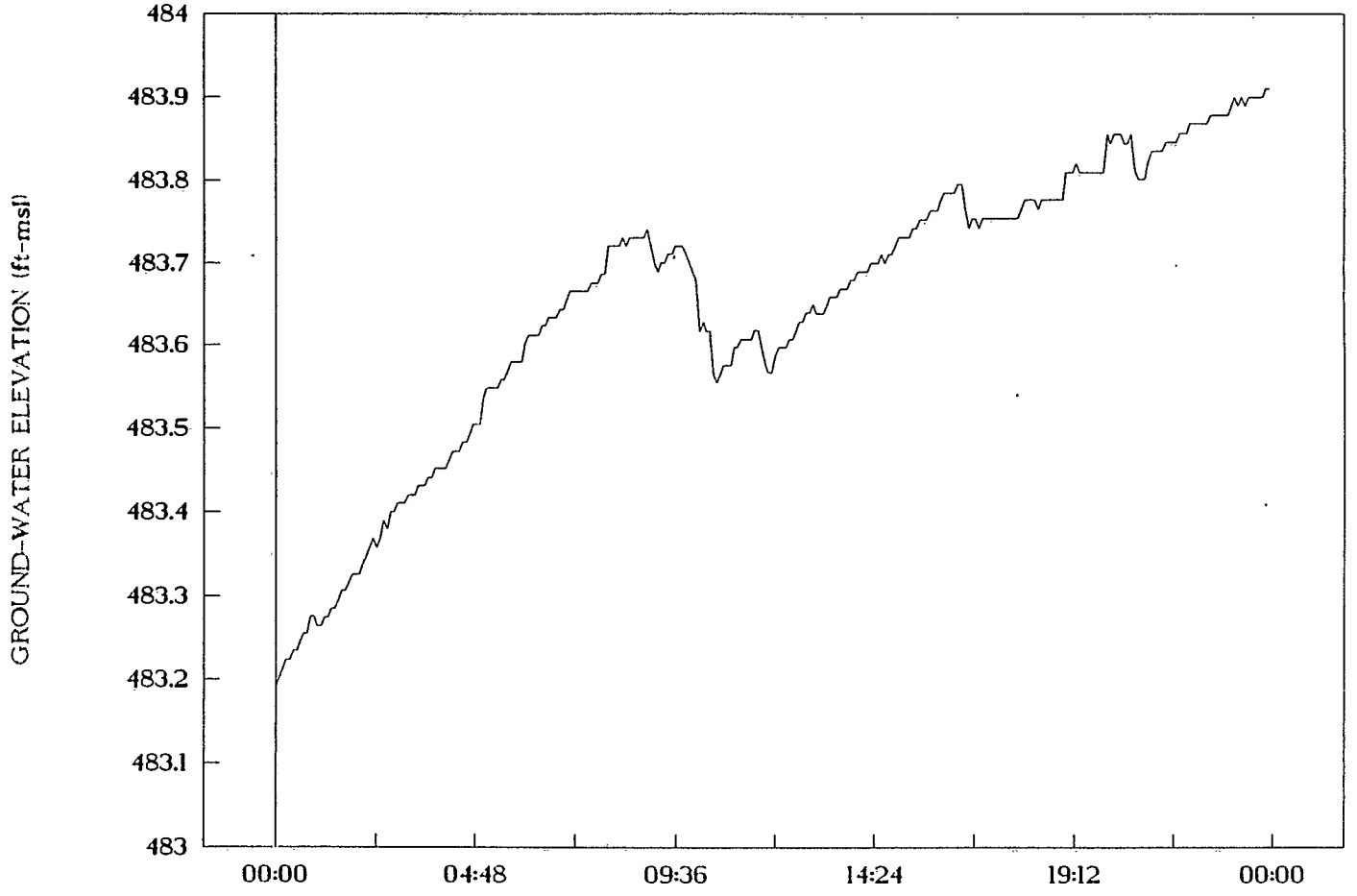
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 1 8 1

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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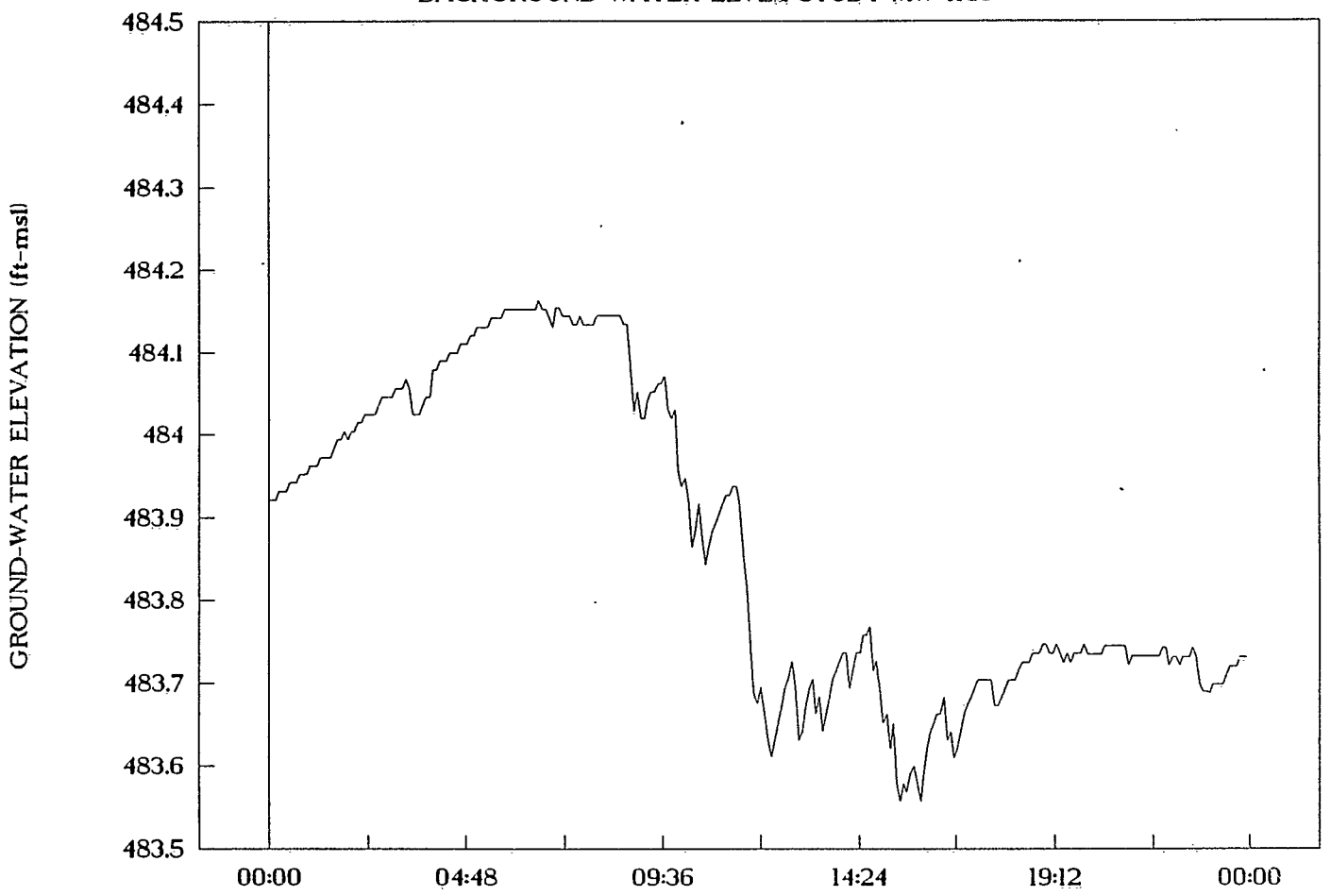
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db



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FUSS&O'NEILL,INC.

LIN003 681

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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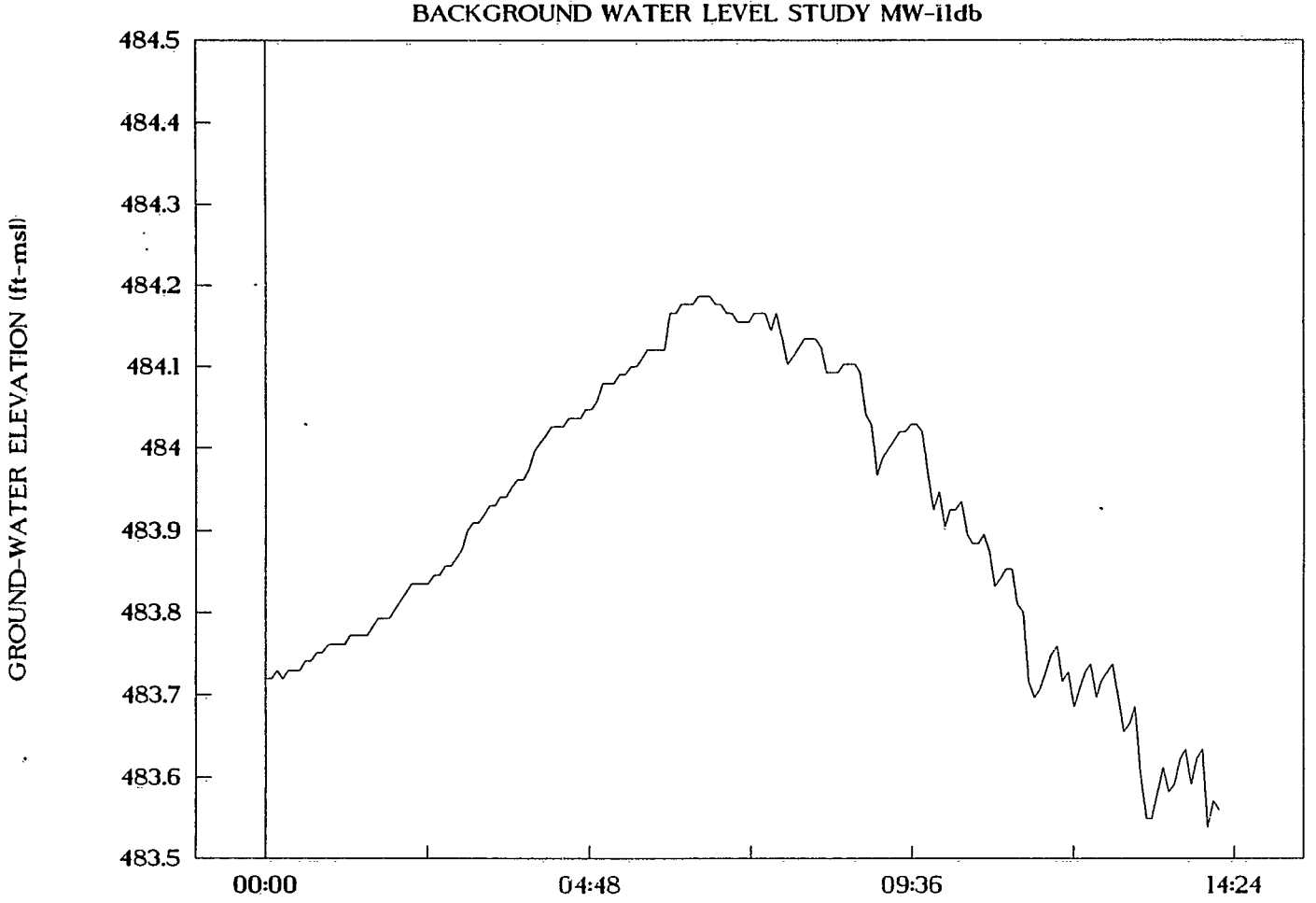
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db



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LINE003 061

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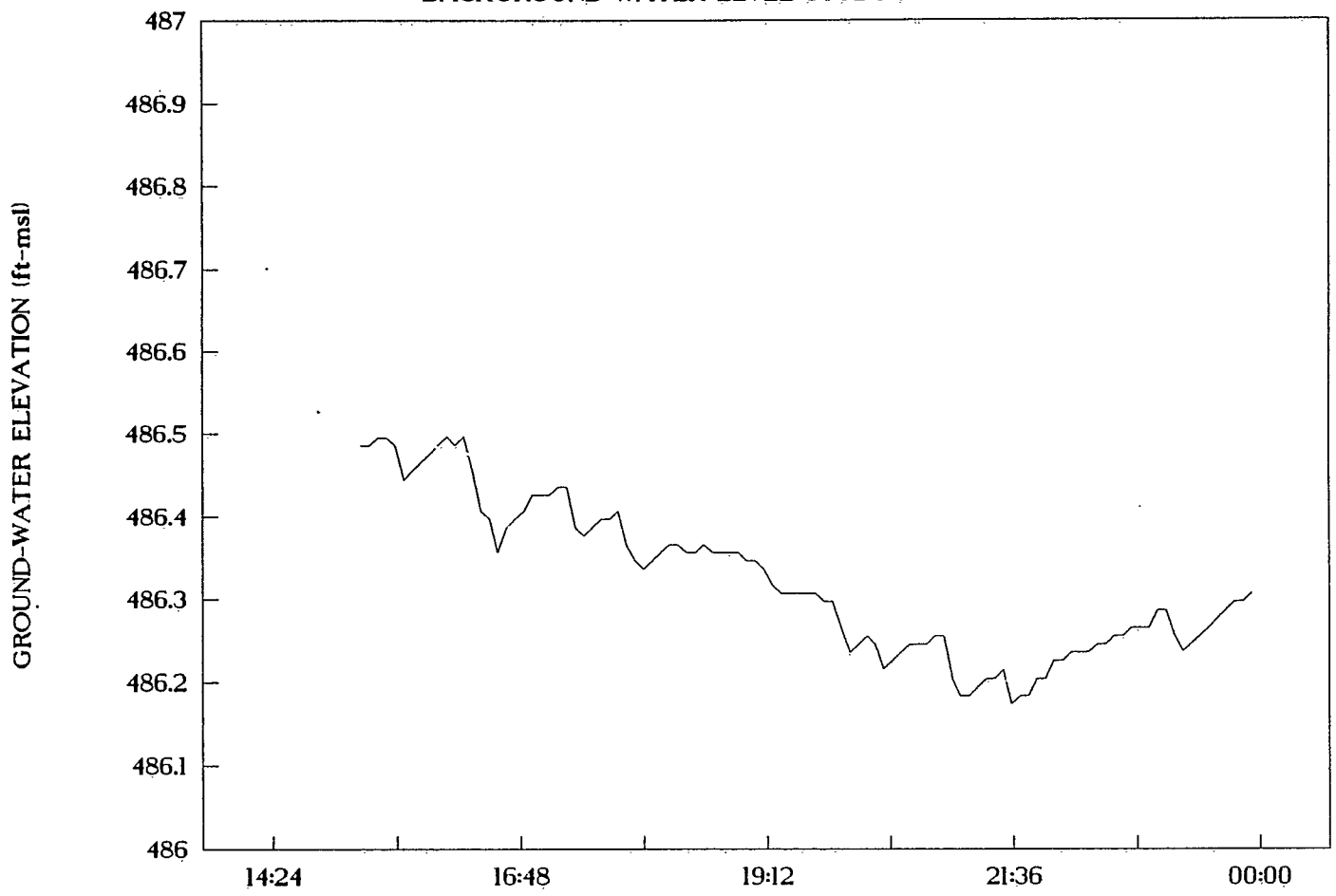
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 191

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db

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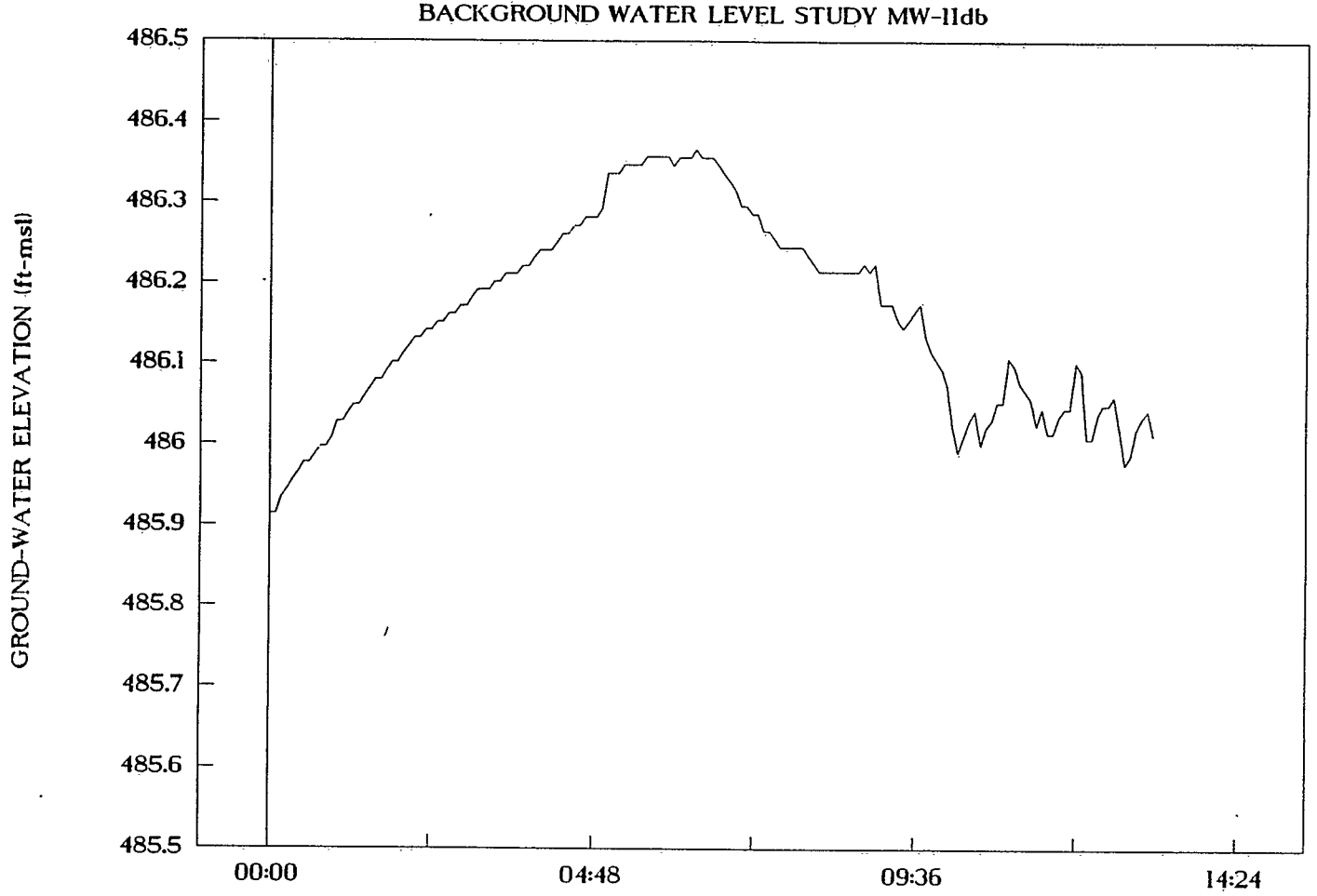
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-11db



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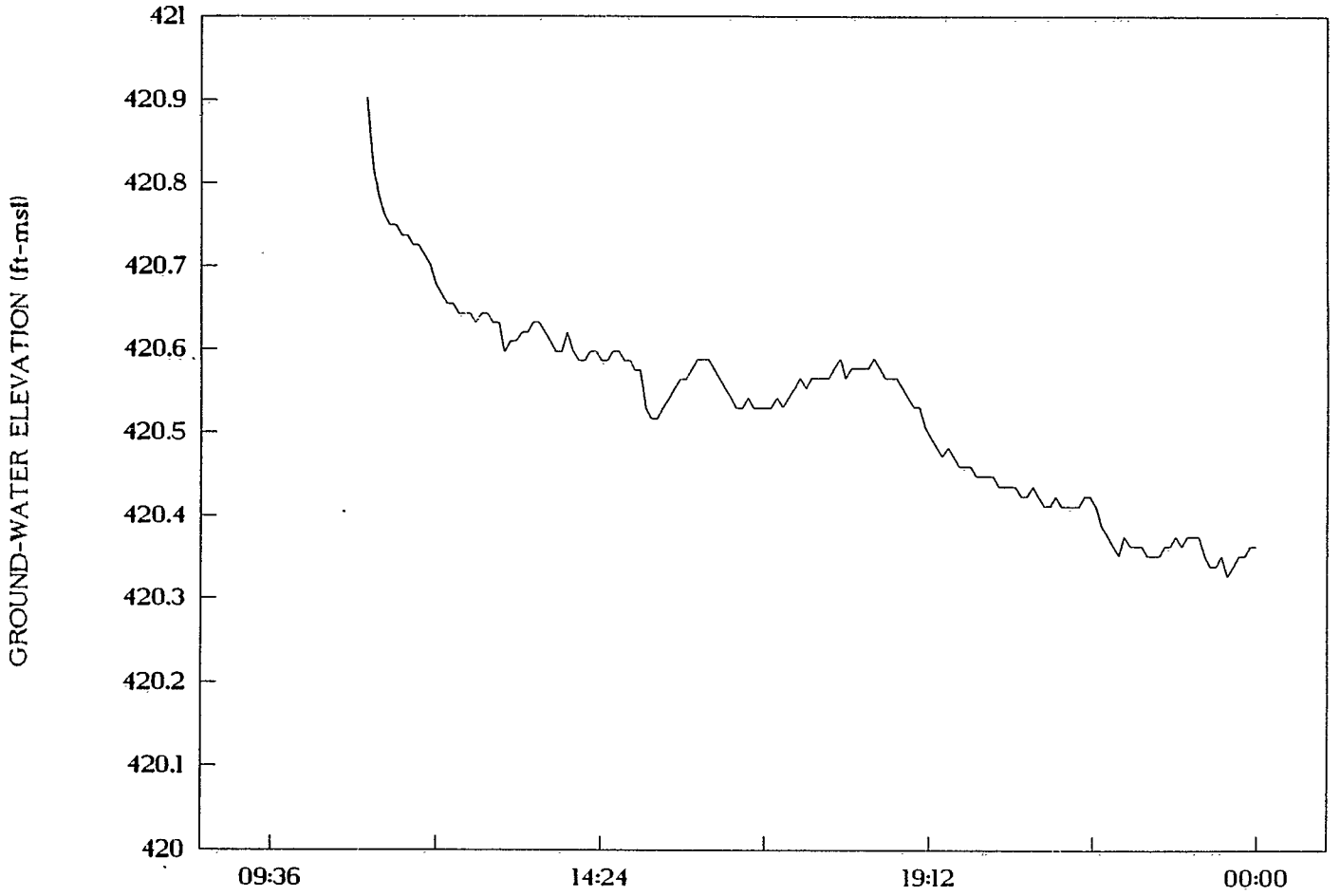
LIN003 E 61

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-12db



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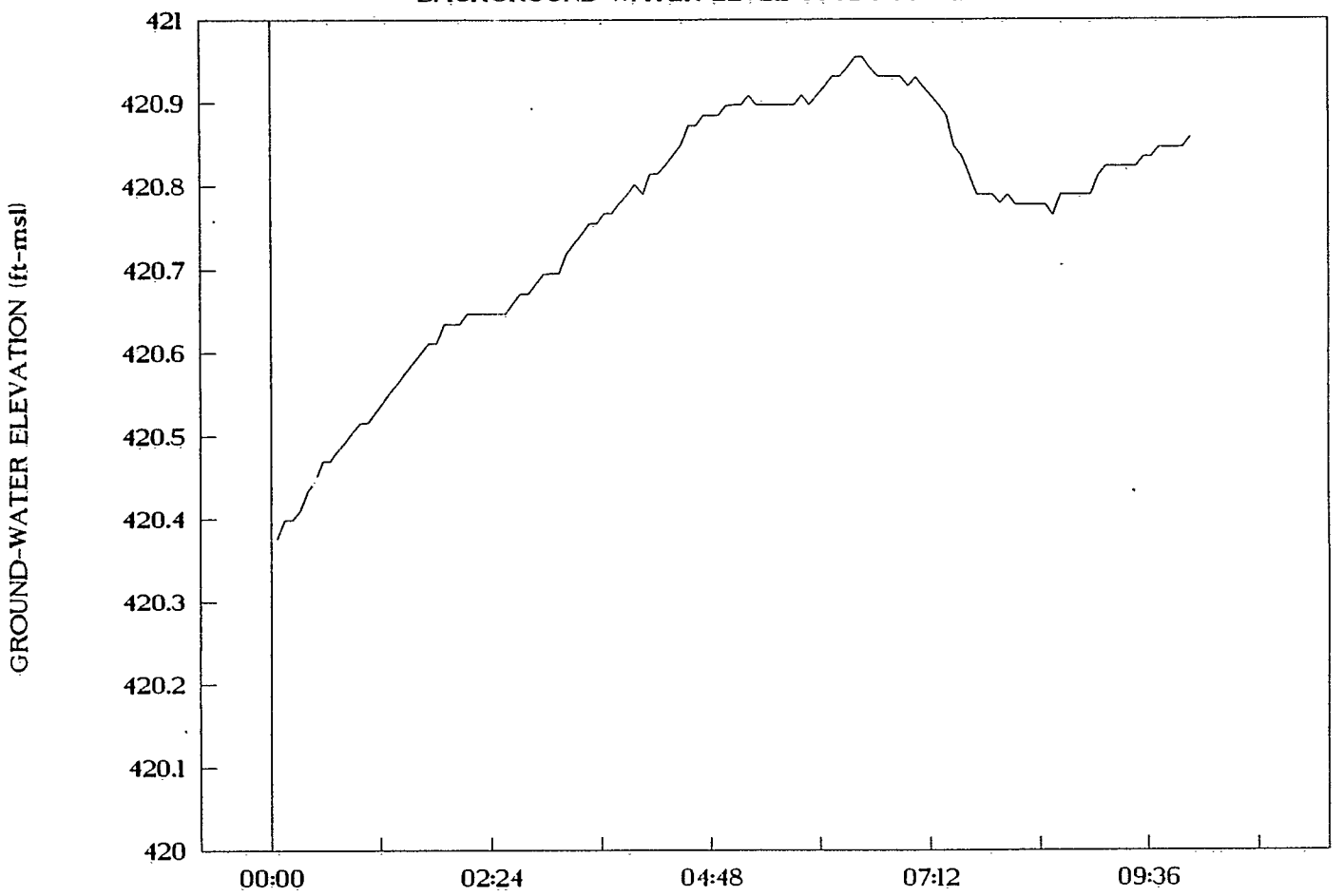
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-12db



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LINE003 561

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ADMINISTRATIVE RECORD

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LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-13db

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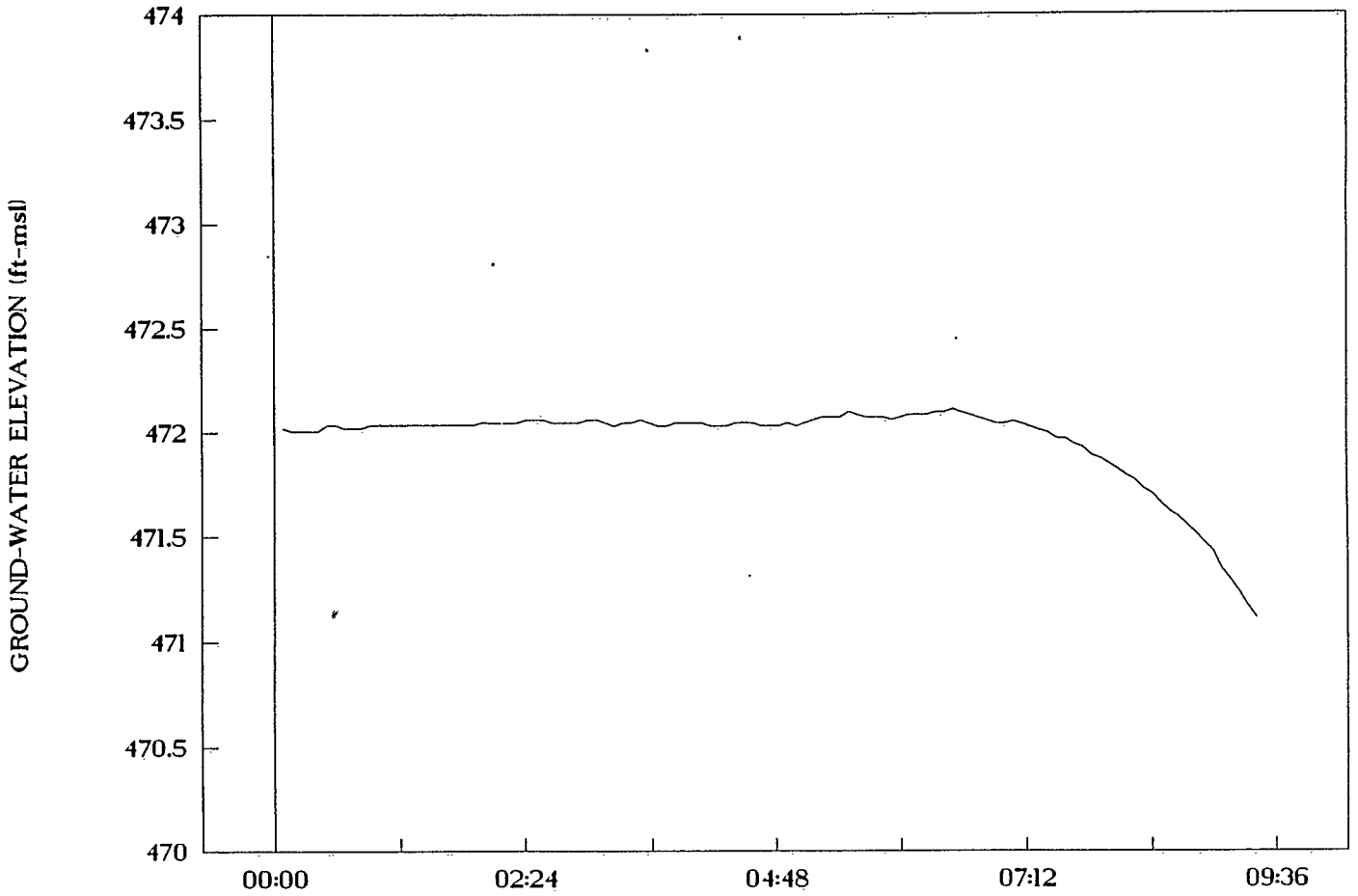
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-13db



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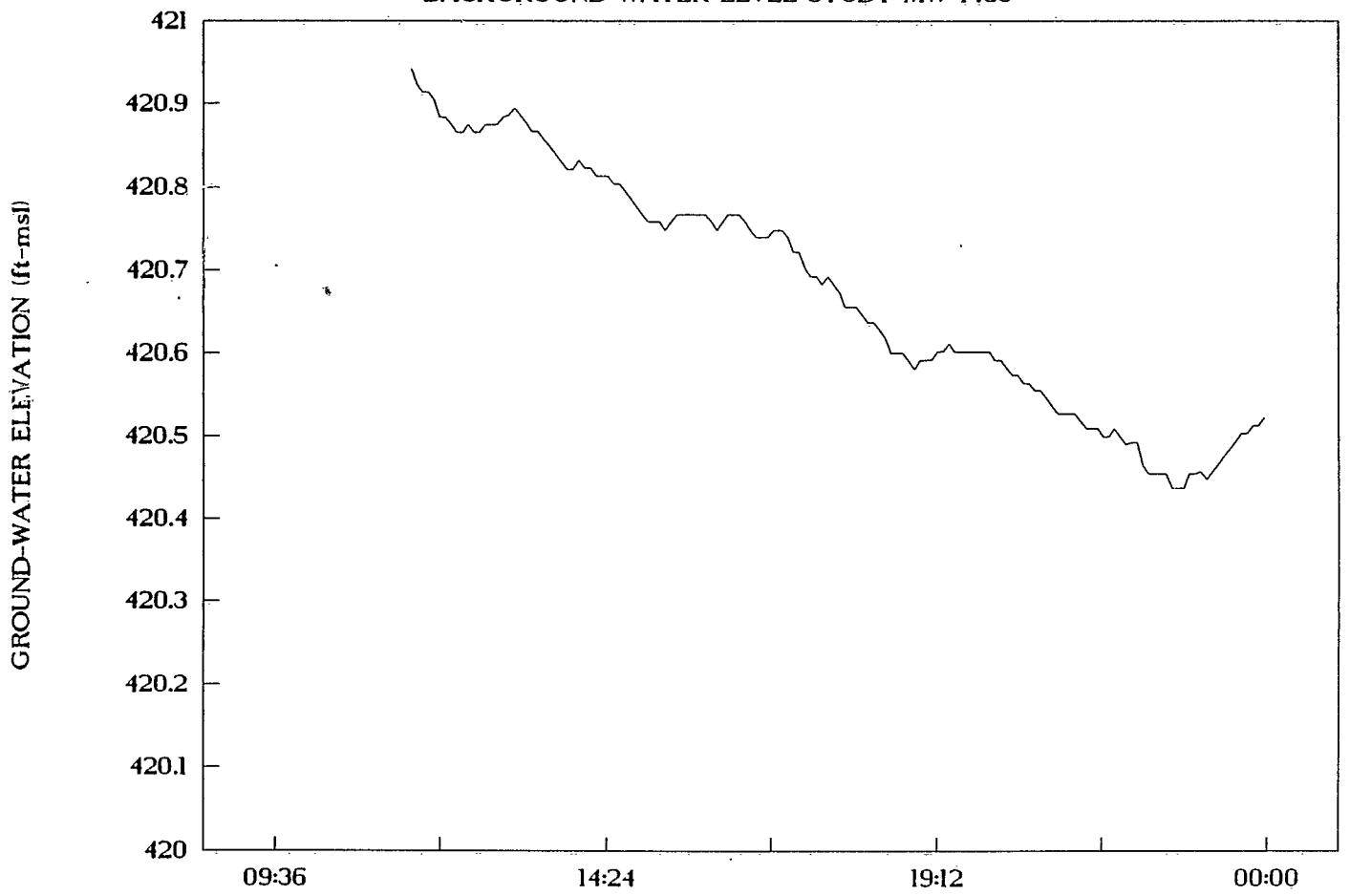
ADMINISTRATIVE RECORD

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-14db



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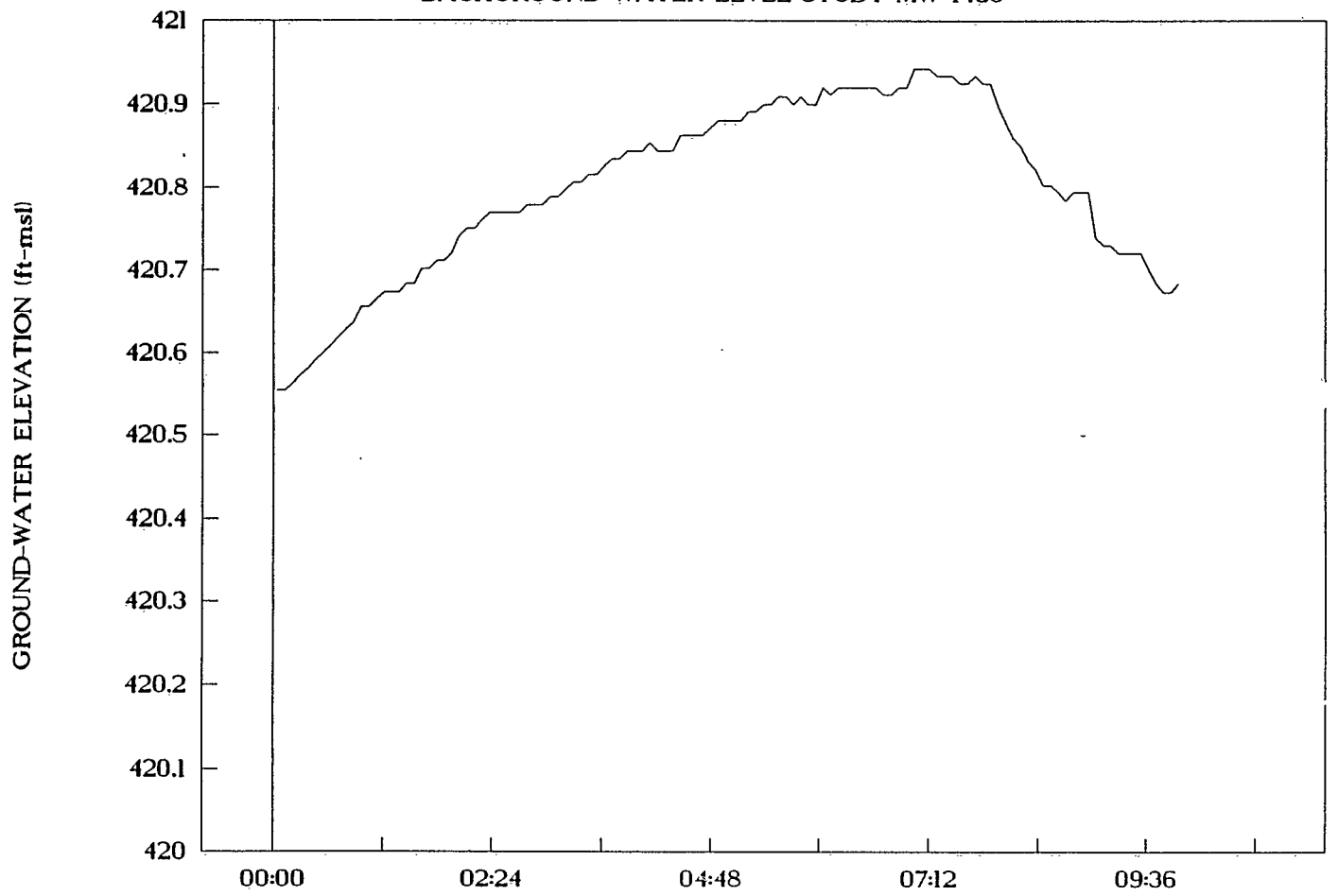
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 861

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-14db



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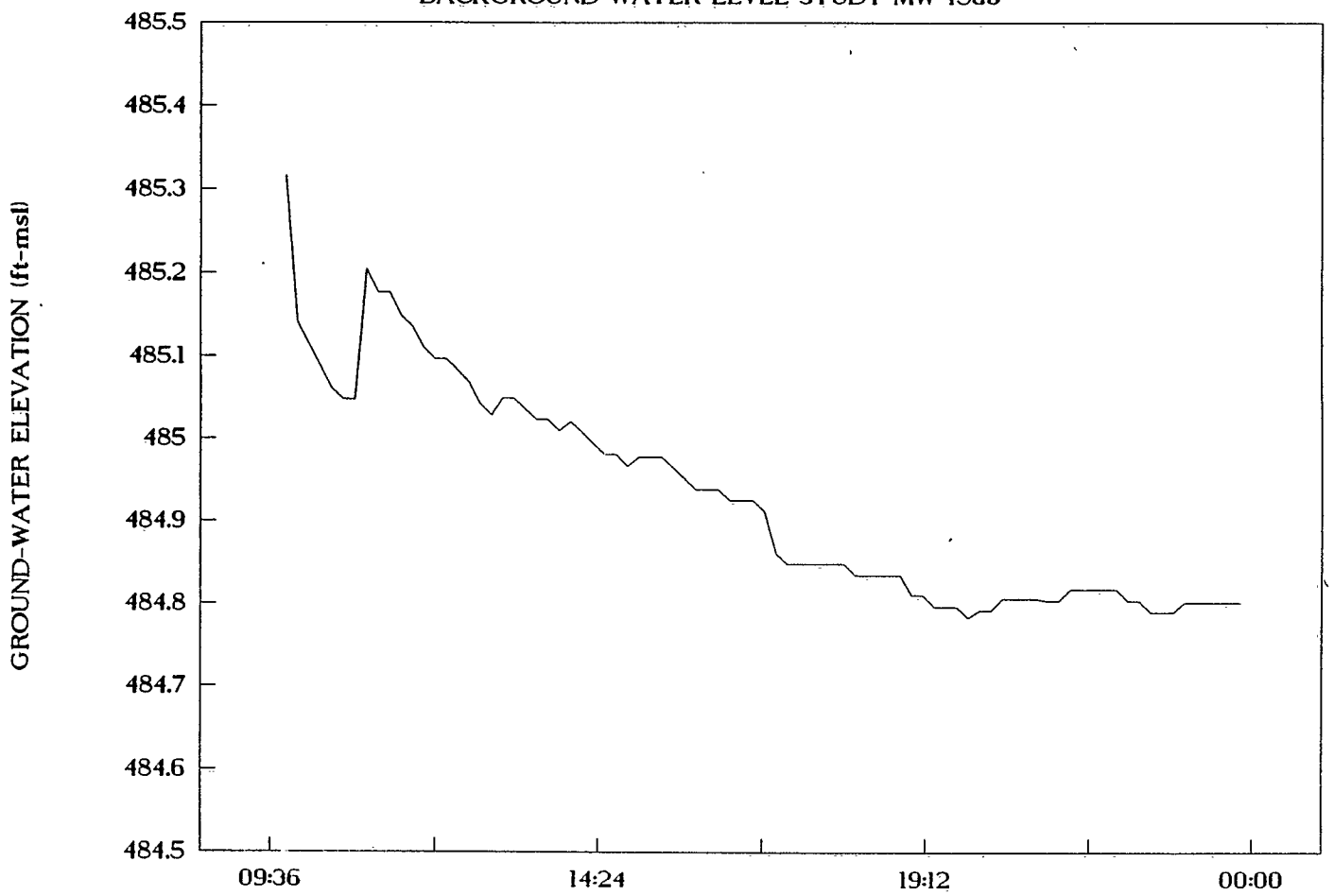
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 1 9 9

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-15db



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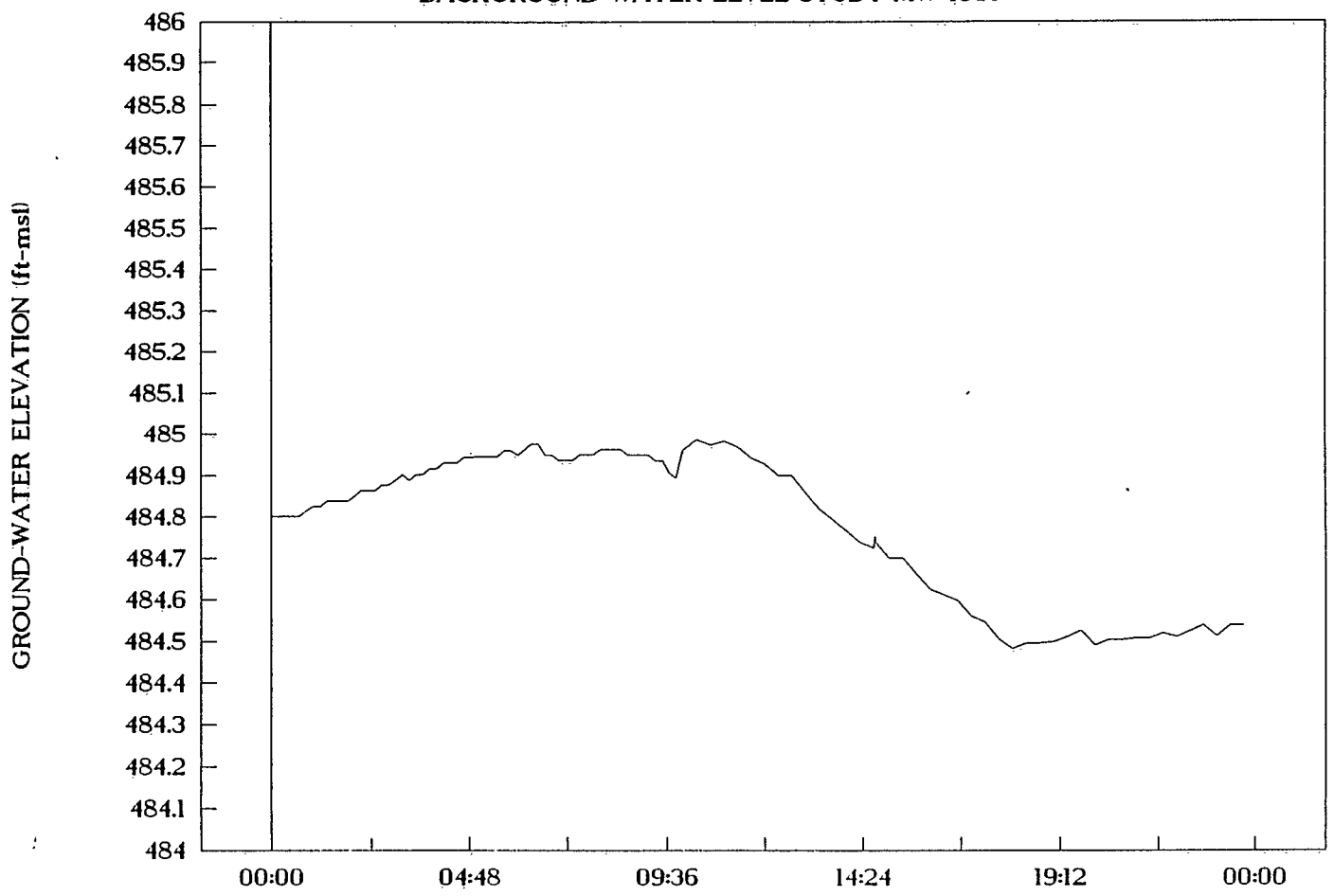
LIN003 0 0 2

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-15db



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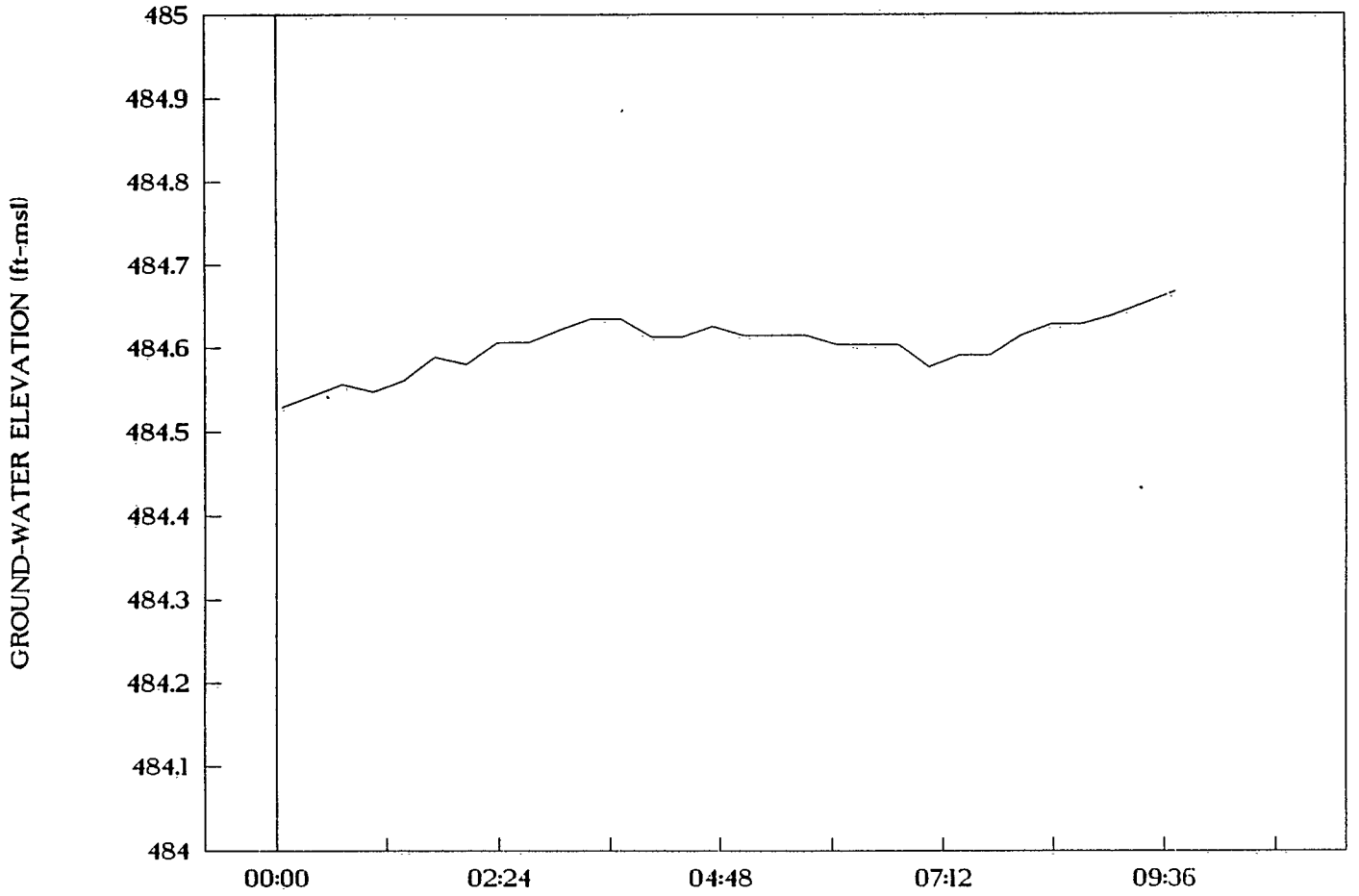
LIN003 2 0 1

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-15db



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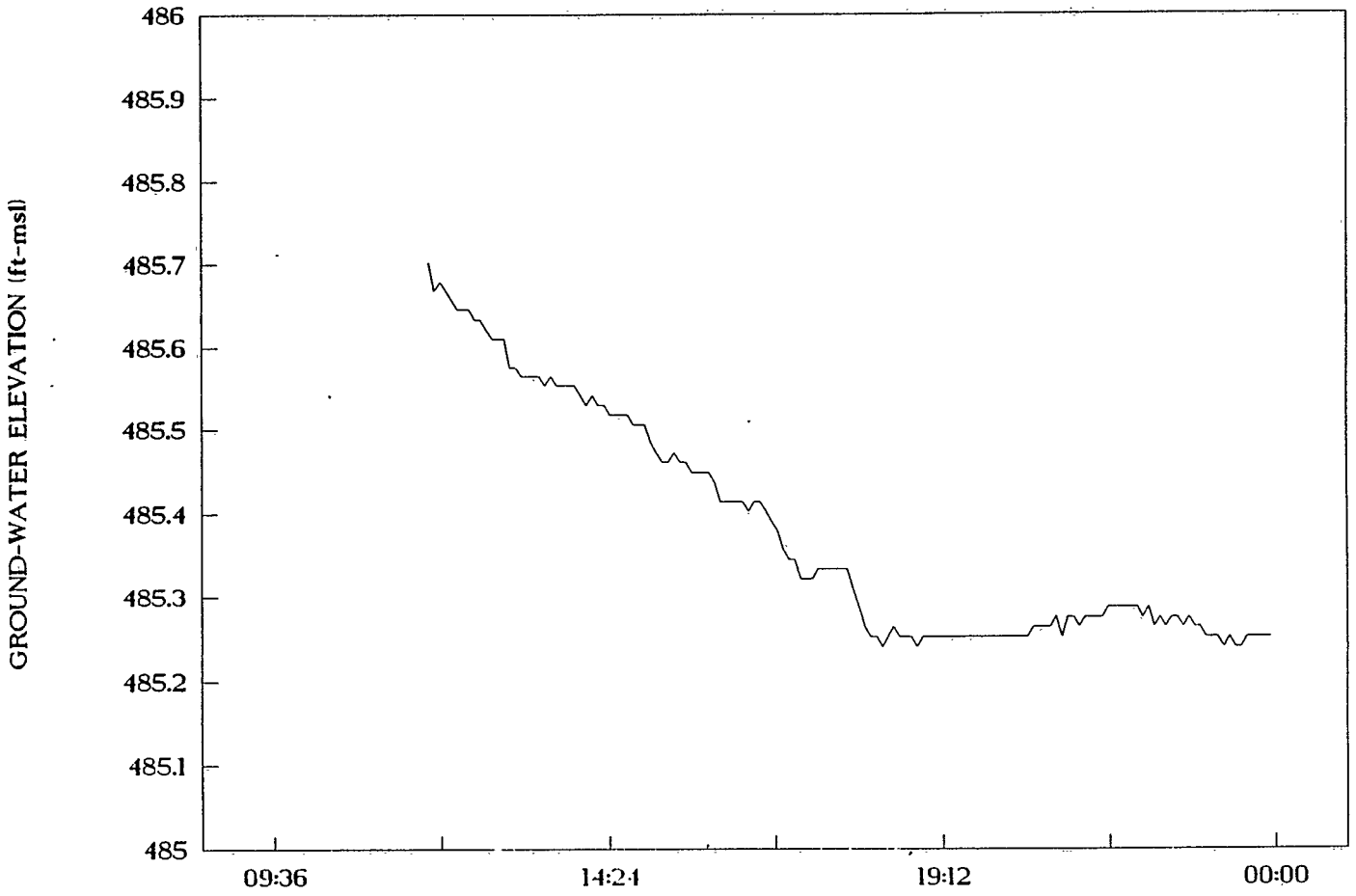
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-15db



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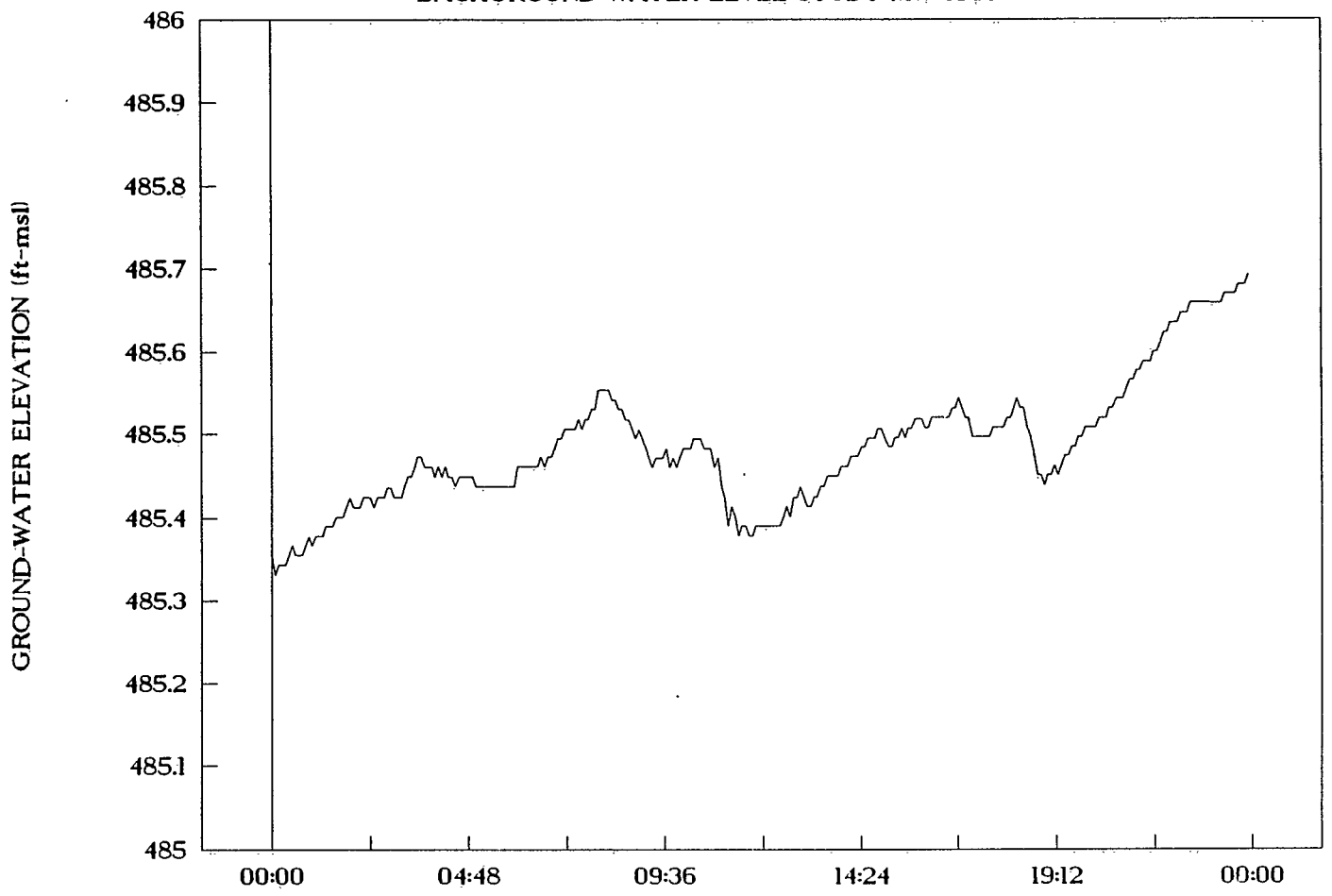
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 E02

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-15db



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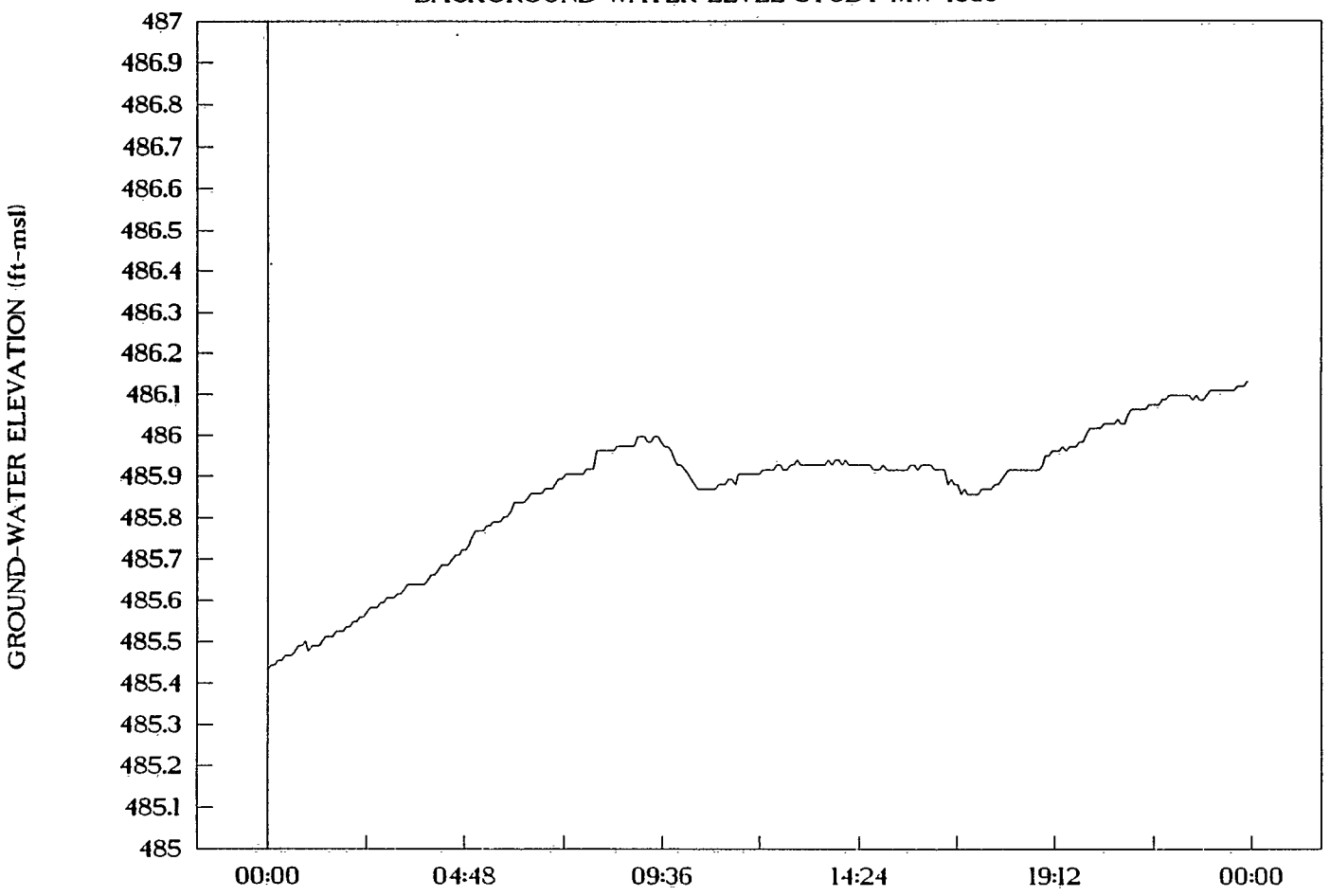
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-15db



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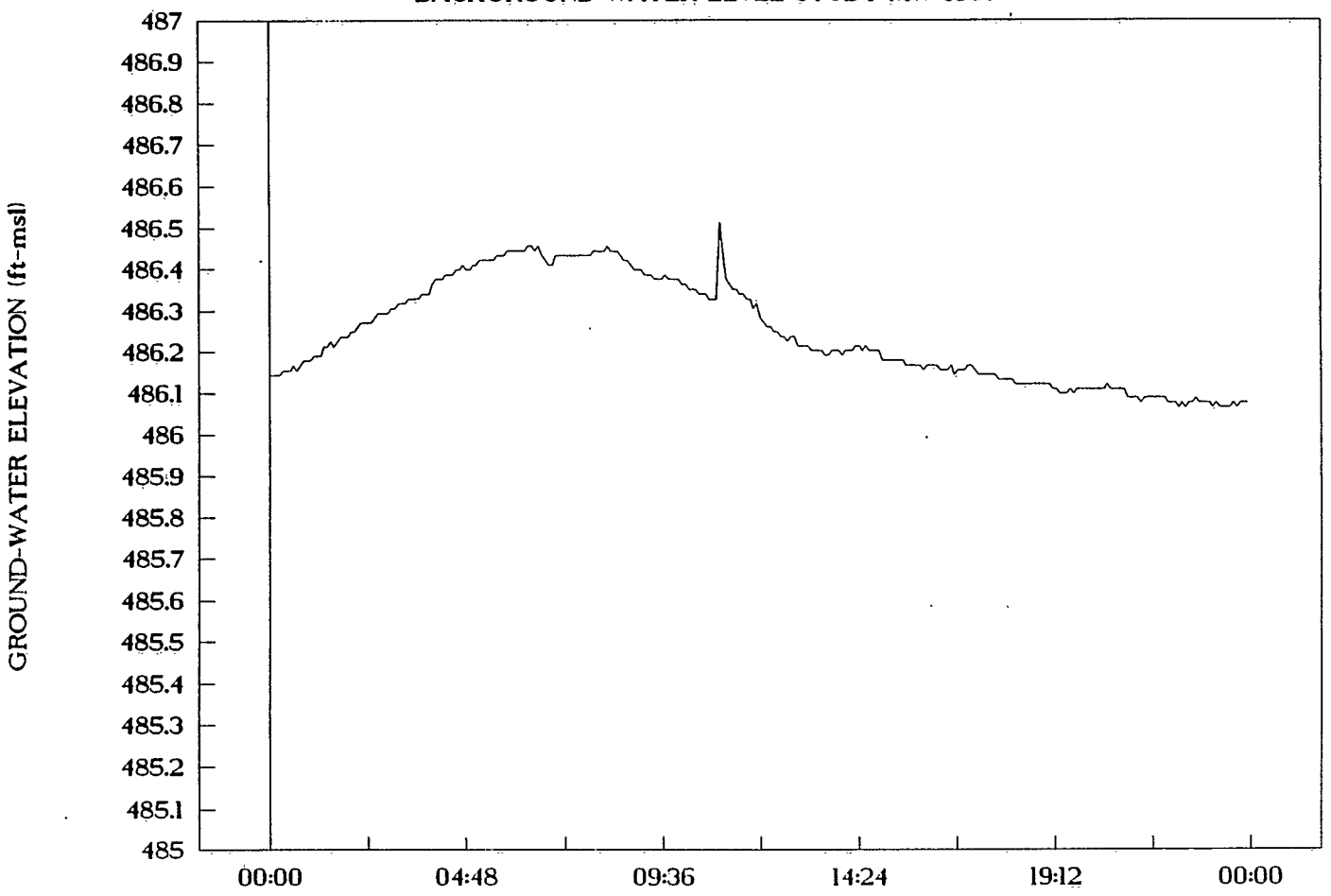
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 502

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-15db



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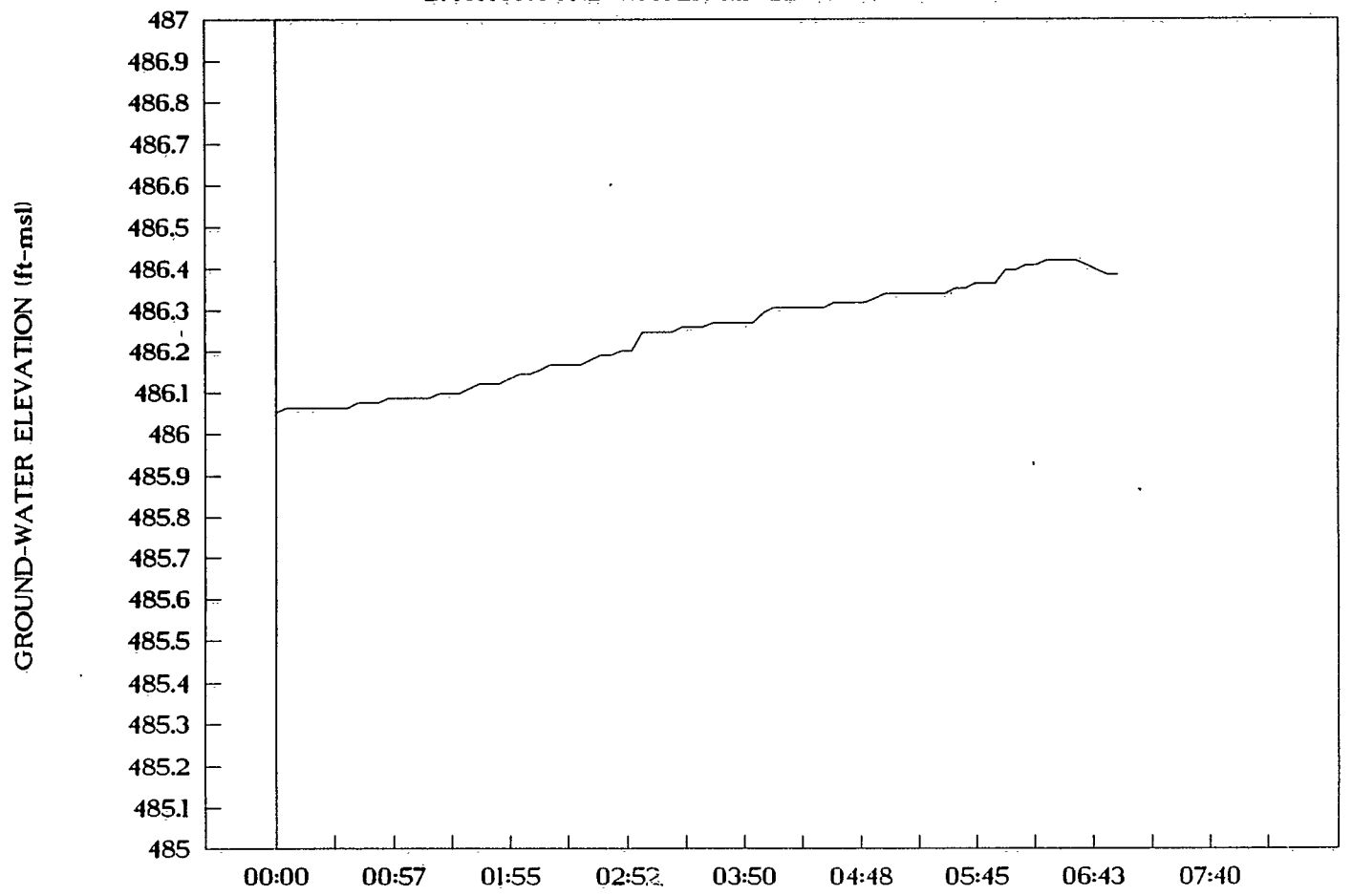
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 2 0 6

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-15db



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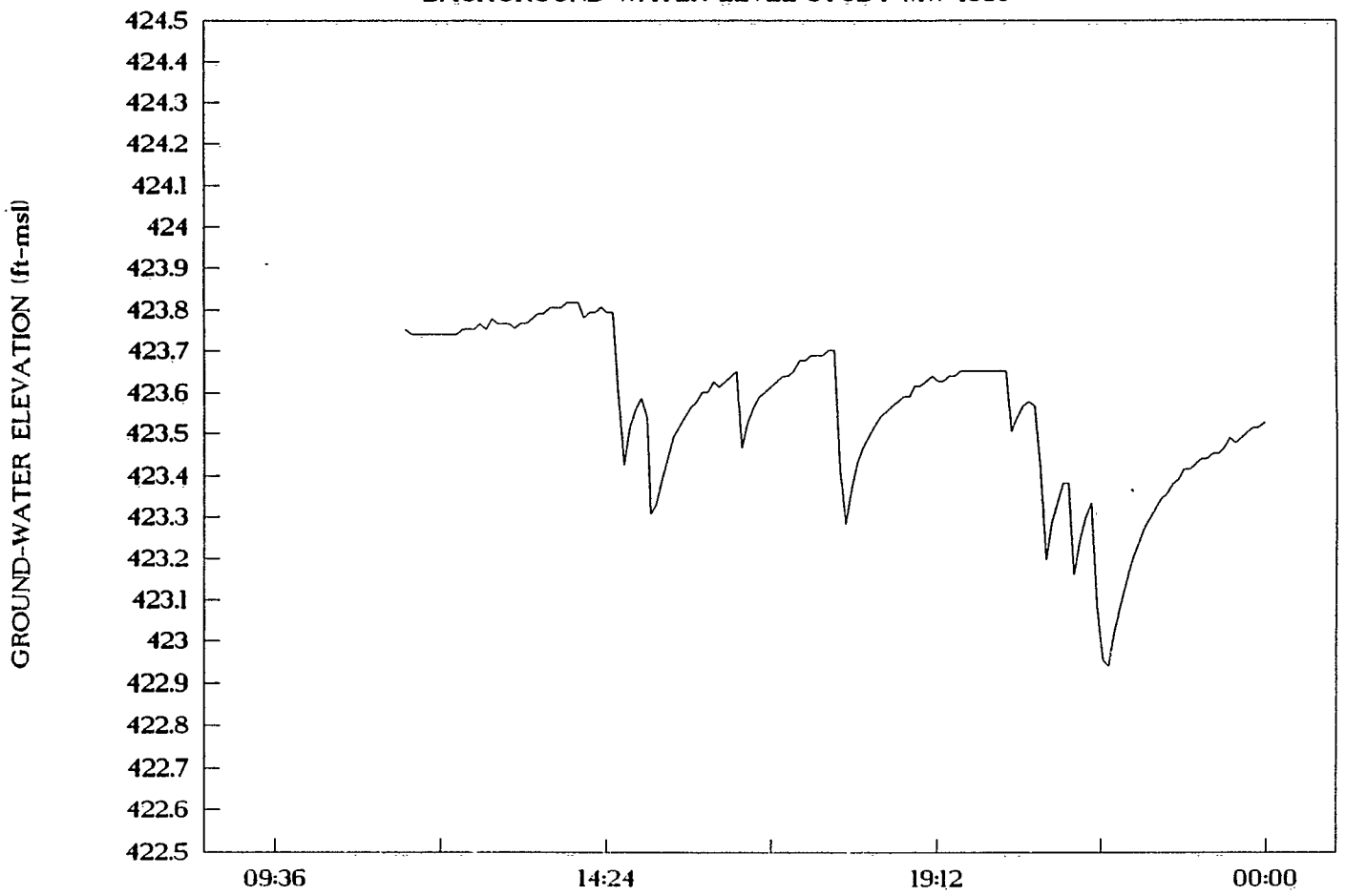
LIN003 2 0 7

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-18db



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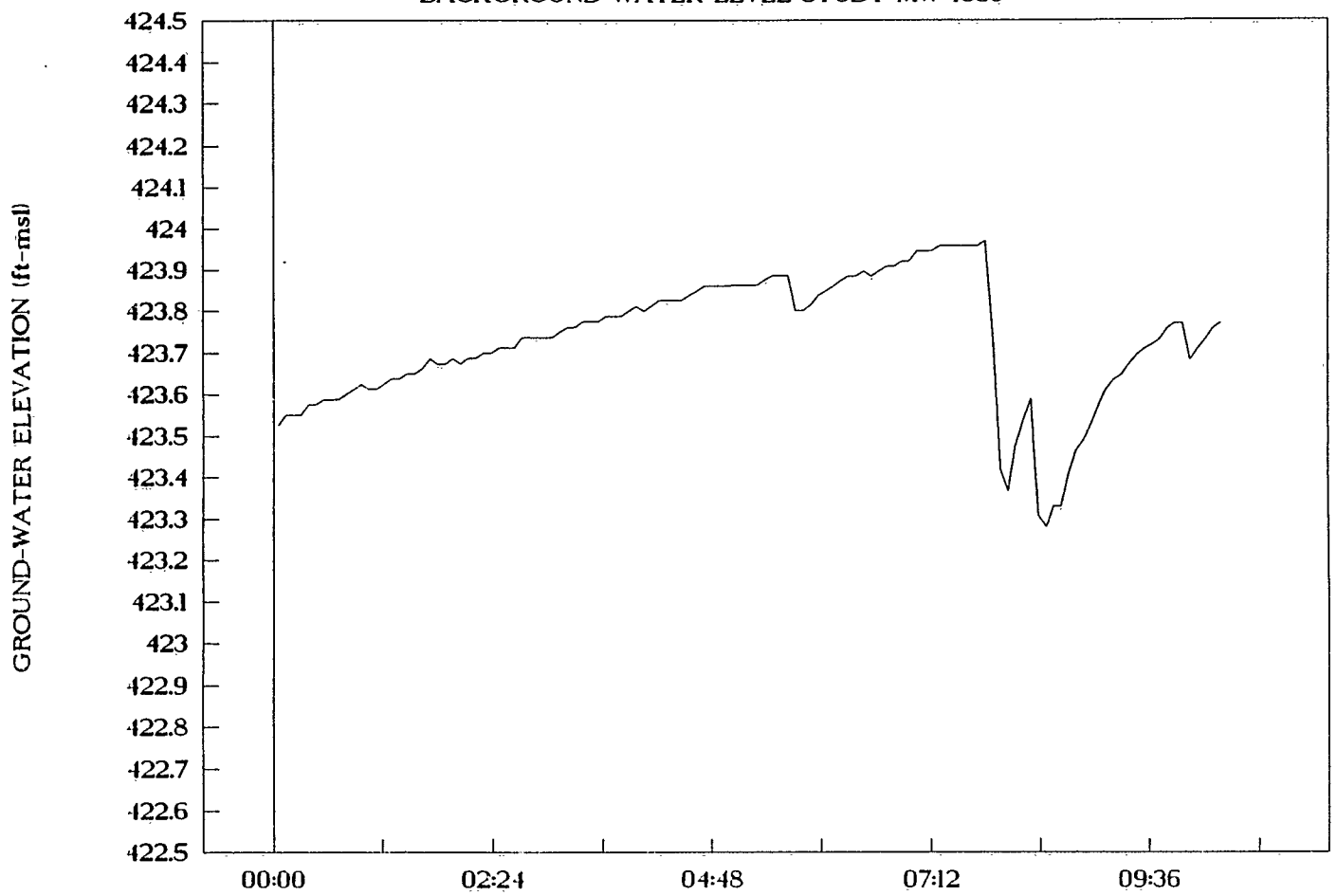
LIN003 802

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-18db



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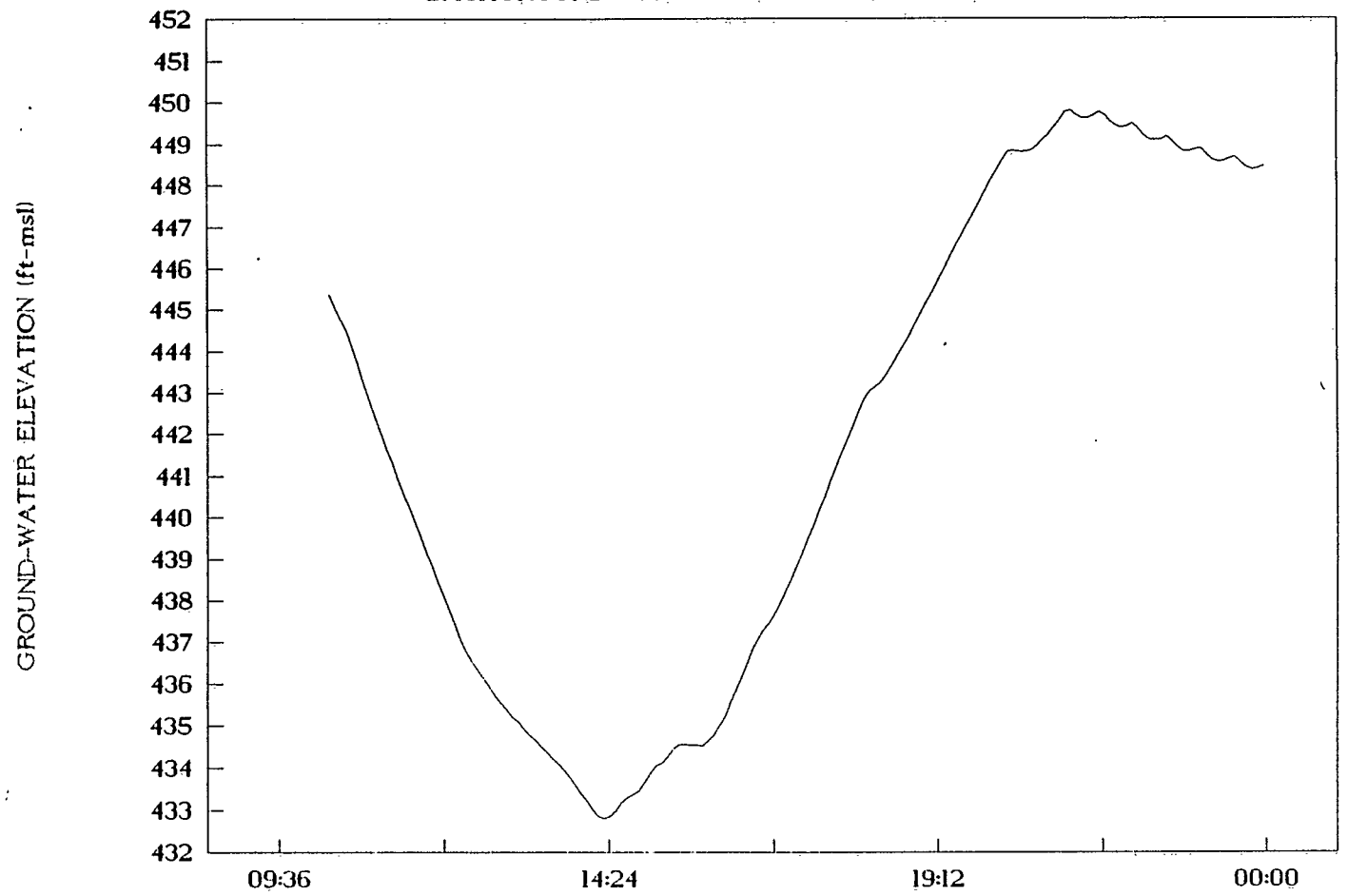
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 2 0 9

LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-21db



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ADMINISTRATIVE RECORD

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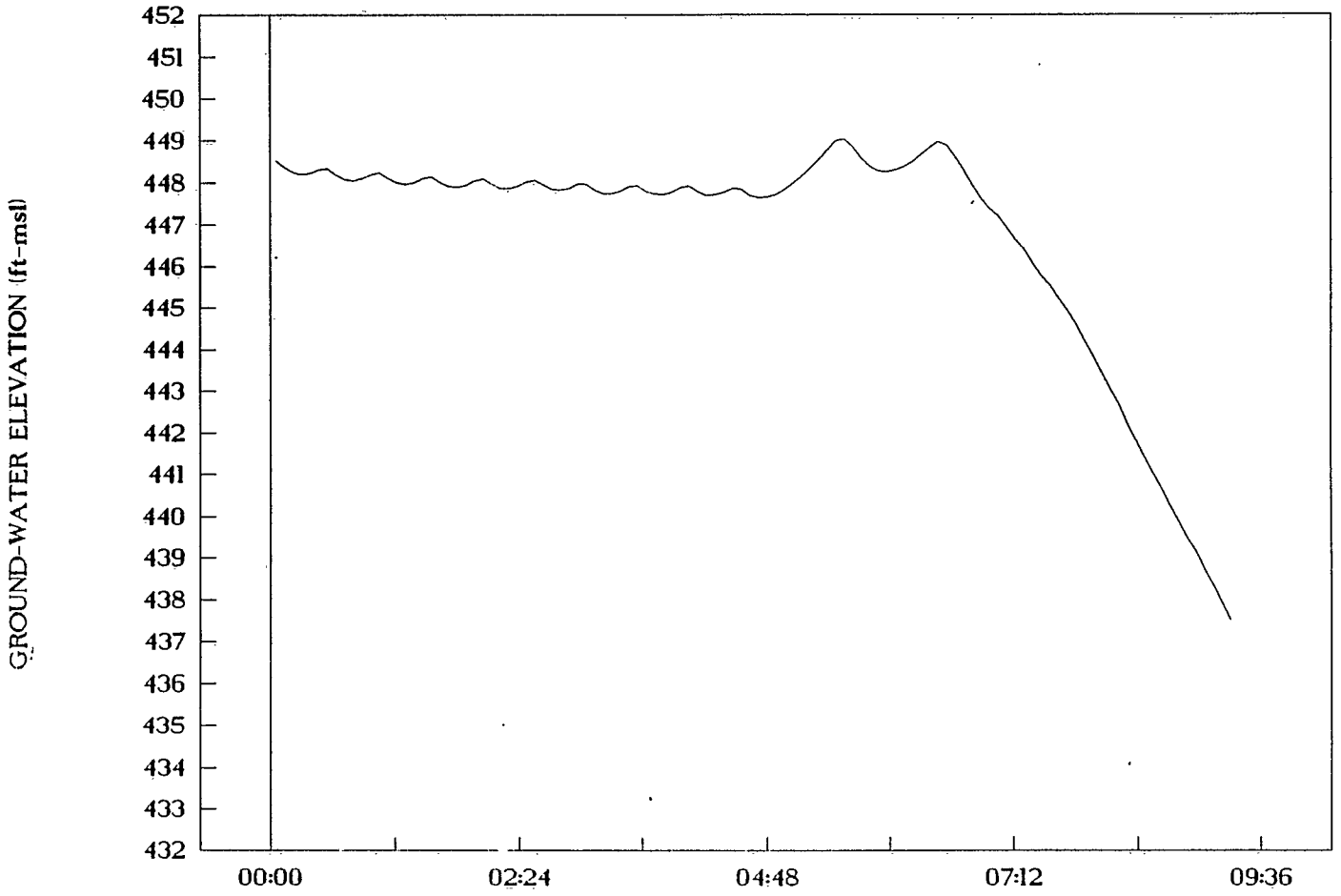
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-21db



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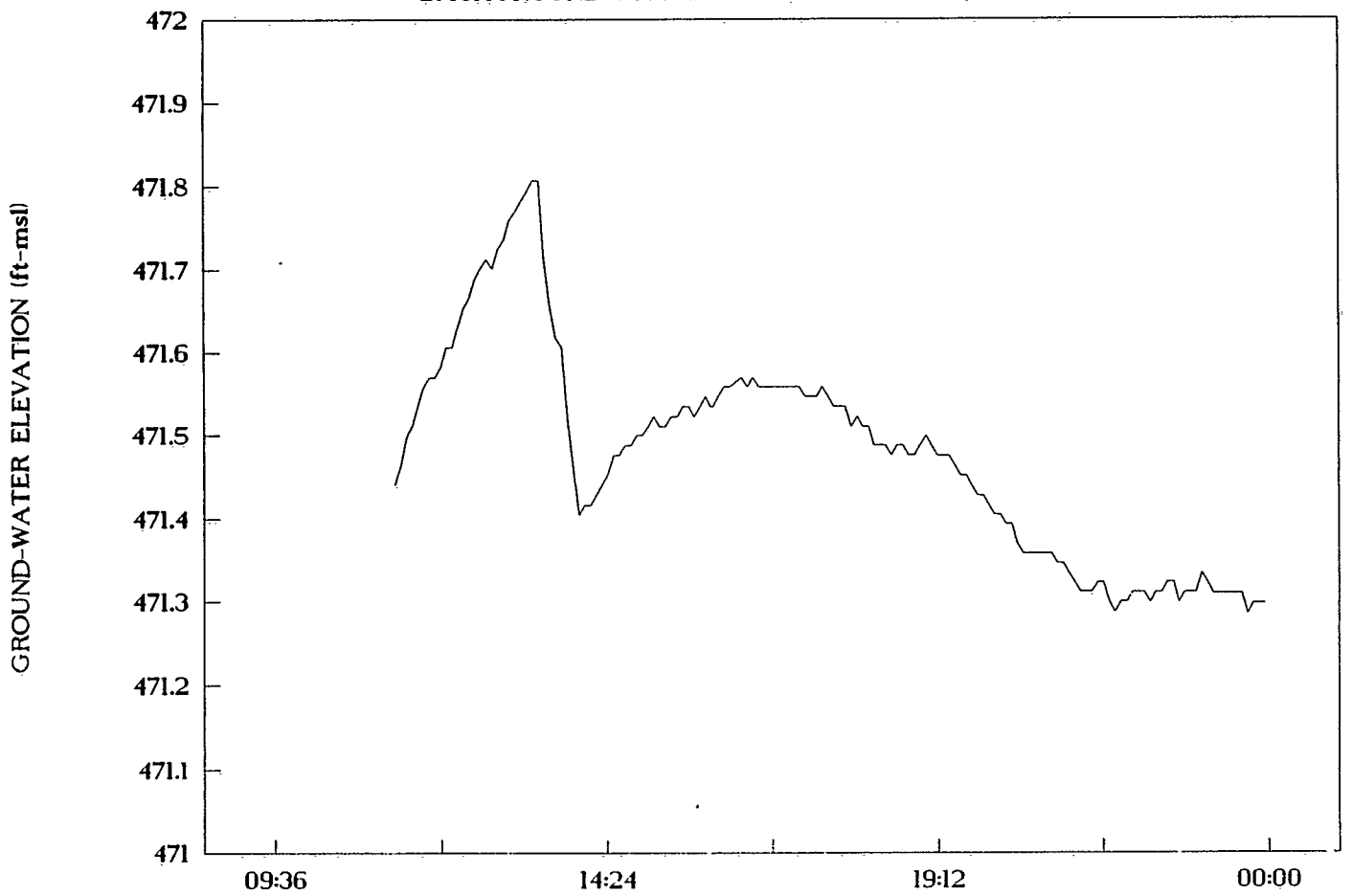
LINEMASTER SWITCH CORP.

BACKGROUND WATER LEVEL STUDY MW-22db



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LINEMASTER SWITCH
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ATTACHMENT B
SHALLOW BEDROCK WATER-LEVEL DATA

BACKGROUND WATER-LEVEL STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003
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LINEMASTER SWITCH CORP.
BACKGROUND WATER LEVEL STUDY

MW-1sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	12:52	42.97	485.50
18-Sep-91	12:30	43.24	485.23
19-Sep-91	12:49	43.43	485.04
24-Sep-91	13:57	42.65	485.82

MW-5sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:54	28.35	510.54
17-Sep-91	12:32	28.43	510.46
18-Sep-91	13:35	28.53	510.36
19-Sep-91	12:52	28.47	510.42
19-Sep-91	16:05	28.53	510.36
24-Sep-91	10:58	28.64	510.25

MW-6sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	13:15	10.05	490.80
17-Sep-91	16:17	10.00	490.85
18-Sep-91	12:35	10.06	490.79
19-Sep-91	14:18	10.07	490.78
24-Sep-91	08:53	9.45	491.40

MW-7sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	12:44	21.85	464.76
17-Sep-91	16:12	21.85	464.76
18-Sep-91	12:40	21.89	464.72
19-Sep-91	14:11	21.91	464.70
24-Sep-91	09:01	21.75	464.86

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LIN003 2 1 7

LINEMASTER SWITCH CORP.
BACKGROUND WATER LEVEL STUDY

MW-8sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	11:40	20.01	417.61
17-Sep-91	15:14	20.07	417.55
18-Sep-91	12:48	20.18	417.44
19-Sep-91	13:28	20.28	417.34
24-Sep-91	09:16	20.37	417.25

MW-9sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	12:36	7.56	462.37
17-Sep-91	16:06	7.58	462.35
18-Sep-91	13:00	7.63	462.30
19-Sep-91	14:03	7.68	462.25
24-Sep-91	09:35	7.48	462.45

MW-10sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:20	46.67	522.62
17-Sep-91	11:57	46.68	522.61
18-Sep-91	13:13	46.74	522.55
19-Sep-91	13:08	46.76	522.53
24-Sep-91	12:27	46.49	522.80

MW-11sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	11:59	9.09	484.27
17-Sep-91	15:44	9.13	484.23
18-Sep-91	13:01	9.24	484.12
19-Sep-91	13:44	9.33	484.03
24-Sep-91	10:08	8.85	484.51

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
215

LINEMASTER SWITCH CORP.
BACKGROUND WATER LEVEL STUDY

MW-12sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	12:21	6.53	449.20
17-Sep-91	15:57	6.56	449.17
18-Sep-91	13:06	6.64	449.09
19-Sep-91	13:54	6.67	449.06
24-Sep-91	09:44	6.42	449.31

MW-14sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	11:48	14.90	426.45
17-Sep-91	15:19	14.92	426.43
18-Sep-91	12:54	15.05	426.30
19-Sep-91	13:33	15.16	426.19
24-Sep-91	09:07	15.11	426.24

MW-15sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	11:40	65.78	486.69
17-Sep-91	11:30	65.84	486.63
19-Sep-91	12:39	66.39	486.08
24-Sep-91	07:50	65.24	487.23

MW-16sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:09	53.21	515.25
17-Sep-91	11:51	53.17	515.29
18-Sep-91	13:05	53.17	515.29
19-Sep-91	13:36	53.18	515.28
24-Sep-91	12:09	52.87	515.59

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LIN003
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LINEMASTER SWITCH CORP.
BACKGROUND WATER LEVEL STUDY

MW-17sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:39	21.83	538.26
17-Sep-91	12:04	21.86	538.23
18-Sep-91	13:26	21.85	538.24
19-Sep-91	12:58	21.87	538.22
24-Sep-91	10:26	21.47	538.62

MW-18sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	12:07	4.55	462.06
17-Sep-91	15:49	4.61	462.00
18-Sep-91	13:14	4.72	461.89
19-Sep-91	13:48	4.77	461.84
24-Sep-91	09:55	4.41	462.20

MW-19sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:31	12.39	456.89
17-Sep-91	16:03	12.38	456.90
18-Sep-91	12:58	12.47	456.81
19-Sep-91	14:02	12.55	456.73
24-Sep-91	09:28	12.08	457.20

MW-20sb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	11:43	7.52	420.10
17-Sep-91	15:22	7.52	420.10
18-Sep-91	12:52	7.60	420.02
19-Sep-91	13:35	7.62	420.00
24-Sep-91	09:22	7.34	420.28

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LIN003 2 1 7

LINEMASTER SWITCH CORP.
BACKGROUND WATER LEVEL STUDY

MW-EPA-Asb

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	11:59	39.66	530.27
17-Sep-91	11:45	39.57	530.36
18-Sep-91	12:58	39.58	530.35
19-Sep-91	13:40	39.59	530.34
24-Sep-91	12:14	39.14	530.79

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
218

ATTACHMENT C
TILL WATER-LEVEL DATA

BACKGROUND WATER-LEVEL STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003
619

LINEMASTER SWITCH CORP.
BACKGROUND WATER LEVEL STUDY

MW-1t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	12:55	18.25	510.24
18-Sep-91	12:27	18.31	510.18
19-Sep-91	12:46	18.21	510.28
24-Sep-91	13:53	17.95	510.54

MW-2t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	11:46	12.59	551.01
17-Sep-91	11:33	12.63	550.97
18-Sep-91	12:46	12.66	550.94
19-Sep-91	13:46	12.68	550.92
24-Sep-91	11:14	12.28	551.32

MW-3t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	13.01	14.27	530.45
17-Sep-91	12:39	14.32	530.40
18-Sep-91	13:40	14.36	530.36
19-Sep-91	13.53	14.37	530.35
24-Sep-91	11:09	14.51	530.21

MW-4t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
18-Sep-91	13:19	13.26	543.27
19-Sep-91	13.22	14.39	542.14
24-Sep-91	12:32	12.83	543.70

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BACKGROUND WATER LEVEL STUDY

MW-6t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	13:16	6.58	494.25
17-Sep-91	16:16	6.59	494.24
18-Sep-91	12:34	6.69	494.14
19-Sep-91	14:17	6.77	494.06
19-Sep-91	16:47	6.78	494.05
24-Sep-91	08:52	6.04	494.79

MW-8t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	11:36	20.25	416.43
17-Sep-91	15:13	20.26	416.42
18-Sep-91	12:47	20.37	416.31
19-Sep-91	13:27	20.46	416.22
24-Sep-91	09:15	20.53	416.15

MW-10t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:22	16.69	553.26
17-Sep-91	11:55	16.72	553.23
18-Sep-91	13:08	16.79	553.16
19-Sep-91	13:14	16.82	553.13
24-Sep-91	12:26	16.67	553.28

MW-11t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	11:57	9.54	483.94
17-Sep-91	15:43	9.55	483.93
18-Sep-91	13:20	9.67	483.81
19-Sep-91	13:43	9.77	483.71
24-Sep-91	10:06	9.32	484.16

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BACKGROUND WATER LEVEL STUDY

MW-12t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:23	5.29	450.22
17-Sep-91	15:58	5.32	450.19
18-Sep-91	13:07	5.37	450.14
19-Sep-91	13:56	5.40	450.11
24-Sep-91	09:46	5.20	450.31

MW-15t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	11:37	59.84	493.00
17-Sep-91	11:27	59.89	492.95
18-Sep-91	12:42	60.22	492.62
19-Sep-91	12:41	60.36	492.48
24-Sep-91	07:45	59.34	493.50

MW-16t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:07	12.73	556.62
17-Sep-91	11:49	12.30	557.05
18-Sep-91	13:02	12.24	557.11
19-Sep-91	13:34	12.20	557.15
24-Sep-91	12:05	11.85	557.50

MW-17ts

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:31	5.40	554.92
17-Sep-91	12:07	5.39	554.93
18-Sep-91	13:30	5.47	554.85
19-Sep-91	12:57	5.52	554.80
24-Sep-91	10:25	5.17	555.15

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BACKGROUND WATER LEVEL STUDY

MW-17td

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:35	11.57	548.29
17-Sep-91	12:06	11.66	548.20
18-Sep-91	13:28	11.76	548.10
19-Sep-91	12:54	11.79	548.07
24-Sep-91	10:24	11.53	548.33

MW-18t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
17-Sep-91	12:10	4.01	462.54
17-Sep-91	15:51	4.12	462.43
18-Sep-91	13:15	4.21	462.34
19-Sep-91	13:49	4.29	462.26
24-Sep-91	09:53	3.90	462.65

MW-23t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	11:54	12.09	557.53
17-Sep-91	11:37	12.13	557.49
18-Sep-91	12:51	12.21	557.41
19-Sep-91	13:43	12.14	557.48
24-Sep-91	11:22	11.67	557.95

MW-24t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	11:50	16.98	550.69
17-Sep-91	11:35	16.90	550.77
18-Sep-91	12:49	16.91	550.76
19-Sep-91	13:44	16.94	550.73
24-Sep-91	11:19	17.02	550.65

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BACKGROUND WATER LEVEL STUDY

MW-25t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:12	8.96	561.38
17-Sep-91	11:40	8.83	561.51
18-Sep-91	12:54	8.94	561.40
19-Sep-91	13:49	8.88	561.46
24-Sep-91	11:25	8.44	561.90

MW-26t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:27	27.36	542.29
17-Sep-91	12:01	27.39	542.26
18-Sep-91	13:14	27.43	542.22
19-Sep-91	13:06	27.44	542.21
24-Sep-91	12:22	27.31	542.34

MW-EPA-Ats

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	11:57	17.44	552.92
17-Sep-91	11:44	17.46	552.90
18-Sep-91	12:57	17.50	552.86
19-Sep-91	13:41	17.54	552.82
24-Sep-91	12:13	17.38	552.98

MW-EPA-Atd

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:01	31.24	538.76
17-Sep-91	11:47	31.23	538.77
18-Sep-91	13:00	31.24	538.76
19-Sep-91	13:38	31.24	538.76
24-Sep-91	12:15	31.08	538.92

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BACKGROUND WATER LEVEL STUDY

DW-1t

DATE	TIME	DEPTH TO WATER (ft)	GROUND-WATER ELEVATION (ft-msl)
16-Sep-91	12:23	7.39	562.54
17-Sep-91	11:59	7.41	562.52
18-Sep-91	13:11	7.47	562.46
19-Sep-91	13:12	7.48	562.45
24-Sep-91	12:24	7.46	562.47

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APPENDIX J
ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
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1.0 INTRODUCTION

This report summarizes the results of a 25-day pumping test conducted for a Zone 1 Dewatering Feasibility Study as part of the Remedial Investigation/Feasibility Study (RI/FS) at the Linemaster Switch site. The pumping test was performed to characterize the till hydraulics and to evaluate the feasibility of dewatering the till at Zone 1 with a network of vertical pumping wells. Zone 1 has been identified as the primary volatile organic compound (VOC) source area at the Site from Phase 1A and 1B RI/FS investigations.

As outlined in the Zone 1 Pumping Test Plan/Dewatering Feasibility Study dated August 13, 1991 and subsequent responses to EPA comments dated October 4, 1991 and January 20, 1992, the Study had two primary objectives. First was to better define till parameters, including transmissivity, storativity, well yield and radius of influence. The second objective was to determine if it was feasible to dewater Zone 1 by using a network of vertical pumping wells.

Prior to the test, data were gathered in Zone 1 as part of Phase 1A RI/FS investigations including soil borings and well installations, slug tests and hydraulic and ground-water flow rate calculations. In addition, a pilot pumping test was conducted in Zone 1 as part of an Interim Removal Action evaluation. From these previous investigations an initial long-term pumping rate was selected for the Zone 1 pumping test.

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2.0 PREVIOUS TILL HYDRAULICS INVESTIGATIONS

The texture of the till in the vicinity of Zone 1 has been visually characterized during the drilling of dewatering and observation wells. The till is olive gray and consists of sand and silt with a little gravel. Depth to water is approximately 5 feet, while bedrock is 38-44 feet. Boring logs and well completion information are contained in Appendix D of the RI Report.

2.1 Slug Tests

Slug tests were conducted at Zone 1 observation and dewatering wells to assess the hydraulic conductivity of the till. The results of the slug tests are presented in Table 1. It should be noted that the listed hydraulic conductivities may not accurately portray the response of the till due to the construction of the wells. The wells have a 13 inch #00 sand pack which may effect early time data, giving a false rapid recovery. While the data may not produce absolute results, the method will still yield applicable relative results. DW-1t, which had the highest relative hydraulic conductivity, was selected for a pilot pumping test.

2.2 Ground-Water Flow Rates

Based on the Darcy equation for flow in a porous media, the average linear ground-water flow velocity within the till unit at Zone 1 was calculated using the formula;

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TABLE 1

SUMMARY OF ZONE 1 TILL HYDRAULIC CONDUCTIVITIES
AND WELL COMPLETION DETAILS

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

WELL	DEPTH (FT)	INTERVAL (FT)	HYDRAULIC CONDUCTIVITY (FT/DAY)	TRANSMISSIVITY (FT /DAY)
DW-1t	42.55	2.55-42.55	0.15	5.35
DW-2t	40.5	4.5-40.5	0.03	0.81
DW-3t	36.5	2.0-36.5	0.10	2.81
DW-4t	37.5	3.5-37.5	0.03	0.96
OW-1t	42.5	4.5-42.5	0.01	0.55
OW-2t	41.0	4.0-41.0	0.07	2.51
OW-3t	44.0	4.0-44.0	0.02	0.54
OW-4t	39.5	3.5-39.5	0.005	0.18
OW-5t	40.5	4.5-40.5	0.02	0.65
OW-6t	39.5	3.5-39.5	0.003	0.12
OW-7t	40.5	0.5-40.5	0.08	2.50
MW-1t	64.5	35.57-45.57	0.002	0.16
MW-6t	22.0	14.99-19.99	0.29	7.9
MW-10ts	25.0	16.45-26.45	*	*
MW-10td	43.5	33.79-43.79	0.001	0.02
MW-26t	44.5	35.50-44.41	*	*

* - not tested

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$$V = \frac{k\ i}{n}$$

where,

V = average linear ground-water flow velocity (ft/day)
k = hydraulic conductivity (ft/day)
i = hydraulic gradient (ft/ft)
n = porosity (dimensionless)

For the horizontal average ground-water flow velocity, the hydraulic conductivity of MW-10t (0.001 ft/day) was used. The hydraulic gradient between MW-10t and MW-6t was used (0.09 ft/ft). A porosity value of 0.25 was determined from physical soil tests conducted on a sample collected from Zone 1. Using these values, the horizontal average linear flow velocity was calculated at 0.0004 ft/day.

A triaxial permeability test was conducted on a sample collected from a trench installed at Zone 1. The vertical hydraulic conductivity (0.03 ft/day) derived from the test along with the vertical gradient between MW-10ts and MW-10td were used to calculate a vertical flow velocity of 0.06 ft/day.

2.3 Zone 1 Pilot Pumping Test

On April 11, 1991 a pilot pumping test was conducted at DW-1t. The objectives of the pilot test were to 1) determine the approximate yield of DW-1t, 2) identify areas of possible hydraulic influence, and 3) examine ground-water quality over the pumping period.

Results of this test, which were provided in a Progress Report on

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Interim Removal Actions dated May 30, 1991, were: 1) a long term yield of less than 1/3 gpm was estimated. 2) A hydraulic influence was induced in the till by pumping of DW-1t. 3) At the end of the test, several VOCs were detected, including PCE (770 ug/l), 1,1,1-TCA (920 ug/l) and TCE (160,000 ug/l). In addition, trace metals were detected; however, detected concentrations were not above the MCLs.

3.0 DESCRIPTION OF PUMPING TEST

During the test water levels were measured at a total of 16 wells. Table 1 contains a list of wells monitored and pertinent well construction details. A more detailed description of the logistics of the dewatering feasibility study follows.

3.1 Background Period

Prior to the pumping test, background data were collected from March 27, 1992 until the pump was started on March 30, 1992. Data collected included climatological conditions and ground-water levels. These data were used to determine if correction factors would need to be calculated for rainfall, barometric pressure or background water-level trends. Data also were reviewed to determine if pumping of the facility production well, GW-08db, affected water levels in the till at Zone 1.

A rain gauge and barometric pressure transducer were established in Zone 1 to measure rainfall and barometric pressure during the background, pumping and recovery phases of the test. Rainfall was measured to determine if and how rapidly the till would respond to precipitation and if correction factors would be needed due to recharge to the till. Barometric pressure was

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measured to determine if there was a correlation between barometric pressure and water levels in the till and if a correction factor would be needed. Results are discussed in Sections 4.1 and 4.2. A barometric pressure graph is contained in Attachment 1.

Water levels were measured continuously, at half hour intervals, throughout the background period at DW-1t, DW-2t, DW-3t, OW-1t and OW-2t by using electronic data loggers. Water levels were measured prior to the test to determine if there was any trend in the water level (i.e., rising or falling) and if pumping of GW-08db had an effect on water levels in the till. Results are discussed in Sections 4.3 and 4.4. Graphs of background water levels are presented in Attachment 2.

3.2 Pumping Period

The pump was started at 10 am on March 30, 1992 and ran for 25 days, until April 24, 1992. During the test, water levels were measured at five wells with data loggers as previously discussed. Data loggers recorded water levels every minute for the first 200 minutes, every 10 minutes until April 9, 1992, every 20 minutes until April 21, 1992 and every 30 minutes until the end of the test. Water levels were measured manually at the remaining wells on a daily basis with the exception of Saturday and Sunday.

The Zone 1 Pumping Test Plan stated that the dewatering well would be pumped for one week. If, at the end of one week, hydraulic influence was limited, the test would be extended. Review of drawdown data after one week indicated that pumping of DW-1t had a limited hydraulic influence on the till; therefore, the test was extended and evaluated after each additional week of

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pumping. Based on these evaluations, the pumping test was performed at DW-1t for a one month period.

Results of the pumping test are discussed in Sections 5.0. Graphs of water levels during the pumping and recovery periods are presented in Attachment 3.

3.2.1 Pumping Equipment

A Marschalk combination Bladder Pump/Air Lift unit was installed in DW-1t prior to the background period. The pump was powered by an on-site air compressor coupled to a QED pneumatic controller unit to control flow to the pump. Water discharge from the pump was routed, via flexible pipe, to a holding tank in a secure area. It should be noted that, to achieve a more even flow, the pump was used in the air lift mode. Therefore, any samples analyzed for VOCs may not accurately reflect the ground-water quality of the till.

3.2.2 Pumping Rate

DW-1t was selected as the pumping well because, based on slug test results, it had the highest relative hydraulic conductivity. As indicated by the pilot pumping test at DW-1t, a pumping rate of 0.25 gpm was selected. The test was originally scheduled to last one week, with an additional week to monitor water-level recovery. However, due to the limited area of influence and drawdown, the test was continued for one month at DW-1t. As the test progressed, dewatering of the till in the area of DW-1t caused the flow rate to drop. By the end of the test the pumping rate had stabilized at approximately 0.03 gpm.

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3.3 Recovery Period

The pump was stopped at 11:30 am on April 24, 1992. Water levels were measured manually on a daily basis, with the exception of Saturday and Sunday, until April 29, 1992. Water-level measurements were stopped on April 29, 1992 because corrected water levels were at or above static conditions. Graphs of water levels during the pumping and recovery periods are contained in Attachment 3.

3.4 Ground-Water Sampling and Analysis

A total of ten samples were collected during the pumping test. All ground-water samples were analyzed by EPA Method 8240. A representative number of samples were analyzed by EPA Methods 8240 and 8270, in addition to the Site-specific list of HSL metals.

Samples, with the exception of the initial and final sample, were collected at the end of the discharge line. As discussed in Section 3.2.1, VOC analyses may not accurately reflect the ground-water quality in the till at Zone 1 because the pump was operated in air lift mode to obtain a more even flow. The initial and final sample was collected by lowering a bailer into DW-1t. A summary of chemical data is provided in Attachment 4.

3.5 Data Analytical Solutions

Data collected during the pumping test was analyzed by a variety of methods, including the Neuman method for unconfined aquifers, the distance drawdown method for late time data and by plotting drawdowns on an area map. A more detailed description of the

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methods and the results of the test follows.

4.0 EXTERNAL FACTORS POTENTIALLY INFLUENCING STUDY

A number of external factors known to create water-level changes in wells were observed to differentiate between drawdown related to pumping and external factors. A discussion of the various external influences follows.

4.1 Rainfall

Numerous rainfall events occurred during the 25-day till pumping test. Rainfall amounts and duration were obtained by inspection of the on-site rain gauge and from data obtained from the Northeast Climate Center's station at the West Thompson Dam in Thompson, Connecticut.

Rainfall effects on the till were measured at background wells MW-1t and MW-6t. Water level graphs are contained in Attachment 5. To correct for the effects of rainfall, water levels at MW-1t and MW-6t were averaged and then subtracted from water levels in Zone 1. A graph of the correction factor applied is contained in Attachment 5.

4.2 Barometric Pressure

A record of barometric pressure was maintained during the pumping test by means of a barometric pressure transducer and data logger. Data collected were compared to fluctuations in background period water levels. No correlation was apparent between water levels and barometric pressure; no correction

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factor was calculated.

4.3 Background Period Water-Level Trends

During the background period, water levels at DW-1t, DW-2t, DW-3t, OW-1t and OW-2t were measured by using electronic data loggers. As can be seen by graphs contained in Attachment 2, water levels slowly declined from March 27 to March 29, 1992. From March 29 to March 30, 1992, water levels rose. For the 12 hours preceding the test, water levels appear to remain relatively constant. As a result, no correction factor was calculated for water-level trends during the background period.

4.4 Water-Supply Well Use

During the background period, pumping of facility production well, GW-08db, was monitored to determine if it had an influence on water levels in the till at Zone 1. Previous studies have shown that GW-08db is pumped intermittently during the work day, lowering water levels in the bedrock near Zone 1. Water levels in the till at Zone 1; however, did not appear to show any influence from pumping of GW-08db.

4.5 Summary of Corrections

During the Zone 1 pumping test several external influences, including rainfall, barometric pressure, background water-level trends and pumping of GW-08db were monitored to determine if they had any effect on water levels in the till. It was determined that rainfall did effect water levels in the till. To correct for the effect of rainfall, drawdowns at MW-1t and MW-6t were averaged and then subtracted from water levels in Zone 1. It

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also was determined that barometric pressure, background trends and pumping of GW-08db did not have a noticeable effect on Zone 1 water levels. Therefore, no correction factors were established for these influences.

5.0 RESULTS OF PUMPING TEST

5.1 Well Yield

Drawdown in pumping well DW-1t is shown graphically in Attachment 3. As demonstrated by the results of the pilot pumping test, the till has a high enough hydraulic conductivity to support up to 0.25 gpm of yield for short amounts of time (less than 2 days). However, as shown by this longer term pumping test, well yield falls off dramatically as dewatering of the till progresses. By the end of the test the well yield was approximately 0.03 gpm, which is probably very close to what could be achieved from a single well on a longer term basis.

5.2 Radius of Influence

The static water levels and maximum and end-of-test drawdowns at each of the monitoring points are listed in Table 2. The maximum and end-of-test drawdowns were plotted on an area map and contoured to determine the radius of influence (Figures 1 and 2). Because of the limited drawdown observed in the wells only three contours intervals were drawn on each map (0.2, 0.5, and 1.0 feet).
As can be seen, even after 22 days of pumping DW-1t has a Radius of Influence that is generally less than 30 feet.

TABLE 2

OBSERVED DRAWDOWNS IN WELLS

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

WELL	DISTANCE FROM PUMPING WELL	STATIC DEPTH TO WATER	MAXIMUM DEPTH TO WATER 4/21/92	BACKGROUND CORRECTED DRAWDOWN 4/21/92	FINAL DEPTH TO WATER 4/24/92	BACKGROUND CORRECTED DRAWDOWN 4/24/92
DW-1t	0.0	6.89	37.27	30.54	38.15	31.36
DW-2t	27.5	7.60	7.60	0.16	7.57	0.07
DW-3t	23.0	8.55	8.76	0.37	8.70	0.25
DW-4t	54.0	6.97	6.89	0.08	6.93	0.06
OW-1t	15.0	9.59	10.20	0.77	10.17	0.68
OW-2t	25.5	6.07	6.39	0.48	6.33	0.36
OW-3t	40.5	8.93	8.80	0.03	8.79	-0.04
OW-4t	47.0	6.53	6.45	0.08	6.52	0.09
OW-5t	40.0	7.90	8.08	0.34	7.96	0.16
OW-6t	43.5	4.27	4.31	0.20	4.77	0.60
OW-7t	65.0	8.09	8.15	0.22	8.27	0.28
MW-1t	BACKGROUND	12.66	12.21	-0.29	12.29	-0.27
MW-6t	BACKGROUND	3.72	3.85	0.29	3.89	0.27
MW-10t	6.5	14.01	18.39	4.54	18.36	4.45
MW-10sb	7.0	41.80	40.59	-1.05	40.73	-0.97
MW-26t	30.0	23.73	24.10	0.49	23.93	0.28

NOTES: DISTANCE FROM PUMPING WELL ESTIMATED TO NEAREST 0.5 FEET
DRAWDOWN IN MW-26t CALCULATED USING THE FORMULA:
BACKGROUND CORRECTIONS ARE 0.16 AND 0.10 FEET, RESPECTIVELY
DRAWDOWN = SIN(63) * MEASURED DTW - SIN(63) * STATIC DTW

G:\P86\86088\DRAWDOWN.WQ1

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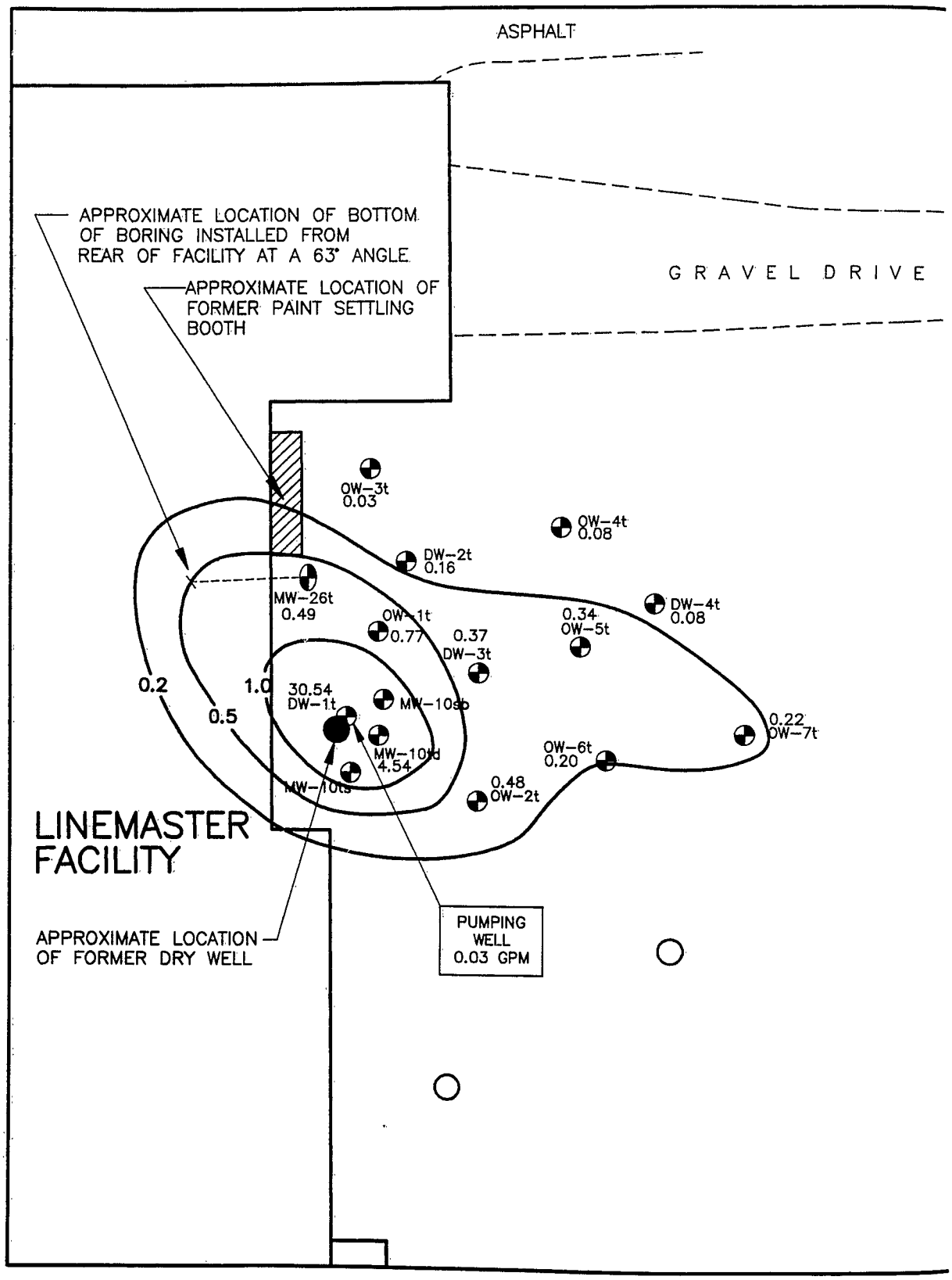

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LEGEND

MW–10t	EXISTING TILL MONITORING WELL
MW–10ab	EXISTING SHALLOW BEDROCK MONITORING WELL
MW–26t	EXISTING ANGLED WELL
DW–1t	EXISTING DEWATERING WELL
OW–1t	EXISTING OBSERVATION WELL
1.0	INFERRED DRAWDOWN CONTOUR (FT.)
	APPROXIMATE LOCATION OF FORMER BRICK MANHOLE

MW–4t

NOTES:

AERIAL PHOTOGRAPHY BASED ON 3–23–86 FLIGHT BY AERO GRAPHICS CORP. COMPILED BY AERIAL DATA REDUCTION ASSOC.

HORIZONTAL DATUM BASED ON C.G.S. (NAD 1927).

DRAWDOWN FROM WATER–LEVEL DATA COLLECTED ON 4/21/92.

APPROXIMATE LOCATION OF TRENCH WHERE TRIAXIAL PERMEABILITY TEST SAMPLE WAS COLLECTED

−20 0 20 40

SCALE: 1" = 20'

FIGURE 1

FUSS & O'NEILL INC.
consulting engineers
MANCHESTER, CONNECTICUT

MAXIMUM DRAWDOWN CONTOURS–25 DAY PUMPING TEST
ZONE 1 PUMPING TEST / DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH CORP.
PLAINE HILL RD. WOODSTOCK, CT.
PROJ NO. 86–88D DATE: AUG. 1992 SCALE: 1"=20'

FILE NAME: 8688FIG2

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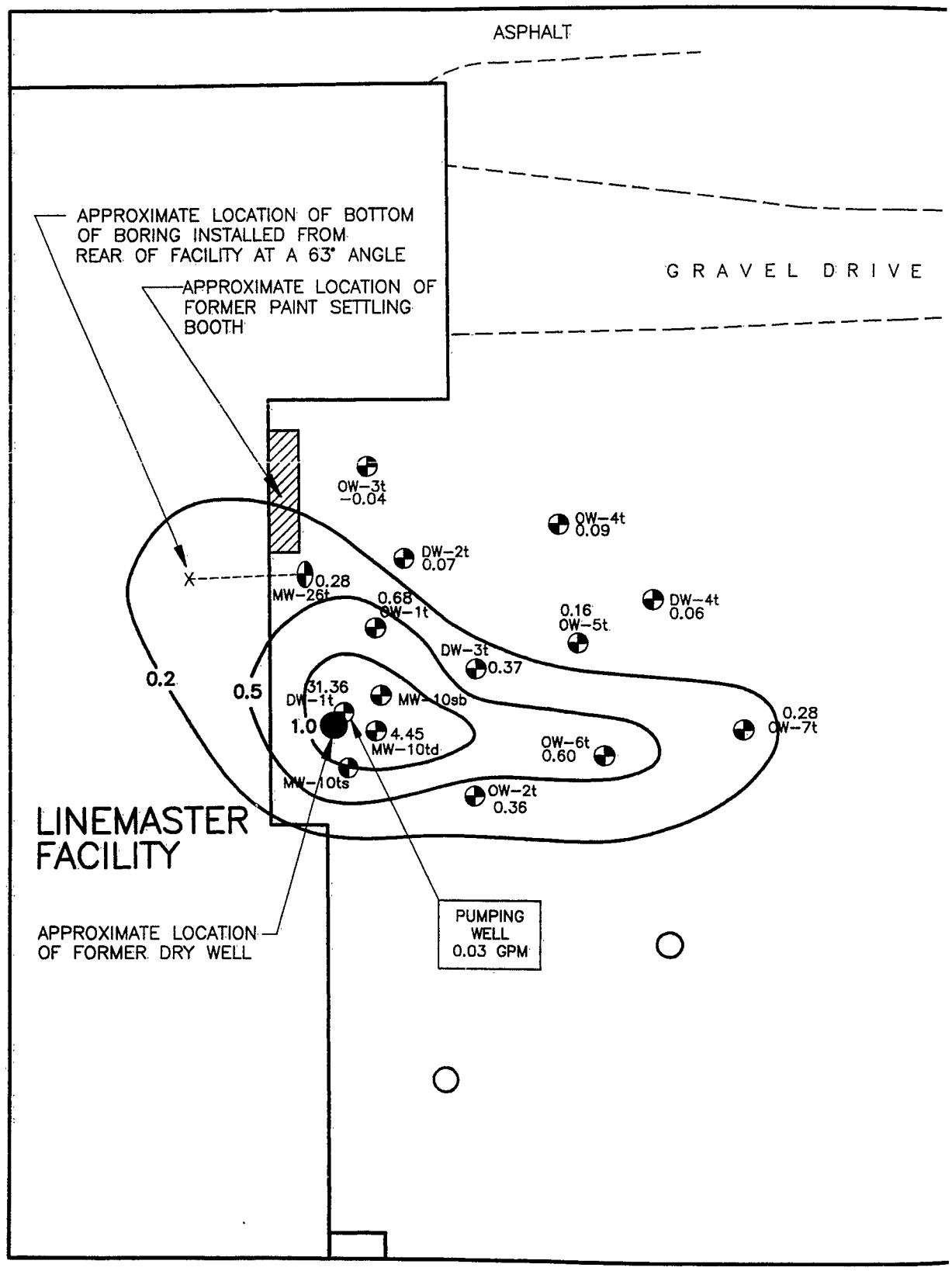

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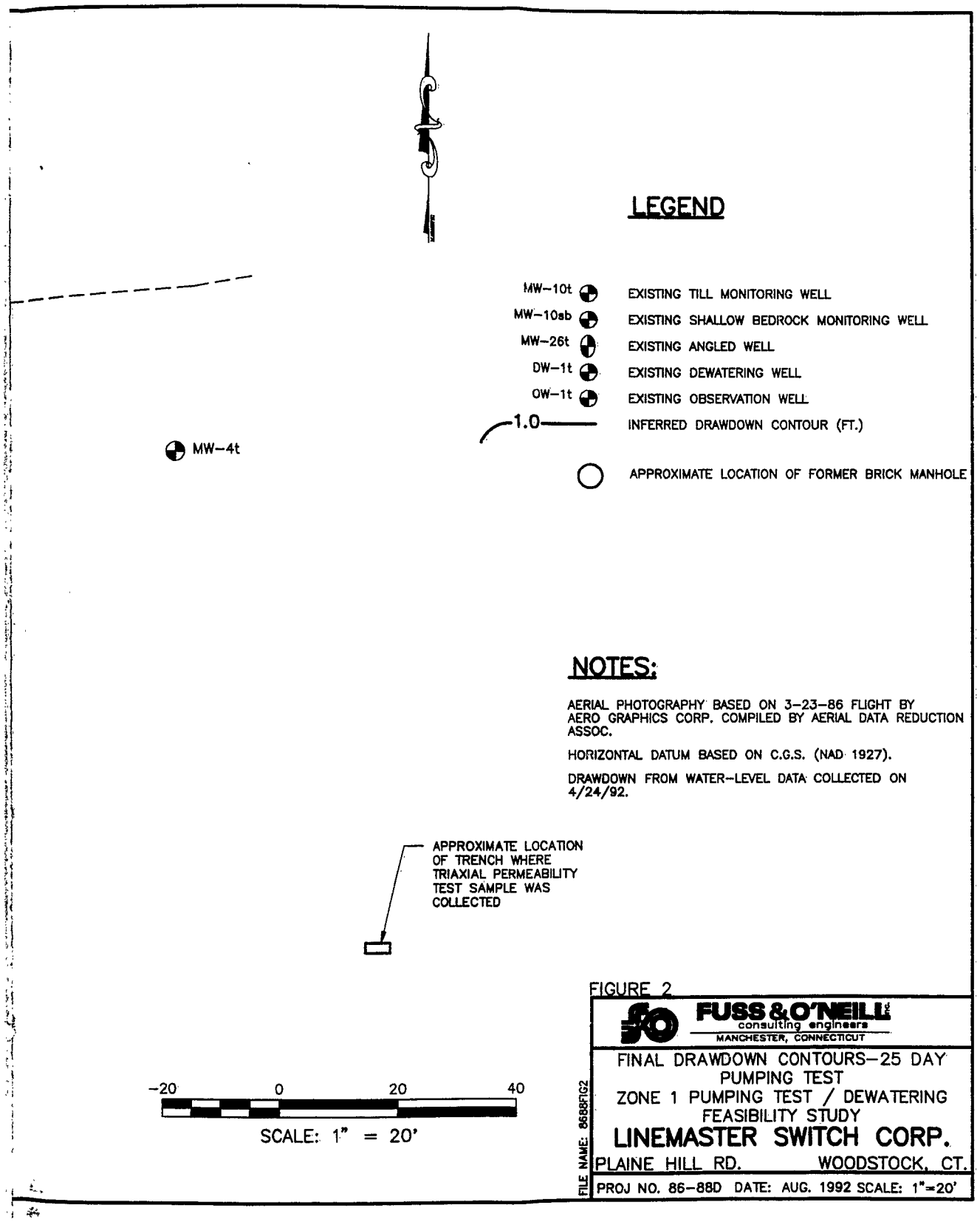

FIGURE 2

FUSS & O'NEILL
consulting engineers
MANCHESTER, CONNECTICUT

FINAL DRAWDOWN CONTOURS-25 DAY PUMPING TEST
ZONE 1 PUMPING TEST / DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH CORP.
PLAINE HILL RD. WOODSTOCK, CT.
PROJ NO. 86-88D DATE: AUG. 1992 SCALE: 1"=20'

FILE NAME: 8688FIG2

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5.3 Till Hydraulic Parameters

A determination of the hydraulic properties of the till was attempted based on drawdown data at well OW-1t. Drawdown data were imported into the Graphical Well Analysis Package (GWAP) program, developed by Groundwater Graphics of San Diego (Dansby and Price, 1987). The GWAP analysis uses the Neuman (1975) analysis for pumping test data from anisotropic unconfined aquifers and takes into account the delayed response from gravity drainage which occurs in unconfined aquifers. To arrive at a solution, early time drawdown data is matched on the computer screen to one of a series of Theis type curves. Once a match is made, the program computes the transmissivity, hydraulic conductivity and storativity of the aquifer. The specific yield of the aquifer can sometimes be determined by matching late-time data, although this solution is much more susceptible to error due to boundary effects. The early and late time graphical analyses are included in Attachment 6.

Drawdown data also was analyzed using the distance-drawdown method. In this method drawdown is plotted linearly on the Y axis while distance from the pumping well is plotted logarithmically on the X axis. Drawdown data at 22 days from MW-10t, OW-1t, OW-2t, and OW-5t were used. Under ideal circumstances the four points should describe a straight line. By modifying the Theis equation, this graph can be used to calculate an average transmissivity for the aquifer. Calculations and the graph are contained in Attachment 7.

The mean of till hydraulic parameters estimated by both Neuman and distance-drawdown methods are as follows:

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Transmissivity 1.03 ft^2/day
Hydraulic Conductivity 0.03 ft/day
Storativity 0.004 ft/day

The mean hydraulic conductivities (OW-1t, 0.03 ft/day) obtained by the Neuman and distance-drawdown is comparable to the hydraulic conductivities determined by slug test and the Bower and Rice solution (Table 1) (OW-1t, 0.01 ft/day) indicating reliability of both methods. As can be seen from Table 1, hydraulic conductivity varies by several orders of magnitude among some of the wells, indicative of the heterogeneity of the till.

5.4 Ground-Water Quality

Monitoring and analysis of ground-water quality has been occurring in the Zone 1 till since 1990. The data from this monitoring program have demonstrated that the major contaminants are VOCs. Metals also have been detected and their source is currently under investigation. Past detections of ABNs are generally believed to be related to laboratory contamination.

5.4.1 VOCs

TCE has been identified as the major VOC detected in ground water at Zone 1. Attachment 4 contains a summary of TCE and other VOCs detected during the pumping test at DW-1t. As can be seen from the data, pumping of DW-1t had a dramatic effect on TCE levels. TCE was detected at the highest level, 400,000 ug/l, at the end of the test. This indicates that during pumping of DW-1t, highly contaminated water was induced to flow to the well, potentially from the southwest from the area of the former dry well.

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5.4.2 ABNs

Several ABNs were detected including bis(2-ethyhexyl)-phthalate and di-n-octylphthalate as indicated in the analytical summary data (Attachment 4). These compounds are believed to be related to laboratory contamination as has been determined from previous RI/FS sampling and subsequent data validation.

5.4.3 Metals

Metals were detected as indicated in the analytical data summary (Attachment 4). As can be seen from the data for the final sample, metal levels had not changed appreciably from the initial sample. This indicates that pumping of DW-1t does not have an effect on metals concentrations.

5.5 Summary of Pumping Test Results

The completion of a long term pumping test made it possible to analyze several till hydraulic characteristics including well yield, zone of influence, hydraulic conductivity, transmissivity, storativity and ground-water quality. Results of the analysis are as follows:

1) A long term well yield of approximately 0.03 gpm was realized.

2) Pumping of DW-1t has a limited radius of influence, generally less than 30 feet.

3) Transmissivity = 1.03 ft^2/day

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4) Hydraulic Conductivity = 0.03 ft/day

5) Storativity = 0.004

6) Minimal drawdown was achieved in observation wells adjacent to the pumping well.

7) Pumping of DW-1t increased VOC levels based on samples collected from the well. TCE was detected at the highest concentrations at the end of the study.

8) Pumping of DW-1t does not seem to have an effect on metals concentrations measured at the well.

6.0 FEASIBILITY OF DEWATERING ZONE 1

The results of the 25-day pumping test indicated a limited radius of influence and minimal drawdown in wells adjacent to the pumping well. This is mainly due to the low hydraulic conductivity of the till which is a reflection of its fine-grained nature and degree of compaction. The pumping rate decreased from 0.25 gpm initially to 0.03 gpm at the end of the test. The radius of influence was less than 30 feet while the maximum drawdown was 4.45 ft at a well located 6.5 feet away from the pumping well. At 15 feet away from the pumping well the drawdown was only 0.68 feet.

To determine if the pumping rate of 0.03 gpm could be maintained for a long period of time, a 180 day pumping rate was calculated using the Theis equation (Attachment 8). The equation variables used were obtained from the pumping test discussed above. As a conservative approach and taking into account the heterogeneity

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of the till as apparent from varying hydraulic conductivities, the hydraulic conductivities from the pumping test (0.03 ft/day) and the slug test for MW-10td (0.001 ft/day) was averaged. Using these values, 0.1 gpm could be maintained up to 180 days. This value is similar to the pumping rate that was present at the end of the pumping test (0.03 gpm). In any event, the 0.03 gpm rate is a more reliable rate which likely can be maintained for an extended period of time.

Based on the above, it may be possible to dewater the Zone 1 area. However, due to the limited drawdown on the Zone 1 area by the single well, it may be necessary to use a significant number of wells or other dewatering techniques such as trenches or horizontal wells.

7.0 CONCLUSIONS

1) Well yield (0.03 gpm) is low due to the low hydraulic conductivity of the till.

2) Radius of influence was less than 30 feet.

3) Drawdown by vertical wells is minimal unless a significant number of wells are used.

4) Other techniques of dewatering Zone 1 such as trenches or horizontal wells may be more effective.

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ATTACHMENT 1
BAROMETRIC PRESSURE DATA

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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BAROMETRIC PRESSURE – BACKGROUND

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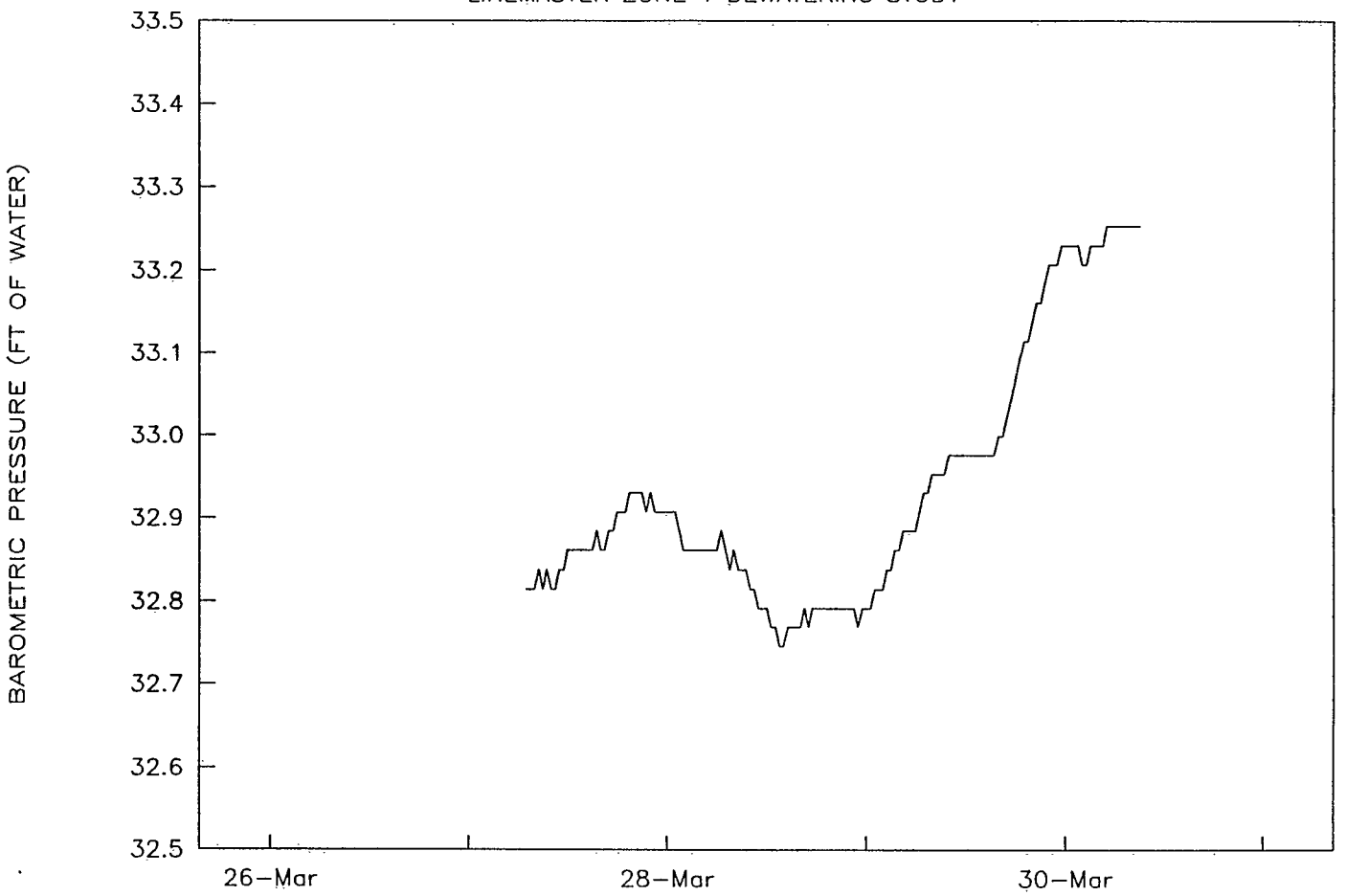

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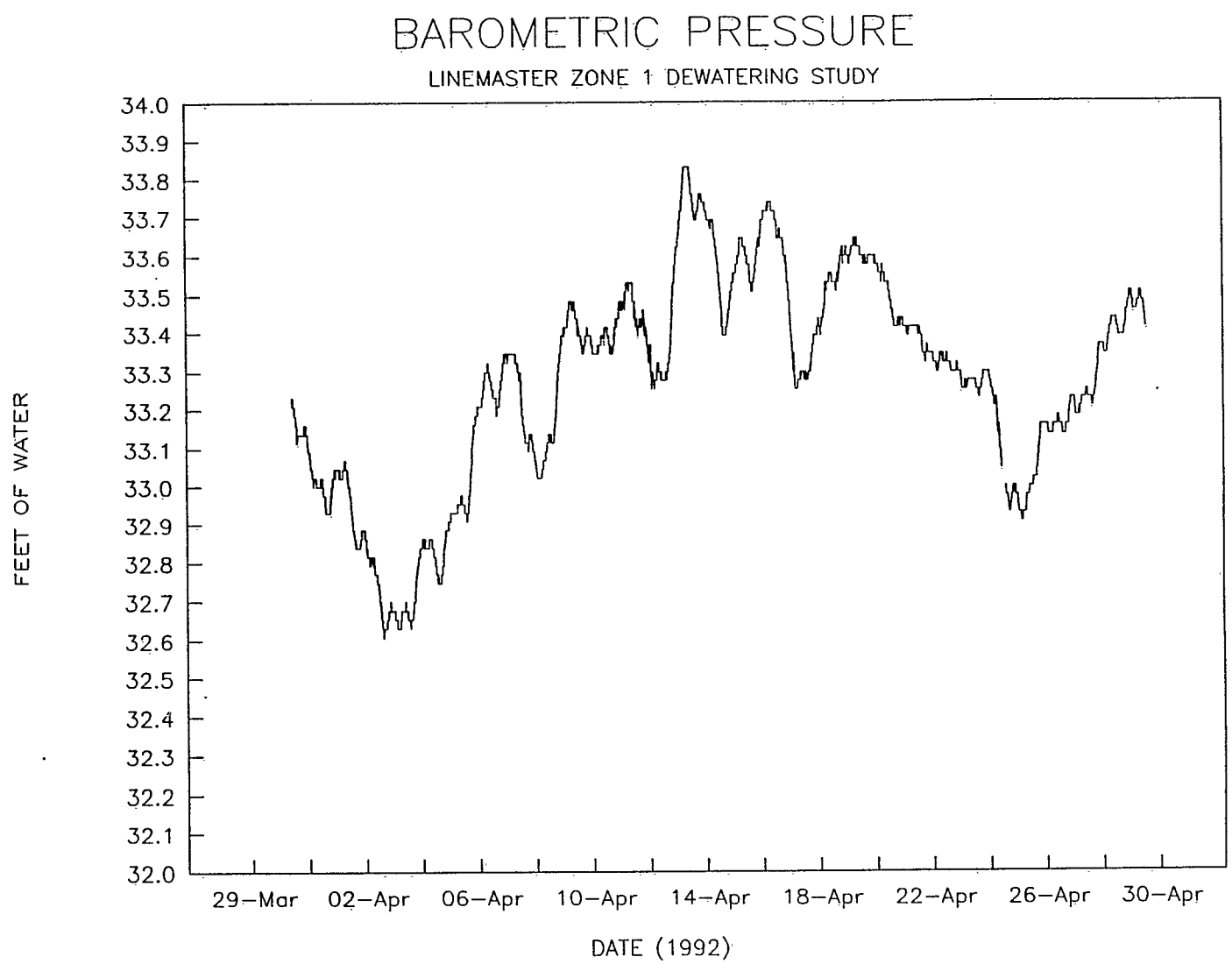

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ATTACHMENT 2
WATER-LEVEL DATA, BACKGROUND PERIOD

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
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DW–1t – BACKGROUND

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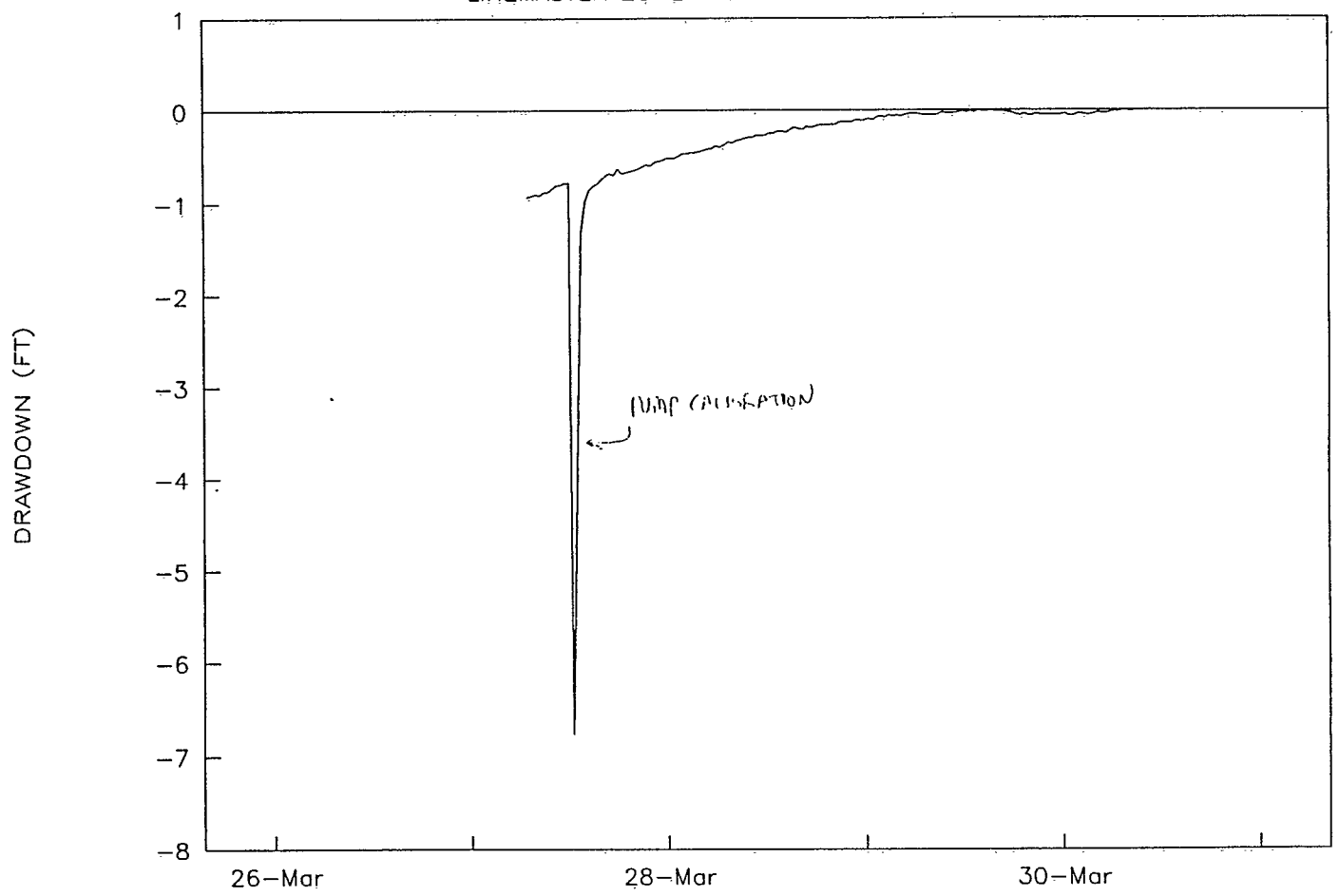

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DW-2t - BACKGROUND

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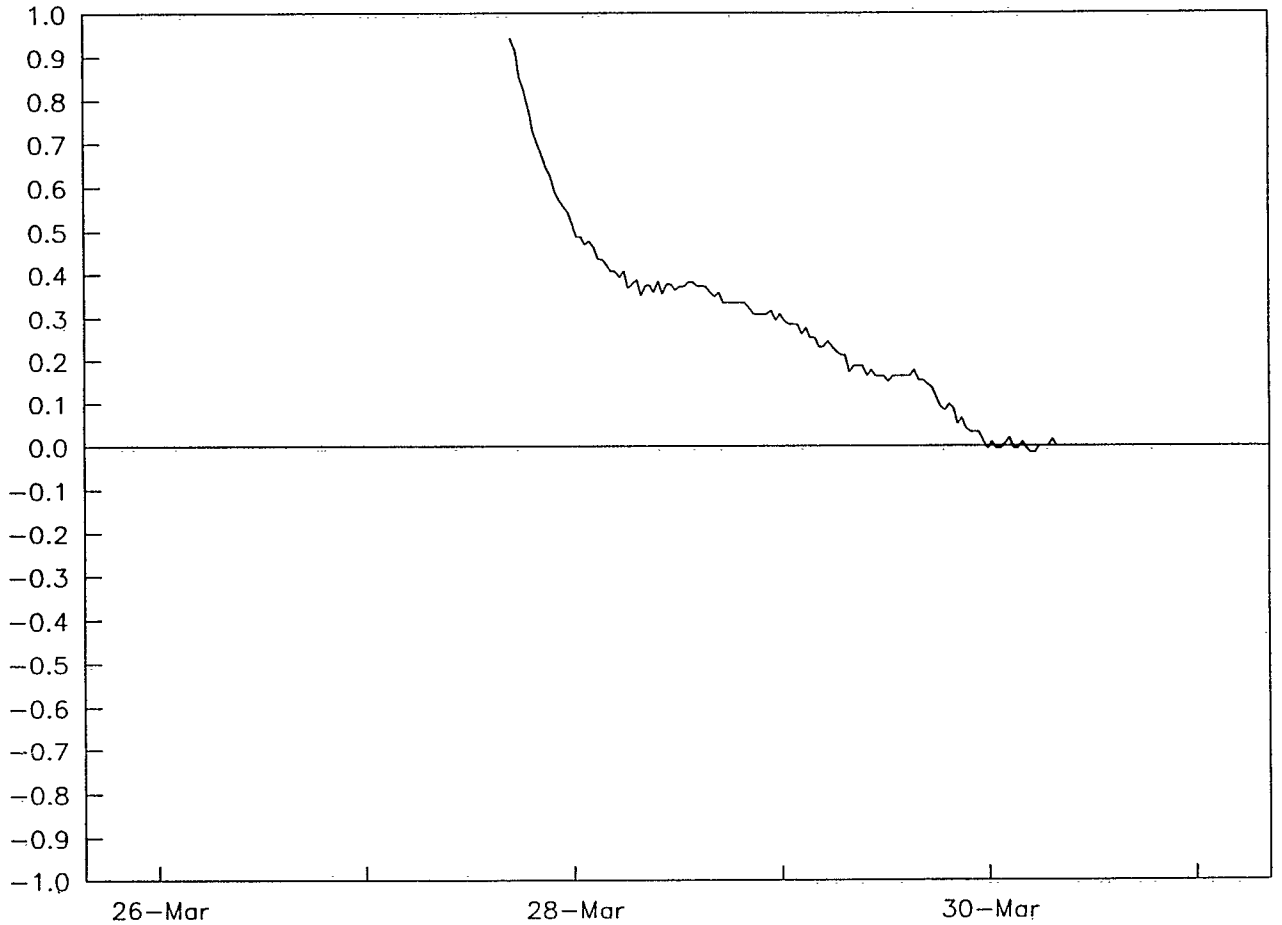

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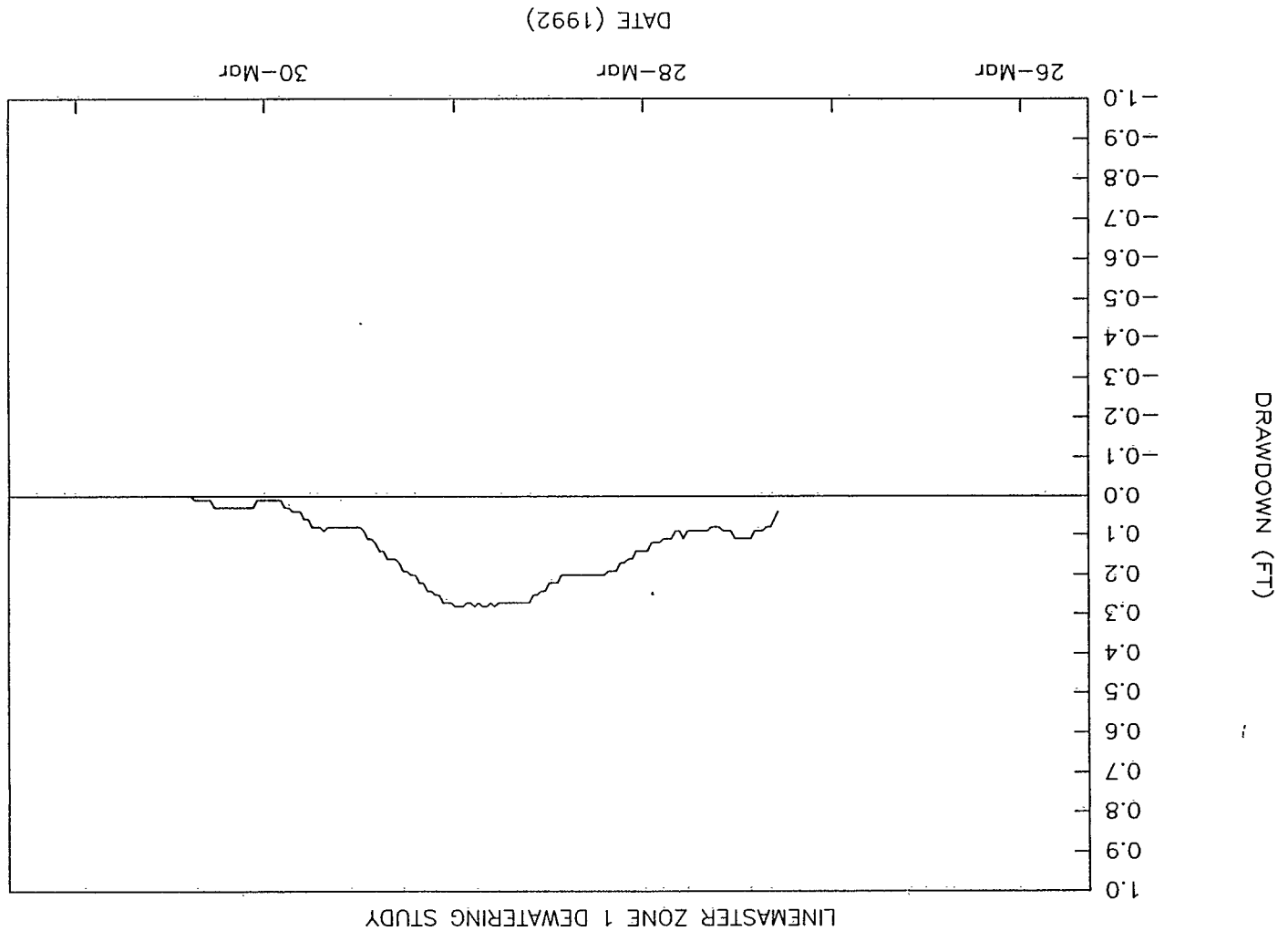

OW-1t - BACKGROUND

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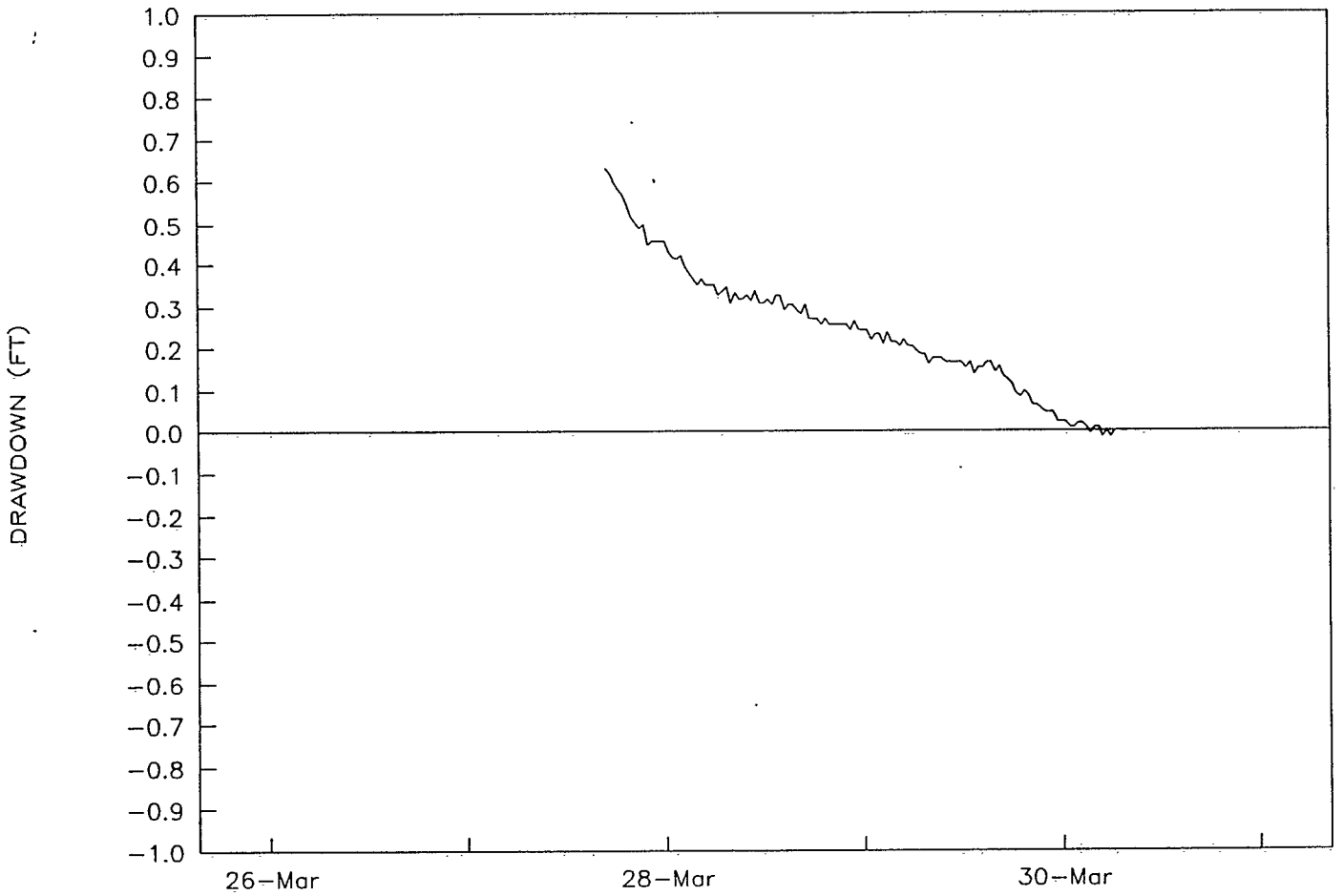

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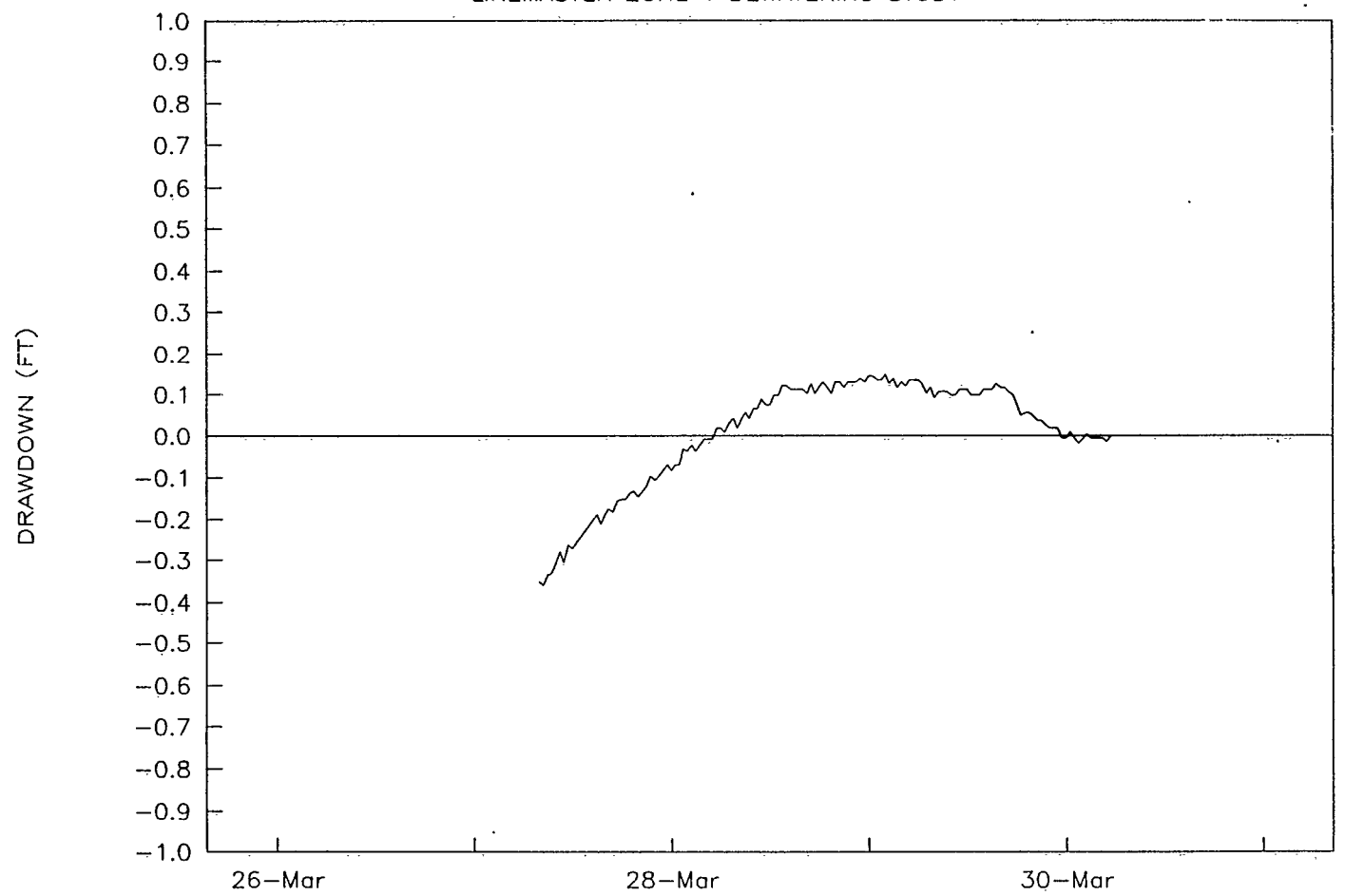

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ATTACHMENT 3
WATER-LEVEL DATA, PUMPING AND RECOVERY PERIODS

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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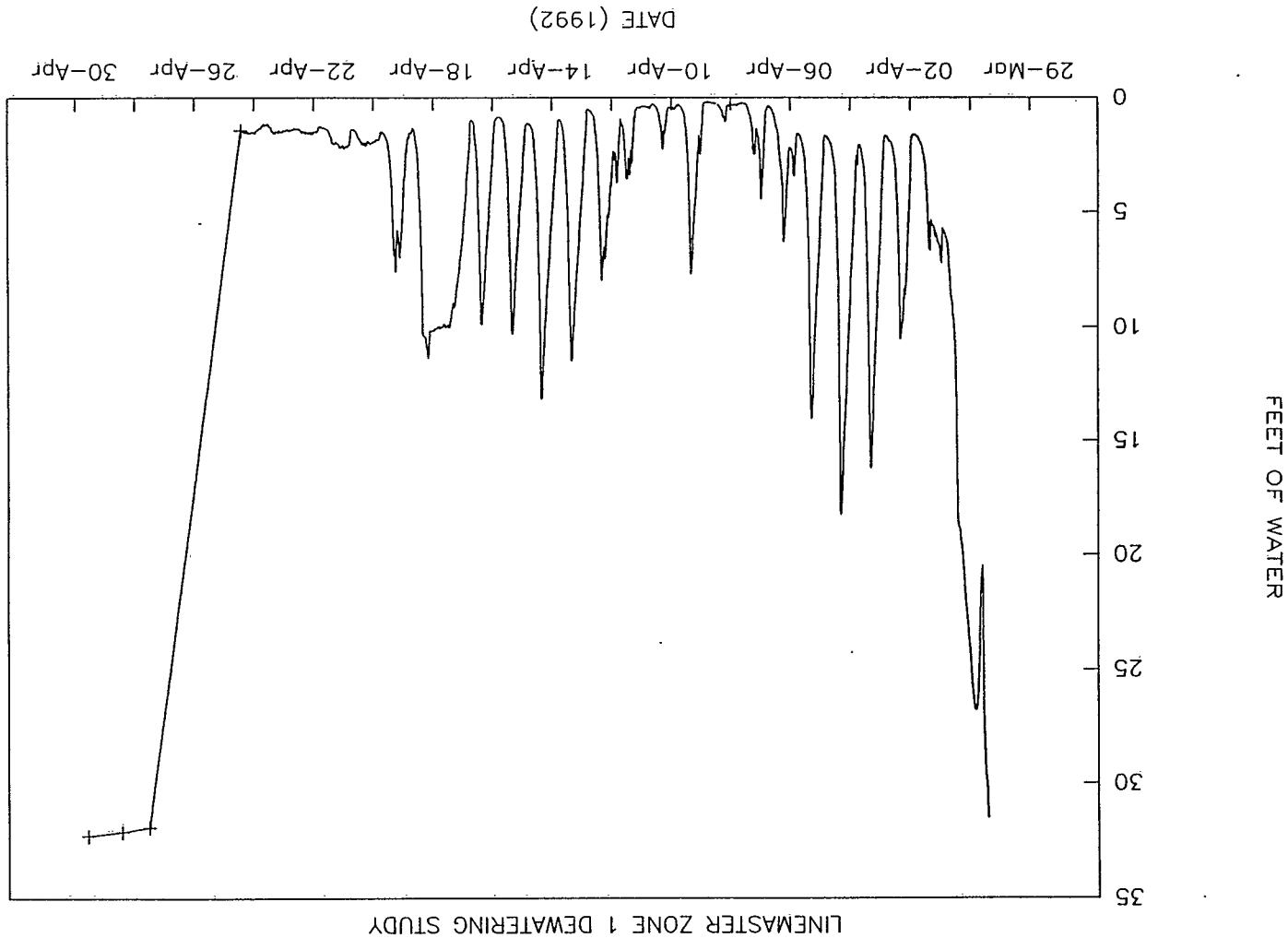

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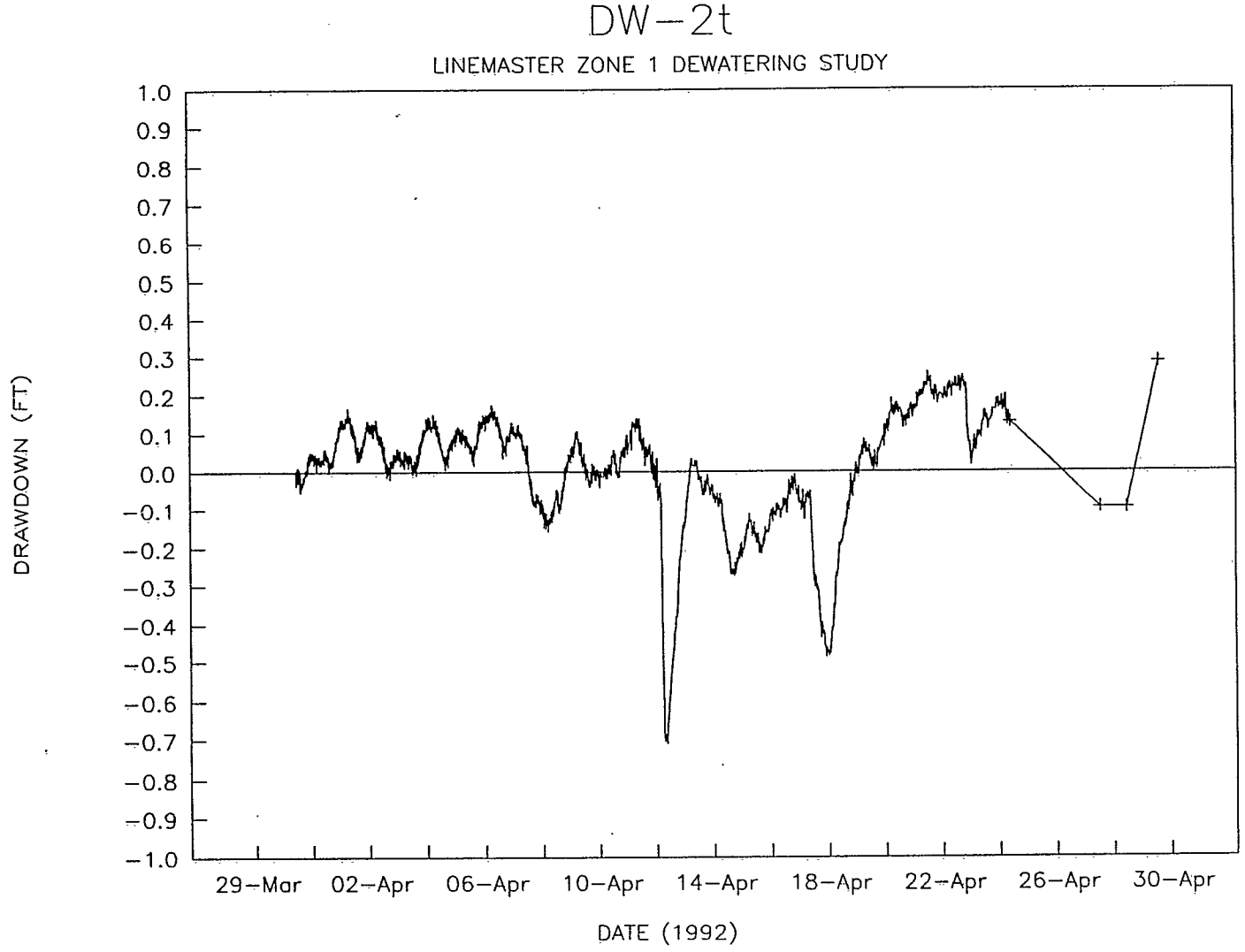

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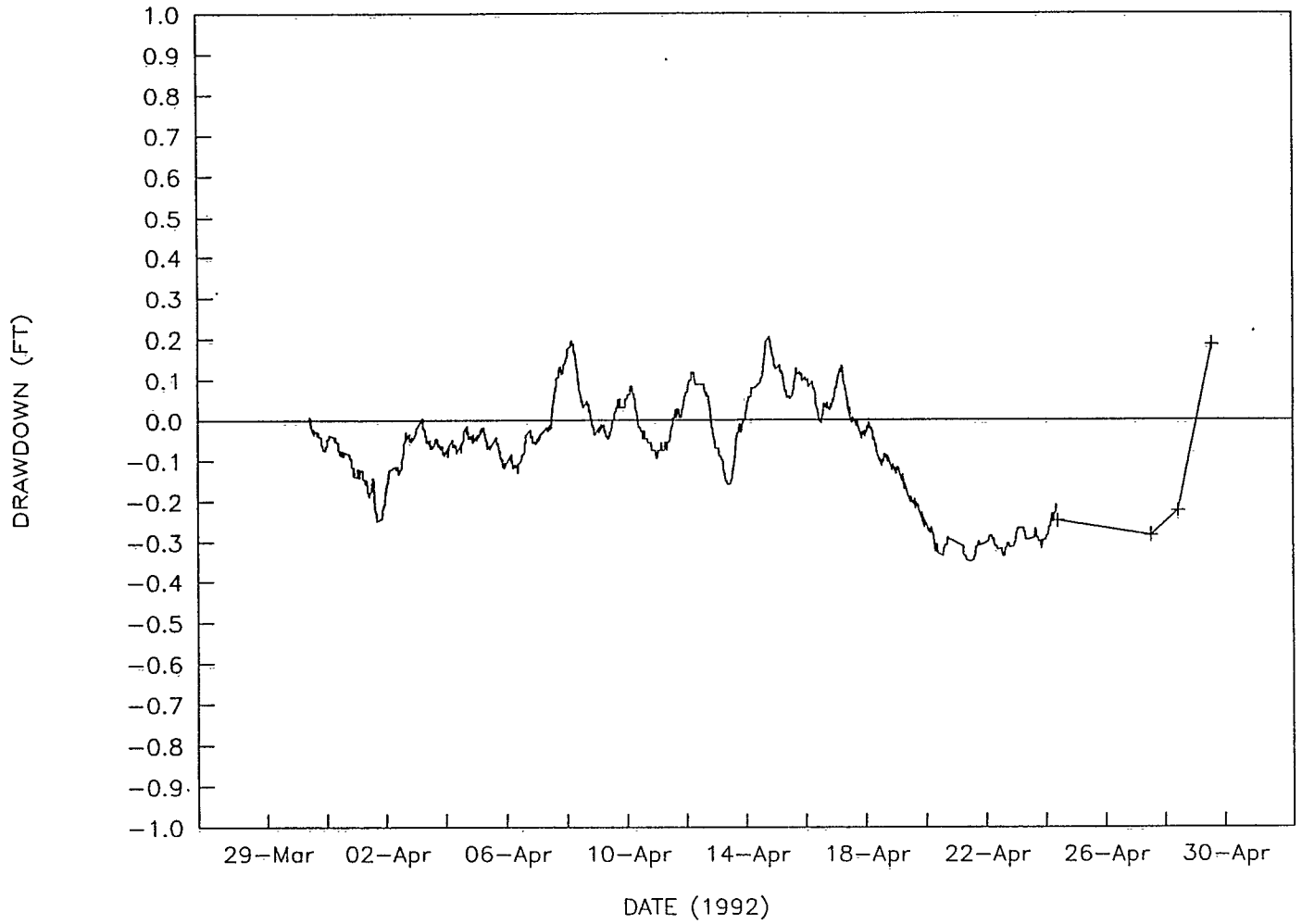

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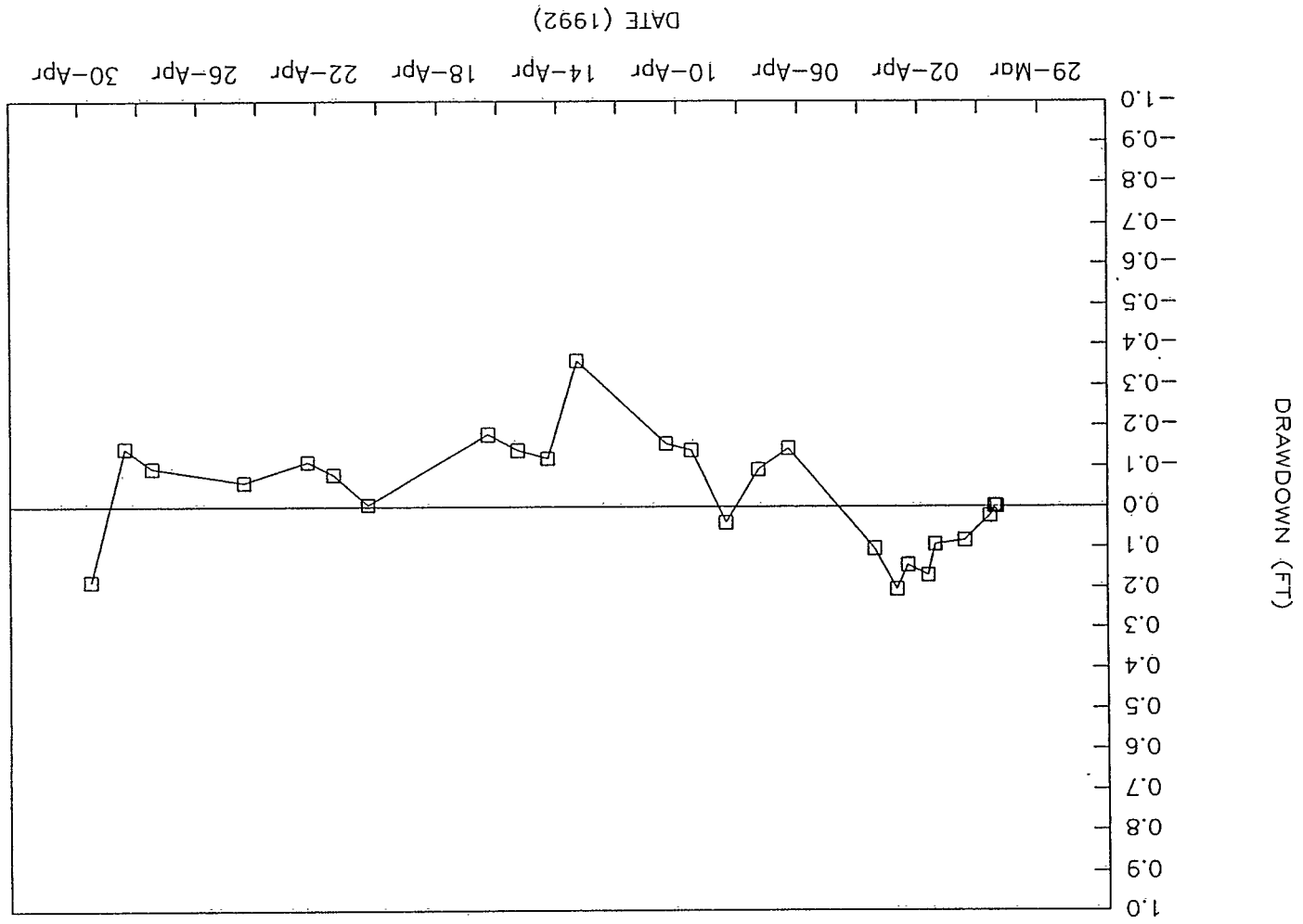

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DW-4t

OW-1t

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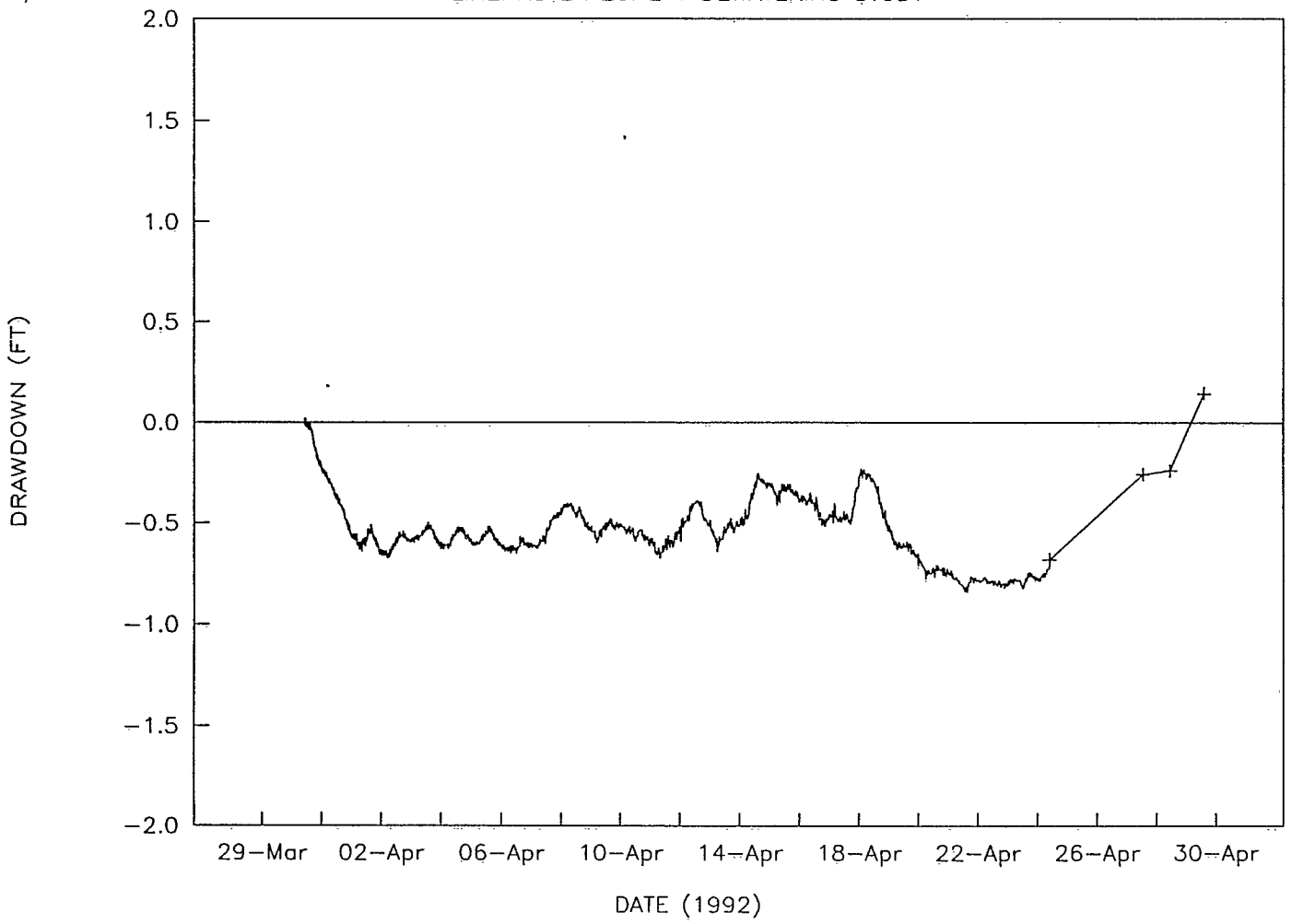

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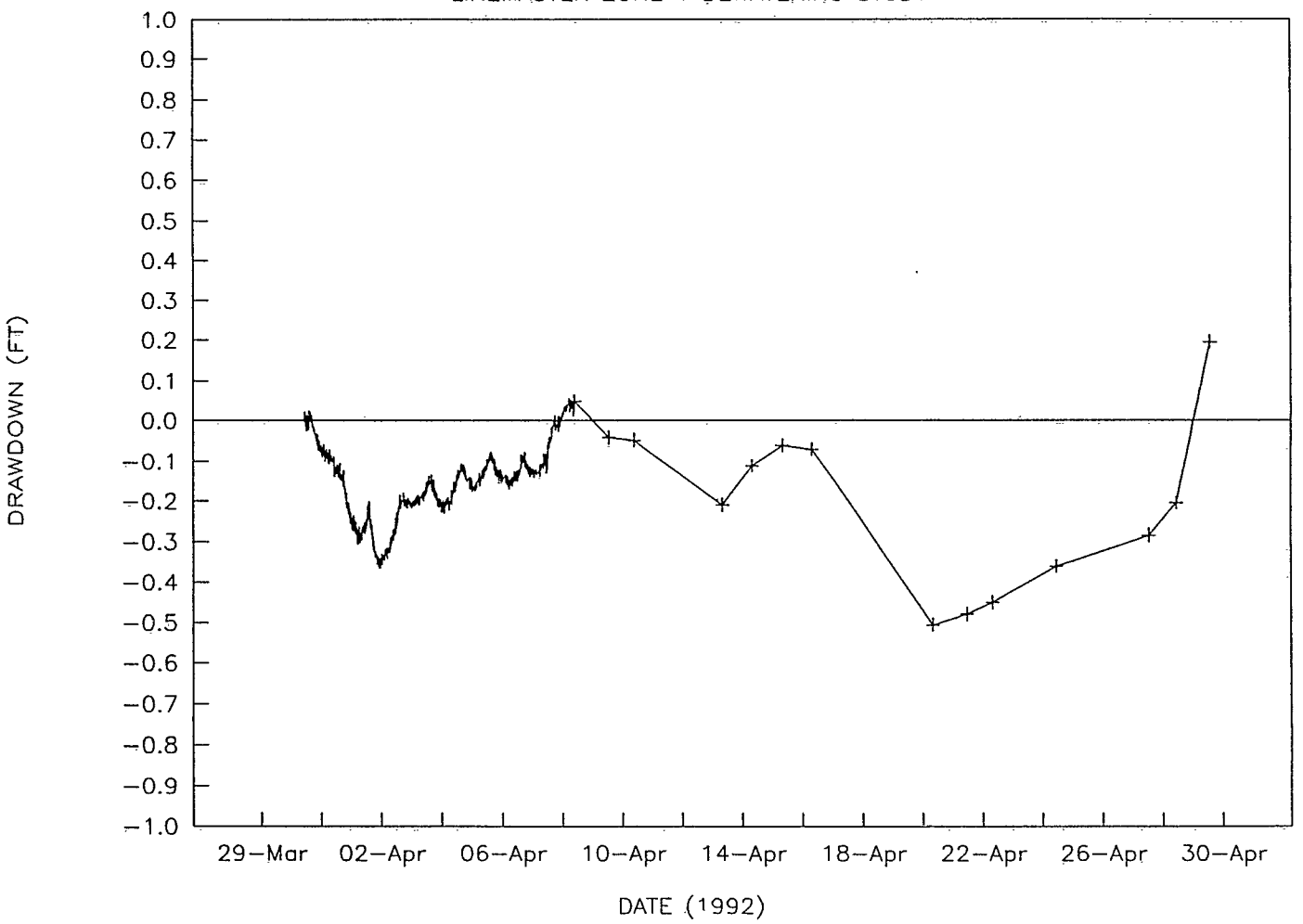

