

DRAFT FINAL
REMEDIAL INVESTIGATION
OF THE
GORICK C & D LANDFILL

KIRKWOOD (T), BROOME (C), NEW YORK



NYSDEC SITE NO. 7-04-019
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Prepared for:

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OCTOBER 1991

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APPENDIX A

SOIL GAS SURVEY RESULTS

APPENDIX A

SOIL GAS SURVEY RESULTS

In September 1990, prior to the start of intrusive activities at the Gorick site, a soil-gas survey was performed over the site by Target Environmental Services, Inc. under the supervision of URS Consultants, Inc. This appendix contains the results of the report issued by Target for this investigation.

Sampling and analytical methodology and results are presented in the report. Sampling locations were chosen in a two-stage process. Five (5) baselines for a 100 by 100 foot grid were laid out over the site by URS surveyors. Target, at the suggestion of the NYSDEC, initially located and sampled every second point on the grid - a total of 69 points. Upon receipt of the results of the analysis of these samples, a second stage was developed: all points where detections occurred would be surrounded by additional sampling points; and all the remaining unsampled points below the toe of the landfill would be located and sampled, to provide for precise delineation of any VOC contaminant plume there. Twenty-seven (27) additional points were located and sampled in this stage, for a total of 96 points.

SOIL GAS SURVEY
GORICK LANDFILL
KIRKWOOD, NEW YORK



TARGET ENVIRONMENTAL SERVICES, INC.

SOIL GAS SURVEY
GORICK LANDFILL
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EXECUTIVE SUMMARY

From September 11-14 and 17-19, 1990, TARGET Environmental Services, Inc. (TARGET) conducted a soil gas survey at the Gorick Landfill, Route 11, Kirkwood, New York, as part of a remedial investigation. Samples were analyzed in the field by a Photovac 10S70 gas chromatograph equipped with a photoionization detector (GC/PID).

Relatively low levels of TCE were present in several locations within the survey area. Toluene, the only other standardized analyte detected within the survey area, was present at three locations.

Introduction

URS Consultants, Inc. contracted Target Environmental Services, Inc. (TARGET) to perform a soil gas survey at the Gorick Landfill site, Route 11, Kirkwood, New York. The site is a non-permitted construction and demolition debris landfill and is classified as a Class 2 inactive hazardous waste site. Trichloroethene (TCE) has been detected in a municipal well nearby. The field phase of the soil gas survey was conducted from September 11-14 and 17-19, 1990.

Detectability

The soil gas survey data presented in this report are the result of precise sampling and measurement of contaminant concentrations in the vadose zone. Analyte detection at a particular location is representative of vapor, dissolved, and/or liquid phase contamination at that location. The presence of detectable levels of target analytes in the vadose zone is dependent upon several factors, including the presence of vapor-phase hydrocarbons or dissolved or liquid concentrations adequate to facilitate volatilization into the unsaturated zone.

Terminology

In order to prevent misunderstanding of certain terms used in this report, the following clarifications are offered:

The term "feature" is used in reference to a discernible pattern in the contoured data. It denotes a contour form rather than a definite or separate chemical occurrence.

The term "occurrence" is used to indicate an area where chemical compounds are present in sufficient concentrations to be detected by the analysis of soil vapors. The term is not indicative of any specific mode of occurrence (vapor, dissolved, etc), and does not necessarily indicate or suggest the presence of "free product" or "phase-separated hydrocarbons".

The term "anomaly" refers to an area where hydrocarbons were measured in excess of what would normally be considered "natural" or "background" levels.

The term "analyte" refers to any of the hydrocarbons standardized for quantification in the chromatographic analysis.

The term "vadose zone" represents the unsaturated zone between the ground water table and the ground surface.

The term "indicates" is used when evidence dictates a unique conclusion. The term "suggests" is used when several explanations of certain evidence are possible, but one in particular seems more likely. As a result, "indicates" carries a higher degree of confidence in a conclusion than does "suggests".

Procedures

Soil gas samples were collected at a total of 96 locations at the site, as shown in Figure 1. To collect the samples a 1/2 inch hole was produced to depths varying from 2' to 5' by using a drive rod (Table 1). The entire sampling system was purged with ambient air drawn through a dust and organic vapor filter cartridge, and a stainless steel probe was inserted to the full depth of the hole and sealed off from the atmosphere. A sample of in-situ soil gas was then withdrawn through the probe and used to purge atmospheric air from the sampling system. A second sample of soil gas was withdrawn through the probe and encapsulated in a pre-evacuated glass vial at two atmospheres of pressure (15 psig). The self-sealing vial was detached from the sampling system and labeled.

Prior to the day's field activities all sampling equipment, slide hammer rods, and probes were decontaminated by washing with soapy water and rinsing thoroughly. Internal surfaces were flushed dry using pre-purified nitrogen or filtered ambient air, and external surfaces were wiped clean using clean paper towels.

Field control samples were collected at the beginning of the day's field activities, after the twentieth soil gas sample, and at the end of the day's field activities. These QA/QC samples were obtained by filtering ambient air through a dust and organic vapor filter and collecting in the same manner as described above.

Most samples were analyzed in the field, using a Photovac Model 10-S-70 portable gas chromatograph equipped with a photo-ionization detector (GC/PID). The remaining samples were analyzed at TARGET's corporate headquarters after the instrument was

repaired. The instrument was standardized and calibrated at the beginning of each day, midday, and at the end of each day for the following analytes:

- trichloroethene (TCE)
- trans-1,2-dichloroethene (t-1,2-DCE)
- benzene
- toluene
- m- and p-xylene
- o-xylene

In addition, approximate retention times of tetrachloroethene (PCE), 1,1,1-trichloroethane (1,1,1-TCA) and acetone were determined prior to the beginning of the job. Total Volatiles values were generated by summing the concentrations of all the standardized analytes. A single unidentified peak at 22-24 seconds was present in all the field samples and in all the field control samples. Analysis of Field Control Sample 303 by gas chromatography/mass spectrometry (GC/MS) indicated that no compound within the GC/MS's capability to detect was present, suggesting that the compound present has a molecular weight less than 35. This peak was not included in the Total Volatiles determination.

Retention times of the standards were used to identify the peaks in the chromatograms of the field samples, and their response factors were used to calculate the analyte concentrations. The tabulated results of the laboratory analysis of the soil gas samples are reported in micrograms per liter ($\mu\text{g}/\text{l}$) in Table 1. Although "micrograms per liter" is equivalent to "parts per billion (v/v)" in water analyses, they are not equivalent in gas analyses, due to the difference in the mass of equal volumes of water and gas matrices. Map sample points with no data shown indicate that the analyte concentrations in the sample were below the detection

For QA/QC purposes, carrier gas samples were analyzed at the beginning and end of each day's analysis and after every tenth sample. Needle blanks of ambient air were analyzed after the injection of each standard and after every "hot" sample. Analysis of samples did not continue until the needle blanks were free of detectable hydrocarbons.

Discussion and Interpretation of Results

The trichloroethene (TCE) data set in Table 1 has been mapped and contoured to produce Figure 2. Relatively low levels of TCE were present in several locations within the survey area. Toluene, the only other standardized analyte detected within the survey area, was present at three locations (Stations 11, 24, and 79). Examination of the chromatograms indicated that peaks at retention times typical of acetone, tetrachloroethene (PCE) and 1,1,1-trichloroethane (1,1,1-TCA) were not present in any of the chromatograms.

TABLE 1

**RESULTS OF IN-FIELD ANALYSIS
PHOTOIONIZATION DETECTOR
CONCENTRATIONS IN MICROGRAMS PER LITER**

SAMPLE	DEPTH	t12DCE ¹	TCE ¹	BENZENE ¹	TOLUENE ¹	m- & p- XYLENE ¹	o- XYLENE ¹	TOTAL VOLATILES
1	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
3	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4	3'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
5	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
6	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
7	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
8	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
9	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
10	3.5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	5'	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	1.5
12	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
13	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
14	2'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
15	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
16	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
17	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
18	5'	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	1.3
19	2'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
20	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
21	5'	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	1.5
22	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TCE = trichloroethene t12DCE = trans-1,2-dichloroethene

¹IDENTIFICATION BASED ON RETENTION TIME

TABLE 1 (CONT.)

**RESULTS OF IN-FIELD ANALYSIS
PHOTOIONIZATION DETECTOR
CONCENTRATIONS IN MICROGRAMS PER LITER**

SAMPLE	DEPTH	t12DCE ¹	TCE ¹	BENZENE ¹	TOLUENE ¹	m- & p- XYLENE ¹	o- XYLENE ¹	TOTAL VOLATILES
23	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
24	5'	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	1.2
25	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
26	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
27	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
28	3.5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
29	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
30	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
31	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
32	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
33	3.5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
34	3.5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
35	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
36	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
37	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
38	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
39	2.5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
40	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
41	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
42	2'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
43	4.5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
44	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TCE = trichloroethene t12DCE = trans-1,2-dichloroethene

¹IDENTIFICATION BASED ON RETENTION TIME

TABLE 1 (cont)

**RESULTS OF IN-FIELD ANALYSIS
PHOTOIONIZATION DETECTOR
CONCENTRATIONS IN MICROGRAMS PER LITER**

SAMPLE	DEPTH	t12DCE ¹	TCE ¹	BENZENE ¹	TOLUENE ¹	m- & p- XYLENE ¹	o- XYLENE ¹	TOTAL VOLATILES
45	4.5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
46	3'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
47	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
48	3'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
49	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
50	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
51	5'	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	1.4
52	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
53	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
54	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
55	5'	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	1.7
56	3'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
57	3.5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
58	3'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
59	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
60	2'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
61	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
62	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
63	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
64	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
65	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
66	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TCE = trichloroethene

t12DCE = trans-1,2-dichloroethene

¹IDENTIFICATION BASED ON RETENTION TIME

TABLE 1 (cont.)

**RESULTS OF IN-FIELD ANALYSIS
PHOTOIONIZATION DETECTOR
CONCENTRATIONS IN MICROGRAMS PER LITER**

SAMPLE	DEPTH	t12DCE¹	TCE¹	BENZENE¹	TOLUENE¹	m- & p- XYLENE¹	o- XYLENE¹	TOTAL VOLATILES
67	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
68	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
69	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
70	4-5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
71	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
72	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
73	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
74	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
75	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
76	3-5'	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	1.3
77	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
78	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
79	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
80	4'	<1.0	<1.0	<1.0	2.1	<1.0	<1.0	2.1
81	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
82	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
83	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
84	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
85	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
86	3-5'	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	1.1
87	4'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
88	4-5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TCE = trichloroethene t12DCE = trans-1,2-dichloroethene

¹IDENTIFICATION BASED ON RETENTION TIME

TABLE 1 (cont)

RESULTS OF IN-FIELD ANALYSIS
 PHOTOIONIZATION DETECTOR
 CONCENTRATIONS IN MICROGRAMS PER LITER

SAMPLE	DEPTH	t12DCE ¹	TCE ¹	BENZENE ¹	TOLUENE ¹	m- & p- XYLENE ¹	o- XYLENE ¹	TOTAL VOLATILES
89	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
90	3'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
91	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
92	4'	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	1.2
93	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
94	3'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
95	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
96	5'	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TCE = trichloroethene t12DCE = trans-1,2-dichloroethene

¹IDENTIFICATION BASED ON RETENTION TIME

TABLE 1 (cont)

RESULTS OF IN-FIELD ANALYSIS
PHOTOIONIZATION DETECTOR
CONCENTRATIONS IN MICROGRAMS PER LITER

SAMPLE	DEPTH	t12DCE ¹	TCE ¹	BENZENE ¹	TOLUENE ¹	m- & p- XYLENE ¹	o- XYLENE ¹	TOTAL VOLATILES
<u>FIELD CONTROL SAMPLES</u>								
300	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
301	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
302	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
303	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
304	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
305	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
306	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
307	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
308	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
309	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TCE = trichloroethene t12DCE = trans-1,2-dichloroethene

NA = Not Applicable

¹IDENTIFICATION BASED ON RETENTION TIME

TABLE 1 (cont.)

RESULTS OF IN-FIELD ANALYSIS
PHOTOIONIZATION DETECTOR
CONCENTRATIONS IN MICROGRAMS PER LITER

SAMPLE	DEPTH	t12DCE ¹	TCE ¹	BENZENE ¹	TOLUENE ¹	m- & p- XYLENE ¹	o- XYLENE ¹	TOTAL VOLATILES
<u>CARRIER GAS BLANKS</u>								
1	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
3	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
5	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
6	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
7	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
8	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
9	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
10	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
11	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
12	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
13	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
14	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

TCE = trichloroethene t12DCE = trans-1,2-dichloroethene

NA = Not Applicable

¹IDENTIFICATION BASED ON RETENTION TIME

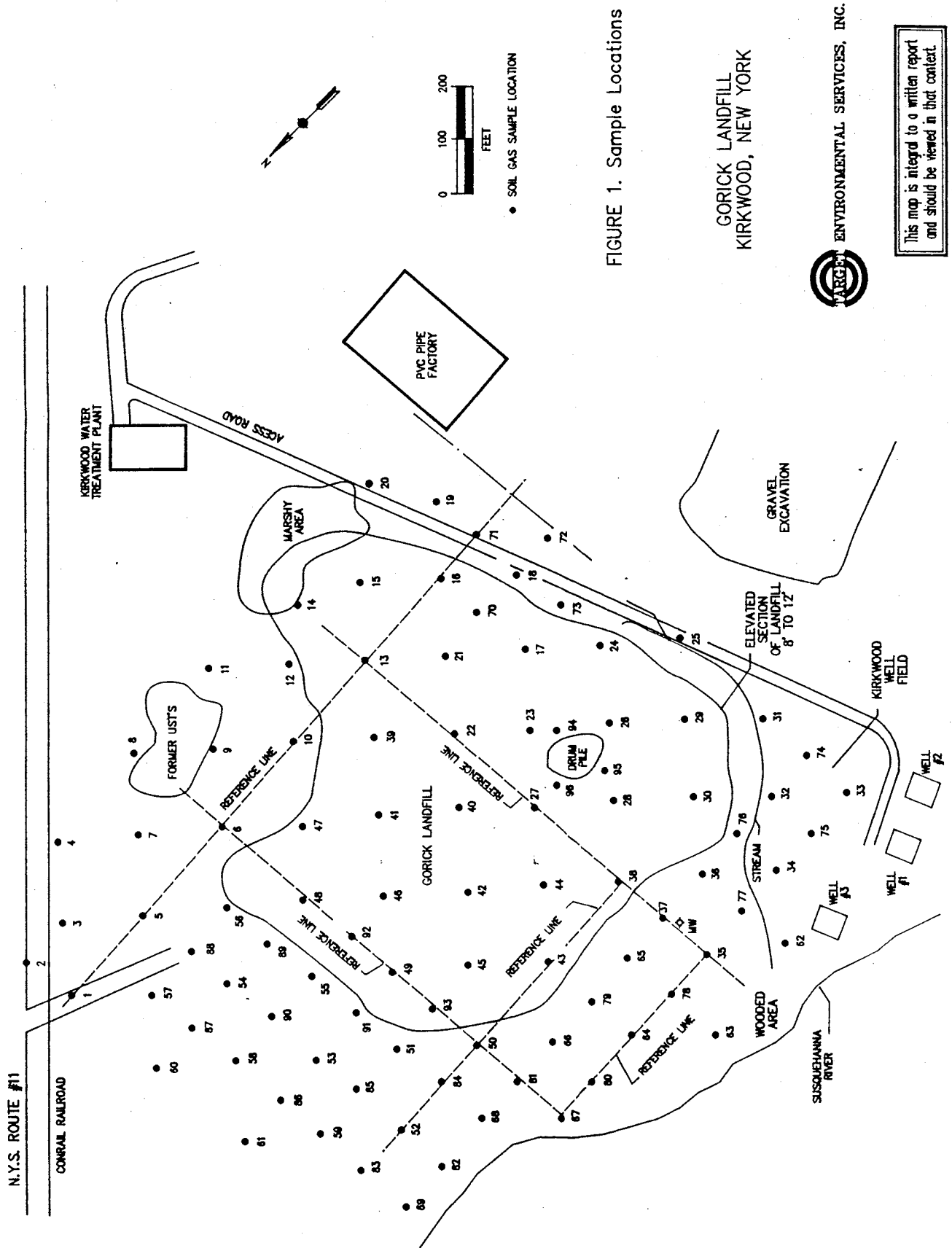
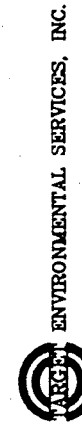


FIGURE 1. Sample Locations

GORICK LANDFILL
KIRKWOOD, NEW YORK



This map is integral to a written report and should be viewed in that context.

APPENDIX B

GEOPHYSICAL SURVEY RESULTS

GEOPHYSICAL INVESTIGATION

**Gorick Landfill Site
Kirkwood, New York**

Prepared for

URS CONSULTANTS, INC.

October 1990

Weston Geophysical
CORPORATION





Weston Geophysical

CORPORATION

October 17, 1990

Mr. James Lanzo
URS Consultants, Inc.
570 Delaware Avenue
Buffalo, NY 14202-1207

Subject: Geophysical Investigation
Gorick Landfill Site
Kirkwood, New York

Dear Mr. Lanzo:

In accordance with your authorization, Weston Geophysical has completed a geophysical survey at the Gorick Landfill to assist URS Consultants' site characterization efforts. This report consists of a formal presentation of our investigative methods and results.

We appreciate the opportunity to provide geophysical services, and welcome any questions or comments regarding this report.

Sincerely,

WESTON GEOPHYSICAL CORPORATION

Fil J. Filipkowski

Fil J. Filipkowski
Geophysicist

M. Blackey

Mark Blackey
Manager, Geophysical Services

MB:cc
WGC - 18193-03

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SECTION 1

INTRODUCTION

Geophysical investigations were performed by Weston Geophysical on September 12, 1990 at the Gorick Landfill in Kirkwood, New York (see Figure 1) to assist determination of the landfill's northeastern boundary. The scope of work was limited to seismic refraction profiling along three traverses oriented approximately perpendicular to the assumed landfill boundary; the landfill boundary was anticipated to be represented by abrupt changes in seismic compressional velocity or possibly by variations in depths to refracting horizons.