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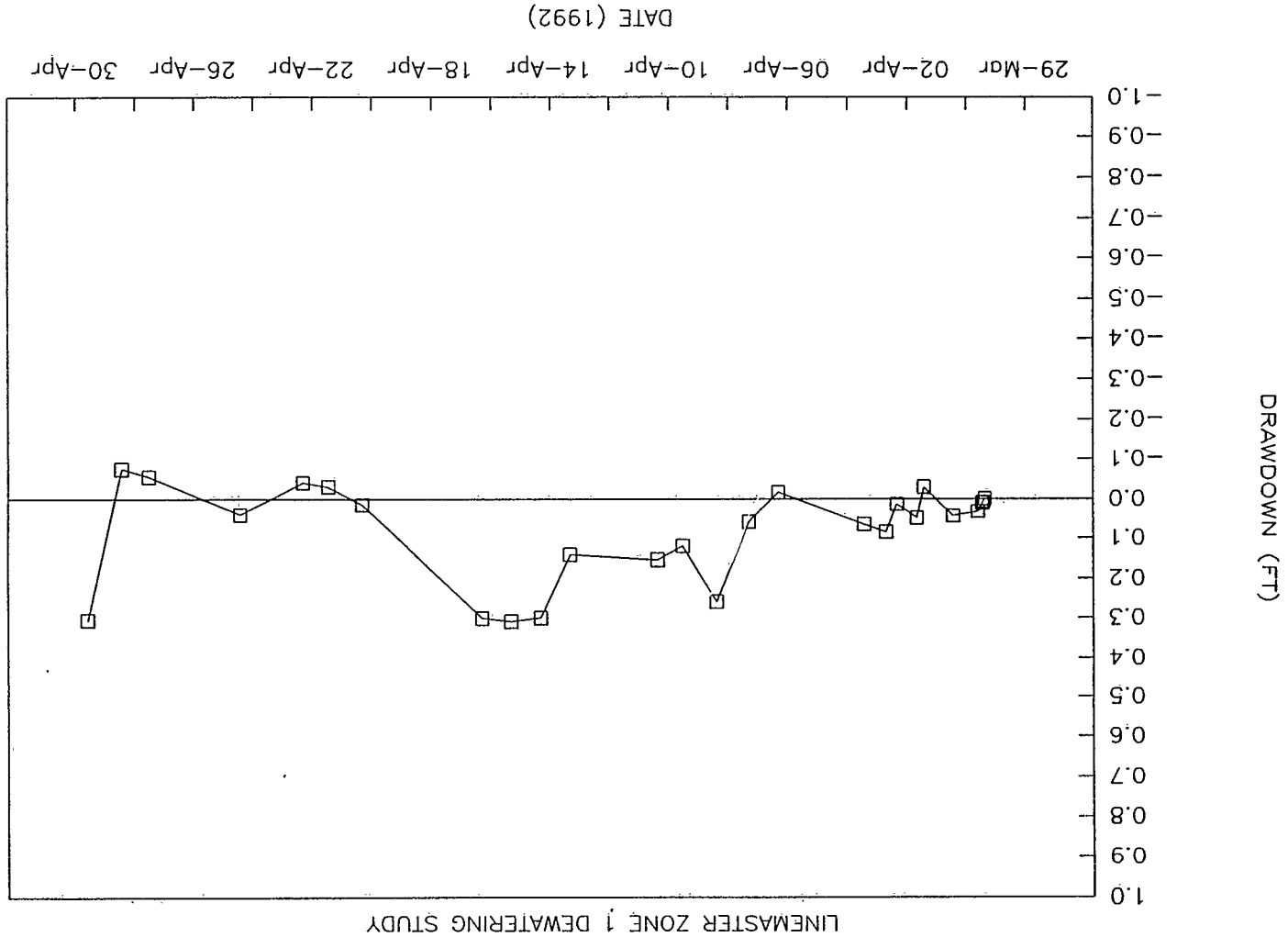

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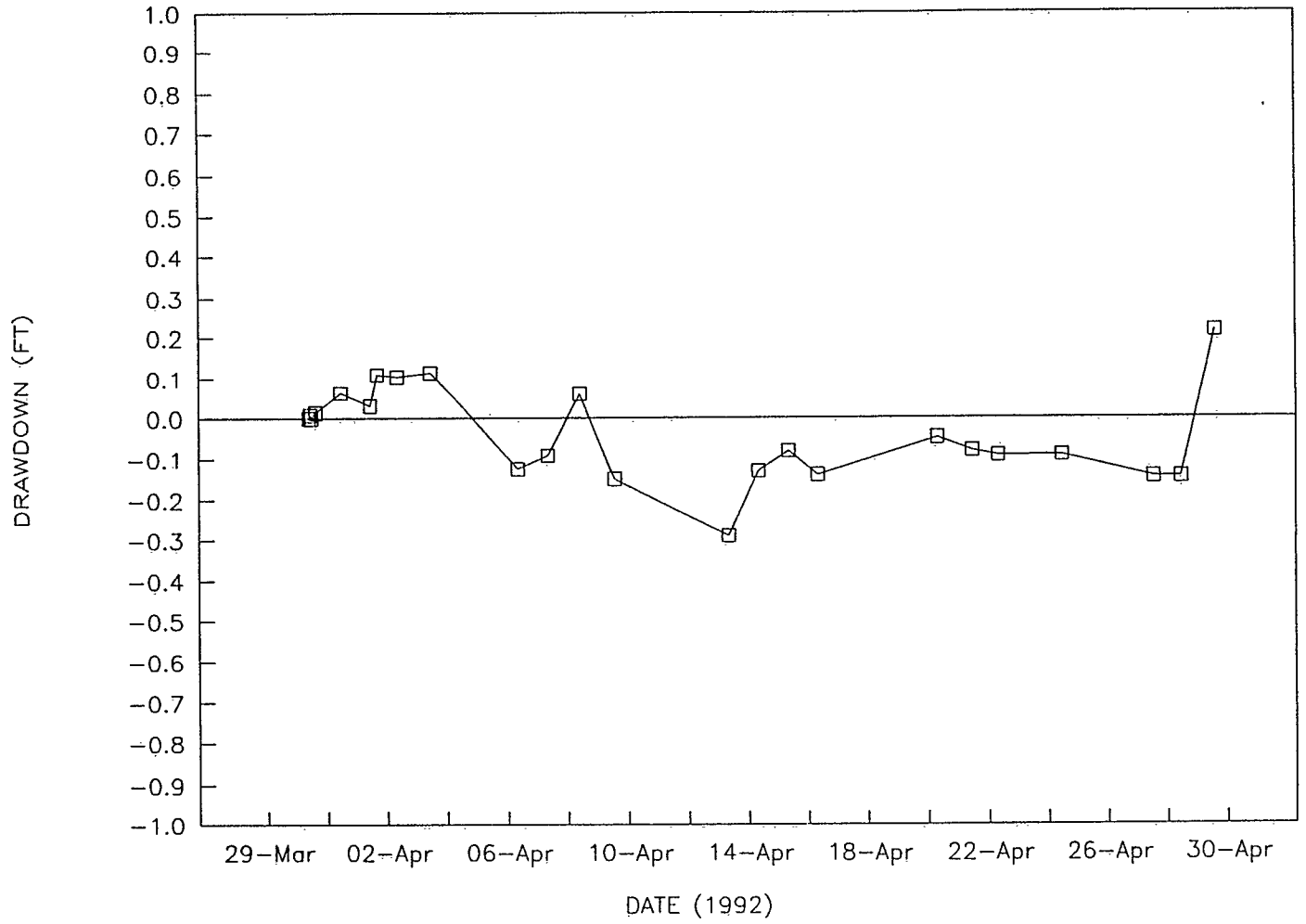

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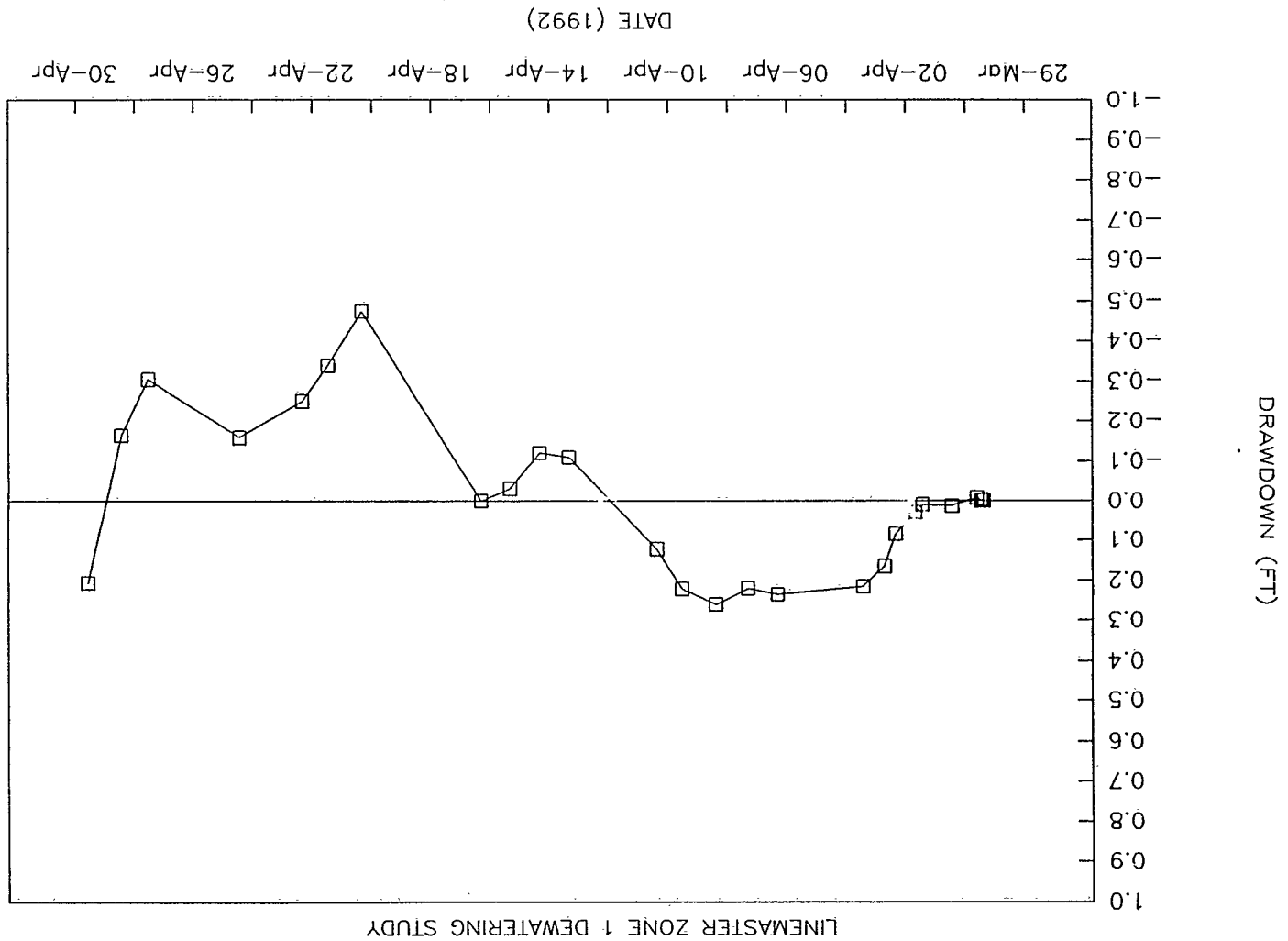

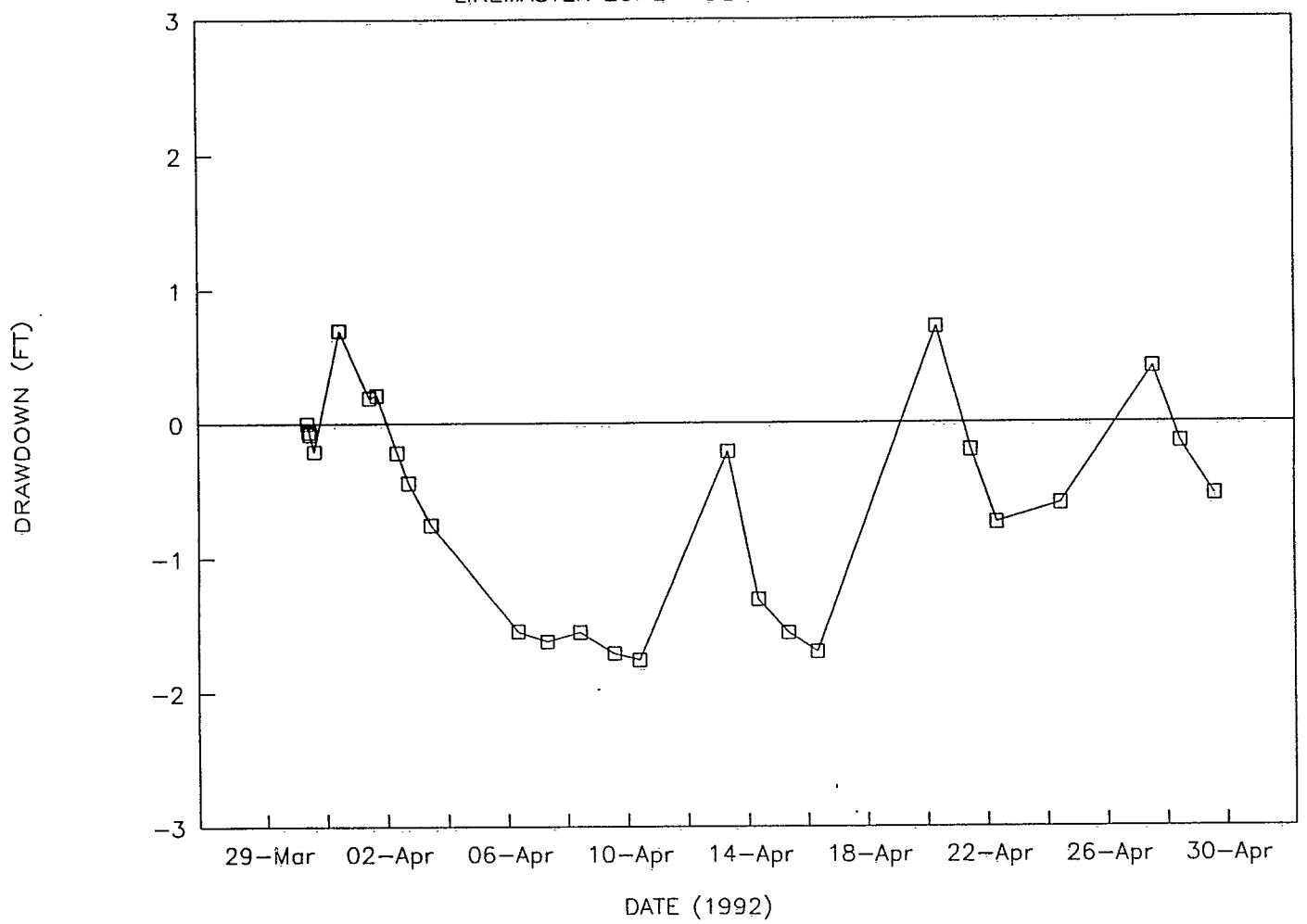

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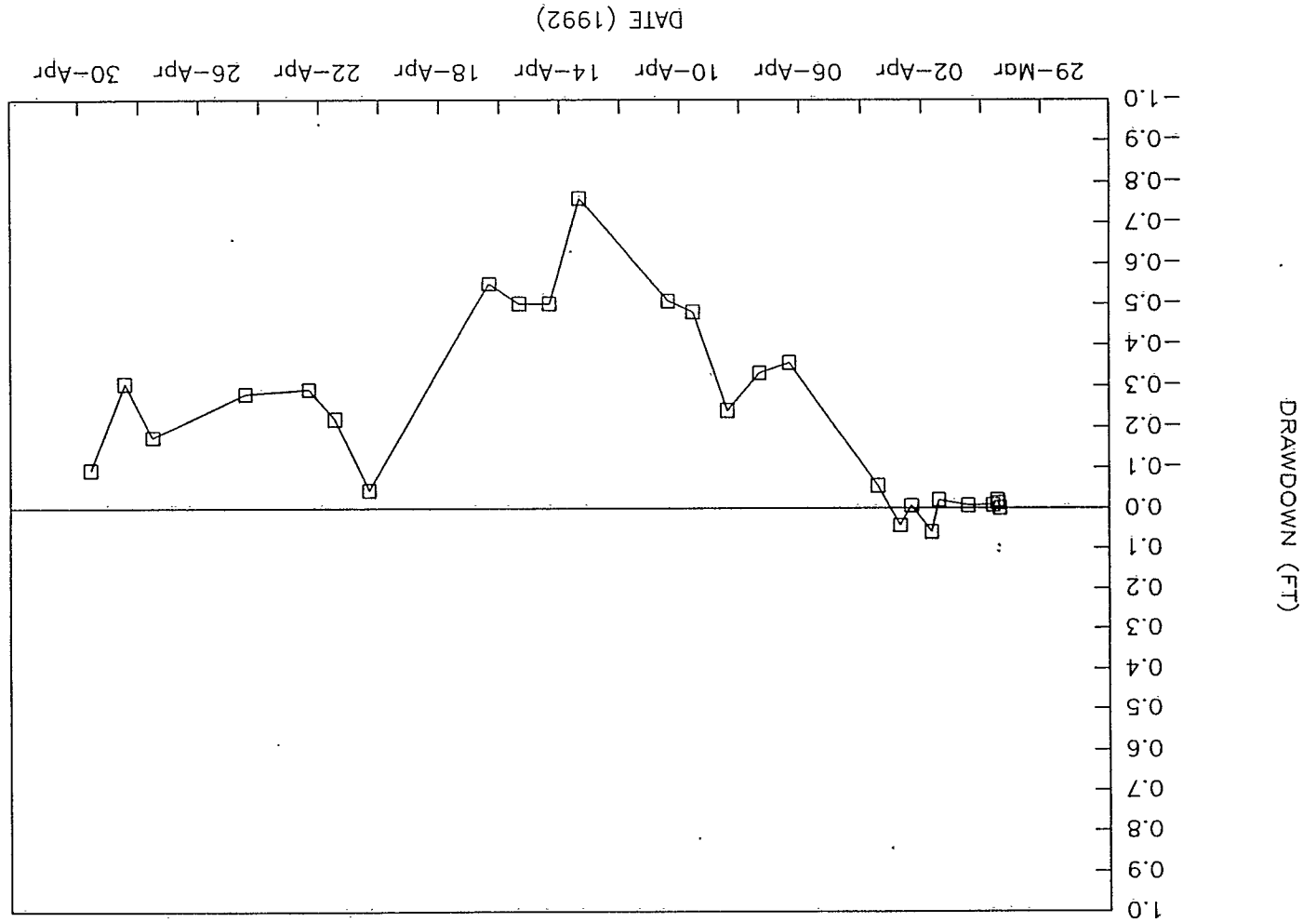

LINEMASTER ZONE 1 DEWATERING STUDY

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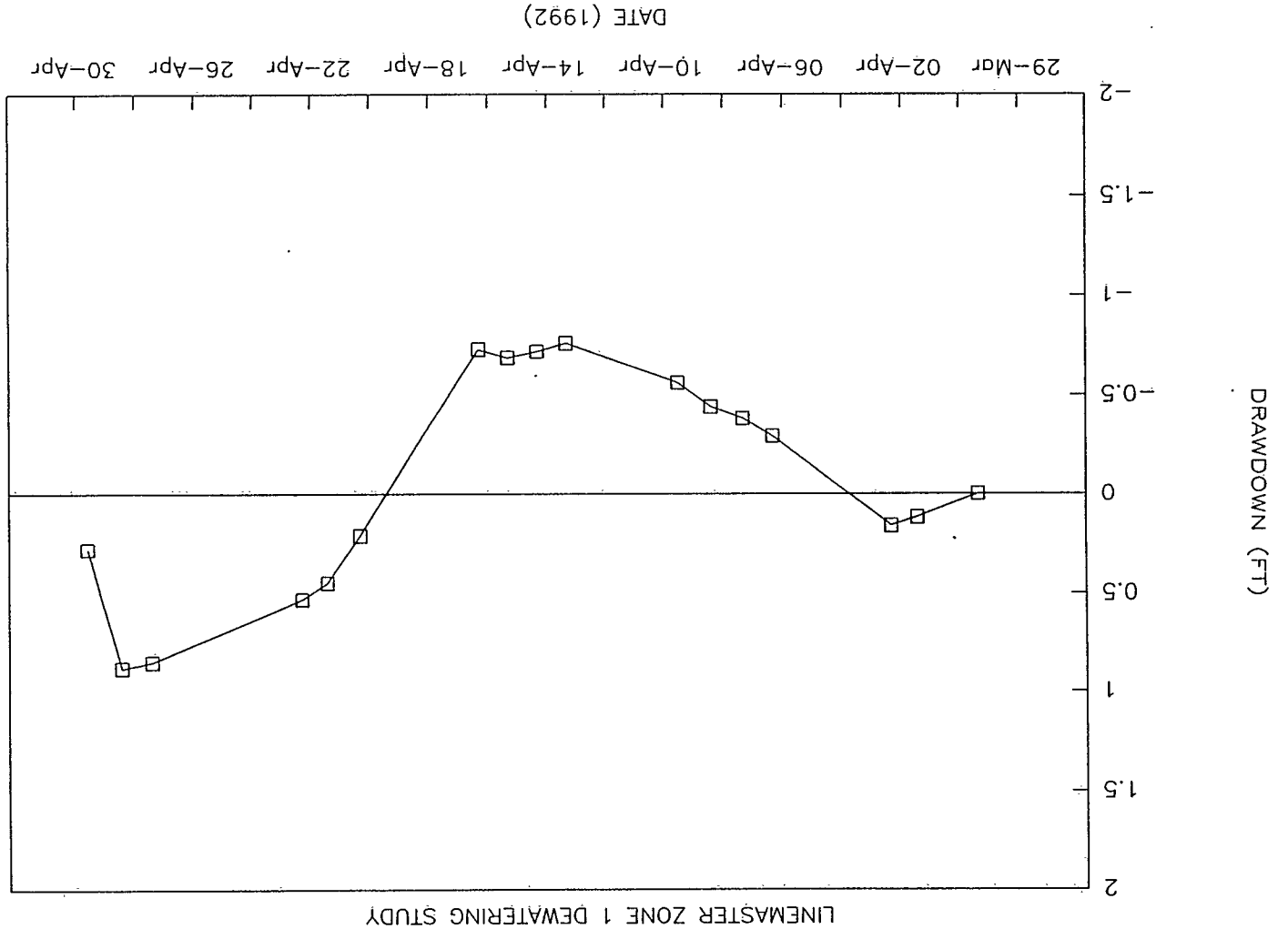

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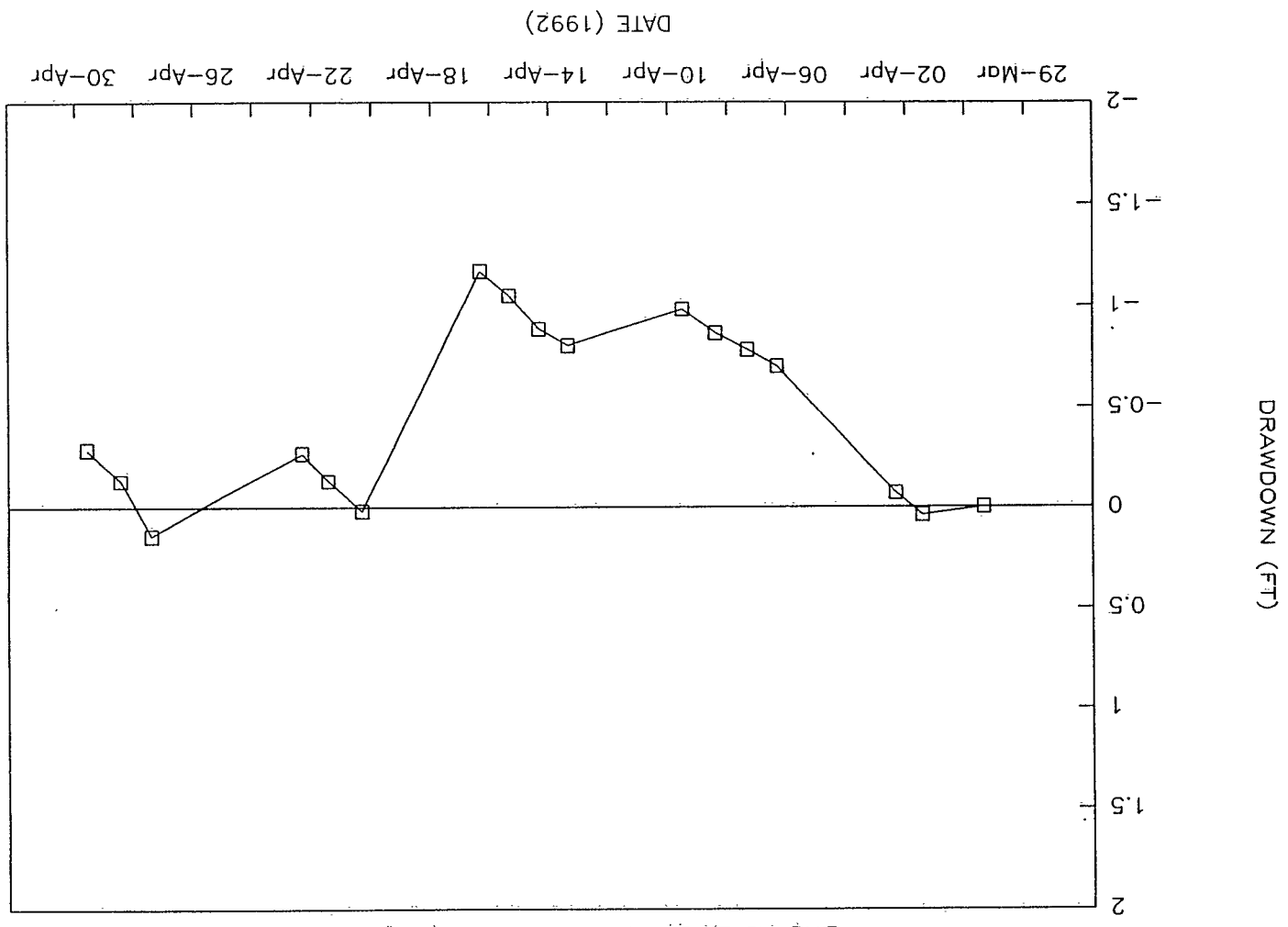

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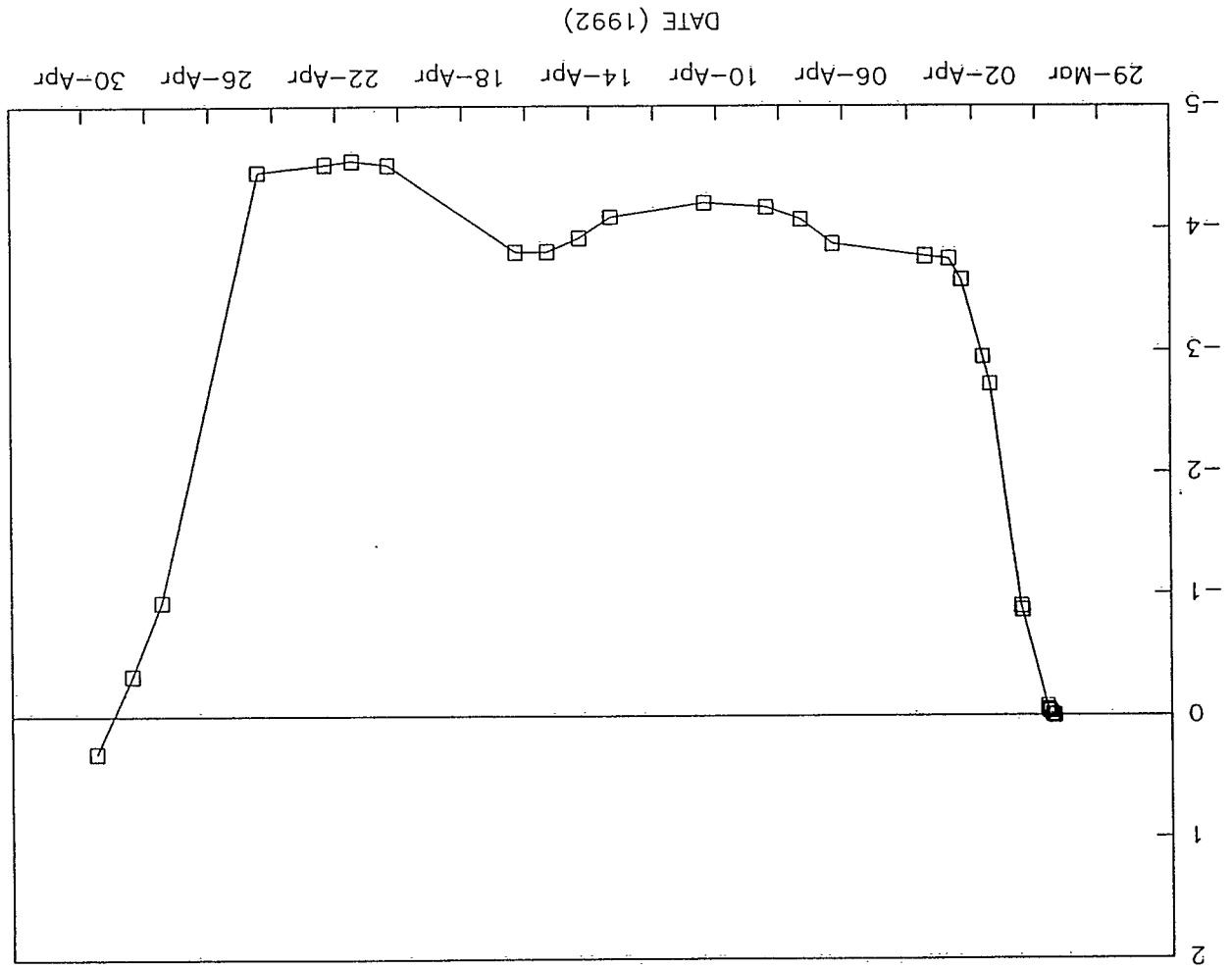

MW-10f

LINEMASTER ZONE 1 DEWATERING STUDY

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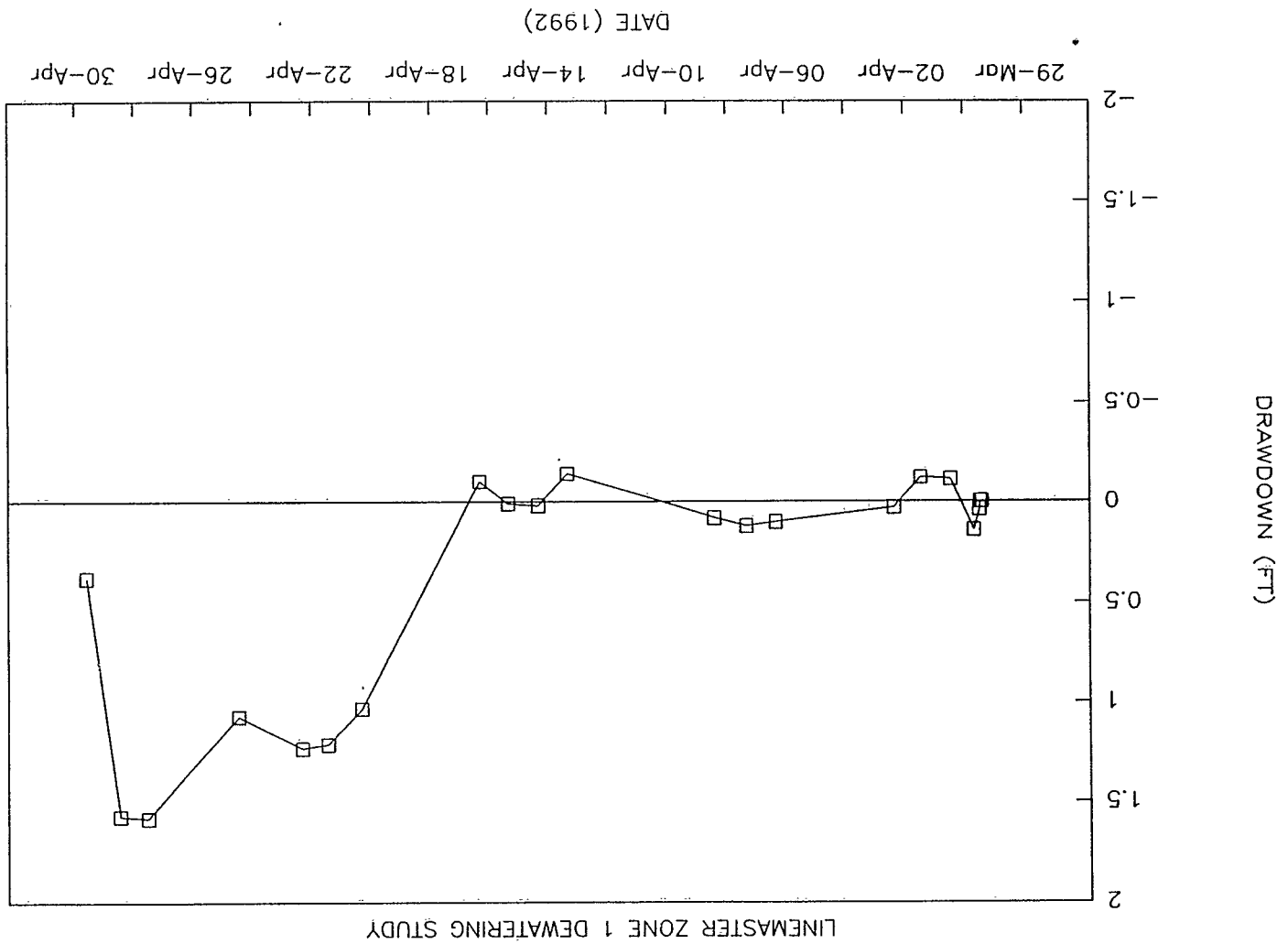
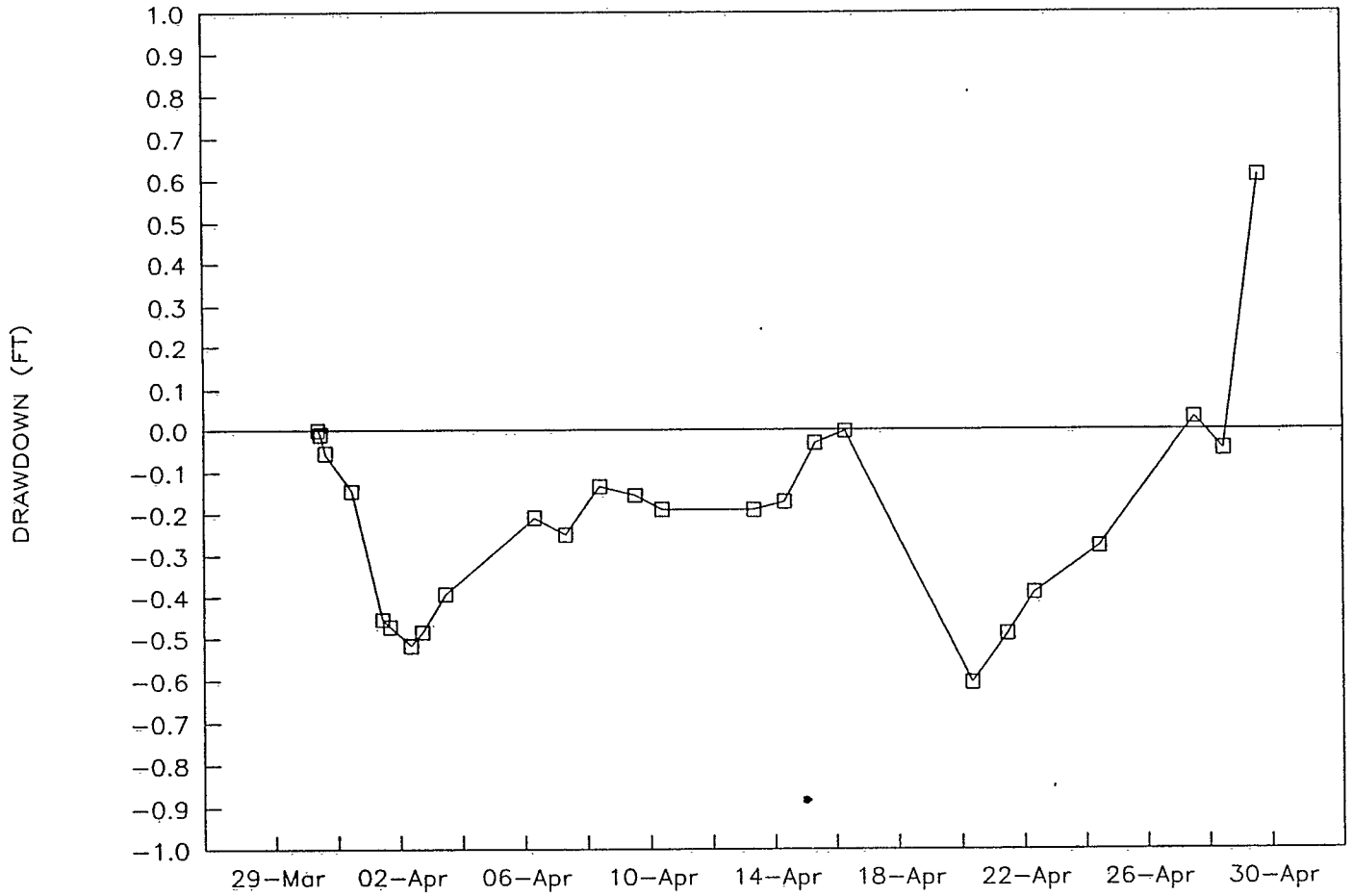


MW-26t

LINEMASTER ZONE 1 DEWATERING STUDY



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ATTACHMENT 4
ANALYTICAL DATA

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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SUMMARY OF MONITORING RESULTS FOR DW-1tPT
MARCH 30, 1992 TO APRIL 24, 1992
ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH, WOODSTOCK, CONNECTICUT

Well ID		DW01TPT	DW01TPT	DW01TPT	DW01TPT
Date		03/30/92	04/01/92	04/03/92	04/06/92
Sample ID		36392033001	36392040101	36392040302	31392040601
Parameter	Unit	Value			
Aluminum, Total	ug/l			6850	
Antimony, Total	ug/l			ND@29	
Arsenic, Total	ug/l			5.7	
Barium, Total	ug/l			152	
Beryllium, Total	ug/l			ND@2.0	
Cadmium, Total	ug/l			ND@4.0	
Chromium, Total	ug/l			44	
Copper, Total	ug/l			11	
Lead, Total	ug/l			6.2	
Magnesium, Total	ug/l			11700	
Mercury, Total	ug/l			ND@10	
Nickel, total	ug/l			93	
Selenium, Total	ug/l			ND@9	
Silver, total	ug/l			ND@1.9	
Thallium, Total	ug/l			ND@1.5	
Tin, Total	ug/l			ND@50	
Vanadium, Total	ug/l			20	
Zinc, Total	ug/l			42	
1,1,1-Trichloroethane	ug/l	ND@500.0	29	ND@50.0	ND@50.0
1,1,2,2-Tetrachloroethane	ug/l	ND@500.0	ND@10.0	ND@50.0	ND@50.0
1,1,2-Trichloroethane	ug/l	ND@750.0	ND@15.0	ND@75.0	ND@75.0
1,1-Dichloroethane	ug/l	ND@750.0	ND@15.0	ND@75.0	ND@75.0
1,1-Dichloroethene	ug/l	ND@750.0	ND@15.0	ND@75.0	ND@75.0
1,2,3-Trichloropropane	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
1,2,4-Trichlorobenzene	ug/l			ND@4.0	
1,2-Dichlorobenzene	ug/l			ND@6.0	
1,2-Dichloroethane	ug/l	ND@750.0	ND@15.0	ND@75.0	ND@75.0
1,2-Dichloropropane	ug/l	ND@1750.0	ND@35.0	ND@175.0	ND@175.0
1,3-Dichlorobenzene	ug/l			ND@6.0	
1,4-Dichlorobenzene	ug/l			ND@4.0	
2-Hexanone	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Acetone	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Benzene	ug/l	ND@500.0	ND@10.0	ND@50.0	ND@50.0
Bis(2-chloroethoxy)methane	ug/l			ND@6.0	
Bis(2-chloroisopropyl)ether	ug/l			ND@4.0	
Bromodichloromethane	ug/l	ND@500.0	ND@10.0	ND@50.0	ND@50.0
Bromoform	ug/l	ND@500.0	ND@10.0	ND@50.0	ND@50.0
Bromomethane	ug/l	ND@1000.0	ND@20.0	ND@100.0	ND@100.0
Carbon disulfide	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Carbon tetrachloride	ug/l	ND@500.0	ND@10.0	ND@50.0	ND@50.0
Chlordane	ug/l			ND@0.6	

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SUMMARY OF MONITORING RESULTS FOR DW-1tPT
MARCH 30, 1992 TO APRIL 24, 1992
ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH, WOODSTOCK, CONNECTICUT

Well ID		DW01TPT	DW01TPT	DW01TPT	DW01TPT
Date		03/30/92	04/01/92	04/03/92	04/06/92
Sample ID		36392033001	36392040101	36392040302	31392040601
Parameter	Unit	Value			
Chlorobenzene	ug/l	ND@1750.0	ND@35.0	ND@175.0	ND@175.0
Chloroethane	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Chloroform	ug/l	ND@750.0	17	ND@75.0	ND@75.0
Chloromethane	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Dibromochloromethane	ug/l	ND@500.0	ND@10.0	ND@50.0	ND@50.0
Dibromomethane	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Dichlorodifluoromethane	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Dichloromethane	ug/l	ND@2500.0	ND@50.0	ND@250.0	ND@250.0
Ethylbenzene	ug/l	ND@500.0	18	ND@50.0	ND@50.0
Hexachlorobutadiene	ug/l			ND@6.0	
Isopropylacetone	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Methyl ethyl ketone	ug/l	ND@2250.0	ND@45.0	ND@225.0	ND@225.0
Naphthalene	ug/l			ND@6.0	
Styrene	ug/l	ND@500.0	ND@10.0	ND@50.0	ND@50.0
Tetrachloroethene	ug/l	ND@750.0	33	ND@75.0	ND@75.0
Toluene	ug/l	1000	380	ND@75.0	130
Trichloroethene	ug/l	120000	5700	4500	6400
Trichlorofluoromethane	ug/l	ND@2500.0	ND@50.0	ND@250.0	ND@250.0
Vinyl acetate	ug/l	ND@5000.0	ND@100.0	ND@500.0	ND@500.0
Vinyl chloride	ug/l	ND@175.0	ND@35.0	ND@175.0	ND@175.0
Xylenes	ug/l	ND@500.0	53	ND@50.0	ND@50.0
cis-1,2-Dichloroethene	ug/l	1300	230	ND@50.0	63
cis-1,3-Dichloropropene	ug/l	ND@500.0	ND@10.0	ND@50.0	ND@50.0
trans-1,2-Dichloroethene	ug/l	ND@750.0	ND@15.0	ND@75.0	ND@75.0
trans-1,3-Dichloropropene	ug/l	ND@750.0	ND@15.0	ND@75.0	ND@75.0
4,4'-DDD	ug/l			ND@0.6	
4,4'-DDE	ug/l			ND@0.6	
4,4'-DDT	ug/l			ND@0.6	
Aldrin	ug/l			ND@0.6	
Chlordane	ug/l			ND@0.6	
Dieldrin	ug/l			ND@0.6	
Endrin	ug/l			ND@0.6	
Heptachlor	ug/l			ND@0.6	
Heptachlor-epoxide	ug/l			ND@0.6	
Lindane (666)	ug/l			ND@0.6	
Methoxychlor	ug/l			ND@0.6	
Toxaphene	ug/l			ND@0.6	
alpha-BHC	ug/l			ND@0.6	
beta-BHC	ug/l			ND@0.6	

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LIN003 0129

SUMMARY OF MONITORING RESULTS FOR DW-1tPT
MARCH 30, 1992 TO APRIL 24, 1992
ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH, WOODSTOCK, CONNECTICUT

Well ID		DW01TPT	DW01TPT	DW01TPT	DW01TPT
Date		04/08/92	04/10/92	04/13/92	04/15/92
Sample ID		31392040814	40192041001	31392041301	31392041502
Parameter	Unit	Value			
Aluminum, Total	ug/l		1520		
Antimony, Total	ug/l		ND@29.0		
Arsenic, Total	ug/l		4.1		
Barium, Total	ug/l		68.0		
Beryllium, Total	ug/l		ND@2.0		
Cadmium, Total	ug/l		ND@4.0		
Chromium, Total	ug/l		ND@10.0		
Copper, Total	ug/l		ND@10.0		
Lead, Total	ug/l		ND@1.6		
Magnesium, Total	ug/l		8590		
Mercury, Total	ug/l		ND@0.2		
Nickel, total	ug/l		ND@18.0		
Selenium, Total	ug/l		ND@1.9		
Silver, total	ug/l		ND@9.0		
Thallium, Total	ug/l		ND@1.5		
Tin, Total	ug/l		ND@50.0		
Vanadium, Total	ug/l		ND@10.0		
Zinc, Total	ug/l		27		
1,1,1-Trichloroethane	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
1,1,2,2-Tetrachloroethane	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
1,1,2-Trichloroethane	ug/l	ND@15.0	ND@75.0	ND@75.0	ND@30.0
1,1-Dichloroethane	ug/l	ND@15.0	ND@75.0	ND@75.0	ND@30.0
1,1-Dichloroethene	ug/l	ND@15.0	ND@75.0	ND@75.0	ND@30.0
1,2,3-Trichloropropane	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
1,2,4-Trichlorobenzene	ug/l		ND@4.0		
1,2-Dichlorobenzene	ug/l		ND@6.0		
1,2-Dichloroethane	ug/l	ND@15.0	ND@75.0	ND@75.0	ND@30.0
1,2-Dichloropropane	ug/l	ND@35.0	ND@175.0	ND@175.0	ND@70.0
1,3-Dichlorobenzene	ug/l		ND@6.0		
1,4-Dichlorobenzene	ug/l		ND@4.0		
2-Hexanone	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Acetone	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Benzene	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
Bis(2-chloroethoxy)methane	ug/l		ND@6.0		
Bis(2-chloroisopropyl)ether	ug/l		ND@4.0		
Bromodichloromethane	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
Bromoform	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
Bromomethane	ug/l	ND@20.0	ND@100.0	ND@100.0	ND@40.0
Carbon disulfide	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Carbon tetrachloride	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
Chlordane	ug/l		ND@0.64		

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SUMMARY OF MONITORING RESULTS FOR DW-1tPT
MARCH 30, 1992 TO APRIL 24, 1992
ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH, WOODSTOCK, CONNECTICUT

Well ID		DW01TPT	DW01TPT	DW01TPT	DW01TPT
Date		04/08/92	04/10/92	04/13/92	04/15/92
Sample ID		31392040814	40192041001	31392041301	31392041502
Parameter	Unit	Value			
Chlorobenzene	ug/l	ND@35.0	ND@175.0	ND@175.0	ND@70.0
Chloroethane	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Chloroform	ug/l	ND@15.0	ND@75.0	ND@75.0	ND@30.0
Chloromethane	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Dibromochloromethane	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
Dibromomethane	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Dichlorodifluoromethane	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Dichloromethane	ug/l	ND@50.0	ND@250.0	ND@250.0	ND@100.0
Ethylbenzene	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
Hexachlorobutadiene	ug/l		ND@6.0		
Isopropylacetone	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Methyl ethyl ketone	ug/l	ND@45.0	ND@225.0	ND@225.0	ND@90.0
Naphthalene	ug/l		ND@6.0		
Styrene	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
Tetrachloroethene	ug/l	ND@15.0	ND@75.0	ND@75.0	ND@30.0
Toluene	ug/l	30	ND@75.0	ND@75.0	74
Trichloroethene	ug/l	1400	2600	4200	4100
Trichlorofluoromethane	ug/l	ND@50.0	ND@250.0	ND@250.0	ND@100.0
Vinyl acetate	ug/l	ND@100.0	ND@500.0	ND@500.0	ND@200.0
Vinyl chloride	ug/l	ND@35.0	ND@175.0	ND@175.0	ND@70.0
Xylenes	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
cis-1,2-Dichloroethene	ug/l	14	ND@50.0	ND@50.0	29
cis-1,3-Dichloropropene	ug/l	ND@10.0	ND@50.0	ND@50.0	ND@20.0
trans-1,2-Dichloroethene	ug/l	ND@15.0	ND@75.0	ND@75.0	ND@30.0
trans-1,3-Dichloropropene	ug/l	ND@15.0	ND@75.0	ND@75.0	ND@30.0
4,4'-DDD	ug/l		ND@0.64		
4,4'-DDE	ug/l		ND@0.64		
4,4'-DDT	ug/l		ND@0.64		
Aldrin	ug/l		ND@0.64		
Chlordane	ug/l		ND@0.64		
Dieldrin	ug/l		ND@0.64		
Endrin	ug/l		ND@0.64		
Heptachlor	ug/l		ND@0.64		
Heptachlor-epoxide	ug/l		ND@0.64		
Lindane (666)	ug/l		ND@0.64		
Methoxychlor	ug/l		ND@0.64		
Toxaphene	ug/l		ND@0.64		
alpha-BHC	ug/l		ND@0.64		
beta-BHC	ug/l		ND@0.64		

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SUMMARY OF MONITORING RESULTS FOR DW-1tPT
MARCH 30, 1992 TO APRIL 24, 1992
ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH, WOODSTOCK, CONNECTICUT

Well ID		DW01TPT	DW01TPT
Date		04/24/92	04/24/92
Sample ID		36392042401	36392042402
Parameter	Unit	Value	
1,1,1-Trichloroethane	ug/l	ND@20.0	1700
1,1,2,2-Tetrachloroethane	ug/l	ND@20.0	ND@50.0
1,1,2-Trichloroethane	ug/l	ND@30.0	ND@75.0
1,1-Dichloroethane	ug/l	ND@30.0	180
1,1-Dichloroethene	ug/l	ND@30.0	83
1,2,3-Trichloropropane	ug/l	ND@200.0	ND@500.0
1,2,4-Trichlorobenzene	ug/l		ND@8.0
1,2-Dichlorobenzene	ug/l		ND@12.0
1,2-Dichloroethane	ug/l	ND@30.0	ND@75.0
1,2-Dichloropropane	ug/l	ND@70.0	ND@175.0
1,3-Dichlorobenzene	ug/l		ND@12.0
1,4-Dichlorobenzene	ug/l		ND@8.0
2-Hexanone	ug/l	ND@200.0	ND@500.0
Acetone	ug/l	ND@200.0	ND@500.0
Benzene	ug/l	ND@20.0	ND@50.0
Bis(2-chloroethoxy)methane	ug/l		ND@12.0
Bis(2-chloroisopropyl)ether	ug/l		ND@8.0
Bromodichloromethane	ug/l	ND@20.0	ND@50.0
Bromoform	ug/l	ND@20.0	ND@50.0
Bromomethane	ug/l	ND@40.0	ND@100.0
Carbon disulfide	ug/l	ND@200.0	ND@500.0
Carbon tetrachloride	ug/l	ND@20.0	ND@50.0
Chlordane	ug/l		ND@1.6
Chlorobenzene	ug/l	ND@70.0	ND@175.0
Chloroethane	ug/l	ND@200.0	ND@500.0
Chloroform	ug/l	ND@30.0	ND@75.0
Chloromethane	ug/l	ND@200.0	ND@500.0
Dibromochloromethane	ug/l	ND@20.0	ND@50.0
Dibromomethane	ug/l	ND@200.0	ND@500.0
Dichlorodifluoromethane	ug/l	ND@200.0	ND@500.0
Dichloromethane	ug/l	ND@100.0	ND@250.0
Ethylbenzene	ug/l	ND@20.0	460
Hexachlorobutadiene	ug/l		ND@12.0
Isopropylacetone	ug/l	ND@200.0	ND@500.0
Methyl ethyl ketone	ug/l	ND@90.0	ND@225.0
Naphthalene	ug/l		ND@12.0
Styrene	ug/l	ND@20.0	ND@50.0
Tetrachloroethene	ug/l	ND@30.0	1800
Toluene	ug/l	49	6700
Trichloroethene	ug/l	3000	400000
Trichlorofluoromethane	ug/l	ND@100.0	ND@250.0

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SUMMARY OF MONITORING RESULTS FOR DW-1tPT
MARCH 30, 1992 TO APRIL 24, 1992
ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
LINEMASTER SWITCH, WOODSTOCK, CONNECTICUT

Well ID		DW01TPT	DW01TPT
Date		04/24/92	04/24/92
Sample ID		36392042401	36392042402
Parameter	Unit	Value	
Vinyl acetate	ug/l	ND@200.0	ND@500.0
Vinyl chloride	ug/l	ND@70.0	ND@175.0
Xylenes	ug/l	ND@20.0	730
cis-1,2-Dichloroethene	ug/l	28	2300
cis-1,3-Dichloropropene	ug/l	ND@20.0	ND@50.0
trans-1,2-Dichloroethene	ug/l	ND@30.0	ND@75.0
trans-1,3-Dichloropropene	ug/l	ND@30.0	ND@75.0
4,4'-DDD	ug/l		ND@1.6
4,4'-DDE	ug/l		ND@1.6
4,4'-DDT	ug/l		ND@1.6
Aldrin	ug/l		ND@1.6
Chlordane	ug/l		ND@1.6
Dieldrin	ug/l		ND@1.6
Endrin	ug/l		ND@1.6
Heptachlor	ug/l		ND@1.6
Heptachlor-epoxide	ug/l		ND@1.6
Lindane (666)	ug/l		ND@1.6
Methoxychlor	ug/l		ND@1.6
Toxaphene	ug/l		ND@1.6
alpha-BHC	ug/l		ND@1.6
beta-BHC	ug/l		ND@1.6

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ATTACHMENT 5
MW-1t AND MW-6t CORRECTION FACTOR GRAPH

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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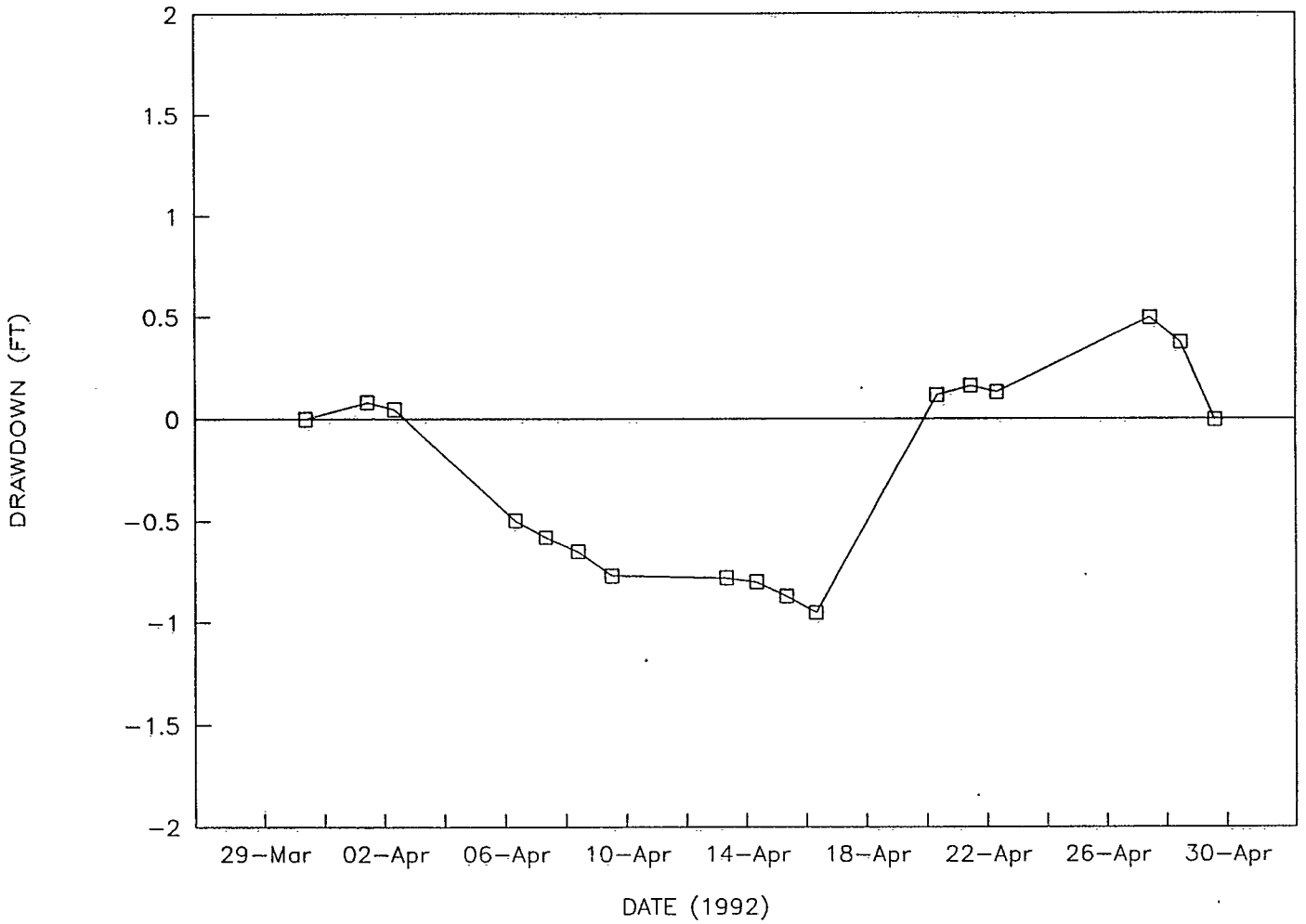
BACKGROUND CORRECTION

LINEMASTER ZONE 1 DEWATERING STUDY



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ATTACHMENT 6
GWAP GRAPHICAL ANALYSIS RESULTS

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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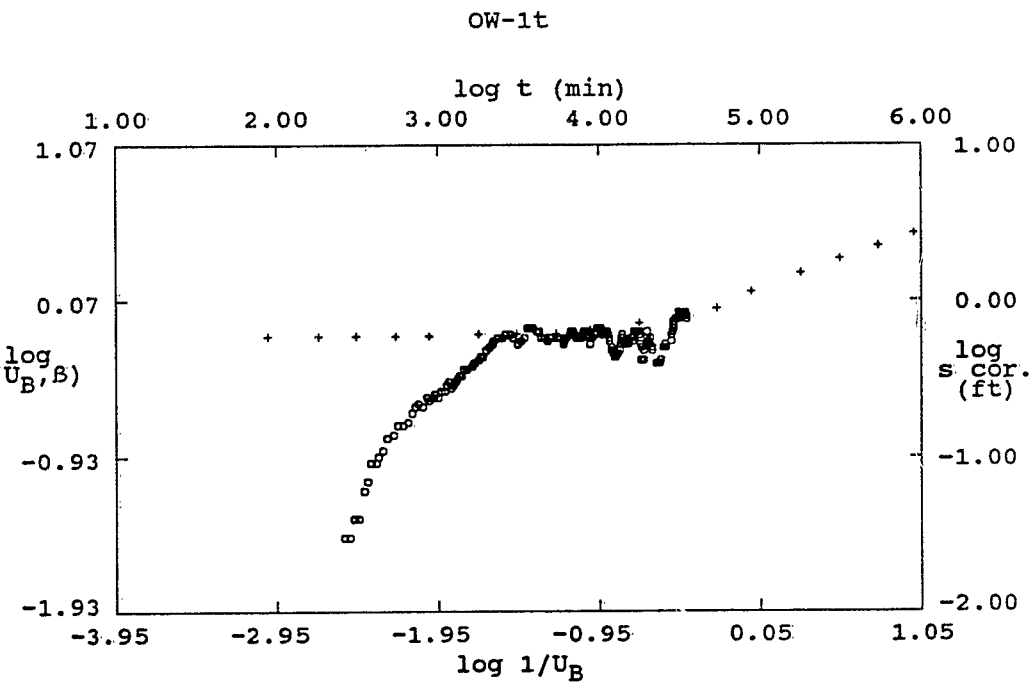

o - Data

\+ - Type Curve
Unconfined Delayed: beta = 0.40

SOLUTION

Transmissivity = 4.038E+0000 gpd/ft
Aquifer Thick. = 3.500E+0001 ft
Hydraulic Cond.= 1.154E-0001 gpd/sq ft
Specific Yield = 1.485E-0001

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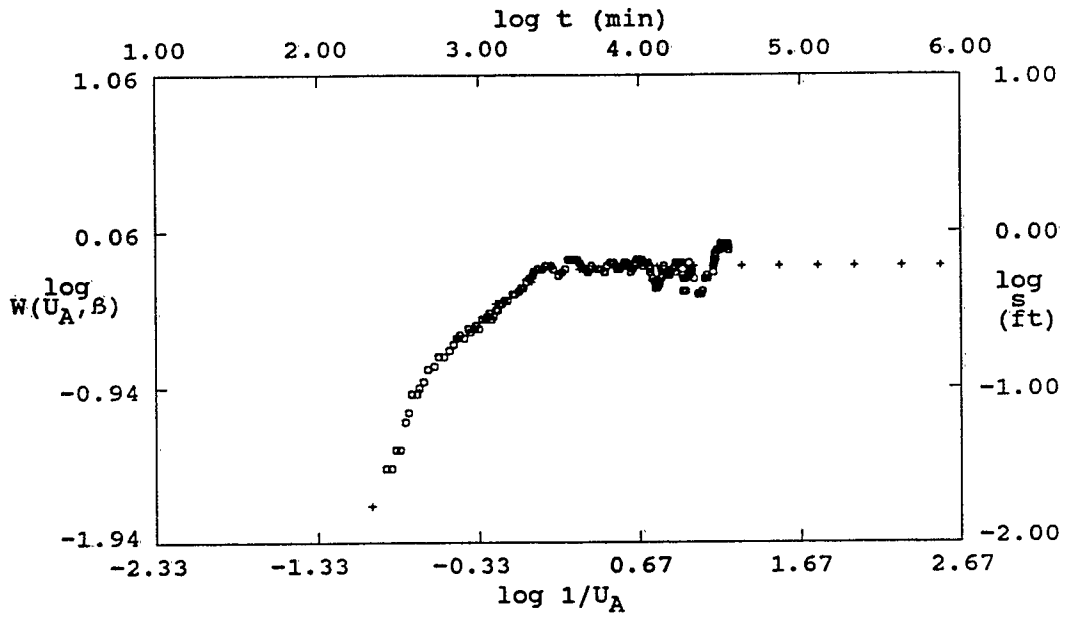

o - Data

\+ - Type Curve
Unconfined Elastic: beta = 0.40

SOLUTION

Transmissivity	=	3.946E+0000 gpd/ft
Aquifer Thick.	=	3.500E+0001 ft
Hydraulic Cond.	=	1.128E-0001 gpd/sq ft
Storativity	=	3.482E-0003

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ATTACHMENT 7
DISTANCE-DRAWDOWN ANALYSIS RESULTS

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REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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FUSS&O'NEILL inc
consulting engineers

PREPARED BY	DATE	CHECKED BY	DATE	PROJECT N
KWK	6/12/92	JTO	4/27/92	86-88

SHEET NO 1 of 1

Distance Drawdown Calculations

$$T = \frac{528\,Q}{\Delta s}$$

$$T = \frac{528(0.03\text{ gpm})}{1.05\text{ ft}}$$

$$T = 15.1\text{ gpd/ft}$$

$$T = 2.02\text{ ft}^2\text{/day}$$

$$K = \frac{T}{b}$$

$$K = \frac{2.02\text{ ft}^2\text{/day}}{35\text{ ft}}$$

$$= 0.058\text{ ft/day}$$

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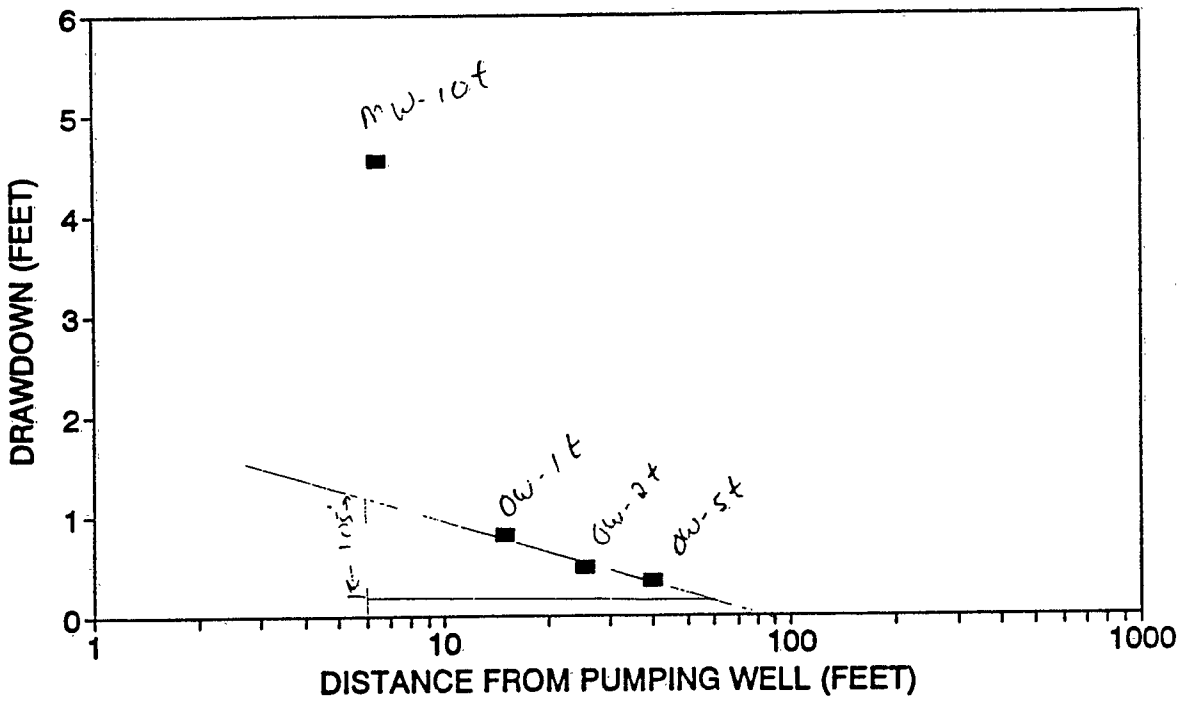
DISTANCE - DRAWDOWN ANALYSIS

ZONE 1 PUMPING TEST



22 days

ATTACHMENT 8
LONG-TERM PUMPING RATE CALCULATION

ZONE 1 PUMPING TEST/DEWATERING FEASIBILITY STUDY
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
LINEMASTER SWITCH CORPORATION
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FUSS&O'NEILL consulting engineers

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JTO	7/29/92	JLS	7/29/92	86-08

LINEMASTER SWITCH CORP. ZONE 1 PUMPING TEST / DEWATERING FEASIBILITY STU

SHEET NO 1 of 1

LONG TERM PUMPING RATE CALCULATION

THEIS SOLUTION

$$h_o - h = \frac{Q}{4\pi T} W(u) \qquad u = \frac{r^2 S}{4Tt}$$

$h_o - h$ = DRAWDOWN (ft) = 31 Ft (From PUMPING TEST)
Q = PUMPING RATE (ft^3/day) = UNKNOWN
T = TRANSMISSIVITY (ft^2/day) = 0.53 ft^2/day (AVERAGE OF PUMPING TEST & MW-104 SLUG TEST)
r = RADIUS FROM PUMPING WELL (Ft) = 1 ft
S = STORATIVITY = 0.004 DIMENSIONLESS (From PUMPING TEST)
t = TIME (DAYS) ARBITRARY

$$u = \frac{1^2 \cdot 0.004}{4(0.53)(180)} = 1.05 \times 10^{-5} \qquad W(u) = 10.94 \text{ (FREEZE AND CHERRY (1979) TABLE 10.1}$$

$$Q = \frac{(h_o - h)(4\pi T)}{W(u)}$$

$$= \frac{(31\ ft)(4\pi\ 0.53\ ft^2/day)}{10.94}$$

$$= 18.87\ \frac{ft^3}{day} \times 7.48\ \frac{gal}{ft^3} \times \frac{1\ day}{1440\ min} = 0.10\ gpm$$

ASSUMPTIONS: DRAWDOWN @ r = 1 = DRAWDOWN AT PUMPING WELL
EFFICIENCY of WELL = 100%

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APPENDIX K
USGS ELECTROMAGNETIC
GEOPHYSICAL RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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FILE 86-88

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

January 11, 1989

RECEIVED
JAN 16 1989
FUSS & O'NEILL, INC.

Mr. Gary Kennett
Linemaster Switch Coporation
Plaine Hill Road
P.O. Box 120
Woodstock, CT 06281

Dear Gary,

Enclosed is a draft copy of the the Linemaster Geophysical Report prepared by the U.S.G.S. The report is based on field data collected by the U.S.G.S. during their site visit from September 16 - 27, 1988.

After everyone has had a chance to review this report, we should meet to discuss the results and decide on the location of any additional monitoring wells necessary on the site.

Please call me if you have any questions.

Sincerely,

Geoff McGean
Linemaster Switch Project Manager

cc: Bob Potterton (Fuss & O'Neil)
Naomi Davidson (CT DEP)
John Zannos (EPA)
Armand Balasco (ADL)

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USGS-OFR-88-

United States
Department of the Interior
Geological Survey

ELECTROMAGNETIC MAPPING OF LOW-CONDUCTIVITY ZONES RELATED TO HAZARDOUS WASTE TRANSPORT NEAR WOODSTOCK, WINDHAM COUNTY, CONNECTICUT

by

Brian D. Rodriguez[1], William F. Hanna[2], David L. Daniels[2], and Stephen L. Snyder[2]

Open-File Report 88-

1988

This report is preliminary and has not been reviewed for conformity with U. S. Geological Survey editorial standards and stratigraphic nomenclature. Company names are for descriptive purposes only and do not constitute endorsement by the U. S. Geological Survey

Prepared by the U. S. Geological Survey
for the
Environmental Protection Agency

[1] U. S. Geological Survey, Denver, CO 80225
[2] U. S. Geological Survey, Reston, VA 22092

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INTRODUCTION

Objectives

On behalf of the Environmental Protection Agency (EPA), ground-based geophysical surveys were conducted by the authors at a site near Woodstock, Windham County, Connecticut, during the period September 16 - 27, 1988, for purposes of hazardous waste assessment (fig. 1). According to the EPA, some trichloroethylene (TCE), a volatile organic compound which is heavier than water, may have leaked over a period of many years from an underground tank near the crest of a hilltop to water wells of homes located near the base of the hill. Of great interest to the EPA are whether geophysical techniques can be used to directly detect source areas or plumes of contaminant and whether they can be used to identify subsurface zones of contaminant migration. One of the immediate purposes for such detection of contaminant or identification of migration paths is to efficiently site new boreholes which will serve as additional monitoring wells.

Geologic setting

The study area, which is a site about one-half mile square located in the western part of the Putnam 7.5-minute quadrangle, is characterized by rolling topography covered by grassy meadows, ponds, and sparse deciduous and coniferous trees. The area is underlain by two mapped bedrock units (fig. 2) covered in most places by highly variable thicknesses of glacial till. Barosh (1977) describes the bedrock units as a metagraywacke schist and a pegmatite intrusive. Dixon (1982) describes one unit as a thinly layered, fine-grained calcic schist of three compositional varieties belonging to the Hebron Formation of Silurian or greater age. This schist is nonresistant to erosion and is poorly exposed except where it is intruded by more resistant pegmatite. She describes the other unit as pegmatite of Devonian or greater age, varying in composition from granite to quartz diorite, commonly well foliated and resistant to erosion, and occurring largely as thick sills between layers of the host schist but also as thin sills and dikes a few centimeters to a few meters thick. The till which overlies these bedrock units is described in borehole records as sand, silt, gravel, and cobbles.

The geologic materials of greatest interest in the investigation are those comprising the overburden, that is, the combination of glacial till and weathered, fractured, and foliated bedrock where it underlies the till at shallow depth. Hydrogeologic studies by Fuss & O'Neill Consulting Engineers, based on the monitoring of nine on-site wells (table 1), indicate that contamination has been detected in the till overburden

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groundwater system at one well (MW-6) and in the shallow bedrock groundwater system at three wells (MW-7, 8, and 9). As another part of this hydrogeologic investigation, the directions of fractures and foliations of both bedrock units have been measured from available outcrops in the study area. These observations suggest that steeply dipping fractures in shallow bedrock may exert significant control over the preferred flow directions of contaminant. Brief inspection of outcrops by the authors further suggest that both subhorizontal and steeply inclined planar features may contribute to controlling the subsurface flow.

Because groundwater systems in both till and shallow bedrock are known to convey contaminant within the study area, it is of interest to know where till and fractured subjacent bedrock occur in appreciable amounts in the subsurface. One physical property characteristic of both types of overburden which can be geophysically sensed by ground-based methods is their relatively high electrical conductivity.

Constraints

The authors were dispatched to the work area with specific EPA- or USGS-owned or leased geophysical equipment which was made available on short notice. Although we had neither a base map for preliminary planning purposes nor specific knowledge of the contaminant problem prior to arrival, we were soon provided with large-scale base maps showing topography, water table, and monitor-well sites as well as detailed logs of monitor-well boreholes by Fuss & O'Neill Consulting Engineers; maps of many known subsurface cultural features, such as metal objects and conduits, by Linemaster Switch Corporation; and information, coupled with a brief field tour, about the contamination problem by personnel of the EPA, Fuss & O'Neill Consulting Engineers, and the Linemaster Switch Corporation. After a few days of testing the feasibility of using the available geophysical equipment for accomplishing objectives, we were informed by the EPA, in consultation with Linemaster Switch Corporation, about the specific time period during which our work could be supported. The alloted time included that needed for non-geophysical surveying, namely, establishing horizontal control, flagging, and staking of station locations at a 25-ft interval along more than 11,000 ft of profile lines by taping along the ground surface from points identified on the large-scale base maps. Thus, important constraints of the geophysical investigations were limited time, limited equipment, and lack of highest-precision topographic control.

Available equipment

Geophysical equipment available for the work was designed for ground-based surveys or portable measurements. This

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equipment included two EPA-owned electromagnetic systems, one USGS-leased system for Very Low Frequency (VLF) and magnetic surveying, and USGS-owned magnetometers and magnetic susceptibility meter. The equipment consisted of (1) a Geonics Limited EM31 Non-contacting Terrain Conductivity Meter, (2) a Geonics Limited EM34 Ground Conductivity Electromagnetic System, (3) an EDA Instruments Omni Plus VLF/Magnetometer System, (4) a Geometrics proton precession magnetometer G-816, (5) a Geometrics Memory-Mag proton precession magnetometer G-856, and (6) a Geoinstruments JH-8 magnetic susceptibility meter. Because the VLF system was inconsistently operational, the limited number of acquired VLF data were used for comparison with some other electromagnetic data but were not used for geophysical interpretation.

Strategy for accomplishing objectives within constraints

Because the compound TCE in small concentrations possesses no physical property known to the authors which is directly detectable by ground-based geophysical surveys, attention was focused exclusively on locating zones which may serve as preferred migration paths for the TCE. The strategy for locating these zones was to map the electrical conductivity of overburden using the EM-31 and EM-34 electromagnetic systems. The electromagnetic measurements, requiring about 90% of the total survey time, were supplemented by magnetic measurements primarily to confirm the subsurface presence of suspected ferrous objects strongly affecting the electromagnetic measurements and secondarily to detect rock magnetization contrasts as an aid to understanding better the geologic setting.

Acknowledgments

We express our appreciation to personnel of Linemaster Switch Corporation, especially Gary Kennett, for their cordial hospitality and permitting our access to the working area beyond normal working hours and throughout weekends. We also acknowledge the technical assistance of Robert S. Potterton, Jr., of Fuss & O'Neill Consulting Engineers both during and after the field investigations. John Zannos and Geoff McGean of the Environmental Protection Agency provided essential liason services to us during the working period.

ACQUISITION OF DATA

General

Geophysical data were acquired along nineteen lines totaling about 11,073 linear feet, the length of each line summarized by technique in table 2 and the orientation of each line shown in plate 2. Line coverage of all surveys totaled about 39,564 ft. Data point spacing varied according to technique as described below.

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EM-31

The EM-31 provides a direct measurement of apparent electrical conductivity in units of millimhos per meter (mmho/m) using a patented electromagnetic inductive technique. The instrument is operated by a single observer who carries a horizontal boom, in each end of which is mounted a dipole transmitter and dipole receiver spaced 3.66 m apart and operating at a frequency of 9.8 kHz. The effective depth of exploration, which depends upon conductivity, is on average about 6 m. A measurement made using this instrument is equivalent to that which would be made using conventional resistivity instruments with fixed array spacings over a uniform half space. The primary field induces circular eddy currents in the conductive subsurface, which generate a secondary field measured as a voltage which is directly proportional to conductivity.

The total line coverage for the EM-31 survey was about 11,073 ft with a data point spacing of 25 ft or less than 25 ft in areas of steep signal gradients. In general, both the maximum and minimum quadrature-phase components in the vertical dipole orientation were measured and manually recorded at each station.

EM-34

Operating on the same principles as the EM-31, the EM-34 is designed to sense apparent conductivity at depths greater than that sensed by the EM-31, and under some circumstances, to provide a vertical conductivity profile. The depth of penetration is relatively insensitive to conductivity, but, rather, is determined by instrument geometry--the intercoil spacing and coil orientation. The EM-34 system is operated by two persons, one of whom handles a coil serving as a dipole transmitter and the other handling a similar coil serving as a dipole receiver. In the present survey, the EM-34 was operated at fixed coil spacings of 10 m, 20 m, or 40 m at corresponding frequencies of 6.4 kHz, 1.6 kHz, and 0.4 kHz, all in the vertical coplanar mode, that is, in a mode in which the transmitter and receiver were horizontal dipoles. In this vertical coplanar mode, the instrumant senses to a depth of approximately 0.75 of the intercoil spacing, that is, to depths of about 7.5 m, 15 m, or 30 m for the 10 m, 20 m, or 40 m spacings. As with the EM-31, the EM-34 is read directly in apparent conductivity units of mmho/m, strictly valid over a uniform or layered halfspace.

Total coverage for the EM-34 surveys amounted to approximately 10,158 linear feet for the 10-m spacing, 5,143 linear feet for the 20-m spacing, and 1,282 linear feet for the 40-m spacing, all with midpoints spaced 50 ft apart or less than 50 ft apart in areas of steep signal gradients. For each spacing the quadrature-phase component was measured and manually recorded. To help assess actual penetration depths of the three

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loop spacings, seven soundings incorporating both the vertical coplanar and horizontal coplanar modes were made. Spread centers were located at a point 100 ft east of station 200, line 12; at station 1000, line 5; between stations 100 and 200, line 6; at station 350, line 8; 100 ft south of station 200, line 1; 300 ft south of station 100, line 1, and 250 ft south of station 200, line 5. Unfortunately, each of these soundings was affected too strongly by cultural objects to permit valid solutions for a two-layer model.

VLF

Unlike the EM-31 and EM-34 methods, the VLF method does not make use of a portable power source to produce a primary field. Instead, the primary field is generated at a distant VLF station consisting of large transmitting antennas, each carrying vertically oriented current in phase or synchronous with one another at a specific radio frequency within the 3 to 30 kHz band. When viewed from great distances, the antennas simulate the simple model of a single, oscillating, vertical electrical dipole. At field points hundreds of kilometers distant from a VLF station, such as those of our study area, a VLF wave arrives mainly via a natural waveguide between the ionosphere and the ground and may be approximated by a plane wave. This plane wave has a magnetic field component assumed to be horizontal and oriented at right angles to the line connecting the observation point to the VLF station and has an electric field component which, though not itself usually vertical, is confined to a vertical plane normal to the magnetic field component. Interaction of the plane wave with the relatively conductive earth results in a nearly vertical refraction of the VLF wave into the subsurface, regardless of the incident angle of the wave at the earth's surface. This vertical refraction of the primary VLF wave is accompanied by an initial 45° phase shift of the magnetic component relative to the electric component, strictlyvalid for a uniformally conductive earth. As the wave propagates vertically into the earth, both components are further phase shifted and are damped exponentially by amounts proportional to the square root of conductivity. The interaction of the primary field with the conductive medium gives rise to two types of anomalous current: Vortex current confined mainly within highly conductive bodies, and galvanic current flowing as broad sheets parallel to the surface of the ground. Secondary magnetic fields generated by the anomalous currents add to the primary field to produce a total field having characteristics which can be measured by VLF detection equipment. Further, electric field components can be measured to permit computation of apparent resistivity and apparent phase shift characteristic of the conductive subsurface.

The VLF detection equipment used in our survey is the OMNI-PLUS VLF/Magnetometer system, designed and manufactured by EDA Instruments, Inc. This microprocessor-based system is capable of providing and storing not only VLF electromagnetic data, but also steady-state magnetic data. The OMNI-PLUS system incorporates

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two types of sensors: A pair of proton precession magnetometer sensors supported by a 2.5-m staff and a three-component coil antenna sensor worn on the back. For steady-state measurements, a single magnetometer provides a total-field value for the earth's field, and a second identical magnetometer 0.5 m below the first is used to provide a measurement of the vertical gradient of this field. For the VLF measurement, the magnetic field component is measured by the coil antennas and the electric field component may be measured by attaching probes through the VLF circuitry housing. An electronics console is worn on the front of the operator so that the acquired data may be observed while being stored.

VLF magnetic field parameters are measured, processed, and outputted as

(1) Total field strength--The total field is the sum of the horizontal primary field and an arbitrarily directed secondary field, out-of-phase with the primary field, caused by induced currents. Because of this phase shift, the total field may be imagined over time to trace out an ellipse, called the polarization ellipse. The measured total field component gives the major semi-axis of the polarization ellipse. When plotted in profile form, anomalies appear as distinct bumps directly reflecting anomalous current flow. The total field is corrected automatically for primary field variations caused by atmospheric effects or changes in transmitter power output at the VLF station using the tie-line method. The total field strength parameter is outputted simply as units.

(2) Vertical in-phase component--This parameter, which approximately expresses the tilt of the major axis of the polarization ellipse, is always indicative of target geometry and is always caused by anomalous current flow. This parameter is outputted as percent.

A 4-point Fraser Filter may be automatically computed from the vertical in-phase or tilt data. This filter has a length which spans 4 observation points and it serves as an effective means of sorting anomalies as to depth, because longer wavelength anomalies have deeper sources. Generally, large responses tend to be associated with subsurface conductive zones which are large or highly conductive, or both. Very sharp responses tend to be produced by shallow sources and broad responses tend to be associated with progressively deeper sources. The output of the 4-point Fraser Filter is expressed as percent.

(3) Vertical quadrature (out-of-phase) component--This parameter, which approximately expresses the ellipticity (ratio of minor to major axis) of the polarization ellipse, is sometimes indicative of target geometry but always caused by anomalous current flow. This parameter is outputted as percent.

(4) Vertical dip angle--This angle, an approximate expression of the tilt angle implied by the vertical in-phase component, is

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defined in a vertical plane between the major axis of the polarization ellipse and the horizontal. This parameter is outputted as degrees.

(5) Magnetic primary field direction--This direction is referenced with respect to the direction the operator is facing. This information helps the operator assess whether the signal being measured is valid and to determine whether a conductive body changes the direction of the primary field lines. This parameter is outputted as degrees.

VLF electric field components are measured, processed, and outputted as

(6) Apparent resistivity--This parameter requires measurement of a horizontal electric field component and a horizontal magnetic field component orthogonal to it. The apparent resistivity is equivalent to the resistivity of a uniformly conductive subsurface which would produce the same ratio of electric to magnetic field as that measured over a non-uniformly conductive subsurface. It is expressed by Cagniard's equation:

$$R_{app} = (E_y/H_x)^2 (1/wu_0),$$

where E_y is the electric field component; H_x is the magnetic field component; w is the VLF angular frequency, which is equal to 2(PI)(frequency); and u_0 is the permeability of free space, which is equal to $4(PI)(10^{-7})$ henries per meter. The apparent resistivity parameter is outputted as ohm-meters.

(7) Apparent phase shift--This parameter is the difference in phase between the electric field component and a reference magnetic field component. As previously stated, the phase, or apparent phase in analogy to the apparent resistivity, does not depend on resistivity over uniformly conductive ground and always equals 45°. As the ground becomes progressively less uniformly conductive, the phase will increasingly differ from 45°. The amount of apparent phase shift is proportional to the reciprocal of "skin depth":

$$\text{"Skin depth"} = [2/wu_0 (\text{Conductivity})]^{1/2},$$

where "skin depth" is in meters and conductivity is in mohs (or siemens) per meter. The "skin depth" is the depth at which the amplitude of the wave drops to 0.368 or about one-third of its ititial value; therefore, most of the energy of the wave has been lost at one "skin depth". The apparent phase shift parameter is outputted as degrees.

In the present study, the total profile coverage for the VLF method was 1,750 linear feet and the data point spacing was 25 ft or less than 25 ft in regions of steep signal gradients. The three VLF stations utilized in the survey were Jim Creek, Washington, 24.8 kHz; Cutler, Maine, 24.0 kHz; and Annapolis, Maryland, 21.4 kHz.

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Magnetics

Apart from the limited amount of steady-state magnetic data acquired using the OMNI-PLUS system, about 10,158 linear feet of magnetometer profiles were measured using a Geometrics proton-precession magnetometer, corrected for diurnal variation using a Geometrics Memory-Mag proton-precession magnetometer at a stationary base station. The data point spacing was 25 ft or less than 25 ft in regions of steep signal gradient.

Twenty-nine measurements of magnetic susceptibility were made using a Geoinstruments [illegible]-8 magnetic susceptibility meter on core samples of pegmatite and Hebron schist obtained from monitor wells MW-5, MW-7, and MW-8. Original readings were corrected for core geometry using the manufacturer's recommended procedures.

COMPUTER PROCESSING OF DATA

Contour plots of data derived from the EM-31, EM-34, and magnetometer surveys were obtained through the following sequence of steps:

(1) On a mylar base map provided by Fuss & O'Neill Consulting Engineers, all profile lines, station points, and well locations were initially inked. The inked base map was aligned and registered on a Summagraphics ID Digitizer, and the x-y coordinates of all data points and well locations were digitized by hairline cursor. The resulting data file was converted to several other data files for addition of z values, attachment of labels, and graphical editing with real-time correcting of errors.

(2) All edited x-y-z files were gridded using a minimum-curvature algorithm (Briggs, 1974; Webring, 1981). After each type of filtering subsequently applied, the gridded data were contoured on a Hewlett-Packard 7585 Drafting Plotter using an algorithm for splining under tension (Cline, 1974; Evenden, 1975; Godson and Webring, 1982).

(3) The gridded data were plugged with default values in order to prepare the data set for test filtering. The data were subsequently low-pass filtered using a Fast Fourier Filtering program (Hildenbrand, 1983). The resulting filtered data set was then unplugged so that for the contouring process, contours would appeared only where data exist.

(4) As an alternative to the FFT filtering of (3) above, a graphics editor was used to selectively remove spurious values--that is, those producing spike anomalies--after which the edited data were gridded and contoured. The results of this eyeball-filtering process differed little from the low-pass filtered product but was judged to offer a map slightly less cluttered by the effects of metallic or ferrous cultural effects.

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Brian: Please add the following if the above narrative is retained--

Briggs, I.C., 1974, Machine contouring using minimum curvature: Geophysics, v. 39, n0. 1, p. 39-48.

Cline, A.K., 1974, Scalar- and planar-values curve fitting using splines under tension: Communications of the Association of Computer Machinery, v. 17, n0. 4, p. 218-223.

Evenden, G.I., 1975, A general purpose contouring system: U.S. Geological Survey Open-File Report 75-317, 107 p.

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****

INTERPRETATION

General

The observed data and a generalized interpretation of these data are presented on plates 3 - 9 and in figures 3 - 8 in the form of contour maps and an annotated base map. Results of the feasibility line are summarized in figure 9.

EM-31 and EM-34

The unfiltered EM-31 and EM-34 data (figures 3 and 4) are strongly influenced by surface and shallow cultural features which are metallic or ferrous, or both. The influence of culture in the forms of buried pipes, cables, well casings, metallic trash, and articles near or beneath manmade ponds and channels, may also be seen in profile form on lines 11, 2, 12, and 5 (fig. ?) where EM-34 data were collected in the vertical coplanar (horizontal dipole) mode at spacings of 10, 20 and 40 m. Although the filtered contoured data (figures 6 and 7) retain some of this cultural noise, they appear to be useful in delineating increased thicknesses or increased conductivities of overburden in the forms of both glacial till and highly fractured bedrock which in many places immediately underlies the till. Locally, for example, the combination of EM-31 and EM-34 data implies that a bedrock outcrop on line 18 is isolated float, rather than a protuberance of subjacent bedrock (plate 9), because the low conductivity measured at the exposure does not extend to appreciable depth.

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More regionally, the fact that both sets of data point to major occurrences of horizontal metallic conduit presumably buried many years ago and not shown on available maps may have some bearing on the chemical contamination problem. For example, it is possible that zones of disturbed overburden surrounding the buried conduit offer paths of least resistance to the shallow flow of groundwater or contaminant under some hydrological conditions. However, of even greater interest, it is possible that regions underlain by greater till thicknesses (known to have relatively high conductivity) are underlain also by more pervasively fractured bedrock (inferred to have relatively high conductivity), thereby offering easier paths for contaminant migration. Thus, the regions on the maps showing relatively high conductivities, whether because of cultural features or increased overburden, are those of greatest interest to contaminant migration. The regions not heavily influenced by culture but showing high conductivities are recommended more highly than surrounding areas for future drilling of monitoring wells.

The shaded areas of plate 9 imply near-surface competent bedrock having a thickness of less than 20 ft. *** Brian: Does the foregoing sentence have the meaning you want it to have? *** Hatched areas correspond to overburden of 20 to 30 ft inferred thickness. The blank areas correspond to overburden thicknesses inferred to be more than 30 ft--of presumably greatest interest to the assessment of subsurface flow of contaminant.

VLF

The many VLF parameters displayed in the feasibility profile (figures ? and ?) also show isolated effects of cultural noise. The parameters associated with measurements of only the VLF magnetic field components are expectedly self-consistent with one another and are mainly useful in confirming the presence of cultural noise along this line. The main parameter associated also with the electric field component--apparent resistivity--is manifested by a curve, which though also influenced by culture, indicates a range of 100 to over 10,000 ohm-meters, suggesting a depth of VLF wave penetration of from 50 to over 1,000 ft.

Feasibility profile

This range of resistivities and depths ofpenetration inferred from VLF data can be compared with conductivities measured using the EM-31 and EM-34 equipment on line 11--our "feasibility profile". The seven independent sets of conductivity data along line 11, which are summarized in table ** and shown in figure **, show a progressive decline in apparent conductivity from the beginning point to the end point of the line, signaling generally a thinning of overburden in that direction. The data also show that, as successively greater depths are sensed, respectively, by the EM-31, EM-34(10m), EM-34(20m), EM-34(40m), and the OMNI-PLUS three VLF frequencies, apparent conductivities significantly

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decrease. At one point along line 11, namely a point about 566 ft from the beginning of the line, a simple two-layer model may be computed using conventional techniques applied to the EM-34 vertical coplanar (horizontal dipole) mode at the 10, 20, and 40 m spacings. The solution here gives a top-layer thickness of 6.0 m; nearby well MW-6 indicates a top-layer thickness of 7.0 m. Our model's top-layer conductivity is about 3.6 mmho/m and its subjacent conductivity is about 0.3 mmho/m. These values appear to be generally consistent with conductivity trends shown on the various profiles.

Magnetics

The unfiltered version of the total-intensiy ground magnetic anomaly map serves to verify the presence of subsurface artifacts detected in the EM-31 and EM-34 conductivity surveys. The filtered version defines a generally north-trending low-amplitude high, which on the basis of magnetic susceptibility measurements, is inferred to be caused by a magnetic phase of metagraywacke schist (Hebron schist) parallel to the regional geologic strike.

CONCLUSIONS AND RECOMMENDATIONS

(1) The active-source electromagnetic, VLF, and magnetic techniques which were available to us for this study are incapable of directly detecting the concentrations of TCE known to be present from chemical analyses, and thus are not amenable to the direct detection of other TCE point sources or plumes. Neither do these geophysical techniques offer sufficiently high resolution to permit the direct identification of the pervasiveness or precise geometric attitudes of subsurface bedrock fractures.

(2) Unfiltered EM-31 and EM-34 conductivity maps and the ground magnetic anomaly map delineate some unmapped metallic or ferrous cultural artifacts, such as buried horizontal pipes, which may serve occasionally as shallow disturbed-soil zones of contaminant migration.

(3) Filtered EM-31 and EM-34 conductivity maps delineate regions of relatively high conductivity where overburden in the form of glacial till, and possibly also in the form of subjacent fractured bedrock, are relatively thick. These regions of higher conductivity appear to be more favorable targets for the siting of future monitoring wells than regions of lower conductivity.

(4) If future geophysical investigations are warranted, it is recommended that the self-potential (SP) method be considered for its usefulness in measuring naturally occurring dc potentials resulting from contaminated groundwater which may have an anomalous pH, salinity, or metallic ion content. For the direct detection of shallow fractured bedrock, the ground penetrating radar (GPR) technique is recommended if the subsurface is low in clay content and shallow S- or P-wave seismology is recommended if clay content is high. In local regions, precise gravimmetry

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using closely spaced, elevation-surveyed stations could be used to help define local undulations of bedrock underlying till.

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STA ID	10m	20m	40m	3.6m	24.0	21.4	24.8	GM	OP	OPVG
1100000	---	---	----	6.20	4.87	3.61	6.90	--	84	-1.0
1100250	---	---	----	6.60	3.62	2.61	5.86	37	19	-1.7
1100500	---	---	----	6.15	3.46	2.58	4.08	52	34	0.9
1100664	4.8	---	----	-----	----	----	-----	--	--	----
1100750	---	---	----	5.35	2.79	2.06	3.83	60	42	0.5
1100828	---	4.2	----	-----	----	----	-----	--	--	----
1101000	---	---	----	5.15	2.37	2.23	2.90	65	48	1.1
1101156	---	---	4.0	-----	----	----	-----	--	--	----
1101164	4.1	---	----	-----	----	----	-----	--	--	----
1101250	---	---	----	4.80	2.10	2.58	1.94	68	50	0.6
1101328	---	3.8	----	-----	----	----	-----	--	--	----
1101500	---	---	----	5.10	2.16	2.22	2.13	69	52	0.2
1101656	---	---	-3.0	-----	----	----	-----	--	--	----
1101664	3.9	---	----	-----	----	----	-----	--	--	----
1101750	---	---	----	6.70	2.50	1.54	1.81	69	51	1.3
1101828	---	neg	----	-----	----	----	-----	--	--	----
1102000	---	---	----	15.75	6.68	3.45	9.66	76	56	4.5
1002156	---	---	1.5	-----	----	----	-----	--	--	----
1102164	3.8	---	----	-----	----	----	-----	--	--	----
1102250	---	---	----	13.50	9.23	7.87	14.40	53	38	-4.1
1102328	---	3.3	----	-----	----	----	-----	--	--	----
1102500	---	---	----	5.65	2.20	1.86	1.67	68	52	-0.4
1102656	---	---	2.6	-----	----	----	-----	--	--	----
1102664	3.1	---	----	-----	----	----	-----	--	--	----
1102750	---	---	----	4.20	1.57	1.27	1.65	70	52	0.2
1102828	---	2.8	----	-----	----	----	-----	--	--	----
1103000	---	---	----	3.80	1.41	1.02	1.05	66	49	0.1
1103156	---	---	1.7	-----	----	----	-----	--	--	----
1103164	2.9	---	----	-----	----	----	-----	--	--	----
1103250	---	---	----	3.95	1.10	0.87	0.83	62	47	-1.2
1103328	---	2.3	----	-----	----	----	-----	--	--	----
1103500	---	---	----	3.85	1.08	0.83	0.87	62	50	0.8
1103656	---	---	2.5	-----	----	----	-----	--	--	----
1103664	2.8	---	----	-----	----	----	-----	--	--	----
1103750	---	---	----	3.40	1.33	1.05	0.90	65	51	1.3
1103828	---	2.0	----	-----	----	----	-----	--	--	----
1104156	---	---	1.7	3.45	1.08	0.88	0.94	65	48	1.2
1104164	3.0	---	----	-----	----	----	-----	--	--	----
1104250	---	---	----	3.15	1.13	0.87	0.52	60	44	0.1
1104328	---	2.1	----	-----	----	----	-----	--	--	----
1104500	---	---	----	3.25	1.02	0.86	0.59	57	43	0.0
1104656	---	---	2.1	-----	----	----	-----	--	--	----
1114664	2.4	---	----	-----	----	----	-----	--	--	----
1114750	---	---	----	3.10	0.86	0.63	0.55	56	42	0.0
1114828	---	2.1	----	-----	----	----	-----	--	--	----
1115000	---	---	----	3.00	0.91	0.70	0.43	52	37	-0.2
1115156	---	---	1.8	-----	----	----	-----	--	--	----
1115164	2.2	---	----	-----	----	----	-----	--	--	----
1115250	---	---	----	3.15	0.90	0.76	0.48	42	29	-1.6
1115328	---	1.8	----	-----	----	----	-----	--	--	----
1115500	---	---	----	3.45	0.81	0.69	0.52	46	33	-1.3
1115656	---	---	1.2	-----	----	----	-----	--	--	----
1115664	2.5	---	----	-----	----	----	-----	--	--	----
1115828	---	1.8	----	-----	----	----	-----	--	--	----
1116156	---	---	1.6	-----	----	----	-----	--	--	----

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Table xxx.--Electrical conductivities mesured at points along "feasibility line" 11 using the EM-34 with spacings of 10, 20, and 40m; the EM-31 with fixed spacing 3.66m; and VLF recordings from stations transmitting at 24.0, 21.4, and 24.8 kHz. Magnetometer measurements also shown are G-816 data corrected using G-856 baseline data; OMNI-PLUS uncorrected data; and OMNI-PLUS vertical gradiometer data.

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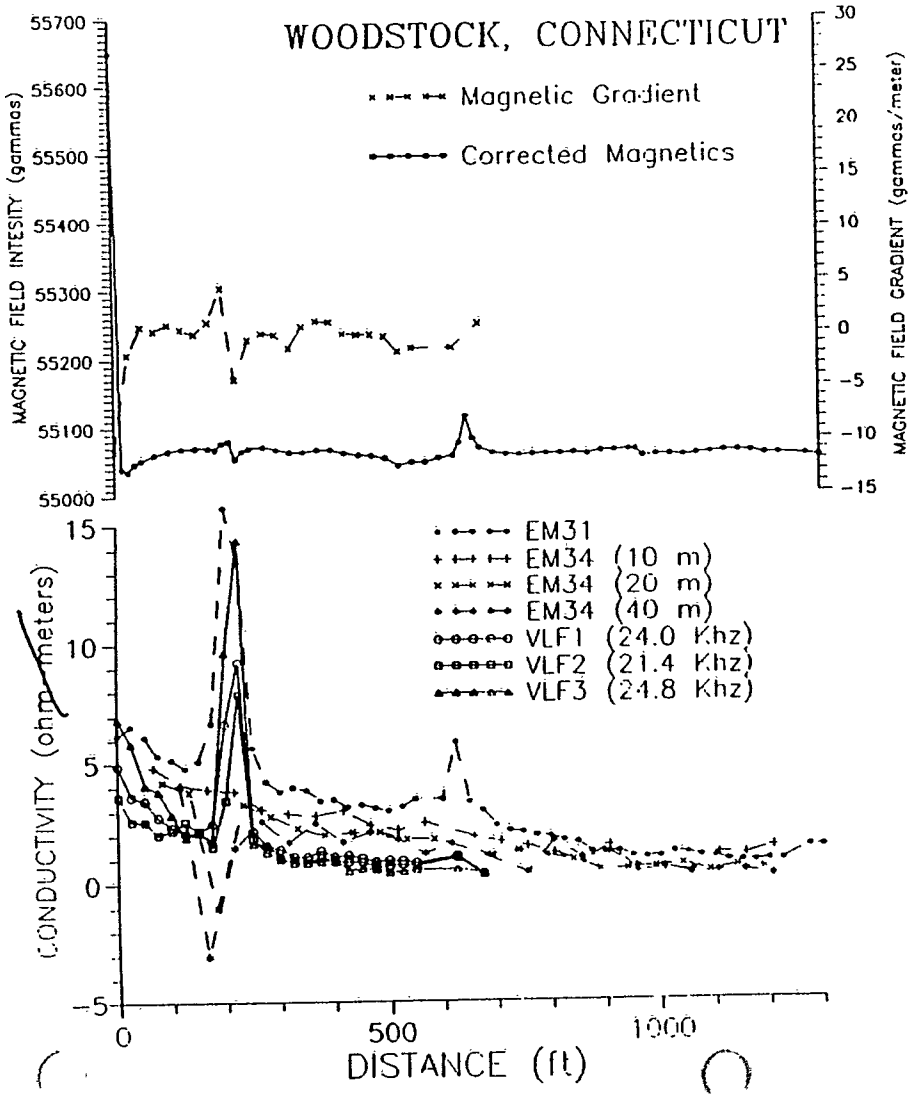
FEASIBILITY PROFILE

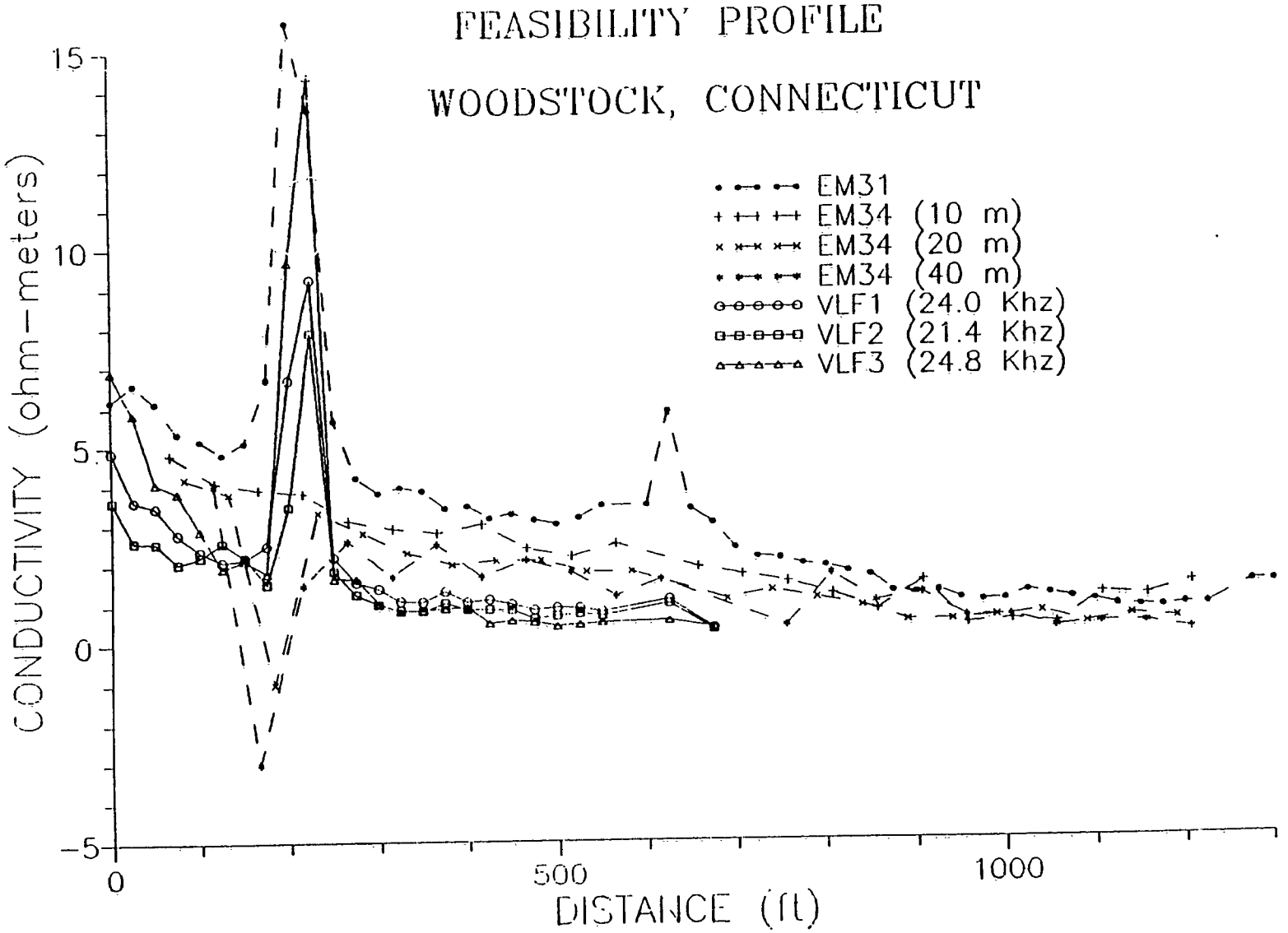
WOODSTOCK, CONNECTICUT



- Data shows changes in thickness of ~~general thickness~~ overb.
- Data heavily influenced by culture except for EM34(10)
- Line 12 may show channel at X = ~~1100 ft~~ 1200 to 1500 ft
- end of L12 & part of L5 may be feeling the pond conductivity or it may have mapped a channel

FEASIBILITY PROFILE

WOODSTOCK, CONNECTICUT



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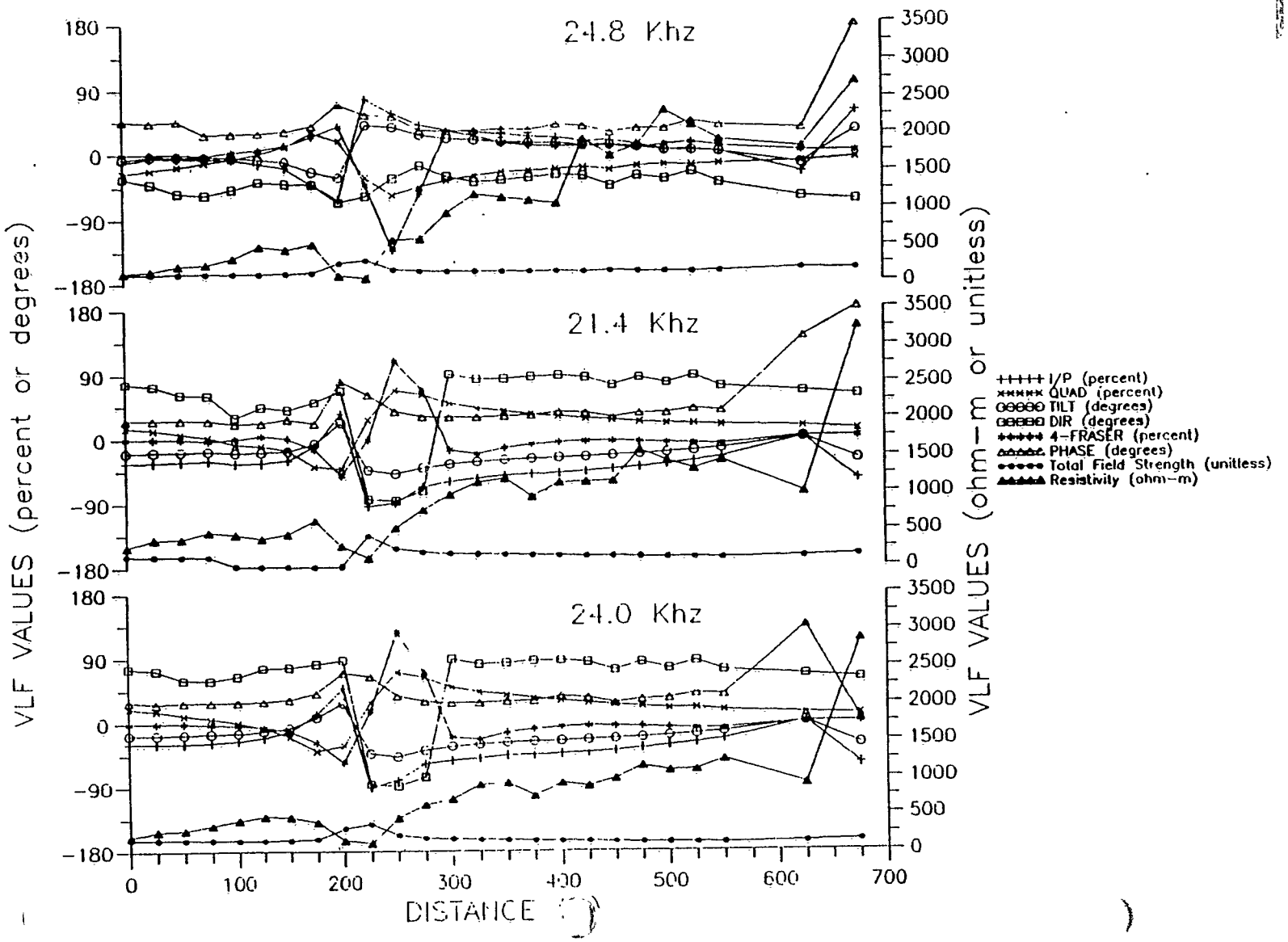
FEASIBILITY PROFILE, WOODSTOCK, CONNECTICUT



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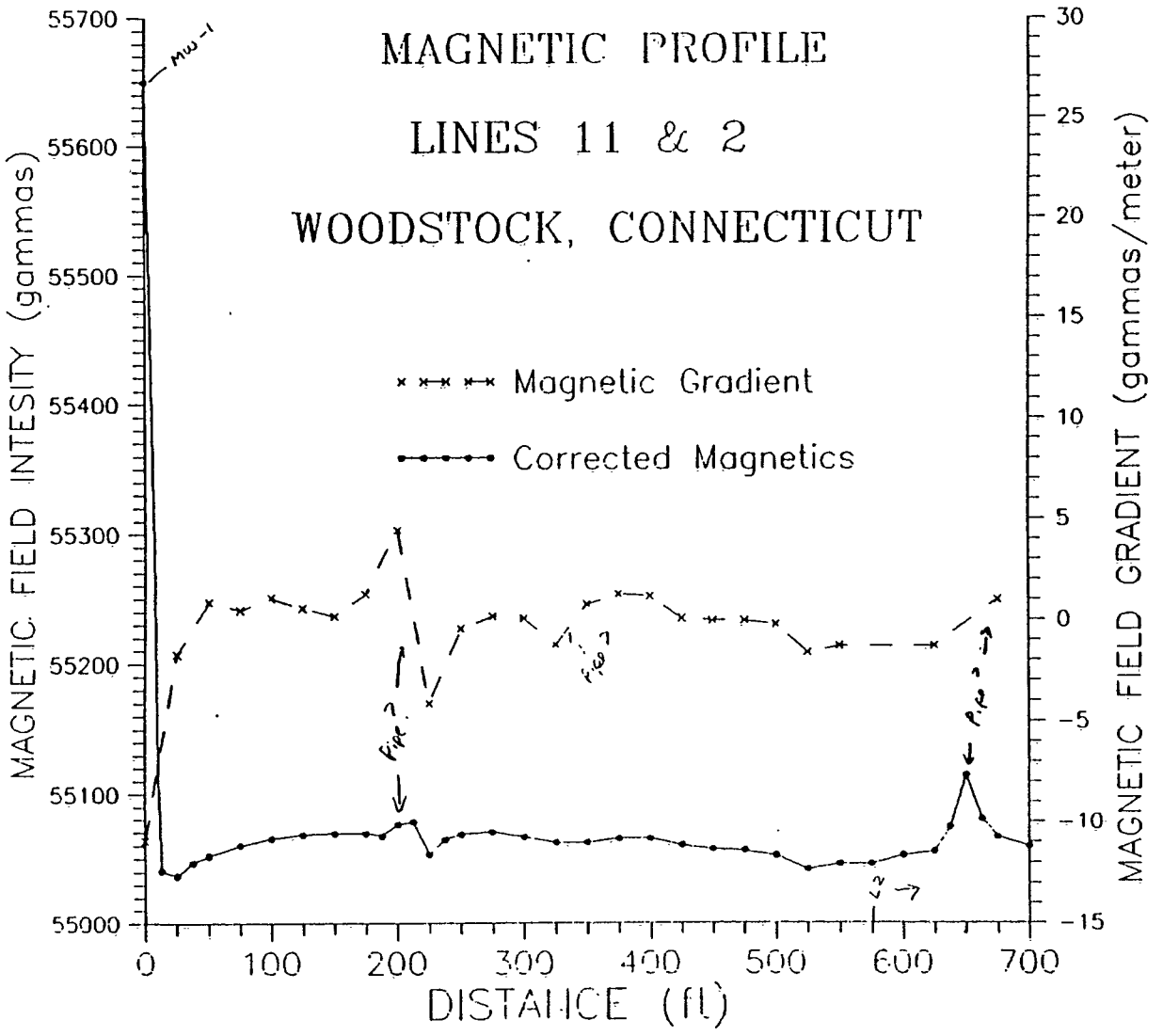
MAGNETIC PROFILE

LINES 11 & 2

WOODSTOCK, CONNECTICUT



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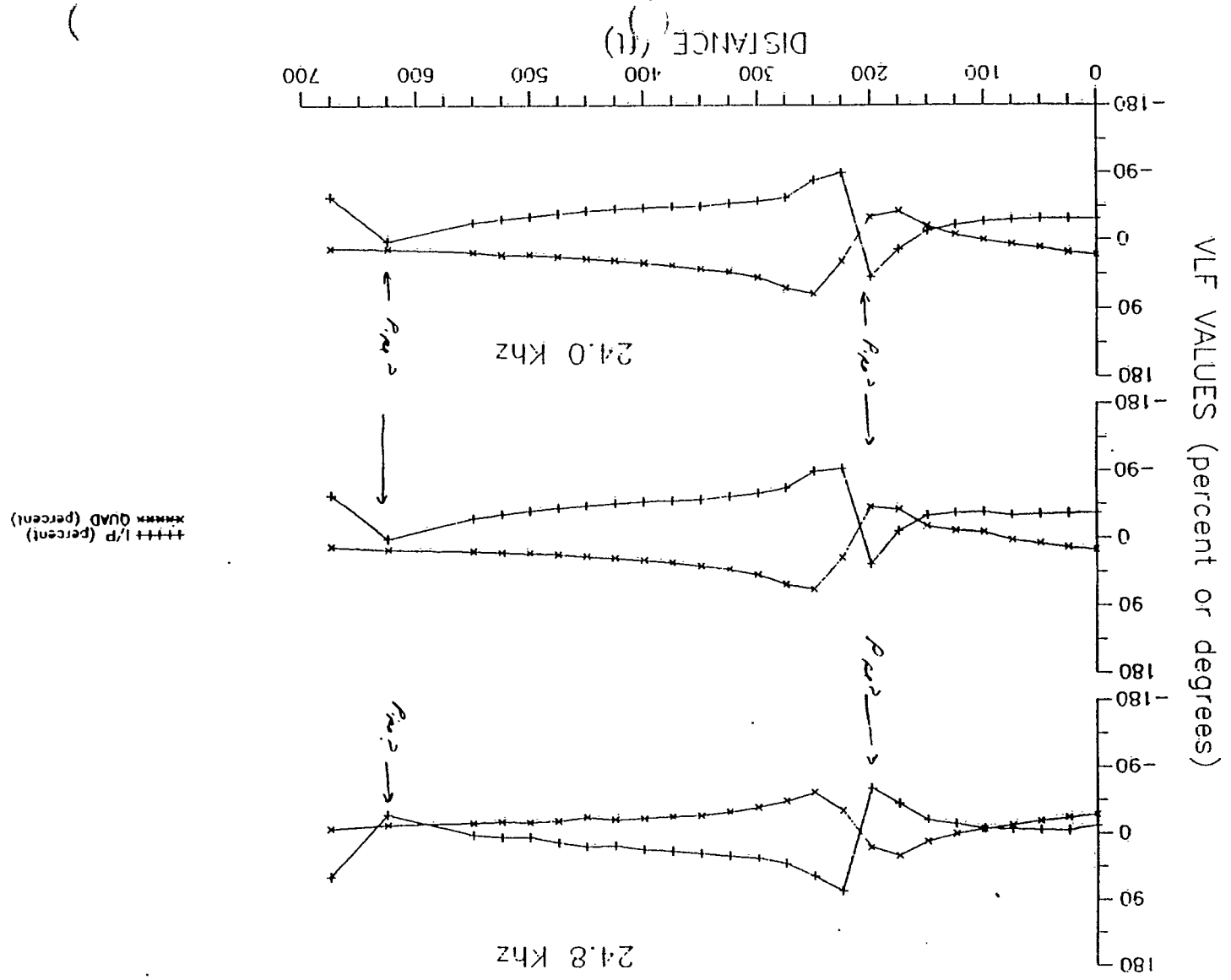

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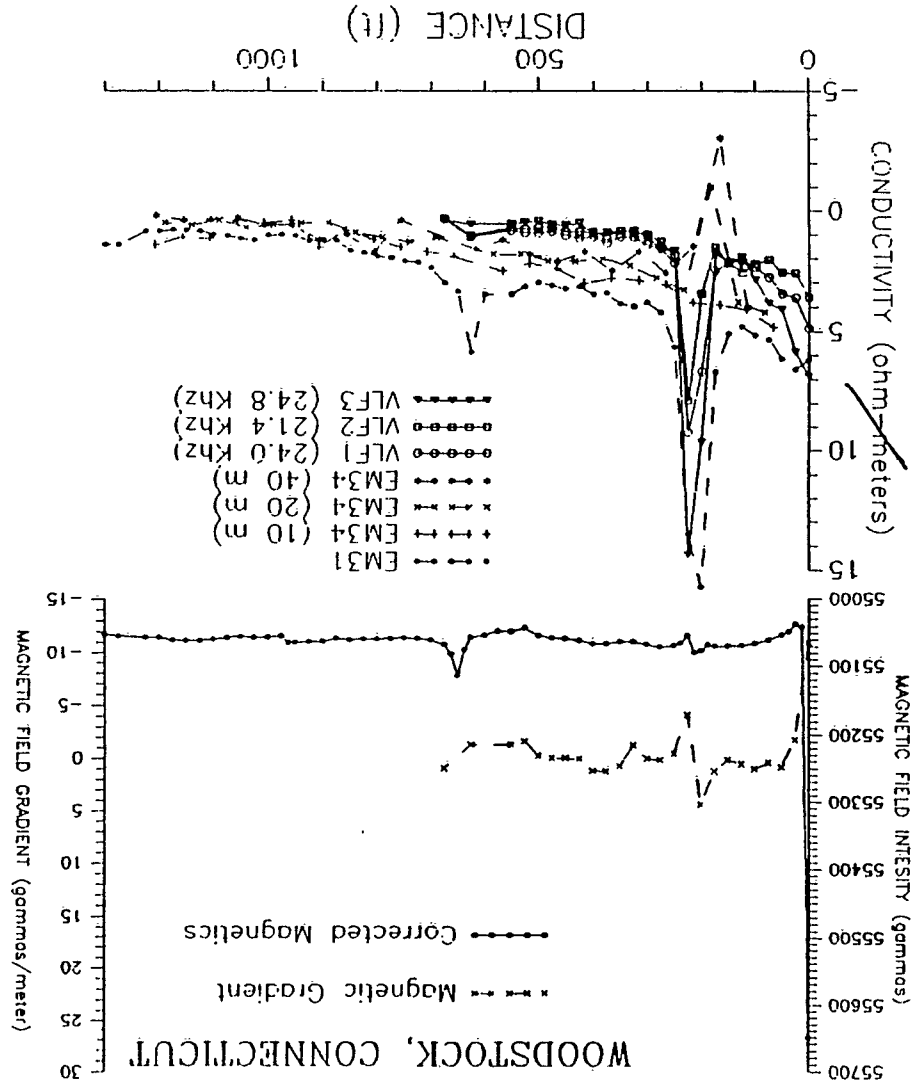
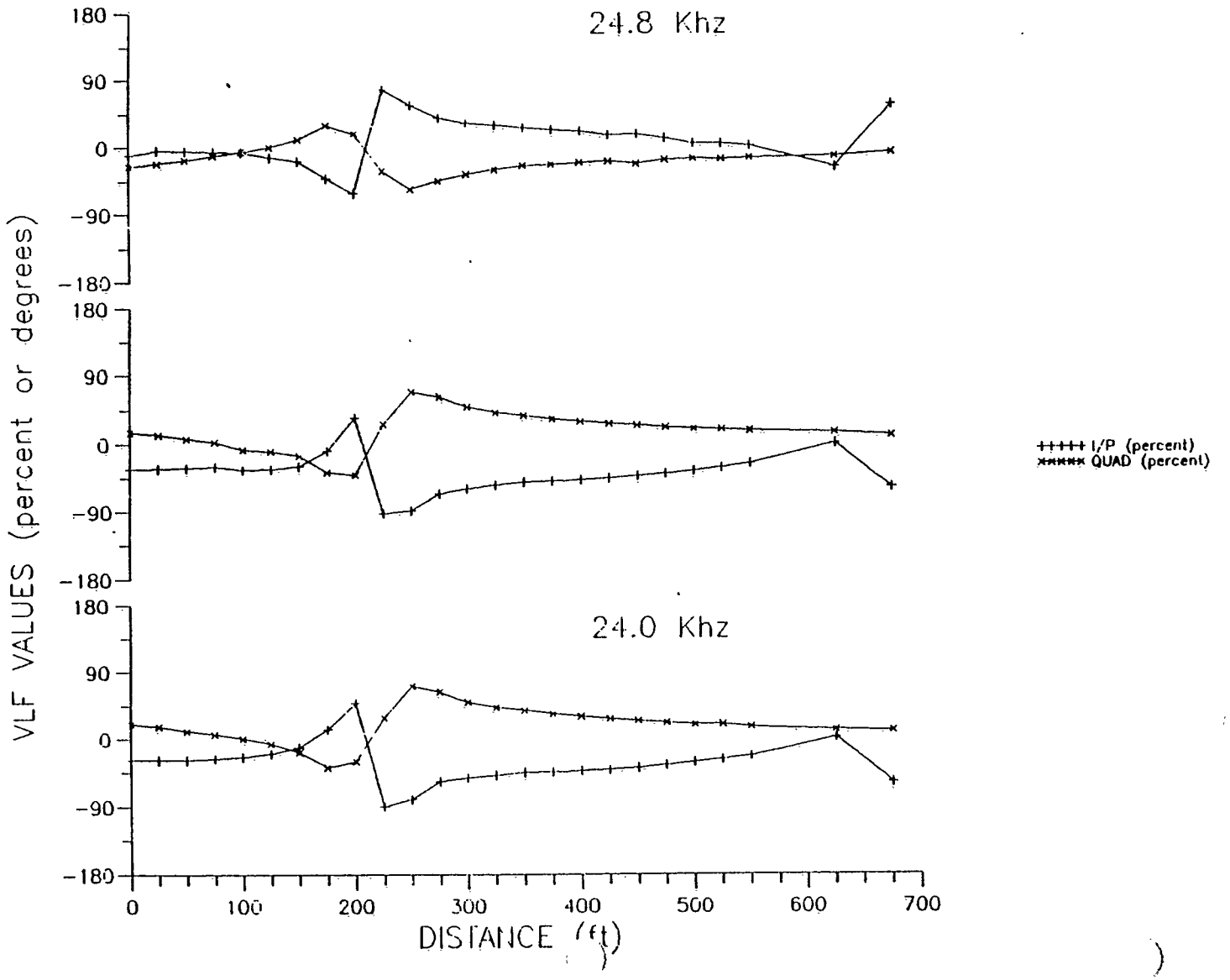


FEASIBILITY PROFILE, WOODSTOCK, CONNECTICUT



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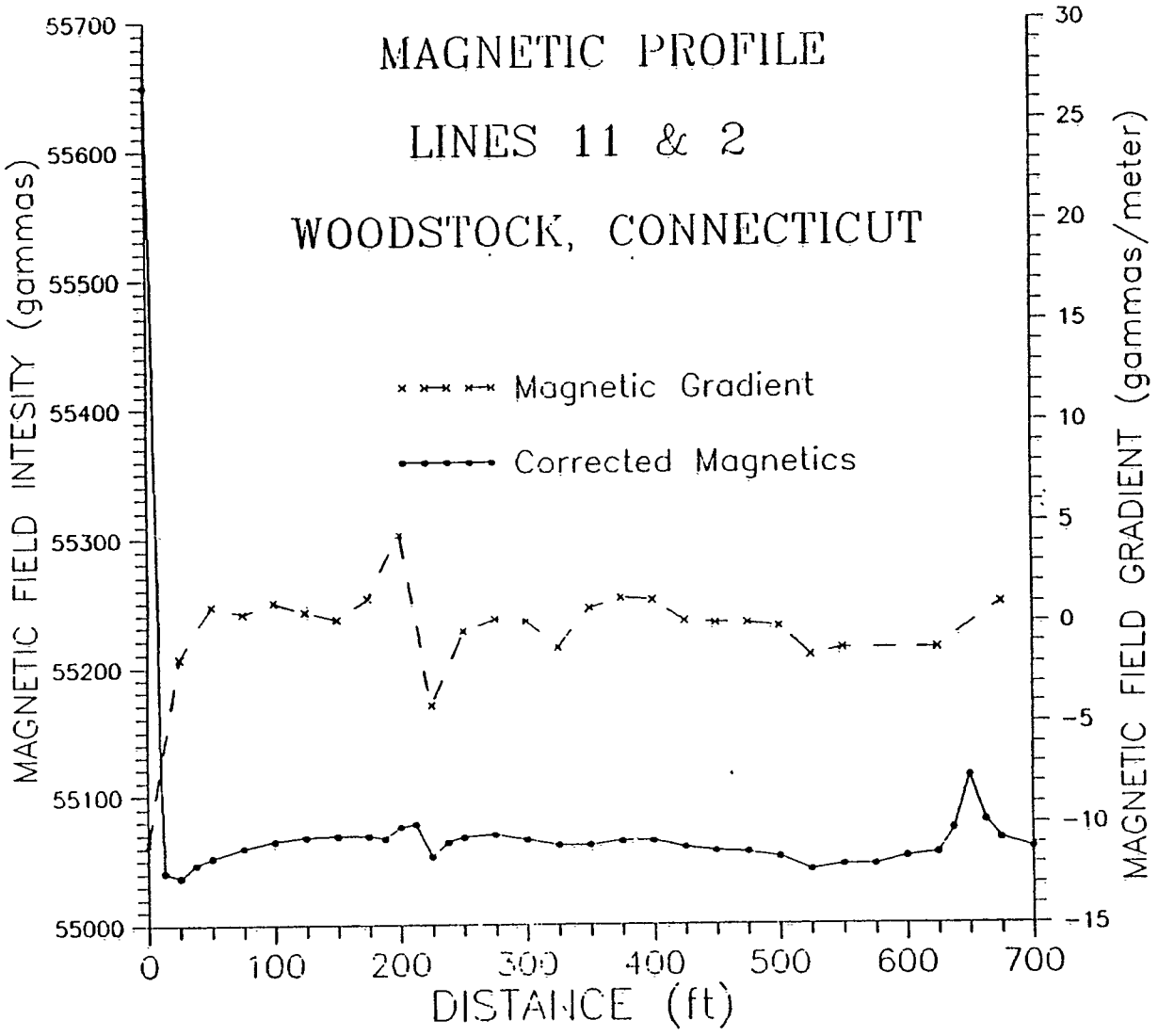

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CONDUCTIVITY PROFILE

LINES 11, 2, 12 & 5

WOODSTOCK, CONNECTICUT

EM31
EM34 (10 m)
EM34 (20 m)
EM34 (40 m)

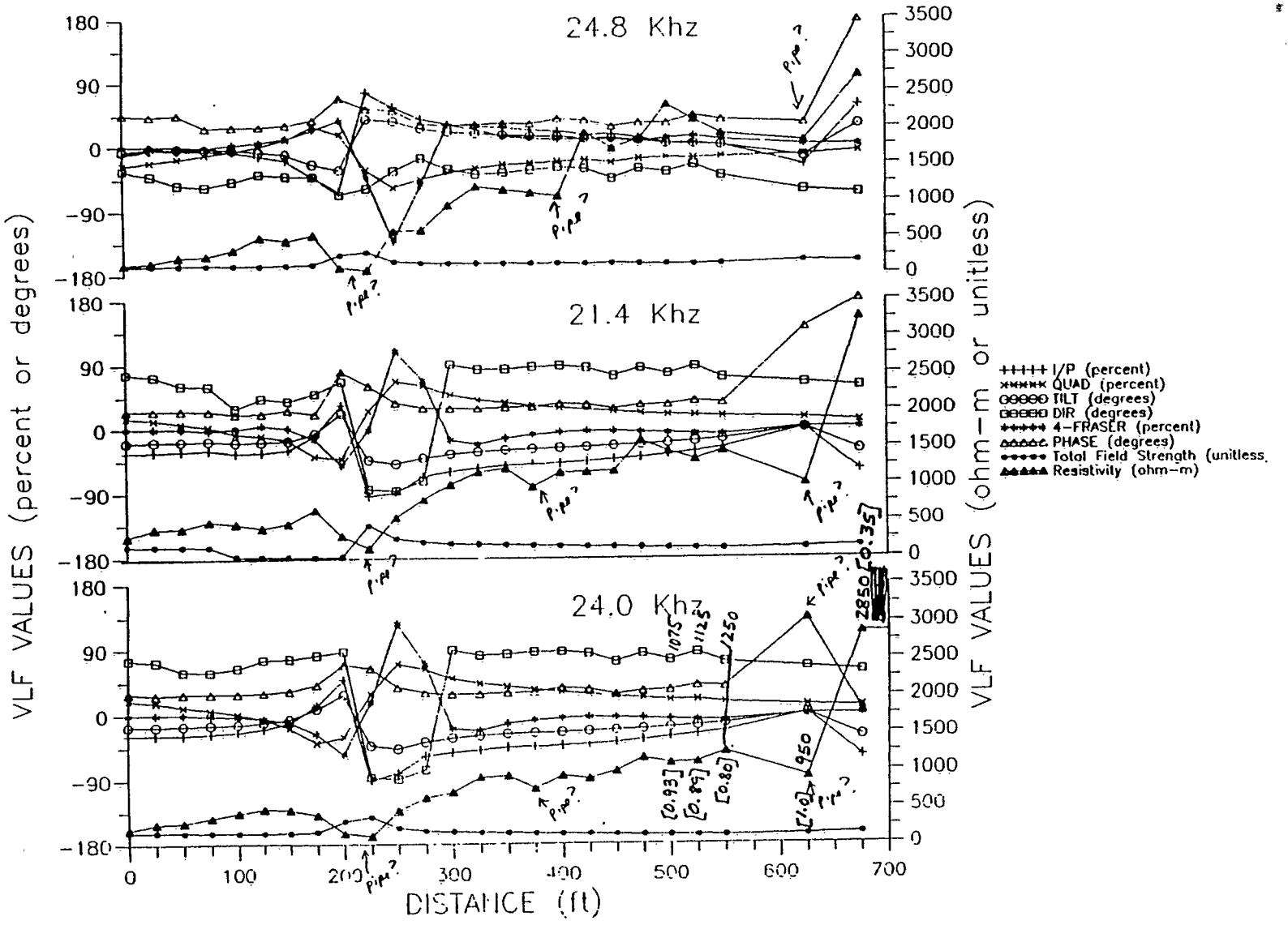
DISTANCE (ft)

0 500 1000 1500 2000 2500 3000

CONDUCTIVITY (ohm-meters)

-10 -5 0 5 10 15

FEASIBILITY PROFILE, WOODSTOCK, CONNECTICUT



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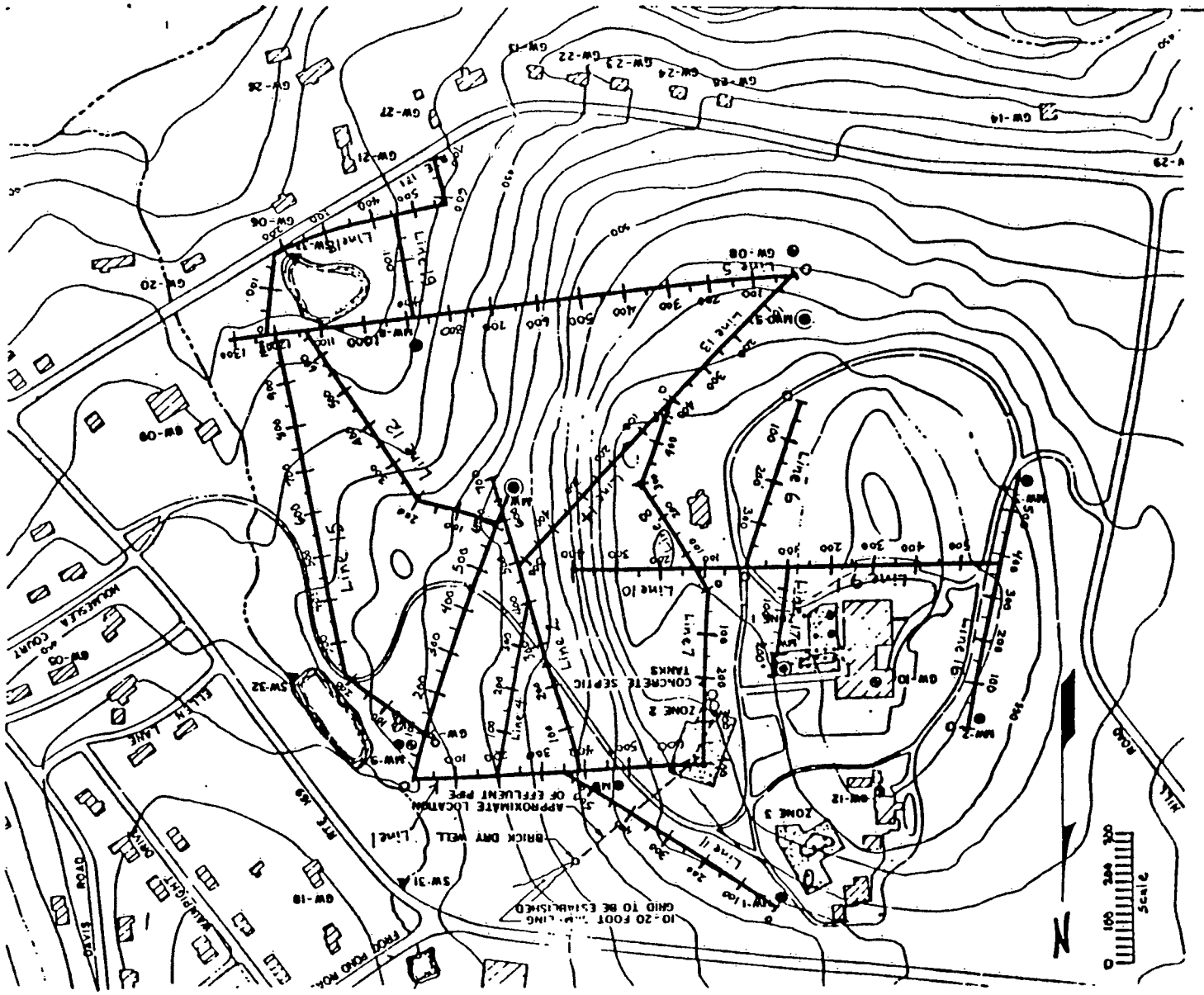

Plate 1. Geophysical stations at Linemaster site, Windham County, Woodstock, Connecticut, September 1988.

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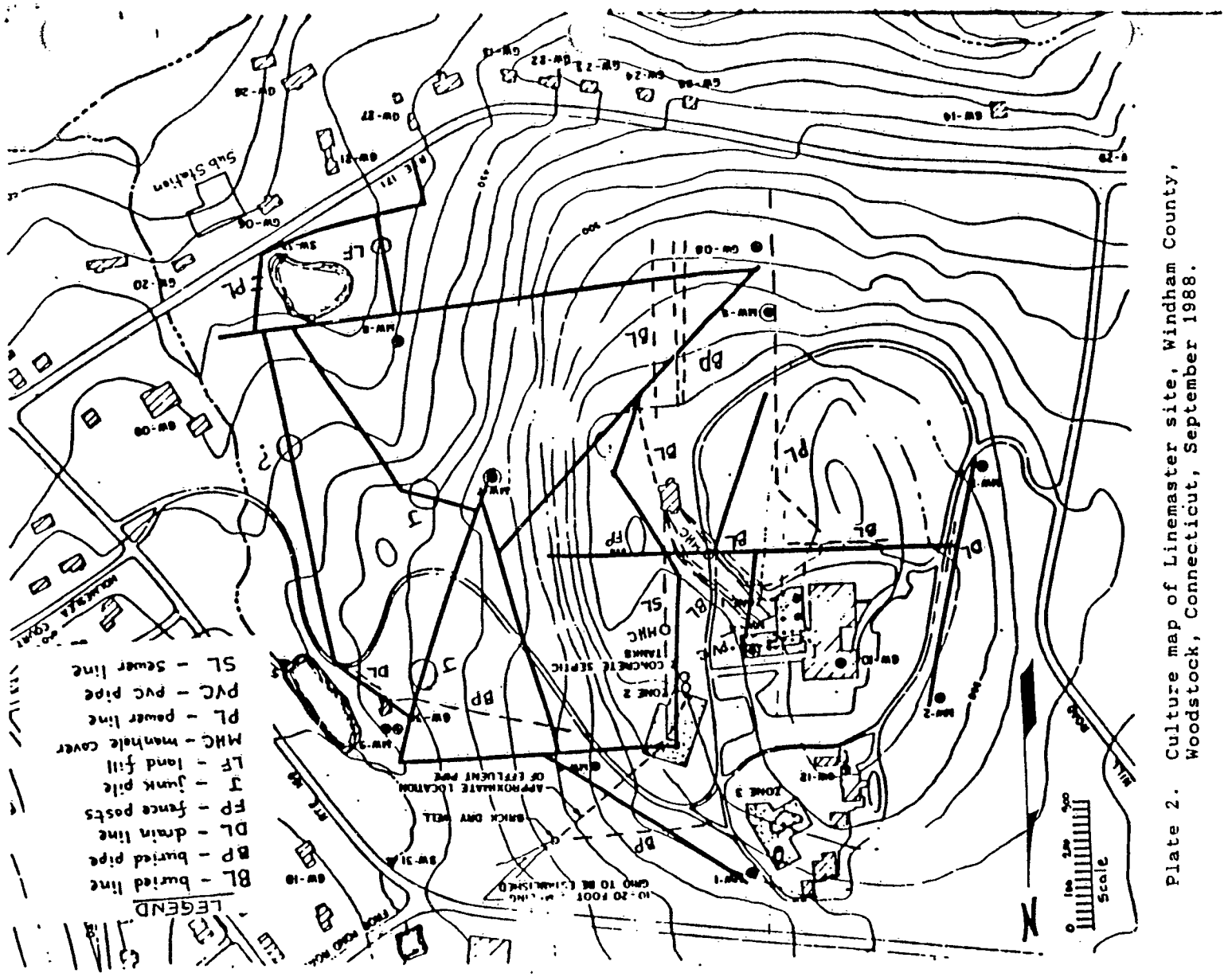

Plate 2. Culture map of Linemaster site, Windham County, Woodstock, Connecticut, September 1988.

9.1 EM31 Data

Sta ID	X (ft)	Y (ft)	mmho/m
0100000	813638.5	404649.5	1.75
0100250	813612.0	404649.5	1.58
0100500	813588.5	404649.0	1.52
0100750	813564.5	404650.0	1.80
0101000	813540.5	404649.0	1.90
0101250	813516.5	404648.5	1.10
0101500	813490.0	404649.5	2.60
0101750	813464.5	404649.0	2.70
0102000	813437.0	404648.0	3.20
0102250	813416.5	404647.5	3.50
0102500	813389.0	404647.5	4.10
0102750	813365.0	404647.0	3.75
0103000	813340.0	404647.0	3.85
0103250	813316.5	404646.0	3.85
0103500	813289.0	404646.0	3.48
0103750	813265.5	404646.5	3.52
0104000	813239.0	404645.5	3.45
0104500	813188.5	404645.5	2.85
0104750	813166.0	404644.5	2.88
0105000	813140.0	404645.0	2.35
0105250	813115.5	404644.5	2.20
0105500	813089.5	404644.5	0.90
0105750	813066.0	404644.5	0.80
0106000	813038.5	404643.0	1.45
0106250	813016.5	404642.5	3.25
0106500	812989.5	404642.5	3.40
0200250	813262.0	404623.0	3.45
0200500	813268.5	404597.0	7.60
0200750	813276.0	404574.5	1.90
0201000	813283.0	404550.0	3.00
0201250	813291.5	404526.5	2.38
0201500	813299.0	404502.0	2.15
0201750	813305.5	404478.5	2.10
0202000	813313.5	404455.0	1.95
0202250	813320.0	404430.5	1.90
0202500	813327.5	404406.5	1.75
0202750	813334.5	404382.0	1.65
0203000	813341.0	404358.0	1.25
0203250	813349.0	404333.5	1.20
0203500	813356.5	404311.0	1.25
0203750	813362.5	404286.0	1.05
0204000	813369.0	404264.5	1.00
0204250	813378.0	404237.5	1.02
0204500	813384.5	404215.0	1.22
0204750	813392.5	404189.0	1.15
0205000	813400.0	404168.0	1.05
0205250	813407.0	404144.0	0.98
0205500	813415.0	404119.5	0.85
0205750	813421.5	404093.5	0.82
0206000	813429.0	404072.0	0.80
0206250	813436.0	404047.0	0.85

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Hazardous Waste Investigation
Woodstock, Connecticut
OFR 88-

Sta ID	X (ft)	Y (ft)	mmho/m
0206500	813443.5	404022.0	0.85
0300000	813639.5	404649.0	1.53
0300250	813629.5	404626.0	1.30
0300500	813623.5	404602.5	1.23
0300750	813615.5	404579.0	1.25
0301000	813610.0	404554.5	1.78
0301250	813600.0	404530.0	2.90
0301500	813594.0	404506.0	6.40
0301750	813586.5	404483.0	1.98
0302000	813579.0	404459.5	1.75
0302250	813572.0	404434.0	1.33
0302500	813564.5	404410.0	1.40
0302750	813557.5	404388.0	1.78
0303000	813549.5	404364.0	2.45
0303250	813542.5	404339.5	2.90
0303500	813534.5	404315.0	2.88
0303750	813527.0	404291.0	2.68
0304000	813520.0	404266.5	2.80
0304250	813514.0	404244.5	2.00
0304500	813506.0	404218.5	2.20
0304750	813497.5	404195.5	2.05
0305000	813490.0	404171.0	1.70
0305250	813483.5	404146.5	1.45
0305500	813476.5	404123.5	1.13
0305750	813469.0	404099.5	0.85
0306000	813460.5	404073.5	0.83
0400000	813438.5	404647.5	3.15
0400250	813433.5	404622.5	3.50
0400500	813430.0	404597.0	3.85
0400750	813425.5	404572.5	5.25
0400875	813423.0	404558.0	12.00
0401000	813421.0	404548.5	0.00
0401150	813419.0	404533.5	13.25
0401250	813416.5	404523.0	7.50
0401500	813413.0	404499.5	3.95
0401750	813407.5	404474.5	3.45
0402000	813405.0	404449.5	3.20
0402250	813400.5	404425.0	2.95
0402500	813394.5	404401.0	2.83
0402750	813390.0	404375.0	2.48
0403000	813385.5	404350.5	2.35
0403250	813381.5	404325.0	1.73
0403500	813377.0	404302.0	1.25
0403880	813370.0	404264.0	0.95
0500250	812811.0	403474.0	2.20
0500500	812834.5	403477.5	2.70
0500750	812860.5	403481.0	3.40
0501000	812884.5	403484.5	3.65
0501250	812911.5	403489.5	3.90
0501500	812934.5	403493.5	4.43
0501750	812960.0	403497.0	12.00
0502000	812982.5	403499.5	6.00
0502250	813009.5	403503.5	3.40
0502500	813032.0	403506.5	3.95

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Sta ID	X (ft)	Y (ft)	mmho/m
0502750	813059.5	403511.0	-6.60
0503000	813082.0	403513.5	2.95
0503250	813108.5	403518.5	1.55
0503500	813131.5	403521.0	1.10
0503750	813158.5	403524.5	1.00
0504000	813180.5	403530.0	0.95
0504250	813208.5	403533.0	0.90
0504500	813230.0	403537.0	0.95
0504750	813254.5	403539.5	0.90
0505000	813279.5	403542.5	0.80
0505250	813303.5	403546.5	0.90
0505500	813329.5	403550.5	0.75
0505750	813354.5	403554.0	0.70
0506000	813379.5	403558.0	0.75
0506250	813404.0	403562.0	0.80
0506500	813428.5	403564.0	0.80
0506750	813452.5	403568.5	0.80
0507000	813479.0	403572.0	1.10
0507250	813504.5	403576.0	0.30
0507500	813527.0	403579.5	1.00
0507750	813552.0	403582.5	0.85
0508000	813577.0	403586.0	0.90
0508250	813603.5	403590.0	0.80
0508500	813626.5	403594.0	0.70
0508750	813653.0	403597.5	1.00
0509000	813677.0	403601.5	1.40
0509250	813702.5	403603.5	1.70
0509500	813726.0	403607.0	1.90
0509750	813750.5	403611.0	2.15
0510000	813775.5	403615.0	2.48
0510250	813802.5	403618.5	2.53
0510500	813824.5	403621.0	2.25
0510750	813851.0	403626.0	2.08
0511000	813873.5	403629.0	2.60
0511250	813899.5	403633.0	2.40
0511500	813923.5	403636.0	2.51
0511750	813950.0	403640.0	2.53
0512000	813972.5	403644.0	1.63
0512250	814000.5	403647.5	1.35
0512500	814025.0	403651.5	1.44
0512750	814048.5	403653.5	1.73
0513000	814072.5	403658.0	2.20
0513250	814096.5	403660.5	2.55
0600000	812741.0	403808.5	3.20
0600250	812751.5	403834.5	4.10
0600500	812760.0	403857.5	4.55
0600750	812768.0	403880.0	4.60
0601000	812777.0	403901.5	4.65
0601250	812785.5	403928.5	4.35
0601500	812793.5	403949.5	4.45
0601750	812803.5	403973.5	4.30
0602000	812810.5	403996.5	4.25
0602250	812821.0	404021.0	4.30
0602500	812828.5	404043.5	4.30

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Sta ID	X (ft)	Y (ft)	mmho/m
0602750	812836.5	404068.0	4.25
0603000	812845.5	404090.0	4.15
0603250	812853.5	404114.0	4.50
0603500	812862.5	404135.5	5.20
0603750	812872.5	404161.0	9.20
0604000	812881.5	404184.5	15.00
0700000	812972.0	404240.5	2.20
0700250	812972.5	404264.0	1.35
0700500	812974.0	404288.0	1.00
0700750	812976.0	404313.0	1.00
0701000	812977.0	404338.5	1.25
0701250	812977.5	404364.5	1.55
0701500	812980.0	404388.0	1.40
0701750	812980.5	404414.5	1.45
0702000	812982.0	404438.0	1.50
0702250	812983.0	404463.0	2.00
0702500	812984.0	404487.5	2.45
0702750	812985.0	404513.5	3.00
0703000	812986.5	404536.5	2.60
0703250	812987.0	404563.0	3.05
0703500	812988.0	404588.0	3.20
0703750	812989.0	404613.0	3.45
0704000	812990.5	404638.5	3.45
0800000	812972.5	404239.5	2.23
0800250	812987.5	404216.5	1.65
0800500	813001.5	404196.0	1.20
0800750	813017.0	404176.0	0.95
0801000	813028.5	404155.5	1.00
0801250	813044.0	404134.5	0.93
0801500	813058.0	404115.0	0.90
0801750	813071.0	404094.0	0.70
0802000	813085.0	404073.5	0.65
0802250	813100.0	404052.5	0.70
0802500	813114.0	404032.0	0.65
0802750	813128.0	404010.0	0.65
0803000	813140.5	403993.0	0.60
0803250	813130.0	403968.5	0.60
0803500	813123.5	403945.5	0.75
0803750	813117.0	403921.5	0.65
0804000	813109.5	403898.0	0.55
0804250	813101.5	403875.0	0.65
0804500	813093.5	403850.5	0.65
0804650	813091.0	403840.0	0.00
0804750	813087.0	403826.5	0.70
0805000	813079.5	403802.0	0.45
0900000	812880.5	404184.0	15.00
0900250	812858.0	404184.0	12.75
0900500	812830.0	404182.0	7.15
0900750	812808.0	404180.0	6.05
0901000	812781.0	404177.5	6.00
0901250	812757.5	404176.5	5.90
0901500	812730.0	404174.0	5.35
0901750	812707.5	404172.5	5.75
0902000	812681.0	404170.5	6.00

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Sta ID	X (ft)	Y (ft)	mmho/m
0902250	812656.5	404167.5	4.25
0902500	812630.5	404165.0	8.00
0902750	812605.0	404164.0	2.85
0903000	812582.0	404163.5	1.83
0903250	812558.0	404167.5	1.40
0903500	812533.0	404169.5	2.15
0903750	812510.5	404172.5	2.25
0904000	812484.0	404174.5	2.40
0904250	812460.5	404177.0	3.90
0904500	812434.0	404181.5	4.00
0904750	812410.0	404183.5	3.70
0905000	812384.5	404185.5	3.55
0905250	812360.0	404189.5	3.75
0905500	812335.5	404191.0	7.40
0905650	812320.5	404192.5	0.00
0905750	812311.0	404194.5	11.00
1000000	812880.0	404183.0	15.00
1000250	812906.0	404182.5	15.00
1000500	812930.0	404182.0	11.75
1000750	812956.0	404182.0	0.00
1001000	812980.0	404181.0	2.65
1001250	813006.0	404180.5	1.00
1001500	813030.5	404181.5	0.60
1001750	813055.0	404179.0	0.55
1002000	813081.0	404179.0	0.43
1002250	813105.0	404178.0	0.60
1002500	813129.5	404178.0	0.50
1002750	813155.5	404176.0	0.40
1003000	813179.5	404176.0	0.38
1003250	813205.0	404175.0	0.43
1003500	813229.0	404174.5	0.38
1003750	813254.0	404173.5	0.45
1004000	813277.5	404172.5	0.48
1100000	812821.0	404951.0	6.20
1100250	812845.5	404936.0	6.60
1100500	812867.0	404922.0	6.15
1100750	812887.5	404909.0	5.35
1101000	812907.5	404894.0	5.15
1101250	812929.0	404881.5	4.80
1101500	812952.0	404866.0	5.10
1101750	812970.5	404854.0	6.70
1102000	812993.5	404838.5	15.75
1102250	813015.5	404826.5	13.50
1102500	813036.5	404812.0	5.65
1102750	813056.0	404799.0	4.20
1103000	813079.5	404785.0	3.80
1103250	813098.5	404771.5	3.95
1103500	813120.0	404757.0	3.85
1103750	813141.0	404744.0	3.40
1104000	813164.0	404730.5	3.45
1104250	813184.0	404716.0	3.15
1104500	813204.5	404702.5	3.25
1104750	813225.5	404688.5	3.10
1105000	813246.0	404676.0	3.00

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Sta ID	X (ft)	Y (ft)	mmho/m
1105250	813268.5	404660.5	3.15
1105500	813289.0	404647.5	3.45
1200000	813461.0	404073.0	1.40
1200250	813486.5	404066.5	1.40
1200500	813510.0	404061.0	1.40
1200750	813534.5	404055.5	1.40
1200950	813552.5	404051.0	2.55
1201000	813558.5	404050.0	0.00
1201250	813584.0	404044.0	2.05
1201500	813607.0	404039.0	3.35
1201750	813631.5	404033.5	0.90
1202000	813656.0	404027.5	1.60
1202250	813669.5	404006.0	1.50
1202500	813683.0	403984.5	1.40
1202750	813698.0	403964.0	1.40
1203000	813711.5	403944.0	1.50
1203250	813726.0	403923.0	1.45
1203500	813738.5	403903.0	1.50
1203750	813755.0	403882.5	1.50
1204000	813769.0	403861.5	1.40
1204250	813783.0	403841.0	1.40
1204500	813797.0	403820.5	1.40
1204750	813812.0	403800.0	1.40
1205000	813825.0	403780.0	1.60
1205125	813832.5	403769.0	1.80
1205250	813840.0	403758.5	2.10
1205500	813852.5	403738.0	2.30
1205750	813867.5	403717.0	2.10
1206000	813882.0	403696.5	2.70
1206250	813896.5	403676.5	3.15
1206500	813909.5	403655.5	2.40
1206750	813924.5	403635.0	3.10
1300250	812801.0	403490.0	4.80
1300500	812817.0	403508.0	5.50
1300750	812834.0	403527.0	6.25
1301000	812849.0	403546.0	6.35
1301250	812867.5	403565.5	6.50
1301500	812881.0	403584.0	6.70
1301750	812898.5	403603.0	6.75
1302000	812915.0	403621.0	6.60
1302250	812931.5	403642.0	6.80
1302500	812946.0	403659.0	9.65
1302550	812950.0	403663.0	11.75
1302600	812953.5	403666.5	12.25
1302625	812955.5	403669.5	4.50
1302750	812963.5	403679.5	3.95
1302825	812968.0	403683.0	11.40
1303000	812979.0	403696.5	5.55
1303250	812996.0	403715.5	3.45
1303500	813013.5	403736.0	0.70
1303625	813018.5	403742.5	0.00
1303725	813027.0	403751.5	2.85
1303750	813029.0	403754.0	2.05
1304000	813044.5	403773.5	1.35

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Sta ID	X (ft)	Y (ft)	mmho/m
1400000	813079.5	403802.0	1.10
1400250	813096.5	403820.5	1.00
1400500	813112.5	403839.0	1.00
1400750	813129.0	403858.0	1.00
1401000	813145.0	403876.5	0.90
1401250	813162.5	403896.5	0.85
1401500	813178.0	403915.0	0.85
1401750	813195.5	403934.5	0.85
1402000	813211.0	403951.5	0.95
1402250	813228.0	403972.5	0.90
1402500	813243.5	403989.5	0.90
1402750	813262.0	404009.5	0.90
1403000	813277.5	404029.5	0.90
1403250	813293.5	404047.5	1.00
1403500	813311.5	404066.0	1.10
1403750	813327.5	404086.5	1.10
1404000	813343.0	404102.5	1.10
1404250	813361.5	404124.0	1.30
1404500	813378.0	404142.0	1.20
1404750	813393.0	404160.5	1.25
1405000	813411.0	404178.0	1.45
1500000	813610.0	404554.0	2.35
1500250	813632.5	404543.5	2.85
1500500	813656.0	404532.0	4.05
1500750	813678.0	404522.5	10.75
1501000	813701.0	404510.0	2.85
1501150	813716.0	404504.0	15.25
1501250	813722.5	404500.5	21.25
1501300	813728.5	404498.0	20.75
1501350	813733.0	404495.0	12.50
1501400	813736.5	404493.5	4.50
1501450	813741.5	404490.5	0.00
1501500	813746.0	404489.5	0.00
1501750	813768.5	404480.0	0.00
1502000	813792.5	404469.0	4.85
1502050	813793.0	404463.5	3.85
1502250	813797.5	404443.5	2.80
1502300	813798.5	404438.5	1.90
1502500	813803.0	404420.0	1.70
1502600	813805.0	404411.0	1.65
1502700	813807.0	404401.5	1.20
1502750	813809.0	404394.0	0.95
1503000	813815.0	404369.5	0.85
1503250	813818.0	404346.0	0.85
1503500	813824.0	404322.0	0.85
1503750	813830.0	404297.0	0.80
1504000	813834.5	404272.5	0.80
1504250	813840.0	404248.0	0.80
1504500	813846.0	404224.5	0.80
1504750	813851.5	404199.0	0.80
1505000	813857.5	404174.0	0.80
1505250	813862.0	404150.5	0.80
1505500	813867.0	404126.0	0.85
1505750	813873.0	404101.5	0.85

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Sta ID	X (ft)	Y (ft)	mmho/m
1506000	813878.0	404077.0	0.90
1506250	813883.0	404053.0	0.95
1506500	813888.0	404027.5	0.90
1506750	813893.0	404004.0	0.85
1507000	813899.5	403979.0	1.05
1507250	813904.5	403953.5	1.40
1507500	813910.5	403929.5	2.80
1507600	813912.5	403919.5	4.90
1507650	813913.5	403914.0	3.75
1507750	813914.5	403906.5	6.50
1507825	813916.0	403897.5	7.25
1507900	813918.0	403890.0	0.00
1507950	813918.0	403886.0	0.00
1508000	813920.0	403881.0	0.30
1508050	813921.0	403877.0	0.85
1508100	813922.5	403871.0	1.70
1508150	813923.5	403866.5	2.65
1508200	813924.5	403862.5	2.10
1508250	813925.5	403858.0	1.80
1508500	813932.0	403832.5	1.75
1508750	813935.0	403808.5	1.70
1509000	813941.0	403784.5	1.80
1509250	813947.0	403759.5	1.90
1509500	813952.0	403734.5	2.10
1509750	813957.5	403710.5	2.20
1510000	813963.0	403686.5	2.10
1510250	813968.5	403662.0	2.15
1510440	813973.0	403642.0	2.15
1600000	812367.0	404538.0	7.40
1600250	812360.5	404514.0	7.85
1600500	812355.0	404488.5	8.30
1600750	812349.5	404463.5	8.00
1601000	812344.5	404440.0	7.75
1601250	812339.5	404415.0	7.60
1601500	812334.5	404391.0	7.65
1601750	812328.5	404365.5	7.15
1602000	812322.0	404341.0	7.20
1602250	812319.0	404317.5	7.25
1602500	812313.0	404293.0	7.25
1602750	812308.0	404269.0	7.05
1603000	812302.5	404245.0	6.75
1603250	812296.5	404220.0	6.30
1603500	812292.0	404195.5	5.90
1603750	812286.5	404171.5	5.70
1604000	812281.5	404147.5	5.40
1604250	812276.0	404122.5	4.10
1604500	812270.5	404097.5	3.80
1604750	812265.5	404072.5	3.75
1605000	812259.5	404048.5	3.90
1605250	812255.5	404025.5	4.60
1605500	812249.5	404001.0	4.65
1605750	812243.5	403975.5	5.15
1700000	812781.0	404177.5	6.00
1700250	812783.5	404200.5	6.40

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Sta ID	X (ft)	Y (ft)	mmho/m
1700500	812788.0	404225.5	10.90
1700650	812789.5	404240.0	17.00
1700750	812790.5	404251.5	0.00
1700850	812793.0	404260.5	41.00
1700950	812794.0	404268.5	0.00
1701000	812794.0	404274.5	20.00
1701250	812797.5	404300.5	13.50
1701400	812800.5	404315.0	0.00
1701500	812800.5	404324.0	10.25
1701750	812804.5	404350.5	5.50
1702000	812808.0	404374.0	5.30
1702250	812811.5	404400.0	5.10
1702500	812814.0	404422.5	5.00
1702750	812818.0	404448.0	5.40
1800000	814024.5	403650.5	1.18
1800250	814020.5	403623.5	1.20
1800500	814017.0	403599.5	1.30
1800750	814015.0	403576.5	2.05
1801000	814011.5	403551.0	4.45
1801250	814009.0	403527.5	6.00
1801500	814005.5	403501.5	6.45
1801750	814003.5	403477.5	6.00
1802000	813983.5	403461.5	5.35
1802250	813962.5	403446.5	4.75
1802500	813944.5	403433.5	4.40
1802750	813924.5	403419.0	3.30
1803000	813901.0	403412.5	2.40
1803250	813875.5	403406.5	1.60
1803500	813852.5	403401.0	1.40
1803750	813829.5	403396.0	1.20
1804000	813804.5	403389.5	1.40
1804250	813778.5	403383.5	1.35
1804500	813756.0	403378.0	1.55
1804750	813728.5	403372.0	2.45
1805000	813706.5	403366.0	3.20
1805250	813683.5	403360.5	3.50
1805500	813659.0	403354.0	2.15
1805750	813635.0	403349.0	2.05
1806000	813611.5	403342.0	2.25
1806250	813618.5	403317.5	2.50
1806500	813626.5	403296.5	2.67
1806750	813634.5	403274.0	2.84
1807000	813642.0	403249.5	3.00
1807150	813650.5	403230.0	4.00
1900000	813728.5	403371.5	2.40
1900250	813721.0	403401.5	2.50
1900500	813715.5	403431.0	6.75
1900750	813709.0	403459.5	12.50
1901000	813702.5	403487.5	6.30
1901250	813695.5	403516.5	3.20
1901500	813687.5	403546.0	2.35
1901750	813682.5	403575.0	1.50
1902000	813676.5	403599.5	1.32

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LIN003 332

Hazardous Waste Investigation
Woodstock, Connecticut
OFR 88-

9.2 EM34 Data

Sta ID	X (ft)	Y (ft)	mmho/m
0100164	813625.0	404649.5	1.05
0100664	813575.5	404650.0	1.45
0101164	813526.5	404649.5	1.70
0101664	813476.5	404649.5	2.20
0102164	813427.5	404647.5	2.75
0102664	813375.0	404647.5	3.00
0103164	813326.0	404646.5	3.00
0103664	813276.5	404647.0	3.00
0104164	813225.0	404646.5	2.50
0104664	813177.0	404645.0	2.15
0105164	813127.0	404645.0	1.95
0105664	813076.0	404644.5	1.05
0106164	813027.5	404642.5	2.15
0106664	812975.0	404641.0	3.60
0200664	813274.0	404584.5	1.90
0201164	813288.5	404535.5	1.70
0201664	813302.5	404488.0	1.50
0202164	813318.0	404440.0	1.20
0202664	813332.5	404392.0	0.80
0203164	813346.0	404344.5	1.50
0203664	813360.5	404297.0	0.40
0204164	813376.0	404249.0	0.50
0204664	813389.5	404200.0	0.40
0205164	813403.5	404153.5	0.90
0205664	813417.5	404106.0	0.60
0206164	813432.5	404057.0	0.90
0207164	813463.0	403961.0	0.50
0300336	813627.0	404616.5	0.90
0300836	813614.0	404568.0	0.80
0301336	813598.5	404522.0	0.75
0301836	813584.5	404473.5	0.45
0302336	813569.5	404424.5	1.00
0302836	813555.0	404378.0	1.60
0303336	813539.5	404329.5	2.15
0303836	813525.5	404282.5	2.10
0304336	813510.5	404234.5	1.80
0304836	813496.0	404187.5	1.55
0305336	813481.0	404140.0	1.25
0305836	813465.0	404091.5	0.80
0400164	813435.5	404630.0	2.75
0400664	813424.5	404579.5	3.00
0401164	813417.5	404532.5	1.70
0401664	813409.0	404482.5	2.75
0402164	813401.5	404433.5	2.55
0402664	813391.0	404384.0	2.10
0403164	813381.5	404334.5	1.60
0403664	813371.5	404285.5	0.90
0404164	813364.0	404237.0	1.05
0500414	812823.5	403477.0	1.40
0500664	812849.5	403480.0	2.20
0500914	812874.0	403484.5	2.40
0501164	812898.0	403487.5	2.60
0501414	812922.5	403491.0	2.30
0501664	812948.5	403495.0	2.20

Sta ID	X (ft)	Y (ft)	mmho/m
0501914	812972.5	403498.0	1.20
0502164	812999.0	403503.5	1.50
0502414	813021.0	403505.5	1.30
0502664	813046.0	403510.0	0.20
0503164	813099.0	403517.5	0.70
0503664	813146.5	403526.0	0.50
0504164	813196.5	403533.0	0.70
0504664	813247.0	403539.0	0.80
0505164	813294.5	403547.0	0.30
0505664	813345.0	403553.0	0.50
0506164	813393.5	403559.5	0.60
0506664	813444.0	403568.0	0.30
0507164	813494.5	403575.0	0.20
0507664	813543.0	403582.0	0.50
0508164	813591.5	403588.5	0.60
0508664	813644.0	403595.0	0.70
0509164	813693.5	403602.5	1.10
0509664	813741.5	403608.5	1.50
0510164	813792.0	403616.5	1.90
0510664	813841.0	403623.5	1.60
0511164	813891.0	403630.5	1.25
0511664	813940.5	403639.5	1.30
0512164	813989.5	403646.0	0.90
0512664	814038.5	403652.5	1.10
0513164	814088.5	403659.5	1.60
0600164	812749.5	403824.5	3.80
0600664	812766.5	403871.5	4.00
0601164	812783.5	403918.0	4.20
0601664	812800.5	403965.0	4.20
0602164	812818.5	404011.5	3.80
0602664	812836.0	404058.5	3.70
0603164	812853.5	404106.0	3.80
0603664	812871.0	404154.0	4.40
0604164	812887.5	404200.0	1.40
-0700164	812974.5	404223.5	1.75
0700336	812974.0	404275.0	1.65
0700836	812977.5	404323.0	2.35
0701336	812980.0	404374.0	2.40
0701836	812983.5	404422.5	2.60
0702336	812985.0	404473.0	2.65
0702836	812987.5	404523.0	2.40
0703336	812988.5	404572.5	3.50
0703836	812991.0	404622.5	3.20
0800164	812982.0	404225.0	1.10
0800664	813010.0	404185.5	0.65
0801164	813037.0	404142.5	1.00
0801664	813065.5	404102.0	1.20
0802164	813094.0	404060.0	0.60
0802664	813122.5	404019.5	0.55
0803164	813133.5	403977.5	0.50
0803664	813120.5	403931.5	0.50
0804164	813104.0	403882.0	0.45
0804664	813089.0	403836.0	0.65
0805164	813074.5	403789.0	0.70

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Hazardous Waste Investigation
Woodstock, Connecticut
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Sta ID	X (ft)	Y (ft)	mmho/m
0900336	812847.0	404181.0	4.30
0900836	812797.5	404177.5	4.90
0901336	812748.5	404175.5	5.00
0901836	812698.5	404171.0	4.70
0902336	812648.5	404167.5	1.70
0902836	812597.0	404164.5	1.10
0903336	812548.5	404168.5	2.95
0903836	812499.5	404173.0	0.95
0904336	812450.0	404178.0	3.10
0904836	812400.0	404184.5	2.70
0905336	812350.0	404190.5	3.00
0905786	812306.0	404193.5	4.20
1000164	812897.0	404183.5	5.00
1000664	812948.0	404182.5	3.40
1001164	812998.0	404181.0	0.85
1001664	813049.0	404180.0	0.35
1002164	813097.5	404178.0	0.50
1002664	813147.5	404176.5	0.55
1003164	813197.5	404175.5	0.55
1003664	813248.5	404172.5	0.35
1004164	813296.0	404172.0	0.45
1100664	812879.5	404913.5	4.80
1101164	812922.5	404885.0	4.10
1101664	812964.0	404858.0	3.90
1102164	813006.0	404831.5	3.80
1102664	813047.5	404803.5	3.10
1103164	813089.0	404776.5	2.90
1103664	813131.0	404750.0	2.80
1104164	813174.5	404723.0	3.00
1104664	813215.5	404695.0	2.40
1105164	813258.5	404667.5	2.20
1105664	813299.0	404639.5	2.50
1200664	813525.0	404058.5	0.90
1201164	813574.0	404047.0	1.30
1202164	813664.5	404014.0	0.30
1202664	813692.0	403972.5	0.70
1203164	813720.5	403932.5	0.40
1203664	813747.0	403889.5	0.70
1204164	813776.5	403848.0	0.80
1204664	813806.0	403806.0	0.80
1205164	813832.5	403766.5	0.80
1205664	813862.5	403724.5	1.20
1206164	813891.0	403682.5	1.60
1206664	813918.5	403642.5	1.00
1300164	812794.5	403484.0	4.40
1300664	812828.0	403523.5	2.25
1301164	812861.5	403561.0	2.75
1301664	812893.0	403598.0	2.75
1302164	812926.5	403637.0	2.45
1302664	812959.5	403674.0	2.05
1303164	812991.5	403711.5	1.05
1303664	813024.5	403748.5	0.80
1304164	813058.5	403787.5	0.75
1400164	813091.0	403815.0	0.70

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Sta ID	X (ft)	Y (ft)	mmho/m
1400664	813124.0	403852.0	0.60
1401164	813157.5	403891.0	0.70
1401664	813190.0	403928.5	0.60
1402164	813223.0	403966.0	0.35
1402664	813255.5	404003.0	0.50
1403164	813289.0	404041.5	0.80
1403664	813321.0	404079.5	1.00
1404164	813354.0	404116.5	0.75
1404664	813387.0	404154.0	1.05
1405164	813421.5	404191.5	1.00
1500336	813639.5	404540.0	1.10
1500836	813684.5	404519.0	1.70
1502336	813797.5	404437.5	2.10
1502836	813809.0	404391.0	1.00
1503336	813821.0	404341.0	0.30
1503836	813830.5	404293.0	0.50
1504336	813841.0	404243.5	0.40
1504836	813853.0	404195.0	0.40
1505336	813863.5	404145.0	1.00
1505836	813875.0	404097.0	0.40
1506336	813884.0	404048.5	0.80
1506836	813893.5	403999.5	0.50
1507336	813905.0	403950.5	0.70
1507836	813916.5	403901.5	2.10
1508336	813926.5	403853.0	0.90
1508836	813937.0	403802.0	0.60
1509336	813948.0	403754.0	0.70
1509836	813957.5	403706.5	1.00
1510276	813969.5	403659.0	0.90
1600164	812362.5	404521.0	6.80
1600664	812351.0	404471.0	7.00
1601164	812341.5	404422.5	6.20
1601664	812330.0	404375.0	5.90
1602164	812320.5	404327.0	5.70
1602664	812309.0	404278.5	5.60
1603164	812299.5	404229.0	5.20
1603664	812288.5	404180.0	4.00
1604164	812277.5	404130.5	3.10
1604664	812268.0	404081.5	2.75
1605164	812258.0	404035.0	2.00
1605664	812245.5	403985.0	2.00
1700164	812784.0	404194.0	5.00
1700664	812790.0	404243.0	4.20
1701164	812796.5	404292.0	5.40
1701664	812804.0	404342.0	5.30
1702164	812810.5	404392.0	4.90
1702664	812817.5	404441.0	5.20
1702914	812821.0	404467.0	5.30

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LINEMASTER SWITCH
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Hazardous Waste Investigation
Woodstock, Connecticut
OPE 88-

9.3 VLF Data

OMNI-PLUS Tie-line MAG/VLF B22G Ser #28003
VLF TOTAL FIELD DATA (uncorrected)
Date 19 SEP 88
Operator: 5001
Records: 47
Bat: 17.7 Volt Lithium: 3.48 Volt
Last time update: 9/19 17:03:00
Start of print: 9/20 9:32:54

Line 5 Date 19 SEP 88 VLF station frequency 24.0
POSITION I/P QUAD T.FLD TILT TIME CULT S DIR 4-PBA 5-PBA BBSIS PHASE
#1 68.3 0.2 3562. 3.0 17:10:02 56 99 0.0 !

Line 5 Date 19 SEP 88 VLF station frequency 24.0

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT	S	DIR	4-PBA	5-PBA	BBSIS	PHASE
225	18.3	-6.9	192.1	10.4	17:12:54	55	69	60.4				
250	27.3	-4.5	197.8	15.3	17:14:43		57	58.6				
275	31.0	-3.9	205.3	17.2	17:15:11		53	42.9				
300	8.9	-0.5	184.4	5.0	17:16:07		69	49.3	3.5			
325	17.4	-1.1	185.8	9.8	17:17:02		79	56.1	17.7	10.6		
350	20.9	-1.9	187.2	11.8	17:17:34		79	56.7	0.6	9.1		
375	23.0	-2.5	192.4	12.9	17:21:04		69	53.7	-9.9	-4.7		
400	24.3	-3.2	195.8	13.6	17:23:10		79	57.7	-4.9	-7.4		
425	24.9	-4.0	197.2	14.0	17:23:42		79	54.6	-2.9	-3.9		
450	25.6	-4.7	197.0	14.3	17:24:20		57	58.8	-1.8	-2.4		
475	25.1	-5.8	199.5	14.1	17:24:58		68	65.0	-0.8	-1.3		
500	26.0	-6.5	197.7	14.6	17:25:35		69	57.7	-0.4	-0.6		
525	26.2	-7.1	197.7	14.7	17:26:15		59	58.9	-0.9	-0.7		
550	25.4	-8.1	199.0	14.3	17:26:42		69	56.5	-0.3	-0.6		
575	26.3	-9.2	200.4	14.9	17:27:13		59	54.0	0.1	-0.1		
600	26.7	-10.5	204.9	15.1	17:27:51		49	64.5	-1.0	-0.5		
625	26.4	-12.1	205.4	15.0	17:28:31		69	58.2	-0.9	-1.0		
650	30.1	-20.0	4.50	17.3	17:29:07		42	31.0	-2.3	-1.6		
675	25.4	-15.7	187.3	14.6	17:29:50		79	54.6	-1.8	-2.1		
700	26.1	-16.8	220.3	15.0	17:30:31		79	55.4	2.7	0.4		
725	26.8	-17.8	222.8	15.4	17:31:44		79	49.1	1.5	2.1		
750	27.6	-18.9	221.2	15.9	17:32:22		79	51.9	-1.7	-0.1		
775	29.4	-19.0	221.1	16.9	17:32:56		69	60.6	-2.4	-2.1		
800	30.5	-18.8	220.9	17.5	17:33:30		79	56.4	-3.1	-2.8		
825	32.7	-19.3	221.4	18.6	17:34:09		69	52.0	-3.3	-3.2		
850	34.4	-19.2	223.6	19.6	17:34:41		79	48.2	-3.8	-3.6		
875	35.0	-19.3	226.2	19.9	17:35:14		89	56.8	-3.4	-3.6		
900	36.0	-19.5	228.7	20.4	17:35:38		69	51.3	-2.1	-2.8		
925	35.6	-19.7	232.6	20.2	17:36:10		79	57.2	-1.1	-1.6		
950	35.7	-19.9	235.9	20.3	17:36:37		89	55.9	-0.2	-0.7		

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ADMINISTRATIVE RECORD

Hazardous Waste Investigation
Woodstock, Connecticut
OPE 86-

975	35.7	-20.3	239.8	20.3	17:37:04	89	58.6	0.0	-0.1
1000	35.4	-20.8	243.8	20.2	17:37:33	79	55.6	0.0	0.0
1025	34.4	-21.6	244.6	19.7	17:38:04	79	56.3	0.7	0.3
1050	32.9	-23.3	244.3	19.0	17:38:28	89	54.3	1.8	1.2
1075	34.0	-24.7	243.1	19.8	17:38:53	89	51.4	1.1	1.4
1100	35.0	-25.9	244.3	20.4	17:39:17	79	55.9	-1.5	-0.2
300	8.4	1.7	199.5	4.8	17:45:59	69	46.0	13.6	6.0
#39	5.2	-14.9	221.4	3.0	17:47:22	79	58.4	!	
25	-39.8	56.7	269.1	-26.8	17:49:20	79	-80.5	62.2	37.9
50	-16.9	29.5	222.4	-10.5	17:50:45	79	76.8	62.5	62.3
75	-1.2	18.6	219.2	-0.7	17:51:10	79	72.9	-10.8	25.8
100	7.4	11.1	220.6	4.3	17:51:35	79	69.7	-40.9	-25.9
125	15.1	9.4	223.1	8.6	17:51:59	89	67.4	-24.1	-32.5
150	21.9	8.5	227.6	12.4	17:52:22	79	64.7	-17.4	-20.8
175	35.2	17.0	263.4	19.9	17:52:47	89	59.7	-19.4	-18.4
200	58.7	3.7	3.41	30.4	17:53:11	71	35.9	-29.3	-24.4

OMNI-PLUS Tie-line MAG/VLF B22C Ser #29003
VLF TOTAL FIELD DATA (uncorrected)
Date 19 SEP 88
Operator: 5001
Records: 47
Bat: 17.7 Volt Lithium: 3.48 Volt
Last time update: 9/19 17:09:00
Start of print: 9/20 9:34:24

Line 5 Date 19 SEP 88 VLF station frequency 21.4

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT	S	DIR	4-PRA	5-PRA	RESIS	PHASE
#1	69.4	0.2	3708.	6.0	17:10:02	56	99	0.0	!			

Line 5 Date 19 SEP 88 VLF station frequency 21.4

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT	S	DIR	4-PRA	5-PRA	RESIS	PHASE
225	16.6	-4.5	67.14	9.4	17:12:54	55	68	58.9				
250	24.8	-1.6	68.36	13.9	17:14:43		66	57.6				
275	28.3	-0.8	74.78	15.8	17:15:11		64	41.9				
300	8.2	0.7	64.58	4.7	17:16:07		69	47.4	2.8			
325	15.4	0.7	63.93	8.7	17:17:02		68	54.2	16.3	9.5		
350	18.0	0.2	65.24	10.2	17:17:34		77	54.5	1.6	8.9		
375	20.1	0.4	65.66	11.4	17:21:04		67	51.1	-8.2	-3.3		
400	21.2	0.3	65.98	11.9	17:23:10		78	55.4	-4.4	-6.3		
425	21.9	-0.3	66.68	12.3	17:23:42		79	52.1	-2.6	-3.5		
450	22.3	-0.9	66.91	12.6	17:24:20		66	56.2	-1.6	-2.1		
475	22.6	-1.7	66.04	12.7	17:24:58		67	62.5	-1.1	-1.4		
500	22.5	-2.3	69.15	12.6	17:25:35		67	56.4	-0.4	-0.8		
525	23.0	-2.3	69.12	12.9	17:26:15		66	57.8	-0.2	-0.3		
550	21.9	-3.2	69.13	12.3	17:26:42		79	54.7	0.1	-0.1		
575	22.9	-3.6	68.84	12.9	17:27:13		69	52.5	0.3	0.2		

LINOO3
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ADMINISTRATIVE RECORD

Hazardous Waste Investigation
Woodstock, Connecticut
OPE 88-

600	23.2	-4.8	68.46	13.1	17:27:51	59	63.4	-0.8	-0.3
625	23.5	-5.9	68.20	13.3	17:28:31	59	56.7	-1.2	-1.0
650	23.8	-6.1	68.22	13.4	17:29:07	59	55.1	-0.7	-1.0
675	23.8	-8.6	68.52	13.4	17:29:50	79	52.6	-0.4	-0.6
700	24.5	-9.0	68.33	13.8	17:30:31	89	54.5	-0.5	-0.5
725	25.4	-9.2	69.51	14.3	17:31:44	79	46.5	-1.3	-0.9
750	26.3	-10.0	66.97	14.9	17:32:22	79	49.3	-2.0	-1.7
775	27.6	-9.0	66.69	15.6	17:32:58	79	58.2	-2.4	-2.2
800	29.2	-9.0	66.88	16.4	17:33:30	79	53.9	-3.8	-2.6
825	30.9	-8.3	66.68	17.3	17:34:09	69	49.1	-3.2	-3.0
850	32.8	-7.6	67.03	18.2	17:34:41	79	45.5	-3.5	-3.4
875	34.5	-7.9	67.15	19.1	17:35:14	89	54.1	-3.6	-3.6
900	35.0	-7.4	67.49	19.3	17:35:38	79	48.3	-2.9	-3.3
925	35.5	-7.6	69.42	19.6	17:36:10	79	53.9	-1.6	-2.3
950	36.5	-7.9	69.20	20.1	17:36:37	89	51.9	-1.3	-1.5
975	36.9	-8.4	69.24	20.3	17:37:04	89	54.2	-1.5	-1.4
1000	36.6	-9.0	70.73	20.2	17:37:33	87	50.9	-0.8	-1.2
1025	36.0	-9.9	71.48	19.9	17:38:04	78	51.0	0.2	-0.3
1050	34.7	-11.1	71.57	19.3	17:38:28	89	49.3	1.3	0.8
1075	35.7	-12.1	72.04	19.9	17:38:53	89	46.7	0.9	1.1
1100	36.6	-13.7	72.10	20.4	17:39:17	79	50.8	-1.1	-0.1
300	8.4	0.0	66.93	4.8	17:45:59	68	44.8	14.0	6.4
#39	3.1	-13.1	70.71	1.8	17:47:20	79	57.3	!	
25	-33.9	56.9	74.37	-25.2	17:49:20	89	-74.7	60.7	37.3
50	-15.5	24.5	63.91	-9.3	17:50:45	79	77.2	59.7	60.2
75	-1.2	14.2	64.52	-0.7	17:51:10	79	70.8	-10.4	24.6
100	6.9	9.6	66.12	4.0	17:51:35	89	66.7	-37.8	-24.1
125	13.5	7.9	67.86	7.7	17:51:59	89	64.2	-21.7	-29.8
150	20.3	8.9	69.28	11.5	17:52:22	89	61.4	-15.9	-18.8
175	33.4	15.5	69.19	18.8	17:52:47	89	56.3	-18.6	-17.3
200	3.9	-12.5	68.42	2.2	17:53:11	79	61.3	-1.8	-10.2

OMNI-PLUS Tie-line MAG/VLF R22G Ser #28003
VLF TOTAL FIELD DATA (uncorrected)
Date 19 SEP 88
Operator: 5001
Records: 47
Bat: 17.7 Volt Lithium: 3.48 Volt
Last time update: 9/19 17:03:00
Start of print: 9/20 9:35:46

Line 5 Date 19 SEP 88 VLF station frequency 24.8

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT	S	DIP	4-PRA	5-PRA	RESIS	PHASE
#1	68.1	0.2	3687.	11.0	17:10:02	56	99	0.0	!			