Although not specifically authorized by URS Consultants, limited electromagnetic (EM) terrain conductivity data were also acquired along each traverse. The combination of seismic refraction and EM data resulted in a more confident interpretation regarding the landfill boundary.

LOCATION AND SURVEY CONTROL

Staking and brush clearing along the geophysical traverses shown on Figure 2 was accomplished by both URS Consultants and Weston Geophysical field personnel. URS Consultants also surveyed a "baseline" through the project area; geophysical traverses were referenced to that baseline by tape and compass measurements.

METHODS OF INVESTIGATION

A total of approximately 980 feet of seismic refraction and EM terrain conductivity data were acquired during this survey. Details regarding these surveys is provided below.

Seismic Refraction

Seismic refraction profiling was accomplished using 24-channel geophone spreads with geophone spacings of 10 or 20 feet; spread lengths varied from 250 to 400 feet depending on the accessibility of each traverse. Seismic energy was generated using a Betsy seisgun, and

data were recorded using a digital seismic data-acquisition system designed and manufactured by Weston Geophysical.

Data analysis was accomplished using delay time and crossover distance techniques. Background information regarding acquisition and interpretation of seismic refraction data are provided in Appendix A.

Electromagnetic Terrain Conductivity

EM terrain conductivity data were used to locate areas of anomalous electrical conductivity which might indicate the presence of buried metallic objects. EM data were obtained using a Geonics model EM-31 instrument in the vertical dipole operating mode; in this configuration the EM-31 has a fixed depth of investigation of approximately 15 to 20 feet. Appendix B contains an expanded discussion of the electromagnetic terrain conductivity method.

RESULTS

Seismic refraction and EM terrain conductivity results are presented on Figure 3. Refraction data are shown in the form of profiles depicting seismic compressional velocities of strata along each traverse. EM terrain conductivity data are displayed below the corresponding seismic traverse.

Based on Weston Geophysical's experience with seismic refraction profiling in numerous geologic locales, seismic compressional velocities shown on Figure 3 are likely to correspond with materials listed in the following table:

<u>Velocity (ft/sec)</u>	<u>Material Correlation</u>
less than 1,500	Unsaturated and unconsolidated overburden and fill materials, possibly including sand, silt, and gravel. Values throughout this range may represent landfill materials.
2,000 - 3,300	Unsaturated overburden materials as listed above, although more consolidated.

5,000 - 7,000

Water-saturated materials (particularly at the low end of this velocity range), or glacial till.

15,000 ±

Bedrock, possibly relatively unweathered or unfractured.

EM conductivity data shown on Figure 3 varied from less than 0 (indicative of shallow buried metal objects) to greater than 30 (indicative of conductive landfill materials or buried metal). Background conductivities for areas outside the landfill were approximately 10 millimhos per meter (mmhos/m), as may be noted on the profiles for Lines 1 and 2 between Stations 2+00 and 4+00.

Based on a combination of seismic refraction and EM-31 results, the northeastern boundary of the Gorick Landfill is anticipated at the following locations: 1) Line 1 Station 2+00, 2) Line 2 Station 2+00, 3) Line 3 Station 1+40 (a very thin layer of landfill materials may extend to Station 2+00 along Line 3). These interpreted landfill boundaries are also shown on the plan map, Figure 2.

Excellent correlations between seismic refraction and EM conductivity data were observed along Lines 1 and 2. Erratic conductivity values indicative of buried metal objects and relatively thick sections of low-velocity strata were seen between Stations 0+00 and 2+00 on each of these traverses.

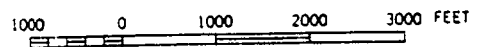
Data along Line 3 were less conclusive; anomalous EM-31 data were observed along the entire length of that line. Buried metal may thus be present along the entire length of Line 3; surface metal objects which could have caused similar anomalies was not observed between Stations 1+40 and 2+50. Seismic refraction data from Line 3 indicate that most of the low-velocity landfill materials are located west of approximately Station 1+40; however, a thin layer (less than 5 feet thick) of landfill materials may extend to at least Station 2+00, and possibly the entire length of Line 3.

A seismic velocity indicative of relatively sound bedrock was observed near Line 2 Station 0+00; bedrock velocities were not noted along the other traverses. The computed bedrock depth of approximately 33 feet (shown on Figure 2) has a relatively low degree of confidence due to the absence of bedrock velocities along adjacent shotpoints and traverses; reversed

profiling could not be completed. However, the velocity and depth is included on Figure 2 in the interest of completeness.

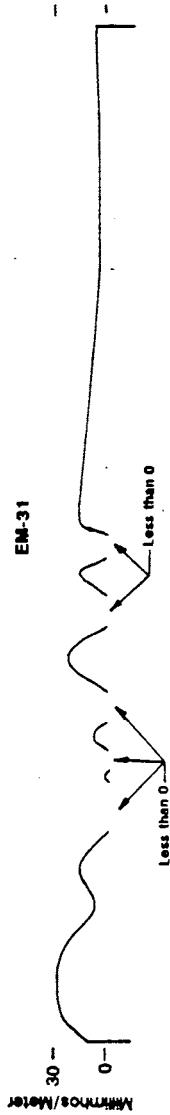
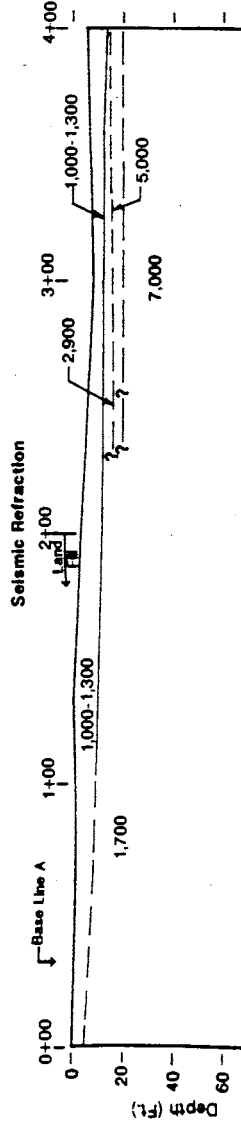


Note:
 Site Basemap: U.S.G.S. 7.5 Minute Series (Topographic)
 Binghamton East, NY Quadrangle.

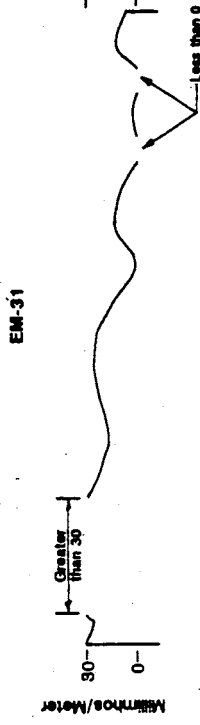
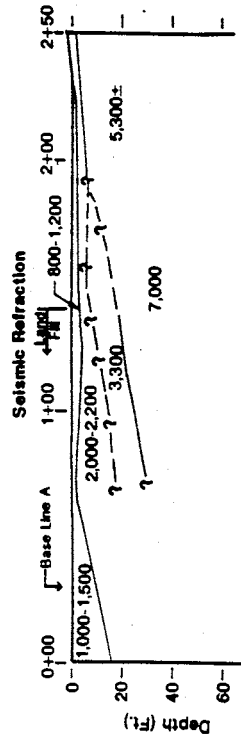


prepared by <i>FF</i> checked by <i>MS</i> reviewed by <i>MS</i>	GEOPHYSICAL INVESTIGATION GORICK LANDFILL KIRKWOOD, NEW YORK prepared for URS CONSULTANTS	Area of Investigation	
		Weston Geophysical	Fig. 1

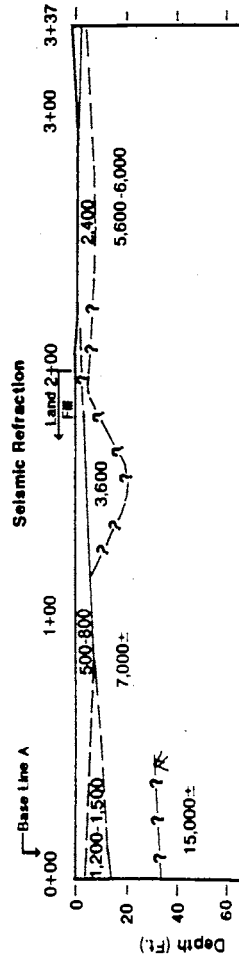
Line 1



Line 3



Line 2



Notes:

Seismic velocities are in feet/sec.

Dashed lines indicate velocity interfaces with uncertain geometries.

prepared by JH	GEOLOGICAL INVESTIGATION GORICK LANDFILL KIRKWOOD, NEW YORK prepared for URS CONSULTANTS	Seismic Refraction and EM-31 Profiles	
checked by MBS			Weston Geophysical Fig. 3
reviewed by MBS			

GENERAL CONSIDERATIONS

The seismic refraction survey method is a means of determining the depths to a refracting horizon and the thickness of major seismic discontinuities overlying the high-velocity refracting horizon. The seismic velocities measured by this technique can be used to calculate the mechanical properties of subsurface materials [moduli values], as well as for material identification and stratigraphic correlation.

Interpretations are made from travel time curves showing the measurement of the time required for a compressional seismic wave to travel from the source ["shot"] point to each of a group of vibration sensitive devices [seismometers or geophones]. The geophones are located at known intervals along the ground surface, as shown in Diagram A. Various seismic sources may be used, including a drop weight, an air gun, and small explosive charges.

FIELD PROCEDURE FOR DATA ACQUISITION

Weston Geophysical Corporation uses a seismic recording technique of continuous profiling and overlapping spreads for engineering and ground water investigations. The seismic refraction equipment consists of a Weston Geophysical trace amplifier, Model USA780, with either a WesComp™ [a field computer system developed by Weston Geophysical], or a recording oscillograph.

Continuous profiling is accomplished by having the end shot-point of one spread coincident with the end or intermediate position shot-point of the succeeding spread. The spread length used in a refraction survey is determined by the required depth of penetration to the refracting horizon. It is generally possible to obtain adequate penetration when the depth to the refracting horizon is approximately one-third to one-quarter of the spread length.

In general, "shots" are located at each end and at the center of the seismic spread, Diagram B. The configuration of the geophone array and the shot point positions are dependent upon the objectives of the seismic array.

As mentioned above, seismic energy can be generated by one or more of several sources.

The seismometer or geophone is in direct contact with the earth and converts the earth motion resulting from the shot energy into electric signals; a moving coil electromagnetic geophone is generally used. This type of detector consists of a magnet permanently attached to a spiked base which can be rigidly fixed to the earth's surface. Suspended within the magnet is a coil-wrapped mass. Relative motion between the magnet and coil produces an electric current, with a voltage proportional to the particle velocity of the ground motion.

The electric current is carried by cable to the recording device which provides simultaneous monitoring of each of the individual geophones. The operator can amplify and filter the seismic signals to minimize background interference. For each shot the seismic signals detected by a series of geophones are recorded on either photographic paper or magnetic tape, depending on job requirements. Included on each shot record is a "time break" representing the instant at which the shot was detonated.

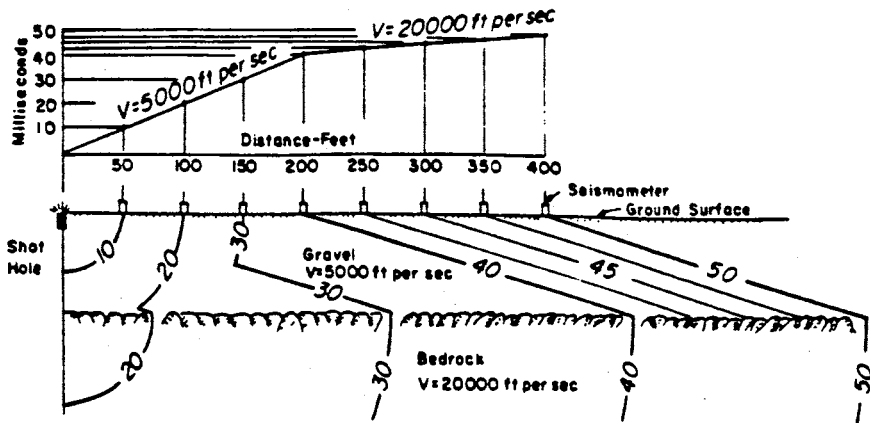
INTERPRETATION THEORY

The elastic wave measured in the seismic refraction method, the "P" or compressional wave, is the first arrival of energy from the source at the detector. This elastic wave travels from the energy source in a path causing adjacent solid particles to oscillate in the direction of wave propagation. Diagram A shows a hypothetical subsurface consisting of a lower velocity material above a higher velocity material. At smaller distances between source and detector the first arriving waves will be direct waves that travel near the ground surface through the lower velocity material. At greater distance, the first arrival at the detector will be a refracted wave that has taken an indirect path through the two layers. The refracted wave will arrive before the direct wave at a greater distance along the spread because the time gained in travel through the higher-speed material compensates for the longer path. Depth computations are based on the ratio of the layer velocities and the horizontal distance from the energy source to the point at which the refracted wave overtakes the direct wave.

Generally the interpretation is by one or more of several methods [W.M. Telford, et al., 1976] ray-tracing, wave front methods, delay times, critical distances. etc. In addition, either a forward or inverse interpretation can be performed using Weston's computer. Since successful refraction interpretation is based on experience, all interpretation of refraction data is performed or thoroughly reviewed by a senior staff geophysicist.

Reference

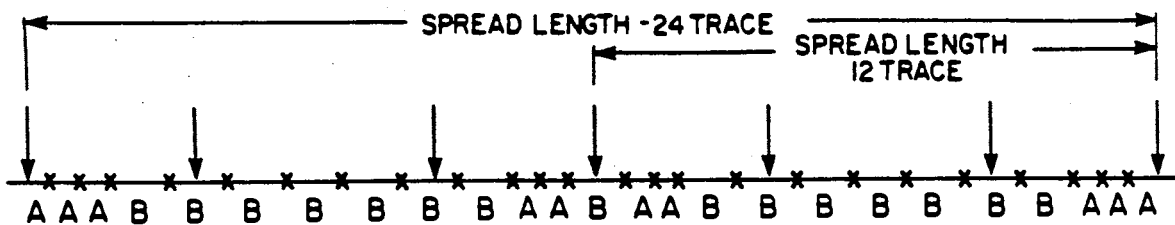
Telford, W.M.; Geldart, L.P.; Sheriff, R.E. and Keys, D.A., 1976, Applied Geophysics: Cambridge University Press.



Plot of Wave Front Advance in Two Layered Problem

Linehan, Daniel, Seismology Applied to Shallow Zone Research, Symposium on Surface and Subsurface Reconnaissance, Special Technical Publication No. 122, American Society for Testing Materials, 1951.

Diagram A



SPREAD LENGTH	GEOPHONE LOCATION A	GEOPHONE LOCATION B
400' - 24 TRACE or 200' - 12 TRACE	10	20
600' - 24 TRACE or 300' - 12 TRACE	15	30
1000' - 24 TRACE or 500' - 12 TRACE	25	50

LEGEND

- ↓ = GENERAL LOCATION OF "SHOT" POINT
- x = GEOPHONE LOCATION

Geophone Interval-Spread Length Relationship

Diagram B

GENERAL CONSIDERATIONS

The electromagnetic terrain conductivity [EM] survey is a method of obtaining subsurface information through "remote" inductive electric measurements made at the surface of the earth. Although limited in application, the EM method has significant advantage in speed and definition for certain problems. The parameter measured with this technique is the apparent conductivity of the subsurface. The conductivity meter consists of receiver coil and a separate transmitter coil which induces an electrical source field [a circular eddy current loop] in the earth [Figure 1]. Each current loop generates a magnetic field proportional to the value of the current flowing within the loop. Part of the magnetic field from each current loop is intercepted by the receiver coil and converted to an output voltage which is linearly related to terrain conductivity. EM instrument readings are in millimhos per meter.

Geologic materials can be characterized by their electrical characteristics; lateral variations in conductivity values generally indicate a change in subsurface conditions. The relative conductivity of earth materials is particularly sensitive to water content and dissolved salts or ions. Accordingly, dry sands and gravels, and massive rock formations have low conductivity values; conversely, most clays and materials with a high ion content have high conductivity values.

FIELD PROCEDURE FOR DATA ACQUISITION

Weston Geophysical generally uses two common terrain conductivity meters: the Geonics EM-31 and the EM-34-3. The EM-31 has a fixed intercoil spacing of 3.7 meters and an effective depth of penetration of approximately 6 meters. The EM-34-3 has two coils which can be separated by 10, 20, or 40 meters and can be oriented in either the horizontal or vertical dipole modes. Intercoil separations increase the effective depth of investigation as shown below.