LIN003 838

Hazardous Waste Investigation
Woodstock, Connecticut
OFR 88-

Line 5 Date 19 SEP 88 VLF station frequency 24.8

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT	S	DIP	4-FRA	5-FRA	RESIS	PHASE
225	40.3	-26.5	7.65	23.2	17:12:54	55	69	-39.3				
250	3.1	-22.0	7.87	1.9	17:14:43		64	-34.4				
275	-8.1	-8.5	19.49	-4.7	17:15:11		65	-28.3				
300	104.1	-17.6	12.73	46.5	17:16:07		69	-57.5	-16.7			
325	88.3	-19.1	9.68	42.0	17:17:02		63	-57.0	-91.3	-54.0		
350	75.1	-21.2	8.70	37.7	17:17:34		72	-56.3	-37.9	-64.6		
375	67.5	-20.8	8.25	34.8	17:21:04		68	-56.8	16.0	-11.0		
400	60.2	-20.6	7.85	31.8	17:23:10		73	-52.1	13.1	14.5		
425	56.8	-19.7	7.74	30.3	17:23:42		73	-54.8	10.4	11.7		
450	52.1	-19.1	7.57	28.6	17:24:20		63	-49.8	7.7	9.0		
475	49.9	-18.0	7.13	27.0	17:24:58		72	-48.9	6.5	7.1		
500	47.6	-17.9	7.49	26.0	17:25:35		73	-50.9	5.9	6.2		
525	46.5	-15.9	7.19	25.4	17:26:15		53	-48.7	4.2	5.0		
550	44.2	-15.2	7.21	24.2	17:26:42		73	-51.5	3.4	3.8		
575	43.8	-14.9	7.02	24.0	17:27:13		62	-53.1	3.2	3.3		
600	44.6	-12.1	6.87	24.3	17:27:51		52	-43.0	1.3	2.2		
625	43.7	-14.7	6.78	24.0	17:28:31		62	-48.4	-0.1	0.6		
650	42.1	-14.7	7.06	23.2	17:29:07		43	-51.2	1.1	0.5		
675	41.3	-14.9	6.62	23.8	17:29:50		75	-53.4	2.3	1.7		
700	40.2	-16.0	6.48	22.3	17:30:31		84	-52.0	2.1	2.2		
725	40.3	-14.4	6.51	22.3	17:31:44		73	-59.3	1.4	1.7		
750	38.8	-13.3	6.46	21.5	17:32:22		73	-58.1	1.3	1.3		
775	37.9	-14.5	6.45	21.0	17:32:56		73	-50.1	2.1	1.7		
800	35.6	-13.8	6.34	19.9	17:33:30		75	-54.7	2.9	2.5		
825	35.3	-13.7	6.32	19.7	17:34:09		73	-59.9	2.9	2.9		
850	33.5	-14.1	6.25	18.8	17:34:41		73	-62.5	2.4	2.6		
875	31.1	-15.3	6.24	17.6	17:35:14		87	-54.8	3.2	2.8		
900	32.5	-14.7	6.56	18.3	17:35:38		74	-61.2	2.6	2.9		
925	29.1	-14.0	6.31	16.5	17:36:10		74	-53.7	1.6	2.1		
950	28.2	-13.1	6.22	16.0	17:36:37		86	-55.6	3.4	2.5		
975	25.2	-13.5	6.25	14.4	17:37:04		79	-52.1	4.4	3.9		
1000	25.1	-12.5	6.34	14.3	17:37:33		86	-55.1	3.8	4.1		
1025	23.3	-11.3	6.37	13.3	17:38:04		75	-55.2	2.8	3.3		
1050	23.3	-10.7	6.47	13.2	17:38:28		86	-57.1	2.2	2.5		
1075	23.2	-10.6	6.51	13.2	17:38:53		85	-59.1	1.2	1.7		
1100	22.4	-9.6	6.76	12.7	17:39:17		79	-53.8	0.6	0.9		
300	105.5	-17.9	14.73	46.9	17:45:59		69	-61.2	-33.2	-16.3		
839	74.4	-22.8	11.74	37.5	17:47:20		79	-35.4	!			
25	38.9	-67.2	10.71	31.4	17:49:20		89	-60.9	-52.4	-42.8		
50	4.6	-54.0	9.29	3.7	17:50:45		74	-39.2	24.5	-14.0		
75	14.1	-38.1	9.53	9.3	17:51:10		74	-34.7	65.3	44.9		
100	15.0	-31.6	9.47	9.4	17:51:35		75	-34.4	16.4	40.8		
125	15.6	-27.8	9.21	9.5	17:51:59		74	-34.9	-5.9	5.2		
150	7.5	-26.4	8.99	4.6	17:52:22		84	-35.2	4.6	-0.7		
175	-26.7	-18.0	11.76	-15.4	17:52:47		86	-18.9	29.7	17.1		
200	74.7	-22.3	11.96	37.6	17:53:11		79	-31.2	-8.1	10.8		

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
669

Hazardous Waste Investigation
Woodstock, Connecticut
OPE 88-

OMNI-PLUS Tie-line MAG/VLF R22C Ser #28003
VLF TOTAL FIELD DATA (Tie-line corrected)
Date 25 SEP 88
Operator: 5002
Records: 27
Bat: 18.7 Volt Lithium: 3.50 Volt
Last time update: 9/19 17:03:00
Start of print: 9/26 10:12:09

Ref. Fld 0.5 -4.(190.2 0.(13:01:18 49 75.2 ! 100.3 6099. 41.1

Line 11 Date 25 SEP 88 VLF station frequency 24.0

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT S	DIR	4-PEA	T-COR	RESIS	PHASE
0	-28.7	20.8	309.9	-16.6	13:12:13	69	76.2		163.1	205.2	29.9
25	-28.3	17.2	305.3	-16.2	13:16:30	79	72.9		160.8	276.2	27.3
50	-29.3	11.2	299.1	-15.9	13:20:19	39	59.0		157.6	289.2	26.6
75	-26.8	6.5	293.6	-15.0	13:27:03	69	58.3	-1.9	154.8	358.2	28.4
100	-24.6	0.6	288.5	-13.8	13:31:00	59	63.8	-3.3	151.1	422.3	28.4
125	-20.2	-7.1	283.3	-11.4	13:34:24	59	75.5	-5.7	149.5	476.8	29.7
150	-11.7	-18.5	285.5	-6.9	13:39:11	59	76.8	-10.5	150.8	462.9	32.6
175	12.6	-39.0	325.7	8.4	13:42:02	59	82.1	-26.7	172.1	399.8	41.0
200	46.1	-21.2	594.9	27.6	13:47:13	69	87.2	-54.3	314.5	149.8	69.3
225	-99.7	28.5	701.7	-43.1	13:51:36	69	-85.8	17.0	371.2	108.3	64.0
250	-69.2	69.8	419.5	-47.3	13:55:29	59	-89.5	126.4	222.0	454.9	37.3
275	-56.9	62.6	345.1	-38.0	14:00:50	69	-75.5	69.8	182.7	635.5	29.9
300	-52.5	49.0	315.9	-32.6	14:05:00	79	86.3	-19.8	167.4	709.1	27.8
325	-49.2	42.2	295.9	-29.7	14:09:05	79	81.2	-23.0	156.8	907.4	28.0
350	-45.7	38.1	283.5	-27.4	14:12:51	69	82.7	-13.5	150.3	929.3	29.2
375	-44.8	33.7	272.1	-26.3	14:18:44	69	85.6	-8.6	144.4	749.1	30.0
400	-43.9	30.2	260.1	-25.3	14:23:14	69	86.1	-5.5	138.1	929.4	36.2
425	-41.6	26.8	249.3	-23.9	14:27:32	59	83.6	-4.5	132.4	883.5	34.1
450	-39.6	24.3	236.3	-22.6	14:33:05	69	72.2	-5.1	125.6	985.2	27.2
475	-36.2	22.0	228.6	-20.7	14:37:52	69	83.3	-5.9	121.6	1161.	31.6
500	-32.2	19.2	220.6	-18.4	14:42:55	59	74.3	-7.4	117.4	1093.	33.0
525	-28.2	19.6	215.0	-16.3	14:47:26	79	85.0	-8.6	114.5	1106.	38.9
550	-23.6	16.0	207.0	-13.6	14:51:54	69	71.6	-9.2	110.3	1239.	37.4

Line 2 Date 25 SEP 88 VLF station frequency 24.0

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT S	DIR	4-PEA	T-COR	RESIS	PHASE
50	1.7	12.2	228.8	1.0	14:56:39	79	65.0		122.0	911.2	133.7
100	-56.6	10.9	269.5	-30.6	15:00:59	79	59.8		143.8	2863.	4.5

Ref. Fld 2.0 -3.9 187.3 1.1 15:07:41 69 71.0 ! 100.0 7193. 41.8

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ADMINISTRATIVE RECORD
LIN003
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Hazardous Waste Investigation
Woodstock, Connecticut
OFE 88-

OMNI-PLUS Tie-line MAG/VLF E22G Ser #28003
VLF TOTAL FIELD DATA (Tie-line corrected)
Date 25 SEP 88
Operator: 5003
Records: 27
Bat: 18.7 Volt Lithium: 3.48 Volt
Last time update: 9/19 17:02:00
Start of print: 9/26 10:12:48

Ref. Fld	2.7	-2.6	72.20	1.5	13:01:19	79	74.3	!		100.0	5705.	38.2

Line 1 Date 25 SEP 88 VLF station frequency 21.4

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT S	DIR	4-PRA	T-COR	RESIS	PHASE
0	-32.2	16.2	114.7	-16.8	13:13:13	79	78.0		155.2	277.0	25.4
25	-31.8	12.7	112.5	-17.9	13:18:30	79	74.1		150.8	383.3	25.3
50	-31.2	7.6	111.1	-17.4	13:22:19	79	61.7		147.6	387.5	25.7
75	-30.0	2.7	109.2	-16.7	13:27:03	79	60.4	-2.6	144.0	485.4	25.2
100	-34.4	-7.5	14.01	-19.1	13:31:00	69	29.8	0.5	18.34	448.2	20.6
125	-33.9	-10.1	9.97	-18.8	13:34:24	73	42.9	3.8	11.80	387.8	21.0
150	-30.1	-15.9	8.08	-17.1	13:36:11	76	39.5	0.1	10.44	450.8	26.4
175	-9.9	-36.3	8.20	-6.6	13:42:02	73	50.2	-14.2	10.52	647.8	20.9
200	38.9	-41.5	12.06	21.8	13:47:13	74	67.1	-51.1	15.34	289.5	80.9
225	-93.4	25.5	340.4	-44.0	13:51:36	79	-84.7	-1.5	429.6	127.0	61.1
250	-89.9	67.4	201.3	-49.1	13:55:29	79	-85.5	108.3	252.3	538.6	36.8
275	-67.4	61.0	164.1	-41.3	14:00:50	79	-73.7	68.2	203.8	785.7	29.5
300	-60.7	47.9	146.0	-35.8	14:05:00	79	89.8	-16.0	180.0	985.1	28.6
325	-56.4	40.5	138.9	-32.7	14:09:05	79	82.8	-21.9	170.0	1149.	28.2
350	-53.6	36.4	132.2	-30.3	14:12:51	79	82.9	-14.1	161.0	1198.	29.1
375	-51.0	31.9	125.9	-29.0	14:18:44	79	85.8	-9.2	151.6	951.4	29.9
400	-49.1	28.4	121.3	-27.6	14:23:14	79	87.4	-6.4	144.8	1137.	34.7
425	-47.0	25.5	115.4	-26.4	14:27:32	79	84.3	-5.3	137.0	1145.	33.2
450	-44.3	23.2	113.3	-24.9	14:32:05	79	73.0	-5.3	133.2	1159.	27.6
475	-40.7	20.3	107.7	-22.9	14:37:52	79	83.8	-6.2	125.8	1578.	32.7
500	-37.1	18.7	104.0	-20.9	14:42:55	79	76.4	-7.5	120.5	1429.	33.1
525	-32.5	17.9	101.1	-18.5	14:47:26	79	86.2	-8.4	116.2	1320.	38.6
550	-27.7	16.0	97.40	-15.8	14:51:54	79	71.0	-9.5	111.1	1441.	35.8

Line 2 Date 25 SEP 88 VLF station frequency 21.4

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT S	DIR	4-PRA	T-COR	RESIS	PHASE
50	-0.6	13.8	107.7	-0.3	14:56:39	79	63.7		121.9	998.0	140.3
100	-59.2	9.7	129.9	-30.8	15:00:59	89	58.9		146.1	3253.	181.3

Ref. Fld	2.9	-3.6	89.86	1.7	15:07:41	79	68.5	!		100.0	7212.	39.1

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ADMINISTRATIVE RECORD
LIN003
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Hazardous Waste Investigation
Woodstock, Connecticut
OPE 88-

OMNI-PLUS Tie-line MAG/VLF B22G Ser #28003
VLF TOTAL FIELD DATA (Tie-line corrected)
Date 25 SEP 88
Operator: 5003
Records: 27
Bat: 18.7 Volt Lithium: 3.50 Volt
Last time update: 9/19 17:03:00
Start of print: 9/26 10:13:26

Ref. Fld 7.6 -8.0 5.27 4.4 13:01:18 61 -28.6 ! 100.0 13240 32.9

Line 1 Date 25 SEP 88 VLF station frequency 24.8

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT S	DIR	4-PEA	T-COR	RESIS	PHASE
0	-10.1	-24.9	6.84	-6.1	13:13:13	71	-32.3		129.0	144.9	46.2
25	-4.2	-20.8	6.89	-2.5	13:18:30	72	-40.4		129.5	170.6	43.5
50	-5.3	-16.7	7.09	-3.1	13:23:19	72	-52.9		132.7	244.8	45.7
75	-6.6	-11.4	7.13	-3.9	13:27:03	74	-55.9	-1.7	133.2	260.9	26.5
100	-7.2	-6.4	6.97	-4.1	13:31:00	62	-46.5	2.3	130.0	345.4	27.3
125	-13.7	-0.9	6.77	-7.8	13:34:24	62	-38.4	5.0	126.0	515.1	27.8
150	-19.5	9.7	7.15	-11.1	13:38:11	72	-41.0	11.0	132.8	466.5	30.4
175	-41.9	29.2	7.89	-24.3	13:42:02	71	-41.3	23.5	146.1	552.1	38.3
200	-61.5	17.8	14.98	-32.2	13:47:13	73	-66.3	37.6	276.8	103.5	69.6
225	77.3	-32.5	17.05	39.5	13:51:36	69	-58.0	-42.7	313.9	69.58	54.3
250	56.8	-56.8	9.97	36.3	13:55:28	73	-34.1	-132.3	183.2	597.8	52.1
275	39.0	-45.8	8.79	25.4	14:00:50	74	-16.9	-54.4	160.9	606.6	32.1
300	32.1	-37.1	8.46	20.1	14:05:00	73	-32.0	30.3	154.6	948.3	30.3
325	29.1	-31.1	8.18	17.7	14:09:05	72	-39.6	23.9	149.2	1203.	30.7
350	25.0	-26.5	7.97	15.0	14:12:51	72	-37.6	12.8	144.9	1154.	31.8
375	22.0	-24.9	7.89	13.2	14:18:44	72	-34.4	9.6	142.9	1112.	31.1
400	20.2	-22.6	8.00	12.0	14:23:14	72	-30.4	7.5	144.6	1067.	38.1
425	14.4	-20.8	7.43	8.5	14:27:32	71	-32.4	7.7	134.1	1921.	35.4
450	15.1	-24.3	8.13	9.1	14:33:05	73	-46.0	7.6	146.2	1701.	26.2
475	10.4	-19.0	7.85	6.2	14:37:52	72	-32.5	5.2	140.6	1824.	31.5
500	2.9	-17.5	7.55	1.7	14:42:55	71	-37.1	9.7	135.0	2313.	31.9
525	2.5	-18.2	7.51	1.4	14:47:26	71	-27.4	12.2	133.8	2104.	42.1
550	-0.8	-16.7	7.83	-0.4	14:51:54	72	-42.3	6.9	139.3	1909.	36.2

Line 2 Date 25 SEP 88 VLF station frequency 24.8

POSITION	I/P	QUAD	T.FLD	TILT	TIME	CULT S	DIR	4-PEA	T-COR	RESIS	PHASE
50	-28.1	-13.9	10.18	-16.0	14:56:39	73	-62.0		180.4	1805.	32.2
100	56.4	-8.9	9.68	29.6	15:00:59	83	-66.6		171.3	2710.	177.1

Ref. Fld 7.4 -7.6 5.68 4.2 15:07:41 61 -34.8 ! 100.0 13610 46.8

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LINEMASTER SWITCH
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Hazardous Waste Investigation
Woodstock, Connecticut
OFB 88-

OMNI-PLUS Tie-line MAG/VLF E22G Ser #28003
TOTAL FIELD DATA (uncorrected)
& GRADIENT

Reference field: 56700.0
Datum subtracted: 0.0 Date 19 SEP 88
Operator: 5001
Records: 47
Bat: 17.7 Volt Lithium: 3.50 Volt
Last time update: 9/19 17:03:00
Start of print: 9/20 0:28:16

Line E Date 19 SEP 88
POSITION FIELD BEE DRIFT TIME DS CULT GRADIENT
#1 56969.7 .00 0.0 17:10:02 88 56

Line E Date 19 SEP 88

POSITION	FIELD	BEE	DRIFT	TIME	DS	CULT	GRADIENT
225	55966.0	.07	0.0	17:12:54	88	55	1.0
250	55968.7	.06	0.0	17:14:43	88		1.0
275	55964.5	.07	0.0	17:15:11	88		-5.0
300	55970.8	.07	0.0	17:16:07	88		1.3
325	55977.3	.07	0.0	17:17:02	88		1.7
350	55975.2	.07	0.0	17:17:34	88		1.3
375	55982.3	.06	0.0	17:21:04	88		1.1
400	55982.5	.06	0.0	17:22:10	88		0.7
425	55979.9	.06	0.0	17:23:42	88		-0.4
450	55985.4	.07	0.0	17:24:20	88		1.0
475	55995.0	.06	0.0	17:24:58	88		2.2
500	55999.0	.06	0.0	17:25:35	88		2.5
525	55106.7	.07	0.0	17:26:15	88		4.8
550	55097.1	.06	0.0	17:26:42	88		3.0
575	55079.7	.06	0.0	17:27:13	88		-1.2
600	55074.3	.07	0.0	17:27:51	88		-1.7
625	55085.9	.07	0.0	17:28:31	88		2.8
650	55080.5	.06	0.0	17:29:07	88		0.9
675	55078.0	.06	0.0	17:29:50	88		0.5
700	55075.9	.07	0.0	17:30:31	88		1.0
725	55097.5	.07	0.0	17:31:44	88		15.1
750	55075.2	.06	0.0	17:32:22	88		0.7
775	55075.3	.07	0.0	17:32:56	88		1.6
800	55074.9	.06	0.0	17:33:30	88		1.6
825	55074.9	.07	0.0	17:34:09	88		1.4
850	55076.4	.07	0.0	17:34:41	88		0.7
875	55073.5	.07	0.0	17:35:14	88		1.2
900	55072.5	.06	0.0	17:35:38	88		1.2
925	55072.3	.06	0.0	17:36:10	88		1.2
950	55069.9	.06	0.0	17:36:37	88		0.6

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975	55068.5	.07	0.0	17:37:04	88	0.5
1000	55067.5	.06	0.0	17:37:32	88	0.6
1025	55067.7	.07	0.0	17:38:04	88	0.7
1050	55069.7	.06	0.0	17:38:28	88	1.6
1075	55069.7	.06	0.0	17:38:53	88	1.2
1100	55069.1	.07	0.0	17:39:17	88	1.0
300	55073.6	.07	0.0	17:45:59	88	1.1
#39	55076.0	.07	0.0	17:47:20	88	0.6
25	55034.0	.06	0.0	17:49:20	88	-16.3
50	55046.8	.07	0.0	17:50:45	88	-3.9
75	55059.6	.06	0.0	17:51:10	88	0.3
100	55066.6	.06	0.0	17:51:35	88	0.0
125	55068.9	.07	0.0	17:51:59	88	0.3
150	55070.6	.07	0.0	17:52:22	88	0.9
175	55066.9	.07	0.0	17:52:47	88	-3.7
200	55075.3	.06	0.0	17:53:11	88	0.9

OMNI-PLUS Tie-line MAG/VLF B220 Ser #2B003
TOTAL FIELD DATA (uncorrected)
& GRADIENT

Reference field: 56700.0
Datum subtracted: 0.0 Date 25 SEP 88
Operator: 5000
Records: 27
Bat: 18.7 Volt Lithium: 3.50 Volt
Last time update: 9/19 17:03:00
Start of print: 9/26 10:07:21

Ref. Fld 55025.3 .06 0.0 13:01:18 88

Line 11 Date 25 SEP 88

POSITION	FIELD	BBE	DRIFT	TIME	DS	CULT	GRADIENT
0	55084.1	.06	0.0	13:13:13	88		-10.9
25	55019.1	.06	0.0	13:18:30	88		-1.7
50	55034.5	.07	0.0	13:23:19	88		0.9
75	55042.5	.07	0.0	13:27:03	88		0.5
100	55048.2	.06	0.0	13:31:00	88		1.1
125	55050.1	.07	0.0	13:34:24	88		0.6
150	55052.3	.06	0.0	13:38:11	88		0.2
175	55051.4	.06	0.0	13:42:02	88		1.3
200	55056.0	.07	0.0	13:47:13	88		4.5
225	55038.2	.06	0.0	13:51:36	88		-4.1
250	55051.9	.05	0.0	13:55:28	88		-0.4
275	55052.0	.06	0.0	14:00:50	88		0.2
300	55048.9	.05	0.0	14:05:00	88		0.1
325	55046.7	.06	0.0	14:09:05	88		-1.2

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350	55049.7	.06	0.0	14:12:51	88	0.8
375	55050.7	.06	0.0	14:18:44	88	1.3
400	55048.4	.06	0.0	14:23:14	88	1.2
425	55044.5	.06	0.0	14:27:32	88	0.1
450	55043.3	.06	0.0	14:33:05	88	0.0
475	55041.8	.06	0.0	14:37:52	88	0.0
500	55036.8	.07	0.0	14:42:55	88	-0.2
525	55029.2	.07	0.0	14:47:26	88	-1.6
550	55033.1	.06	0.0	14:51:54	88	-1.3

Line 2 Date 25 SEP 88

POSITION	FIELD	REB	DRIFT	TIME	DS	CULT GRADIENT
50	55028.5	.07	0.0	14:56:39	88	-1.3
100	55046.4	.06	0.0	15:00:59	88	1.0

Ref. Fld 55038.7 .06 0.0 15:07:41 88

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9.4 Magnetic Data

Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
0100000	813638.5	404649.5	55050.00
0100250	813612.0	404649.5	55050.00
0100500	813588.5	404649.0	55052.00
0100750	813564.5	404650.0	55049.00
0101000	813540.5	404649.0	55052.00
0101125	813530.0	404649.5	55046.00
0101250	813516.5	404648.5	55042.00
0101500	813490.0	404649.5	55051.00
0101750	813464.5	404649.0	55050.00
0102000	813437.0	404648.0	55052.00
0102250	813416.5	404647.5	55053.00
0102375	813402.0	404647.5	55056.00
0102500	813389.0	404647.5	55060.00
0102750	813365.0	404647.0	55064.00
0103000	813340.0	404647.0	55063.00
0103250	813316.5	404646.0	55059.00
0103500	813289.0	404646.0	55054.00
0103750	813265.5	404646.5	55052.00
0104000	813239.0	404645.5	55055.00
0104250	813214.5	404645.0	55058.00
0104500	813188.5	404645.5	55062.00
0104750	813166.0	404644.5	55061.00
0105000	813140.0	404645.0	55062.00
0105250	813115.5	404644.5	55060.00
0105500	813089.5	404644.5	55058.00
0105750	813066.0	404644.5	55050.00
0106000	813038.5	404643.0	55050.00
0106250	813016.5	404642.5	55054.00
0106500	812989.5	404642.5	55053.00
0200000	813254.0	404645.5	55046.00
0200250	813262.0	404623.0	55052.00
0200500	813268.5	404597.0	55055.00
0200625	813273.0	404586.5	55074.00
0200750	813276.0	404574.5	55114.00
0200875	813280.5	404561.0	55080.00
0201000	813283.0	404550.0	55066.00
0201250	813291.5	404526.5	55059.00
0201500	813299.0	404502.0	55057.00
0201750	813305.5	404478.5	55056.00
0202000	813313.5	404455.0	55057.00
0202250	813320.0	404430.5	55058.00
0202500	813327.5	404406.5	55058.00
0202750	813334.5	404382.0	55059.00
0203000	813341.0	404358.0	55057.00
0203250	813349.0	404333.5	55061.00
0203500	813356.5	404311.0	55062.00
0203750	813362.5	404286.0	55063.00
0203825	813367.5	404275.0	55063.00
0204000	813369.0	404264.5	55053.00
0204250	813378.0	404237.5	55055.00
0204500	813384.5	404215.0	55055.00

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LINEMASTER SWITCH
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Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
0204750	813392.5	404189.0	55054.00
0205000	813400.0	404168.0	55056.00
0205250	813407.0	404144.0	55058.00
0205500	813415.0	404119.5	55060.00
0205750	813421.5	404093.5	55060.00
0206000	813429.0	404072.0	55059.00
0206250	813436.0	404047.0	55055.00
0206500	813443.5	404022.0	55055.00
0300250	813629.5	404626.0	55049.00
0300500	813623.5	404602.5	55054.00
0300750	813615.5	404579.0	55051.00
0300875	813613.5	404564.0	55053.00
0301000	813610.0	404554.5	55061.00
0301125	813607.5	404542.0	55079.00
0301250	813600.0	404530.0	55108.00
0301375	813598.0	404517.0	55103.00
0301500	813594.0	404506.0	55153.00
0301625	813591.0	404494.0	55017.00
0302500	813564.5	404410.0	55059.00
0302750	813557.5	404388.0	55058.00
0303000	813549.5	404364.0	55056.00
0303250	813542.5	404339.5	55054.00
0303500	813534.5	404315.0	55052.00
0303750	813527.0	404291.0	55050.00
0304000	813520.0	404266.5	55049.00
0304250	813514.0	404244.5	55065.00
0304500	813506.0	404218.5	55056.00
0304750	813497.5	404195.5	55058.00
0305000	813490.0	404171.0	55066.00
0305250	813483.5	404146.5	55064.00
0305500	813476.5	404123.5	55061.00
0305750	813469.0	404099.5	55060.00
0306000	813460.5	404073.5	55059.00
0306250	813453.0	404046.5	55059.00
0400000	813438.5	404647.5	55052.00
0400250	813433.5	404622.5	55049.00
0400500	813430.0	404597.0	55046.00
0400750	813425.5	404572.5	55048.00
0400875	813423.0	404558.0	55046.00
0401000	813421.0	404548.5	55030.00
0401125	813419.5	404536.0	55004.00
0401250	813416.5	404523.0	55028.00
0401500	813413.0	404499.5	55048.00
0401750	813407.5	404474.5	55050.00
0402000	813405.0	404449.5	55052.00
0402250	813400.5	404425.0	55055.00
0402500	813394.5	404401.0	55057.00
0402750	813390.0	404375.0	55056.00
0403000	813385.5	404350.5	55058.00
0403250	813381.5	404325.0	55058.00
0403500	813377.0	404302.0	55059.00
0403750	813372.0	404276.0	55063.00
0404000	813367.5	404251.5	55054.00
0500250	812811.0	403474.0	55003.00
0500375	812822.0	403475.5	55012.00

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LINEMASTER SWITCH
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Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
0500500	812834.5	403477.5	55021.00
0500625	812848.0	403480.0	55030.00
0500750	812860.5	403481.0	55036.00
0500875	812871.0	403483.0	55039.00
0501000	812884.5	403484.5	55042.00
0501125	812897.0	403487.0	55046.00
0501250	812911.5	403489.5	55045.00
0501375	812920.5	403491.0	55047.00
0501500	812934.5	403493.5	55048.00
0501625	812946.0	403494.5	55047.00
0501750	812960.0	403497.0	55044.00
0501875	812970.5	403497.5	55051.00
0502000	812982.5	403499.5	55051.00
0502125	812995.5	403501.0	55050.00
0502250	813009.5	403503.5	55049.00
0502375	813020.5	403505.0	55049.00
0502500	813032.0	403506.5	55049.00
0502625	813043.5	403509.0	55057.00
0502750	813059.5	403511.0	55046.00
0502875	813072.0	403513.0	55040.00
0503000	813082.0	403513.5	55048.00
0503125	813094.5	403516.5	55053.00
0503250	813108.5	403518.5	55054.00
0503375	813120.5	403520.5	55056.00
0503500	813131.5	403521.0	55056.00
0503625	813144.5	403523.5	55056.00
0503750	813158.5	403524.5	55055.00
0503875	813169.0	403528.0	55054.00
0504000	813180.5	403530.0	55055.00
0504125	813195.5	403531.0	55051.00
0504250	813208.5	403533.0	55051.00
0504375	813220.0	403535.5	55053.00
0504500	813230.0	403537.0	55059.00
0504625	813244.5	403538.5	55062.00
0504750	813254.5	403539.5	55066.00
0504875	813269.0	403541.5	55070.00
0505000	813279.5	403542.5	55072.00
0505125	813293.5	403545.5	55076.00
0505250	813303.5	403546.5	55081.00
0505375	813319.0	403550.5	55078.00
0505500	813329.5	403550.5	55071.00
0505625	813343.5	403551.5	55057.00
0505750	813354.5	403554.0	55052.00
0505875	813367.5	403556.0	55047.00
0506000	813379.5	403558.0	55046.00
0506125	813392.5	403559.0	55048.00
0506250	813404.0	403562.0	55059.00
0506375	813417.0	403563.5	55059.00
0506500	813428.5	403564.0	55053.00
0506625	813442.0	403566.5	55049.00
0506750	813452.5	403568.5	55049.00
0506875	813466.0	403570.0	55048.00
0507000	813479.0	403572.0	55050.00
0507125	813492.0	403574.0	55053.00
0507250	813504.5	403576.0	55079.00

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Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
0507375	813517.0	403578.0	55051.00
0507500	813527.0	403579.5	55049.00
0507625	813541.0	403581.0	55050.00
0507750	813552.0	403582.5	55050.00
0507875	813568.0	403586.0	55050.00
0508000	813577.0	403586.0	55051.00
0508125	813590.5	403587.0	55049.00
0508250	813603.5	403590.0	55051.00
0508375	813616.0	403591.0	55055.00
0508500	813626.5	403594.0	55052.00
0508625	813640.0	403595.0	55050.00
0508750	813653.0	403597.5	55048.00
0508875	813664.5	403599.5	55049.00
0509000	813677.0	403601.5	55051.00
0509125	813691.0	403603.0	55051.00
0509250	813702.5	403603.5	55049.00
0509375	813715.0	403605.5	55050.00
0509500	813726.0	403607.0	55047.00
0509625	813738.5	403609.0	55047.00
0509750	813750.5	403611.0	55046.00
0509875	813764.5	403612.5	55047.00
0510000	813775.5	403615.0	55045.00
0510125	813788.0	403616.0	55044.00
0510250	813802.5	403618.5	55045.00
0510375	813814.0	403621.0	55047.00
0510500	813824.5	403621.0	55049.00
0510625	813838.0	403624.5	55048.00
0510750	813851.0	403626.0	55048.00
0510875	813864.0	403626.0	55048.00
0511000	813873.5	403629.0	55046.00
0511125	813887.5	403631.0	55046.00
0511250	813899.5	403633.0	55044.00
0511375	813912.5	403634.0	55043.00
0511500	813923.5	403636.0	55041.00
0511750	813950.0	403640.0	55039.00
0512000	813972.5	403644.0	55041.00
0512250	814000.5	403647.5	55040.00
0512500	814025.0	403651.5	55037.00
0512750	814048.5	403653.5	55034.00
0513000	814072.5	403658.0	55030.00
0600000	812741.0	403808.5	55097.00
0600125	812743.5	403816.5	55072.00
0600250	812751.5	403834.5	55060.00
0600500	812760.0	403857.5	55053.00
0600750	812768.0	403880.0	55054.00
0601000	812777.0	403901.5	55053.00
0601250	812785.5	403928.5	55051.00
0601500	812793.5	403949.5	55048.00
0601750	812803.5	403973.5	55043.00
0602000	812810.5	403996.5	55038.00
0602250	812821.0	404021.0	55031.00
0602500	812828.5	404043.5	55022.00
0602750	812836.5	404068.0	55014.00
0603000	812845.5	404090.0	55013.00
0603250	812853.5	404114.0	55012.00

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LINEMASTER SWITCH
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Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
0603500	812862.5	404135.5	55015.00
0603750	812872.5	404161.0	55014.00
0604000	812881.5	404184.5	55030.00
0700000	812972.0	404240.5	55033.00
0700250	812972.5	404264.0	55035.00
0700500	812974.0	404288.0	55035.00
0700750	812976.0	404313.0	55035.00
0701000	812977.0	404338.5	55035.00
0701250	812977.5	404364.5	55059.00
0701500	812980.0	404388.0	55041.00
0701750	812980.5	404414.5	55042.00
0702000	812982.0	404438.0	55043.00
0702250	812983.0	404463.0	55048.00
0702500	812984.0	404487.5	55056.00
0702750	812985.0	404513.5	55059.00
0702875	812986.0	404525.0	55057.00
0703000	812986.5	404536.5	55071.00
0703125	812987.0	404551.0	54883.00
0703250	812987.0	404563.0	54973.00
0703375	812988.0	404574.5	55025.00
0703500	812988.0	404588.0	55040.00
0703750	812989.0	404613.0	55049.00
0704000	812990.5	404638.5	55052.00
0800000	812972.5	404239.5	55033.00
0800250	812987.5	404216.5	55030.00
0800500	813001.5	404196.0	55024.00
0800625	813008.5	404188.0	55017.00
0800750	813017.0	404176.0	55002.00
0800875	813022.5	404166.0	54984.00
0801000	813028.5	404155.5	54955.00
0801125	813036.5	404145.0	54912.00
0801250	813044.0	404134.5	54859.00
0801375	813050.5	404125.5	54794.00
0801500	813058.0	404115.0	54739.00
0801625	813064.5	404104.5	54691.00
0801750	813071.0	404094.0	54698.00
0801875	813079.0	404084.0	54743.00
0802000	813085.0	404073.5	54785.00
0802125	813092.0	404063.5	54841.00
0802250	813100.0	404052.5	54884.00
0802375	813107.5	404042.5	54928.00
0802500	813114.0	404032.0	54954.00
0802625	813120.5	404023.0	54980.00
0802750	813128.0	404010.0	54997.00
0802875	813134.0	404001.0	55012.00
0803000	813140.5	403993.0	55019.00
0803125	813134.5	403982.0	55022.00
0803250	813130.0	403968.5	55024.00
0803375	813127.5	403958.0	55030.00
0803500	813123.5	403945.5	55033.00
0803625	813122.0	403936.0	55036.00
0803750	813117.0	403921.5	55038.00
0804000	813109.5	403898.0	55044.00
0804250	813101.5	403875.0	55043.00
0804500	813093.5	403850.5	55045.00

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Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
0804750	813087.0	403826.5	55048.00
0805000	813079.5	403802.0	55046.00
0900000	812880.5	404184.0	55030.00
0900250	812858.0	404184.0	54999.00
0900500	812830.0	404182.0	55012.00
0900750	812808.0	404180.0	55016.00
0901000	812781.0	404177.5	55014.00
0901250	812757.5	404176.5	55012.00
0901500	812730.0	404174.0	55009.00
0901750	812707.5	404172.5	55001.00
0902000	812681.0	404170.5	55014.00
0902250	812656.5	404167.5	54927.00
0902500	812630.5	404165.0	58152.00
0902750	812605.0	404164.0	54910.00
0903000	812582.0	404163.5	54978.00
0903500	812533.0	404169.5	54988.00
0904000	812484.0	404174.5	54990.00
0904500	812434.0	404181.5	55007.00
0905000	812384.5	404185.5	55023.00
0905500	812335.5	404191.0	55043.00
1000000	812880.0	404183.0	55030.00
1000250	812906.0	404182.5	54982.00
1000500	812930.0	404182.0	55007.00
1000750	812956.0	404182.0	55021.00
1001000	812980.0	404181.0	55014.00
1001250	813006.0	404180.5	55007.00
1001500	813030.5	404181.5	54997.00
1001750	813055.0	404179.0	54993.00
1002000	813081.0	404179.0	54996.00
1002250	813105.0	404178.0	55024.00
1002500	813129.5	404178.0	55012.00
1002750	813155.5	404176.0	55019.00
1003000	813179.5	404176.0	55030.00
1003250	813205.0	404175.0	55038.00
1003500	813229.0	404174.5	55042.00
1003750	813254.0	404173.5	55040.00
1004000	813277.5	404172.5	55041.00
1100000	812821.0	404951.0	55650.00
1100125	812833.5	404944.0	55041.00
1100250	812845.5	404936.0	55037.00
1100375	812856.0	404929.5	55047.00
1100500	812867.0	404922.0	55052.00
1100750	812887.5	404909.0	55060.00
1101000	812907.5	404894.0	55065.00
1101250	812929.0	404881.5	55068.00
1101500	812952.0	404866.0	55069.00
1101750	812970.5	404854.0	55069.00
1101875	812982.0	404846.5	55067.00
1102000	812993.5	404838.5	55076.00
1102125	813003.5	404833.0	55078.00
1102250	813015.5	404826.5	55053.00
1102375	813024.5	404819.0	55064.00
1102500	813036.5	404812.0	55068.00
1102750	813056.0	404799.0	55070.00
1103000	813079.5	404785.0	55066.00

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Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
1103250	813098.5	404771.5	55062.00
1103500	813120.0	404757.0	55062.00
1103750	813141.0	404744.0	55065.00
1104000	813164.0	404730.5	55065.00
1104250	813184.0	404716.0	55060.00
1104500	813204.5	404702.5	55057.00
1104750	813225.5	404688.5	55056.00
1105000	813246.0	404676.0	55052.00
1105250	813268.5	404660.5	55042.00
1105500	813289.0	404647.5	55046.00
1200000	813461.0	404073.0	55053.00
1200250	813486.5	404066.5	55051.00
1200500	813510.0	404061.0	55045.00
1200750	813534.5	404055.5	55046.00
1201000	813558.5	404050.0	55049.00
1201125	813570.0	404047.5	55047.00
1201250	813584.0	404044.0	55011.00
1201375	813594.5	404042.0	55054.00
1201500	813607.0	404039.0	55062.00
1201625	813618.0	404036.0	55041.00
1201750	813631.5	404033.5	55049.00
1202000	813656.0	404027.5	55045.00
1202250	813669.5	404006.0	55052.00
1202500	813683.0	403984.5	55050.00
1202750	813698.0	403964.0	55050.00
1203000	813711.5	403944.0	55049.00
1203250	813726.0	403923.0	55050.00
1203500	813738.5	403903.0	55051.00
1203750	813755.0	403882.5	55048.00
1204000	813769.0	403861.5	55048.00
1204250	813783.0	403841.0	55046.00
1204500	813797.0	403820.5	55046.00
1204750	813812.0	403800.0	55048.00
1205000	813825.0	403780.0	55046.00
1205250	813840.0	403758.5	55045.00
1205500	813852.5	403738.0	55043.00
1205750	813867.5	403717.0	55042.00
1206000	813882.0	403696.5	55042.00
1206250	813896.5	403676.5	55042.00
1206500	813909.5	403655.5	55042.00
1206750	813924.5	403635.0	55040.00
1300000	812784.0	403470.5	55086.00
1300250	812801.0	403490.0	55002.00
1300500	812817.0	403508.0	55015.00
1300750	812834.0	403527.0	55031.00
1301000	812849.0	403546.0	55042.00
1301250	812867.5	403565.5	55045.00
1301500	812881.0	403584.0	55047.00
1301750	812898.5	403603.0	55048.00
1302000	812915.0	403621.0	55050.00
1302250	812931.5	403642.0	55050.00
1302500	812946.0	403659.0	55046.00
1302750	812963.5	403679.5	54996.00
1303000	812979.0	403696.5	55057.00
1303250	812996.0	403715.5	55049.00

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Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
1303500	813013.5	403736.0	55066.00
1303750	813029.0	403754.0	55047.00
1304000	813044.5	403773.5	55047.00
1400000	813079.5	403802.0	55044.00
1400250	813096.5	403820.5	55047.00
1400500	813112.5	403839.0	55048.00
1400750	813129.0	403858.0	55047.00
1401000	813145.0	403876.5	55047.00
1401250	813162.5	403896.5	55046.00
1401500	813178.0	403915.0	55044.00
1401750	813195.5	403934.5	55050.00
1402000	813211.0	403951.5	55052.00
1402250	813228.0	403972.5	55054.00
1402500	813243.5	403989.5	55049.00
1402750	813262.0	404009.5	55050.00
1402875	813269.5	404018.0	55066.00
1403000	813277.5	404029.5	55078.00
1403125	813285.5	404038.0	55073.00
1403250	813293.5	404047.5	55062.00
1403375	813301.5	404055.5	55050.00
1403500	813311.5	404066.0	55048.00
1403750	813327.5	404086.5	55051.00
1404000	813343.0	404102.5	55053.00
1404250	813361.5	404124.0	55053.00
1404500	813378.0	404142.0	55050.00
1404750	813393.0	404160.5	55052.00
1405000	813411.0	404178.0	55054.00
1500000	813610.0	404554.0	55054.00
1500250	813632.5	404543.5	55066.00
1500375	813643.5	404538.0	55068.00
1500500	813656.0	404532.0	55074.00
1500625	813666.5	404527.5	55082.00
1500750	813678.0	404522.5	55051.00
1501000	813701.0	404510.0	55045.00
1501250	813722.5	404500.5	55062.00
1501500	813746.0	404489.5	55061.00
1501625	813757.0	404484.5	54987.00
1501750	813768.5	404480.0	55022.00
1501875	813779.0	404473.5	55011.00
1502000	813792.5	404469.0	55031.00
1502125	813796.5	404453.5	55039.00
1502250	813797.5	404443.5	55046.00
1502500	813803.0	404420.0	55046.00
1502750	813809.0	404394.0	55049.00
1503000	813815.0	404369.5	55048.00
1503250	813818.0	404346.0	55047.00
1503500	813824.0	404322.0	55046.00
1503750	813830.0	404297.0	55046.00
1504000	813834.5	404272.5	55044.00
1504250	813840.0	404248.0	55043.00
1504500	813846.0	404224.5	55046.00
1504750	813851.5	404199.0	55048.00
1505000	813857.5	404174.0	55050.00
1505250	813862.0	404150.5	55050.00
1505500	813867.0	404126.0	55049.00

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Sta ID	X (ft)	Y (ft)	Cor Mag (nT)
1505750	813873.0	404101.5	55046.00
1506000	813878.0	404077.0	55046.00
1506250	813883.0	404053.0	55049.00
1506500	813888.0	404027.5	55050.00
1506750	813893.0	404004.0	55049.00
1507000	813899.5	403979.0	55046.00
1507250	813904.5	403953.5	55048.00
1507375	813907.5	403943.5	55043.00
1507500	813910.5	403929.5	55008.00
1507625	813912.5	403917.0	55031.00
1507750	813914.5	403906.5	54964.00
1507875	813917.5	403894.0	55010.00
1508000	813920.0	403881.0	55068.00
1508125	813922.5	403868.5	55055.00
1508250	813925.5	403858.0	55050.00
1508500	813932.0	403832.5	55047.00
1508750	813935.0	403808.5	55045.00
1509000	813941.0	403784.5	55045.00
1509250	813947.0	403759.5	55045.00
1509500	813952.0	403734.5	55045.00
1509750	813957.5	403710.5	55044.00
1510000	813963.0	403686.5	55043.00
1510250	813968.5	403662.0	55040.00
1510440	813973.0	403642.0	55041.00
1600000	812367.0	404538.0	55076.00
1600250	812360.5	404514.0	55032.00
1600500	812355.0	404488.5	55032.00
1601000	812344.5	404440.0	55029.00
1601500	812334.5	404391.0	55033.00
1602000	812322.0	404341.0	55032.00
1602500	812313.0	404293.0	55034.00
1603000	812302.5	404245.0	55040.00
1603500	812292.0	404195.5	55044.00
1604000	812281.5	404147.5	55049.00
1604500	812270.5	404097.5	55057.00
1605000	812259.5	404048.5	55056.00
1605500	812249.5	404001.0	55048.00
1700000	812781.0	404177.5	55017.00
1700250	812783.5	404200.5	55003.00
1700500	812788.0	404225.5	54985.00
1700750	812790.5	404251.5	54964.00
1701000	812794.0	404274.5	54968.00
1701250	812797.5	404300.5	54933.00
1701500	812800.5	404324.0	54935.00
1701750	812804.5	404350.5	54948.00
1702000	812808.0	404374.0	54943.00
1702250	812811.5	404400.0	54948.00
1702500	812814.0	404422.5	54937.00
1702750	812818.0	404448.0	54895.00

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Hazardous Waste Investigation
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Magnetic susceptibility measurements on core samples from monitor wells drilled on Linemaster Switch property
Measurements by D.L. Daniels 9/14/88

Description: Measured samples were found in 4 foot wooden coreboxes at site of monitor well 7. Information about the number of the well, run, box, and depths come from writing on core boxes. Geologic names from Dixon (1982).

Instrument: Geoinstruments model JH-8 USGS G414462
Battery reading 65.
All measurements SI units

MW-5 (corebox II)

Run 7 39.0-44.0', recovery 5'4", core diam 1.875"

depth	interval	K'*	K**	description
39.0'	12"	0-5 x 10-5	0-10 x 10-5	coarse pegmatite
|	10"	0-2 x 10-5	0-4 x 10-5	" "
|	7"	0-1 x 10-5	0-2 x 10-5	" "
|	15"	0-3 x 10-5	0-6 x 10-5	" "
44.0'	18"	0-1 x 10-5	0-2 x 10-5	" "

MW-8 (corebox II)

Run 1 22.0-27.0', recovery 4.8', core diam 1.875"

depth	interval	K'*	K**	description
22.0'	12"	8-12 x 10-5	15-23 x 10-5	Hebron schist
|	12"	12-22 x 10-5	23-41 x 10-5	"
|	12"	10-16 x 10-5	19-30 x 10-5	"
|	12"	10-15 x 10-5	19-28 x 10-5	"
27.0'	12"	10-15 x 10-5	19-28 x 10-5	"

Run 2 27.0-29.0', recovery 1.8', core diam 1.875"

depth	interval	K'*	K**	description
27.0'	22"	15-25 x 10-5	28-47 x 10-5	Hebron schist

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MW-7 (coreboxes III, IV, V)

Run 1 4.5-9.5', recovery 5.0', core diam 1.875"

depth	interval	K'*	K**	description
4.5'	3"	0	0	pegmatite vein
|	12"	15-25 x 10-5	28-47 x 10-5	Hebron schist
|	10"	0	0	pegmatite vein
|	10"	15-20 x 10-5	28-38 x 10-5	Hebron schist
|	10"	15-20 x 10-5	28-38 x 10-5	Hebron schist
9.5'	12"	15-30 x 10-5	28-56 x 10-5	Hebron schist

Run 2 4.5-10.0' only chips - no measurements

Run 3 10.0-13.0', recovery 2.875', core diam 2.875"

depth	interval	K'*	K**	description
10.0'	5"	0 x 10-5	0	pegmatite vein
|	10"	20-38 x 10-5	31-60 x 10-5	Hebron schist
13.0'	10"	10-80 x 10-5	16-126 x 10-5	Hebron schist

Run 4 13.0-18.0', recovery 5.0', core diam 2.875"

depth	interval	K'*	K**	description
13.0'	3"	0 x 10-5	0	pegmatite vein
|	6"	20-40 x 10-5	31-62 x 10-5	Hebron schist
|	24"	15-45 x 10-5	24-71 x 10-5	"
|	12"	40-100 x 10-5	62-157 x 10-5	"
|	12"	20-40 x 10-5	31-62 x 10-5	"
18.0'	3"	0 x 10-5	0	pegmatite vein

Run 5 18.0-23.0', recovery 4.9', core diam 2.875"

depth	interval	K'*	K**	description
18.0'	24"	30-55 x 10-5	47-86 x 10-5	Hebron schist
|	6"	30-55 x 10-5	47-86 x 10-5	Hebron schist
|	5"	0	0	pegmatite vein
|	18"	30-60 x 10-5	47-94 x 10-5	Hebron schist
23.0'	12"	30-100 x 10-5	47-157 x 10-5	"

Run 6 23.0-28.0', recovery 5.1', core diam 2.875"

depth	interval	K'*	K**	description
23.0'	6"	30-40 x 10-5	47-62 x 10-5	Hebron schist
|	12"	30-100 x 10-5	47-157 x 10-5	"
|	12"	30-50 x 10-5	47-79 x 10-5	"
|	12"	30-40 x 10-5	47-62 x 10-5	"
28.0'	18"	0	0	pegmatite vein

* measured magnetic susceptibility of interval (SI units)
** corrected magnetic susceptibility (SI units)

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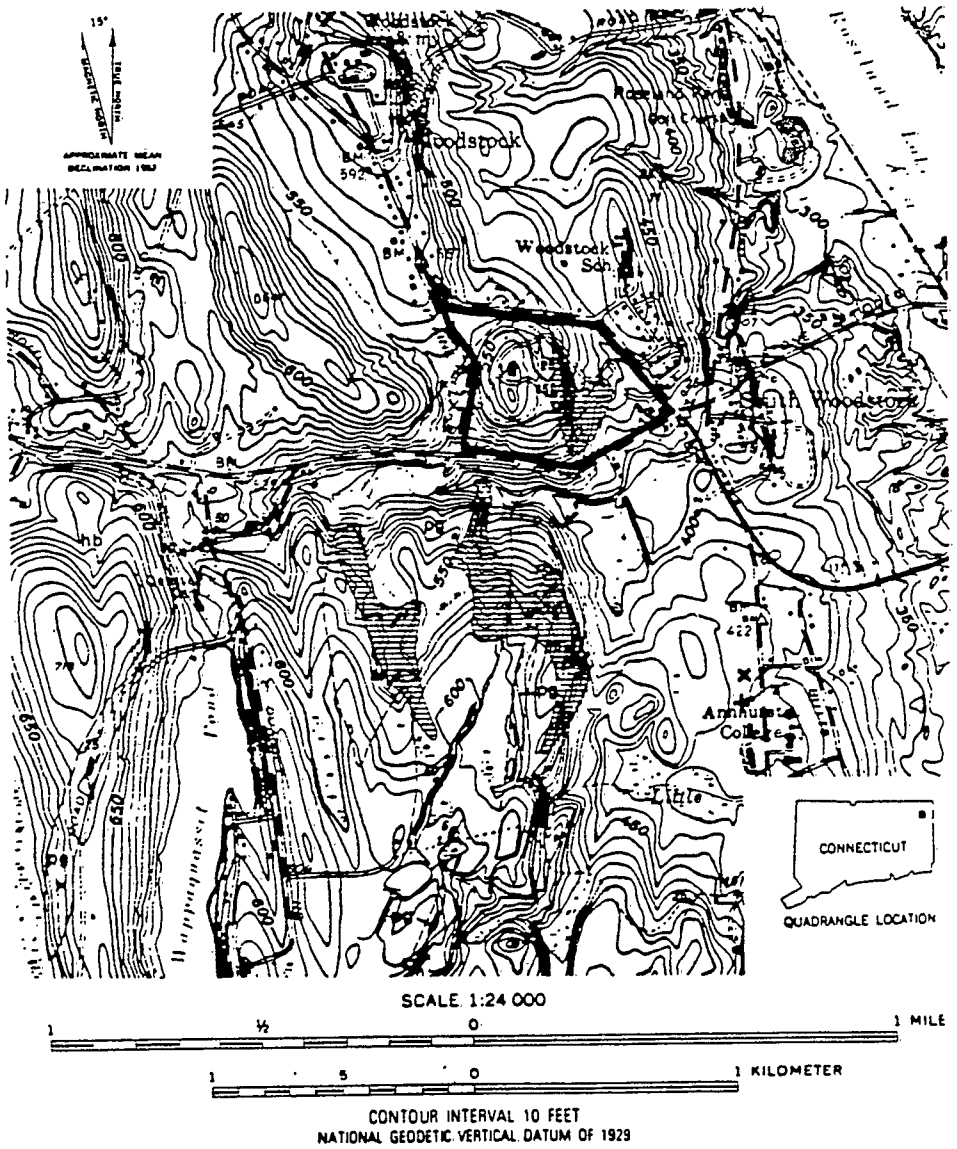

Figure 1. Geographic setting of Linemaster Site, Windham County, Woodstock, Connecticut. Adapted from Dixon (1982).

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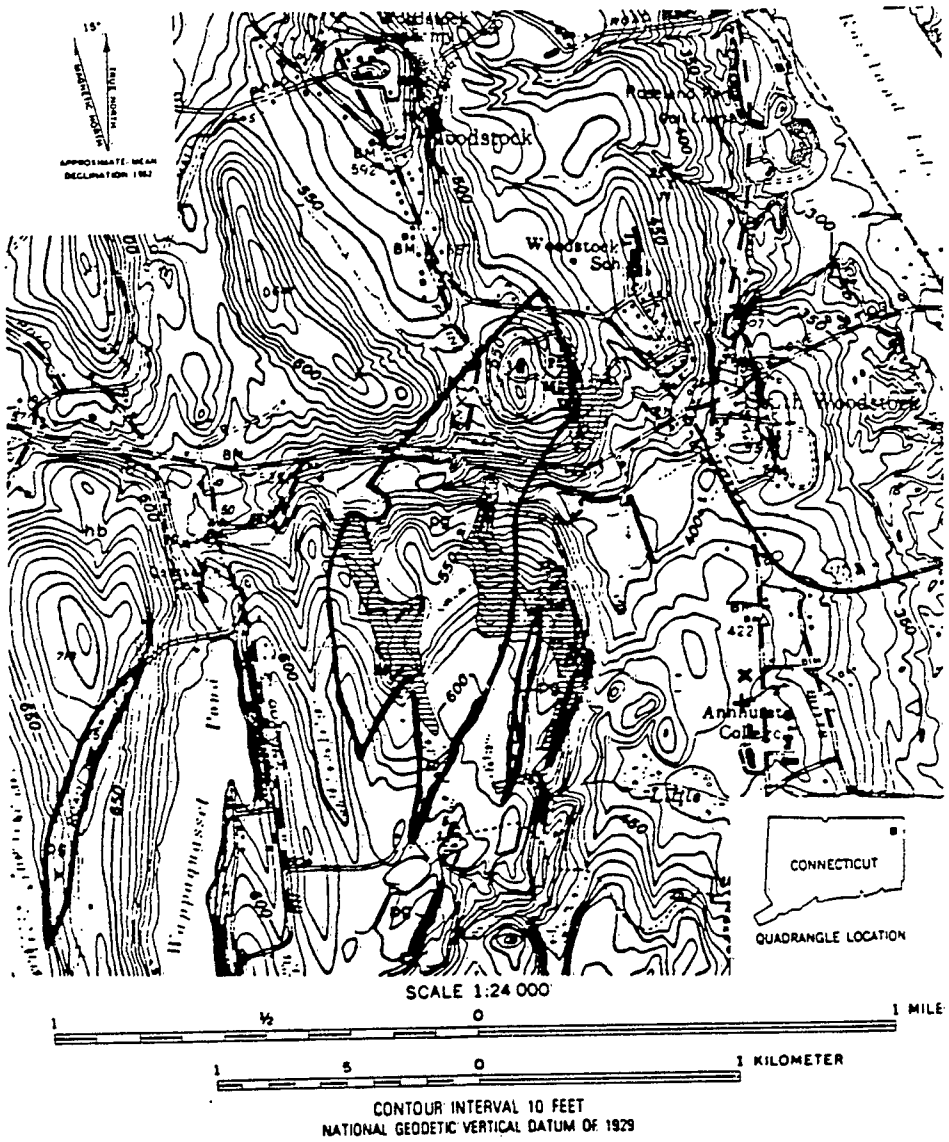

Figure 2. Bedrock geology of Linemaster Site, Windham County, Woodstock, Connecticut. Adapted from Dixon (1982).

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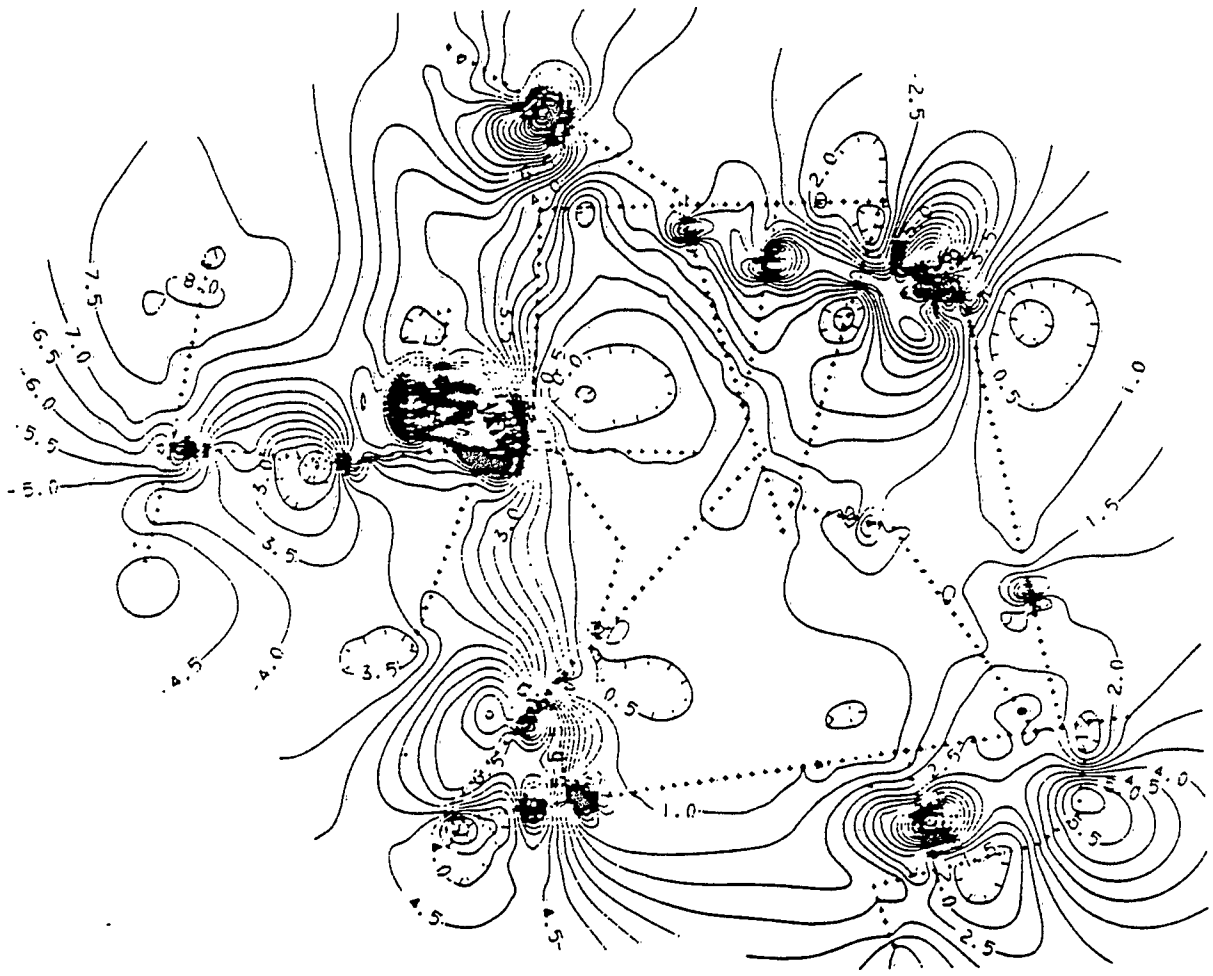

Figure 3. Unfiltered EM31 conductivity map of Linemaster Site, Woodstock, Connecticut, September 1988. Contours are in millimhos per meter. Crosses are station locations.

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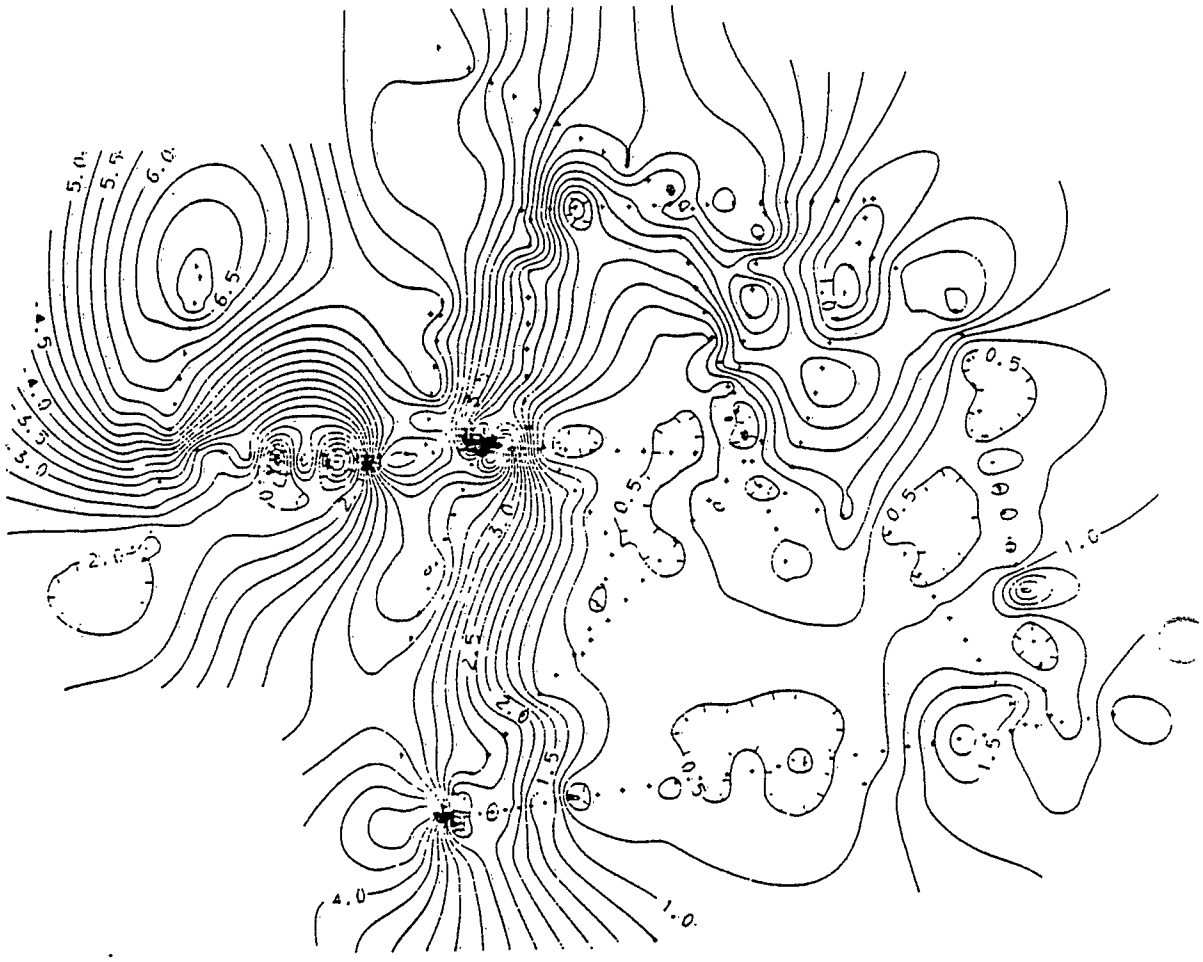

Figure 4. Unfiltered EM34 conductivity map of Linemaster Site, Woodstock, Connecticut, September 1988. Contours are in millimhos per meter. Crosses are station locations.

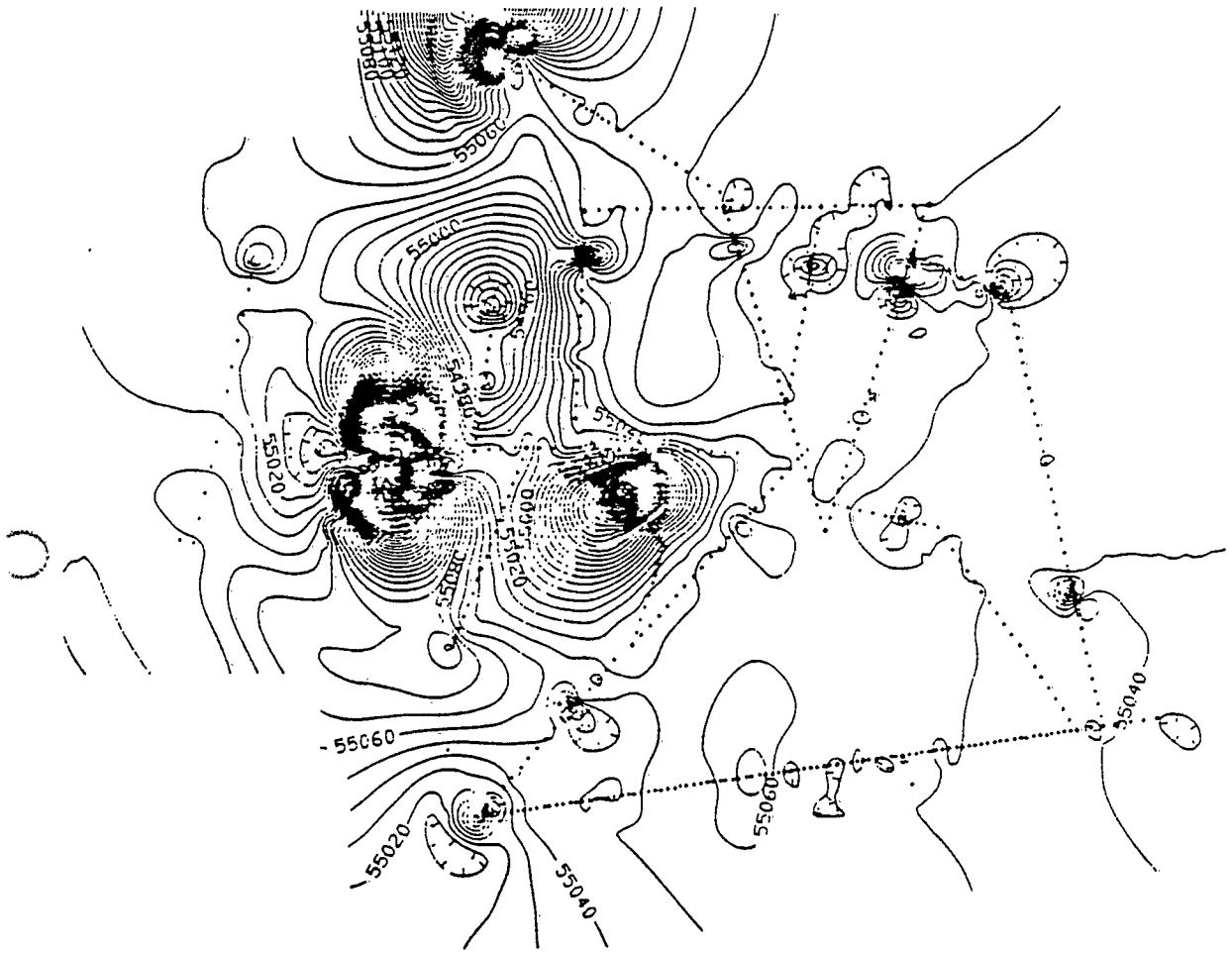

Figure 5. Unfiltered magnetic map of Linemaster Site, Woodstock, Connecticut, September 1988. Contours are in gammas. Crosses are station locations.

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Hazardous Waste Investigation
Woodstock, Connecticut
OFR 88-

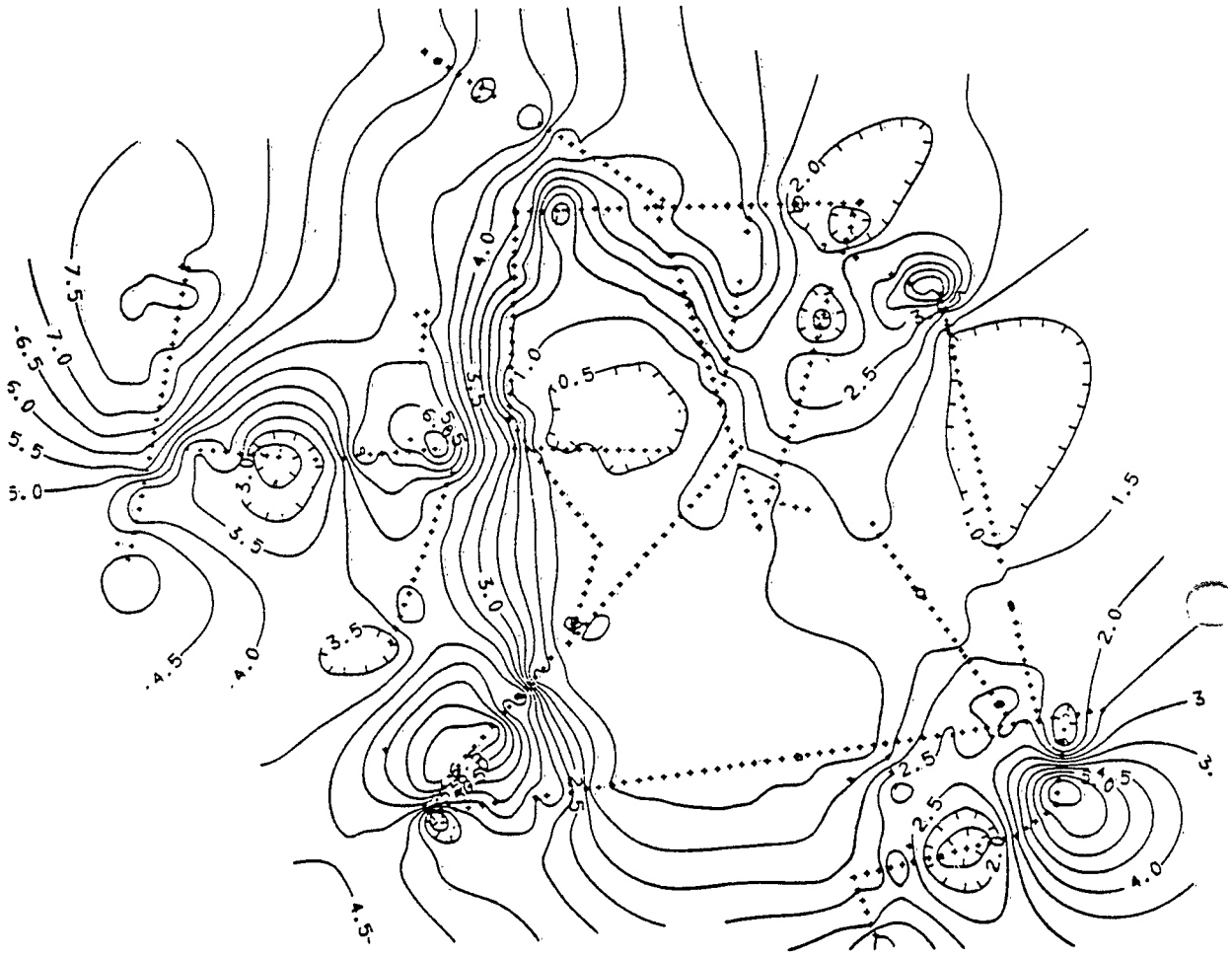

Figure 6. Filtered EM31 conductivity map of Linemaster Site, Woodstock, Connecticut, September 1988. Contours are in millimhos per meter. Crosses are station locations.

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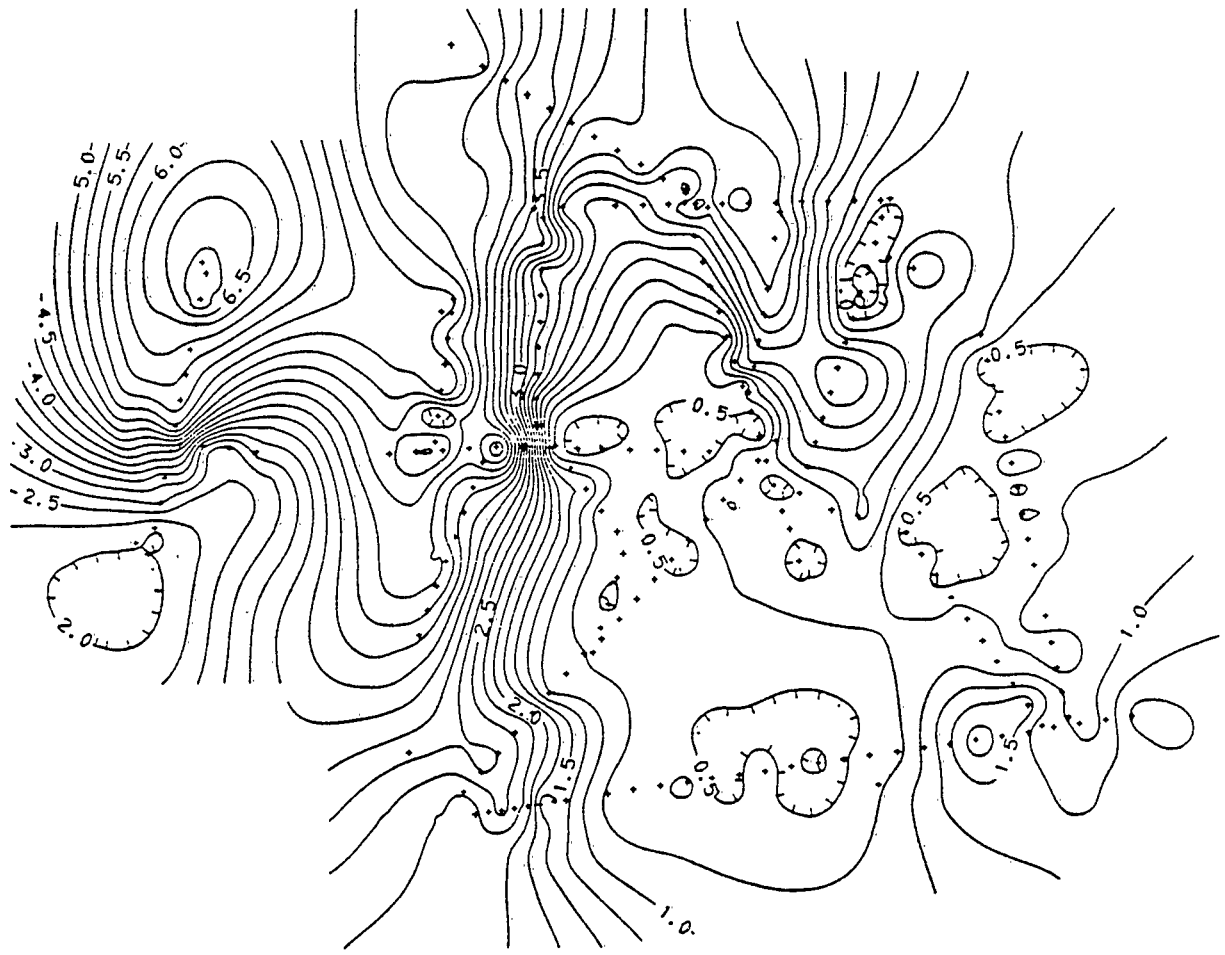

Figure 7. Filtered EM34 conductivity map of Linemaster Site, Woodstock, Connecticut, September 1988. Contours are in millimhos per meter. Crosses are station locations.

Hazardous Waste Investigation
Woodstock, Connecticut
OFR 88-

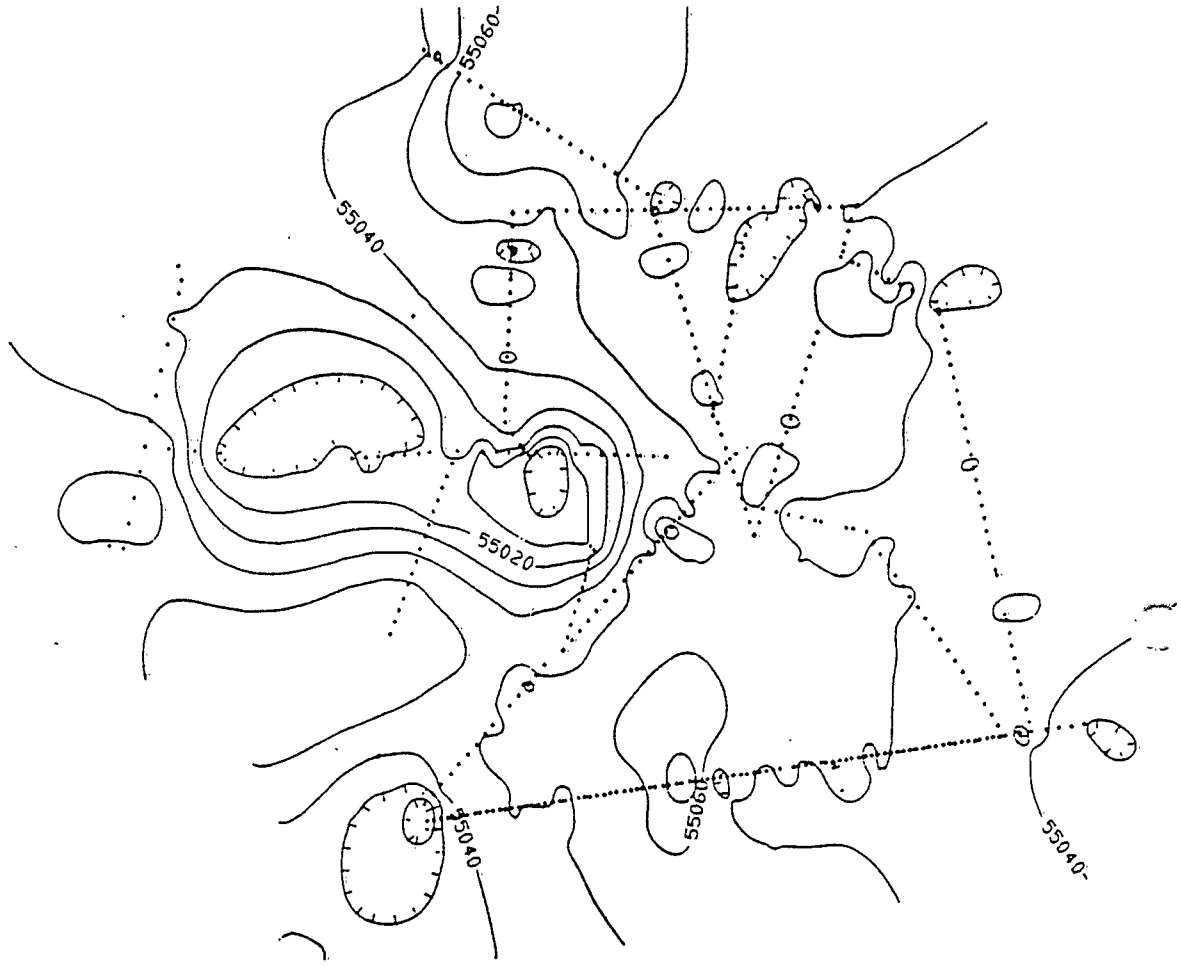

Figure 8. Filtered magnetic map of Linemaster Site, Woodstock, Connecticut, September 1988. Contours are in gammas. Crosses are station locations.

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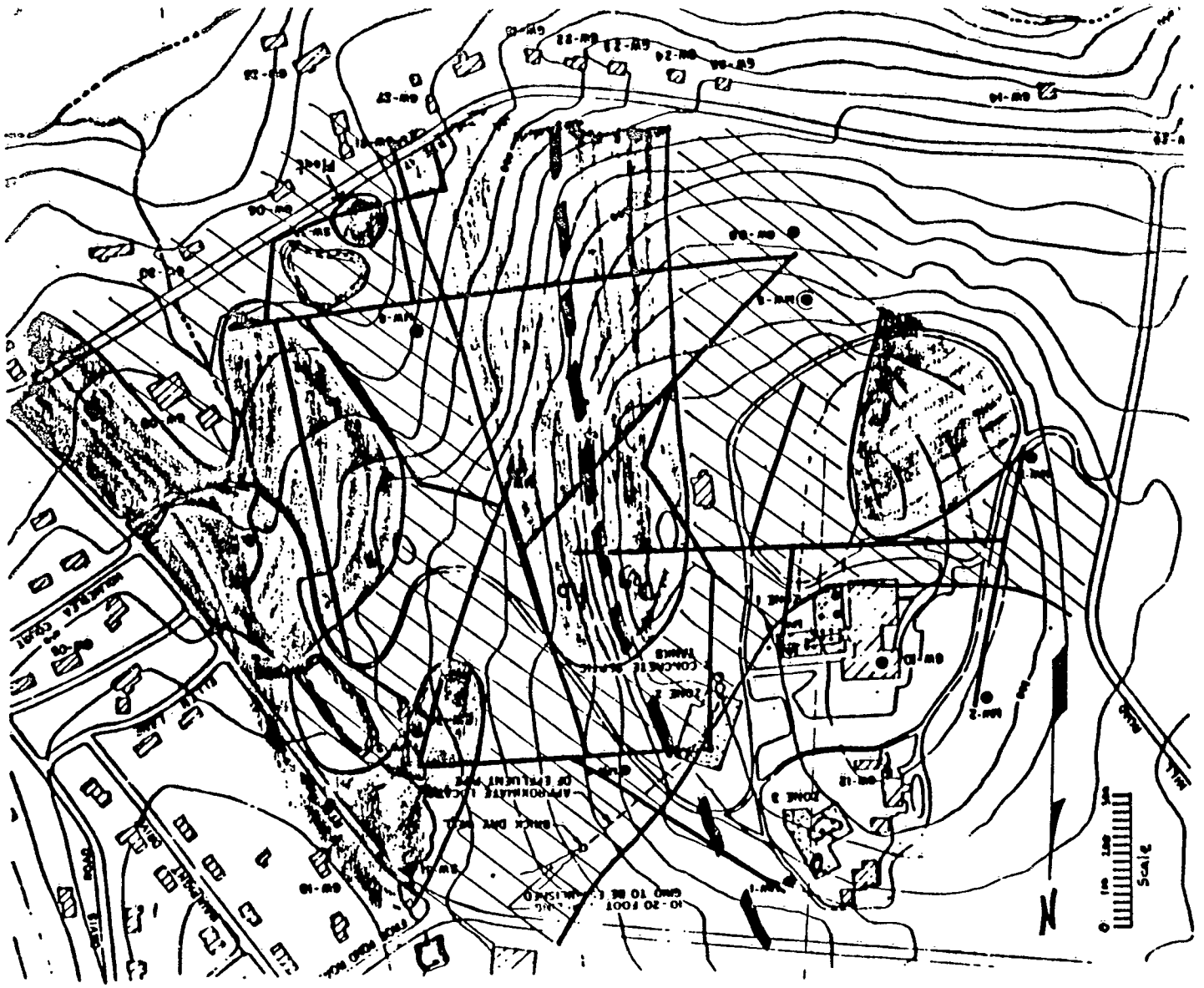

Plate 9. Geophysical interpretation of Linemaster Site, Woodstock, Connecticut, September 1988.

APPENDIX L
USGS BOREHOLE GEOPHYSICAL RESULTS
AND ACOUSTIC TELEVIEWER LOG INTERPRETATION

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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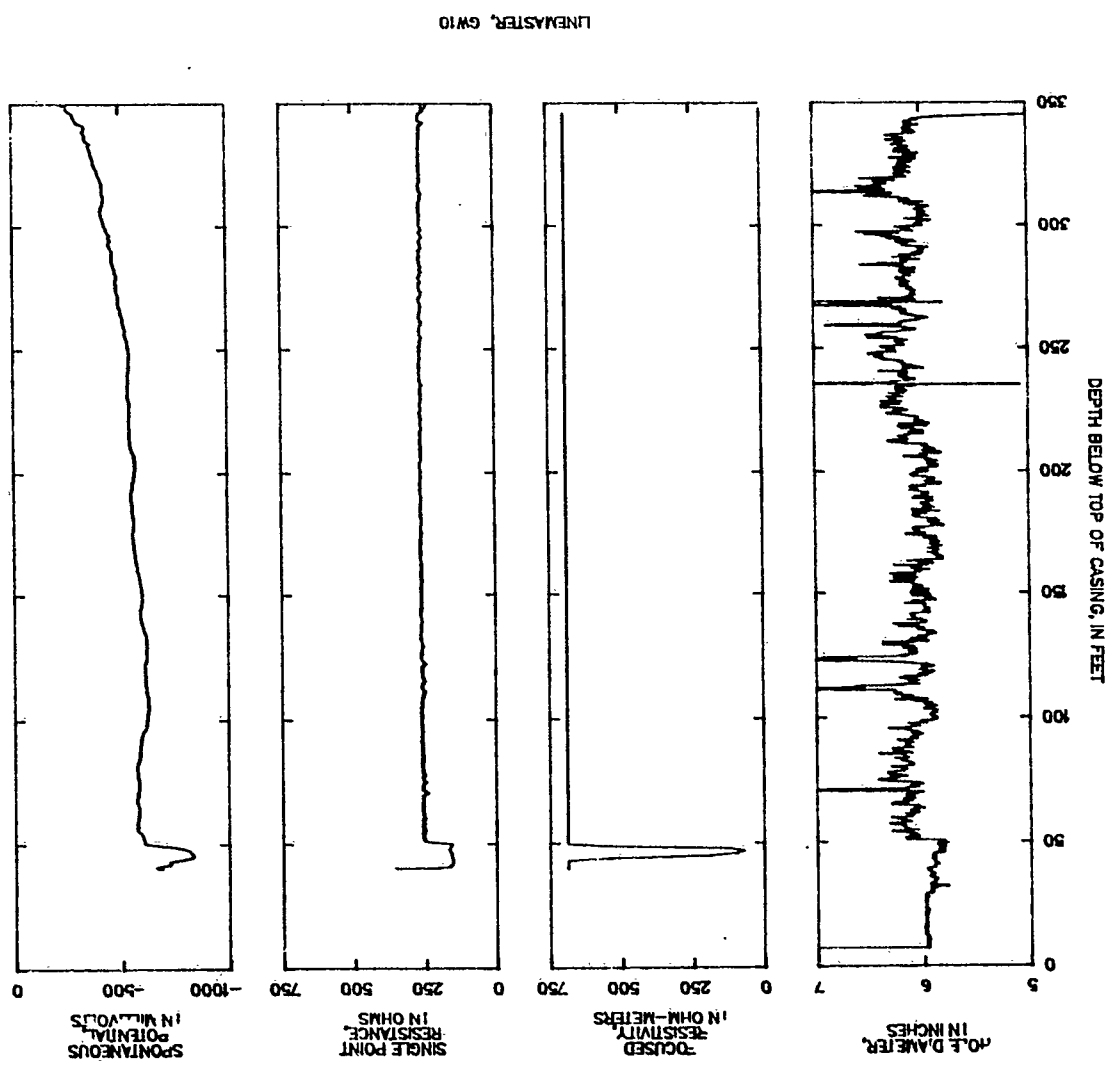

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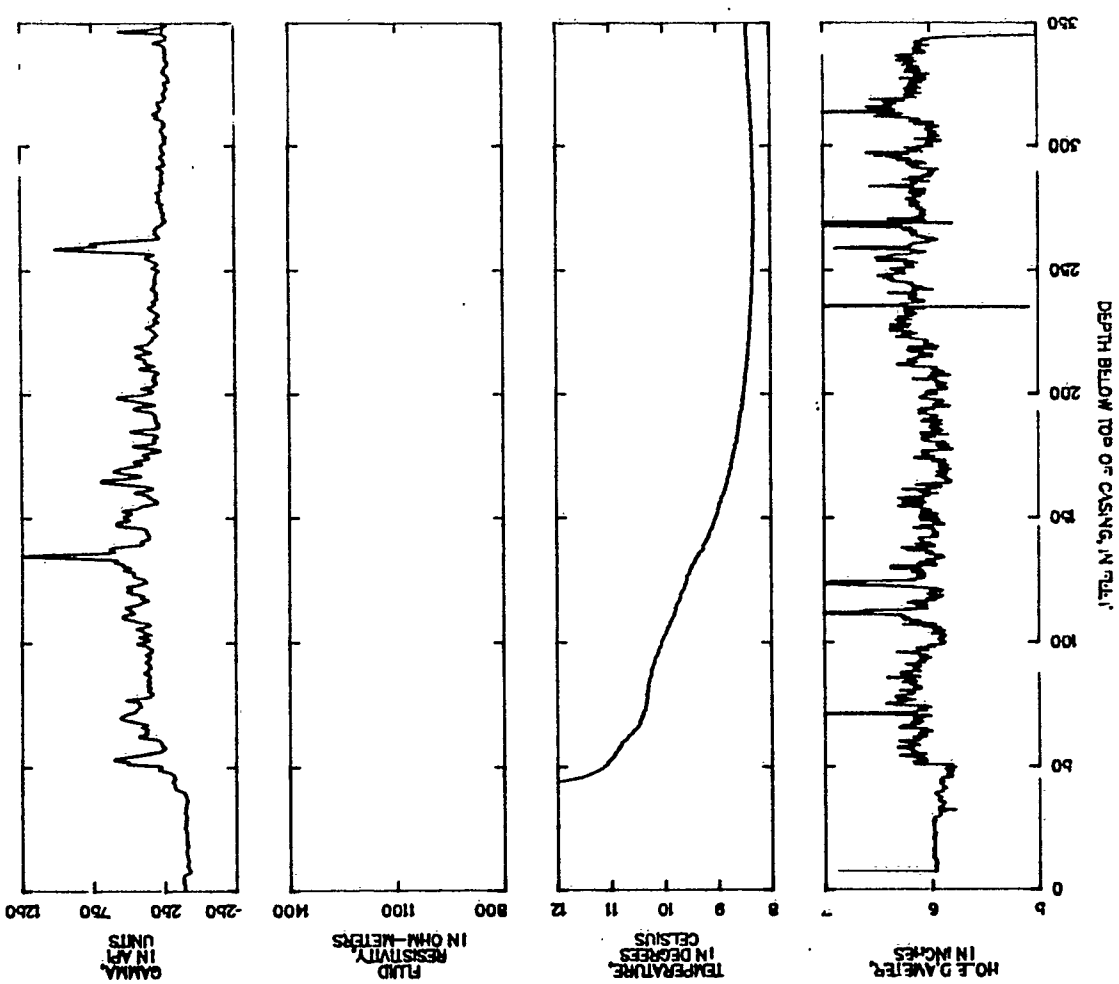

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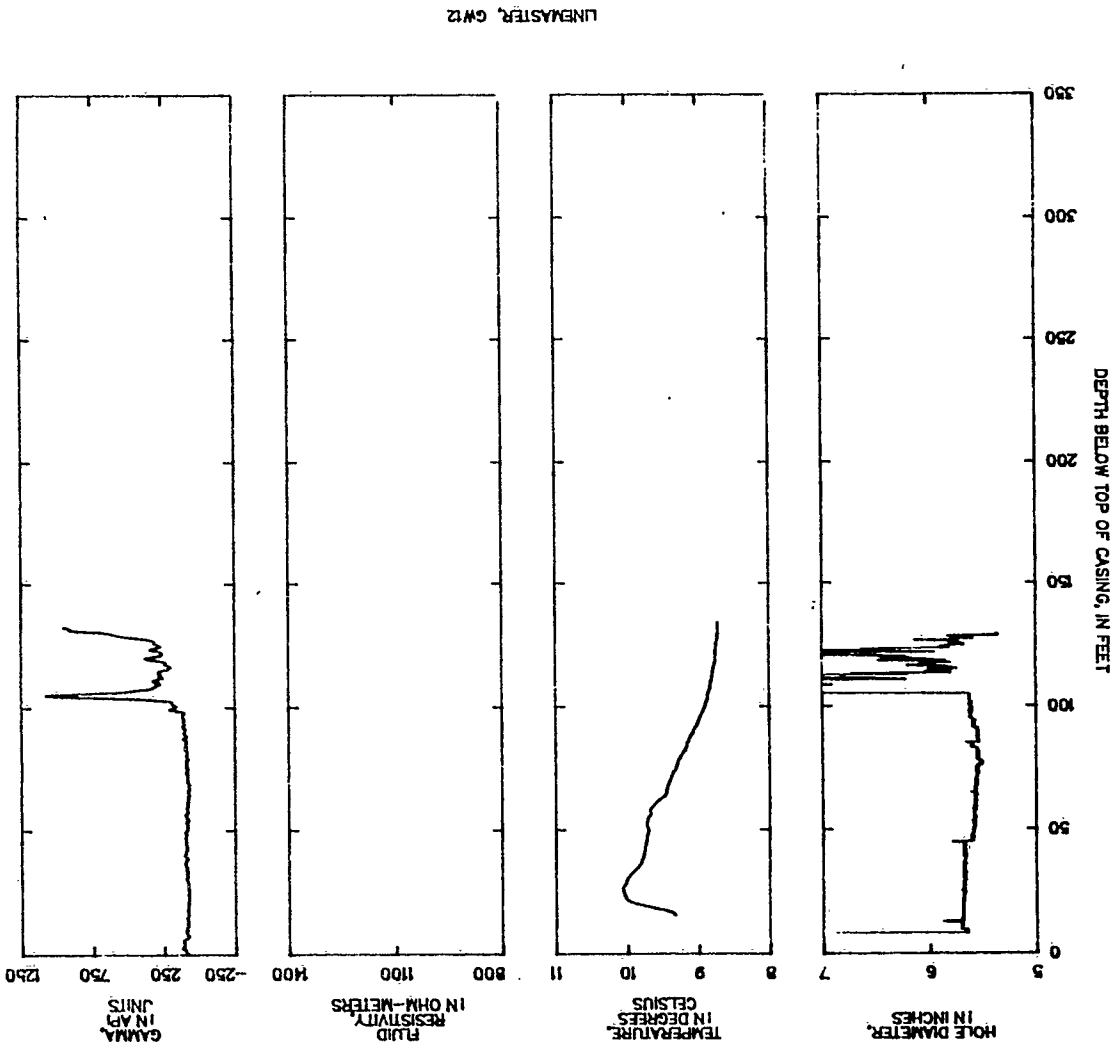

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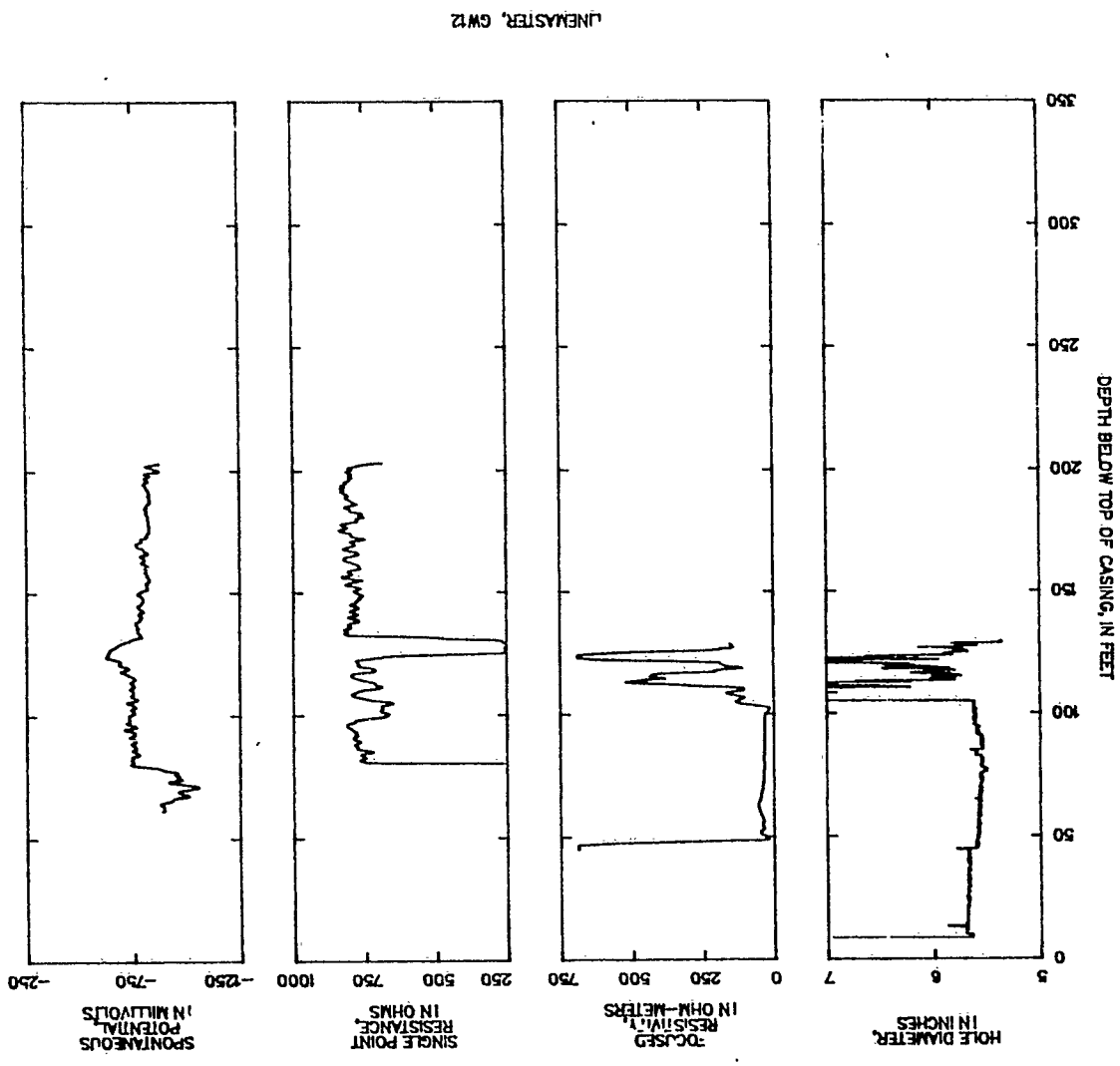

COLOG INC.

BOREHOLE GEOPHYSICAL SERVICES

17301 W. Colfax, Suite 265 • Golden, CO 80401-4886
(303) 279-0171 • FAX: (303) 279-2730

June 16, 1992

David L. Bramley, P.E.
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040-5921

RE: Level 1 interpretation of well GW-10.

Dear David:

Eighty discrete fractures or bedding plane features have been deduced from the analog acoustic televiewer log of well GW-10 at Linemaster Switch Corporation. Many of these features are subtle, but a few observed fracture intervals are characterized by temperature anomalies or gradient changes and caliper irregularities. Temperature anomalies in fractured intervals identified by the televiewer may be an indicator of potential flow zones or conduits for potential flow. Listed fracture intervals from 71 - 75 feet, 94 - 96 feet, 124 - 129 feet, and 269.4 feet are associated with temperature anomalies; therefore, flow may exist in these zones. Most of the other listed fractured intervals are not associated with temperature anomalies. I have enclosed the paper "Temperature Logging As An Aid To Understanding Groundwater Flow In Boreholes" and a USGS paper "Effects of Lithology On Televiewer-Log Quality And Fracture Interpretation" as references for you to browse along with some other pertinent televiewer and temperature information.

Also enclosed is a pair of Rose Diagrams depicting dip and dip direction distributions for fractures and bedding plane features interesting GW-10. The vector mean for dip direction is about 155 degrees (south-southeast) but there appears to be a bimodal distribution of fracture dip direction, a set dipping from 85 to 120 degrees and a set dipping form 150 to 200 degrees. The amount of dip ranges from zero to 17 degrees, with a vector mean of 8.54 degrees. The fractured intervals with corresponding temperature anomalies dip from 6 to 14 degrees in directions ranging from 110 (south-southeast) to 260 (west) degrees.

If you have any questions about any aspect of this interpretation, please don't hesitate to call us.

Yours sincerely,

James J. LoCoco
Operations Manager/Geologist

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Well GW-10 ATV FRACTURE INFO.

DEPTH FEET	DIP DRCTN DEGREES	DIP AMT DEGREES	AP WIDTH INCHES	AP WIDTH FEET	HEIGHT FEET
58.30	145.00	12.15	1.20	0.10	0.80
71.10	120.00	6.49	8.40	0.70	0.30
75.10	260.00	14.44	1.20	0.10	1.30
75.70		0.00	1.20	0.10	0.00
84.20	270.00	6.49	1.20	0.10	0.30
85.80	200.00	8.10	2.40	0.20	0.40
89.90		0.00	1.20	0.10	0.00
91.40	200.00	6.49	1.20	0.10	0.30
96.00	195.00	6.49	2.40	0.20	0.30
107.30	45.00	10.51	2.40	0.20	0.60
109.80		0.00	1.20	0.10	0.00
111.80	85.00	13.29	7.20	0.60	1.00
112.00	85.00	13.29	7.20	0.60	1.00
116.40	155.00	12.15	1.20	0.10	0.80
122.80	85.00	17.28	1.80	0.15	3.80
123.10	185.00	10.51	2.40	0.20	0.60
129.90		0.00	2.40	0.20	0.00
129.90	320.00	14.11	2.40	0.20	1.20
141.60	160.00	9.42	1.20	0.10	0.50
145.20	275.00	15.42	1.20	0.10	1.70
148.50	280.00	14.73	1.20	0.10	1.40
153.00	90.00	14.44	1.20	0.10	1.30
154.80		0.00	1.20	0.10	0.00
156.00		0.00	1.20	0.10	0.00
157.20	110.00	14.11	1.20	0.10	1.20
161.70	170.00	4.57	1.20	0.10	0.20
163.40	145.00	8.10	2.40	0.20	0.40
164.40	330.00	4.57	2.40	0.20	0.20
177.00		0.00	1.20	0.10	0.00
189.30	185.00	8.10	1.20	0.10	0.40
206.30	180.00	6.49	2.40	0.20	0.30
210.40		0.00	1.20	0.10	0.00
212.50	325.00	13.73	1.20	0.10	1.10
216.90	170.00	12.15	1.20	0.10	0.80
235.00	100.00	13.29	3.60	0.30	1.00
236.90		0.00	1.20	0.10	0.00
247.20		0.00	1.20	0.10	0.00
254.00		0.00	1.20	0.10	0.00
255.20	100.00	14.73	2.40	0.20	1.40
255.40	110.00	15.91	8.40	0.70	2.00
260.50	140.00	15.21	1.20	0.10	1.60
260.70	200.00	11.41	1.20	0.10	0.70
262.60	160.00	12.76	1.20	0.10	0.90
264.70	160.00	12.15	1.20	0.10	0.80
267.60	130.00	16.28	1.20	0.10	2.30
268.50	110.00	17.28	2.40	0.20	3.80
269.40	310.00	17.10	1.20	0.10	3.40
274.60	90.00	16.57	1.20	0.10	2.60

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DEPTH FEET	DIP DRCTN DEGREES	DIP AMT DEGREES	AP WIDTH INCHES	AP WIDTH FEET	HEIGHT FEET
277.60	105.00	12.15	1.20	0.10	0.80
277.90	105.00	14.73	1.20	0.10	1.40
284.00	200.00	2.37	4.80	0.40	0.10
284.20		0.00	1.20	0.10	0.00
285.80		0.00	1.20	0.10	0.00
288.40	170.00	16.17	1.20	0.10	2.20
293.00		0.00	1.20	0.10	0.00
294.80		0.00	1.20	0.10	0.00
295.60	100.00	16.73	7.20	0.60	2.80
298.00	270.00	10.51	1.20	0.10	0.60
298.50	160.00	14.11	2.40	0.20	1.20
303.60		0.00	1.20	0.10	0.00
306.70	160.00	13.04	1.20	0.10	0.95
308.20	165.00	12.76	1.20	0.10	0.90
311.50	160.00	12.76	1.20	0.10	0.90
313.80	210.00	10.51	3.60	0.30	0.60
315.30		0.00	1.20	0.10	0.00
319.50		0.00	1.20	0.10	0.00
324.80	230.00	4.57	1.20	0.10	0.20
330.50		0.00	1.20	0.10	0.00

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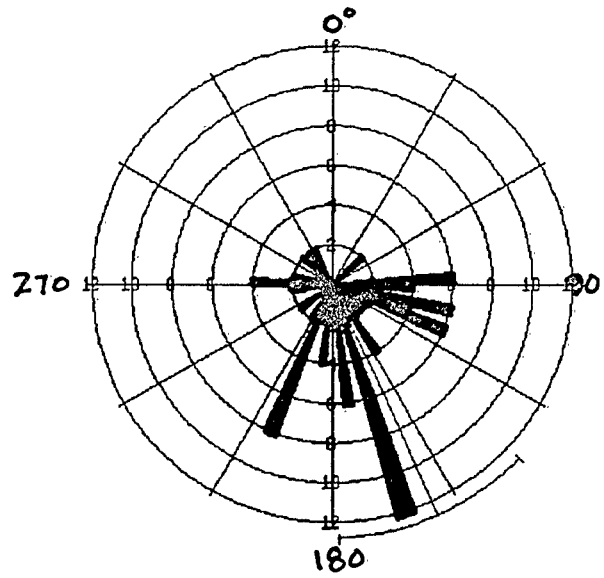
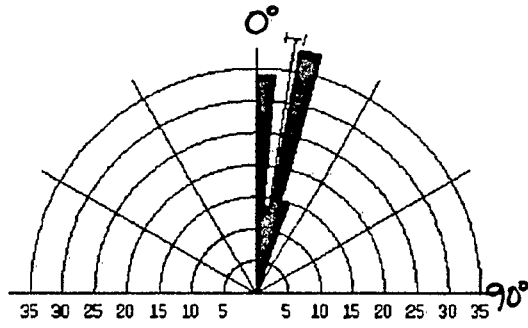


WELL GW-10 DIP DIRECTION

Calculation Method . .	Frequency
Class Interval	5 Degrees
Filtering	Deactivated
Data Type	Unidirectional
Rotation Amount	0.0 Degrees
Population	49
Maximum Percentage . .	12.2 Percent
Mean Percentage	3.6 Percent
Standard Deviation . .	2.46 Percent
Vector Mean	155.67 Degrees
Confidence Interval ..	22.55 Degrees
R-mag	0.47



WELL GW-10 DIP AMOUNT

Calculation Method ..	Frequency
Class Interval	5 Degrees
Filtering	Deactivated
Data Type	Unidirectional
Rotation Amount	0.0 Degrees
Population	68
Maximum Percentage ...	38.2 Percent
Mean Percentage	25.0 Percent
Standard Deviation ...	12.88 Percent
Vector Mean	8.54 Degrees
Confidence Interval ..	1.93 Degrees
R-mag	0.99

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APPENDIX M
PHASE II WELLS
BOREHOLE GEOPHYSICAL RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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Weston Geophysical
CORPORATION

April 3, 1990

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, Connecticut 06040

Subject: Borehole Geophysical Logging Survey
Linemaster Switch Corporation Site
Woodstock, Connecticut

Dear Mr. Olsen:

Enclosed for your use are five (5) copies of our report documenting the methods and results of a geophysical logging program conducted in monitoring wells MW-12db, MW-13db, and MW-14db, at the Linemaster Switch Corporation factory.

We appreciate the opportunity to provide borehole geophysical services to Fuss & O'Neill, and welcome any questions or comments regarding this report.

Sincerely,

WESTON GEOPHYSICAL CORPORATION

Fil J. Filipkowski
Geophysicist

M. Blackey

Mark Blackey
Manager, Geophysical Services

FF:cc-178-2
WGC - 17787-03

Enclosures

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SECTION 1

INTRODUCTION AND PURPOSE

In conjunction with an on-going study of fluid contamination at the Linemaster Switch Corporation factory in Woodstock, Connecticut, a borehole geophysical logging program was conducted in three on-site monitoring wells during the period of March 14, 1990 through March 19, 1990. Figure 1 shows the area of investigation (based on a map supplied by Fuss & O'Neill).

Contamination of borehole fluids was noted (by others) in each of the three monitoring wells selected for geophysical borehole logging. Of particular concern was the detection of bedrock fractures through which contaminants could migrate. Excluding overburden, the monitoring wells were drilled through one lithology, a schist. Therefore, geophysical logging was performed primarily to detect possible fracture zones in the schist encountered by the three selected wells.

METHODS OF INVESTIGATION

Geophysical borehole logging was performed with a Mount Sopris Model 2500 Logger and downhole tools for temperature, fluid conductivity, caliper, spontaneous potential (SP), single-point resistance (SPR), and natural gamma-ray logging. These borehole logging techniques are discussed in the following sub-sections and in Appendix A.

Since these techniques are not considered "stand alone" methods, logs obtained with each technique must be checked against each other before suitable correlations and conclusions about the borehole environment can be obtained.

Borehole logging depths were referenced to top of casing and are accurate to within 0.5 feet. All logs were recorded on a vertical scale of 1 inch equals 10 feet. Logging probes were calibrated before and after each run with drift error computed to be within 10 percent. Temperature and fluid conductivity logs were obtained first at each borehole to minimize the effects of mixing of the borehole fluids.

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Fluid Logging

Fluid logging includes those techniques that measure characteristics related to the fluid column in the borehole; no direct signal is derived from the surrounding rocks and their contained fluids. The fluid logging techniques used in this investigation were temperature and fluid conductivity.

Temperature and fluid conductivity are useful in locating depth intervals that accept water (e.g., along possible fractures in bedrock). Measuring probes for both techniques were lowered at a slow rate of about 15 feet per minute in an unmixed fluid column to assure accurate fluid profiles.

The fluid logging probes used were "open-ended" to allow direct contact of borehole fluid with: 1) a thermistor for temperature readings (degrees Celsius), and 2) a multi-electrode system for conductivity measurements (micro-mhos per centimeter).

Calibrations were performed for each fluid probe to obtain an absolute scale of measurement. Specifically, temperature and fluid conductivity (specific conductance) of well water and bottled spring water samples were measured with the probes and independent measuring devices to determine scale. Since fluid conductivity is temperature dependent, temperature of water samples for this calibration were maintained to within ± 2 degrees (Celsius).

Caliper Logging

The caliper tool measures variations in minimum borehole diameter using a spring-loaded three-arm system. The tool responds to enlargements in the borehole due to fractures and poor rock quality, as well as reductions in borehole size due to obstructions from rock breakout or scale build-up. It can resolve borehole deviations of less than one quarter inch.

Caliper logs were run at a logging speed of about 15 feet per minute. Calibrations were made at 4 inches and 6.5 inches based on expected hole conditions (i.e., nominal borehole diameter was 6.0 inches).

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Electric Logging

Electric logging refers to logs where potential differences due to the flow of electric current in and adjacent to the well are measured. The two electric logging techniques used were spontaneous potential (SP) and single-point resistance (SPR).

The SP method measures the naturally-occurring voltage potentials, in millivolts, in the borehole. Of primary interest to this investigation are voltage potentials generated electro-kinetically when an electrolyte (ground water) flows through a permeable medium (fractured bedrock). Zones of water gain or loss are often identified by these "streaming potentials" on a log. Streaming potentials are generally negative and have a spikey, irregular character.

The SPR method measures the resistance, in ohms, in the borehole. Fractures typically show up on SPR logs as resistance lows.

Spontaneous potential and single-point resistance were recorded simultaneously, i.e, one probe contained both measuring systems and the logger had two recording channels. The same ground and downhole electrodes were used for both logs.

Electric logs were recorded at a speed of 25 feet per minute. SP and SPR scaling were checked with the internal circuitry of the Model 2500 logger.

Natural Gamma-Ray Logging

The natural gamma-ray log is a measure of the naturally-occurring gamma radiation in the formation. Natural gamma radiation is produced by the radioactive decay of potassium, thorium, and uranium atoms. A fractured bedrock schist with migrating water may become chemically altered into clay minerals which promote the adsorption of positive ions, such as Th+ and U+, because of their open crystal lattice structure and net negative charges. Fractured or weathered zones may appear as peaks on natural gamma-ray logs.

Natural gamma-ray measurements in counts per second (CPS), were made with the same probe as the SP and SPR measurements. Internal logger circuitry provided an electrical check on the gamma-ray scaling. Logging speed was approximately 15 feet per minute.

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SECTION 2

RESULTS

A map showing locations of the wells geophysically logged is shown on Figure 1. The results of the borehole logging for monitoring wells MW-12db, MW-13db, and MW-14db are shown on Figures 2, 3, and 4, respectively. Table 1 lists general well information.

Monitoring Well MW-12db

The logs from well MW-12db confirm a "soft" zone (noted on a well construction diagram provided by Fuss & O'Neill) between harder, more competent rock for the depth interval from 49 to 55 feet. This zone may represent an increase in weathering or alteration of minerals, or possibly a zone of small fractures. This zone is characterized by a decrease in single-point resistance, an increase in natural gamma radiation, and a slight increase in hole diameter.

The character of the logs also change over the depth interval from 92 feet to 97 feet. From 92 feet to 95 feet, a decrease in single-point resistance, an increase in SP, and a slight hole diameter enlargement are observed. A large increase in fluid conductivity also occurred from 95 to 97 feet. These data indicate a small fracture zone with water flowing into the borehole in this area.

A generalized zone of limited fracturing (permitting water infiltration) is indicated for the depth interval from approximately 142 feet to 183 feet. From 142 feet to 179 feet, streaming potential anomalies are observed on the SP log; the caliper log also shows slight hole diameter enlargements from 144 feet to 183 feet. Furthermore, abrupt increase in fluid conductivity is evident over the depth interval from 179 feet to 181 feet.

Monitoring Well MW-13db

Due to the highly rusty condition of water in monitoring well MW-13db, logging data was limited to temperature, caliper, single-point resistance, and natural gamma-ray logs. All probes measuring the electrical nature of the borehole material and borehole fluid appear to have been adversely affected by electric currents related to the rust. These logs clipped off-scale when water was encountered by the probes near casing bottom and remained

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unreadable for the entire run. Of the electric logs, only single-point resistance was readable at minimum sensitivity. Therefore, due to limited logging data, only suggested borehole features can be inferred.

Based on a single-point resistance decrease, a natural gamma radiation increase, and slight borehole enlargements, small zones of weathering or fracturing may be present for the depth intervals from 165 feet to 171 feet and from 215 feet to 222 feet. Other decreases in SPR values do not correlate with borehole enlargements and thus may not represent fracturing.

Monitoring Well MW-14db

Logs from monitoring well MW-14db show two fracture zones with probable water intrusion at depth intervals from 88 feet to 95 feet and from 177 feet to approximately 185 feet.

The fracture zone located from 88 feet to 95 feet is indicated by a slight hole diameter enlargement over this depth range, a decrease in single-point resistance from 90 feet to 93 feet, and an increase in fluid conductivity that occurs at 92 feet.

Fluctuations in logging data for a fracture zone inferred at the depth interval of about 177 feet to 185 feet were typically greater than those discussed in the preceding paragraph. This fracture zone is characterized by relatively large increases in hole diameter and fluid conductivity, increases in spontaneous potential, natural gamma radiation and temperature, and a single-point resistance decrease.

Numerous variations in borehole diameter between depths of 120 feet to 200 feet may represent minor weathering or fracturing, or possibly alternating thin layers of different lithologies.

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TABLE 1

MONITORING WELL INFORMATION
(Provided by Fuss & O'Neill)

Name	Total Depth (feet)	Elevation (feet)	Water Level Below TOC (feet)	GPM	Casing Length (feet)
MW-12db	200	455	33	2	28
MW-13db	300	542	29	1.5	20
MW-14db	200	443	19.5	30	26

Note:
Elevations (TOC) were estimated using the topographic site plan provided by Fuss & O'Neill and casing stick-up heights observed by Weston Geophysical's field personnel.

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FIGURES

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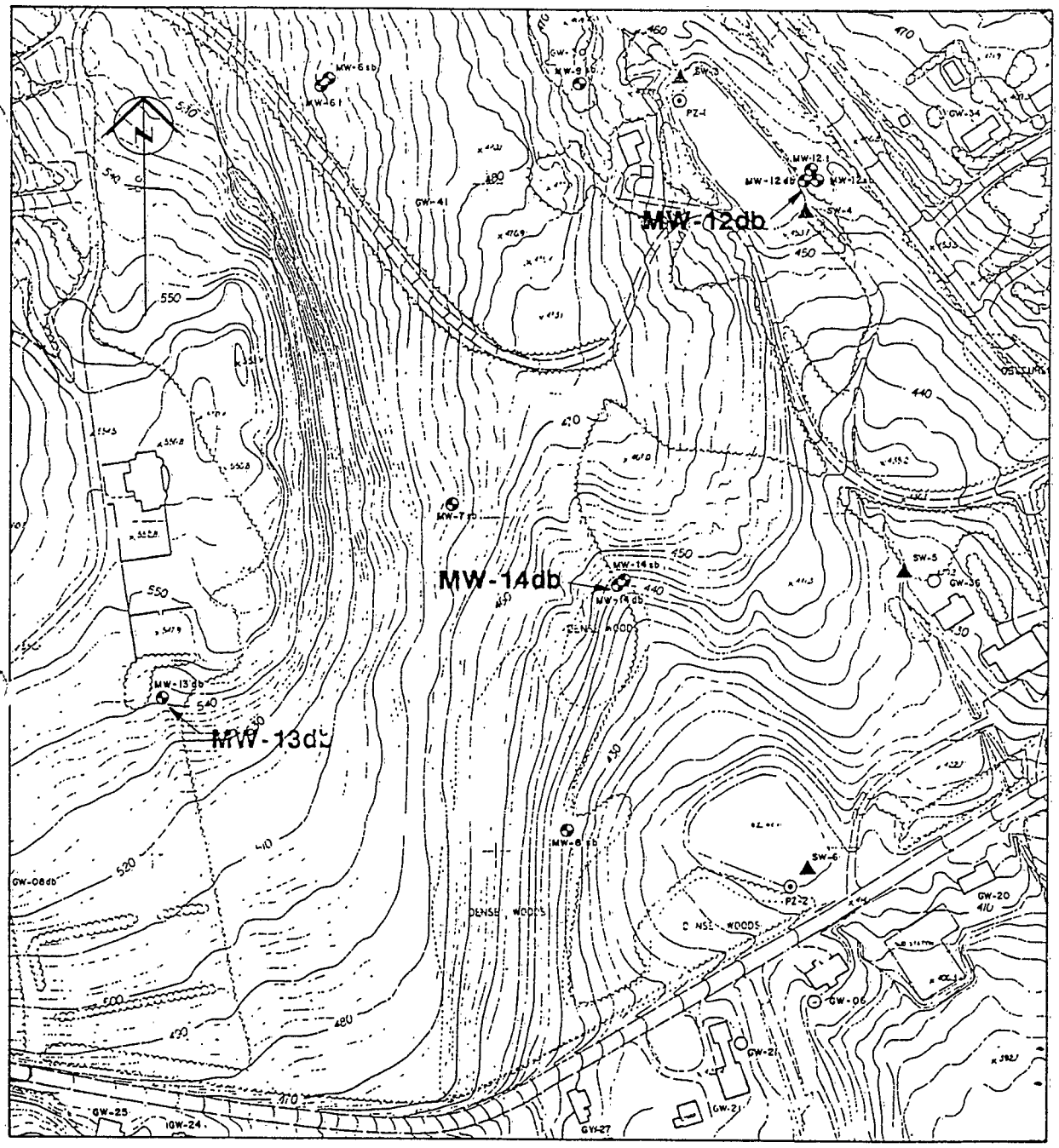

Basemap: "Sampling Location Map" Fuss & O'Neill, Inc., Plate 2, Feb. 1990.

prepared by	BOREHOLE GEOPHYSICAL LOGGING SURVEY LINEMASTER SWITCH CORPORATION SITE WOODSTOCK, CONNECTICUT prepared for FUSS & O'NEILL, INC.	**Location of Geophysically-Logged Wells**
checked by		
reviewed by		Weston Geophysical — Fig. 1

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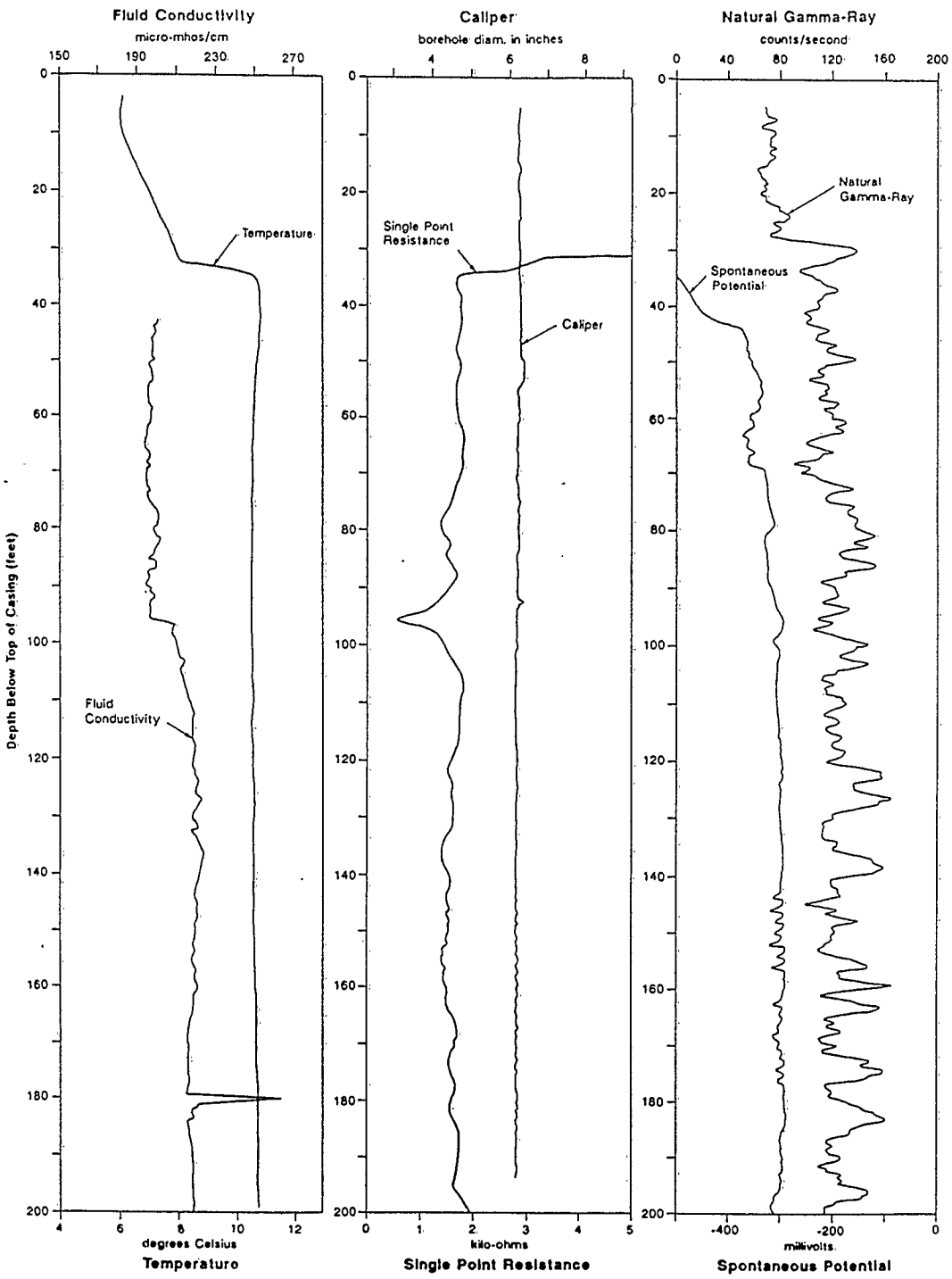

prepared by TT checked by CP reviewed by CP	BOREHOLE GEOPHYSICAL LOGGING SURVEY LINEMASTER SWITCH CORPORATION SITE WOODSTOCK, CONNECTICUT prepared for FUSS & O'NEILL, INC.	Well MW-12db Geophysical Logs	
		Weston Geophysical	Fig. 2

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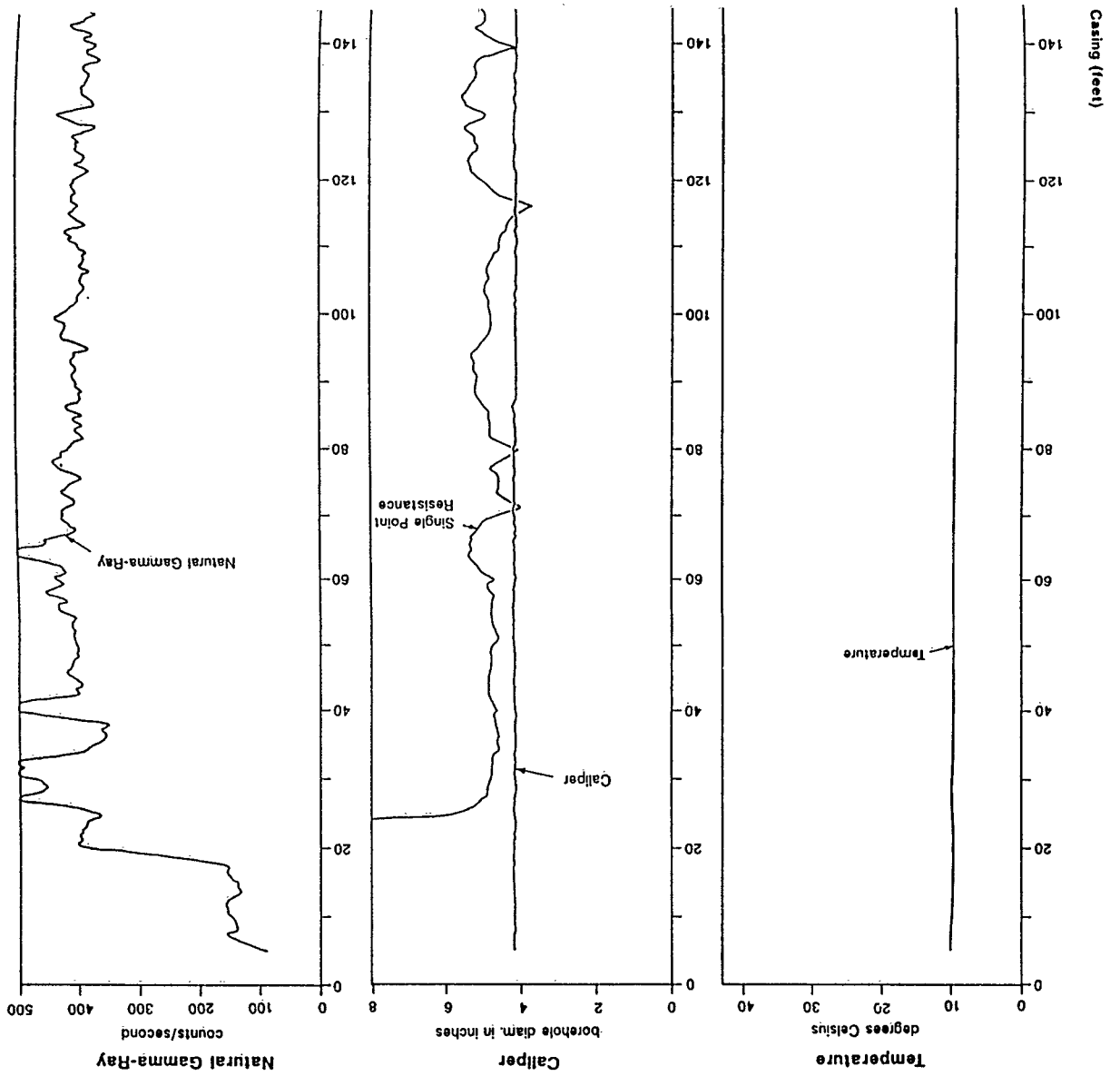

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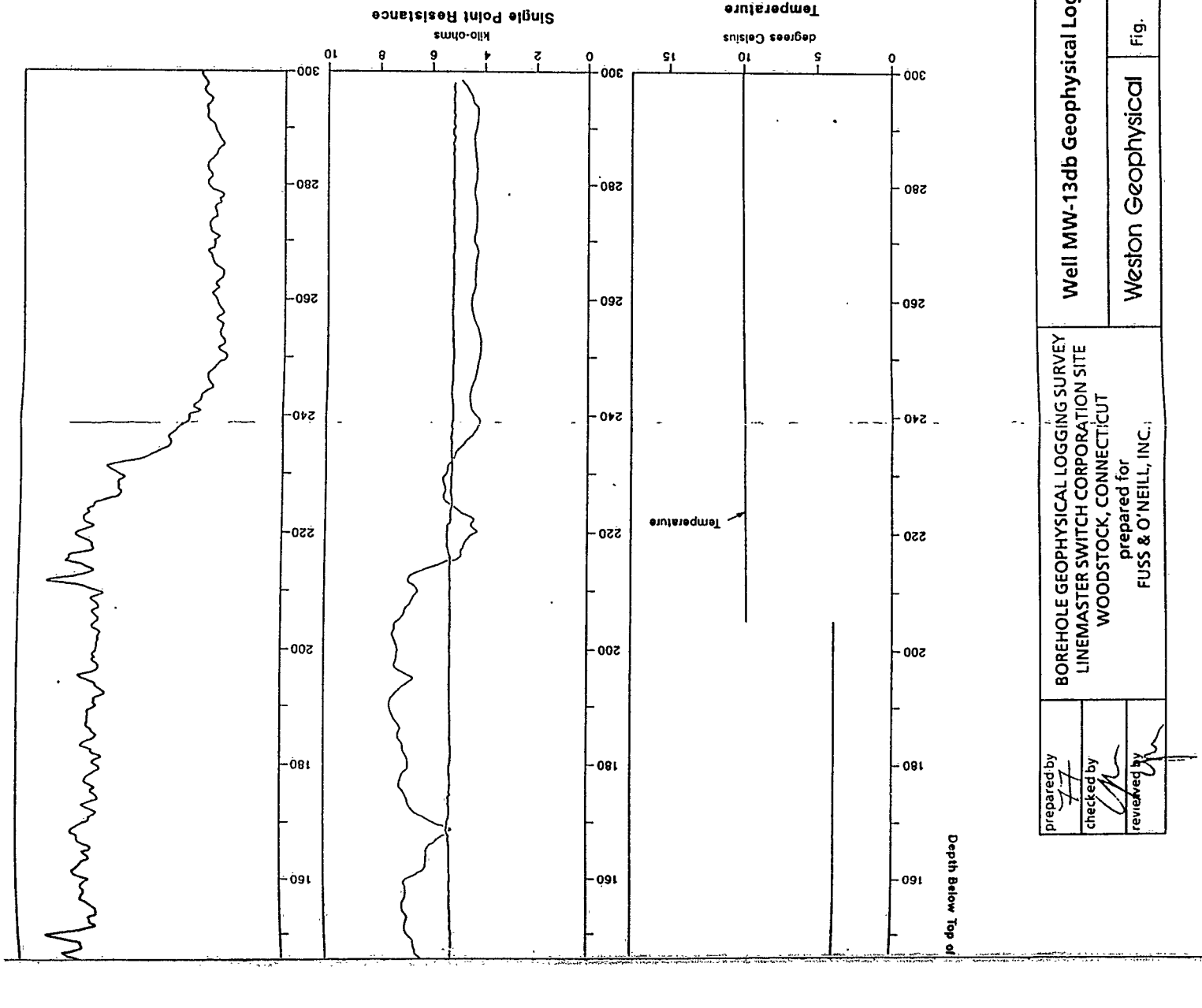

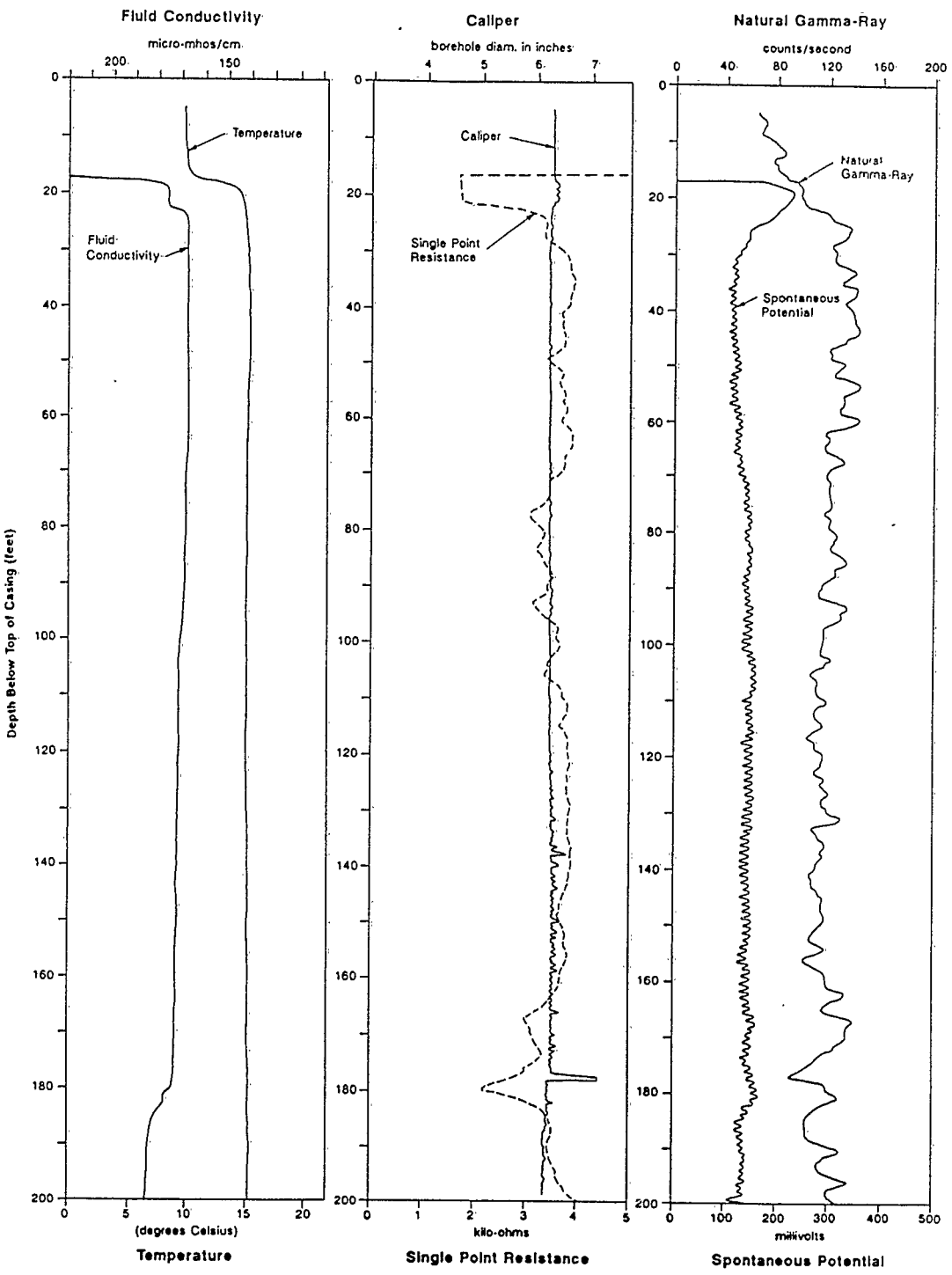

prepared by	BOREHOLE GEOPHYSICAL LOGGING SURVEY LINEMASTER SWITCH CORPORATION SITE WOODSTOCK, CONNECTICUT prepared for FUSS & O'NEILL, INC.	Well MW-14db Geophysical Logs	
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reviewed by			

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Borehole Geophysical Methods

Borehole geophysical techniques (also called logging) are a group of active and passive geophysical methods used to provide detailed measurements of soil, rock and water properties. Geophysical logging involves lowering tools into the borehole to measure the electrical, acoustical or radioactive properties of the materials surrounding a borehole.

The techniques are based on counterpart surface geophysical methods, adapted to the borehole environment. Typically, these adaptations include the reduction of equipment size (most techniques will fit inside a 2" diameter hole), reduction and standardization of the fixed source to receiver spacing (and a corresponding reduction in how deep the technique looks into the formation), protection of tools from pressure and temperature effects, and interpretation of data with respect to vertical rather than horizontal changes.

More than one logging technique is generally used to determine soil and water properties in the borehole. For example, the caliper, resistivity, and SP logs are usually run together to identify fracture zones in rock. Because each tool has a different non-unique response to fractures, these logs are interpreted together to determine the characteristics of the rock and fractures. Tool responses and interpretations can often be verified using other borehole tools, split spoon or core samples, or surface geophysical methods.

SP measurements are used for the following:

- identification of zones of water loss or gain (streaming potential)
- qualitative indication of clay content/determination of clay layers
- qualitative indication of water salinity
- rock type correlation/layer thickness

The SP log is used in conjunction with the resistivity log to identify clays and permeable zones. Other logs such as the neutron, gamma ray or temperature

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can be used with the SP to determine lithology and permeability. The SP method is not a stand-alone technique; it requires verification from another log.

Resistivity logs are used to determine:

- water content
- porosity
- lithology
- water quality

Equipment

The downhole equipment for SP and resistivity logging includes a probe with lead or copper electrodes connected to the logging cable. The uphole equipment includes the winch, uphole circuits, power supply and recorder. The SP requires a grounding electrode or stake driven into the ground at least 25 feet from the borehole. The commercially available induction tool is a self-contained portable unit that includes the 2 coil probe, logging cable, uphole electronics, power supply and recorder.

Data Acquisition Field Procedures

Field procedures for logging consist of six steps as outlined below:

- Equipment setup and assembly
- Verification of tool functions at surface
- Total depth determination
- Repeat run
- Main run
- After run calibration

Calibration measures the tool's response to a known standard. Checking this before and after a run in the borehole ensures that the tool is operating and measuring correctly. Once the tool is calibrated it is placed at the top of the borehole so that the measuring point of the tool is at a reference elevation (usualy ground surface or top of casing). The depth counter is then

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set to zero and the tool is lowered to the bottom of the hole. The SP and resistivity tools are run from bottom to top so that constant logging speed and cable tension can be maintained.

A short section of the hole is logged more than once so that the recording parameters can be checked, and to check the repeatability of the tool. The tool is then shut off and sent to the bottom of the hole, and the main run is made. After the borehole is logged, the calibration is checked to verify tool response. Logs are commonly recorded on vertical scales of 1 inch equals five feet; however, scales can be changed to show more or less detail.

The downhole tools, which will be in direct contact with potentially contaminated soil and water, must be decontaminated between logging runs.

Data Interpretation

The SP log can be interpreted to give qualitative information on clay content and permeability. To accomplish this a line is drawn on the log at the maximum deflection of the SP as shown in Figure 1. A second line is drawn along the baseline. Deflections from the baseline indicate permeable zones. The magnitude of the deflection is proportional to the salinity of the water in a clay-free zone, and proportional to the clay content in a clayey zone. If the borehole water has a lower ion concentration than the formation water, the deflection will be negative; however, if the formation water has a lower concentration, the deflection may be positive. Zones of water loss or gain can be detected as negative excursions from the baseline with a noisy or spikey, irregular character.

Resistivity measurements can be used qualitatively to pick porous water-filled zones. Usually, these zones have lower resistivities than adjacent non-porous zones. Once these low resistivity zones are identified they should be compared to the SP or gamma-ray logs to verify that they are not clay zones which also have low resistivity. Fracture zones will also show low resistivity if they are permeable and water-filled.

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Porosity can be estimated from resistivity logs if the resistivity of the formation water is known. Qualitative estimates of water quality can be made from resistivity logs in clay free zones. As specific conductance increases the resistivity will decrease, assuming the porosity and lithology are constant. Thus, brackish and salt water aquifers will show lower resistivity than fresh water aquifers of similar porosity and lithology. Keys and MacCary (1971) describe a method of estimating water quality from electric logs. The method employs the use of mathematical expressions to relate formation resistivity factor, fluid resistivity, specific conductance and dissolved solids.

When used with the SP and gamma-ray logs, the resistivity log can give valuable information concerning lithology and water content. Since electrical current is carried through the water in the pores it is possible to pick the top of the saturated zone. If a single point or small spacing resistivity tool is used, the capillary fringe can also be identified.

Resistivity values are not unique for specific lithologies. However, clays usually have very low resistivities and most non-fractured, unweathered igneous and metamorphic rocks have high resistivities. Fresh water saturated sands usually have resistivities greater than clays. Fine-grained sands and silts will have higher resistivities than coarser sands and gravels. In coastal environments, the resistivity log is used to discriminate the higher resistivity fresh water aquifer from the lower resistivity brackish or saline sea water aquifer.

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APPENDIX N
PHASE III WELLS
BOREHOLE GEOPHYSICAL RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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BOREHOLE GEOPHYSICS
COLOG
INC.
GOLDEN, COLORADO

GEOPHYSICAL LOG INTERPRETATION

LINEMASTER SWITCH CORPORATION

WOODSTOCK CONNECTICUT

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August 9, 1991

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2. Log response trends from various borehole conditions in MW-18DB.

2A. Color VDL from MW-18DB illustrating attributes obtained by colorizing full waveform amplitude intensity.

3. Three component crossplot from MW-8DB showing trends in log response for fracture identification.

4. Three component crossplot from MW-6DB showing trends in log response for fracture identification.

APPENDICES

A. Petrophysical Discussions, Tools and Calibrations

B. Geophysical Logs

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EXECUTIVE SUMMARY

Interpretations based on geophysical logs and borehole television images from monitor wells MW-1DB, MW-6DB, MW-8DB, MW-11DB, MW-15DB, MW-17DB, MW-18DB, MW-21DB, and MW-22[illegible] at Linemaster Switch Corporation are presented. Geophysical logs for these wells consist of full waveform sonic, caliper, natural gamma, 16" and 64" normal resistivity, guard resistivity, spontaneous potential, temperature, fluid resistivity, and video. The geophysical logs and a copy of the original video tapes are included with this report; selected examples illustrate the fundamental log interpretation methods and conclusions.

The report focuses on the identification of fracture zones and fracture flow. A table is presented which listing fracture zones and potential zones of fracture flow as interpreted primarily from temperature, fluid resistivity, 16" normal resistivity, and tube wave amplitude logs. Tube wave amplitude is derived from the full waveform data.

An important relationship between the 16" normal resistivity (and guard resistivity) and tube wave amplitude logs forms the basis for the interpretation of major fracture zones. Temperature and fluid resistivity logs provide evidence of fracture flow. The coincidence of evidence of both the presence of fractures and fracture flow from all four of these key logs is used as a criteria for listing the most probable productive intervals in the wells (see Table 1).

The video provides visual evidence of fractures and confirms their predominate high angle orientation with respect to the borehole. Flow cleavage fractures at various angles with respect to the borehole are also visualized with borehole television. Downhole visual inspection also aids in the interpretation of relationships between fracture occurrence and rock fabric or mineralogy as manifested by color changes, foliation and other attributes.

FRACTURE IDENTIFICATION

Competent, unfractured rock at Linemaster is recognized by very high resistivities and tube wave amplitude maxima. Assuming the rock is relatively homogeneous with respect to lithology, low resistivity and tube wave amplitude attenuation can be attributed to fractured rock. Therefore, both resistivity and tube wave amplitude can be considered to be qualitative fracture density profiles. Fracture density infers a greater occurrence of fracture space, either as more fractures per unit area or greater total fracture aperture per unit area. This is illustrated in figure 1, which shows the resistivity (16" normal) and tube wave amplitude logs (among other logs including, sonic transit time, temperature and fluid resistivity) for well MW8-DB.

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Figure 1 illustrates several important features of the fundamental log interpretation at Linemaster. One of these features is the correlation between resistivity and tube wave amplitude. The physical basis for this correlation is that the resistivity log responds in a large measure to the degree of fluid connections in the rock, and records lower resistivity when the interconnected network is prominent, which results from the presence of fractures. Tube wave amplitude also responds to fluid connections since acoustic energy diminishes where the presence of fractures allow interaction between borehole fluid and fluid contained within the rock near the borehole wall (for a more detailed discussion, see Appendix A). Therefore, the correlation between resistivity and tube wave amplitude is intuitively reasonable. Figure 1 also shows increased sonic transit time in the fracture zone; this can be observed in many Linemaster wells.

An exception to the resistivity/tube wave correlation may occur where a change in mineralogy or rock fabric characteristics (e.g., foliation) results in a more electrically conductive rock. If the rock is unfractured, or if the fractures are healed, tube wave energy may not diminish as rapidly and the log will respond accordingly. This appears in several wells, including MW-8DB and is displayed in figure 1. Lower resistivity is noted in the granitic pegmatite zone but tube wave amplitude does not depart sharply until the interface of the pegmatite seam and the host rock. The pegmatite mineralogy apparently yields lower resistivities.

The general correlative trend between resistivity and tube wave amplitude is a good interpretive tool at Linemaster. Additional evidence of this relationship is shown in figure 2, which shows some logs from MW-18DB, and in figures 3 and 4, which are three component crossplots demonstrating the trend. Interpreted fracture zones using this technique are verified by geological logs and borehole television. Figure 2 also shows how the logs respond in three types of increased aperture space (or void-space) environments. Lower tube wave amplitude and lower resistivity occur in the low-incidence (with respect to the borehole) foliation fracture at 153-4 feet and the borehole breakout zone at 157 feet. The high-angle fracture at 131-2 feet depicts a tube wave excursion but no appreciable resistivity departure. Generally, throughout the Linemaster site, high-angle fracture features exhibit noticeable tube wave lows and only minor decreases in resistivity.

A color-enhanced variable density log for MW-18DB is displayed in Figure 2A with temperature, fluid resistivity, and tube wave amplitude plotted coincidently. The labeled intervals are verified by borehole television images. The color enhancement vividly portrays amplitude intensity changes across the VDL. Broader (lower amplitude) red, green, and blue hues are dominant within the marked tube wave window in and around the fracture zones.

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The VDL and tube wave amplitude log serve to identify fracture zones and borehole breakouts, but temperature and fluid resistivity log anomalies may acquiesce potential flow zones. A temperature slope change at 77 feet (Figure 2A) and an anomaly at 177 feet suggest flow in or out of the borehole may be taking place under the concurrent head conditions. Noticeable tube wave attenuation occurs in both of these intervals indicating the zones are relatively more permeable than media above and below. Although deep indentions in the VDL occur in the labeled fracture zones, hydraulically important fractures may take on a more subtle appearance manifested by temperature logs. The water quality change at 131-2 feet as indicated by the fluid resistivity log is more evidence of flow in or out of the borehole at the high-angle fracture. From 131-2 feet to the bottom of the borehole, fluid resistivity is fairly stable with the only departures appearing at fracture or breakout zones where the high resistivity host rock may influence the fluid resistivity response.

Table 1 summarizes each well at the Linemaster site identifying fracture zones and breakouts based on tube wave amplitude and resistivity relationships. If temperature and/or fluid resistivity anomalies are present, the zone is considered to be potentially hydraulically important. Each zone is classified with a 1, 2, or 3; a "3" indicates the zone shows resistivity/tube wave correlation, temperature or fluid resistivity departures and confirmation by television and/or geological logs. ∠H and ∠L represent high and low angle features respectively.

TABLE 1.

WELL NO.	FRACTURE ZONES	POTENTIAL FLOW ZONE (1 = some probability of flow) (3 = high probability of flow)	VIDEO ATTRIBUTES
MW-22DB	42 - 45 ft	1	Breakout, minor ∠L fracture.
	66 - 68 ft	1	Dark lithology with minor fractures along interface of white mineralized swirls.
	87 - 93 ft	2	major ∠H fracture
	112 - 113 ft		no T or FLRES anomaly
	142 - 144 ft		no T or FLRES anomaly
	171 - 176 ft	3	several ∠H fractures
	217 - 221 ft		no T of FLRES anomaly
MW-21DB	185 - 192 ft	2	fractures not readily evident on video
	287 - 305	1	alternating light and dark banding with some ∠L features
MW-18DB	81 - 82 ft	1	no noticeable video attributes
	133 - 135 ft	2	∠H fracture
	151 - 152 ft	1	∠L foliation fracture

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WELL NO.	FRACTURE ZONES	POTENTIAL FLOW ZONE	VIDEO ATTRIBUTES
MW-18DB	155 - 157 ft	1	wall pitted, some ∠L features
	164 - 165 ft	1	small breakout zone
	188 ft	2	cloudy fluid
MW-15DB	160 - 252 ft	3	highly fractured interval, highest flow potential @ 169 ft and 236 ft
	266 - 267 ft		no T or video log
	277 - 281 ft		
	296 - 298 ft		
	307 - 325 ft		
MW-1DB	82 - 83 ft		bottom of casing
	119 -124 ft	3	major ∠H fracture and breakout
	146 - 148 ft	3	∠L, nearly horizontal feature
	216 - 217 ft	2	wall pitted, fluid cloudy
	234 - 236 ft	1	
	251 - 254 ft	3	several ∠L pits and scraps
MW-6DB	34 - 35 ft		bottom casing
	42 - 43 ft	1	∠L feature
	65 & 68 ft	1	∠L features
	82 - 92 ft	3	∠L breakouts
	110 -111 ft	1	minor fracture features
	134 - 136 ft	2	∠L fracture features
	161 - 163 ft	2	∠L fracture features
MW-8DB	30 - 48 ft	3	bottom casing, focus?
	88,95,101,107,123	1	guard spikes, ∠L foliation features
	122 - 126 ft	2	cloudy borehole fluid
	165 - 170 ft	1	too cloudy
	190 - 194 ft	2	too cloudy
MW-11DB	40 - 42 ft		bottom casing
	54 - 56 ft	1	breakout zone and ∠L features
	79 - 82 ft	3	major breakout zone
	90.5 ft	1	∠H fracture
	162 -164 ft	1	∠H fracture parallels foliation
	188 - 190 ft	2	wall pitted, particles appear to be flowing across screen
MW-17DB	89 -90 ft	1	pitted borehole wall
	109 ft	1	boundary of mineralized zone
	118 ft	1	∠L fracture @ mineralization boundary
	144 - 147 ft		no fractures apparent on video
	190 - 195 ft	1	∠H fracture
	211 ft	1	possible ∠L feature
	265 - 277 ft	3	several ∠L shadows, fluid cloudy
	316 ft	1	cloudy borehole fluid

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FRACTURE FLOW

Fluid flow through fractures that intersect the borehole will usually be indicated by departures from established trends in the temperature and fluid resistivity logs. Changes in the thermal gradient are indicative of convective heat transfer caused by circulating fluid, and changes in fluid resistivity are indicative of the introduction of water with differing salinity into the wellbore (or exiting from the wellbore).

The Zone from 174-178 feet in MW-22DB (see Appendix A) is interpreted as fracture flow in or out of the borehole; the *direction* of flow cannot be determined from temperature and fluid resistivity logs. The zone marks a significant change in water quality and a small temperature deviation and is associated with a fracture zone, as interpreted from the resistivity and tube wave amplitude logs. This points out an important feature of fracture flow: the fractures that support natural flow may not occur in the major fracture zones. Furthermore, major fracture zones as interpreted from the resistivity and tube wave amplitude logs may not exhibit flow. This is an issue of fracture extent, not directly addressed by resistivity and tube wave amplitude logs, which investigate only the immediate borehole environment. The interval from 82-92 feet in MW-6DB however, is marked by temperature and fluid resistivity anomalies and significant tube wave amplitude and resistivity lows, which indicates fracture flow within a major fracture zone.

Interpretation of fracture flow contains some subjectivity, and no unique solution exists. There are physical circumstances for which flow intersecting a borehole would not produce a temperature or fluid resistivity anomaly (i.e., water of equal temperature or salinity flowing in or out). Likewise, changes in temperature or fluid resistivity are not necessarily caused by fluid flow (i.e., salinity or temperature stratification within the borehole).

Nevertheless, the coinciding evidence of temperature and fluid resistivity anomalies, particularly when observed with corresponding resistivity and tube wave amplitude minima, are strong evidence for not only the presence of fractures, but also fracture flow.

VIDEO ATTRIBUTES

Borehole television images enhance the interpretation of geophysical logs at the Linemaster site by providing high resolution visual representations and insight into the following key aspects:

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* Borehole rugosity.

* The presence and relative geometry of fractures.

* Fracture density.

* The presence of gneissic bands and the relative geometry of the banding with respect to fractures.

* Changes in mineralogy due to some video attribute (color, texture, apparent hardness, reflectivity etc).

* Fluid flow can be inferred if sufficient ambient particulates exist and can be seen moving in or out of a fracture. Very small flows may not be detectable with the borehole video system.

The video showed overall that: (1) some holes were deviated, (2) foliation dip is variable relative to the boreholes, and (3) high angle fractures and lower angle fractures that parallel foliation appear throughout the site. Deviation of the boreholes is surmised by the position of the camera, which despite having centralizers installed is decentralized in some of the wells. This occurrence is not unfortunate however, because if deviation data becomes available on these holes at a later date, that information may allow the azimuth and absolute dip of the fracture sets and foliation to be estimated with existing video images.

To aid in the interpretation of television images, especially when protruding objects are encountered, it is often helpful to study the shadows projected by the image as the light is varied and the camera is worked back and forth. The scale on the television image can be deduced by realizing that the true diameter of the light-head housing (as seen on the picture) is approximately 2 inches and the distance from the view portal to the light source is about 8 inches. Depth is referenced to the top of the light-head housing; consequently, the light source is 5 1/2 inches below the depth reference and the view portal is 2 1/2 inches above the reference.

The monitor wells videoed and geophysically logged at Linemaster penetrate bedrock consisting primarily of schist with some occurrence of pegmatite mineralogy and granitic intervals. The video attributes of these facies combined with their geophysical signature assist the characterization of this site. Several wells provide examples. Observations from each well in zone of interest are presented in Table 1.

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ELECTRIC LOG RELATIONSHIPS

The electrical logs, IP, SP and resistivity may be indicating secondary sulfide mineralization in several wells. It has been COLOG's experience that IP values greater than 4% can only be caused by sulfide mineralization or other materials with very high cation exchange capacities such as graphite.

Sulfide mineralization such as pyrite, is usually typified by negative SP anomalies, low resistivities and high IP anomalies demonstrated in well MW-21DB at 135', at 198' and well MW-22DB at 92' and 142'. The zones at 190' and 245' in MW-22DB do not have associated SP negative anomalies and may be graphite or other mineralization fabric.

Detailed core evaluation in the areas of the IP anomalies may identify the cause of these anomalies. Naturally occurring sulfide minerals such as galena, arsenopyrite, etc., can be a potential natural source of certain types of heavy metal groundwater contamination.

CROSSPLOT RELATIONSHIPS

Geophysical log analysis is enhanced by the examination of three component crossplots which display two or more measurements in such a way that unique groups or trends can be analyzed. These crossplots serve to establish statistically meaningful relationships and identify departures.

Figure 3, for example, illustrates the general trend between resistivity (guard resistivity is used here) and tube wave amplitude for well MW-8DB, identifying an important group of points associated with fracturing. The group of log values enclosed by the red polygon represents the rock with the lowest resistivity and tube wave amplitude and is interpreted as the most heavily fractured rock in the well. High sonic transit times are observed in this group also. The general trend illustrated on Figure 3 is found throughout the Linemaster site.

Figure 4 is a similar crossplot for MW-8DB, but the trend is not as apparent as in Figure 3. The lowest resistivity and tube wave data for the entire well is encircled by the red polygon and the log shows this group to be in a major fracture zone.

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MW-8DB

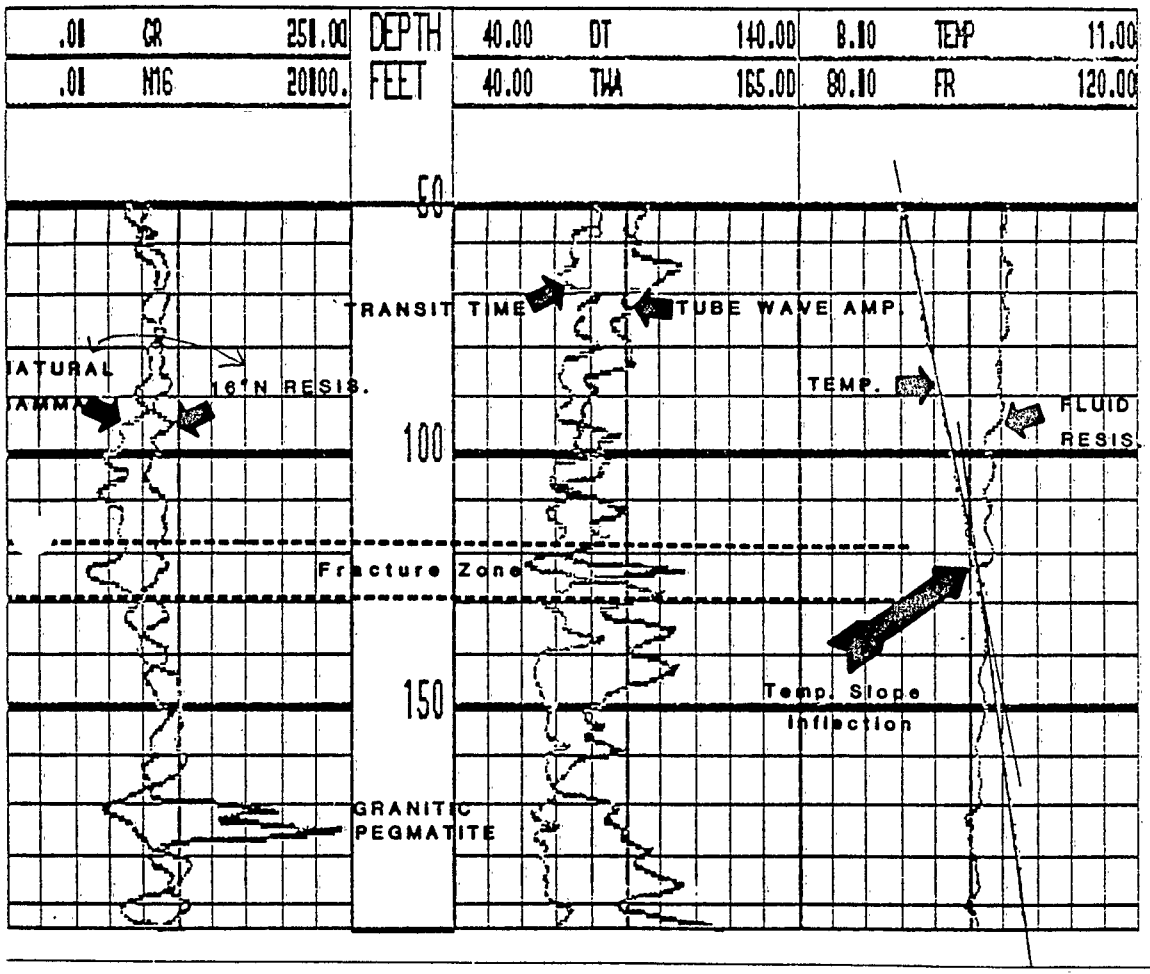

Figure 1. Geophysical logs from MW-8DB showing correlation between 16" normal resistivity (magenta, left track), tube wave amplitude (red, middle track) and sonic transit time (blue, middle track). Zones with decreased amplitude content, higher sonic transit time, and low 16" normal resistivity are interpreted as potential fracture zones. If a temperature anomaly or temperature slope inflection occurs in these zones, the interval is interpreted to be a potential flow zone. Departures in temperature and fluid resistivity trends often exist in flowing fracture zones. High natural gamma radiation (left track, green trace) occurs in zones of pegmatite mineralization.

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MW-18DB

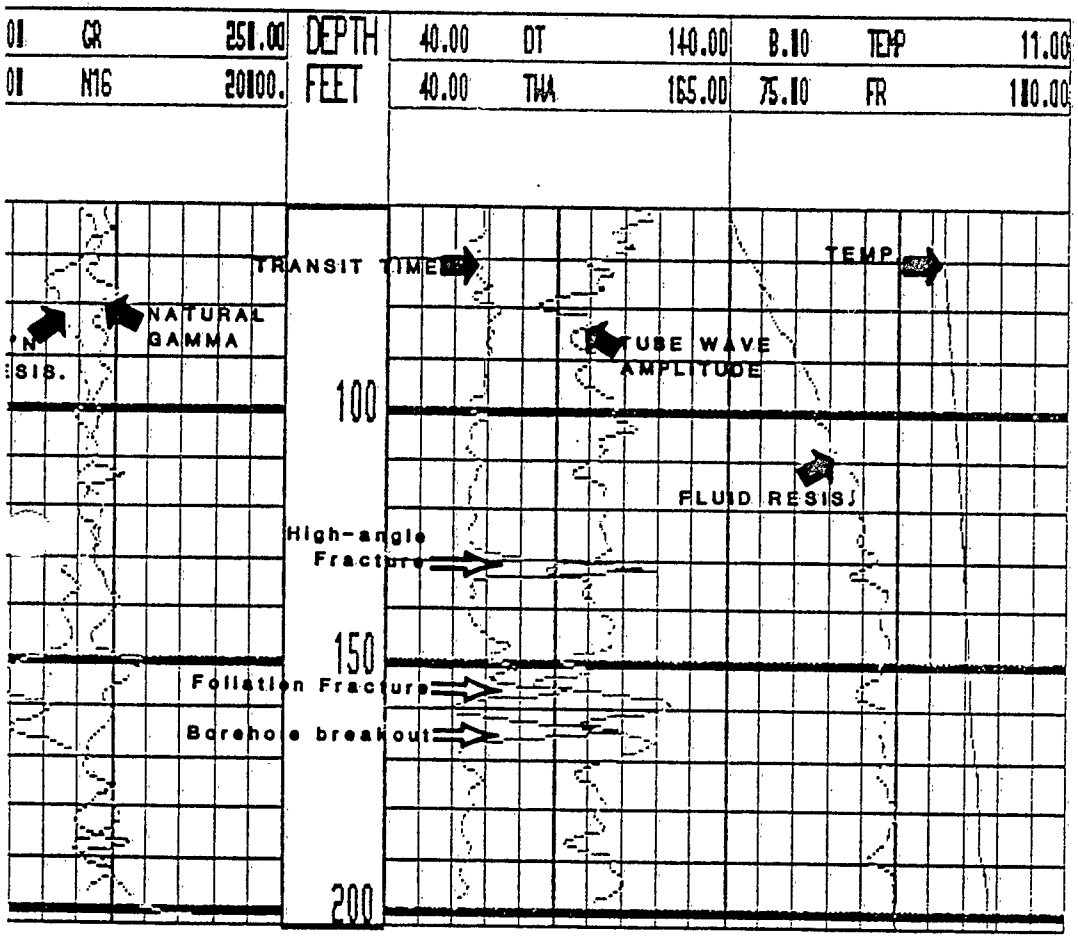

Figure 2. Logs from MW-18DB showing trends in tube wave amplitude and sonic transit time in a high angle fracture zone (with respect to borehole), a foliation fracture zone (lower angle with respect to the borehole), and a borehole breakout zone (caliper out of gauge). Highest tube wave attenuation occurs in the foliation fracture zone, but higher sonic transit times are found in the high angle fracture zone. These qualitative trends are common throughout the site, but the magnitude of change depends on total fracture aperture space and geometry as well as borehole rugosity.

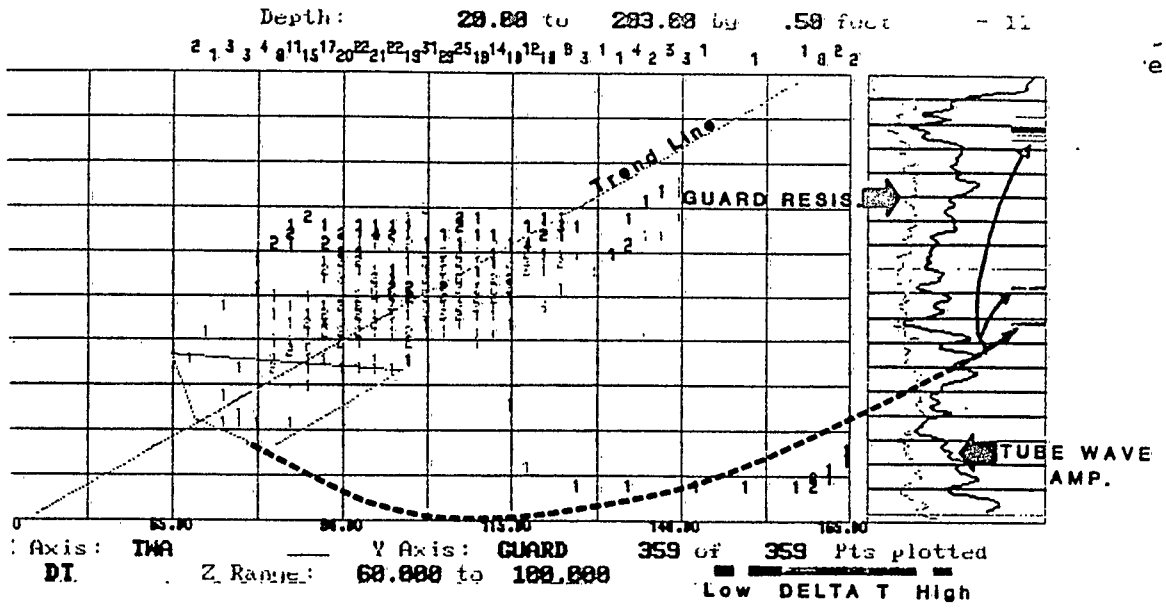

Figure 3. Three component crossplot illustrating the relationship and trend between guard resistivity, tube wave amplitude, and sonic transit time. The red polygon marks a zone of low resistivity and tube wave amplitude; the highest transit times (red and orange colored data points) in the well are found in this area also. The combination of low resistivity and tube wave amplitude and high sonic transit time is interpreted to be a potential fracture zone at the Linemaster site. The green trend line shows generally that tube wave amplitude and resistivity increase as sonic transit time decreases.

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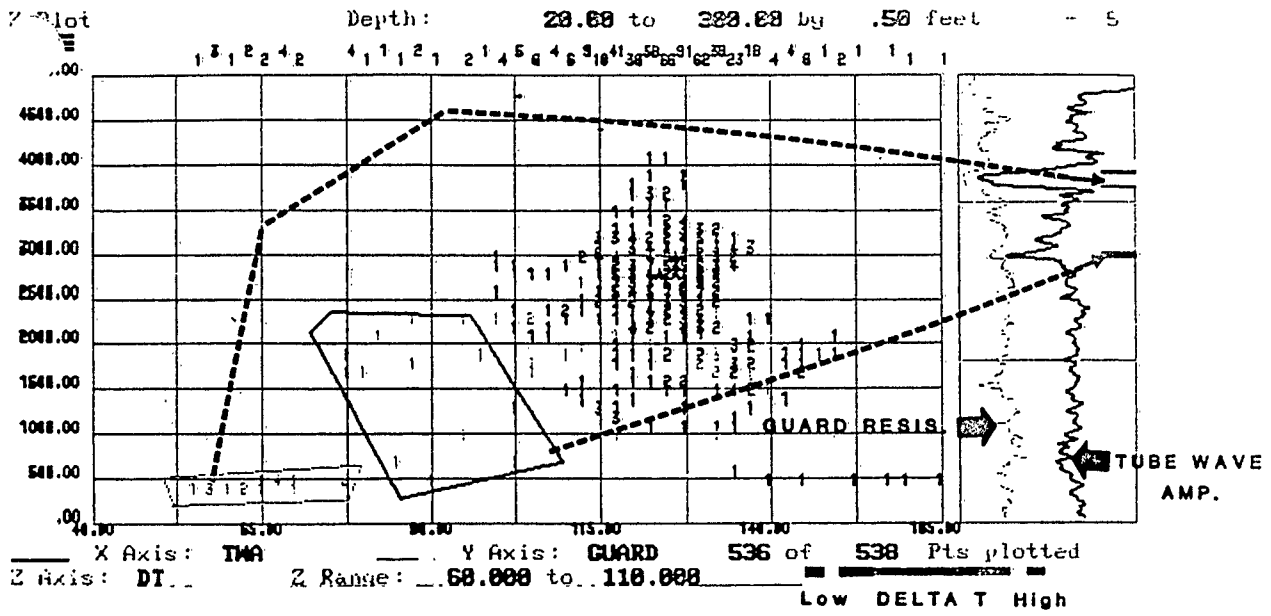

Figure 4. This three component plot from MW-6DB compares tube wave amplitude, guard resistivity, and sonic transit time. The polygons isolate data points which are displayed on the log in intervals interpreted to be fracture zones. Television images verify the presence of fractures in these intervals.

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APPENDIX A: PETROPHYSICAL DISCUSSION,

TOOLS, AND CALIBRATIONS

ELECTRICAL RESISTIVITY LOGS

Electrical resistivity or resistance in a borehole can be measured with a number of different devices including the 16" normal, the 64" normal, and the single point resistance used at the Linemaster site. The operational features of each measurement are discussed under the measurement heading, while the petrophysical aspects of formation resistivity will follow here. In the area of interest, the resistivity is dependent on the fluid salinity, permeability, and connected fracture paths within the depth of investigation of the measurement. For example, the resistivity measurement in well MW-12 is greatly lowered by fluid salinity compared to all the other wells in the program. The resistivity changes in all the wells are also controlled by the fracture density, and fracture connectivity. The resistivity traces decrease in areas in which the borehole has been broken out, and/or highly fractured.

16" Normal

All electrical devices require the presence of the borehole fluid to carry the current from the probe to the formation, and therefore these devices do not work above fluid level. A constant downhole current is supplied to a current electrode and the resulting voltage drop is measured on a return electrode 16" away from the current electrode. The resistivity of the surrounding media (which includes the borehole fluid) is derived from Ohm's Law and the geometry of the electrode arrangement. The static electric field which results from the geometric arrangement of electrodes is ideally a sphere 16" in radius at the measurement electrode. The presence of the borehole however, affects the measurement sphere by decreasing the lateral extent, and increasing the vertical extent. Borehole corrections based on the borehole fluid resistivity can be made, but these corrections do not address the effects of vertical averaging. The influence of the borehole size effects become less with smaller diameter boreholes. Calibration of the 16" normal is performed in the shop with a known resistance box which tests a range of resistivities from 0.0 ohm-m to 10,000 ohm-m.

64" Normal

The only differences between the 64" normal and the 16" normal are the electrode spacing, depth of investigation, and geometric factors which differ because of the electrode spacing. The measurement electrode is placed 64" away from the current electrode for the 64" normal. Calibrations are done using the same resistance box used for the 16" normal. The range of resistivities are from 0.0 ohm-m to 40,000 ohm-m. The difference between the ranges of the 16" and 64" normals due to differing geometric factors for the electrode arrangements.

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Spontaneous Potential (SP)

The SP is a measurement of the naturally occurring potential in the borehole. This naturally occurring potential is most often caused by a concentration gradient between the borehole fluid and formation fluid, and requires the presence of a clay rich/porous media interface to occur. Reduction/oxidation interfaces and streaming potentials caused by the flow of fluid in or out of the borehole are also suggested as causes for the occurrence of spontaneous potential. The SP logs for the Linemaster project were not relied upon for any critical log interpretation because of their general lack of response. The lack of response in the borehole could be due to the similarity of the borehole and formation fluids.

Induced Polarization

Induced Polarization (IP) measurements are used to detect high cation exchange capacity minerals and metallic sulfides, however it cannot distinguish between the two electrochemical effects. In sedimentary environments, IP generally is used to detect disseminated sulfide mineralization (pyrite) and/or montmorillonite clay. IP can be used to distinguish between the oxidized and reduced geochemical environments. IP logs can be used qualitatively to detect pyrite in coal seams.

In igneous and metamorphic environments, IP is one of the best tools available to detect the presence of sulfides. IP has been used to define the mineralization in a massive sulfide deposit (Daniels, et la, 1981) and semi-quantitative correlations between sulfide content and IP log response (Snyder, et la, 1977).

COLOG records (IP) as a time-domain measurement of the residual charge stored (or decayed or secondary voltage (V_s)) after the formation has been excited with a constant current pulse, that is then turned off. Measurement of the secondary voltage corresponds to the polarizability of the formation. The secondary voltage is normalized with respect to the primary voltage (V_p) pulse with the IP effect expressed as the ratio V_s/V_p. The log value for the IP effect is displayed as a percentage with 1% IP response corresponding to 10 millivolts per volt (mV/V). It has been COLOG's experience that montmorillonite clay does not cause an IP effect greater than 2%.

COLOG utilizes Mt. Sopris Instrument Company's RLP-4980 electric logging probe to record Induced Polarization. This system is the only commercial IP system that available in the industry. Laboratory measurements compare favorably with field logs made with this system. The RLP-4980 probe utilizes four (4) electrodes (current and voltage electrodes on the probe, the cable armor, and a surface mud plug). For the IP measurement, current is passed between the logging cable armor (B) and a current electrode (A) on the probe. Voltage is sensed between electrode (M^1) (short normal

resistivity array) on the probe and the surface mud plug (N). The AM_1 distance is 0.4 meters or 16 inches which is the approximate bed resolution with this tool.

References

Daniels, J.J., and J.H. Scott, 1980, The interpretation of geophysical well logs in a coal depositional environment, Illinois Basin, Kentucky: U.S. Geological Survey Bulletin, no. 1509, 44p.

Daniels, J.J., J.H. Scott, and G. Olhoeft, 1981, Interpreting Precambrian metamorphic geology from geophysical well logs: Trans., of the SPWLA 22nd Annual Logging Symp., paper T.

Snyder, D.D., R.H. Merkel, and J.T. Williams, 1977, Complex formation resistivity - The forgotten half of the resistivity log: Trans. of the 18th Annual Logging Symp., June 5-8, paper Z.

Full Waveform Sonic

Acquisition of the digital full waveform sonic (FWS) data is accomplished with custom COLOG software, which allows the real time viewing of the waveforms as they are written directly to hard disk on a microcomputer in the logging van. The waveforms can also subsequently be viewed and processed for amplitude, frequency, and velocity information. For the Linemaster logging program COLOG used the slim-hole Mt. Sopris sonic tool (1.75" diameter) with receiver spacings of three and four feet from the transmitter (figure A-1). Calibration and repeatability of the tool is monitored by periodic logging of the USBM calibration test holes at the Denver Federal Center. Shop and field calibrations can also be preformed using a section of free standing steel pipe of known velocity.

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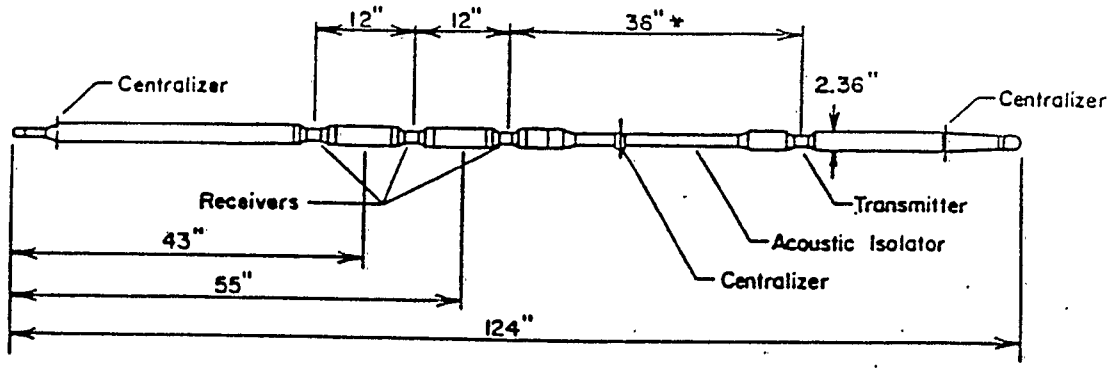

Figure A-1: Probe schematic for Mt. Sopris slimhole sonic tool.

The FWS log, recorded in the time domain at two downhole receivers, consists of interacting sonic waves generated by a 30 kHz acoustic energy pulse from the downhole transmitter. Sonic logs can only be obtained in the fluid filled portion of the borehole, and the propagation of these waves is controlled by the borehole wall/fluid interface, at which head waves are critically refracted and complicated reflections occur. For this report, we are primarily concerned with the compression and tube waves (figure A-2).

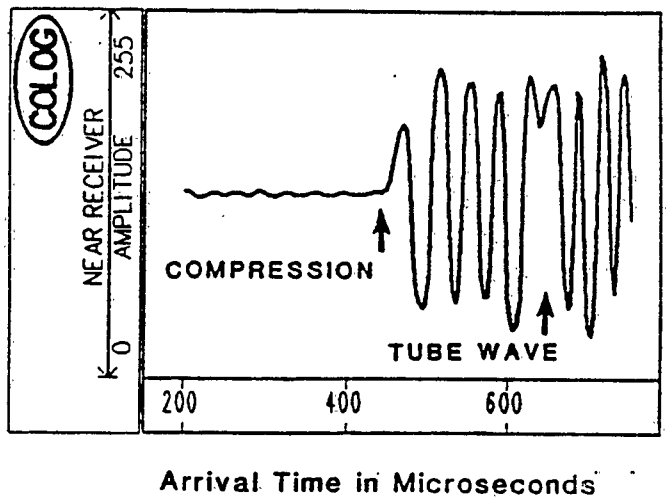

Figure A-2: Example of individual waveform with compression and tube waves annotated.

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Sonic transit time is the compression travel time per foot of rock, and represents the inverse of velocity (i.e., greater transit time equals slower velocity). Often referred to as "delta t" because it is the difference in arrival times between two receivers spaced one foot apart, transit time can be used to characterize rock as to lithology, consolidation, and presence of discontinuities. These characterizations, however, usually require calibration from core data unless regional relationships are available. The transit times are also used to help in the processing of seismic reflection and refraction data.

The tube wave is a guided fluid wave the travels along the borehole wall/fluid boundary at a velocity slightly slower than the speed of sound in water. Paillet and White (1982) presented theoretical work and field evidence that the amplitude content of the tube wave could be used to distinguish open fractures. Work by Davison et al. (1982), Mathieu (1984), and Paillet (1989) has firmly established the link between fracture permeability and the tube wave amplitude for crystalline rock. Studies which focused on petroleum reservoirs (see for example Mathieu, 1984 or Williams et al., 1984) have also suggested a direct relationship between permeability and tube wave amplitude in porous media.

Vertical stacking of the individual waveforms creates the full waveform display, which uses a banded presentation to represent the sinusoidal nature of sonic waves. In the convention used in this report, black bands represent high amplitude waves above the centerline, dark grey is the low amplitude portion of the positive wave, while light grey is the low amplitude portion of the negative wave below the centerline, and white is the high amplitude portion of the negative wave. The degree of discontinuity of the rock is reflected by the deviation from parallel banding in the FWS display.

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Temperature and Fluid Resistivity

The thermal gradient and fluid resistivity profile of the borehole fluid can be obtained with these logs, which are acquired with the same probe. The temperature is measured with a thermistor and the fluid resistivity is measured with a closely spaced Wenner electrical array. Shop calibration of these measurements is accomplished by immersing the probe in two water baths of known temperature and resistivity.

Geothermal gradients in the near surface earth are usually dominated by conduction and are generally linear due to the relative constancy of the thermal conductivity of earth materials. Therefore, deviations from the linear thermal gradient can be attributed to convective heat flow. Most commonly, convective heat flow is within the borehole fluid and is caused by formation fluid entering or leaving the borehole at some permeable interval. Abrupt changes in the temperature log are strong evidence of fluid flow between the formation and the borehole, and sometimes subtle

changes in the gradient can also be attributed to fluid flow. This is the premise, in conjunction with tube wave amplitude and the fluid resistivity logs, on which fracture permeability is interpreted in the Linemaster data. More detailed discussion on temperature and fluid resistivity logging can be found in a text by Keys (1989), which is also an excellent source of information for all of the logs discussed in this report.

The fluid resistivity in the borehole is controlled primarily by its salinity and therefore salinity stratification or the introduction of a fluid of different water quality into the borehole can be observed by changes in the fluid resistivity log. Often, the exchange of fluid between the formation and the borehole influences both the temperature and the fluid resistivity so the response is evident in both logs.

Temperature corrected resistivity can be converted to salinity in parts per million (ppm) equivalent NaCl (Bateman and Konen, 1977). A salinity profile can then be plotted which indicates the general water quality trend of the borehole fluid. If the assumption is made that the borehole fluid is in equilibrium with the formation fluid, then the borehole salinity profile can be interpreted as a formation fluid salinity profile. The differences between these profiles may contain information concerning the extent of hydraulic connectivity in the area.

Natural Gamma

Measurement of the natural gamma radiation is made by a scintillation detector in the probe. The source of this radiation is primarily the potassium 40 isotope found in clays and feldspars, but uranium and thorium minerals may also contribute. In the case of Linemaster project, the high counts in the gamma ray can be attributed to abundant feldspars in the granite gneiss. From the videos, the lower counting regions seem to contain more black minerals (possibly amphibolite rich). The gamma ray is also lower in the cased area of the borehole due to the shielding of the crystal by the casing.

The stability and repeatability of the natural gamma probe used at the Linemaster site is routinely checked with a source sleeve of known radioactivity. Because natural radiation is a relative measurement, no quantitative calibrations are performed. However, our natural gamma probes have been checked against those used in the petroleum industry which typically use a calibrated unit of radioactivity called the API unit. The counts per second (CPS) unit used by COLOG has been found to be approximately equal to one API unit.

Caliper

Measurement of the borehole diameter is measured by the change in a variable pot resistor in the three-arm caliper probe.

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Calibrations of the probe are done routinely in the shop and in the field before the tool is run in the borehole. Two caliper rings of known diameter are placed over the three arms and the tools response to these diameters is recorded. The caliper can be helpful in the search for fracture zones. For example, well number MW-16 from 70-78' has a break out zone, which can also be seen on the 16" and 64" normals, temperature, tube wave amplitude, fluid resistivity, as well as the video.

FIELD PROCEDURES

All equipment, probes and modules, were checked out before departure. All probes performed within manufacturers' specifications.

Video surveys of each well were done first so that any particulates would not be disturbed for the initial run in the well. Temperature and fluid resistivity logs were then run the following day, giving the well time to reach equilibrium. Followed by the sonic log, gamma ray log, 16" normal, 64" normal, SP, single point resistance, and caliper. The same tools and zeroing procedures were used at each well, as well as the same field computer.

The date and time of each run was recorded along with the well name, location, witnesses, logging engineer, total depth, casing and bit records, probe serial number, module serial number, run number, logging speed, digital file name, depth increment, and additional comments.

Before recording the digital file, the digital value was checked against the analog value to make sure the digital scales were working properly. A field copy of the log was made while recording the digital file. Copies of the digital file were made before leaving the well.

Digital data processing consisted of correcting depth offsets of the different probe functions, cutting off the electric logs above fluid level, filtering of the gamma measurement, combining the measurements into one large data file, processing of full waveform sonic data for tube wave amplitude and improved transit times, and reformatting and reploting the logs. Both a paper and computer audit file were kept as an aid to processing and future use.

QUALITY CONTROL

The same equipment and procedure was used on all eleven holes. All data was recorded in the simplest form and then corrected, filtered, and processed. Additionally, an audit trail (file) was automatically made showing the changes made to the raw data (the raw data is never altered). Logging trips and Daily logs were

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filled out for each well and each day in the field. These records documented all equipment serial numbers, when they were used, hole conditions, logging speed, sample interval, engineers, witness(es), digital file name, etc.

All equipment was checked out before departure, while logging, and again before stored at COLOG. Final logs were compared against the field copies making sure the logs were not contaminated with noise while processing.

Copies of the final logs were mailed to Fuss and O'Neill before final format and final bluelines were made. Depth values were referenced to ground level, and elevations were picked of the topographic map supplied. All data, raw and final, has been backed up on tape and disk. Copies of the field prints and final logs are saved at COLOG with the processing steps, Daily logs, and Logging Trip Reports.

REFERENCES

Bateman, R.M. and Konen. 1977. The log analyst and the programmable calculator. The Log Analyst, v. 18, no. 5, pp. 3-11.

Davison, C.C., W.S. Keys, and F.L. Paillet. 1982. Use of borehole geophysical logs and hydrologic tests to characterize crystalline rock for nuclear waste storage, Whiteshell Nuclear Establishment, Manitoba, and Chalk River Nuclear Laboratory, Ontario, Canada. 1882. Office of Nuclear Waste Isolation Paper ONWI-418. Available from NTIS.

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Mathieu, F. 1984. Application of full waveform acoustic logging data to the estimation of reservoir permeability. M.S. thesis, Massachusetts Institute of Technology.

Paillet, F.L. and J.E. White. 1982. Acoustic modes of propagation in the borehole and their relationship to rock properties. Geophysics, v. 47, no. 8, pp. 1215-1228.

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Williams et al. 1984. The long spaced acoustic logging tool. Proceedings of the 25th SPWLA symposium, paper T.

Wyllie, M.R.J., Gregory, A.R., Gardner, L.W. 1956. Elastic Wave Velocities in Heterogeneous and Porous Media: Geophysics, Vol. 21, No. 1, pp. 41-70.

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APPENDIX B: GEOPHYSICAL LOGS

COLOG INC

BOREHOLE GEOPHYSICS

17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC
TEMP/FLRES
WELL: MW-18DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 20, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 464 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 200 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	40 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER
DRILL METHOD: AIR ROTARY
MUD TYPE:
TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III
UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	Rx-Rx FEET	SOURCE TYPE	SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	200 FT	194 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			200 FT	39 FT	161 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 18.SIO, 18FIN2.PLP, 18VDL.HDP
REMARKS:

LINEMASTER MW-18DB 5/20/91 COLOG

T-WAVE AMPLITUDE
0 450-600 uSEC window 200
FLUID RESISTIVITY
50 OHM-METERS 100

Variable Density Log (Far Receiver) microSeconds

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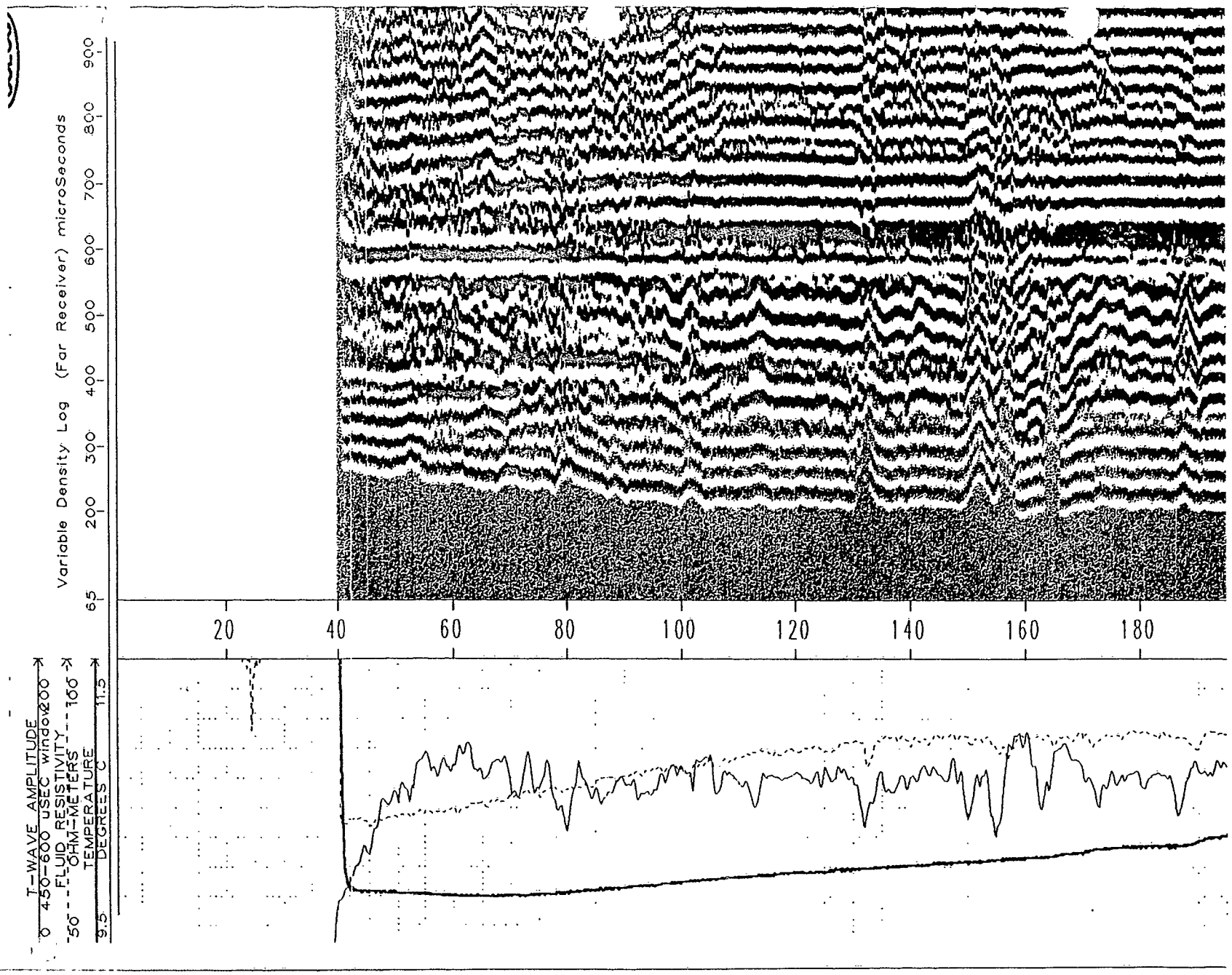

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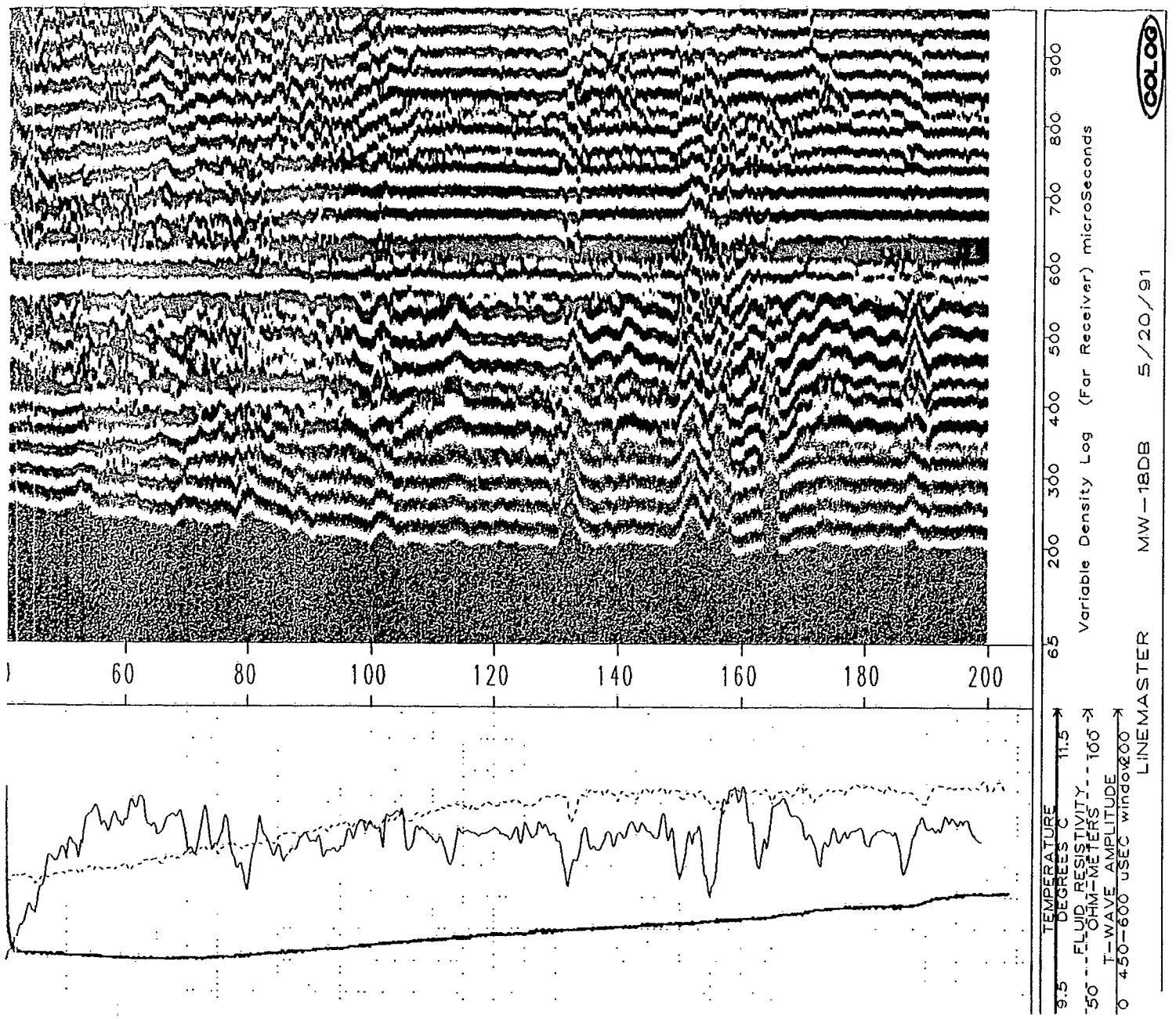

COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, 265 GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-18DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 20, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 464 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 203 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	40 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

LOGGING DATA

LOG JUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	Rx-Rx FEET	SOURCE TYPE	SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						203 FT	40 FT	163 FT
SP,IP	3	RLP	545	442	0.2	20						203 FT	40 FT	163 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	14						203 FT	5 FT	198 FT
CALIPER	5	GLP	1221	401	0.2	20						203 FT	10 FT	193 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 18FIN1.DAT, 18FIN1.PLP, 18.HDP
REMARKS:

LINEMASTER MW-18DB 5/20/91 COLOG
INDUCED POLARIZATION

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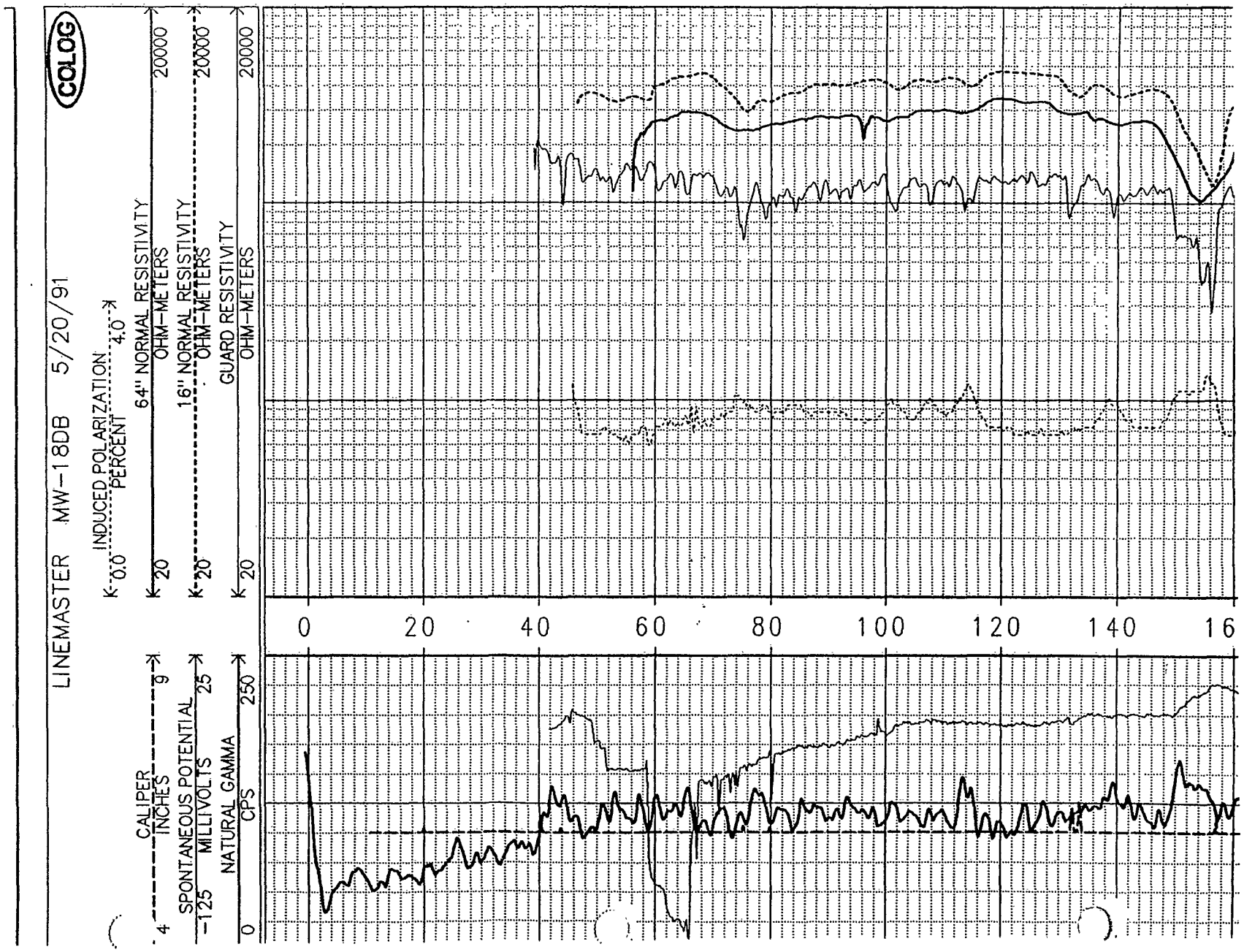

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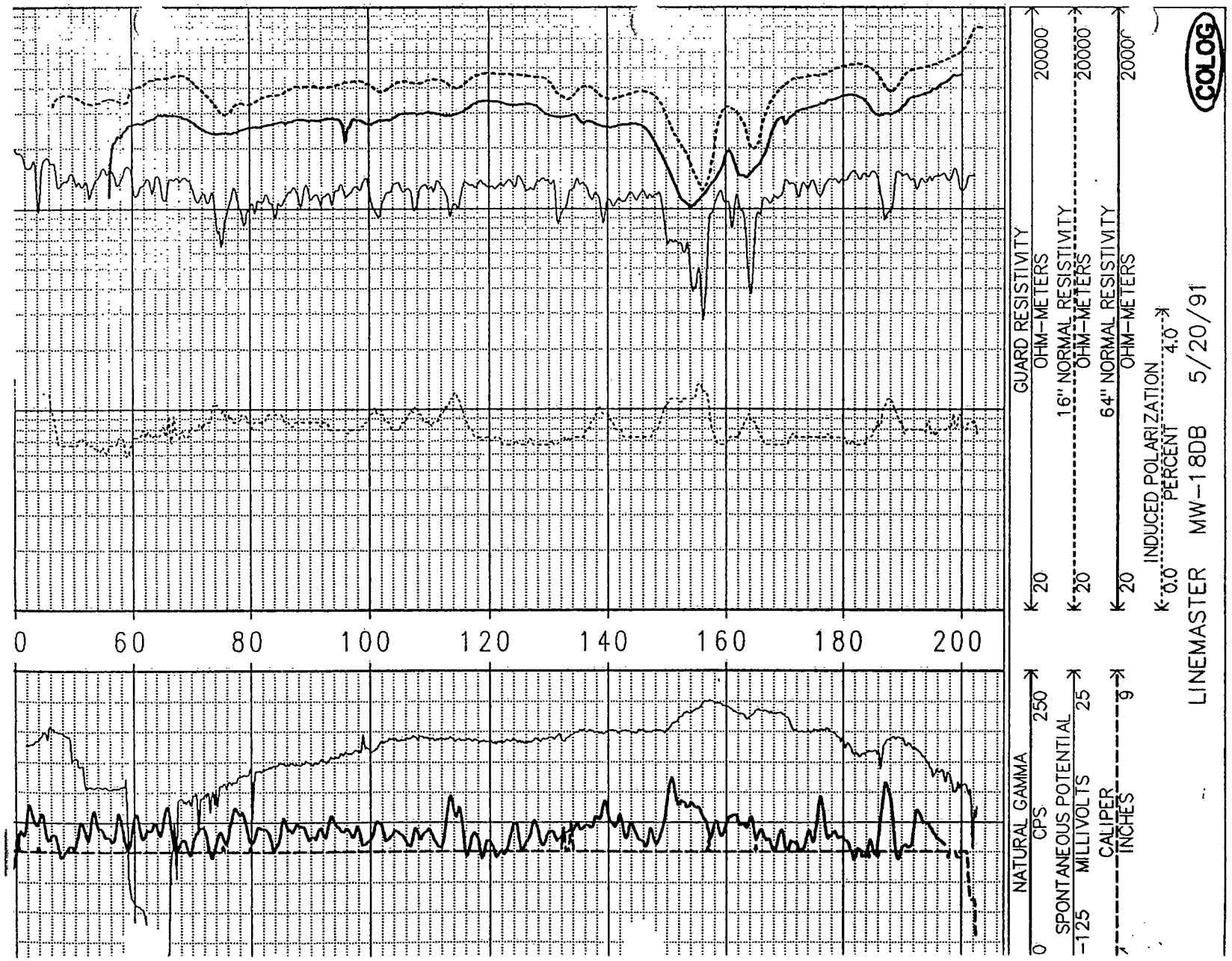

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ADMINISTRATIVE RECORD

COLOG INC

BOREHOLE GEOPHYSICS

17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC
TEMP/FLRES
WELL: MW-22DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 24, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 501 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 350 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	40 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT			LOGGING		DETECTOR	SPACING		SOURCE		LOGGED INTERVAL		
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	350 FT	344 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			350 FT	40 FT	310 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S) 22.SIO, 22FIN2.PLP, 22VDL.HDP
REMARKS:

LINEMASTER MW-22DB 5/24/91 COLOG

T-WAVE AMPLITUDE
0 450-600 uSEC window 200
FLUID RESISTIVITY Variable Density Log (Far Receiver)

LIN003 22

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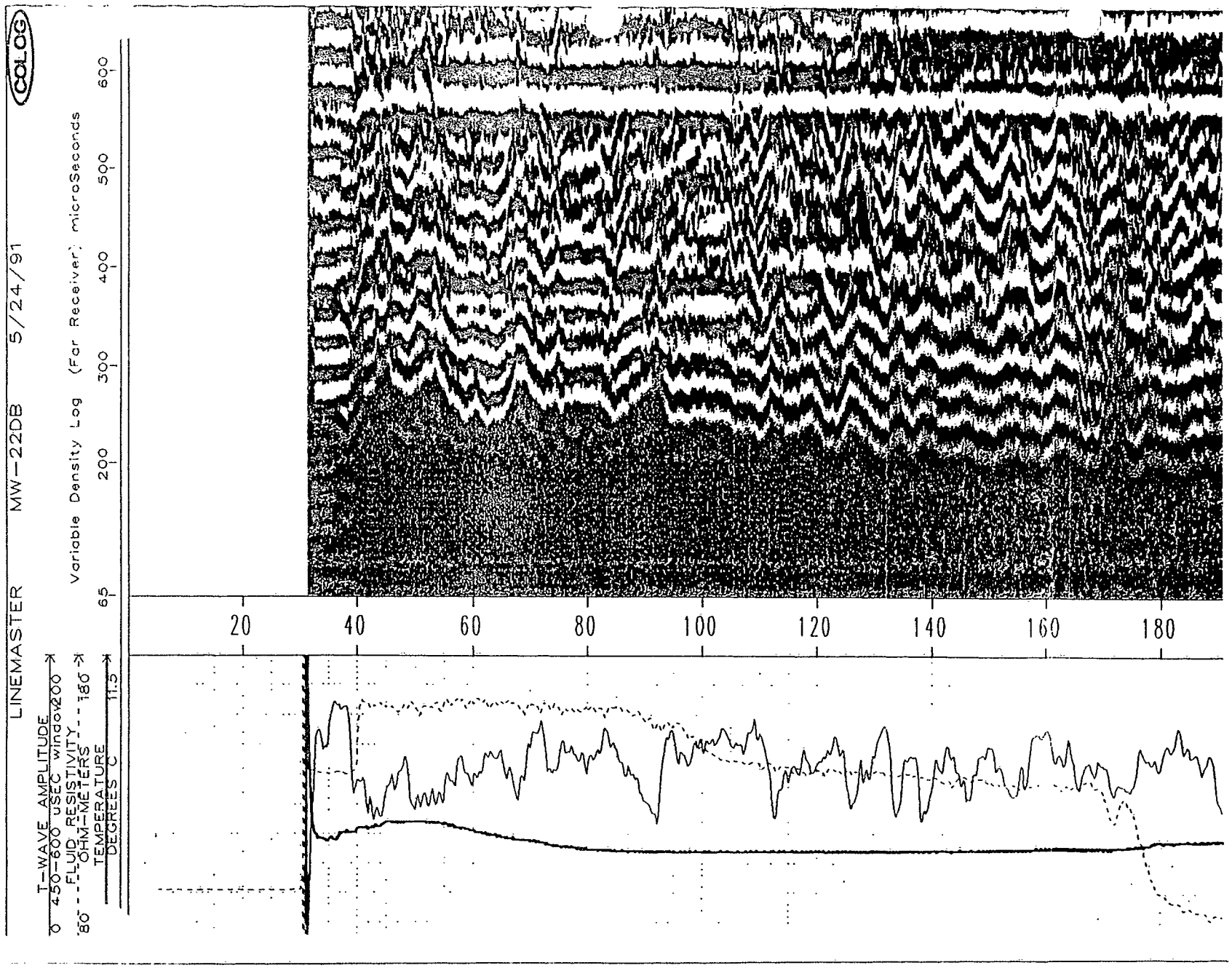
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 426



NOTICE
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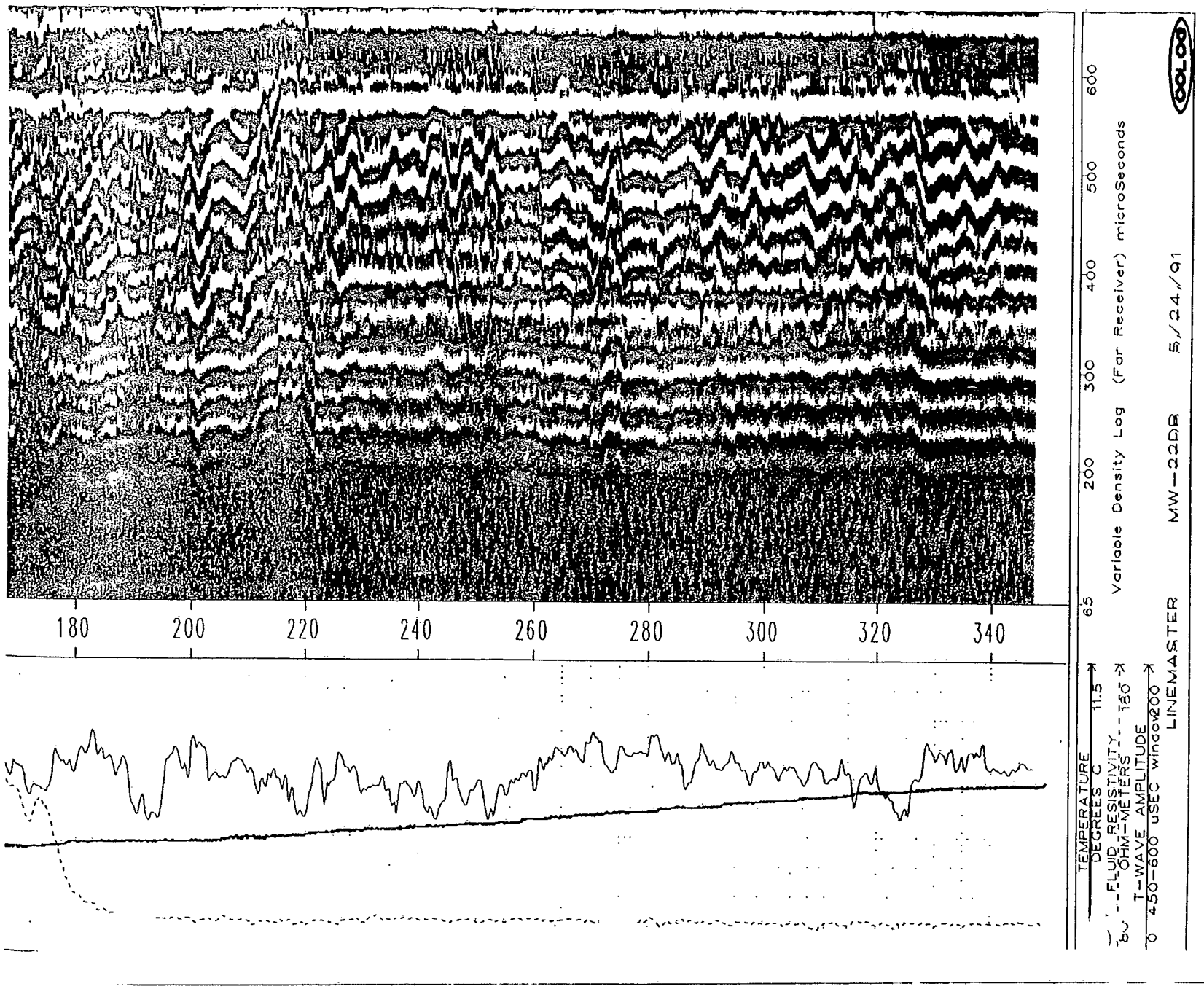
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 427



NOTICE
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

COLOG INC

BOREHOLE GEOPHYSICS

17301 W. COLFAX, 265 GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-21DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 24, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 552 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 405 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	44 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	Rx-Rx FEET	SOURCE TYPE	SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						405 FT	123 FT	282 FT
SP,IP	3	RLP	545	442	0.2	20						405 FT	123 FT	282 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	14						405 FT	5 FT	400 FT
CALIPER	5	GLP	1221	401	0.2	20						405 FT	40 FT	365 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 21FIN.DAT, 21FIN1.PLP, 21.HDP
REMARKS:

LINEMASTER MW-21DB 5/24/91 COLOG

INDUCED POLARIZATION
0.0 PERCENT 4.0

LIN003
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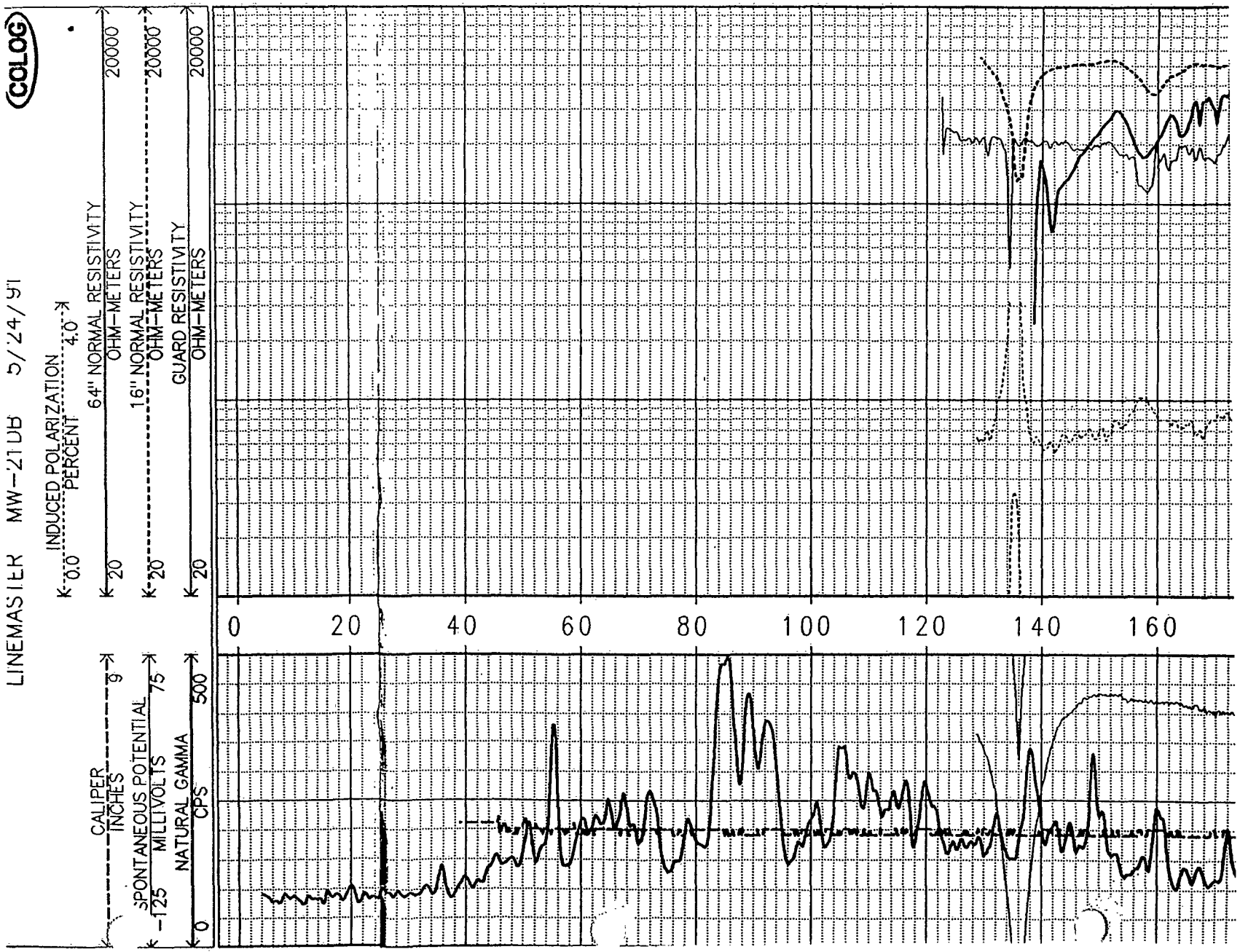
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 429



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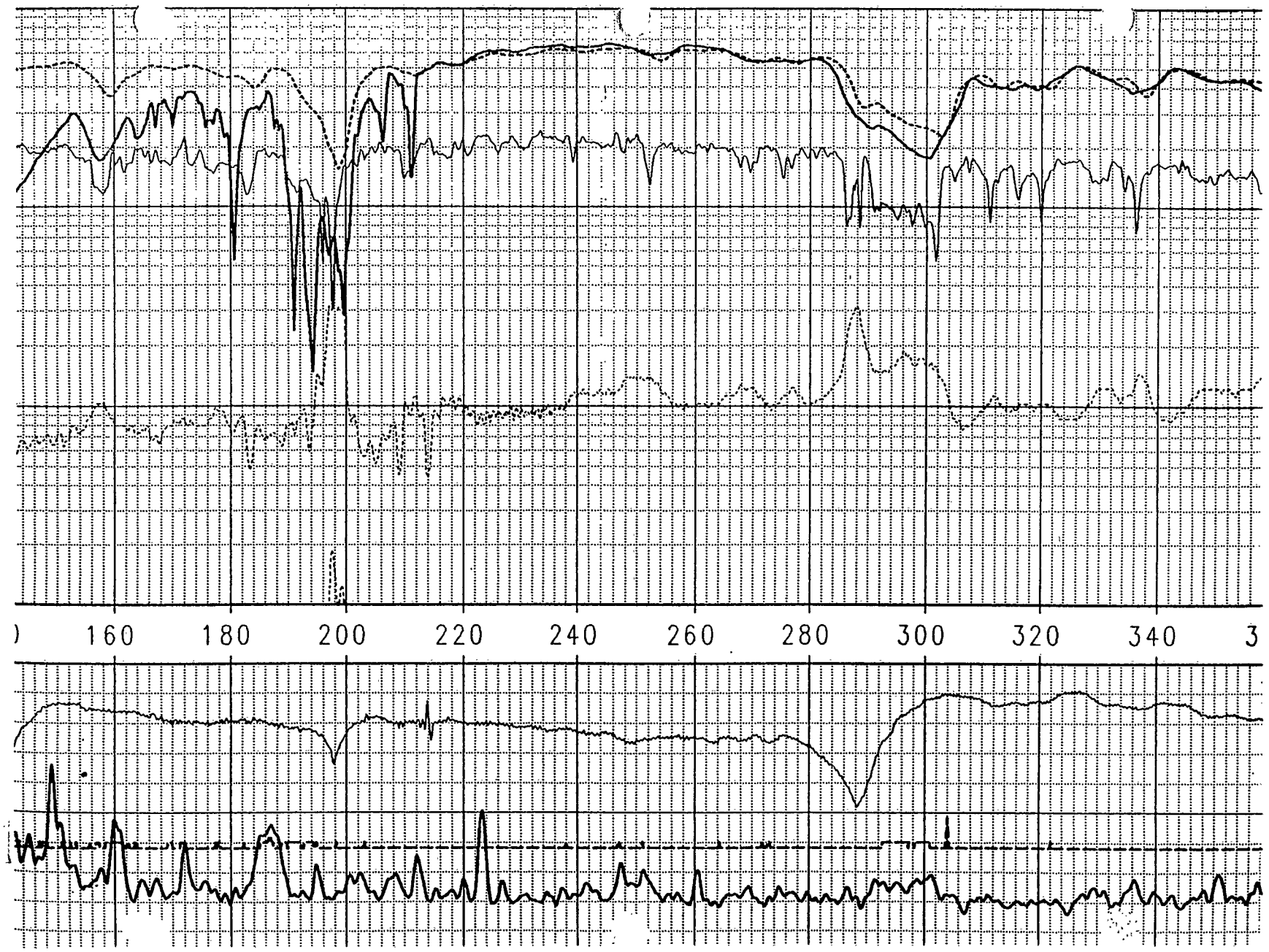
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 430



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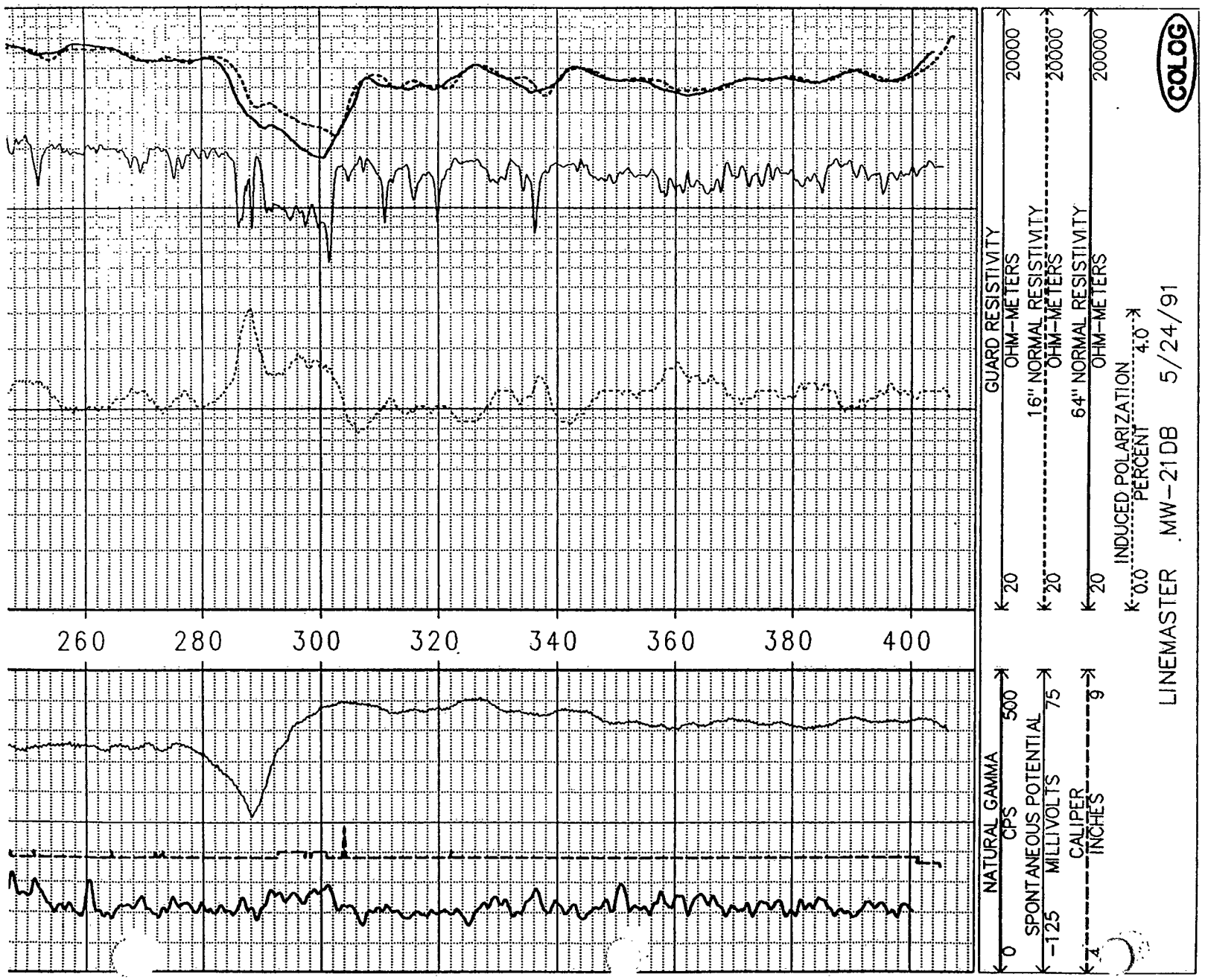
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 431



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
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COLOG INC

BOREHOLE GEOPHYSICS

17301 W. COLFAX, 265 GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-22DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 24, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 501 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 350 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	40 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

TRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT			LOGGING		DETECTOR	SPACING		SOURCE		LOGGED INTERVAL		
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						350 FT	40 FT	310 FT
SP,IP	3	RLP	545	442	0.2	20						350 FT	40 FT	310 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	14						350 FT	5 FT	345 FT
CALIPER	5	GLP	1221	401	0.2	20						350 FT	35 FT	315 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 22FIN.DAT, 221FIN.PLP, 22.HDP
REMARKS:

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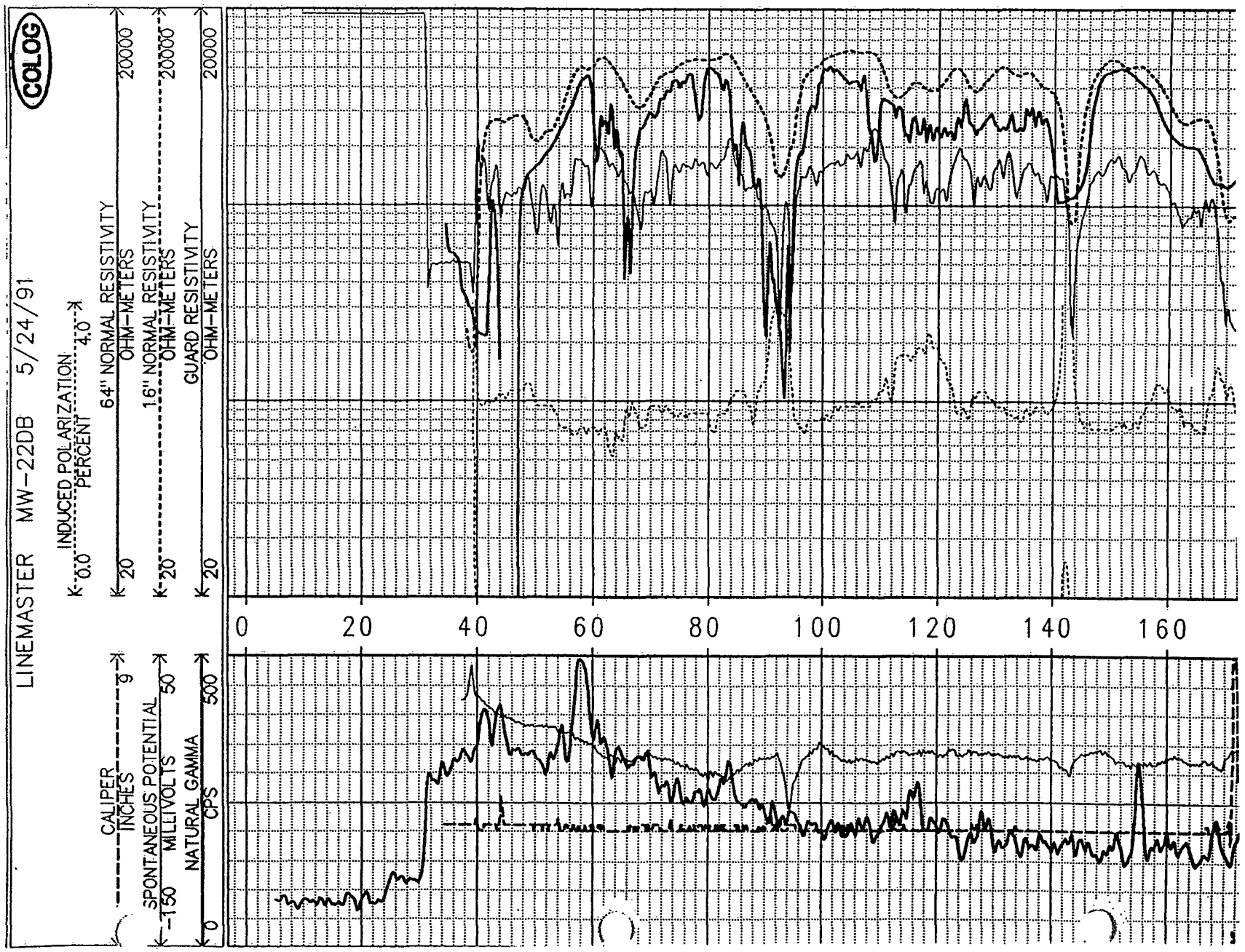
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 433



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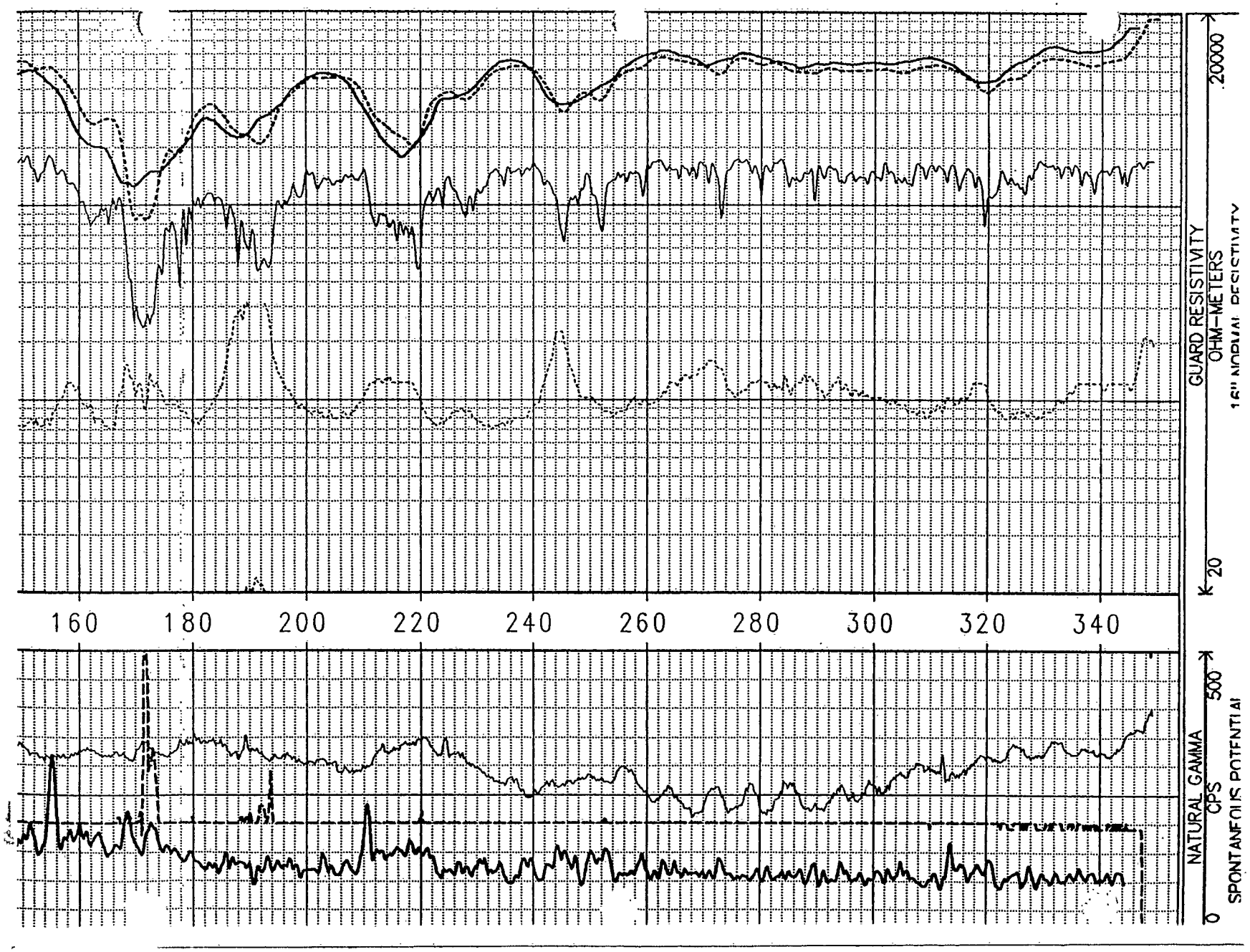
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

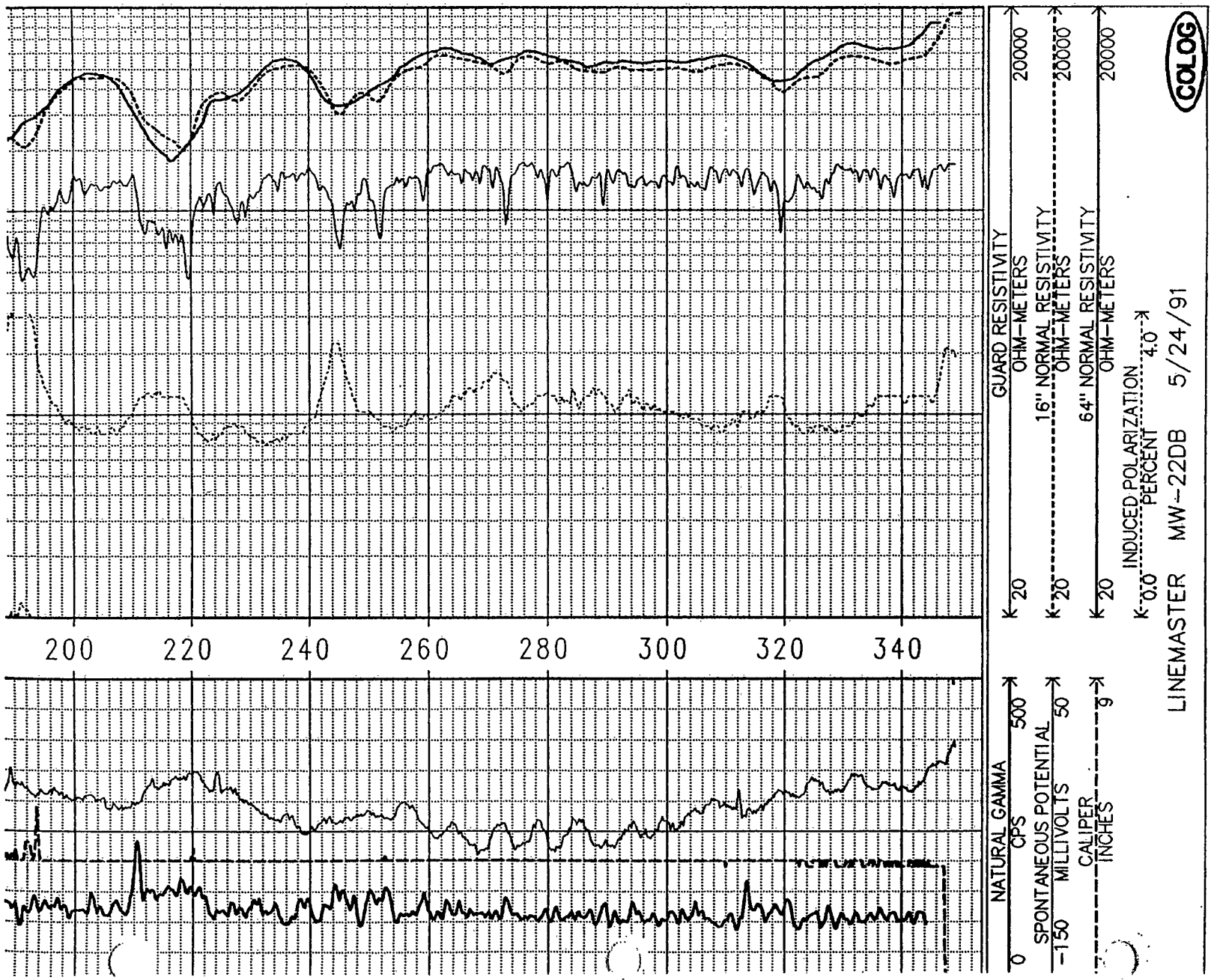
LIN003 434



NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 435



COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC
TEMP/FLRES
WELL: MW-21DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 24, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 552 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 405 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	45 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER
DRILL METHOD: AIR ROTARY
MUD TYPE:
TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III
UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT			LOGGING		DETECTOR	SPACING		SOURCE		LOGGED INTERVAL		
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	405 FT	399 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			405 FT	127 FT	278 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 21.SIO, 21FIN2.PLP, 21VDL.HDP
REMARKS:

LINEMASTER MW-21DB 5/24/91 COLOG

T-WAVE AMPLITUDE
0 450-600 uSEC window 200
FLUID RESISTIVITY
70 OHM-METERS 120

Variable Density Log (Far Receiver) microSeconds

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 436

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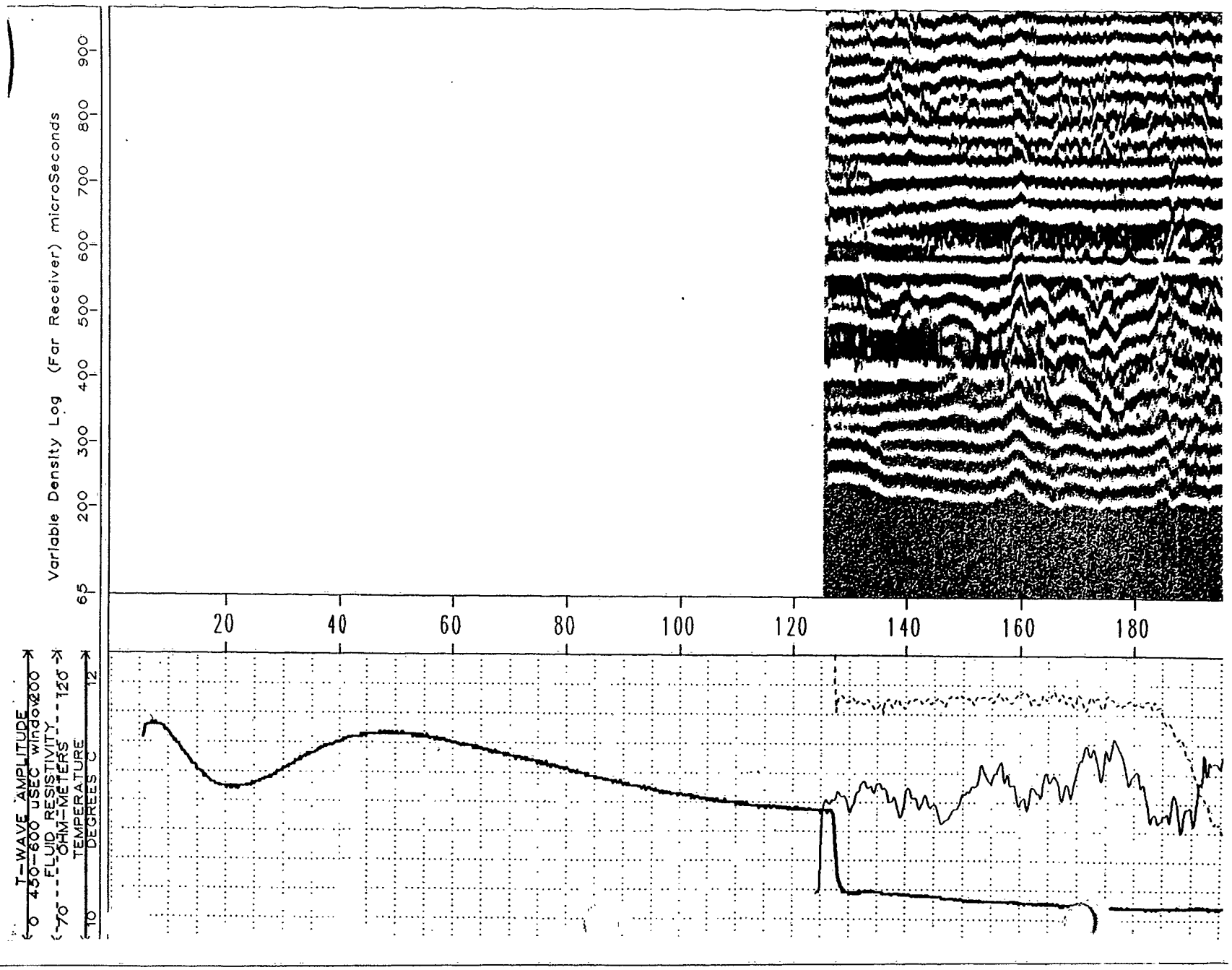
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 437



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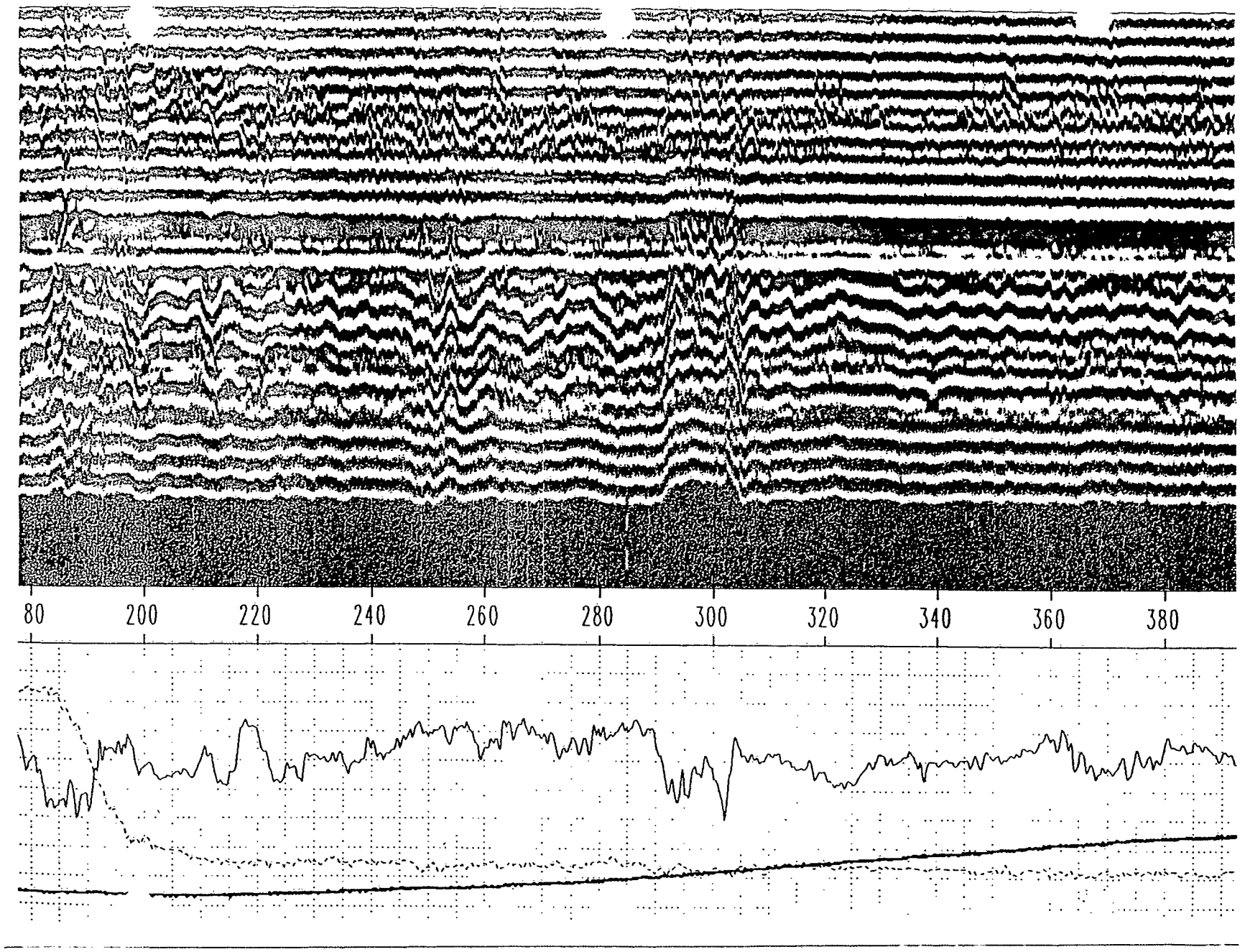
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 438



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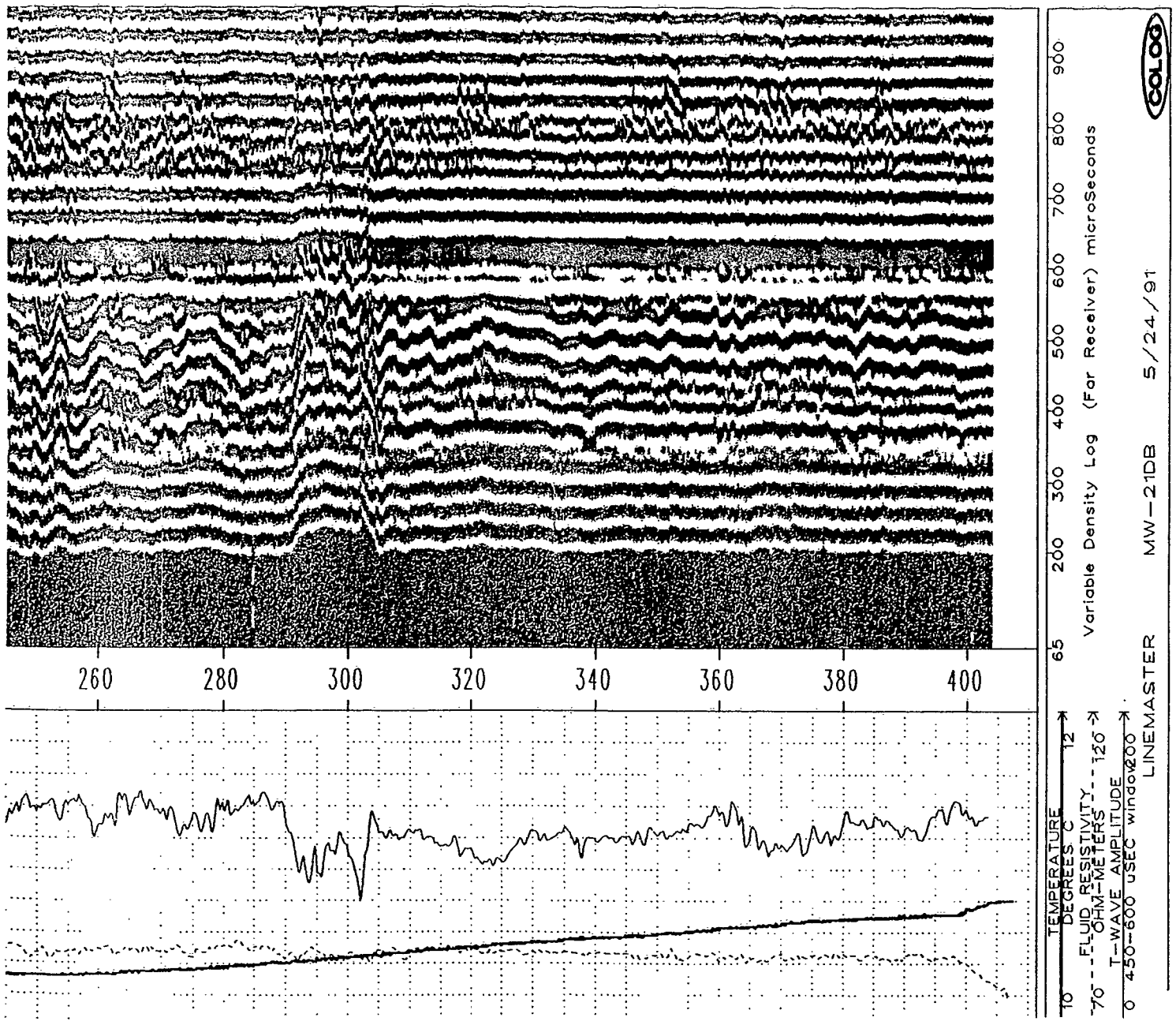
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 439



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ADMINISTRATIVE RECORD

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COLOG INC

BOREHOLE GEOPHYSICS

17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC
TEMP/FLRES
WELL: MW-17DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 24, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 462 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 400 FT

RUN NO.	BIT RECORD			CASING RECORD		
	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	60 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT			LOGGING		DETECTOR	SPACING		SOURCE		LOGGED INTERVAL		
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	400 FT	394 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			400 FT	74 FT	326 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 17.SIO, 17FIN2.PLP, 17VDL.HDP
REMARKS:

LINEMASTER MW-17DB 5/24/91 COLOG

T-WAVE AMPLITUDE
450-600 uSEC window 200 →
FLUID RESISTIVITY
OHM-METERS 60 →

Variable Density Log (Far Receiver) microSeconds

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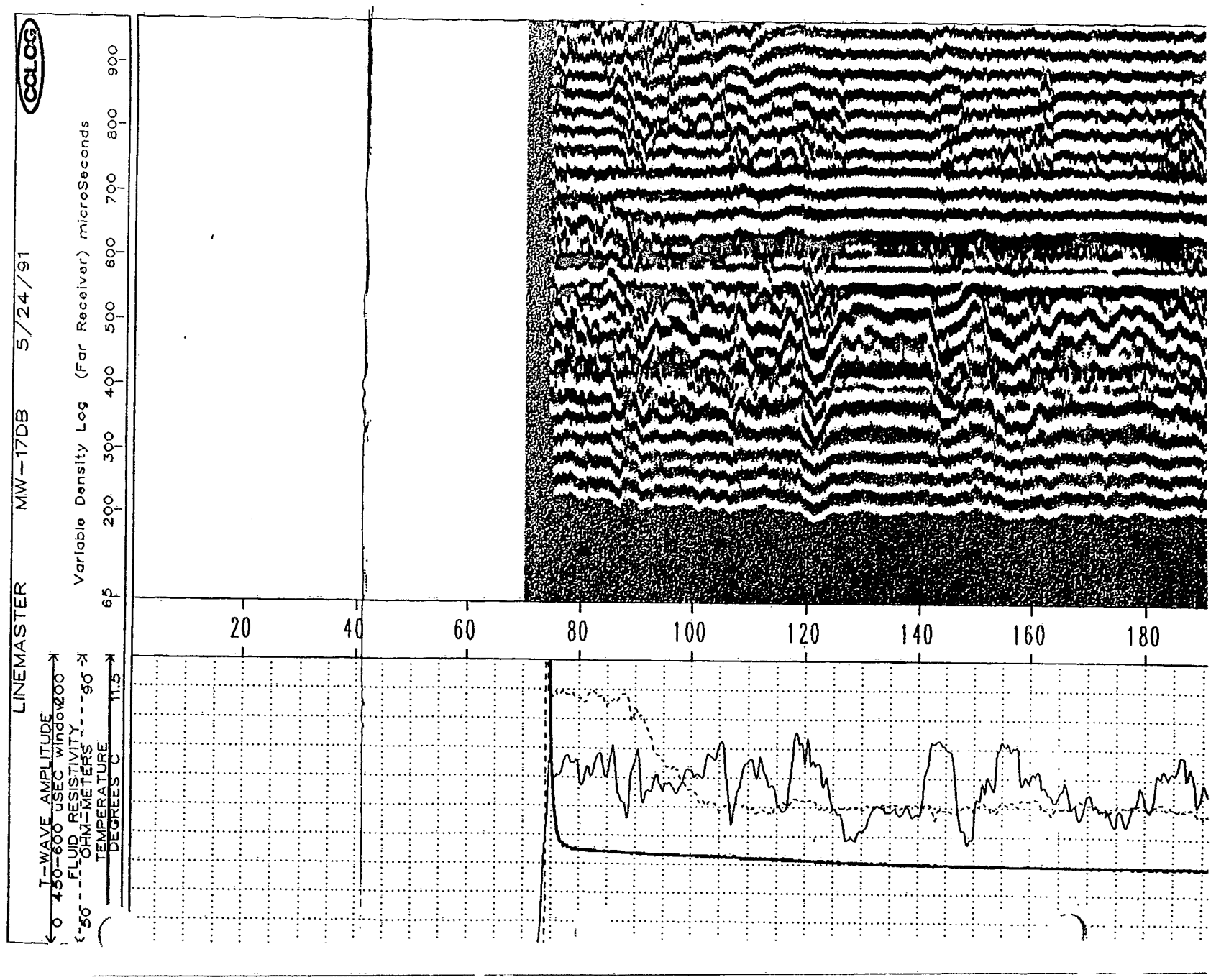
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 441



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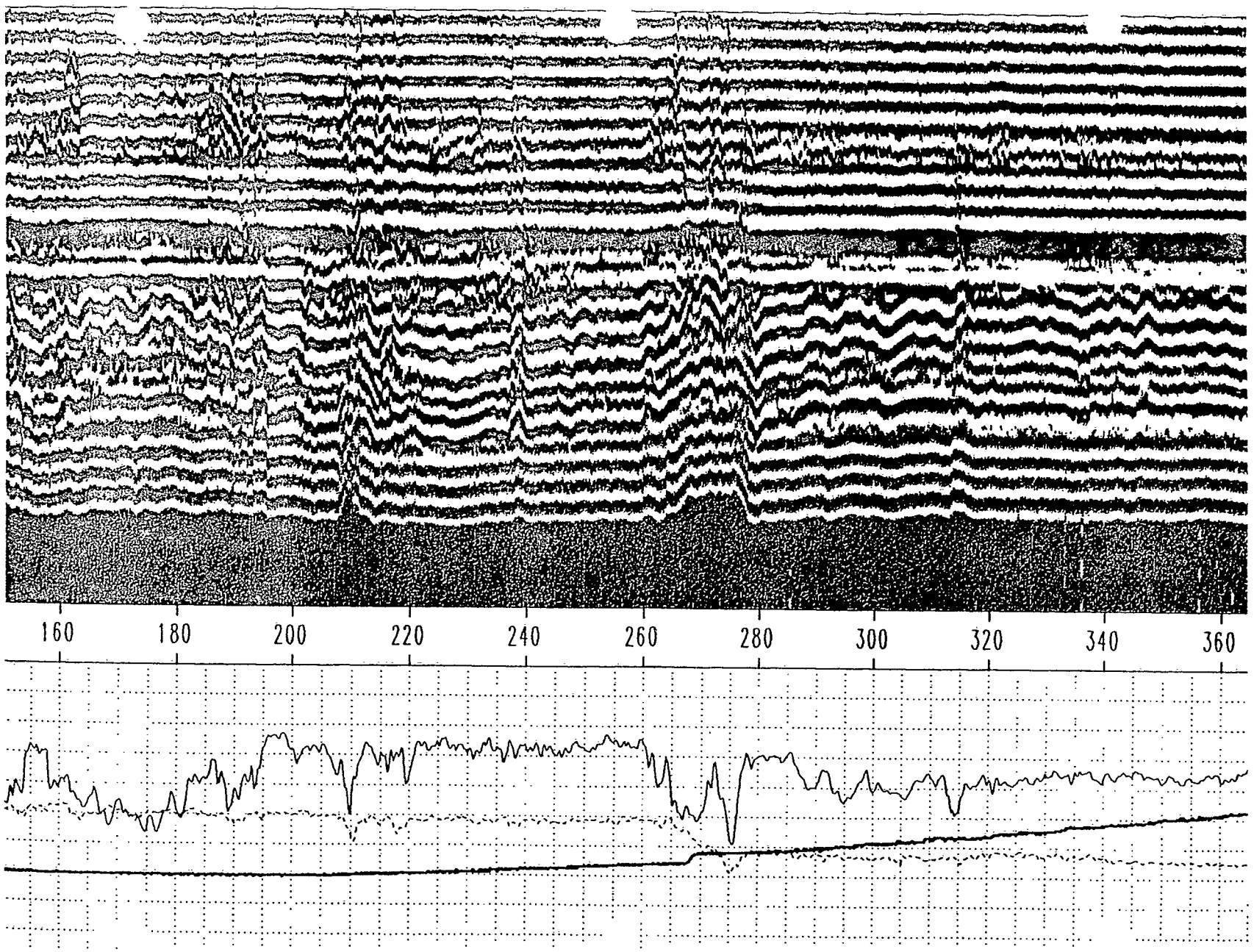
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 442



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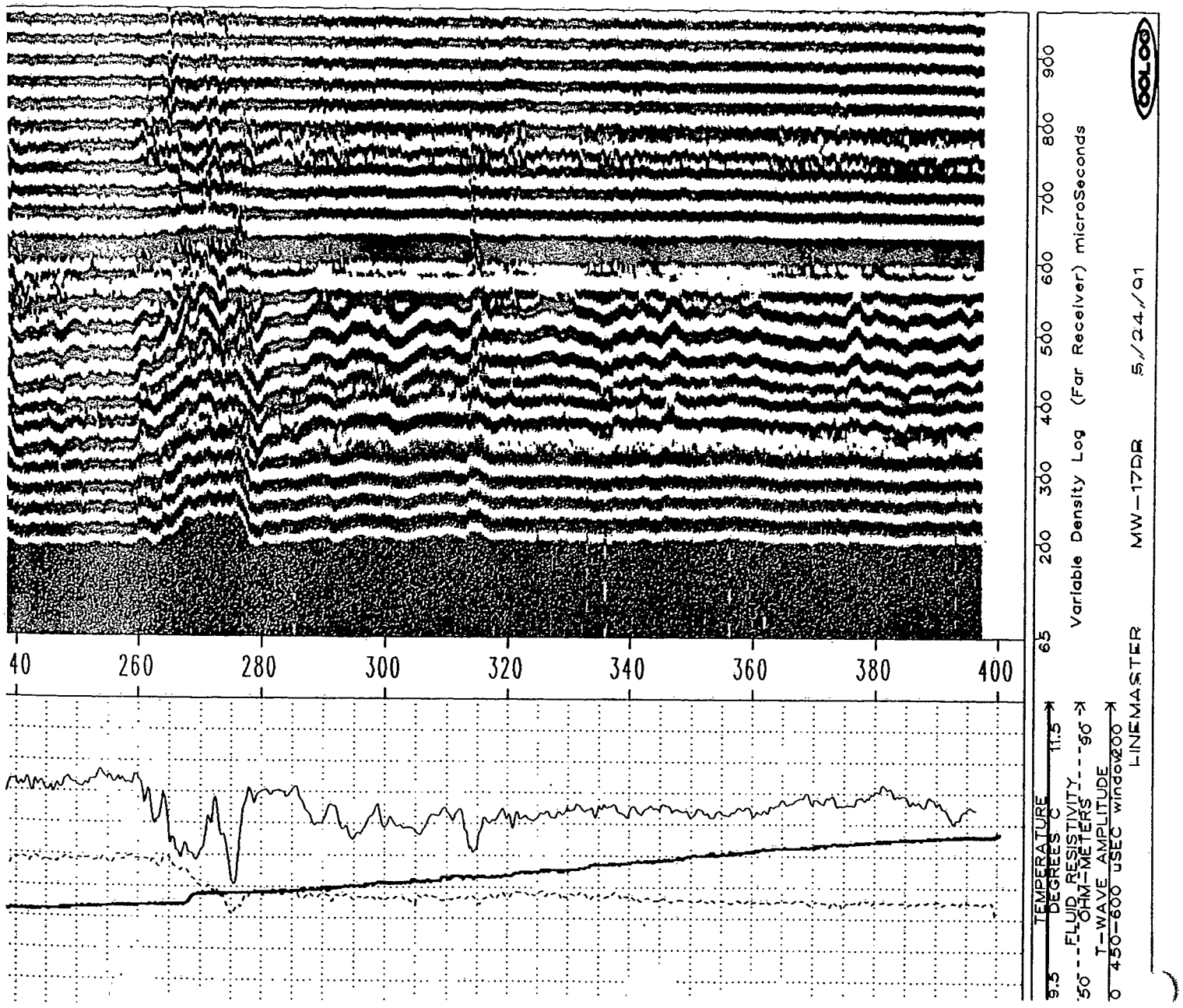
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 443



COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, 265 GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-17DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 24, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 562 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 400 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	60 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER
DRILL METHOD: AIR ROTARY
MUD TYPE:
TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rmf at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III
UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	Rx-Rx FEET	SOURCE TYPE	SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						400 FT	74 FT	326 FT
SP,IP	3	RLP	545	442	0.2	20						400 FT	74 FT	326 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	14						400 FT	5 FT	395 FT
CALIPER	5	GLP	1221	401	0.2	20						400 FT	55 FT	345 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 17FIN1.DAT, 17FIN1.PLP, 17.HDP
REMARKS:

LINEMASTER MW-17DB 5/24/91 COLOG

INDUCED POLARIZATION
0.0 PERCENT 4.0

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
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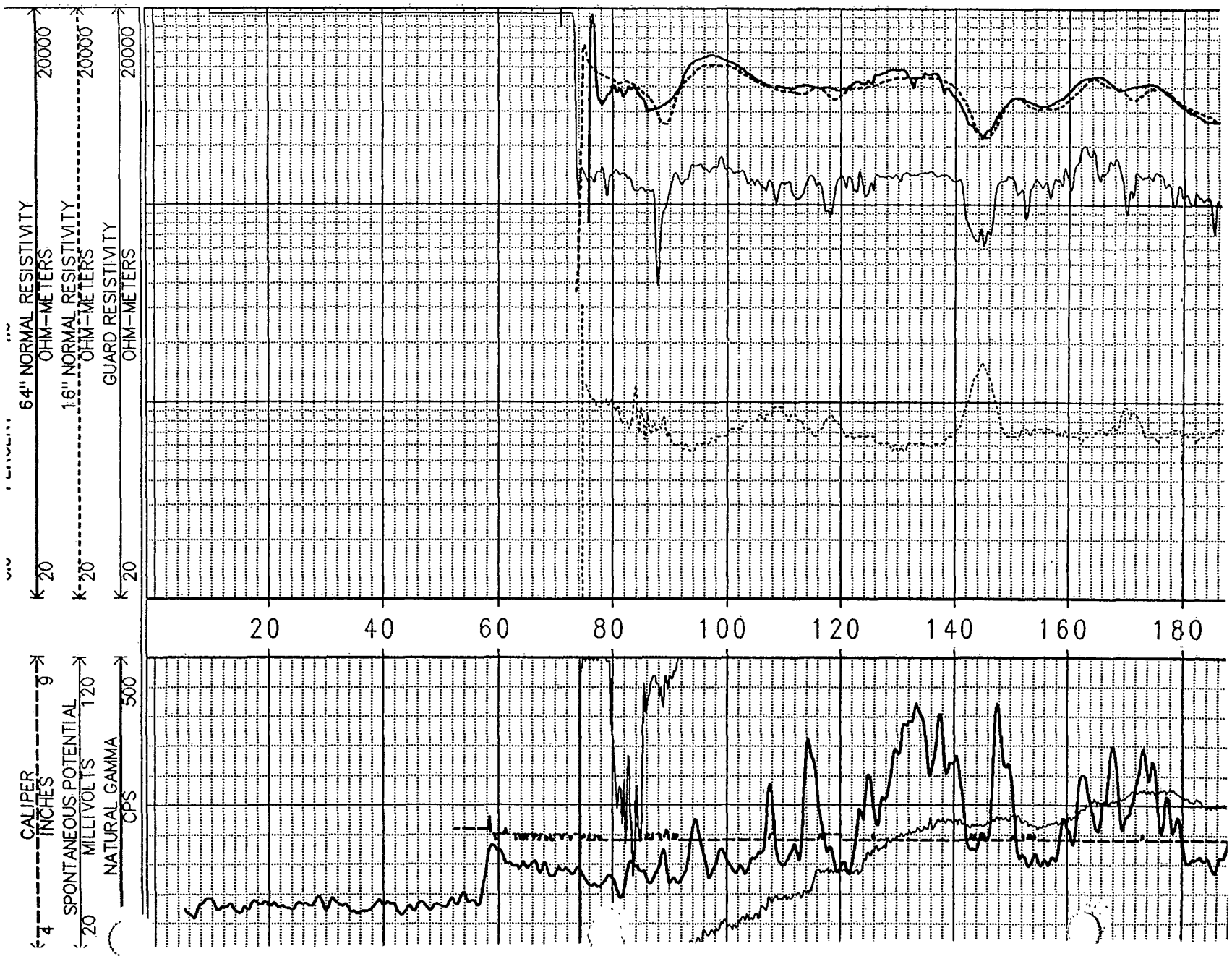
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 445



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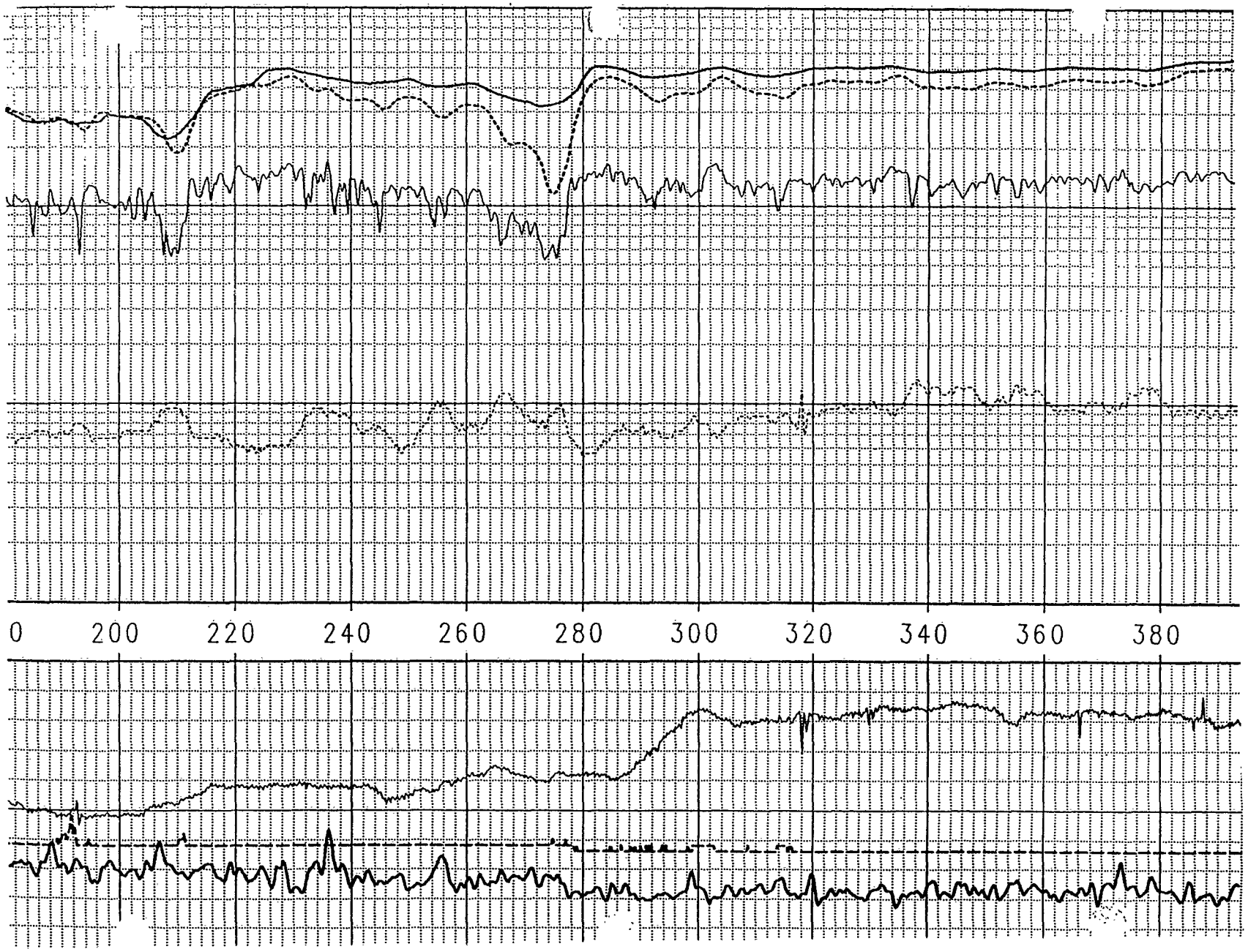
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 446



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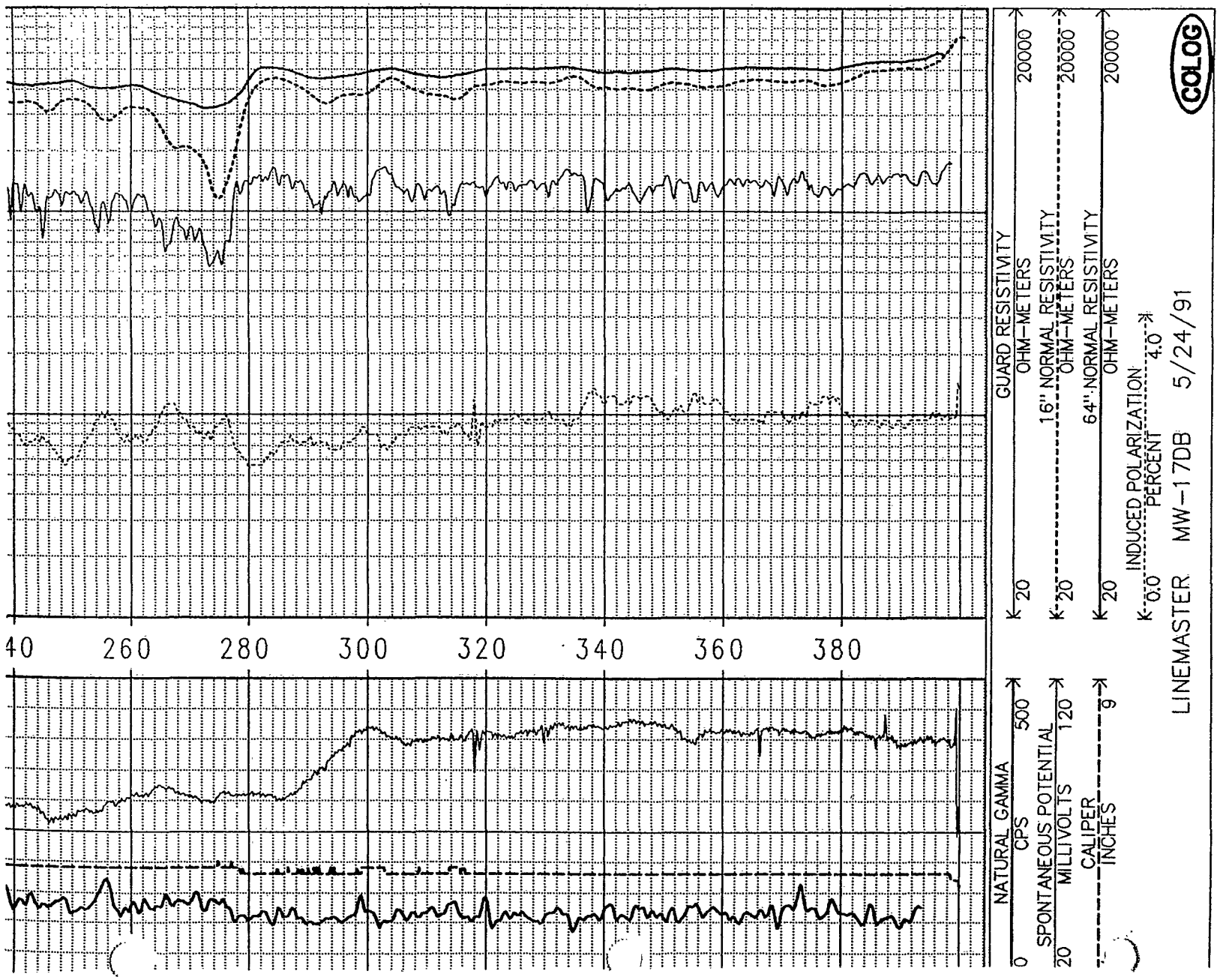
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 447



COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC TEMP/FLRES

WELL: MW-15DB

PROJECT: LINEMASTER SWITCH CORPORATION

DATE: MAY 24, 1991

CLIENT: FUSS & O'NEILL, INC.

COLOG ID NO:

LOCATION: WOODSTOCK

STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 552 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:

CUSTOMER TD: COLOG TD: 332 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	160 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY

MUD TYPE: TIME SINCE CIRC:

VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12

LOGGING ENGINEER: J. LOCOCO

CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL

OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT			LOGGING		DETECTOR	SPACING		SOURCE		LOGGED INTERVAL		
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	240 FT	234 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			332 FT	150 FT	182 FT

CALIBRATION FACTOR(S):

DIGITAL FILE NAME(S): 15.SIO, 15FIN2.PLP, 15VDL.HDP

REMARKS:

LINEMASTER MW-15DB 5/23,24/91 COLOG

T-WAVE AMPLITUDE
450 <- 450-600 uSEC window -> 200
FLUID RESISTIVITY
50 <- OHM-METERS -> 80

Variable Density Log (Far Receiver) microSeconds

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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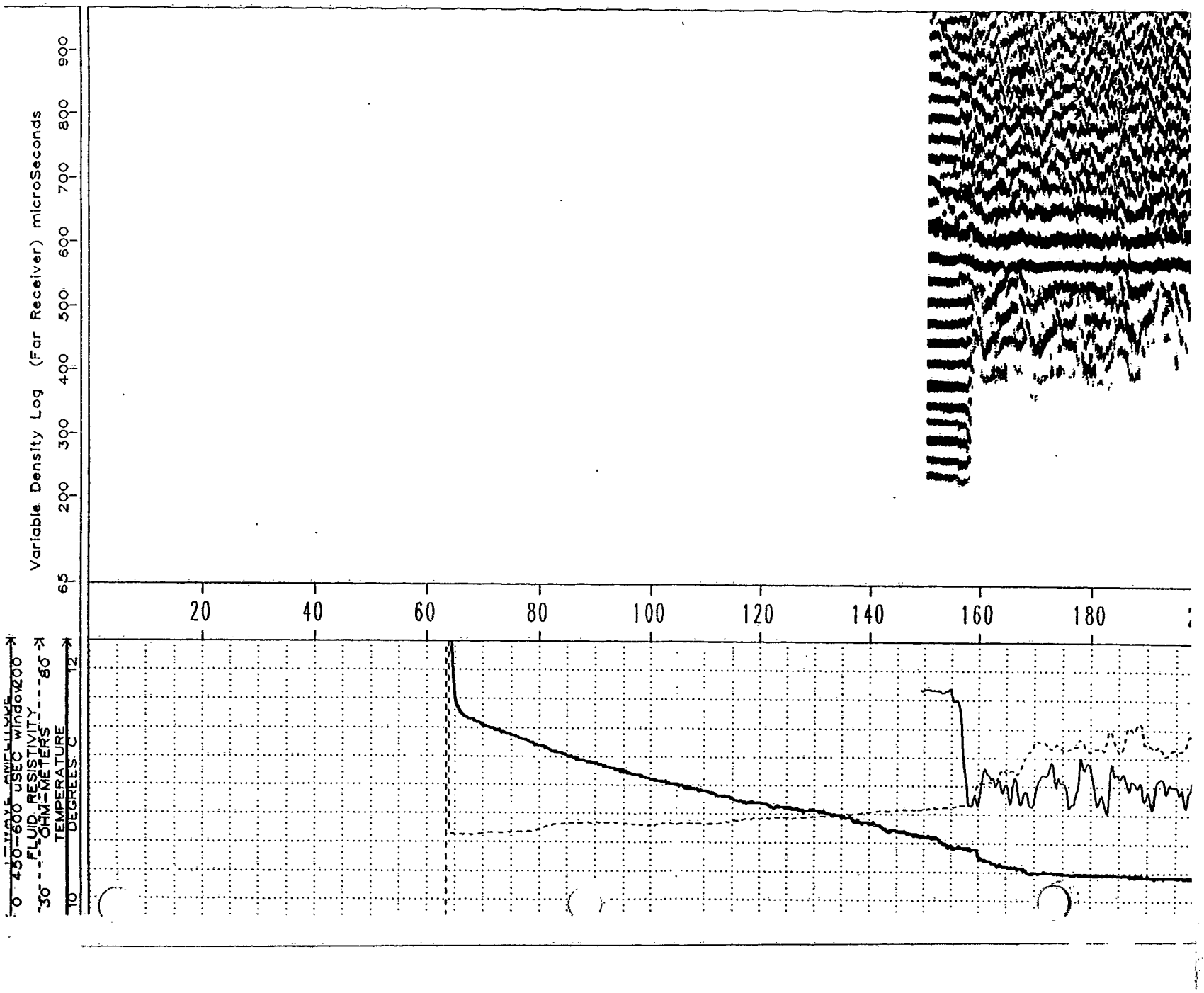
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 449



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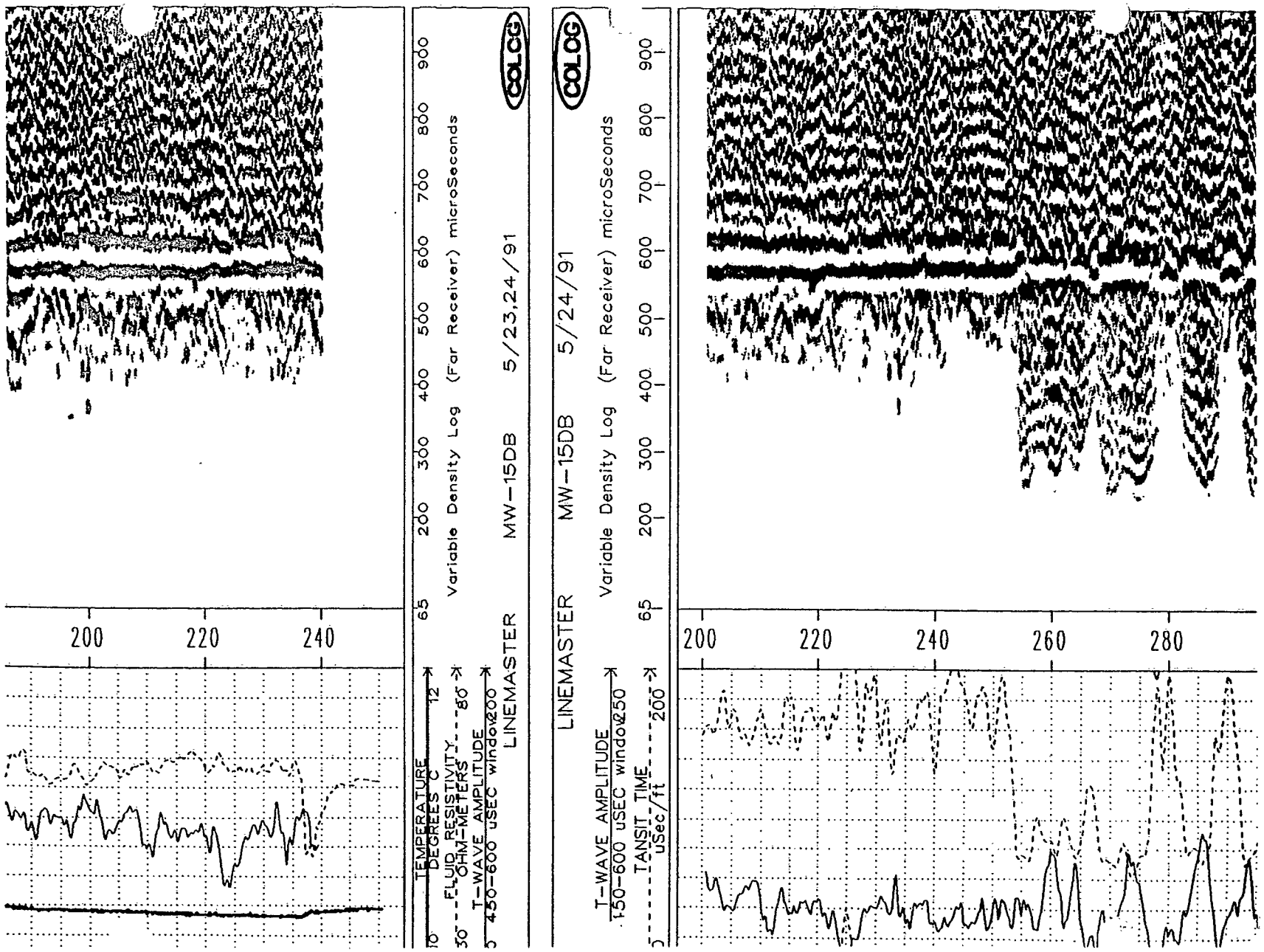
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 450



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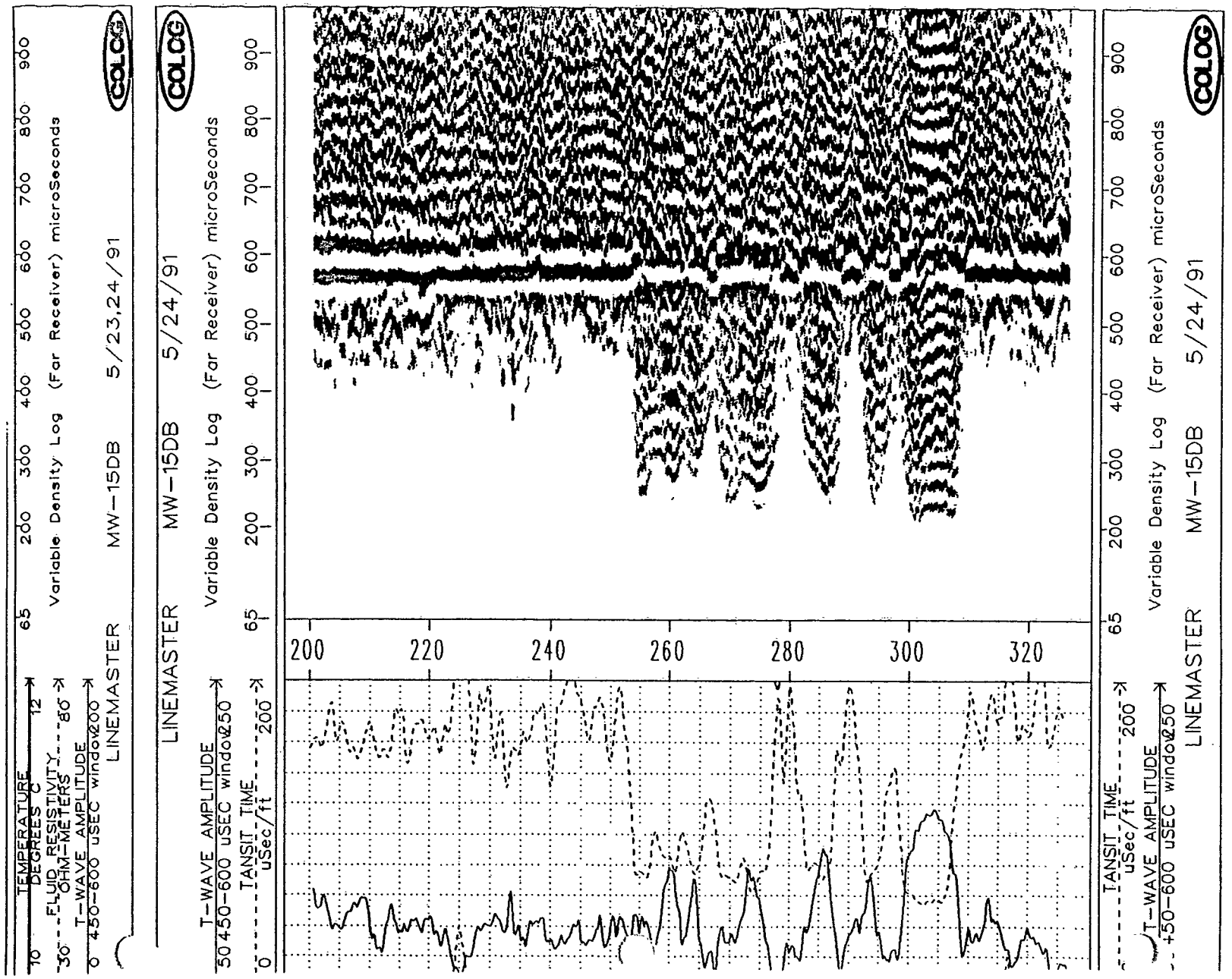
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 451



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 254

COLOG INC

BOREHOLE GEOPHYSICS

1019 8th ST. GOLDEN, COLORADO 80401
PHONE: (303) 279-0171 FAX: 278-3461

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-15DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 18, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 552 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 332 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	160 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rmf at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

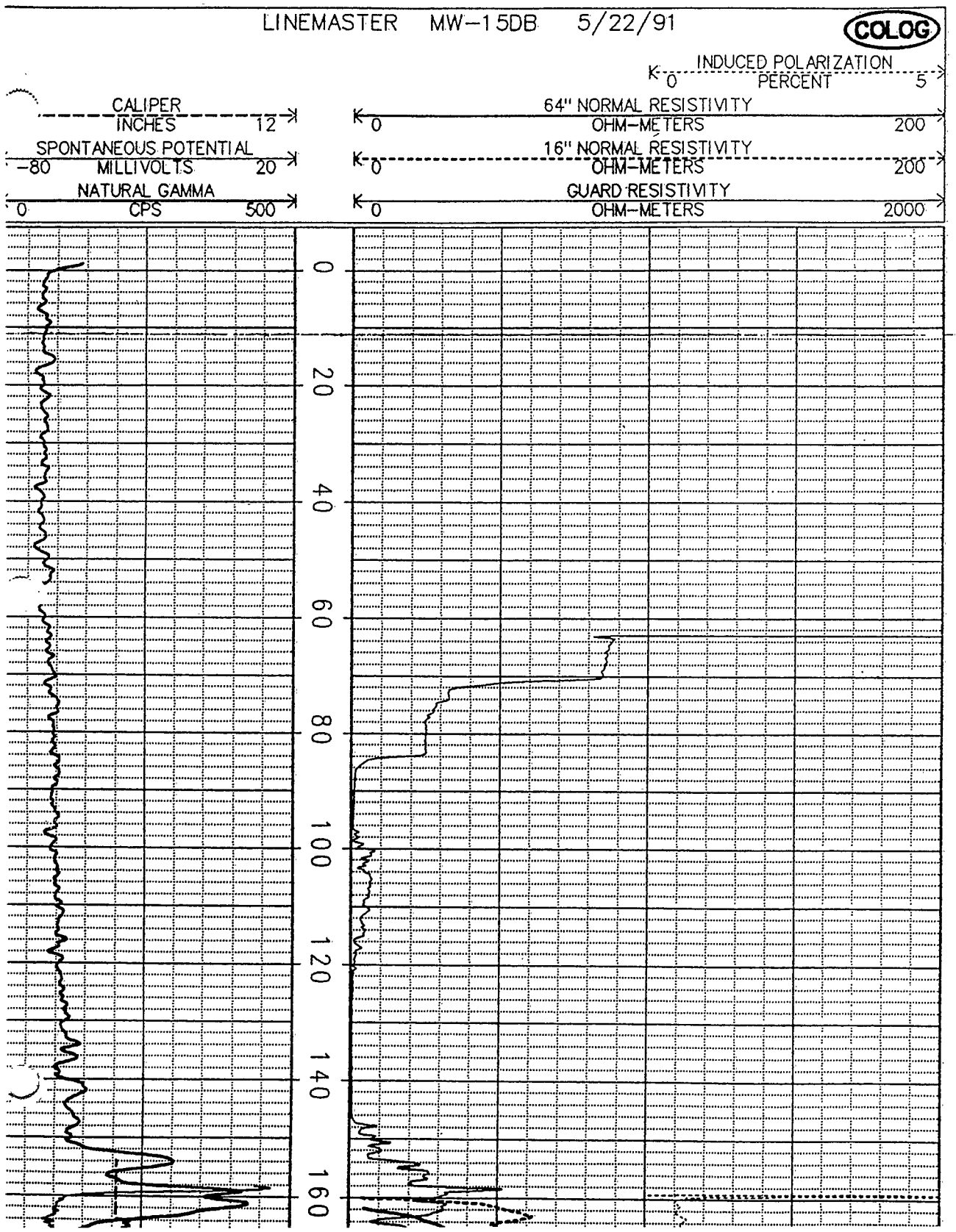
LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	Rx-Rx FEET	SOURCE TYPE	SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						332 FT	160 FT	172 FT
SP,IP	3	RLP	545	442	0.2	20						332 FT	160 FT	172 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	14						332 FT	5 FT	327 FT
CALIPER	5	GLP	1221	401	0.2	20						332 FT	150 FT	182 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 15FIN1.DAT, 15FIN1.PLP, 15.HDP
REMARKS:
This hole was logged twice, the second run included electric, sonic gamma/guard, and caliper from 332 ft to 200 ft.

LINEMASTER MW-15DB 5/22/91

COLOG



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 453

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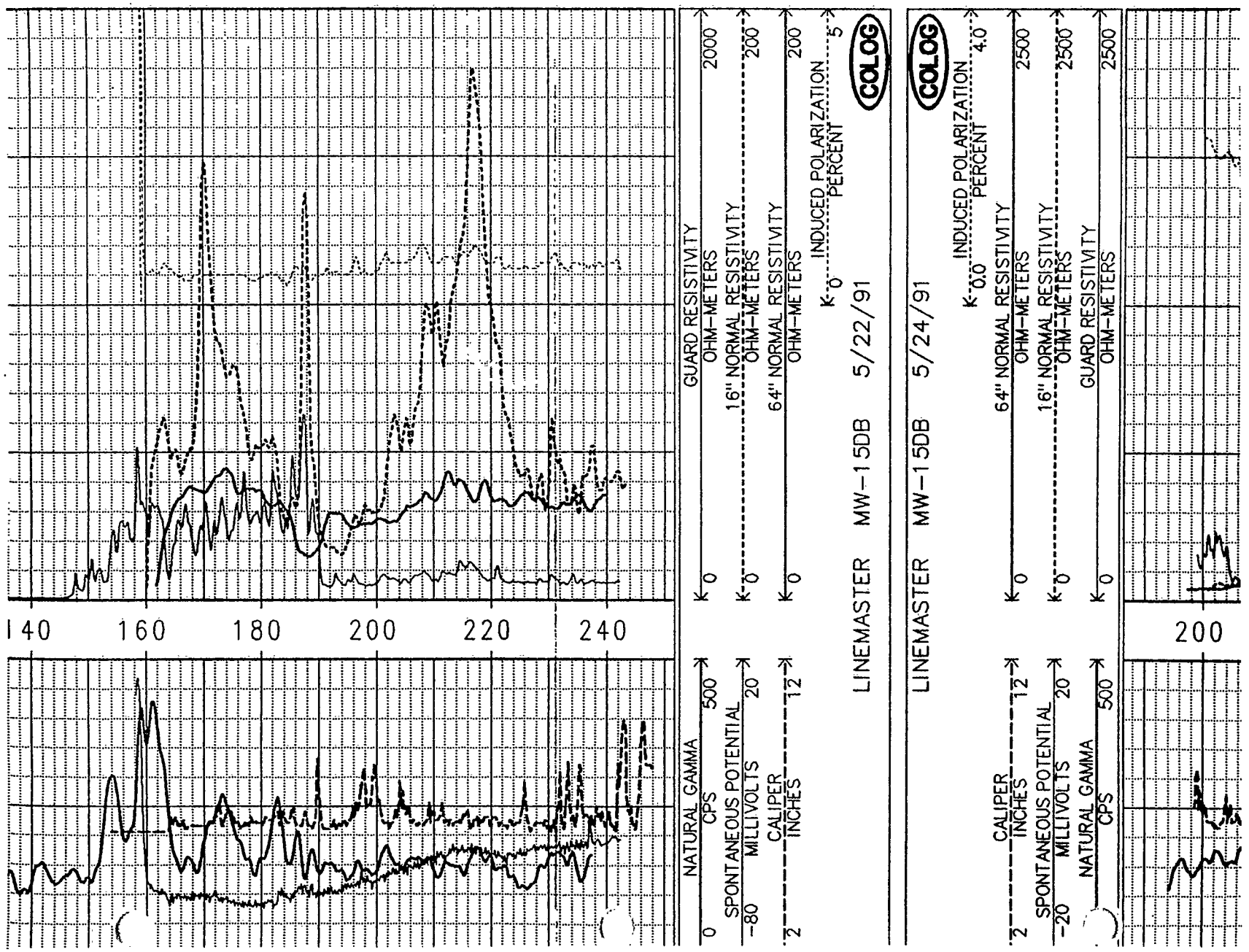
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 454



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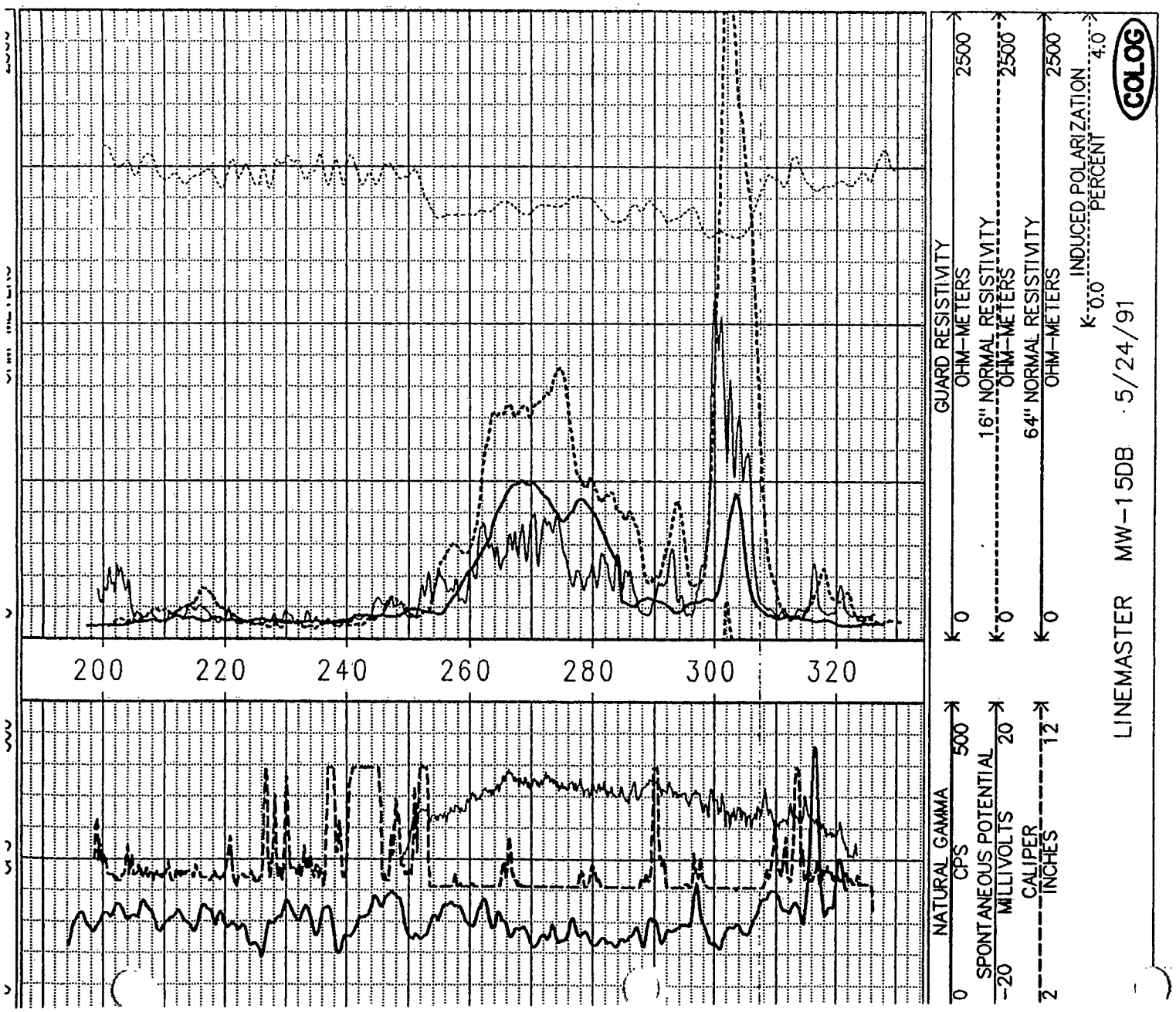
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 455



COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC
TEMP/FLRES
WELL: MW-11DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 22, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 490 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 250 FT

RUN NO.	BIT RECORD			CASING RECORD		
	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	40 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	LOGGING SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	SPACING Rx-Rx FEET	SOURCE TYPE	SOURCE SIZE CURIE	LOGGED INTERVAL FROM	LOGGED INTERVAL TO	LOGGED INTERVAL INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	250 FT	244 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			250 FT	35 FT	215 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 15.SIO, 15FIN2.PLP, 15VDL.HDP
REMARKS:

LINEMASTER MW-11DB 5/22/91 COLOG

T-WAVE AMPLITUDE
0 450-600 uSEC window 200
80 FLUID RESISTIVITY OHM-METERS 320

Variable Density Log (Far Receiver) microSeconds

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 4 5 6

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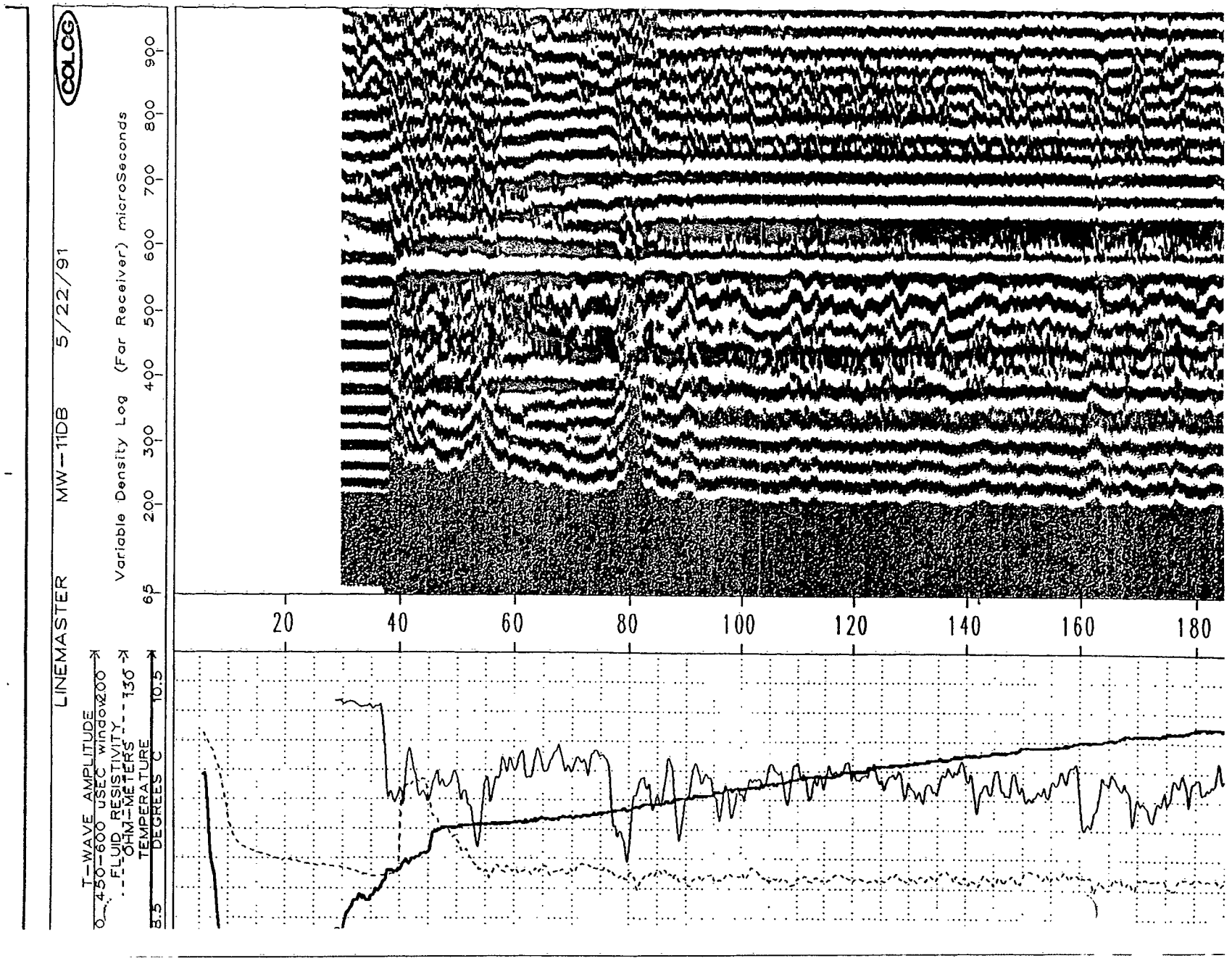
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 457



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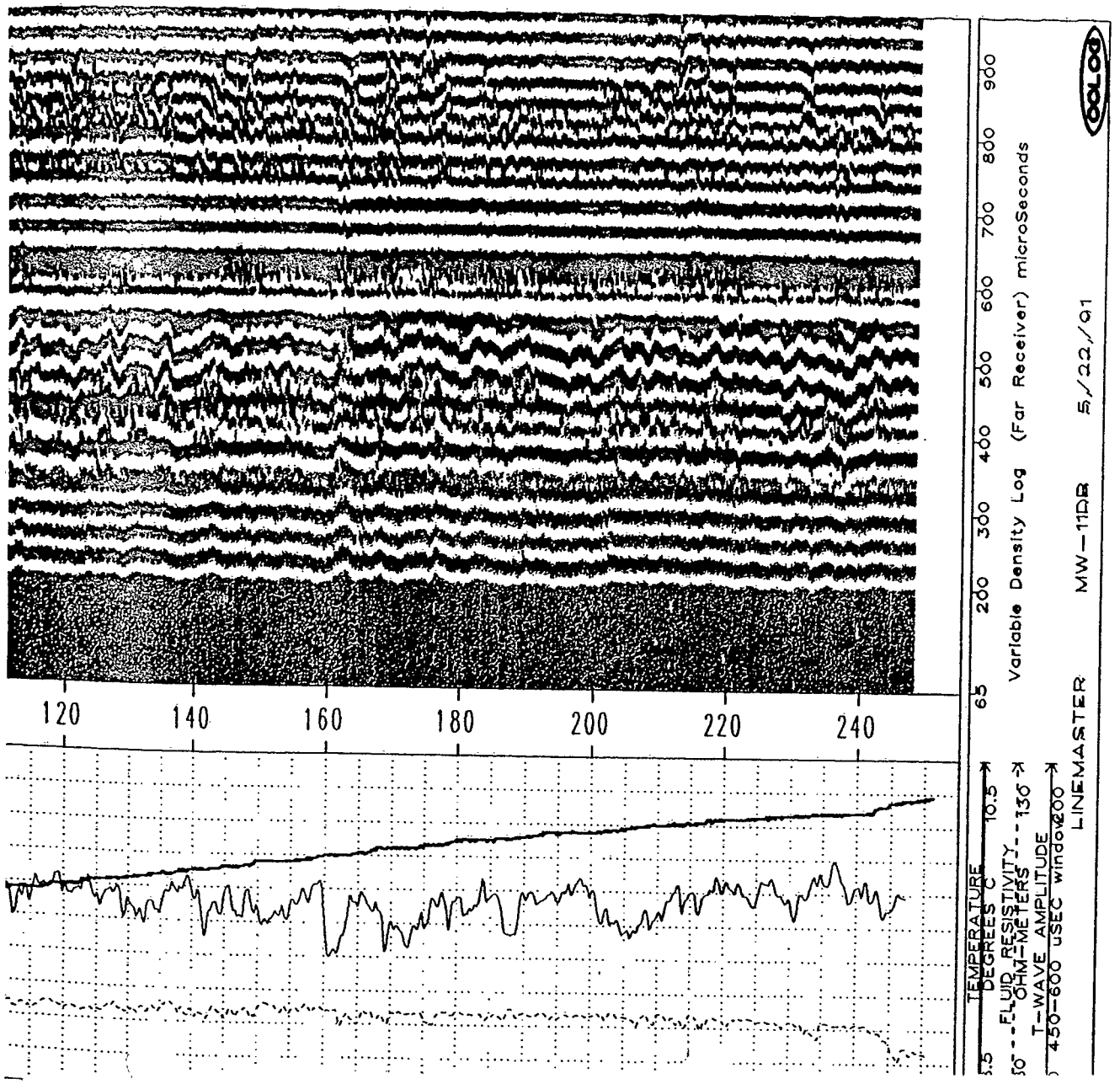
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 458



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, 265 GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-11DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 22, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 490 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 250 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	40 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER
DRILL METHOD: AIR ROTARY
MUD TYPE:
TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rmf at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III
UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT			LOGGING		DETECTOR	SPACING		SOURCE		LOGGED INTERVAL		
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						250 FT	40 FT	210 FT
SP,IP	3	RLP	545	442	0.2	20						250 FT	40 FT	210 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	14						250 FT	5 FT	245 FT
CALIPER	5	GLP	1221	401	0.2	20						250 FT	35 FT	215 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 11FIN1.DAT, 11FIN1.PLP, 11.HDP
REMARKS:

LINEMASTER MW-11DB 5/22/91
INDUCED POLARIZATION

LIN003 659

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0960

LINEMASTER MW-11DB 5/22/91

COLOG

CALIPER
4 INCHES 9

SPONTANEOUS POTENTIAL
-100 MILLIVOLTS 0

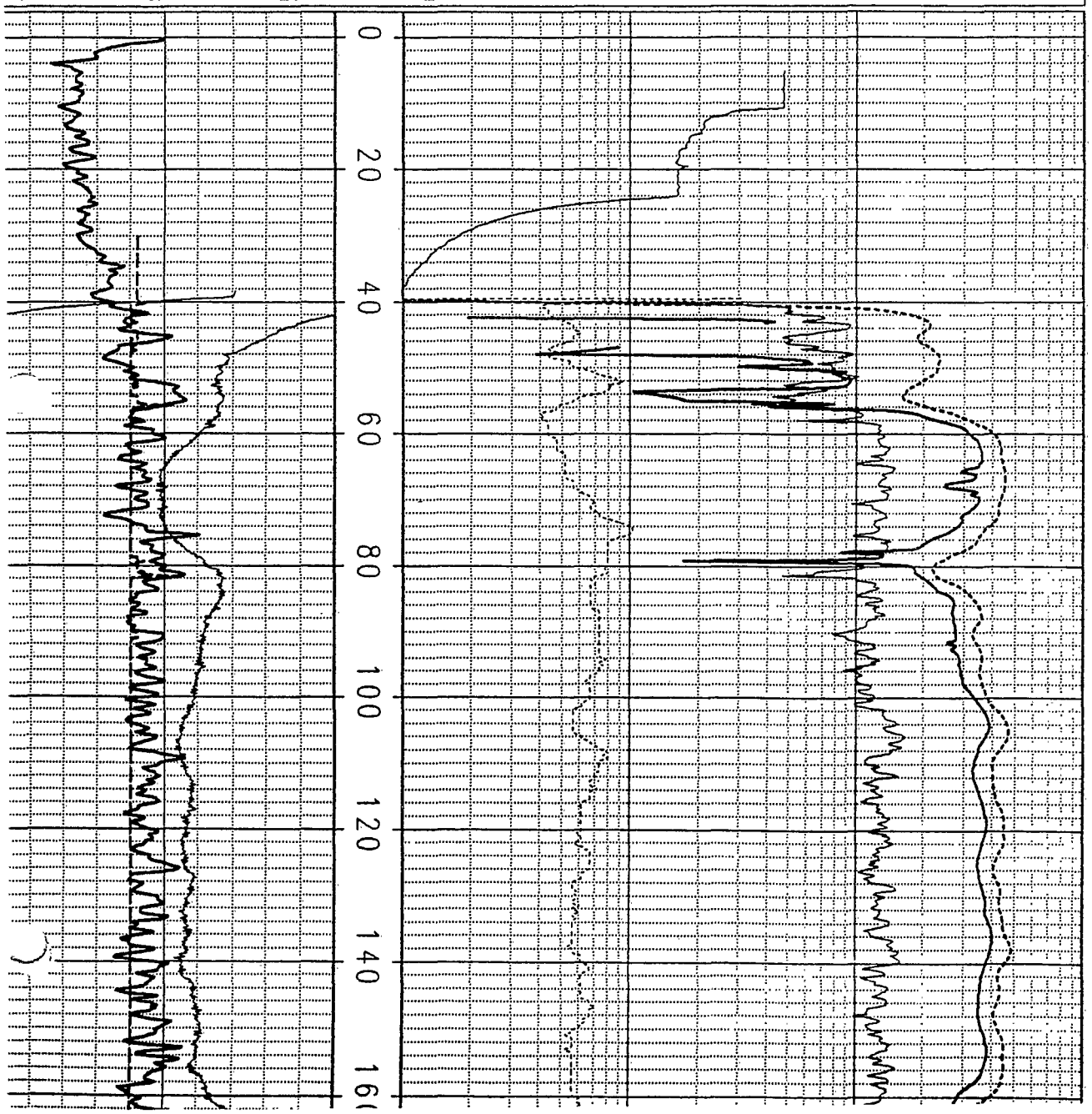
NATURAL GAMMA
0 CPS 250

INDUCED POLARIZATION
0.0 PERCENT 4.0

64" NORMAL RESISTIVITY
20 OHM-METERS 20000

16" NORMAL RESISTIVITY
20 OHM-METERS 20000

GUARD RESISTIVITY
20 OHM-METERS 20000



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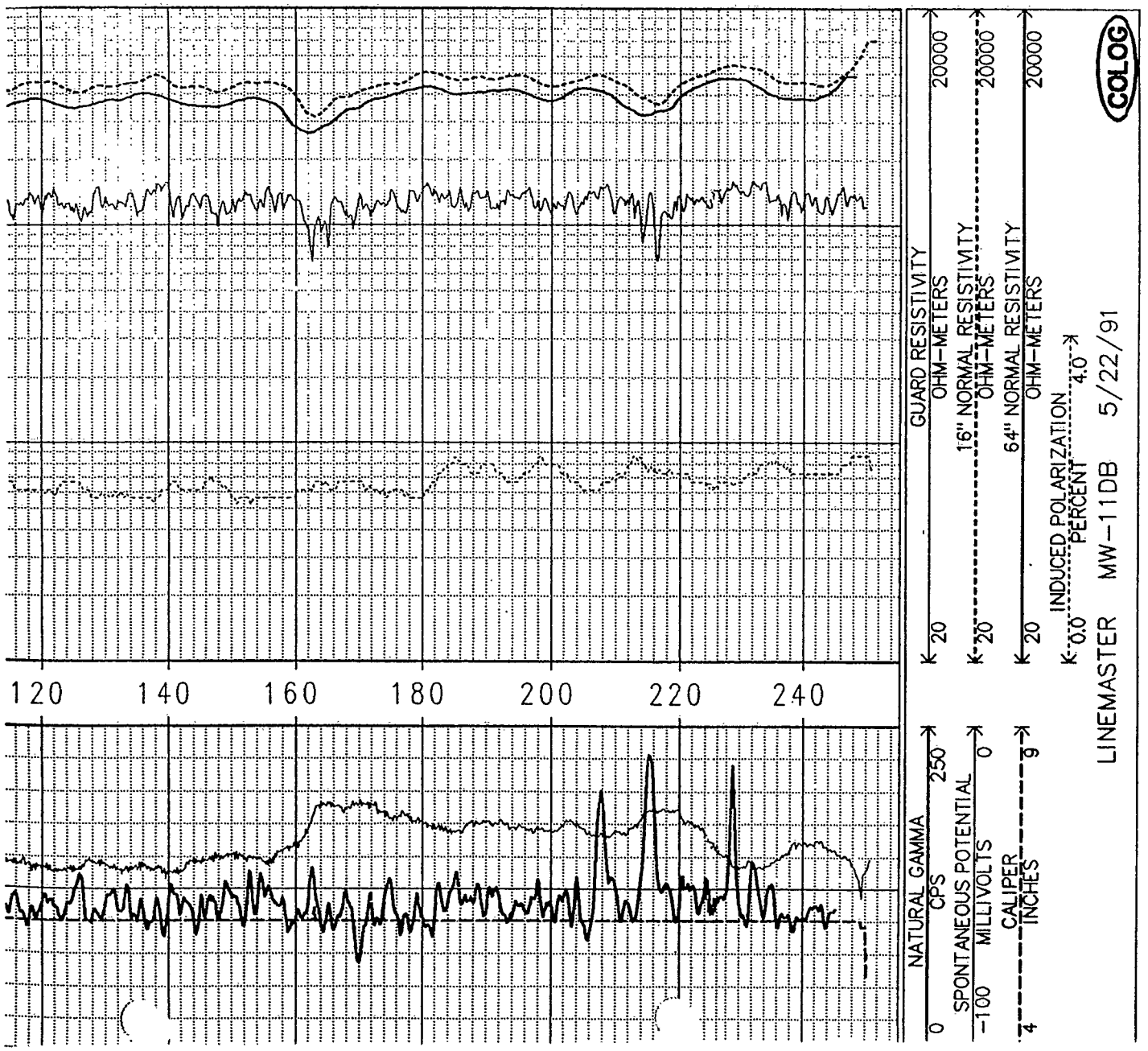
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 461



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 2 9 6

COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, 265 GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-8DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 21, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 435 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 241 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	30 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg.

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	Rx-Rx FEET	SOURCE TYPE	SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						241 FT	30 FT	211 FT
SP,IP	3	RLP	545	442	0.2	20						241 FT	30 FT	211 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	14						241 FT	5 FT	236 FT
CALIPER	5	GLP	1221	401	0.2	20						241 FT	13 FT	228 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 8FIN1.DAT, 8FIN1.PLP, 8.HDP
REMARKS:

LINEMASTER MW-8DB 5/21/91

COLOG

INDUCED POLARIZATION
K 0.0 PERCENT 4.0

NOTICE
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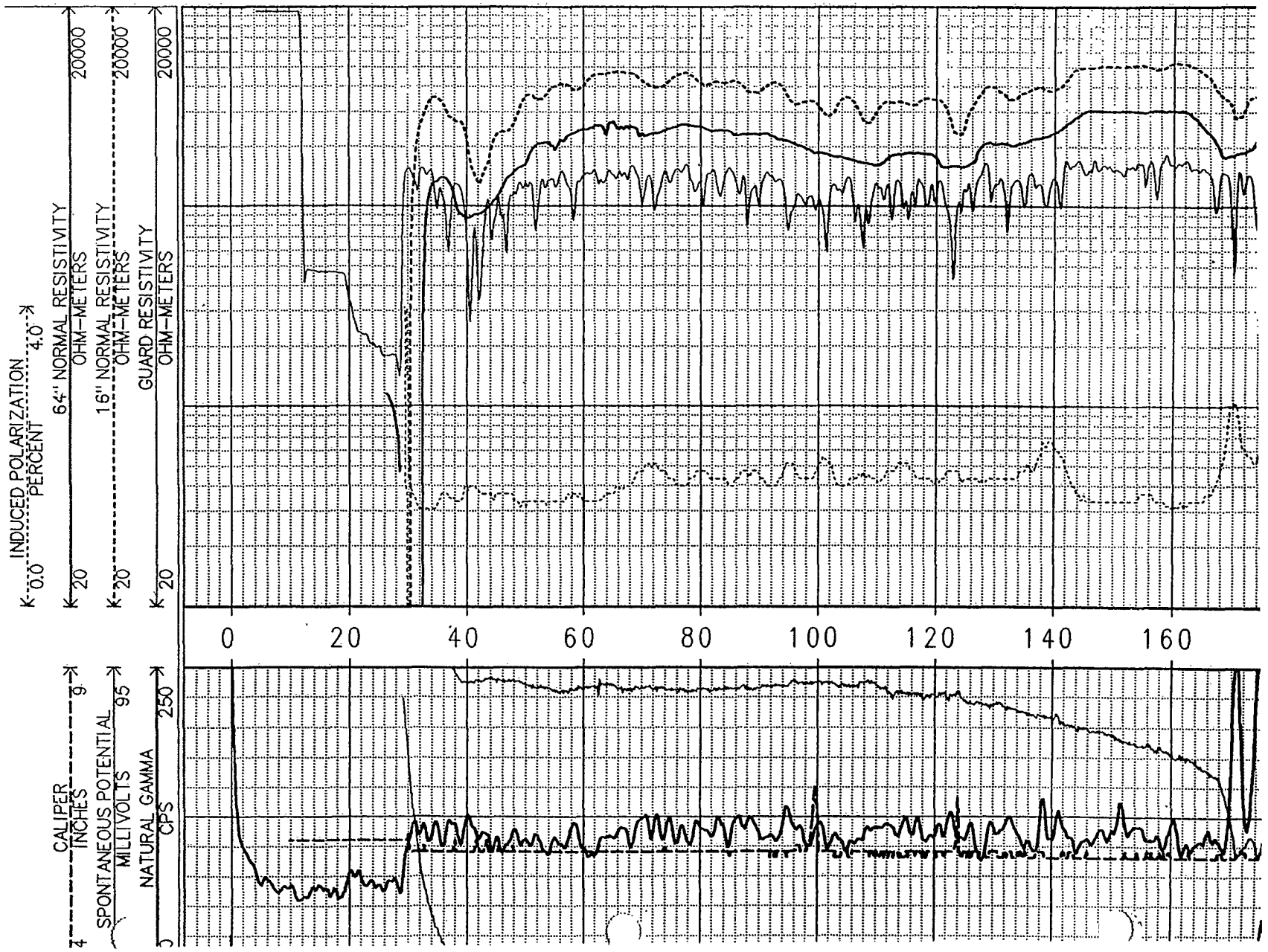
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 463



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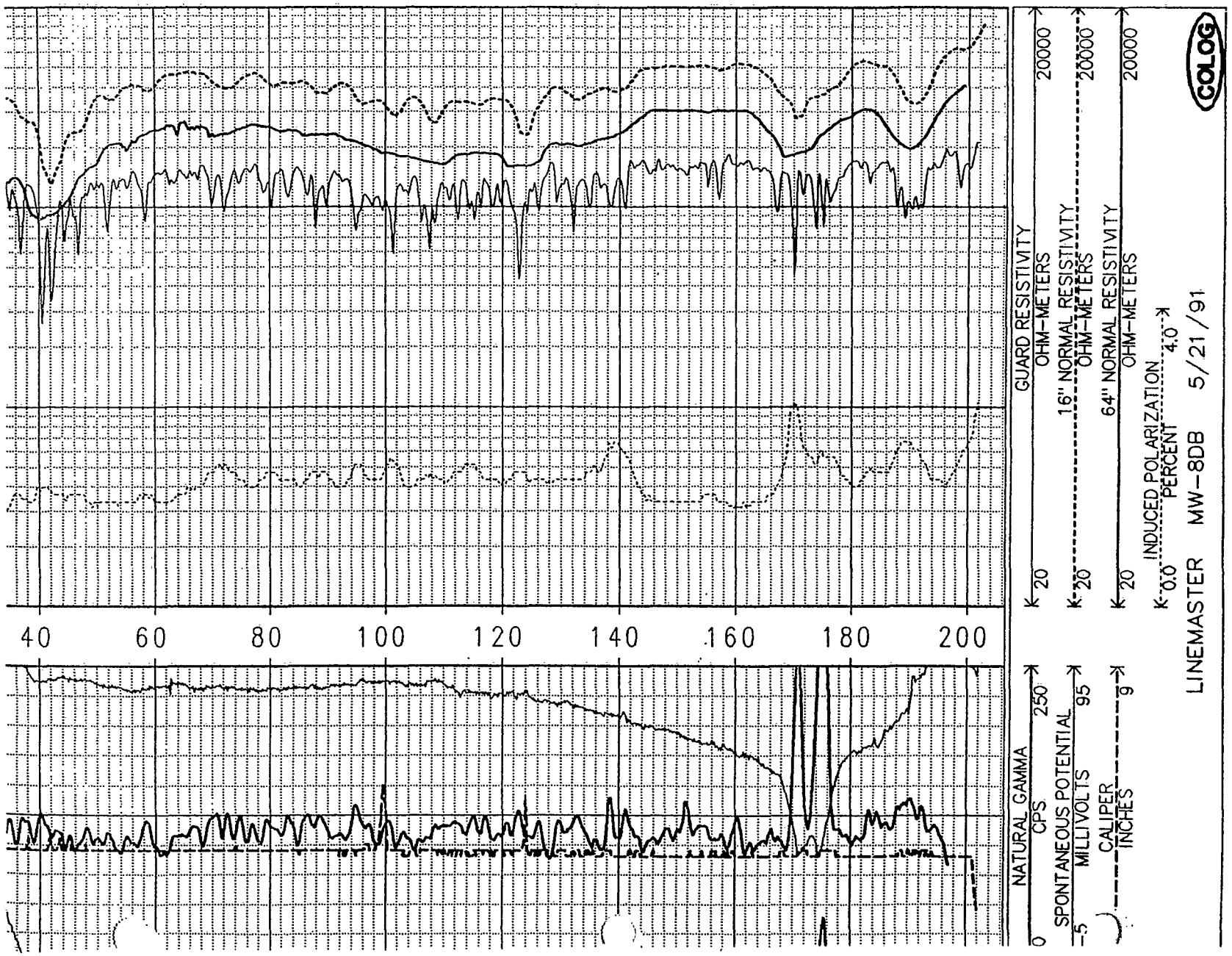
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 464



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

COLOG INC

BOREHOLE GEOPHYSICS

17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC
TEMP/FLRES
WELL: MW-8DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 21, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 435 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 241 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	30 FT
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	Rx-Rx FEET	SOURCE TYPE	SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	241 FT	235 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			241 FT	25 FT	226 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 8.SIO, 8FIN2.PLP, 8VDL.HDP
REMARKS:

LINEMASTER MW-8DB 5/21/91 COLOG

T-WAVE AMPLITUDE

LIN003 4 9 5 5

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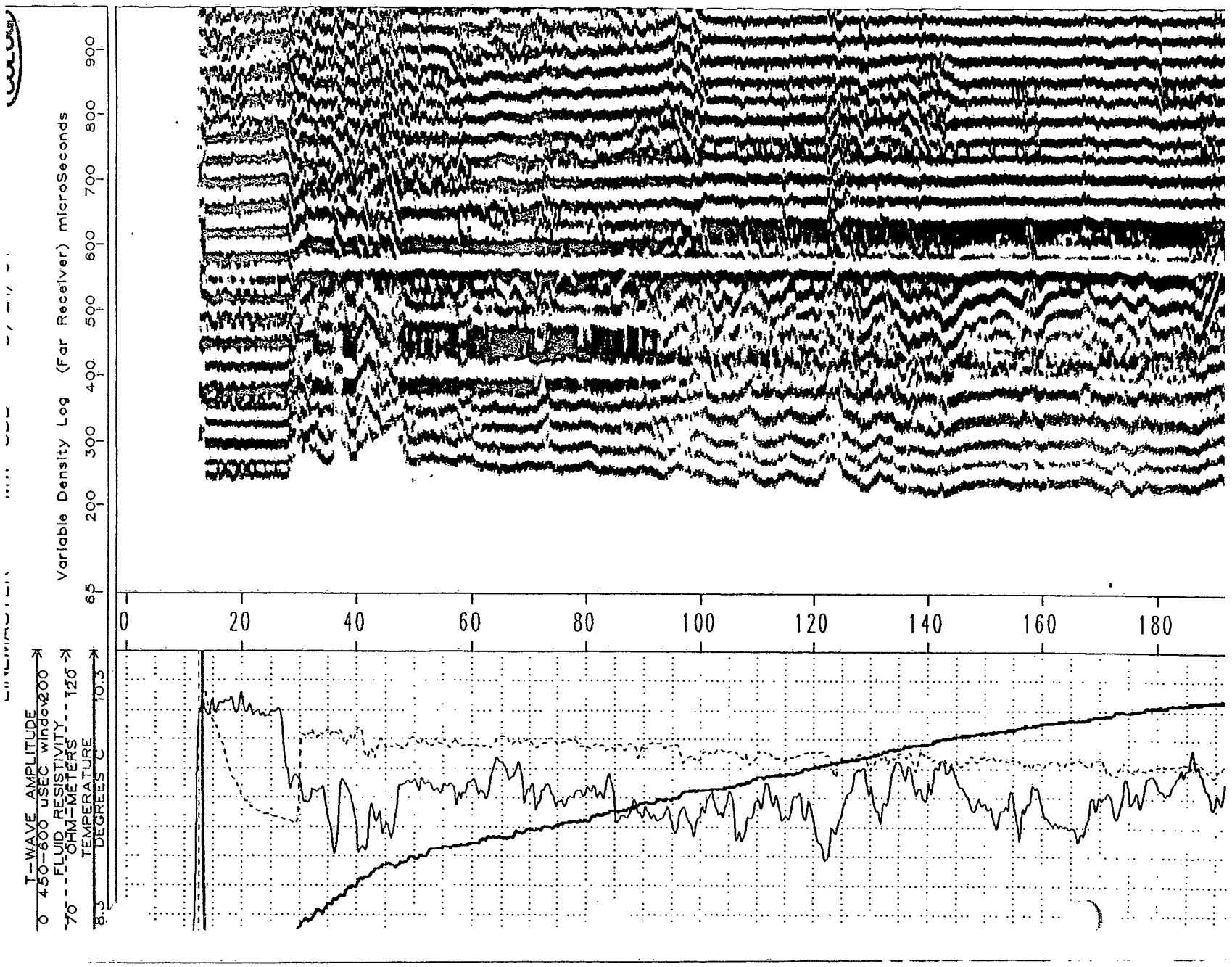
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 466



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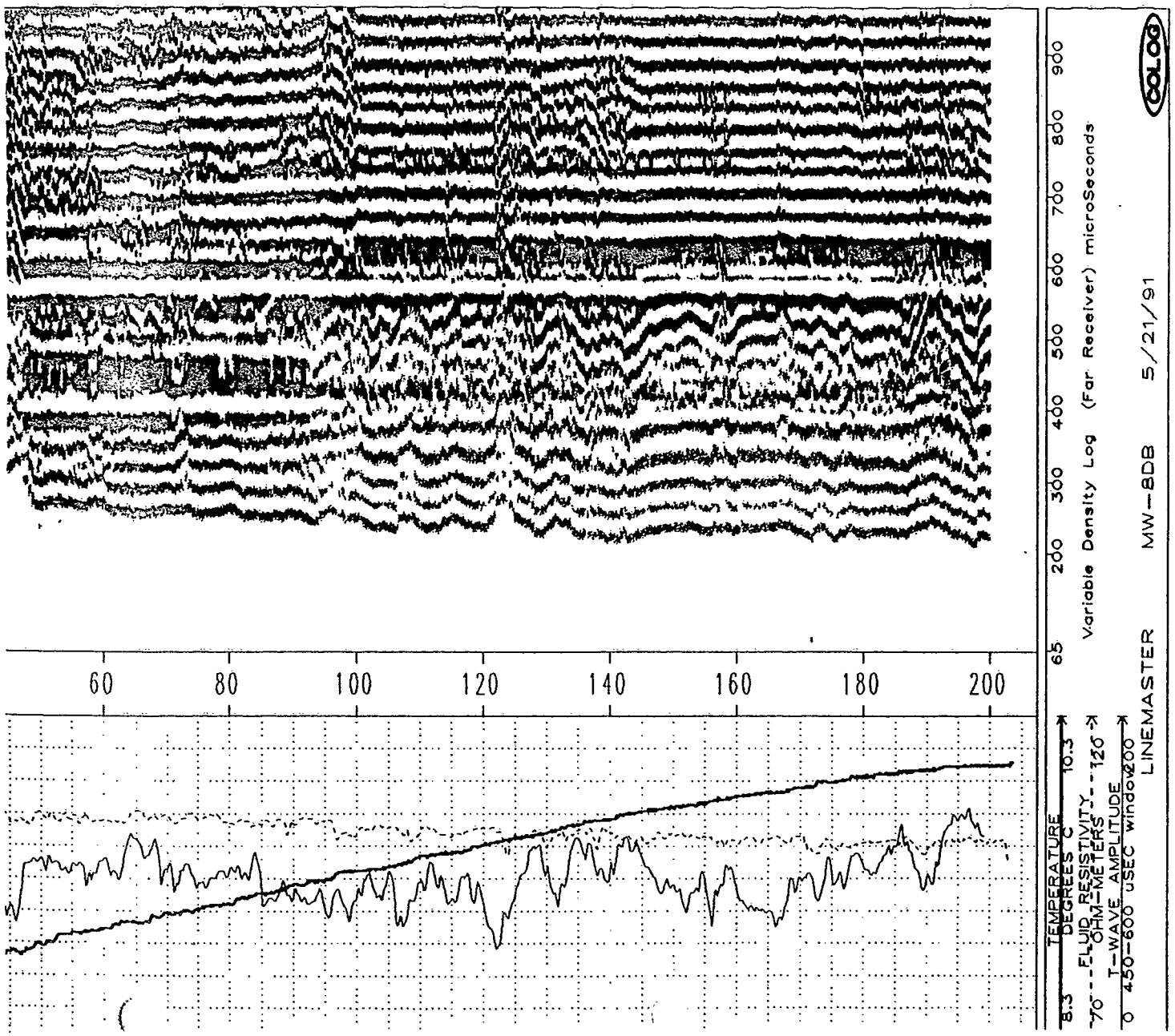
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 467



COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, 265 GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-6DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 23, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 498 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 301 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	35 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	SPACING Rx-Rx FEET	SOURCE TYPE	SOURCE SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						301 FT	35 FT	266 FT
SP,IP	3	RLP	545	442	0.2	20						301 FT	35 FT	266 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	1.4						301 FT	5 FT	296 FT
CALIPER	5	GLP	1221	401	0.2	20						301 FT	25 FT	276 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 6FIN1.DAT, 6FIN1.PLP, 6.HDP
REMARKS:

LINEMASTER MW-6DB 5/23/91

COLOG

INDUCED POLARIZATION
0.0 PERCENT 4.0

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 469

NOTICE
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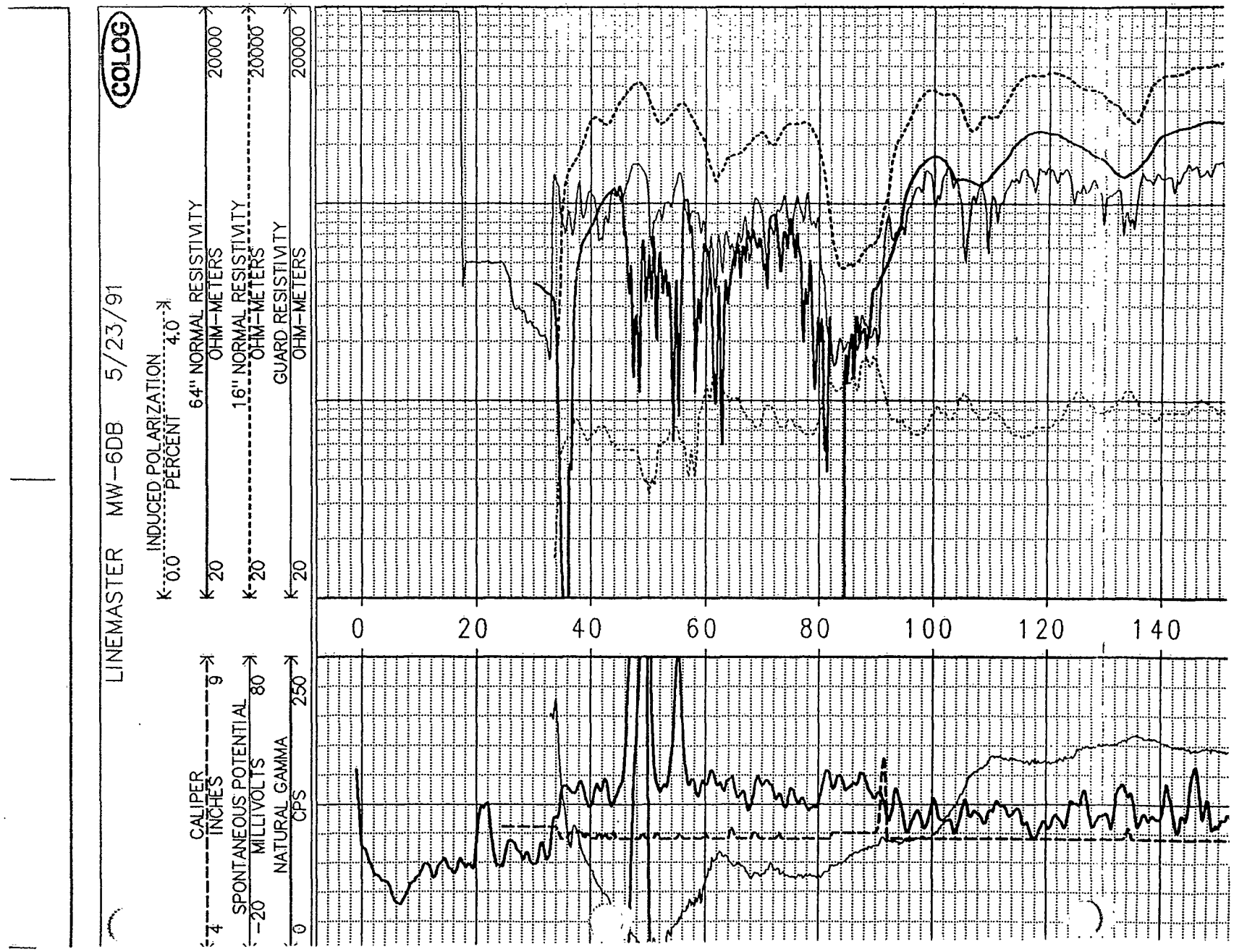
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 469



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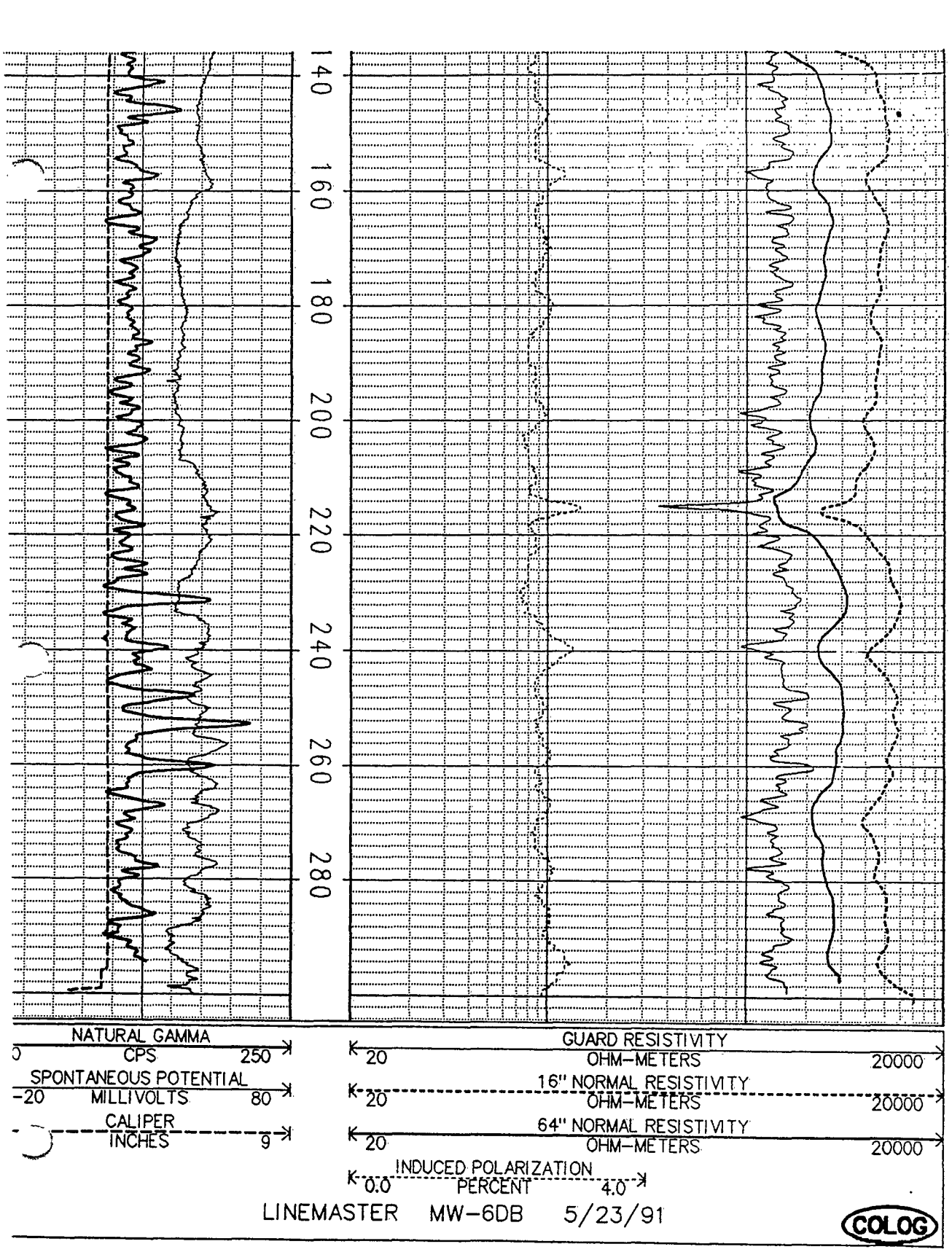
LINEMASTER SWITCH
ADMINISTRATIVE RECORD



LIN003
0179

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 4 7 1

COLOG INC

BOREHOLE GEOPHYSICS

17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC
TEMP/FLRES
WELL: MW-6DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 23, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 498 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 301 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	35 FT
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER
DRILL METHOD: AIR ROTARY
MUD TYPE:
TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

INSTRUMENTATION: SERIES III
UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

OG UNCTION	RUN NO.	EQUIPMENT			LOGGING		DETECTOR	SPACING		SOURCE		LOGGED INTERVAL		
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
EMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	301 FT	295 FT
ONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			301 FT	30 FT	271 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 6.SIO, 6FIN2.PLP, 6VDL.HDP
REMARKS:

LINEMASTER MW-6DB 5/23/91 COLOG

T-WAVE AMPLITUDE
450-600 uSEC window 200
FLUID RESISTIVITY
70 OHM-METERS 120

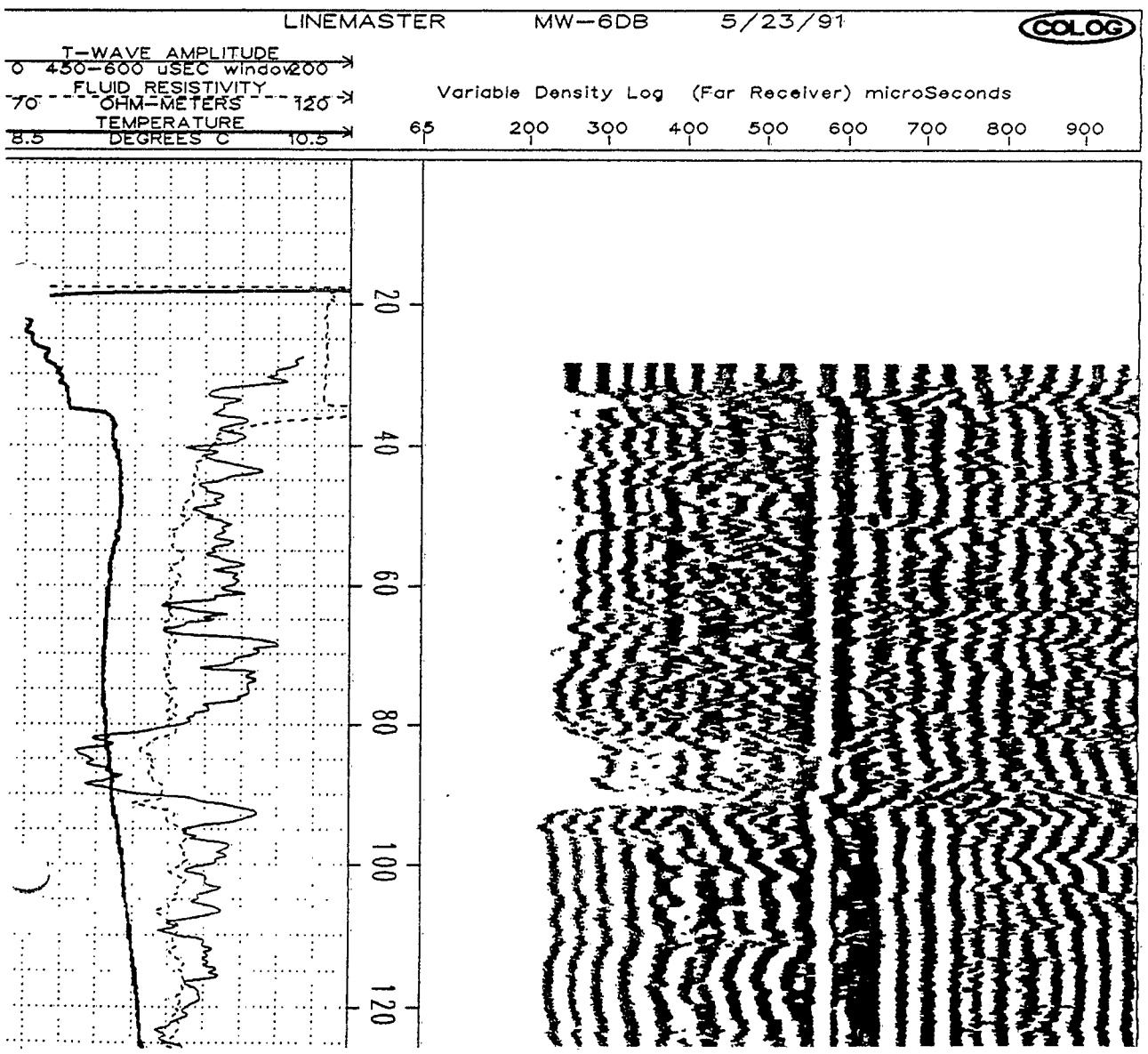
Variable Density Log (Far Receiver) microSeconds

FUNCTION	NO.	MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	301 FT	295 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			301 FT	30 FT	271 FT

CALIBRATION FACTOR(S):

DIGITAL FILE NAME(S): 6.SIO, 6FIN2.PLP, 6VDL.HDP

REMARKS:



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 472

NOTICE
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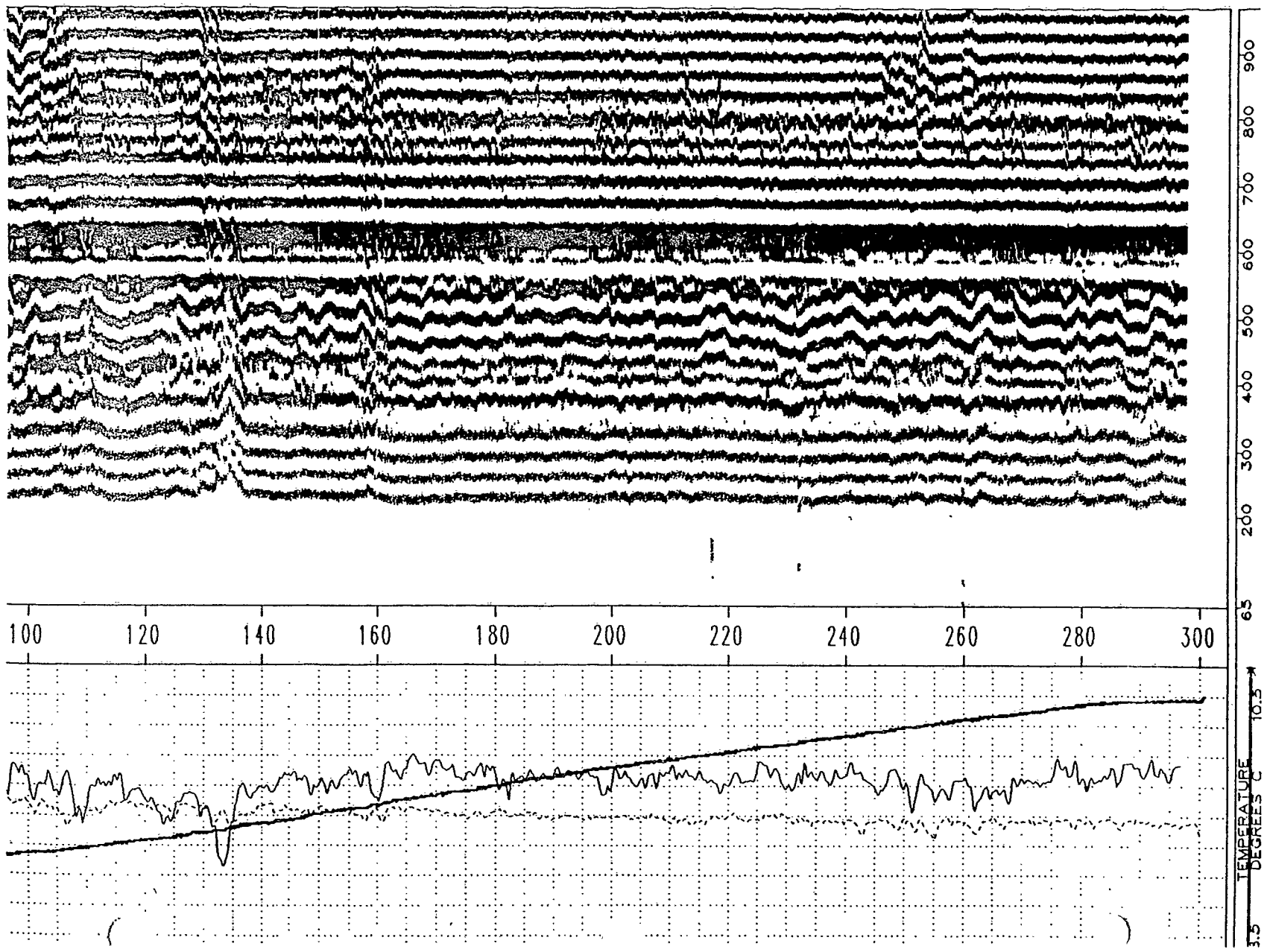
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 473



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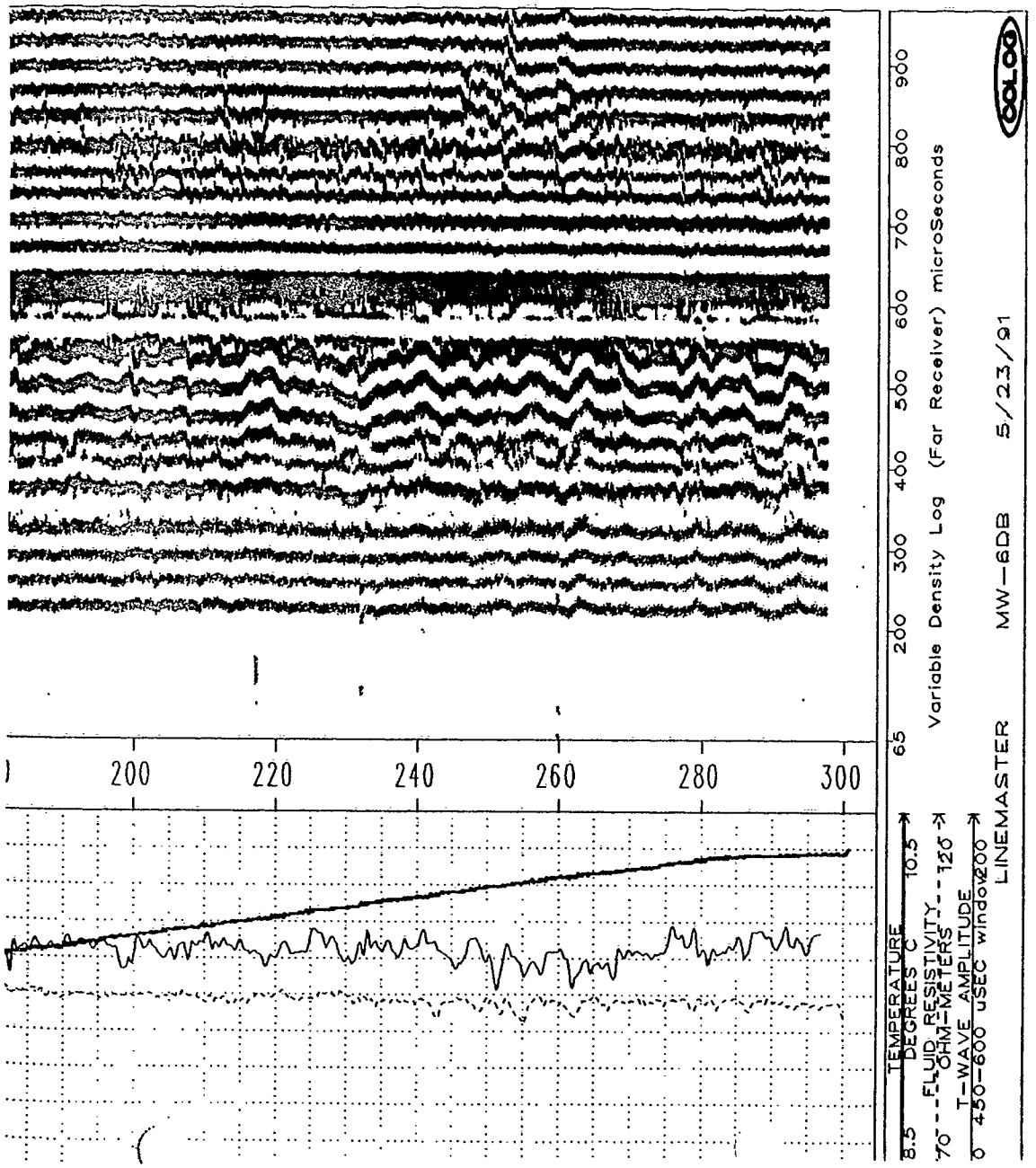
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 474



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LINEMASTER SWITCH ADMINISTRATIVE RECORD

COLOG INC
BOREHOLE GEOPHYSICS
17301 W. COLFAX, STE. 265, GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

FULL WAVE SONIC TEMP/FLRES

WELL: MW-1DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 23, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 498 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 303 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	81 FT
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER
DRILL METHOD: AIR ROTARY
MUD TYPE:
TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rm: at Deg

GENERAL DATA

TRUMENTATION: SERIES III
UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, ELECTRICS, GAMMA

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT			LOGGING		DETECTOR	SPACING		SOURCE		LOGGED INTERVAL		
		MODEL	PROBE S.N.	UPHOLE S.N.	DIG INT FEET	SPEED FT./MIN.	TYPE	Tx-Rx FEET	Rx-Rx FEET	TYPE	SIZE CURIE	FROM	TO	INT. FEET
TEMP/FLRES	1	MLP	917	1021	0.2	12						6 FT	303 FT	297 FT
SONIC	4	CLP	NSN	48	0.2	10		1.5 FT	1.0 FT			303 FT	40 FT	263 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 1.SIO, 1FIN2.PLP, 1VDL.HDP
REMARKS:

LINEMASTER MW-1DB 5/21/91 COLOG

T-WAVE AMPLITUDE
0 450-600 USEC window 200

LIN003 675

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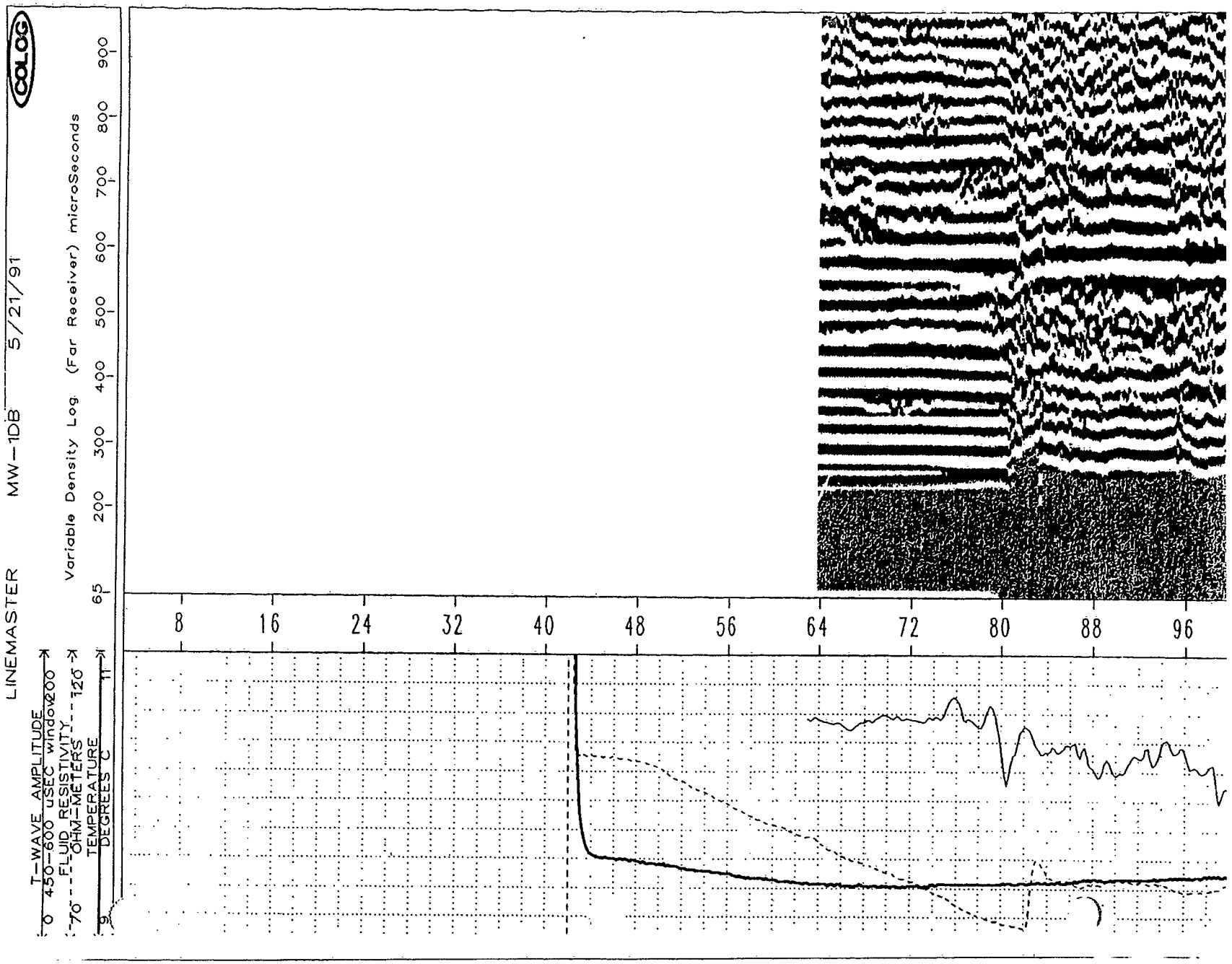
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 476



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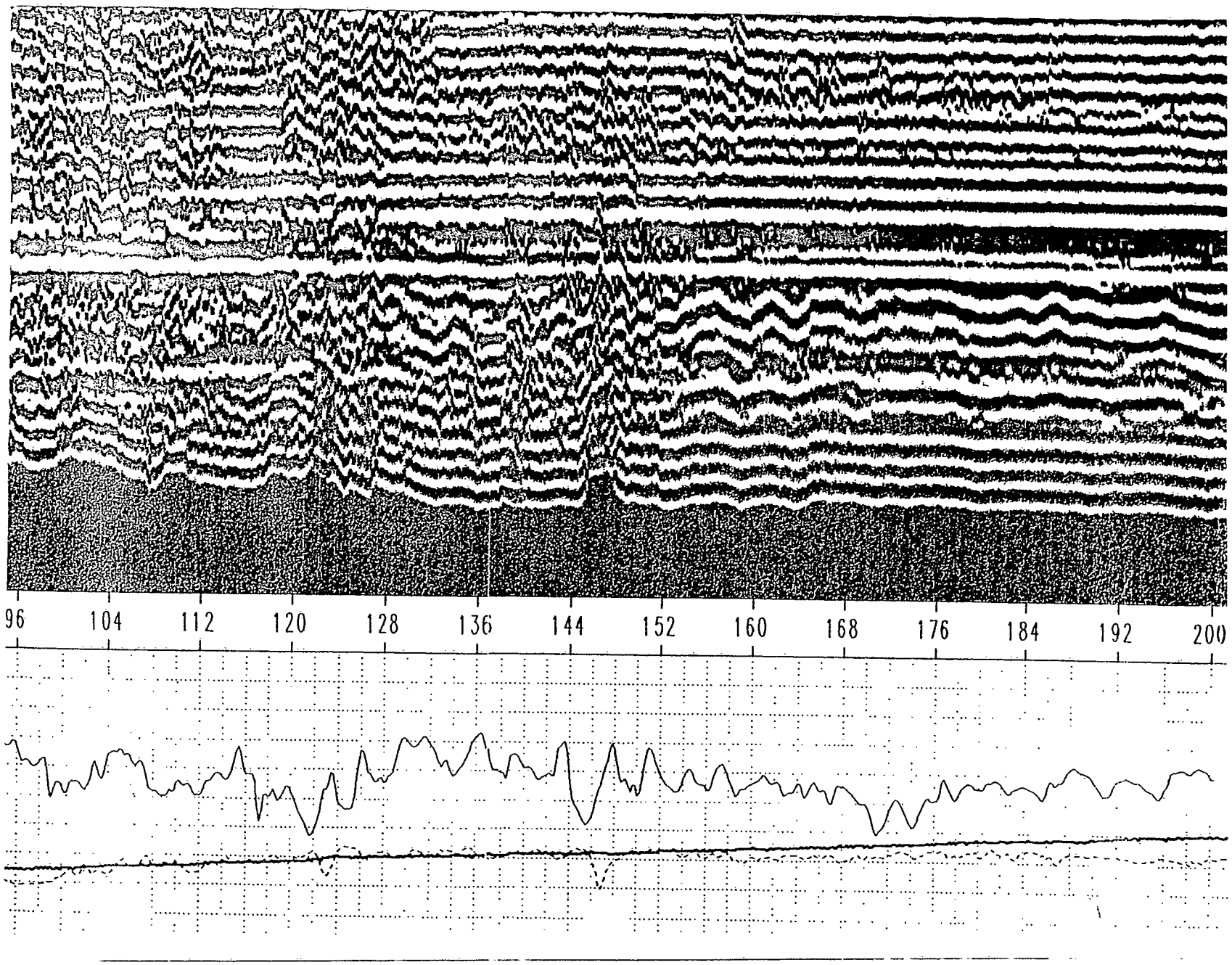
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 477



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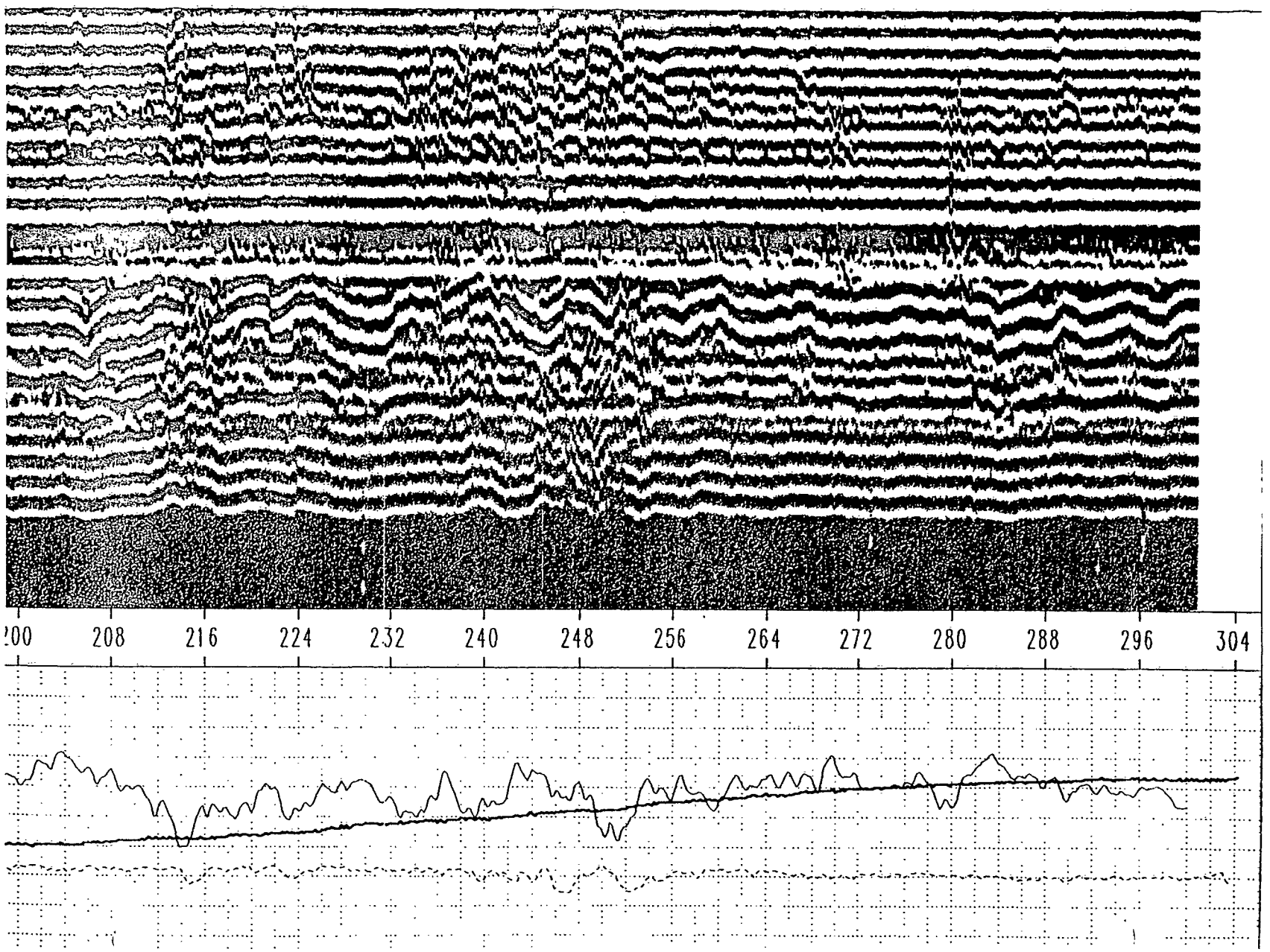
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 478



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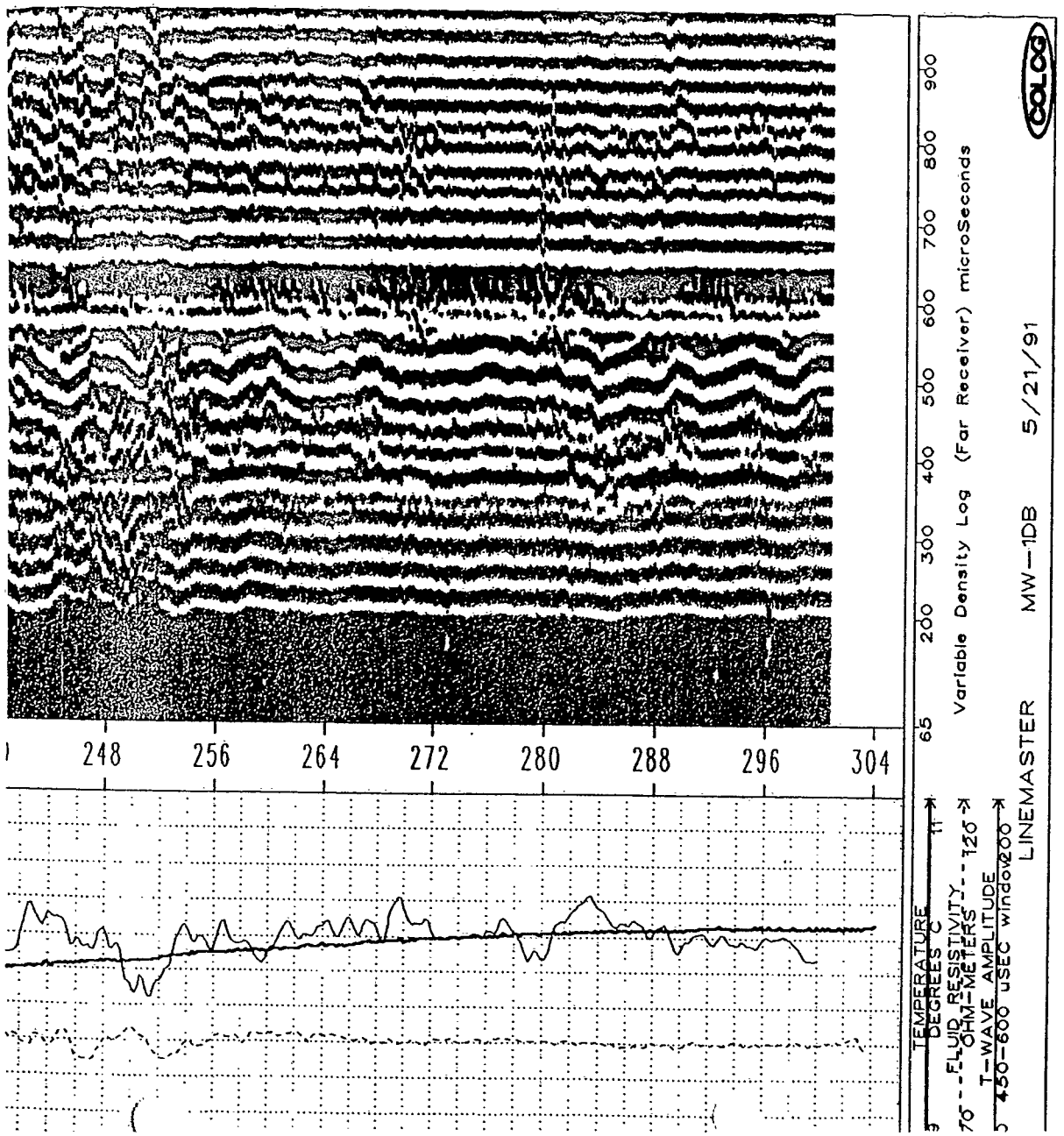
ADMINISTRATIVE RECORD

LIN003 479



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

COLOG INC

BOREHOLE GEOPHYSICS

17301 W. COLFAX, 265 GOLDEN, CO 80401
PHONE: (303) 279-0171 FAX: 279-2730

RESISTIVITY,SP,IP
GAMMA,CALIPER
WELL: MW-1DB

PROJECT: LINEMASTER SWITCH CORPORATION
DATE: MAY 23, 1991
CLIENT: FUSS & O'NEILL, INC.
COLOG ID NO:
LOCATION: WOODSTOCK
STATE: CONNECTICUT COUNTY: WINDHAM ELEV: 528 FT DEPTH REF: CASING

BOREHOLE DATA

DRILLING CONTRACTOR:
CUSTOMER TD: COLOG TD: 303 FT

RUN	BIT RECORD			CASING RECORD		
NO.	Bit Size	From	To	Size/Wgt/Thk.	From	To
1	6"	SURFACE	TD	6"	SURFACE	81 FT.
2						
3						
4						

HOLE MEDIUM: CLOUDY WATER DRILL METHOD: AIR ROTARY
MUD TYPE: TIME SINCE CIRC:
VISCOSITY: WEIGHT: Rmf at Deg

GENERAL DATA

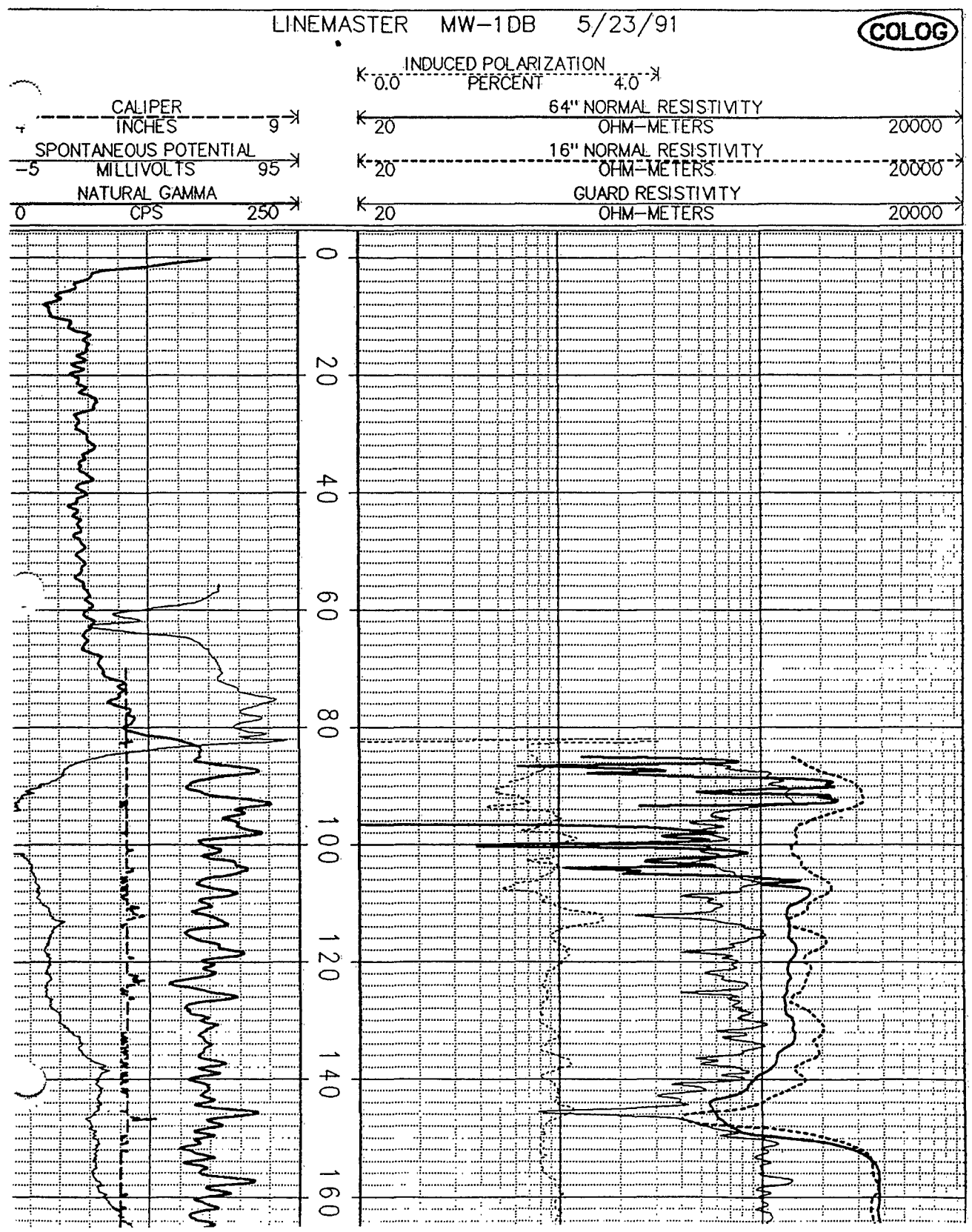
INSTRUMENTATION: SERIES III UNIT/TRUCK: 705/12
LOGGING ENGINEER: J. LOCOCO
CLIENT REP: MR. DAVID FONTAINE - FUSS & O'NEILL
OTHER SERVICES: VIDEO, TMP/FLRES, SONIC

LOGGING DATA

LOG FUNCTION	RUN NO.	EQUIPMENT MODEL	PROBE S.N.	UPHOLE S.N.	LOGGING DIG INT FEET	SPEED FT./MIN.	DETECTOR TYPE	SPACING Tx-Rx FEET	Rx-Rx FEET	SOURCE TYPE	SIZE CURIE	LOGGED INTERVAL FROM	TO	INT. FEET
RESISTIVITY	3	RLP	545	442	0.2	20						303 FT	81 FT	222 FT
SP,IP	3	RLP	545	442	0.2	20						303 FT	81 FT	222 FT
GAMMA/GUARD	4	XAP	1743	933	0.1	14						303 FT	5 FT	298 FT
CALIPER	5	GLP	1221	401	0.2	20						303 FT	70 FT	233 FT

CALIBRATION FACTOR(S):
DIGITAL FILE NAME(S): 1FIN1.DAT, 1FIN1.PLP, 1.HDP
REMARKS:

LIN003 0849



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 4 8 1

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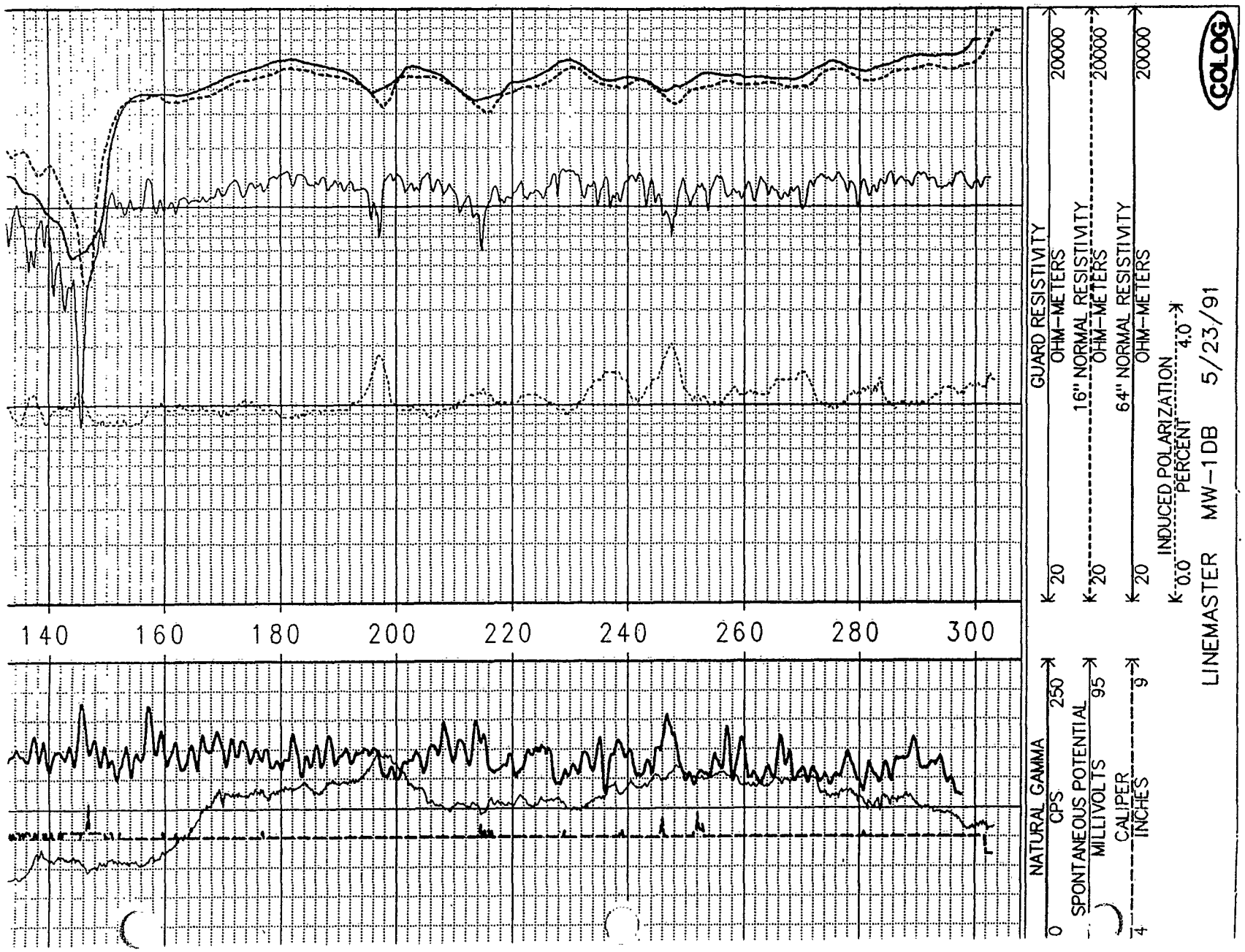
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 482



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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 983

Fuss & O'Neill Inc.