<u>Intercoil Spacing</u> [meters]	<u>Depth of Investigation [meters]</u>	
	Horizontal Dipoles	Vertical Dipoles
10	7.5	15
20	15	30
40	30	60

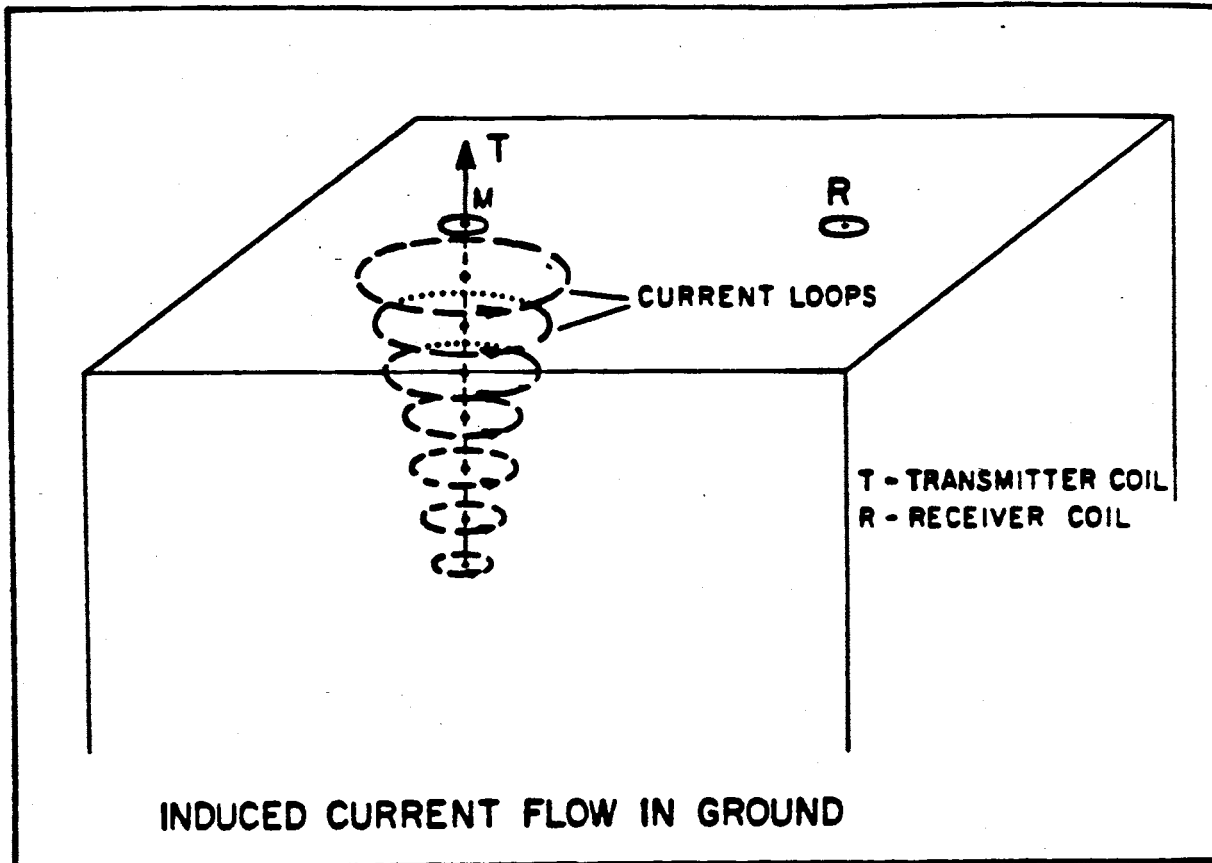
The coil orientation [horizontal or vertical] allows the EM-34-3 to respond to materials of different depths.

Conductivity measurements obtained with the EM-31 and/or the EM-34-3 can be obtained at any spacing along a survey line. EM-31 readings have the added flexibility of being recorded on a continuous chart recorder providing continuous data along a survey line.

DATA INTERPRETATION

EM data interpretation is generally subjective, that is measured EM values are contoured or profiled to identify high or low conductivity locations. Conductivity values obtained by an EM survey are relative values and depth estimates to conductive surface or bodies are best accomplished with an on-site calibration.

The EM-31 and EM-34-3 measure terrain conductivity in millimhos/meter. These values can be converted to resistivity [ohm/meters] for comparison with resistivity results by dividing the conductivity values into 1000.



Horizontal coplanar configuration (vertical dipole mode)

Figure 1

APPENDIX C

URS SOIL BORING LOGS

APPENDIX C

URS SOIL BORING LOGS

Boring logs were compiled from the results of continuous split-spoon sampling conducted of the deepest boring at each well cluster. At locations where only one well was installed, that well was sampled.

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MW-15

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 2

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: Buffalo Drilling

BORING LOCATION: N 761, 200.402 E 706, 574.609

GROUND WATER:

CAS. SAMP CORE TUBE

GROUND ELEVATION: 874.02

DATE TIME LEV TYPE TYPE SS (Split-Span)

DATE STARTED: 9/24/90

9/25 6:00 PM 48.6' Borehole 6.5" DIA. 2"

DATE FINISHED: 9/26/90

9/26 1:30 PM 11.6' " WT. 140#

DRILLER: KEN HUEBERT

9/26 6:30 PM 15.5' Borehole FALL 30"

GEOLOGIST: DANIEL SHEDDEN

Completion * POCKET PENETROMETER READING

REVIEWED BY: D. R. LEINHARDT

DEPTH FT	STRATA	SAMPLE				RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"							
	SS	S-1	SS	1	1	40	BRN	SOFT	Silt, some fine to	ML	
				1	3				MEDIUM SAND. TRACE		
		S-2		2	6	40		MED STIFF	CLAY		
5				6	9						
		S-3		6	6	85		DENSE	Gravelly silt, some	ML	• DK. BRN. SAND SEAMS, (1" THK) 4-6'
				13	19				SAND	GM	• SI. MOIST
		S-4		13	16	40					• COARSE GRAVEL
				15	22						• WET SAND SEAM
10		S-5		14	15	50	GRAY				
				21	21						
		S-6		6	10	45					
				16	25						
		S-7		19	26	50		V. DENSE			
				65/2							
15		S-8		100/1		0					• DRY
											• HAND Augering 14-15'
		S-9		17	25	55					
				45	50/1						
20		S-10		15	44	40	GRAY-BRN				
				75/3							
		S-11		14	56	75					
				30	38						
		S-12		53	18	70					
				20	34						
25		S-13		10	15	80		DENSE			
				18	21						
		S-14		18	27	50					
				30	27						
30		S-15		16	27	75					
				24	30						
		S-16		19	28	40	BRN	V. DENSE	Silty GRAVEL	GM	• EASY Augering 28-32'. Wet coatings
				50/1							
		S-17		27	63	65					
				60	71						
35		S-18		20	67	80			Gravelly silt, some SAND	ML/GM	• COARSE GRAVEL
36				100/5							

A-3205

COMMENTS: No PID readings for soil above background. CME-55 drill rig, 6 1/4" Augers.

PROJECT NO. 35232
BORING NO. MW-15

PROJECT: GORICK LANDFILL

SHEET NO. 2 OF 2

CLIENT: NYS DEC

JOB NO.: 35232

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %					
	0-5	S-19	SS	19 59 99 70	80	BRN	V. DENSE	Gravelly Silt, some SAND	ML/GM	• HARD Augering 36-44'
	5-10	S-20		38 100/5	30					
40	10-15	S-21		42 100/5	40					
	15-20	S-22		44 46 44 75/3	80					
45	20-25	S-23		27 REFUSAL	10					• Very HARD Augering 44-45, hard 45-46'
	25-30	S-24		60 29 37 68	70					
50	30-35	S-25		40 100/5	30					
	35-40	S-26		23 64 53 88	75	BRN GRAY Mottled				
	40-45	S-27		45 86 75/3	40					
55	45-50	S-28		46 68 92 74/2	65					
	50-55	S-29		47 100 100/3	50					
60	55-60	S-30		80 100/3	30					• Tight FINE SAND SEAM 61.4-61.8' Sl. moist
62	60-62	S-31		73 93 54 100	70					
								Boring completed at 62 Feet		

A-3205A

COMMENTS

PROJECT NO.

35232

BORING NO.

MW-15

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO. **MW-25**

PROJECT: **GOLICK LANDFILL**

SHEET NO. 1 OF 1

CLIENT: **NYSDEC**

JOB NO.: **35232**

BORING CONTRACTOR: **BUFFALO DRILLING**

BORING LOCATION: **N 761 441.60 S E 700, 571.247**

GROUND WATER:

CAS. SAMP CORE TUBE

GROUND ELEVATION: **857.64**

DATE	TIME	LEV	TYPE	TYPE			
9/19	9:00 A	7.5'	BoaE Hdg 6' 10'	DIA.		SS (Split-Span)	2"
"	10:00 A	17.0	" " 18'	WT.			140#
"	10:20 A		" " 18'	FALL			30"

DATE STARTED: **9/19/90**
 DATE FINISHED: **9/19/90**
 DRILLER: **KEN HUEBERT**
 GEOLOGIST: **DANIEL SHELTON**
 REVIEWED BY: **D. R. LEONHART**

* POCKET PENETROMETER READING

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS	
		NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %						
5	Silty CLAY	S-1	SS	2 9 11 8	50	BRN.	MED DENSE ↓ DENSE ↓ LOOSE ↓ U-DENSE	Silty GRAVEL (FINE to coarse gravel)	GM	2" DK. BRN Top soil	
		S-2		7 8 17 20	60						
		S-3		15 34 24 27	100						
10	Silty CLAY	S-4		5 6 3 2	40				MEDIUM to FINE SAND, Some silt	SW-SM	• SATURATED.
		S-5		1 15 9 67	40				Silty GRAVEL	GM	• COARSE size GRAVEL
15	Silty CLAY	No Sample - Cobbles		31 53 87 53/11	50						
		S-7	SS	15 45 22 31	40				As Above, some clay	GC	• HARD Auger- ing 10-13'
		S-8		12 19 31 32	30						• Moist
17											
20											
25											
30											
35											
								Boring completed at 17.0 Feet			

A-3205

COMMENTS: No PID readings from soil above background. CME-SS drill rig equipped with 6 1/4" Augers.

PROJECT NO. 35232
 BORING NO. MW-25

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MW-35

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 1

CLIENT: NYS DEC

JOB NO.: 35232

BORING CONTRACTOR: BUFFALO DRILLING

BORING LOCATION: N 761, 145.127 E 706, 654.275

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: 842.44

DATE: 10/8 TIME: 1:50 P LEV: 10.5' TYPE: Borehole @ 4.1'

TYPE: SS (SPLT-SFAR)

DATE STARTED: 10/8/90

DIA. 2"

WT. 140#

DATE FINISHED: 10/8/90

FALL 30'

* POCKET PENETROMETER READING

DRILLER: KEN HUEBERT

GEOLOGIST: DANIEL SHELDON

REVIEWED BY: D.R. LENARSKI

DEPTH FT.	STRATA	SAMPLE				RECOVERY ROD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"							
		S-1	SS	2 3	90	RED-BRN	LOOSE	Silt, trace clay with some FINE SAND SEAMS (1/2" TYP)	ML		
				4 4							
		S-2		2 4	70						
				3 3							
5		S-3		3 2	50						
				1 2							
		S-4		2 3	70			SAND AND GRAVEL, some silt	GM-SM		
				4 9							
		S-5		6 8	30		MED DENSE				
10				10 10							
		S-6		10 11	35	BRN				• Moist	
				11 16							
		NO SAMPLE 12-13'									• SATURATED
		S-7	SS	5 8	45			MEDIUM SAND, trace to some silt	SW-SM		
				7 6							
15		S-8		3 5	60						
				8 8							
		S-9		WH 3	90		LOOSE to MED DENSE			• HEAVY SAND 18-21	
				6 9							
20		S-10		4 5	55						
21				9 13							
		Boring completed at 21.0 feet									
25											
30											
35											

COMMENTS: No PID readings from soil above background. CME-SS drill rig equipped with 6 1/4" augers

PROJECT NO. 35232
BORING NO. MW-35

A-3205

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

B-3A

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 2

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: BUFFALO DRILLING

BORING LOCATION: N 761, 213.433 E 706.045. 735

GROUND WATER:

GROUND ELEVATION: 843.47

DATE	TIME	LEV	TYPE	TYPE	CAS.	SAMP	CORE	TUBE
10/4	10:00 A	27.0'	BOREHOLE @ 28'	DIA.		SS (Split-Spoon)		
				WT.		2"		
				FALL		140"		
						30"		

DATE STARTED: 10/2/90

DATE FINISHED: 10/4/90

DRILLER: KEN HUEBERT

GEOLOGIST: DANIEL SHELDON

* POCKET PENETROMETER READING

REVIEWED BY: D.R. LEONARD

DEPTH FT	STRATA	SAMPLE					DESCRIPTION				REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USES		
		SS-1	SS	1 3	1 9	40	D. BRN BRN ↓ GRAY-BRN	V. LOOSE MEO DENSE ↓ V. DENSE	ORGANIC RICH SANDY TOPSOIL COARSE GRAVEL, SOME SILT, TRACE CLAY WITH SOME FINE SAND SEAMS (1/2" Typ), Few Cobbles	OL GW-GM	
5		SS-2		14 34	18 35	95					
		SS-3		19 109/4	37	55					• SI. MOIST
		SS-4		16 48	56 66	90					• HARD Augering
10		SS-5		11 40	34 27	65					• Moist
		SS-6		19 39	38 36	75					
		SS-7		14 91	35 49	45					
15		SS-8		5 39	30 35	70					• MOTTLED 15-22 • Difficult Augering 14-22
		SS-9		8 28	20 41	85					
20		SS-10		86 50/1	63	50					
		SS-11		24	109/3	25					
		SS-12		31 34	50 25	80					
25		SS-13		4 27	14 37	90					• FINE SAND SEAM (2") • WET 24-25
		SS-14		14 49	31 38	75					• Moist SAND SEAMS (1/2" Typ) 25-31'
30		SS-15		12 40	12 29	80					
		SS-16		11 40	22 29	75					
		S-17		27 64	90	50					
35		S-18	↓	36 40	90 Refusal	50					• DRY. Very HARD Augering 34-44

A-3205

COMMENTS Initial location of proposed well MW-35. Hole grouted to surface due to insufficient water bearing zone. No RQD readings from soil above background. CME-55 drill rig equipped with 6 1/4" augers.

PROJECT NO.

35232

BORING NO.

B-3A

PROJECT: *GONICK LANDFILL*

SHEET NO. 2 OF 2

CLIENT: *NYSDEC*

JOB NO.: *35232*

DEPTH FT	STRATA	SAMPLE				RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"							
40		S-19	SS	26	65	60	GRAY-BRN	V-DENSE		GW-CM	<ul style="list-style-type: none"> Sl. Moist. Red mottling FINE SAND SEAMS cobbles 42-44' Augering through, NO SAMPLE
				72	75/3						
		S-20		35	49	60					
44		S-21		So-Refusal		0					<p>Boring Completed at 44.0' Sampler Refusal at 44'</p>

COMMENTS

A-3205A

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO. MW-4I

PROJECT: GOALICK LANDFILL

SHEET NO. 1 OF 2

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: Buffalo Drilling

BORING LOCATION: N161,449.71 E 705,460.371

GROUND WATER:

CAS. SAMP CORE TUBE

GROUND ELEVATION: 841.33

DATE TIME LEV TYPE TYPE SS (Split-Sound)

DATE STARTED: 11/5/90

11/5 4:30 P 7.4' Borehole to 18' DIA. 2"

DATE FINISHED: 11/6/90

11/6 10:00 A 8.7' " " 38' WT. 140#

DRILLER: Jerry Warren

FALL 30'

GEOLOGIST: Daniel Sheldon

* POCKET PENETROMETER READING

REVIEWED BY: D.R. LEJAEWSKI

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCC	REMARKS	
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %						
5	S-1	SS		1	3	BRN	SOFT U-SOFT	Silt, trace clay with SOME FINE SAND SEAMS (1/2" THK)	ML		
				2	2						80
				1	1 1/2						95
5	S-2			2		GRAY	DENSE	MEDIUM TO COARSE SAND AND COARSE GRAVEL, TRACE SILT	GW	• Rust colored, mottling 5-7' • Moist • Sample sat- urated • HARD Augering 10-12' Rust colored silt lenses	
				WR	WH						1
10	S-3			2	2	GRAY-BRN-RUST	DENSE	MEDIUM TO COARSE SAND AND COARSE GRAVEL, TRACE SILT	GW		
				WR	2						2
10	S-4			3	12	GRAY-BRN-RUST	DENSE	MEDIUM TO COARSE SAND AND COARSE GRAVEL, TRACE SILT	GW		
				7	3						65
10	S-5			7	13	GRAY-BRN-RUST	DENSE	MEDIUM TO COARSE SAND AND COARSE GRAVEL, TRACE SILT	GW		
				31	26						65
15	S-6			12	15	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				34	25						60
15	S-7			10	13	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				13	10						65
20	S-8			4	14	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				20	16						50
20	S-9			10	19	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				22	20						70
25	S-10			11	14	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				24	24						45
25	S-11			12	17	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				25	24						40
30	S-12			19	14	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				16	21						65
30	S-13			15	19	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				22	16						40
30	S-14			20	16	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				13	11						50
35	S-15			5	13	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				11	10						40
35	S-16			12	11	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				18	13						40
35	S-17			15	14	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				14	12						70
35	S-18			15	14	BRN	MED DENSE	SAND + Gravel AS ABOVE, SOME SILT	GW-GM		
				14	12						70

A-3205

COMMENTS: No RPD readings from soil above background. CME-SS drill rig equipped with 6 1/4" Augers.

PROJECT NO. 35232
BORING NO. MW-4I

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MW-4I

PROJECT: *GORICK LANDFILL*

SHEET NO. 1 OF 2

CLIENT: *NYSDEC*

JOB NO.: *35232*

DEPTH FT	STRATA	SAMPLE				RECOVERY ROD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION		CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"					MATERIAL DESCRIPTION			
38	<i>DISC P.O.</i>	5-19	SS	11 20 15 12	40	BKN	MED DENSE	<i>SAND AND GRAVEL</i>		GW- GM		
								<i>Boring completed at 38.0'</i>				

A-3205A

COMMENTS _____

PROJECT NO. 35232
BORING NO. MW-4I

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO. MW-5D

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 2

CLIENT: NYS DEC

JOB NO.: 35232

BORING CONTRACTOR: Buffalo Drilling

BORING LOCATION: N 74, 172.035 E 705, 462.725

GROUND WATER:

GROUND ELEVATION: 858.86

DATE	TIME	LEV	TYPE	TYPE	CAS. FLOW #	SAMP	CORE	TUBE
10/12	10:00 A	6.5'	Back Hole @ 10'	DIA.	4"	SS (Silt-Sand)		
10/15	10:30 A	4.5'	" " 18'	WT.		140*		
				FALL		30'		

DATE STARTED: 10/12/90

DATE FINISHED: 10/17/90

DRILLER: KEN HUEBERT

GEOLOGIST: DANIEL SHELDON

REVIEWED BY: D.R. LEHARST

* POCKET PENETROMETER READING

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY	DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %					
		S-1	SS	2 6	50	BRN	SOFT	Silt, trace SAND AND CLAY	ML	
		S-2		9 7	90					
		S-3		2 1						
5				4 4	75	GRAY	V. SOFT	FINE SAND, some silt	SM	Moist
		S-4		7 6						
				9 7	100					Decomposed leaves
		S-5		WR 1						
				1 2	60					
10		S-6		8 20	25	GRAY-BRN	MED DENSE	Silty GRAVEL, trace to SOME SAND	GM	WET
		S-7		10 7	50					
		S-8		8 20	40					Some SAND Blow-in 14-52
15		S-9		5 5	50					
				8 11						
		S-10		5 9	35					Subangular to round gravel
				10 10	50					
		S-11		4 5						
				4 7						
		S-12		9 15	0					No sample recovered 22-24' gravelly
				11 14						
20		S-13		10 13	60					
				14 13						
		S-14		12 10	45					
				10 12						
		S-15		6 10	65					
				14 15						
		S-16		14 18	40					
				11 11						
30		S-17		11 15	45					
				10 10						
		S-18		9 19	45		DENSE			
				13 20						
35				13 27	45					
				19 17						

COMMENTS

No PID readings from soil above background. CME-SS drill rig equipped with 6 1/4" Augers. Spin casing (4") from 58'-68'.

PROJECT NO.

35232

BORING NO.

MW-5D

PROJECT: GORICKE LANDFILL

SHEET NO. 2 OF 2

CLIENT: NYSDEC

JOB NO.: 35232

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %					
40	S.O.S	S-19	SS	19 16	50	GRAY-BRN	MED DENSE	MEDIUM TO COARSE SAND AND GRAVEL, SOME silt	GW-SM	
				13 11						
	S.O.S	S-20		9 13	40					
				10 14						
	S.O.S	S-21		8 14	25					
				19 18						
	S.O.S	S-22		7 15	50					
				13 9						
45	S.O.S	S-23		14 10	45					
				9 11						
	S.O.S	S-24		12 12	65					
				11 9						
50	S.O.S	S-25		8 15	20					
				22 19						
	S.O.S	S-26		15 13	75	V GRAY				
				16 15						
	S.O.S	S-27		WR WR	80					
				2 9						
55	S.O.S	S-28	✓	7 10	100					
				16 23						
No Sample										
60	S.O.S	S-29	SS	28 25	60		DENSE			
				20 22						
	S.O.S	S-30		34 41	30		U-DENSE			
				42 21						
	S.O.S	S-31		40 38	30					
				27 14						
65	S.O.S	S-32		32 30	55			GRAVELLY silt, trace CLAY. Gravel is AN-gular to subangular	ML	
				26 76						
	S.O.S	S-33		48 82	25					
				95 76						
69	S.O.S	S-34	✓	55 20/5	25					
								Boring Completed At 69.0 Feet		

• Excessive Sand Blow-in @ 54' Set-up to spin casing
 • No Sample 56-58' in order to seat casing

• GRAY silty sand seam (M) at 64.5'
 • WET

A-3205A

COMMENTS

PROJECT NO.
BORING NO.

35232
MW-5D

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MW-6I

PROJECT: COORICK LANDFILL

SHEET NO. 1 OF 1

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: BUFFALO DRILLING

BORING LOCATION: N76.2, 117.524 E705, 446.056

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: 839.34

DATE

TIME

LEV

TYPE

TYPE

DIA.

WT.

FALL

* POCKET PENETROMETER READING

DATE STARTED: 10/10/90

DATE FINISHED: 10/11/90

DRILLER: KEN HUEBERT

GEOLOGIST: DANIEL SHELDON

REVIEWED BY: D.R. LEHARDT

DEPTH FT	STRATA	SAMPLE					COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	PID (PPM)	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %							
		S-1	SS	WH	1	90	BRN	SOFT	CLAYEY Silt with Some FINE SAND SEAMS	0.0	ML	
					2							
5		S-2		1	2	80	↓	↓	↓	0.0	↓	
				3	2							
		S-3		2	2	90	GRAY	V. LOOSE	FINE to medium Silty SAND	0.0	SM	• Peat seam (1")
				2	3							
10		S-4		WR	WR	45	↓	↓	↓	0.0	↓	• Wet
				WH	1							
		S-5		1/2	3	40	↓	↓	↓	0.0	↓	• Peat seam (1")
				6								
15		S-6		3	5	60	GRAY-BRN	↓	↓	3.0	Gw-SW	• BANDS of Rust colored Silt in SAND AND GRAVEL
				9	6							
		S-7		7	4	50	↓	↓	↓	0.0	↓	
				3	10							
20		S-8		5	9	65	BRN	↓	↓	0.0	↓	
				10	13							
		S-9		7	15	55	↓	↓	↓	0.0	↓	
				24	10							
25		S-10		3	9	65	↓	↓	↓	0.0	SW-SM	
				8	10							
		S-11		3	4	95	↓	↓	↓	0.0	↓	
				4	11							
		S-12		3	6	100	↓	↓	↓	0.0	↓	
				10	13							
30		S-13		3	3	100	↓	↓	↓	0.0	↓	• SAND Blow-IN
				6	13							
35		No Sample, SAND Blow-IN						↓	↓	↓		
		Boring Completed At 28.8 feet										

A-3205

COMMENTS CME-SS Drill rig equipped with 6 1/4" Augers. No sampling below 26' due to severe SAND blow-in. PID readings from split-spoon samples.

PROJECT NO.

BORING NO.

35232

MW-6I

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO. **MW-6D**

PROJECT: **GORICK LANDFILL**

SHEET NO. 1 OF 2

CLIENT: **NYSDEC**

JOB NO.: **35232**

BORING CONTRACTOR: **Buffalo Drilling**

BORING LOCATION: **N762123.674 E705443.197**

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: **839.66**

DATE

TIME

LEV

TYPE

TYPE

SPIN

SPIN

T:11

Shelby

DATE STARTED: **6/4/91**

DIA.

WT.

FALL

4"

—

140lb.

3"

3"

DATE FINISHED: **6/5/91**

DRILLER: **K. Huebert**

GEOLOGIST: **Dan Sheldon**

* POCKET PENETROMETER READING

REVIEWED BY: **DUANE LEHARST**

DEPTH FT	STRATA	SAMPLE					DESCRIPTION				REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS		
5											
10											
15											
20											
25											
30											
		S-1	SS	12 11	0	BRN	Loose to MED DENSE	Fine to Medium sand, Trace silt	SP	Rock in nose of sample	
		S-2	SS	4 6	65						
				9 10							
35		S-3	SS	8 11	65						
				11 11							

Borehole logging begun below bottom of borehole No. MW-6I. SEE boring log MW-6I dated 10/10/90 for 0-30' data.

COMMENTS **Hole advanced with a CME-55 drill rig equipped with 6 1/4" Augers and 4" spin casing. No PID readings from soil above background.**

PROJECT NO. **35232**
BORING NO. **MW-6D**

A-3205

PROJECT: GORICK LANDFILL

SHEET NO. 2 OF 2

CLIENT: NYSDEC

JOB NO.: 35232

DEPTH FT	STRATA	SAMPLE				RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"							
							BRN	LOOSE to MED DENSE	FINE to MEDIUM SAND, TRACE to Some Silt	SW- SM	Rapid Drilling Rate 20- 56'
40		No Sampling Due to Severe SAND Blow-IN									
		S-4	SS	9 12	16 14	5					
45		S-5	SS	12 16	12 17	100					
		S-6	SS	3 12	9 11	100					
50		NO SAMPLE, SAND Blow IN 48.0 - 54.4 Feet									
54.5		S-7	SS	9 15	16 25	20					
56.4		NO SAMPLE					BRN- GRAY/ BRN	DENSE	FINE to COARSE GRAVEL IN A clayey silt matrix	GM	• SLOWER Drilling rate 56-63.5'
57.8		S-8	SS	22 19	25 22	0					
59.8		S-9	SS	7 88	22 90	95		V. DENSE			• SHEBLY sample* • WET
		S-10*	SS	100/5		20					• MOIST
63.5		S-11	Till CORE BARREL	NA		1.9 RQD 6.0 rec					
		* Sample S-9 59-61' * " S-10 61.6-62.0'							Boring Completed at 63.5 Feet.		* Sampler re- Fusal.

COMMENTS Auger Drilled to 25'. SAND rose in Augers to 20'. Spun casing 20-61.6'. Severe SAND blow IN below 20-54.5 FEET.

PROJECT NO.

35232

BORING NO.

MW-6D

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MN-75

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 1

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: Buffalo Drilling

BORING LOCATION: N762, 26S, 40E 705, 9.0S 464

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: 849.44

DATE

TIME

LEV

TYPE

TYPE

DIA.

SS (Split-Spoon)

DATE STARTED: 9/20/90

9/20

11:00A

16.7

BORE HOLE

DIA.

2"

DATE FINISHED: 9/20/90

Completion

WT.

140#

DRILLER: KEN HUEBERT

FALL

30"

GEOLOGIST: DANIEL SHELDON

* POCKET PENETROMETER READING

REVIEWED BY: D.R. LENHARDT

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	PID (PPM)	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %						
5	[Cross-hatched]	S-1	SS	3	11	40	BRN- DK.BRN	Loose to DENSE	Fill; wood, brick, concrete, glass, metal AND SOME clayey silt	1.0	Fill
				19	22						
		S-2		4	4	25					
				4	4						
		S-3		2	3	10					
				1	2						
S-4		3	4	25							
		5	6								
10	[Cross-hatched]	S-5		3	2	5					
				2	4						
S-6		5	5	5							
		4	3								
15	[Dotted]	S-7		1/12	22	35	LT.BRN	DENSE	GRAVEL, SOME FINE SAND, TRACE SILT	1.0	GW
				24							
S-8		14	23	60							
		24	20								
S-9		5	11	20	DK.BRN	MED DENSE					
		9	9								
20	[Dotted]	S-10		5	8	40					
				6	12						
S-11		3	7	25							
		10	9								
25	[Dotted]	S-12		6	7	35					
				7	5						
S-13		11	15	35							
		14	13								
S-14		11	17	60	DENSE						
		21	24								
30	[Dotted]	S-15		13	21	40					
				28	23						
S-16		10	15	60	MEDIUM DENSE						
		7	18								
35											Boring Completed at 32.0 feet

COMMENTS: PID readings from split-spoon samples. Water table encountered below fill unit. CME-SS drill rig equipped with 6 1/4" Augers.

PROJECT NO. 35232
BORING NO. MN-75

A-3205

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MW-85

PROJECT: COORICK LAND FILL

SHEET NO. 1 OF 1

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: BUFFALO DRILLING CO.

BORING LOCATION: N 761, 900, 403 E 705, 863, 109

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: 859.70

DATE

TIME

LEV

TYPE

TYPE

SS (Split-Spoon)

DATE STARTED: 10/29/90

10/29

5:00 P

19.4'

Borehole # 28'

DIA.

2"

DATE FINISHED: 10/30/90

10/29

5:30 P

21.0'

" " 30'

WT.

140#

DRILLER: JERRY WARREN

10/30

7:30 A

20.5'

Borehole

FALL

30"

GEOLOGIST: DANIEL SHELDON

Completion

* POCKET PENETROMETER READING

REVIEWED BY: D. R. LENHARTS

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY	DESCRIPTION	GLASS USES	REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RGD %					
		SS-1	SS	2 14 3 4	15	BRN-D. BRN	LOOSE	Fill; wood, concrete, bricks, plastics, clothing and metal	Fill	
		SS-2		6 7 11 19	10					• Black decomposed material 2-4'
5		SS-3		3 4 6 4	10					
		SS-4		3 2 1 12	0					
10		SS-5		3 2 8 1	5					• WET
		SS-6		2 2 3 11	0					• Very HARD Augering 11-12', metal
		SS-7		6 8 15 10	60					• wet sample 12-14' (penched water)
15		SS-8		9 4 8 17	15					• water level at 17'
		SS-9		8 10 5 5	10					
20		SS-10		1 2 5 7	5					
		SS-11		7 1 1/2 3	5					
		SS-12		9 6 5 REFORM	5					
25		SS-13		1 14 36 33	45	BRN-GRAY	DENSE	GRAVEL, trace silt + SAND	GW	Bottom of Fill at 24'
		SS-14		3 8 11 12	45		MED DENSE	SOME SAND, trace silt AND CLAY	GW-GM	• WET
30		SS-15		4 8 13 16	50					
		SS-16		9 8 12 11	35					
		SS-17		9 12 17 17	40					
35		SS-18		8 13 10 15	60					

Boring Completed at 36'

COMMENTS

No PID readings from soil or fill above background. Fifteen feet south of soil gas point #92. Composite waste sample GL-WS-8 collected from fill interval. CME SS drill rig equipped with 6 1/4" augers.

PROJECT NO.

35232

BORING NO.

MW-85

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO. MW-95

PROJECT: GONICK LANDFILL

SHEET NO. 1 OF 1

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: Buffalo Drilling

BORING LOCATION: N 74, 666.857 E 70, 660.329

GROUND WATER:

CAS. SAMP CORE TUBE

GROUND ELEVATION: 859.17

DATE	TIME	LEV	TYPE	TYPE	SAMP	CORE	TUBE
10/31	1.00 P	21.7'	Borehole At	DIA.	SS (split-spawn)		
			30.0'	WT.	2"		
				FALL	140"		
					30"		

DATE STARTED: 10/31/90
 DATE FINISHED: 10/31/90
 DRILLER: Jerry WARREN
 GEOLOGIST: DANIEL SHELDON
 REVIEWED BY: D.R. LEWIS

* POCKET PENETROMETER READING

DEPTH FT	STRATA	SAMPLE				RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	PIED (ppm)	CLASS USCS	REMARKS		
		NO.	TYPE	BLOWS PER 6"										
5	[Cross-hatched]	SS-1	SS	11	15	70	BRN-BLK	MED DENSE	Fill; wood, concrete metal and plastic	0.0	Fill			
				21	15									
		SS-2				6							8	45
						13							5	
		SS-3				11							16	5
						13							5	
		SS-4				5							17	10
						8							7	
		SS-5				3							3	5
						7							3	
		SS-6				1							2	35
17	12													
SS-7				11	15	30								
				10	12									
SS-8				1	3	5								
				3	5									
SS-9				2	12	10								
				14	21									
SS-10				12	35	5								
				30	11									
SS-11				27	31	10								
				8	17									
25	[Dotted]	SS-12		30	26	55	BRN	DENSE	GRAVEL, TRACE SILT AND SAND	0.0	GW	Bottom of Fill at 22.0'		
				28	24									
		SS-13		22	30	60								
		40	18											
30	[Dotted]	SS-14		9	15	60	GRAY-BRN		SAND AND GRAVEL, some silt	0.0	GM-SM	FEW cobbles 27-28'		
				25	28									
		SS-15		12	16	50								
		16	20											
35	[Dotted]	SS-16		8	17	60								
				13	23									
		SS-17		14	10	40								
		5	16											
SS-18		15	16	30										
		16	19											

A-3205

Boring Completed @ 36.0'

COMMENTS Composite waste sample GL-WS-9 collected from fill interval. PIED readings from split spoon samples. CME-SS drill rig equipped with 6 1/4" Augers.

PROJECT NO. 35232
 BORING NO. MW-95

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MW-105

PROJECT: GONICK LANDFILL

SHEET NO. 1 OF 1

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: BUFFALO DRILLING

BORING LOCATION: N 76.1389207 E 705.767.932

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: 856.41

DATE

TIME

LEV

TYPE

TYPE

SS (Split-Spoon)

DATE STARTED: 11/1/90

11/1

10:00A

18.7'

Base Hole @ 22'

DIA.

2"

DATE FINISHED: 11/1/90

WT.

140#

DRILLER: JERRY WARREN

FALL

30"

GEOLOGIST: DANIEL SHELDON

* POCKET PENETROMETER READING

REVIEWED BY: D.R. LENHARDT

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	PEN (ppm)	CLASS USCS	REMARKS	
		NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %							
5	[Cross-hatched]	SS-1	SS	4	27	15	BAN	Loose to DENSE	Fill; wood, brick, cloth and metal	0.0	Fill	• Sample warm
				30	12							
		SS-2		4	1	5						
				3	2							
		SS-3		2	10	15						
				16	4							
		SS-4		4	7	15						
				2	7							
		10	[Cross-hatched]	SS-5		3						
7	5											
SS-6		4	38	5								
		SS/2										
15	[Cross-hatched]	SS-7		1/18	6	5						
SS-8		12	SS/2	5								
18	[Cross-hatched]	SS-9		1	4	10						
				8	5							
20	[Cross-hatched]	SS-10		5	8	65	BAN-D.BAN	MED DENSE	Silty FINE SAND, SOME COARSE GRAVEL	6.0	SM	• Bottom of Fill at 18.0'
				14	18							
25	[Cross-hatched]	SS-11		3	12	65						
				17	13							
SS-12		4	10	60								
		12	10									
SS-13		7	7	70								
		10	11									
30	[Cross-hatched]	SS-14		18	25	75	LT.BAN	DENSE	SANDY SILT, SOME GRAVEL	0.0	ML	
				40	30							
SS-15		11	20	75								
		18	25									
35	[Cross-hatched]											

COMMENTS

Composite waste sample GL-WS-10 collected from fill interval. PID readings from split spoon samples. CME-SS drill rig equipped with 6 1/4" augers.

PROJECT NO.

35232

BORING NO.