APPENDIX O
SURFACE-WATER FIELD DATA SHEETS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

recycled paper

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900719-02	SW-1

Sample Location Info

WETLANDS NORTH OF LINEMASTER

Special Instructions:

Sample Data

Date: 7-19-90 Time: 0830
Sampler: JTO Weather: SUNNY, CLEAR
Estimated Flow Rate (GPM) NA
Stagnant / Dry / Other
Filtered in Field?: No / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance: ORGANICS IN WATER
Comments:

Container	Quantity	Preservative
40-ML EPA VIAL	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	5.08
Temp	xxxxxxxxxxxx	21.2
Spec. Cond.	4	xxxxxxxxxxxx
Dissolved Oxy	1	1.75

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor x Calib Factor x Conductivity = Spec. Cond.

(21.2) 1.07 x 1.04 x 192 = 214

Comments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
4 8 8

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP. | Project #: 86-88

Project Location: WOODSTOCK, CT | Well ID

Sample #: 401920508-17 | SW-1

Sample Location Info

Stream / Wetland

Special Instructions:

Sample Taken next to foot bridge

Sample Data

Date: 5/8/92 Time: 1640

Sampler: SJR / MRG Weather:

Estimated Flow Rate (GPM) _____ slow

Stagnant / Dry / Other _____

Filtered in Field?: No / @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # _____ Filter ID # _____

Field Decon: Filter / Tubing / Other _____

Appearance:

Comments:

Container	Quantity	Preservative
VOA	3	HCl
Plastic 1L	1	HNO3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.19
Temp	xxxxxxxxxxxx	10.4
Spec. Cond.	2	xxxxxxxxxxxx
Dissolved Oxy		6.4

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(10.4) 1.39	x	1.06	x	115	=	169

Comments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
585

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER	Project #: 8650
Project Location: WOODSTOCK, CT	Well ID
Sample #:	SW-2

Sample Location Info

DID NOT COLLECT, STREAM DOES NOT EXIST IN THIS AREA

Special Instructions:

Sample Data

Sample Data	Container	Quantity	Preservative
Date: 7-19-90 Time: 0945			
Sampler: _____ Weather: SUNNY, CLEAR			
Estimated Flow Rate (GPM) _____			
Stagnant / Dry / Other _____			
Filtered in Field?: No / @Vehicle			
Method of Filtration: Pressure / Vacuum / Syringe			
Pump ID # [ ] Filter ID # [ ]			
Field Decon: Filter / Tubing / Other _____			
Appearance:			
Comments:			

Field Parameters

Parameter	Instrument ID#	Value
pH		
Temp	xxxxxxxxxxxx	
Spec. Cond.		xxxxxxxxxxxx
Dissolved Oxy		

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
( )	x		x		=	

Comments:

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
9865

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900719-05	SW-3

Sample Location Info

COLLECTED FROM OFF-SITE POND NORTHEAST OF LINEMASTER

Special Instructions:

Sample Data

Date: 7-19-90 Time: 0950

Sampler: JTD Weather: SUNNY, CLEAR

Estimated Flow Rate (GPM) NA

Stagnant / Dry / Other

Filtered in Field? No / @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # Filter ID #

Field Decon: Filter / Tubing / Other

Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ML	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	8.47
Temp	xxxxxxxxxxxxx	25.9
Spec. Cond.	4	xxxxxxxxxxxxx
Dissolved Oxy	1	5.7

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(25.9) .99	x	1.04	x	228	=	235

Comments:

nx386\e\0base\swfds

revised 05/01/90

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 487

Surface Water Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

ient/Project Name: LINEMASTER SWITCH CORP Project #: 86-88

oject Location: WOODSTOCK, CT Well ID: SW-3

mple #: 401920508-10

ample Location Info

Pond along Frog Pond Rd.

ecial Instructions:

ample Data

Date: 5/8/92 Time: 14:00

ampler: STR/MRG Weather: Cloudy 50

stimated Flow Rate (GPM) _____ POND

agnant / Dry / Other _____

Filtered in Field?: (No) @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # _____ Filter ID # _____

Field Decon: Filter / Tubing / Other _____

Container	Quantity	Preservative
VOA	3	HCl
1 Plastic	1	HNO_3

ppearance:

Clear No odor

ments:

ield Parameters

arameter	Instrument ID#	Value
H	2	6.89
emp	xxxxxxxxxxxx	11.6
pec. Cond.	2	xxxxxxxxxxxx
issolved Oxy		6.6

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(11.6) 1.35	x	1.06	x	270	=	386

omments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
0884

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID: SW-4
Sample #: 192900719-07	

Sample Location Info

COLLECTED FROM ON-SITE STREAM AT ENTRANCE BEFORE "EAST POND"

Special Instructions:

Sample Data

Date: 7-19-90 Time: 1030
Sampler: JTO Weather: CLEAR, SUNNY
Estimated Flow Rate (GPM) <1 gpm
Stagnant / Dry / Other JT

Filtered in Field? (No) @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ML	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	8.02
Temp	xxxxxxxxxxxx	21.8
Spec. Cond.	4	xxxxxxxxxxxx
Dissolved Oxy	1	5.5

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor x Calib Factor x Conductivity = Spec. Cond.

(21.8) 1.07 x 1.04 x 180 = 200

Comments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
689

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

lient/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

roject Location: WOODSTOCK, CT

nple #: 401920508 - 13

Well ID SW-4

ample Location Info

North end of Pond 1

pecial Instructions:

ample Data

Date: 5/8/92 Time: 15:45

ampler: SJR/MRG Weather:

stimated Flow Rate (GPM) POND

tagnant / Dry / Other

Filtered in Field? No / @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # Filter ID #

Field Decon: Filter / Tubing / Other

ppearance:

Clear No Odor

nents:

Container	Quantity	Preservative
VOA	3	HCl
1L Plastic	1	HNO_3

ield Parameters

arameter	Instrument ID#	Value
H	2	7.71
emp	xxxxxxxxxxxxx	12.8
pec. Cond.	2	xxxxxxxxxxxxx
ssolved Oxy		11.0

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)	Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(12.8)	1.30	x	1.06	x	150	=	207

omments:

386\e\0base\swfds revised 05/01/90

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 490

Surface Water Field Data Sheet

FUSS&O'NEILL Environment Field Services

Client/Project Name: LINEMASTER
Project #: 86-88
Project Location: WOODSTOCK, CT
Well ID
Sample #: 192900719-DB #09 (DUP)
SW-5 & SW-5 (DUP)

Sample Location Info

COLLECTED FRIM ON-SITE "EAST POND"

Special Instructions:

Sample Data

Date: 7-19-90 Time: 1100
Sampler: JTD Weather: SUNNY, CLEAR
Estimated Flow Rate (GPM) NA
Stagnant / Dry / Other
Filtered in Field?: No / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance:
Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.83
Temp	xxxxxxxxxxxx	29.1
Spec. Cond.	4	xxxxxxxxxxxx
Dissolved Oxy	1	7.4

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor x Calib Factor x Conductivity = Spec. Cond.

(29.1) .92 x 1.04 x 200 = 191

Comments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
191

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900719-10	SW-6

Sample Location Info

COLLECTED FROM ON-SITE "EAST POND"

Special Instructions:

Sample Data

Date: 7-19-90 Time: 1145
Sampler: JTD Weather: SUNNY, CLEAR
Estimated Flow Rate (GPM) NA
Stagnant / Dry / Other
Filtered in Field? No / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.97
Temp	xxxxxxxxxxxxx	28.5
Spec. Cond.	4	xxxxxxxxxxxxx
Dissolved Oxy	1	6.90

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)	Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(25.5)	.93	x	1.04	x	194	=	188

Comments:

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ADMINISTRATIVE RECORD

LIN003 492

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Service

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID: SW-7
Sample #: 192900719-11	

Sample Location Info

COLLECTED AT STREAM EXIT OF ON-SITE "EAST POND"

Special Instructions:

Sample Data

Date: 7-19-90 Time: 1300
Sampler: JTD Weather: SUNNY, CLEAR
Estimated Flow Rate (GPM) 4 gpm
Stagnant / Dry / Other

Filtered in Field? (No) / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other

Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.43
Temp	xxxxxxxxxxxx	28.7
Spec. Cond.	4	xxxxxxxxxxxx
Dissolved Oxy	1	5.6

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(28.7) .93	x	1.04	x	197	=	191

Comments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
E69

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

Project Location: WOODSTOCK, CT

Sample #: 401920508-12

Well ID SW-7

Sample Location Info

South side of Pond 1

Special Instructions:

Sample Data

Date: 5/8/92 Time: 15:30

Sampler: SJR/MRG Weather:

Estimated Flow Rate (GPM) POND

Stagnant / Dry / Other

Filtered in Field? No / @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # Filter ID #

Field Decon: Filter / Tubing / Other

Appearance:

Clear No Odor

Comments:

Container	Quantity	Preservative
VOA	3	HCl
Plastic 1L	1	HNO3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.33
Temp	xxxxxxxxxxxxx	13.0
Spec. Cond.	2	xxxxxxxxxxxxx
Dissolved Oxy		9.6

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)	Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(13.0)	1.30	x	1.06	x	160	=	220

Comments:

x386\e\0base\swfds revised 05/01/90

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 494

Surface Water Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER SWITCH CORP
Project #: 86-88
Project Location: WOODSTOCK, CT
Well ID: SW-8
Sample #: 401920508-~~05~~ 09

Sample Location Info

Stream Near Restaurant
Near Piezometer PZ-6

Special Instructions:

Sample Data

Container	Quantity	Preservative
VOA	3	HCl
Plastic 1L	1	HNO_3

Date: 5/8/92 Time: _____
Sampler: SJR/MRG Weather: Cloudy SD
Estimated Flow Rate (GPM) 5-10
Stagnant / Dry / Other _____
Filtered in Field?: No / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # _____ Filter ID # _____
Field Decon: Filter / Tubing / Other _____

Appearance:
Clear No Odor

Comments:

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.06
Temp	xxxxxxxxxxxx	11.4
Spec. Cond.	2	xxxxxxxxxxxx
Dissolved Oxy		8.9

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor x Calib Factor x Conductivity = Spec. Cond.

(11.4) 1.35 x 1.06 x 1.60 = 229

Comments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 595

Surface Water Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900720-13	SW-9

Sample Location Info

COLLECTED FROM ON-SITE "SOUTH POND"

Special Instructions:

Sample Data

Date: 7-20-90 Time: 1145
Sampler: JTD Weather: SUNNY, CLEAR
Estimated Flow Rate (GPM) NA
Stagnant / Dry / Other
Filtered in Field? No / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2.	7.21
Temp	xxxxxxxxxxxxx	31.5
Spec. Cond.	4	xxxxxxxxxxxxx
Dissolved Oxy	1	7.2

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(31.5) .87	x	1.04	x	121	=	110

Comments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
496

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Service

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900720-09 & -10	SW-10 &SW-10 (DUP)

Sample Location Info

COLLECTED FROM ONSITE "SOUTH POND"

Special Instructions:

Sample Data

Date: 7-20-90 Time: 1015
Sampler: JTO Weather:
Estimated Flow Rate (GPM) NA
Stagnant / Dry / Other
Filtered in Field? (No) / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3
		-1

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.29
Temp.	xxxxxxxxxxxxx	30
Spec. Cond.	4	xxxxxxxxxxxxx
Dissolved Oxy	1	6.2

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(30) .90	x	1.04	x	118	=	111

Comments:

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LIN003
1697

Surface Water Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

Project Location: WOODSTOCK, CT

Well ID: SW-10

Sample #: 401920508-06

Sample Location Info

Pond Near Restaurant

Special Instructions:

Sample Data

Date: 5/8/92 Time: 13:10

Sampler: SJR/MRG Weather: Cloudy, 50

Estimated Flow Rate (GPM) _____ POND

Stagnant / Dry / Other _____

Filtered in Field? No / @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # _____ Filter ID # _____

Field Decon: Filter / Tubing / Other _____

Appearance:

Comments:

Container	Quantity	Preservative
VOA	3	HCl
Plastic 1L	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.23
Temp	xxxxxxxxxxxx	13.1
Spec. Cond.	2	xxxxxxxxxxxx
Dissolved Oxy		10.9

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor x Calib Factor x Conductivity = Spec. Cond.

(13.1) 1.30 x 1.06 x 70 = 96

Comments:

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LIN003
868

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900720-07	SW-11

Sample Location Info

COLLECTED FROM STREAM LEAVING "SOUTH POND" ON SOUTH SIDE OF ROUTE 171

Special Instructions:

Sample Data

Date: 7-20-90 Time: 0950

Sampler: STO Weather: SUNNY, CLEAR

Estimated Flow Rate (GPM) 4.1

Stagnant / Dry / Other

Filtered in Field? (No) @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # Filter ID #

Field Decon: Filter / Tubing / Other

Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.21
Temp	xxxxxxxxxxxx	23.3
Spec. Cond.	4	xxxxxxxxxxxx
Dissolved Oxy	1	3.4

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor x Calib Factor x Conductivity = Spec. Cond.

(23.3) 1.03 x 1.04 x 150 = 161

Comments:

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LIN003
669

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900720-05	SW-12

Sample Location Info

COLLECTED FROM MILL BROOK NEAR BRIDGE ON ROUTE 169

Special Instructions:

Sample Data

Date: 7-20-90 Time: 0045
Sampler: JTD Weather: SUNNY, CLEAR
Estimated Flow Rate (GPM) 10
Stagnant / Dry / Other
Filtered in Field?: No / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.44
Temp	xxxxxxxxxxxx	22.6
Spec. Cond.	4	xxxxxxxxxxxx
Dissolved Oxy	1	6.4

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(22.6) 1.05	x	1.04	x	130	=	142

Comments:

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LIN003 500

Surface Water Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900720-03	SW-13

Sample Location Info

COLLECTED FROM MILL BROOK NEAR WESTERN (UP STREAM) BORDER of SITE

Special Instructions:

Sample Data

Date: 7-20-90 Time: 0745
Sampler: JTD Weather: SUNNY, CLEAR
Estimated Flow Rate (GPM) 10
Stagnant / Dry / Other
Filtered in Field? No / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.29
Temp	xxxxxxxxxxxxx	22.8
Spec. Cond.	4	xxxxxxxxxxxxx
Dissolved Oxy	1	6.3

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)	Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(22.8)	1.04	x	1.04	x	132	=	143

Comments:

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 501

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

lient/Project Name: LINEMASTER SWITCH | Project #: 86-88

roject Location: WOODSTOCK, CT

iple #: 401920508-04 | Well ID: SW-13

ample Location Info

Stream/River Behind Residence (GW-14)
Sample Taken above impoundment

pecial Instructions:

ample Data

Date: 5/8/92 Time: ~~11:30~~ 12:30

ampler: SJR/MRG Weather: Cloudy 50

stimated Flow Rate (GPM) _____

tagnant / Dry / Other _____

Filtered in Field? No / @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # _____ Filter ID # _____

Field Decon: Filter / Tubing / Other _____

ppearance: Clear No Odor

ments:

Container	Quantity	Preservative
VOA	3	HCl
Plastic 1L	1	HNO_3

ield Parameters

arameter	Instrument ID#	Value
H	2	7.60
emp	xxxxxxxxxxxx	10.5
pec. Cond.	2	xxxxxxxxxxxx
issolved Oxy		9.8

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(10.5) 1.39	x	1.06	x	65	=	96

omments:

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ADMINISTRATIVE RECORD
LIN003
2 0 5

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

:lient/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

roject Location: WOODSTOCK, CT

Well ID: SW-14

Sample #: 401920508-03

Sample Location Info

Stream flowing under Route 171. near Plaine Hill Rd. Entrance
Sample taken on south side of Plaine Hill Rd.

pecial Instructions:

Sample Data

Date: 5/8/92 Time: 11:20

ampler: SJR/MRG Weather: Clouds Rain 50's

stimated Flow Rate (GPM) ~~20~~ 15

tagnant / Dry / Other

Filtered in Field?: No / @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # Filter ID #

Field Decon: Filter / Tubing / Other

ppearance: Clear, No Odor

omments:

Container	Quantity	Preservative
VOA	3	HCl
Plastic 1L	1	HNO_3

'ield Parameters

arameter	Instrument ID#	Value
H	2	7.58
emp	xxxxxxxxxxxxx	11.3
pec. Cond.	2	xxxxxxxxxxxxx
issolved Oxy		9.1

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)	Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(113)	1.35	x	1.06	x	120	=	172

:omments:

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 15 03

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

Project Location: WOODSTOCK, CT

Sample #: 401920508-01 Well ID: SW-15

Sample Location Info

Stream located in cow pasture across Plaine Hill Rd. from Linemaster Entrance

Special Instructions:

Sample Data

Date: 5/8/92 Time: 10:45

Sampler: SJF/MBG Weather: Clouds 50's

Estimated Flow Rate (GPM) 10

Stagnant / Dry / Other

Filtered in Field? (No) @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # Filter ID #

Field Decon: Filter / Tubing / Other

Appearance: Clear, slight yellowish tint

Comments:

Container	Quantity	Preservative
VOA	3	HCl
Plastic 1L	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.44
Temp	xxxxxxxxxxxx	12.0
Spec. Cond.	2	xxxxxxxxxxxx
Dissolved Oxy		10.1

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(12.0) 1.33	x	1.06	x	105	=	148

Comments:

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LIN003
4 0 5

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 401920508-05	SW-16

Sample Location Info

Behind Apt Building Complex

Special Instructions:

Sample Data

Container	Quantity	Preservative
VOA	3	

Date: 5/8/92 Time: _____

Sampler: SJR/MRG Weather: _____

Estimated Flow Rate (GPM) 20

Stagnant / Dry / Other _____

Filtered in Field?: (No) @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # _____ Filter ID # _____

Field Decon: Filter / Tubing / Other _____

Appearance:

Clear, No Odor

Comments:

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.48
Temp	xxxxxxxxxxxx	10.6
Spec. Cond.	2	xxxxxxxxxxxx
Dissolved Oxy		9.6

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(10.6) 1.39	x	1.06	x	65	=	96

Comments:

A Septic System Overflow pipe is sticking out of the bank near the river - liquid is flowing out of it to the River Very strong bad sewage odor in the area

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LIN003 505

Surface Water Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

Project Location: WOODSTOCK, CT

Well ID: SW-16 Dup.

Sample #: 401920508-07

Sample Location Info

Duplicate of 401920508-05

Special Instructions:

Sample Data

Sample Data	Container	Quantity	Preservative
Date: _____ Time: _____			
Sampler: _____ Weather: _____			
Estimated Flow Rate (GPM) _____			
Stagnant / Dry / Other _____			
Filtered in Field?: No / @Vehicle			
Method of Filtration: Pressure / Vacuum / Syringe			
Pump ID # _____ Filter ID # _____			
Field Decon: Filter / Tubing / Other _____			
Appearance:			
Comments:			

Field Parameters

Parameter	Instrument ID#	Value
pH	Z	7.35
Temp	xxxxxxxxxxxx	10.4
Spec. Cond.	Z	xxxxxxxxxxxx
Dissolved Oxy		9.6

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor x Calib Factor x Conductivity = Spec. Cond.

(10.4) 1.39 x 1.06 x 70 = 96

Comments:

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 506

Surface Water Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER
Project #: 86-84
Project Location: Woodstock, CT
Well ID: SW-17
Sample #: 401920515-01

Sample Location Info

Special Instructions:

Sample Data

Date: 5/15/92 Time: _____
Sampler: SJR Weather: Sun 70
Estimated Flow Rate (GPM) _____
Stagnant / Dry / Other _____
Filtered in Field? No / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # _____ Filter ID # _____
Field Decon: Filter / Tubing / Other _____
Appearance:

Comments:

Container	Quantity	Preservative
VOA	3	—
Plastic 1L	1	—

Field Parameters

Parameter	Instrument ID#	Value
pH	5	7.87
Temp	xxxxxxxxxxxx	16.3
Spec. Cond.	5	xxxxxxxxxxxx
Dissolved Oxy		7.8

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)	Corr Factor	x	Calib Factor	x	Conductivity	=	Spec. Cond.
(16.3)	1.19	x	1.05	x	80	=	100

Comments:

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ADMINISTRATIVE RECORD
LIN003
507

Surface Water Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

Project Location: WOODSTOCK, CT

Sample #: 401920508-18

Well ID
SW-18

Sample Location Info

Pond 3

Special Instructions:

Sample Data

Date: 5/8/92 Time: 17:00

Sampler: SJR/MRG Weather:

Estimated Flow Rate (GPM) _____ POND

Stagnant / Dry / Other _____

Filtered in Field?: No / @Vehicle

Method of Filtration: Pressure / Vacuum / Syringe

Pump ID # _____ Filter ID # _____

Field Decon: Filter / Tubing / Other _____

Appearance:

Comments:

Container	Quantity	Preservative
VOA	3	HCl
Plastic 1L	1	HNO_3

Field Parameters

Parameter	Instrument ID#	Value
pH	2	7.90
Temp	xxxxxxxxxxxx	12.0
Spec. Cond.	2	xxxxxxxxxxxx
Dissolved Oxy		10.8

Note: SC calculation based on (temp) at time of SC measurement.

(Temp)Corr Factor x Calib Factor x Conductivity = Spec. Cond.

(12.0) 1.33 x 1.06 x 120 = 169

Comments:

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 508

Soil Sampling Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP.
Project #: 86-88
Project Location: WOODSTOCK, CT
Sample #: 401920508-15
Sampling Location: SE-1

Sample Location Info

stream / wetland
Near Foot bridge
See map

Sample Data

Date: 5/8/92 Time: _____
Sampler: SJR / MRG Weather: Cloudy 50

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / Other PONAR
Field decon: Yes / No / Dedicated

Type of Sample: Grab / Composite /
Other _____

Container	Quantity	Preservative
VOA	1	-
8oz. glass	4	-

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: _____ Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)
Sediment
DK grey organics

Munsell Color: _____ Grain Size: FINE to V. FINE

Sample Description Foreign Material: _____

Appearance:

Comments:

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 509

Soil Sampling Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-85

Project Location: WOODSTOCK, CT

Sample #: 401920508-11

Sampling Location: SE-3

Sample Location Info

Frog Pond Rd.

Sample Data

Date: 5/8/92 Time: _____

Sampler: SJR/MRG Weather: Cloudy 50

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / Other PONAR

Field decon: (Yes / No) / Dedicated

Type of Sample: (Grab) / Composite /
Other _____

Container	Quantity	Preservative
VOA	1	-
8oz. glass	4	-

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2-4' Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)

Sediment

Munsell Color: Dark grey organics present slight odor

Grain Size: FINE to V. FINE

Sample Description Foreign Material: _____

Appearance:

Comments:

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LIN003
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Soil Sampling Field Data Sheet

Client/Project Name: Linemaster Switch Corp. Project #: 86-88

Project Location: Woodstock, CT.

Sample #: 351920513-03

Sampling Location SE-3

FUSS&O'NEILL Environmental Field Services

Sample Location Info

Frog pond Road

Sample Data

Date: 5/13/92 Time: 1100

Sampler: MRG/PDL Weather: cloudy 70s

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / (Other) PONAR

Field decon: (Yes) / No / Dedicated

Type of Sample: (Grab) / Composite /
Other _____

Container	Quantity	Preservative
GLASS 8oz	4	AS IS
VOA 6oz	1	AS IS

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2"-4" Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)

Munsell Color: Dark grey Grain Size: Fine w organic matter

Sample Description Foreign Material: _____

Appearance:

Comments:

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Soil Sampling Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

Project Location: WOODSTOCK CT.

Sample #: 351920513-04

Sampling Location: SE-3 DUP

Sample Location Info

FROG POND ROAD

Sample Data

Date: 5/13/92 Time: 1115

Sampler: MRG/PDL Weather: CLOUDY 70

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / (Other) PONAR

Field decon: (Yes) No / Dedicated

Type of Sample: (Grab) / Composite /
Other _____

Container	Quantity	Preservative
GLASS 8oz	4	AS IS
VOA 6oz	1	AS IS

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2"-4" Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)

Munsell Color: DARK GREY Grain Size: FINE W ORGANIC MATTER

Sample Description Foreign Material: _____

Appearance:

Comments:

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LIN003005212

Soil Sampling Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP.	Project #: 86-85
Project Location: WOODSTOCK, CT	Sampling Location: SE-4
Sample #: 401920508-14	

Sample Location Info

POND 1

Sample Data

Date: 5/8/92 Time: _____

Sampler: SJR/MRG Weather: Cloudy 50

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / Other PONAR

Field decon: ~~Yes~~ / No / Dedicated

Type of Sample: (Grab) / Composite /
Other _____

Container	Quantity	Preservative
VOA	1	—
8oz. glass	4	—

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2-4" Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)

Sediment

Dk grey organics

Munsell Color: _____ Grain Size: FINE to V. FINE

Sample Description Foreign Material: _____

Appearance:

Comments:

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN00308

E-4

Soil Sampling Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP.
Project #: 86-88
Project Location: WOODSTOCK, CT
Sample #: 401920508-16
Sampling Location: SE-4 dup

Sample Location Info

Duplicate of 401920508-14

Sample Data

Date: 5/8/92 Time: _____
Sampler: SJR / MRC Weather: Cloudy 50

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / Other PONAR
Field decon: Yes / No / Dedicated

Type of Sample: Grab / Composite /
Other _____

Container	Quantity	Preservative
VOA	1	-
8oz. glass	4	-

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: _____ Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)
Sediment

Munsell Color: _____ Grain Size: FINE to V. FINE

Sample Description Foreign Material: _____

Appearance:

Comments:

adfldsvc\efs\soilfds

revised 04/21/92

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 514

Soil Sampling Field Data Sheet

Client/Project Name: LINEMASTER SWITCH CORP.	Project #: 86-88
Project Location: WOODSTOCK CT.	**Sampling Location**
Sample #: 351920513-02	SE-10

FUSS&O'NEILL
Environmental
Field Services

Sample Location Info

Pond 2

Sample Data

Container	Quantity	Preservative
GLASS 8oz	4	AS IS
VOA 6oz	1	AS IS

Date: 5/13/92 Time: 1030
Sampler: MRG/PDL Weather: cloudy, RAIN, 70s

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / (Other) PONAR
Field decon: (Yes) / No / Dedicated

Type of Sample: (Grab) / Composite /
Other _____

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2-4" Core Length: _____

Sample Description: (Sediment) / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)

Munsell Color: DARK GREY/TANISH Grain Size: FINE

Sample Description Foreign Material: _____

Appearance:

Comments:

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LIN003 515

Soil Sampling Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER SW TCH CORP. Project #: 86-88

Project Location: WOODSTOCK, CT

Sample #: 401920508-08

Sampling Location
SE-10

Sample Location Info

POND 2

Sample Data

Container	Quantity	Preservative
VOA	1	-
8oz glass	4	-

Date: 5/8/92 Time: _____

Sampler: SJF / MRG Weather: Cloudy 50

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / Other PONAR

Field decon: (Yes) / No / Dedicated

Type of Sample: (Grab) / Composite /
Other _____

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2-6" Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)
Sediment

Munsell Color: Light Brown Grain Size: FINE to V. FINE

Sample Description Foreign Material: _____

Appearance:

Comments:

adfldsvc\efs\soilfds revised 04/21/92

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 5 1 6

Soil Sampling Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

Project Location: WOODSTOCK, CT

Sample #: 401920508-02

Sampling Location: SE-16

Sample Location Info

Stream in Cow Pasture
across from Linemaster Entrance

Sample Data

	Container	Quantity	Preservative
Date: 5/8/92 Time:	VOA	1	-
Sampler: STRIMRG Weather: Cloudy 50	glass 8oz	4	

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / Other PONAR

Field decon: (Yes) / No / Dedicated

Type of Sample: (Grab) / Composite /
Other _____

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2-4" Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)

Sediment

Munsell Color: Dark gray, organics Grain Size: Fine

Sample Description Foreign Material: _____

Appearance:

Comments:

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LIN003 5 1 1

Soil Sampling Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP Project #: 86-88

Project Location: WOODSTOCK CT.

Sample #: 351920513 - 01

Sampling Location: SE-16

Sample Location Info

STREAM IN COW PASTURE

Sample Data

Date: 5/13/92 Time: 10:10

Sampler: MRG/PDL Weather: cloudy, 70s

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon Trowel / Other PONAR

Field decon: Yes / No / Dedicated

Type of Sample: Grab / Composite / Other _____

Container	Quantity	Preservative
GLASS 8oz	4	AS IS
VOA 6oz	1	AS IS

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2"-4" Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)

Munsell Color: DARK grey, 0 Grain Size: Fine

Sample Description Foreign Material: _____

Appearance:

Comments:

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LINEMASTER SWITCH ADMINISTRATIVE RECORD

LIN003 5 1 8

Soil Sampling Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER SWITCH CORP.	Project #: 86-88
Project Location: WOODSTOCK, CT	Sampling Location: SE-18
Sample #: 401920508-19	

Sample Location Info

POND 3

Sample Data

Container	Quantity	Preservative
VOA	1	-
8oz. glass	4	-

Date: 5/8/92 Time: _____

Sampler: SJR / MRC Weather: Cloudy 50

Sampling Device: Auger / Core Sampler / Shovel / Split Spoon
Trowel / Other PONAR

Field decon: (Yes / No) / Dedicated

Type of Sample: (Grab) / Composite /
Other _____

Description Data

Organic Vapor Reading: _____ Instrument: _____

Sample Depth: 2-6" Core Length: _____

Sample Description: Sediment / Soil Type (ex. Lacustrian, Wetland, B Horizon, Outwash, Etc.)

Sediment
Light Brown

Munsell Color: _____ Grain Size: FINE to V. FINE

Sample Description Foreign Material: _____

Appearance:

Comments:

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revised 04/21/92

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 519

Trip Blank Field Data Sheet

Client/Project Name: LINEMASTER SWITCH CORP. Project #: 86-88

Project Location: Woodstock, CT

Sample #: 401920515-02

Well ID
Trip Blank

FUSS&O'NEILL
Environmental
Field Services

Sample Data

Date: 5/15/92 Time: 15:30

Sampler: SJR Weather: Sun 70's

Blank Supplied By: Lab / F&O / Other _____

Container	Quantity	Preservative
VOA	1	HCl

Comments:

nx386\e\0base\tbfds

revised 05/01/90

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
0259

Trip Blank Field Data Sheet

FUSS&O'NEILL
Environment
Field Service

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900719-03	Trip Blank

Sample Data

Date: 7-19-90 Time: 0830
Sampler: JTD Weather: SUNNY, CLEAR
Blank Supplied By: (Lab) F&O / Other _____

Container	Quantity	Preservative
EPA VIAL 40 ml	1	3N HCL

Comments:

nx386\e\0base\tbfds

revised 05/01/90

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 521

Trip Blank Field Data Sheet

FUSS&O'NEILL Environmental Field Services

Client/Project Name: LINEMASTER
Project #: 86-88
Project Location: WOODSTOCK, CT
Well ID
Trip Blank
Sample #: 192900720-01

Sample Data

Date: 7-20-90 Time: 0730
Sampler: JTD Weather: SUNNY, CLEAR
Blank Supplied By (Lab) / F&O / Other _____

Container	Quantity	Preservative
EPA VIAL 40 ml	1	3N HCL

Comments:

nx386\e\0base\tbfds

revised 05/01/90

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ADMINISTRATIVE RECORD
LIN003
225

Equipment Blank Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900719-18	Equip Blank

Sample Data

Date: 7-19-90 Time: 1530
Sampler: JTD Weather: SUNNY, CLEAR
Blank Water Supplied By: (Lab) / F&O / Other _____
Equipment Used: Bailer / Filter / Pump / Other DREDGE
Filtered in Field?: (No) / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # _____ Filter ID # _____
Field Decon: Filter / Tubing / Other _____
Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Comments:

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ADMINISTRATIVE RECORD
LIN003 00225

Equipment Blank Field Data Sheet

FUSS&O'NEILL
Environmental
Field Services

Client/Project Name: LINEMASTER	Project #: 86-88
Project Location: WOODSTOCK, CT	Well ID
Sample #: 192900720-16	Equip Blank

Sample Data

Date: 7-20-90 Time: 1230
Sampler: JTD Weather: SUNNY, CLEAR
Blank Water Supplied By: (Lab) / F&O / Other
Equipment Used: Bailer / Filter / Pump / Other DREDGE
Filtered in Field?: (No) / @Vehicle
Method of Filtration: Pressure / Vacuum / Syringe
Pump ID # Filter ID #
Field Decon: Filter / Tubing / Other
Appearance:

Comments:

Container	Quantity	Preservative
EPA VIAL 40 ml	3	3N HCL
PLASTIC 1000 ml	1	HNO_3

Comments:

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 425

APPENDIX P
SUMMARY OF POSITIVE DETECTIONS FOR INTERIM WATER-SUPPLY WELL MONITORING PROGRAM

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

recycled paper

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 S 2 5

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW04	GW04	GW04	GW04
Date		09/11/86	02/18/88	09/13/90	12/12/90
Sample ID		GW04860911	GW04880218	31390091314	31390121218
Parameter	Unit	Value			
Lead, Total	ug/l				3.1
1,1,1-Trichloroethane	ug/l	1.0		1.3	
Tetrachloroethene	ug/l		3.8		

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LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW05DB	GW05DB	GW06A	GW06A
Date		08/22/90	02/14/92	07/02/86	09/11/86
Sample ID		34390082210	31392021426	GW06A860702	GW06A860911
Parameter	Unit	Value			
Arsenic, Total	ug/l	1.8	6.3		
1,1,1-Trichloroethane	ug/l			4	1.0
Chloroform	ug/l			111	
Trichloroethene	ug/l			1	12.0
Trichloroethene	ug/l			5	

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW06A	GW060B	GW060B	GW060B
Date		12/19/86	07/29/86	10/17/86	04/16/87
Sample ID		GW06A861219	GW06860729	GW06861017	GW06870416
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l		1.0		
Trichloroethene	ug/l	2.5	9.0	9	1

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW060B	GW060B	GW060B	GW060B
Date		12/22/87	02/18/88	04/26/88	07/11/88
Sample ID		GW06871222	GW06880218	38504268806	34388071117
Parameter	Unit	Value			
Trichloroethene	ug/l	7.9	19.0	55.5	14.3

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW060B	GW060B	GW060B	GW060B
Date		08/15/88	10/12/88	12/16/88	02/22/89
Sample ID		34388081517	34388101216	34388121613	31389022212
Parameter	Unit	Value			
Trichloroethene	ug/1	7.5	5.0	6.7	19

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ADMINISTRATIVE RECORD

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW060B	GW060B	GW060B	GW060B
Date		04/03/89	06/06/89	08/24/89	10/13/89
Sample ID		31389040311	31889060604	30489082404	31389101301
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l				0.28
Chloroform	ug/l		3.7		0.34
Trichloroethene	ug/l	4.6	5.1	1.4	14

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ll ID		GW060B	GW060B	GW060B	GW060B
Date		12/21/89	01/08/90	02/15/90	03/16/90
Sample ID		19289122101	19290010801	30490021503	19290031602
Parameter	Unit	Value			
Manganese, Dissolved	mg/l	0.02			
1,1-Dichloroethene	ug/l	0.35			
Trichloroethene	ug/l	2.6	3.7	3.3	3.4

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW060B	GW060B	GW060B	GW060B
Date		06/21/90	09/12/90	12/12/90	03/05/91
Sample ID		31390062121	31390091201	31390121211	31391030507
Parameter	**Unit**		**Value**		
Lead, Total	ug/l			7.7	
Trichloroethene	ug/l	2.1	5.0	8.4	2.2
cis-1,2-Dichloroethene	ug/l		1.3		

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW060B	GW060B	GW060B	GW060B
Date		06/07/91	09/03/91	12/03/91	03/09/92
Sample ID		31391060719	31391090304	31391120303	31392030915
Parameter	Unit	Value			
Isopropylacetone	ug/l				7.1
Trichloroethene	ug/l	2.0	1.7	2.9	0.62

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ADMINISTRATIVE RECORD

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW060B	GW06T	GW06T	GW07DB
Date		06/04/92	12/21/89	01/08/90	09/11/86
Sample ID		31392060411	19289122102	19290010802	GW07860911
Parameter	Unit	Value			
Iron, Dissolved	mg/l		0.6	0.1	
Manganese, Dissolved	mg/l		0.05		
1,1,1-Trichloroethane	ug/l				1.0
Chloroform	ug/l				1.0
Trichloroethene	ug/l	1.6			

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW07DB	GW07DB	GW07DB	GW07DB
Date		08/15/88	12/16/88	08/22/90	08/22/91
Sample ID		34388081528	34388121621	34390082214	31391082208
Parameter	Unit	Value			
Arsenic, Total	ug/l			2.3	2.3
Chloroform	ug/l	3.9	2.6	1.4	

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LIN003 536

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		06/25/86	09/11/86	10/17/86	04/22/87
Sample ID		GW08860625	GW08860911	GW08861017	GW08870422
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l		1.0		
2-Chloroethyl vinyl ether	ug/l				4940
Bromodichloromethane	ug/l				1.9
Tetrachloroethene	ug/l		1.0		
Trichloroethene	ug/l	375	792	799	424
trans-1,2-Dichloroethene	ug/l	88.3	190	153	114

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571

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		06/25/87	08/24/87	10/19/87	12/22/87
Sample ID		GW08870625	GW08870824	GW08871019	GW08871222
Parameter	Unit	Value			
1,1-Dichloroethane	ug/l	3.1			
Bromodichloromethane	ug/l	2.8			
Tetrachloroethene	ug/l	1.4			
Trichloroethene	ug/l	595	217	1200	1200
trans-1,2-Dichloroethene	ug/l	129			

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LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		02/18/88	03/25/88	04/08/88	04/26/88
Sample ID		GW8880218	17203258803	17204088801	38504268819
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l		5.9		
Chloroform	ug/l		15.8		
Tetrachloroethene	ug/l		3.8	15.4	
Trichloroethene	ug/l	3780	3100	5530	1050

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LIN003
539

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		05/13/88	07/11/88	08/15/88	10/12/88
Sample ID		17205138806	34388071101	34388081501	34388101203
Parameter	Unit	Value			
Barium, Dissolved	mg/l	0.02			
Cadmium, Dissolved	mg/l	0.03			
Chromium, Total	mg/l	0.02			
Copper, Dissolved	mg/l	0.05			
Sodium, Dissolved	mg/l	11.2			
Trichloroethene	ug/l	342	1840	1152	1040
trans-1,2-Dichloroethene	ug/l			314	310

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		12/16/88	02/22/89	04/03/89	06/06/89
Sample ID		3438812164	31389022201	3138904031	31889060613
Parameter	Unit	Value			
Iron, Dissolved	mg/l			0.1	
1,1-Dichloroethane	ug/l				1.3
1,2-Dichloroethane	ug/l				1.3
Tetrachloroethene	ug/l				0.35
Trichloroethene	ug/l	1558	556	457	851
trans-1,2-Dichloroethene	ug/l	326	169	182	14

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LIN003 5 4 1

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		08/24/89	10/13/89	12/05/89	02/15/90
Sample ID		30489082401	31389101304	38489120501	30490021513
Parameter	Unit	Value			
1,1-Dichloroethane	ug/l	0.55	19	0.36	1.2
1,1-Dichloroethene	ug/l	0.26		0.63	
Tetrachloroethene	ug/l				0.24
Trichloroethene	ug/l	460	910	168	503
trans-1,2-Dichloroethene	ug/l	5.9	63	2.9	10

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		04/06/90	06/21/90	08/22/90	10/12/90
Sample ID		30490040701	31390062101	34390082206	31390101201
Parameter	Unit	Value			
Arsenic, Total	ug/l		4.6	4.1	4.2
1,1-Dichloroethane	ug/l	0.81			
1,1-Dichloroethene	ug/l	2.2			2.8
Acetone	ug/l			3640	
Carbon disulfide	ug/l		409		
Dichloromethane	ug/l			90	
Trichloroethene	ug/l	416	1498	970	2100
cis-1,2-Dichloroethene	ug/l		402	520	560
trans-1,2-Dichloroethene	ug/l	8.4	56.5		39

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ADMINISTRATIVE RECORD

LIN003 5 4 3

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		12/11/90	01/11/91	01/21/91	01/29/91
Sample ID		31390121101	31391011101	31391012101	31391012901
Parameter	Unit	Value			
Arsenic, Total	ug/l	3.6			
Lead, Total	ug/l	33.0			
1,1-Dichloroethane	ug/l	2.9	3.9	3.9	2.8
1,1-Dichloroethene	ug/l	3.3	3.7	5.7	
1,2-Dichloroethene	ug/l	430	540	510	380
Tetrachloroethene	ug/l		1.7		
Toluene	ug/l	2.4	3.9		
Trichloroethene	ug/l	1700	3100	8700	1600

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 544

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		02/05/91	02/05/91	02/21/91	02/21/91
Sample ID		31391020504	31391020505	31391022101	31391022103
Parameter	Unit	Value			
Arsenic, Total	ug/l	4.5	4.4		
Lead, Total	ug/l		11.4		
1,1-Dichloroethane	ug/l		2.9		
1,1-Dichloroethene	ug/l		2.9		
1,2-Dichloroethene	ug/l	570	430	410	440
Trichloroethene	ug/l	2000	2300	2100	2200

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 00545

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		03/05/91	04/04/91	05/15/91	05/30/91
Sample ID		31391030501	31391040401	31391051501	31391053002
Parameter	Unit	Value			
Arsenic, Total	ug/l	3.5	3.9		
1,1-Dichloroethane	ug/l			1.6	2.4
1,1-Dichloroethene	ug/l				2.5
1,2-Dichloroethene	ug/l	290	540		
Tetrachloroethene	ug/l			1.0	
Trichloroethene	ug/l	1600	2600	1800	2300
cis-1,2-Dichloroethene	ug/l			420	410
trans-1,2-Dichloroethene	ug/l			33	

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 546

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08DB	GW08DB
Date		06/07/91	10/01/91	12/06/91	02/10/92
Sample ID		31391060714	31391100101	31391120626	31392021002
Parameter	Unit	Value			
Arsenic, Total	ug/l	5.1	4.5	4.4	3.1
1,1-Dichloroethane	ug/l	4.2		4.1	
1,1-Dichloroethene	ug/l	3.4		1.5	
Toluene	ug/l	2.2			
Trichloroethene	ug/l	2200	2200	2400	2500
cis-1,2-Dichloroethene	ug/l	440	450	340	560
trans-1,2-Dichloroethene	ug/l	7.7	40	48	38

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ADMINISTRATIVE RECORD
LIN003 5 h 7

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08DB	GW08DB	GW08T	GW08T
Date		04/06/92	06/05/92	02/11/88	02/11/88
Sample ID		31392040603	31392060528	GW08TA880211	GW08TB880211
Parameter	Unit	Value			
Arsenic, Total	ug/l	3.6	3.6		
1,1-Dichloroethane	ug/l	2.3	1.8		
Trichloroethene	ug/l	1900	1200	18.4	15.1
cis-1,2-Dichloroethene	ug/l	630	400		
trans-1,2-Dichloroethene	ug/l	69	30		

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08T	GW08T	GW08T	GW08T
Date		02/18/88	03/25/88	04/08/88	07/11/88
Sample ID		GW8T880218	17203258804	17204088802	34388071102
Parameter	Unit	Value			
Tetrachloroethene	ug/l			2.4	
Trichloroethene	ug/l	93.0	2.9	10.6	15.9

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 549

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08T	GW08T	GW08T	GW08T
Date		08/15/88	09/14/88	10/12/88	12/16/88
Sample ID		34388081502	GW08T880914	34388101201	3438812162
Parameter	Unit	Value			
Trichloroethene	ug/l	0.69	3.8	1.0	1.9
trans-1,2-Dichloroethene	ug/l	0.74		1.2	1.9

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08T	GW08T	GW08T	GW08T
Date		02/22/89	04/03/89	06/06/89	08/24/89
Sample ID		31389022202	3138904032	31889060614	30489082402
Parameter	Unit	Value			
Trichloroethene	ug/l	4.6	1.4	3.1	2.5
trans-1,2-Dichloroethene	ug/l	3.9	2.5		

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LIN003 5 1

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ll ID		GW08T	GW08T	GW08TA	GW08TA
Date		10/13/89	12/05/89	10/13/89	12/05/89
Sample ID		31389101305	38489120502	31389101302	38489120504
Parameter	Unit	Value			
Chloroform	ug/l	0.44		0.53	
Trichloroethene	ug/l	1.3	1.6	1.2	2.0

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TA	GW08TA	GW08TA	GW08TA
Date		02/15/90	04/06/90	06/21/90	08/22/90
Sample ID		30490021514	30490040702	31390062102	34390082207
Parameter	Unit	Value			
Arsenic, Total	ug/l			6.9	3.9
Bromodichloromethane	ug/l		3.0		
Chloroform	ug/l		5		
Dibromochloromethane	ug/l		1.6		
Toluene	ug/l				24
Trichloroethene	ug/l	2.7	2.0	0.7	3.6
cis-1,2-Dichloroethene	ug/l			2.1	4.6

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LIN003 553

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TA	GW08TA	GW08TA	GW08TA
Date		10/12/90	12/11/90	01/04/91	01/11/91
Sample ID		31390101202	31390121102	31391010401	31391011102
Parameter	Unit	Value			
Arsenic, Total	ug/l	3.0			
Toluene	ug/l		1.3		
Trichloroethene	ug/l	5.8	9.8	8.0	6.0
cis-1,2-Dichloroethene	ug/l	6.3	6.6		

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ADMINISTRATIVE RECORD

LIN003 554

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TA	GW08TA	GW08TA	GW08TA
Date		01/21/91	01/29/91	02/05/91	02/21/91
Sample ID		31391012102	31391012902	31391020506	31391022102
Parameter	Unit	Value			
Arsenic, Total	ug/l			5.3	
1,2-Dichloroethene	ug/l	0.8	1.0	1.0	
Bromodichloromethane	ug/l			3.4	
Chloroform	ug/l			10	
Dibromochloromethane	ug/l			1.7	
Trichloroethene	ug/l	3.5	4.1	3.8	5.7
cis-1,2-Dichloroethene	ug/l				1.2

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ADMINISTRATIVE RECORD

LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TA	GW08TA	GW08TA	GW08TA
Date		03/05/91	04/04/91	05/15/91	06/07/91
Sample ID		31391030502	31391040402	31391051502	31391060715
Parameter	Unit	Value			
Arsenic, Total	ug/l	3.8	3.3		5.5
1,2-Dichloroethene	ug/l	1.4			
Bromodichloromethane	ug/l		5.1		
Chloroform	ug/l		1.6		
Dibromochloromethane	ug/l		4.5		
Trichloroethene	ug/l	8.7	1.2	3.6	5.8

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ADMINISTRATIVE RECORD
LIN003 559

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TA	GW08TA	GW08TA	GW08TA
Date		10/01/91	02/10/92	04/06/92	06/05/92
Sample ID		31391100102	31392021006	31392040604	31392060529
Parameter	Unit	Value			
Arsenic, Total	ug/l	5.1	3.4	4.4	4.1
Trichloroethene	ug/l	2.2		3.8	1.2

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LIN003 577

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TAAC	GW08TAAC	GW08TAAC	GW08TAAC
Date		12/06/91	02/10/92	04/06/92	06/05/92
Sample ID		31391120628	31392021005	31392040606	31392060531
Parameter	Unit	Value			
Arsenic, Total	ug/l	4.1	3.5	4.0	4.5

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LIN003 558

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TABC	GW08TABC	GW08TABT	GW08TABT
Date		12/06/91	02/10/92	04/06/92	06/05/92
Sample ID		31391120627	31392021003	31392040605	31392060530
Parameter	Unit	Value			
Arsenic, Total	ug/l	4.4		3.8	4.6
Trichloroethene	ug/l		4.0		

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LIN003 559

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TADU	GW08TADU	GW08TADU	GW08TB
Date		06/21/90	01/21/91	02/05/91	06/21/90
Sample ID		31390062103	31391012104	31391020508	31390062104
Parameter	Unit	Value			
Arsenic, Total	ug/l	6.2		2.8	8.7
1,2-Dichloroethene	ug/l		0.8	0.8	
Trichloroethene	ug/l	0.8	3.0	5.8	
cis-1,2-Dichloroethene	ug/l	2.3			

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TB	GW08TB	GW08TB	GW08TB
Date		08/22/90	10/12/90	12/11/90	02/05/91
Sample ID		34390082208	31390101203	31390121103	31391020507
Parameter	Unit	Value			
Arsenic, Total	ug/l	4.1	4.8	5.1	4.3
Toluene	ug/l	19			
Trichloroethene	ug/l	3.4			
cis-1,2-Dichloroethene	ug/l	4.4			

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TB	GW08TB	GW08TB	GW08TB
Date		03/05/91	04/04/91	06/07/91	10/01/91
Sample ID		31391030506	31391040404	31391060716	31391100103
Parameter	Unit	Value			
Arsenic, Total	ug/l	4.2	2.8	5.0	5.7
Trichloroethene	ug/l				2.1
cis-1,2-Dichloroethene	ug/l			1.0	

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LIN003 5 9 2

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW08TB	GW08TB	GW08TB	GW08TB
Date		12/03/91	02/10/92	04/06/92	06/05/92
Sample ID		31391120301	31392021008	31392040608	31392060527
Parameter	Unit	Value			
Arsenic, Total	ug/l	4.6	3.3	3.7	4.2
cis-1,2-Dichloroethene	ug/l				1.2

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 563

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW09DB	GW09DB	GW09DB	GW09DB
Date		07/09/86	07/10/86	09/10/86	12/22/87
Sample ID		GW09860709	GW09860710	GW09860910	GW09871222
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l		2.0		
Tetrachloroethene	ug/l		1.0		
Trichloroethene	ug/l	1	5.0	1	7.2

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LIN003 5 9 4

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW09DB	GW09DB	GW09DB	GW09DB
Date		06/06/89	12/05/89	08/22/90	10/12/90
Sample ID		31889060602	38489120513	34390082209	31390101204
Parameter	Unit	Value			
Trichloroethene	ug/l	0.42	0.23	0.6	0.7

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW09DB	GW09DB	GW09DB	GW09DB
Date		12/11/90	02/05/91	04/04/91	06/06/91
Sample ID		31390121104	31391020509	31391040408	31391060601
Parameter	Unit	Value			
Trichloroethene	ug/1	1.4	1.3	1.0	1.2

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW09DB	GW09DB	GW09DB	GW09DB
Date		10/01/91	12/03/91	02/10/92	04/06/92
Sample ID		31391100112	31391120302	31392021009	31392040609
Parameter	Unit	Value			
Trichloroethene	ug/l	0.9	0.6	1.3	0.80

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LIN003 5 6 7

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW09DB	GW10DB	GW10DB	GW10DB
Date		06/04/92	06/25/86	07/09/86	07/10/86
Sample ID		31392060410	GW10860625	GW10860709	GW10860710
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l		8.6		14.0
1,1-Dichloroethane	ug/l		49.3		63.0
1,1-Dichloroethene	ug/l				61.0
1,2-Dichloroethene	ug/l			5900	
1,2-Dichloropropane	ug/l		2.1		
Chlorobenzene	ug/l				8.0
Chloroform	ug/l		30.7		
Tetrachloroethene	ug/l		49.3		48.0
Toluene	ug/l			1900	
Trichloroethene	ug/l	1.0	>10000	~59000	42310
trans-1,2-Dichloroethene	ug/l		3875		10177

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ADMINISTRATIVE RECORD
LIN003 568

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW10DB	GW10DB	GW10DB	GW10DB
Date		07/29/86	09/11/86	10/17/86	12/19/86
Sample ID		GW10860729	GW10860911	GW10861017	GW10861219
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l	15		9.2	
1,1-Dichloroethane	ug/l	48		32.9	
1,1-Dichloroethene	ug/l	4.0		2.1	
Dichloromethane	ug/l	2.0			
Tetrachloroethene	ug/l	91		53.2	65.9
Trichloroethene	ug/l	15254	14700	7930	6890
trans-1,2-Dichloroethene	ug/l	3163	3020	2325	3251

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LIN003 5 9 9

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ell ID		GW10DB	GW10DB	GW10DB	GW10DB
Date		01/21/87	04/22/87	08/02/88	08/02/88
Sample ID		GW10870121	GW10870422	17288080201	17288080202
Parameter	Unit	Value			
Arsenic, Dissolved	mg/l			0.115	0.175
1,1-Dichloroethane	ug/l	17.0	9.1		
2-Chloroethyl vinyl ether	ug/l		155500		
Bromodichloromethane	ug/l		2.6		
Carbon tetrachloride	ug/l		3.5		
Tetrachloroethene	ug/l	39.5			
Trichloroethene	ug/l	15750	18280		
trans-1,2-Dichloroethene	ug/l	3275	3570		

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LIN003 0170

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW10DB	GW10DB1	GW10DB1	GW10DB2
Date		08/02/88	07/13/90	12/21/90	07/13/90
Sample ID		17288080203	19290071302	31390122125	19290071303
Parameter	Unit	Value			
Arsenic, Total	ug/l		146	164	456
Barium, Total	ug/l			290	
Calcium, Total	ug/l			48685	
Chromium, Total	ug/l			189	
Iron, Total	ug/l			37624	
Lead, Total	ug/l			16.3	
Nickel, total	ug/l			81	
Potassium, Total	ug/l			4960	
Sodium, Total	ug/l			16410	
1,1,1-Trichloroethane	ug/l				22
1,1,2-Trichloroethane	ug/l		3.3		
1,1-Dichloroethane	ug/l	55	72		59
1,1-Dichloroethene	ug/l	47	44		21
1,2-Dichloroethane	ug/l		2.8		
1,2-Dichloroethene	ug/l			3200	
Acetone	ug/l		210		
Benzene	ug/l		3.5		
Carbon disulfide	ug/l				12
Ethylbenzene	ug/l		98		96
Isopropylacetone	ug/l		150		139
Tetrachloroethene	ug/l	100	51		57
Toluene	ug/l		2100	1700	1900
Trichloroethene	ug/l	58000	5100	33000	10800
Vinyl acetate	ug/l		264		
Vinyl chloride	ug/l		10		
Xylenes	ug/l		270	345	270
cis-1,2-Dichloroethene	ug/l		3700		4700
trans-1,2-Dichloroethene	ug/l	4600	9.2		

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW10DB2	GW10DB3	GW10DB3	GW10DBDP
Date		12/21/90	07/13/90	12/21/90	08/02/88
Sample ID		31390122124	19290071304	31390122121	17288080204
Parameter	Unit	Value			
Arsenic, Dissolved	ug/l			137	
Arsenic, Total	ug/l	221	513	171	
Barium, Dissolved	ug/l			51	
Barium, Total	ug/l	135		759	
Calcium, Dissolved	ug/l			41043	
Calcium, Total	ug/l	40464		42840	
Chromium, Total	ug/l	40		42	
Iron, Dissolved	ug/l			631	
Iron, Total	ug/l	11840		22620	
Lead, Dissolved	ug/l			3.8	
Lead, Total	ug/l	7.4		5.0	
Nickel, Dissolved	ug/l			35	
Nickel, total	ug/l	48		38	
Potassium, Dissolved	ug/l			3350	
Potassium, Total	ug/l	3870		3810	
Sodium, Dissolved	ug/l			13330	
Sodium, Total	ug/l	13380		14160	
1,1-Dichloroethane	ug/l		67	49	53
1,1-Dichloroethene	ug/l		60	43	48
1,2-Dichloroethene	ug/l	4000		6800	
2-Hexanone	ug/l			70	
Ethylbenzene	ug/l		120	110	
Isopropylacetone	ug/l		92		
Tetrachloroethene	ug/l			65	96
Toluene	ug/l	1800	1800	1500	
Trichloroethene	ug/l	34000	12500	43000	55000
Xylenes	ug/l	310	760	500	
cis-1,2-Dichloroethene	ug/l		15000		
trans-1,2-Dichloroethene	ug/l		37		4700

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW10DBPT	GW10DBPT	GW10DBPT	GW10DBPT
Date		04/01/91	04/01/91	04/03/91	04/03/91
Sample ID		31391040101	31391040102	19291040310	19291040311
Parameter	Unit	Value			
Arsenic, Dissolved	ug/l	93.8		136	
Arsenic, Total	ug/l	146.1	130.8	147	159
Barium, Dissolved	ug/l	30		17	
Barium, Total	ug/l	42	38	15	
Iron, Dissolved	ug/l	98			
Iron, Total	ug/l	1124	924		
Lead, Total	ug/l		1.3	2.5	
Manganese, Dissolved	ug/l	631			
Manganese, Total	ug/l	1978	1507		
1,2-Dichloroethene	ug/l	5400	5900	3800	2800
Ethylbenzene	ug/l			83	
Toluene	ug/l	1400	980	1700	900
Trichloroethene	ug/l	27000	34000	44000	24000
Xylenes	ug/l	330	250	310	

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW10DBPT	GW10DBPT	GW10DBPT	GW10DBPT
Date		04/03/91	04/03/91	04/03/91	04/03/91
Sample ID		19291040312	19291040313	19291040314	19291040315
Parameter	Unit	Value			
Arsenic, Dissolved	ug/l	148		138	
Arsenic, Total	ug/l	148	133	142	144
Barium, Dissolved	ug/l	12.0		11.0	
Barium, Total	ug/l	23		12.0	
Lead, Dissolved	ug/l			1.4	
Lead, Total	ug/l	2.9			
1,2-Dichloroethene	ug/l	3800	6100	5400	6100
Toluene	ug/l	850	770	660	710
Trichloroethene	ug/l	25000	26000	24000	26000
Xylenes	ug/l	200	220	200	230

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW10DBPT	GW12A	GW12B	GW12B
Date		04/03/91	06/25/86	06/25/86	09/11/86
Sample ID		19291040316	GW12A860625	GW12B860625	GW12B860911
Parameter	Unit	Value			
Arsenic, Dissolved	mg/l	0.162			
Arsenic, Total	mg/l	0.160			
Barium, Dissolved	mg/l	0.04			
Barium, Total	mg/l	0.04			
Calcium, Dissolved	mg/l	37.9			
Calcium, Total	mg/l	38.8			
Iron, Dissolved	mg/l	0.13			
Iron, Total	mg/l	0.22			
Manganese, Dissolved	mg/l	0.78			
Manganese, Total	mg/l	0.88			
Potassium, Dissolved	mg/l	4.33			
Potassium, Total	mg/l	3.87			
Sodium, Dissolved	mg/l	11.7			
Sodium, Total	mg/l	12.0			
1,1,1-Trichloroethane	ug/l		4.4	7.1	
1,1-Dichloroethane	ug/l			4.6	
1,2-Dichloroethene	ug/l	6500			
1,2-Dichloropropane	ug/l		3.6	4.7	
Tetrachloroethene	ug/l		7.4	8.0	
Toluene	ug/l	760			
Trichloroethene	ug/l	29000	3724	3405.	62.8
Xylenes	ug/l	230			
trans-1,2-Dichloroethene	ug/l		768	679.0	22.9

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12B	GW12B	GW12DB	GW12DB
Date		10/17/86	01/21/87	09/24/86	12/19/86
Sample ID		GW12B861017	GW12B870121	GW12860924	GW12861219
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l	1.0		6.5	
1,1-Dichloroethane	ug/l	3.8		7.3	
1,1-Dichloroethene	ug/l	1.4		5.1	
1,2-Dichloroethene	ug/l	430			
1,2-Dichloropropane	ug/l			1.4	
2-Chloroethyl vinyl ether	ug/l		27.9		
Tetrachloroethene	ug/l			6.7	
Trichloroethene	ug/l	87.9	978	5543	12.5
Trichloroethene	ug/l	90			
trans-1,2-Dichloroethene	ug/l	413	1080	691	289.1

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12DB	GW12DB	GW12DB	GW12DB
Date		04/08/87	04/22/87	06/15/87	06/25/87
Sample ID		GW12870409	GW12870422	GW12870615	GW12870625
Parameter	Unit	Value			
Manganese, Dissolved	mg/l			0.38	
1,1,1-Trichloroethane	ug/l	30			
1,1-Dichloroethane	ug/l	10			
1,1-Dichloroethene	ug/l	29			
1,2-Dichloropropane	ug/l	14			
2-Chloroethyl vinyl ether	ug/l		5440		
Bromoform	ug/l	889			
Tetrachloroethene	ug/l	430			
Trichloroethene	ug/l	10327	379		2820
trans-1,2-Dichloroethene	ug/l	3558	78.4		88.7

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12DB	GW12DB	GW12DB	GW12DB
Date		06/29/87	07/15/87	08/24/87	09/16/87
Sample ID		GW12870629	GW12870715	GW12870824	GW12870916
Parameter	Unit	Value			
Arsenic, Dissolved	mg/l			0.02	
1,1,1-Trichloroethane	ug/l	1.9			7.7
1,1-Dichloroethane	ug/l	4.3			4.4
1,1-Dichloroethene	ug/l	3.6			5.6
Tetrachloroethene	ug/l				9.3
Trichloroethene	ug/l	6436	7178	1110	5932
trans-1,2-Dichloroethene	ug/l	1230	502		812

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12DB	GW12DB	GW12DB	GW12DB
Date		10/19/87	12/22/87	02/18/88	04/26/88
Sample ID		GW12871019	GW12871222	GW12880218	38504268817
Parameter	Unit	Value			
Tetrachloroethene	ug/l				7.5
Trichloroethene	ug/l	5590	6560	6420	4050

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12DB	GW12DB	GW12DB	GW12DB
Date		07/11/88	08/02/88	08/02/88	08/15/88
Sample ID		34388071103	17288080205	17288080206	34388081503
Parameter	Unit	Value			
Arsenic, Dissolved	mg/l		0.027	0.027	0.04
1,1,1-Trichloroethane	ug/l				2.4
1,1-Dichloroethane	ug/l				6.1
1,1-Dichloroethene	ug/l				3.4
1,2-Dichloropropane	ug/l				2.0
Tetrachloroethene	ug/l				7.0
Trichloroethene	ug/l	5370			6572
trans-1,2-Dichloroethene	ug/l				747

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12DB	GW12DB	GW12DB	GW12DB
Date		10/12/88	12/16/88	02/22/89	04/03/89
Sample ID		34388101204	3438812163	31389022203	3138904033
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l	4.4	9.4	2.3	5.6
1,1-Dichloroethane	ug/l	14	5.1	1.0	2.2
1,1-Dichloroethene	ug/l	8.7	3.9	3.3	
1,2-Dichloropropane	ug/l	1.4	2.1		0.79
Tetrachloroethene	ug/l	18	10	7.4	8.2
Trichloroethene	ug/l	6897	5488	6864	6086
Vinyl chloride	ug/l	0.89			
trans-1,2-Dichloroethene	ug/l	1739	975	824	979

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12DB	GW12DB1	GW12DB1	GW12DB1D
Date		06/06/89	07/16/90	12/20/90	07/16/90
Sample ID		31889060620	19290071602	31390122018	19290071603
Parameter	Unit	Value			
Arsenic, Dissolved	ug/l			12.2	
Arsenic, Total	ug/l		288	37.4	271
Barium, Total	ug/l			1327	
Cadmium, Total	ug/l			11	
Calcium, Dissolved	ug/l			27306	
Calcium, Total	ug/l			53621	
Chromium, Total	ug/l			625	
Iron, Dissolved	ug/l			28	
Iron, Total	ug/l			272640	
Lead, Total	ug/l			87.3	
Nickel, total	ug/l			367	
Potassium, Dissolved	ug/l			2970	
Potassium, Total	ug/l			72920	
Sodium, Dissolved	ug/l			12730	
Sodium, Total	ug/l			22100	
1,1,1-Trichloroethane	ug/l	6.7			
1,1-Dichloroethane	ug/l	8.7	8.2	6.4	6.8
1,1-Dichloroethene	ug/l	6.0	3.2	2.9	3.2
1,2-Dichloroethene	ug/l			540	
Acetone	ug/l		68		51
Ethylbenzene	ug/l			1.6	
Tetrachloroethene	ug/l	18	5.4	8.0	5.2
Toluene	ug/l		3.8	13	3.7
Trichloroethene	ug/l	4160	1400	5500	1400
Xylenes	ug/l		2.8	7.7	2.6
cis-1,2-Dichloroethene	ug/l		670		660
trans-1,2-Dichloroethene	ug/l	9.1	11		10

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12DBPT	GW12DBPT	GW12DBPT	GW12DBPT
Date		04/02/91	04/02/91	04/02/91	04/02/91
Sample ID		19291040201	19291040202	19291040203	19291040204
Parameter	Unit	Value			
Arsenic, Dissolved	ug/l	9.3		11.9	
Arsenic, Total	ug/l	56.3	38.5	39.2	31.5
Barium, Total	ug/l	59	29	32	18
Cadmium, Total	ug/l	5.0			
Chromium, Total	ug/l	26.0		11.0	
Lead, Dissolved	ug/l			2.9	
Lead, Total	ug/l	15.3	10.1	8.8	6.4
1,1-Dichloroethane	ug/l		5.6		
1,1-Dichloroethene	ug/l		4.7		
1,2-Dichloroethene	ug/l	350	470	470	550
Tetrachloroethene	ug/l		4.7		
Trichloroethene	ug/l	3500	4500	5500	5000

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12DBPT	GW12DBPT	GW12DBPT	GW12T
Date		04/02/91	04/02/91	04/02/91	09/24/86
Sample ID		19291040205	19291040206	19291040207	GW12T860924
Parameter	Unit	Value			
Arsenic, Dissolved	mg/l			0.0189	
Arsenic, Dissolved	ug/l	14.8			
Arsenic, Total	mg/l			0.0247	
Arsenic, Total	ug/l	25.6	23.7		
Barium, Total	mg/l			0.02	
Calcium, Dissolved	mg/l			26.0	
Calcium, Total	mg/l			26.1	
Iron, Dissolved	mg/l			0.06	
Iron, Total	mg/l			3.01	
Lead, Total	ug/l	3.5	2.3		
Manganese, Dissolved	mg/l			0.28	
Manganese, Total	mg/l			0.53	
Potassium, Dissolved	mg/l			3.38	
Potassium, Total	mg/l			3.59	
Sodium, Dissolved	mg/l			10.8	
Sodium, Total	mg/l			10.9	
1,1-Dichloroethane	ug/l				1.6
1,1-Dichloroethene	ug/l				0.23
1,2-Dichloroethene	ug/l	510	540	470	
Trichloroethene	ug/l	5200	4600	4500	2.3
trans-1,2-Dichloroethene	ug/l				67

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW12T	GW12T	GW12T	GW12T
Date		06/29/87	08/24/87	02/11/88	07/27/88
Sample ID		GW12T870629	GW12T870824	GW12T4880211	LM8807
Parameter	Unit	Value			
Arsenic, Dissolved	mg/l		0.02		
Trichloroethene	ug/l	1.8		3970	
trans-1,2-Dichloroethene	ug/l				8.0

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
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Well ID		GW12T	GW12T	GW12T	GW130B
Date		08/15/88	10/12/88	06/06/89	06/21/90
Sample ID		34388081504	34388101206	31889060621	31390062115
Parameter	Unit	Value			
Arsenic, Dissolved	mg/l	0.04			
Arsenic, Total	ug/l				2.8
1,1-Dichloroethane	ug/l			0.78	
Trichloroethene	ug/l			9.9	
trans-1,2-Dichloroethene	ug/l		0.53		

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW130B	GW130B	GW130B	GW130B
Date		09/12/90	12/13/90	03/06/91	06/06/91
Sample ID		31390091206	31390121326	31391030617	31391060608
Parameter	Unit	Value			
Arsenic, Total	ug/l	1.7		1.2	3.4
Lead, Total	ug/l		19.8		

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
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ell ID		GW130B	GW14	GW16DB	GW16DB
Date		06/04/92	06/07/91	06/06/89	09/11/89
Sample ID		31392060418	31391060722	31889060617	34389091109
Parameter	Unit	Value			
Arsenic, Total	ug/l	2.4	8.7		
Trichloroethene	ug/l		0.6	0.79	0.48

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW16DB	GW16DB	GW16DB	GW17DB
Date		06/21/90	12/11/90	03/06/91	01/11/91
Sample ID		31390062109	31390121107	31391030624	31391011103
Parameter	Unit	Value			
Arsenic, Total	ug/l	5.6			
Benzene	ug/l		2.6	0.5	
Trichloroethene	ug/l				0.6

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 0085

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW17DB	GW17DB	GW17DB	GW17DB
Date		02/05/91	04/04/91	05/15/91	05/15/91
Sample ID		31391020510	31391040409	30991051511	30991051512
Parameter	Unit	Value			
Arsenic, Total	ug/l	2.3			
Trichloroethene	ug/l		2.4	1.4	1.0

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 0659

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW17DB	GW17DB	GW17DB	GW17DBDP
Date		10/01/91	04/06/92	06/04/92	06/04/92
Sample ID		31391100106	31392040610	31392060401	31392060403
Parameter	Unit	Value			
Arsenic, Total	ug/l	1.8	2.0	1.9	1.8

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 5 9 1

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW18DB	GW18DB	GW18DB	GW18DB
Date		06/06/89	06/21/90	09/12/90	12/12/90
Sample ID		31889060618	31390062110	31390091211	31390121223
Parameter	Unit	Value			
Arsenic, Total	ug/l		9.4	3.8	4.4
Trichloroethene	ug/l	1.8			

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 5 9 2

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW18DB	GW18DB	GW18DB	GW18DB
Date		03/06/91	06/06/91	09/03/91	12/04/91
Sample ID		31391030620	31391060603	31391090310	31391120413
Parameter	Unit	Value			
Arsenic, Total	ug/l	5.2	5.4	4.9	5.3

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 593

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW18DB	GW18DB	GW21	GW21
Date		03/09/92	06/04/92	07/02/86	07/29/86
Sample ID		31392030912	31392060407	GW21860702	GW21860729
Parameter	Unit	Value			
Arsenic, Total	ug/l	3.6	4.6		
Chloroform	ug/l			2	
Trichloroethene	ug/l			2	2.0
Trichloroethene	ug/l			3	

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0594

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW21	GW21	GW21	GW21
Date		09/11/86	10/17/86	02/18/88	10/12/88
Sample ID		GW21860911	GW21861017	GW21880218	34388101214
Parameter	Unit	Value			
Trichloroethene	ug/1	7.3	2	12.2	6.2

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 595

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW21	GW21	GW21	GW21
Date		04/03/89	06/06/89	09/11/89	03/05/90
Sample ID		31389040313	31889060605	34389091114	31390030503
Parameter	Unit	Value			
Trichloroethene	ug/l	3.4	2.5	3.3	1.6

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
596

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW21	GW21	GW21	GW21
Date		06/21/90	09/13/90	06/06/91	12/04/91
Sample ID		31390062112	31390091312	31391060605	31391120412
Parameter	Unit	Value			
Arsenic, Total	ug/l	57.3	1.4	20.6	26.0
Trichloroethene	ug/l		3.3	1.5	0.8
cis-1,2-Dichloroethene	ug/l		0.8		

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 597

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ell ID		GW21DB	GW21DB	GW21DB	GW21DB
Date		10/12/90	12/12/90	03/06/91	07/05/91
Sample ID		31390101214	31390121216	31391030616	31391070502
Parameter	Unit	Value			
Arsenic, Total	ug/l	23.6	24.8	22.7	
Lead, Total	ug/l		4.1		
Sodium, Total	ug/l				12800
Trichloroethene	ug/l	0.7	1.5	0.8	1.2

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW21DB	GW21DB	GW21DB	GW21DUP
Date		09/05/91	03/09/92	06/04/92	06/21/90
Sample ID		31391090512	31392030919	31392060415	31390062114
Parameter	Unit	Value			
Arsenic, Total	ug/l	22.1	24.1	22.7	53.0
Trichloroethene	ug/l	1.1	1.1	1.5	
cis-1,2-Dichloroethene	ug/l			0.50	

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ADMINISTRATIVE RECORD

LIN003 599

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ll ID		GW210B	GW210B	GW220B	GW220B
ate		10/12/90	07/05/91	07/02/86	12/22/87
Sample ID		31390101213	31391070501	GW22860702	GW22871222
Parameter	Unit				
		Value			
Arsenic, Total	ug/l	2.0	4.5		
Iron, Total	ug/l		2060		
Sodium, Total	ug/l		12200		
Chloroform	ug/l			4	
Trichloroethene	ug/l	3.6	1.5		27.7
cis-1,2-Dichloroethene	ug/l	0.7			

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 600

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW220B	GW220B	GW220B	GW220B
Date		06/21/90	09/12/90	03/06/91	06/06/91
Sample ID		31390062116	31390091207	31391030618	31391060610
Parameter	Unit	Value			
Arsenic, Total	ug/l	10.8	2.0	1.7	2.1

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0001

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW220B	GW220B	GW23DB	GW23DB
Date		03/10/92	06/04/92	07/02/86	08/15/88
Sample ID		31392031027	31392060417	GW23860702	34388081510
Parameter	Unit	Value			
Arsenic, Total	ug/l	1.6	2.1		
1,1,1-Trichloroethane	ug/l			1	
Chloroform	ug/l			7	
Trichloroethene	ug/l				0.41

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ADMINISTRATIVE RECORD
LIN003
209

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW23DB	GW23DB	GW23DB	GW23DB
Date		10/12/88	09/11/89	12/05/89	08/22/90
Sample ID		34388101209	34389091104	38489120507	34390082202
Parameter	Unit	Value			
Trichloroethene	ug/1	0.21	0.42	0.37	0.7

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 E03

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW23DB	GW23DB	GW23DB	GW24DB
Date		10/12/90	06/06/91	02/10/92	07/02/86
Sample ID		31390101205	31391060611	31392021012	GW24860702
Parameter	Unit	Value			
Arsenic, Total	ug/l			4.5	
Chloroform	ug/l				7
Trichloroethene	ug/l	0.45	0.7		

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ADMINISTRATIVE RECORD

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW24DB	GW250B	GW250B	GW250B
Date		12/12/90	07/02/86	03/16/90	12/12/90
Sample ID		31390121221	GW25860702	19290031601	31390121222
Parameter	Unit	Value			
Lead, Total	ug/l	3.4			
Carbon disulfide	ug/l		3		
Trichloroethene	ug/l			3.1	15

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ell ID		GW26	GW26	GW26	GW26
Date		12/16/88	03/05/90	06/21/90	09/12/90
Sample ID		34388121612	31390030504	31390062111	31390091203
Parameter	Unit				
		Value			
Arsenic, Total	ug/l			21.9	16.3
Trichloroethene	ug/l	0.40	0.36		0.5

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 606

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW26	GW26	GW26	GW26
Date		12/12/90	03/05/91	06/07/91	09/03/91
Sample ID		31390121217	31391030509	31391060721	31391090307
Parameter	Unit	Value			
Arsenic, Total	ug/l	10.2	14.7	13.5	11.6

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0097

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

.ll ID		GW26	GW26	GW26	GW27OB
Date		12/04/91	03/09/92	06/04/92	06/21/90
Sample ID		31391120411	31392030917	31392060413	31390062113
Parameter	Unit	Value			
Arsenic, Total	ug/l	12.0	11.3	12.4	4.0

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ADMINISTRATIVE RECORD

LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW28	GW28	GW28	GW28
Date		07/29/86	02/22/88	03/25/88	04/26/88
Sample ID		GW28860729	GW28880222	17203258801	38504268801
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l	1.0			
1,1,2,2-Tetrachloroethane	ug/l			2.1	
Chloroform	ug/l			1.2	
Tetrachloroethene	ug/l			7.8	
Trichloroethene	ug/l		106	56.6	49.4
Trichloroethene	ug/l			5.7	
cis-1,2-Dichloroethene	ug/l			1.9	

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0009

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW28	GW28	GW28	GW28
Date		07/11/88	08/15/88	10/12/88	12/16/88
Sample ID		34388071121	34388081522	34388101220	34388121617
Parameter	Unit	Value			
Chloroform	ug/l			0.82	0.69
Trichloroethene	ug/l	11.2	4.7	5.0	4.1
trans-1,2-Dichloroethene	ug/l			1.1	1.5

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW28	GW28	GW28	GW28
Date		02/22/89	04/03/89	06/06/89	09/11/89
Sample ID		31389022205	3138904035	31889060615	34389091116
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l	2.0			
Chloroform	ug/l	0.98	0.48	1.3	
Trichloroethene	ug/l	3.8	3.3	5.8	2.4
trans-1,2-Dichloroethene	ug/l	2.0	1.6		

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LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ell ID		GW29	GW29	GW29	GW29
Date		08/24/89	08/22/90	10/12/90	08/22/91
Sample ID		30489082406	34390082201	31390101207	31391082207
Parameter	Unit	Value			
Arsenic, Total	ug/l		6.9	5.8	6.1
Tetrachloroethene	ug/l	1.7	0.9		

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW29	GW30	GW30	GW34DB
Date		04/27/92	09/11/86	04/22/87	06/21/90
Sample ID		35192042730	GW30860911	GW30870422	31390062120
Parameter	Unit	Value			
Arsenic, Total	ug/l	10.8			50.4
Copper, Total	ug/l	49.0			
Lead, Total	ug/l	1.0			
Magnesium, Total	ug/l	1660			
Manganese, Total	ug/l	36			
Zinc, Total	ug/l	100			
2-Chloroethyl vinyl ether	ug/l			5.4	
Trichloroethene	ug/l		1220	365	
trans-1,2-Dichloroethene	ug/l		28.7		

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

..l ID		GW34DB	GW34DB	GW34DB	GW34DB
Date		09/12/90	12/13/90	03/06/91	06/06/91
Sample ID		31390091210	31390121325	31391030622	31391060604
Parameter	Unit				
==========	========	==========Value==========			
Arsenic, Total	ug/l	18.2	10.8	11.8	10.4

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 6 1 4

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW34DB	GW34DB	GW34DB	GW34DB
Date		09/03/91	12/05/91	03/09/92	04/27/92
Sample ID		31391090309	31391120516	31392030913	35192042731
Parameter	Unit	Value			
Arsenic, Total	ug/l	12.9	8.0	8.2	16.9
Magnesium, Total	ug/l				1530
Manganese, Total	ug/l				16.0
Silver, total	ug/l				17.0
Dichloromethane	ug/l			1.0	

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 615

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW34DB	GW35	GW36DB	GW36DB
Date		06/04/92	07/11/88	06/06/89	12/21/89
Sample ID		31392060408	34388071113	31889060601	19289122103
Parameter	Unit	Value			
Arsenic, Dissolved	mg/l			0.006	
Arsenic, Total	ug/l	14.7			
Iron, Dissolved	mg/l			1.8	0.1
Manganese, Dissolved	mg/l			.10	0.06
Tetrachloroethene	ug/l		7.5		
Trichloroethene	ug/l				2.1

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW36DB	GW36DB	GW36DB	GW36DB
Date		01/08/90	01/16/90	02/15/90	06/21/90
Sample ID		19290010804	19290011601	30490021505	31390062108
Parameter	Unit	Value			
Arsenic, Total	ug/l				5.0
Manganese, Dissolved	mg/l	0.05	0.06	0.04	
1,1,1-Trichloroethane	ug/l			0.33	
Trichloroethene	ug/l	5.6			
cis-1,2-Dichloroethene	ug/l				7.5

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 6 1 7

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ell ID		GW36DB	GW36DB	GW36DB	GW36DB
Date		08/22/90	09/13/90	12/12/90	03/05/91
Sample ID		34390082204	31390091318	31390121214	31391030504
Parameter	Unit	Value			
Arsenic, Total	ug/l	3.5	5.6	7.2	15.9
1,3-Dichlorobenzene	ug/l	0.5			
1,4-Dichlorobenzene	ug/l		0.9		

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 00811

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW36DB	GW36DB	GW36DB	GW36DB
Date		09/05/91	10/01/91	12/04/91	03/10/92
Sample ID		31391090521	31391100104	31391120406	31392031029
Parameter	Unit	Value			
Arsenic, Total	ug/l	19.7			
1,4-Dichlorobenzene	ug/l	0.7	0.6	1.3	
Dichloromethane	ug/l				24
Isopropylacetone	ug/l				12
Trichloroethene	ug/l	24		18	
Trichlorofluoromethane	ug/l				2.4
cis-1,2-Dichloroethene	ug/l	3.1		1.7	

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW36DB	GW36T	GW36T	GW36T
Date		06/04/92	12/21/89	01/08/90	02/15/90
Sample ID		31392060409	19289122104	19290010803	30490021506
Parameter	Unit	Value			
Iron, Dissolved	mg/l		0.3		
Manganese, Dissolved	mg/l		0.09	0.02	0.06
Trichloroethene	ug/l	1.1			

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW36T	GW36T	GW36T	GW36T
Date		06/21/90	08/22/90	09/13/90	12/12/90
Sample ID		31390062107	34390082205	31390091319	31390121215
Parameter	Unit	Value			
Arsenic, Total	ug/l	46.2	5.6	3.7	2.7
Sodium, Total	ug/l			96440	
1,4-Dichlorobenzene	ug/l			0.6	
Trichloroethene	ug/l			0.8	

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW40B	GW40DB	GW40DB	GW40DB
Date		03/09/92	08/22/90	10/12/90	10/23/90
Sample ID		31392030910	34390082211	31390101210	31390102301
Parameter	**Unit**		**Value**		
Iron, Total	ug/l				0.24
Manganese, Total	mg/l				0.05
Isopropylacetone	ug/l				5.1
Trichloroethene	ug/l		5.0	2.9	2.8
Trichlorofluoromethane	ug/l	1.8			
cis-1,2-Dichloroethene	ug/l		1.8	1.3	1.0

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW40DB	GW40DB	GW40DB	GW40DB
Date		12/11/90	01/03/91	02/05/91	03/05/91
Sample ID		31390121105	31391010302	31391020501	31391030511
Parameter	Unit	Value			
1,2-Dichloroethene	ug/l	2.8		20	54
Toluene	ug/l				5.4
Trichloroethene	ug/l	11	9.7	140	96

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW40DB	GW40DB	GW40DB	GW40DB
Date		04/04/91	05/09/91	06/06/91	07/05/91
Sample ID		31391040410	19291050901	31391060602	31391070503
Parameter	Unit	Value			
1,2-Dichloroethene	ug/l	44	32	13	
Trichloroethene	ug/l	220	170	67	52
cis-1,2-Dichloroethene	ug/l				6.3

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 0274

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW40DB	GW40DB	GW40DB	GW40DB
Date		08/22/91	09/03/91	10/01/91	11/04/91
Sample ID		31391082201	31391090301	31391100110	31391110401
Parameter	Unit	Value			
Trichloroethene	ug/l	34	26	27	35
cis-1,2-Dichloroethene	ug/l	4.9	3.8	6.3	5.7

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LIN003 B 2 5

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW40DB	GW40DB	GW40DB	GW40DB
Date		12/04/91	01/09/92	02/14/92	03/09/92
Sample ID		31391120407	31392010937	31392021422	31392030909
Parameter	Unit	Value			
Trichloroethene	ug/l	33	57	20	11
cis-1,2-Dichloroethene	ug/l	5.5	6.8	3.8	3.4

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ADMINISTRATIVE RECORD

LIN003 0229

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW40DB	GW40DBDP	GW40DBDP	GW40T
Date		06/04/92	08/22/90	10/12/90	10/01/91
Sample ID		31392060405	34390082212	31390101212	31391100111
Parameter	Unit	Value			
Arsenic, Total	ug/l				1.7
Trichloroethene	ug/l	2.2	5.0	2.7	
cis-1,2-Dichloroethene	ug/l		1.9	1.3	

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ADMINISTRATIVE RECORD
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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW40T	GW41	GW41	GW41
Date		03/09/92	02/15/90	03/05/90	06/21/90
Sample ID		31392030911	30490021515	31390030501	31390062106
Parameter	Unit	Value			
1,1,1-Trichloroethane	ug/l		1.0	1.1	
Chloroform	ug/l		0.41		
Isopropylacetone	ug/l	7.1			
Tetrachloroethene	ug/l		1.3	0.95	
Trichloroethene	ug/l		130	118	161
Trichlorofluoromethane	ug/l	1.7			
cis-1,2-Dichloroethene	ug/l				5.0

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW41	GW41	GW41	GW41
Date		12/11/90	03/05/91	04/04/91	06/07/91
Sample ID		31390121109	31391030512	31391040406	31391060717
Parameter	**Unit**		**Value**		
1,2-Dichloroethene	ug/l	2.3		3.0	
Trichloroethene	ug/l	49	52	62	64
cis-1,2-Dichloroethene	ug/l				3.3

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ll ID		GW41	GW41	GW41	GW41
ate		10/01/91	10/14/91	12/04/91	03/10/92
Sample ID		31391100109	40191101402	31391120414	31392031030
Parameter	Unit	Value			
Trichloroethene	ug/l	58	52	33	51
cis-1,2-Dichloroethene	ug/l	2.7			3.1

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW41DUP	GW42	GW42DUP	GW43
Date		03/05/90	06/05/92	06/05/92	06/07/91
Sample ID		31390030516	31392060523	31392060524	31391060727
Parameter	Unit	Value			
Arsenic, Total	ug/l		2.9	3.7	2.8
1,1,1-Trichloroethane	ug/l	1.3			
Tetrachloroethene	ug/l	0.61			
Trichloroethene	ug/l	92			

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW43	GW43	GW43	GW43
Date		09/05/91	12/06/91	03/10/92	06/04/92
Sample ID		31391090518	31391120629	31392031023	31392060402
Parameter	Unit	Value			
Arsenic, Total	ug/l	2.4	2.7	1.5	1.4

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW44	GW44	GW45DB	GW45DB
Date		06/07/91	09/05/91	08/22/91	02/12/92
Sample ID		31391060723	31391090520	31391082209	31392021215
Parameter	Unit	Value			
Arsenic, Total	ug/l	10.4	11.6	5.9	8.4

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW47DB	GW47DB	GW47T	GW48DB
Date		08/23/91	09/24/91	02/12/92	02/12/92
Sample ID		31391082311	31391092401	31392021217	31392021219
Parameter	Unit	Value			
Arsenic, Total	ug/l			2.9	
1,1,1-Trichloroethane	ug/l				2.9
Benzene	ug/l	12	2.4		
Tetrachloroethene	ug/l				1.4

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW48DB	GW49DB	GW50DB	GW50DB
Date		03/09/92	02/14/92	08/23/91	02/14/92
Sample ID		31392030914	31392021424	31391082316	31392021425
Parameter	Unit	Value			
Arsenic, Total	ug/l		2.5	3.1	2.4
1,1,1-Trichloroethane	ug/l	2.9			
Tetrachloroethene	ug/l	1.6			

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW51DB	GW52	GW52	GW54
Date		02/12/92	08/23/91	02/14/92	08/26/91
Sample ID		31392021221	31391082318	31392021429	31391082621
Parameter	Unit	Value			
Arsenic, Total	ug/l	1.7	2.3	2.3	13.0

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW57	GW57	GW57	GW57
Date		08/26/91	09/24/91	12/05/91	02/12/92
Sample ID		31391082622	31391092402	31391120517	31392021214
Parameter	Unit				
==========	========	==========Value==========			
Trichloroethene	ug/l	2.6	1.5	1.4	3.4

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW57	GW57	GW57DUP	GW59
Date		04/08/92	06/05/92	04/08/92	08/26/91
Sample ID		31392040816	31392060526	31392040818	31391082623
Parameter	Unit				
		Value			
Arsenic, Total	ug/l				16.4
1,4-Dichlorobenzene	ug/l		1.9		
Trichloroethene	ug/l	2.7	2.6	2.1	
cis-1,2-Dichloroethene	ug/l		0.6		

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 638

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW59	GW60DB	GW60DB	GW61
Date		02/17/92	08/26/91	02/14/92	08/26/91
Sample ID		31392021733	31391082624	31392021432	31391082625
Parameter	Unit	Value			
Arsenic, Total	ug/l	13.3	3.4	5.1	33.9

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ADMINISTRATIVE RECORD
LIN003 0339

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

ell ID		GW61	GW62	GW62	GW63
Date		02/17/92	08/26/91	02/17/92	07/05/91
Sample ID		31392021735	31391082626	31392021736	31391070505
Parameter	Unit				
		Value			
Arsenic, Total	ug/l	26.6	5.3	2.8	1.8

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 640

SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID		GW64DB	GW65DB	GW66DB	GW66DB
Date		04/08/92	08/23/91	08/23/91	02/14/92
Sample ID		31392040812	31391082314	31391082315	31392021427
Parameter	Unit	Value			
Arsenic, Total	ug/l	4.9	6.6	1.8	11.2

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ADMINISTRATIVE RECORD

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SUMMARY OF POSTIVE DETECTS FOR GW WELLS
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
JULY 1992

Well ID	GW67DB
Date	09/24/91
Sample ID	31391092403

Parameter	Unit	Value
Benzene	ug/l	250
Ethylbenzene	ug/l	11
Toluene	ug/l	5.2

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APPENDIX Q
ABN DATA VALIDATION RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313900726-23	313900726-28	313900726-29	343910627-26	343910627-25
ENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
E NAME - LINEMASTER	DILUTION	1.25	2.50	2.50	2.50	1.25
PREPARATION DATE - 21 MAY 92	BLANK ID	WB3852	WB3852	WB3852	WB0703	WB0703
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
phenol		13 U	25 U	25 U	25 U	13 U
bis(2-chloroethyl)ether		13 U	25 U	25 U	25 U	13 U
2-chlorophenol		13 U	25 U	25 U	25 U	13 U
1,3-dichlorobenzene		13 U	25 U	25 U	25 U	13 U
1,4-dichlorobenzene		13 U	25 U	25 U	25 U	13 U
benzyl alcohol		13 U	25 U	25 U	25 U	13 U
1,2-dichlorobenzene		13 U	25 U	25 U	25 U	13 U
2-methylphenol		13 U	25 U	25 U	25 U	13 U
bis(2-chloroisopropyl)ether		13 U	25 U	25 U	25 U	13 U
4-methylphenol		13 U	25 U	25 U	25 U	13 U
N-nitrosodipropylamine		13 U	25 U	25 U	25 U	13 U
hexachloroethane		13 U	25 U	25 U	25 U	13 U
nitrobenzene		13 U	25 U	25 U	25 U	13 U
isophorone		13 U	25 U	25 U	25 U	13 U
2-nitrophenol		13 U	25 U	25 U	25 U	13 U
2,4-dimethylphenol		13 U	25 U	25 U	25 U	13 U
zoic acid		63 U	125 U	125 U	125 U	63 U
(2-chloroethoxy)methane		13 U	25 U	25 U	25 U	13 U
2,4-dichlorophenol		13 U	25 U	25 U	25 U	13 U
1,2,4-trichlorobenzene		13 U	25 U	25 U	25 U	13 U
naphthalene		13 U	25 U	25 U	25 U	13 U
4-chloroaniline		13 U	25 U	25 U	25 U	13 U
hexacholorobutadiene		13 U	25 U	25 U	25 U	13 U
4-chloro-3-methylphenol		13 U	25 U	25 U	25 U	13 U
2-methylnaphthalene		13 U	25 U	25 U	25 U	13 U
hexachlorocyclopentadiene		13 UJ	25 UJ	25 UJ	25 U	13 U
2,4,6-trichlorophenol		13 U	25 U	25 U	25 U	13 U
2,4,5-trichlorophenol		63 U	125 U	125 U	125 U	63 U
2-chloronaphthalene		13 U	25 U	25 U	25 U	13 U
2-nitroaniline		63 U	125 U	125 U	125 U	63 U
dimethyl phthalate		13 U	25 U	25 U	25 U	13 U
acenaphthylene		13 U	25 U	25 U	25 U	13 U
3-nitroaniline		63 U	125 U	125 U	125 U	63 U
acenaphthene		13 U	25 U	25 U	25 U	13 U
2,4-dinitrophenol		63 U	125 U	125 U	125 U	63 U
4-nitrophenol		63 U	125 U	125 U	125 U	63 U
enzofuran		13 U	25 U	25 U	25 U	13 U
-dinitrotoluene		13 U	25 U	25 U	25 U	13 U
2,6-dinitrotoluene		13 U	25 U	25 U	25 U	13 U

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 644

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313900726-23	313900726-28	313900726-29	343910627-26	343910627-25
CLIENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
SITE NAME - LINEMASTER	DILUTION	1.25	2.50	2.50	2.50	1.25
PREPARATION DATE - 21 MAY 92	BLANK ID	WB3852	WB3852	WB3852	WB0703	WB0703
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
diethylphthalate		13 U	25 U	25 U	25 U	13 U
4-chlorophenyl phenyl ether		13 U	25 U	25 U	25 U	13 U
fluorene		13 U	25 U	25 U	25 U	13 U
4-nitroaniline		63 U	125 U	125 U	125 U	63 U
4,6-dinitro-2-methylphenol		63 U	125 U	125 U	125 U	63 U
N-nitrosodiphenylamine		13 U	25 U	25 U	25 U	13 U
4-bromophenyl phenyl ether		13 U	25 U	25 U	25 U	13 U
hexachlorobenzene		13 U	25 U	25 U	25 U	13 U
pentachlorophenol		63 U	125 U	125 U	125 U	63 U
phenanthrene		13 U	25 U	25 U	25 U	13 U
anthracene		13 U	25 U	25 U	25 U	13 U
di-n-butyl phthalate		13 U	25 U	25 U	25 U	13 U
fluoranthene		13 U	25 U	25 U	25 U	13 U
pyrene		13 U	25 U	25 U	25 U	13 U
butyl benzyl phthalate		13 U	25 U	25 U	25 U	13 U
3,3'-dichlorobenzidine		25 U	50 U	50 U	50 U	25 U
benzo(a)anthracene		13 U	25 U	25 U	25 U	13 U
bis(2-ethylhexyl)phthalate		14 U	73 J	22 J	29 U	55 U
chrysene		13 U	25 U	25 U	25 U	13 U
di-n-octyl phthalate		13 U	25 U	25 U	25 U	13 U
benzo(b)fluoranthene		13 U	25 U	25 U	25 U	13 U
benzo(k)fluoranthene		13 U	25 U	25 U	25 U	13 U
benzo(a)pyrene		13 U	25 U	25 U	25 U	13 U
indeno(1,2,3-cd)pyrene		13 UJ	25 UJ	25 UJ	25 U	13 U
dibenzo(a,h)anthracene		13 UJ	25 UJ	25 UJ	25 U	13 U
benzo(g,h,i,)perylene		13 UJ	25 UJ	25 UJ	25 U	13 U

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ADMINISTRATIVE RECORD
LIN003 0455

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	343910627-28	313910612-09	313910612-10	313910612-14	343910708-48
ENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
E NAME - LINEMASTER	DILUTION	4.00	1.25	2.50	2.50	3.30
PREPARATION DATE - 21 MAY 92	BLANK ID	WB0703	WB0619	WB0619	WB0619	WB0708
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
phenol		40 U	13 U	25 U	25 U	33 U
bis(2-chloroethyl)ether		40 U	13 U	25 U	25 U	33 U
2-chlorophenol		40 U	13 U	25 U	25 U	33 U
1,3-dichlorobenzene		40 U	13 U	25 U	25 U	33 U
1,4-dichlorobenzene		40 U	13 U	25 U	25 U	33 U
benzyl alcohol		40 U	13 U	25 U	25 U	33 U
1,2-dichlorobenzene		40 U	13 U	25 U	25 U	33 U
2-methylphenol		40 U	13 U	25 U	25 U	33 U
bis(2-chloroisopropyl)ether		40 U	13 U	25 U	25 U	33 U
4-methylphenol		40 U	13 U	25 U	25 U	33 U
N-nitrosodipropylamine		40 U	13 U	25 U	25 U	33 U
hexachloroethane		40 U	13 U	25 U	25 U	33 U
nitrobenzene		40 U	13 U	25 U	25 U	33 U
isophorone		40 U	13 U	25 U	25 U	33 U
2-nitrophenol		40 U	13 U	25 U	25 U	33 U
-dimethylphenol		40 U	13 U	25 U	25 U	33 U
zoic acid		200 U	63 U	125 U	125 U	165 U
bis(2-chloroethoxy)methane		40 U	13 U	25 U	25 U	33 U
2,4-dichlorophenol		40 U	13 U	25 U	25 U	33 U
1,2,4-trichlorobenzene		40 U	13 U	25 U	25 U	33 U
naphthalene		40 U	13 U	25 U	25 U	33 U
4-chloroaniline		40 U	13 U	25 U	25 U	33 U
hexacholorobutadiene		40 U	13 U	25 U	25 U	33 U
4-chloro-3-methylphenol		40 U	13 U	25 U	25 U	33 U
2-methylnaphthalene		40 U	13 U	25 U	25 U	33 U
hexachlorocyclopentadiene		40 U	13 U	25 U	25 U	33 U
2,4,6-trichlorophenol		40 U	13 U	25 U	25 U	33 U
2,4,5-trichlorophenol		200 U	63 U	125 U	125 U	165 U
2-chloronaphthalene		40 U	13 U	25 U	25 U	33 U
2-nitroaniline		200 U	63 U	125 U	125 U	165 U
dimethyl phthalate		40 U	13 U	25 U	25 U	33 U
acenaphthylene		40 U	13 U	25 U	25 U	33 U
3-nitroaniline		200 U	63 U	125 U	125 U	165 U
acenaphthene		40 U	13 U	25 U	25 U	33 U
2,4-dinitrophenol		200 U	63 U	125 U	125 U	165 U
4-nitrophenol		200 U	63 U	125 U	125 U	165 U
enzofuran		40 U	13 U	25 U	25 U	33 U
dinitrotoluene		40 U	13 U	25 U	25 U	33 U
2,6-dinitrotoluene		40 U	13 U	25 U	25 U	33 U

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ADMINISTRATIVE RECORD
LIN003 649

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	343910627-28	313910612-09	313910612-10	313910612-14	343910708-48
CLIENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
SITE NAME - LINEMASTER	DILUTION	4.00	1.25	2.50	2.50	3.30
PREPARATION DATE - 21 MAY 92	BLANK ID	WB0703	WB0619	WB0619	WB0619	WB0708
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
diethylphthalate		40 U	13 U	25 U	25 U	33 U
4-chlorophenyl phenyl ether		40 U	13 U	25 U	25 U	33 U
fluorene		40 U	13 U	25 U	25 U	33 U
4-nitroaniline		200 U	63 U	125 U	125 U	165 U
4,6-dinitro-2-methylphenol		200 U	63 U	125 U	125 U	165 U
N-nitrosodiphenylamine		40 U	13 U	25 U	25 U	33 U
4-bromophenyl phenyl ether		40 U	13 U	25 U	25 U	33 U
hexachlorobenzene		40 U	13 U	25 U	25 U	33 U
pentachlorophenol		200 U	63 U	125 U	125 U	165 U
phenanthrene		40 U	13 U	25 U	25 U	33 U
anthracene		40 U	13 U	25 U	25 U	33 U
di-n-butyl phthalate		40 U	13 U	25 U	2 J	33 U
fluoranthene		40 U	13 U	25 U	25 U	33 U
pyrene		40 U	13 U	25 U	25 U	33 U
butyl benzyl phthalate		40 U	13 U	25 U	25 U	33 U
3,3'-dichlorobenzidine		80 U	25 U	50 U	50 U	66 U
benzo(a)anthracene		40 U	13 U	25 U	25 U	33 U
bis(2-ethylhexyl)phthalate		60 U	54 U	83 U	41	37
chrysene		40 U	13 U	25 U	25 U	33 U
di-n-octyl phthalate		40 U	13 U	25 U	25 U	33 U
benzo(b)fluoranthene		40 U	13 U	25 U	25 U	33 U
benzo(k)fluoranthene		40 U	13 U	25 U	25 U	33 U
benzo(a)pyrene		40 U	13 U	25 U	25 U	33 U
indeno(1,2,3-cd)pyrene		40 U	13 U	25 U	25 U	33 U
dibenzo(a,h)anthracene		40 U	13 U	25 U	25 U	33 U
benzo(g,h,i,)perylene		40 U	13 U	25 U	25 U	33 U

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ADMINISTRATIVE RECORD
LIN003 679

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313900724-16	313900724-13	313900724-10	313910613-17	313910613-18
ENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
E NAME - LINEMASTER	DILUTION	1.25	1.25	1.25	1.25	1.25
PREPARATION DATE - 21 MAY 92	BLANK ID	WB3852	WB3852	WB3852	WB0620	WB0620
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
phenol		13 U	13 U	13 U	13 U	13 U
bis(2-chloroethyl)ether		13 U	13 U	13 U	13 U	13 U
2-chlorophenol		13 U	13 U	13 U	13 U	13 U
1,3-dichlorobenzene		13 U	13 U	13 U	13 U	13 U
1,4-dichlorobenzene		13 U	13 U	13 U	13 U	13 U
benzyl alcohol		13 U	13 U	13 U	13 U	13 U
1,2-dichlorobenzene		13 U	13 U	13 U	13 U	13 U
2-methylphenol		13 U	13 U	13 U	13 U	185
bis(2-chloroisopropyl)ether		13 U	13 U	13 U	13 U	13 U
4-methylphenol		13 U	13 U	13 U	13 U	129
N-nitrosodipropylamine		13 U	13 U	13 U	13 U	13 U
hexachloroethane		13 U	13 U	13 U	13 U	13 U
nitrobenzene		13 U	13 U	13 U	13 U	13 U
isophorone		13 U	13 U	13 U	13 U	13 U
2-nitrophenol		13 U	13 U	13 U	13 U	13 U
-dimethylphenol		13 U	13 U	13 U	13 U	13 U
izoic acid		63 U	63 U	63 U	63 U	90 J
s(2-chloroethoxy)methane		13 U	13 U	13 U	13 U	13 U
2,4-dichlorophenol		13 U	13 U	13 U	13 U	13 U
1,2,4-trichlorobenzene		13 U	13 U	13 U	13 U	13 U
naphthalene		13 U	13 U	13 U	13 U	13 U
4-chloroaniline		13 U	13 U	13 U	13 U	13 U
hexacholorobutadiene		13 U	13 U	13 U	13 U	13 U
4-chloro-3-methylphenol		13 U	13 U	13 U	13 U	13 U
2-methylnaphthalene		13 U	13 U	13 U	13 U	13 U
hexachlorocyclopentadiene		13 U	13 U	13 U	13 U	13 U
2,4,6-trichlorophenol		13 U	13 U	13 U	13 U	13 U
2,4,5-trichlorophenol		63 U	63 U	63 U	63 U	63 U
2-chloronaphthalene		13 U	13 U	13 U	13 U	13 U
2-nitroaniline		63 U	63 U	63 U	63 U	63 U
dimethyl phthalate		13 U	13 U	13 U	13 U	13 U
acenaphthylene		13 U	13 U	13 U	13 U	13 U
3-nitroaniline		63 U	63 U	63 U	63 U	63 U
acenaphthene		13 U	13 U	13 U	13 U	13 U
2,4-dinitrophenol		63 U	63 U	63 U	63 U	63 U
4-nitrophenol		63 U	63 U	63 U	63 U	63 U
nzofuran		13 U	13 U	13 U	13 U	13 U
dinitrotoluene		13 U	13 U	13 U	13 U	13 U
2,6-dinitrotoluene		13 U	13 U	13 U	13 U	13 U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313900724-16	313900724-13	313900724-10	313910613-17	313910613-18
CLIENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
SITE NAME - LINEMASTER	DILUTION	1.25	1.25	1.25	1.25	1.25
PREPARATION DATE - 21 MAY 92	BLANK ID	WB3852	WB3852	WB3852	WB0620	WB0620
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
diethylphthalate		13 U	13 U	13 U	13 U	13 U
4-chlorophenyl phenyl ether		13 U	13 U	13 U	13 U	13 U
fluorene		13 U	13 U	13 U	13 U	13 U
4-nitroaniline		63 U	63 U	63 U	63 U	63 U
4,6-dinitro-2-methylphenol		63 U	63 U	63 U	63 U	63 U
N-nitrosodiphenylamine		13 U	13 U	13 U	13 U	13 U
4-bromophenyl phenyl ether		13 U	13 U	13 U	13 U	13 U
hexachlorobenzene		13 U	13 U	13 U	13 U	13 U
pentachlorophenol		63 U	63 U	63 U	63 U	63 U
phenanthrene		13 U	13 U	13 U	13 U	13 U
anthracene		13 U	13 U	13 U	13 U	13 U
di-n-butyl phthalate		13 U	13 U	13 U	13 U	3 J
fluoranthene		13 U	13 U	13 U	13 U	13 U
pyrene		13 U	13 UJ	13 U	13 U	13 U
butyl benzyl phthalate		13 U	13 UJ	13 U	13 U	13 U
3,3'-dichlorobenzidine		25 U	25 UJ	25 U	25 U	25 U
benzo(a)anthracene		13 U	13 UJ	13 U	13 U	13 U
bis(2-ethylhexyl)phthalate		21	21 U	11 J	139 U	25 U
chrysene		13 U	13 U	13 U	13 U	13 U
di-n-octyl phthalate		13 U	13 U	13 U	13 U	13 U
benzo(b)fluoranthene		13 U	13 U	13 U	13 U	13 U
benzo(k)fluoranthene		13 U	13 U	13 U	13 U	13 U
benzo(a)pyrene		13 U	13 U	13 U	13 U	13 U
indeno(1,2,3-cd)pyrene		13 U	13 U	13 U	13 U	13 U
dibenzo(a,h)anthracene		13 U	13 U	13 U	13 U	13 U
benzo(g,h,i,)perylene		13 U	13 U	13 U	13 U	13 U

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649

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313910613-19	313900725-19	313900725-26	313900725-21	313900725-22
ENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
E NAME - LINEMASTER	DILUTION	3.30	1.25	1.25	2.50	2.50
PREPARATION DATE - 21 MAY 92	BLANK ID	WB0620	WB3879	WB3879	WB3879	WB3879
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
phenol		33 U	13 U	13 U	25 U	25 U
bis(2-chloroethyl)ether		33 U	13 U	13 U	25 U	25 U
2-chlorophenol		33 U	13 U	13 U	25 U	25 U
1,3-dichlorobenzene		33 U	13 U	13 U	25 U	25 U
1,4-dichlorobenzene		33 U	13 U	13 U	25 U	25 U
benzyl alcohol		33 U	13 U	13 U	25 U	25 U
1,2-dichlorobenzene		33 U	13 U	13 U	25 U	25 U
2-methylphenol		33 U	13 U	13 U	25 U	25 U
bis(2-chloroisopropyl)ether		33 U	13 U	13 U	25 U	25 U
4-methylphenol		33 U	13 U	13 U	25 U	25 U
N-nitrosodipropylamine		33 U	13 U	13 U	25 U	25 U
hexachloroethane		33 U	13 U	13 U	25 U	25 U
nitrobenzene		33 U	13 U	13 U	25 U	25 U
isophorone		33 U	13 U	13 U	25 U	25 U
2-nitrophenol		33 U	13 U	13 U	25 U	25 U
2,4-dimethylphenol		33 U	13 U	13 U	25 U	25 U
zoic acid		165 U	63 U	63 U	125 U	125 U
(2-chloroethoxy)methane		33 U	13 U	13 U	25 U	25 U
2,4-dichlorophenol		33 U	13 U	13 U	25 U	25 U
1,2,4-trichlorobenzene		33 U	13 U	13 U	25 U	25 U
naphthalene		33 U	13 U	13 U	25 U	25 U
4-chloroaniline		33 U	13 U	13 U	25 U	25 U
hexacholorobutadiene		33 U	13 U	13 U	25 U	25 U
4-chloro-3-methylphenol		33 U	13 U	13 U	25 U	25 U
2-methylnaphthalene		33 U	13 U	13 U	25 U	25 U
hexachlorocyclopentadiene		33 U	13 U	13 U	25 U	25 U
2,4,6-trichlorophenol		33 U	13 U	13 U	25 U	25 U
2,4,5-trichlorophenol		165 U	63 U	63 U	125 U	125 U
2-chloronaphthalene		33 U	13 U	13 U	25 U	25 U
2-nitroaniline		165 U	63 U	63 U	125 U	125 U
dimethyl phthalate		33 U	13 U	13 U	25 U	25 U
acenaphthylene		33 U	13 U	13 U	25 U	25 U
3-nitroaniline		165 U	63 U	63 U	125 U	125 U
acenaphthene		33 U	13 U	13 U	25 U	25 U
2,4-dinitrophenol		165 U	63 U	63 U	125 U	125 U
4-nitrophenol		165 U	63 U	63 U	125 U	125 U
nzofuran		33 U	13 U	13 U	25 U	25 U
dinitrotoluene		33 U	13 U	13 U	25 U	25 U
2,6-dinitrotoluene		33 U	13 U	13 U	25 U	25 U

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LIN003 0550

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313910613-19	313900725-19	313900725-26	313900725-21	313900725-22
CLIENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
SITE NAME - LINEMASTER	DILUTION	3.30	1.25	1.25	2.50	2.50
PREPARATION DATE - 21 MAY 92	BLANK ID	WB0620	WB3879	WB3879	WB3879	WB3879
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
diethylphthalate		33 U	13 U	13 U	25 U	25 U
4-chlorophenyl phenyl ether		33 U	13 U	13 U	25 U	25 U
fluorene		33 U	13 U	13 U	25 U	25 U
4-nitroaniline		165 U	63 U	63 U	125 U	125 U
4,6-dinitro-2-methylphenol		165 U	63 U	63 U	125 U	125 U
N-nitrosodiphenylamine		33 U	13 U	13 U	25 U	25 U
4-bromophenyl phenyl ether		33 U	13 U	13 U	25 U	25 U
hexachlorobenzene		33 U	13 U	13 U	25 U	25 U
pentachlorophenol		165 U	63 U	63 U	125 U	125 U
phenanthrene		33 U	13 U	13 U	25 U	25 U
anthracene		33 U	13 U	13 U	25 U	25 U
di-n-butyl phthalate		33 U	13 U	13 U	25 U	3 J
fluoranthene		33 U	13 U	13 U	25 U	25 U
pyrene		33 U	13 U	13 U	25 U	25 U
butyl benzyl phthalate		33 U	13 U	13 U	25 U	25 U
3,3'-dichlorobenzidine		66 U	25 U	25 U	50 U	50 U
benzo(a)anthracene		33 U	13 U	13 U	25 U	25 U
bis(2-ethylhexyl)phthalate		85	18 U	65	38 U	92 U
chrysene		33 U	13 U	13 U	25 U	25 U
di-n-octyl phthalate		33 U	13 U	13 U	25 U	25 U
benzo(b)fluoranthene		33 U	13 U	13 U	25 U	25 U
benzo(k)fluoranthene		33 U	13 U	13 U	25 U	25 U
benzo(a)pyrene		33 U	13 U	13 U	25 U	25 U
indeno(1,2,3-cd)pyrene		33 U	13 U	13 U	25 U	25 U
dibenzo(a,h)anthracene		33 U	13 U	13 U	25 U	25 U
benzo(g,h,i,)perylene		33 U	13 U	13 U	25 U	25 U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313900725-25	WB0619	WB0703	WB3852	WB3879
ENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
SITE NAME - LINEMASTER	DILUTION	1.25	1.25	1.25	1.25	1.25
PREPARATION DATE - 21 MAY 92	BLANK ID	WB3879	06-19-91	07-03-91	07-27-90	07-26-90
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
phenol		13 U	13 U	13 U	13 U	13 U
bis(2-chloroethyl)ether		13 U	13 U	13 U	13 U	13 U
2-chlorophenol		13 U	13 U	13 U	13 U	13 U
1,3-dichlorobenzene		13 U	13 U	13 U	13 U	13 U
1,4-dichlorobenzene		13 U	13 U	13 U	13 U	13 U
benzyl alcohol		13 U	13 U	13 U	13 U	13 U
1,2-dichlorobenzene		13 U	13 U	13 U	13 U	13 U
2-methylphenol		13 U	13 U	13 U	13 U	13 U
bis(2-chloroisopropyl)ether		13 U	13 U	13 U	13 U	13 U
4-methylphenol		13 U	13 U	13 U	13 U	13 U
N-nitrosodipropylamine		13 U	13 U	13 U	13 U	13 U
hexachloroethane		13 U	13 U	13 U	13 U	13 U
nitrobenzene		13 U	13 U	13 U	13 U	13 U
isophorone		13 U	13 U	13 U	13 U	13 U
2-nitrophenol		13 U	13 U	13 U	13 U	13 U
dimethylphenol		13 U	13 U	13 U	13 U	13 U
nzoic acid		63 U	63 U	63 U	63 U	63 U
bis(2-chloroethoxy)methane		13 U	13 U	13 U	13 U	13 U
2,4-dichlorophenol		13 U	13 U	13 U	13 U	13 U
1,2,4-trichlorobenzene		13 U	13 U	13 U	13 U	13 U
naphthalene		13 U	13 U	13 U	13 U	13 U
4-chloroaniline		13 U	13 U	13 U	13 U	13 U
hexacholorobutadiene		13 U	13 U	13 U	13 U	13 U
4-chloro-3-methylphenol		13 U	13 U	13 U	13 U	13 U
2-methylnaphthalene		13 U	13 U	13 U	13 U	13 U
hexachlorocyclopentadiene		13 U	13 U	13 U	13 UJ	13 U
2,4,6-trichlorophenol		13 U	13 U	13 U	13 U	13 U
2,4,5-trichlorophenol		63 U	63 U	63 U	63 U	63 U
2-chloronaphthalene		13 U	13 U	13 U	13 U	13 U
2-nitroaniline		63 U	63 U	63 U	63 U	63 U
dimethyl phthalate		13 U	13 U	13 U	13 U	13 U
acenaphthylene		13 U	13 U	13 U	13 U	13 U
3-nitroaniline		63 U	63 U	63 U	63 U	63 U
acenaphthene		13 U	13 U	13 U	13 U	13 U
2,4-dinitrophenol		63 U	63 U	63 U	63 U	63 U
trophenol		63 U	63 U	63 U	63 U	63 U
nzofuran		13 U	13 U	13 U	13 U	13 U
,4-dinitrotoluene		13 U	13 U	13 U	13 U	13 U
2,6-dinitrotoluene		13 U	13 U	13 U	13 U	13 U

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003
0552

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ADMINISTRATIVE RECORD
LIN003
0537

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313900725-25	WB0619	WB0703	WB3852	WB3879
CLIENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
SITE NAME - LINEMASTER	DILUTION	1.25	1.25	1.25	1.25	1.25
PREPARATION DATE - 21 MAY 92	BLANK ID	WB3879	06-19-91	07-03-91	07-27-90	07-26-90
FILE ID - SVW492	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
diethylphthalate		13 U	13 U	13 U	13 U	13 U
4-chlorophenyl phenyl ether		13 U	13 U	13 U	13 U	13 U
fluorene		13 U	13 U	13 U	13 U	13 U
4-nitroaniline		63 U	63 U	63 U	63 U	63 U
4,6-dinitro-2-methylphenol		63 U	63 U	63 U	63 U	63 U
N-nitrosodiphenylamine		13 U	13 U	13 U	13 U	13 U
4-bromophenyl phenyl ether		13 U	13 U	13 U	13 U	13 U
hexachlorobenzene		13 U	13 U	13 U	13 U	13 U
pentachlorophenol		63 U	63 U	63 U	63 U	63 U
phenanthrene		13 U	13 U	13 U	13 U	13 U
anthracene		13 U	13 U	13 U	13 U	13 U
di-n-butyl phthalate		13 U	2 J	13 U	13 U	13 U
fluoranthene		13 U	13 U	13 U	13 U	13 U
pyrene		13 U	13 U	13 U	13 U	13 U
butyl benzyl phthalate		13 U	13 U	13 U	13 U	13 U
3,3'-dichlorobenzidine		25 U	25 U	25 U	25 U	25 U
benzo(a)anthracene		13 U	13 U	13 U	13 U	13 U
bis(2-ethylhexyl)phthalate		41 U	100	17	39	8 J
chrysene		13 U	13 U	13 U	13 U	13 U
di-n-octyl phthalate		13 U	13 U	13 U	13 U	13 U
benzo(b)fluoranthene		13 U	13 U	13 U	13 U	13 U
benzo(k)fluoranthene		13 U	13 U	13 U	13 U	13 U
benzo(a)pyrene		13 U	13 U	13 U	13 U	13 U
indeno(1,2,3-cd)pyrene		13 U	13 U	13 U	13 UJ	13 U
dibenzo(a,h)anthracene		13 U	13 U	13 U	13 UJ	13 U
benzo(g,h,i,)perylene		13 U	13 U	13 U	13 UJ	13 U

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	WB0620	
CLIENT - FUSS & ONEILL	MATRIX	WATER	
E NAME - LINEMASTER	DILUTION	1.25	
PREPARATION DATE - 21 MAY 92	BLANK ID	06-20-91	
FILE ID - SVW492	UNITS	ug/l	
phenol		13	U
bis(2-chloroethyl)ether		13	U
2-chlorophenol		13	U
1,3-dichlorobenzene		13	U
1,4-dichlorobenzene		13	U
benzyl alcohol		13	U
1,2-dichlorobenzene		13	U
2-methylphenol		13	U
bis(2-chloroisopropyl)ether		13	U
4-methylphenol		13	U
N-nitrosodipropylamine		13	U
hexachloroethane		13	U
nitrobenzene		13	U
isophorone		13	U
2-nitrophenol		13	U
2,4-dimethylphenol		13	U
zoic acid		63	U
(2-chloroethoxy)methane		13	U
2,4-dichlorophenol		13	U
1,2,4-trichlorobenzene		13	U
naphthalene		13	U
4-chloroaniline		13	U
hexacholorobutadiene		13	U
4-chloro-3-methylphenol		13	U
2-methylnaphthalene		13	U
hexachlorocyclopentadiene		13	U
2,4,6-trichlorophenol		13	U
2,4,5-trichlorophenol		63	U
2-chloronaphthalene		13	U
2-nitroaniline		63	U
dimethyl phthalate		13	U
acenaphthylene		13	U
3-nitroaniline		63	U
acenaphthene		13	U
2,4-dinitrophenol		63	U
4-nitrophenol		63	U
enzofuran		13	U
dinitrotoluene		13	U
2,6-dinitrotoluene		13	U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	WB0620	
CLIENT - FUSS & ONEILL	MATRIX	WATER	
SITE NAME - LINEMASTER	DILUTION	1.25	
PREPARATION DATE - 21 MAY 92	BLANK ID	06-20-91	
FILE ID - SVW492	UNITS	ug/l	
diethylphthalate		13	U
4-chlorophenyl phenyl ether		13	U
fluorene		13	U
4-nitroaniline		63	U
4,6-dinitro-2-methylphenol		63	U
N-nitrosodiphenylamine		13	U
4-bromophenyl phenyl ether		13	U
hexachlorobenzene		13	U
pentachlorophenol		63	U
phenanthrene		13	U
anthracene		13	U
di-n-butyl phthalate		13	U
fluoranthene		13	U
pyrene		13	U
butyl benzyl phthalate		13	U
3,3'-dichlorobenzidine		25	U
benzo(a)anthracene		13	U
bis(2-ethylhexyl)phthalate		28	
chrysene		13	U
di-n-octyl phthalate		13	U
benzo(b)fluoranthene		13	U
benzo(k)fluoranthene		13	U
benzo(a)pyrene		13	U
indeno(1,2,3-cd)pyrene		13	U
dibenzo(a,h)anthracene		13	U
benzo(g,h,i,)perylene		13	U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - SUMMARY TABLE - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313900726-23	343910627-25	343910627-28	313910612-09	313910612-10
NT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
SITE NAME - LINEMASTER	DILUTION	1.25	1.25	4.00	1.25	2.50
PREPARATION DATE - 21 MAY 92	BLANK ID	WB3852	WB0703	WB0703	WB0619	WB0619
FILE ID - SVW492S	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
2-methylphenol		13 U	13 U	40 U	13 U	25 U
4-methylphenol		13 U	13 U	40 U	13 U	25 U
benzoic acid		63 U	63 U	200 U	63 U	125 U
di-n-butyl phthalate		13 U	13 U	40 U	13 U	25 U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - SUMMARY TABLE - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	313900724-13	313910613-17	313910613-18	313900725-21	313900725-22
CLIENT - FUSS & ONEILL	MATRIX	WATER	WATER	WATER	WATER	WATER
SITE NAME - LINEMASTER	DILUTION	1.25	1.25	1.25	2.50	2.50
PREPARATION DATE - 21 MAY 92	BLANK ID	WB3852	WB0620	WB0620	WB3879	WB3879
FILE ID - SVW492S	UNITS	ug/l	ug/l	ug/l	ug/l	ug/l
2-methylphenol		13 U	13 U	185	25 U	25 U
4-methylphenol		13 U	13 U	129	25 U	25 U
benzoic acid		63 U	63 U	90 J	125 U	125 U
di-n-butyl phthalate		13 U	13 U	3 J	25 U	3 J

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - WATER - SUMMARY TABLE - CASE NO. 492

IVOLATILE ORGANICS DATA	SAMPLE ID	313900725-25
.ENT - FUSS & ONEILL	MATRIX	WATER
SITE NAME - LINEMASTER	DILUTION	1.25
PREPARATION DATE - 21 MAY 92	BLANK ID	07-08-91
FILE ID - SVW492S	UNITS	ug/l
2-methylphenol		13 U
4-methylphenol		13 U
benzoic acid		63 U
di-n-butyl phthalate		13 U

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910613-16	401910614-19	401910618-50	401910617-24	401910617-46
CLIENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID	SOLID
SITE NAME - LINEMASTER	DILUTION	0.98	1.02	1.00	0.97	0.99
PREPARATION DATE - 21 MAY 92	BLANK ID	SB0620	SB0620	SB0620	SB0620	SB0620
FILE ID - SVS492	UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	88	87	88	94	88
phenol		1103 U	1157 U	1125 U	1022 U	1114 U
bis(2-chloroethyl)ether		1103 U	1157 U	1125 U	1022 U	1114 U
2-chlorophenol		1103 U	1157 U	1125 U	1022 U	1114 U
1,3-dichlorobenzene		1103 U	1157 U	1125 U	1022 U	1114 U
1,4-dichlorobenzene		1103 U	1157 U	1125 U	1022 U	1114 U
benzyl alcohol		1103 U	1157 U	1125 U	1022 U	1114 U
1,2-dichlorobenzene		1103 U	1157 U	1125 U	1022 U	1114 U
2-methylphenol		1103 U	1157 U	1125 U	1022 U	1114 U
bis(2-chloroisopropyl)ether		1103 U	1157 U	1125 U	1022 U	1114 U
4-methylphenol		1103 U	1157 U	1125 U	1022 U	1114 U
N-nitrosodipropylamine		1103 U	1157 U	1125 U	1022 U	1114 U
hexachloroethane		1103 U	1157 U	1125 U	1022 U	1114 U
nitrobenzene		1103 U	1157 U	1125 U	1022 U	1114 U
isophorone		1103 U	1157 U	1125 U	1022 U	1114 U
2-nitrophenol		1103 U	1157 U	1125 U	1022 U	1114 U
2,4-dimethylphenol		1103 U	1157 U	1125 U	1022 U	1114 U
benzoic acid		5345 U	5608 U	5455 U	4953 U	5400 U
bis(2-chloroethoxy)methane		1103 U	1157 U	1125 U	1022 U	1114 U
2,4-dichlorophenol		1103 U	1157 U	1125 U	1022 U	1114 U
1,2,4-trichlorobenzene		1103 U	1157 U	1125 U	1022 U	1114 U
naphthalene		1103 U	1157 U	1125 U	1022 U	1114 U
4-chloroaniline		1103 U	1157 U	1125 U	1022 U	1114 U
hexacholorobutadiene		1103 U	1157 U	1125 U	1022 U	1114 U
4-chloro-3-methylphenol		1103 U	1157 U	1125 U	1022 U	1114 U
2-methylnaphthalene		1103 U	1157 U	1125 U	1022 U	1114 U
hexachlorocyclopentadiene		1103 U	1157 U	1125 U	1022 U	1114 U
2,4,6-trichlorophenol		1103 U	1157 U	1125 U	1022 U	1114 U
2,4,5-trichlorophenol		5345 U	5608 U	5455 U	4953 U	5400 U
2-chloronaphthalene		1103 U	1157 U	1125 U	1022 U	1114 U
2-nitroaniline		5345 U	5608 U	5455 U	4953 U	5400 U
dimethyl phthalate		1103 U	1157 U	1125 U	1022 U	1114 U
acenaphthylene		1103 U	1157 U	1125 U	1022 U	1114 U
3-nitroaniline		5345 U	5608 U	5455 U	4953 U	5400 U
acenaphthene		1103 U	1157 U	1125 U	1022 U	1114 U
2,4-dinitrophenol		5345 U	5608 U	5455 U	4953 U	5400 U
4-nitrophenol		5345 U	5608 U	5455 U	4953 U	5400 U
dibenzofuran		1103 U	1157 U	1125 U	1022 U	1114 U
2,4-dinitrotoluene		1103 U	1157 U	1125 U	1022 U	1114 U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910613-16	401910614-19	401910618-50	401910617-24	401910617-46
CLIENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID	SOLID
E NAME - LINEMASTER	DILUTION	0.98	1.02	1.00	0.97	0.99
REPARATION DATE - 21 MAY 92	BLANK ID	SB0620	SB0620	SB0620	SB0620	SB0620
FILE ID - SVS492	UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	88	87	88	94	88
2,6-dinitrotoluene		1103 U	1157 U	1125 U	1022 U	1114 U
diethylphthalate		1103 U	1157 U	1125 U	1022 U	1114 U
4-chlorophenyl phenyl ether		1103 U	1157 U	1125 U	1022 U	1114 U
fluorene		1103 U	1157 U	1125 U	1022 U	153 J
4-nitroaniline		5345 U	5608 U	5455 U	4953 U	5400 U
4,6-dinitro-2-methylphenol		5345 U	5608 U	5455 U	4953 U	5400 U
N-nitrosodiphenylamine		1103 U	1157 U	1125 U	1022 U	1114 U
4-bromophenyl phenyl ether		1103 U	1157 U	1125 U	1022 U	1114 U
hexachlorobenzene		1103 U	1157 U	1125 U	1022 U	1114 U
pentachlorophenol		5345 U	5608 U	5455 U	4953 U	5400 U
phenanthrene		1103 U	1157 U	1125 U	1022 U	904 J
anthracene		1103 U	1157 U	1125 U	1022 U	255 J
di-n-butyl phthalate		1210 U	1157 U	1132 U	2050 U	2950 U
fluoranthene		1103 U	1157 U	1125 U	1022 U	702 J
pyrene		1103 U	1157 U	1125 U	1022 U	521 J
tyl benzyl phthalate		1103 U	1157 U	1125 U	1022 U	1114 U
-dichlorobenzidine		2205 U	2313 U	2228 U	2043 U	2228 U
benzo(a)anthracene		1103 U	1157 U	1125 U	1022 U	275 J
bis(2-ethylhexyl)phthalate		1103 U	1157 U	1125 U	1022 U	1114 U
chrysene		1103 U	1157 U	1125 U	1022 U	1114 U
di-n-octyl phthalate		1103 U	1157 U	1125 U	1022 U	1114 U
benzo(b)fluoranthene		1103 U	1157 U	1125 U	1022 U	199 J
benzo(k)fluoranthene		1103 U	1157 U	1125 U	1022 U	1114 U
benzo(a)pyrene		1103 U	1157 U	1125 U	1022 U	195 J
indeno(1,2,3-cd)pyrene		1103 U	1157 U	1125 U	1022 U	1114 U
dibenzo(a,h)anthracene		1103 U	1157 U	1125 U	1022 U	1114 U
benzo(g,h,i,)perylene		1103 U	1157 U	1125 U	1022 U	1114 U

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LIN003 660

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910612-13	401910610-05	401910625-84	401910625-86	401910625-87
CLIENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID	SOLID
SITE NAME - LINEMASTER	DILUTION	1.00	1.15	1.00	1.05	0.[illegible]
PREPARATION DATE - 21 MAY 92	BLANK ID	SB0617	SB0613	SB0627	SB0627	SB0627
FILE ID - SVS492	UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	89	100	69	68	70
phenol		1112 U	1139 U	1437 U	1540 U	1329 U
bis(2-chloroethyl)ether		1112 U	1139 U	1437 U	1540 U	1329 U
2-chlorophenol		1112 U	1139 U	1437 U	1540 U	1329 U
1,3-dichlorobenzene		1112 U	1139 U	1437 U	1540 U	1329 U
1,4-dichlorobenzene		1112 U	1139 U	1437 U	1540 U	1329 U
benzyl alcohol		1112 U	1139 U	1437 U	1540 U	1329 U
1,2-dichlorobenzene		1112 U	1139 U	1437 U	1540 U	1329 U
2-methylphenol		1112 U	1139 U	1437 U	1540 U	1329 U
bis(2-chloroisopropyl)ether		1112 U	1139 U	1437 U	1540 U	1329 U
4-methylphenol		1112 U	1139 U	1437 U	1540 U	1329 U
N-nitrosodipropylamine		1112 U	1139 U	1437 U	1540 U	1329 U
hexachloroethane		1112 U	1139 U	1437 U	1540 U	1329 U
nitrobenzene		1112 U	1139 U	1437 U	1540 U	1329 U
isophorone		1112 U	1139 U	1437 U	1540 U	1329 U
2-nitrophenol		1112 U	1139 U	1437 U	1540 U	1329 U
2,4-dimethylphenol		1112 U	1139 U	1437 U	1540 U	1[illegible]
benzoic acid		5393 U	5520 U	6967 U	7467 U	644[illegible] U
bis(2-chloroethoxy)methane		1112 U	1139 U	1437 U	1540 U	1329 U
2,4-dichlorophenol		1112 U	1139 U	1437 U	1540 U	1329 U
1,2,4-trichlorobenzene		1112 U	1139 U	1437 U	1540 U	1329 U
naphthalene		1112 U	1139 U	1437 U	1540 U	1329 U
4-chloroaniline		1112 U	1139 U	1437 U	1540 U	1329 U
hexacholorobutadiene		1112 U	1139 U	1437 U	1540 U	1329 U
4-chloro-3-methylphenol		1112 U	1139 U	1437 U	1540 U	1329 U
2-methylnaphthalene		1112 U	1139 U	1437 U	1540 U	1329 U
hexachlorocyclopentadiene		1112 U	1139 U	1437 U	1540 U	1329 U
2,4,6-trichlorophenol		1112 U	1139 U	1437 U	1540 U	1329 U
2,4,5-trichlorophenol		5393 U	5520 U	6967 U	7467 U	6446 U
2-chloronaphthalene		1112 U	1139 U	1437 U	1540 U	1329 U
2-nitroaniline		5393 U	5520 U	6967 U	7467 U	6446 U
dimethyl phthalate		1112 U	1139 U	1437 U	1540 U	1329 U
acenaphthylene		1112 U	1139 U	1437 U	1540 U	1329 U
3-nitroaniline		5393 U	5520 U	6967 U	7467 U	6446 U
acenaphthene		1112 U	1139 U	1437 U	1540 U	1329 U
2,4-dinitrophenol		5393 U	5520 U	6967 U	7467 U	6446 U
4-nitrophenol		5393 U	5520 U	6967 U	7467 U	64[illegible] U
dibenzofuran		1112 U	1139 U	1437 U	1540 U	1[illegible]
2,4-dinitrotoluene		1112 U	1139 U	1437 U	1540 U	1329 U

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LIN003 661

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910612-13	401910610-05	401910625-84	401910625-86	401910625-87
CLIENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID	SOLID
E NAME - LINEMASTER	DILUTION	1.00	1.15	1.00	1.05	0.94
PREPARATION DATE - 21 MAY 92	BLANK ID	SB0617	SB0613	SB0627	SB0627	SB0627
FILE ID - SVS492	UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	89	100	69	68	70
2,6-dinitrotoluene		1112 U	1139 U	1437 U	1540 U	1329 U
diethylphthalate		1112 U	1139 U	1437 U	1540 U	1329 U
4-chlorophenyl phenyl ether		1112 U	1139 U	1437 U	1540 U	1329 U
fluorene		1112 U	1139 U	1437 U	1540 U	1329 U
4-nitroaniline		5393 U	5520 U	6967 U	7467 U	6446 U
4,6-dinitro-2-methylphenol		5393 U	5520 U	6967 U	7467 U	6446 U
N-nitrosodiphenylamine		1112 U	1139 U	1437 U	1540 U	1329 U
4-bromophenyl phenyl ether		1112 U	1139 U	1437 U	1540 U	1329 U
hexachlorobenzene		1112 U	1139 U	1437 U	1540 U	1329 U
pentachlorophenol		5393 U	5520 U	6967 U	7467 U	6446 U
phenanthrene		1112 U	1139 U	1437 U	1540 U	1329 U
anthracene		1112 U	1139 U	1437 U	1540 U	1329 U
di-n-butyl phthalate		1675 U	1139 U	1437 U	1540 U	1650 U
fluoranthene		1112 U	1139 U	150 J	1540 U	1329 U
pyrene		1112 U	1139 U	145 J	1540 U	1329 U
yl benzyl phthalate		1112 U	1139 U	1437 U	1540 U	1329 U
'-dichlorobenzidine		2225 U	2277 U	2874 U	3051 U	2659 U
benzo(a)anthracene		1112 U	1139 U	1437 U	1540 U	1329 U
bis(2-ethylhexyl)phthalate		1112 U	1139 U	1437 U	1540 U	1329 U
chrysene		1112 U	1139 U	1437 U	1540 U	1329 U
di-n-octyl phthalate		1112 U	1139 U	1437 U	1540 U	1329 U
benzo(b)fluoranthene		1112 U	1139 U	1437 U	1540 U	1329 U
benzo(k)fluoranthene		1112 U	1139 U	1437 U	1540 U	1329 U
benzo(a)pyrene		1112 U	1139 U	1437 U	1540 U	1329 U
indeno(1,2,3-cd)pyrene		1112 U	1139 U	1437 U	1540 U	1329 U
dibenzo(a,h)anthracene		1112 U	1139 U	1437 U	1540 U	1329 U
benzo(g,h,i,)perylene		1112 U	1139 U	1437 U	1540 U	1329 U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910625-89	401910625-92	401910625-96	401910625-98	401910625-94
CLIENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID	SOLID
SITE NAME - LINEMASTER	DILUTION	1.01	0.97	0.96	0.99	1.05
PREPARATION DATE - 21 MAY 92	BLANK ID	SB0627	SB0627	SB0627	SB0627	SB0627
FILE ID - SVS492	UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	71	88	78	82	89
phenol		1418 U	1091 U	1218 U	1195 U	1168 U
bis(2-chloroethyl)ether		1418 U	1091 U	1218 U	1195 U	1168 U
2-chlorophenol		1418 U	1091 U	1218 U	1195 U	1168 U
1,3-dichlorobenzene		1418 U	1091 U	1218 U	1195 U	1168 U
1,4-dichlorobenzene		1418 U	1091 U	1218 U	1195 U	1168 U
benzyl alcohol		1418 U	1091 U	1218 U	1195 U	1168 U
1,2-dichlorobenzene		1418 U	1091 U	1218 U	1195 U	1168 U
2-methylphenol		1418 U	1091 U	1218 U	1195 U	1168 U
bis(2-chloroisopropyl)ether		1418 U	1091 U	1218 U	1195 U	1168 U
4-methylphenol		1418 U	1091 U	1218 U	1195 U	1168 U
N-nitrosodipropylamine		1418 U	1091 U	1218 U	1195 U	1168 U
hexachloroethane		1418 U	1091 U	1218 U	1195 U	1168 U
nitrobenzene		1418 U	1091 U	1218 U	1195 U	1168 U
isophorone		1418 U	1091 U	1218 U	1195 U	1168 U
2-nitrophenol		1418 U	1091 U	1218 U	1195 U	1168 U
2,4-dimethylphenol		1418 U	1091 U	1218 U	1195 U	1168 U
benzoic acid		6877 U	5291 U	5908 U	5795 U	5663 U
bis(2-chloroethoxy)methane		1418 U	1091 U	1218 U	1195 U	1168 U
2,4-dichlorophenol		1418 U	1091 U	1218 U	1195 U	1168 U
1,2,4-trichlorobenzene		1418 U	1091 U	1218 U	1195 U	1168 U
naphthalene		1418 U	1091 U	1218 U	1195 U	1168 U
4-chloroaniline		1418 U	1091 U	1218 U	1195 U	1168 U
hexacholorobutadiene		1418 U	1091 U	1218 U	1195 U	1168 U
4-chloro-3-methylphenol		1418 U	1091 U	1218 U	1195 U	1168 U
2-methylnaphthalene		1418 U	1091 U	1218 U	1195 U	1168 U
hexachlorocyclopentadiene		1418 U	1091 U	1218 U	1195 U	1168 U
2,4,6-trichlorophenol		1418 U	1091 U	1218 U	1195 U	1168 U
2,4,5-trichlorophenol		6877 U	5291 U	5908 U	5795 U	5663 U
2-chloronaphthalene		1418 U	1091 U	1218 U	1195 U	1168 U
2-nitroaniline		6877 U	5291 U	5908 U	5795 U	5663 U
dimethyl phthalate		1418 U	1091 U	1218 U	1195 U	1168 U
acenaphthylene		1418 U	1091 U	1218 U	1195 U	1168 U
3-nitroaniline		6877 U	5291 U	5908 U	5795 U	5663 U
acenaphthene		1418 U	1091 U	1218 U	1195 U	1168 U
2,4-dinitrophenol		6877 U	5291 U	5908 U	5795 U	5663 U
4-nitrophenol		6877 U	5291 U	5908 U	5795 U	5663 U
dibenzofuran		1418 U	1091 U	1218 U	1195 U	1168 U
2,4-dinitrotoluene		1418 U	1091 U	1218 U	1195 U	1168 U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910625-89	401910625-92	401910625-96	401910625-98	401910625-94
ENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID	SOLID
E NAME - LINEMASTER	DILUTION	1.01	0.97	0.96	0.99	1.05
PREPARATION DATE - 21 MAY 92	BLANK ID	SB0627	SB0627	SB0627	SB0627	SB0627
FILE ID - SVS492	UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	71	88	78	82	89
2,6-dinitrotoluene		1418 U	1091 U	1218 U	1195 U	1168 U
diethylphthalate		1418 U	1091 U	1218 U	1195 U	1168 U
4-chlorophenyl phenyl ether		1418 U	1091 U	1218 U	1195 U	1168 U
fluorene		1418 U	1091 U	1218 U	1195 U	1168 U
4-nitroaniline		6877 U	5291 U	5908 U	5795 U	5663 U
4,6-dinitro-2-methylphenol		6877 U	5291 U	5908 U	5795 U	5663 U
N-nitrosodiphenylamine		1418 U	1091 U	1218 U	1195 U	1168 U
4-bromophenyl phenyl ether		1418 U	1091 U	1218 U	1195 U	1168 U
hexachlorobenzene		1418 U	1091 U	1218 U	1195 U	1168 U
pentachlorophenol		6877 U	5291 U	5908 U	5795 U	5663 U
phenanthrene		1418 U	1091 U	1218 U	1195 U	1168 U
anthracene		1418 U	1091 U	1218 U	1195 U	1168 U
di-n-butyl phthalate		1660 U	1091 U	1410 U	1470 U	1430 U
fluoranthene		1418 U	1091 U	1218 U	1195 U	1168 U
pyrene		1418 U	1091 U	1218 U	1195 U	1168 U
l benzyl phthalate		1418 U	1091 U	1218 U	1195 U	1168 U
-dichlorobenzidine		2837 U	2183 U	2437 U	2390 U	2336 U
benzo(a)anthracene		1418 U	1091 U	1218 U	1195 U	1168 U
bis(2-ethylhexyl)phthalate		1418 U	1091 U	1218 U	1195 U	1168 U
chrysene		1418 U	1091 U	1218 U	1195 U	1168 U
di-n-octyl phthalate		1418 U	1091 U	1218 U	1195 U	1168 U
benzo(b)fluoranthene		1418 U	1091 U	1218 U	1195 U	1168 U
benzo(k)fluoranthene		1418 U	1091 U	1218 U	1195 U	1168 U
benzo(a)pyrene		1418 U	1091 U	1218 U	1195 U	1168 U
indeno(1,2,3-cd)pyrene		1418 U	1091 U	1218 U	1195 U	1168 U
dibenzo(a,h)anthracene		1418 U	1091 U	1218 U	1195 U	1168 U
benzo(g,h,i,)perylene		1418 U	1091 U	1218 U	1195 U	1168 U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	SB0627	SB0613	SB0617	SB0620
CLIENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID
SITE NAME - LINEMASTER	DILUTION	1.00	1.00	1.00	1.00
PREPARATION DATE - 21 MAY 92	BLANK ID	06-27-91	06-13-91	06-17-91	06-20-91
FILE ID - SVS492	UNITS	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	100	100	100	100
phenol		990 U	990 U	990 U	990 U
bis(2-chloroethyl)ether		990 U	990 U	990 U	990 U
2-chlorophenol		990 U	990 U	990 U	990 U
1,3-dichlorobenzene		990 U	990 U	990 U	990 U
1,4-dichlorobenzene		990 U	990 U	990 U	990 U
benzyl alcohol		990 U	990 U	990 U	990 U
1,2-dichlorobenzene		990 U	990 U	990 U	990 U
2-methylphenol		990 U	990 U	990 U	990 U
bis(2-chloroisopropyl)ether		990 U	990 U	990 U	990 U
4-methylphenol		990 U	990 U	990 U	990 U
N-nitrosodipropylamine		132	990 U	990 U	990 U
hexachloroethane		990 U	990 U	990 U	990 U
nitrobenzene		990 U	990 U	990 U	990 U
isophorone		990 U	990 U	990 U	990 U
2-nitrophenol		990 U	990 U	990 U	990 U
2,4-dimethylphenol		990 U	990 U	990 U	990 U
benzoic acid		4800 U	4800 U	4800 U	4800 U
bis(2-chloroethoxy)methane		990 U	990 U	990 U	990 U
2,4-dichlorophenol		990 U	990 U	990 U	990 U
1,2,4-trichlorobenzene		990 U	990 U	990 U	990 U
naphthalene		990 U	990 U	990 U	990 U
4-chloroaniline		990 U	990 U	990 U	990 U
hexacholorobutadiene		990 U	990 U	990 U	990 U
4-chloro-3-methylphenol		990 U	990 U	990 U	990 U
2-methylnaphthalene		990 U	990 U	990 U	990 U
hexachlorocyclopentadiene		990 U	990 U	990 U	990 U
2,4,6-trichlorophenol		990 U	990 U	990 U	990 U
2,4,5-trichlorophenol		4800 U	4800 U	4800 U	4800 U
2-chloronaphthalene		990 U	990 U	990 U	990 U
2-nitroaniline		4800 U	4800 U	4800 U	4800 U
dimethyl phthalate		990 U	990 U	990 U	990 U
acenaphthylene		990 U	990 U	990 U	990 U
3-nitroaniline		4800 U	4800 U	4800 U	4800 U
acenaphthene		990 U	990 U	990 U	990 U
2,4-dinitrophenol		4800 U	4800 U	4800 U	4800 U
4-nitrophenol		4800 U	4800 U	4800 U	4800 U
dibenzofuran		990 U	990 U	990 U	990 U
2,4-dinitrotoluene		990 U	990 U	990 U	990 U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	SB0627	SB0613	SB0617	SB0620
ENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID
E NAME - LINEMASTER	DILUTION	1.00	1.00	1.00	1.00
PREPARATION DATE - 21 MAY 92	BLANK ID	06-27-91	06-13-91	06-17-91	06-20-91
FILE ID - SVS492	UNITS	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	100	100	100	100
2,6-dinitrotoluene		990 U	990 U	990 U	990 U
diethylphthalate		990 U	990 U	990 U	990 U
4-chlorophenyl phenyl ether		990 U	990 U	990 U	990 U
fluorene		990 U	990 U	990 U	990 U
4-nitroaniline		4800 U	4800 U	4800 U	4800 U
4,6-dinitro-2-methylphenol		4800 U	4800 U	4800 U	4800 U
N-nitrosodiphenylamine		990 U	990 U	990 U	990 U
4-bromophenyl phenyl ether		990 U	990 U	990 U	990 U
hexachlorobenzene		990 U	990 U	990 U	990 U
pentachlorophenol		4800 U	4800 U	4800 U	4800 U
phenanthrene		990 U	990 U	990 U	990 U
anthracene		990 U	990 U	990 U	990 U
di-n-butyl phthalate		1197	1090	1581	1610
fluoranthene		990 U	990 U	990 U	990 U
pyrene		990 U	990 U	990 U	990 U
l benzyl phthalate		990 U	990 U	990 U	990 U
-dichlorobenzidine		1980 U	1980 U	1980 U	1980 U
benzo(a)anthracene		990 U	990 U	990 U	990 U
bis(2-ethylhexyl)phthalate		991	810 J	480 J	450 J
chrysene		990 U	990 U	990 U	990 U
di-n-octyl phthalate		990 U	990 U	990 U	990 U
benzo(b)fluoranthene		990 U	990 U	990 U	990 U
benzo(k)fluoranthene		990 U	990 U	990 U	990 U
benzo(a)pyrene		990 U	990 U	990 U	990 U
indeno(1,2,3-cd)pyrene		990 U	990 U	990 U	990 U
dibenzo(a,h)anthracene		990 U	990 U	990 U	990 U
benzo(g,h,i,)perylene		990 U	990 U	990 U	990 U

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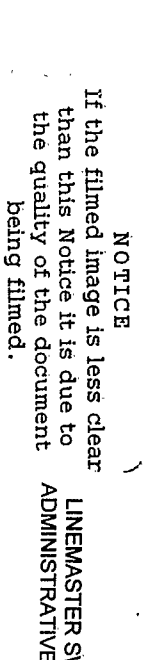

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - SUMMARY TABLE - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910613-16	401910614-19	401910618-50	401910617-24	401910617-46
CLIENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID	SOLID
SITE NAME - LINEMASTER	DILUTION	0.98	1.02	1.00	0.97	0.99
PREPARATION DATE - 21 MAY 92	BLANK ID	SB0620	SB0620	SB0620	SB0620	SB0620
FILE ID - SVS492S	UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	88	87	88	94	88
fluorene		1103 U	1157 U	1125 U	1022 U	153 J
phenanthrene		1103 U	1157 U	1125 U	1022 U	904 J
anthracene		1103 U	1157 U	1125 U	1022 U	255 J
fluoranthene		1103 U	1157 U	1125 U	1022 U	702 J
pyrene		1103 U	1157 U	1125 U	1022 U	521 J
benzo(a)anthracene		1103 U	1157 U	1125 U	1022 U	275 J
benzo(b)fluoranthene		1103 U	1157 U	1125 U	1022 U	199 J
benzo(a)pyrene		1103 U	1157 U	1125 U	1022 U	195 J

LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - SUMMARY TABLE - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910612-13		401910610-05		401910625-84		401910625-86		401910625-87	
CLIENT - FUSS & ONEILL	MATRIX	SOLID		SOLID		SOLID		SOLID		SOLID	
SITE NAME - LINEMASTER	DILUTION	1.00		1.15		1.00		1.05		0.94	
PREPARATION DATE - 21 MAY 92	BLANK ID	SB0617		SB0613		SB0627		SB0627		SB0627	
FILE ID - SVS492S	UNITS	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
	% SOLIDS	89		100		69		68		70	
fluorene		1112	U	1139	U	1437	U	1540	U	1329	U
phenanthrene		1112	U	1139	U	1437	U	1540	U	1329	U
anthracene		1112	U	1139	U	1437	U	1540	U	1329	U
fluoranthene		1112	U	1139	U	150	J	1540	U	1329	U
pyrene		1112	U	1139	U	145	J	1540	U	1329	U
benzo(a)anthracene		1112	U	1139	U	1437	U	1540	U	1329	U
benzo(b)fluoranthene		1112	U	1139	U	1437	U	1540	U	1329	U
benzo(a)pyrene		1112	U	1139	U	1437	U	1540	U	1329	U

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LINEMASTER - WOODSTOCK CT., SEMIVOLATILE - SOIL - SUMMARY TABLE - CASE NO. 492

SEMIVOLATILE ORGANICS DATA	SAMPLE ID	401910625-89	401910625-92	401910625-96	401910625-98	401910625-94
CLIENT - FUSS & ONEILL	MATRIX	SOLID	SOLID	SOLID	SOLID	SOLID
SITE NAME - LINEMASTER	DILUTION	1.01	0.97	0.96	0.99	1.05
PREPARATION DATE - 21 MAY 92	BLANK ID	SB0627	SB0627	SB0627	SB0627	SB0627
FILE ID - SVS492S	UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	% SOLIDS	71	88	78	82	89
fluorene		1418 U	1091 U	1218 U	1195 U	1168 U
phenanthrene		1418 U	1091 U	1218 U	1195 U	1168 U
anthracene		1418 U	1091 U	1218 U	1195 U	1168 U
fluoranthene		1418 U	1091 U	1218 U	1195 U	1168 U
pyrene		1418 U	1091 U	1218 U	1195 U	1168 U
benzo(a)anthracene		1418 U	1091 U	1218 U	1195 U	1168 U
benzo(b)fluoranthene		1418 U	1091 U	1218 U	1195 U	1168 U
benzo(a)pyrene		1418 U	1091 U	1218 U	1195 U	1168 U

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 401910610-05
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* * - data completeness
* * - holding times
* * - surrogate recovery
  - - matrix spike/matrix spike duplicate
  - - blanks
* * - GC/MS tuning
  - - calibration
* * - internal standards performance
* * - field duplicates
* * - TCL compound identification
* * - tentatively identified compounds
* * - system performance
  - - compound quantitation and reported detection limits
* * - sample result verification

* All criteria were met for this parameter.

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Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CLP CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									105/110		
401910625-86									90/112	115	
S38122								117	108/109		

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

	RPD (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									63		
401910613-86							20				

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Action:

- none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
SB0613	di-n-butylphthalate	1090	10900
	bis(2-ethylhexyl)phthalate	810	8100

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
SB0613	ALL SAMPLES

Action:

- associated sample results <CRQL are changed to CRQL U
- associated sample results ≥CRQL and < action level are flagged as not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Numerous TIC's were identified in the method blank that were also reported present in the environmental samples. These results are flagged as unusable (R).

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	06-17-91/14:06:00	bis(2-isopropyl)ether		28
		benzoic acid		41
		4-nitroaniline		32

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	06-17-91/14:06:00	ALL SAMPLES

Action:

o none, sample results reported as CRQL U

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

The laboratory reported occasional method detection limits that are below the quantitation limits specified in USEPA Method 8270 and the CRQL specified in the CLP SOW, which are identical. The tables present CLP CRQL's and include CLP SOW required (J) qualifiers for values reported below the CRQL.

Sincerely,
ECHEM INC.

Bruce Wallin

Bruce K. Wallin, PhD
Vice President

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Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
401910610-05	A1,R8

If the field is blank, no qualifiers were necessary.

A1 - change positive values for di-n-butylphthalate and bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

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R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 313910612-09 313910612-10 313910612-14
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- * - data completeness
- * - holding times
- * - surrogate recovery
- - matrix spike/matrix spike duplicate
- - blanks
- * - GC/MS tuning
- - calibration
- * - internal standards performance
- * - field duplicates
- * - TCL compound identification
- * - tentatively identified compounds
- * - system performance
- * - compound quantitation and reported detection limits
- * - sample result verification

* All criteria were met for this parameter.

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Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CRR are tabulated below:

					RECOVERY (%)						
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
313910612-14									112	125	

Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
WB0619	di-n-butylphthalate	202	2020
	bis(2-ethylhexyl)phthalate	100	1000
313910612-14	di-n-butylphthalate	156	1560
	bis(2-ethylhexyl)phthalate	40.5	405

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
WB0619	ALL SAMPLES

FIELD BLANK ID.	ASSOCIATED SAMPLES
313910612	ALL SAMPLES

Action:

- o associated sample results ≥CRQL and < action level are flagged as not detected at the sample value (U)
- o associated sample results <CRQL are changed to CRQL U

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Numerous TIC's were identified in the method blank that were also reported present in the environmental samples. These results are flagged as unusable (R).

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	06-21-91/16:49:00	benzoic acid		38
		4-nitrophenol		42
		4-nitroaniline		29
		butylbenzylphthalate		28
		di-n-octylphthalate		28

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	06-21-91/16:49:00	ALL SAMPLES

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Action:

o none, sample results reported as CRQL U

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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LIN003679

Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
313910612-09	A1,R8
313910612-10	A1,R8
313910612-14	

If the field is blank, no qualifiers were necessary.

A1 - change positive values for bis(2-ethylhexyl)phthalate and di-n-butylphthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

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R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 401910612-13
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- * - data completeness
- * - holding times
- * - surrogate recovery
- - matrix spike/matrix spike duplicate
- - blanks
- * - GC/MS tuning
- - calibration
- * - internal standards performance
- * - field duplicates
- * - TCL compound identification
- * - tentatively identified compounds
- * - system performance
- - compound quantitation and reported detection limits
- * - sample result verification

* All criteria were met for this parameter.

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Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CLP CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									105/110		
401910625-86									90/112	115	
S38122								117	108/109		

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

	RPD (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									63		
401910613-86							20				

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Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
SB0617	di-n-butylphthalate	1581	15810
	bis(2-ethylhexyl)phthalate	480	4800

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
SB0617	ALL SAMPLES

Action:

- o associated sample results <CRQL are changed to CRQL U
- o associated sample results <CRQL (flagged J); changed to CRQL (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Numerous TIC's were identified in the method blank that were also reported present in the environmental samples. These results are flagged as unusable (R).

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	06-19-91/08:21:00	benzoic acid		29
		4-dinitrophenol		31

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Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	06-19-91/08:21:00	ALL SAMPLES

Action:

o none, sample results reported as CRQL U

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

The laboratory reported occasional method detection limits that are below the quantitation limits specified in USEPA Method 8270 and the CRQL specified in the CLP SOW, which are identical. The tables present CLP CRQL's and include CLP SOW required (J) qualifiers for values reported below the CRQL.

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
401910612-13	A1,R8

If the field is blank, no qualifiers were necessary.

A1 - change positive values for di-n-butylphthalate and bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

LIN003 9 8 9 5

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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SAMPLE PREPARATION AND ANALYSIS SUMMARY

CLIENT: FUSS & O'NEILL SITE: LINEMASTER

CASE NO. SDG NO. ANALYTICAL FRACTION: Semivolatiles

CLIENT SAMPLE ID	EPA SAMPLE NO.	LAB. SAMPLE ID	MATRIX	DATE COLLECTED	DATE EXTRACTED	HOLD TIME
401910612-13		913691.4	SOIL	06-12-91	06-17-91	5

COMMENTS:

LIN003 889

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 401910613-16 401910614-19
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* * - data completeness
* * - holding times
* * - surrogate recovery
* \- matrix spike/matrix spike duplicate
* \- blanks
* * - GC/MS tuning
* \- calibration
* * - internal standards performance
* * - field duplicates
* * - TCL compound identification
* * - tentatively identified compounds
* * - system performance
* \- compound quantitation and reported detection limits
* * - sample result verification

* All criteria were met for this parameter.

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689

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Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CLP CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16								105/110			
401910625-86								90/112		115	
S38122							117	108/109			

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

	RPD (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									63		
401910613-86							20				

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Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
SB0620	di-n-butylphthalate	1610	16100
	bis(2-ethylhexyl)phthalate	450	4500

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
SB0620	ALL SAMPLES

Action:

- o associated sample results <CRQL are changed to CRQL U
- o associated sample results reported >CRQL but < action level changed to not-detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Numerous TIC's were identified in the method blank that were also reported present in the environmental samples. These results are flagged as unusable (R).

CALIBRATION:

a. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	06-24-91/15:12:00	butylbenzylphthalate		28
		di-n-octylphthalate		27
		benzoic acid		32

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Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	06-24-91/15:12:00	ALL SAMPLES

Action:

o none, sample results reported as CRQL U

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

The laboratory reported occasional method detection limits that are below the quantitation limits specified in USEPA Method 8270 and the CRQL specified in the CLP SOW, which are identical. The tables present CLP CRQL's and include CLP SOW required (J) qualifiers for values reported below the CRQL.

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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LIN003 2 6 9 2

Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
401910613-16	A1,R8
401910614-19	A1,R8

If the field is blank, no qualifiers were necessary.

A1 - change positive values for di-n-butylphthalate and bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

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LIN003 693

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 313910613-17 313910613-18 313910613-19
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* - data completeness
* - holding times
* - surrogate recovery
\- matrix spike/matrix spike duplicate
\- blanks
* - GC/MS tuning
\- calibration
* - internal standards performance
* - field duplicates
* - TCL compound identification
* - tentatively identified compounds
* - system performance
* - compound quantitation and reported detection limits
* - sample result verification

* All criteria were met for this parameter.

LIN003595

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LIN003 656

Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
313910613-19									104/112		

Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
WB0620	bis(2-ethylhexyl)phthalate	28.2	282
313910613-19	bis(2-ethylhexyl)phthalate	84.9	849

Associated samples with positive values reported below the action level are:

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METHOD BLANK ID.	ASSOCIATED SAMPLES
WB0620	ALL SAMPLES

FIELD BLANK ID.	ASSOCIATED SAMPLES
313910613-19	ALL SAMPLES

Action:

- o associated sample results ≥CRQL and < action level are flagged as not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

A TIC eluting at approximately 25.6 minutes was identified in the method blank as well as sample 313910613-17. This result is flagged as unusable (R).

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	06-24-91/15:12:00	benzoic acid		32

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	06-24-91/15:12:00	ALL SAMPLES

Action:

- o for %D >25%, results ≥CRQL for the compound are flagged as estimated (J)

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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LIN003 698

Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
313910613-17	A1,R8
313910613-18	A1,J6
313910613-19	A1

If the field is blank, no qualifiers were necessary.

A1 - change positive values for bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) for benzoic acid due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
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(207) 892-0002
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22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 401910617-24 401910617-46
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- * - data completeness
- * - holding times
- * - surrogate recovery
- - matrix spike/matrix spike duplicate
- - blanks
- * - GC/MS tuning
- - calibration
- * - internal standards performance
- * - field duplicates
- * - TCL compound identification
- * - tentatively identified compounds
- * - system performance
- - compound quantitation and reported detection limits
- * - sample result verification

* All criteria were met for this parameter.

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Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CLP CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									105/110		
401910625-86									90/112	115	
S38122								117	108/109		

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

	RPD (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									63		
401910613-86							20				

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Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
SB0620	di-n-butylphthalate	1610	16100
	bis(2-ethylhexyl)phthalate	450	4500

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
SB0620	ALL SAMPLES

Action:

- o associated sample results <CRQL are changed to CRQL U.
- o associated sample results ≥CRQL and < action level are flagged as not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Numerous TIC's were identified in the method blank that were also reported present in the environmental samples. These results are flagged as unusable (R).

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	06-24-91/15:12:00	butylbenzylphthalate		28
		di-n-octylphthalate		27
		benzoic acid		32

LIN003 207

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Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	06-24-91/15:12:00	ALL SAMPLES

Action:

o none, sample results reported as CRQL U

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

The laboratory reported occasional method detection limits that are below the quantitation limits specified in USEPA Method 8270 and the CRQL specified in the CLP SOW, which are identical. The tables present CLP CRQL's and include CLP SOW required (J) qualifiers for values reported below the CRQL.

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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LIN003 E03

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ADMINISTRATIVE RECORD

Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
401910617-24	A1,R8
401910617-46	A1,R8

If the field is blank, no qualifiers were necessary.

A1 - change positive values for di-n-butylphthalate and bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

LIN003 4 0 7

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 401910618-50
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- * - data completeness
- * - holding times
- * - surrogate recovery
- - matrix spike/matrix spike duplicate
- - blanks
- * - GC/MS tuning
- - calibration
- * - internal standards performance
- * - field duplicates
- * - TCL compound identification
- * - tentatively identified compounds
- * - system performance
- - compound quantitation and reported detection limits
- * - sample result verification

* All criteria were met for this parameter.

LIN003 005

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LIN003
107

Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CLP CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									105/110		
401910625-86									90/112	115	
S38122								117	108/109		

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

	RPD (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									63		
401910613-86							20				

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Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
SB0620	di-n-butylphthalate	1610	16100
	bis(2-ethylhexy)phthalate	450	4500

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
SB0620	401910618-50

Action:

- o associated sample results changed to CRQL (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Numerous TIC's were identified in the method blank that were also reported present in the environmental samples. These results are flagged as unusable (R).

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	06-24-91/15:12:00	butylbenzylphthalate		28
		di-n-octylphthalate		27

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	06-24-91/15:12:00	401910618-50

LIN003 0801

Action:

o none, sample results reported as CRQL U

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

The laboratory reported occasional method detection limits that are below the quantitation limits specified in USEPA Method 8270 and the CRQL specified in the CLP SOW, which are identical. The tables present CLP CRQL's and include CLP SOW required (J) qualifiers for values reported below the CRQL.

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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LIN003 0076

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Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
401910618-50	A1,R8

If the field is blank, no qualifiers were necessary.

A1 - change positive values for di-n-butylphthalate and bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

LIN003 7 1 0

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 313900724-10 313900724-13 313900724-16
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* * - data completeness
* * - holding times
* * - surrogate recovery
  - matrix spike/matrix spike duplicate
  - blanks
* * - GC/MS tuning
* * - calibration
  - internal standards performance
* * - field duplicates
* * - TCL compound identification
* * - tentatively identified compounds
* * - system performance
* * - compound quantitation and reported detection limits
* * - sample result verification

* All criteria were met for this parameter.

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LIN003 1-1-13

Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CRR are tabulated below:

					RECOVERY (%)						
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
313900724-13									143/143		130

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

					RPD (%)						
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
313900724-13										72	

Action:

- o none, sample results reported as CRQL U

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BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
WB3852	bis(2-ethylhexyl)phthalate	39.2	392
313900724-16	bis(2-ethylhexyl)phthalate	21.3	213
313900724-10	bis(2-ethylhexyl)phthalate	10.6	106

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
WB3852	ALL SAMPLES

FIELD BLANK ID.	ASSOCIATED SAMPLES
313900724-16	313900724-13

TRIP BLANK ID.	ASSOCIATED SAMPLES
313900724-10	313900724-13

Action:

- o associated sample results ≥CRQL and < action level are flagged as not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

A TIC eluting at approximately 14 minutes was identified in the method blank as well as the environmental sample. This result was flagged as unusable (R).

INTERNAL STANDARDS PERFORMANCE:

Deviations from the internal standard response stability factor of -50 to 100% are tabulated below:

SAMPLE	IS COMPOUND	% OF STANDARD
313900724-13	CRY	-54

LIN003

Action:

- o sample results for analytes assigned for quantitation from the associated internal standard are flagged as estimated (J)

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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LIN003 215

Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
313900724-10	
313900724-13	A1,J7,R8
313900724-16	

If the field is blank, no qualifiers were necessary.

A1 - change positive values for bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for CRY due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
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Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles:	401910625-84	401910625-89	401910625-98
(USEPA Method 8270)	401910625-86	401910625-92	401910625-94
	401910625-87	401910625-96	

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- * - data completeness
- * - holding times
- * - surrogate recovery
- - matrix spike/matrix spike duplicate
- - blanks
- * - GC/MS tuning
- - calibration
- * - internal standards performance
- * - field duplicates
- * - TCL compound identification
- * - tentatively identified compounds
- * - system performance
- - compound quantitation and reported detection limits
- * - sample result verification

* All criteria were met for this parameter.

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Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CLP CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									105/110		
401910625-86									90/112	115	
S38122								117	108/109		

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

	RPD (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
401910613-16									63		
401910613-86							20				

Action:

- o none, sample results reported as CRQL U

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BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
SB0627	n-nitroso-di-n-propylamine	132	660
	di-n-butylphthalate	1197	11970
	bis(2-ethylhexyl)phthalate	991	9910

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
SB0627	ALL SAMPLES

Action:

- o associated sample results <CRQL are changed to CRQL U
- o associated sample results ≥CRQL and < action level are flagged as not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Numerous TIC's were identified in the method blank that were also reported present in the environmental samples. These results are flagged as unusable (R).

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	07-02-91/19:22:00	hexachlorocyclopentadiene		31
		benzoic acid		40
		4-nitroaniline		37
		pentachlorophenol		30

LIN003 0271

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	07-02-91/19:22:00	ALL SAMPLES

Action:

o none, sample results reported as CRQL U

COMPOUND QUANTITATION AND REPORTED DETECTION LIMITS:

The laboratory reported occasional method detection limits that are below the quantitation limits specified in USEPA Method 8270 and the CRQL specified in the CLP SOW, which are identical. The tables present CLP CRQL's and include CLP SOW required (J) qualifiers for values reported below the CRQL.

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
401910625-84	A1,R8
401910625-89	A1,R8
401910625-98	A1,R8
401910625-86	A1,R8
401910625-92	A1,R8
401910625-87	A1,R8
401910625-96	A1,R8
401910625-94	A1,R8

If the field is blank, no qualifiers were necessary.

A1 - change positive values for di-n-butylphthalate and bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
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Windham, Maine 04062
(207) 892-0002
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22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 343910627-26 343910627-25 343910627-28
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* * - data completeness
* * - holding times
* * - surrogate recovery
- \- matrix spike/matrix spike duplicate
- \- blanks
* * - GC/MS tuning
- \- calibration
* * - internal standards performance
* * - field duplicates
* * - TCL compound identification
* * - tentatively identified compounds
* * - system performance
* * - compound quantitation and reported detection limits
* * - sample result verification

* All criteria were met for this parameter.

LIN003 00211

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521

Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
343910627-28						102			134/122	117/112	104

Action:

- o none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
WB0703	bis(2-ethylhexyl)phthalate	17.2	172
343910627-26	bis(2-ethylhexyl)phthalate	28.9	289

Associated samples with positive values reported below the action level are:

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METHOD BLANK ID.	ASSOCIATED SAMPLES
WB0703	ALL SAMPLES

FIELD BLANK ID.	ASSOCIATED SAMPLES
343910627-26	ALL SAMPLES

Action:

- o associated sample results ≥CRQL and < action level are flagged as not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Numerous TIC's were identified in the method blank that were also reported present in the environmental samples. These results are flagged as unusable (R).

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	07-10-91/03:04:00	3-nitroaniline		37

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	07-10-91/03:04:00	ALL SAMPLES

Action:

- o none, sample results reported as CRQL U

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
343910627-26	A1,R8
343910627-25	A1,R8
343910627-28	A1,R8

If the field is blank, no qualifiers were necessary.

A1 - change positive values for bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

LIN003 1271

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 343910708-48
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* * - data completeness
* * - holding times
* * - surrogate recovery
* \- matrix spike/matrix spike duplicate
* * - GC/MS tuning
* \- calibration
* * - internal standards performance
* * - field duplicates
* * - TCL compound identification
* * - tentatively identified compounds
* * - system performance
* * - compound quantitation and reported detection limits
* * - sample result verification

* All criteria were met for this parameter.

LIN003 627

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ADMINISTRATIVE RECORD

Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CRR are tabulated below:

					RECOVERY (%)						
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
343910708-48						99			121		

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

					RPD (%)						
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
343910708-48			30		36						

Action:

- o none, sample results reported as CRQL U

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CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE/TIME	COMPOUND	RRF	%D
FINN	07-26-91/18:35:00	4-nitroaniline		31
		pentachlorophenol		41
		hexachlorobutadiene		29
		hexachlorobenzene		38

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
FINN	07-26-91/18:35:00	ALL SAMPLES

Action:

o none, sample results reported as CRQL U

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No. SVOA
343910708-48

If the field is blank, no qualifiers were necessary.

A1 - change positive values for to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

LIN003 2 3 2

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 313900725-19 313900725-21 313900725-22
(USEPA Method 8270) 313900725-25 313900725-26

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* * - data completeness
* * - holding times
* * - surrogate recovery
  - - matrix spike/matrix spike duplicate
  - - blanks
* * - GC/MS tuning
* * - calibration
* * - internal standards performance
* * - field duplicates
* * - TCL compound identification
* * - tentatively identified compounds
* * - system performance
* * - compound quantitation and reported detection limits
* * - sample result verification

* All criteria were met for this parameter.

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Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- data validation log,
- telephone log,
- completeness log,
- sample preparation and analysis summaries,
- analytical data tables, and
- summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CRR are tabulated below:

									RECOVERY (%)		
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
313900725-22									148/131		

Action:

- none, sample results reported as CRQL U

BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
WB3879	bis(2-ethylhexyl)phthalate	8	80
313900725-26	bis(2-ethylhexyl)phthalate	65	650
313900725-19	bis(2-ethylhexyl)phthalate	18.2	182

LIN003 735

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
WB3879	313900725-20 313900725-25

FIELD BLANK ID.	ASSOCIATED SAMPLES
313900725-26	ALL SAMPLES

TRIP BLANK ID.	ASSOCIATED SAMPLES
313900725-19	ALL SAMPLES

Action:

- o associated sample results ≥CRQL and < action level are flagged as not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comment:

A TIC eluting at approximately 20.9 minutes was identified in the method blank as well as two of the associated environmental samples. These results were flagged as unusable (R).

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
313900725-19	
313900725-21	A1,R8
313900725-22	A1
313900725-25	A1,R8
313900725-26	

If the field is blank, no qualifiers were necessary.

A1 - change positive values for bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for ( ) due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

R4 - reject detection limit values (UR) for ( ) due to calibration not meeting minimum RF criteria

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

22 May 1992

Mr. Jim Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster Switch Corp.
Laboratory: Alpha Analytical

Semivolatiles: 313900726-23 313900726-28 313900726-29
(USEPA Method 8270)

Dear Mr. Olsen:

Validation and data management were performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* - data completeness
* - holding times
* - surrogate recovery
  - matrix spike/matrix spike duplicate
  - blanks
* - GC/MS tuning
  - calibration
* - internal standards performance
* - field duplicates
* - TCL compound identification
* - tentatively identified compounds
* - system performance
* - compound quantitation and reported detection limits
* - sample result verification

* All criteria were met for this parameter.

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LIN003 740

Please note that the laboratory analyzed the samples by USEPA Method No. 8270 which is not a CLP RAS protocol. The laboratory provided deliverables for this method to the maximum extent possible, in CLP format.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log,
- o sample preparation and analysis summaries,
- o analytical data tables, and
- o summary data tables.

The analytical data tables noted above represent a compilation of all TCL data reported by the laboratory plus data qualifiers (flags) resulting from this evaluation. The summary data tables present only those TCL analytes that were reported present in any environmental samples, and also include data qualifiers.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

Samples with MS and/or MSD recoveries not within the CRR are tabulated below:

	RECOVERY (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
313900726-28					102				116/148		

Action:

- o none, sample results reported as CRQL U

Samples with MS/MSD relative percent differences (RPD) not within the criteria specified in the CLP SOW are tabulated below:

	RPD (%)										
SAMPLE	PHE	CLPH	DCB	DNP	TCB	CRE	ACE	NPH	DNT	PCP	PYR
313900726-28	43			39							36

Action:

- o none, sample results reported as CRQL U

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BLANKS:

Positive blank results and associated action levels are tabulated below.

BLANK ID.	COMPOUND	CONC.	ACTION LEVEL
WB3852	bis(2-ethylhexyl)phthalate	39.2	392
313900726-28	bis(2-ethylhexyl)phthalate	72.5	725
313900726-29	bis(2-ethylhexyl)phthalate	21.7	217

Associated samples with positive values reported below the action level are:

METHOD BLANK ID.	ASSOCIATED SAMPLES
WB3852	313900726-23

TRIP BLANK ID.	ASSOCIATED SAMPLES
313900726-28	313900726-23

FIELD BLANK ID.	ASSOCIATED SAMPLES
313900726-28	313900726-23

Action:

- o associated sample results <CRQL; changed to CRQL (U)

CALIBRATION:

A. Continuing calibration:

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTR.	CAL DATE	COMPOUND	RRF	%D
INC0S50	08-03-90	bis(2-ethylhexyl)phthalate		34
		phenol		37
		2-chlorophenol		28
		1,3-dichlorobenzene		30
		benzyl alcohol		28
		4-methylphenol		27
		nitrobenzene		28
		bis(2-chloroethoxy)methane		26
		hexachlorocyclopentadiene		66
		2,4,5-trichlorophenol		44
		2-chloronaphthalene		30
		dimethylphthalate		30
		2,4-dinitrophenol	.045	39
		4-nitrophenol		29
		4,6-dinitro-2-methyl phenol		39

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INSTR.	CAL DATE	COMPOUND	RRF	%D
INC0S50	08-03-90	4-bromophenyl phenyl ether		27
		hexachlorobenzene		27
		pentachlorophenol		50
		di-n-butylphthalate		29
		fluoranthene		27
		pyrene		40
		benzo(a)anthracene		29
		bis(2-ethylhexyl)phthalate		34
		di-n-octylphthalate		41
		benzo(a)pyrene		37
		indeno(1,2,3-cd)pyrene		68
		dibenz(a,h)anthracene		65
		benzo(g,h,i)perylene		54

Associated samples:

INSTRUMENT	CAL DATE	SAMPLE NO.
INC0S50	08-03-90	ALL SAMPLES

Action:

- for RRF <0.05, detection limit values (CRQL U) for the compound are flagged as unusable (R)
- for %D >50%, detection limit values (CRQL U) for the compound are flagged as estimated (J)

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

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LIN003 242

Linemaster Switch Corporation

Table I. Validation Action Summary

Sample No.	SVOA
313900726-23	A1,R4,J6
313900726-28	R4,J6
313900726-29	R4,J6

If the field is blank, no qualifiers were necessary.

A1 - change positive values for bis(2-ethylhexyl)phthalate to revised detection limit due to blank contamination

J1 - estimate positive values (J) and detection limit values (UJ) due to holding time violations

J2 - estimate positive values (J) and detection limit values (UJ) due to non-compliant volatile surrogate recoveries

J3 - estimate positive values (J) and detection limit values (UJ) due to non-compliant (acid) (base-neutral) fraction surrogate recoveries

J4 - estimate positive values (J) for ( ) due to non-compliant matrix spike recoveries

J5 - estimate positive values (J) for ( ) due to calibration not meeting minimum RF criteria

J6 - estimate positive values (J) and detection limit values (UJ) for dibenz(a,h)anthracene, hexachlorocyclopentadiene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene due to non-compliant calibration stability

J7 - estimate positive values (J) for ( ) due to non-compliant internal standard stability

J8 - estimate all positive values (J) due to non-compliant field duplicate precision

R1 - reject detection limit values (UR) due to holding time exceedences

R2 - reject detection limit values (UR) due to low surrogate recoveries

R3 - reject detection limit values (UR) for ( ) due to low matrix spike recoveries

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R4 - reject detection limit values (UR) for 2,4-dinitrophenol due to calibration not meeting minimum RF criteria

R5 - reject detection limit values (UR) for ( ) due to extreme variations in the internal standard stability

R7 - reject detection limit value (UR) for ( ) due to continuing calibration %D >50%

R8 - TIC's identified in associated method blank, results flagged as unusable (R)

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APPENDIX R
METALS STUDY REPORT

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

recycled paper

PATRICK J. BAROSH AND ASSOCIATES
35 POTTER STREET • CONCORD, MASS. 01742
508-369-1906

ARSENIC IN GROUND WATER IN SOUTHEASTERN NEW ENGLAND AND SOURCE OF METALS FOUND IN GROUND WATER AT THE LIMEMASTER SWITCH CORPORATION SITE, WOODSTOCK, CONNECTICUT

Introduction

Over the past ten years an increasing number of localities have been reporting elevated levels of Arsenic in ground water in southeastern New England. These localities are concentrated in a zone across southeastern New Hampshire and east-central Massachusetts and appear related to the geology. Part I of this report will summarize these data. Part II will analyze the elevated arsenic levels at the Linemaster Switch Corporation Site in Woodstock, Connecticut, in light of these data, and also consider possible natural sources for elevated levels of other metals found at the site.