MW-105

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. **B-10A**

PROJECT: **GORICK LANDFILL**

SHEET NO. 1 OF 1

CLIENT: **NYSDEC**

JOB NO.: **35232**

BORING CONTRACTOR: **Buffalo Drilling**

BORING LOCATION: **N76,589.849 E706,095.834**

GROUND WATER: **DRY HOLE**

GROUND ELEVATION: **860.72**

DATE	TIME	LEV	TYPE	CAS.	SAMP	CORE	TUBE
					SS (Split - Spec. 1)		
			DIA.		2"		
			WT.		140#		
			FALL		30"		

DATE STARTED: **10/9/90**
DATE FINISHED: **10/19/90**
DRILLER: **JERRY WARREN**
GEOLOGIST: **DANIEL SHELDON**
REVIEWED BY: **D.R. LENHART**

* POCKET PENETROMETER READING

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %					
		S-1	SS	4 24 20 19	70	BRN-BLACK	DENSE MED DENSE	WOOD AND GRAVEL FILL, TRACE CLAY, SOME SILT	Fill	- Blackened wood fragments - Moist
		S-2		4 6 5 7	5		LOOSE			
5		S-3		3 1 3 9	80	GRAY-BRN	V. DENSE	COARSE GRAVEL, SOME SAND AND SILT. FEW COBBLES	GW-GM	
		S-4		12 37 55 60/4	70					- Spoons Refusal, Cobbly
10		S-5		Refusal	0					
		S-6		14 16 24 28	70		DENSE	COARSE GRAVEL, SOME SILT, TRACE CLAY	GM	- Sl. Moist
12										
15										
20										
25										
30										
35										
								Boring Completed At 12.0'		

COMMENTS: Proposed location of MW-105. Aborted hole at 12'. Bottom of fill at 5.0'. No PID readings from soil above background. CME-SS drill rig equipped with 6 1/4" Augers.

PROJECT NO. **35232**
BORING NO. **B-10A**

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MW-11 I

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 2

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: BUFFALO DRILLING

BORING LOCATION: N762390.681 E706715.178

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: 858.91

DATE

TIME

LEV

TYPE

TYPE

SS (Split Spoon)

DATE STARTED: 6/19/91

6/19

4:40 PM

26.0'

Borehole At

DIA.

2"

DATE FINISHED: 6/20/91

G.S.

28'

WT.

140lb

DRILLER: L. Schroeder

6/21

7:10 AM

25.91

Well Comp. (G.S.)

FALL

30"

GEOLOGIST: Dan Sheldon

6/27

7:00 PM

26.27

" "

* POCKET PENETROMETER READING

REVIEWED BY: DUANE LEJHARDT

DEPTH FT	STRATA	SAMPLE				DESCRIPTION				REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	
		S-1	SS	7 10 10 14	60	Lt. BRN	MED DENSE	COARSE GRAVEL, SOME Silt	GM	<ul style="list-style-type: none"> • Black granular material at 1.5' • HARD Augering 3-4' • Cobbles • DRY • Mottled Silts 10-24' • Moist • Rust Colored Silts • Cobbles. Very moist • SATURATED MEDIUM SAND layer 25.5-26.5' • MORE COMPACT GRAVEL in a mottled silt matrix
		S-2	SS	4 6 14 14	70	Lt. BRN	MED DENSE	MEDIUM SAND, some silt. Trace coarse gravel	SP	
5	SS	S-3	SS	15 8 12 20	70	BRN				
		S-4	SS	15 23 20 30	65	Lt. BRN - BRN	DENSE	COARSE GRAVEL w/ Cobbles, TRACE to some silt, Few MEDIUM to FINE SAND SEAMS	GP/GM	
10		S-5	SS	17 18 22 24	65					
		S-6	SS	14 18 23 18	70					
		S-7	SS	13 22 14 12	45					
15		S-8	SS	12 30 21 24	40					
		S-9	SS	13 17 16 11	50					
20		S-10	SS	9 9 7 6	45		MED DENSE			
		S-11	SS	6 7 14 11	40					
		S-12	SS	9 10 10 11	55					
25		S-13	SS	10 10 18 7	60					
		S-14	SS	21 18 11 13	80					
30		S-15	SS	8 15 11 18	60					
		S-16	SS	12 15 18 19	70		DENSE			
		S-17	SS	17 16 22 17	65					
35		S-18	SS	25 26 21 16	65					

A-3205

COMMENTS: Hole advanced with a CME-55 drill rig equipped with 6 1/4" AUGERS. No PID readings from soil above background.

PROJECT NO.
BORING NO.

35232
MW-11 I

PROJECT: Gorlick Landfill

SHEET NO. 2 OF 2

CLIENT: NYSDEC

JOB NO.: 35232

DEPTH FT	STRATA	SAMPLE				RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"							
		S-19	SS	- 13 18 23	95	LT. SAND BAN.	DENSE	STRATIFIED FINE TO MEDIUM SAND AND COARSE GRAVEL, SOME SILT	GM- SM		
40		S-20	SS	13 12 13 17	45	↓	↓	↓	↓	• SOME SAND Blow-in 40-44'	
42		S-21	SS	7 19 13 15	100	↓	↓	↓	↓		
		S-22	SS	9 7 9 11	100	GRAY MED DENSE		FINE SAND, SOME SILT, CLAYEY SILT SEAMS (1" TYP)	SM- SC		
45		S-23	SS	6 9 18 19	100	↓	↓	↓	↓		
		S-24	SS	DROPPED RODS	100	↓	↓	↓	↓		
48.5		NO SAMPLE									
50.5		S-25	SS	4 12 29 68	90	↓	DENSE			• SOME COARSE GRAVEL 50-50.5'	
								Boring Completed at 50.5 Feet			

COMMENTS

Possible top of till at 50.0'. Very compact.

PROJECT NO.

35232

BORING NO.

MW-11I

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

B-11

PROJECT: Gorick Landfill

SHEET NO. 1 OF 1

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: Buffalo Drilling

BORING LOCATION: N 76, 000.79 E 706, 559.740

GROUND WATER: DRY HOLE

GROUND ELEVATION: 861.44

DATE	TIME	LEV	TYPE	TYPE	CAS.	SAMP	CORE	TUBE
						SS (1.1 - 5 ft)		
				DIA.		2"		3" Shelby
				WT.		140#		
				FALL		30"		

DATE STARTED: 11/7/90

DATE FINISHED: 11/7/90

DRILLER: Jerry Warren

GEOLOGIST: Daniel Sheldon

* POCKET PENETROMETER READING

REVIEWED BY: D. R. LENHART

DEPTH FT	STRATA	SAMPLE				COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %					
		S-1	SS	6 12	65	BRN	MED DENSE	Silty GRAVEL, some to TRACE SAND	GM	REWORKED SURFACE 0-2'
		S-2		12 22	60		DENSE			• DRY
5		S-3		15 18	70	GRAY-BRN.		GRAVELLY SILT, TRACE to some clay	ML-GM	• SI. MOIST
		S-4	Shelby	NA	95					COARSE GRAVEL, FEW cobbles.
10		S-5	SS	15 41	45					
		S-6		8 12	75					
		S-7		7 11	75		MED DENSE			
15		S-8		13 31	65		DENSE			• WET SAND SEAM (1/2") AT 13.5'
		S-9		13 25	60					• SI. MOIST
				14 35						
20		S-10		13 18	80					
				21 31						
22		S-11		6 40	75		V. DENSE			• DRY
				50 63						
25										
30										
35										
								Boring Completed at 22 Feet		

A-3205

COMMENTS Background well attempt. Shelby tube sample unsuccessful, too gravelly. No PID readings from soil above background CME-SS Drilling equipped with 6 1/4" augers.

PROJECT NO. 35232
BORING NO. B-11

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

MW-12D

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 2

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: Buffalo Drilling

BORING LOCATION: N760960.324 E705291.502

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: 846.73

DATE

TIME

LEV

TYPE

TYPE

TYPE

TYPE

TYPE

TYPE

TYPE

TYPE

DATE STARTED: 6/13/91

6/13

9:00AM

14.42

Borehole @ 16'

DIA.

DIA.

DIA.

DIA.

DIA.

DIA.

DATE FINISHED: 6/13/91

6/14

8:50AM

13.60

Well Completion

WT.

WT.

WT.

WT.

WT.

WT.

DRILLER: M. SAELI

Both levels from

FALL

FALL

FALL

FALL

FALL

FALL

GEOLOGIST: DAN SHELDON

Ground SURFACE

* POCKET PENETROMETER READING

REVIEWED BY: DUANE LENHART

DEPTH FT	STRATA	SAMPLE				RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"	TYPE							
		S-1	SS	10 9 12 12	75	Lt. BRN	STIFF ↓ MED STIFF	Clayey Silt, trace FINE SAND		ML		
		S-2	SS	5 5 7 6	70							
5		S-3	SS	4 5 5 5	85							
		S-4	SS	4 4 4 4	90							
10		S-5	SS	3 3 4 13	90	GRAY-BRN			AS ABOVE, with some COARSE GRAVEL		• Mottled Silts 7-12' • HARD Augering 10-12'	
12		S-6	SS	15 19 21 16	65		DENSE					
		S-7	SS	9 12 24 26	60	BRN	DENSE	Fine to Coarse Gravel with stratified medium to coarse sand. Some silt		GM/SM	• V. Moist • 4" SAND SEAM AT 15.5' SATURATED • Some SAND Blow-IN 20-24'	
15		S-8	SS	12 16 9 10	60		MED DENSE					
		S-9	SS	8 9 11 12	40							
20		S-10	SS	7 5 6 8	75	D. BRN						
		S-11	SS	3 5 8 11	65							
		S-12	SS	10 11 11 28	95							
25		S-13	SS	7 7 9 11	55							
		S-14	SS	9 9 14 32	75							
30		S-15	SS	14 13 15 17	20							
32		S-16	SS	6 8 12 21	40							
		S-17	SS	4 8 15 24	100	DARK BRN	MED DENSE	FINE-MEDIUM SAND, SOME SILT		SM		
35		S-18	SS	3 8 13 14	90							

COMMENTS: Hole advanced with a CME-SS drill rig equipped with 6 1/4" augers. PID readings taken on split spoon samples. No readings ABOVE background

PROJECT NO.

35232

BORING NO.

MW-12D

PROJECT: *Gorick Landfill*

SHEET NO. 2 OF 2

CLIENT: *NYSDEC*

JOB NO.: *35232*

DEPTH FT	STRATA	SAMPLE				RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		NO.	TYPE	BLOWS PER 6"							
		S-19	SS	NR	WH	100	D.BRN	V. LOOSE	AS ABOVE, trace FINE GRAVEL	SM	
40		S-20	SS	NR	5	100		V. DENSE			
				30	34						
		S-21	SS	15	10	100	GRAY-BRN	V. STIFF	Fine to coarse Gravel	GM	• Some SAND Blow-IN 40-43'
				15	30				clast in clayey silt matrix		
		S-22	SS	9	11	40		HARD			
				31	50/3						
45				NO SAMPLE							• Shelby Sample
46		S-24	SS	45	60/1	95					• Very HARD, DIFFICULTY PULLING RODS
47		S-25	SS	74	106	90					
				55/1							
									Boring Completed at 47.0 Feet		

COMMENTS
REFUSAL.

* Attempted Shelby tube sample (S-23) at 44.5'. Encountered sampler

PROJECT NO.

35232

BORING NO.

MW-12D

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO.

P-13

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 1

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: BUFFALO DRILLING

BORING LOCATION: N762343.781 E706051.448

GROUND WATER:

CAS.

SAMP

CORE

TUBE

GROUND ELEVATION: 856.86

DATE

TIME

LEV

TYPE

TYPE

DIA.

WT.

FALL

DATE STARTED:

5/17/91

6/19

7:10A

DRY

Borehole Comple-

tion

2 7/8"

3"

DATE FINISHED:

6/18/91

6/20

7:15A

23.82'

24 hours After

well Installation

30"

DRILLER: L. SCHROEDER

GEOLOGIST: DAN SHELTON

REVIEWED BY: DUANE LENHART

* POCKET PENETROMETER READING

DEPTH FT	STRATA	SAMPLE					DESCRIPTION				REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS		
2	6'ips 0.5'	S-1	SS	8 10 10 14	70	Lt. BRN	MEDIUM DENSE	SANDY SILT AND COARSE GRAVEL	SM-GM	• HARD Augering 1-15.	
		S-2	SS	26 8 15 29	30	BRN-BIK	Loose to DENSE	Fill; WOOD, METAL, BRICK AND CONCRETE. TRACE TO SOME SANDY SILT.	Fill		
		S-3	SS	3 2 3 5	35						
		S-4	SS	10 40 20 9	50						
		S-5	SS	7 33 65 32	40						
		S-6	SS	2 3 50%	20						
		S-7	SS	5 13 4 25%	45						
		S-8	SS	6 9 28 22	50	Lt. BRN	DENSE	COARSE GRAVEL AND FINE TO MEDIUM SAND TRACE TO SOME SILT	GM-SM		
		S-9	SS	21 24 16 14	75						
		S-10	SS	11 15 20 27	75	BRN					
		S-11	SS	12 18 32 32	95	BRN-GRAY/BRN	HARD	Silt, SOME FINE SAND, TRACE TO SOME CLAY. TRACE FINE GRAVEL	ML		
		S-12	SHELBY	NA	0						
		*S-13	SS	139 48 93	95						
		*S-14	SS	19/60/129	100						
25	25.5'							Bottom of Boring at 25.5 Feet			
30								* Samples S-13 AND S-14 submitted for permeability determination			
35											

COMMENTS

Bottom of Fill at 15'. Hole advanced with a CME-SS drill rig equipped with 6 1/4" AUGERS. No PID readings from soil above background.

Piezometer P-13 installed in borehole. Screened interval: 14.5-24.5'

PROJECT NO.
BORING NO.

35232
P-13

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO. MW-14D

PROJECT: GORICK LANDFILL

SHEET NO. 1 OF 3

CLIENT: NYSDEC

JOB NO.: 35232

BORING CONTRACTOR: BUFFALO DRILLING

BORING LOCATION: N762302.879 E709948.877

GROUND WATER:

CAS. SAMP CORE TUBE

GROUND ELEVATION: 846.13

DATE	TIME	LEV	TYPE	TYPE	CAS.	SAMP	CORE	TUBE
6/6	3:00 PM	13.0'	Borehole @ 14'	DIA.		SS (SPLIT Spoon)		
6/7	7:00 AM	15.3'	" " 37'	WT.		2"		
6/7	11:00 PM	16.6'	" " 68'	FALL		140 lb		
6/10	10:00 AM	13.8'	" " 68'			30"		

DATE STARTED: 6/6/91
 DATE FINISHED: 6/10/91
 DRILLER: K. HUEBERT
 GEOLOGIST: DAN SHELDON
 REVIEWED BY: DUANE LENHARDT

DEPTH FT	STRATA	SAMPLE				DESCRIPTION				REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	
5	SS	S-1	SS	2 2	55	LT. BRN	SOFT	Silt, trace to some FINE-MEDIUM SAND IN SEAMS (1/4" TYP)	ML	. DRY
				2 1						
		S-2	SS	2 2	40					. Sl. Moist
				3 2						
		S-3	SS	2 1	75					. Moist
				2 1						. Trace CLAY
		S-4	SS	2 2	60		V. SOFT			
				3 2						
10	SS	S-5	SS	1 1	75					. Very Moist
				1 1						
		S-6	SS	WH 1	80					
				1 1						
14	SS	S-7	SS	WA WA	90	GRAY				. SATURATED
				WH 12						
15	SS	S-8	SS	8 10	20	GRAY	MED DENSE	INTERBEDDED GRAVEL AND FINE TO MEDIUM SAND WITH TRACE TO SOME SILT	SM/GW	Iron staining 14-18'
				6 3						
		S-9	SS	5 7	45					. HARDER Augering 18-26' MORE COMPACT.
				8 10						
20	SS	S-10	SS	15 16	40					
				12 11						
		S-11	SS	8 10	40					
				14 17						
		S-12	SS	3 7	40					
				19 19						
25	SS	S-13	SS	19 14	40					
				16 14						
		S-14	SS	12 9	35					
				8 6						
28	SS	S-15	SS	2 1	90	GRAY	LOOSE	FINE SAND, some silt. PEAT AND OTHER ORGANIC debris IN SEAMS (1/4" TYP)	SM	. MED. SAND IN SEAMS (1/4" TYP) 32-34
				2 3						
30	SS	S-16	SS	1 3	100					
				6 7						
		S-17	SS	3 3	40					
				5 6						
35	SS	S-18	SS	4 5	45		MED DENSE			
				8 9						

COMMENTS No PID readings from soil above background. Hole advanced with A CME-SS drill rig equipped with 6 1/4" Augers.

PROJECT NO. 35232
 BORING NO. MW-14D

URS CONSULTANTS, Inc.