Part I

ARSENIC IN GROUNDWATER IN SOUTHEASTERN NEW ENGLAND

Distribution

Testing for arsenic is only required for public drinking supplies and not for private wells. Despite this lack of systematic testing, a large number of wells with elevated levels of arsenic have been revealed serendipitously by scatteed testing of private wells. Systematic testing should reveal many more, but those found to date have defined a general area of ground water with high arsenic.

The wells with elevated levels of arsenic are concentrated in a northeasterly-trending zone following the Worcester lowlands - Nashua River Valley and extending through southeastern New Hampshire (Figure 1, Table 1). Very few locations occur outside this zone in Massachusetts. In New Hampshire, however, a few also occur to the northwest of it.

Relation to Geology

The distribution of wells with elevated levels where they were initially found, in the Hudson-Nashua area in southern New Hampshire, does not indicate a point source nor a relation with faults, but shows the closest relation with the Paxton Group of strata (Barosh In Thomas, 1981). Subsequent discoveries of high levels in Massachusetts also occurred in this rock group of metasandstone or near its edge as are most of those in New Hampshire (Fig. 1) (Reitzal, 1983, Barosh, 1989, Tirella, 1990).

No sites are as yet recorded at a significant distance northwest of the Paxton Group in Massachusetts, but some are in New Hampshire at Ware, Bow, Barrington, Dunbarton, Goffstown, New Hampton and Moultonborough. Most of thses lie in the overlying Brimfield Group, that locally has some lithology like the Paxton.

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The region is highly faulted (Barosh, 1977; Barosh and others, 1977), but the distribution of arsenic appears to be more closely aligned with lithology than faults.

The Clinton-Newbury fault zone is a major fault zone that borders the southeast side of the region in which the Paxton occurs. Insignificant amounts of arsenic are found southeast of this fault zone. For example, Harvard and the northwest corner of Littleton, Massachusetts locally have very high levels of arsenic where the Paxton occurs as scattered pendents in granitic rock, however, to the southeast none are reported in the rest of Littleton, Boxborough, Acton and minor amounts at Hanscom Air Force Base in Bedford - Lexington, Massachusetts. Contaminated ground water at Hanscom slightly exceeded the limits for arsenic in 2 of 20 wells (D. Dopkin, pers. commun. 1991). Also, no high levels of arsenic are reported from Cape Cod even at the contaminated Yarmouth landfill site (John Mosher, pers. commun. 1991).

Source

Investigations into the high levels of arsenic have been concerned as to whether it is natural or man-made and if its distribution is controlled by fractures, rock type, agricultural practices, road salting or some industrial process. Two geologists with the U.S. Geological Survey in New Hampshire proposed that it is man-made and related to a type of road salt, laundry detergents, fertilizers or Paris Green, an insecticide (Swanson, 1985). However, their suggested causes could not be supported by their evidence and their report was never issued. An EPA study suggested a natural source (Thomas, 1981). Most of the subsequent locations with high arsenic that have been revealed are away from any industrial activity.

Paris Green, an arsenic-based insecticide was widely used on orchards in the region. Most of these orchards were planted on drumlins, which are glacially formed hills of clayey material (till). Relatively more drumlins overlie the Paxton and the underlying Oakdale Formation than the adjacent areas as they are relatively soft. This might indirectly cause some concentration of elevated levels of arsenic over the Paxton, but it will not explain the lack of elevated levels in orchard areas away from the Paxton.

Arsenic from man-made sources would be concentrated at the surface in the surficial material and migrate downward into the ground water and bedrock. The present information, however, is the reverse. The vast majority of wells with high arsenic are bedrock wells, not ones in the overburden. Few of the wells tested in unconsolidated sediments have any measurable arsenic in the Nashua-Hudson, New Hampshire area (Thomas, 1981). A couple of wells with arsenic rich water were tested at depth intervals and found to have the source in bedrock and not the overburden. A well in Pepperell had a particular zone within the bedrock which produced the elevated levels of arsenic (J. T. Morine, pers. commun. 1986). Distilled water, in which rock cuttings from this well were placed, registered a similar elevated level of arsenic in a

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weeks time (N. Reitzel, pers. commun. 1991). The Paxton occurs as scattered pendants within granite at Harvard, Massachusetts. Wells with high arsenic lie in the Paxton, and generally not in the granite, except where it appears to have open fractures extending from the Paxton (J. T. Morine, pers. commun. 1986). Arsenic-bearing minerals were found in wells in both Pepperell and Harvard, Massachusetts.

The Paxton Group is a late Precambrian sequence of moderately metamorphosed sandstone (Barosh and Moore, 1988; Pease, 1989). The marine sandstone is a "dirty" type referred to as graywacke, which generally contains a volcanic component. Arsenic may have been derived from a volcanic source and precipitated as an impurity in iron sulfides when the sandstone was deposited.

The underlying Oakdale Formation is of similar composition, but finer-grained, being a metasiltstone. It might also be expected to be similar to the Paxton in arsenic content, but for some reason only a few elevated arsenic levels have been reported near the Paxton contact, except for a zone through Atkinson, Plaistow and Kingston, New Hampshire (Figure 1, Table 1).

The overlying Brimfield Group of heterogeneous metamorphosed rock has zones particularly rich in iron sulfide precipitants and few horizons of similar lithology as the Paxton. These might also, be expected to be arsenic bearing, but thus far, only a few places in New Hampshire report high arsenic levels in ground water away from the Paxton. These locations are: Goffstown, Ware, Dunbarton and Bow in a group northwest of Manchester, New Hampshire and Barrington farther east and closer to the Paxton.

Arsenopyrite is reported as one of the minerals associated with the White MountainPlutonic Series of granite bodies in New Hampshire (Cox, 1970). The elevated levels of arsenic in ground water at New Hampton and Moultonborough, near these bodies in central New Hampshire, is probably due to leaching of these minerals.

Mineralogy - Metamorphism has mobilized some of the finely disseminated iron sulfides to form scattered larger crystals and veinlets of pyrrhotite and pyrite in fractures. The Paxton is not particularly sulfide-rich, but such veinlets are not rare. These have not been checked for arsenic content, nor if they contain other arsenic minerals. Arsenopyrite occurs in the region (Table 2) and was noted in samples from two wells in which the arsenic level is high; one in Paxton in Harvard, Massachusetts and the other in a younger phyllite, preserved in a fault trough over the Paxton in Pepperell, Massachusetts. A large veinlet of arsenopyrite is present in the Oakdale, near the Paxton, in western Nashua, New Hampshire. Analyses of the samples of Paxton from wells with high arsenic in nearby Hudson, New Hampshire indicated copper and silver arsenosulfides (Thomas, 1981).

Arsenides are also reported from mineralized areas in the Brimfield in East Hampton, Connecticut and also in a large quartz vein at Lantern

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Hill in southeastern Connecticut.

Conclusions

Wells with elevated levels of arsenic form a zone along or near the Paxton Group in Massachusetts and New Hampshire. The vast majority are bedrock wells and in two, a direct relation is found between arsenic minerals in the bedrock and contaminated water. The present evidence indicates the arsenic in the ground water is from arsenopyrite or related minerals in the Paxton Group. Also, arsenic probably occurs locally in New Hampshire in some horizons of similar strata in the Brimfield Group, at places in the Oakdale Formation and in mineralized areas adjacent to the White Mountain Plutonic Series as well. The New Hampshire Department of Environmental services now considers the arsenic to be a natural contaminant.

Part II

Possible natural sources for elevated levels of metals in ground water at the Linemaster Switch Corperation site, Woodstock, Connecticut.

Introduction

Levels of arsenic, barium, beryllium, cadmium, chromium, lead and nickel are found to exceed the EPA limits for drinking water in several monitor wells around the site of the Linemaster Switch Corperation in Woodstock, Connecticut (Table 3). Occurrences of these metals in natural minerals and likely host rocks were reviewed and the distribution of the metals at the site analyzed in searching for a natural source for the contaminants.

Site Geology

The site is situated on a north-south aligned oval knoll that represents a glacially modified bedrock hill with thin till cover, whereas Woodstock center just to the north lies on a rock-cored drumlin trending south 16 east, the direction of ice movement. The knoll is formed of an irregulr sill of pegmatite (Dixon, 1976), near the eastern border of the Paxton Group (Barosh, 1977, Pease, 1989). Several known and probable faults pass near the site. The pegmatite at the site is one of a series near a northeasterly trending topographic break that passes along the south side of Wappaqwesset Pond to South Woodstock. Pegmatite commonly intrudes along zones of disruption in the rock of this region and this series may mark a small northwest-dipping thrust fault zone parallel to one mapped a mile to the northwest. The northwest-trending Putnam fault passes a mile to the northeast along a transverse valley (Dixion, 1976). A north-trending fault probably passes through Wappaquasset Pond to the west as it is aligned along a topographic break, that is unexplained by the glaical geology. This is also the case for the swales crossed by Route 117 just south of the site and the road probably follows a small fault zone. North-trending fracture zones may also flank the knoll at the site and help give it its

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shape.

Natural Metal Occurrences and Potential Host Rocks

Nearly all rocks contain minute amounts of all the metals in question (Table 4). The site might be expeced to contain the average amounts for a granitic rock or a sandstone with a small admixture of shale. Even these tiny amounts are much greater than that found in the ground water, however, concentrations of metals are probably needed to provide significant amounts for solution.

Some concentrations of all these metals are known in the region around eastern Connecticut and others are undoubtedly present in the right host rocks beneath the surficial deposits. These are reviewed below:

Arsenic - The site lies in a zone of arsenic bearing Paxton strata with similar levels in ground water as described in Part I. High levels of arsenic in ground water occur just north of the site in Charlton, Leicester and Oxford, Massachusetts (Figure 1, Table 1)(Barosh, 1989, Tirella, 1990, Barosh and Johnson, 1974). The Paxton at the site might be expected to contain similar amounts. Arsenopyrite, such as that found in the pegmatite on the site , is the apparent source mineral.

Barium - Barium is found mainly as barite, a heavy mineral commonly occurring in fracture fillings with quartz veins. Some occurs in southern New England, but is not known locally, although many quartz veins are present in southeastern Connecticut. The prominent ones occur along late north-trending fault zones such as the probable zone through Wappaquesset Pond west of the site. Barite, if present, might be expected to be associated with veins along such faults or with the quartz veins found with some pegmatites near the site.

Beryllium - Beryl, the chief beryllium mineral, is present in many pegmatites in Maine and New Hampshire (Young, 1968) and also in the pegmatite quarries of Middletown, Connecticut (Rice and Foye, 1927). Some of these contained commercial quantities. None has been described locally, but pegmatites in the area and at the site, could contain some.

Cadmium and Lead - Cadmium and lead commonly occur together in sulfide deposits; cadmium along with zinc in sphalerite and lead in galena. These are present in deposits in Middletown, Connecticut (Rice and Foye, 1927) and in veins in the Oakdale Formation in Nashua, New Hampshire (Whittemore, 1990), however, the "lead" mines west of the site are graphite deposits (Pease, 1972). The rock at the site is similar to that at these deposits and small veinlets could occur. If so, zinc might also be expected in elevated levels.

Chromium and Nickel - Chromium and Nickel usually ocuur together in association with ultrabasic and some basic igneous rocks. Chromium usually occurs as chromite and nickel as pentlandite. These form deposits in West Torrington, Connecticut (Cameron, 1943) and Dracut,

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Massachusetts (Dennen, 1943) in ultrabasic noritic rock. Basic plutons that could serve as hosts nearer the site are: the Preston Gabbro in southeast Connecticut, the Lebanon Gabbro at Lebanon, Connecticut, the Foster Gabbro at Foster, Rhode Island and a norite dike at Stafford, Connecticut (Peper and Pease, 1975). A small norite dike could easily lie undiscovered near the site. A nearby deposit might be expected to also contain cobalt, as the others do, which also would show up in elevated amounts in ground water. Chromite weathers from the igneous rock to form heavy sand deposits, that become sedimentary rock. It is possible that some heavy sand lies at the base of beds in the Paxton, but the meta sandstone is not the type to contain significant amounts.

Metal Distribution at the Site

The pattern of distribution of metal around the site, as reflected in the samples from the drill holes, varies slightly for each metal and all are different from the TCE plume indicated (Table 5).

The distribution of the elevated levels of metals with each other shows some interesting relations. Arsenic does not match the distribution of the others well, nor did it match the distribution of other metals in the Hudson, New Hampshire area (Thomas, 1981). No nickel occurs where chromium is not found. Cadmium also occurs with chromium and nickel. No cadmium occurs where lead is not present. Barium is found where chromium, lead and nickel is, except for one location where lead is not high. Beryllium is present where chromium is, but it is hard not to match as there is so much chromium.

The metal pairs that occur together in nature occur together in the wells. However, some metals not necessarily to be expected together do so. The well sites MW06, MW13 and GW12 have the most elevated levels of contaminants and MW04, MW05, and MW09, the least.

The distribution pattern is not simple. The Linemaster Switch Corporation sits on top of a hall and the metals are distributed irregularly about it. The arsenic high levels are near the northern edge of the hilltop near the TCE high levels, but Barium is high at the lower flanks of the hill. Beryllium has elevated levels along the east and south hillslopes. Cadmium has highest values on the southwest and northeast slopes of the hill. Chromium and nickel are highest along the north to east flank and edge of the hill and have less than half these values on the hilltop. Lead has its most elevated level on the southeast slope and is also high along the east slope. Part of these differences in the distribution patterns may be due to differences between bedrock and overburdan wells coupled with fractred controlled ground water movement in the bedrock.

Summary and Conclusions

It is possible that all of the elevated levels of metals in ground water at the Linemaster site may be of natural origin, but only arsenic has strong supporting evidence. Such metals occur in the region

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and proper host conditions could be present. Also, the distribution pattern of the metals does not form any simple plume from the facility. However, it would seem most fortuitous, if mineral deposits to account for all the metals were present at one site.

Arsenic-bearing minerals related to elevated levels in ground water occurs in the region. The elevated levels form a zone following the Paxton Group and arsenic was predicted in the Woodstock area prior to its measurement there. The 513 m/l measured in ground water at the site is less than the 620 m/l measured in the zone near Hudson, New Hampshire. Thus, despite the high levels measured near the facility, the evidence indicates the arsenic is a natural contaminant.

Of the other metal contaminants, Beryllium is most likely to be natural, as the site is on a host rock for beryl. But as yet, there is insufficient evidence to demonstrate natural occurrences for these metals.

RECOMMENDATIONS

1. Sample, for all metal testing, other existing bedrock wells in the area, that are away from possible ground water discharge from the site, such as the center of Woodstock.

2. Sample for arsenic testing a couple of bedrock wells in the Paxton to the southwest of the site.

3. Investigate for beryl in the pegmatite at or near the site.

4. Perform a fracture and fault study on the site area to better understand ground water flow in the bedrock and possible locations for mineral deposits.

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Table 1

Areas with reports of elevated levels of arsenic in ground water (> .05 mg/1)

Location		wells	highest amount
CT			
1	Woodstock	6	.513
MA			
2	Charlton	13 of 60	.196
3	Oxford	2	.120
4	Leicester	19 of 109	
5	West Boylston	2 of 14	
6	Sterling	10 of 53	
7	Harvard	14 of 106	.30
8	Littleton	1	
9	Pepperell	1	.40-.45
10	Bedford-Lexington	2 of 20	.06
N H			
11	Nashua		
12	Hudson	20 of 200	.37
	(Hudson and vicinity		.62)
13	Pelham		
14	Litchfield		
15	Londonderry		
16	Derry		
17	Atkinson		
18	Plaistow		
19	Kingston		
20	Seabrook		
21	Goffstown		
22	Ware		
23	Dunbarton		
24	Bow		
25	Barrington		
26	New Hampton		
27	Moultonborough		

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Table 2

Arsenic-bearing Mineral Locations

Location	Mineral	Reference
Mine Falls Park, Nashua, N H -	arsenopyrite	(Whittemore, 1990)
Hudson, N H -	Cu & Ag arsenosulfides	(Thomas, 1981)
Pepperell, MA -	arsenopyrite	(J. T. Morine, 1986)
Harvard, MA -	arsenopyrite	(J. T. Morine, 1986)
Sterling, MA -	arsenopyrite	(Dana, 1888)
Worcester, MA -	arsenopyrite	(Dana, 1888)
Great Hill, Cobalt, East Hampton, CT -	arsenides	(Rice and Foye, 1927)
Lantern Hill, NorthStonington, CT -	arsenides	(Loughlin, 1912)
Woodstock, CT -	arsenopyrite	(Fuss and O'Neill, 1991)

Table 3

Range of Values of Metals Found at the Linemaster Site

Metal	g/l	MCL g/l	Wells over MCL
Arsenic	<1.8 - 513	50	6
Barium	<24.0 -1,897	1,000	7
Beryllium	<1.0 - 13	1	4
Cadmium	<6.0 - 13.0	10	4
Chromium	<9.0 - 1,033	50	19
Lead	<2.0 - 180	50	6
Nickel	<22.0 - 573	100	13

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Table 4

Amounts of Metals Commonly Found in Various Rock Types (Brobst and Pratt, 1973).

	ppm (mg/l or 1,000 g/l)
ARSENIC	
Igneous rock	2
Shale	8-15
Ocean bottom sediment	4
Sedimentary pyrite	3,000
BARIUM	
Gabbro	100
Granite	700-800
Syenite and potassic igneous rock	up to 3,000-5,000
Sandstone	few to several 100s
Limestone	<200
Shale	500-1,000
BERYLLIUM	
Gabbro	0.5
Granite	5
Quartzite and marble	very low
Micaceous metamorphic strata	few
CADMIUM	
Igneous rock	0.15
Bentonitic shale	2.8
Phosphatic shale	200
CHROMIUM	
Ultramaphic rock	1,100-3,400
Gabbro	200
Granite	5
Clay	100
LEAD	
Gabbro	5
Granite	20
Sandstone	7
Limestone	9
Shale	20
Deep sea clay	80
NICKEL	
Ultramaphic rock	1,000-3,000
Gabbro	160
Diorite	55
Granite	8
Shale and clay	95

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Table 5

Well Locations of Metals Found in Elevated Levels in Ground Water (>MCL restrictions) at the Linemaster Switch Corperation Site, Woodstock, Connecticut. (ND, not detected; H, highest amount: -, close to MCL)

Well No.	Metal							TCE
	As	Ba	Be	Cd	Cr	Pb	Ni	>25 g/l
MW01T					X		X	
MW02T					X		X	
MW03T		X		XH	X	X	X	ND
MW04T								X
MW05SB								ND
MW06T			X		X		-	X
MW06SB		XH	X	XH	XH	X	XH	X
MW07SB			X	X	X	-	X	
MW08SB					X			
MW09SB								X
MW10T					X		X	X
MW10SB	X							X
MW11T	X	X			X		X	
MW11SB					X			
MW12T	X				X		X	ND
MW12SB					X			
MW12DB		X			X	X	X	ND
MW13DB	X	X	XH		X	XH	X	
MW14DB		X			X	X	X	
MWEPAAT					X		X	
GW08								
GW10DB	XH				X			X?
GW12DB	X	X		X	X	X	X	X?

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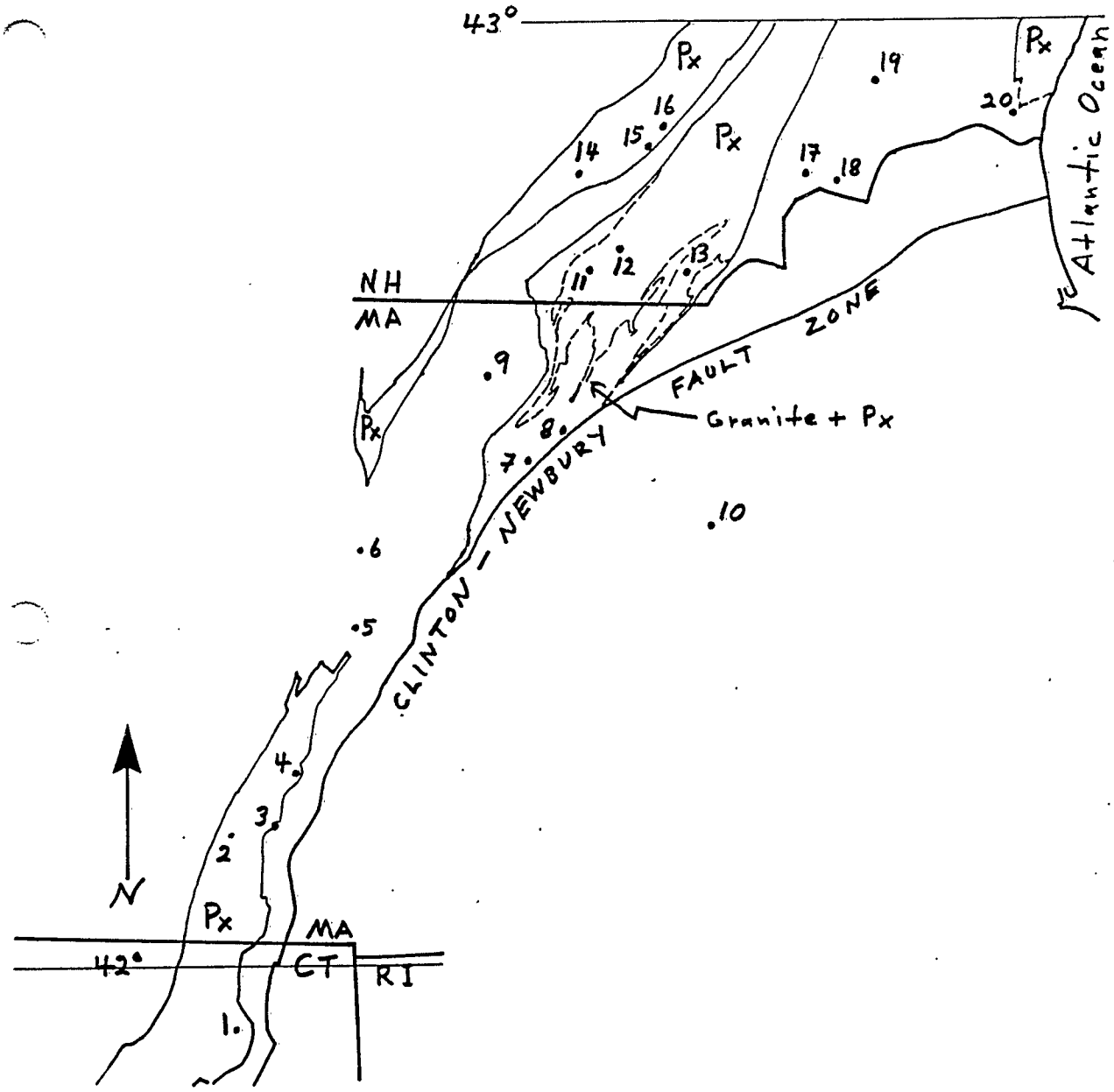

Figure 1 Index Map of Northeastern Connecticut, Central Massachusetts and Southeastern New Hampshire Showing Towns Reporting Elevated Levels of Arsenic (>MCL values). Explanation: 1, towns listed on Table 1; Px, area of Paxton Group strata (Barosh, 1977; Barosh and others, 1977).

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APPENDIX S
GROUND-WATER METALS
SUPPLEMENTAL INFORMATION

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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APPENDIX S CONTENTS

REMEDIAL INVESTIGATION REPORT

LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

I. Summary of Ground-Water Metals Analytical Results

II. Background Ground-Water Sample Metals Cumulative Frequency Distribution (Probability) Plots (Raw Data and Logarythmically Transformed Data)

III. Logarythmically Transformed Total Suspended Solids - Total Metals Concentrations Scatter Plots and Linear Regression Analyses

Note: Cummulative frequency distribution plots, scatter plots, linear regression analyses, and other statistical analyses were performed using the U.S. APA GEO-EAS Geostatistical Environmental Assessment Software package (1988).

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-4						
	Depth (ft)							
	Date	08/15/88	12/16/88	09/13/90	10/12/90	12/12/90	02/05/91	08/22/91
	Sample ID	34388081526	34388121625	31390091314	31390101209	31390121218	31391020502	31391082204
Parameter Unit (ug/l)								
All Metals Special								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved		-						
Arsenic, Total				-	-	-		
Barium, Dissolved							-	-
Barium, Total						-		
Beryllium, Dissolved								
Beryllium, Total						-		
Cadmium, Dissolved								
Cadmium, Total						-		
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total						-		
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-	-					
Iron, Total								
Lead, Dissolved								
Lead, Total						3.1		
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-	-					
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total						-		
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
Blank space indicates parameter was not analyzed for.

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-4	GW-5db					
	Depth (ft)							
	Date	02/10/92	08/15/88	12/16/88	08/22/90	06/07/91	08/22/91	02/14/92
	Sample ID	31392021011	34388081520	34388121624	34390082210	31391060731	31391082205	31392021426
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-			1.8	-	-	6.3
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved					-	-		
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved			-	-				
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 763

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-6ob						
	Depth (ft)							
	Date	04/03/89	06/06/89	10/13/89	12/21/89	01/08/90	06/21/90	09/12/90
	Sample ID	31389040311	31889060604	31389101301	19289122101	19290010801	31390062121	31390091201
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total								-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved	-	-	-	-	-			
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved	-	-	-	20	-			
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 1764

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-6ob						
	Depth (ft)							
	Date	12/12/90	03/05/91	06/07/91	09/03/91	12/03/91	03/09/92	06/04/92
	Sample ID	31390121211	31391030507	31391060719	31391090304	31391120303	31392030915	31392060411
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-	-	
Barium, Dissolved								
Barium, Total		-						-
Beryllium, Dissolved								
Beryllium, Total		-						
Cadmium, Dissolved								
Cadmium, Total		-						
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total		-						
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total		7.7						
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total		-						
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 1155

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-7db				GW-8db		
	Depth (ft)							
	Date	08/15/88	12/16/88	08/22/90	08/22/91	08/24/87	05/13/88	08/15/88
	Sample ID	34388081528	34388121621	34390082214	31391082208	GW08870824	17205138806	34388081501
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved		-				-	-	-
Arsenic, Total								
Barium, Dissolved				2.3	2.3			
Barium, Total							20	
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total							30	
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved							20	
Cobalt, Total								
Copper, Dissolved								
Copper, Total							50	
Iron, Dissolved		-						
Iron, Total			-					-
Lead, Dissolved								
Lead, Total							-	
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-						
Manganese, Total			-					-
Mercury, Dissolved								
Mercury, Total							-	
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total							-	
Silver, Dissolved								
Silver, total							-	
Sodium, Dissolved								
Sodium, Total							11200	
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 169

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-8db						
	Depth (ft)							
	Date	12/16/88	02/22/89	04/03/89	06/06/89	10/13/89	06/21/90	08/22/90
	Sample ID	3438812164	31389022201	3138904031	31889060613	31389101304	31390062101	34390082206
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total							4.6	4.1
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-	-	100	-	-		
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-	-	-	-	-		
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-8db						
	Depth (ft)							
	Date	10/12/90	12/11/90	02/05/91	02/05/91	03/05/91	04/04/91	06/07/91
	Sample ID	31390101201	31390121101	31391020504	31391020505	31391030501	31391040401	31391060714
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		4.2	3.6	4.5	4.4	3.5	3.9	5.1
Barium, Dissolved								
Barium, Total			-					
Beryllium, Dissolved								
Beryllium, Total			-					
Cadmium, Dissolved								
Cadmium, Total			-					
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total			-					
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total			33.0		11.4			
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total			-					
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD
LIN003 178

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-8db					GW-9db	
	Depth (ft)							
	Date	10/01/91	12/06/91	02/10/92	04/06/92	06/05/92	08/15/88	12/16/88
	Sample ID	31391100101	31391120626	31392021002	31392040603	31392060528	34388081519	34388121615
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved							-	
Arsenic, Total		4.5	4.4	3.1	3.6	3.6		
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved							-	-
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved							-	-
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, Total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 1659

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-9db						
	Depth (ft)							
	Date	02/22/89	06/06/89	09/11/89	06/21/90	08/22/90	10/12/90	12/11/90
	Sample ID	31389022209	31889060602	34389091111	31390062105	34390082209	31390101204	31390121104
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total					-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-	-	-				
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-	-	-				
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD
LIN003 0170

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-9db						
	Depth (ft)							
	Date	02/05/91	04/04/91	06/06/91	10/01/91	12/03/91	02/10/92	04/06/92
	Sample ID	31391020509	31391040408	31391060601	31391100112	31391120302	31392021009	31392040609
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-		
Barium, Dissolved							-	-
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-9db	GW-10db					
	Depth (ft)		Grab		68-98		100-130	
	Date	06/04/92	08/02/88	08/02/88	07/13/90	12/21/90	07/13/90	12/21/90
	Sample ID	31392060410	17288080201	17288080202	19290071302	31390122125	19290071303	31390122124
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved			115	175				
Arsenic, Total		-			146	164	456	221
Barium, Dissolved								
Barium, Total						290		135
Beryllium, Dissolved								
Beryllium, Total						-		-
Cadmium, Dissolved								
Cadmium, Total						-		-
Calcium, Dissolved								
Calcium, Total						48685		40464
Chromium, Dissolved								
Chromium, Total						189		40
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total						37624		11840
Lead, Dissolved								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total						81		48
Potassium, Dissolved								
Potassium, Total						4960		3870
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total						16410		13380
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-10db		GW-10dbPT				
	Depth (ft)	290-320						
	Date	07/13/90	12/21/90	04/01/91	04/01/91	04/03/91	04/03/91	04/03/91
	Sample ID	19290071304	31390122121	31391040101	31391040102	19291040310	19291040311	19291040312
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved			137	93.8		136		148
Arsenic, Total		513	171	146.1	130.8	147	159	148
Barium, Dissolved			651	30		17		12.0
Barium, Total			759	42	38	615		23
Beryllium, Dissolved			-	-		-		-
Beryllium, Total			-	-	-	-		-
Cadmium, Dissolved			-	-		-		-
Cadmium, Total			-	-	-	-		-
Calcium, Dissolved			41043					
Calcium, Total			42840					
Chromium, Dissolved			-	-		-		-
Chromium, Total			42	-	-	-		-
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved			631	98				
Iron, Total			22620	1124	924			
Lead, Dissolved			3.8	-		-		-
Lead, Total						2.5		2.9
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved				631				
Manganese, Total				1978	1507			
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved			35	-		-		-
Nickel, total			38	-	-	-		-
Potassium, Dissolved			3350					
Potassium, Total			3810					
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved			13330					
Sodium, Total			14160					
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
Blank space indicates parameter was not analyzed for.

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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-10dbPT				GW-12db		
	Depth (ft)					Grab		
	Date	04/03/91	04/03/91	04/03/91	04/03/91	06/15/87	08/24/87	08/02/88
	Sample ID	19291040313	19291040314	19291040315	19291040316	GW12870615	GW12870824	17288080205
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved			138		162		20	27
Arsenic, Total		133	142	144	160			
Barium, Dissolved			11.0		40			
Barium, Total			12.0		40			
Beryllium, Dissolved			-		-			
Beryllium, Total			-		-			
Cadmium, Dissolved			-		-			
Cadmium, Total			-		-			
Calcium, Dissolved					37900			
Calcium, Total					38800			
Chromium, Dissolved			-		-			
Chromium, Total			-		-			
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved					130	-		
Iron, Total					220			
Lead, Dissolved			1.4		6			
Lead, Total			-		-			
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved					780	380		
Manganese, Total					880			
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved			-		-			
Nickel, total			-		-			
Potassium, Dissolved					4330			
Potassium, Total					3870			
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, Total								
Sodium, Dissolved					11700			
Sodium, Total					12000			
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW12DB						
	Depth (ft)	Grab					95-135	
	Date	08/02/88	08/15/88	12/16/88	02/22/89	06/06/89	07/16/90	07/16/90DUP
	Sample ID	17288080206	34388081503	3438812163	31389022203	31889060620	19290071602	19290071603
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved		27	40					
Arsenic, Total							288	271
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved			-	-	-	-		
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved			-	-	-	-		
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, Total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-12db	GW-12dbPT					
	Depth (ft)	95-135						
	Date	12/20/90	04/02/91	04/02/91	04/02/91	04/02/91	04/02/91	04/02/91
	Sample ID	31390122018	19291040201	19291040202	19291040203	19291040204	19291040205	19291040206
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved		12.2	9.3		11.9		14.8	
Arsenic, Total		37.4	56.3	38.5	39.2	31.5	25.6	23.7
Barium, Dissolved		-	-		-		-	
Barium, Total		1327	59	29	32	18	-	-
Beryllium, Dissolved		-	-		-		-	
Beryllium, Total		-	-	-	-	-	-	-
Cadmium, Dissolved		-	-		-		-	
Cadmium, Total		11	5.0	-	-	-	-	-
Calcium, Dissolved		27306						
Calcium, Total		53621						
Chromium, Dissolved		-	-		-		-	
Chromium, Total		625	26.0	-	11.0	-	-	-
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		28						
Iron, Total		272640						
Lead, Dissolved		-	-		2.9		-	
Lead, Total		87.3	15.3	10.1	8.8	6.4	3.5	2.3
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved		-	-		-		-	
Nickel, total		367	-	-	-	-	-	-
Potassium, Dissolved		2970						
Potassium, Total		72920						
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved		12730						
Sodium, Total		22100						
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-12dbPT	GW-13ob					
	Depth (ft)							
	Date	04/02/91	08/15/88	12/16/88	06/06/89	09/11/89	06/21/90	09/12/90
	Sample ID	19291040207	34388081512	3438812169	31889060608	34389091108	31390062115	31390091206
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		24.7					2.8	1.7
Barium, Dissolved		-						
Barium, Total		20						
Beryllium, Dissolved		-						
Beryllium, Total		-						
Cadmium, Dissolved		-						
Cadmium, Total		-						
Calcium, Dissolved		26000						
Calcium, Total		26100						
Chromium, Dissolved		-						
Chromium, Total		-						
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		60	-	-	-	-		
Iron, Total		3010						
Lead, Dissolved		-						
Lead, Total		-						
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		280	-	-	-	-		
Manganese, Total		530						
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved		-						
Nickel, total		-						
Potassium, Dissolved		3380						
Potassium, Total		3590						
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved		10800						
Sodium, Total		10900						
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-13ob						
	Depth (ft)							
	Date	12/13/90	03/06/91	06/06/91	09/05/91	12/05/91	03/09/92	06/04/92
	Sample ID	31390121326	31391030617	31391060608	31391090514	31391120520	31392030921	31392060418
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	1.2	3.4	-	-	-	2.4
Barium, Dissolved								
Barium, Total		-						
Beryllium, Dissolved								
Beryllium, Total		-						
Cadmium, Dissolved								
Cadmium, Total		-						
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total		-						
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total		19.8						
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total		-						
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-14		GW-16db				
	Depth (ft)							
	Date	08/15/88	06/07/91	08/15/88	02/22/89	06/06/89	09/11/89	06/21/90
	Sample ID	34388081507	31391060722	34388081524	31389022206	31889060617	34389091109	31390062109
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved				-				
Arsenic, Total			8.7					5.6
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-		-	-	-	-	
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-		-	-	-	-	
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-16db						
	Depth (ft)							
	Date	09/13/90	09/13/90DUP	10/12/90	12/11/90	03/06/91	04/04/91	06/07/91
	Sample ID	31390091315	31390091316	31390101211	31390121107	31391030624	31391040411	31391060729
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-16db				GW-16t	GW-17db	
	Depth (ft)							
	Date	06/07/91DUP	09/03/91	12/05/91	03/10/92	06/05/92	08/15/88	12/16/88
	Sample ID	31391060730	31391090303	31391120515	31392031022	31392060525	34388081525	34388121620
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-		
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved							-	-
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved							-	-
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-17db						
	Depth (ft)							
	Date	08/22/90	10/12/90	02/05/91	04/04/91	06/07/91	06/07/91DUP	10/01/91
	Sample ID	34390082213	31390101208	31391020510	31391040409	31391060725	31391060726	31391100106
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	2.3	-	-	-	1.8
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 2817

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-17db					GW-18db	
	Depth (ft)							
	Date	12/04/91	02/12/92	04/06/92	06/04/92	06/04/92DUP	08/15/88	12/16/88
	Sample ID	31391120409	31392021213	31392040610	31392060401	31392060403	34388081523	34388121618
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	2.0	1.9	1.8		
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								-
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								-
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 183

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-18db						
	Depth (ft)							
	Date	06/06/89	06/21/90	09/12/90	12/12/90	03/06/91	06/06/91	09/03/91
	Sample ID	31889060618	31390062110	31390091211	31390121223	31391030620	31391060603	31391090310
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total			9.4	3.8	4.4	5.2	5.4	4.9
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-						
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-						
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD
LIN003185

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-18db			GW-20db			
	Depth (ft)							
	Date	12/04/91	03/09/92	06/04/92	08/15/88	12/16/88	02/22/89	06/06/89
	Sample ID	31391120413	31392030912	31392060407	34388081518	34388121614	31389022210	31889060603
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		5.3	3.6	4.6				
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved					-	-	-	-
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved					-	-	-	-
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
Blank space indicates parameter was not analyzed for.

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-20db						
	Depth (ft)							
	Date	09/11/89	07/09/90	09/13/90	12/11/90	03/05/91	06/06/91	09/03/91
	Sample ID	34389091110	31390070901	31390091313	31390121108	31391030510	31391060609	31391090308
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total			-	-	-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-						
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-						
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0961

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-20db			GW-21			
	Depth (ft)							
	Date	12/05/91	03/10/92	06/04/92	08/15/88	12/16/88	02/22/89	06/06/89
	Sample ID	31391120518	31392031028	31392060414	34388081515	34388121610	31389022214	31889060605
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-				
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved					-	-	-	-
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved					-	-	-	-
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Selenium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 0171

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-21						GW-21db
	Depth (ft)							
	Date	09/11/89	06/21/90	06/21/90DUP	09/13/90	06/06/91	12/04/91	10/12/90
	Sample ID	34389091114	31390062112	31390062114	31390091312	31391060605	31391120412	31390101214
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total			57.3	53.0	1.4	20.6	26.0	23.6
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-						
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-						
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 788

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-21db						GW-21ob
	Depth (ft)							
	Date	12/12/90	03/06/91	07/05/91	09/05/91	03/09/92	06/04/92	10/12/90
	Sample ID	31390121216	31391030616	31391070502	31391090512	31392030919	31392060415	31390101213
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		24.8	22.7		22.1	24.1	22.7	2.0
Barium, Dissolved								
Barium, Total		-						
Beryllium, Dissolved								
Beryllium, Total		-						
Cadmium, Dissolved								
Cadmium, Total		-						
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total		-						
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total				-				
Lead, Dissolved								
Lead, Total		4.1						
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total				-				
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total		-						
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total				12800				
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 689

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-21ob	GW-22ob					
	Depth (ft)							
	Date	07/05/91	08/15/88	12/16/88	02/22/89	06/06/89	09/11/89	06/21/90
	Sample ID	31391070501	34388081511	3438812167	31389022218	31889060609	34389091107	31390062116
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		4.5						10.8
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved			-	-	-	-	-	
Iron, Total		2060						
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved			-	-	-	-	-	
Manganese, Total		-						
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total		12200						
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 0170

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-22ob						
	Depth (ft)							
	Date	09/12/90	12/12/90	03/06/91	06/06/91	09/05/91	12/05/91	03/10/92
	Sample ID	31390091207	31390121220	31391030618	31391060610	31391090515	31391120521	31392031027
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		2.0	-	1.7	2.1	-	-	1.6
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-22ob	GW-23db					
	Depth (ft)							
	Date	06/04/92	08/15/88	12/16/88	09/11/89	06/21/90	08/22/90	10/12/90
	Sample ID	31392060417	34388081510	3438812166	34389091104	31390062118	34390082202	31390101205
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		2.1				-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved			-	-	-			
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved			-	-	-			
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-23db						
	Depth (ft)							
	Date	12/28/90	06/06/91	10/01/91	12/05/91	02/10/92	04/08/92	06/04/92
	Sample ID	31390122836	31391060611	31391100105	31391120523	31392021012	31392040811	31392060420
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	4.5	-	-
Barium, Dissolved								
Barium, Total		-						
Beryllium, Dissolved								
Beryllium, Total		-						
Cadmium, Dissolved								
Cadmium, Total		-						
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total		-						
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total		-						
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total		-						
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003
193

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-24db						
	Depth (ft)							
	Date	08/15/88	12/16/88	02/22/89	06/06/89	09/11/89	06/21/90	09/12/90
	Sample ID	34388081509	3438812168	31389022220	31889060610	34389091103	31390062117	31390091208
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total								-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-	-	-	-	-		
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-	-	-	-	-		
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
197

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-24db						
	Depth (ft)							
	Date	12/12/90	03/06/91	06/06/91	09/05/91	12/05/91	03/10/92	06/04/92
	Sample ID	31390121221	31391030619	31391060612	31391090516	31391120524	31392031026	31392060419
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-	-	-
Barium, Dissolved								
Barium, Total		-						
Beryllium, Dissolved								
Beryllium, Total		-						
Cadmium, Dissolved								
Cadmium, Total		-						
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total		-						
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total		3.4						
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total		-						
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 595

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-25ob						
	Depth (ft)							
	Date	08/15/88	12/16/88	02/22/89	06/06/89	09/11/89	06/21/90	09/12/90
	Sample ID	34388081508	34388121622	31389022221	31889060611	34389091102	31390062119	31390091209
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total							-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-	-	-	-	-		
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-	-	-	-	-		
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 196

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-25ob						
	Depth (ft)							
	Date	12/12/90	03/05/91	0305/91DUP	06/06/91	09/05/91	12/05/91	03/10/92
	Sample ID	31390121222	31391030514	31391030515	31391060613	31391090517	31391120525	31392031025
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 197

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-25ob	GW-26					
	Depth (ft)							
	Date	06/04/92	08/15/88	12/16/88	02/22/89	06/06/89	09/11/89	06/21/90
	Sample ID	31392060421	34388081516	34388121612	31389022213	31889060606	34389091101	31390062111
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-						21.9
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved			-	-	-	-	-	
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved			-	-	-	-	-	
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0967

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-26						
	Depth (ft)							
	Date	09/12/90	12/12/90	03/05/91	06/07/91	09/03/91	12/04/91	03/09/92
	Sample ID	31390091203	31390121217	31391030509	31391060721	31391090307	31391120411	31392030917
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		16.3	10.2	14.7	13.5	11.6	12.0	11.3
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 669

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-26	GW-27ob					
	Depth (ft)							
	Date	06/04/92	08/15/88	12/16/88	02/22/89	06/06/89	09/11/89	06/21/90
	Sample ID	31392060413	34388081514	34388121623	31389022215	31889060607	34389091115	31390062113
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		12.4						4.0
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved			-	-	-	-	-	
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved			-	-	-	-	-	
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-27ob						
	Depth (ft)							
	Date	09/12/90	12/12/90	03/06/91	06/06/91	09/05/91	12/05/91	03/09/92
	Sample ID	31390091205	31390121219	31391030623	31391060607	31391090513	31391120519	31392030920
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LIN003 0081

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-27ob	GW-28					GW-29
	Depth (ft)							
	Date	06/04/92	08/15/88	12/16/88	02/22/89	06/06/89	09/11/89	08/22/90
	Sample ID	31392060416	34388081522	34388121617	31389022205	31889060615	34389091116	34390082201
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved			-					
Arsenic, Total		-						6.9
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved			-	-	-	-	-	
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved			-	-	-	-	-	
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD
LIN003
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-29			GW-34db			
	Depth (ft)							
	Date	10/12/90	08/22/91	04/27/92	08/15/88	12/16/88	02/22/89	06/06/89
	Sample ID	31390101207	31391082207	35192042730	34388081521	34388121616	31389022208	31889060619
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total				-				
Antimony, Dissolved								
Antimony, Total				-				
Arsenic, Dissolved								
Arsenic, Total		5.8	6.1	10.8				
Barium, Dissolved								
Barium, Total				-				
Beryllium, Dissolved								
Beryllium, Total				-				
Cadmium, Dissolved								
Cadmium, Total				-				
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total				-				
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total				49.0				
Iron, Dissolved					-	-	-	-
Iron, Total								
Lead, Dissolved								
Lead, Total				1.0				
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total				1660				
Manganese, Dissolved					-	-	-	-
Manganese, Total				36				
Mercury, Dissolved								
Mercury, Total				-				
Nickel, Dissolved								
Nickel, total				-				
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total				-				
Silver, Dissolved								
Silver, total				-				
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total				-				
Tin, Dissolved								
Tin, Total				-				
Vanadium, Dissolved								
Vanadium, Total				-				
Zinc, Dissolved								
Zinc, Total				100				

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-34db						
	Depth (ft)							
	Date	09/11/89	06/21/90	09/12/90	12/13/90	03/06/91	06/06/91	09/03/91
	Sample ID	34389091112	31390062120	31390091210	31390121325	31391030622	31391060604	31391090309
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total			50.4	18.2	10.8	11.8	10.4	12.9
Barium, Dissolved								
Barium, Total					-			
Beryllium, Dissolved								
Beryllium, Total					-			
Cadmium, Dissolved								
Cadmium, Total					-			
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total					-			
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-						
Iron, Total								
Lead, Dissolved								
Lead, Total					-			
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-						
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total					-			
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 804

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LIN003 8 0 5

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-34db				GW-35		
	Depth (ft)							
	Date	12/05/91	03/09/92	04/27/92	06/04/92	08/15/88	12/16/88	02/22/89
	Sample ID	31391120516	31392030913	35192042731	31392060408	34388081513	34388121611	31389022216
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total				-				
Antimony, Dissolved								
Antimony, Total				-				
Arsenic, Dissolved								
Arsenic, Total		8.0	8.2	16.9	14.7			
Barium, Dissolved								
Barium, Total				-				
Beryllium, Dissolved								
Beryllium, Total				-				
Cadmium, Dissolved								
Cadmium, Total				-				
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total				-				
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total				-				
Iron, Dissolved						-	-	-
Iron, Total								
Lead, Dissolved								
Lead, Total				-				
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total				1530				
Manganese, Dissolved						-	-	-
Manganese, Total				16.0				
Mercury, Dissolved								
Mercury, Total				-				
Nickel, Dissolved								
Nickel, total				-				
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total				-				
Silver, Dissolved								
Silver, total				17.0				
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total				-				
Tin, Dissolved								
Tin, Total				-				
Vanadium, Dissolved								
Vanadium, Total				-				
Zinc, Dissolved								
Zinc, Total				-				

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-36db						
	Depth (ft)							
	Date	08/15/88	06/06/89	12/21/89	01/08/90	01/16/90	02/15/90	06/21/90
	Sample ID	34388081527	31889060601	19289122103	19290010804	19290011601	30490021505	31390062108
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved			6					
Arsenic, Total								5.0
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved		-	1800	100	-	-	-	
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved		-	100	60	50	60	40	
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0089

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-36db						
	Depth (ft)							
	Date	08/22/90	09/13/90	12/12/90	03/05/91	09/05/91	12/04/91	03/10/92
	Sample ID	34390082204	31390091318	31390121214	31391030504	31391090521	31391120406	31392031029
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		3.5	5.6	7.2	15.9	19.7	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0071

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-36db	GW-37	GW-40db				
	Depth (ft)							
	Date	06/04/92	06/06/89	09/11/89	08/22/90	08/22/90DUP	10/12/90	10/12/90DUP
	Sample ID	31392060409	31889060616	34389091117	34390082211	34390082212	31390101210	31390101212
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-			-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved			-	-				
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved			-	-				
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-40db						
	Depth (ft)							
	Date	10/23/90	12/11/90	01/03/91	02/05/91	03/05/91	04/04/91	06/06/91
	Sample ID	31390102301	31390121105	31391010302	31391020501	31391030511	31391040410	31391060602
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-	-	-
Barium, Dissolved								
Barium, Total			-					
Beryllium, Dissolved								
Beryllium, Total			-					
Cadmium, Dissolved								
Cadmium, Total			-					
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total			-					
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total		240						
Lead, Dissolved								
Lead, Total			-					
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total		50						
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total			-					
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 809

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-40db						
	Depth (ft)							
	Date	08/22/91	09/03/91	10/01/91	11/04/91	12/04/91	01/09/92	02/14/92
	Sample ID	31391082201	31391090301	31391100110	31391110401	31391120407	31392010937	31392021422
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-40db		GW-41	GW-42			
	Depth (ft)							
	Date	03/09/92	06/04/92	03/10/92	06/07/91	12/10/91	02/10/92	04/08/92
	Sample ID	31392030909	31392060405	31392031030	31391060728	31391121033	31392021010	31392040817
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-42		GW-43				
	Depth (ft)							
	Date	06/05/92	06/05/92	06/07/91	09/05/91	12/06/91	03/10/92	06/04/92
	Sample ID	31392060523	31392060524	31391060727	31391090518	31391120629	31392031023	31392060402
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		2.9	3.7	2.8	2.4	2.7	1.5	1.4
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-44		GW-45db		GW-46db		GW-46t
	Depth (ft)							
	Date	06/07/91	09/05/91	08/22/91	02/12/92	08/22/91	04/08/92	02/12/92
	Sample ID	31391060723	31391090520	31391082209	31392021215	31391082210	31392040813	31392021216
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		10.4	11.6	5.9	8.4	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-47db	GW-47t	GW-48db			GW-49db	
	Depth (ft)							
	Date	08/23/91	02/12/92	08/23/91	02/12/92	03/09/92	08/28/91	02/14/92
	Sample ID	31391082311	31392021217	31391082312	31392021219	31392030914	35991082834	31392021424
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	2.9	-	-	-	-	2.5
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-50db		GW-51db		GW-52		GW-53db
	Depth (ft)							
	Date	08/23/91	02/14/92	08/23/91	02/12/92	08/23/91	02/14/92	08/26/91
	Sample ID	31391082316	31392021425	31391082317	31392021221	31391082318	31392021429	31391082620
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		3.1	2.4	-	1.7	2.3	2.3	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-53db	GW-54		GW-56	GW-57		
	Depth (ft)							
	Date	02/14/92	08/26/91	02/14/92	08/28/91	08/26/91	12/05/91	02/12/92
	Sample ID	31392021430	31391082621	31392021431	35991082828	31391082622	31391120517	31392021214
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	13.0	-	-	-	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-57			GW-59		GW-60db	
	Depth (ft)							
	Date	04/08/92	04/08/92DUP	06/05/92	08/26/91	02/17/92	08/26/91	02/14/92
	Sample ID	31392040816	31392040818	31392060526	31391082623	31392021733	31391082624	31392021432
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		-	-	-	16.4	13.3	3.4	5.1
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-61		GW-62		GW-63		GW-64db
	Depth (ft)							
	Date	08/26/91	02/17/92	08/26/91	02/17/92	07/05/91	02/17/92	08/23/91
	Sample ID	31391082625	31392021735	31391082626	31392021736	31391070505	31392021734	31391082313
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		33.9	26.6	5.3	2.8	1.8	-	-
Barium, Dissolved								
Barium, Total								
Beryllium, Dissolved								
Beryllium, Total								
Cadmium, Dissolved								
Cadmium, Total								
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total								
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total								
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total								
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	GW-64db	GW-65db		GW-66db		MW-1db	
	Depth (ft)						105-135	130-160
	Date	04/08/92	08/23/91	02/12/92	08/23/91	02/14/92	06/20/91	06/20/91
	Sample ID	31392040812	31391082314	31392021220	31391082315	31392021427	34391062001	34391062004
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved							2.9	
Arsenic, Total		4.9	6.6	-	1.8	11.2	34.5	12.8
Barium, Dissolved							-	
Barium, Total							872	1945
Beryllium, Dissolved							-	
Beryllium, Total							34	10
Cadmium, Dissolved							-	
Cadmium, Total							8.0	12
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved							9.0	
Chromium, Total							308	354
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved							60	
Iron, Total							164000	122000
Lead, Dissolved							-	
Lead, Total							97.0	101
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved							46	
Manganese, Total							1870	1210
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved							-	
Nickel, total							230	226
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-1db		MW-1sb	MW-1t		MW-2t	
	Depth (ft)	210-340	240-270					
	Date	06/21/91	06/21/91	06/13/91	07/23/90	12/04/90	07/23/90	12/04/90
	Sample ID	34391062105	34391062106	31391061317	31390072305	31390120406	31390072304	31390120404
Parameter (ug/l)								
Aluminum, Dissolved				154				
Aluminum, Total				19655				
Antimony, Dissolved				-				
Antimony, Total				-				
Arsenic, Dissolved			2.3	19.0				
Arsenic, Total		10.2	9.1	20.1	42.9	19.4	22.1	18.5
Barium, Dissolved			43	-				
Barium, Total		904	739	109		287		664
Beryllium, Dissolved			1.0	-				
Beryllium, Total		4.0	2.0	-		-		-
Cadmium, Dissolved			-	-				
Cadmium, Total		9.0	4.0	-		-		-
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved			15	-				
Chromium, Total		182	130	83		185		296
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved				-				
Copper, Total				47				
Iron, Dissolved								
Iron, Total		67400						
Lead, Dissolved			-	-				
Lead, Total		31.8	24.9	11.2		32.5		24.0
Lithium, Total								
Magnesium, Dissolved				2078				
Magnesium, Total				8450				
Manganese, Dissolved				83				
Manganese, Total		795		353				
Mercury, Dissolved				-				
Mercury, Total				-				
Nickel, Dissolved			-	-				
Nickel, total		112	92	52		117		181
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved				-				
Selenium, Total				1.3				
Silver, Dissolved				-				
Silver, total				-				
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved				-				
Thallium, Total				-				
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved				-				
Vanadium, Total				26				
Zinc, Dissolved				25				
Zinc, Total				121				

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-3t			MW-4t		MW-5sb	
	Depth (ft)							
	Date	07/23/90	12/04/90	04/24/92	07/26/90	12/07/90	07/23/90	07/24/90
	Sample ID	31390072301	31390120401	37392042402	31390072623	31390120724	31390072303	31390072403
Parameter (ug/l)								
Aluminum, Dissolved				312				
Aluminum, Total				254000	15100			
Antimony, Dissolved				-				
Antimony, Total				56	-			
Arsenic, Dissolved				-				
Arsenic, Total		18.3	-	-	2.1	5.9	4.9	2.1
Barium, Dissolved				55				
Barium, Total			1695	2250	241	244		
Beryllium, Dissolved				-				
Beryllium, Total			-	10	-	-		
Cadmium, Dissolved				-				
Cadmium, Total			13.0	-	-	-		
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved				-				
Chromium, Total			688	969	-	36		
Cobalt, Dissolved				-				
Cobalt, Total				264				
Copper, Dissolved				-				
Copper, Total				368	-			
Iron, Dissolved								
Iron, Total								
Lead, Dissolved				-				
Lead, Total			75.2	71.3	4.4	4.7		
Lithium, Total								
Magnesium, Dissolved				3190				
Magnesium, Total				134000	-			
Manganese, Dissolved				18				
Manganese, Total				4160	268			
Mercury, Dissolved				-				
Mercury, Total				-	-			
Nickel, Dissolved				-				
Nickel, total			419	647	-	-		
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved				-				
Selenium, Total				-	-			
Silver, Dissolved				-				
Silver, total				-	-			
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved				-				
Thallium, Total				4.3	-			
Tin, Dissolved				-				
Tin, Total				60				
Vanadium, Dissolved				-				
Vanadium, Total				659	-			
Zinc, Dissolved				9				
Zinc, Total				879	-			

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-5sb		MW-6db			MW-6sb	MW-6t
	Depth (ft)			40-70	81-111			
	Date	07/24/90DUP	12/04/90	07/08/91	07/08/91	07/08/91DUP	07/25/90	07/25/90
	Sample ID	31390072409	31390120403	34391070850	34391070846	34391070847	31390072522	31390072521
Parameter (ug/l)								
Aluminum, Dissolved					217	346	3790	812
Aluminum, Total					209000	192000	130000	39000
Antimony, Dissolved					-	42	-	-
Antimony, Total					-	30	-	-
Arsenic, Dissolved					-	-	7.4	-
Arsenic, Total		3.5	-	-	-	-	42.4	24.5
Barium, Dissolved					26	28	-	-
Barium, Total			-	271	571	521	807	292
Beryllium, Dissolved					-	-	-	-
Beryllium, Total			-	1.0	13	12	8.0	4.0
Cadmium, Dissolved					-	4.0	-	-
Cadmium, Total			-	-	18	16	9.0	-
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved					41	-	-	-
Chromium, Total			13.0	56	633	622	372	96.0
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved					20	-	-	-
Copper, Total					264	266	184	68.0
Iron, Dissolved								
Iron, Total								
Lead, Dissolved					-	8.9	14.2	2.6
Lead, Total			5.7	19.2	117	108	90.5	22.2
Lithium, Total								
Magnesium, Dissolved					2250	2540	4920	2720
Magnesium, Total					138000	122000	65700	18600
Manganese, Dissolved					65	57	235	102
Manganese, Total					3251	3016	1740	647
Mercury, Dissolved					-	-	-	-
Mercury, Total					-	-	-	-
Nickel, Dissolved					25	-	42.0	-
Nickel, total			-	56	669	658	124	61.0
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved					-	-	-	-
Selenium, Total					-	-	-	-
Silver, Dissolved					-	-	-	-
Silver, total					-	-		
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved							-	-
Thallium, Total							-	-
Tin, Dissolved							-	36.0
Tin, Total							-	-
Vanadium, Dissolved					-	-	-	-
Vanadium, Total					480	446	205	84.0
Zinc, Dissolved					37	39	305	12.0
Zinc, Total					652	653	531	78.0

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 00011
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LINEMASTER SWITCH ADMINISTRATIVE RECORD

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-6t		MW-7sb		MW-8db		
	Depth (ft)					30-70	87-127	160-200
	Date	07/25/90	12/07/90	07/24/90	12/06/90	07/01/91	07/01/91	07/02/91
	Sample ID	31390072525	31390120721	31390072413	31390120615	34391070137	34391070138	34391070240
Parameter (ug/l)								
Aluminum, Dissolved		771						
Aluminum, Total		18000		59500				
Antimony, Dissolved		-						
Antimony, Total		-		-				
Arsenic, Dissolved		-	-			-		-
Arsenic, Total		9.6	6.8	14.5	10.5	3.4	4.4	4.4
Barium, Dissolved		-	-			20		16
Barium, Total		112	205	353	258	336	175	361
Beryllium, Dissolved		-	-			2.0		2.0
Beryllium, Total		2.0	-	3.0	-	3.0	4.0	3.0
Cadmium, Dissolved		-	-			-		-
Cadmium, Total		-	-	11.0	-	4.0	8.0	7.0
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved		-	10			-		12
Chromium, Total		43.0	117	98.0	59.0	108	149	194
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved		-						
Copper, Total		24.0		110				
Iron, Dissolved								
Iron, Total								
Lead, Dissolved		-	3.3			-		-
Lead, Total		9.3	11.9	37.5	26.2	24.6	49.5	36.9
Lithium, Total								
Magnesium, Dissolved		2700						
Magnesium, Total		8780		15840				
Manganese, Dissolved		148						
Manganese, Total		231		1200				
Mercury, Dissolved		-						
Mercury, Total		-		-				
Nickel, Dissolved		45.0	-			-		-
Nickel, total		-	91	264	109	115	288	205
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved		-						
Selenium, Total		-		-				
Silver, Dissolved		-						
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved		-						
Thallium, Total		-		-				
Tin, Dissolved		-						
Tin, Total		-		-				
Vanadium, Dissolved		-						
Vanadium, Total		28.0		71.0				
Zinc, Dissolved		21.0						
Zinc, Total		40.0		175				

- Not Detected
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LIN003 8 2 3

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-8sb		MW-8t	MW-9sb		MW-10sb	
	Depth (ft)							
	Date	07/24/90	12/05/90	06/11/91	07/25/90	12/06/90	07/25/90	12/10/90
	Sample ID	31390072411	31390120510	31391061104	31390072520	31390120617	31390072524	31390121028
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved				-				354
Arsenic, Total		2.2	1.9	-	3.0	2.7	239	399
Barium, Dissolved				-				-
Barium, Total			-	783		-		-
Beryllium, Dissolved				-				-
Beryllium, Total			-	3.0		-		-
Cadmium, Dissolved				-				-
Cadmium, Total			-	38.0		-		-
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved				7.0				-
Chromium, Total			126	423		-		25
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved				-				-
Lead, Total			4.0	30.9		15.0		13.5
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved				22.0				-
Nickel, total			-	280		-		-
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-10ts	MW-10td			MW-11db		MW-11sb
	Depth (ft)					52-92	160-200	
	Date	04/24/92	07/25/90	12/10/90	12/10/90DUP	07/05/91	08/05/91	07/23/90
	Sample ID	37392042401	31390072627	31390121027	31390121030	34391070543	34391070544	31390072308
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total		15600						
Antimony, Dissolved								
Antimony, Total		-						
Arsenic, Dissolved				4.6	5.5	-		
Arsenic, Total		4.3	36.8	23.8	22.3	-	3.3	4.6
Barium, Dissolved				-	-	149		
Barium, Total		141		486	441	359	615	
Beryllium, Dissolved				-	-	2.0		
Beryllium, Total		-		-	-	7.0	12	
Cadmium, Dissolved				-	-	-		
Cadmium, Total		-		-	-	6.0	5.0	
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved				-	-	-		
Chromium, Total		58		211	182	104	358	
Cobalt, Dissolved								
Cobalt, Total		16						
Copper, Dissolved								
Copper, Total		14						
Iron, Dissolved								
Iron, Total								
Lead, Dissolved				-	-	6.1		
Lead, Total		5.2		16.8	12.8	23.4	31.2	
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total		17400						
Manganese, Dissolved								
Manganese, Total		920						
Mercury, Dissolved								
Mercury, Total		-						
Nickel, Dissolved				-	-	-		
Nickel, total		66		126	102	75	243	
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total		-						
Silver, Dissolved								
Silver, total		-						
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total		-						
Tin, Dissolved								
Tin, Total		-						
Vanadium, Dissolved								
Vanadium, Total		35						
Zinc, Dissolved								
Zinc, Total		54						

- Not Detected
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-11sb		MW-11t			MW-12db	
	Depth (ft)						45-65	
	Date	12/05/90	12/06/90	07/23/90	12/06/90	12/06/90DUP	07/11/90	12/18/90
	Sample ID	31390120508	31390120608	31390072307	31390120614	31390120616	19290071104	31390121810
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved			-		3.3	2.8		
Arsenic, Total		1.9		163	-	-	13.1	18.7
Barium, Dissolved			99.0		104	136		
Barium, Total		-			1003	1015		923
Beryllium, Dissolved			-		-	-		
Beryllium, Total		-			-	-		-
Cadmium, Dissolved			-		-	-		
Cadmium, Total		-			-	-		9.0
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved			-		-	-		
Chromium, Total		51.0			525	530		278
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved			4.2		3.0	3.0		
Lead, Total		5.6			28.9	31.2		80.4
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved			-		-	-		
Nickel, total		-			280	270		182
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-12db						
	Depth (ft)	85-105		135-155		160-200		
		07/11/90	12/18/90	07/11/90	12/18/90	07/11/90	12/18/90	12/18/90
	Sample ID	19290071103	31390121809	19290071102	31390121807	19290071101	31390121806	31390121808
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved							-	-
Arsenic, Total		1.9	5.9	1.3	4.7	21.1	13.6	8.3
Barium, Dissolved							-	-
Barium, Total			172		242		1588	1192
Beryllium, Dissolved							-	-
Beryllium, Total			-		-		-	-
Cadmium, Dissolved							-	-
Cadmium, Total			-		-		7.0	7.0
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved							-	-
Chromium, Total			72		58		281	188
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved							-	-
Lead, Total			13.4		19.1		36.2	25.9
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved							-	-
Nickel, total			43		42		183	131
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-12sb					MW-12t	
	Depth (ft)							
	Date	07/24/90	12/05/90	04/21/92	04/28/92	05/20/92	07/24/90	07/24/90DUP
	Sample ID	31390072414	31390120511	35192042115	37392042804	40192052001	31390072415	31390072417
Parameter (ug/l)								
Aluminum, Dissolved				-				
Aluminum, Total					51300	1040		
Antimony, Dissolved				-				
Antimony, Total					-	-		
Arsenic, Dissolved				3.4				
Arsenic, Total		8.9	5.0		19.1	2.2	131	240
Barium, Dissolved				44				
Barium, Total			-		250	32		
Beryllium, Dissolved				4				
Beryllium, Total			-		-	-		
Cadmium, Dissolved				9				
Cadmium, Total			-		-	-		
Calcium, Dissolved								
Calcium, Total						43100		
Chromium, Dissolved				-				
Chromium, Total			144		163	-		
Cobalt, Dissolved								
Cobalt, Total						-		
Copper, Dissolved				-				
Copper, Total					46	-		
Iron, Dissolved								
Iron, Total						1200		
Lead, Dissolved				-				
Lead, Total			5.8		63.0	1.7		
Lithium, Total						-		
Magnesium, Dissolved				6460				
Magnesium, Total					35600			
Manganese, Dissolved				59				
Manganese, Total					1630			
Mercury, Dissolved				-				
Mercury, Total					-	-		
Nickel, Dissolved				-				
Nickel, total			-		90	-		
Potassium, Dissolved								
Potassium, Total						5950		
Selenium, Dissolved				-				
Selenium, Total					-	-		
Silver, Dissolved				-				
Silver, total					-	-		
Sodium, Dissolved								
Sodium, Total						25300		
Strontium, Total						158		
Thallium, Dissolved				-				
Thallium, Total					-	-		
Tin, Dissolved				-				
Tin, Total					-	-		
Vanadium, Dissolved				-				
Vanadium, Total					85	-		
Zinc, Dissolved				24				
Zinc, Total					193	13		

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ADMINISTRATIVE RECORD
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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-12t			MW-13db			
	Depth (ft)				60-80		160-180	
	Date	12/05/90	04/21/92	05/20/92	07/12/90	12/19/90	07/12/90	12/19/90
	Sample ID	31390120512	35192042114	40192052002	19290071205	31390121916	19290071204	31390121915
Parameter (ug/l)								
Aluminum, Dissolved			-					
Aluminum, Total				185000				
Antimony, Dissolved			-					
Antimony, Total				290				
Arsenic, Dissolved			-			-		
Arsenic, Total		27.7		65.6	310	37.9	24.2	10.7
Barium, Dissolved			70.0			-		
Barium, Total		369		1290		532		1053
Beryllium, Dissolved			4.0			-		
Beryllium, Total		-		7		-		-
Cadmium, Dissolved			-			-		
Cadmium, Total		-		-		-		-
Calcium, Dissolved								
Calcium, Total				81900				
Chromium, Dissolved			-			-		
Chromium, Total		470		690		114		246
Cobalt, Dissolved								
Cobalt, Total				162				
Copper, Dissolved			-					
Copper, Total				224				
Iron, Dissolved								
Iron, Total				219000				
Lead, Dissolved			-			-		
Lead, Total		20.9		66.0		49.5		17.9
Lithium, Total				235				
Magnesium, Dissolved			10700					
Magnesium, Total								
Manganese, Dissolved			4370					
Manganese, Total								
Mercury, Dissolved			-					
Mercury, Total				-				
Nickel, Dissolved			18.0			-		
Nickel, total		119		444		76		137
Potassium, Dissolved								
Potassium, Total				77500				
Selenium, Dissolved			-					
Selenium, Total				-				
Silver, Dissolved			-					
Silver, total				-				
Sodium, Dissolved								
Sodium, Total				95200				
Strontium, Total				582				
Thallium, Dissolved			-					
Thallium, Total				-				
Tin, Dissolved			-					
Tin, Total				53				
Vanadium, Dissolved			-					
Vanadium, Total				429				
Zinc, Dissolved			40.0					
Zinc, Total				506				

- Not Detected
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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 0278

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-13db			MW-14db			
	Depth (ft)	210-230			40-70		80-111	
	Date	07/12/90	07/12/90DUP	12/19/90	07/10/90	12/17/90	07/10/90	12/17/90
	Sample ID	19290071202	19290071203	31390121912	19290071003	31390121703	19290071002	31390121702
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved								
Arsenic, Total		16.4	17.2	87.6	8.7	18.2	15.7	11.9
Barium, Dissolved								
Barium, Total				708		875		629
Beryllium, Dissolved								
Beryllium, Total				13		-		-
Cadmium, Dissolved								
Cadmium, Total				-		-		-
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved								
Chromium, Total				202		146		91
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved								
Lead, Total				186		86.6		33.8
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved								
Nickel, total				158		110		66
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-14db		MW-14sb		MW-15db		
	Depth (ft)	170-200				155-255	255-305	
	Date	07/10/90	12/17/90	07/24/90	12/05/90	06/21/91	06/24/91	06/24/91DUP
	Sample ID	19290071001	31390121701	31390072412	31390120509	34391062109	34391062410	34391062411
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved			-			-	-	4.3
Arsenic, Total		9.4	7.4	4.6	1.9	14	5.4	-
Barium, Dissolved			-			10	26	28
Barium, Total			1686		-	368	1950	1785
Beryllium, Dissolved			-			1.0	2.0	2.0
Beryllium, Total			-		-	45	7.0	7.0
Cadmium, Dissolved			-			-	-	-
Cadmium, Total			-		-	87	13	11
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved			-			10	14	-
Chromium, Total			80		73	1868	594	485
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved						242	469	
Iron, Total						470000	125000	
Lead, Dissolved			3.7			2.8	-	-
Lead, Total			13.9		3.6	119	78	70.2
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved						-	95	
Manganese, Total						8200	1260	
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved			-			-	-	-
Nickel, total			53		-	1008	348	291
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

Well ID	MW-15sb	MW-15t	MW-16sb	MW-16t		MW-17db	
Depth (ft)						83-123	180-200
Date	06/11/91	06/11/91	06/13/91	06/13/91	01/09/92	06/27/91	06/27/91
Sample ID	31391061108	31391061107	31391061321	31391061318	31392010940	34391062723	34391062724
Parameter (ug/l)							
Aluminum, Dissolved				-	-		
Aluminum, Total				58241	1200000		
Antimony, Dissolved				-	-		
Antimony, Total				-	-		
Arsenic, Dissolved		17.8		5.2	18.9	-	
Arsenic, Total	3.1	22.5	33.0	11.3	-	8.4	7.0
Barium, Dissolved		7.0		299	292	46	
Barium, Total	-	81.0	2936	694	9960	920	124
Beryllium, Dissolved		-		-	-	1.0	
Beryllium, Total	-	-	19	-	14	1.0	1.0
Cadmium, Dissolved		-		-	-	-	
Cadmium, Total	-	-	68	-	49	-	-
Calcium, Dissolved							
Calcium, Total							
Chromium, Dissolved		-		-	-	-	
Chromium, Total	10.0	28.0	1712	191	4000	109	51
Cobalt, Dissolved							
Cobalt, Total							
Copper, Dissolved				-	-		
Copper, Total				50	1290		
Iron, Dissolved							
Iron, Total							
Lead, Dissolved		-		-	-	-	
Lead, Total	-	4.0	159	16.4	322	21.7	8.8
Lithium, Total							
Magnesium, Dissolved				50140	71100		
Magnesium, Total				73875	720000		
Manganese, Dissolved				612	2440		
Manganese, Total				1431	23700		
Mercury, Dissolved				-	-		
Mercury, Total				-	0.4		
Nickel, Dissolved		-		-	31.0	-	
Nickel, total	26.0	27.0	1015	109	2730	58	41
Potassium, Dissolved							
Potassium, Total							
Selenium, Dissolved				-	-		
Selenium, Total				-	-		
Silver, Dissolved				-	-		
Silver, total				7	-		
Sodium, Dissolved							
Sodium, Total							
Strontium, Total							
Thallium, Dissolved				-	-		
Thallium, Total				-	-		
Tin, Dissolved							
Tin, Total							
Vanadium, Dissolved				-	-		
Vanadium, Total				135	1400		
Zinc, Dissolved				16	-		
Zinc, Total				156	3420		

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-17db			MW-17sb	MW-17ts	MW-17td	MW-18db
	Depth (ft)	250-290		300-340				70-100
	Date	06/27/91	06/27/91	06/28/91	06/12/91	06/12/91	06/12/91	06/28/91
	Sample ID	34391062725	34391062728	34391062829	31391061213	31391061212	31391061210	34391062831
Parameter (ug/l)								
Aluminum, Dissolved		81	157				250	
Aluminum, Total		4520	5120				26529	
Antimony, Dissolved		40	-				-	
Antimony, Total		50	-				-	
Arsenic, Dissolved		3.8	4.3				4.8	
Arsenic, Total		9.2	10.2	5.7	11.8	2.4	8.7	9.4
Barium, Dissolved		11	12				52	
Barium, Total		80	89	128	241	1148	232	144
Beryllium, Dissolved		-	-				1.0	
Beryllium, Total		-	-	2.0	3.0	4.0	2.0	3.0
Cadmium, Dissolved		-	5.0				-	
Cadmium, Total		-	-	-	7.0	39	-	-
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved		-	-				-	
Chromium, Total		37	38	69	159	530	87	98
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved		-	8.0				-	
Copper, Total		42	42				17	
Iron, Dissolved								
Iron, Total								
Lead, Dissolved		2.7	-				-	
Lead, Total		19.7	18.6	12.2	21.9	36.2	7.9	14.0
Lithium, Total								
Magnesium, Dissolved		2450	2430				2102	
Magnesium, Total		4110	4490				12414	
Manganese, Dissolved		116	124				27	
Manganese, Total		250	268				373	
Mercury, Dissolved		-	-				-	
Mercury, Total		-	-				-	
Nickel, Dissolved		-	-				-	
Nickel, total		20	35	28	103	285	46	47
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved		-	-				1.2	
Selenium, Total		2.8	-				-	
Silver, Dissolved		-	-				-	
Silver, total		-	-				-	
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved							-	
Thallium, Total							-	
Tin, Dissolved		-	-					
Tin, Total		76	78					
Vanadium, Dissolved		14	-				-	
Vanadium, Total		20	25				61	
Zinc, Dissolved		11	31				17	
Zinc, Total		114	131				86	

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-18db		MW-18sb	MW-18t	MW-19sb	MW-20sb	MW-21db
	Depth (ft)	130-160	160-190					170-200
	Date	07/01/91	07/01/91	06/12/91	06/11/91	06/11/91	06/11/91	06/26/91
	Sample ID	34391070134	34391070135	31391061209	31391061101	31391061105	31391061102	34391062619
Parameter (ug/l)								
Aluminum, Dissolved				168				
Aluminum, Total				34197				
Antimony, Dissolved				-				
Antimony, Total				-				
Arsenic, Dissolved		5.2		10.5				2.0
Arsenic, Total		7.8	12.4	12.1	8.8	-	2.0	10.4
Barium, Dissolved		8.0		-				35.0
Barium, Total		149	81	141	130	73.0	79.0	457
Beryllium, Dissolved		2.0		1.0				-
Beryllium, Total		3.0	2.0	2.0	1.0	-	-	1.0
Cadmium, Dissolved		-		-				-
Cadmium, Total		4.0	4.0	-	-	4.0	-	11.0
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved		-		-				-
Chromium, Total		62	79	85	45	30.0	22.0	271
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Dissolved				-				
Copper, Total				50				
Iron, Dissolved								
Iron, Total								
Lead, Dissolved		-		-				6.5
Lead, Total		26.5	11.8	13.9	16.9	7.6	5.7	48.0
Lithium, Total								
Magnesium, Dissolved				2659				
Magnesium, Total				14040				
Manganese, Dissolved				9.0				
Manganese, Total				380				
Mercury, Dissolved				-				
Mercury, Total				-				
Nickel, Dissolved		-		-				-
Nickel, total		108	51	50	40.0	27.0	39.0	107
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved				-				
Selenium, Total				-				
Silver, Dissolved				-				
Silver, total				-				
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved				-				
Thallium, Total				-				
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved				-				
Vanadium, Total				53				
Zinc, Dissolved				98				
Zinc, Total				78				

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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-21db	MW-22db				MW-23t	
	Depth (ft)	280-310	35-75	80-120	140-180	185-225		
	Date	06/26/91	06/25/91	06/25/91	06/25/91	06/25/91	08/28/91	01/09/92
	Sample ID	34391062620	34391062513	34391062514	34391062515	34391062516	35991082829	31392010943
Parameter (ug/l)								
Aluminum, Dissolved								-
Aluminum, Total								1410000
Antimony, Dissolved								-
Antimony, Total								-
Arsenic, Dissolved				-	-			7.3
Arsenic, Total		7.4	4.7	6.4	4.1	3.5	-	-
Barium, Dissolved				9.0	-			82
Barium, Total		2406	196	456	1008	335	23300	97.0
Beryllium, Dissolved				-	-			-
Beryllium, Total		2.0	1.0	2.0	4.0	1.0	87	18
Cadmium, Dissolved				-	-			-
Cadmium, Total		20.0	-	8.0	14	7.0	757	68
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved				-	-			10
Chromium, Total		510	18	92	50	37	10500	4910
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								11
Copper, Total								1210
Iron, Dissolved								
Iron, Total								
Lead, Dissolved				2.8	-			-
Lead, Total		30.6	23.5	36.2	76.6	109	319	265.0
Lithium, Total								
Magnesium, Dissolved								19500
Magnesium, Total								815000
Manganese, Dissolved								455
Manganese, Total								22500
Mercury, Dissolved								-
Mercury, Total								0.5
Nickel, Dissolved				-	-			28
Nickel, total		341	39	270	604	271	6000	2680
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								-
Selenium, Total								-
Silver, Dissolved								-
Silver, total								-
Sodium, Dissolved								
Sodium, Total								
Thallium, Dissolved								-
Thallium, Total								-
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								-
Vanadium, Total								3400
Zinc, Dissolved								-
Zinc, Total								3670

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 8375

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-21db	MW-22db				MW-23t	
	Depth (ft)	280-310	35-75	80-120	140-180	185-225		
	Date	06/26/91	06/25/91	06/25/91	06/25/91	06/25/91	08/28/91	01/09/92
	Sample ID	34391062620	34391062513	34391062514	34391062515	34391062516	35991082829	31392010943
Parameter (ug/l)								
Aluminum, Dissolved								-
Aluminum, Total								1410000
Antimony, Dissolved								-
Antimony, Total								-
Arsenic, Dissolved				-	-			7.3
Arsenic, Total		7.4	4.7	6.4	4.1	3.5	-	-
Barium, Dissolved				9.0	-			82
Barium, Total		2406	196	456	1008	335	23300	97.0
Beryllium, Dissolved				-	-			-
Beryllium, Total		2.0	1.0	2.0	4.0	1.0	87	18
Cadmium, Dissolved				-	-			-
Cadmium, Total		20.0	-	8.0	14	7.0	757	68
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved				-	-			10
Chromium, Total		510	18	92	50	37	10500	4910
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								11
Copper, Total								1210
Iron, Dissolved								
Iron, Total								
Lead, Dissolved				2.8	-			-
Lead, Total		30.6	23.5	36.2	76.6	109	319	265.0
Lithium, Total								
Magnesium, Dissolved								19500
Magnesium, Total								815000
Manganese, Dissolved								455
Manganese, Total								22500
Mercury, Dissolved								-
Mercury, Total								0.5
Nickel, Dissolved				-	-			28
Nickel, total		341	39	270	604	271	6000	2680
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								-
Selenium, Total								-
Silver, Dissolved								-
Silver, total								-
Sodium, Dissolved								
Sodium, Total								
Thallium, Dissolved								-
Thallium, Total								-
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								-
Vanadium, Total								3400
Zinc, Dissolved								-
Zinc, Total								3670

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 8356

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

Well ID	MW-24t		MW-25t		MW-26t		MW-27sb
Depth (ft)							
Date	08/28/91	01/09/92	08/28/91	01/08/92	08/28/91	01/09/92	04/21/92
Sample ID	35991082830	31392010944	35991082831	31392010831	35991082832	31392010945	35192042110
Parameter (ug/l)							
Aluminum, Dissolved				1880		146	
Aluminum, Total				542000		4720000	
Antimony, Dissolved				-		-	
Antimony, Total				-		-	
Arsenic, Dissolved		16.0		10.5		11.1	
Arsenic, Total	-	23.1	-	-	-	1.5	48.5
Barium, Dissolved		27		102		32	
Barium, Total	4140	360	10100	4280	4030	3340	5470
Beryllium, Dissolved		-		-		-	
Beryllium, Total	19	-	38	5.0	18	4	75.0
Cadmium, Dissolved		-		-		-	
Cadmium, Total	172	-	366	71.0	178	21	-
Calcium, Dissolved							
Calcium, Total							
Chromium, Dissolved		12		13.0		44	
Chromium, Total	2150	158	4990	2240	2200	1790	2480
Cobalt, Dissolved							
Cobalt, Total							
Copper, Dissolved				12.0		-	
Copper, Total				552		445	
Iron, Dissolved							
Iron, Total							
Lead, Dissolved				-		2.0	
Lead, Total	122		273	137	95.6	93.6	282
Lithium, Total							
Magnesium, Dissolved				19800		3530	
Magnesium, Total				308000		251000	
Manganese, Dissolved				1600		39	
Manganese, Total				11400		8070	
Mercury, Dissolved				0.4		0.3	
Mercury, Total				0.5		0.5	
Nickel, Dissolved				-		55	
Nickel, total	1140		2750	1320	1180	1030	1610
Potassium, Dissolved							
Potassium, Total							
Selenium, Dissolved				-		-	
Selenium, Total				-		-	
Silver, Dissolved				-		-	
Silver, total				-		-	
Sodium, Dissolved							
Sodium, Total							
Thallium, Dissolved				-		-	
Thallium, Total				-		-	
Tin, Dissolved							
Tin, Total							
Vanadium, Dissolved				-		-	
Vanadium, Total				1540		1200	
Zinc, Dissolved				-		-	
Zinc, Total				1580		1280	

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ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-27t	MW-28db				MW-28sb	
	Depth (ft)		80-110	130-160	260-290	350-380		
	Date	04/21/92	04/28/92	04/28/92	04/28/92	04/29/92	04/21/92	05/20/92
	Sample ID	35192042111	37392042801	37392042802	37392042803	37392042905	35192042103	40192052003
Parameter (ug/l)								
Aluminum, Dissolved					118		-	
Aluminum, Total					3650			18100
Antimony, Dissolved					-		-	
Antimony, Total					-			-
Arsenic, Dissolved					5.7		6.9	
Arsenic, Total		-	7.9	9.0	10.6	2.2		11.1
Barium, Dissolved					-		14.0	
Barium, Total		8870	46	37	21	14		112
Beryllium, Dissolved					-		4.0	
Beryllium, Total		49.0	-	-	-	-		-
Cadmium, Dissolved					-		-	
Cadmium, Total		-	-	-	-	-		-
Calcium, Dissolved								
Calcium, Total								34800
Chromium, Dissolved					24		-	
Chromium, Total		4280	71	67	20	13		68
Cobalt, Dissolved								
Cobalt, Total								24
Copper, Dissolved					-		-	
Copper, Total					100			77
Iron, Dissolved								
Iron, Total								18400
Lead, Dissolved					-		2.9	
Lead, Total		276	297	124	50.5	17.2		12.7
Lithium, Total								-
Magnesium, Dissolved					1730		1250	
Magnesium, Total					2830			
Manganese, Dissolved					57		29.0	
Manganese, Total					148			
Mercury, Dissolved					-		-	
Mercury, Total					-			-
Nickel, Dissolved					22		-	
Nickel, total		2310	45	41	22	-		44
Potassium, Dissolved								
Potassium, Total								13300
Selenium, Dissolved					-		-	
Selenium, Total					-			-
Silver, Dissolved					-		-	
Silver, total					-			-
Sodium, Dissolved					9090			
Sodium, Total					9840			17500
Strontium, Total								76
Thallium, Dissolved					-		-	
Thallium, Total					-			-
Tin, Dissolved					-		-	
Tin, Total					-			-
Vanadium, Dissolved					-		-	
Vanadium, Total					-			29
Zinc, Dissolved					303		24.0	
Zinc, Total					2660			360

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-28t		MW-29db				
	Depth (ft)			90-130	180-220	280-230		320-360
	Date	04/21/92	05/20/92	04/30/92	04/30/92	05/01/92	05/01/92	05/01/92
	Sample ID	35192042105	40192052005	37392043008	37392043009	37392050110	37392050113	37392050112
Parameter (ug/l)								
Aluminum, Dissolved		-						
Aluminum, Total			467000					
Antimony, Dissolved		-						
Antimony, Total			803					
Arsenic, Dissolved		8.0				5.9	5.9	
Arsenic, Total			-	14.9	13.0	8.5	8.0	8.7
Barium, Dissolved		28.0				-	-	
Barium, Total			3570	47	37	21	16	27
Beryllium, Dissolved		3.0				-	-	
Beryllium, Total			18	-	-	-	-	-
Cadmium, Dissolved		-				-	-	
Cadmium, Total			-	-	-	-	-	-
Calcium, Dissolved								
Calcium, Total			84700					
Chromium, Dissolved		-				-	-	
Chromium, Total			2190	38	49	15	16	31
Cobalt, Dissolved								
Cobalt, Total			362					
Copper, Dissolved		-						
Copper, Total			501					
Iron, Dissolved								
Iron, Total			660					
Lead, Dissolved		-				-	-	
Lead, Total			147	50.0	134	7.3	5.6	47.6
Lithium, Total			917					
Magnesium, Dissolved		4110						
Magnesium, Total								
Manganese, Dissolved		25.0						
Manganese, Total								
Mercury, Dissolved		-						
Mercury, Total			-					
Nickel, Dissolved		-				-	-	
Nickel, total			2930	26	34	23	19	-
Potassium, Dissolved								
Potassium, Total			244000					
Selenium, Dissolved		-						
Selenium, Total			-					
Silver, Dissolved		-						
Silver, total			-					
Sodium, Dissolved								
Sodium, Total			26600					
Strontium, Total			564					
Thallium, Dissolved		-						
Thallium, Total			6.8					
Tin, Dissolved								
Tin, Total			137					
Vanadium, Dissolved		-						
Vanadium, Total			1300					
Zinc, Dissolved		32.0						
Zinc, Total			1390					

- Not Detected
Blank space indicates parameter was not analyzed for.

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 939

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MW-29sb	MW-29t	MW-30ts	MW-30td	MWEPA-Asb	MWEPA-At	
	Depth (ft)							
	Date	04/21/92	04/21/92	04/21/92	04/21/92	06/12/91	07/25/90	12/10/90
	Sample ID	35192042102	35192042101	35192042107	35192042106	31391061216	31390072518	31390121025
Parameter (ug/l)								
Aluminum, Dissolved								
Aluminum, Total								
Antimony, Dissolved								
Antimony, Total								
Arsenic, Dissolved						12.3		
Arsenic, Total		41.9	2.9	-	-	35.7	15.6	10.3
Barium, Dissolved						11		
Barium, Total		892	1360	1430	5020	847		462
Beryllium, Dissolved						-		
Beryllium, Total		10.0	7.0	7.0	26	6.0		-
Cadmium, Dissolved						-		
Cadmium, Total		-	-	-	-	37		-
Calcium, Dissolved								
Calcium, Total								
Chromium, Dissolved						7.0		
Chromium, Total		575	987	782	2730	512		209
Cobalt, Dissolved								
Cobalt, Total								
Copper, Dissolved								
Copper, Total								
Iron, Dissolved								
Iron, Total								
Lead, Dissolved						-		
Lead, Total		116	55.8	58.3	150	99		37.6
Lithium, Total								
Magnesium, Dissolved								
Magnesium, Total								
Manganese, Dissolved								
Manganese, Total								
Mercury, Dissolved								
Mercury, Total								
Nickel, Dissolved						-		
Nickel, total		401	604	640	1730	305		143
Potassium, Dissolved								
Potassium, Total								
Selenium, Dissolved								
Selenium, Total								
Silver, Dissolved								
Silver, total								
Sodium, Dissolved								
Sodium, Total								
Strontium, Total								
Thallium, Dissolved								
Thallium, Total								
Tin, Dissolved								
Tin, Total								
Vanadium, Dissolved								
Vanadium, Total								
Zinc, Dissolved								
Zinc, Total								

- Not Detected
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0489

GROUNDWATER - SUMMARY OF METALS RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Well ID	MWEPA-Atd	
	Depth (ft)		
	Date	06/12/91	01/08/92
	Sample ID	31391061215	31392010836
Parameter (ug/l)			
Aluminum, Dissolved			
Aluminum, Total			
Antimony, Dissolved			
Antimony, Total			
Arsenic, Dissolved			
Arsenic, Total		-	-
Barium, Dissolved			
Barium, Total		13092	2910
Beryllium, Dissolved			
Beryllium, Total		59	2.0
Cadmium, Dissolved			
Cadmium, Total		494	19.0
Calcium, Dissolved			
Calcium, Total			
Chromium, Dissolved			
Chromium, Total		6753	1340
Cobalt, Dissolved			
Cobalt, Total			
Copper, Dissolved			
Copper, Total			
Iron, Dissolved			
Iron, Total			
Lead, Dissolved			
Lead, Total		306	89.2
Lithium, Total			
Magnesium, Dissolved			
Magnesium, Total			
Manganese, Dissolved			
Manganese, Total			
Mercury, Dissolved			
Mercury, Total			
Nickel, Dissolved			
Nickel, total		3702	86.7
Potassium, Dissolved			
Potassium, Total			
Selenium, Dissolved			
Selenium, Total			
Silver, Dissolved			
Silver, total			
Sodium, Dissolved			
Sodium, Total			
Strontium, Total			
Thallium, Dissolved			
Thallium, Total			
Tin, Dissolved			
Tin, Total			
Vanadium, Dissolved			
Vanadium, Total			
Zinc, Dissolved			
Zinc, Total			

- Not Detected
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ADMINISTRATIVE RECORD

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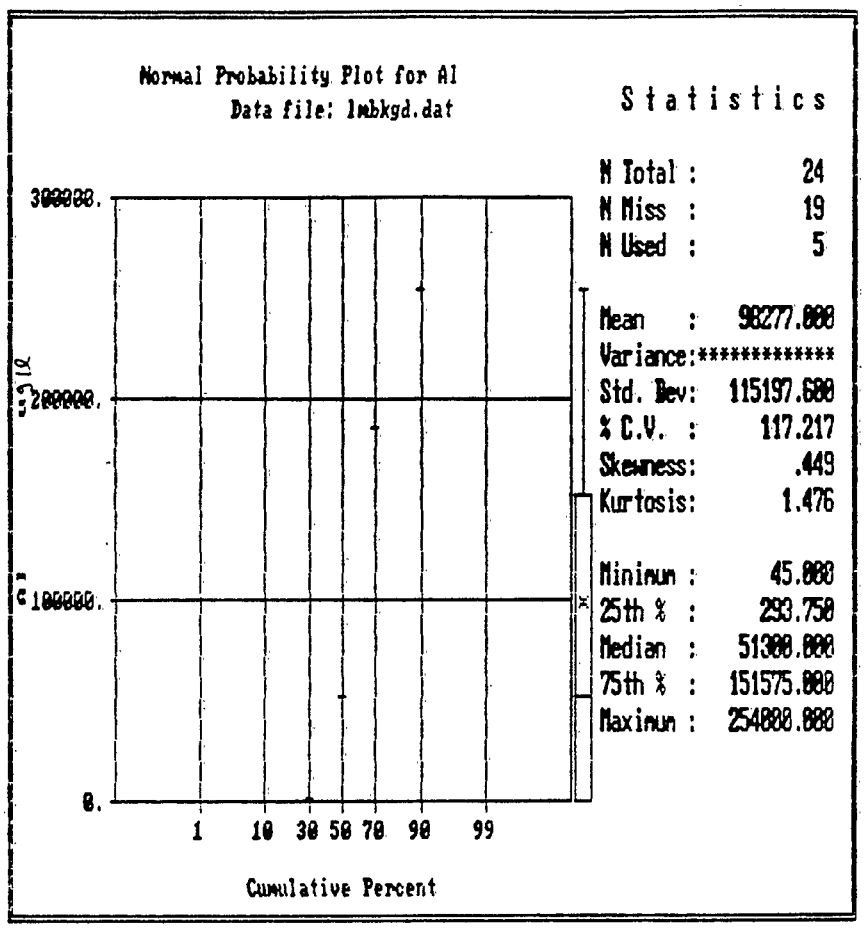
ADMINISTRATIVE RECORD

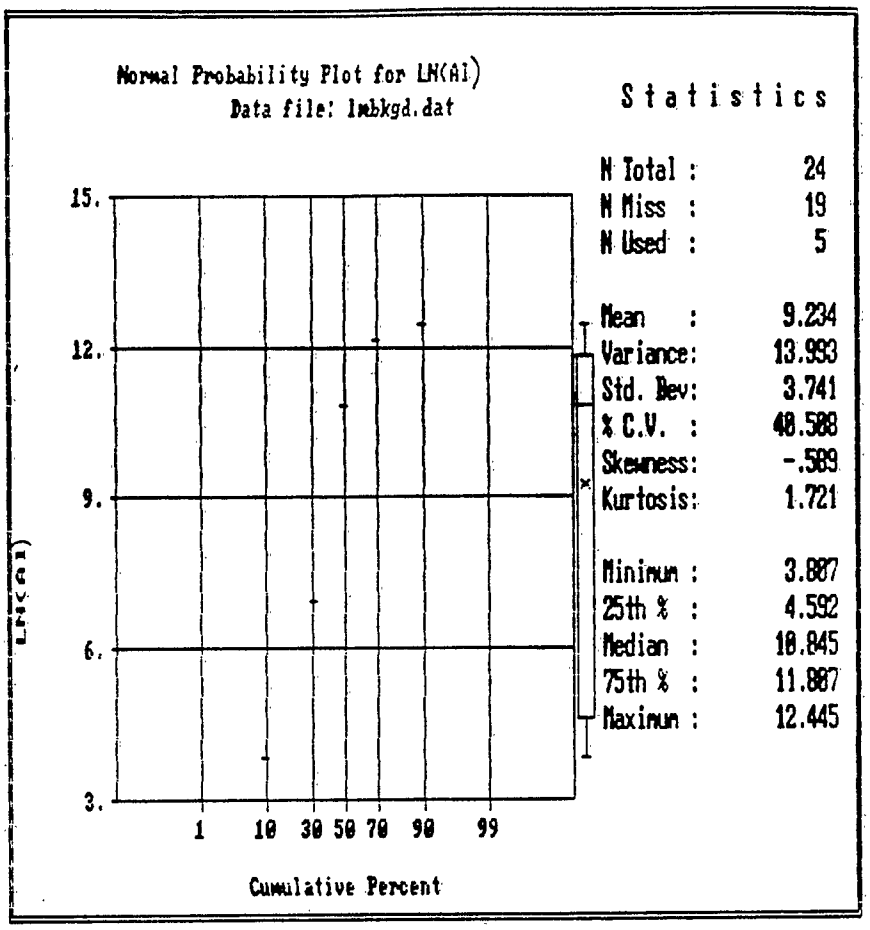
LIN003

248



Statistics

N Total :	24
N Miss :	19
N Used :	5
Mean :	98277.000
Variance:	**********
Std. Dev:	115197.680
% C.V. :	117.217
Skewness:	.449
Kurtosis:	1.476
Minimun :	45.000
25th % :	293.750
Median :	51300.000
75th % :	151575.000
Maximun :	254000.000



Statistics

N Total :	24
N Miss :	19
N Used :	5
Mean :	9.234
Variance:	13.993
Std. Dev:	3.741
% C.V. :	40.508
Skewness:	-.589
Kurtosis:	1.721
Minimum :	3.807
25th % :	4.592
Median :	10.845
75th % :	11.807
Maximum :	12.445

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LIN003
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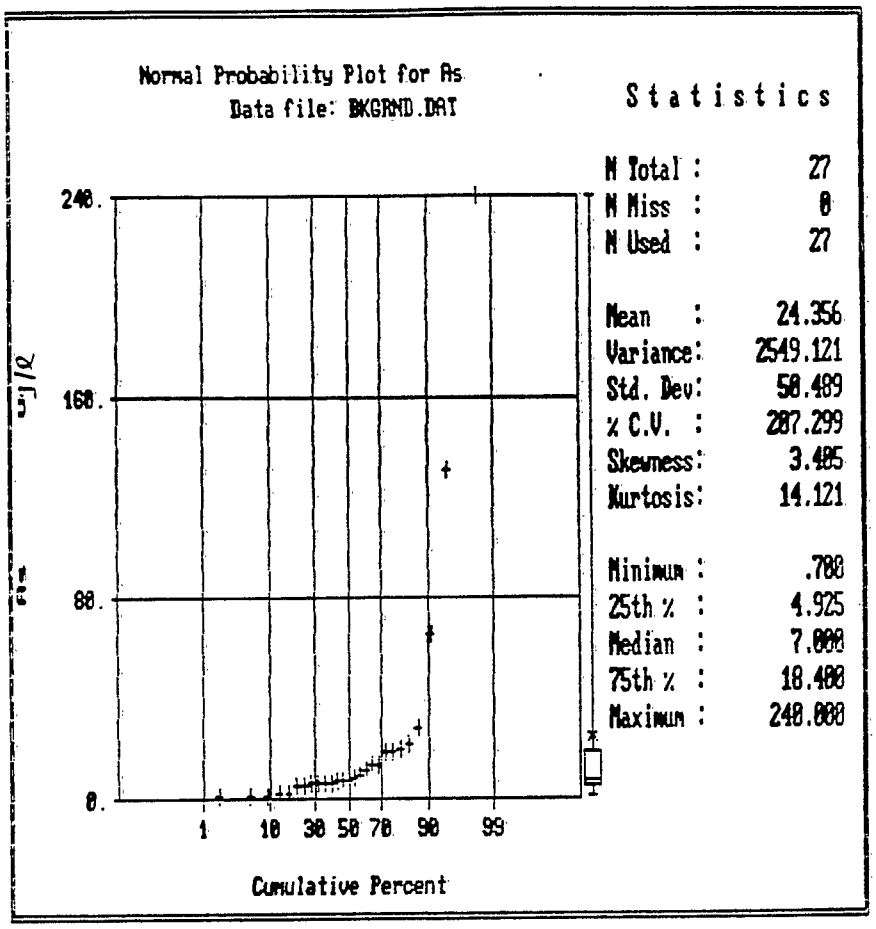

Statistics

N Total :	27
N Miss :	0
N Used :	27
Mean :	24.356
Variance:	2549.121
Std. Dev:	50.489
% C.V. :	207.299
Skewness:	3.485
Kurtosis:	14.121
Minimum :	.700
25th % :	4.925
Median :	7.000
75th % :	18.400
Maximum :	240.000

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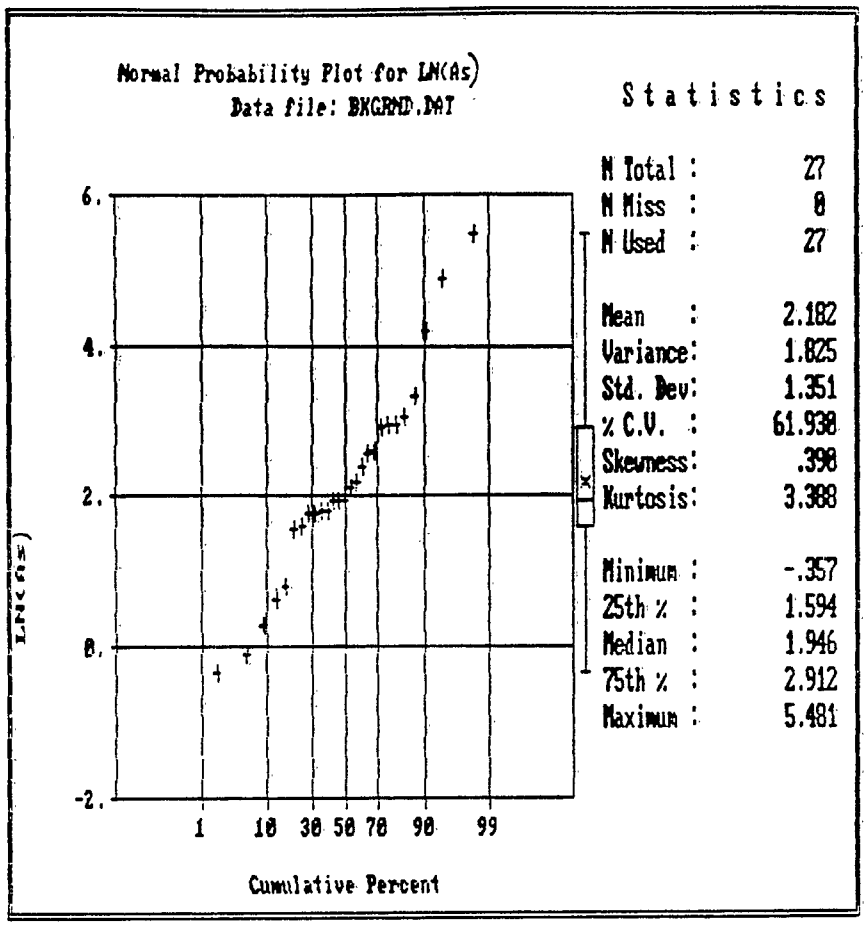
ADMINISTRATIVE RECORD
LIN003
8 4 4



Statistics

N Total :	27
N Miss :	0
N Used :	27
Mean :	2.182
Variance:	1.825
Std. Dev:	1.351
% C.V. :	61.930
Skewness:	.398
Kurtosis:	3.388
Minimum :	-.357
25th % :	1.594
Median :	1.946
75th % :	2.912
Maximum :	5.481

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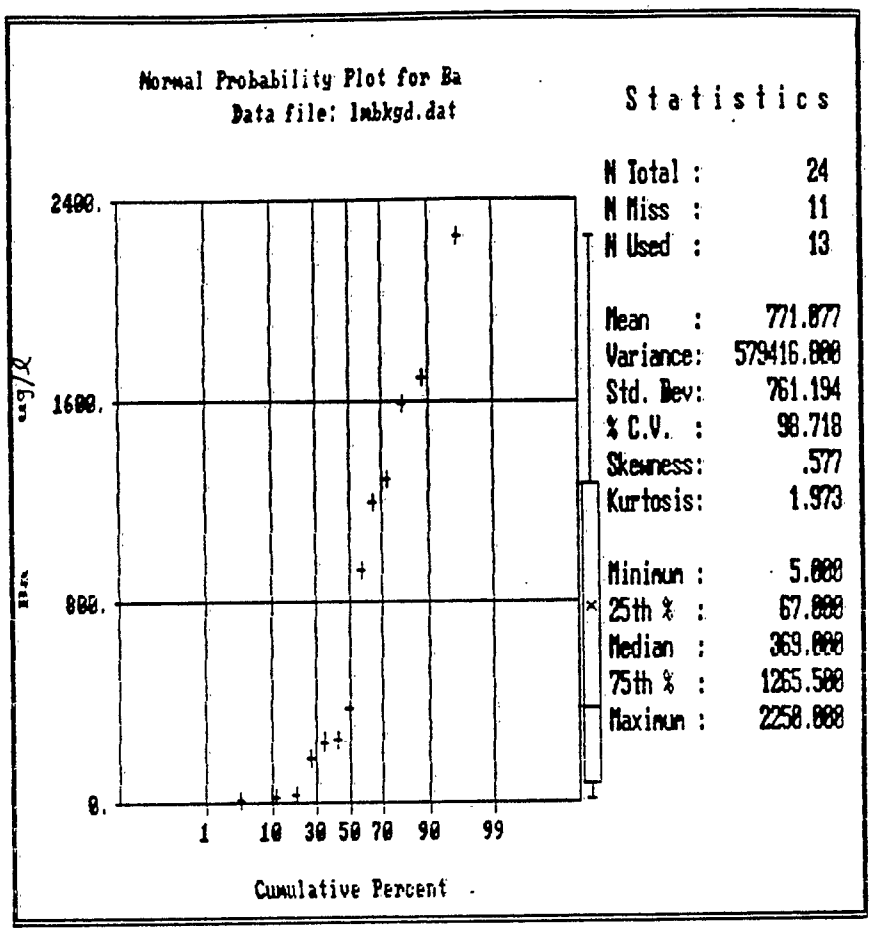
LIN003
548



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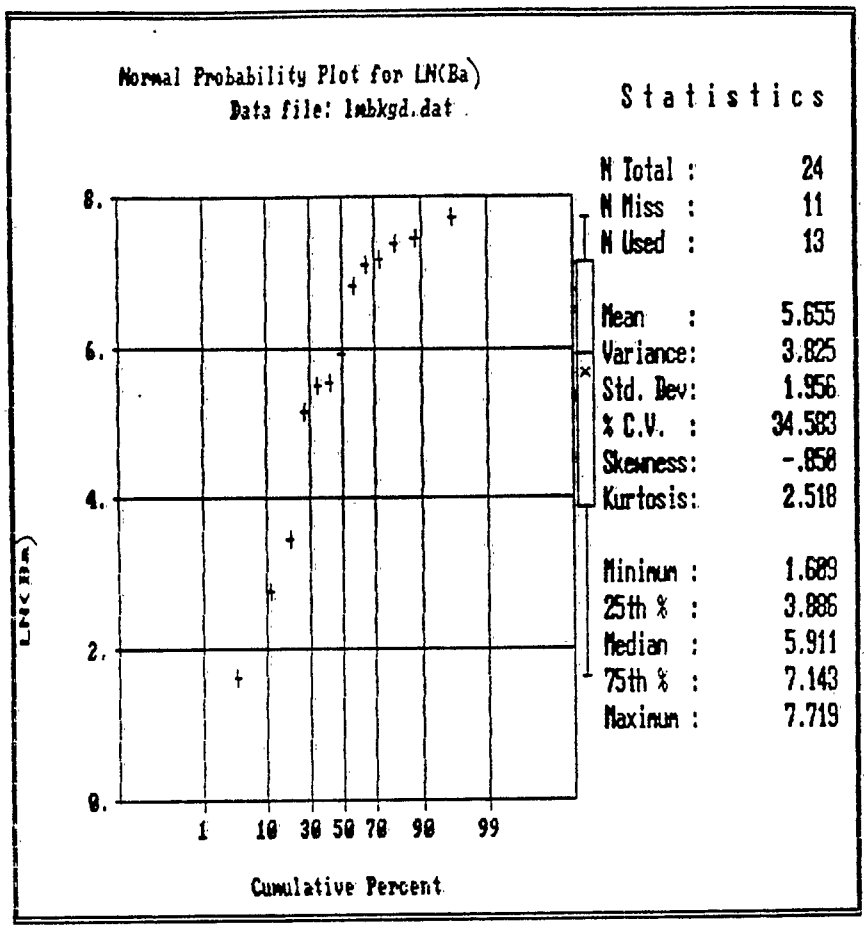
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0965



Statistics

N Total :	24
N Miss :	11
N Used :	13
Mean :	5.655
Variance:	3.825
Std. Dev:	1.956
% C.V. :	34.583
Skewness:	-.858
Kurtosis:	2.518
Minimum :	1.609
25th % :	3.886
Median :	5.911
75th % :	7.143
Maximum :	7.719

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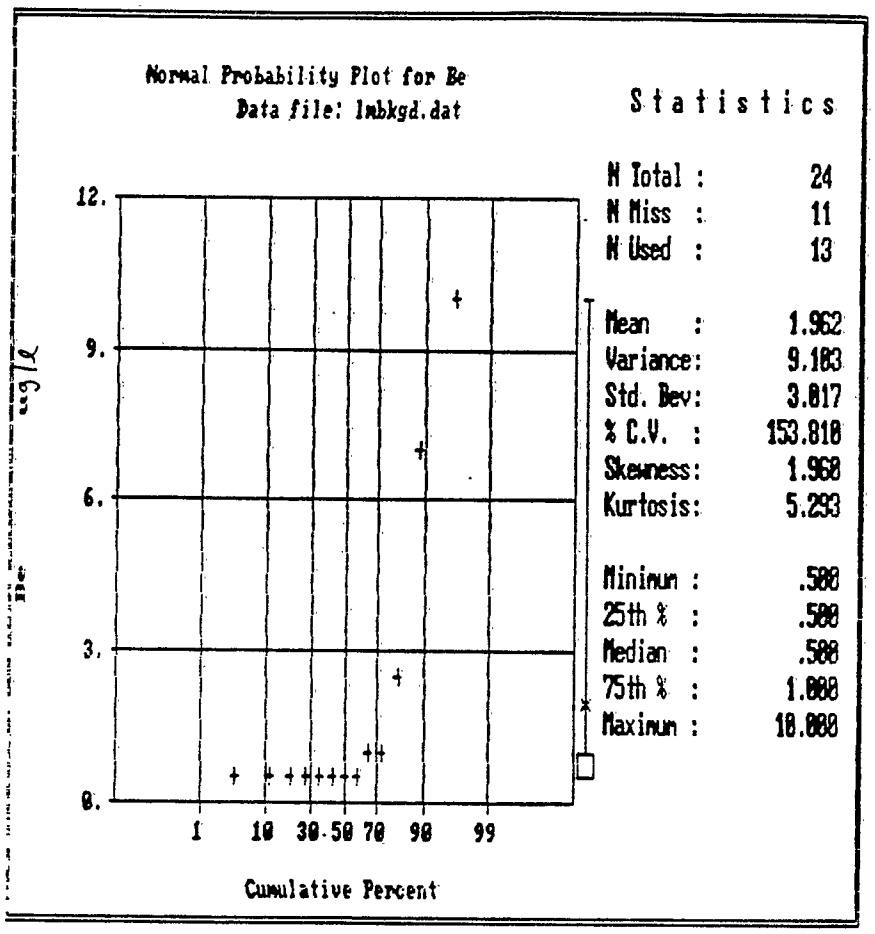
LIN003
178



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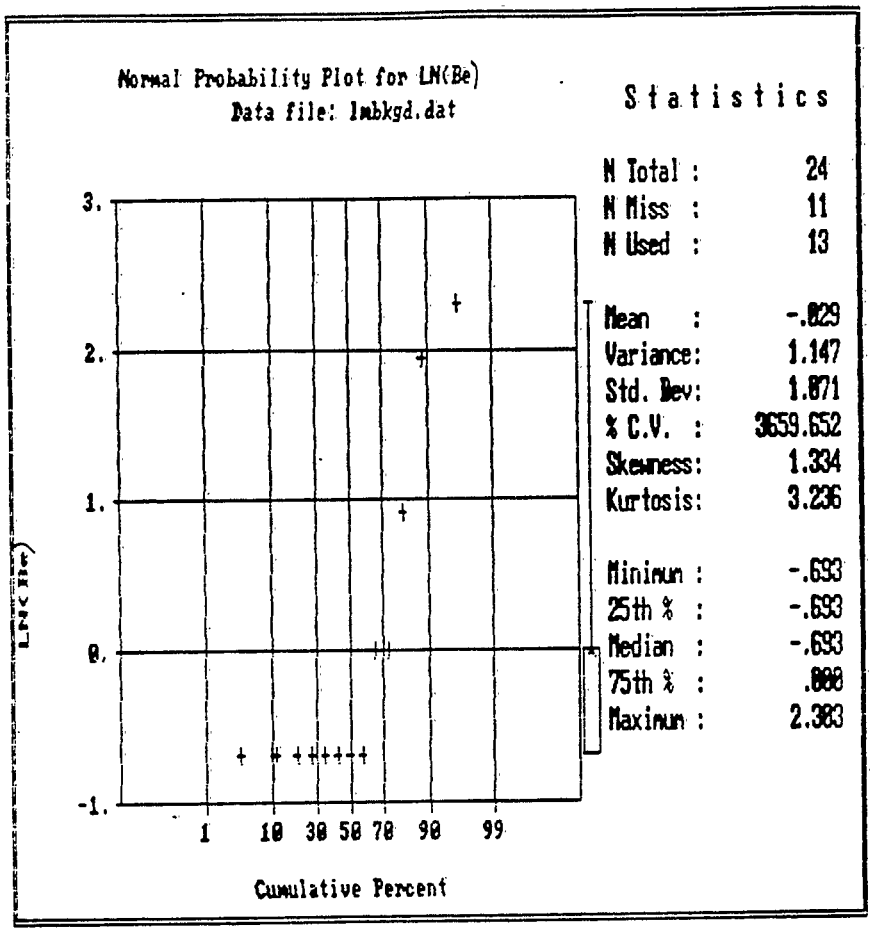
ADMINISTRATIVE RECORD
LIN003
8 9 8



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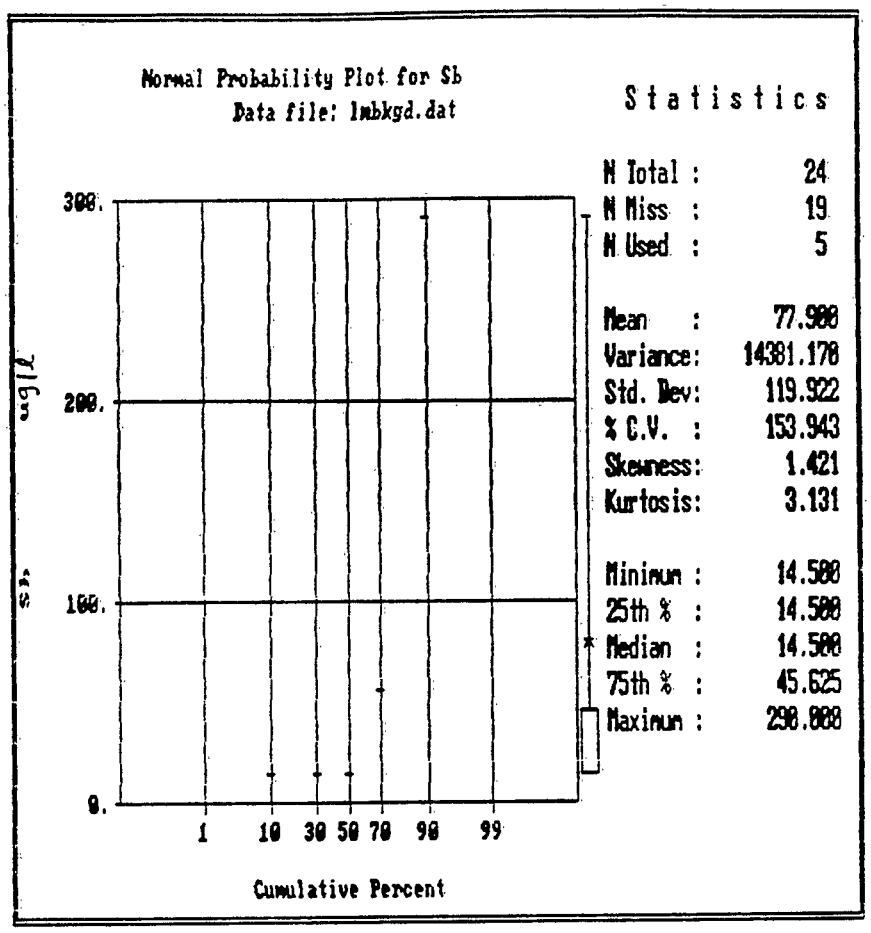
LIN003
6 h 8 9



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LIN003
0850

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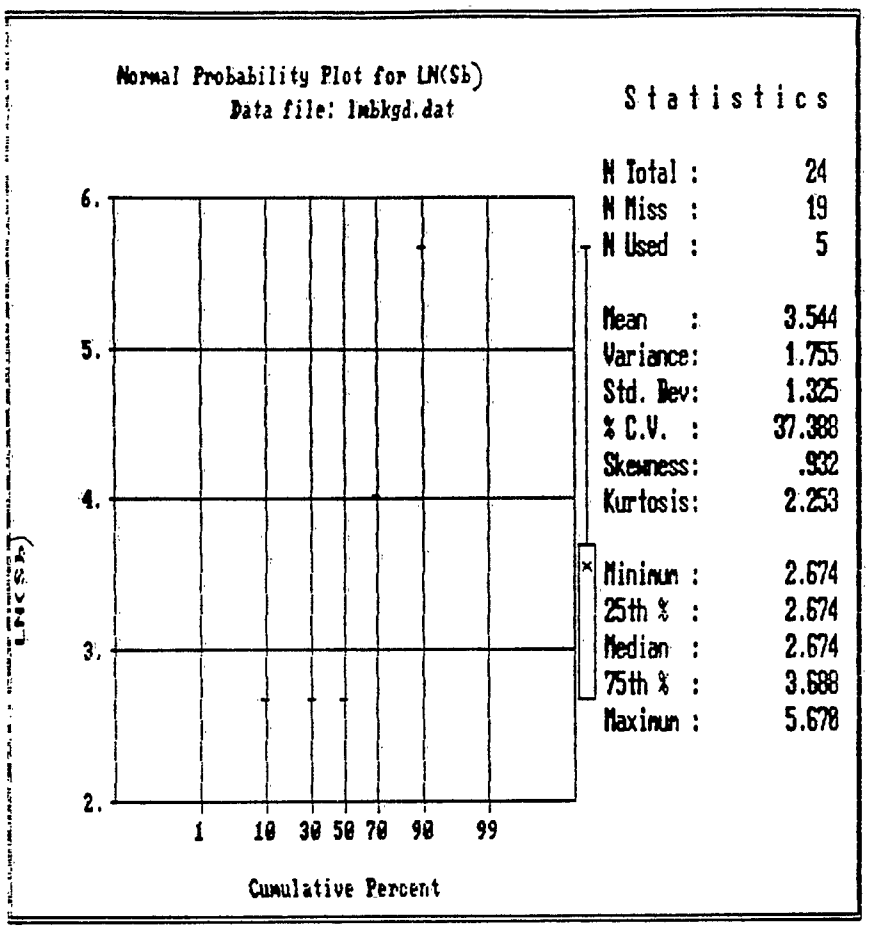
LIN003
B 5 1



Statistics

N Total :	24
N Miss :	19
N Used :	5
Mean :	3.544
Variance:	1.755
Std. Dev:	1.325
% C.V. :	37.388
Skewness:	.932
Kurtosis:	2.253
Minimun :	2.674
25th % :	2.674
Median :	2.674
75th % :	3.688
Maximun :	5.678

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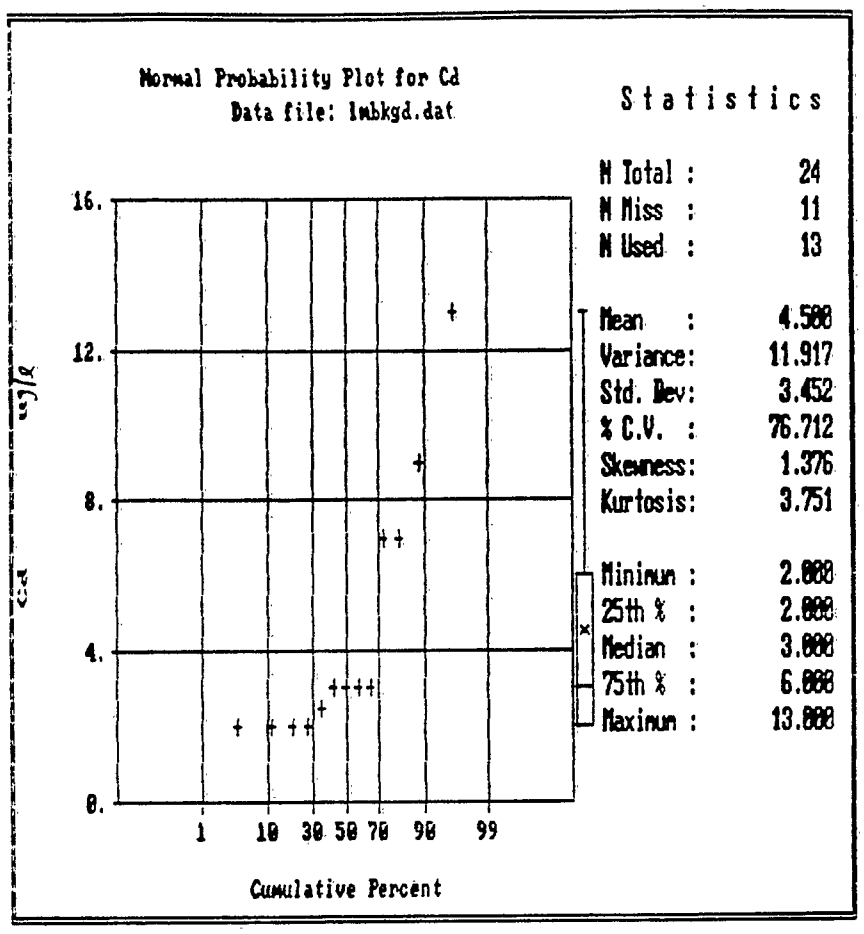
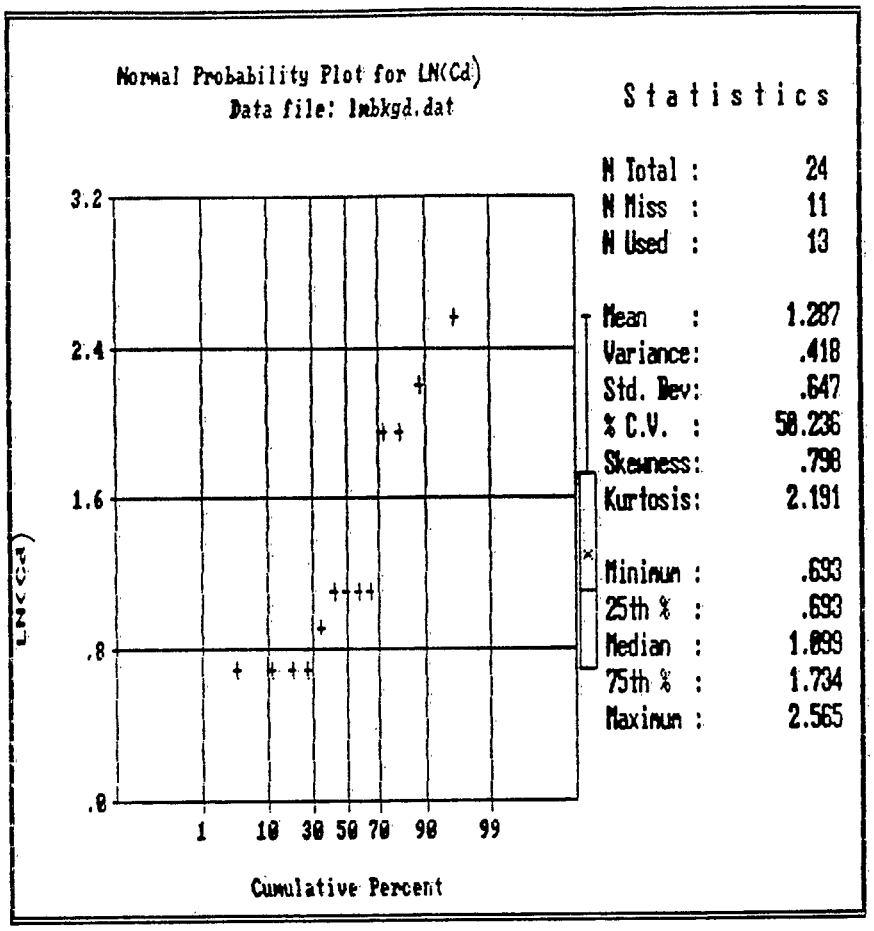
ADMINISTRATIVE RECORD

LIN003
8852





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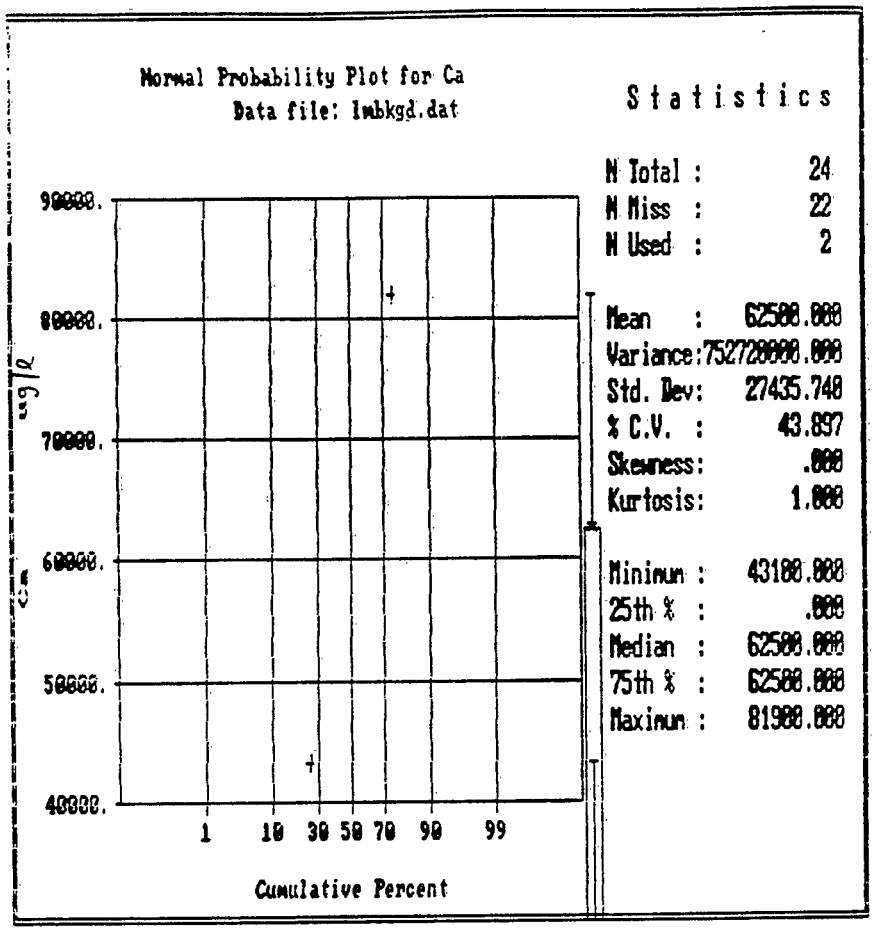
ADMINISTRATIVE RECORD
LIN003
8 5 7 3



Statistics

N Total :	24
N Miss :	22
N Used :	2
Mean :	62500.000
Variance:	752720000.000
Std. Dev:	27435.740
% C.V. :	43.897
Skewness:	.000
Kurtosis:	1.000
Minimun :	43100.000
25th % :	.000
Median :	62500.000
75th % :	62500.000
Maximun :	81900.000

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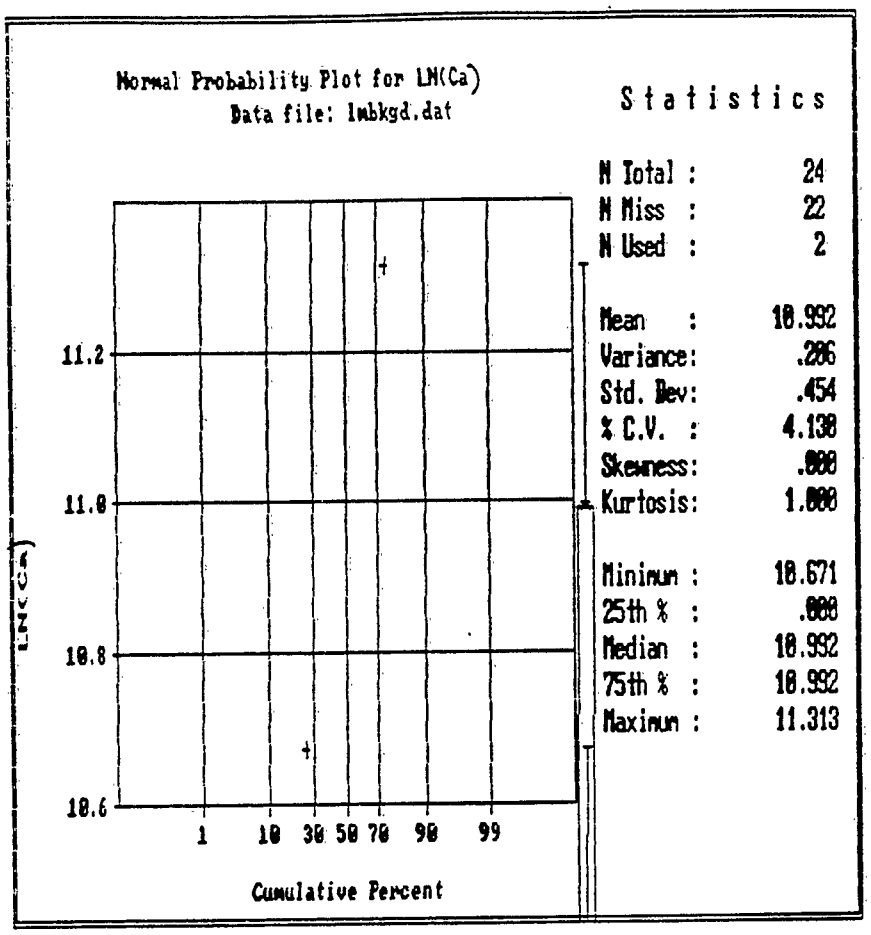
ADMINISTRATIVE RECORD
LIN003 8574



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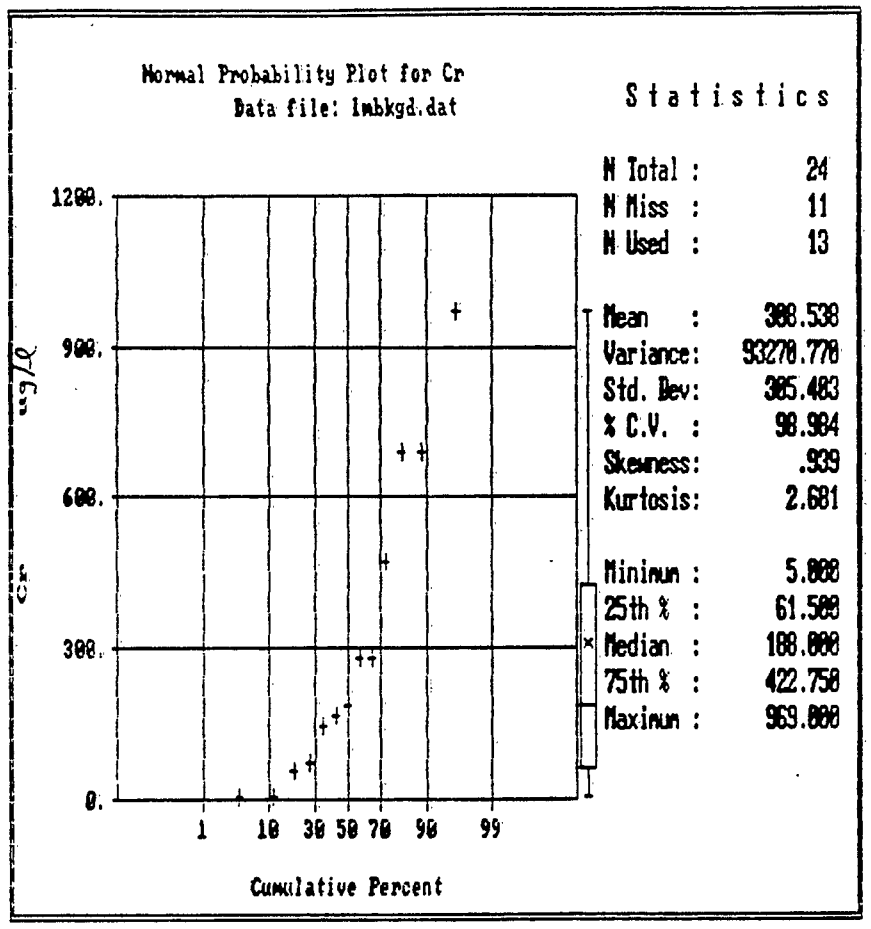
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
B 5 5



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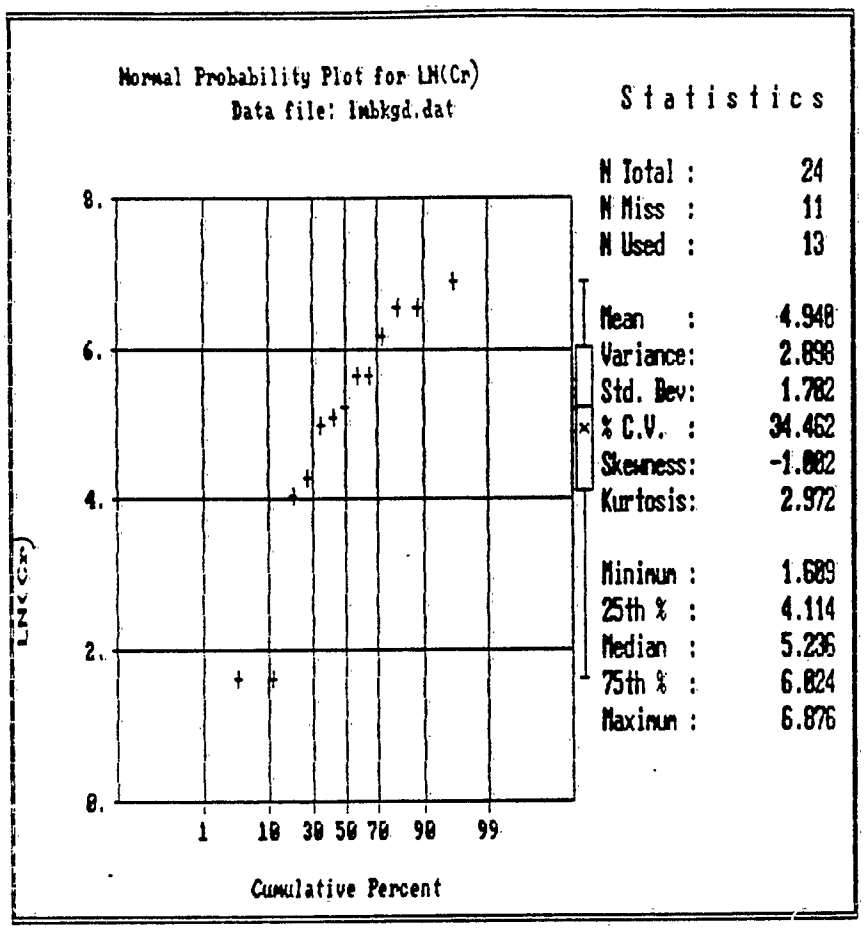
ADMINISTRATIVE RECORD

LIN003 8576



Statistics

N Total :	24
N Miss :	11
N Used :	13
Mean :	4.948
Variance:	2.898
Std. Dev:	1.702
% C.V. :	34.462
Skewness:	-1.002
Kurtosis:	2.972
Minimun :	1.609
25th % :	4.114
Median :	5.236
75th % :	6.024
Maximun :	6.076

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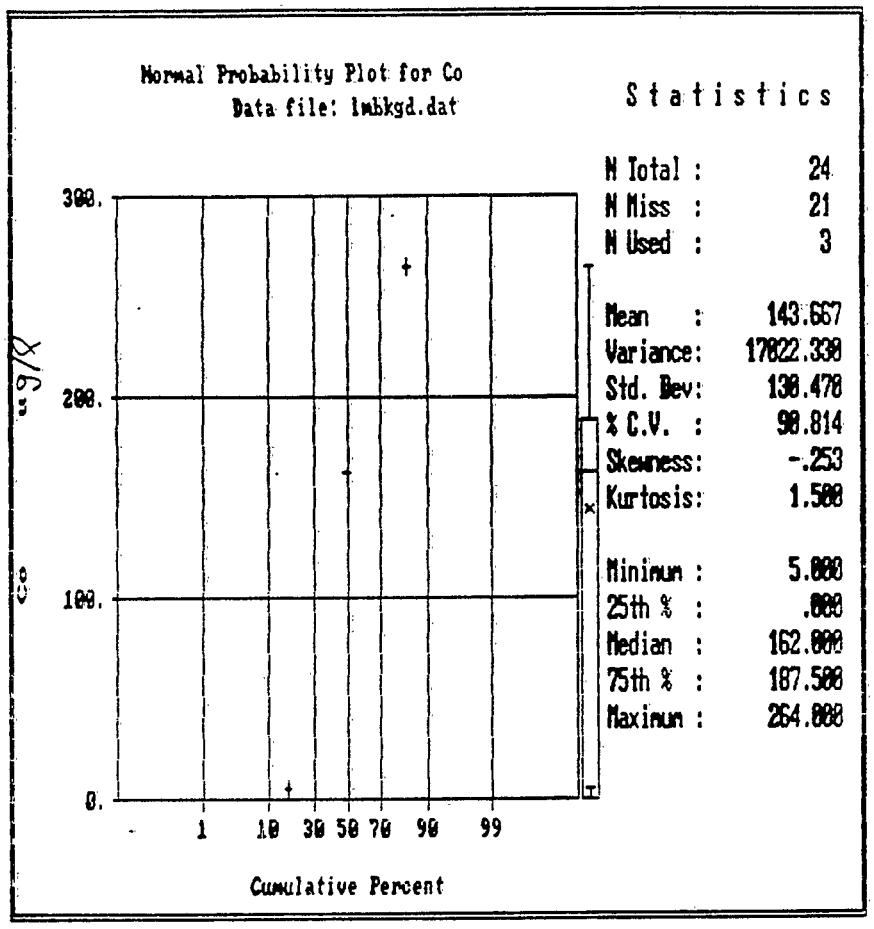
ADMINISTRATIVE RECORD

LIN003
B 5 7



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ADMINISTRATIVE RECORD
LIN003 858

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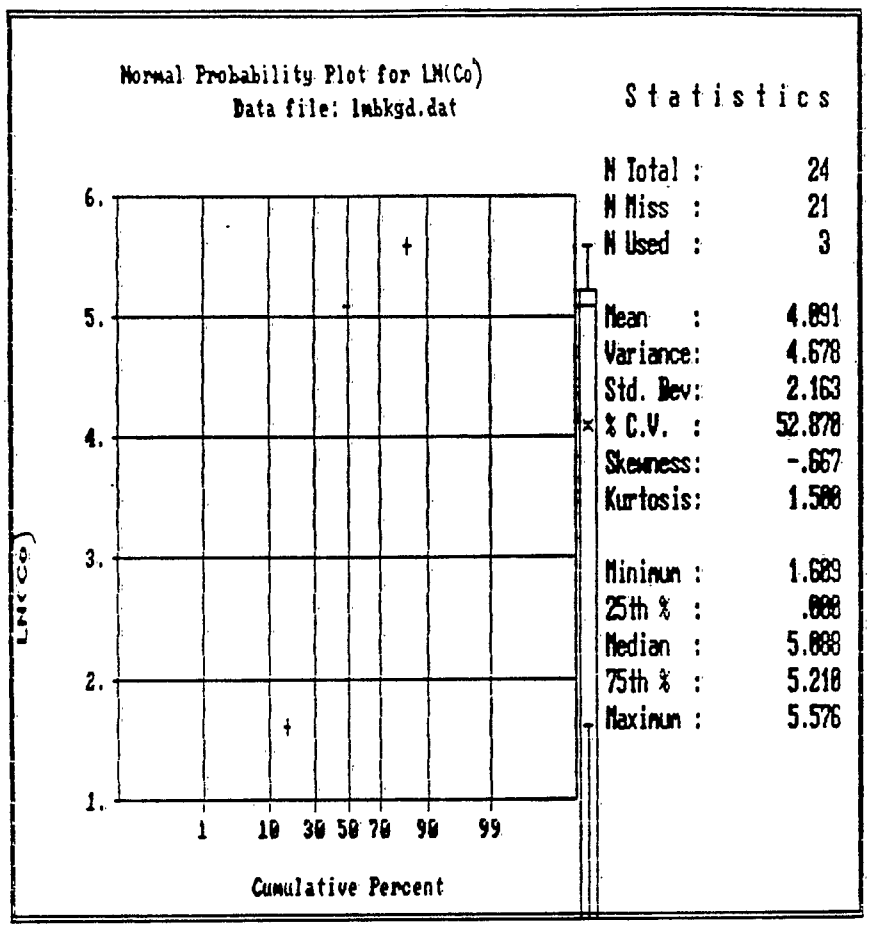
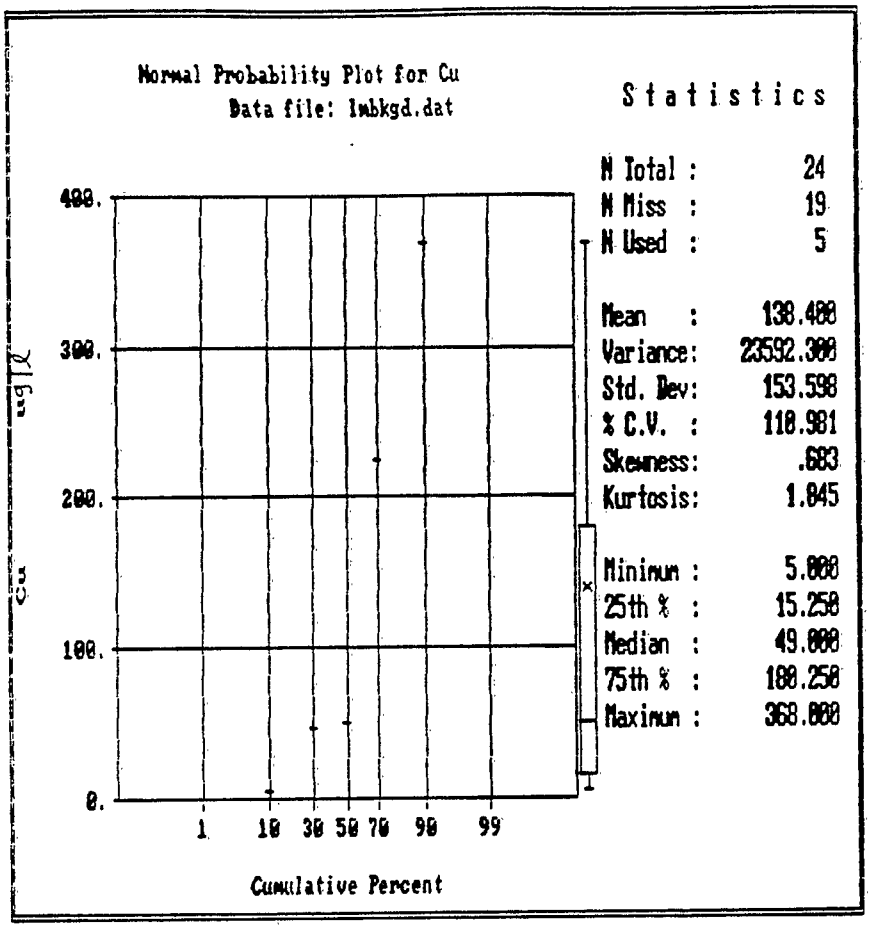
ADMINISTRATIVE RECORD

LIN003 659



Statistics

N Total :	24
N Miss :	21
N Used :	3
Mean :	4.891
Variance:	4.678
Std. Dev:	2.163
% C.V. :	52.878
Skewness:	-.667
Kurtosis:	1.500
Minimun :	1.609
25th % :	.000
Median :	5.000
75th % :	5.218
Maximun :	5.576



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ADMINISTRATIVE RECORD
LIN003
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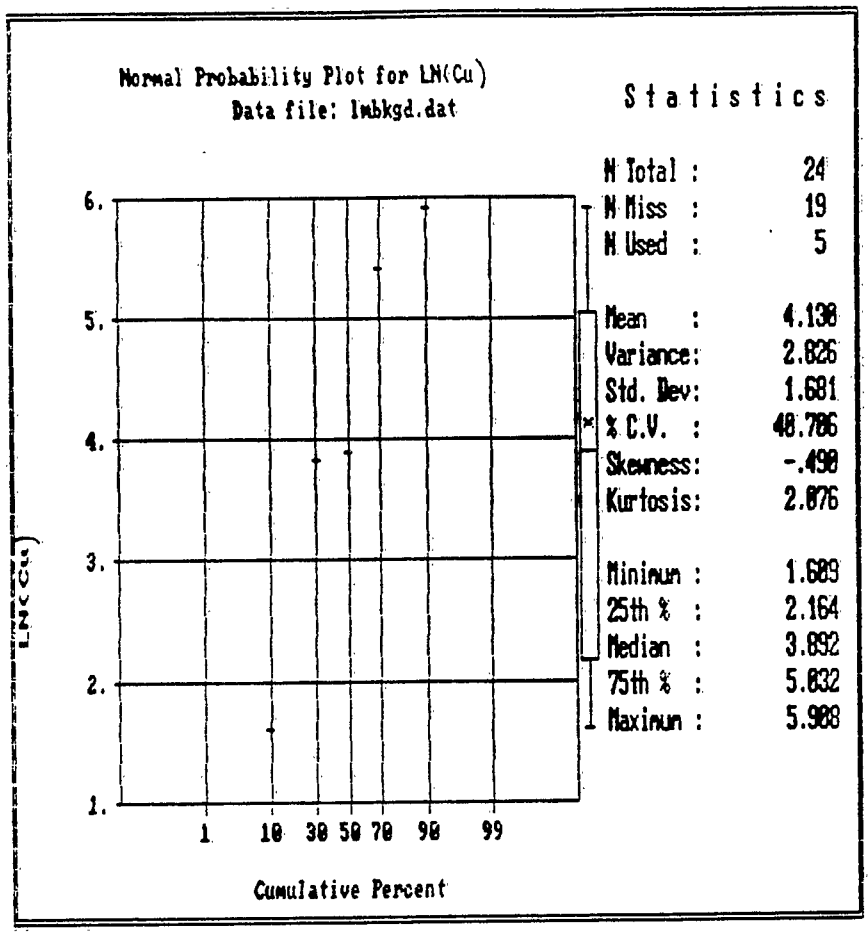
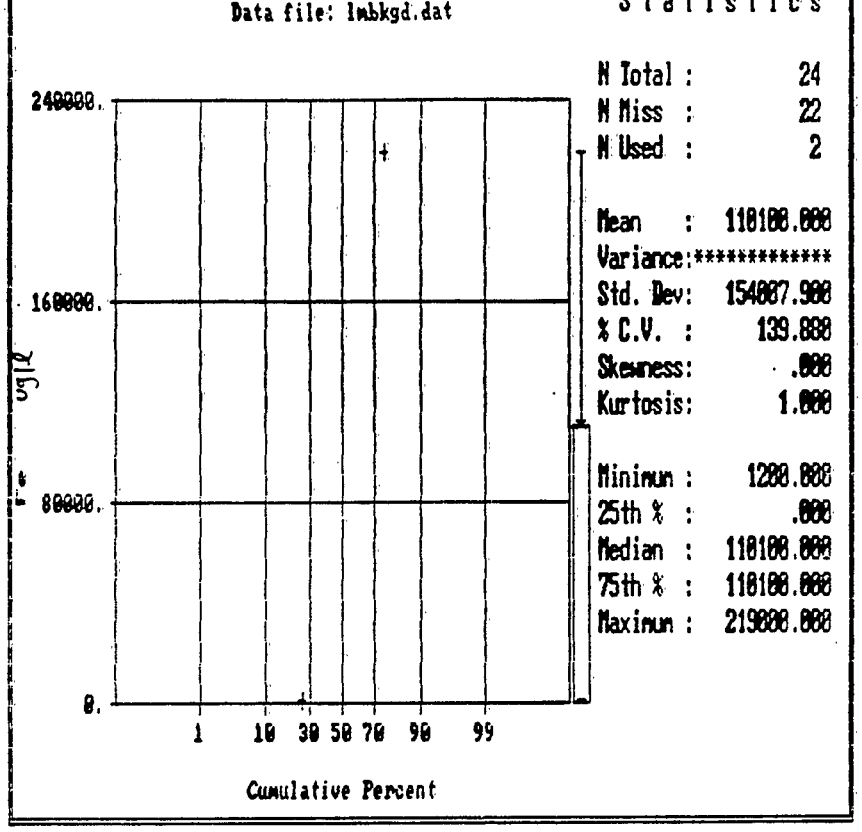
ADMINISTRATIVE RECORD

LIN003 8 9 1



Statistics

N Total :	24
N Miss :	19
N Used :	5
Mean :	4.136
Variance:	2.826
Std. Dev:	1.681
% C.V. :	40.706
Skewness:	-.490
Kurtosis:	2.076
Minimum :	1.609
25th % :	2.164
Median :	3.892
75th % :	5.832
Maximum :	5.900



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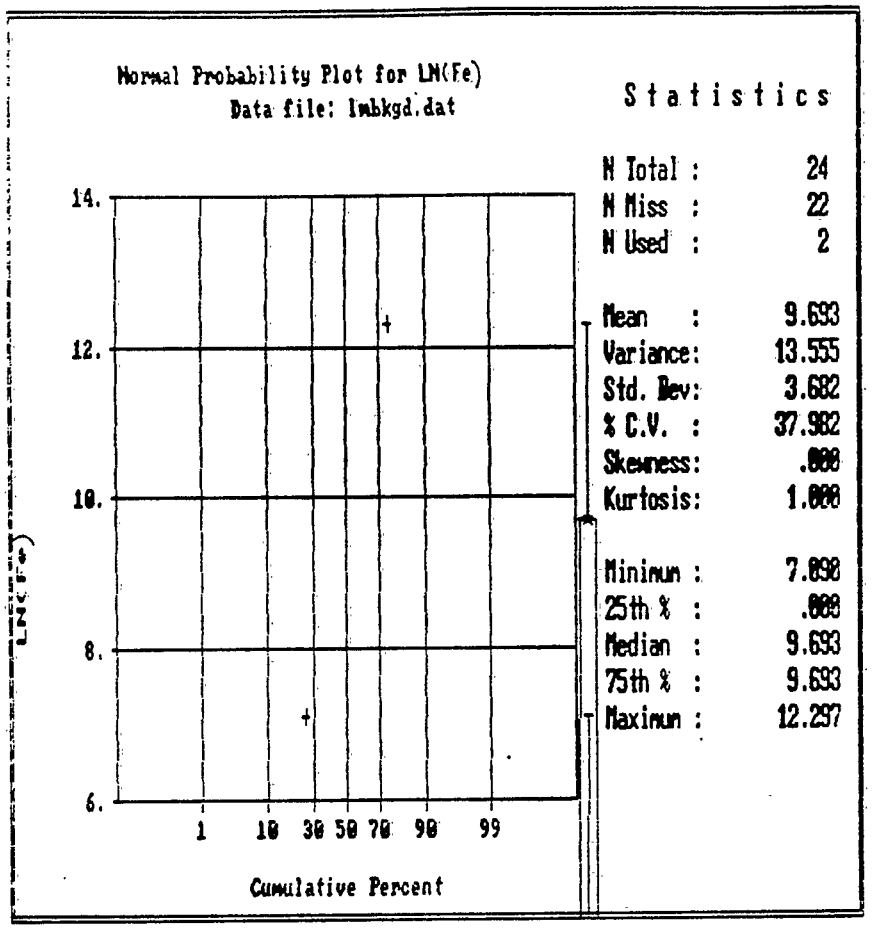
ADMINISTRATIVE RECORD

LIN003

2 9 8 6 2



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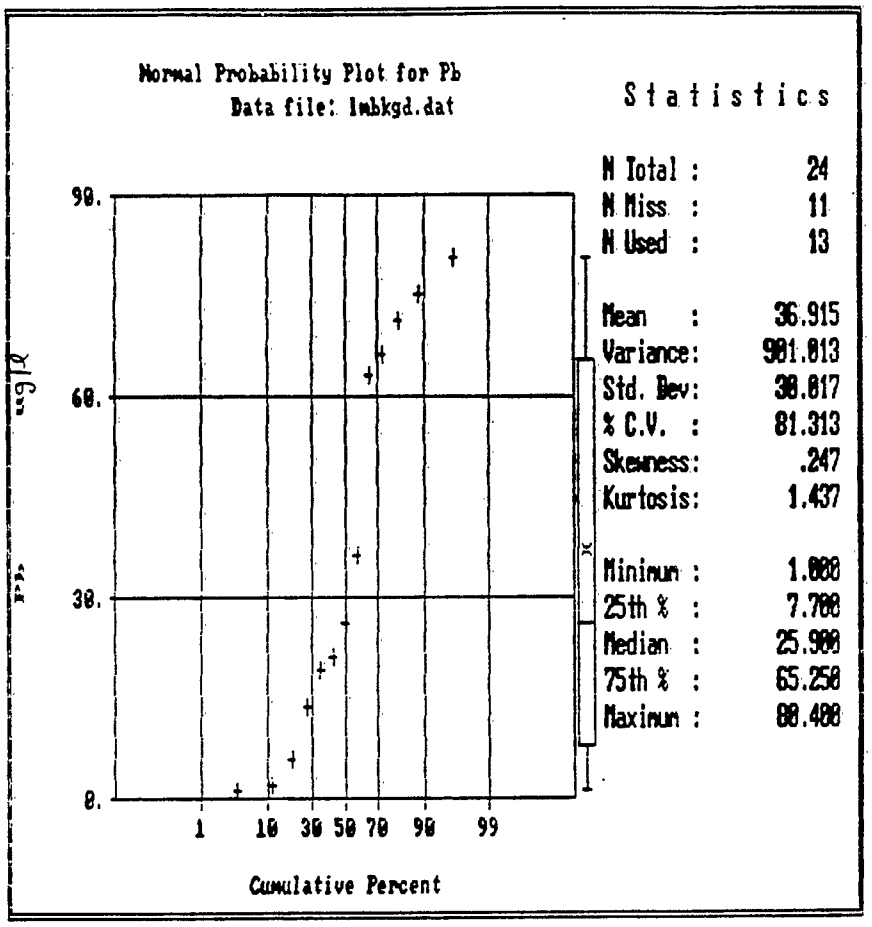
ADMINISTRATIVE RECORD
LIN003 B 63



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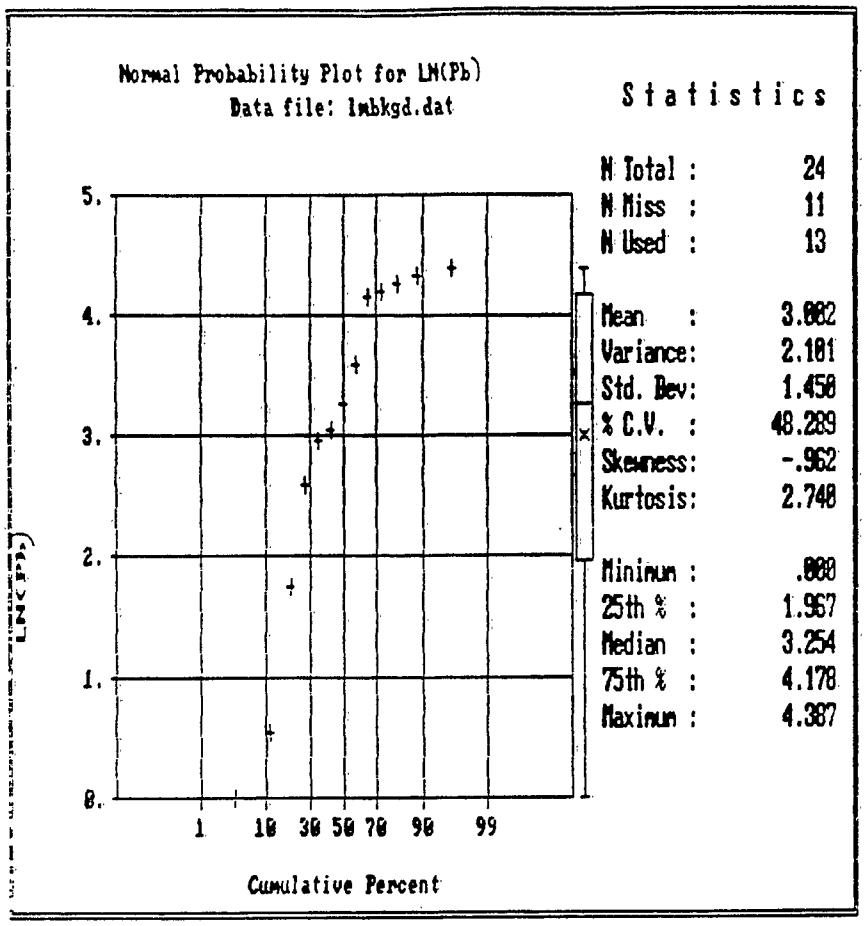
ADMINISTRATIVE RECORD
LIN003
8 9 5 4



Statistics

N Total :	24
N Miss :	11
N Used :	13
Mean :	3.882
Variance:	2.101
Std. Dev:	1.450
% C.V. :	48.289
Skewness:	-.962
Kurtosis:	2.748
Minimum :	.000
25th % :	1.967
Median :	3.254
75th % :	4.178
Maximum :	4.387

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
865

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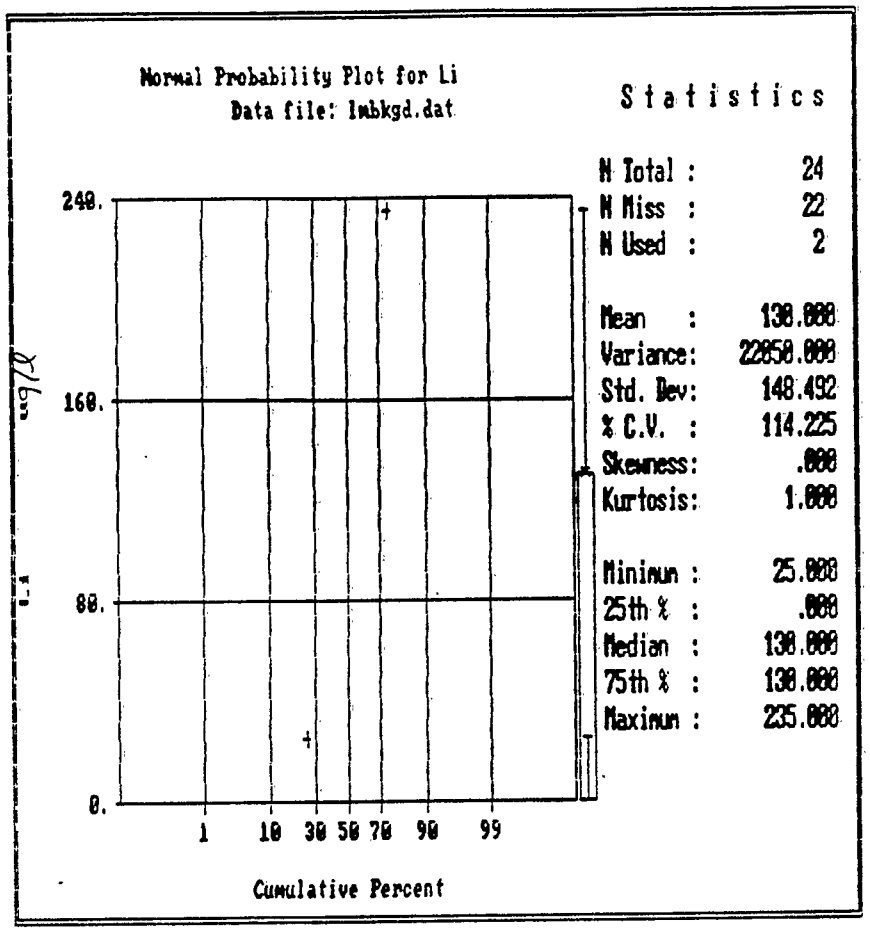
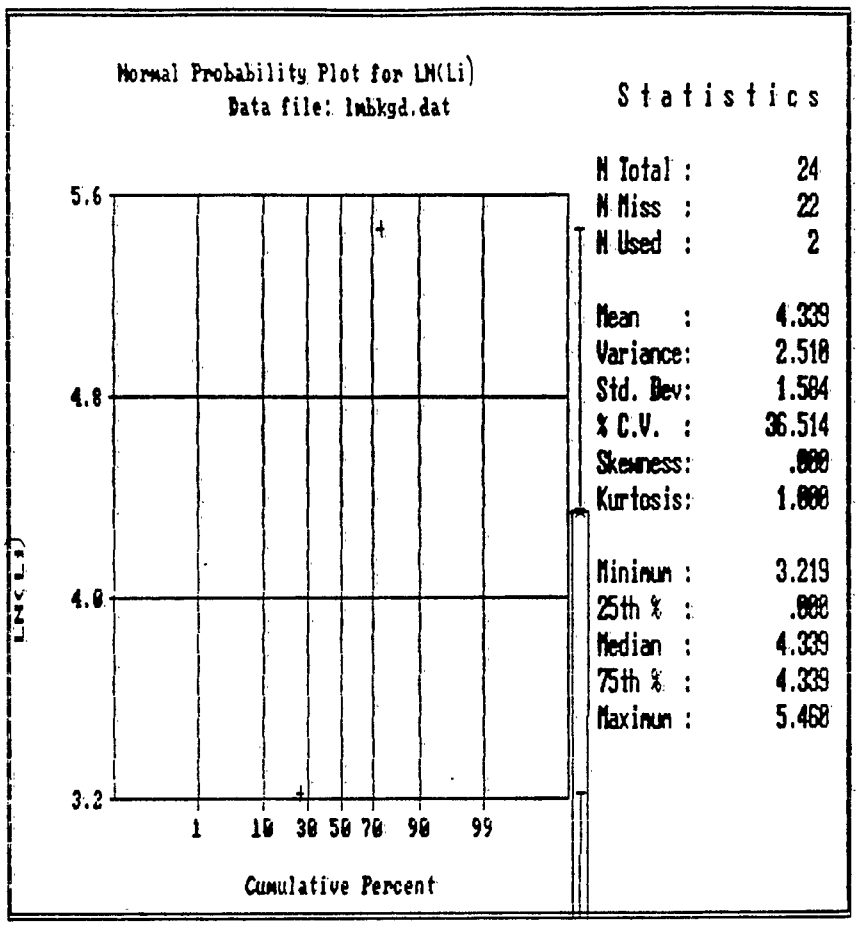
ADMINISTRATIVE RECORD

LIN003 B 6 6

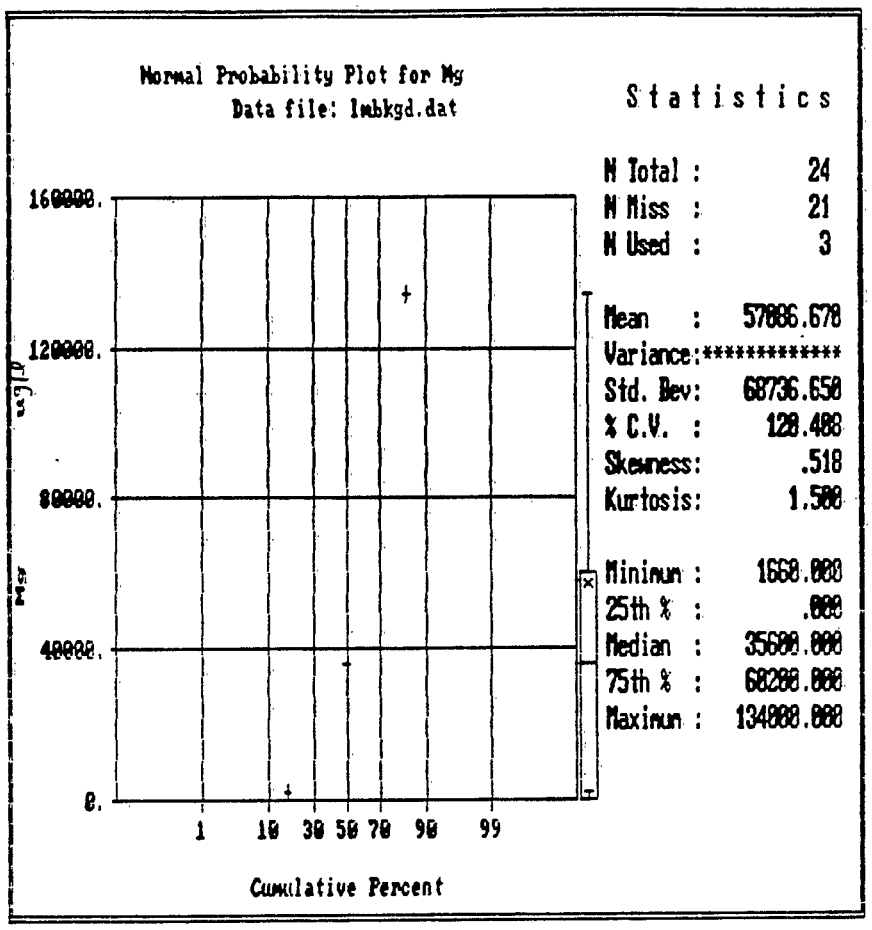




Statistics

N Total :	24
N Miss :	22
N Used :	2
Mean :	4.339
Variance:	2.518
Std. Dev:	1.584
% C.V. :	36.514
Skewness:	.000
Kurtosis:	1.000
Minimum :	3.219
25th % :	.000
Median :	4.339
75th % :	4.339
Maximum :	5.460

NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
B 6 7 1



Statistics

N Total :	24
N Miss :	21
N Used :	3
Mean :	57666.670
Variance:	**********
Std. Dev:	68736.650
% C.V. :	128.488
Skewness:	.518
Kurtosis:	1.500
Minimum :	1660.000
25th % :	.000
Median :	35600.000
75th % :	68200.000
Maximum :	134000.000

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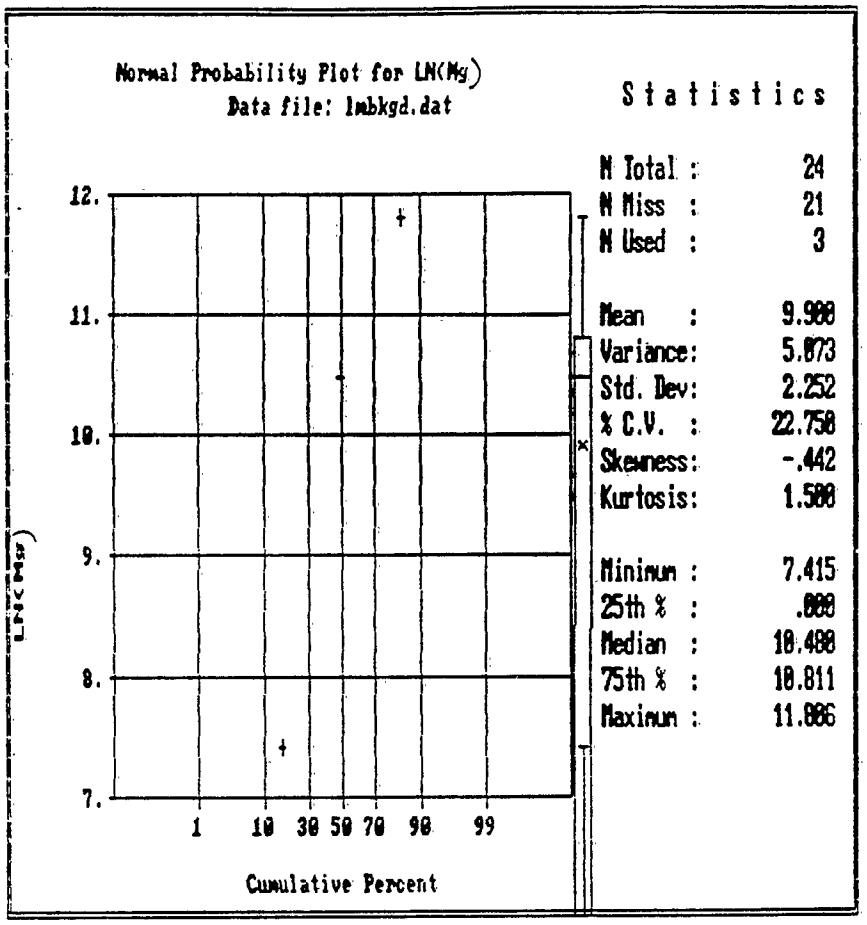
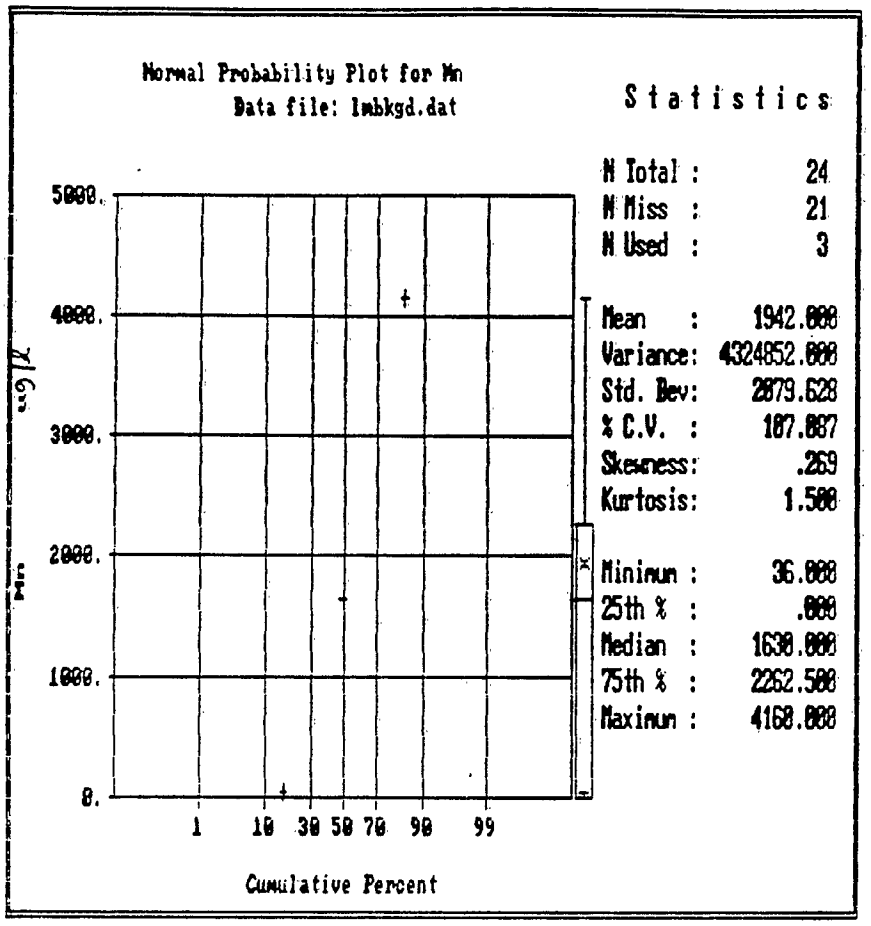
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
8 9 8



Statistics	
N Total :	24
N Miss :	21
N Used :	3
Mean :	9.900
Variance:	5.073
Std. Dev:	2.252
% C.V. :	22.750
Skewness:	-.442
Kurtosis:	1.500
Minimum :	7.415
25th % :	.000
Median :	10.400
75th % :	10.811
Maximum :	11.086

NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
869



Statistics

N Total :	24
N Miss :	21
N Used :	3
Mean :	1942.000
Variance:	4324852.000
Std. Dev:	2079.628
% C.V. :	107.087
Skewness:	.269
Kurtosis:	1.500
Minimun :	36.000
25th % :	.000
Median :	1638.000
75th % :	2262.500
Maximun :	4168.000

NOTICE
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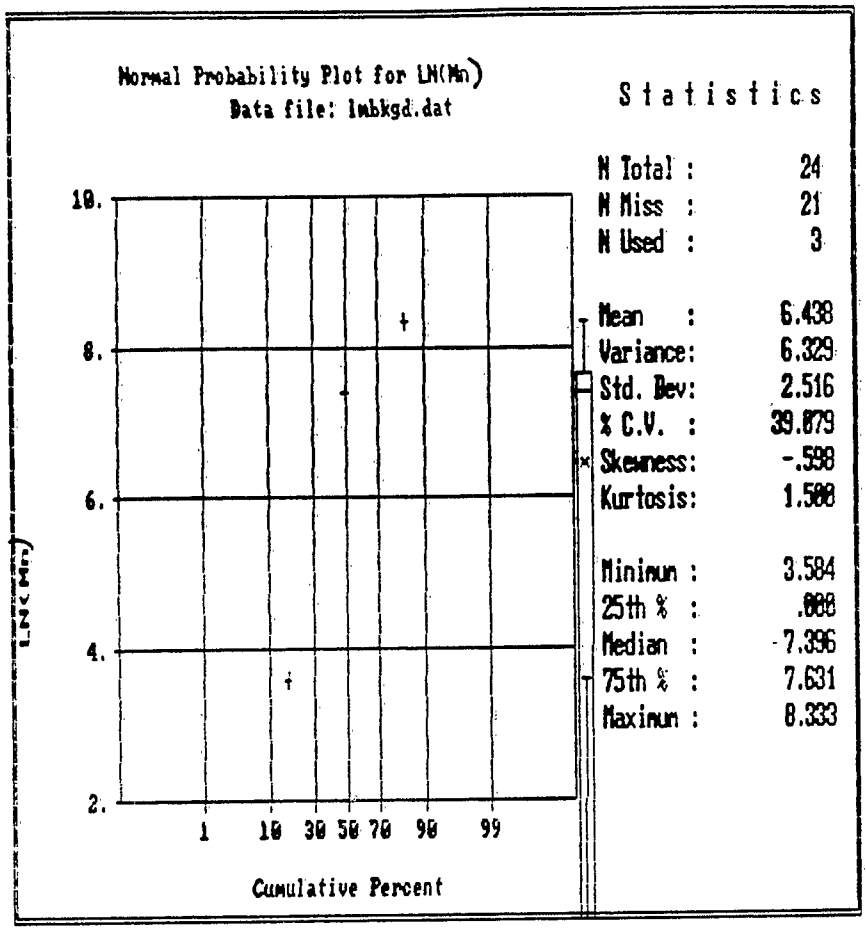
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
018



Statistics

N Total :	24
N Miss :	21
N Used :	3
Mean :	6.438
Variance:	6.329
Std. Dev:	2.516
% C.V. :	39.079
Skewness:	-.598
Kurtosis:	1.500
Minimun :	3.584
25th % :	.000
Median :	7.396
75th % :	7.631
Maximun :	8.333

NOTICE
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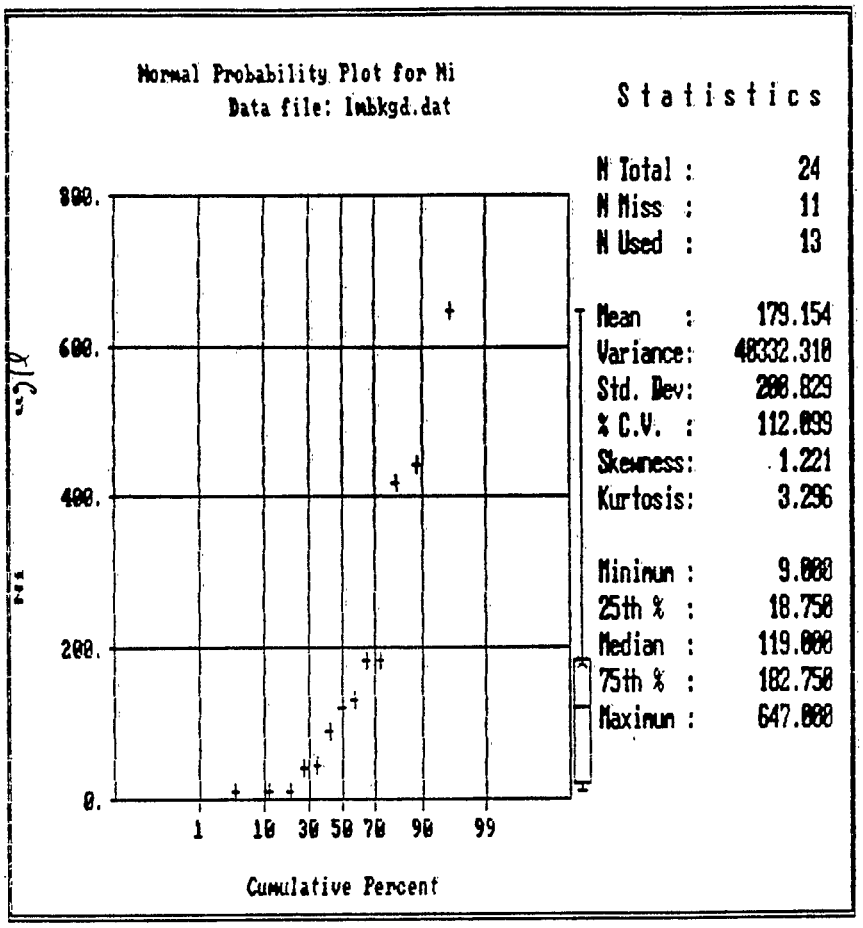
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
87



Statistics

N Total :	24
N Miss :	11
N Used :	13
Mean :	179.154
Variance:	48332.310
Std. Dev:	208.029
% C.V. :	112.099
Skewness:	1.221
Kurtosis:	3.296
Minimum :	9.000
25th % :	18.750
Median :	119.000
75th % :	182.750
Maximum :	647.000

NOTICE
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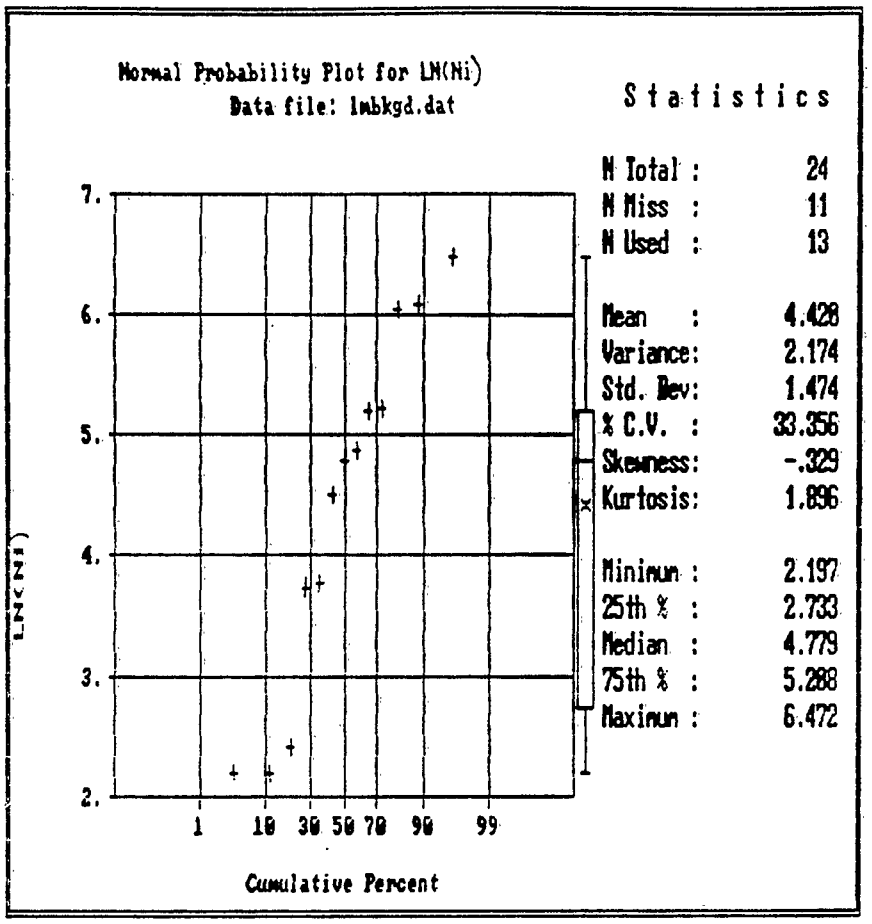
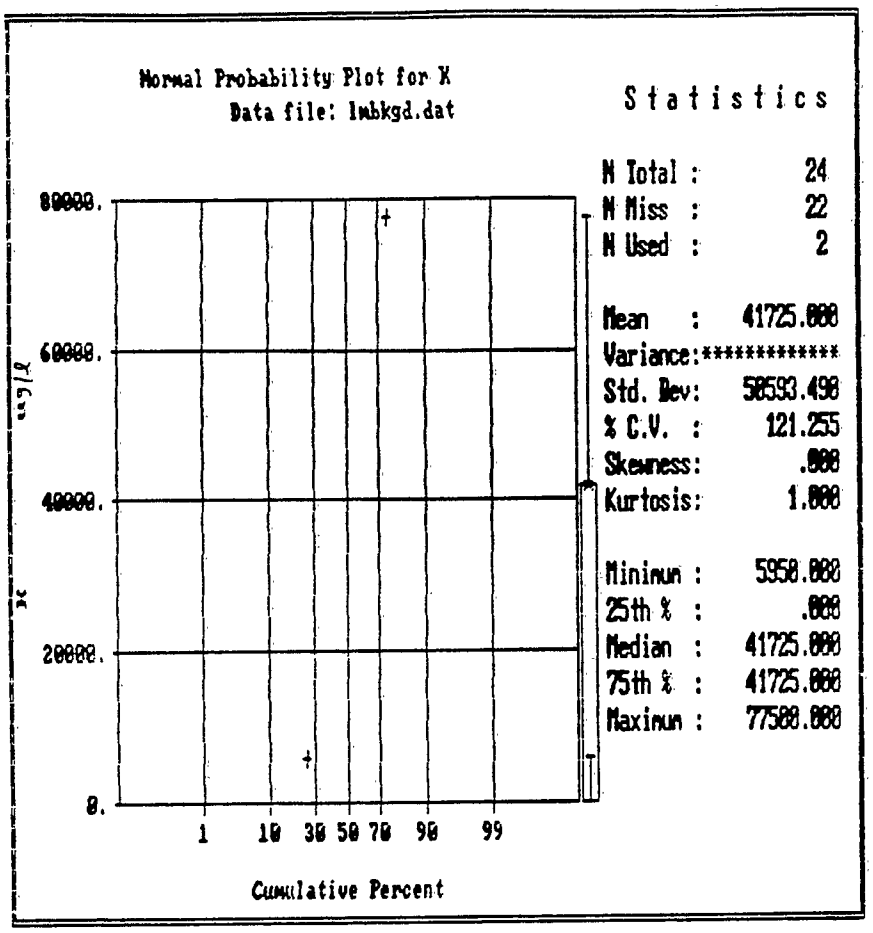
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
218



NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
E L B



NOTICE
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0174

NOTICE
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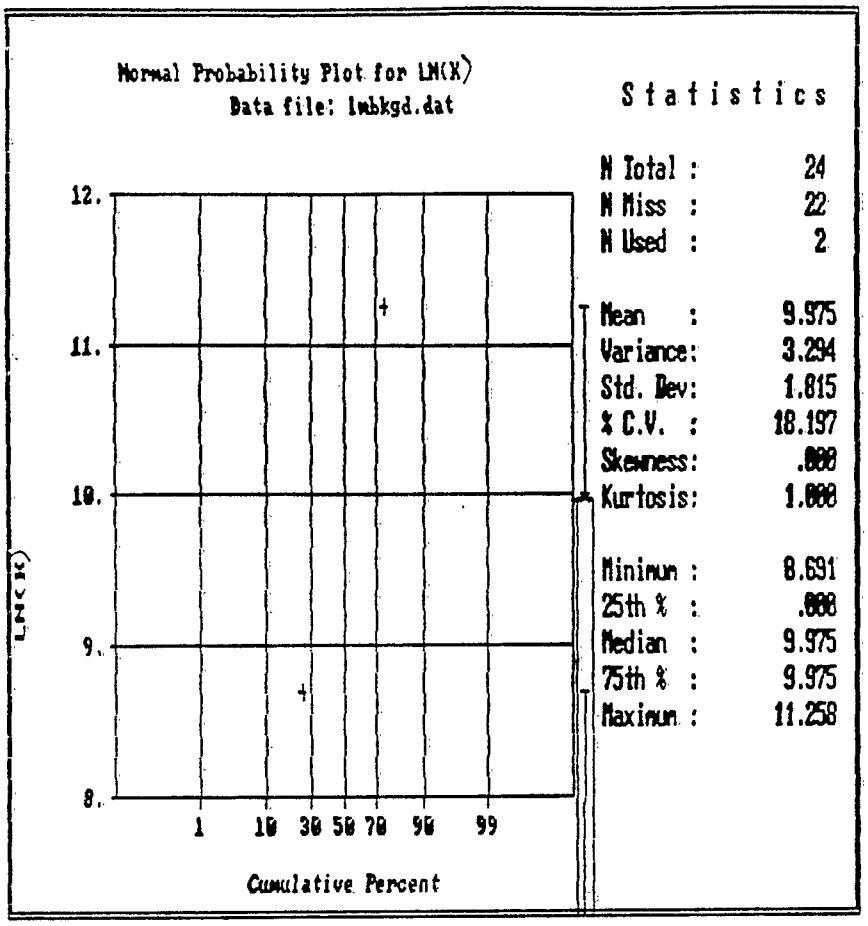
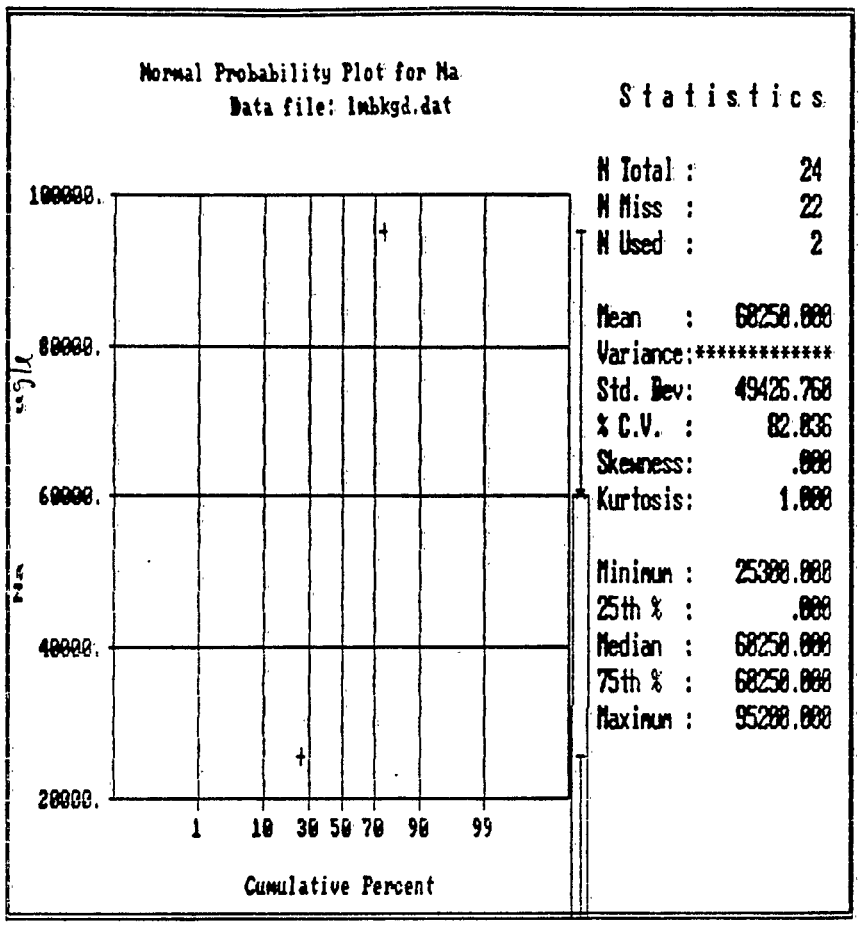
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 875



Statistics

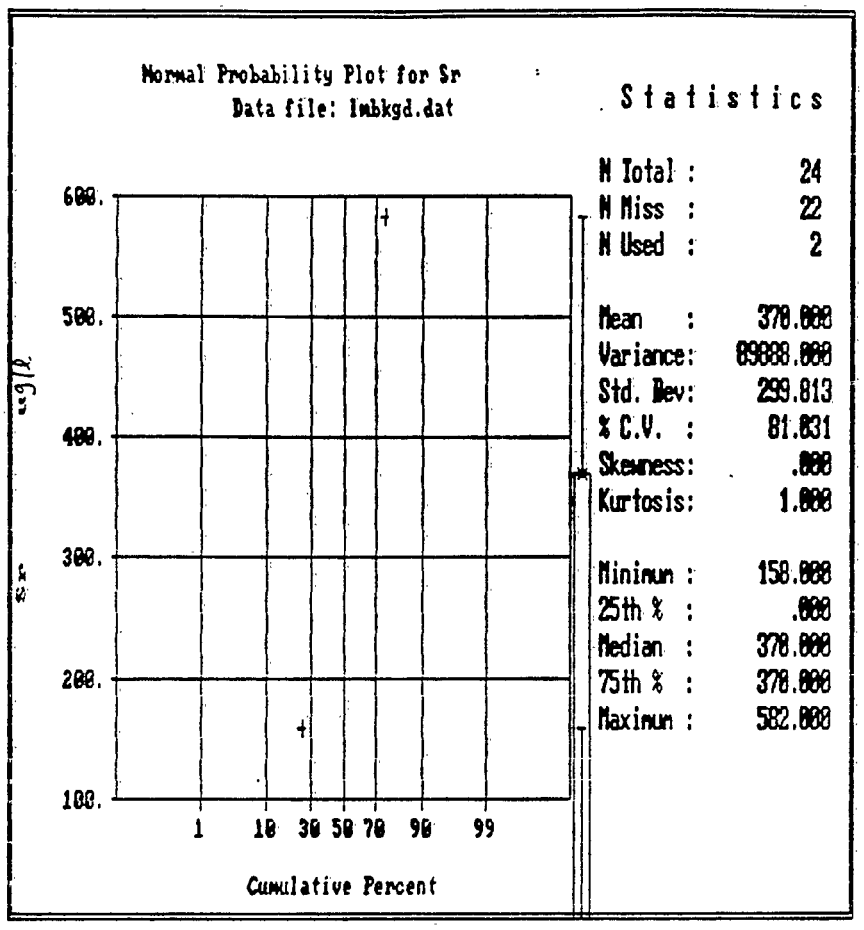
N Total :	24
N Miss :	22
N Used :	2
Mean :	9.975
Variance:	3.294
Std. Dev:	1.815
% C.V. :	18.197
Skewness:	.000
Kurtosis:	1.000
Minimum :	8.691
25th % :	.000
Median :	9.975
75th % :	9.975
Maximum :	11.258



Statistics

N Total :	24
N Miss :	22
N Used :	2
Mean :	60250.000
Variance:	**********
Std. Dev:	49426.760
% C.V. :	82.036
Skewness:	.000
Kurtosis:	1.000
Minimum :	25300.000
25th % :	.000
Median :	60250.000
75th % :	60250.000
Maximum :	95200.000

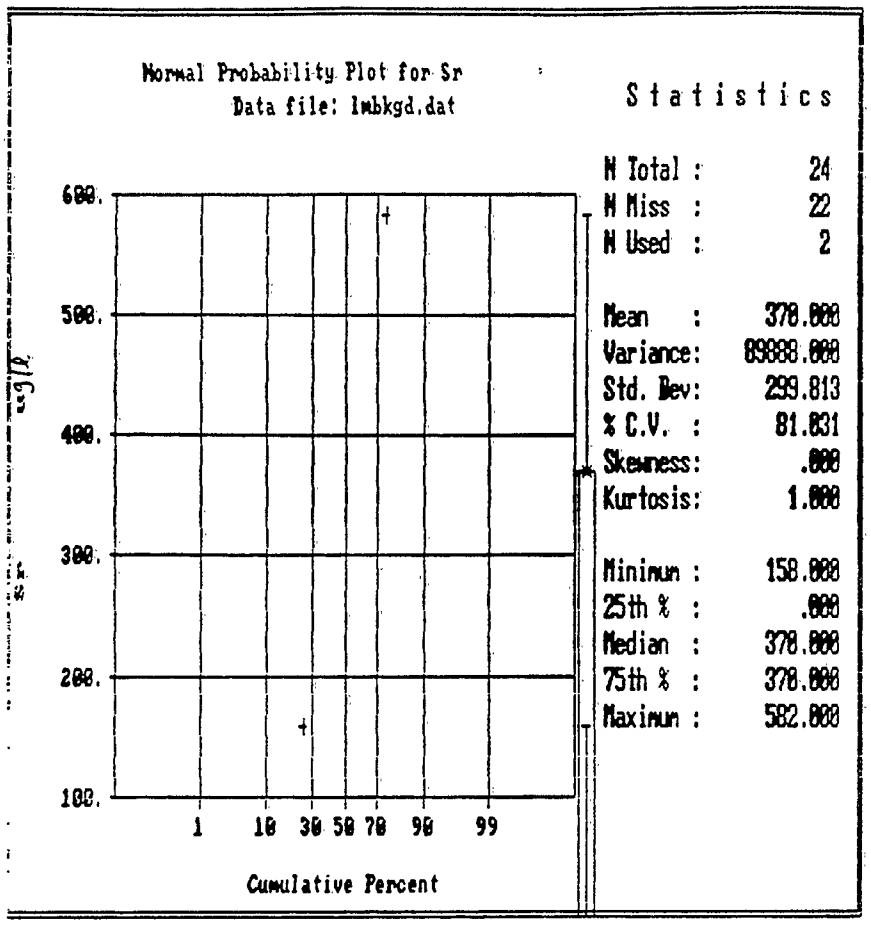
NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 876



Statistics

N Total :	24
N Miss :	22
N Used :	2
Mean :	370.000
Variance:	89888.000
Std. Dev:	299.813
% C.V. :	81.031
Skewness:	.000
Kurtosis:	1.000
Minimum :	158.000
25th % :	.000
Median :	370.000
75th % :	370.000
Maximum :	582.000

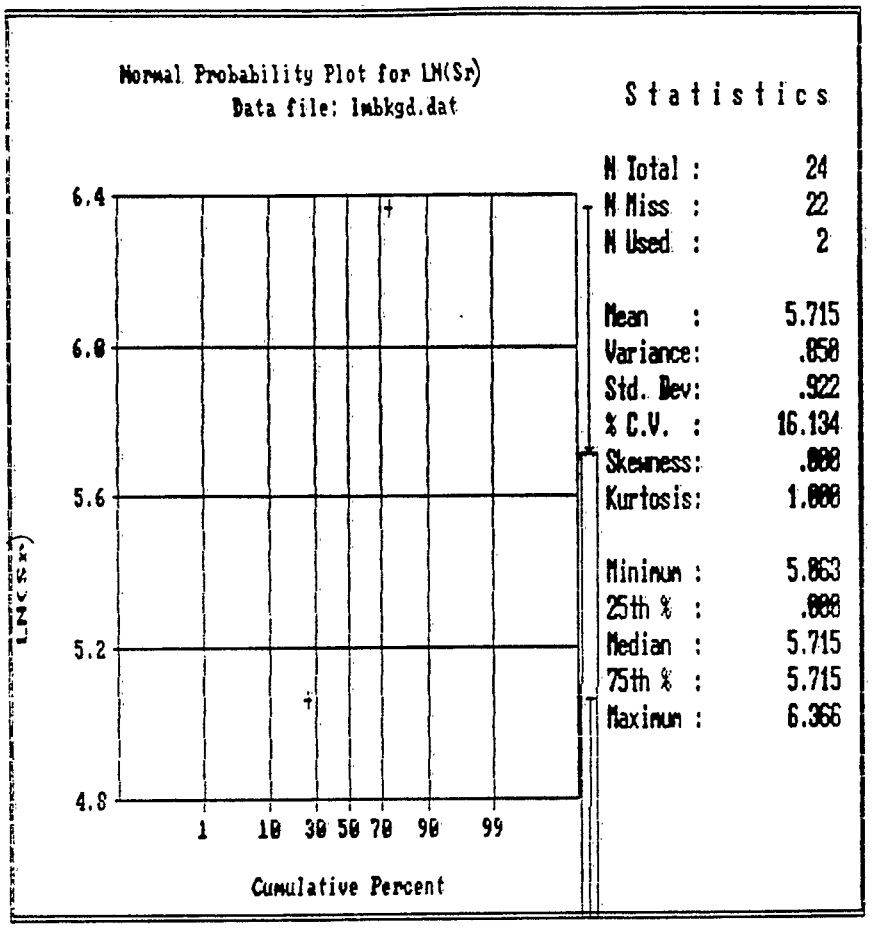
NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
B 7 7



Statistics

N Total :	24
N Miss :	22
N Used :	2
Mean :	370.000
Variance:	89888.000
Std. Dev:	299.813
% C.V. :	81.031
Skewness:	.000
Kurtosis:	1.000
Minimun :	158.000
25th % :	.000
Median :	370.000
75th % :	370.000
Maximun :	582.000

NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
8 7 8



Statistics

N Total :	24
N Miss :	22
N Used :	2
Mean :	5.715
Variance:	.850
Std. Dev:	.922
% C.V. :	16.134
Skewness:	.000
Kurtosis:	1.000
Minimum :	5.063
25th % :	.000
Median :	5.715
75th % :	5.715
Maximum :	6.366

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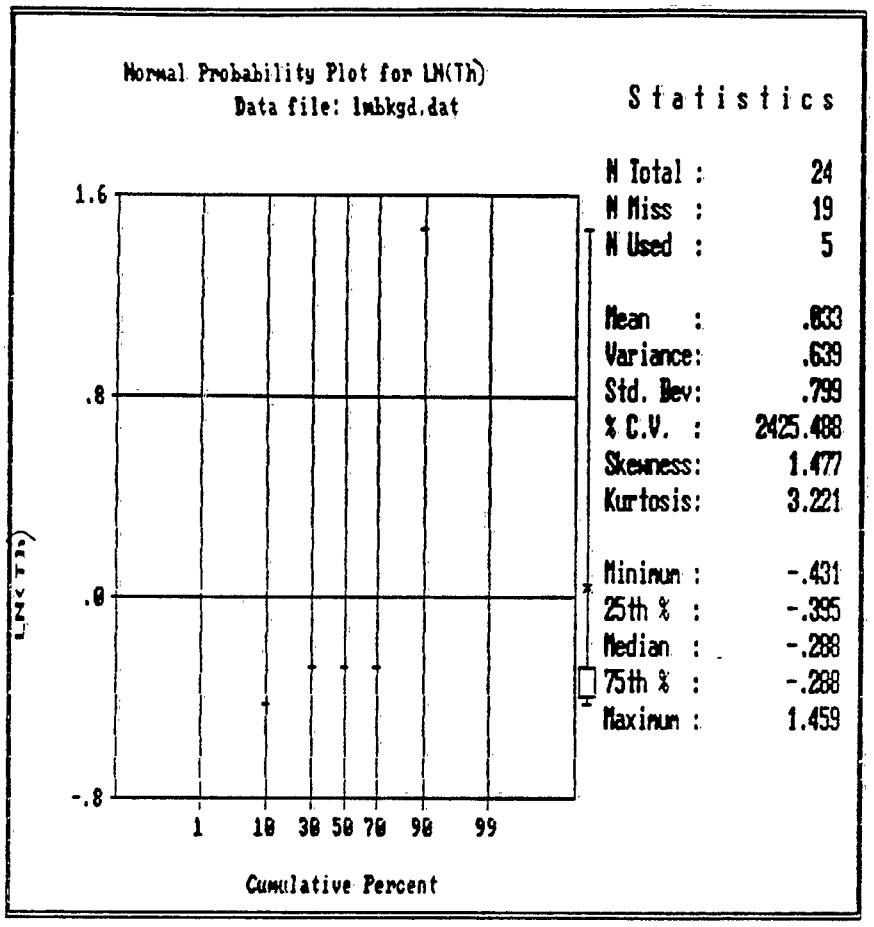
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0179

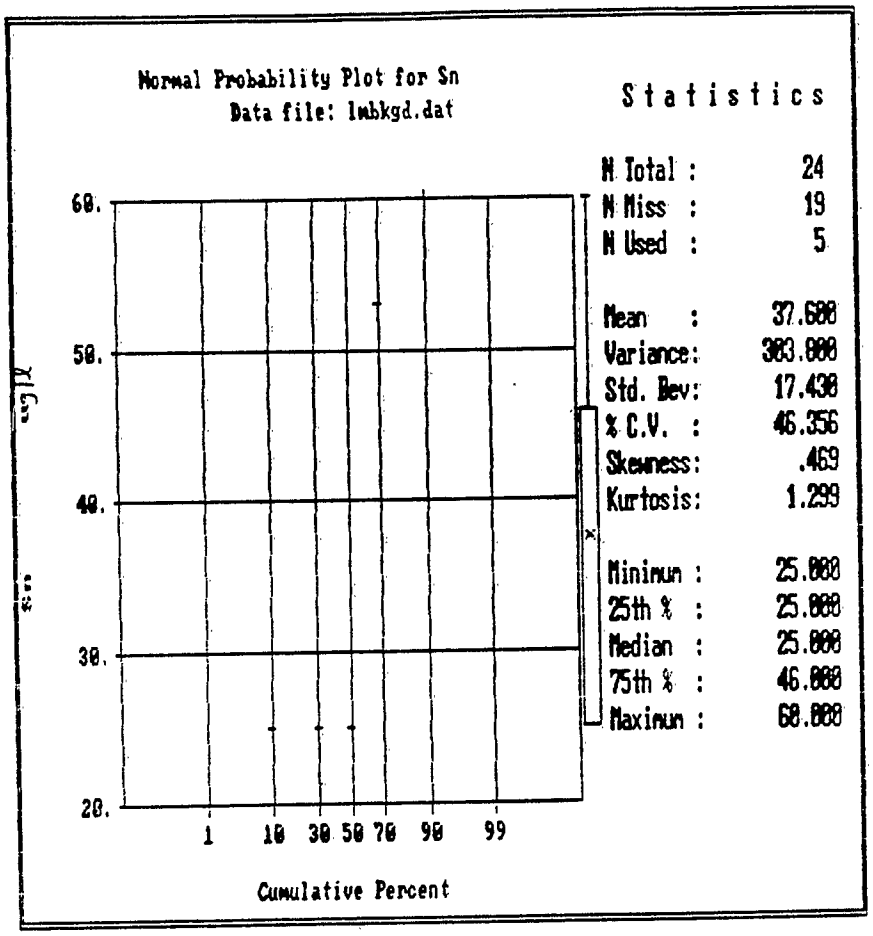


NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.

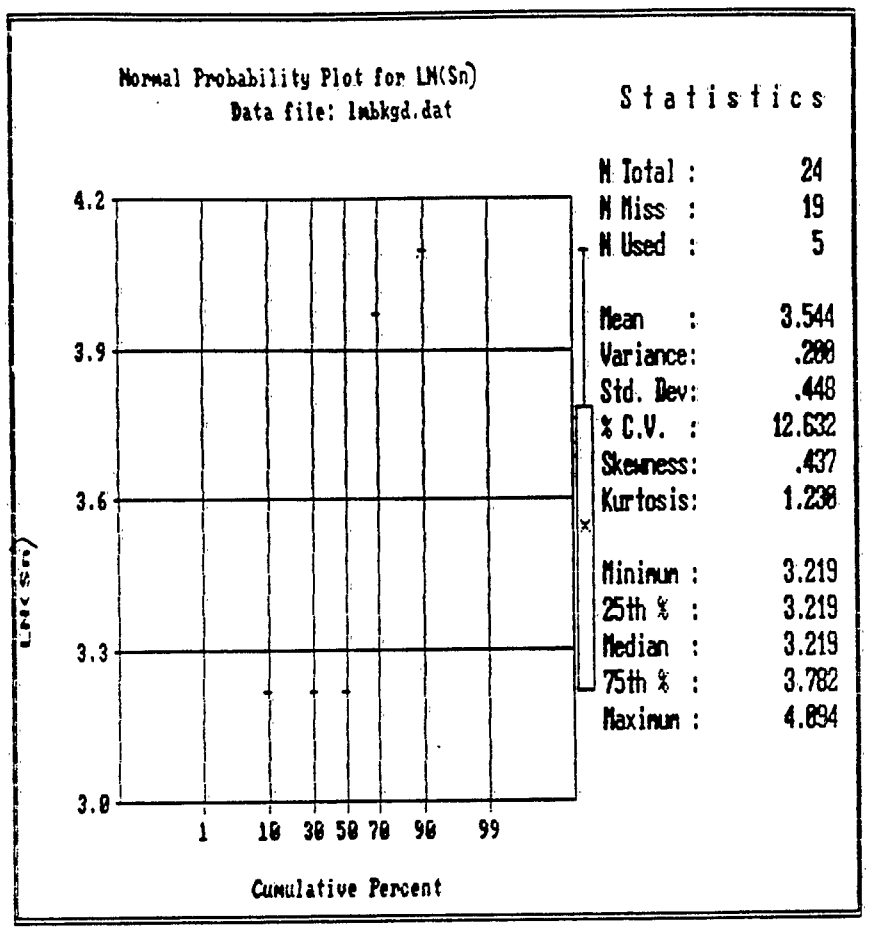
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003

0 8 8 0



NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
1 8 8



Statistics

N Total :	24
N Miss :	19
N Used :	5
Mean :	3.544
Variance:	.200
Std. Dev:	.448
% C.V. :	12.632
Skewness:	.437
Kurtosis:	1.238
Minimum :	3.219
25th % :	3.219
Median :	3.219
75th % :	3.782
Maximum :	4.094

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
288

NOTICE
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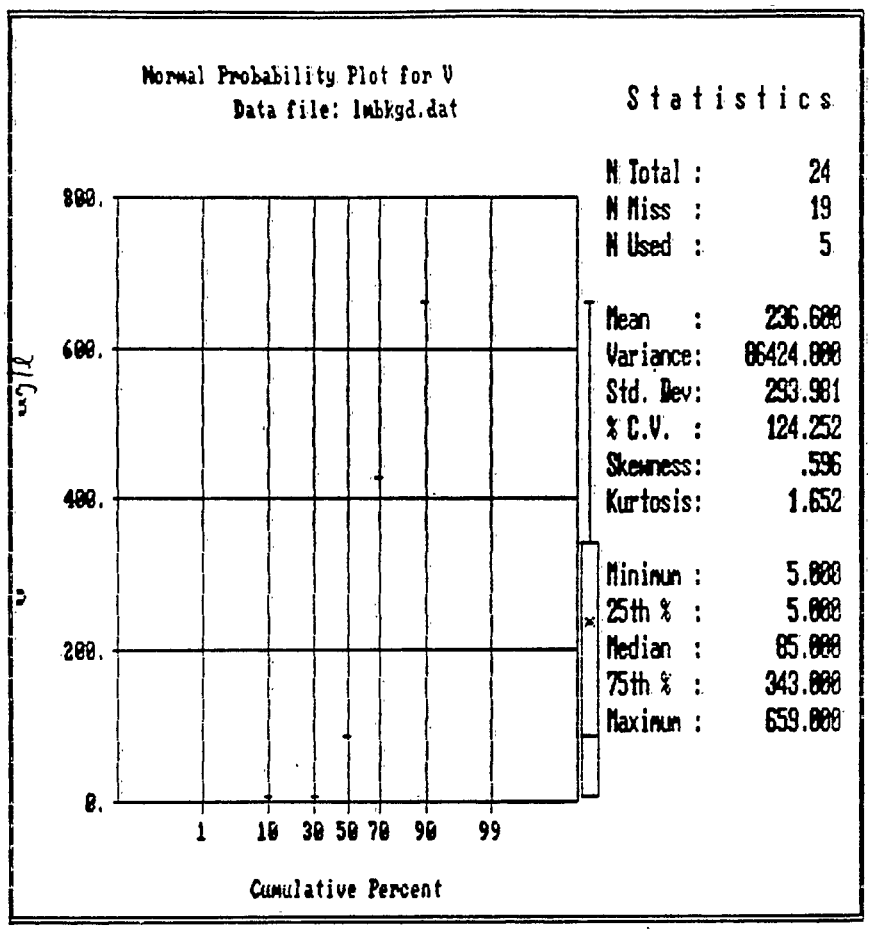
LINEMASTER SWITCH
ADMINISTRATIVE RECORD



Statistics

N Total :	24
N Miss :	19
N Used :	5
Mean :	236.600
Variance:	86424.000
Std. Dev:	293.981
% C.V. :	124.252
Skewness:	.596
Kurtosis:	1.652
Minimum :	5.000
25th % :	5.000
Median :	85.000
75th % :	343.000
Maximum :	659.000

LIN003 8 3

NOTICE
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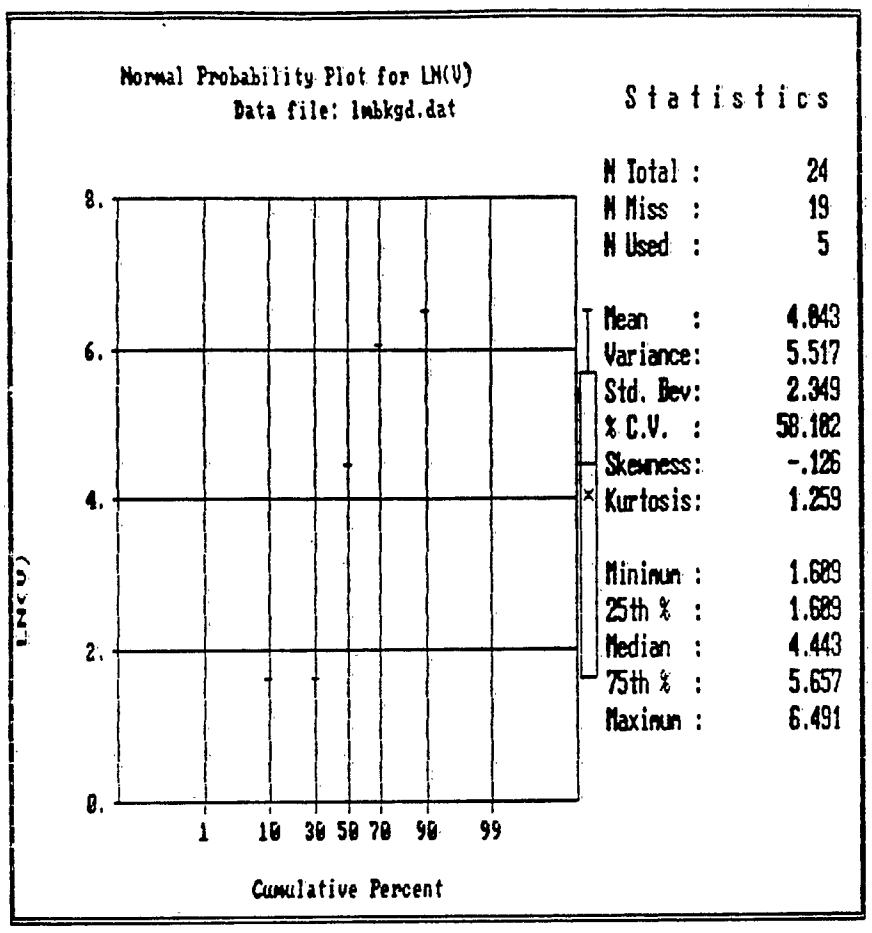
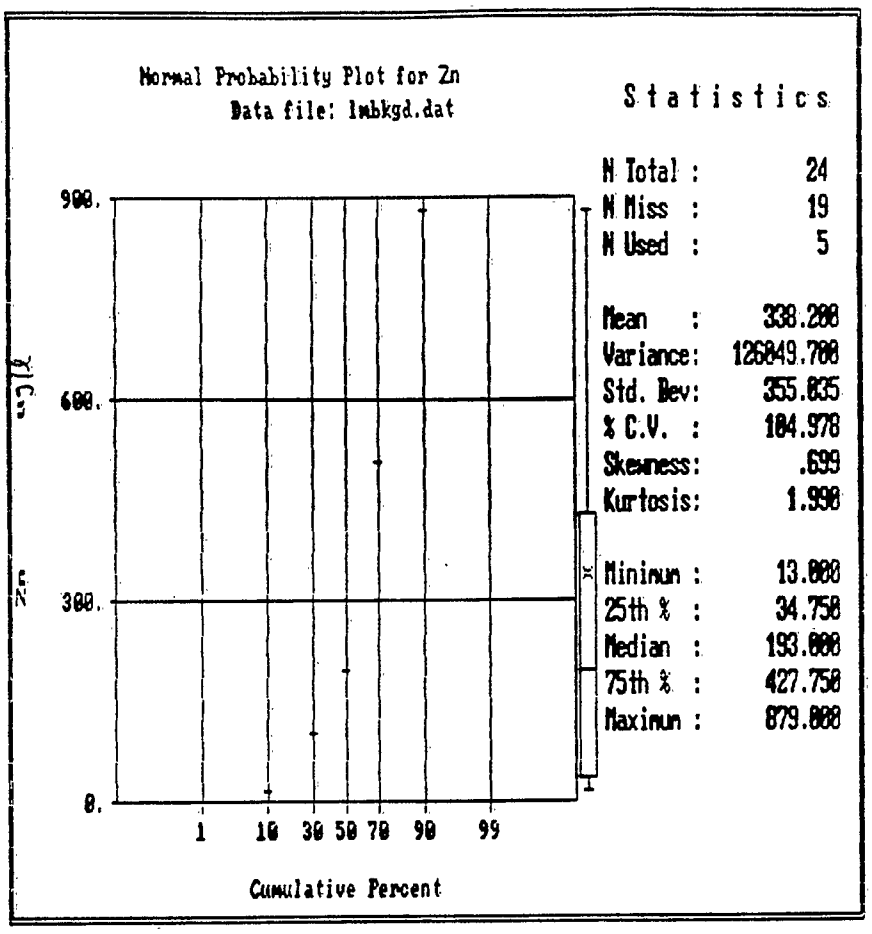
LINEMASTER SWITCH
ADMINISTRATIVE RECORD



Statistics

N Total :	24
N Miss :	19
N Used :	5
Mean :	4.843
Variance:	5.517
Std. Dev:	2.349
% C.V. :	58.182
Skewness:	-.126
Kurtosis:	1.259
Minimun :	1.609
25th % :	1.609
Median :	4.443
75th % :	5.657
Maximun :	6.491

LIN003 4884



NOTICE
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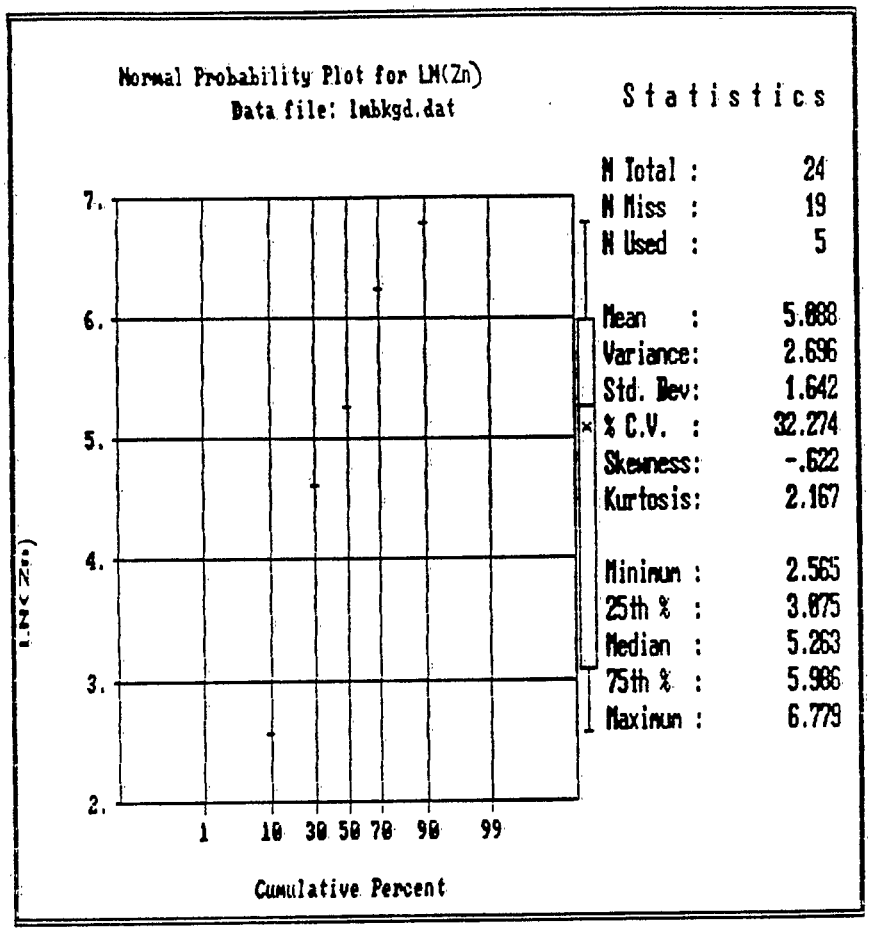
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
8805



Statistics

N Total :	24
N Miss :	19
N Used :	5
Mean :	5.888
Variance:	2.696
Std. Dev:	1.642
% C.V. :	32.274
Skewness:	-.622
Kurtosis:	2.167
Minimun :	2.565
25th % :	3.875
Median :	5.263
75th % :	5.986
Maximun :	6.779

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
9 8 5

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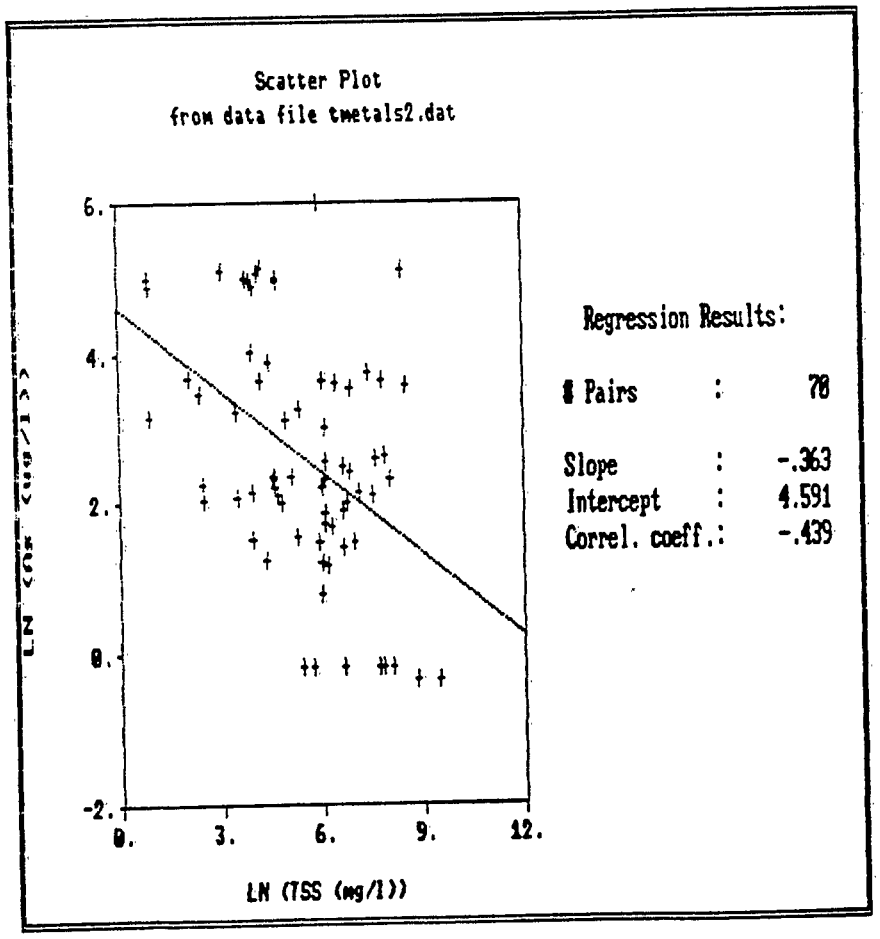
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

TSS v. Total As



LIN003 187

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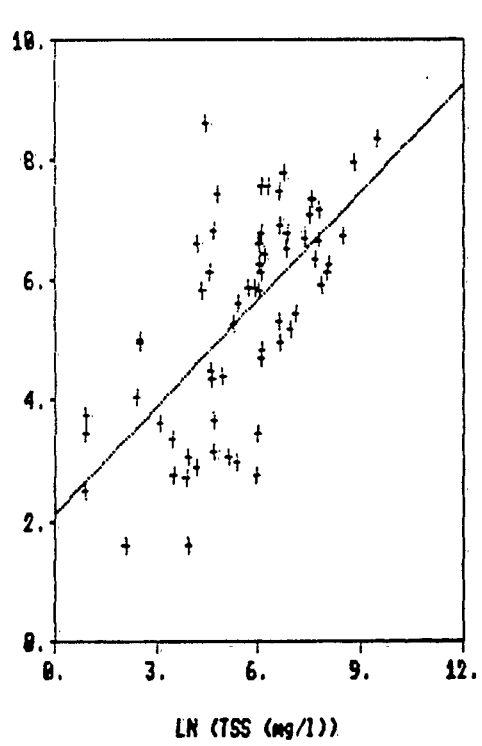
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

TSS v. Total Ba

Scatter Plot
from data file tmetals2.dat



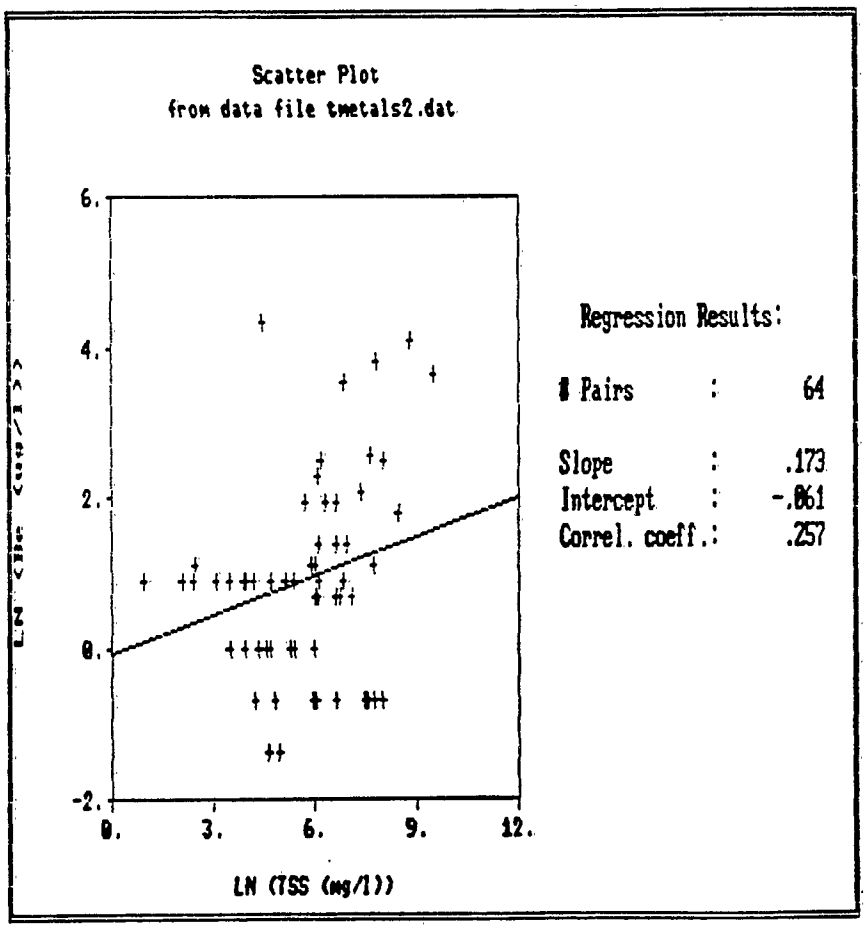
Regression Results:

# Pairs	:	64
Slope	:	.596
Intercept	:	2.891
Correl. coeff.:		.653

LIN003
888

NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

TSS v. Total Be



LIN003 6 8 9

NOTICE
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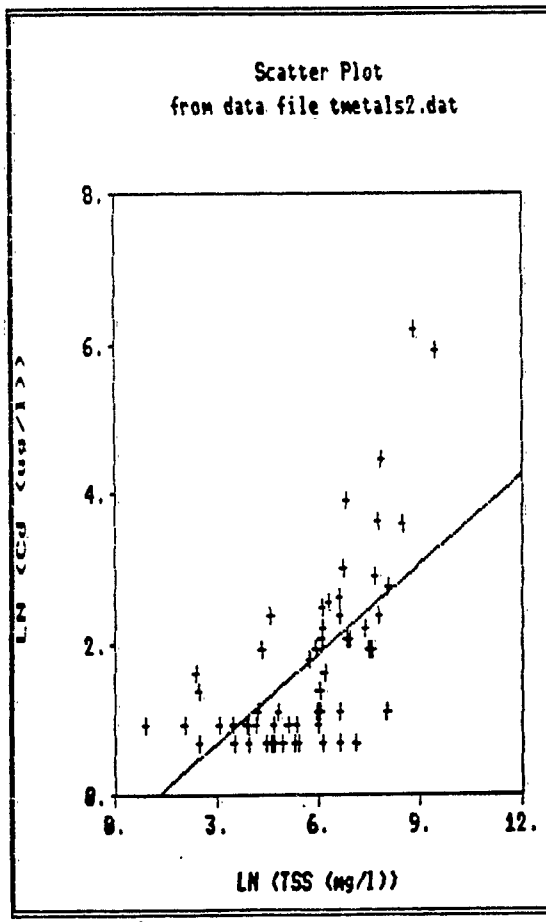
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003
0 9 0

TSS v. Total Cd

Scatter Plot
from data file tmetals2.dat



Regression Results:

# Pairs	:	64
Slope	:	.397
Intercept	:	-.497
Correl. coeff.	:	.634

NOTICE
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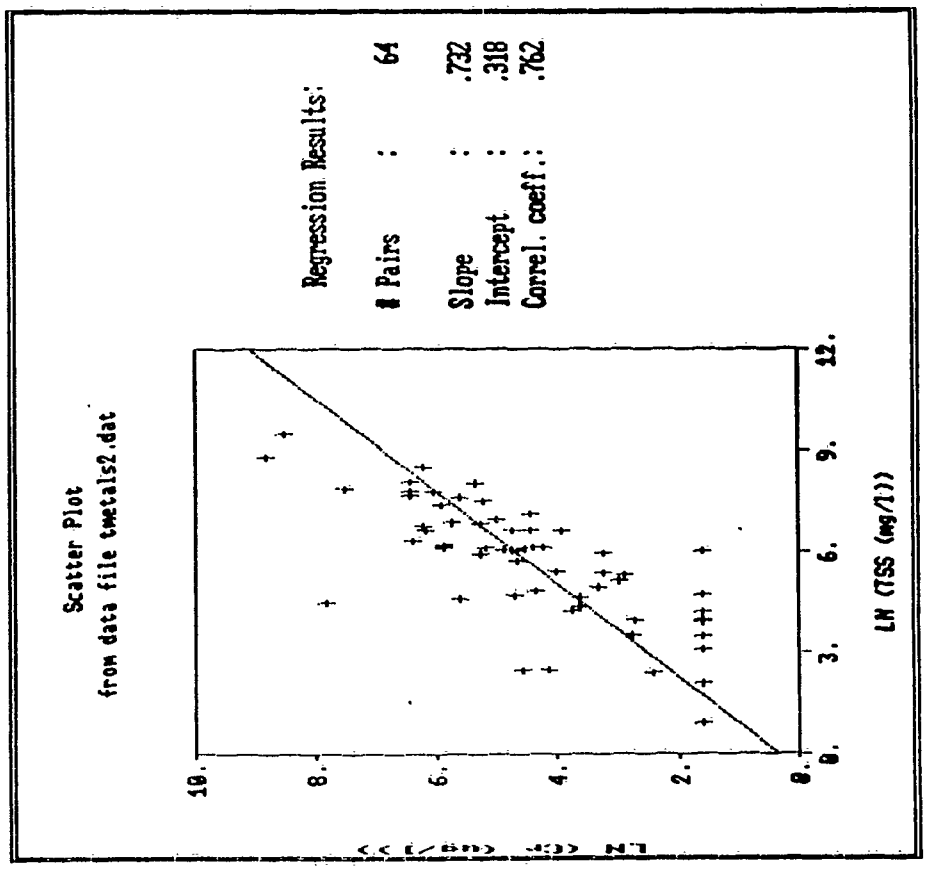
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

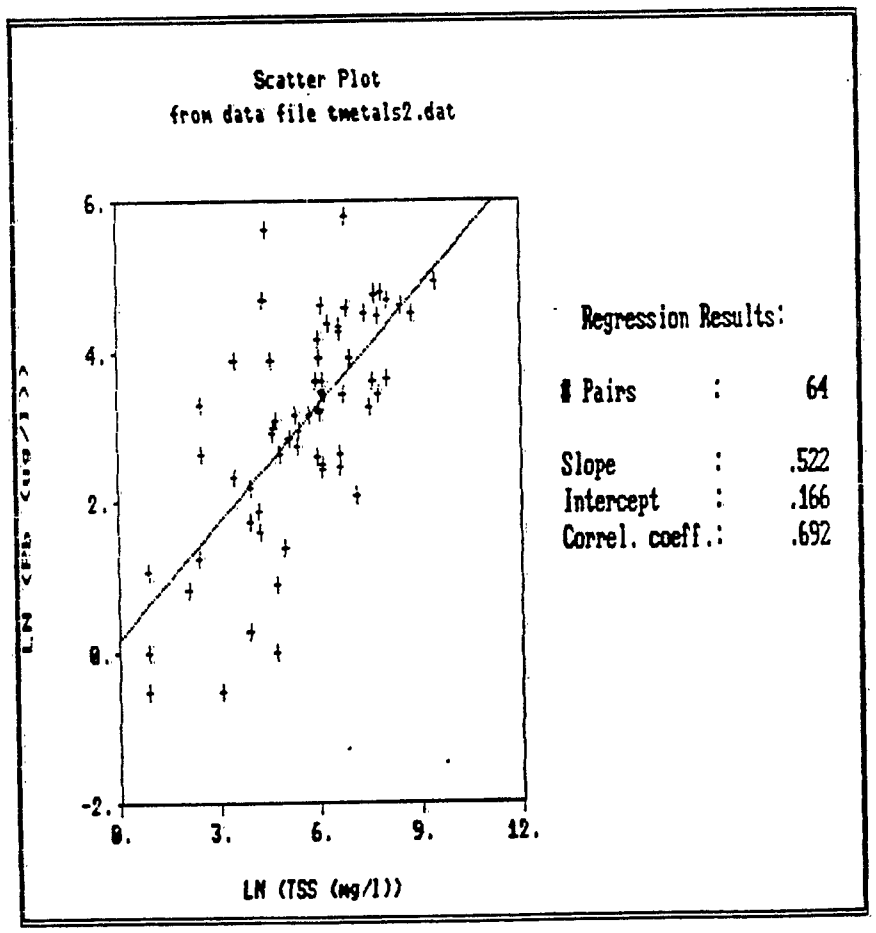
LIN003 0 9 1

TSS v. Total Cr



NOTICE
If the filmed image is less clear than this Notice it is due to the quality of the document being filmed.
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

TSS v. Total Pb



LIN003
268

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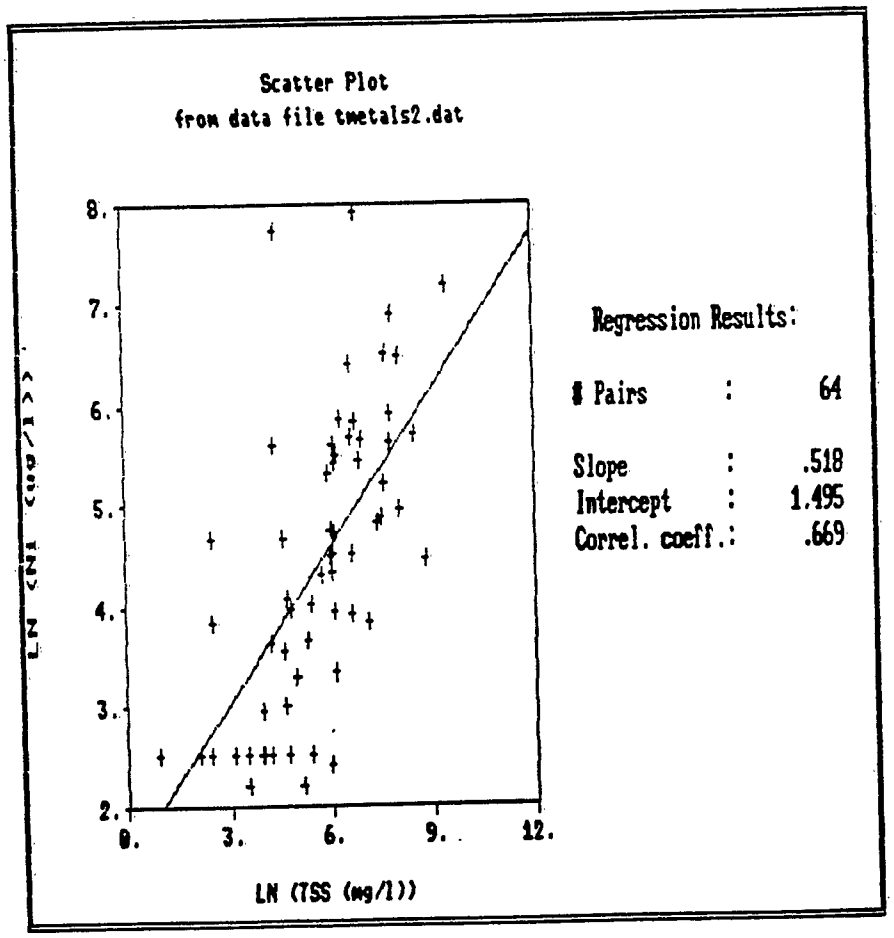
LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 B 9 3

TSS v. Total Ni



APPENDIX T
SURFACE-WATER AND SEDIMENT DATA VALIDATION RESULTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

recycled paper

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0468

DRAFT

SEDIMENT - VOC VALIDATION SUMMARY

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

	Sample ID	BG1	BG	SE-1	SE-3	SE-4	SE-5	SE-5D	SE-6
	Blank ID	80112	802C10	80112	80112	80112	80112	80112	80112
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound	% Solids	32	50	40	40	48	43	45	40
chloromethane		31 UR	20 UJ	25 UR	25 UR	21 UR	23 UR	22 UR	25 UR
bromomethane		31 U	20 U	25 U	25 U	21 U	23 U	22 UJ	25 UR
vinyl chloride		31 U	20 UJ	25 U	25 U	21 U	23 U	22 UJ	25 UR
chloroethane		31 U	20 U	25 U	25 U	21 U	23 U	22 UJ	25 UR
methylene chloride		16 U	2120 U	13 U	13 U	14 U	12 U	11 UJ	13 UR
acetone		226 U	490 U	594 U	310 U	648 U	470 U	590 U	570 U
carbon disulfide		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
1,1-dichloroethene		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
1,1-dichloroethane		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
1,2-dichloroethene (total)		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
chloroform		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
1,2-dichloroethane		16 UJ	10 U	13 UJ	13 UJ	10 UJ	12 UJ	11 UJ	13 UR
2-butanone (MEK)		31 U	20 U	25 U	25 U	21 U	23 U	22 UJ	25 UR
1,1,1-trichloroethane		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
carbon tetrachloride		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
vinyl acetate		31 UJ	20 UJ	25 UJ	25 UJ	21 UJ	23 UJ	22 UJ	25 UR
bromodichloromethane		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
1,1,2,2-tetrachloroethane		16 U	10 UJ	13 U	13 U	10 U	12 U	11 UJ	13 UR
1,2-dichloropropane		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
trans-1,3-dichloropropene		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
trichloroethene (TCE)		16 U	10 U	13 U	13 U	31 U	12 U	11 UJ	15 UR
dibromochloromethane		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
1,1,2-trichloroethane		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
benzene		16 U	10 U	13 U	13 U	10 J	12 U	11 UJ	13 UR
cis-1,3-dichloropropene		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
bromoform		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
2-hexanone (MBK)		31 U	20 U	25 U	25 U	21 U	23 U	22 UJ	25 UR
4-methyl-2-pentanone		31 U	20 U	25 U	25 U	21 U	23 U	22 UJ	25 UR
tetrachloroethene (PCE)		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
toluene		16 U	10 U	13 U	13 U	11 J	12 U	11 UJ	13 UR
chlorobenzene		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
ethyl benzene		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
styrene		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR
total xylenes		16 U	10 U	13 U	13 U	10 U	12 U	11 UJ	13 UR

Data Validation Qualifiers

U - Compound not detected at the reported detection limit.
J - Reported concentration is an estimated value.
UJ - Compound not detected at the reported estimated detection limit.
UR - Compound not detected at the reported rejected detection limit.

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SEDIMENT - VOC VALIDATION SUMMARY

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

Compound	Sample ID / Blank ID / Units / % Solids	SE-7 80112 ug/kg 33	SE-9 83C6 ug/kg 40	SE-10 83C13 ug/kg 43	SE-10D 83C13 ug/kg 69	SE-11 83C13 ug/kg 50	SE-12 802C13 ug/kg 44	SE-13 802C13 ug/kg 50
chloromethane		30 UR	25 UJ	23 UJ	14 UJ	20 UJ	23 UR	20 UR
bromomethane		30 U	25 UJ	23 UJ	14 UJ	20 UJ	23 UR	20 UR
vinyl chloride		30 U	25 UJ	23 UJ	14 UJ	20 UJ	23 UR	20 UR
chloroethane		30 U	25 UJ	23 UJ	14 UJ	20 UJ	23 UR	20 UR
methylene chloride		15 U	13 UJ	12 UJ	9 UJ	10 UJ	14 U	56 U
acetone		714 U	740 U	610 U	750 U	770 U	1170 U	2600 U
carbon disulfide		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
1,1-dichloroethene		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
1,1-dichloroethane		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
1,2-dichloroethene (total)		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
chloroform		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
1,2-dichloroethane		15 UJ	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
2-butanone (MEK)		30 U	25 UJ	23 UJ	14 UJ	20 UJ	23 UJ	20 UJ
1,1,1-trichloroethane		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
carbon tetrachloride		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
vinyl acetate		30 UJ	130 J	23 UJ	220 J	830 J	23 UJ	20 UJ
bromodichloromethane		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
1,1,2,2-tetrachloroethane		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
1,2-dichloropropane		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
trans-1,3-dichloropropene		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
trichloroethene (TCE)		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
dibromochloromethane		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
1,1,2-trichloroethane		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
benzene		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
cis-1,3-dichloropropene		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
bromoform		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UJ	10 UJ
2-hexanone (MBK)		30 U	25 UJ	23 UJ	14 UJ	20 UJ	23 UR	20 UR
4-methyl-2-pentanone		30 U	25 UJ	23 UJ	14 UJ	6 J	8 J	20 UR
tetrachloroethene (PCE)		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
toluene		22 J	30 J	1 J	7 UJ	81 J	71 J	10 UR
chlorobenzene		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
ethyl benzene		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
styrene		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR
total xylenes		15 U	13 UJ	12 UJ	7 UJ	10 UJ	11 UR	10 UR

Data Validation Qualifiers

U - Compound not detected at the reported detection limit.
J - Reported concentration is an estimated value.
UJ - Compound not detected at the reported estimated detection limit.
UR - Compound not detected at the reported rejected detection limit.

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SEDIMENT - VOC VALIDATION SUMMARY

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

Compound	Sample ID / Blank ID / Units / % Solids	SE-14 / 80112 / ug/kg / 34	SE-15 / 83C6 / ug/kg / 45	METHOD BLK / 83C13 / ug/kg / 100	METHOD BLK / 83C6 / ug/kg / 100	METHOD BLK / 802C13 / ug/kg / 100	METHOD BLK / 802C10 / ug/kg / 100	METHOD BLK / 80112 / ug/kg / 100
chloromethane		29 UR	22 UJ	10 U	10 U	10 U	10 U	10 U
bromomethane		29 U	22 UJ	10 U	10 U	10 U	10 U	10 U
vinyl chloride		29 U	22 UJ	10 U	10 U	10 U	10 U	10 U
chloroethane		29 U	22 UJ	10 U	10 U	10 U	10 U	10 U
methylene chloride		15 U	11 UJ	25	2 J	6400	295	1 J
acetone		290 U	380 U	69	56	131	85	31
carbon disulfide		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
1,1-dichloroethene		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
1,1-dichloroethane		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
1,2-dichloroethene (total)		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
chloroform		15 U	11 UJ	5 U	5 U	7	4 J	5 U
1,2-dichloroethane		15 UJ	11 UJ	5 U	5 U	5 U	5 U	5 U
2-butanone (MEK)		29 U	22 UJ	10 U	10 U	10 U	10 U	10 U
1,1,1-trichloroethane		15 U	11 UJ	5 U	5 U	5 U	5 U	3 J
carbon tetrachloride		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
vinyl acetate		29 UJ	46 J	10 U	10 U	10 U	10 U	10 U
bromodichloromethane		15 U	11 UJ	5 U	5 U	2 J	1 J	5 U
1,1,2,2-tetrachloroethane		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
1,2-dichloropropane		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
trans-1,3-dichloropropene		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
trichloroethene (TCE)		15 U	11 UJ	2 J	5 U	6	6	15
dibromochloromethane		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
1,1,2-trichloroethane		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
benzene		15 U	11 UJ	5 U	5 U	5 U	1 J	5 U
cis-1,3-dichloropropene		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
bromoform		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
2-hexanone (MBK)		29 U	22 UJ	10 U	10 U	10 U	10 U	10 U
4-methyl-2-pentanone		29 U	22 UJ	10 U	10 U	10 U	10 U	10 U
tetrachloroethene (PCE)		15 U	11 UJ	5 U	5 U	5 U	1 J	5 U
toluene		15 U	10 J	5 U	5 U	5 U	1 J	5 U
chlorobenzene		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
ethyl benzene		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
styrene		15 U	11 UJ	5 U	5 U	5 U	5 U	5 U
total xylenes		15 U	11 UJ	5 U	5 U	5 U	1 J	5 U

Data Validation Qualifiers

U - Compound not detected at the reported detection limit.
J - Reported concentration is an estimated value.
UJ - Compound not detected at the reported estimated detection limit.
UR - Compound not detected at the reported rejected detection limit.

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SURFACE WATER - VOC VALIDATION SUMMARY

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

Compound	Sample ID / Units	SW-01 ug/l	SW-03 ug/l	SW-04 ug/l	SW-05 ug/l	SW-05D ug/l	SW-06 ug/l	SW-07 ug/l	SW-09 ug/l	SW-10 ug/l
chloromethane		2 U	2 U	2 U	2 U	2 U	2 UJ	2 UJ	2 UJ	2 UJ
bromomethane		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
vinyl chloride		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
chloroethane		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
methylene chloride		1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	7 U	2 U
acetone		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
carbon disulfide		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloroethene (total)		1 U	1 U	3	1 U	1 U	1 U	1 U	1 U	1 U
chloroform		1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 J	2 J
1,2-dichloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-butanone (MEK)		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-trichloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
carbon tetrachloride		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
vinyl acetate		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
bromodichloromethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloropropane		1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ	1 UJ	1 UJ
cis-1,3-dichloropropene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trichloroethene (TCE)		1 U	1 U	8 U	1 U	1 U	1 UJ	1 UJ	UJ	1 UJ
dibromochloromethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-trichloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
benzene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-dichloropropene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
bromoform		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-methyl-2-pentanone		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-hexanone (MBK)		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
tetrachloroethene (PCE)		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
toluene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
chlorobenzene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ethyl benzene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
styrene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
total xylenes		1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 UJ	1 UJ	1 UJ

Data Validation Qualifiers

U - Compound not detected at the reported detection limit.
J - Reported concentration is an estimated value.
UJ - Compound not detected at the reported estimated detection limit.

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SURFACE WATER - VOC VALIDATION SUMMARY

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

Compound	Sample ID Units	SW-10D ug/l	SW-11 ug/l	SW-12 ug/l	SW-13 ug/l	EQUIP BLK ug/l	EQUIP BLK ug/l	TRIP BLK ug/l	TRIP BLK ug/l
chloromethane		2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 U	2 UJ	2 U
bromomethane		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
vinyl chloride		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
chloroethane		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
methylene chloride		5 U	1 UJ	1 UJ	1 UJ	1 J	1 U	1 UJ	1 U
acetone		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
carbon disulfide		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-dichloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloroethene (total)		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
chloroform		1 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-butanone (MEK)		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,1-trichloroethane		1 U	1 U	1 U	1 U	1 U	1	1 U	1 U
carbon tetrachloride		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
vinyl acetate		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
bromodichloromethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-dichloropropane		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U
cis-1,3-dichloropropene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trichloroethene (TCE)		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	6 J	1 UJ	1 U
dibromochloromethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-trichloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
benzene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-dichloropropene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
bromoform		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-methyl-2-pentanone		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-hexanone (MBK)		2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
tetrachloroethene (PCE)		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-tetrachloroethane		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
toluene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
chlorobenzene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
ethyl benzene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
styrene		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
total xylenes		1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U

Data Validation Qualifiers

U - Compound not detected at the reported detection limit.
J - Reported concentration is an estimated value.
UJ - Compound not detected at the reported estimated detection limit.

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

11 March 1991

Mr. James Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re:	Linemaster
Laboratory:	Alpha Analytical
Case No:	86-88
SDG No:	192900719 & 192900720

TAL Inorganics: (Arsenic only)	903774.1	903774.7	903774.13
	903774.2	903774.8	903774.14
	903774.3	903774.9	903774.15
	903774.4	903774.10	903774.16
	903774.5	903774.11	903774.17
	903774.6	903774.12	903774.18
	903775.1	903775.7	903775.13
	903775.2	903775.8	903775.14
	903775.3	903775.9	903775.15
	903775.4	903775.10	903775.16
	903775.5	903775.11	
	903775.6	903775.12	

Dear Mr. Olsen:

Validation was performed on the inorganic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- \- data completeness
- * - holding times
- \- calibration
- * - blanks
- * - matrix spike analysis

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* - duplicate sample analysis
* - laboratory control sample analysis
  - furnace atomic absorption analysis
* - detection limits
* - sample result verification

* All criteria were met for this parameter.

Table I summarizes the validation actions, which were in accordance with USEPA Region I Functional Guidelines for Evaluating Inorganic Analyses, June 13, 1988, modified February 1989, as detailed below.

Also attached are the:

- o telephone log,
- o completeness log, and
- o sample preparation and analysis summaries

DATA COMPLETENESS:

For sample ID 903774.1, Form 1 was not supplied by laboratory.

CALIBRATION:

Initial and/or continuing calibration verifications that were not within the 90-110% of the true value are tabulated below:

CALIBRATION DATE/TIME	INSTRUMENT	ELEMENT	% OF TRUE
09-06-90/17:20	ASCLP2.GEL	arsenic	89.6

Associated samples:

SAMPLE NO.
903775.4
903775.6
903775.8
903775.11
903775.12
903775.14
903775.15

Action:

- o for recoveries between 75-89%, all data are flagged as estimated (J)

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Comments:

1. The associated samples listed above were run by MSA right after the non-compliant calibration.

2. Not all initial and continuing calibration were listed on forms. Also the initial calibration could not be verified for 09-06-90 between 02:05 and 14:03 for SDG 192900719 and after 08-29-90 at 03:46 for SDG 192900720.

FURNACE ATOMIC ABSORPTION ANALYSIS:

1. Method of Standard Additions:

Samples analyzed by MSA that provided replicated linearity coefficients (r) of <0.995 are tabulated below:

SAMPLE	ELEMENT	(r)
903774.16	arsenic	0.9828

Action:

- for r <0.995, results >IDL are flagged as estimated (J)

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

enc.

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Table I. Validation Action Summary

Arsenic J^1J^2

If the field is left blank, no qualifications were necessary - accept all data.

J^1 - Estimate (J) positive values due to poor replicated linearity near the CRDL. Detection limit is biased low.

J^2 - Estimate (J) positive values due to low matrix spike recoveries. These estimated results would be minimum values.

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
North Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

12 March 1991

Mr. James Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster - Woodstock, CT
Laboratory: Alpha Analytical Laboratories
Case No: #86-88
SDG No: 192900719

Volatiles:	903774.1	903774.7D	903774.13
	903774.2	903774.8	903774.14
	903774.3	903774.9	903774.15
	903774.4	903774.9D	903774.16
	903774.5	903774.10	903774.17
	903774.6	903774.11	903774.18
	903774.7	903774.12	903774.18D

Dear Mr. Olsen:

Validation was performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

- data completeness
* - holding times
- GC/MS tuning
- calibration
- blanks
- surrogate recovery
- matrix spike/matrix spike duplicate
* - field duplicates
- internal standards performance
* - TCL compound identification
* - compound quantitation and reported detection limits

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* - tentatively identified compounds
* - system performance
* - sample result verification

* All criteria were met for this parameter.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o data validation log,
- o telephone log,
- o completeness log, and
- o sample preparation and analysis summaries

DATA COMPLETENESS:

Please note that the laboratory analyzed the samples by USEPA Methods No. 524.2 (water) and 8240 (soils) which are not CLP RAS protocols. The laboratory provided deliverables for these methods in CLP format to the maximum extent possible. In certain cases, however, all CLP required criteria could not be evaluated; i.e. USEPA Method No. 524.2 does not require the use of surrogate compounds.

GM/MS TUNING:

1. GC/MS tuning exceeded the 12 hour standard for 07-31-90 at 07:25 and on 08-02-90 at 13:34.

CALIBRATION:

1. VOA

A. Initial calibration:

Compounds with average relative response factors (AVG. RRF) <0.05 or percent relative standard deviations (%RSD) > 30% are tabulated below:

INSTRUMENT	CAL DATE	COMPOUND	AVG. RRF	%RSD
OLD INCOS (method 524.2)	07-24-90	1,2-dibromo-3-chloropropane	0.047	
OLD INCOS (method 8240)	07-20-90	vinyl acetate		67.3
		chloromethane		88.0
		acetone	0.018	

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Associated samples:

INSTRUMENT	CAL DATE	SAMPLE NO.
OLD INCOS (method 524.2)	07-24-90	903774.2
		903774.3
		903774.5
		903774.7
		903774.7 DUP
		903774.8
		903774.9
		903774.9 DUP
		903774.10
		903774.11
		903774.18
		903774.18 DUP
OLD INCOS (METHOD 8240)	07-20-90	903774.1
		903774.4
		903774.6
		903774.12
		903774.13
		903774.14
		903774.15
		903774.16
		903774.17

Action:

- for AVG. RRF <0.05, results ≥CRQL for the compound are flagged as estimated (J) and detection limit values (CRQL U) are flagged as unusable (R)
- for %RSD >50%, detection limit values (CRQL U) for the compound are flagged as estimated (J)

Comments:

1. The initial calibration results for method 8240 on 07-20-90 could not be verified. Raw data results were not provided.
2. Data were flagged only for those compounds reported on Form 1.

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B. Continuing calibration: Water

Compounds with percent difference (%D) between the initial and continuing calibration (%D) ≥ 20% as stated in Method 524.2 or relative response factors (RRF) <0.05 as stated in the Functional Guidelines are tabulated below:

INSTRUMENT	CAL DATE/TIME	COMPOUND	RRF	%D
DW200731	08-01-90/00:36	chloromethane		33.3
		t-1,3-dichloropropene		23.6
		2,2-dichloropropropane		21.6
		trichloroethylene		32.1
		1,2-dichloropropane		415.9
		m/p-xylene		96.3
		bromoform		22.4
		1,1,2,2-tetrachloroethane		22.4
		1,2-dibromo-3-chloropropane	0.035	25.5
DW200801	08-02-90/01:26	dichlorodifluoromethane		21.0
		chloromethane		60.2
		methylene chloride		72.1
		t-1,3-dichloropropene		20.9
		c-1,2-dichloroethylene		20.2
		chloroform		20.9
		trichloroethylene		85.5
		1,2-dichloropropane		537.8
		toluene		27.6
		ethylbenzene		22.3
		m/p-xylene		134.7
		bromoform		20.0
		propylbenzene		22.3
		1,2-dibromo-3-chloropropane	0.025	46.8
		hexachlorobutadiene		28.8

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE #
DW200731	08-01-90/00:36	903774.8
		903774.18
DW200801	08-02-90/01:26	903774.7 DUP
		903774.9 DUP
		903774.10
		903774.11
		903774.18 DUP

Action:

- for Avg RRF <0.05, results ≥ CRQL for the compound are flagged as estimated (J) and detection limit values (CRQL U) are flagged as unusable (R)

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- o for %D ≥20%, results ≥ CRQL for the compound are flagged as estimated (J)

- o for %D >50%, detection limit values (CRQL U) for the compound are flagged as estimate (J)

Comments:

With the exception of chloromethane, the continuing calibration standard on 08-01-90 at 00:36 appears to have been a 400 ng standard instead of 200 ng and therefore the RRF and %D were calculated accordingly.

C. Continuing calibration: Soil

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTRUMENT	CAL DATE/TIME	COMPOUND	RRF	%D
V0250801	08-01-90/17:59	chloromethane	0.049	44.3
		vinyl chloride		30.4
		carbon disulfide		25.7
		1,2-dichloroethane		358.9
		1,1,1-trichloroethane		25.8
		carbon tetrachloride		28.2
		4-methyl-2-pentanone		26.2
		1,1,2,2-tetrachloroethane		45.1
		1,2-dichloroethane-d4		399.2*
V0250802N	08-02-90/19:17	1,1,2,2-tetrachloroethane		69.0
		vinyl chloride		45.0

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
V0250801	08-01-90/17:59	903774.1
		903774.4
		903774.6
		903774.12
		903774.13
		903774.14
		903774.15
		903774.16
		903774.17

Action:

- o for RRF <0.05, results ≥CRQL for the compound are flagged as estimated (J) and detection limit values (CRQL U) are flagged as unusable (R)

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- for %D >25%, results ≥CRQL for the compound are flagged as estimated (J)
- for %D >50%, detection limit values (CRQL U) for the compound are flagged as estimated (J)

Comments:

1. The continuing calibrations listed above do not have associated initial calibrations and therefore, could not be verified.
2. Data were flagged only for those compounds reported on Form 1.

BLANKS:

1. VOA.

Positive blank results and associated action levels are tabulated below:

BLANK ID.	COMPOUND	CONCENTRATION	ACTION LEVEL
BLK80112	methylene chloride	1.33	13.30
	1,1,1-trichloroethane	2.85	14.25
	trichloroethylene	15.49	77.45
	toluene	0.17	1.70
	tetrachloroethene	0.53	2.65
	p/m-xylenes	0.07	0.35
	o-xylene	0.01	0.05
	acetone	30.91	309.10
903774.18	1,1,1-trichloroethane	0.8	4.0
	trichloroethene	5.6	28.0

Associated Samples:

METHOD BLANK ID.	ASSOCIATED SAMPLES
BLK80112	3774.1
	3774.4
	3774.6
	3774.12
	3774.13
	3774.14
	3774.15
	3774.16
	3774.17

FIELD BLANK ID.	ASSOCIATED SAMPLES
903774.18	903774.2
	903774.5
	903774.7
	903774.7 DUP
	903774.8

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FIELD BLANK ID.	ASSOCIATED SAMPLES
903774.18	903774.9
	903774.9 DUP
	903774.10
	903774.11

Action:

- o sample value <CRQL (flagged J); changed to CRQL U
- o sample value ≥CRQL and < action level (flagged B); changed to not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Method blanks were not provided for method 524.2.

SURROGATE RECOVERY:

1. VOA.

Samples with one or more surrogate recoveries which did not meet the criteria specified in the CLP SOW are summarized below:

	Percent Recoveries		
SAMPLE	TOL	BFB	DCE
903774.14			132

Action:

- o recovery ≥10%; for the associated sample, all results ≥CRQL are flagged as estimated (J) and detection limit values (CRQL U) are flagged as estimated (J)

Comments:

1. Please note that the non-compliant surrogate recovery may be due to calibration instability (see Calibration 1C) rather than sample matrix affects.
2. For USEPA Method 524.2, surrogate recoveries are not required, therefore, the water samples did not have surrogates added.

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MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

1. VOA

Comments:

USEPA Method 524.2 does not require an MS/MSD be performed. Method 8240 states that an MS/MSD should be performed, however, this was not done.

INTERNAL STANDARDS PERFORMANCE:

1. VOA

Deviations from the internal standard response stability factor of -50 to 100% are tabulated below:

SAMPLE	IS COMPOUND	%R vs CAL
903774.5	FB	- 66
	1,2-DCB	- 92
903774.8	1,2-DCB	- 51
903774.1	IS3 (CBZ)	- 62
903774.12	IS3 (CBZ)	- 60
903774.14	IS1 (BCM)	- 51
	IS3 (CBZ)	- 54
903774.16	IS3 (CBZ)	- 51
903774.17	IS1 (BCM)	- 80
	IS2 (DFB)	- 78
	IS3 (CBZ)	- 84

Action:

- results ≥CRQL for analytes assigned for quantitation from the associated internal standard are flagged as estimated (J)
- for extreme variations greater than -75 and +125% in IS performance, assigned analyte detection limit values (CRQL U) are also flagged as unusable (R)

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Comments:

- For samples run under Method 524.2, all results were quantified using fluorobenzene, therefore any deviations from this standard was used for flagging purposes.

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

enc.

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Linemaster
Case No: #86-88
SDG NO: 192900719

Table I. Validation Action Summary

Sample No.	VOA
903774.1	A2 J1 A1 R1
903774.2	A
903774.3	A
903774.4	A2 J1 A1 R1
903774.5	A
903774.6	A2 J1 A1 R1
903774.7	A1
903774.7D	J4 J1 A1
903774.8	J1
903774.9	A
903774.9D	J1
903774.10	J1
903774.11	J1
903774.12	A2 J1 A1 J3 R1
903774.13	A2 J1 A1 R1
903774.14	A2 J1 A1 J2 J3 R1
903774.15	A2 J1 A1 R1
903774.16	A2 J1 A1 R1
903774.17	A2 J1 A1 R1 R2
903774.18	J4 J1
903774.18D	J1

A - accept all data

A^1 - accept data, but change positive values for methylene chloride, acetone, and trichlorethene to revised detection limit due to blank contamination

A^2 - accept data but estimate (J) positive values due to calibration not meeting minimum RF criteria. The positive results for these compounds would be a minimum value

J^1 - estimate detection limits (UJ) due to non-complaint calibrations

J^2 - estimate all positive values (J) due to high surrogate recoveries

J^3 - estimate positive values (J) due to deviations from the internal standard response stability factor

J^4 - estimate (J) positive values due to non-compliant calibration

R^1 - Reject detection limits (UR) due to non-complaint calibrations

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R^2 - Reject detection limits (UR) due to extreme variations from the internal standard response stability factor

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ECHEM INC.
ENGINEERING CHEMISTRY CONSULTANTS

P.O. Box 1510
#32 Route 35
Sebago Common
North Windham, Maine 04062
(207) 892-0002
FAX (207) 892-7499

12 March 1991

Mr. James Olsen
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Re: Linemaster - Woodstock, CT
Laboratory: Alpha Analytical Laboratories
Case No: #86-88
SDG No: 192900720

Volatiles:

903775.1	903775.7	903775.13
903775.2	903775.8	903775.14
903775.3	903775.9	903775.15
903775.4	903775.10	903775.16
903775.5	903775.11	
903775.6	903775.12	

Dear Mr. Olsen:

Validation was performed on the organic analytical data from the samples referenced above. The data were evaluated based on the following parameters:

* * - data completeness
- holding times
- GC/MS tuning
- calibration
- blanks
- surrogate recovery
- matrix spike/matrix spike duplicate
- field duplicates
- internal standards performance
* * - TCL compound identification
* * - compound quantitation and reported detection limits
* * - tentatively identified compounds
* * - system performance

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* - sample result verification

* All criteria were met for this parameter.

Table I summarizes the validation actions, which were in accordance with USEPA Region 1 Functional Guidelines for Evaluating Organic Analyses, February 1, 1988 as modified by Deborah Szaro November 1, 1988, as detailed below.

Also attached are the:

- o completeness log, and
- o sample preparation and analysis summaries

DATA COMPLETENESS:

Please note that the laboratory analyzed the samples by USEPA Methods No. 524.2 (water) and 8240 (soils) which are not CLP RAS protocols. The laboratory provided deliverables for these methods in CLP format to the maximum extent possible. In certain case, however, all CLP referred criteria could not be evaluate; i.e. USEPA Method No. 524.2 does not required the use of surrogate compounds.

HOLDING TIMES:

1. VOA.

Preserved samples with holding times exceeding 14 days from collection, are itemized below.

SAMPLE	HOLDING TIME (DAYS) FROM SAMPLE COLLECTION
903775.14	15
903775.15	16

Action:

- o detection limit values (CRQL U) are flagged as estimated (J)
- o results ≥CRQL are flagged as estimated (J)

Comments:

The validation flags were affixed primarily as a result of Contract Compliance Screening (CCS). The reviewer concludes that the slight (1-2 day) exceedences do not compromise data quality.

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GC/MS TUNING:

1. GC/MS tuning exceeded the 12 hour standard for 08-02-90 at 13:34.

CALIBRATION:

1. VOA

A. Initial calibration:

Compounds with average relative response factors (AVG. RRF) <0.05 or percent relative standard deviations (%RSD) > 30% are tabulated below:

INSTRUMENT	CAL DATE	COMPOUND	AVG. RRF	%RSD
OLD INCOS (method 524.2)	07-24-90	1,2-dibromo-3-chloropropane	0.047	
OLD INCOS method 8240)	07-20-90	vinyl acetate		67.3
		chloromethane		88.0
		acetone	0.018	

Associated samples:

INSTRUMENT	CAL DATE	SAMPLE NO.
OLD INCOS (method 524.2)	07-24-90	903775.1
		903775.3
		903775.5
		903775.7
		903775.9
		903775.10
		903775.13
		903775.16
OLD INCOS (method 8240)	07-20-90	903775.2
		903775.4
		903775.6
		903775.8
		903775.11
		903775.12
		903775.14
		903775.15

Action:

- for AVG. RRF <0.05, results ≥CRQL for the compound are flagged as estimated (J) and detection limit values (CRQL U) are flagged as unusable (R)

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- o for %RSD >50%, detection limit values (CRQL U) for the compound are flagged as estimated (J)

Comments:

1. The initial calibration results for Method 8240 on 07-20-90 could not be verified. Raw data results were not provided.

2. Data was flagged only for those compounds reported on Form 1.

3. For USEPA Method 524.2 the reviewer believes that the high level standard reported as 1000 ng was actually analyzed as 750 ng.

B. Continuing calibration: WATER

Compounds with percent difference (%D) between initial and continuing calibration ≥ 20% as stated in Method 524.2 and relative response factors (RRF) < 0.05 as stated in the Functional Guidelines are tabulated below:

INSTRUMENT	CAL DATE/TIME	COMPOUND	RRF	%D
DW200731	08-01-90/00:36	chloromethane		33.3
		t-1,3-dichloropropene		23.6
		2,2-dichloropropane		21.6
		trichloroethylene		32.1
		1,2-dichloropropane		415.9
		m/p-xylene		96.3
		bromoform		22.4
		1,1,2,2-tetrachloroethane		22.4
		1,2-dibromo-3-chloropropane	0.035	25.5
DW200801	08-02-90/01:26	dichlorodifluoromethane		21.0
		chloromethane		60.2
		methylene chloride		72.1
		t-1,3-dichloropropene		20.9
		c-1,2-dichloroethylene		20.2
		chloroform		20.9
		trichloroethylene		85.5
		1,2-dichloropropane		537.8
		toluene		27.6
		ethylbenzene		22.3
		m/p-xylene		134.7
		bromoform		20.0
		propylbenzene		22.3
		1,2-dibromo-3-chloropropane	0.025	46.8
		hexachlorobutadiene		28.8

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Associated Samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE #
DW2008001	08-02-90/01:26	903775.1
		903775.3
		903775.5
		903775.7
		903775.9
		903775.10
		903775.13
		903775.16

Action:

- for avg. RRF <0.05, results ≥ CRQL for the compound are flagged as estimated (J) and detection limit values (CRQL U) are flagged as unusable (R)
- for %D ≥20%, results ≥ CRQL for the compound are flagged as estimated (J)
- for %D >50%, detection limit values (CRQL U) for the compound are also flagged as estimated (J)

Comments:

With the exception of chloromethane, the continuing calibration standard on 08-01-90 at 00:36 appears to have been a 400 ng standard instead of 200 ng and therefore the RRF and %D were calculated accordingly.

C. Continuing Calibration: SOIL

Compounds with relative response factors (RRF) <0.05 or percent difference between initial and continuing calibration (%D) >25% are tabulated below:

INSTRUMENT	CAL DATE/TIME	COMPOUND	RRF	%D
V0250802N	08-02-90/19:17	1,1,2,2-tetrachloroethane		69.0
		vinyl chloride		45.0

Associated samples:

INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
V0250802N	08-02-90/19:17	903775.2
		903775.4
		903775.6
		903775.8
		903775.11

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INSTRUMENT	CAL DATE/TIME	SAMPLE NO.
V0250802N	08-02-90/19:17	903775.12
		903775.14
		903775.15

Action:

- for RRF <0.05, results ≥CRQL for the compound are flagged as estimated (J) and detection limit values (CRQL U) are also flagged as unusable (R)
- for %D >25%, results ≥CRQL for the compound are flagged as estimated (J)
- for %D >50%, detection limit values (CRQL U) for the compound are also flagged as estimated (J)

Comments:

1. The continuing calibrations listed above did not have associated initial calibrations and therefore, could not be verified.
2. Data was flagged only for those compounds reported on Form 1.

BLANKS:

1. VOA.

Positive blank results and associated action levels are tabulated below:

BLANK ID.	COMPOUND	CONCENTRATION	ACTION LEVEL
BLK83C13	methylene chloride	24.91	249.1
	trichloroethylene	2.07	10.4
	acetone	69.06	690.6
BLK83C6	methylene chloride	2.19	21.9
	toluene	0.04	0.4
	acetone	55.80	558.0
BLK802C13	methylene chloride	6367.60	63676.0
	chloroform	6.74	33.7
	trichloroethylene	5.86	29.3
	bromodichloromethane	2.36	11.8
	acetone	131.00	1310.0

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BLANK ID.	COMPOUND	CONCENTRATION	ACTION LEVEL
BLK802C10	cis-1-2-dichloroethene	0.17	0.9
	1,1-dichloroethene	0.31	1.6
	methylene chloride	295.36	2953.6
	trans-1,2-dichloroethene	0.11	0.6
	1,1-dichloroethane	0.25	1.3
	chloroform	3.94	19.7
	carbon disulfide	0.46	2.3
	carbon tetrachloride	0.28	1.4
	1,1,1-trichloroethane	0.49	2.5
	benzene	0.67	3.4
	trichloroethylene	5.93	29.7
	bromodichloromethane	1.39	7.0
	toluene	0.64	6.4
	tetrachloroethene	0.72	3.6
	chlorobenzene	0.25	1.3
	p/m-xylenes	0.61	3.1
	o-xylene	0.33	1.7
	styrene	0.08	0.4
	acetone	84.73	847.3
903775.16	methylene chloride	0.7	3.5

Associated Samples:

METHOD BLANK ID.	ASSOCIATED SAMPLES
BLK802C10	903775.2
BLK802C13	903775.4
	903775.6
BLK83C13	903775.8
	903775.11
	903775.12
BLK83C6	903775.14
	903775.15

FIELD BLANK ID.	ASSOCIATED SAMPLES
903775.16	903775.3
	903775.5
	903775.7
	903775.9
	903775.10
	903775.13

Action:

- sample value <CRQL (flagged J); changed to CRQL U

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- o sample value ≥CRQL and < action level (flagged B); changed to not detected at the sample value (U)

NOTE: Blank action levels were corrected for associated sample dilution factors, where necessary, prior to validation qualifications.

Comments:

Method blank data were not provided for Method 524.2.

SURROGATE RECOVERY:

1. VOA.

Samples with one or more surrogate recoveries which did not meet the criteria specified in the CLP SOW are summarized below:

	Percent Recoveries		
SAMPLE	TOL	BFB	DCE
903775.4		143	357
903775.6			223
903775.8	125	70	
903775.11	121		126
903775.12	122		150
903775.14			164

Action:

- o recovery ≥10%; for the associated sample, all results ≥CRQL are flagged as estimated (J) and detection limit values (CRQL U) are also flagged as estimated (J)

Comments:

USEPA Method 524.2, does not require the use of surrogate compounds, therefore, the water samples did not have surrogates added.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE:

1. VOA.

Samples with MS and/or MSD recoveries outside the Contract Required Recovery Range are tabulated below:

	RECOVERY (%)				
SAMPLE	CHLB	TOL	BENZ	DCE	TCE
903775.13-MS		129	132		122
903775.13-MSD					141

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Action: none, results are reported as CRQL (U)

Samples with MS/MSD relative percent differences (RPD) outside the criteria specified in the CLP SOW are tabulated below:

		RPD (%)				
SAMPLE	CHLB	TOL	BENZ	DCE	TCE
903775.13-MSD				26	

Action: none, results are reported as CRQL (U)

Comments:

No analytical data was provided to verify accuracy of this form. Method 524.2 did not state that an MS/MSD should be performed.

FIELD DUPLICATES:

Comments:

The chain of custody indicates duplicates were taken at site 903775.10 and 903775.12, but data were not submitted for validation.

INTERNAL STANDARDS PERFORMANCE:

1. VOA

Deviations from the internal standard response stability factor of -50 to 100% are tabulated below:

SAMPLE	IS COMPOUND	%R vs CAL
903775.2	IS3 (CBZ)	- 55
903775.4	IS1 (BCM)	- 81
	IS2 (DFB)	- 51
	IS3 (CBZ)	- 78
903775.6	IS1 (BCM)	- 76
	IS2 (DFB)	- 55
	IS3 (CBZ)	- 77
903775.8	IS3 (CBZ)	- 59
903775.12	IS1 (BCM)	- 60
	IS3 (CBZ)	- 59
903775.14	IS1 (BCM)	- 58

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Action:

- o results ≥CRQL for analytes assigned for quantitation from the associated internal standard are flagged as estimated (J)

- o for extreme variations greater than - 75 or + 125% in IS performance, assigned analyte detection limit values (CRQL U) are also flagged as unusable (R)

Sincerely,
ECHEM INC.

Bruce K. Wallin, PhD
Vice President

enc.

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Linemaster
Case No: #86-88
SDG No: 192900720

Table I. Validation Action Summary

Sample No.	VOA
903775.1	J2
903775.2	A1 A2 J2
903775.3	J2 J5
903775.4	A1 A2 J2 J3 J4 R1
903775.5	J2
903775.6	A1 A2 J2 J3 J4 R1
903775.7	J2
903775.8	A1 A2 J2 J3 J4 J5
903775.9	A1 J2 J5
903775.10	A2 J2
903775.11	A1 A2 J2 J3
903775.12	A1 A2 J2 J3 J5
903775.13	J2 J5
903775.14	A1 J1 A2 J2 J3 J5
903775.15	A1 J1 A2 J2 J5
903775.16	J2 J5

A^1 - accept data, but change positive values to revised detection limit due to blank contamination

A^2 - accept data but estimate (J) positive and reject (R) non-detected values for acetone due to calibration not meeting minimum RF criteria. The positive results for these compounds would be a minimum value

J^1 - estimate all positive values (J) and detection limits (UJ) due to holding time violations. These estimated results would be minimum values

J^2 - estimate detection limits (UJ) due to non-complaint calibrations

J^3 - estimate all positive values (J) and detection limits (UJ) due to high surrogate recoveries

J^4 - estimate positive values (J) due to deviations from the internal standard response stability factor

J^5 - estimate (J) positive values due to non-compliant calibration

R^1 - reject detection limits (UR) due to extreme variations from the internal standard response stability factor

LIN003 9 2 5

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ORGANICS COMPLETENESS LOG

SITE: Linemaster Woodstock, CT CLIENT: Fiss & O'Neill

CASE # 86-88 Linemaster SDG# 182900720-

	SAMPLE #	90 3775.1	3775.2	3225.3	3775.3S	3225.4	3225.5	3775.6	3775.7	3225.8	3225.9	3225.10	3225.11	3225.12	3775.13	3775.14	3775.15	3775.16						
VOA	1A	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X						
	1E	-	X	-		X	-	X	X	X	X	X	-	X	X	X	-	-						
	2A																							
	2B		X			X		X		X			X	X		X	X							
	3A	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X						
	3B																							
	4A																							
	5A	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X						
*	6A	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X						
*	7A	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X						
	8A	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X						
	1B																							
	1C																							
	1F																							
	2C																							
	2D																							
	3C																							
	3D																							
SVOA	4B																							
	5B																							
	6B																							
	6C																							
	7B																							
	7C																							
	8B																							
	8C																							
	1D																							
	2E																							
	2F																							
	3E																							
PEST	3F																							
	4C																							
	8D																							
	8E																							
	9																							
	10																							
COC NARRATIVE																								

* Not on CLP Forms

ECHEM INC.

SAMPLE PREPARATION AND ANALYSIS SUMMARY

CASE NO. #86-88 ANALYTICAL FRACTION: Volatiles

	LAB ID	SAMPLE ID	MATRIX	DATE COLLECTED	DATE ANALYZED	HOLD TIME
TRIP BLANK	1929007 20-01	903775.1	A	7-20	8-2	13
	-02	.2	S	7-20	8-3	14
	-03	.3	A	7-20	8-2	13
SPIKE RECOVERY	-03	.35				
	-04	.4	S	7-20	8-3	14
	-05	.5	A	7-20	8-2	13
	-06	.6	S	7-20	8-3	14
	-07	.7	A	7-20	8-2	13
	-08	.8	S	7-20	8-3	14
	-09	.9	A	7-20	8-2	13
	-10	.10	A	7-20	8-3	14
	-11	.11	S	7-20	8-3	14
	-12	.12	S	7-20	8-3	14
	-13	.13	A	7-20	8-3	14
	-14	.14	S	7-20	8-4	15
	-15	.15	S	7-20	8-5	16
	-16	.16	A	7-20	8-3	14

COMMENTS: COC does not clearly state sampled DATE & TIME, as such

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APPENDIX U
EMISSION ESTIMATE AND BUILDING CAVITY CALCULATIONS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

recycled paper

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LIN003008276

FUSS&O'NEILL
consulting engineers

PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO
RES	10/18/91	WTR	11/1/91	86-88/27

EMISSION RATE PRELIM. CALCULATIONS — SHEET NO. 1 of

OBJECTIVE: TO OBTAIN A ROUGH COMPARISON OF SOIL GAS DATA DERIVED EMISSION RATES WITH LAND-7 PREDICTED RATES

1. SOIL GAS DATA INDICATES AN ISOPLETH OF 100 PPMV + WITHIN AND DOWNGRADIENT OF ZONE 1 (SOURCE: VAPEX).

2. MONITOR WELL DATA INDICATES A CONTOUR OF > 100,000 µg/l COVERING ROUGHLY THE SAME AREA (SHALLOW G.W.; SOURCE: F&O DRAFT REPORT)

3. CALCULATE CONC. IN AIR IN EQUILIBRIUM WITH 100 PPM TRICHLOROETHYLENE IN WATER

HENRY'S LAW (LAND7) = 0.91×10^{-2}

" " (AWWA) = 0.375 $^{mg/}_{M.L.}$ at 20° C

USE EQN 6-5 FROM CHEMDAT6 MANUAL

$$P_i = \frac{H_{ci} \rho X_i}{MW} \times 10^6$$

$H_{ci} = 0.91 \times 10^{-2}$

$\rho = 1$ at DILUTE CONC.

$MW \simeq 18$

$$X_i = \frac{100 \times 10^{-6}/131.4}{\sim 1/18 + (100 \times 10^{-6}/131.4)}$$

$$= 1.37 \times 10^{-5}$$

$$P_i = \frac{0.91 \times 10^{-2} (1)(1.37 \times 10^{-5})}{18} \times 10^6$$

$= 0.007$ atm.

$$C_{si} = \frac{P_i MW_i}{RT} = \frac{(131.4)\ 0.007}{82.05\ (294)}$$

$= 3.8 \times 10^{-5}$ g/cc

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ADMINISTRATIVE RECORD
LIN003 629

FUSS&O'NEILL consulting engineers	PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO.
	RES	10/21/91	WTR	11/1/91	86-88/27
EMISSION RATE PRELIM. CALCULATIONS					SHEET 2 OF

3.8×10^{-5} g/cc $\times 10^6$ cc/M^3 $\times 10^6$ ug/g

$= 3.8 \times 10^7$ ug/M^3

$\frac{3.8 \times 10^7}{131.4\ (40.81)} = 7086$ ppmv

AT 50° F (= 10° C) = 7387 ppmv (3.96×10^{-5} g/cc)

4. CALCULATE DIFFUSION-INDUCED EMISSIONS

$$J_i = -D_{ei} (C_{zi} - C_{si}) / l$$

WHERE $D_{ei} = D_{ai} \cdot (\epsilon_a^{10/3} / \epsilon_t^2)$

FOR CLAY, USE $\epsilon_t = 0.4$, $\epsilon_a = 0.2$

$D_{ei} = 0.079\ (.0047/.16)$

$= 0.0023$ cm²/sec

FOR l USE 8' TO GROUND WATER MINUS 3' WETTED SOIL (i.e., 3' OF WASTE)

5' = 152.4 cm

$\therefore J_i = \frac{-0.0023\ (-3.96 \times 10^{-5})}{152.4} = 5.98 \times 10^{-10}$ gm/cm²-sec

5. MULTIPLY BY AREA:

FROM PLANIMETRY OF 100,000 ug/l CONTOUR,

0.907 m² $\times (100$ FT$)^2 \times 929$ cm²/FT²

$= 8.43 \times 10^6$ cm²

$(8.43 \times 10^6)(5.98 \times 10^{-10}) = 5.04 \times 10^{-3}$ g/sec

FO.-#110

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FUSS&O'NEILL consulting engineers	PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO.
	RES	10/21/91	WTR	11/1/91	86-88/27
EMISSION RATE PRELIM. CALCULATIONS					SHEET NO. 3 of

6. CALCULATE EMISSIONS DUE TO BAROMETRIC PUMPING:

a) VOLUME OF GAS:

$3' = 91.4 \text{ cm} \times 8.43 \times 10^{6} \times 0.2$

$V_c = 1.54 \times 10^{8}$ cc

b) Δ VOL DUE TO BAROMETRIC PRESSURE (AS PER CHEMDATG)

$$V_e = 1.54 \times 10^{8} \left[\left(\frac{1013}{1009} \right) (1) - 1 \right]$$

$$= 6.11 \times 10^{5} \text{ cc}$$

c) $$Q = \frac{V_e}{\Delta t \, A} = \frac{6.11 \times 10^{5}}{86{,}400 \; (8.43 \times 10^{6})}$$

$$= 8.38 \times 10^{-7} \text{ cm}^3/\text{cm}^2\text{-sec}$$

d) $E_{2i} = Q \cdot C_{si} \cdot A$

$= (8.38 \times 10^{-7})(3.96 \times 10^{-5})(8.43 \times 10^{6})$

$= 2.8 \times 10^{-4}$ g/sec

7. TOTAL RATE $= 2.8 \times 10^{-4} + 5.04 \times 10^{-3}$

$E_i^* = 5.32 \times 10^{-3}$

8 AVERAGE ANNUAL RATE

$$F_{AL}(t) = \frac{31.56 \, E_i^*}{\lambda t} \left[1 - e^{-\lambda t} \right]$$

WHERE $\lambda = 2.63 \times 10^{6} \, E_i^* / M_{oi}$

AND

$M_{oi} = C_i \, WAD$

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PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO.
		WTR	11/1/91	

SHEET 01

$C_i = 100 \times 10^{-6}$

$W = 0.2$ (wet porosity = Dry porosity)

$A = 8.43 \times 10^{6}$

$D = 91.4$

$M_{oi} = 15,410$ g.

$$\therefore \quad \lambda = \frac{2.63 \times 10^{6} \left(5.32 \times 10^{-3}\right)}{15,410}$$

$$= 0.908$$

$$\therefore \quad E_{Ai}(t) = \frac{31.56 \left(5.32 \times 10^{-3}\right)}{12\ (.908)} \left[1 - e^{-(.908)(12)}\right]$$

$= 0.0154$ Mg / yr.

$= 34$ LB / yR

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ADMINISTRATIVE RECORD

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CLOSED LANDFILL

A, LF area (cm2)	8.4300E+06
l, cap thickness (cm)	152.4
ea, cap air porosity	0.2
et,cap total porosity	0.4
T, avg. LF temp. (C)	10
efw, waste porosity	0.4
Pref, ref. pressure (mbar)	1013
P1, new pressure (mbar)	1009
Tref, reference temp. (C)	10
T1, new temp. (C)	10
dt,bar.pump time int.(s)	86400
weight fraction oil	0.2
weight fraction water	0.2
weight fraction VO	0.0001
W, liquid in waste (g/cm3)	0.2
mwt oil	147
t, time of calc. (mo.)	12
D, depth of waste (cm)	91.4
CC/GVOC CONV	1750
active biomass (g/cc)	0.00E+00
VO diss. in water, enter 1	1
rho-liquid,density (g/cm3)	1
MW-liquid, (g/g mol)	18

CLOSED LANDFILL AIR EMISSIONS

COMPOUND NAME	EMISS. FRACTION	BIOL. FRACTION	EMISSION RATES 12 months AVERAGE	INST.
TRICHLOROETHYLENE	1.000	0.000	0.015410	8.4E-11

FUSS&O'NEILL
consulting engineers

PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO
EES	10/25/91			86-88/21

INPUT TO CHEMDAT 6 FOR CLOSED LANDFILLS

SHEET NO. of

1. DATA FROM "WATER RESOURCE CONDITIONS IN CT." BY USGS / DEP., SEPT. 1991.

MANSFIELD MONITORING WELL DATA (CLOSEST TO SITE)

	HIGH	LOW
FT BELOW GROUND:	10.2	12.9
DATE	APR '90	SEPT '90
FT BELOW GROUND:	10.2	12.9
DATE	MAY '91	OCT. '91

∴ APPROX. 3' IS WETTED ON AN ANNUAL BASIS, IGNORING MINOR TRANSIENT FLUCTUATIONS.

2. RUN MODEL AS PREVIOUSLY FOR 10,000 µg/l ISOPLETH.

3. AREA FROM PLANIMETRY:

$12.66\ IN^2 \times (100)^2\ FT^2/IN^2 = 126,600\ FT^2$

$126,600\ FT^2 \times 929\ CM^2/FT^2 = 1.18 \times 10^8\ CM^2$

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ADMINISTRATIVE RECORD

CLOSED LANDFILL

A, LF area (cm2)	1.1800E+08
l, cap thickness (cm)	152.4
ea, cap air porosity	0.2
et,cap total porosity	0.4
T, avg. LF temp. (C)	10
efw, waste porosity	0.4
Pref, ref. pressure (mbar)	1013
P1, new pressure (mbar)	1009
Tref, reference temp. (C)	10
T1, new temp. (C)	10
dt,bar.pump time int.(s)	86400
weight fraction oil	0.2
weight fraction water	0.2
weight fraction VO	0.00001
W, liquid in waste (g/cm3)	0.2
mwt oil	147
t, time of calc. (mo.)	12
D, depth of waste (cm)	91.4
CC/GVOC CONV	1750
active biomass (g/cc)	0.00E+00
VO diss. in water, enter 1	1
rho-liquid,density (g/cm3)	1
MW-liquid, (g/g mol)	18

CLOSED LANDFILL AIR EMISSIONS

COMPOUND NAME	EMISS. FRACTION	BIOL. FRACTION	EMISSION RATES 12 months AVERAGE	INST.
TRICHLOROETHYLENE	1.000	0.000	0.021570	1.2E-10

LIN003 935

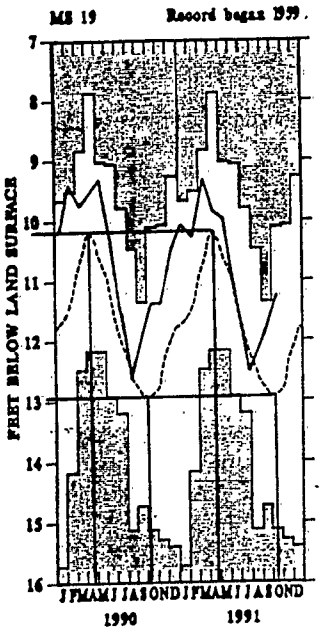
GROUND-WATER STORAGE

STATUS OF GROUND-WATER STORAGE AS INDICATED ON THE MAP IS BASED ON WATER LEVEL CHANGES IN OBSERVATION WELLS AS SHOWN ON HYDROGRAPHS.

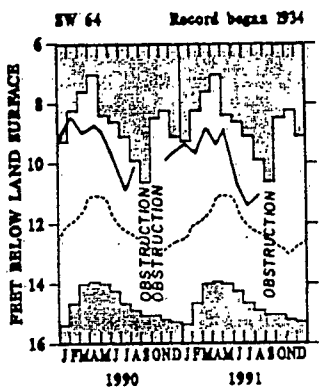
Unshaded areas on graphs show range between highest and lowest month-end water levels of record.

———— Solid line shows current water levels. - - - - - - - - - Dashed line is monthly median for period of record.

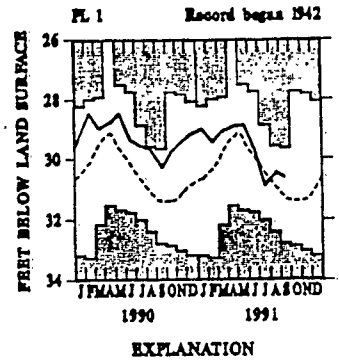
MANSFIELD

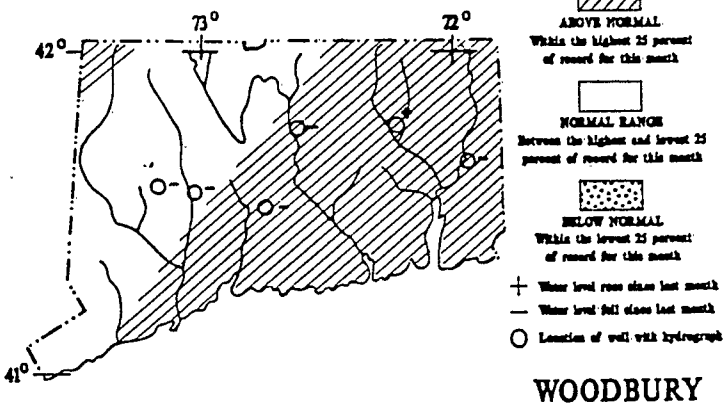


SOUTH WINDSOR



PLAINFIELD





EXPLANATION

ABOVE NORMAL
Within the highest 25 percent of record for this month

NORMAL RANGE
Between the highest and lowest 25 percent of record for this month

BELOW NORMAL
Within the lowest 25 percent of record for this month

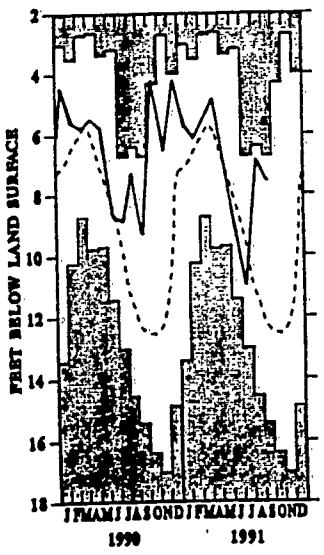
\+ Water level rose since last month

— Water level fell since last month

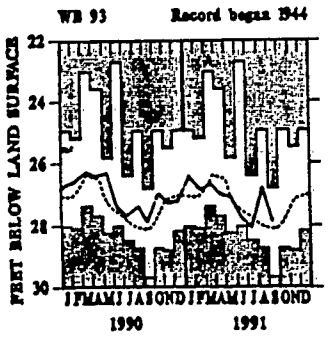
○ Location of well with hydrograph

Map based on 14 long-term observation wells (shown on map, p.ii). Elsewhere conditions are generalized.

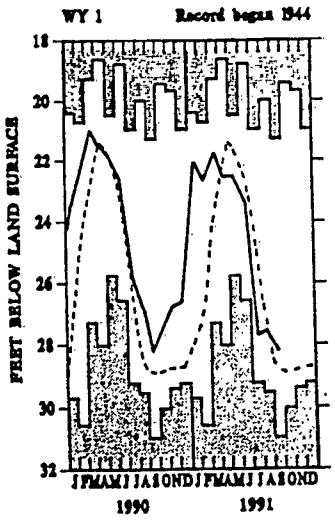
MIDDLEFIELD



WATERBURY



WOODBURY



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ADMINISTRATIVE RECORD
LIN003 936

GROUND-WATER STORAGE

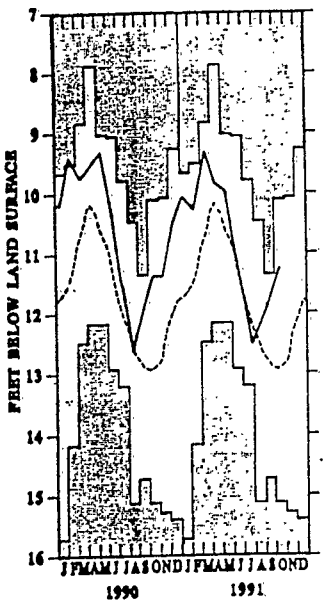
STATUS OF GROUND-WATER STORAGE AS INDICATED ON THE MAP IS BASED ON WATER LEVEL CHANGES IN OBSERVATION WELLS AS SHOWN ON HYDROGRAPHS.

Unshaded areas on graphs show range between highest and lowest month-end water levels of record.

———— Solid line shows current water levels. - - - - - - - - Dashed line is monthly median for period of record.

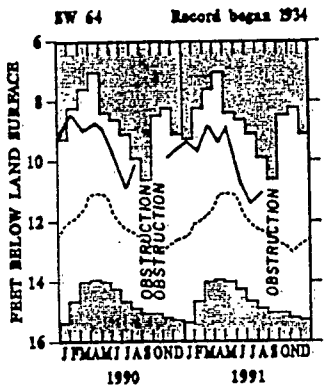
MANSFIELD

MS 19 Record began 1959



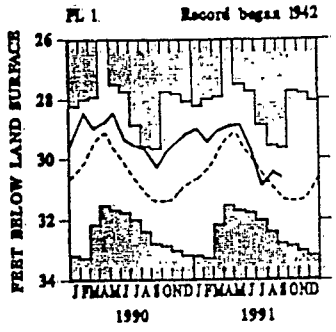
SOUTH WINDSOR

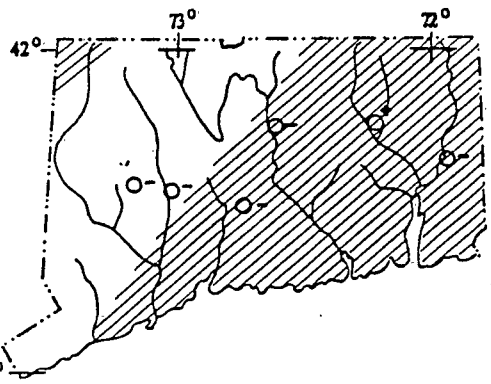
SW 64 Record began 1934



PLAINFIELD

PL 1 Record began 1942





EXPLANATION

ABOVE NORMAL
Within the highest 25 percent of record for this month

NORMAL RANGE
Between the highest and lowest 25 percent of record for this month

BELOW NORMAL
Within the lowest 25 percent of record for this month

+ Water level rose since last month

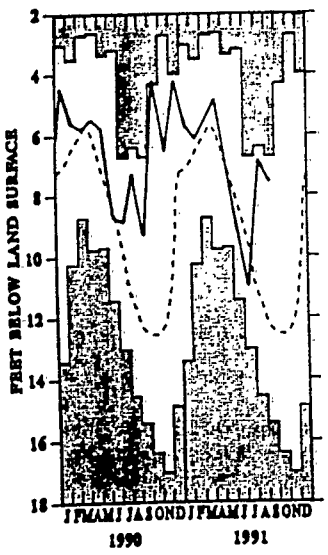
— Water level fell since last month

○ Location of well with hydrograph

Map based on 14 long-term observation wells (shown on map, p.8). Elsewhere conditions are generalized.

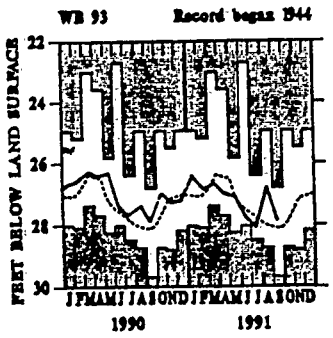
MIDDLEFIELD

MF 1 Record began 1946



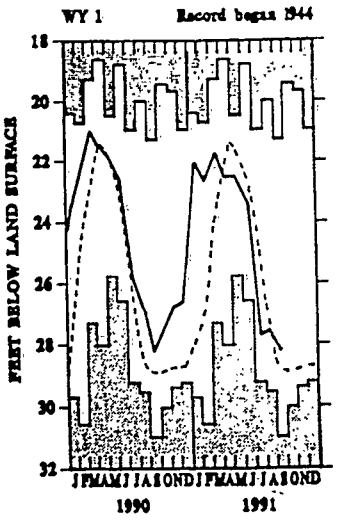
WATERBURY

WB 93 Record began 1944



WOODBURY

WY 1 Record began 1944



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PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO
RES	10/24/91	WTR	1/10/91	86-88/21

CAVITY SCREENING - DEGREASER

SHEET NO. 1 of

1. EMISSION RATE CALC:

1990 TCE PURCHASED: 6 x 1320# = 7920#
1990 MANIFESTED OFF-SITE: = 2618#
5302

THIS WEIGHT IS EXHAUSTED OVER 8 HR / 5 DA / 52 WKS:

$8 \times 3600 \times 5 \times 52 = 7.488 \times 10^6$ SEC

$\frac{5302\,(454)}{7.488 \times 10^6} = 0.32$ g/SEC

2. STACK HEIGHT = ROOF HEIGHT + 3'

BLDG HEIGHT = 30' = 9.1 M AT EXHAUST
STACK HEIGHT = 33' = 10.06 M

3 STACK DIAM. 6" = 0.15 M

4 EXIT VELOCITY

100 CFM = 2.83 M^3/MIN = 0.047 M^3/SEC

AREA OF EXIT PIPE = $\pi(0.15/2)^2$ = 0.0177 M^2

0.047/0.0177 = 2.66 M/SEC

FO-#110

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LIN003 939

10-24-91
12:07:30

*** SCREEN-1.1 MODEL RUN ***
*** VERSION DATED 88300 ***

. assessment of degreaser cavity modeling - Linemaster

IMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.3200
STACK HEIGHT (M)	=	10.06
STK INSIDE DIAM (M)	=	.15
STK EXIT VELOCITY (M/S)	=	2.66
STK GAS EXIT TEMP (K)	=	293.00
AMBIENT AIR TEMP (K)	=	293.00
RECEPTOR HEIGHT (M)	=	.00
IOPT (1=URB,2=RUR)	=	2
BUILDING HEIGHT (M)	=	9.10
MIN HORIZ BLDG DIM (M)	=	33.50
MAX HORIZ BLDG DIM (M)	=	70.00

UOY. FLUX = .00 M**4/S**3; MOM. FLUX = .04 M**4/S**2.

** FULL METEOROLOGY ***

****
** SCREEN AUTOMATED DISTANCES ***
****

** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

T (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.0000	0	.0	.0	.0	.0	.0	.0	NA
100.	1502.	6	1.0	1.0	5000.0	10.1	4.1	9.7	SS
200.	787.9	6	1.0	1.0	5000.0	10.1	7.7	10.8	SS
300.	531.4	6	1.0	1.0	5000.0	10.1	11.2	11.9	SS
400.	396.8	6	1.0	1.0	5000.0	10.1	14.6	12.9	SS
500.	313.2	6	1.0	1.0	5000.0	10.1	18.0	13.9	SS
600.	258.9	6	1.0	1.0	5000.0	10.1	21.2	14.5	SS
700.	218.0	6	1.0	1.0	5000.0	10.1	24.5	15.4	SS
800.	187.1	6	1.0	1.0	5000.0	10.1	27.6	16.2	SS
900.	162.9	6	1.0	1.0	5000.0	10.1	30.8	17.0	SS
1000.	143.7	6	1.0	1.0	5000.0	10.1	33.9	17.8	SS

AXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

28.	2963.	6	1.0	1.0	5000.0	10.1	1.3	5.7	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
MMARY OF TERRAIN HEIGHTS ENTERED FOR *
SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN DISTANCE RANGE (M)

HT (M)	MINIMUM	MAXIMUM
0.	10.	1000.

*** CAVITY CALCULATION - 1 ***			*** CAVITY CALCULATION - 2 ***		
CONC (UG/M**3)	=	.0000	CONC (UG/M**3)	=	.0000
CRIT WS @10M (M/S)	=	99.99	CRIT WS @10M (M/S)	=	99.99
CRIT WS @ HS (M/S)	=	99.99	CRIT WS @ HS (M/S)	=	99.99
DILUTION WS (M/S)	=	99.99	DILUTION WS (M/S)	=	99.99
CAVITY HT (M)	=	9.22	CAVITY HT (M)	=	9.10
CAVITY LENGTH (M)	=	41.91	CAVITY LENGTH (M)	=	30.53
ALONGWIND DIM (M)	=	33.50	ALONGWIND DIM (M)	=	70.00

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	2963.	28.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

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PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO
RES	10/24/91	WTR	11/1/91	86-88/21

CAVITY SCREENING - STRIPPING TOWER

SHEET NO. 1 of 1

1. EMISSION RATE CALC.

= 3000 µg/l of VOC's (MOSTLY TCE)
= 27 g.p.m. WHEN RUNNING (INTERMITTENT OPERATION)

$$\frac{27 \times 3.785 \times 3 \times 10^{-3}}{60} = 0.00511 \text{ g/sec}$$

2. STACK HEIGHT = 29' 6" + 8' ADDED SECTION + 3' EXIT PIPE

= 40.5' = 12.34 M.

3. INSIDE DIAM OF EXIT PIPE = 6" = 0.15 M

4. EXIT VELOCITY CALC:

330 CFM = 330/35.3 = 9.3 m^3/MIN

= 0.1557 m^3/SEC

AREA OF EXIT PIPE:

$= \pi(0.15/2)^2 = 0.0177 \text{ m}^2$

0.1557/0.0177 = 8.8 m/sec.

5. BLDG HEIGHT AT STRIPPER = 28 FT = 8.5 M

6. BLDG IS 110' x 230' = 33.5 M x 70 M

FO-#110

10-24-91
10:00:38

*** SCREEN-1.1 MODEL RUN ***
*** VERSION DATED 88300 ***

elim. assessment of stripping tower cavity modeling - Linemaster

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.5110E-02
STACK HEIGHT (M)	=	12.34
STK INSIDE DIAM (M)	=	.15
STK EXIT VELOCITY (M/S)	=	8.80
STK GAS EXIT TEMP (K)	=	293.00
AMBIENT AIR TEMP (K)	=	293.00
RECEPTOR HEIGHT (M)	=	.00
IOPT (1=URB,2=RUR)	=	2
BUILDING HEIGHT (M)	=	8.50
MIN HORIZ BLDG DIM (M)	=	33.50
MAX HORIZ BLDG DIM (M)	=	70.00

BUOY. FLUX = .00 M**4/S**3; MOM. FLUX = .44 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.0000	0	.0	.0	.0	.0	.0	.0	NA
100.	6.612	6	1.0	1.1	5000.0	12.6	4.1	6.0	SS
200.	5.991	6	1.0	1.1	5000.0	12.6	7.7	7.4	SS
300.	5.245	6	1.0	1.1	5000.0	12.6	11.2	8.7	SS
400.	4.497	6	1.0	1.1	5000.0	12.6	14.6	10.0	SS
500.	3.798	6	1.0	1.1	5000.0	12.6	18.0	10.8	SS
600.	3.283	6	1.0	1.1	5000.0	12.6	21.2	11.9	SS
700.	2.858	6	1.0	1.1	5000.0	12.6	24.5	12.9	SS
800.	2.508	6	1.0	1.1	5000.0	12.6	27.6	13.9	SS
900.	2.230	6	1.0	1.1	5000.0	12.6	30.8	14.5	SS
1000.	1.993	6	1.0	1.1	5000.0	12.6	33.9	15.4	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

85.	6.740	6	1.0	1.1	5000.0	12.6	3.5	5.8	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
SIMPLE ELEVATED TERRAIN PROCEDURE *
****

TERRAIN DISTANCE RANGE (M)

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LIN003 942

HT (M)	MINIMUM	MAXIMUM
0.	10.	1000.

*** CAVITY CALCULATION - 1 ***			*** CAVITY CALCULATION - 2 ***		
CONC (UG/M**3)	=	.0000	CONC (UG/M**3)	=	.0000
CRIT WS @10M (M/S)	=	99.99	CRIT WS @10M (M/S)	=	99.99
CRIT WS @ HS (M/S)	=	99.99	CRIT WS @ HS (M/S)	=	99.99
DILUTION WS (M/S)	=	99.99	DILUTION WS (M/S)	=	99.99
CAVITY HT (M)	=	8.58	CAVITY HT (M)	=	8.50
CAVITY LENGTH (M)	=	40.05	CAVITY LENGTH (M)	=	29.53
ALONGWIND DIM (M)	=	33.50	ALONGWIND DIM (M)	=	70.00

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	6.740	85.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

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APPENDIX V
ISCLT2 INPUTS AND OUTPUTS

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

recycled paper

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LIN003 0476

FUSS&O'NEILL inc
consulting engineers

PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO
CJE	6/27/92	RES'	6/30/92	86-088

SHEET NO. 1 of 2

Input Data for ISC Modeling - Source #4

The following calculations are based on information provided by Dave Day, Environmental Engineer at F&O.

The source is an air stripper utilized to remove TCE from contaminated ground water at the site.

1. Source Type - Stack

2. Coordinates w/ Respect to ISCLT Setup

X-Coordinate = 210' (64.0 m)

Y-Coordinate = 130' (54.9 m)

3. Stack Height = 42'

4. Base Elevation = 542'

5. Stack Temperature = Ambient, use 70°F

6. Stripper Exhaust Rate = 1500 cfm

7. Stack Diameter = 4'

8. Building Height = 28'

9. Building width - Building width is calculated the dimension of a square building of equal horizontal area.

Building Dimensions = 22' x 32' ∴ Area = 704 ft²

Building Width - $\sqrt{704}$ = 26.53 ft

10. Emision Rate (m)

TCE Conc. to Stripper = 4,800 ug/l - Assume all TCE is stripped

Flow = 61 gpm

$$m = Q \times C = 4{,}800\ ug/l \times 3.785\ l/gal \times 61\ gal/min \times 1\ g/1\times10^{6}\ ug \times 1\ min/60\ s$$

$$= 0.0185\ g/s$$

50 - #110

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FUSS&O'NEILL Inc
consulting engineers

PREPARED BY	DATE	CHECKED BY	DATE	PROJECT NO
CJE	6/27/92			86-088

SHEET 2

Input Data for ISC Modeling - Sources # 1-2

Sources 1, 2, and 3 are the same sources as 1, 2 and 4, respectively, of the Initial Site Characterization Report. Therefore, new calculations for these sources were not developed.

FO - # 110

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ECHO

*** Message Summary For ISC2 Model Setup ***

--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250 63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

****
** SETUP Finishes Successfully ***
****

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data *** 06/27/92

LIN003 9 4 7
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

*Model Is Setup For Calculation of Average CONCentration Values.

*Model Uses RURAL Dispersion.

*Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Default Wind Profile Exponents.
5. Default Vertical Potential Temperature Gradients.
6. "Upper Bound" Values For Supersquat Buildings.
7. No Exponential Decay for RURAL Mode

*Model Accepts Receptors on ELEV Terrain.

*Model Assumes No FLAGPOLE Receptor Heights.

*Model Calculates 1 STAR Average(s) for the Following Months: 0 0 0 0 0 0 0 0 0 0 0 0
Seasons/Quarters: 0 0 0 0
and Annual: 1

*Model Assumes 1 STAR Summaries In Data File for the Averaging Periods Identified Above

*This Run Includes: 4 Source(s); 2 Source Group(s): and 301 Receptor(s)

*The Model Assumes A Pollutant Type of: OTHER

*Model Set To Continue RUNning After the Setup Testing.

*Output Options Selected:
Model Outputs Tables of Long Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Long Term Values for Plotting (PLOTFILE Keyword)

*Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

*Input Runstream File: G:\BEE\IN\LNMA72.DTA ; **Output Print File: G:\BEE\IN\LNMA72.LST
*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
*** *** 11:04:09

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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
3	0	0.51100E-02	3.0	-27.4	173.7	0.00	294.26	8.54	0.15	YES	
4	0	0.18500E-01	64.0	39.6	165.2	12.80	294.26	0.61	1.22	YES	

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF AREA (METERS)	EMISSION RATE SCALAR VARY BY
1	0	0.57910E-06	0.0	0.0	173.7	0.00	29.03	
2	0	0.57750E-07	-15.2	-3.0	173.7	0.00	108.51	

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

ROUP ID	SOURCE IDs
1	1 . 2 . 3 . 4 .

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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

OURCE ID: 3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	79.1,	0	2	8.5,	79.1,	0	3	8.5,	79.1,	0	4	8.5,	79.1,	0
5	8.5,	79.1,	0	6	8.5,	79.1,	0	7	8.5,	79.1,	0	8	8.5,	79.1,	0
9	8.5,	79.1,	0	10	8.5,	79.1,	0	11	8.5,	79.1,	0	12	8.5,	79.1,	0
13	8.5,	79.1,	0	14	8.5,	79.1,	0	15	8.5,	79.1,	0	16	8.5,	79.1,	0

OURCE ID: 4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	8.1,	0	2	8.5,	8.1,	0	3	8.5,	8.1,	0	4	8.5,	8.1,	0
5	8.5,	8.1,	0	6	8.5,	8.1,	0	7	8.5,	8.1,	0	8	8.5,	8.1,	0
9	8.5,	8.1,	0	10	8.5,	8.1,	0	11	8.5,	8.1,	0	12	8.5,	8.1,	0
13	8.5,	8.1,	0	14	8.5,	8.1,	0	15	8.5,	8.1,	0	16	8.5,	8.1,	0

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
*** 11:04:09

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-2000.0, -1500.0, -1000.0, -500.0, -400.0, -300.0, -200.0, -100.0, 0.0, 100.0,
200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-2000.0, -1500.0, -1000.0, -500.0, -400.0, -300.0, -200.0, -100.0, 0.0, 100.0,
200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

LIN003 056
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	192.02	170.69	164.59	142.65	143.26	137.16	130.45	128.02	121.01
1500.00	188.67	170.69	158.50	153.92	147.83	143.26	133.81	133.50	129.54
1000.00	188.98	179.83	167.03	182.27	170.69	147.83	140.51	135.94	135.64
500.00	189.59	181.36	186.54	171.91	172.52	168.55	158.50	147.83	147.83
400.00	188.37	184.40	192.63	170.69	171.91	168.55	158.50	151.49	149.96
300.00	188.67	183.49	194.16	169.47	171.30	170.69	160.93	156.36	155.14
200.00	185.93	187.45	188.98	166.73	168.55	167.64	160.93	160.63	160.02
100.00	179.83	187.45	182.88	167.64	164.59	163.68	161.54	164.59	170.69
0.00	175.56	179.83	171.30	173.74	167.64	160.93	169.16	173.74	164.59
-100.00	175.87	185.93	170.69	181.36	175.26	162.76	162.15	169.16	174.96
-200.00	92.05	87.17	173.74	182.88	171.60	178.31	174.65	162.15	157.58
-300.00	172.21	175.26	167.64	164.59	161.54	156.97	149.35	152.40	156.97
-400.00	175.26	170.69	161.54	141.12	140.21	142.65	139.60	141.43	143.26
-500.00	178.31	182.88	156.67	142.95	143.26	140.21	140.21	131.06	128.93
-1000.00	198.12	206.96	180.44	167.64	169.16	170.08	176.17	176.78	169.16
-1500.00	185.32	192.63	182.88	179.53	180.75	182.27	179.22	178.31	173.74
-2000.00	184.40	189.59	177.39	185.93	185.93	182.88	179.83	174.35	172.82

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
200.00	112.78	103.63	96.62	95.1[illegible]	106.98	97.23	95.10	145.39
0.00	126.49	121.92	121.92	118.[illegible]	106.68	87.48	92.05	138.38

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600.00	133.81	135.03	135.94	134	128.02	100.58	87.17	103.02
500.00	146.61	139.90	143.26	146.91	140.21	100.58	87.48	92.96
400.00	146.91	141.12	142.65	146.30	144.17	99.06	87.48	100.58
300.00	150.88	145.69	142.34	146.30	146.00	94.49	87.78	102.72
200.00	155.45	149.05	143.26	144.17	146.30	107.29	89.31	92.96
100.00	164.59	153.62	143.26	141.73	143.26	111.86	89.92	87.17
0.00	153.92	144.78	137.16	139.60	117.04	92.96	87.17	175.87
-100.00	169.16	163.07	143.26	136.55	134.72	121.31	92.05	87.17
-200.00	165.51	172.21	167.64	160.02	137.16	132.59	128.02	123.44
-300.00	158.50	152.40	134.11	126.49	124.97	123.44	102.11	87.17
-400.00	144.78	137.16	131.06	125.58	118.87	120.40	100.58	88.39
-500.00	121.92	126.49	125.58	120.40	117.35	120.09	101.50	87.48
-1000.00	168.55	152.40	128.02	123.44	128.02	127.10	106.68	92.96
-1500.00	170.08	150.88	138.68	131.06	134.11	128.93	107.29	82.30
-2000.00	159.41	147.83	146.91	148.44	137.16	133.50	115.82	106.68

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(-94.5,	274.3,	159.4,	0.0);	(-48.8,	265.2,	160.3,	0.0);
(36.6,	259.1,	156.7,	0.0);	(118.9,	274.3,	151.2,	0.0);
(246.9,	237.7,	144.5,	0.0);	(387.1,	161.5,	143.9,	0.0);
(36.6,	-396.2,	144.5,	0.0);	(120.4,	-402.3,	143.3,	0.0);
(158.5,	-411.5,	140.2,	0.0);	(192.0,	-417.6,	138.4,	0.0);
(227.1,	-423.7,	137.2,	0.0);	(411.5,	341.4,	147.8,	0.0);

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AVERAGE SPEED FOR EACH WIND SPEED CATEGORY ***
(METERS/SEC)

1.50, 2.50, 4.30, 6.80, 9.50, 12.50,

*** WIND PROFILE EXPONENTS ***

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LIN003
LINEMASTER SWITCH
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STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** AVERAGE AMBIENT AIR TEMPERATURE (KELVIN) ***

	STABILITY CATEGORY A	STABILITY CATEGORY B	STABILITY CATEGORY C	STABILITY CATEGORY D	STABILITY CATEGORY E	STABILITY CATEGORY F
ANNUAL	298.0000	292.2000	289.0000	282.2000	280.5000	278.3000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AVERAGE MIXING LAYER HEIGHT (METERS) ***

ANNUAL

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY A	1904.7000	1777.6000	1777.6000	1777.6000	1777.6000	1777.6000
STABILITY CATEGORY B	1332.6000	1372.0000	1340.7000	1340.7000	1340.7000	1340.7000
STABILITY CATEGORY C	1073.7000	1202.3000	1394.8000	1576.5000	1366.5000	1366.5000
STABILITY CATEGORY D	775.6000	967.3000	1085.5000	1273.2000	1284.6000	1009.2000
STABILITY CATEGORY E	0.0000	1356.9000	1571.5000	1571.5000	1571.5000	1571.5000
STABILITY CATEGORY F	1519.7000	1547.9000	1547.900	1547.9000	1547.9000	1547.9000

LINO03 E 5 6
LINEMASTER SWITCH
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LNMA72.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY A

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00000000	0.00068000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00011000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00023000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00011000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00011000	0.00046000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00011000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00000000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00011000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY B

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00205000	0.00262000	0.00114000	0.00000000	0.00000000	0.00000000
22.500	0.00075000	0.00182000	0.00057000	0.00000000	0.00000000	0.00000000
45.000	0.00095000	0.00057000	0.00023000	0.00000000	0.00000000	0.00000000
67.500	0.00071000	0.00046000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00084000	0.00068000	0.00011000	0.00000000	0.00000000	0.00000000
112.500	0.00131000	0.00080000	0.00023000	0.00000000	0.00000000	0.00000000

LIN0038 9 5 4
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 955

ANNUAL: STABILITY CATEGORY C

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.001610	0.002500	0.004550	0.000910	0.000000	0.000000
22.500	0.001810	0.001820	0.002850	0.000340	0.000000	0.000000
45.000	0.001170	0.001370	0.001710	0.000230	0.000000	0.000000
67.500	0.000800	0.001250	0.000800	0.000230	0.000000	0.000000
90.000	0.000630	0.000460	0.000230	0.000000	0.000000	0.000000
112.500	0.000570	0.001370	0.000680	0.000000	0.000000	0.000000
135.000	0.001490	0.000570	0.001480	0.000460	0.000000	0.000000
157.500	0.000230	0.001820	0.002390	0.000340	0.000000	0.000000
180.000	0.001020	0.002730	0.006260	0.002050	0.000110	0.000000
202.500	0.000550	0.001020	0.002390	0.000570	0.000000	0.000000
225.000	0.000790	0.001020	0.002850	0.000680	0.000000	0.000000
247.500	0.000550	0.001020	0.002280	0.000460	0.000000	0.000000
270.000	0.000800	0.001140	0.002730	0.000340	0.000000	0.000000
292.500	0.000920	0.001250	0.002850	0.001020	0.000000	0.000000
315.000	0.000810	0.001370	0.002850	0.001250	0.000000	0.000000
337.500	0.001290	0.001370	0.002390	0.000680	0.000000	0.000000

ANNUAL: STABILITY CATEGORY

FILE: G:\BEE\IN\LNMA72.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
135.000	0.000860	0.001710	0.000800	0.000000	0.000000	0.000000
157.500	0.000500	0.001250	0.000680	0.000000	0.000000	0.000000
180.000	0.001240	0.002730	0.001940	0.000000	0.000000	0.000000
202.500	0.000480	0.000680	0.000910	0.000000	0.000000	0.000000
225.000	0.000710	0.000230	0.000230	0.000000	0.000000	0.000000
247.500	0.000610	0.000910	0.000340	0.000000	0.000000	0.000000
270.000	0.000380	0.001020	0.000570	0.000000	0.000000	0.000000
292.500	0.000830	0.000570	0.000230	0.000000	0.000000	0.000000
315.000	0.000490	0.000800	0.000340	0.000000	0.000000	0.000000
337.500	0.000850	0.001140	0.000340	0.000000	0.000000	0.000000

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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ANNUAL: STABILITY CATEGORY E

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.000000000	0.007740000	0.003300000	0.000000000	0.000000000	0.000000000
22.500	0.000000000	0.002160000	0.000230000	0.000000000	0.000000000	0.000000000
45.000	0.000000000	0.001140000	0.000110000	0.000000000	0.000000000	0.000000000
67.500	0.000000000	0.000460000	0.000034000	0.000000000	0.000000000	0.000000000
90.000	0.000000000	0.000091000	0.000011000	0.000000000	0.000000000	0.000000000
112.500	0.000000000	0.000068000	0.000000000	0.000000000	0.000000000	0.000000000
135.000	0.000000000	0.002730000	0.000011000	0.000000000	0.000000000	0.000000000
157.500	0.000000000	0.006260000	0.001710000	0.000000000	0.000000000	0.000000000
180.000	0.000000000	0.011380000	0.009900000	0.000000000	0.000000000	0.000000000

ANNUAL: STABILITY CATEGORY E

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.012700000	0.033130000	0.046680000	0.026530000	0.003530000	0.000570000
22.500	0.006120000	0.008310000	0.011040000	0.006600000	0.000800000	0.000000000
45.000	0.004090000	0.004330000	0.004780000	0.003534000	0.000340000	0.000011000
67.500	0.001700000	0.002390000	0.003760000	0.001480000	0.000000000	0.000000000
90.000	0.002330000	0.002960000	0.002500000	0.001370000	0.000000000	0.000000000
112.500	0.004100000	0.004440000	0.002960000	0.000340000	0.000000000	0.000000000
135.000	0.004340000	0.006490000	0.003760000	0.001820000	0.000110000	0.000000000
157.500	0.004580000	0.012860000	0.012180000	0.009592000	0.000460000	0.000000000
180.000	0.006280000	0.019580000	0.044170000	0.028010000	0.003530000	0.000680000
202.500	0.001470000	0.004780000	0.010020000	0.008080000	0.001140000	0.000110000
225.000	0.001020000	0.003070000	0.006600000	0.005690000	0.000570000	0.000110000
247.500	0.002980000	0.003760000	0.003870000	0.004900000	0.002050000	0.000091000
270.000	0.002420000	0.004550000	0.005460000	0.008650000	0.002850000	0.001020000
292.500	0.003090000	0.003530000	0.007740000	0.016620000	0.009170000	0.001590000
315.000	0.005010000	0.007740000	0.012640000	0.031190000	0.007740000	0.001710000
337.500	0.005620000	0.012180000	0.013550000	0.013890000	0.001020000	0.000230000

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LNMA72.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

202.500	0.00000000	0.00228000	0.00239000	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00216000	0.00125000	0.00000000	0.00000000	0.00000000
247.500	0.00000000	0.00285000	0.00194000	0.00000000	0.00000000	0.00000000
270.000	0.00000000	0.00228000	0.00467000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00364000	0.00649000	0.00000000	0.00000000	0.00000000
315.000	0.00000000	0.00490000	0.01002000	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00581000	0.00524000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY F

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.01508000	0.00956000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00606000	0.00091000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00402000	0.00114000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00197000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00195000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00198000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00400000	0.00194000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00485000	0.00444000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00740000	0.01104000	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00251000	0.00239000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00215000	0.00159000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00595000	0.00398000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.01127000	0.00615000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.01062000	0.00512000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.01128000	0.00626000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.01138000	0.00990000	0.00000000	0.00000000	0.00000000	0.00000000

SUM OF FREQUENCIES, FTOTAL = 0.99996

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
*** *** 11:04:09
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) -2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 957

000.00	0.000097	0.000148	0.000217	0.000	0.000427	0.000468	0.000509	0.000548	0.00
1500.00	0.000099	0.000154	0.000268	0.00050	0.000595	0.000682	0.000769	0.000852	0.000
1000.00	0.000092	0.000156	0.000298	0.000662	0.000851	0.001071	0.001318	0.001560	0.001806
500.00	0.000083	0.000133	0.000285	0.000951	0.001356	0.001845	0.002853	0.004352	0.005921
400.00	0.000083	0.000134	0.000256	0.000951	0.001401	0.002157	0.003106	0.005830	0.008648
300.00	0.000082	0.000132	0.000258	0.000959	0.001399	0.002301	0.003974	0.008746	0.013968
200.00	0.000080	0.000130	0.000256	0.000860	0.001444	0.002271	0.004545	0.009639	0.027183
100.00	0.000078	0.000125	0.000247	0.000831	0.001215	0.001939	0.004842	0.013688	0.082242
0.00	0.000076	0.000123	0.000242	0.000816	0.001205	0.001966	0.003822	0.010741	0.152157
-100.00	0.000074	0.000119	0.000229	0.000720	0.001022	0.001849	0.003723	0.012946	0.067718
-200.00	0.000074	0.000118	0.000222	0.000794	0.001136	0.001883	0.004335	0.008660	0.027357
-300.00	0.000073	0.000115	0.000212	0.000798	0.001166	0.002171	0.003185	0.007771	0.015041
-400.00	0.000072	0.000112	0.000222	0.000797	0.001308	0.001778	0.002466	0.005752	0.009640
-500.00	0.000071	0.000108	0.000233	0.000881	0.001134	0.001501	0.002663	0.004479	0.006747
-1000.00	0.000074	0.000131	0.000270	0.000546	0.000763	0.001073	0.001421	0.001774	0.002170
-1500.00	0.000084	0.000138	0.000226	0.000494	0.000618	0.000746	0.000875	0.001003	0.001146
-2000.00	0.000086	0.000126	0.000180	0.000409	0.000470	0.000533	0.000595	0.000656	0.000725

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000540	0.000486	0.000431	0.000376	0.000322	0.000124	0.000093	0.000071
1500.00	0.000837	0.000723	0.000608	0.000495	0.000384	0.000164	0.000115	0.000108
1000.00	0.001520	0.001198	0.000881	0.000586	0.000389	0.000233	0.000199	0.000163
500.00	0.004172	0.002330	0.001173	0.000920	0.000834	0.000508	0.000357	0.000251
400.00	0.005564	0.002241	0.001467	0.001292	0.001052	0.000640	0.000394	0.000268
300.00	0.007714	0.002714	0.002279	0.001715	0.001451	0.000739	0.000431	0.000285
200.00	0.011522	0.005085	0.003269	0.002650	0.002275	0.000843	0.000465	0.000300
100.00	0.019723	0.010939	0.006154	0.004029	0.002854	0.000937	0.000497	0.000315
0.00	0.070472	0.018861	0.009203	0.005495	0.003670	0.001068	0.000543	0.000337
-100.00	0.038600	0.015934	0.009550	0.005000	0.003449	0.001051	0.000539	0.000335
-200.00	0.023107	0.012594	0.007333	0.004819	0.003541	0.001036	0.000538	0.000336
-300.00	0.012217	0.007950	0.006297	0.004257	0.003126	0.001002	0.000533	0.000335
-400.00	0.008276	0.006264	0.004590	0.003806	0.002801	0.001031	0.000523	0.000333
-500.00	0.005985	0.004676	0.003521	0.002996	0.002570	0.000975	0.000509	0.000328
-1000.00	0.002050	0.001834	0.001600	0.001360	0.001177	0.000800	0.000478	0.000312

LIN003 856
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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-1500.00	0.001104	0.001030	0.000950	0.000866	0.000780	0.000542	0.000412	0.000292
-2000.00	0.000706	0.000671	0.000634	0.000595	0.000555	0.000385	0.000321	0.000261

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010042	-48.77	265.18	0.013050
36.58	259.08	0.015794	118.87	274.32	0.007367
246.89	237.74	0.003430	387.10	161.54	0.003647
36.58	-396.24	0.009933	120.40	-402.34	0.007730
158.50	-411.48	0.006660	192.02	-417.58	0.006412
227.08	-423.67	0.004978	411.48	341.38	0.001430

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000135	0.000201	0.000287	0.000526	0.000575	0.000624	0.000672	0.000719	0.000781
1500.00	0.000131	0.000212	0.000355	0.000732	0.000806	0.000905	0.001003	0.001098	0.001222
1000.00	0.000125	0.000203	0.000405	0.000827	0.001207	0.001513	0.001695	0.001946	0.002270
500.00	0.000109	0.000170	0.000405	0.001204	0.001809	0.002168	0.003770	0.005412	0.006618
400.00	0.000109	0.000170	0.000351	0.001036	0.001701	0.002726	0.004150	0.007438	0.009367
300.00	0.000107	0.000169	0.000313	0.001202	0.001556	0.002670	0.004555	0.009797	0.014554
200.00	0.000105	0.000166	0.000311	0.001050	0.001627	0.002531	0.004966	0.013375	0.027019
100.00	0.000110	0.000175	0.000335	0.000980	0.001345	0.002312	0.004313	0.013115	0.008104
0.00	0.000107	0.000169	0.000321	0.000926	0.001267	0.002165	0.003984	0.011928	0.017446
-100.00	0.000098	0.000152	0.000277	0.000904	0.001390	0.002138	0.004237	0.012982	0.034600
200.00	0.000097	0.000150	0.000269	0.001[illegible]	0.001303	0.002258	0.003844	0.009883	0.018[illegible]

LIN003 656
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 960

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

Y-COORD (METERS)	X-COORD (METERS)						
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000743	0.000657	0.000594	0.000530	0.000466	0.000171	0.000129	0.000112
1500.00	0.001149	0.000977	0.000850	0.000723	0.000598	0.000227	0.000185	0.000153
1000.00	0.002086	0.001647	0.001323	0.001072	0.000718	0.000386	0.000277	0.000223
500.00	0.005801	0.004054	0.002266	0.001458	0.001380	0.000806	0.000510	0.000352
400.00	0.008147	0.005081	0.002524	0.002087	0.001552	0.000973	0.000553	0.000373
300.00	0.012253	0.006875	0.003491	0.002750	0.002357	0.001031	0.000593	0.000392
200.00	0.022996	0.010778	0.006043	0.004499	0.003240	0.001134	0.000631	0.000410
100.00	0.018196	0.019382	0.009645	0.006120	0.004241	0.001399	0.000733	0.000461
0.00	0.046538	0.027392	0.012377	0.007152	0.004594	0.001485	0.000768	0.000479
-100.00	0.040009	0.022773	0.011785	0.007557	0.005009	0.001375	0.000730	0.000460
-200.00	0.020444	0.015177	0.009697	0.006321	0.004530	0.001344	0.000725	0.000460
-300.00	0.012743	0.010806	0.007146	0.005975	0.004020	0.001505	0.000714	0.000457
-400.00	0.008521	0.007979	0.005787	0.004482	0.004056	0.001470	0.000698	0.000453
-500.00	0.006449	0.005828	0.005061	0.003369	0.003201	0.001300	0.000753	0.000446
-1000.00	0.002523	0.002257	0.002051	0.001949	0.001813	0.001089	0.000642	0.000433
-1500.00	0.001415	0.001308	0.001228	0.001143	0.001054	0.000712	0.000572	0.000396
-2000.00	0.000925	0.000870	0.000831	0.000789	0.000745	0.000523	0.000431	0.000364

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Lineмaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
*** 11:04:09
PAGE 20

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)						
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000123	0.000167	0.000231	0.000537	0.000604	0.000671	0.000739	0.000804	0.000917
1500.00	0.000110	0.000195	0.000289	0.000680	0.000799	0.000928	0.001058	0.001185	0.001400
1000.00	0.000103	0.000170	0.000374	0.000720	0.001142	0.001385	0.001669	0.001976	0.002491
500.00	0.000092	0.000150	0.000309	0.001101	0.001285	0.001729	0.003406	0.004462	0.006374
400.00	0.000094	0.000142	0.000332	0.001024	0.001535	0.001841	0.003683	0.005754	0.008412
300.00	0.000096	0.000147	0.000294	0.000861	0.001441	0.002308	0.003854	0.007676	0.0118

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Lineмaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
*** 11:04:09
PAGE 19

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)						
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010938	-48.77	265.18	0.015288
36.58	259.08	0.020004	118.87	274.32	0.012883
246.89	237.74	0.005721	387.10	161.54	0.005085
36.58	-396.24	0.009648	120.40	-402.34	0.008340
158.50	-411.48	0.007789	192.02	-417.58	0.007558
227.08	-423.67	0.007271	411.48	341.38	0.002203

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000991	0.001475	0.002088	0.002534	0.002853	0.002714	0.002494	0.002534	0.002261
1500.00	0.001009	0.001526	0.002323	0.003854	0.003919	0.003988	0.003404	0.003774	0.003676
1000.00	0.000929	0.001569	0.002753	0.006182	0.007309	0.005842	0.005512	0.005487	0.006320
500.00	0.000847	0.001337	0.002756	0.008080	0.011009	0.014277	0.015055	0.014025	0.019371
400.00	0.000840	0.001336	0.002540	0.008203	0.011334	0.015932	0.016528	0.019096	0.026201
300.00	0.000827	0.001322	0.002511	0.008097	0.011631	0.017213	0.021024	0.028396	0.046471
200.00	0.000810	0.001294	0.002480	0.007112	0.010910	0.016904	0.022405	0.040547	0.093082
100.00	0.000787	0.001248	0.002393	0.006851	0.009005	0.013632	0.022545	0.062144	0.316072
0.00	0.000759	0.001195	0.002234	0.006613	0.008812	0.010652	0.025628	0.074834	0.829152
-100.00	0.000750	0.001174	0.002168	0.006209	0.008615	0.010251	0.016088	0.065538	0.872803
-200.00	0.000147	0.000142	0.002144	0.005720	0.007910	0.014159	0.027968	0.044567	0.121252
-300.00	0.000739	0.001147	0.001996	0.005719	0.007782	0.009745	0.009453	0.020908	0.077744
-400.00	0.000730	0.001110	0.001734	0.002445	0.002935	0.004491	0.004891	0.010024	0.021118
-500.00	0.000716	0.001080	0.001662	0.002873	0.003756	0.004113	0.005342	0.005137	0.006618
-1000.00	0.000720	0.001288	0.002477	0.005312	0.006222	0.009975	0.014174	0.018359	0.022021
-1500.00	0.000850	0.001337	0.002281	0.004758	0.006159	0.007614	0.009077	0.010559	0.012005
-2000.00	0.000864	0.001277	0.001863	0.004161	0.004855	0.005558	0.006262	0.006957	0.007632

MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

LIN003 196
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** THE ANNUAL AVERAGE CONCENTRAT VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.001642	0.001140	0.000826	0.000689	0.000820	0.000279	0.000219	0.000511
1500.00	0.002933	0.002161	0.001801	0.001316	0.000687	0.000216	0.000203	0.000624
1000.00	0.004809	0.003905	0.002906	0.001724	0.001082	0.000306	0.000199	0.000295
500.00	0.011787	0.003902	0.003279	0.003335	0.002061	0.000338	0.000223	0.000254
400.00	0.012288	0.003595	0.003292	0.003371	0.002826	0.000330	0.000227	0.000325
300.00	0.015435	0.005050	0.003281	0.003931	0.003759	0.000280	0.000234	0.000356
200.00	0.017109	0.006756	0.003916	0.004164	0.004613	0.000479	0.000253	0.000273
100.00	0.042437	0.013481	0.004835	0.004090	0.004367	0.000609	0.000266	0.000238
0.00	0.027494	0.006411	0.002850	0.003933	0.000719	0.000292	0.000252	0.003154
-100.00	0.202235	0.060962	0.006680	0.003348	0.002830	0.001056	0.000304	0.000250
-200.00	0.104494	0.083104	0.045558	0.022555	0.003800	0.002004	0.001246	0.000854
-300.00	0.049166	0.023728	0.004205	0.002043	0.001815	0.001309	0.000463	0.000265
-400.00	0.015693	0.005654	0.003450	0.002383	0.001430	0.001189	0.000457	0.000283
-500.00	0.002663	0.002638	0.002388	0.001775	0.001553	0.001254	0.000491	0.000284
-1000.00	0.019671	0.011700	0.003327	0.002098	0.002503	0.002176	0.000739	0.000390
-1500.00	0.011114	0.007455	0.004611	0.003105	0.002998	0.001917	0.000865	0.000348
-2000.00	0.006580	0.005009	0.004567	0.004376	0.002988	0.001841	0.000992	0.000712

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.036541	-48.77	265.18	0.054723
36.58	259.08	0.045992	118.87	274.32	0.011501
246.89	237.74	0.004206	387.10	161.54	0.004431
36.58	-396.24	0.020636	120.40	-402.34	0.012372
158.50	-411.48	0.007890	192.02	-417.58	0.006370
227.08	-423.67	0.005641	411.48	341.38	0.003915

LIN003 296
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.003135	0.004453	0.006172	0.006823	0.007792	0.007525	0.007066	0.007286	0.006652
1500.00	0.003164	0.004527	0.006296	0.009732	0.010083	0.010575	0.009341	0.010541	0.010510
1000.00	0.002835	0.004779	0.007603	0.019481	0.020752	0.013448	0.013536	0.014209	0.016959
500.00	0.002671	0.004181	0.007753	0.020870	0.027248	0.034968	0.032950	0.027119	0.044163
400.00	0.002632	0.004138	0.007637	0.020346	0.028097	0.035006	0.035017	0.032610	0.054249
300.00	0.002578	0.004056	0.007551	0.018550	0.027156	0.039122	0.039115	0.047972	0.085611
200.00	0.002508	0.003920	0.007311	0.016578	0.023487	0.033374	0.039856	0.063826	0.129072
100.00	0.002423	0.003759	0.006907	0.015595	0.019112	0.026303	0.036243	0.080031	0.415485
0.00	0.002333	0.003642	0.006114	0.016294	0.018783	0.020042	0.043810	0.098802	0.175648
-100.00	0.002332	0.003619	0.005984	0.016502	0.020982	0.019928	0.032324	0.096156	0.335028
-200.00	0.000466	0.000458	0.006068	0.015269	0.020770	0.036795	0.058466	0.066354	0.119310
-300.00	0.002224	0.003438	0.005286	0.013776	0.017161	0.019814	0.019695	0.034300	0.105506
-400.00	0.002241	0.003187	0.004418	0.006384	0.007494	0.010809	0.011957	0.018854	0.039703
-500.00	0.002229	0.003285	0.004427	0.007142	0.009143	0.010191	0.012738	0.011865	0.015800
-1000.00	0.002311	0.004010	0.007402	0.013758	0.016158	0.023370	0.036177	0.047850	0.053608
-1500.00	0.002672	0.004120	0.006900	0.013106	0.017151	0.021377	0.025714	0.030044	0.033258
-2000.00	0.002702	0.003960	0.005712	0.012134	0.014221	0.016345	0.018483	0.020168	0.021948

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
)00.00	0.005468	0.003855	0.002818	0.0023	0.002798	0.000914	0.000717	0.001529

LIN003 E96
LINEMASTER SWITCH ADMINISTRATIVE RECORD
NOTICE
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00.00	0.009761	0.007299	0.006126	0.0045[illegible]	0.002404	0.000708	0.000669	0.001783
1000.00	0.016249	0.013369	0.010123	0.006207	0.003411	0.000993	0.000650	0.000924
500.00	0.043978	0.015096	0.010078	0.010242	0.006333	0.001069	0.000716	0.000814
400.00	0.047470	0.012113	0.009828	0.010200	0.008357	0.001031	0.000732	0.001020
300.00	0.067375	0.014280	0.009211	0.011376	0.010505	0.000886	0.000758	0.001109
200.00	0.102849	0.017639	0.009951	0.011127	0.012218	0.001497	0.000818	0.000877
100.00	0.247394	0.033903	0.010450	0.010126	0.011248	0.001894	0.000862	0.000772
0.00	0.030203	0.010660	0.006026	0.009703	0.001943	0.000932	0.000817	0.010451
-100.00	0.602856	0.195717	0.017561	0.009190	0.007967	0.003175	0.000986	0.000815
-200.00	0.305312	0.221088	0.139108	0.062908	0.011103	0.005485	0.003418	0.002317
-300.00	0.145994	0.048910	0.010669	0.006466	0.005747	0.003922	0.001488	0.000867
-400.00	0.051164	0.018386	0.009168	0.006539	0.004615	0.003698	0.001475	0.000924
-500.00	0.010670	0.010360	0.006851	0.005035	0.004454	0.003956	0.001578	0.000930
-1000.00	0.057080	0.032220	0.010950	0.007227	0.006737	0.006013	0.002370	0.001279
-1500.00	0.033515	0.020781	0.013419	0.009434	0.008915	0.005138	0.002605	0.001152
-2000.00	0.019055	0.014195	0.012927	0.012362	0.008601	0.004796	0.002829	0.002136

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
*** *** 11:04:09
PAGE 26

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.061846	-48.77	265.18	0.084996
36.58	259.08	0.140404	118.87	274.32	0.054424
246.89	237.74	0.010996	387.10	161.54	0.011334
36.58	-396.24	0.051337	120.40	-402.34	0.042271
158.50	-411.48	0.028775	192.02	-417.58	0.021572
227.08	-423.67	0.016688	411.48	341.38	0.011642

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data *** 06/27/92
*** *** 11:04:09
PAGE 27

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 9 6 4

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.004358	0.006278	0.008764	0.010269	0.011648	0.011331	0.010741	0.011087	0.010282
1500.00	0.004403	0.006420	0.009243	0.014827	0.015403	0.016150	0.014517	0.016265	0.016346
1000.00	0.003982	0.006707	0.011059	0.027152	0.030118	0.021874	0.022061	0.023202	0.027355
500.00	0.003711	0.005822	0.011198	0.031105	0.041422	0.053257	0.054628	0.050908	0.076073
400.00	0.003664	0.005778	0.010784	0.030537	0.042534	0.055821	0.058802	0.064975	0.098465
300.00	0.003594	0.005679	0.010633	0.028808	0.041743	0.061306	0.068669	0.094911	0.160604
200.00	0.003503	0.005511	0.010358	0.025599	0.037467	0.055080	0.071771	0.127387	0.276355
100.00	0.003397	0.005308	0.009882	0.024257	0.030676	0.044185	0.067942	0.168977	0.821903
0.00	0.003276	0.005129	0.008911	0.024649	0.030066	0.034825	0.077245	0.196304	1.174403
-100.00	0.003255	0.005064	0.008658	0.024335	0.032010	0.034166	0.056372	0.187622	1.310249
-200.00	0.000784	0.000868	0.008703	0.022787	0.031119	0.055095	0.094612	0.129464	0.286108
-300.00	0.003132	0.004846	0.007788	0.021154	0.027551	0.034037	0.036188	0.070655	0.210131
-400.00	0.003137	0.004551	0.006706	0.010650	0.013272	0.018918	0.022998	0.040384	0.078873
-500.00	0.003108	0.004623	0.006632	0.011997	0.015318	0.017534	0.024149	0.025943	0.035539
-1000.00	0.003209	0.005598	0.010524	0.020336	0.024286	0.035802	0.053441	0.069958	0.080290
-1500.00	0.003716	0.005790	0.009696	0.019037	0.024727	0.030666	0.036723	0.042791	0.047809
-2000.00	0.003775	0.005530	0.007986	0.017241	0.020151	0.023108	0.026079	0.028586	0.031222

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.008394	0.006138	0.004669	0.003956	0.004405	0.001487	0.001158	0.002223
1500.00	0.014680	0.011161	0.009386	0.007065	0.004073	0.001315	0.001172	0.002669
1000.00	0.024664	0.020119	0.015233	0.009589	0.005600	0.001918	0.001326	0.001605
500.00	0.065738	0.025383	0.016796	0.015956	0.010608	0.002721	0.001806	0.001671
400.00	0.073469	0.023030	0.017112	0.016949	0.013788	0.002973	0.001906	0.001985
300.00	0.102777	0.028919	0.018263	0.019772	0.018073	0.002936	0.002016	0.002141
200.00	0.154476	0.040258	0.023180	0.022441	0.022346	0.003953	0.002167	0.001861
100.00	0.327750	0.077705	0.031085	0.024365	0.022710	0.004839	0.002358	0.001785
0.00	0.174706	0.063324	0.030457	0.026[illegible]	0.010927	0.003777	0.002380	0.014421
-100.00	0.883700	0.295385	0.045576	0.02[illegible]	0.019255	0.006657	0.002559	0.001861

LIN003 596
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
NOTICE
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00.00 |	0.453356	0.331962	0.201697	0.0966	0.022974	0.009868	0.005928	0.003967
00.00 |	0.220120	0.091393	0.028317	0.018742	0.014708	0.007738	0.003198	0.001925
-400.00 |	0.083653	0.038283	0.022996	0.017210	0.012902	0.007387	0.003153	0.001993
-500.00 |	0.025766	0.023501	0.017821	0.013175	0.011778	0.007485	0.003331	0.001988
-1000.00 |	0.081324	0.048010	0.017928	0.012633	0.012230	0.010078	0.004230	0.002414
-1500.00 |	0.047149	0.030575	0.020208	0.014549	0.013747	0.008309	0.004454	0.002188
-2000.00 |	0.027265	0.020745	0.018959	0.018122	0.012889	0.007545	0.004574	0.003474

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.119367	-48.77	265.18	0.168057
36.58	259.08	0.222193	118.87	274.32	0.086175
246.89	237.74	0.024352	387.10	161.54	0.024497
36.58	-396.24	0.091555	120.40	-402.34	0.070713
158.50	-411.48	0.051114	192.02	-417.58	0.041912
227.08	-423.67	0.034577	411.48	341.38	0.019189

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4 ,

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS) |	X-COORD (METERS) -2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00 |	0.003135	0.004453	0.006172	0.006823	0.007792	0.007525	0.007066	0.007286	0.006652
1500.00 |	0.003164	0.004527	0.006296	0.009732	0.010083	0.010575	0.009341	0.010541	0.010510
1000.00 |	0.002835	0.004779	0.007603	0.019481	0.020752	0.013448	0.013536	0.014209	0.016959
500.00 |	0.002671	0.004181	0.007753	0.020870	0.027248	0.034968	0.032950	0.027119	0.044163

LIN003 996
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 967

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*** ISCLT2 - VERSION 92062 ***     *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data ***          06/27/92:

-2000.00 |  0.001905   0.014195   0.012927   0.012367   0.008601   0.004796   0.002829   0.002136
-1500.00 |  0.003515   0.020781   0.013419   0.009434   0.008915   0.005138   0.002605   0.001152
-1000.00 |  0.005080   0.032220   0.010950   0.007227   0.006737   0.006013   0.002370   0.001279
 -500.00 |  0.010670   0.010360   0.006851   0.005035   0.004454   0.003956   0.001578   0.000930
 -400.00 |  0.051164   0.018386   0.009168   0.006539   0.004615   0.003698   0.001475   0.000924
 -300.00 |  0.145994   0.048910   0.010669   0.006466   0.005747   0.003922   0.001488   0.000867
 -200.00 |  0.305312   0.221088   0.139108   0.062908   0.011103   0.005485   0.003418   0.002317
 -100.00 |  0.602856   0.195717   0.017561   0.009190   0.007967   0.003175   0.000986   0.000815
    0.00 |  0.030203   0.010660   0.006026   0.009703   0.001943   0.000932   0.000817   0.010451
  100.00 |  0.247394   0.033903   0.010450   0.010126   0.011248   0.001894   0.000862   0.000772
  200.00 |  0.102849   0.017639   0.009951   0.011127   0.012218   0.001497   0.000818   0.000877
  300.00 |  0.067375   0.014280   0.009211   0.011376   0.010505   0.000886   0.000758   0.001109
  400.00 |  0.047470   0.012113   0.009828   0.010200   0.008357   0.001031   0.000732   0.001020
  500.00 |  0.043978   0.015096   0.010078   0.010242   0.006333   0.001069   0.000716   0.000814
 1000.00 |  0.016249   0.013369   0.010123   0.006207   0.003411   0.000993   0.000650   0.000924
 1500.00 |  0.009761   0.007299   0.006126   0.004531   0.002404   0.000708   0.000669   0.001783
 2000.00 |  0.005468   0.003855   0.002818   0.002361   0.002798   0.000914   0.000717   0.001529
---------|-------------------------------------------------------------------------------------------
Y-COORD  |                              X-COORD (METERS)
(METERS) |  100.00   200.00   300.00   400.00   500.00   1000.00   1500.00   2000.00

                    ** CONC OF OTHER    IN MICROGRAMS/M**3                    **

                    *** NETWORK ID: CAR      : NETWORK TYPE: GRIDCART ***

                    INCLUDING SOURCE(S):    4

*** THE ANNUAL AVERAGE CONCENTRATION  VALUES FOR SOURCE GROUP: 2                ***

*** MODELING OPTIONS USED:  CONC   RURAL  ELEV          DFAULT

                                        ***
*** ISCLT2 - VERSION 92062 ***     *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1972 data ***          06/27/92
                                                                                                                  ***          11:04:09
                                                                                                                               PAGE  31

-2000.00 |  0.002702   0.003960   0.005712   0.012134   0.014221   0.016345   0.018483   0.020168   0.021948
-1500.00 |  0.002672   0.004120   0.006900   0.013106   0.017151   0.021377   0.025714   0.030044   0.033258
-1000.00 |  0.002311   0.004010   0.007402   0.013758   0.016158   0.023370   0.034177   0.047850   0.053608
 -500.00 |  0.002229   0.003285   0.004427   0.007142   0.009143   0.010191   0.012738   0.011865   0.015800
 -400.00 |  0.002241   0.003187   0.004418   0.006384   0.007494   0.010809   0.011957   0.018854   0.039703
 -300.00 |  0.002224   0.003438   0.005286   0.013776   0.017161   0.019814   0.019695   0.034300   0.105506
 -200.00 |  0.000466   0.000458   0.006068   0.015269   0.020770   0.036795   0.058466   0.066354   0.119310
 -100.00 |  0.002332   0.003619   0.005984   0.016502   0.020982   0.019928   0.032324   0.096156   0.335028
    0.00 |  0.002333   0.003642   0.006114   0.016294   0.018783   0.020042   0.043810   0.098802   0.175648
  100.00 |  0.002423   0.003759   0.006907   0.015595   0.019112   0.026303   0.036243   0.080031   0.415485
  200.00 |  0.002508   0.003920   0.007311   0.016578   0.023487   0.033374   0.039856   0.063826   0.129072
  300.00 |  0.002578   0.004056   0.007551   0.018550   0.027156   0.039122   0.039115   0.047972   0.085611
  400.00 |  0.002632   0.004138   0.007637   0.020346   0.028097   0.035006   0.035017   0.032610   0.054249
```

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4 .

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.061846	-48.77	265.18	0.084996
36.58	259.08	0.140404	118.87	274.32	0.054424
246.89	237.74	0.010996	387.10	161.54	0.011334
36.58	-396.24	0.051337	120.40	-402.34	0.042271
158.50	-411.48	0.028775	192.02	-417.58	0.021572
227.08	-423.67	0.016688	411.48	341.38	0.011642

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

LIN003 896
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 969

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E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

**********
*** ISCLT2 finished Successfully ***
**********
```

ECHO

*** Message Summary For ISC2 Model Setup ***

--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250 63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

****
** SETUP Finishes Successfully ***
****

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1971 data *** 06/27/92

LIN003 0 L 6
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
NOTICE
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

*Model Is Setup For Calculation of Average CONCentration Values.

*Model Uses RURAL Dispersion.

*Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Default Wind Profile Exponents.
5. Default Vertical Potential Temperature Gradients.
6. "Upper Bound" Values For Supersquat Buildings.
7. No Exponential Decay for RURAL Mode

*Model Accepts Receptors on ELEV Terrain.

*Model Assumes No FLAGPOLE Receptor Heights.

*Model Calculates 1 STAR Average(s) for the Following Months: 0 0 0 0 0 0 0 0 0 0 0 0
Seasons/Quarters: 0 0 0 0
and Annual: 1

*Model Assumes 1 STAR Summaries In Data File for the Averaging Periods Identified Above

*This Run Includes: 4 Source(s); 2 Source Group(s); and 301 Receptor(s)

*The Model Assumes A Pollutant Type of: OTHER

*Model Set To Continue RUNning After the Setup Testing.

*Output Options Selected:
Model Outputs Tables of Long Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Long Term Values for Plotting (PLOTFILE Keyword)

*Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

*Input Runstream File: G:\BEE\IN\LNMA71.DTA ; **Output Print File: G:\BEE\IN\LNMA71.LST
** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linem r Switch for RI/FS - TCE - 1971 data *** 06/27/9
*** *** 11:25

LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
3	0	0.51100E-02	3.0	-27.4	173.7	0.00	294.26	8.54	0.15	YES	
4	0	0.18500E-01	64.0	39.6	165.2	12.80	294.26	0.61	1.22	YES	

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF AREA (METERS)	EMISSION RATE SCALAR VARY BY
1	0	0.57910E-06	0.0	0.0	173.7	0.00	29.03	
2	0	0.57750E-07	-15.2	-3.0	173.7	0.00	108.51	

*** SOURCE IDs DEFINING SOURCE GROUPS ***

ROUP ID	SOURCE IDs
1	1 . 2 . 3 . 4 .