TEST BORING LOG

BORING NO. MW-14D

MW-14D

PROJECT: GORICK LANDFILL

SHEET NO. 3 OF 3

CLIENT: NYSDEC

JOB NO.: 35232

DEPTH FT	STRATA	SAMPLE				DESCRIPTION				REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	
80	2-0 3-0 4-0 5-0	S-40	SS	43 45 44 45	90	BRI	V. DENSE	SILTY COARSE GRAVEL TRACE CLAY	GM	Very Hard Augering
82		S-41	SS	43 45 46 42	75					
Boring Completed At 82 Feet										

A-3805A

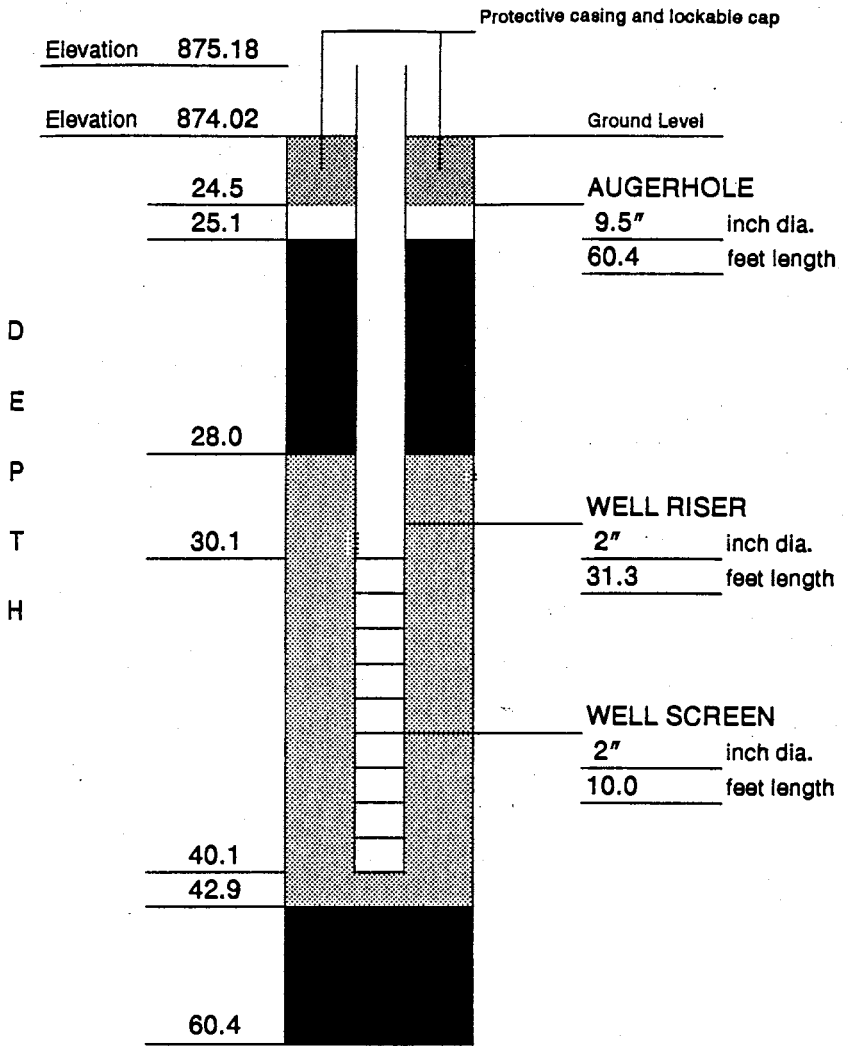
COMMENTS

PROJECT NO. 35232
BORING NO. MW-14D

APPENDIX D

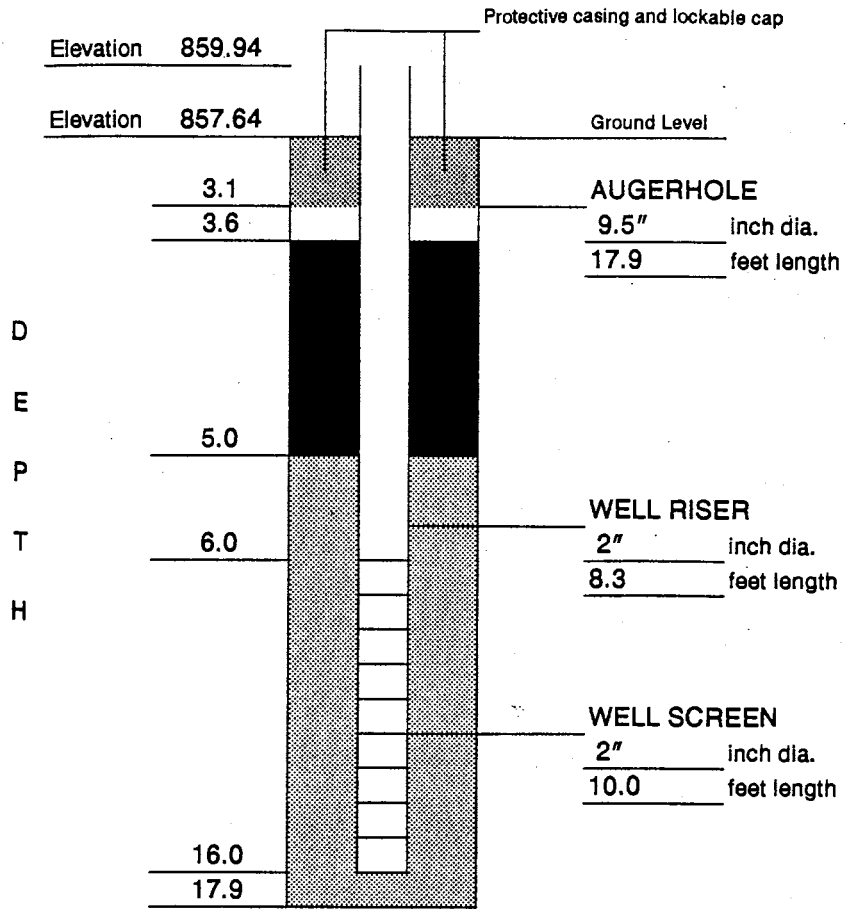
URS MONITORING WELL INSTALLATION REPORTS

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Ken Huebert	
Date: 10/1/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-5.0	Silt, some Sand
5.0-30.0	Gravelly Silt, Some Sand
30.0-32.5	Silty Gravel
32.5-62.0	Gravelly Silt, Some Sand
WELL DESIGN	



CASING MATERIAL	SCREEN MATERIAL	SEAL MATERIAL
Surface: Steel	Type: #304 Stainless Steel	Seal #1 Type Pure Gold Slurry Setting: 51.2' - 60.4'
Monitor: #304 Stainless Steel	Slot Size: .010"	Seal #2 Type Bentonite Pellets Setting: 42.9' - 51.2'; 25.1' - 28.0'
FILTER MATERIAL	ROCK CORING	LEGEND
Type: #2 Q-Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 28.0' - 42.9'	Core Diameter: None	#1 Silica Sand
	Reamed Diameter: None	Bentonite Seal
		Silica Sandpack
Client: NYSDEC	Project: Gorick RI/FS	Project No. 35232.00
URS Consultants Inc.	Monitoring Well Construction Details	Well Number: MW 1S

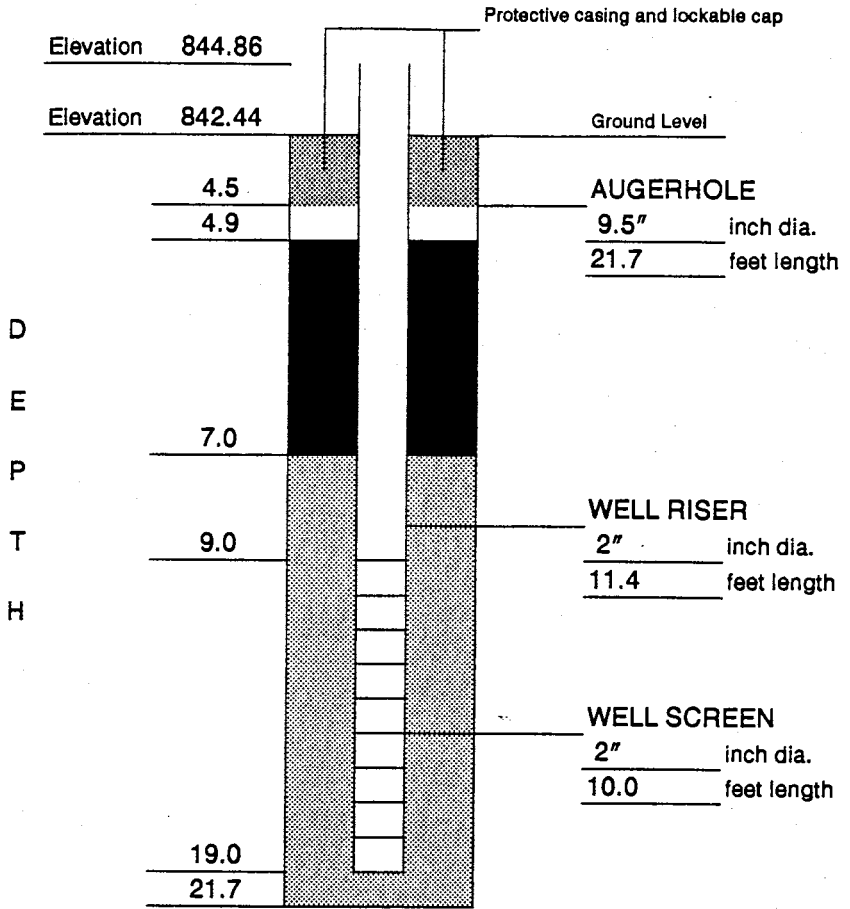
DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Ken Huebert	
Date: 9/19/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-6.0	Silty Gravel
6.0-8.0	Sand, some Silt
8.0-17.9	Silty Gravel



WELL DESIGN

CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Pellets
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	3.6' - 5.0'
FILTER MATERIAL		ROCK CORING		LEGEND	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting:	5.0' - 17.9'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number MW 2S	

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Ken Huebert	
Date: 10/8/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-6.0	Clayey Silt
6.0-13.0	Sand and Gravel
13.0-22.0	Silty Sand
WELL DESIGN	



CASING MATERIAL Surface: Steel Monitor: #304 Stainless Steel	SCREEN MATERIAL Type: #304 Stainless Steel Slot Size: .010"	SEAL MATERIAL Seal #1 Type Bentonite Pellets Setting: 4.9' - 7.0' Seal #2 Type None Setting:
FILTER MATERIAL Type: #2 Q-Rok Setting: 7.0' - 21.7'	ROCK CORING Cored Interval: None Core Diameter: None Reamed Diameter: None	LEGEND <ul style="list-style-type: none"> Cement/Bentonite Grout #1 Silica Sand Bentonite Seal Silica Sandpack
Client: NYSDEC	Project: Gorick RI/FS	Project No. 35232.00
URS Consultants Inc.	Monitoring Well Construction Details	Well Number MW 3S



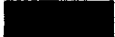
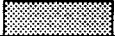
DRILLING SUMMARY

Geologist:
Daniel Sheldon
Drilling Company:
Buffalo Drilling Co.
Driller:
Jerry Warren
Date:
11/6/90

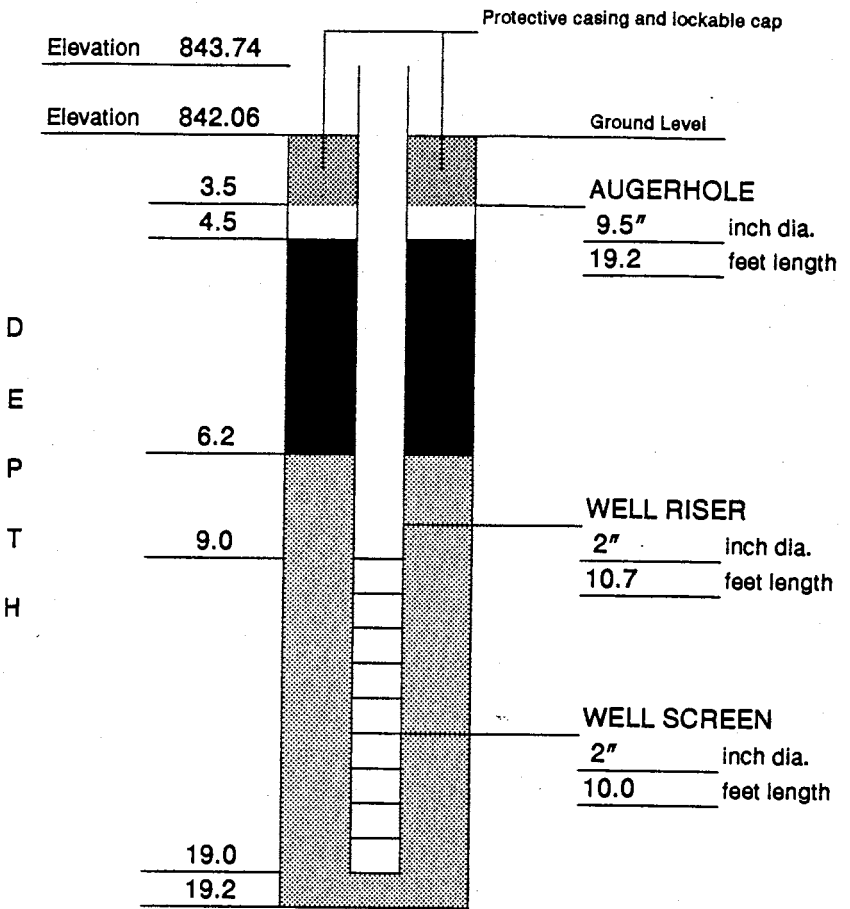
GEOLOGIC LOG

depth(ft.)	lithology
0-9.0	Silt, trace clay and sand
9.0-19.2	Sand and Gravel

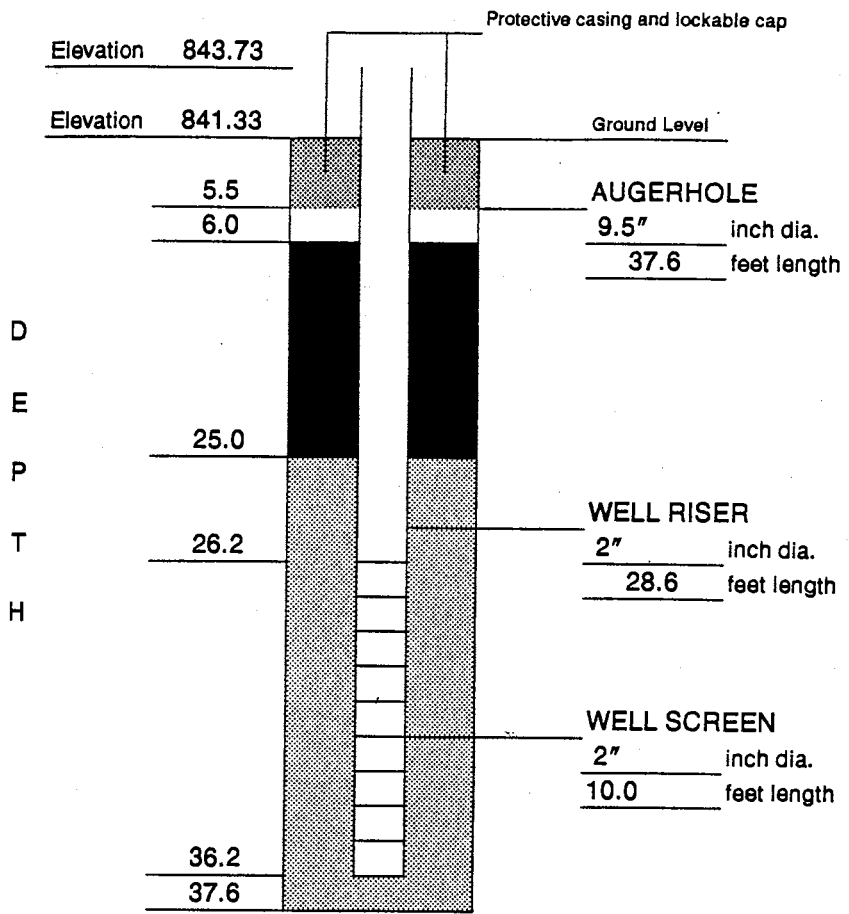
WELL DESIGN

<p><i>CASING MATERIAL</i></p> <p>Surface: Steel</p> <p>Monitor: #304 Stainless Steel</p>	<p><i>SCREEN MATERIAL</i></p> <p>Type: #304 Stainless Steel</p> <p>Slot Size: .010"</p>	<p><i>SEAL MATERIAL</i></p> <p>Seal #1 Type Bentonite Pellets Setting: 4.5' - 6.2'</p> <p>Seal #2 Type None Setting:</p>
<p><i>FILTER MATERIAL</i></p> <p>Type: #2 Q-Rok</p> <p>Setting: 6.2' - 19.2'</p>	<p><i>ROCK CORING</i></p> <p>Cored Interval: None</p> <p>Core Diameter: None</p> <p>Reamed Diameter: None</p>	<p><i>LEGEND</i></p> <p> Cement/Bentonite Grout</p> <p> #1 Silica Sand</p> <p> Bentonite Seal</p> <p> Silica Sandpack</p>

Client: NYSDEC	Project: Gorick RI/FS	Project No. 35232.00
URS Consultants Inc.	Monitoring Well Construction Details	Well Num MW 4S



DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Jerry Warren	
Date: 11/6/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-9.0	Silt, trace sand and clay
9.0-37.6	Sand and gravel
WELL DESIGN	



CASING MATERIAL	SCREEN MATERIAL	SEAL MATERIAL
Surface: Steel	Type: #304 Stainless Steel	Seal #1 Type Bentonite Slurry Setting: 6.0' - 25.0'
Monitor: #304 Stainless Steel	Slot Size: .010"	Seal #2 Type None Setting:
FILTER MATERIAL	ROCK CORING	LEGEND
Type: #2 Q-Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 25.0' - 37.6'	Core Diameter: None	#1 Silica Sand
	Reamed Diameter: None	Bentonite Seal
		Silica Sandpack
Client: NYSDEC	Project: Gorick RI/FS	Project No. 35232.00
URS Consultants Inc.	Monitoring Well Construction Details	Well Number MW 41