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2 4

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1971 data *** 06/27/92
*** *** 11:25:29
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

OURCE ID: 3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	79.1,	0	2	8.5,	79.1,	0	3	8.5,	79.1,	0	4	8.5,	79.1,	0
5	8.5,	79.1,	0	6	8.5,	79.1,	0	7	8.5,	79.1,	0	8	8.5,	79.1,	0
9	8.5,	79.1,	0	10	8.5,	79.1,	0	11	8.5,	79.1,	0	12	8.5,	79.1,	0
13	8.5,	79.1,	0	14	8.5,	79.1,	0	15	8.5,	79.1,	0	16	8.5,	79.1,	0

OURCE ID: 4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	8.1,	0	2	8.5,	8.1,	0	3	8.5,	8.1,	0	4	8.5,	8.1,	0
5	8.5,	8.1,	0	6	8.5,	8.1,	0	7	8.5,	8.1,	0	8	8.5,	8.1,	0
9	8.5,	8.1,	0	10	8.5,	8.1,	0	11	8.5,	8.1,	0	12	8.5,	8.1,	0
13	8.5,	8.1,	0	14	8.5,	8.1,	0	15	8.5,	8.1,	0	16	8.5,	8.1,	0

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1971 data *** 06/27/92
*** *** 11:25:29
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-2000.0,	-1500.0,	-1000.0,	-500.0,	-400.0,	-300.0,	-200.0,	-100.0,	0.0,	100.0,
200.0,	300.0,	400.0,	500.0,	1000.0,	1500.0,	2000.0,			

*** Y-COORDINATES OF GRID ***
(METERS)

-2000.0,	-1500.0,	-1000.0,	-500.0,	-400.0,	0,	-200.0,	-100.0,	0.0,	100.0,
200.0,	300.0,	400.0,	500.0,	1000.0,	0,	2000.0,			

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 9 7 3

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	192.02	170.69	164.59	142.65	143.26	137.16	130.45	128.02	121.01
1500.00	188.67	170.69	158.50	153.92	147.83	143.26	133.81	133.50	129.54
1000.00	188.98	179.83	167.03	182.27	170.69	147.83	140.51	135.94	135.64
500.00	189.59	181.36	186.54	171.91	172.52	168.55	158.50	147.83	147.83
400.00	188.37	184.40	192.63	170.69	171.91	168.55	158.50	151.49	149.96
300.00	188.67	183.49	194.16	169.47	171.30	170.69	160.93	156.36	155.14
200.00	185.93	187.45	188.98	166.73	168.55	167.64	160.93	160.63	160.02
100.00	179.83	187.45	182.88	167.64	164.59	163.68	161.54	164.59	170.69
0.00	175.56	179.83	171.30	173.74	167.64	160.93	169.16	173.74	164.59
-100.00	175.87	185.93	170.69	181.36	175.26	162.76	162.15	169.16	174.96
-200.00	92.05	87.17	173.74	182.88	171.60	178.31	174.65	162.15	157.58
-300.00	172.21	175.26	167.64	164.59	161.54	156.97	149.35	152.40	156.97
-400.00	175.26	170.69	161.54	141.12	140.21	142.65	139.60	141.43	143.26
-500.00	178.31	182.88	156.67	142.95	143.26	140.21	140.21	131.06	128.93
-1000.00	198.12	206.96	180.44	167.64	169.16	170.08	176.17	176.78	169.16
-1500.00	185.32	192.63	182.88	179.53	180.75	182.27	179.22	178.31	173.74
-2000.00	184.40	189.59	177.39	185.93	185.93	182.88	179.83	174.35	172.82

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	112.78	103.63	96.62	95.10	106.98	97.23	95.10	145.39
1500.00	126.49	121.92	121.92	118.87	106.68	87.48	92.05	138.38

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1000.00	133.81	135.03	135.94	134.11	128.02	100.58	87.17	103.02
500.00	146.61	139.90	143.26	146.91	140.21	100.58	87.48	92.96
400.00	146.91	141.12	142.65	146.30	144.17	99.06	87.48	100.58
300.00	150.88	145.69	142.34	146.30	146.00	94.49	87.78	102.72
200.00	155.45	149.05	143.26	144.17	146.30	107.29	89.31	92.96
100.00	164.59	153.62	143.26	141.73	143.26	111.86	89.92	87.17
0.00	153.92	144.78	137.16	139.60	117.04	92.96	87.17	175.87
-100.00	169.16	163.07	143.26	136.55	134.72	121.31	92.05	87.17
-200.00	165.51	172.21	167.64	160.02	137.16	132.59	128.02	123.44
-300.00	158.50	152.40	134.11	126.49	124.97	123.44	102.11	87.17
-400.00	144.78	137.16	131.06	125.58	118.87	120.40	100.58	88.39
-500.00	121.92	126.49	125.58	120.40	117.35	120.09	101.50	87.48
-1000.00	168.55	152.40	128.02	123.44	128.02	127.10	106.68	92.96
-1500.00	170.08	150.88	138.68	131.06	134.11	128.93	107.29	82.30
-2000.00	159.41	147.83	146.91	148.44	137.16	133.50	115.82	106.68

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(-94.5,	274.3,	159.4,	0.0);	(-48.8,	265.2,	160.3,	0.0):
(36.6,	259.1,	156.7,	0.0);	(118.9,	274.3,	151.2,	0.0):
(246.9,	237.7,	144.5,	0.0);	(387.1,	161.5,	143.9,	0.0):
(36.6,	-396.2,	144.5,	0.0);	(120.4,	-402.3,	143.3,	0.0):
(158.5,	-411.5,	140.2,	0.0);	(192.0,	-417.6,	138.4,	0.0):
(227.1,	-423.7,	137.2,	0.0);	(411.5,	341.4,	147.8,	0.0):

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AVERAGE SPEED FOR EACH WIND SPEED CATEGORY ***
(METERS/SEC)

1.50, 2.50, 4.30, 6.80, 9.50, 12.50,

*** WIND PROFILE EXPONENTS ***

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STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** AVERAGE AMBIENT AIR TEMPERATURE (KELVIN) ***

	STABILITY CATEGORY A	STABILITY CATEGORY B	STABILITY CATEGORY C	STABILITY CATEGORY D	STABILITY CATEGORY E	STABILITY CATEGORY F
ANNUAL	299.1000	294.2000	289.7000	283.0000	281.1000	279.1000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AVERAGE MIXING LAYER HEIGHT (METERS) ***

	ANNUAL WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY A	1822.0000	1861.0000	1861.0000	1861.0000	1861.0000	1861.0000
STABILITY CATEGORY B	1212.3000	1397.7000	1764.5000	1764.5000	1764.5000	1764.5000
STABILITY CATEGORY C	1080.4000	1110.1000	1445.7000	1748.9000	2001.0000	2001.0000
STABILITY CATEGORY D	772.9000	980.7000	1215.6000	1496.7000	1574.5000	1337.4000
STABILITY CATEGORY E	0.0000	1405.4000	1707.5000	1707.5000	1707.5000	1707.5000
STABILITY CATEGORY F	1491.9000	1713.2000	1713.2000	1713.2000	1713.2000	1713.2000

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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LNMA71.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY A

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00000000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00034000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00011000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00046000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00011000	0.00091000	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00023000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00023000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00011000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00011000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY B

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00179000	0.00194000	0.00080000	0.00000000	0.00000000	0.00000000
22.500	0.00062000	0.00183000	0.00068000	0.00000000	0.00000000	0.00000000
45.000	0.00131000	0.00126000	0.00034000	0.00000000	0.00000000	0.00000000
67.500	0.00106000	0.00068000	0.00046000	0.00000000	0.00000000	0.00000000
90.000	0.00061000	0.00103000	0.00011000	0.00000000	0.00000000	0.00000000
112.500	0.00083000	0.00080000	0.00023000	0.00000000	0.00000000	0.00000000

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.000	0.00072000	0.00091000	0.00023000	0.00000000	0000000	0.00000000
157.500	0.00026000	0.00103000	0.00103000	0.00000000	0.00000000	0.00000000
180.000	0.00133000	0.00228000	0.00194000	0.00000000	0.00000000	0.00000000
202.500	0.00074000	0.00183000	0.00023000	0.00000000	0.00000000	0.00000000
225.000	0.00038000	0.00126000	0.00034000	0.00000000	0.00000000	0.00000000
247.500	0.00094000	0.00034000	0.00034000	0.00000000	0.00000000	0.00000000
270.000	0.00118000	0.00068000	0.00091000	0.00000000	0.00000000	0.00000000
292.500	0.00048000	0.00080000	0.00023000	0.00000000	0.00000000	0.00000000
315.000	0.00107000	0.00080000	0.00057000	0.00000000	0.00000000	0.00000000
337.500	0.00061000	0.00114000	0.00068000	0.00000000	0.00000000	0.00000000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LNMA71.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY C

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00270000	0.00308000	0.00434000	0.00057000	0.00011000	0.00000000
22.500	0.00209000	0.00263000	0.00240000	0.00057000	0.00000000	0.00000000
45.000	0.00171000	0.00160000	0.00057000	0.00034000	0.00011000	0.00000000
67.500	0.00099000	0.00126000	0.00080000	0.00000000	0.00000000	0.00000000
90.000	0.00084000	0.00034000	0.00034000	0.00023000	0.00000000	0.00000000
112.500	0.00073000	0.00068000	0.00046000	0.00011000	0.00000000	0.00000000
135.000	0.00102000	0.00217000	0.00114000	0.00034000	0.00000000	0.00000000
157.500	0.00077000	0.00183000	0.00228000	0.00091000	0.00000000	0.00000000
180.000	0.00174000	0.00263000	0.00708000	0.00285000	0.00023000	0.00000000
202.500	0.00051000	0.00126000	0.00354000	0.00126000	0.00000000	0.00000000
225.000	0.00050000	0.00068000	0.00183000	0.00068000	0.00000000	0.00000000
247.500	0.00114000	0.00228000	0.00217000	0.00034000	0.00000000	0.00000000
270.000	0.00077000	0.00183000	0.00445000	0.00080000	0.00000000	0.00000000
292.500	0.00136000	0.00171000	0.00342000	0.00183000	0.00057000	0.00000000
315.000	0.00112000	0.00183000	0.00194000	0.00103000	0.00000000	0.00000000
337.500	0.00040000	0.00137000	0.00274000	0.00057000	0.00011000	0.00000000

ANNUAL: STABILITY CATEGORY D

LIN003 9 L 8
LINEMASTER SWITCH
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IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.01309000	0.02557000	0.03265000	0.01678000	0.00240000	0.00011000
22.500	0.00636000	0.00811000	0.00788000	0.00491000	0.00011000	0.00000000
45.000	0.00365000	0.00548000	0.00263000	0.00183000	0.00023000	0.00000000
67.500	0.00248000	0.00285000	0.00183000	0.00148000	0.00011000	0.00000000
90.000	0.00221000	0.00183000	0.00137000	0.00034000	0.00000000	0.00000000
112.500	0.00242000	0.00422000	0.00126000	0.00023000	0.00011000	0.00000000
135.000	0.00325000	0.00422000	0.00263000	0.00091000	0.00000000	0.00000000
157.500	0.00314000	0.01073000	0.00799000	0.00434000	0.00034000	0.00000000
180.000	0.00554000	0.01758000	0.03756000	0.02934000	0.00354000	0.00034000
202.500	0.00077000	0.00457000	0.00799000	0.00708000	0.00103000	0.00000000
225.000	0.00196000	0.00468000	0.00605000	0.00639000	0.00046000	0.00011000
247.500	0.00271000	0.00559000	0.00582000	0.01062000	0.00308000	0.00046000
270.000	0.00221000	0.00491000	0.00811000	0.01370000	0.00342000	0.00148000
292.500	0.00449000	0.00582000	0.00822000	0.02420000	0.00628000	0.00126000
315.000	0.00547000	0.00651000	0.01347000	0.02842000	0.00742000	0.00011000
337.500	0.00590000	0.01142000	0.01324000	0.01279000	0.00080000	0.00000000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LNMA71.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY E

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00000000	0.00799000	0.00479000	0.00000000	0.00000000	0.00000000
22.500	0.00000000	0.00148000	0.00057000	0.00000000	0.00000000	0.00000000
45.000	0.00000000	0.00103000	0.00046000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00068000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00000000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00126000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00205000	0.00011000	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00605000	0.00160000	0.00000000	0.00000000	0.00000000
0.000	0.00000000	0.01050000	0.01039000	0.00000000	0.00000000	0.00000000

LINO03 9 L 9
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LIN003 980

SUM OF FREQUENCIES, FTOTAL = 0.99998

*** ISCLT2 - VERSION 92062 *** *** ISCLT modelling of Linemaster Switch for RI/FS - TCE - 1971 data *** 06/27/92
*** 11:25:29
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)									
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00

SUM OF FREQUENCIES, FTOTAL = 0.99998

337.500	0.013010000	0.009250000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
315.000	0.010700000	0.008110000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
292.500	0.011510000	0.007420000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
270.000	0.011830000	0.006850000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
247.500	0.009770000	0.007190000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
225.000	0.003190000	0.003080000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
202.500	0.003120000	0.001480000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
180.000	0.010360000	0.010620000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
157.500	0.006160000	0.006510000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
135.000	0.006350000	0.001710000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
112.500	0.002220000	0.000340000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
90.000	0.002330000	0.000230000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
67.500	0.002330000	0.000230000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
45.000	0.004280000	0.000460000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
22.500	0.007940000	0.001140000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000
0.000	0.017690000	0.008790000	0.000000000	0.000000000	0.000000000	0.000000000	0.000000000

ANNUAL: STABILITY CATEGORY F

DIRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
2.500	0.000000000	0.002970000	0.002280000	0.000000000	0.000000000	0.000000000
225.000	0.000000000	0.002510000	0.002970000	0.000000000	0.000000000	0.000000000
247.500	0.000000000	0.003880000	0.001940000	0.000000000	0.000000000	0.000000000
270.000	0.000000000	0.005480000	0.004000000	0.000000000	0.000000000	0.000000000
292.500	0.000000000	0.003650000	0.007760000	0.000000000	0.000000000	0.000000000
315.000	0.000000000	0.004570000	0.011420000	0.000000000	0.000000000	0.000000000
337.500	0.000000000	0.007190000	0.005480000	0.000000000	0.000000000	0.000000000

2000.00	0.000103	0.000155	0.000225	0.000396	0.000439	0.000480	0.000522	0.000562	0.000603
1500.00	0.000101	0.000161	0.000279	0.000523	0.000612	0.000701	0.000789	0.000874	0.000961
1000.00	0.000086	0.000155	0.000311	0.000685	0.000877	0.001102	0.001353	0.001601	0.001851
500.00	0.000076	0.000120	0.000267	0.000979	0.001406	0.001903	0.002927	0.004454	0.006052
400.00	0.000075	0.000121	0.000229	0.000952	0.001436	0.002232	0.003194	0.005965	0.008838
300.00	0.000074	0.000120	0.000232	0.000921	0.001383	0.002344	0.004100	0.008956	0.014271
200.00	0.000073	0.000118	0.000232	0.000772	0.001342	0.002199	0.004588	0.009888	0.027713
100.00	0.000071	0.000115	0.000226	0.000751	0.001094	0.001736	0.004490	0.013543	0.083643
0.00	0.000072	0.000116	0.000229	0.000780	0.001157	0.001899	0.003721	0.010569	0.158965
-100.00	0.000072	0.000116	0.000227	0.000745	0.001076	0.001962	0.003877	0.013236	0.066478
-200.00	0.000073	0.000118	0.000230	0.000856	0.001200	0.001923	0.004376	0.008959	0.026641
-300.00	0.000074	0.000119	0.000228	0.000825	0.001176	0.002173	0.003300	0.007873	0.014586
-400.00	0.000074	0.000118	0.000244	0.000797	0.001302	0.001822	0.002607	0.005735	0.009321
-500.00	0.000074	0.000117	0.000249	0.000873	0.001153	0.001569	0.002766	0.004423	0.006511
-1000.00	0.000079	0.000133	0.000264	0.000581	0.000805	0.001088	0.001406	0.001726	0.002090
-1500.00	0.000084	0.000134	0.000234	0.000507	0.000621	0.000737	0.000854	0.000970	0.001102
-2000.00	0.000084	0.000128	0.000192	0.000409	0.000465	0.000521	0.000578	0.000633	0.000696

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000552	0.000496	0.000439	0.000382	0.000326	0.000129	0.000113	0.000099
1500.00	0.000855	0.000737	0.000617	0.000499	0.000385	0.000190	0.000160	0.000153
1000.00	0.001552	0.001218	0.000888	0.000586	0.000409	0.000321	0.000281	0.000230
500.00	0.004237	0.002361	0.001309	0.001128	0.001127	0.000713	0.000473	0.000320
400.00	0.005640	0.002373	0.001753	0.001734	0.001472	0.000873	0.000507	0.000335
300.00	0.007802	0.003120	0.003035	0.002398	0.002033	0.000961	0.000538	0.000348
200.00	0.012149	0.006690	0.004573	0.003677	0.003056	0.001051	0.000566	0.000360
100.00	0.025459	0.014690	0.007956	0.005094	0.003555	0.001127	0.000589	0.000370
0.00	0.083266	0.022578	0.010935	0.006499	0.004327	0.001246	0.000631	0.000390
-100.00	0.040176	0.017685	0.011141	0.005960	0.004093	0.001231	0.000628	0.000389
-200.00	0.023358	0.013021	0.007944	0.005436	0.004131	0.001226	0.000632	0.000393
-300.00	0.012164	0.008204	0.006486	0.004548	0.003453	0.001196	0.000630	0.000394
-400.00	0.008171	0.006435	0.004724	0.003911	0.002965	0.001221	0.000622	0.000393
-500.00	0.005876	0.004746	0.003641	0.0030	0.002636	0.001117	0.000608	0.000390
-1000.00	0.001992	0.001810	0.001609	0.00	0.001224	0.000817	0.000523	0.000360

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LINEMASTER SWITCH
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 982

Y-COORD (METERS)	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
				X-COORD (METERS)					
2000.00	0.000141	0.000211	0.000298	0.000541	0.000591	0.000641	0.000690	0.000737	0.000799
1500.00	0.000132	0.000220	0.000370	0.000754	0.000828	0.000930	0.001030	0.001126	0.001251
1000.00	0.000118	0.000200	0.000417	0.000857	0.001246	0.001558	0.001741	0.001997	0.002325
500.00	0.000099	0.000154	0.000381	0.001218	0.001848	0.002226	0.003875	0.005547	0.006754
400.00	0.000099	0.000154	0.000322	0.001021	0.001709	0.002775	0.004249	0.007629	0.009560
300.00	0.000098	0.000154	0.000283	0.001144	0.001509	0.002662	0.004617	0.010007	0.014860
200.00	0.000097	0.000152	0.000283	0.000973	0.001530	0.002414	0.004895	0.013514	0.027709
100.00	0.000102	0.000164	0.000314	0.000917	0.001261	0.002206	0.004179	0.012961	0.008381
0.00	0.000102	0.000163	0.000312	0.000909	0.001249	0.002136	0.003933	0.012078	0.018057
-100.00	0.000096	0.000151	0.000280	0.000931	0.001429	0.002190	0.004364	0.013017	0.034671
-200.00	0.000097	0.000152	0.000280	0.001037	0.001334	0.002325	0.003975	0.009889	0.018027

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010283	-48.77	265.18	0.013341
36.58	259.08	0.016081	118.87	274.32	0.007612
246.89	237.74	0.004585	387.10	161.54	0.004900
36.58	-396.24	0.009627	120.40	-402.34	0.007687
158.50	-411.48	0.006718	192.02	-417.58	0.006556
227.08	-423.67	0.005151	411.48	341.38	0.001999

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Lineamaster Switch for RI/FS - TCE - 1971 data *** 06/27/92
*** 11:25:29
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
				X-COORD (METERS)					
2000.00	0.000141	0.000211	0.000298	0.000541	0.000591	0.000641	0.000690	0.000737	0.000799
1500.00	0.000132	0.000220	0.000370	0.000754	0.000828	0.000930	0.001030	0.001126	0.001251
1000.00	0.000118	0.000200	0.000417	0.000857	0.001246	0.001558	0.001741	0.001997	0.002325
500.00	0.000099	0.000154	0.000381	0.001218	0.001848	0.002226	0.003875	0.005547	0.006754
400.00	0.000099	0.000154	0.000322	0.001021	0.001709	0.002775	0.004249	0.007629	0.009560
300.00	0.000098	0.000154	0.000283	0.001144	0.001509	0.002662	0.004617	0.010007	0.014860
200.00	0.000097	0.000152	0.000283	0.000973	0.001530	0.002414	0.004895	0.013514	0.027709
100.00	0.000102	0.000164	0.000314	0.000917	0.001261	0.002206	0.004179	0.012961	0.008381
0.00	0.000102	0.000163	0.000312	0.000909	0.001249	0.002136	0.003933	0.012078	0.018057
-100.00	0.000096	0.000151	0.000280	0.000931	0.001429	0.002190	0.004364	0.013017	0.034671
-200.00	0.000097	0.000152	0.000280	0.001037	0.001334	0.002325	0.003975	0.009889	0.018027

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010283	-48.77	265.18	0.013341
36.58	259.08	0.016081	118.87	274.32	0.007612
246.89	237.74	0.004585	387.10	161.54	0.004900
36.58	-396.24	0.009627	120.40	-402.34	0.007687
158.50	-411.48	0.006718	192.02	-417.58	0.006556
227.08	-423.67	0.005151	411.48	341.38	0.001999

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Lineamaster Switch for RI/FS - TCE - 1971 data *** 06/27/92
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

-300.00	0.000097	0.000152	0.000311	0.000882	0.001477	0.002371	0.003923	0.007662	0.011693
-400.00	0.000098	0.000151	0.000351	0.001042	0.001568	0.001903	0.003722	0.005714	0.008281
-500.00	0.000097	0.000161	0.000323	0.001120	0.001323	0.001784	0.003438	0.004413	0.006258
-1000.00	0.000109	0.000172	0.000374	0.000754	0.001173	0.001395	0.001654	0.001934	0.002430
-1500.00	0.000110	0.000193	0.000300	0.000692	0.000801	0.000919	0.001037	0.001152	0.001359
-2000.00	0.000121	0.000171	0.000245	0.000537	0.000598	0.000659	0.000720	0.000780	0.000887

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000760	0.000670	0.000604	0.000537	0.000471	0.000181	0.000157	0.000154
1500.00	0.001174	0.000995	0.000863	0.000731	0.000601	0.000263	0.000252	0.000216
1000.00	0.002130	0.001674	0.001338	0.001102	0.000762	0.000518	0.000390	0.000314
500.00	0.005902	0.004222	0.002478	0.001804	0.001812	0.001098	0.000662	0.000446
400.00	0.008381	0.005382	0.003038	0.002724	0.002118	0.001283	0.000701	0.000463
300.00	0.012755	0.007778	0.004527	0.003673	0.003170	0.001313	0.000736	0.000478
200.00	0.024996	0.013069	0.007825	0.005905	0.004193	0.001404	0.000766	0.000492
100.00	0.023164	0.023898	0.012087	0.007588	0.005213	0.001686	0.000874	0.000546
0.00	0.050117	0.031375	0.014499	0.008502	0.005522	0.001762	0.000905	0.000562
-100.00	0.040889	0.024185	0.013066	0.008613	0.005771	0.001620	0.000855	0.000537
-200.00	0.020412	0.015596	0.010321	0.006910	0.005087	0.001593	0.000854	0.000539
-300.00	0.012652	0.010884	0.007450	0.006331	0.004350	0.001758	0.000845	0.000539
-400.00	0.008413	0.008005	0.005892	0.004678	0.004281	0.001684	0.000830	0.000535
-500.00	0.006349	0.005817	0.005135	0.003472	0.003332	0.001455	0.000887	0.000529
-1000.00	0.002466	0.002222	0.002043	0.001969	0.001855	0.001125	0.000698	0.000491
-1500.00	0.001376	0.001279	0.001211	0.001138	0.001060	0.000735	0.000588	0.000423
-2000.00	0.000897	0.000847	0.000815	0.000779	0.000741	0.000544	0.000444	0.000373

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** DISCRETE CARTESI[illegible] ECEPTOR POINTS ***

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 984

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Lakemaster Switch for RI/FS - TCE - 1971 data *** 06/27/92
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*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.001047	0.001528	0.002128	0.002463	0.002788	0.002623	0.002387	0.002427	0.002156
1500.00	0.001021	0.001591	0.002330	0.003805	0.003816	0.003853	0.003235	0.003613	0.003522
1000.00	0.000872	0.001548	0.002810	0.006236	0.007356	0.005585	0.005220	0.005215	0.006077
500.00	0.000759	0.001184	0.002548	0.008164	0.011050	0.014166	0.014487	0.013347	0.018860
400.00	0.000755	0.001189	0.002235	0.008088	0.011348	0.015734	0.015680	0.018218	0.025618
300.00	0.000747	0.001182	0.002206	0.007626	0.011279	0.016951	0.019962	0.027108	0.045786
200.00	0.000734	0.001164	0.002195	0.006189	0.009883	0.015828	0.021006	0.038243	0.092263
100.00	0.000717	0.001130	0.002136	0.005931	0.007652	0.011423	0.019808	0.058366	0.314552
0.00	0.000695	0.001090	0.002015	0.005886	0.007730	0.009137	0.022044	0.062828	0.818942
-100.00	0.000704	0.001106	0.002055	0.006108	0.008610	0.010506	0.017624	0.067396	0.799413
-200.00	0.000132	0.000139	0.002148	0.006227	0.008844	0.014948	0.027842	0.045343	0.109750
-300.00	0.000731	0.001160	0.002100	0.006085	0.007986	0.009683	0.009501	0.020667	0.070269
-400.00	0.000741	0.001159	0.001910	0.002520	0.002975	0.004494	0.004902	0.009296	0.018535
-500.00	0.000744	0.001164	0.001814	0.002856	0.003723	0.004088	0.005280	0.004663	0.005770
-1000.00	0.000779	0.001318	0.002396	0.005575	0.006626	0.010013	0.013806	0.017538	0.020719
-1500.00	0.000850	0.001289	0.002350	0.004878	0.006148	0.007460	0.008766	0.010094	0.011384
-2000.00	0.000831	0.001297	0.001981	0.004143	0.004770	0.005404	0.006036	0.006658	0.007259

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.011154	-48.77	265.18	0.015598
36.58	259.08	0.020621	118.87	274.32	0.013678
246.89	237.74	0.007313	387.10	161.54	0.006549
36.58	-396.24	0.009479	120.40	-402.34	0.008257
158.50	-411.48	0.007744	192.02	-417.58	0.007565
227.08	-423.67	0.007324	411.48	341.38	0.002956

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Lakemaster Switch for RI/FS - TCE - 1971 data *** 06/27/92
*** 11:25:29
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*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.001555	0.001077	0.000784	0.000655	0.000776	0.000273	0.000235	0.000697
1500.00	0.002800	0.002056	0.001714	0.001252	0.000661	0.000225	0.000231	0.000852
1000.00	0.004618	0.003756	0.002798	0.001659	0.001072	0.000337	0.000245	0.000394
500.00	0.011483	0.003850	0.003410	0.003808	0.002481	0.000440	0.000308	0.000344
400.00	0.012041	0.003648	0.003610	0.004111	0.003608	0.000451	0.000312	0.000434
300.00	0.015262	0.005409	0.003848	0.005029	0.004978	0.000388	0.000320	0.000472
200.00	0.017158	0.008000	0.004924	0.005528	0.006311	0.000654	0.000343	0.000363
100.00	0.049979	0.017939	0.006615	0.005559	0.005823	0.000820	0.000358	0.000315
0.00	0.036687	0.008457	0.003835	0.005149	0.001006	0.000406	0.000339	0.003666
-100.00	0.218418	0.075434	0.008567	0.004357	0.003683	0.001377	0.000405	0.000330
-200.00	0.106476	0.086537	0.051850	0.027515	0.004889	0.002547	0.001572	0.001071
-300.00	0.048804	0.023947	0.004409	0.002323	0.002186	0.001695	0.000608	0.000349
-400.00	0.014569	0.005544	0.003462	0.002489	0.001588	0.001543	0.000600	0.000372
-500.00	0.002374	0.002491	0.002342	0.001793	0.001619	0.001561	0.000643	0.000374
-1000.00	0.018819	0.011160	0.003094	0.002033	0.002474	0.002190	0.000833	0.000484
-1500.00	0.010641	0.007045	0.004304	0.002912	0.002915	0.001924	0.000865	0.000379
-2000.00	0.006249	0.004709	0.004335	0.004220	0.002860	0.001874	0.000990	0.000711

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.035127	-48.77	265.18	0.053564
36.58	259.08	0.045468	118.87	274.32	0.011476
246.89	237.74	0.004969	387.10	161.54	0.005985
36.58	-396.24	0.018358	120.40	-402.34	0.011649
158.50	-411.48	0.007675	192.02	-417.58	0.006233
227.08	-423.67	0.005554	411.48	341.38	0.005001

LINEMASTER SWITCH
ADMINISTRATIVE RECORD
5 8 6
LIN003
NOTICE
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) -2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.003228	0.004483	0.006059	0.006309	0.007287	0.006997	0.006558	0.006804	0.006234
1500.00	0.003107	0.004513	0.005933	0.009019	0.009260	0.009747	0.008583	0.009815	0.009871
1000.00	0.002560	0.004540	0.007257	0.019332	0.020120	0.011824	0.012122	0.013055	0.015913
500.00	0.002369	0.003665	0.006741	0.019459	0.025885	0.032286	0.028545	0.023562	0.041264
400.00	0.002343	0.003646	0.006601	0.018100	0.025634	0.031689	0.029757	0.027413	0.050471
300.00	0.002304	0.003593	0.006574	0.015481	0.023415	0.034382	0.032673	0.040188	0.078476
200.00	0.002253	0.003493	0.006421	0.013537	0.019044	0.026704	0.031623	0.052474	0.111540
100.00	0.002188	0.003376	0.006133	0.013084	0.015678	0.021232	0.028556	0.061653	0.354961
0.00	0.002133	0.003341	0.005526	0.015010	0.017107	0.018318	0.041680	0.100345	0.184366
-100.00	0.002197	0.003449	0.005743	0.017065	0.022237	0.021870	0.034616	0.096658	0.338756
-200.00	0.000432	0.000461	0.006185	0.017103	0.022263	0.037862	0.057779	0.065618	0.107824
-300.00	0.002204	0.003509	0.005637	0.014342	0.017388	0.019648	0.019568	0.033574	0.093123
-400.00	0.002286	0.003349	0.004941	0.006540	0.007595	0.010775	0.011859	0.017917	0.034471
-500.00	0.002334	0.003581	0.004732	0.007098	0.009017	0.010024	0.012416	0.010995	0.013858
-1000.00	0.002479	0.004081	0.007150	0.014072	0.016733	0.023319	0.035216	0.045590	0.049535
-1500.00	0.002667	0.003967	0.007053	0.013487	0.017121	0.020906	0.024774	0.028606	0.031225
-2000.00	0.002597	0.003999	0.006008	0.012052	0.013925	0.015826	0.017735	0.019139	0.020659

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.005146	0.003642	0.002681	0.002254	0.002643	0.000892	0.000759	0.002025

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LINEMASTER SWITCH ADMINISTRATIVE RECORD
LIN003 986

1500.00	0.009218	0.006900	0.005796	0.004299	0.002328	0.000738	0.000739	0.002380
1000.00	0.015414	0.012700	0.009630	0.005932	0.003350	0.001052	0.000800	0.001245
500.00	0.042223	0.014991	0.010280	0.011065	0.007158	0.001422	0.000996	0.001107
400.00	0.046112	0.012667	0.010480	0.011571	0.010153	0.001429	0.001013	0.001371
300.00	0.066057	0.015446	0.010089	0.013923	0.013743	0.001235	0.001045	0.001478
200.00	0.102309	0.019604	0.012257	0.015047	0.016882	0.002070	0.001122	0.001170
100.00	0.266645	0.046586	0.014506	0.013992	0.015242	0.002589	0.001176	0.001029
0.00	0.030693	0.014044	0.008334	0.013211	0.002815	0.001319	0.001114	0.012217
-100.00	0.560126	0.198865	0.020760	0.011801	0.010440	0.004207	0.001324	0.001082
-200.00	0.273475	0.224032	0.141154	0.069232	0.013357	0.007177	0.004432	0.002990
-300.00	0.127589	0.046891	0.010580	0.006865	0.006357	0.005152	0.001967	0.001147
-400.00	0.043767	0.016571	0.008752	0.006567	0.004868	0.004673	0.001947	0.001222
-500.00	0.009346	0.009197	0.006368	0.004893	0.004505	0.004683	0.002079	0.001229
-1000.00	0.052618	0.028948	0.009671	0.006587	0.006483	0.005977	0.002594	0.001548
-1500.00	0.031254	0.018722	0.011921	0.008426	0.008213	0.005089	0.002582	0.001227
-2000.00	0.017502	0.012797	0.011763	0.011441	0.007870	0.004811	0.002798	0.002117

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.052154	-48.77	265.18	0.072630
36.58	259.08	0.133123	118.87	274.32	0.054188
246.89	237.74	0.012077	387.10	161.54	0.015664
36.58	-396.24	0.043811	120.40	-402.34	0.036454
158.50	-411.48	0.025256	192.02	-417.58	0.019297
227.08	-423.67	0.015289	411.48	341.38	0.013983

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MIC GRAMS/M**3 **

LINO03 L 8 6
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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Y-COORD (METERS)	X-COORD (METERS) -2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.004518	0.006378	0.008710	0.009709	0.011105	0.010741	0.010156	0.010529	0.009791
1500.00	0.004361	0.006486	0.008912	0.014101	0.014515	0.015230	0.013636	0.015428	0.015605
1000.00	0.003637	0.006443	0.010794	0.027110	0.029600	0.020068	0.020436	0.021868	0.026165
500.00	0.003303	0.005123	0.009936	0.029820	0.040189	0.050581	0.049834	0.046909	0.072930
400.00	0.003272	0.005109	0.009387	0.028160	0.040127	0.052429	0.052881	0.059225	0.094487
300.00	0.003224	0.005050	0.009296	0.025172	0.037586	0.056339	0.061353	0.086260	0.153394
200.00	0.003157	0.004928	0.009131	0.021470	0.031800	0.047145	0.062112	0.114119	0.259224
100.00	0.003078	0.004785	0.008809	0.020684	0.025684	0.036597	0.057033	0.146523	0.761536
0.00	0.003002	0.004710	0.008082	0.022585	0.027242	0.031491	0.071378	0.185821	1.180331
-100.00	0.003068	0.004822	0.008305	0.024848	0.033351	0.036528	0.060480	0.190307	1.239319
-200.00	0.000733	0.000870	0.008843	0.025223	0.033640	0.057057	0.093972	0.129808	0.262241
-300.00	0.003107	0.004939	0.008276	0.022134	0.028027	0.033874	0.036292	0.069777	0.189671
-400.00	0.003198	0.004778	0.007446	0.010899	0.013440	0.018995	0.023090	0.038663	0.070609
-500.00	0.003250	0.005022	0.007119	0.011946	0.015215	0.017466	0.023900	0.024494	0.032397
-1000.00	0.003446	0.005704	0.010185	0.020983	0.025336	0.035815	0.052082	0.066787	0.074773
-1500.00	0.003711	0.005583	0.009937	0.019564	0.024692	0.030023	0.035431	0.040822	0.045069
-2000.00	0.003633	0.005596	0.008426	0.017140	0.019758	0.022411	0.025068	0.027209	0.029501

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.008012	0.005886	0.004508	0.003829	0.004215	0.001476	0.001264	0.002975
1500.00	0.014047	0.010688	0.008990	0.006781	0.003975	0.001416	0.001382	0.003601
1000.00	0.023713	0.019348	0.014654	0.009279	0.005593	0.002228	0.001716	0.002182
500.00	0.063844	0.025424	0.017477	0.017805	0.012578	0.003674	0.002439	0.002216
400.00	0.072173	0.024070	0.018882	0.020139	0.017350	0.004036	0.002533	0.002603
300.00	0.101876	0.031753	0.021499	0.025023	0.023924	0.003898	0.002639	0.002777
200.00	0.156612	0.047363	0.029579	0.030157	0.030442	0.005179	0.002797	0.002386
100.00	0.365246	0.103113	0.041164	0.032234	0.029833	0.006221	0.002998	0.002261
0.00	0.200761	0.076455	0.037603	0.033361	0.013670	0.004732	0.002988	0.016835
-100.00	0.859608	0.316169	0.053534	0.030731	0.023986	0.008435	0.003211	0.002338

LIN003 806
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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-200.00	0.423721	0.339186	0.211269	0.109094	0.027464	0.012542	0.007490	0.004993
-300.00	0.201208	0.089925	0.028924	0.020066	0.016345	0.009800	0.004050	0.002429
-400.00	0.074920	0.036554	0.022830	0.017645	0.013702	0.009122	0.003998	0.002522
-500.00	0.023945	0.022250	0.017486	0.013236	0.012093	0.008815	0.004217	0.002522
-1000.00	0.075895	0.044140	0.016417	0.011986	0.012036	0.010109	0.004648	0.002884
-1500.00	0.044340	0.028053	0.018376	0.013343	0.012979	0.008308	0.004455	0.002342
-2000.00	0.025328	0.019006	0.017534	0.017028	0.012026	0.007631	0.004563	0.003467

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.108718	-48.77	265.18	0.155134
36.58	259.08	0.215293	118.87	274.32	0.086954
246.89	237.74	0.028944	387.10	161.54	0.033097
36.58	-396.24	0.081275	120.40	-402.34	0.064046
158.50	-411.48	0.047393	192.02	-417.58	0.039651
227.08	-423.67	0.033317	411.48	341.38	0.023939

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4 ,

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.003228	0.004483	0.006059	0.006309	0.007287	0.006997	0.006558	0.006804	0.006234
1500.00	0.003107	0.004513	0.005933	0.009019	0.009260	0.009747	0.008583	0.009815	0.009871
1000.00	0.002560	0.004540	0.007257	0.019?	0.020120	0.011824	0.012122	0.013055	0.015?
500.00	0.002369	0.003665	0.006741	0.01?	0.025885	0.032286	0.028545	0.023562	0.0

LIN003 686
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
NOTICE
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00.00	0.002343	0.003646	0.006601	0.01810	0.025634	0.031689	0.029757	0.027413	0.0504
300.00	0.002304	0.003593	0.006574	0.015481	0.023415	0.034382	0.032673	0.040188	0.078476
200.00	0.002253	0.003493	0.006421	0.013537	0.019044	0.026704	0.031623	0.052474	0.111540
100.00	0.002188	0.003376	0.006133	0.013084	0.015678	0.021232	0.028556	0.061653	0.354961
0.00	0.002133	0.003341	0.005526	0.015010	0.017107	0.018318	0.041680	0.100345	0.184366
-100.00	0.002197	0.003449	0.005743	0.017065	0.022237	0.021870	0.034616	0.096658	0.338756
-200.00	0.000432	0.000461	0.006185	0.017103	0.022263	0.037862	0.057779	0.065618	0.107824
-300.00	0.002204	0.003509	0.005637	0.014342	0.017388	0.019648	0.019568	0.033574	0.093123
-400.00	0.002286	0.003349	0.004941	0.006540	0.007595	0.010775	0.011859	0.017917	0.034471
-500.00	0.002334	0.003581	0.004732	0.007098	0.009017	0.010024	0.012416	0.010995	0.013858
-1000.00	0.002479	0.004081	0.007150	0.014072	0.016733	0.023319	0.035216	0.045590	0.049535
-1500.00	0.002667	0.003967	0.007053	0.013487	0.017121	0.020906	0.024774	0.028606	0.031225
-2000.00	0.002597	0.003999	0.006008	0.012052	0.013925	0.015826	0.017735	0.019139	0.020659

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.005146	0.003642	0.002681	0.002254	0.002643	0.000892	0.000759	0.002025
1500.00	0.009218	0.006900	0.005796	0.004299	0.002328	0.000738	0.000739	0.002380
1000.00	0.015414	0.012700	0.009630	0.005932	0.003350	0.001052	0.000800	0.001245
500.00	0.042223	0.014991	0.010280	0.011065	0.007158	0.001422	0.000996	0.001107
400.00	0.046112	0.012667	0.010480	0.011571	0.010153	0.001429	0.001013	0.001371
300.00	0.066057	0.015446	0.010089	0.013923	0.013743	0.001235	0.001045	0.001478
200.00	0.102309	0.019604	0.012257	0.015047	0.016882	0.002070	0.001122	0.001170
100.00	0.266645	0.046586	0.014506	0.013992	0.015242	0.002589	0.001176	0.001029
0.00	0.030693	0.014044	0.008334	0.013211	0.002815	0.001319	0.001114	0.012217
-100.00	0.560126	0.198865	0.020760	0.011801	0.010440	0.004207	0.001324	0.001082
-200.00	0.273475	0.224032	0.141154	0.069232	0.013357	0.007177	0.004432	0.002990
-300.00	0.127589	0.046891	0.010580	0.006865	0.006357	0.005152	0.001967	0.001147
-400.00	0.043767	0.016571	0.008752	0.006567	0.004868	0.004673	0.001947	0.001222
-500.00	0.009346	0.009197	0.006368	0.004893	0.004505	0.004683	0.002079	0.001229
-1000.00	0.052618	0.028948	0.009671	0.006587	0.006483	0.005977	0.002594	0.001548
-1500.00	0.031254	0.018722	0.011921	0.008426	0.008213	0.005089	0.002582	0.001227
-2000.00	0.017502	0.012797	0.011763	0.011441	0.007870	0.004811	0.002798	0.002117

LIN003 0 6 9 0
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4 .

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.052154	-48.77	265.18	0.072630
36.58	259.08	0.133123	118.87	274.32	0.054188
246.89	237.74	0.012077	387.10	161.54	0.015664
36.58	-396.24	0.043811	120.40	-402.34	0.036454
158.50	-411.48	0.025256	192.02	-417.58	0.019297
227.08	-423.67	0.015289	411.48	341.38	0.013983

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified f GRID CAR
250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified GRID CAR

LIN0033 166
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 492

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E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

**************************************************
*** ISCLT2 Finishes Successfully ***
**************************************************
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```
O ECHO


*** Message Summary For ISC2 Model Setup ***

--------- Summary of Total Messages --------

 Total of             0 Fatal Error Message(s)
 Total of            23 Warning Message(s)
 Total of             0 Informational Message(s)


  ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


  ********   WARNING MESSAGES   ********
E W250   61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

************************************
** SETUP Finishes Successfully ***
************************************

 *** ISCLT2 - VERSION 92062 ***    *** ISCLT modeling of Li   er Switch for RI/FS - TCE - 1970 data      ***        06/2
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LINO03 E 6 6

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

*Model Is Setup For Calculation of Average CONCentration Values.

*Model Uses RURAL Dispersion.

*Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Default Wind Profile Exponents.
5. Default Vertical Potential Temperature Gradients.
6. "Upper Bound" Values For Supersquat Buildings.
7. No Exponential Decay for RURAL Mode

*Model Accepts Receptors on ELEV Terrain.

*Model Assumes No FLAGPOLE Receptor Heights.

*Model Calculates 1 STAR Average(s) for the Following Months: 0 0 0 0 0 0 0 0 0 0 0 0
Seasons/Quarters: 0 0 0 0
and Annual: 1

*Model Assumes 1 STAR Summaries In Data File for the Averaging Periods Identified Above

*This Run Includes: 4 Source(s); 2 Source Group(s); and 301 Receptor(s)

*The Model Assumes A Pollutant Type of: OTHER

*Model Set To Continue RUNning After the Setup Testing.

*Output Options Selected:
Model Outputs Tables of Long Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Long Term Values for Plotting (PLOTFILE Keyword)

*Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

*Input Runstream File: G:\BEE\IN\LNMA70.DTA ; **Output Print File: G:\BEE\IN\LNMA70.LST
*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
*** *** 11:14:33

LIN003 9 9 4
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
3	0	0.51100E-02	3.0	-27.4	173.7	0.00	294.26	8.54	0.15	YES	
4	0	0.18500E-01	64.0	39.6	165.2	12.80	294.26	0.61	1.22	YES	

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF AREA (METERS)	EMISSION RATE SCALAR VARY BY
1	0	0.57910E-06	0.0	0.0	173.7	0.00	29.03	
2	0	0.57750E-07	-15.2	-3.0	173.7	0.00	108.51	

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

ROUP ID	SOURCE IDs
1	1 . 2 . 3 . 4 .

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

OURCE ID: 3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	79.1,	0	2	8.5,	79.1,	0	3	8.5,	79.1,	0	4	8.5,	79.1,	0
5	8.5,	79.1,	0	6	8.5,	79.1,	0	7	8.5,	79.1,	0	8	8.5,	79.1,	0
9	8.5,	79.1,	0	10	8.5,	79.1,	0	11	8.5,	79.1,	0	12	8.5,	79.1,	0
13	8.5,	79.1,	0	14	8.5,	79.1,	0	15	8.5,	79.1,	0	16	8.5,	79.1,	0

OURCE ID: 4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	8.1,	0	2	8.5,	8.1,	0	3	8.5,	8.1,	0	4	8.5,	8.1,	0
5	8.5,	8.1,	0	6	8.5,	8.1,	0	7	8.5,	8.1,	0	8	8.5,	8.1,	0
9	8.5,	8.1,	0	10	8.5,	8.1,	0	11	8.5,	8.1,	0	12	8.5,	8.1,	0
13	8.5,	8.1,	0	14	8.5,	8.1,	0	15	8.5,	8.1,	0	16	8.5,	8.1,	0

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-2000.0, -1500.0, -1000.0, -500.0, -400.0, -300.0, -200.0, -100.0, 0.0, 100.0,
200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-2000.0, -1500.0, -1000.0, -500.0, -400.0, -300.0, -200.0, -100.0, 0.0, 100.0,
200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	192.02	170.69	164.59	142.65	143.26	137.16	130.45	128.02	121.01
1500.00	188.67	170.69	158.50	153.92	147.83	143.26	133.81	133.50	129.54
1000.00	188.98	179.83	167.03	182.27	170.69	147.83	140.51	135.94	135.64
500.00	189.59	181.36	186.54	171.91	172.52	168.55	158.50	147.83	147.83
400.00	188.37	184.40	192.63	170.69	171.91	168.55	158.50	151.49	149.96
300.00	188.67	183.49	194.16	169.47	171.30	170.69	160.93	156.36	155.14
200.00	185.93	187.45	188.98	166.73	168.55	167.64	160.93	160.63	160.02
100.00	179.83	187.45	182.88	167.64	164.59	163.68	161.54	164.59	170.69
0.00	175.56	179.83	171.30	173.74	167.64	160.93	169.16	173.74	164.59
-100.00	175.87	185.93	170.69	181.36	175.26	162.76	162.15	169.16	174.96
-200.00	92.05	87.17	173.74	182.88	171.60	178.31	174.65	162.15	157.58
-300.00	172.21	175.26	167.64	164.59	161.54	156.97	149.35	152.40	156.97
-400.00	175.26	170.69	161.54	141.12	140.21	142.65	139.60	141.43	143.26
-500.00	178.31	182.88	156.67	142.95	143.26	140.21	140.21	131.06	128.93
-1000.00	198.12	206.96	180.44	167.64	169.16	170.08	176.17	176.78	169.16
-1500.00	185.32	192.63	182.88	179.53	180.75	182.27	179.22	178.31	173.74
-2000.00	184.40	189.59	177.39	185.93	185.93	182.88	179.83	174.35	172.82

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	112.78	103.63	96.62	95	106.98	97.23	95.10	145.39
1500.00	126.49	121.92	121.92	111	106.68	87.48	92.05	138.38

LIN003 L 6 6
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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1000.00	133.81	135.03	135.94	134	128.02	100.58	87.17	103.02
500.00	146.61	139.90	143.26	146.	140.21	100.58	87.48	92.96
400.00	146.91	141.12	142.65	146.30	144.17	99.06	87.48	100.58
300.00	150.88	145.69	142.34	146.30	146.00	94.49	87.78	102.72
200.00	155.45	149.05	143.26	144.17	146.30	107.29	89.31	92.96
100.00	164.59	153.62	143.26	141.73	143.26	111.86	89.92	87.17
0.00	153.92	144.78	137.16	139.60	117.04	92.96	87.17	175.87
-100.00	169.16	163.07	143.26	136.55	134.72	121.31	92.05	87.17
-200.00	165.51	172.21	167.64	160.02	137.16	132.59	128.02	123.44
-300.00	158.50	152.40	134.11	126.49	124.97	123.44	102.11	87.17
-400.00	144.78	137.16	131.06	125.58	118.87	120.40	100.58	88.39
-500.00	121.92	126.49	125.58	120.40	117.35	120.09	101.50	87.48
-1000.00	168.55	152.40	128.02	123.44	128.02	127.10	106.68	92.96
-1500.00	170.08	150.88	138.68	131.06	134.11	128.93	107.29	82.30
-2000.00	159.41	147.83	146.91	148.44	137.16	133.50	115.82	106.68

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(-94.5,	274.3,	159.4,	0.0);	(-48.8,	265.2,	160.3,	0.0);
(36.6,	259.1,	156.7,	0.0);	(118.9,	274.3,	151.2,	0.0);
(246.9,	237.7,	144.5,	0.0);	(387.1,	161.5,	143.9,	0.0);
(36.6,	-396.2,	144.5,	0.0);	(120.4,	-402.3,	143.3,	0.0);
(158.5,	-411.5,	140.2,	0.0);	(192.0,	-417.6,	138.4,	0.0);
(227.1,	-423.7,	137.2,	0.0);	(411.5,	341.4,	147.8,	0.0);

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AVERAGE SPEED FOR EACH WIND SPEED CATEGORY ***
(METERS/SEC)

1.50, 2.50, 4.30, 6.80, 9.50, 12.50,

*** WIND PROFILE EXPONENTS ***

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** AVERAGE AMBIENT AIR TEMPERATURE (KELVIN) ***

	STABILITY CATEGORY A	STABILITY CATEGORY B	STABILITY CATEGORY C	STABILITY CATEGORY D	STABILITY CATEGORY E	STABILITY CATEGORY F
ANNUAL	299.6000	293.3000	288.8000	283.3000	280.6000	278.1000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AVERAGE MIXING LAYER HEIGHT (METERS) ***

	ANNUAL WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY A	1906.3000	1844.6000	1844.6000	1844.6000	1844.6000	1844.6000
STABILITY CATEGORY B	1125.2000	1576.4000	1731.3000	1731.3000	1731.3000	1731.3000
STABILITY CATEGORY C	892.5000	1118.5000	1538.2000	1761.2000	1297.6000	1297.6000
STABILITY CATEGORY D	796.8000	962.4000	1164.1000	1429.7000	1502.3000	1674.6000
STABILITY CATEGORY E	0.0000	1413.0000	1675.9000	1675.9000	1675.9000	1675.9000
STABILITY CATEGORY F	1507.1000	1767.0000	1767.00	1767.0000	1767.0000	1767.0000

LIN003 669
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: g:\bee\met\brad70.isc FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 14740 UPPER AIR STATION NO.: 14735
NAME: HARTFORD NAME: ALBANY
YEAR: 1970 YEAR: 1970

ANNUAL: STABILITY CATEGORY A

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00023000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00000000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00011000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00057000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00000000	0.00057000	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00011000	0.00046000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00023000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY B

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00161000	0.00205000	0.00217000	0.00000000	0.00000000	0.00000000
22.500	0.00069000	0.00091000	0.00046000	0.00000000	0.00000000	0.00000000
45.000	0.00081000	0.00126000	0.00068000	0.00000000	0.00000000	0.00000000
67.500	0.00103000	0.00057000	0.00034000	0.00000000	0.00000000	0.00000000
90.000	0.00115000	0.00046000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00115000	0.00057000	0.00011000	0.00000000	0.00000000	0.00000000

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135.000	0.00103000	0.00068000	0.00080000	0.00000000	0.00000000	0.00000000
157.500	0.00104000	0.00171000	0.00080000	0.00000000	0.00000000	0.00000000
180.000	0.00116000	0.00263000	0.00148000	0.00000000	0.00000000	0.00000000
202.500	0.00058000	0.00103000	0.00080000	0.00000000	0.00000000	0.00000000
225.000	0.00058000	0.00126000	0.00046000	0.00000000	0.00000000	0.00000000
247.500	0.00069000	0.00068000	0.00023000	0.00000000	0.00000000	0.00000000
270.000	0.00035000	0.00080000	0.00034000	0.00000000	0.00000000	0.00000000
292.500	0.00023000	0.00034000	0.00034000	0.00000000	0.00000000	0.00000000
315.000	0.00035000	0.00126000	0.00114000	0.00000000	0.00000000	0.00000000
337.500	0.00069000	0.00114000	0.00103000	0.00000000	0.00000000	0.00000000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: g:\bee\met\brad70.isc FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 14740 UPPER AIR STATION NO.: 14735
NAME: HARTFORD NAME: ALBANY
YEAR: 1970 YEAR: 1970

ANNUAL: STABILITY CATEGORY C

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00168000	0.00354000	0.00354000	0.00068000	0.00000000	0.00000000
22.500	0.00132000	0.00285000	0.00263000	0.00023000	0.00000000	0.00000000
45.000	0.00167000	0.00251000	0.00137000	0.00034000	0.00000000	0.00000000
67.500	0.00095000	0.00137000	0.00057000	0.00011000	0.00000000	0.00000000
90.000	0.00048000	0.00068000	0.00023000	0.00000000	0.00000000	0.00000000
112.500	0.00140000	0.00068000	0.00057000	0.00000000	0.00000000	0.00000000
135.000	0.00084000	0.00137000	0.00091000	0.00057000	0.00000000	0.00000000
157.500	0.00061000	0.00194000	0.00251000	0.00080000	0.00011000	0.00000000
180.000	0.00156000	0.00331000	0.00537000	0.00274000	0.00068000	0.00000000
202.500	0.00072000	0.00171000	0.00263000	0.00126000	0.00000000	0.00000000
225.000	0.00037000	0.00103000	0.00205000	0.00080000	0.00000000	0.00000000
247.500	0.00083000	0.00091000	0.00297000	0.00068000	0.00023000	0.00000000
270.000	0.00048000	0.00114000	0.00274000	0.00080000	0.00000000	0.00000000
292.500	0.00036000	0.00080000	0.00228000	0.00148000	0.00000000	0.00000000
315.000	0.00083000	0.00114000	0.00342000	0.00171000	0.00000000	0.00000000
337.500	0.00061000	0.00194000	0.00422000	0.00126000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY

LIN003 0101
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LIN003 002

ANNUAL: STABILITY CATEGORY E

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.000000000	0.009470000	0.002850000	0.000000000	0.000000000	0.000000000
22.500	0.000000000	0.001260000	0.000110000	0.000000000	0.000000000	0.000000000
45.000	0.000000000	0.001030000	0.000110000	0.000000000	0.000000000	0.000000000
67.500	0.000000000	0.000800000	0.000110000	0.000000000	0.000000000	0.000000000
90.000	0.000000000	0.000800000	0.000110000	0.000000000	0.000000000	0.000000000
112.500	0.000000000	0.000680000	0.000110000	0.000000000	0.000000000	0.000000000
135.000	0.000000000	0.001940000	0.000230000	0.000000000	0.000000000	0.000000000
157.500	0.000000000	0.004910000	0.003310000	0.000000000	0.000000000	0.000000000
180.000	0.000000000	0.009590000	0.011760000	0.000000000	0.000000000	0.000000000

ANNUAL: STABILITY CATEGORY E

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: g:\bee\met\bra470.isc FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 14740 UPPER AIR STATION NO.: 14735
NAME: HARTFORD NAME: ALBANY
YEAR: 1970 YEAR: 1970

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.008490000	0.027280000	0.037100000	0.017350000	0.002510000	0.000340000
22.500	0.004370000	0.010500000	0.008790000	0.002970000	0.000110000	0.000000000
45.000	0.003690000	0.004790000	0.004680000	0.001370000	0.000110000	0.000000000
67.500	0.002130000	0.002510000	0.002970000	0.001030000	0.000460000	0.000000000
90.000	0.001210000	0.002510000	0.002850000	0.001140000	0.000000000	0.000000000
112.500	0.002040000	0.003540000	0.002050000	0.000800000	0.000110000	0.000000000
135.000	0.002300000	0.005370000	0.005250000	0.001030000	0.000000000	0.000000000
157.500	0.001630000	0.013700000	0.016890000	0.007530000	0.001260000	0.000000000
180.000	0.002770000	0.018720000	0.050000000	0.036990000	0.005710000	0.000110000
202.500	0.001560000	0.002850000	0.009820000	0.009020000	0.000800000	0.000000000
225.000	0.001100000	0.003080000	0.004340000	0.006280000	0.000570000	0.000110000
247.500	0.001220000	0.003310000	0.004220000	0.004910000	0.000680000	0.000230000
270.000	0.002020000	0.002630000	0.005940000	0.001210000	0.003420000	0.000680000
292.500	0.002040000	0.003540000	0.008900000	0.002454000	0.010730000	0.001600000
315.000	0.004270000	0.005140000	0.012560000	0.031620000	0.009820000	0.001600000
337.500	0.004370000	0.010840000	0.012330000	0.015300000	0.001600000	0.000000000

202.500	0.00000000	0.00240000	0.00331000	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00217000	0.00137000	0.00000000	0.00000000	0.00000000
247.500	0.00000000	0.00320000	0.00137000	0.00000000	0.00000000	0.00000000
270.000	0.00000000	0.00342000	0.00388000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00502000	0.00799000	0.00000000	0.00000000	0.00000000
315.000	0.00000000	0.00479000	0.00947000	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00731000	0.00559000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY F

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.01661000	0.01005000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00780000	0.00183000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00390000	0.00091000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00362000	0.00046000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00124000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00238000	0.00046000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00402000	0.00240000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00526000	0.00548000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00714000	0.00890000	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00307000	0.00137000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00284000	0.00148000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00725000	0.00571000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.01029000	0.00662000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.01035000	0.00582000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.01235000	0.00765000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.01319000	0.00742000	0.00000000	0.00000000	0.00000000	0.00000000

SUM OF FREQUENCIES, FTOTAL = 0.99985

*** MODELING OPTIONS USED: CONC RURAL ELEV . DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) -2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00

LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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-1000.00	0.001939	0.001757	0.001557	0.001348	0.001190	0.000825	0.000501	0.000330
-500.00	0.005707	0.004592	0.003569	0.003059	0.002644	0.001028	0.000533	0.000339
-400.00	0.007930	0.006262	0.004676	0.003911	0.002909	0.001088	0.000540	0.000339
-300.00	0.011791	0.008070	0.006464	0.004427	0.003269	0.001041	0.000543	0.000338
-200.00	0.022756	0.012905	0.007640	0.005056	0.003718	0.001056	0.000541	0.000335
-100.00	0.039407	0.016652	0.009936	0.005151	0.003523	0.001050	0.000533	0.000330
0.00	0.072069	0.019013	0.009200	0.005463	0.003635	0.001047	0.000530	0.000328
100.00	0.020674	0.011578	0.006397	0.004127	0.002894	0.000930	0.000489	0.000308
200.00	0.011435	0.005328	0.003531	0.002874	0.002426	0.000858	0.000466	0.000298
300.00	0.007537	0.002764	0.002386	0.001842	0.001575	0.000775	0.000439	0.000286
400.00	0.005412	0.002251	0.001500	0.001350	0.001125	0.000693	0.000410	0.000273
500.00	0.004048	0.002298	0.001190	0.000942	0.000871	0.000558	0.000379	0.000260
1000.00	0.001466	0.001160	0.000858	0.000579	0.000392	0.000243	0.000216	0.000180
1500.00	0.000805	0.000697	0.000588	0.000480	0.000376	0.000167	0.000120	0.000117
2000.00	0.000519	0.000468	0.000416	0.000364	0.000313	0.000125	0.000095	0.000074

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00

** CONC OF OTHER IN MICROGRAMS/M**3 **

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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-2000.00	0.000084	0.000127	0.000189	0.000399	0.000454	0.000509	0.000564	0.000618	0.000680
-1500.00	0.000089	0.000135	0.000231	0.000495	0.000606	0.000720	0.000834	0.000946	0.001075
-1000.00	0.000093	0.000146	0.000266	0.000570	0.000786	0.001061	0.001372	0.001683	0.002038
-500.00	0.000082	0.000137	0.000289	0.000883	0.001141	0.001541	0.002697	0.004310	0.006345
-400.00	0.000078	0.000132	0.000292	0.000841	0.001318	0.001800	0.002551	0.005586	0.009081
-300.00	0.000074	0.000125	0.000260	0.000914	0.001254	0.002203	0.003247	0.007670	0.014206
-200.00	0.000069	0.000116	0.000242	0.000992	0.001365	0.002087	0.004445	0.008763	0.025929
-100.00	0.000064	0.000106	0.000218	0.000787	0.001174	0.002196	0.004297	0.013476	0.064635
0.00	0.000059	0.000097	0.000197	0.000705	0.001062	0.001781	0.003596	0.010646	0.162278
100.00	0.000059	0.000097	0.000195	0.000680	0.001007	0.001635	0.004217	0.012595	0.081256
200.00	0.000063	0.000104	0.000210	0.000746	0.001279	0.002031	0.004151	0.009646	0.026738
300.00	0.000066	0.000109	0.000220	0.000858	0.001252	0.002092	0.003893	0.008859	0.013664
400.00	0.000068	0.000113	0.000225	0.000851	0.001270	0.002082	0.003149	0.005867	0.008431
500.00	0.000070	0.000115	0.000255	0.000861	0.001295	0.001840	0.002923	0.004339	0.005759
1000.00	0.000082	0.000140	0.000270	0.000679	0.000881	0.001086	0.001309	0.001526	0.001745
1500.00	0.000089	0.000139	0.000266	0.000519	0.000598	0.000677	0.000754	0.000828	0.000904
2000.00	0.000088	0.000144	0.000223	0.000	0.000423	0.000460	0.000496	0.000530	0.00

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 005

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000123	0.000195	0.000292	0.000526	0.000571	0.000615	0.000658	0.000699	0.000756
1500.00	0.000118	0.000194	0.000350	0.000742	0.000809	0.000900	0.000988	0.001073	0.001187
1000.00	0.000112	0.000182	0.000371	0.000835	0.001220	0.001522	0.001689	0.001916	0.002215
500.00	0.000091	0.000144	0.000357	0.001115	0.001718	0.002123	0.003748	0.005371	0.006518
400.00	0.000089	0.000142	0.000302	0.000928	0.001579	0.002601	0.004078	0.007386	0.009234
300.00	0.000086	0.000138	0.000262	0.001052	0.001373	0.002480	0.004373	0.009630	0.014335
200.00	0.000083	0.000133	0.000253	0.000892	0.001400	0.002202	0.004578	0.012835	0.026550
100.00	0.000089	0.000145	0.000284	0.000868	0.001207	0.002098	0.003954	0.012620	0.007237
0.00	0.000091	0.000149	0.000294	0.000903	0.001256	0.002173	0.004038	0.012133	0.017748
-100.00	0.000089	0.000145	0.000282	0.000[illegible]	0.001527	0.002343	0.004507	0.012990	0.034[illegible]
-200.00	0.000095	0.000154	0.000299	0.001[illegible]	0.001443	0.002434	0.004051	0.009747	0.017

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010165	-48.77	265.18	0.013038
36.58	259.08	0.015358	118.87	274.32	0.007280
246.89	237.74	0.003607	387.10	161.54	0.003885
36.58	-396.24	0.009368	120.40	-402.34	0.007452
158.50	-411.48	0.006502	192.02	-417.58	0.006365
227.08	-423.67	0.005024	411.48	341.38	0.001527

** CONC OF OTHER IN MICROGRAMS/M**3 **

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
-1500.00	0.001040	0.000979	0.000911	0.000839	0.000764	0.000552	0.000425	0.000305	
-2000.00	0.000663	0.000635	0.000603	0.000571	0.000536	0.000390	0.000328	0.000270	

*** ISCLT2 - VERSION 92062 *** *** ISCLT modelling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
*** 11:14:33
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010165	-48.77	265.18	0.013038
36.58	259.08	0.015358	118.87	274.32	0.007280
246.89	237.74	0.003607	387.10	161.54	0.003885
36.58	-396.24	0.009368	120.40	-402.34	0.007452
158.50	-411.48	0.006502	192.02	-417.58	0.006365
227.08	-423.67	0.005024	411.48	341.38	0.001527

*** ISCLT2 - VERSION 92062 *** *** ISCLT modelling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 006

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

Y-COORD (METERS)	X-COORD (METERS)						
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000717	0.000633	0.000573	0.000512	0.000451	0.000171	0.000132	0.000118
1500.00	0.001111	0.000943	0.000822	0.000701	0.000582	0.000231	0.000195	0.000166
1000.00	0.002024	0.001594	0.001286	0.001053	0.000715	0.000406	0.000301	0.000245
500.00	0.005672	0.003977	0.002260	0.001511	0.001452	0.000865	0.000534	0.000363
400.00	0.008003	0.005010	0.002598	0.002197	0.001660	0.001026	0.000570	0.000379
300.00	0.012101	0.006918	0.003679	0.002912	0.002493	0.001065	0.000602	0.000393
200.00	0.023069	0.011015	0.006291	0.004696	0.003358	0.001149	0.000631	0.000407
100.00	0.019176	0.020015	0.009923	0.006262	0.004318	0.001403	0.000729	0.000456
0.00	0.047891	0.028143	0.012709	0.007308	0.004671	0.001489	0.000764	0.000474
-100.00	0.039615	0.023067	0.012125	0.007801	0.005152	0.001389	0.000730	0.000458
-200.00	0.019947	0.015175	0.009998	0.006550	0.004705	0.001377	0.000734	0.000462
-300.00	0.012328	0.010658	0.007282	0.006163	0.004178	0.001563	0.000731	0.000464
-400.00	0.008173	0.007814	0.005793	0.004593	0.004185	0.001537	0.000722	0.000463
-500.00	0.006168	0.005663	0.005023	0.003429	0.003283	0.001365	0.000787	0.000460
-1000.00	0.002399	0.002158	0.001981	0.001910	0.001806	0.001120	0.000672	0.000457
-1500.00	0.001340	0.001243	0.001176	0.001103	0.001026	0.000724	0.000589	0.000413
-2000.00	0.000874	0.000825	0.000792	0.000756	0.000719	0.000528	0.000441	0.000375

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)						
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
00.00	0.000100	0.000162	0.000347	0.000;	0.001548	0.002414	0.003887	0.007486	0.011
00.00	0.000104	0.000168	0.000397	0.001085	0.001596	0.001896	0.003644	0.005578	0.008056
-500.00	0.000107	0.000185	0.000366	0.001139	0.001319	0.001753	0.003360	0.004305	0.006090
-1000.00	0.000125	0.000188	0.000379	0.000740	0.001147	0.001362	0.001614	0.001887	0.002368
-1500.00	0.000118	0.000195	0.000296	0.000676	0.000782	0.000897	0.001012	0.001124	0.001325
-2000.00	0.000122	0.000170	0.000241	0.000524	0.000584	0.000644	0.000703	0.000761	0.000865

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 007

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) -2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000898	0.001436	0.002148	0.002536	0.002837	0.002694	0.002479	0.002518	0.002257
1500.00	0.000904	0.001376	0.002290	0.003917	0.003935	0.003977	0.003398	0.003757	0.003665
1000.00	0.000827	0.001397	0.002466	0.006360	-0.007582	0.005907	0.005535	0.005500	0.006314
500.00	0.000714	0.001157	0.002420	0.007280	0.010556	0.014371	0.015542	0.014144	0.019307
400.00	0.000694	0.001131	0.002221	0.007212	0.010226	0.015457	0.016924	0.019336	0.026122
300.00	0.000669	0.001092	0.002142	0.007063	0.010170	0.015553	0.020757	0.029032	0.046160
200.00	0.000639	0.001040	0.002050	0.006114	0.009412	0.014598	0.020210	0.041817	0.092283
100.00	0.000604	0.000971	0.001904	0.005674	0.007511	0.011496	-0.019050	0.058048	0.313092
0.00	0.000566	0.000896	0.001697	0.005140	0.006917	0.008494	0.020643	0.061929	0.827058
-100.00	0.000600	0.000964	0.001870	0.006013	0.008729	0.010947	0.019077	0.070344	0.771489
-200.00	0.000130	0.000135	0.002175	0.007111	0.010304	0.016418	0.028699	0.043813	0.105978
-300.00	0.000713	0.001187	0.002311	0.006768	0.008498	0.009940	0.009279	0.019436	0.067886
-400.00	0.000762	0.001262	0.002225	0.002606	0.003079	0.004456	0.004587	0.008715	0.017786
-500.00	0.000805	0.001339	0.002072	0.002947	0.003724	0.003925	0.004889	0.004356	0.005503
-1000.00	0.000926	0.001447	0.002420	0.005436	0.006428	0.009730	0.013431	0.017071	0.020175
-1500.00	0.000908	0.001297	0.002316	0.004754	0.005992	0.007271	0.008543	0.009839	0.011099
-2000.00	0.000834	0.001283	0.001941	0.004042	0.004654	0.005271	0.005888	0.006495	0.007081

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010720	-48.77	265.18	0.015080
36.58	259.08	0.019687	118.87	274.32	0.012790
246.89	237.74	0.005975	387.10	161.54	0.005257
36.58	-396.24	0.009219	120.40	-402.34	0.008029
158.50	-411.48	0.007544	192.02	-417.58	0.007378
227.08	-423.67	0.007152	411.48	341.38	0.002346

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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*** THE ANNUAL AVERAGE CONCENTRATIO ( )LUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.001649	0.001151	0.000838	0.000700	0.000825	0.000277	0.000210	0.000519
1500.00	0.002933	0.002170	0.001808	0.001324	0.000699	0.000214	0.000187	0.000630
1000.00	0.004814	0.003907	0.002908	0.001732	0.001085	0.000284	0.000181	0.000260
500.00	0.011790	0.003990	0.003291	0.003300	0.001987	0.000315	0.000204	0.000228
400.00	0.012359	0.003700	0.003277	0.003291	0.002722	0.000312	0.000209	0.000296
300.00	0.015573	0.005135	0.003208	0.003795	0.003638	0.000268	0.000217	0.000329
200.00	0.017517	0.006732	0.003765	0.003981	0.004469	0.000444	0.000235	0.000254
100.00	0.042928	0.013423	0.004653	0.003883	0.004165	0.000567	0.000247	0.000222
0.00	0.027564	0.006212	0.002734	0.003757	0.000679	0.000270	0.000234	0.003059
-100.00	0.205777	0.064218	0.006620	0.003237	0.002741	0.001015	0.000283	0.000236
-200.00	0.104141	0.084387	0.047519	0.023978	0.003875	0.002020	0.001247	0.000850
-300.00	0.047435	0.023468	0.004075	0.001966	0.001758	0.001329	0.000452	0.000256
-400.00	0.014247	0.005527	0.003370	0.002304	0.001376	0.001221	0.000451	0.000277
-500.00	0.002373	0.002579	0.002335	0.001739	0.001503	0.001284	0.000493	0.000281
-1000.00	0.018292	0.010810	0.003023	0.002019	0.002424	0.002103	0.000734	0.000400
-1500.00	0.010358	0.006831	0.004165	0.002821	0.002825	0.001869	0.000823	0.000338
-2000.00	0.006082	0.004570	0.004202	0.004087	0.002766	0.001817	0.000958	0.000680

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.037371	-48.77	265.18	0.054805
36.58	259.08	0.045668	118.87	274.32	0.011760
246.89	237.74	0.004143	387.10	161.54	0.004246
36.58	-396.24	0.017762	120.40	-402.34	0.011459
158.50	-411.48	0.007663	192.02	-417.58	0.006219
227.08	-423.67	0.005503	411.48	341.38	0.003805

LIN003 800
LINEMASTER SWITCH
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 009

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)									
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.002797	0.004221	0.006229	0.006894	0.007838	0.007571	0.007129	0.007355	0.006741
1500.00	0.002799	0.003980	0.005977	0.009982	0.010237	0.010701	0.009484	0.010679	0.010663
1000.00	0.002481	0.004193	0.006555	0.019519	0.021248	0.013846	0.013902	0.014587	0.017339
500.00	0.002195	0.003507	0.006664	0.017862	0.023411	0.032440	0.032722	0.028635	0.045687
400.00	0.002124	0.003403	0.006440	0.017153	0.023842	0.029509	0.032817	0.034434	0.056641
300.00	0.002039	0.003261	0.006211	0.015311	0.022647	0.032712	0.032133	0.047548	0.090247
200.00	0.001940	0.003068	0.005841	0.013301	0.018966	0.026929	0.032161	0.052608	0.140432
100.00	0.001828	0.002859	0.005327	0.012309	0.015158	0.020945	0.029067	0.064511	0.348028
0.00	0.001806	0.002860	0.004954	0.013994	0.016458	0.018013	0.041153	0.102026	0.190156
-100.00	0.001984	0.003196	0.005616	0.018091	0.023999	0.022654	0.035579	0.099816	0.318036
-200.00	0.000426	0.000448	0.006501	0.019829	0.024210	0.040331	0.059284	0.063815	0.102010
-300.00	0.002216	0.003691	0.006201	0.015153	0.018040	0.020389	0.019437	0.031282	0.088868
-400.00	0.002404	0.003678	0.005519	0.006770	0.007974	0.010852	0.011255	0.016475	0.032878
-500.00	0.002562	0.004156	0.005073	0.007423	0.009139	0.009732	0.011551	0.010174	0.013190
-1000.00	0.002880	0.004428	0.007224	0.013628	0.016098	0.022458	0.034103	0.044215	0.047960
-1500.00	0.002830	0.003994	0.006943	0.013092	0.016631	0.020316	0.024083	0.027815	0.030339
-2000.00	0.002609	0.003955	0.005870	0.011727	0.013551	0.015403	0.017263	0.018618	0.020093

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92

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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)									
	2000.00	1500.00	1000.00	500.00	400.00	300.00	200.00	100.00	0.00	
2000.00	0.002797	0.004221	0.006229	0.006894	0.007838	0.007571	0.007129	0.007355	0.006741	
1500.00	0.002799	0.003980	0.005977	0.009982	0.010237	0.010701	0.009484	0.010679	0.010663	
1000.00	0.002481	0.004193	0.006555	0.019519	0.021248	0.013846	0.013902	0.014587	0.017339	
500.00	0.002195	0.003507	0.006664	0.017862	0.023411	0.032440	0.032722	0.028635	0.045687	
400.00	0.002124	0.003403	0.006440	0.017153	0.023842	0.029509	0.032817	0.034434	0.056641	
300.00	0.002039	0.003261	0.006211	0.015311	0.022647	0.032712	0.032133	0.047548	0.090247	
200.00	0.001940	0.003068	0.005841	0.013301	0.018966	0.026929	0.032161	0.052608	0.140432	
100.00	0.001828	0.002859	0.005327	0.012309	0.015158	0.020945	0.029067	0.064511	0.348028	
0.00	0.001806	0.002860	0.004954	0.013994	0.016458	0.018013	0.041153	0.102026	0.190156	
-100.00	0.001984	0.003196	0.005616	0.018091	0.023999	0.022654	0.035579	0.099816	0.318036	
-200.00	0.000426	0.000448	0.006501	0.019829	0.024210	0.040331	0.059284	0.063815	0.102010	
-300.00	0.002216	0.003691	0.006201	0.015153	0.018040	0.020389	0.019437	0.031282	0.088868	
-400.00	0.002404	0.003678	0.005519	0.006770	0.007974	0.010852	0.011255	0.016475	0.032878	
-500.00	0.002562	0.004156	0.005073	0.007423	0.009139	0.009732	0.011551	0.010174	0.013190	
-1000.00	0.002880	0.004428	0.007224	0.013628	0.016098	0.022458	0.034103	0.044215	0.047960	
-1500.00	0.002830	0.003994	0.006943	0.013092	0.016631	0.020316	0.024083	0.027815	0.030339	
-2000.00	0.002609	0.003955	0.005870	0.011727	0.013551	0.015403	0.017263	0.018618	0.020093	

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92

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LINEMASTER SWITCH
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LIN003 0010

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***

INCLUDING SOURCE(S): 1 , 2 , 3 , 4 , .

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.060079	-48.77	265.18	0.088642
36.58	259.08	0.146470	118.87	274.32	0.057190
246.89	237.74	0.010885	387.10	161.54	0.010533
36.58	-396.24	0.042082	120.40	-402.34	0.035519
158.50	-411.48	0.024904	192.02	-417.58	0.019284
227.08	-423.67	0.015526	411.48	341.38	0.010832

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-2000.00	0.016964	0.012358	0.011352	0.011037	0.007586	0.004644	0.002694	0.002019
-1500.00	0.030332	0.018063	0.011489	0.008141	0.007945	0.004921	0.002467	0.001112
-1000.00	0.050946	0.027908	0.009418	0.006515	0.006445	0.005729	0.002317	0.001286
-500.00	0.091344	0.009287	0.006721	0.004995	0.004426	0.003927	0.001574	0.000916
-400.00	0.042442	0.016748	0.009017	0.006499	0.004637	0.003711	0.001449	0.000904
-300.00	0.123448	0.046656	0.015990	0.006536	0.005623	0.003969	0.001451	0.000836
-200.00	0.264506	0.217124	0.137116	0.063214	0.010969	0.005586	0.003456	0.002327
-100.00	0.544782	0.191308	0.017190	0.008633	0.007661	0.003065	0.000918	0.000772
0.00	0.030465	0.010497	0.005674	0.009312	0.001778	0.000842	0.000756	0.010167
100.00	0.253027	0.032040	0.010126	0.009650	0.010597	0.001774	0.000804	0.000722
200.00	0.107977	0.017746	0.009564	0.010268	0.011095	0.001411	0.000765	0.000817
300.00	0.070248	0.015286	0.009006	0.010560	0.009558	0.000870	0.000711	0.001023
400.00	0.049219	0.013021	0.009951	0.009655	0.007709	0.001008	0.000688	0.000931
500.00	0.045213	0.015784	0.010278	0.009973	0.005947	0.001030	0.000673	0.000738
1000.00	0.016598	0.013630	0.010290	0.006295	0.003454	0.000919	0.000597	0.000801
100.00	0.009914	0.007435	0.006233	0.004	0.002476	0.000714	0.000611	0.001708

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.003905	0.005996	0.008892	0.010342	0.011670	0.011340	0.010762	0.011102	0.010320
1500.00	0.003910	0.005689	0.008882	0.015160	0.015579	0.016254	0.014625	0.016337	0.016420
1000.00	0.003503	0.005912	0.009662	0.027392	0.030931	0.022360	0.022435	0.023529	0.027613
500.00	0.003070	0.004924	0.009696	0.027118	0.036979	0.050774	0.054935	0.052489	0.077271
400.00	0.002975	0.004789	0.009188	0.026144	0.036918	0.049650	0.056967	0.067024	0.100428
300.00	0.002859	0.004600	0.008835	0.024284	0.035441	0.052837	0.061156	0.095069	0.164407
200.00	0.002725	0.004345	0.008354	0.021053	0.031057	0.045759	0.061101	0.116906	0.286003
100.00	0.002581	0.004071	0.007710	0.019531	0.024882	0.036174	0.056287	0.147774	0.749614
0.00	0.002522	0.004002	0.007142	0.020742	0.025693	0.030461	0.069430	0.186734	1.197240
-100.00	0.002737	0.004411	0.007986	0.025879	0.035429	0.038139	0.063460	0.196626	1.188229
-200.00	0.000720	0.000854	0.009218	0.029064	0.037322	0.061270	0.096480	0.126138	0.251469
-300.00	0.003102	0.005164	0.009118	0.023799	0.029340	0.034946	0.035850	0.065875	0.182338
-400.00	0.003348	0.005240	0.008433	0.011306	0.013966	0.019003	0.022037	0.036354	0.067803
-500.00	0.003555	0.005817	0.007801	0.012391	0.015323	0.016951	0.022498	0.023145	0.031127
-1000.00	0.004025	0.006209	0.010290	0.020373	0.024459	0.034611	0.050520	0.064856	0.072541
-1500.00	0.003946	0.005620	0.009786	0.019018	0.024011	0.029204	0.034472	0.039725	0.043837
-2000.00	0.003648	0.005535	0.008240	0.016692	0.019243	0.021828	0.024418	0.026491	0.028719

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.008451	0.006193	0.004718	0.004000	0.004435	0.001489	0.001122	0.002216
1500.00	0.014763	0.011244	0.009452	0.007120	0.004133	0.001325	0.001113	0.002621
1000.00	0.024902	0.020291	0.015343	0.009659	0.005645	0.001853	0.001295	0.001486
500.00	0.066724	0.026049	0.017018	0.015726	0.010258	0.002768	0.001791	0.001589
400.00	0.074992	0.023981	0.017325	0.016494	0.013216	0.003039	0.001877	0.001879
300.00	0.105459	0.030103	0.018280	0.019109	0.017264	0.002978	0.001970	0.002031
200.00	0.159997	0.040821	0.023151	0.021820	0.021348	0.003862	0.002097	0.001775
100.00	0.335805	0.077056	0.031098	0.023922	0.021974	0.004675	0.002269	0.001708
0.00	0.177988	0.063866	0.030317	0.0258	0.010763	0.003648	0.002284	0.014028
-100.00	0.829581	0.295246	0.045870	0.02	0.019077	0.006518	0.002465	0.001797

LIN003 0 1 1
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 012

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.002797	0.004221	0.006229	0.006894	0.007838	0.007571	0.007129	0.007355	0.006741
1500.00	0.002799	0.003980	0.005977	0.009982	0.010237	0.010701	0.009484	0.010679	0.010663
1000.00	0.002481	0.004193	0.006555	0.019519	0.021248	0.013846	0.013902	0.014587	0.017339
500.00	0.002195	0.003507	0.006664	0.017862	0.023411	0.032440	0.032722	0.028635	0.045687

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
*** 11:14:33
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*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.118334	-48.77	265.18	0.171565
36.58	259.08	0.227183	118.87	274.32	0.089019
246.89	237.74	0.024609	387.10	161.54	0.023921
36.58	-396.24	0.078431	120.40	-402.34	0.062460
158.50	-411.48	0.046613	192.02	-417.58	0.039247
227.08	-423.67	0.033206	411.48	341.38	0.018510

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
*** 11:14:33
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.024582	0.018387	0.016949	0.016450	0.011607	0.007378	0.004421	0.003344	
1500.00	0.043070	0.027116	0.017740	0.012904	0.012559	0.008066	0.004304	0.002168	
1000.00	0.073576	0.042634	0.015979	0.011793	0.011865	0.009777	0.004224	0.002473	
500.00	0.023382	0.022122	0.017649	0.013223	0.011855	0.007604	0.003387	0.001996	
0.00	0.411350	0.329592	0.202273	0.0987	0.023266	0.010039	0.005978	0.003974	
-300.00	0.195001	0.088851	0.028412	0.019092	0.014829	0.007901	0.003177	0.001894	
-400.00	0.072791	0.036350	0.022855	0.017307	0.013107	0.007557	0.003163	0.001983	
-500.00	0.023382	0.022122	0.017649	0.013223	0.011855	0.007604	0.003387	0.001996	
-1000.00	0.073576	0.042634	0.015979	0.011793	0.011865	0.009777	0.004224	0.002473	
-1500.00	0.043070	0.027116	0.017740	0.012904	0.012559	0.008066	0.004304	0.002168	
-2000.00	0.024582	0.018387	0.016949	0.016450	0.011607	0.007378	0.004421	0.003344	

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1970 data *** 06/27/92
*** 11:14:33
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.118334	-48.77	265.18	0.171565
36.58	259.08	0.227183	118.87	274.32	0.089019
246.89	237.74	0.024609	387.10	161.54	0.023921
36.58	-396.24	0.078431	120.40	-402.34	0.062460
158.50	-411.48	0.046613	192.02	-417.58	0.039247
227.08	-423.67	0.033206	411.48	341.38	0.018510

400.00	0.002124	0.003403	0.006440	0.017153	0.023842	0.029509	0.032817	0.034434	0.056641
300.00	0.002039	0.003261	0.006211	0.015311	0.022647	0.032712	0.032133	0.047548	0.090247
200.00	0.001940	0.003068	0.005841	0.013301	0.018966	0.026929	0.032161	0.052608	0.140432
100.00	0.001828	0.002859	0.005327	0.012309	0.015158	0.020945	0.029067	0.064511	0.348028
0.00	0.001806	0.002860	0.004954	0.013994	0.016458	0.018013	0.041153	0.102026	0.190156
-100.00	0.001984	0.003196	0.005616	0.018091	0.023999	0.022654	0.035579	0.099816	0.318036
-200.00	0.000426	0.000448	0.006501	0.019829	0.024210	0.040331	0.059284	0.063815	0.102010
-300.00	0.002216	0.003691	0.006201	0.015153	0.018040	0.020389	0.019437	0.031282	0.088868
-400.00	0.002404	0.003678	0.005519	0.006770	0.007974	0.010852	0.011255	0.016475	0.032878
-500.00	0.002562	0.004156	0.005073	0.007423	0.009139	0.009732	0.011551	0.010174	0.013190
-1000.00	0.002880	0.004428	0.007224	0.013628	0.016098	0.022458	0.034103	0.044215	0.047960
-1500.00	0.002830	0.003994	0.006943	0.013092	0.016631	0.020316	0.024083	0.027815	0.030339
-2000.00	0.002609	0.003955	0.005870	0.011727	0.013551	0.015403	0.017263	0.018618	0.020093

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.005565	0.003941	0.002891	0.002424	0.002846	0.000915	0.000685	0.001504
1500.00	0.009914	0.007435	0.006233	0.004614	0.002476	0.000714	0.000611	0.001708
1000.00	0.016598	0.013630	0.010290	0.006295	0.003454	0.000919	0.000597	0.000801
500.00	0.045213	0.015784	0.010278	0.009973	0.005947	0.001030	0.000673	0.000738
400.00	0.049219	0.013021	0.009951	0.009655	0.007709	0.001008	0.000688	0.000931
300.00	0.070248	0.015286	0.009006	0.010560	0.009558	0.000870	0.000711	0.001023
200.00	0.107977	0.017746	0.009564	0.010268	0.011095	0.001411	0.000765	0.000817
100.00	0.253027	0.032040	0.010126	0.009650	0.010597	0.001774	0.000804	0.000722
0.00	0.030465	0.010497	0.005674	0.009312	0.001778	0.000842	0.000756	0.010167
-100.00	0.544782	0.191308	0.017190	0.008633	0.007661	0.003065	0.000918	0.000772
-200.00	0.264506	0.217124	0.137116	0.063214	0.010969	0.005586	0.003456	0.002327
-300.00	0.123448	0.046656	0.010590	0.006536	0.005623	0.003969	0.001451	0.000836
-400.00	0.042442	0.016748	0.009017	0.006499	0.004637	0.003711	0.001449	0.000904
-500.00	0.009134	0.009287	0.006721	0.004995	0.004426	0.003927	0.001574	0.000916
-1000.00	0.050946	0.027908	0.009418	0.006515	0.006445	0.005729	0.002317	0.001286
-1500.00	0.030332	0.018063	0.011489	0.008141	0.007945	0.004921	0.002467	0.001112
2000.00	0.016964	0.012358	0.011352	0.011[illegible]	0.007586	0.004644	0.002694	0.002019

LINO03 E I 0
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4 .

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.060079	-48.77	265.18	0.088642
36.58	259.08	0.146470	118.87	274.32	0.057190
246.89	237.74	0.010885	387.10	161.54	0.010533
36.58	-396.24	0.042082	120.40	-402.34	0.035519
158.50	-411.48	0.024904	192.02	-417.58	0.019284
227.08	-423.67	0.015526	411.48	341.38	0.010832

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

LIN003 214
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0015

E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250 63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

****
*** ISCLI2 finished Successfully ***
****

O ECHO

*** Message Summary For ISC2 Model Setup ***

--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250 64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

****
** SETUP Finishes Successfully ***
****

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1973 data *** 06/27/92

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LINEMASTER SWITCH
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** MODEL SETUP OPTIONS SUMMARY ***

*Model Is Setup For Calculation of Average CONCentration Values.

*Model Uses RURAL Dispersion.

*Model Uses Regulatory DEFAULT Options:
1. Final Plume Rise.
2. Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Default Wind Profile Exponents.
5. Default Vertical Potential Temperature Gradients.
6. "Upper Bound" Values For Supersquat Buildings.
7. No Exponential Decay for RURAL Mode

*Model Accepts Receptors on ELEV Terrain.

*Model Assumes No FLAGPOLE Receptor Heights.

*Model Calculates 1 STAR Average(s) for the Following Months: 0 0 0 0 0 0 0 0 0 0 0 0
Seasons/Quarters: 0 0 0 0
and Annual: 1

*Model Assumes 1 STAR Summaries In Data File for the Averaging Periods Identified Above

*This Run Includes: 4 Source(s): 2 Source Group(s): and 301 Receptor(s)

*The Model Assumes A Pollutant Type of: OTHER

*Model Set To Continue RUNning After the Setup Testing.

*Output Options Selected:
Model Outputs Tables of Long Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Long Term Values for Plotting (PLOTFILE Keyword)

*Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.0000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

*Input Runstream File: G:\BEE\IN\LNMA73.DTA : **Output Print File: G:\BEE\IN\LNMA73.LST
** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Lineme r Switch for RI/FS - TCE - 1973 data *** 06/27/92
*** *** 12:08:18

LINE MASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
3	0	0.51100E-02	3.0	-27.4	173.7	0.00	294.26	8.54	0.15	YES	
4	0	0.18500E-01	64.0	39.6	165.2	12.80	294.26	0.61	1.22	YES	

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF AREA (METERS)	EMISSION RATE SCALAR VARY BY
1	0	0.57910E-06	0.0	0.0	173.7	0.00	29.03	
2	0	0.57750E-07	-15.2	-3.0	173.7	0.00	108.51	

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

ROUP ID	SOURCE IDs
1	1 . 2 . 3 . 4 .

LIN0033
LINEMASTER SWITCH
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

OURCE ID: 3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	79.1,	0	2	8.5,	79.1,	0	3	8.5,	79.1,	0	4	8.5,	79.1,	0
5	8.5,	79.1,	0	6	8.5,	79.1,	0	7	8.5,	79.1,	0	8	8.5,	79.1,	0
9	8.5,	79.1,	0	10	8.5,	79.1,	0	11	8.5,	79.1,	0	12	8.5,	79.1,	0
13	8.5,	79.1,	0	14	8.5,	79.1,	0	15	8.5,	79.1,	0	16	8.5,	79.1,	0

OURCE ID: 4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	8.1,	0	2	8.5,	8.1,	0	3	8.5,	8.1,	0	4	8.5,	8.1,	0
5	8.5,	8.1,	0	6	8.5,	8.1,	0	7	8.5,	8.1,	0	8	8.5,	8.1,	0
9	8.5,	8.1,	0	10	8.5,	8.1,	0	11	8.5,	8.1,	0	12	8.5,	8.1,	0
13	8.5,	8.1,	0	14	8.5,	8.1,	0	15	8.5,	8.1,	0	16	8.5,	8.1,	0

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-2000.0, -1500.0, -1000.0, -500.0, -400.0, -300.0, -200.0, -100.0, 0.0, 100.0,
200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-2000.0, -1500.0, -1000.0, -500.0, -400.0, -300.0, -200.0, -100.0, 0.0, 100.0,
200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

LIN003 3 1 9
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 020

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	112.78	103.63	96.62	95.10	106.98	97.23	95.10	145.39
1500.00	126.49	121.92	121.92	118.87	106.68	87.48	92.05	138.38

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)							
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	192.02	170.69	164.59	142.65	143.26	137.16	130.45	128.02	121.01
1500.00	188.67	170.69	158.50	153.92	147.83	143.26	133.81	133.50	129.54
1000.00	188.98	179.83	167.03	182.27	170.69	147.83	140.51	135.94	135.64
500.00	189.59	181.36	186.54	171.91	172.52	168.55	158.50	147.83	147.83
400.00	188.37	184.40	192.63	170.69	171.91	168.55	158.50	151.49	149.96
300.00	188.67	183.49	194.16	169.47	171.30	170.69	160.93	156.36	155.14
200.00	185.93	187.45	188.98	166.73	168.55	167.64	160.93	160.63	160.02
100.00	179.83	187.45	182.88	167.64	164.59	163.68	161.54	164.59	170.69
0.00	175.56	179.83	171.30	173.74	167.64	160.93	169.16	173.74	164.59
-100.00	175.87	185.93	170.69	181.36	175.26	162.76	162.15	169.16	174.96
-200.00	92.05	87.17	173.74	182.88	171.60	178.31	174.65	162.15	157.58
-300.00	172.21	175.26	167.64	164.59	161.54	156.97	149.35	152.40	156.97
-400.00	175.26	170.69	161.54	141.12	140.21	142.65	139.60	141.43	143.26
-500.00	178.31	182.88	156.67	142.95	143.26	140.21	140.21	131.06	128.93
-1000.00	198.12	206.96	180.44	167.64	169.16	170.08	176.17	176.78	169.16
-1500.00	185.32	192.63	182.88	179.53	180.75	182.27	179.22	178.31	173.74
-2000.00	184.40	189.59	177.39	185.93	185.93	182.88	179.83	174.35	172.82

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)							
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	192.02	170.69	164.59	142.65	143.26	137.16	130.45	128.02	121.01
1500.00	188.67	170.69	158.50	153.92	147.83	143.26	133.81	133.50	129.54
1000.00	188.98	179.83	167.03	182.27	170.69	147.83	140.51	135.94	135.64
500.00	189.59	181.36	186.54	171.91	172.52	168.55	158.50	147.83	147.83
400.00	188.37	184.40	192.63	170.69	171.91	168.55	158.50	151.49	149.96
300.00	188.67	183.49	194.16	169.47	171.30	170.69	160.93	156.36	155.14
200.00	185.93	187.45	188.98	166.73	168.55	167.64	160.93	160.63	160.02
100.00	179.83	187.45	182.88	167.64	164.59	163.68	161.54	164.59	170.69
0.00	175.56	179.83	171.30	173.74	167.64	160.93	169.16	173.74	164.59
-100.00	175.87	185.93	170.69	181.36	175.26	162.76	162.15	169.16	174.96
-200.00	92.05	87.17	173.74	182.88	171.60	178.31	174.65	162.15	157.58
-300.00	172.21	175.26	167.64	164.59	161.54	156.97	149.35	152.40	156.97
-400.00	175.26	170.69	161.54	141.12	140.21	142.65	139.60	141.43	143.26
-500.00	178.31	182.88	156.67	142.95	143.26	140.21	140.21	131.06	128.93
-1000.00	198.12	206.96	180.44	167.64	169.16	170.08	176.17	176.78	169.16
-1500.00	185.32	192.63	182.88	179.53	180.75	182.27	179.22	178.31	173.74
-2000.00	184.40	189.59	177.39	185.93	185.93	182.88	179.83	174.35	172.82

1000.00	133.81	135.03	135.94	134.11	128.02	100.58	87.17	103.02
500.00	146.61	139.90	143.26	146.91	140.21	100.58	87.48	92.96
400.00	146.91	141.12	142.65	146.30	144.17	99.06	87.48	100.58
300.00	150.88	145.69	142.34	146.30	146.00	94.49	87.78	102.72
200.00	155.45	149.05	143.26	144.17	146.30	107.29	89.31	92.96
100.00	164.59	153.62	143.26	141.73	143.26	111.86	89.92	87.17
0.00	153.92	144.78	137.16	139.60	117.04	92.96	87.17	175.87
-100.00	169.16	163.07	143.26	136.55	134.72	121.31	92.05	87.17
-200.00	165.51	172.21	167.64	160.02	137.16	132.59	128.02	123.44
-300.00	158.50	152.40	134.11	126.49	124.97	123.44	102.11	87.17
-400.00	144.78	137.16	131.06	125.58	118.87	120.40	100.58	88.39
-500.00	121.92	126.49	125.58	120.40	117.35	120.09	101.50	87.48
-1000.00	168.55	152.40	128.02	123.44	128.02	127.10	106.68	92.96
-1500.00	170.08	150.88	138.68	131.06	134.11	128.93	107.29	82.30
-2000.00	159.41	147.83	146.91	148.44	137.16	133.50	115.82	106.68

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZFLAG)
(METERS)

(-94.5,	274.3,	159.4,	0.0);	(-48.8,	265.2,	160.3,	0.0);
(36.6,	259.1,	156.7,	0.0);	(118.9,	274.3,	151.2,	0.0);
(246.9,	237.7,	144.5,	0.0);	(387.1,	161.5,	143.9,	0.0);
(36.6,	-396.2,	144.5,	0.0);	(120.4,	-402.3,	143.3,	0.0);
(158.5,	-411.5,	140.2,	0.0);	(192.0,	-417.6,	138.4,	0.0);
(227.1,	-423.7,	137.2,	0.0);	(411.5,	341.4,	147.8,	0.0);

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AVERAGE SPEED FOR EACH WIND SPEED CATEGORY ***
(METERS/SEC)

1.50, 2.50, 4.30, 6.80, 9.50, 12.50,

*** WIND PROFILE EXPONENTS ***

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LIN003 0222

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
			ANNUAL			
STABILITY CATEGORY A	1703.1000	1701.2000	1701.2000	1701.2000	1701.2000	1701.2000
STABILITY CATEGORY B	1134.6000	1424.7000	1610.1000	1610.1000	1610.1000	1610.1000
STABILITY CATEGORY C	865.8000	1114.5000	1373.6000	1900.5000	2024.0000	1987.2000
STABILITY CATEGORY D	735.0000	971.4000	1209.4000	1377.7000	1431.7000	1552.3000
STABILITY CATEGORY E	0.0000	1458.2000	1602.9000	1602.9000	1602.9000	1602.9000
STABILITY CATEGORY F	1473.7000	1644.9000	1644.9000	1644.9000	1644.9000	1644.9000

*** AVERAGE MIXING LAYER HEIGHT (METERS) ***

*** MODELING OPTIONS USED: CONC RURAL ELEV DEFAULT

***

PAGE 11

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
B	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01	.70000E-01
C	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00	.10000E+00
D	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00
E	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00	.35000E+00
F	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00	.55000E+00

*** AVERAGE AMBIENT AIR TEMPERATURE (KELVIN) ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

STABILITY CATEGORY A	STABILITY CATEGORY B	STABILITY CATEGORY C	STABILITY CATEGORY D	STABILITY CATEGORY E	STABILITY CATEGORY F
ANNUAL 300.8000	294.4000	290.8000	283.9000	282.2000	280.2000

*** ISCLT2 - VERSION 92062 *** *** ISCLT modelling of Linemaster Switch for RI/FS - TCE - 1973 data *** 06/27/92
*** 12:08:18
PAGE 11

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LNMA73.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY A

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00011000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY B

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00188000	0.00263000	0.00194000	0.00000000	0.00000000	0.00000000
22.500	0.00070000	0.00091000	0.00068000	0.00000000	0.00000000	0.00000000
45.000	0.00072000	0.00251000	0.00057000	0.00000000	0.00000000	0.00000000
67.500	0.00059000	0.00080000	0.00011000	0.00000000	0.00000000	0.00000000
90.000	0.00082000	0.00091000	0.00034000	0.00000000	00000000	0.00000000
.500	0.00059000	0.00114000	0.00011000	0.00000000	0000000	0.00000000

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ANNUAL: STABILITY CATEGORY D

337.500	0.000560000	0.001480000	0.003200000	0.000340000	0.000000000	0.000110000
315.000	0.000770000	0.000910000	0.002400000	0.001140000	0.000000000	0.000000000
292.500	0.000360000	0.002050000	0.002510000	0.001370000	0.000000000	0.000000000
270.000	0.001000000	0.000570000	0.003290000	0.001480000	0.000110000	0.000000000
247.500	0.000040000	0.000680000	0.002050000	0.001370000	0.000800000	0.000000000
225.000	0.000018000	0.001030000	0.002510000	0.001140000	0.000230000	0.000000000
202.500	0.000053000	0.000910000	0.002280000	0.001140000	0.000340000	0.000000000
180.000	0.001040000	0.003540000	0.006960000	0.001370000	0.000110000	0.000000000
157.500	0.000760000	0.002740000	0.003540000	0.000110000	0.000000000	0.000000000
135.000	0.000670000	0.001260000	0.001600000	0.000230000	0.000000000	0.000000000
112.500	0.000430000	0.001140000	0.000910000	0.000110000	0.000000000	0.000000000
90.000	0.000530000	0.000800000	0.000110000	0.000230000	0.000000000	0.000000000
67.500	0.001120000	0.000680000	0.000910000	0.000000000	0.000000000	0.000000000
45.000	0.000930000	0.001600000	0.001830000	0.000230000	0.000000000	0.000000000
22.500	0.001220000	0.002510000	0.003200000	0.000230000	0.000000000	0.000000000
0.000	0.001390000	0.003310000	0.007530000	0.000910000	0.000000000	0.000000000

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
337.500	0.000130000	0.000910000	0.000910000	0.000690000	0.000000000	0.000000000
315.000	0.000480000	0.001480000	0.000460000	0.000000000	0.000000000	0.000000000
292.500	0.000590000	0.001370000	0.000110000	0.000000000	0.000000000	0.000000000
270.000	0.000590000	0.001030000	0.000800000	0.000000000	0.000000000	0.000000000
247.500	0.000350000	0.000570000	0.000800000	0.000000000	0.000000000	0.000000000
225.000	0.000580000	0.000680000	0.000680000	0.000000000	0.000000000	0.000000000
202.500	0.000930000	0.000910000	0.000800000	0.000000000	0.000000000	0.000000000
180.000	0.001530000	0.002400000	0.001140000	0.000000000	0.000000000	0.000000000
157.500	0.000360000	0.001140000	0.001030000	0.000000000	0.000000000	0.000000000
135.000	0.000130000	0.001370000	0.000230000	0.000000000	0.000000000	0.000000000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LMMA73.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY C

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.001390000	0.003310000	0.007530000	0.000910000	0.000000000	0.000000000
22.500	0.001220000	0.002510000	0.003200000	0.000230000	0.000000000	0.000000000
45.000	0.000930000	0.001600000	0.001830000	0.000230000	0.000000000	0.000000000
67.500	0.001120000	0.000680000	0.000910000	0.000000000	0.000000000	0.000000000
90.000	0.000530000	0.000800000	0.000110000	0.000230000	0.000000000	0.000000000
112.500	0.000430000	0.001140000	0.000910000	0.000110000	0.000000000	0.000000000
135.000	0.000670000	0.001260000	0.001600000	0.000230000	0.000000000	0.000000000
157.500	0.000760000	0.002740000	0.003540000	0.000110000	0.000000000	0.000000000
180.000	0.001040000	0.003540000	0.006960000	0.001370000	0.000110000	0.000000000
202.500	0.000530000	0.000910000	0.002280000	0.001140000	0.000340000	0.000000000
225.000	0.000018000	0.001030000	0.002510000	0.001140000	0.000230000	0.000000000
247.500	0.000040000	0.000680000	0.002050000	0.001370000	0.000800000	0.000000000
270.000	0.001000000	0.000570000	0.003290000	0.001480000	0.000110000	0.000000000
292.500	0.000360000	0.002050000	0.002510000	0.001370000	0.000000000	0.000000000
315.000	0.000770000	0.000910000	0.002400000	0.001140000	0.000000000	0.000000000
337.500	0.000560000	0.001480000	0.003200000	0.000340000	0.000000000	0.000110000

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ADMINISTRATIVE RECORD

LIN003 025

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.000000000	0.006510000	0.000960000	0.000000000	0.000000000	0.000000000
22.500	0.000000000	0.002050000	0.000570000	0.000000000	0.000000000	0.000000000
45.000	0.000000000	0.001260000	0.000340000	0.000000000	0.000000000	0.000000000
67.500	0.000000000	0.000800000	0.000570000	0.000000000	0.000000000	0.000000000
90.000	0.000000000	0.000460000	0.000239000	0.000000000	0.000000000	0.000000000
112.500	0.000000000	0.001260000	0.000110000	0.000000000	0.000000000	0.000000000
135.000	0.000000000	0.001710000	0.000340000	0.000000000	0.000000000	0.000000000
157.500	0.000000000	0.006160000	0.002850000	0.000000000	0.000000000	0.000000000
180.000	0.000000000	0.009020000	0.012790000	0.000000000	0.000000000	0.000000000

ANNUAL: STABILITY CATEGORY E

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.009330000	0.022150000	0.032420000	0.025340000	0.004340000	0.000230000
22.500	0.003140000	0.008900000	0.008900000	0.006050000	0.000570000	0.000000000
45.000	0.003430000	0.004790000	0.006050000	0.004450000	0.001370000	0.000000000
67.500	0.001060000	0.002280000	0.002630000	0.001710000	0.000000000	0.000000000
90.000	0.001800000	0.002850000	0.002510000	0.001260000	0.000110000	0.000000000
112.500	0.002320000	0.004000000	0.002970000	0.000230000	0.000000000	0.000000000
135.000	0.002040000	0.005710000	0.005250000	0.001260000	0.000460000	0.000000000
157.500	0.002740000	0.010730000	0.015870000	0.007990000	0.000680000	0.000000000
180.000	0.004380000	0.015410000	0.044630000	0.027170000	0.003080000	0.000230000
202.500	0.001210000	0.002970000	0.013240000	0.010500000	0.001260000	0.000000000
225.000	0.000630000	0.003540000	0.008900000	0.009470000	0.000800000	0.000000000
247.500	0.001560000	0.002970000	0.006620000	0.009130000	0.000910000	0.000110000
270.000	0.003040000	0.004000000	0.009930000	0.017690000	0.003310000	0.000340000
292.500	0.001740000	0.004220000	0.011990000	0.026370000	0.007420000	0.001030000
315.000	0.002470000	0.007310000	0.013240000	0.031390000	0.008110000	0.000110000
337.500	0.004290000	0.010730000	0.009250000	0.010390000	0.001600000	0.000000000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LMA73.ISC
SURFACE STATION NO.: 99999
NAME: UNKNOWN
YEAR: 1990

FORMAT: (7X,6F7.0)
UPPER AIR STATION NO.: 99999
NAME: UNKNOWN
YEAR: 1990

225.000	0.00000000	0.00148000	0.00217000	0.00000000	0.00000000	0.00000000
247.500	0.00000000	0.00240000	0.00217000	0.00000000	0.00000000	0.00000000
270.000	0.00000000	0.00548000	0.00377000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00445000	0.00525000	0.00000000	0.00000000	0.00000000
315.000	0.00000000	0.00468000	0.00947000	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00434000	0.00731000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY F

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.01463000	0.00833000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00654000	0.00217000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00263000	0.00080000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00154000	0.00057000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00126000	0.00046000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00318000	0.00091000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00425000	0.00183000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00497000	0.00479000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00733000	0.01062000	0.00000000	0.00000000	0.00000000	0.00000000
202.500	0.00256000	0.00285000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00311000	0.00217000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00550000	0.00479000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.01100000	0.00788000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.01108000	0.00753000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00782000	0.00868000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.01077000	0.00639000	0.00000000	0.00000000	0.00000000	0.00000000

SUM OF FREQUENCIES, FTOTAL = 0.99981

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00

LINO03 920
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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2000.00	0.000087	0.000140	0.000215	0.000375	0.000411	0.000448	0.000483	0.000517	0.000553
1500.00	0.000094	0.000137	0.000258	0.000503	0.000580	0.000658	0.000734	0.000808	0.000884
1000.00	0.000097	0.000152	0.000267	0.000656	0.000851	0.001052	0.001272	0.001487	0.001705
500.00	0.000085	0.000142	0.000299	0.000859	0.001255	0.001779	0.002824	0.004209	0.005614
400.00	0.000082	0.000138	0.000279	0.000891	0.001273	0.002016	0.003039	0.005682	0.008218
300.00	0.000078	0.000131	0.000269	0.000955	0.001331	0.002107	0.003763	0.008563	0.013317
200.00	0.000074	0.000123	0.000252	0.000905	0.001481	0.002217	0.004218	0.009307	0.026045
100.00	0.000068	0.000112	0.000228	0.000808	0.001202	0.001965	0.004834	0.013004	0.079145
0.00	0.000064	0.000104	0.000206	0.000709	0.001053	0.001732	0.003405	0.009730	0.141287
-100.00	0.000063	0.000101	0.000195	0.000627	0.000895	0.001636	0.003325	0.011887	0.058964
-200.00	0.000063	0.000101	0.000193	0.000708	0.001016	0.001681	0.003945	0.008078	0.023734
-300.00	0.000063	0.000100	0.000187	0.000711	0.001038	0.001964	0.002986	0.007080	0.013023
-400.00	0.000062	0.000098	0.000198	0.000708	0.001179	0.001652	0.002351	0.005157	0.008332
-500.00	0.000062	0.000095	0.000208	0.000791	0.001047	0.001419	0.002490	0.003978	0.005825
-1000.00	0.000066	0.000115	0.000239	0.000525	0.000725	0.000979	0.001264	0.001550	0.001871
-1500.00	0.000074	0.000121	0.000212	0.000457	0.000558	0.000663	0.000767	0.000870	0.000986
-2000.00	0.000075	0.000116	0.000174	0.000367	0.000418	0.000468	0.000518	0.000567	0.000623

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000509	0.000461	0.000412	0.000363	0.000314	0.000136	0.000108	0.000087
1500.00	0.000791	0.000689	0.000586	0.000484	0.000384	0.000188	0.000140	0.000120
1000.00	0.001444	0.001155	0.000868	0.000604	0.000428	0.000280	0.000213	0.000165
500.00	0.004014	0.002371	0.001319	0.001074	0.000981	0.000513	0.000370	0.000269
400.00	0.005391	0.002425	0.001694	0.001507	0.001165	0.000646	0.000421	0.000293
300.00	0.007575	0.003085	0.002630	0.001866	0.001512	0.000779	0.000471	0.000316
200.00	0.011935	0.005771	0.003468	0.002712	0.002344	0.000922	0.000520	0.000339
100.00	0.021797	0.011550	0.006537	0.004368	0.003135	0.001058	0.000566	0.000361
0.00	0.077153	0.021539	0.010552	0.006320	0.004231	0.001235	0.000629	0.000390
-100.00	0.034123	0.016031	0.010465	0.005727	0.003961	0.001213	0.000623	0.000388
-200.00	0.019639	0.011128	0.007126	0.004967	0.003850	0.001189	0.000621	0.000388
-300.00	0.010356	0.006813	0.005565	0.004055	0.003127	0.001145	0.000612	0.000386
-400.00	0.007032	0.005316	0.003960	0.003364	0.002633	0.001146	0.000598	0.000382
-500.00	0.005094	0.003953	0.003008	0.002[illegible]	0.002272	0.001028	0.000580	0.000376
1000.00	0.001753	0.001563	0.001358	0.00[illegible]	0.000999	0.000707	0.000473	0.000333

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0 2 7

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0 2 8

Y-COORD (METERS)	X-COORD (METERS) -2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000123	0.000190	0.000283	0.000511	0.000555	0.000599	0.000641	0.000682	0.000739
1500.00	0.000126	0.000195	0.000339	0.000719	0.000785	0.000875	0.000962	0.001045	0.001161
1000.00	0.000132	0.000200	0.000376	0.000807	0.001181	0.001476	0.001641	0.001864	0.002167
500.00	0.000110	0.000177	0.000415	0.001143	0.001713	0.002078	0.003631	0.005209	0.006375
400.00	0.000107	0.000172	0.000362	0.000999	0.001625	0.002598	0.003988	0.007157	0.009031
300.00	0.000102	0.000165	0.000317	0.001182	0.001501	0.002567	0.004373	0.009409	0.014020
200.00	0.000097	0.000157	0.000302	0.001034	0.001589	0.002450	0.004783	0.012783	0.026333
100.00	0.000098	0.000158	0.000309	0.000930	0.001286	0.002193	0.004062	0.012511	0.007018
0.00	0.000092	0.000148	0.000284	0.000837	0.001152	0.001973	0.003641	0.011038	0.016348
-100.00	0.000083	0.000130	0.000238	0.000792	0.001224	0.001889	0.003843	0.011645	0.030429
-200.00	0.000083	0.000129	0.000234	0.000888	0.001156	0.002052	0.003550	0.008888	0.015898

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.009822	-48.77	265.18	0.012630
36.58	259.08	0.015107	118.87	274.32	0.007522
246.89	237.74	0.003898	387.10	161.54	0.003777
36.58	-396.24	0.008499	120.40	-402.34	0.006557
158.50	-411.48	0.005632	192.02	-417.58	0.005431
227.08	-423.67	0.004231	411.48	341.38	0.001595

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1973 data *** 06/27/92
*** 12:08:18
PAGE 17

-2000.00	0.000604	0.000573	0.000540	0.000506	0.000471	0.000327	0.000278	0.000230
00.00	0.000945	0.000879	0.000809	0.000	0.000660	0.000467	0.000364	0.000280

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1973 data *** 06/27/92
*** 12:08:18
PAGE 18

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.009822	-48.77	265.18	0.012630
36.58	259.08	0.015107	118.87	274.32	0.007522
246.89	237.74	0.003898	387.10	161.54	0.003777
36.58	-396.24	0.008499	120.40	-402.34	0.006557
158.50	-411.48	0.005632	192.02	-417.58	0.005431
227.08	-423.67	0.004231	411.48	341.38	0.001595

-300.00	0.000082	0.000127	0.000259	0.000766	0.001308	0.002123	0.003531	0.006902	0.010326
-400.00	0.000082	0.000125	0.000294	0.000924	0.001406	0.001716	0.003357	0.005144	0.007324
-500.00	0.000081	0.000133	0.000275	0.001004	0.001193	0.001612	0.003098	0.003971	0.005543
-1000.00	0.000091	0.000150	0.000337	0.000681	0.001057	0.001254	0.001487	0.001737	0.002160
-1500.00	0.000097	0.000174	0.000271	0.000622	0.000720	0.000826	0.000931	0.001034	0.001210
-2000.00	0.000109	0.000155	0.000222	0.000482	0.000537	0.000592	0.000646	0.000699	0.000791

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000704	0.000624	0.000567	0.000510	0.000452	0.000188	0.000151	0.000133
1500.00	0.001092	0.000932	0.000818	0.000704	0.000590	0.000259	0.000217	0.000168
1000.00	0.001993	0.001584	0.001292	0.001085	0.000763	0.000444	0.000295	0.000226
500.00	0.005606	0.004065	0.002408	0.001640	0.001542	0.000841	0.000539	0.000381
400.00	0.007971	0.005182	0.002769	0.002311	0.001680	0.001025	0.000596	0.000409
300.00	0.012157	0.007101	0.003829	0.002975	0.002528	0.001107	0.000652	0.000436
200.00	0.023047	0.011514	0.006584	0.004854	0.003506	0.001249	0.000705	0.000462
100.00	0.019469	0.021210	0.010718	0.006801	0.004719	0.001577	0.000833	0.000526
0.00	0.043598	0.028099	0.013340	0.007931	0.005215	0.001698	0.000882	0.000551
-100.00	0.035551	0.021392	0.011904	0.008060	0.005458	0.001583	0.000842	0.000532
-200.00	0.017630	0.013432	0.008985	0.006200	0.004692	0.001541	0.000834	0.000530
-300.00	0.010961	0.009245	0.006361	0.005512	0.003869	0.001664	0.000819	0.000526
-400.00	0.007311	0.006809	0.004967	0.003992	0.003727	0.001565	0.000799	0.000520
-500.00	0.005532	0.004965	0.004325	0.002901	0.002847	0.001327	0.000840	0.000511
-1000.00	0.002167	0.001924	0.001743	0.001656	0.001543	0.000966	0.000628	0.000451
-1500.00	0.001214	0.001117	0.001046	0.000972	0.000894	0.000611	0.000507	0.000378
-2000.00	0.000793	0.000743	0.000709	0.000672	0.000634	0.000445	0.000373	0.000322

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** DISCRETE CARTES' RECEPTOR POINTS ***

LIN003 620
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010506	-48.77	265.18	0.014752
36.58	259.08	0.019442	118.87	274.32	0.012914
246.89	237.74	0.006276	387.10	161.54	0.005545
36.58	-396.24	0.008347	120.40	-402.34	0.007141
158.50	-411.48	0.006641	192.02	-417.58	0.006448
227.08	-423.67	0.006205	411.48	341.38	0.002385

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000878	0.001394	0.002077	0.002435	0.002718	0.002558	0.002328	0.002349	0.002081
1500.00	0.000943	0.001345	0.002223	0.003786	0.003783	0.003795	0.003193	0.003510	0.003391
1000.00	0.000967	0.001496	0.002407	0.006152	0.007332	0.005676	0.005238	0.005131	0.005845
500.00	0.000874	0.001433	0.002772	0.007078	0.010236	0.013914	0.015046	0.013381	0.018018
400.00	0.000839	0.001384	0.002718	0.007251	0.009932	0.014978	0.016405	0.018410	0.024416
300.00	0.000798	0.001317	0.002615	0.007536	0.010296	0.015074	0.020071	0.027856	0.043403
200.00	0.000751	0.001234	0.002456	0.007153	0.010343	0.014920	0.019452	0.040379	0.087146
100.00	0.000699	0.001127	0.002228	0.006700	0.008826	0.013270	0.019787	0.055722	0.296526
0.00	0.000641	0.001016	0.001925	0.005836	0.007834	0.009530	0.023334	0.069211	0.784411
-100.00	0.000629	0.000990	0.001848	0.005391	0.007528	0.009076	0.014598	0.061737	0.728553
-200.00	0.000136	0.000137	0.001856	0.005097	0.007173	0.012994	0.026085	0.041322	0.100781
-300.00	0.000632	0.000990	0.001757	0.005227	0.007248	0.009394	0.008969	0.018460	0.064523
-400.00	0.000629	0.000970	0.001548	0.002453	0.003047	0.004377	0.004374	0.008426	0.017345
-500.00	0.000623	0.000954	0.001505	0.002910	0.003669	0.003788	0.004633	0.004299	0.005527
-1000.00	0.000644	0.001145	0.002210	0.005043	0.005968	0.009023	0.012440	0.015806	0.018689
-1500.00	0.000749	0.001177	0.002133	0.004394	0.005534	0.006711	0.007883	0.009075	0.010232
-2000.00	0.000753	0.001177	0.001791	0.003727	0.004289	0.004856	0.005422	0.005979	0.006517

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

LIN003 0 E 0
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
NOTICE
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*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.001516	0.001060	0.000776	0.000654	0.000786	0.000297	0.000239	0.000620
1500.00	0.002722	0.002023	0.001708	0.001271	0.000685	0.000231	0.000224	0.000683
1000.00	0.004493	0.003715	0.002847	0.001786	0.001159	0.000331	0.000197	0.000284
500.00	0.011247	0.004027	0.003560	0.003736	0.002338	0.000311	0.000212	0.000273
400.00	0.011874	0.003855	0.003620	0.003848	0.003096	0.000292	0.000231	0.000368
300.00	0.015291	0.005511	0.003666	0.004245	0.003857	0.000265	0.000255	0.000422
200.00	0.018269	0.007603	0.004072	0.004108	0.004424	0.000516	0.000292	0.000336
100.00	0.048110	0.013783	0.004547	0.004162	0.004721	0.000724	0.000325	0.000302
0.00	0.029181	0.007420	0.003411	0.004834	0.000864	0.000357	0.000321	0.003674
-100.00	0.194670	0.069870	0.007893	0.004043	0.003482	0.001351	0.000390	0.000327
-200.00	0.088911	0.076536	0.047135	0.025331	0.004396	0.002448	0.001553	0.001072
-300.00	0.041061	0.020553	0.003886	0.002035	0.001911	0.001556	0.000569	0.000332
-400.00	0.012910	0.004699	0.003020	0.002193	0.001391	0.001371	0.000547	0.000348
-500.00	0.002249	0.002145	0.002019	0.001567	0.001425	0.001377	0.000576	0.000343
-1000.00	0.016654	0.009749	0.002703	0.001709	0.002084	0.001955	0.000740	0.000426
-1500.00	0.009452	0.006231	0.003791	0.002536	0.002469	0.001650	0.000775	0.000336
-2000.00	0.005577	0.004189	0.003816	0.003664	0.002472	0.001553	0.000862	0.000638

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.035910	-48.77	265.18	0.052235
36.58	259.08	0.043512	118.87	274.32	0.011976
246.89	237.74	0.004704	387.10	161.54	0.004253
36.58	-396.24	0.016945	120.40	-402.34	0.010179
158.50	-411.48	0.006499	192.02	-417.58	0.005263
227.08	-423.67	0.004730	411.48	341.38	0.004365

LINO03 1 E 0
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.002772	0.004121	0.006068	0.006602	0.007463	0.007125	0.006625	0.006782	0.006150
1500.00	0.002976	0.003963	0.005853	0.009718	0.009847	0.010156	0.008842	0.009874	0.009759
1000.00	0.002985	0.004619	0.006566	0.018974	0.020701	0.013407	0.013116	0.013500	0.015860
500.00	0.002654	0.004279	0.008082	0.018162	0.022934	0.031696	0.031863	0.027280	0.042120
400.00	0.002539	0.004102	0.007837	0.018321	0.024413	0.028884	0.031824	0.033145	0.052329
300.00	0.002406	0.003877	0.007445	0.017559	0.024760	0.033795	0.031072	0.045568	0.084123
200.00	0.002256	0.003585	0.006875	0.015375	0.021916	0.030217	0.032711	0.050217	0.133891
100.00	0.002090	0.003278	0.006129	0.014122	0.017221	0.023494	0.031704	0.068916	0.331674
0.00	0.001968	0.003085	0.005285	0.014294	0.016786	0.018246	0.039422	0.088728	0.178901
-100.00	0.001984	0.003098	0.005231	0.014619	0.018727	0.017765	0.030747	0.097796	0.301341
-200.00	0.000435	0.000442	0.005343	0.013776	0.019204	0.034339	0.056769	0.062669	0.099509
-300.00	0.001927	0.003007	0.004712	0.013078	0.016941	0.020712	0.019426	0.029872	0.086860
-400.00	0.001953	0.002818	0.003955	0.006679	0.008169	0.010925	0.010925	0.015786	0.032653
-500.00	0.001955	0.002922	0.004092	0.007639	0.009264	0.009557	0.011025	0.009962	0.013366
-1000.00	0.002073	0.003604	0.006715	0.012866	0.015122	0.021092	0.031869	0.041304	0.045224
-1500.00	0.002383	0.003683	0.006453	0.012167	0.015451	0.018872	0.022368	0.025831	0.028275
-2000.00	0.002391	0.003661	0.005449	0.010871	0.012558	0.014270	0.015990	0.017283	0.018672

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.005050	0.003591	0.002654	0.002247	0.002681	0.000978	0.000786	0.001833

LIN003 2E0

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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1500.00	0.009044	0.006828	0.005800	0.004366	0.002390	0.000763	0.000738	0.001942
1000.00	0.015145	0.012654	0.009826	0.006316	0.003677	0.001070	0.000639	0.000889
500.00	0.041569	0.015214	0.011021	0.011418	0.007131	0.000967	0.000703	0.000899
400.00	0.045293	0.012940	0.010869	0.011547	0.009061	0.000927	0.000769	0.001192
300.00	0.065110	0.015869	0.010251	0.012137	0.010606	0.000874	0.000850	0.001357
200.00	0.102268	0.019958	0.010192	0.010683	0.012122	0.001698	0.000978	0.001107
100.00	0.282014	0.033488	0.011378	0.011808	0.013685	0.002371	0.001088	0.001004
0.00	0.029482	0.013002	0.007401	0.012300	0.002369	0.001146	0.001044	0.012372
-100.00	0.499762	0.180339	0.018791	0.010589	0.009436	0.003990	0.001239	0.001051
-200.00	0.251337	0.189743	0.126670	0.062916	0.011972	0.006698	0.004306	0.002968
-300.00	0.118959	0.039776	0.009313	0.006107	0.005664	0.004614	0.001805	0.001073
-400.00	0.041683	0.014955	0.007587	0.005797	0.004321	0.004139	0.001749	0.001126
-500.00	0.009320	0.008587	0.005469	0.004274	0.003979	0.004167	0.001838	0.001113
-1000.00	0.047815	0.026292	0.008796	0.005818	0.005456	0.005361	0.002322	0.001370
-1500.00	0.028266	0.017029	0.010816	0.007573	0.007215	0.004383	0.002322	0.001096
-2000.00	0.015921	0.011650	0.010611	0.010190	0.006992	0.004005	0.002446	0.001907

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.057691	-48.77	265.18	0.085184
36.58	259.08	0.135056	118.87	274.32	0.054059
246.89	237.74	0.012284	387.10	161.54	0.011026
36.58	-396.24	0.042003	120.40	-402.34	0.034488
158.50	-411.48	0.023504	192.02	-417.58	0.017571
227.08	-423.67	0.013484	411.48	341.38	0.012822

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN M' 'GRAMS/M**3 **

LIN003 EEB
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 034

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.007780	0.005736	0.004410	0.003775	0.004234	0.001600	0.001284	0.002673
1500.00	0.013649	0.010473	0.008913	0.006825	0.004049	0.001441	0.001320	0.002913
1000.00	0.023075	0.019108	0.014834	0.009791	0.006026	0.002127	0.001344	0.001565
500.00	0.062436	0.025676	0.018308	0.017868	0.011991	0.002631	0.001823	0.001822
400.00	0.070529	0.024402	0.018952	0.019212	0.015002	0.002890	0.002016	0.002262
300.00	0.100132	0.031566	0.020375	0.021222	0.018503	0.003026	0.002228	0.002531
200.00	0.155520	0.044845	0.024316	0.022357	0.022396	0.004385	0.002495	0.002244
100.00	0.371391	0.080031	0.033181	0.027139	0.026260	0.005730	0.002812	0.002192
0.00	0.179415	0.070060	0.034705	0.031386	0.012679	0.004437	0.002877	0.001988
-100.00	0.764106	0.287633	0.049053	0.028419	0.022337	0.008137	0.003094	0.002299

Y-COORD (METERS)	X-COORD (METERS) -2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.003859	0.005845	0.008643	0.009923	0.011148	0.010729	0.010078	0.010330	0.009523
1500.00	0.004138	0.005639	0.008673	0.014725	0.014996	0.015484	0.013732	0.015237	0.015194
1000.00	0.004182	0.006467	0.009615	0.026588	0.030066	0.021611	0.021268	0.021982	0.025577
500.00	0.003724	0.006032	0.011568	0.027241	0.036138	0.049467	0.053363	0.050080	0.072127
400.00	0.003567	0.005795	0.011195	0.027461	0.037242	0.048476	0.055257	0.064394	0.093994
300.00	0.003385	0.005490	0.010646	0.027232	0.037888	0.053542	0.059279	0.091396	0.154863
200.00	0.003179	0.005098	0.009884	0.024467	0.035328	0.049804	0.061163	0.112686	0.273416
100.00	0.002955	0.004676	0.008894	0.022559	0.028535	0.040923	0.060388	0.150153	0.714363
0.00	0.002765	0.004353	0.007700	0.021677	0.026825	0.031481	0.069802	0.178707	1.120947
-100.00	0.002758	0.004318	0.007513	0.021429	0.026373	0.030365	0.052513	0.183064	1.119287
-200.00	0.000717	0.000809	0.007626	0.020469	0.028549	0.051065	0.090350	0.120957	0.239922
-300.00	0.002704	0.004224	0.006915	0.019783	0.026534	0.034192	0.034912	0.062314	0.174731
-400.00	0.002726	0.004011	0.005996	0.019764	0.013800	0.018670	0.021008	0.034513	0.065654
-500.00	0.002720	0.004104	0.006080	0.012345	0.015173	0.016376	0.021246	0.022209	0.030261
-1000.00	0.002874	0.005014	0.009500	0.019115	0.022872	0.032348	0.047060	0.060397	0.067944
-1500.00	0.003303	0.005155	0.009069	0.017640	0.022264	0.027071	0.031949	0.036810	0.040703
-2000.00	0.003327	0.005109	0.007636	0.015447	0.017801	0.020186	0.022575	0.024528	0.026602

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1973 data *** 06/27/92
*** 12:08:18
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 035

Y-COORD (METERS)	X-COORD (METERS)									
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00	
2000.00	0.002772	0.004121	0.006068	0.006602	0.007463	0.007125	0.006625	0.006782	0.006150	
1500.00	0.002976	0.003963	0.005853	0.009718	0.009847	0.010156	0.008842	0.009874	0.009759	
1000.00	0.002985	0.004619	0.006566	0.018	0.020701	0.013407	0.013116	0.013500	0.015	
500.00	0.002654	0.004279	0.008082	0.018	0.022934	0.031696	0.031863	0.027280	0.04	

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***

INCLUDING SOURCE(S): 4

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)									
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00	
-200.00	0.377517	0.290839	0.189917	0.099414	0.024911	0.011876	0.007313	0.004959		
-300.00	0.181338	0.076386	0.025125	0.017708	0.014571	0.008979	0.003806	0.002318		
-400.00	0.068936	0.031779	0.019534	0.015347	0.012072	0.008220	0.003693	0.002376		
-500.00	0.022194	0.019650	0.014821	0.011338	0.010523	0.007900	0.003834	0.002343		
-1000.00	0.068388	0.039527	0.014690	0.010331	0.010081	0.008989	0.004163	0.002580		
-1500.00	0.039876	0.025256	0.016462	0.011816	0.011238	0.007110	0.003968	0.002090		
-2000.00	0.022894	0.017156	0.015676	0.015032	0.010568	0.006329	0.003959	0.003098		

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***

INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.113929	-48.77	265.18	0.164800
36.58	259.08	0.213117	118.87	274.32	0.086471
246.89	237.74	0.027162	387.10	161.54	0.024601
36.58	-396.24	0.075794	120.40	-402.34	0.058366
158.50	-411.48	0.042276	192.02	-417.58	0.034712
227.08	-423.67	0.028650	411.48	341.38	0.021168

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1973 data *** 06/27/92

*** 12:08:18

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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1973 data *** 06/27/92

*** 12:08:18

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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

0.00	0.002539	0.004102	0.007837	0.0183	0.024413	0.028884	0.031824	0.033145	0.052
300.00	0.002406	0.003877	0.007445	0.017559	0.024760	0.033795	0.031072	0.045568	0.084123
200.00	0.002256	0.003585	0.006875	0.015375	0.021916	0.030217	0.032711	0.050217	0.133891
100.00	0.002090	0.003278	0.006129	0.014122	0.017221	0.023494	0.031704	0.068916	0.331674
0.00	0.001968	0.003085	0.005285	0.014294	0.016786	0.018246	0.039422	0.088728	0.178901
-100.00	0.001984	0.003098	0.005231	0.014619	0.018727	0.017765	0.030747	0.097796	0.301341
-200.00	0.000435	0.000442	0.005343	0.013776	0.019204	0.034339	0.056769	0.062669	0.099509
-300.00	0.001927	0.003007	0.004712	0.013078	0.016941	0.020712	0.019426	0.029872	0.086860
-400.00	0.001953	0.002818	0.003955	0.006679	0.008169	0.010925	0.010925	0.015786	0.032653
-500.00	0.001955	0.002922	0.004092	0.007639	0.009264	0.009557	0.011025	0.009962	0.013366
-1000.00	0.002073	0.003604	0.006715	0.012866	0.015122	0.021092	0.031869	0.041304	0.045224
-1500.00	0.002383	0.003683	0.006453	0.012167	0.015451	0.018872	0.022368	0.025831	0.028275
-2000.00	0.002391	0.003661	0.005449	0.010871	0.012558	0.014270	0.015990	0.017283	0.018672

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.005050	0.003591	0.002654	0.002247	0.002681	0.000978	0.000786	0.001833
1500.00	0.009044	0.006828	0.005800	0.004366	0.002390	0.000763	0.000738	0.001942
1000.00	0.015145	0.012654	0.009826	0.006316	0.003677	0.001070	0.000639	0.000889
500.00	0.041569	0.015214	0.011021	0.011418	0.007131	0.000967	0.000703	0.000899
400.00	0.045293	0.012940	0.010869	0.011547	0.009061	0.000927	0.000769	0.001192
300.00	0.065110	0.015869	0.010251	0.012137	0.010606	0.000874	0.000850	0.001357
200.00	0.102268	0.019958	0.010192	0.010683	0.012122	0.001698	0.000978	0.001107
100.00	0.282014	0.033488	0.011378	0.011808	0.013685	0.002371	0.001088	0.001004
0.00	0.029482	0.013002	0.007401	0.012300	0.002369	0.001146	0.001044	0.012372
-100.00	0.499762	0.180339	0.018791	0.010589	0.009436	0.003990	0.001239	0.001051
-200.00	0.251337	0.189743	0.126670	0.062916	0.011972	0.006698	0.004306	0.002968
-300.00	0.118959	0.039776	0.009313	0.006107	0.005664	0.004614	0.001805	0.001073
-400.00	0.041683	0.014955	0.007587	0.005797	0.004321	0.004139	0.001749	0.001126
-500.00	0.009320	0.008587	0.005469	0.004274	0.003979	0.004167	0.001838	0.001113
-1000.00	0.047815	0.026292	0.008796	0.005818	0.005456	0.005361	0.002322	0.001370
-1500.00	0.028266	0.017029	0.010816	0.007573	0.007215	0.004383	0.002322	0.001096
-2000.00	0.015921	0.011650	0.010611	0.010190	0.006992	0.004005	0.002446	0.001907

LIN003 0396
LINEMASTER SWITCH ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4 .

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.057691	-48.77	265.18	0.085184
36.58	259.08	0.135056	118.87	274.32	0.054059
246.89	237.74	0.012284	387.10	161.54	0.011026
36.58	-396.24	0.042003	120.40	-402.34	0.034488
158.50	-411.48	0.023504	192.02	-417.58	0.017571
227.08	-423.67	0.013484	411.48	341.38	0.012822

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

** Message Summary For ISC2 Model Execution ***

--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified f GRID CAR
250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified RID CAR

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0 3 8

```
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

**********************************************
*** ISCLT2 finishes Successfully ***
**********************************************
```

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 039

E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250 64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

********** ISCLT2 finishes Successfully ***
****

O ECHO

*** Message Summary for ISC2 Model Setup ***

--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

********** FATAL ERROR MESSAGES **********
*** NONE ***

********** WARNING MESSAGES **********
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250 62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

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E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   62 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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E W250   63 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250   64 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR

************************************
** SETUP Finishes Successfully ***
************************************

 *** ISCLT2 - VERSION 92062 ***    *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1974 data      ***        06/27/92
                                 ***                                                                       ***        12:02:40
                                                                                                                      PAGE   1

*** MODELING OPTIONS USED:  CONC   RURAL  ELEV          DFAULT

                                      ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

*Model Is Setup For Calculation of Average CONCentration Values.

*Model Uses RURAL Dispersion.

*Model Uses Regulatory DEFAULT Options:
         1. Final Plume Rise.
         2. Stack-tip Downwash.
         3. Buoyancy-induced Dispersion.
         4. Default Wind Profile Exponents.
         5. Default Vertical Potential Temperature Gradients.
         6. "Upper Bound" Values For Supersquat Buildings.
         7. No Exponential Decay for RURAL Mode

*Model Accepts Receptors on ELEV Terrain.

*Model Assumes No FLAGPOLE Receptor Heights.

*Model Calculates   1 STAR Average(s) for the Following Months:  0  0  0  0  0  0  0  0  0  0  0  0
                                                Seasons/Quarters:  0  0  0  0
                                                     and Annual:  1
```

LIN003 0 h 0

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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*Model Assumes 1 STAR Summaries In Data File for the Averaging Periods Identified Above

*This Run Includes: 4 Source(s); 2 Source Group(s); and 301 Receptor(s)

*The Model Assumes A Pollutant Type of: OTHER

*Model Set To Continue RUNning After the Setup Testing.

*Output Options Selected:
Model Outputs Tables of Long Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of Long Term Values for Plotting (PLOTFILE Keyword)

*Misc. Inputs: Anem. Hgt. (m) = 10.00 : Decay Coef. = 0.0000 : Rot. Angle = ' 0.0
Emission Units = GRAMS/SEC : Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

*Input Runstream File: G:\BEE\IN\LNMAST.DTA : **Output Print File: G:\BEE\IN\LNMAST.LST

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
3	0	0.51100E-02	3.0	-27.4	173.7	0.00	294.26	8.54	0.15	YES	
4	0	0.18500E-01	64.0	39.6	165.2	12.80	294.26	0.61	1.22	YES	

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HT (METERS)	WIDTH OF AREA (METERS)	EMISSION RATE SCALAR VARY BY

LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 042

*** ISCLT2 - VERSION 92062 *** *** ISCLT modelling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92

SOURCE ID: 4															
IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	79.1,	0	2	8.5,	79.1,	0	3	8.5,	79.1,	0	4	8.5,	79.1,	0
5	8.5,	79.1,	0	6	8.5,	79.1,	0	7	8.5,	79.1,	0	8	8.5,	79.1,	0
9	8.5,	79.1,	0	10	8.5,	79.1,	0	11	8.5,	79.1,	0	12	8.5,	79.1,	0
13	8.5,	79.1,	0	14	8.5,	79.1,	0	15	8.5,	79.1,	0	16	8.5,	79.1,	0
SOURCE ID: 3															
IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	8.5,	79.1,	0	2	8.5,	79.1,	0	3	8.5,	79.1,	0	4	8.5,	79.1,	0
5	8.5,	79.1,	0	6	8.5,	79.1,	0	7	8.5,	79.1,	0	8	8.5,	79.1,	0
9	8.5,	79.1,	0	10	8.5,	79.1,	0	11	8.5,	79.1,	0	12	8.5,	79.1,	0
13	8.5,	79.1,	0	14	8.5,	79.1,	0	15	8.5,	79.1,	0	16	8.5,	79.1,	0

*** ISCLT2 - VERSION 92062 *** *** ISCLT modelling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

*** SOURCE IDs DEFINING SOURCE GROUPS ***

ROUP ID SOURCE IDs

1 1 , 2 , 3 , 4 ,

2 4

*** ISCLT2 - VERSION 92062 *** *** ISCLT modelling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92
*** 12:02:40
PAGE 5

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

1	0	0.57910E-06	0.0	0.0	173.7	0.00	29.03
2	0	0.57750E-07	-15.2	-3.0	173.7	0.00	108.51

*** ISCLT2 - VERSION 92062 *** *** ISCLT modelling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92
*** 12:02:40
PAGE 4

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 043

400.00	175.26	170.69	161.54	141	140.21	142.65	139.60	141.43	14
300.00	172.21	175.26	167.64	164	161.54	156.97	149.35	152.40	156
200.00	92.05	87.17	173.74	182.88	171.60	178.31	174.65	162.15	157.58
100.00	175.87	185.93	170.69	181.36	175.26	162.76	162.15	169.16	174.96
0.00	175.56	179.83	171.30	173.74	167.64	160.93	169.16	173.74	164.59
100.00	179.83	187.45	182.88	167.64	164.59	163.68	161.54	164.59	170.69
200.00	185.93	187.45	188.98	166.73	168.55	167.64	160.93	160.63	160.02
300.00	188.67	183.49	194.16	169.47	171.30	170.69	160.93	156.36	155.14
400.00	188.37	184.40	192.63	170.69	171.91	168.55	158.50	151.49	149.96
500.00	189.59	181.36	186.54	171.91	172.52	168.55	158.50	147.83	147.83
1000.00	188.98	179.83	167.03	182.27	170.69	147.83	140.51	135.94	135.64
1500.00	188.67	170.69	158.50	153.92	147.83	143.26	133.81	133.50	129.54
2000.00	192.02	170.69	164.59	142.65	143.26	137.16	130.45	128.02	121.01

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00

*** ELEVATION HEIGHTS IN METERS ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

-2000.0, -1500.0, -1000.0, -500.0, -400.0, -300.0, -200.0, -100.0, 0.0, 100.0,
200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

*** Y-COORDINATES OF GRID ***
(METERS)

-2000.0, -1500.0, -1000.0, -500.0, -400.0, -300.0, -200.0, -100.0, 0.0, 100.0,
200.0, 300.0, 400.0, 500.0, 1000.0, 1500.0, 2000.0,

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92
*** 12:02:40
PAGE 7

*** MODELING OPTIONS USED: CONC RURAL ELEV DEFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

*** 12:02:40
PAGE 6

*** MODELING OPTIONS USED: CONC RURAL ELEV DEFAULT

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0044

(-94.5, 274.3, 159.4, 0.0): (-48.8, 265.2, 160.3, 0.0):
(36.6, 259.1, 156.7, 0.0): (118.9, 274.3, 151.2, 0.0):

(METERS)
(X-COORD, Y-COORD, ZELEV, ZFLAG)
*** DISCRETE CARTESIAN RECEPTORS ***

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92
*** 12:02:40
PAGE 9

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	112.78	103.63	96.62	95.10	106.98	97.23	95.10	145.39
1500.00	126.49	121.92	121.92	118.87	106.68	87.48	92.05	138.38
1000.00	133.81	135.03	135.94	134.11	128.02	100.58	87.17	103.02
500.00	146.61	139.90	143.26	146.91	140.21	100.58	87.48	92.96
400.00	146.91	141.12	142.65	146.30	144.17	99.06	87.48	100.58
300.00	150.88	145.69	142.34	146.30	146.00	94.49	87.78	102.72
200.00	155.45	149.05	143.26	144.17	146.30	107.29	89.31	92.96
100.00	164.59	153.62	143.26	141.73	143.26	111.86	89.92	87.17
0.00	153.92	144.78	137.16	139.60	117.04	92.96	87.17	175.87
-100.00	169.16	163.07	143.26	136.55	134.72	121.31	92.05	87.17
-200.00	165.51	172.21	167.64	160.02	137.16	132.59	128.02	123.44
-300.00	158.50	152.40	134.11	126.49	124.97	123.44	102.11	87.17
-400.00	144.78	137.16	131.06	125.58	118.87	120.40	100.58	88.39
-500.00	121.92	126.49	125.58	120.40	117.35	120.09	101.50	87.48
-1000.00	168.55	152.40	128.02	123.44	128.02	127.10	106.68	92.96
-1500.00	170.08	150.88	138.68	131.06	134.11	128.93	107.29	82.30
-2000.00	159.41	147.83	146.91	148.44	137.16	133.50	115.82	106.68

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92
*** 12:02:40
PAGE 8

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	184.40	189.59	177.39	185.93	185.93	182.88	179.83	174.35	172.82
1500.00	185.32	192.63	182.88	179.53	180.75	182.27	179.22	178.31	173.74
1000.00	198.12	206.96	180.44	167.64	169.16	170.08	176.17	176.78	169.16
500.00	178.31	182.88	156.67	14.	143.26	140.21	140.21	131.06	12

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 - 045

*** AVERAGE AMBIENT AIR TEMPERATURE (KELVIN) ***

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00
B	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00
C	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00
D	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00	.000000E+00
E	.200000E-01	.200000E-01	.200000E-01	.200000E-01	.200000E-01	.200000E-01
F	.350000E-01	.350000E-01	.350000E-01	.350000E-01	.350000E-01	.350000E-01

STABILITY STABILITY STABILITY STABILITY STABILITY STABILITY

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	WIND SPEED CATEGORY 1	2	3	4	5	6
A	.700000E-01	.700000E-01	.700000E-01	.700000E-01	.700000E-01	.700000E-01
B	.700000E-01	.700000E-01	.700000E-01	.700000E-01	.700000E-01	.700000E-01
C	.100000E+00	.100000E+00	.100000E+00	.100000E+00	.100000E+00	.100000E+00
D	.150000E+00	.150000E+00	.150000E+00	.150000E+00	.150000E+00	.150000E+00
E	.350000E+00	.350000E+00	.350000E+00	.350000E+00	.350000E+00	.350000E+00
F	.550000E+00	.550000E+00	.550000E+00	.550000E+00	.550000E+00	.550000E+00

*** WIND PROFILE EXPONENTS ***

1.50, 2.50, 4.30, 6.80, 9.50, 12.50,

*** AVERAGE SPEED FOR EACH WIND SPEED CATEGORY ***
(METERS/SEC)

(246.9, 237.7, 144.5, 0.0): (387.1, 161.5, 143.9, 0.0);
(36.6, -396.2, 144.5, 0.0): (120.4, -402.3, 143.3, 0.0);
(158.5, -411.5, 140.2, 0.0): (192.0, -417.6, 138.4, 0.0);
(227.1, -423.7, 137.2, 0.0): (411.5, 341.4, 147.8, 0.0);

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92
*** 12:02:40
PAGE 10

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

	CATEGORY A	CATEGORY B	CATEGORY C	CATEGORY D	CATEGORY E	CATEGORY F
ANNUAL	298.4000	292.8000	289.0000	283.1000	280.1000	278.1000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** AVERAGE MIXING LAYER HEIGHT (METERS) ***

ANNUAL

	WIND SPEED CATEGORY 1	WIND SPEED CATEGORY 2	WIND SPEED CATEGORY 3	WIND SPEED CATEGORY 4	WIND SPEED CATEGORY 5	WIND SPEED CATEGORY 6
STABILITY CATEGORY A	1914.8000	1652.4000	1652.4000	1652.4000	1652.4000	1652.4000
STABILITY CATEGORY B	940.2000	1443.9000	1759.4000	1759.4000	1759.4000	1759.4000
STABILITY CATEGORY C	834.1000	1092.9000	1515.9000	1865.6000	1658.7000	1747.4000
STABILITY CATEGORY D	868.3000	981.2000	1302.3000	1428.5000	1471.7000	1400.3000
STABILITY CATEGORY E	0.0000	1387.4000	1559.7000	1559.7000	1559.7000	1559.7000
STABILITY CATEGORY F	1475.6000	1669.9000	1669.9000	1669.9000	1669.9000	1669.9000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LNMAST.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY A

ANNUAL: STABILITY CATEGORY A

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
22.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
45.000	0.00000000	0.00034000	0.00000000	0.00000000	0.00000000	0.00000000
67.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
90.000	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
112.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
135.000	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
157.500	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
180.000	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000

LIN003 0 4 6
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0 4 7

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

FILE: G:\BEE\IN\LMMAST.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY C

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00077000	0.00297000	0.00103000	0.00000000	0.00000000	0.00000000
22.500	0.00037000	0.00103000	0.00080000	0.00000000	0.00000000	0.00000000
45.000	0.00026000	0.00103000	0.00046000	0.00000000	0.00000000	0.00000000
67.500	0.00083000	0.00068000	0.00046000	0.00000000	0.00000000	0.00000000
90.000	0.00060000	0.00091000	0.00023000	0.00000000	0.00000000	0.00000000
112.500	0.00095000	0.00080000	0.00034000	0.00000000	0.00000000	0.00000000
135.000	0.00049000	0.00114000	0.00080000	0.00000000	0.00000000	0.00000000
157.500	0.00061000	0.00126000	0.00091000	0.00000000	0.00000000	0.00000000
180.000	0.00061000	0.00137000	0.00194000	0.00000000	0.00000000	0.00000000
202.500	0.00037000	0.00068000	0.00057000	0.00000000	0.00000000	0.00000000
225.000	0.00025000	0.00068000	0.00034000	0.00000000	0.00000000	0.00000000
247.500	0.00048000	0.00057000	0.00103000	0.00000000	0.00000000	0.00000000
270.000	0.00096000	0.00126000	0.00103000	0.00000000	0.00000000	0.00000000
292.500	0.00002000	0.00103000	0.00057000	0.00000000	0.00000000	0.00000000
315.000	0.00026000	0.00126000	0.00057000	0.00000000	0.00000000	0.00000000
337.500	0.00015000	0.00148000	0.00046000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY B

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
202.500	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
225.000	0.00011000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
247.500	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
270.000	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
292.500	0.00000000	0.00011000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00000000	0.00023000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00000000	0.00057000	0.00000000	0.00000000	0.00000000	0.00000000

*** ISCLT2 - VERSION 92062 *** *** ISCLT modeling of Linemaster Switch for RI/FS - TCE - 1974 data *** 06/27/92
*** 12:02:40
PAGE 13

ES)						
0.000	0.00234000	0.00354000	0.00571000	0.00034000	0.00000000	0.00000000
22.500	0.00110000	0.00126000	0.00377000	0.00023000	0.00000000	0.00000000
45.000	0.00060000	0.00046000	0.00171000	0.00057000	0.00011000	0.00000000
67.500	0.00072000	0.00046000	0.00080000	0.00046000	0.00000000	0.00000000
90.000	0.00071000	0.00023000	0.00023000	0.00011000	0.00011000	0.00000000
112.500	0.00085000	0.00103000	0.00057000	0.00023000	0.00000000	0.00000000
135.000	0.00074000	0.00114000	0.00171000	0.00000000	0.00000000	0.00000000
157.500	0.00054000	0.00240000	0.00194000	0.00057000	0.00000000	0.00000000
180.000	0.00058000	0.00365000	0.00628000	0.00228000	0.00011000	0.00000000
202.500	0.00015000	0.00103000	0.00457000	0.00114000	0.00011000	0.00000000
225.000	0.00085000	0.00091000	0.00320000	0.00137000	0.00011000	0.00000000
247.500	0.00098000	0.00114000	0.00308000	0.00091000	0.00000000	0.00000000
270.000	0.00029000	0.00194000	0.00342000	0.00091000	0.00000000	0.00000000
292.500	0.00074000	0.00114000	0.00251000	0.00091000	0.00034000	0.00011000
315.000	0.00073000	0.00091000	0.00331000	0.00091000	0.00023000	0.00000000
337.500	0.00039000	0.00137000	0.00342000	0.00000000	0.00000000	0.00000000

ANNUAL: STABILITY CATEGORY D

IRECTION DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.00697000	0.02534000	0.03973000	0.02888000	0.00251000	0.00000000
22.500	0.00360000	0.00856000	0.01119000	0.00651000	0.00068000	0.00000000
45.000	0.00230000	0.00605000	0.00457000	0.00422000	0.00023000	0.00000000
67.500	0.00214000	0.00251000	0.00148000	0.00091000	0.00000000	0.00000000
90.000	0.00085000	0.00308000	0.00205000	0.00068000	0.00011000	0.00000000
112.500	0.00208000	0.00388000	0.00240000	0.00160000	0.00000000	0.00000000
135.000	0.00214000	0.00514000	0.00651000	0.00354000	0.00011000	0.00000000
157.500	0.00142000	0.00788000	0.01701000	0.00845000	0.00114000	0.00000000
180.000	0.00329000	0.01233000	0.03961000	0.03413000	0.00571000	0.00011000
202.500	0.00065000	0.00388000	0.00959000	0.01119000	0.00114000	0.00011000
225.000	0.00099000	0.00342000	0.00753000	0.00639000	0.00080000	0.00000000
247.500	0.00095000	0.00251000	0.00537000	0.00639000	0.00160000	0.00034000
270.000	0.00268000	0.00388000	0.00731000	0.00993000	0.00331000	0.00080000
292.500	0.00248000	0.00479000	0.00902000	0.02340000	0.00696000	0.00137000
315.000	0.00207000	0.00639000	0.01564000	0.03413000	0.00959000	0.00148000
337.500	0.00353000	0.01244000	0.01564000	0.01918000	0.00148000	0.00011000

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** FREQUENCY OF OCCURRENCE OF WIND SPEED, DIRECTION AND STABILITY ***

LIN003 8h8
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 049

FILE: G:\BEE\IN\LNMAST.ISC FORMAT: (7X,6F7.0)
SURFACE STATION NO.: 99999 UPPER AIR STATION NO.: 99999
NAME: UNKNOWN NAME: UNKNOWN
YEAR: 1990 YEAR: 1990

ANNUAL: STABILITY CATEGORY E

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.000000000	0.006510000	0.009020000	0.000000000	0.000000000	0.000000000
22.500	0.000000000	0.002050000	0.001260000	0.000000000	0.000000000	0.000000000
45.000	0.000000000	0.001710000	0.000110000	0.000000000	0.000000000	0.000000000
67.500	0.000000000	0.000230000	0.000000000	0.000000000	0.000000000	0.000000000
90.000	0.000000000	0.000230000	0.000110000	0.000000000	0.000000000	0.000000000
112.500	0.000000000	0.001710000	0.000230000	0.000000000	0.000000000	0.000000000
135.000	0.000000000	0.002171000	0.000910000	0.000000000	0.000000000	0.000000000
157.500	0.000000000	0.003770000	0.003200000	0.000000000	0.000000000	0.000000000
180.000	0.000000000	0.008220000	0.014840000	0.000000000	0.000000000	0.000000000
202.500	0.000000000	0.001940000	0.003080000	0.000000000	0.000000000	0.000000000
225.000	0.000000000	0.003310000	0.001830000	0.000000000	0.000000000	0.000000000
247.500	0.000000000	0.003650000	0.003200000	0.000000000	0.000000000	0.000000000
270.000	0.000000000	0.003540000	0.003880000	0.000000000	0.000000000	0.000000000
292.500	0.000000000	0.003200000	0.007880000	0.000000000	0.000000000	0.000000000
315.000	0.000000000	0.005020000	0.010960000	0.000000000	0.000000000	0.000000000
337.500	0.000000000	0.004910000	0.008560000	0.000000000	0.000000000	0.000000000

ANNUAL: STABILITY CATEGORY F

DIRECTION (DEGREES)	WIND SPEED CATEGORY 1 (1.500 M/S)	WIND SPEED CATEGORY 2 (2.500 M/S)	WIND SPEED CATEGORY 3 (4.300 M/S)	WIND SPEED CATEGORY 4 (6.800 M/S)	WIND SPEED CATEGORY 5 (9.500 M/S)	WIND SPEED CATEGORY 6 (12.500 M/S)
0.000	0.010920000	0.009360000	0.000000000	0.000000000	0.000000000	0.000000000
22.500	0.005410000	0.002170000	0.000000000	0.000000000	0.000000000	0.000000000
45.000	0.004520000	0.001260000	0.000000000	0.000000000	0.000000000	0.000000000
67.500	0.002010000	0.000680000	0.000000000	0.000000000	0.000000000	0.000000000
90.000	0.001060000	0.000230000	0.000000000	0.000000000	0.000000000	0.000000000
112.500	0.002010000	0.000680000	0.000000000	0.000000000	0.000000000	0.000000000
135.000	0.004240000	0.002050000	0.000000000	0.000000000	0.000000000	0.000000000
157.500	0.004580000	0.004790000	0.000000000	0.000000000	0.000000000	0.000000000
180.000	0.008970000	0.011190000	0.000000000	0.000000000	0.000000000	0.000000000
202.500	0.002150000	0.001830000	0.000000000	0.000000000	0.000000000	0.000000000
225.000	0.003190000	0.002970000	0.000000000	0.000000000	0.000000000	0.000000000
247.500	0.006430000	0.006280000	0.000000000	0.000000000	0.000000000	0.000000000
270.000	0.009980000	0.006960000	0.000000000	0.000000000	0.000000000	0.000000000

2.500	0.00736000	0.00651000	0.00000000	0.00000000	0.00000000	0.00000000
315.000	0.00757000	0.00616000	0.00000000	0.00000000	0.00000000	0.00000000
337.500	0.00737000	0.00970000	0.00000000	0.00000000	0.00000000	0.00000000

SUM OF FREQUENCIES, FTOTAL = 0.99975

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000092	0.000136	0.000193	0.000356	0.000398	0.000439	0.000480	0.000520	0.000562
1500.00	0.000094	0.000145	0.000244	0.000461	0.000547	0.000635	0.000722	0.000807	0.000894
1000.00	0.000087	0.000148	0.000281	0.000592	0.000761	0.000979	0.001225	0.001470	0.001718
500.00	0.000070	0.000118	0.000270	0.000892	0.001245	0.001665	0.002562	0.004027	0.005589
400.00	0.000067	0.000113	0.000234	0.000895	0.001311	0.001972	0.002785	0.005354	0.008145
300.00	0.000063	0.000106	0.000223	0.000904	0.001316	0.002149	0.003611	0.007948	0.013118
200.00	0.000058	0.000098	0.000205	0.000768	0.001337	0.002134	0.004233	0.008677	0.025386
100.00	0.000053	0.000089	0.000181	0.000660	0.000990	0.001635	0.004339	0.012665	0.076154
0.00	0.000050	0.000083	0.000166	0.000590	0.000886	0.001479	0.002971	0.008785	0.145595
-100.00	0.000052	0.000085	0.000171	0.000592	0.000870	0.001683	0.003642	0.012646	0.057593
-200.00	0.000054	0.000090	0.000182	0.000756	0.001127	0.001883	0.004283	0.008046	0.023069
-300.00	0.000057	0.000094	0.000188	0.000797	0.001172	0.002160	0.003069	0.006858	0.012628
-400.00	0.000058	0.000096	0.000213	0.000804	0.001308	0.001730	0.002340	0.004966	0.008072
-500.00	0.000060	0.000098	0.000233	0.000885	0.001112	0.001440	0.002419	0.003833	0.005639
-1000.00	0.000074	0.000132	0.000274	0.000519	0.000700	0.000940	0.001215	0.001492	0.001805
-1500.00	0.000086	0.000141	0.000220	0.000439	0.000537	0.000637	0.000738	0.000838	0.000951
-2000.00	0.000089	0.000124	0.000172	0.000353	0.000402	0.000450	0.000499	0.000546	0.000601

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

LIN003 0 5 0
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000516	0.000463	0.000410	0.000356	0.000304	0.000121	0.000108	0.000095
1500.00	0.000798	0.000687	0.000576	0.000465	0.000359	0.000180	0.000153	0.000134
1000.00	0.001446	0.001134	0.000826	0.000545	0.000383	0.000305	0.000241	0.000189
500.00	0.003939	0.002199	0.001238	0.001079	0.001059	0.000586	0.000387	0.000266
400.00	0.005239	0.002225	0.001672	0.001621	0.001306	0.000708	0.000420	0.000281
300.00	0.007242	0.002960	0.002817	0.002096	0.001715	0.000793	0.000451	0.000294
200.00	0.011361	0.006138	0.003913	0.003040	0.002502	0.000883	0.000480	0.000307
100.00	0.022913	0.012288	0.006578	0.004251	0.002986	0.000961	0.000505	0.000319
0.00	0.068405	0.018741	0.009159	0.005477	0.003662	0.001066	0.000542	0.000336
-100.00	0.033639	0.014272	0.008910	0.004795	0.003329	0.001029	0.000531	0.000331
-200.00	0.019826	0.010903	0.006483	0.004350	0.003273	0.000999	0.000525	0.000329
-300.00	0.010382	0.006893	0.005438	0.003737	0.002791	0.000953	0.000514	0.000326
-400.00	0.006995	0.005421	0.003970	0.003282	0.002448	0.000958	0.000499	0.000321
-500.00	0.005041	0.004018	0.003057	0.002587	0.002213	0.000885	0.000481	0.000314
-1000.00	0.001711	0.001545	0.001363	0.001174	0.001023	0.000685	0.000424	0.000285
-1500.00	0.000918	0.000862	0.000800	0.000735	0.000668	0.000469	0.000353	0.000256
-2000.00	0.000585	0.000559	0.000531	0.000501	0.000470	0.000335	0.000276	0.000223

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 1 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.009119	-48.77	265.18	0.012054
36.58	259.08	0.014886	118.87	274.32	0.007095
246.89	237.74	0.004197	387.10	161.54	0.004032
36.58	-396.24	0.008308	120.40	-402.34	0.006562
158.50	-411.48	0.005703	192.02	-417.58	0.005535
227.08	-423.67	0.004325	411.48	341.38	0.001784

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRA( ) VALUES FOR SOURCE: 2 ***

150
LIN0033
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000127	0.000185	0.000257	0.000485	0.000535	0.000584	0.000633	0.000680	0.000741
1500.00	0.000124	0.000200	0.000323	0.000667	0.000741	0.000841	0.000939	0.001035	0.001158
1000.00	0.000119	0.000192	0.000380	0.000744	0.001096	0.001387	0.001572	0.001823	0.002142
500.00	0.000090	0.000146	0.000371	0.001122	0.001667	0.001971	0.003449	0.005000	0.006182
400.00	0.000086	0.000141	0.000309	0.000976	0.001581	0.002505	0.003796	0.006848	0.008728
300.00	0.000082	0.000134	0.000260	0.001090	0.001428	0.002457	0.004172	0.009031	0.013526
200.00	0.000077	0.000126	0.000245	0.000898	0.001426	0.002261	0.004461	0.012250	0.025349
100.00	0.000078	0.000129	0.000255	0.000786	0.001094	0.001949	0.003744	0.011716	0.007565
0.00	0.000076	0.000124	0.000243	0.000741	0.001029	0.001850	0.003540	0.010956	0.016715
-100.00	0.000071	0.000113	0.000216	0.000789	0.001257	0.001987	0.004002	0.011733	0.030230
-200.00	0.000073	0.000118	0.000223	0.000949	0.001260	0.002206	0.003747	0.008828	0.015673
-300.00	0.000076	0.000121	0.000263	0.000864	0.001427	0.002262	0.003582	0.006769	0.010110
-400.00	0.000077	0.000123	0.000317	0.001018	0.001511	0.001786	0.003334	0.005012	0.007143
-500.00	0.000079	0.000137	0.000309	0.001089	0.001254	0.001636	0.003042	0.003846	0.005400
-1000.00	0.000103	0.000172	0.000375	0.000679	0.001031	0.001210	0.001430	0.001671	0.002093
-1500.00	0.000112	0.000197	0.000281	0.000600	0.000693	0.000794	0.000896	0.000995	0.001171
-2000.00	0.000125	0.000165	0.000221	0.000464	0.000517	0.000569	0.000622	0.000673	0.000764

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.000707	0.000626	0.000564	0.000502	0.000440	0.000170	0.000150	0.000144
1500.00	0.001091	0.000928	0.000805	0.000682	0.000560	0.000250	0.000235	0.000189
1000.00	0.001975	0.001559	0.001247	0.001030	0.000716	0.000478	0.000334	0.000258
500.00	0.005450	0.003945	0.002333	0.001665	0.001640	0.000915	0.000547	0.000372
400.00	0.007743	0.005040	0.002790	0.002450	0.001851	0.001066	0.000584	0.000389
300.00	0.011791	0.007132	0.004043	0.003182	0.002691	0.001093	0.000619	0.000405

LIN003 250
LINEMASTER SWITCH
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200.00	0.022698	0.011632	0.006730	0.004988	0.003530	0.001183	0.000650	0.000420
100.00	0.020303	0.020106	0.010089	0.006313	0.004332	0.001421	0.000742	0.000465
0.00	0.041213	0.025847	0.011901	0.006989	0.004550	0.001473	0.000763	0.000476
-100.00	0.034566	0.020116	0.010715	0.007005	0.004700	0.001336	0.000713	0.000452
-200.00	0.017435	0.013094	0.008514	0.005647	0.004128	0.001291	0.000703	0.000449
-300.00	0.010831	0.009235	0.006215	0.005233	0.003555	0.001411	0.000687	0.000443
-400.00	0.007219	0.006804	0.004975	0.003900	0.003544	0.001347	0.000666	0.000436
-500.00	0.005452	0.004955	0.004343	0.002914	0.002778	0.001167	0.000706	0.000427
-1000.00	0.002117	0.001898	0.001737	0.001665	0.001560	0.000939	0.000568	0.000391
-1500.00	0.001182	0.001095	0.001033	0.000967	0.000898	0.000615	0.000492	0.000347
-2000.00	0.000770	0.000726	0.000696	0.000664	0.000630	0.000454	0.000371	0.000312

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 2 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.010092	-48.77	265.18	0.014114
36.58	259.08	0.018900	118.87	274.32	0.012606
246.89	237.74	0.006463	387.10	161.54	0.005528
36.58	-396.24	0.008166	120.40	-402.34	0.007070
158.50	-411.48	0.006608	192.02	-417.58	0.006436
227.08	-423.67	0.006215	411.48	341.38	0.002594

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.000938	0.001345	0.001845	0.0022[illegible]	0.002565	0.002425	0.002208	0.002240	0.0019[illegible]
[illegible]0.00	0.000955	0.001437	0.002074	0.0034[illegible]	0.003491	0.003554	0.002992	0.003331	0.003[illegible]

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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00.00	0.000879	0.001478	0.002566	0.005	0.006441	0.005134	0.004833	0.004797	0.005
500.00	0.000724	0.001211	0.002573	0.007472	0.009948	0.012628	0.013109	0.012317	0.017208
400.00	0.000688	0.001156	0.002371	0.007596	0.010424	0.014240	0.014309	0.016802	0.023339
300.00	0.000647	0.001086	0.002227	0.007466	0.010714	0.015701	0.018419	0.024905	0.041823
200.00	0.000601	0.001001	0.002049	0.006504	0.009969	0.015376	0.019981	0.034957	0.084485
100.00	0.000549	0.000896	0.001808	0.005732	0.007770	0.012174	0.019992	0.055111	0.288940
0.00	0.000493	0.000785	0.001501	0.004657	0.006334	0.007906	0.019681	0.062083	0.745156
-100.00	0.000500	0.000798	0.001528	0.004757	0.006825	0.008535	0.014429	0.061512	0.726284
-200.00	0.000114	0.000119	0.001679	0.005199	0.007513	0.013624	0.027128	0.040200	0.100721
-300.00	0.000556	0.000906	0.001714	0.005517	0.007500	0.009258	0.008336	0.018127	0.064569
-400.00	0.000579	0.000936	0.001610	0.002208	0.002606	0.003920	0.004122	0.008441	0.017636
-500.00	0.000597	0.000968	0.001593	0.002635	0.003364	0.003557	0.004556	0.004311	0.005604
-1000.00	0.000712	0.001293	0.002513	0.004990	0.005775	0.008767	0.012098	0.015385	0.018224
-1500.00	0.000862	0.001369	0.002212	0.004246	0.005353	0.006497	0.007637	0.008794	0.009917
-2000.00	0.000889	0.001259	0.001770	0.003600	0.004144	0.004694	0.005242	0.005782	0.006304

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.001420	0.000981	0.000714	0.000601	0.000726	0.000275	0.000232	0.000670
1500.00	0.002569	0.001890	0.001589	0.001173	0.000626	0.000223	0.000227	0.000742
1000.00	0.004228	0.003476	0.002631	0.001608	0.001062	0.000337	0.000206	0.000288
500.00	0.010554	0.003631	0.003321	0.003686	0.002399	0.000344	0.000226	0.000258
400.00	0.011039	0.003497	0.003502	0.003970	0.003281	0.000335	0.000238	0.000336
300.00	0.014054	0.005200	0.003725	0.004509	0.004128	0.000304	0.000254	0.000375
200.00	0.016106	0.007687	0.004327	0.004393	0.004781	0.000517	0.000280	0.000297
100.00	0.047738	0.014952	0.004971	0.004252	0.004575	0.000676	0.000302	0.000266
0.00	0.029223	0.007037	0.003247	0.004359	0.000879	0.000355	0.000294	0.003173
-100.00	0.184566	0.060340	0.007040	0.003624	0.003093	0.001174	0.000347	0.000283
-200.00	0.093881	0.073820	0.042330	0.021936	0.003998	0.002138	0.001329	0.000910
-300.00	0.044046	0.021567	0.003916	0.001963	0.001802	0.001407	0.000510	0.000295
-400.00	0.013858	0.005293	0.003215	0.002229	0.001365	0.001266	0.000498	0.000312
-500.00	0.002336	0.002455	0.002233	0.001655	0.001454	0.001299	0.000530	0.000311
-1000.00	0.016473	0.010041	0.003014	0.002004	0.002378	0.002005	0.000733	0.000408
-1500.00	0.009249	0.006300	0.003988	0.002761	0.002724	0.001782	0.000806	0.000339
-2000.00	0.005470	0.004207	0.003870	0.003740	0.002611	0.001699	0.000926	0.000661

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0 5 4

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 3 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.032116	-48.77	265.18	0.049121
36.58	259.08	0.041610	118.87	274.32	0.010689
246.89	237.74	0.004793	387.10	161.54	0.004579
36.58	-396.24	0.017495	120.40	-402.34	0.011129
158.50	-411.48	0.007381	192.02	-417.58	0.005968
227.08	-423.67	0.005290	411.48	341.38	0.004635

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.002949	0.004042	0.005410	0.005901	0.006790	0.006524	0.006090	0.006275	0.005693
1500.00	0.002967	0.004209	0.005550	0.008361	0.008699	0.009144	0.008021	0.009071	0.009017
1000.00	0.002653	0.004457	0.006952	0.017227	0.018071	0.011482	0.011600	0.012169	0.014510
500.00	0.002195	0.003613	0.007149	0.018901	0.024682	0.030809	0.028361	0.023600	0.038044
400.00	0.002074	0.003414	0.006751	0.018249	0.025241	0.031141	0.030205	0.028554	0.046931
300.00	0.001937	0.003171	0.006278	0.016426	0.024133	0.034635	0.033720	0.041772	0.074937
200.00	0.001785	0.002873	0.005637	0.013710	0.019936	0.028739	0.033724	0.054729	0.115329
100.00	0.001618	0.002554	0.004833	0.011647	0.014550	0.020443	0.028934	0.066711	0.360747
0.00	0.001532	0.002419	0.004186	0.011707	0.013914	0.015480	0.034421	0.082406	0.158863
-100.00	0.001625	0.002590	0.004513	0.013858	0.018314	0.017937	0.029288	0.088229	0.296148
-200.00	0.000374	0.000390	0.004987	0.014586	0.019662	0.035408	0.055778	0.058504	0.100968
-300.00	0.001723	0.002808	0.004670	0.012	0.015921	0.017963	0.016959	0.029282	0.088
00.00	0.001822	0.002749	0.004129	0.005	0.006483	0.009267	0.010027	0.015811	0.03

LIN003 0550
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 056

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
500.00	0.001898	0.003006	0.004137	0.006	0.007977	0.008697	0.010774	0.009936	0.01
-1000.00	0.002277	0.004000	0.007447	0.01276	0.014857	0.020701	0.031144	0.040397	0.044667
-1500.00	0.002694	0.004185	0.006661	0.011803	0.015009	0.018348	0.021761	0.025149	0.027616
-2000.00	0.002762	0.003884	0.005404	0.010545	0.012189	0.013857	0.015532	0.016826	0.018202

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE: 4 ***

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.004660	0.003293	0.002425	0.002053	0.002458	0.000903	0.000753	0.001928
1500.00	0.008370	0.006285	0.005330	0.003998	0.002181	0.000734	0.000737	0.002020
1000.00	0.013919	0.011620	0.008993	0.005739	0.003357	0.001081	0.000674	0.000879
500.00	0.037986	0.013769	0.010119	0.010860	0.007020	0.001113	0.000755	0.000841
400.00	0.041097	0.011703	0.010231	0.011326	0.009031	0.001096	0.000798	0.001071
300.00	0.059097	0.014614	0.010033	0.012128	0.010659	0.001013	0.000852	0.001190
200.00	0.093003	0.019219	0.010460	0.011025	0.012026	0.001704	0.000941	0.000976
100.00	0.260165	0.034305	0.011547	0.011354	0.012436	0.002215	0.001014	0.000883
0.00	0.930621	0.011468	0.006953	0.011228	0.002432	0.001151	0.000966	0.010515
-100.00	0.538162	0.018250	0.017542	0.009315	0.008484	0.003554	0.001124	0.000925
-200.00	0.263173	0.203516	0.126440	0.060591	0.011299	0.006010	0.003751	0.002541
-300.00	0.124322	0.046949	0.010148	0.006211	0.005567	0.004232	0.001632	0.000962
-400.00	0.043606	0.016795	0.008692	0.006204	0.004414	0.003878	0.001596	0.001016
-500.00	0.009352	0.009274	0.006456	0.004740	0.004218	0.004023	0.001693	0.001014
-1000.00	0.004753	0.027454	0.009673	0.006654	0.006565	0.005662	0.002331	0.001323
-1500.00	0.027808	0.017509	0.011522	0.008293	0.008042	0.004925	0.002452	0.001113
-2000.00	0.015811	0.011898	0.010951	0.010587	0.007513	0.004594	0.002698	0.002007

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.053768	-48.77	265.18	0.074586
36.58	259.08	0.122567	118.87	274.32	0.048966
246.89	237.74	0.012028	387.10	161.54	0.011349
36.58	-396.24	0.043138	120.40	-402.34	0.036443
158.50	-411.48	0.025403	192.02	-417.58	0.019504
227.08	-423.67	0.015535	411.48	341.38	0.012752

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.004107	0.005708	0.007705	0.009001	0.010287	0.009973	0.009410	0.009714	0.008971
1500.00	0.004140	0.005991	0.008191	0.012912	0.013479	0.014174	0.012675	0.014244	0.014297
1000.00	0.003738	0.006275	0.010179	0.024012	0.026369	0.018982	0.019229	0.020259	0.023916
500.00	0.003079	0.005089	0.010364	0.028386	0.037541	0.047073	0.047481	0.044945	0.067022
400.00	0.002916	0.004824	0.009665	0.027716	0.038558	0.049857	0.051095	0.057558	0.087144
300.00	0.002729	0.004498	0.008988	0.025886	0.037592	0.054943	0.059922	0.083656	0.143404
200.00	0.002521	0.004098	0.008135	0.021881	0.032668	0.048509	0.062398	0.110613	0.250549
100.00	0.002299	0.003667	0.007077	0.018824	0.024404	0.036202	0.057009	0.146202	0.733406
0.00	0.002151	0.003411	0.006096	0.017694	0.022164	0.026715	0.060612	0.164229	1.066329
-100.00	0.002247	0.003587	0.006427	0.019996	0.027266	0.030143	0.051361	0.174120	1.110255
-200.00	0.000616	0.000716	0.007071	0.021489	0.029561	0.053121	0.090937	0.115579	0.240432
-300.00	0.002410	0.003929	0.006836	0.020115	0.026020	0.031644	0.031946	0.061036	0.175927
-400.00	0.002536	0.003904	0.006268	0.009641	0.011908	0.016703	0.019824	0.034231	0.066236
-500.00	0.002633	0.004209	0.006271	0.010922	0.013707	0.015330	0.020791	0.021926	0.030098
-1000.00	0.003167	0.005597	0.010609	0.018950	0.022363	0.031618	0.045887	0.058945	0.066790
-1500.00	0.003754	0.005891	0.009374	0.017088	0.021591	0.026276	0.031033	0.035776	0.039655
-2000.00	0.003864	0.005433	0.007566	0.014962	0.017251	0.019571	0.021895	0.023827	0.025870

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATI( ) VALUES FOR SOURCE GROUP: 1 ***

LIN003 0 5 7
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INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** NETWORK ID: CAR ; NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00
2000.00	0.007303	0.005363	0.004113	0.003512	0.003927	0.001469	0.001242	0.002837
1500.00	0.012828	0.009791	0.008300	0.006319	0.003726	0.001387	0.001351	0.003086
1000.00	0.021569	0.017790	0.013697	0.008922	0.005518	0.002202	0.001455	0.001615
500.00	0.057930	0.023542	0.017010	0.017291	0.012118	0.002958	0.001915	0.001737
400.00	0.065119	0.022465	0.018196	0.019367	0.015468	0.003206	0.002041	0.002076
300.00	0.092184	0.029906	0.020617	0.021915	0.019193	0.003204	0.002176	0.002265
200.00	0.143167	0.044676	0.025431	0.023446	0.022840	0.004287	0.002352	0.002000
100.00	0.351118	0.081651	0.033186	0.026170	0.024329	0.005273	0.002563	0.001932
0.00	0.169462	0.063093	0.031260	0.028054	0.011522	0.004046	0.002565	0.014500
-100.00	0.790933	0.277978	0.044208	0.024739	0.019606	0.007092	0.002715	0.001992
-200.00	0.394315	0.301334	0.183767	0.092524	0.022698	0.010439	0.006308	0.004229
-300.00	0.189581	0.084643	0.025718	0.017145	0.013715	0.008003	0.003343	0.002025
-400.00	0.071679	0.034314	0.020853	0.015615	0.011771	0.007449	0.003260	0.002085
-500.00	0.022181	0.020703	0.016089	0.011896	0.010663	0.007374	0.003411	0.002066
-1000.00	0.067828	0.040939	0.015787	0.011496	0.011526	0.009291	0.004056	0.002407
-1500.00	0.039157	0.025766	0.017343	0.012756	0.012331	0.007791	0.004102	0.002055
-2000.00	0.022637	0.017390	0.016049	0.015492	0.011224	0.007082	0.004271	0.003203

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 1 ***
INCLUDING SOURCE(S): 1 , 2 , 3 , 4 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.105095	-48.77	265.18	0.149874
36.58	259.08	0.197963	118.87	274.32	0.079356
246.89	237.74	0.027481	387.10	161.54	0.025488
36.58	-396.24	0.077106	120.40	-402.34	0.061205
158.50	-411.48	0.045095	192.02	-417.58	0.037443
227.08	-423.67	0.031366	411.48	341.38	0.021764

LINO03 858
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
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*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	-2000.00	-1500.00	-1000.00	-500.00	-400.00	-300.00	-200.00	-100.00	0.00
2000.00	0.002949	0.004042	0.005410	0.005901	0.006790	0.006524	0.006090	0.006275	0.005693
1500.00	0.002967	0.004209	0.005550	0.008361	0.008699	0.009144	0.008021	0.009071	0.009017
1000.00	0.002653	0.004457	0.006952	0.017227	0.018071	0.011482	0.011600	0.012169	0.014510
500.00	0.002195	0.003613	0.007149	0.018901	0.024682	0.030809	0.028361	0.023600	0.038044
400.00	0.002074	0.003414	0.006751	0.018249	0.025241	0.031141	0.030205	0.028554	0.046931
300.00	0.001937	0.003171	0.006278	0.016426	0.024133	0.034635	0.033720	0.041772	0.074937
200.00	0.001785	0.002873	0.005637	0.013710	0.019936	0.028739	0.033724	0.054729	0.115329
100.00	0.001618	0.002554	0.004833	0.011647	0.014550	0.020443	0.028934	0.066711	0.360747
0.00	0.001532	0.002419	0.004186	0.011707	0.013914	0.015480	0.034421	0.082406	0.158863
-100.00	0.001625	0.002590	0.004513	0.013858	0.018314	0.017937	0.029288	0.088229	0.296148
-200.00	0.000374	0.000390	0.004987	0.014586	0.019662	0.035408	0.055778	0.058504	0.100968
-300.00	0.001723	0.002808	0.004670	0.012937	0.015921	0.017963	0.016959	0.029282	0.088621
-400.00	0.001822	0.002749	0.004129	0.005610	0.006483	0.009267	0.010027	0.015811	0.033385
-500.00	0.001898	0.003006	0.004137	0.006314	0.007977	0.008697	0.010774	0.009936	0.013454
-1000.00	0.002277	0.004000	0.007447	0.012762	0.014857	0.020701	0.031144	0.040397	0.044667
-1500.00	0.002694	0.004185	0.006661	0.011803	0.015009	0.018348	0.021761	0.025149	0.027616
-2000.00	0.002762	0.003884	0.005404	0.010545	0.012189	0.013857	0.015532	0.016826	0.018202

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** NETWORK ID: CAR : NETWORK TYPE: GRIDCART ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)							
	100.00	200.00	300.00	400.00	500.00	1000.00	1500.00	2000.00

LIN003 650
LINEMASTER SWITCH
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2000.00	0.004660	0.003293	0.002425	0.002053	0.002458	0.000903	0.000753	0.001928
1500.00	0.008370	0.006285	0.005330	0.003998	0.002181	0.000734	0.000737	0.002020
1000.00	0.013919	0.011620	0.008993	0.005739	0.003357	0.001081	0.000674	0.000879
500.00	0.037986	0.013769	0.010119	0.010860	0.007020	0.001113	0.000755	0.000841
400.00	0.041097	0.011703	0.010231	0.011326	0.009031	0.001096	0.000798	0.001071
300.00	0.059097	0.014614	0.010033	0.012128	0.010659	0.001013	0.000852	0.001190
200.00	0.093003	0.019219	0.010460	0.011025	0.012026	0.001704	0.000941	0.000976
100.00	0.260165	0.034305	0.011547	0.011354	0.012436	0.002215	0.001014	0.000883
0.00	0.030621	0.011468	0.006953	0.011228	0.002432	0.001151	0.000966	0.010515
-100.00	0.538162	0.183250	0.017542	0.009315	0.008484	0.003554	0.001124	0.000925
-200.00	0.263173	0.203516	0.126440	0.060591	0.011299	0.006010	0.003751	0.002541
-300.00	0.124322	0.046949	0.010148	0.006211	0.005567	0.004232	0.001632	0.000962
-400.00	0.043606	0.016795	0.008692	0.006204	0.004414	0.003878	0.001596	0.001016
-500.00	0.009352	0.009274	0.006456	0.004740	0.004215	0.004023	0.001693	0.001014
-1000.00	0.047528	0.027454	0.009673	0.006654	0.006565	0.005662	0.002331	0.001323
-1500.00	0.027808	0.017509	0.011522	0.008293	0.008042	0.004925	0.002452	0.001113
-2000.00	0.015811	0.011898	0.010951	0.010587	0.007513	0.004594	0.002698	0.002007

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

*** THE ANNUAL AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: 2 ***
INCLUDING SOURCE(S): 4

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
-94.49	274.32	0.053768	-48.77	265.18	0.074586
36.58	259.08	0.122567	118.87	274.32	0.048966
246.89	237.74	0.012028	387.10	161.54	0.011349
36.58	-396.24	0.043138	120.40	-402.34	0.036443
158.50	-411.48	0.025403	192.02	-417.58	0.019504
227.08	-423.67	0.015535	411.48	341.38	0.012752

*** MODELING OPTIONS USED: CONC RURAL ELEV DFAULT

** Message Summary For ISC2 Model Execution ***

LINE003
090
LINEMASTER SWITCH
ADMINISTRATIVE RECORD
NOTICE
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--------- Summary of Total Messages --------

Total of 0 Fatal Error Message(s)
Total of 23 Warning Message(s)
Total of 0 Informational Message(s)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********

E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
E W250 61 XYPNTS: Duplicate XPNT/DIST or YPNT/DIR Specified for GRID CAR
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****
*** ISCLT2 Finishes Successfully ***
****

LIN003
190
LINEMASTER SWITCH
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APPENDIX W
WILDLIFE INVENTORIES

REMEDIAL INVESTIGATION REPORT
LINEMASTER SWITCH CORPORATION
WOODSTOCK, CONNECTICUT
AUGUST 1992

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003
0627

recycled paper

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0963

POTENTIAL REPTILE AND AMPHIBIAN SPECIES

Project Name: Linemaster Switch
Date: October 1991
Location: Woodstock, CT

Weather: Sunny 60's
Comments:

COMMON NAME	SCIENTIFIC NAME	POTENTIAL USER
Spotted salamander	*Ambystoma maculatum*	*
Red-spotted newt	*Notophthalmus v. viridescens*	*
Redback salamander	*Plethodon cinereus*	*
Four-toed salamander	*Hemidactylium scutatum*	
Northern two-lined salamander	*Eurycea b. bislineata*	*
Eastern spadefoot	*Scaphiopus h. holbrookii*	
Eastern American toad	*Bufo a. americanus*	*
Fowler's toad	*Bufo woodhousii fowleri*	
Northern spring peeper	*Hyla c. cruficer*	*
Gray treefrog	*Hyla versicolor*	*
Bullfrog	*Rana catesbeiana*	
Green frog	*Rana clamitans melanota*	*
Wood frog	*Rana sylvatica*	*
Northern leopard frog	*Rana pipiens*	*
Pickerel frog	*Rana palustris*	*
Common snapping turtle	*Chelydra s. serpentina*	
Stinkpot	*Sternotherus odoratus*	
Spotted turtle	*Clemmys guttata*	
Wood turtle	*Clemmys insculpta*	
Eastern box turtle	*Terrapene c. carolina*	*
Eastern painted turtle	*Chrysemys p. picta*	*
Blanding's turtle	*Emydoidea blandingii*	
Northern water snake	*Nerodia s. sipedon*	
Northern brown snake	*Storeria d. dekayi*	*
Northern redbelly snake	*Storeria o. occipitomaculata*	*
Eastern garter snake	*Thamnophis s. sirtalis*	*
Eastern ribbon snake	*Thamnophis s. sauritus*	*
Eastern hognose snake	*Heterodon platyrhinos*	
Northern ringneck snake	*Diadophis punctatus edwardsi*	
Northern black racer	*Coluber c. constrictor*	*
Eastern smooth green snake	*Opheodrys v. vernalis*	*
Eastern milk snake	*Lampropeltis t. trianqulum*	*

Note:

FE = Federally Endangered by the U.S. Fish and Wildlife Service
FT = Federally Threatened by the U.S. Fish and Wildlife Service
(Federal status is based on current federal list)

* Species which may utilize the on-site habitats based on the literature.

NOTICE
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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

POTENTIAL BIRD SPECIES

Project Name: Linemaster Switch
Date: October 1991
Location: Woodstock, CT

Weather: Sunny 60's
Comments:

COMMON NAME	SCIENTIFIC NAME	POTENTIAL USER
Pied-billed grebe	*Podilymbus podiceps*	
Great blue heron	*Ardea herodias*	
Green-backed heron	*Butorides striatus*	
Black-crowned night-heron	*Nycticorax nycticorax*	
Mute swan	*Cygnus olor*	
Canada goose	*Branta canadensis*	
Wood duck	*Axis sponsa*	
Green-winged teal	*Anas crecca*	
American black duck	*Anas rubripes*	
Mallard	*Anas platyrhynchos*	
Blue-winged teal	*Anas discors*	
Bufflehead	*Bucephala albeola*	
Osprey	*Pandion haliaetus*	
Sharp-shinned hawk	*Accipiter striatus*	
Cooper's hawk	*Accipiter copperii*	
Northern goshawk	*Accipiter gentilis*	
Red-shouldered hawk	*Buteo lineatus*	*
Broad-winged hawk	*Buteo platypterus*	*
Red-tailed hawk	*Buteo jamaicensis*	
Northern harrier	*Circus cyaneus*	
American kestrel	*Falco sparverius*	*
Merlin	*Falco columbarius*	
Peregrine falcon	*Falco peregrinus*	
Ring-necked pheasant	*Phasianus colchicus*	*
Ruffed grouse	*Bonasa umbellus*	*
Northern bobwhite	*Colinus virginianus*	
Killdeer	*Charadrius vociferus*	
Spotted sandpiper	*Actitis macularia*	
Common snipe	*Gallinago gallinago*	
American woodcock	*Scolopax minor*	*

Note:

FE = Federally Endangered by the U.S. Fish and Wildlife Service
FT = Federally Threatened by the U.S. Fish and Wildlife Service
(Federal status is based on current federal list)

* Species which may utilize the on-site habitats based on the literature.

LIN003 4 9 8

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD
LIN003 0955

POTENTIAL BIRD SPECIES

Project Name: Linemaster Switch
Date: October 1991
Location: Woodstock, CT

Weather: Sunny 60's
Comments:

COMMON NAME	SCIENTIFIC NAME	POTENTIAL USER
Lesser yellow legs	*Tringa flavipes*	
Solitary sandpiper	*Tringa solitaria*	
Herring gull	*Larus argentatus*	
Great black-backed gull	*Larus marinus*	
Mourning dove	*Zenaida macroura*	
Black-billed cuckoo	*Coccyzus erythropthalmus*	*
Yellow-billed cuckoo	*Coccyzus americanus*	
Common barn-owl	*Tyto alba*	
Eastern screech-owl	*Otus asio*	*
Great horned owl	*Bubo virginianus*	
Barred owl	*Strix varia*	
Long-eared owl	*Asio otus*	
Short-eared owl	*Asio flammeus*	
Northern saw-whet owl	*Aegolius acadicus*	
Common nighthawk	*Chordeiles minor*	
Whip-poor-will	*Caprimulqus vociferus*	
Chimney swift	*Chaetura pelaqica*	
Ruby-throated hummingbird	*Archilochus colubris*	
Belted kingfisher	*Ceryle alcyon*	
Downy woodpecker	*Picoides pubescens*	*
Hairy woodpecker	*Picoides villosus*	*
Northern flicker	*Colaptes auratus*	*
Yellow-bellied sapsucker	*Sphyrapicus varius*	
Eastern wood-pewee	*Contopus virens*	*

Note:

FE = Federally Endangered by the U.S. Fish and Wildlife Service
FT = Federally Threatened by the U.S. Fish and Wildlife Service
(Federal status is based on current federal list)

* Species which may utilize the on-site habitats based on the literature.

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

POTENTIAL BIRD SPECIES

Project Name: Linemaster Switch
Date: October 1991
Location: Woodstock, CT

Weather: Sunny 60's
Comments:

COMMON NAME	SCIENTIFIC NAME	POTENTIAL USER
Flycatcher	*Empidonax spp*	*
Least flycatcher	*Empidonax minimus*	
Eastern phoebe	*Sayornis phoebe*	*
Great crested flycatcher	*Myiarchus crinitus*	*
Eastern kingbird	*Tyrannus tyrannus*	*
Tree swallow	*Tachycineta bicolor*	*
Northern rough-winged swallow	*Stelgidopteryx serripennis*	
Bank swallow	*Riparia riparia*	
Cliff swallow	*Hirundo pyrrhonota*	
Barn swallow	*Hirundo rustica*	
Blue jay	*Cyanocitta cristata*	*
American crow	*Corvus brachyrhynchos*	*
Black-capped chickadee	*Parus atricapillus*	*
Tufted titmouse	*Parus bicolor*	*
Red-breasted nuthatch	*Sitta canadensis*	
White-breasted nuthatch	*Sitta carolinensis*	*
Brown creeper	*Certhia americana*	*
Carolina wren	*Thryothorus ludovicianus*	
House wren	*Troglodytes aedon*	*
Marsh wren	*Cistothorus palustris*	
Golden-crowned kinglet	*Regulus satrapa*	*
Ruby-crowned kinglet	*Regulus calendula*	*
Blue-gray gnatcatcher	*Polioptila caerulea*	
Eastern bluebird	*Sialia sialis*	
Veery	*Catharus fuscescens*	*
Hermit thrush	*Catharus guttatus*	
Wood thrush	*Hylocichla mustelina*	*
American robin	*Turdus migratorius*	*

Note:

FE = Federally Endangered by the U.S. Fish and Wildlife Service
FT = Federally Threatened by the U.S. Fish and Wildlife Service
(Federal status is based on current federal list)

* Species which may utilize the on-site habitats based on the literature.

LIN003 0559

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0671

POTENTIAL BIRD SPECIES

Project Name: Linemaster Switch
Date: October 1991
Location: Woodstock, CT

Weather: Sunny 60's
Comments:

COMMON NAME	SCIENTIFIC NAME	POTENTIAL USER
Gray catbird	*Dumetella carolinensis*	*
Northern mockingbird	*Mimus polyglottos*	*
Brown thrasher	*Toxostoma rufum*	
Cedar waxwing	*Bombycilla cedrorum*	*
Northern shrike	*Lanius excubitor*	
Loggerhead shrike	*Lanius ludovicianus*	
European starling	*Sturnus vulgaris*	*
White-eyed vireo	*Vireo griseus*	
Solitary vireo	*Vireo solitarius*	
Yellow-throated vireo	*Vireo flavifrons*	
Warbling vireo	*Vireo gilvus*	*
Red-eyed vireo	*Vireo olivaceus*	
Blue-winged warbler	*Vermivora pinus*	*
Golden-winged warbler	*Vermivora chrysoptera*	
Nashville warbler	*Vermivora ruficapilla*	
Yellow warbler	*Dendroica petechia*	
Chestnut-sided warbler	*Dendroica pensylvanica*	*
Magnolia warbler	*Dendroica magnolia*	
Black-throated blue warbler	*Dendroica caerulescens*	
Blackpoll warbler	*Dendroica striata*	
Yellow-rumped warbler	*Dendroica coronata*	*
Black-throated green warbler	*Dendroica virens*	
Pine warbler	*Dendroica pinus*	
Prairie warbler	*Dendroica discolor*	
Black-and-white warbler	*Mniotilta varia*	*
American redstart	*Setophaga ruticilla*	*
Ovenbird	*Seiurus aurocapillus*	*
Northern waterthrush	*Seiurus noveboracensis*	
Common yellowthroat	*Geothlypis trichas*	*
Canada warbler	*Wilsonia canadensis*	
Yellow-breasted chat	*Icteria virens*	
Scarlet tanager	*Piranga olivacea*	*

Note:

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FT = Federally Threatened by the U.S. Fish and Wildlife Service
(Federal status is based on current federal list)

* Species which may utilize the on-site habitats based on the literature.

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

POTENTIAL BIRD SPECIES

Project Name: Linemaster Switch
Date: October 1991
Location: Woodstock, CT

Weather: Sunny 60's
Comments:

COMMON NAME	SCIENTIFIC NAME	POTENTIAL USER
Northern cardinal	*Cardinalis cardinalis*	*
Rose-breasted grosbeak	*Pheucticus ludovicianus*	*
Indigo bunting	*Passerina cyanea*	
Rufous-sided towhee	*Pipilo erthrophthalmus*	
American tree sparrow	*Spizella arborea*	
Chipping sparrow	*Spizella passerina*	*
Field sparrow	*Spizella pusilla*	
Vesper sparrow	*Pooecetes gramineus*	
Savannah sparrow	*Passerculus sandwichensis*	
Fox sparrow	*Passerella iliaca*	
Song sparrow	*Melospiza melodia*	*
Swamp sparrow	*Melospiza georgiana*	
White-throated sparrow	*Zonotrichia albicollis*	
Dark-eyed junco	*Junco hyemalis*	*
Lapland longspur	*Calcarius lapponicus*	
Snow bunting	*Plectrophenax nivalis*	
Red-winged blackbird	*Agelaius phoeniceus*	
Eastern meadowlark	*Sturnella magna*	
Common grackle	*Quiscalus quiscula*	
Brown-headed cowbird	*Molothrus ater*	*
Orchard oriole	*Icterus spurius*	
Northern oriole	*Icterus galbula*	*
Pine grosbeak	*Pinicola enucleator*	
Purple finch	*Carpodacus purpureus*	*
House finch	*Carpodacus mexicanus*	*
Common redpoll	*Carduelis flammea*	
Pine siskin	*Carduelis pinus*	
American goldfinch	*Carduelis tristis*	*
Evening grosbeak	*Coccothraustes vespertinus*	*
House sparrow	*Passer domesticus*	*

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LIN003 0588

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

LIN003 0569

POTENTIAL MAMMAL SPECIES

Project Name: Linemaster Switch
Date: October 1991
Location: Woodstock, CT

Weather: Sunny 60's
Comments:

COMMON NAME	SCIENTIFIC NAME	POTENTIAL USER
Virginia opossum	*Didelphis virginiana*	*
Masked shrew	*Sorex cinereus*	*
Northern short-tailed shrew	*Blarina brevicauda*	*
Hairy-tailed mole	*Parascalops breweri*	
Eastern mole	*Scalopus aquaticus*	*
Star-nosed mole	*Condylura cristata*	
Little brown myotis	*Myotis lucifugus*	*
Keen's myotis	*Myotis keenii*	*
Silver-haired bat	*Lasionycteris noctivagans*	
Eastern pipistrelle	*Pipistrellus subflavus*	
Big brown bat	*Eptesicus fuscus*	*
Red bat	*Lasiurus borealis*	
Hoary bat	*Lasiurus cinereus*	
Eastern cottontail	*Sylvilagus floridanus*	*
New England cottontail	*Sylvilagus transitionalis*	
Snowshoe hare	*Lepus americanus*	
Eastern chipmunk	*Tamias striatus*	*
Woodchuck	*Marmota monax*	*
Gray squirrel	*Sciurus carolinensis*	*
Red squirrel	*Tamiasciurus hudsonicus*	*
Southern flying squirrel	*Glaucomys volans*	*
White-footed mouse	*Peromyscus leucopus*	*
Southern red-backed vole	*Clethrionomys gapperi*	*
Meadow vole	*Microtus pennsylvanicus*	*
Woodland vole	*Microtus pinetorum*	*
Muskrat	*Ondatra zibethicus*	
Southern bog lemming	*Synaptomys cooperi*	
Northern bog lemming	*Synaptomys borealis*	
Norway rat	*Rattus norvegicus*	*
House mouse	*Mus musculus*	*

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POTENTIAL MAMMAL SPECIES

Project Name: Linemaster Switch
Date: October 1991
Location: Woodstock, CT

Weather: Sunny 60's
Comments:

COMMON NAME	SCIENTIFIC NAME	POTENTIAL USER
Meadow jumping mouse	*Zapus hudsonius*	*
Coyote	*Canis latrans*	
Red fox	*Vulpes vulpes*	*
Gray fox	*Urocyon cinereoargenteus*	
Raccoon	*Procyon lotor*	*
Ermine	*Mustela erminea*	
Long-tailed weasel	*Mustela frenata*	
Mink	*Mustela vison*	
Striped skunk	*Mephitis mephitis*	*
River otter	*Lutra canadensis*	
Bobcat	*Felis rufus*	
White-tailed deer	*Odocoileus virginianus*	*

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LINEMASTER SWITCH
ADMINISTRATIVE RECORD

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