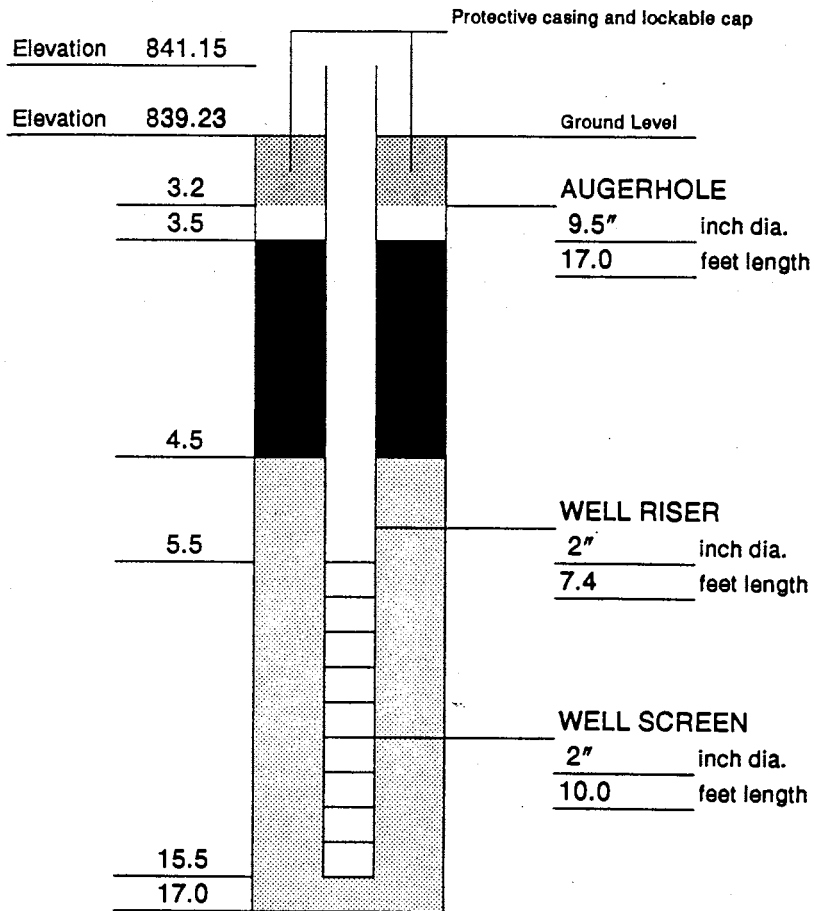
DRILLING SUMMARY

Geologist:
Daniel Sheldon
Drilling Company:
Buffalo Drilling Co.
Driller:
Jerry Warren
Date:
10/19/90

GEOLOGIC LOG

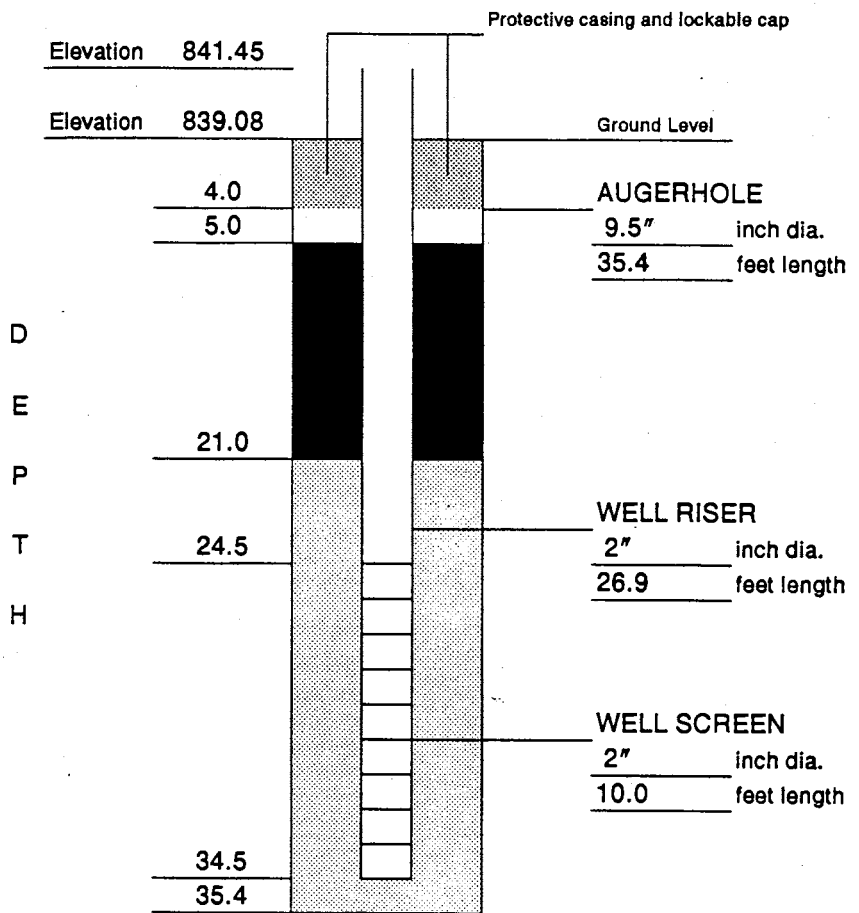
depth(ft.)	lithology
0-4.0	Silt, trace sand and clay
4.0-10.0	Sand, some silt
10.0-17.0	Gravel, some silt and sand


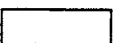


WELL DESIGN



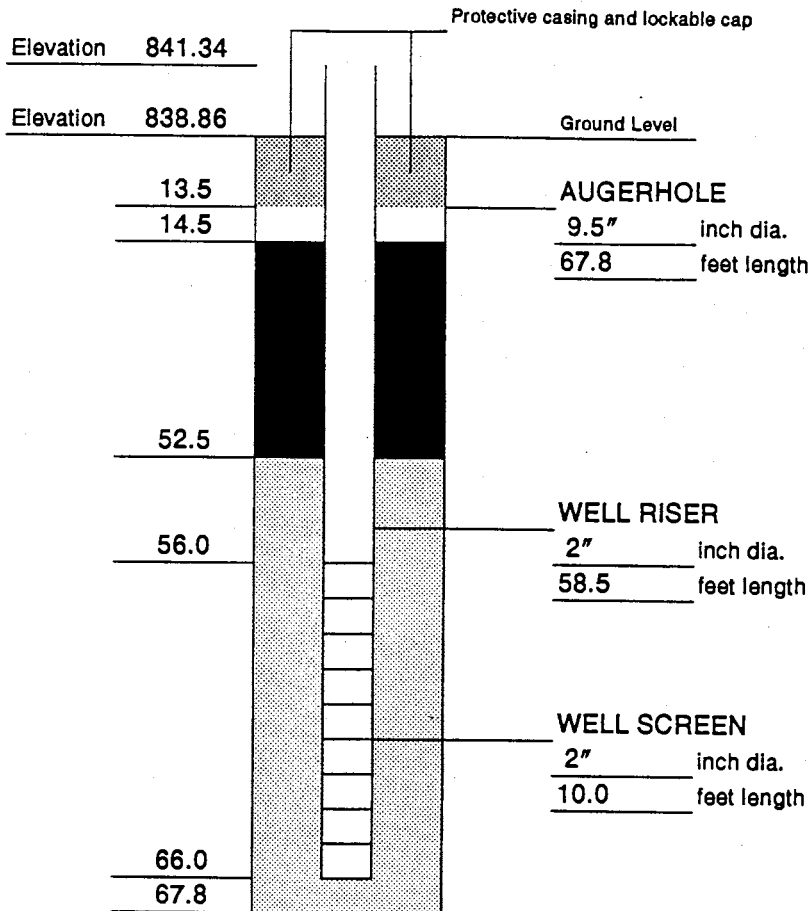
CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface: Steel		Type: #304 Stainless Steel		Seal #1 Type Bentonite	
Monitor: #304 Stainless Steel		Slot Size: .010"		Setting: 3.5' - 4.5'	
FILTER MATERIAL		ROCK CORING		LEGEND	
Type: #2 Q-Rok		Cored Interval: None		[Hatched Box] Cement/Bentonite Grout	
Setting: 4.5' - 17.0'		Core Diameter: None		[White Box] #1 Silica Sand	
		Reamed Diameter: None		[Black Box] Bentonite Seal	
				[Dotted Box] Silica Sandpack	
Client: NYSDEC		Project: Gorick RI/FS		Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW 5S	

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Ken Huebert	
Date: 11/2/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-4.0	Silt, trace sand and clay
4.0-10.0	Sand, some silt
10.0-18.0	Gravel, some silt and sand
18.0-35.4	Sand and gravel
WELL DESIGN	



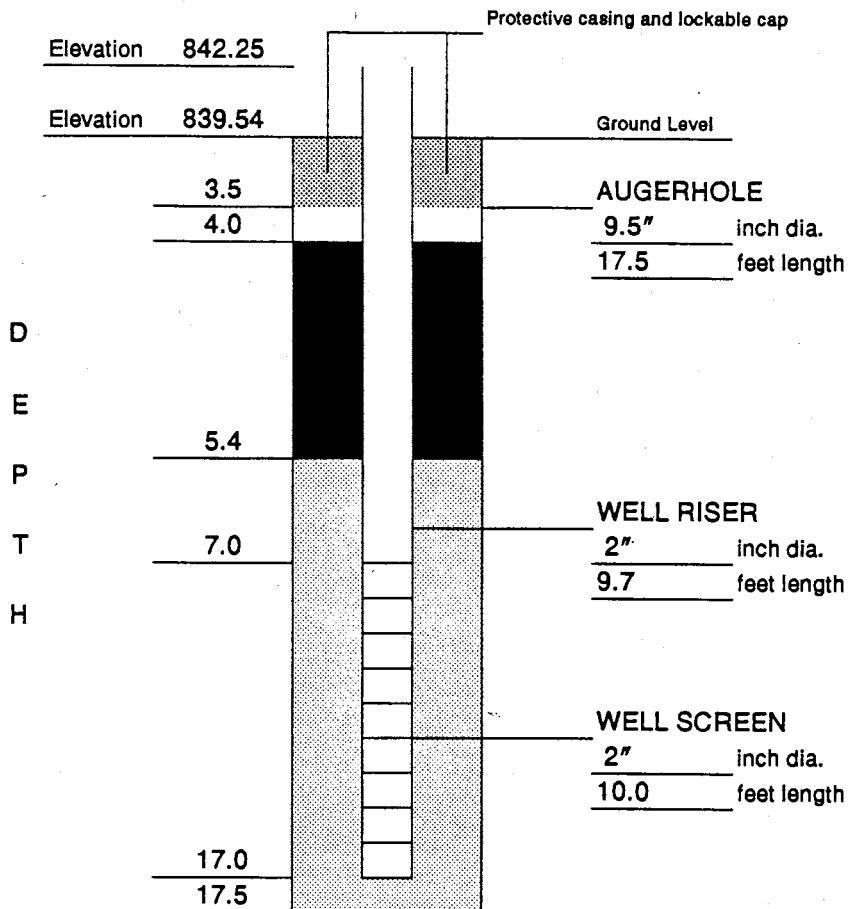
CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Slurry
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	5.0' - 21.0'
FILTER MATERIAL		ROCK CORING		LEGEND	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting:	21.0' - 35.4'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW 51	

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Ken Huebert	
Date: 10/18/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-4.0	Silt, trace sand and clay
4.0-10.0	Sand, some silt
10.0-18.0	Gravel, some silt and sand
18.0-64.0	Sand and gravel
64.0-69.0	Gravelly silt, trace clay
WELL DESIGN	



CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Slurry
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	16.0' - 52.5'
FILTER MATERIAL		ROCK CORING		LEGEND	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting:	52.5' - 67.8'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW 5D	

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Ken Huebert	
Date: 10/11/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-7.0	Silt, trace sand and clay
7.0-10.0	Silty sand, trace peat
10.0-17.5	Sand and gravel



WELL DESIGN

CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Pellets
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	4.0' - 5.4'
FILTER MATERIAL		ROCK CORING		LEGEND	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting:	5.4' - 17.5'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW 6S	

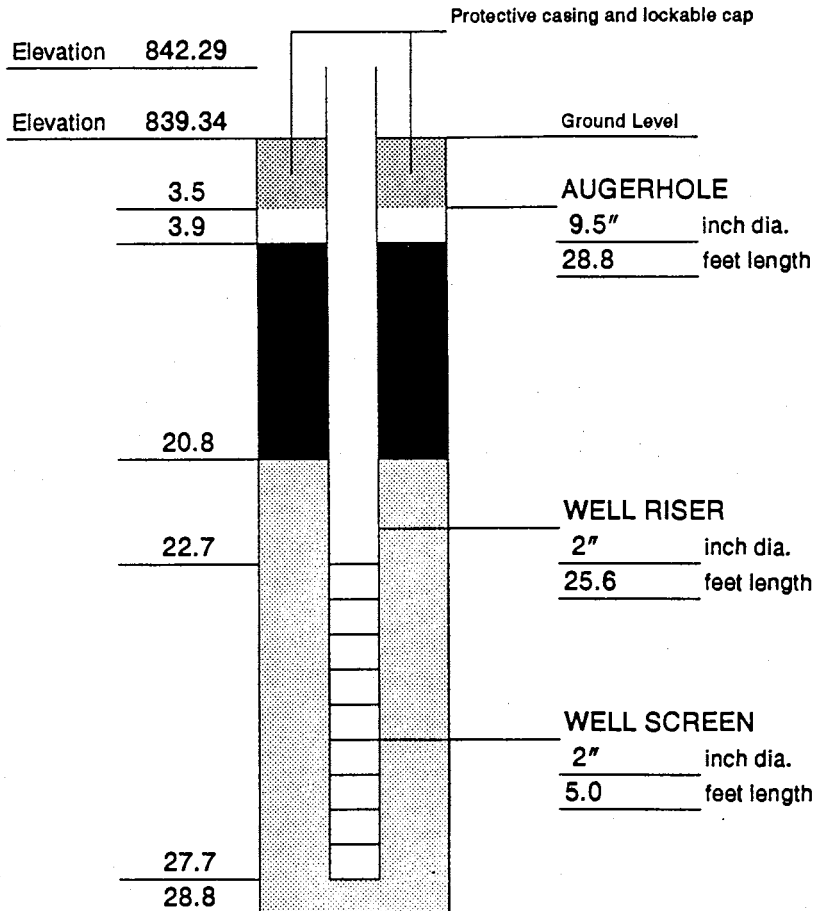
DRILLING SUMMARY

Geologist:
Daniel Sheldon
Drilling Company:
Buffalo Drilling Co.
Driller:
Ken Huebert
Date:
10/11/90

GEOLOGIC LOG

depth(ft.)	lithology
0-6.7	Silt, trace sand and clay
6.7-10.0	Silty Sand
10.0-17.5	Sand and Gravel
17.5-28.8	Sand, Some Silt

WELL DESIGN



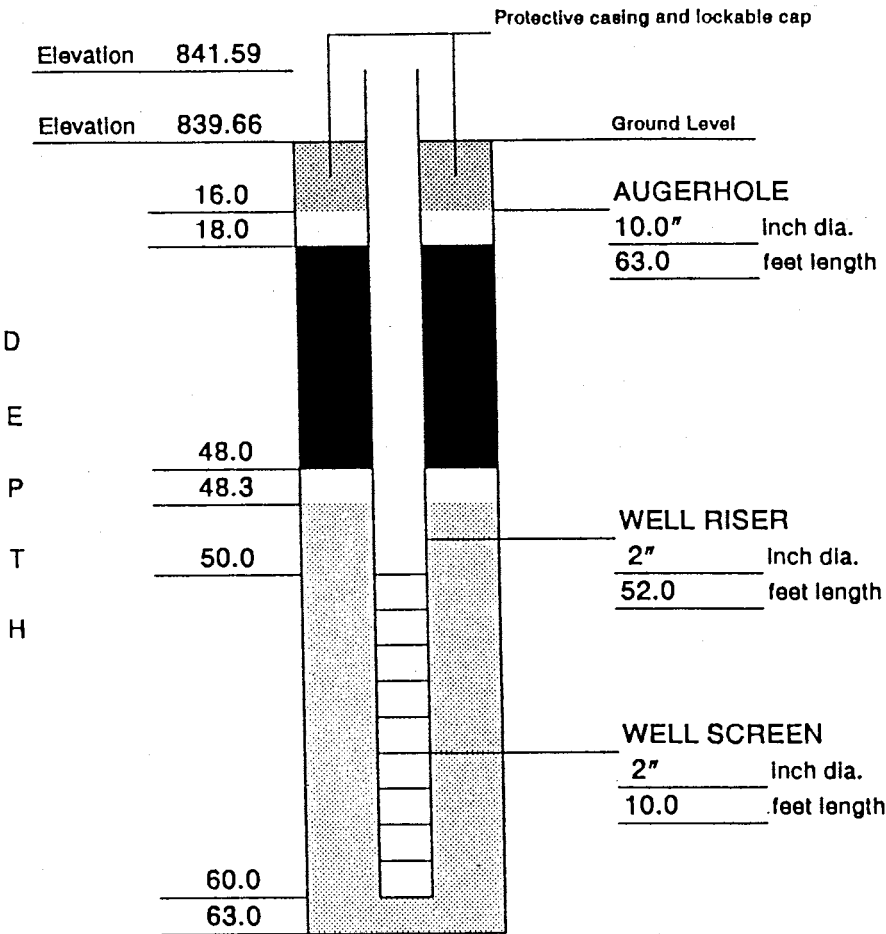
CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Slurry
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	3.9' - 20.8'
FILTER MATERIAL		ROCK CORING		LEGEND	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting:	20.8' - 28.8'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW 6I	

DRILLING SUMMARY

Geologist:
Daniel Sheldon
Drilling Company:
Buffalo Drilling Co.
Driller:
Ken Huebert
Date:
6/5/91

GEOLOGIC LOG

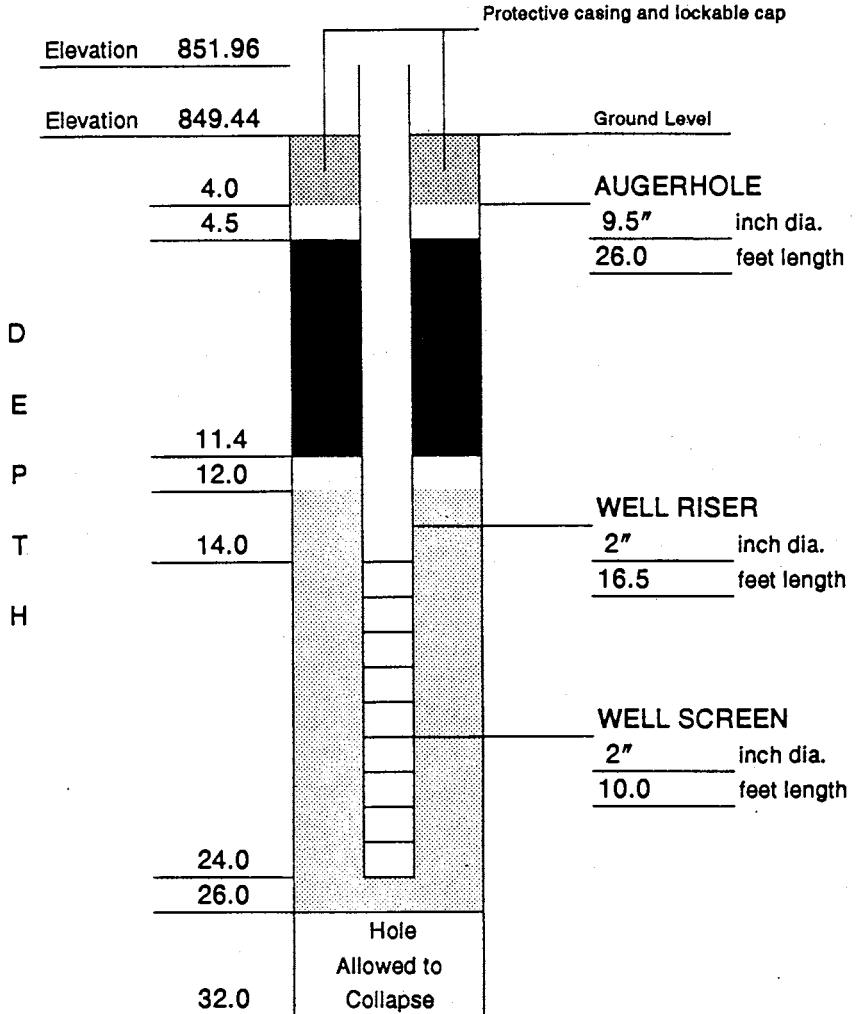
depth(ft.)	lithology
28.8-56.4	Sand, some silt
56.4-63.5	Gravel in a clayey silt matrix



WELL DESIGN

<i>CASING MATERIAL</i>		<i>SCREEN MATERIAL</i>		<i>SEAL MATERIAL</i>	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Slurry 18.0' - 48.0'
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Seal #2 Type	None
				Setting:	
<i>FILTER MATERIAL</i>		<i>ROCK CORING</i>		<i>LEGEND</i>	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting	48.3'-63.0'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No.	35232.00
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW-6D	

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Ken Huebert	
Date: 9/21/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-13.0	Fill
13.0-20.0	Gravel, some sand
20.0-32.0	Sand and Gravel



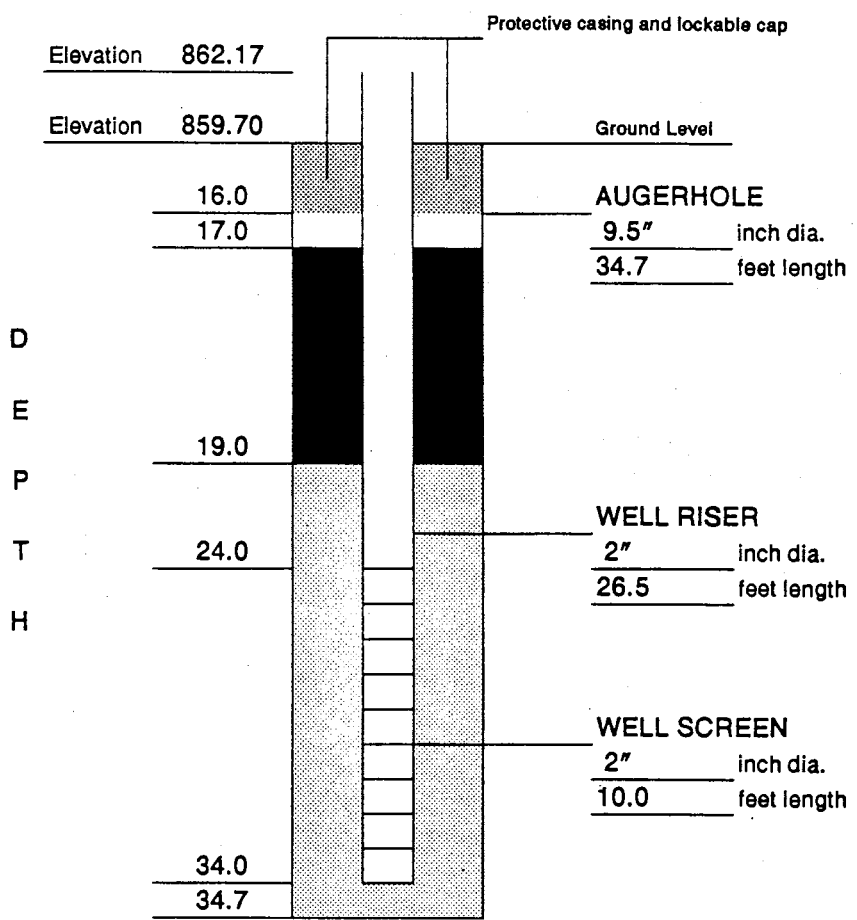
WELL DESIGN

CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIALS	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Pellets
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	11.4'-10.0'; 6.0'-4.5'
				Seal #2 Type	Bentonite Slurry
				Setting:	8.5'-6.0'
				Seal #3 Type	Pure Gold Slurry
				Setting:	10.0'-8.5'
FILTER MATERIAL		ROCK CORING		LEGEND	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting:	12.0' - 26.0'	Core Diameter:	None		#1 Silica Sand
Type:	#1 Silica Sand	Reamed Diameter:	None		Bentonite Seal
Setting:	11.4' - 12.0'				Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW 7S	

DRILLING SUMMARY
Geologist: Daniel Sheldon
Drilling Company: Buffalo Drilling Co.
Driller: Jerry Warren
Date: 10/30/90

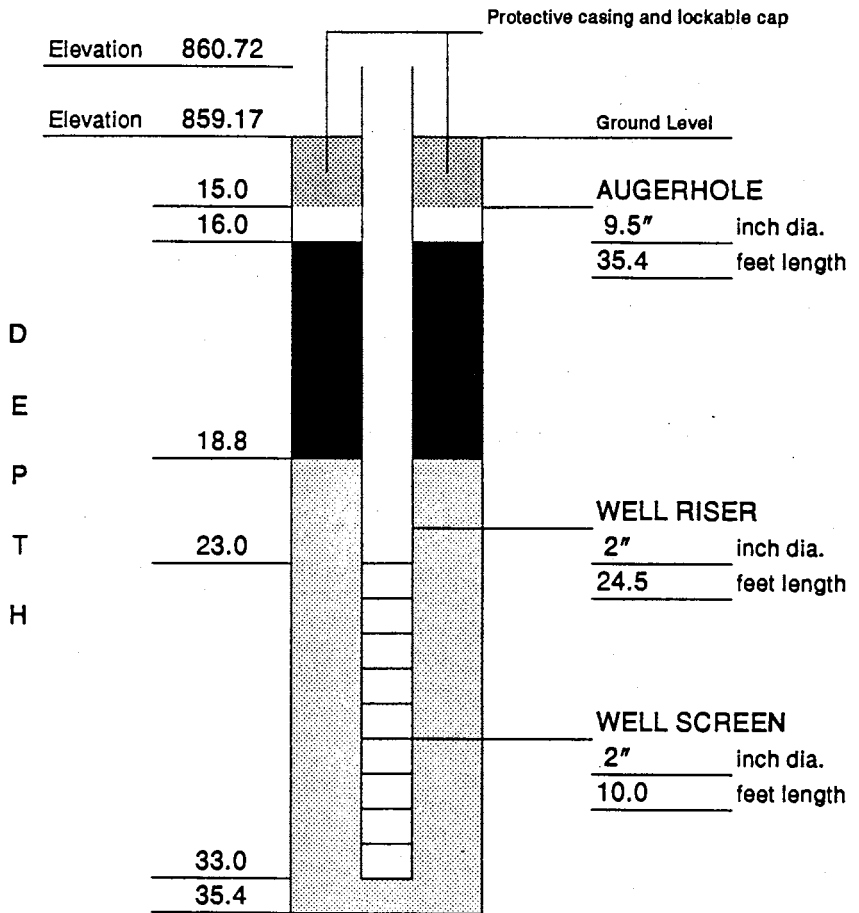
GEOLOGIC LOG	
depth(ft.)	lithology
0-24.0	Fill
24.0-26.0	Gravel, trace silt and sand
26.0-36.0	Gravel, some sand, trace silt and clay

WELL DESIGN



CASING MATERIAL Surface: Steel Monitor: #304 Stainless Steel	SCREEN MATERIAL Type: #304 Stainless Steel Slot Size: .010"	SEAL MATERIAL Seal #1 Type Bentonite Pellets Setting: 17.0' - 19.0' Seal #2 Type None Setting:
FILTER MATERIAL Type: #2 Q-Rok Setting: 19.0' - 34.7'	ROCK CORING Cored Interval: None Core Diameter: None Reamed Diameter: None	LEGEND <ul style="list-style-type: none"> Cement/Bentonite Grout #1 Silica Sand Bentonite Seal Silica Sandpack
Client: NYSDEC	Project: Gorick RI/FS	Project No. 35232.00
URS Consultants Inc.	Monitoring Well Construction Details	Well Number: MW 8S

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Jerry Warren	
Date: 10/31/90	
GEOLOGIC LOG	
depth(ft.)	lithology
0-22.0	Fill
22.0-26.0	Gravel, some sand
26.0-36.0	Sand and gravel
WELL DESIGN	



CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Pellets
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	16.0' - 18.8'
FILTER MATERIAL		ROCK CORING		LEGEND	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting	18.8' - 35.4'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW 9S	

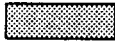
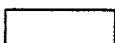


DRILLING SUMMARY

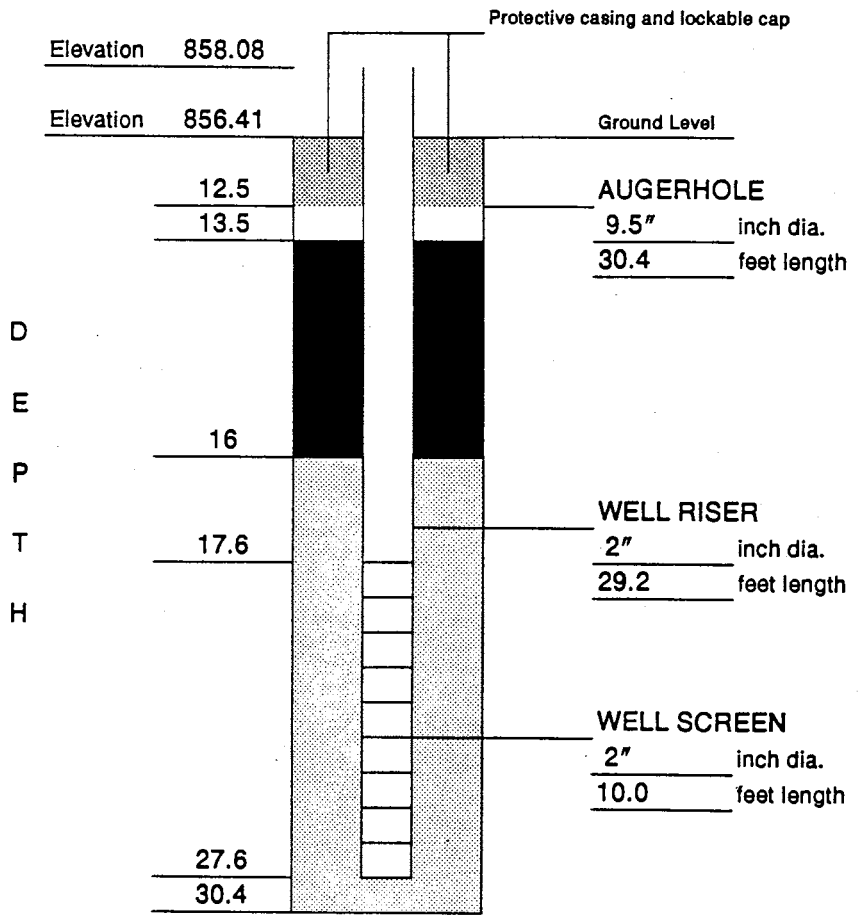
Geologist:
Daniel Sheldon
Drilling Company:
Buffalo Drilling Co.
Driller:
Jerry Warren
Date:
11/1/90

GEOLOGIC LOG

depth(ft.)	lithology
0-18.0	Fill
18.0-26.5	Silty sand, some gravel
26.5-30.0	Sandy silt some gravel

WELL DESIGN

<p><i>CASING MATERIAL</i></p> <p>Surface: Steel</p> <p>Monitor: #304 Stainless Steel</p>		<p><i>SCREEN MATERIAL</i></p> <p>Type: #304 Stainless Steel</p> <p>Slot Size: .010"</p>		<p><i>SEAL MATERIAL</i></p> <p>Seal #1 Type Bentonite Pellets Setting: 13.5' - 16.0'</p> <p>Seal #2 Type None Setting:</p>	
<p><i>FILTER MATERIAL</i></p> <p>Type: #2 Q-Rok</p> <p>Setting 16.0' - 30.4'</p>		<p><i>ROCK CORING</i></p> <p>Cored Interval: None</p> <p>Core Diameter: None</p> <p>Reamed Diameter: None</p>		<p><i>LEGEND</i></p> <p> Cement/Bentonite Grout</p> <p> #1 Silica Sand</p> <p> Bentonite Seal</p> <p> Silica Sandpack</p>	
<p>Client: NYSDEC</p>		<p>Project: Gorick RI/FS</p>		<p>Project No. 35232.00</p>	
<p>URS Consultants Inc.</p>		<p>Monitoring Well Construction Details</p>		<p>Well Number: MW 10S</p>	




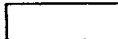

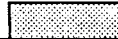
DRILLING SUMMARY

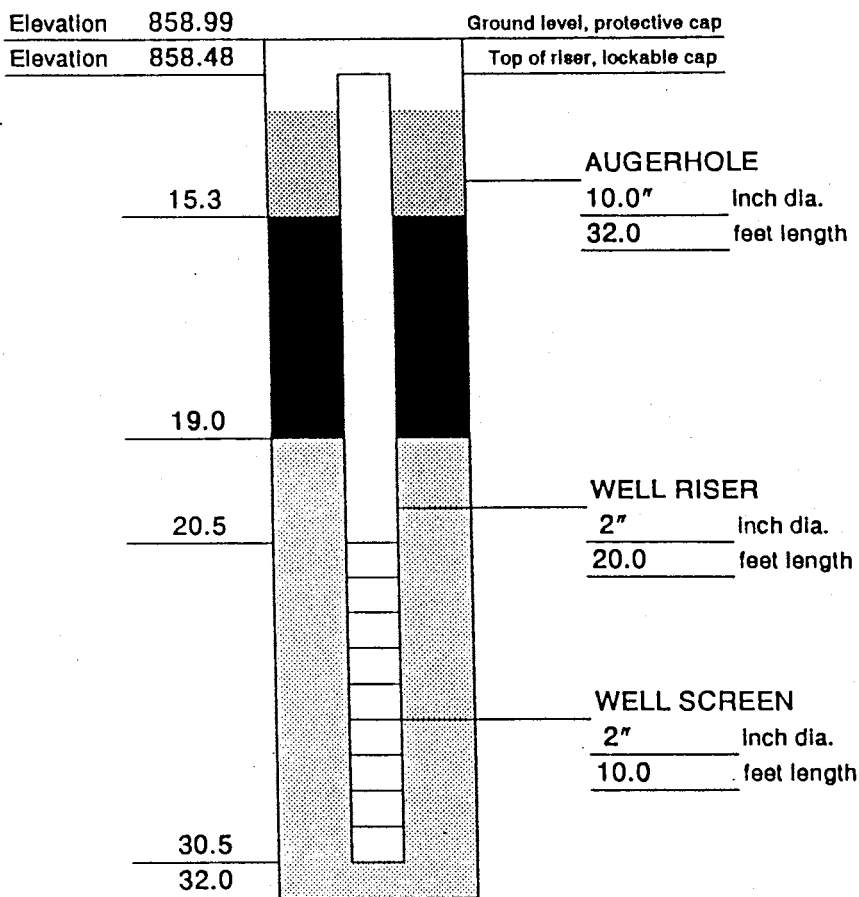
Geologist:
Daniel Sheldon
Drilling Company:
Buffalo Drilling Co.
Driller:
Larry Schroeder
Date:
6/20/91

GEOLOGIC LOG

depth(ft.)	lithology
0-2.0	Gravel, some silt
2.0-5.5	Sand, some silt, trace gravel
5.5-32.0	Gravel, trace silt and sand

WELL DESIGN

<p>CASING MATERIAL</p> <p>Surface: Steel (Flush mount)</p> <p>Monitor: #304 Stainless Steel</p>		<p>SCREEN MATERIAL</p> <p>Type: #304 Stainless Steel</p> <p>Slot Size: .010"</p>		<p>SEAL MATERIAL</p> <p>Seal #1 Type Bentonite Pellets Setting: 15.3'-19.0'</p> <p>Seal #2 Type None Setting:</p>	
<p>FILTER MATERIAL</p> <p>Type: #2 Q-Rok</p> <p>Setting: 19.0'-32.0'</p>		<p>ROCK CORING</p> <p>Cored Interval: None</p> <p>Core Diameter: None</p> <p>Reamed Diameter: None</p>		<p>LEGEND</p> <p> Cement/Bentonite Grout</p> <p> #1 Silica Sand</p> <p> Bentonite Seal</p> <p> Silica Sandpack</p>	
<p>Client: NYSDEC</p>		<p>Project: Gorick RI/FS</p>		<p>Project No. 35232.00</p>	
<p>URS Consultants Inc.</p>		<p>Monitoring Well Construction Details</p>		<p>Well Number: MW-11S</p>	



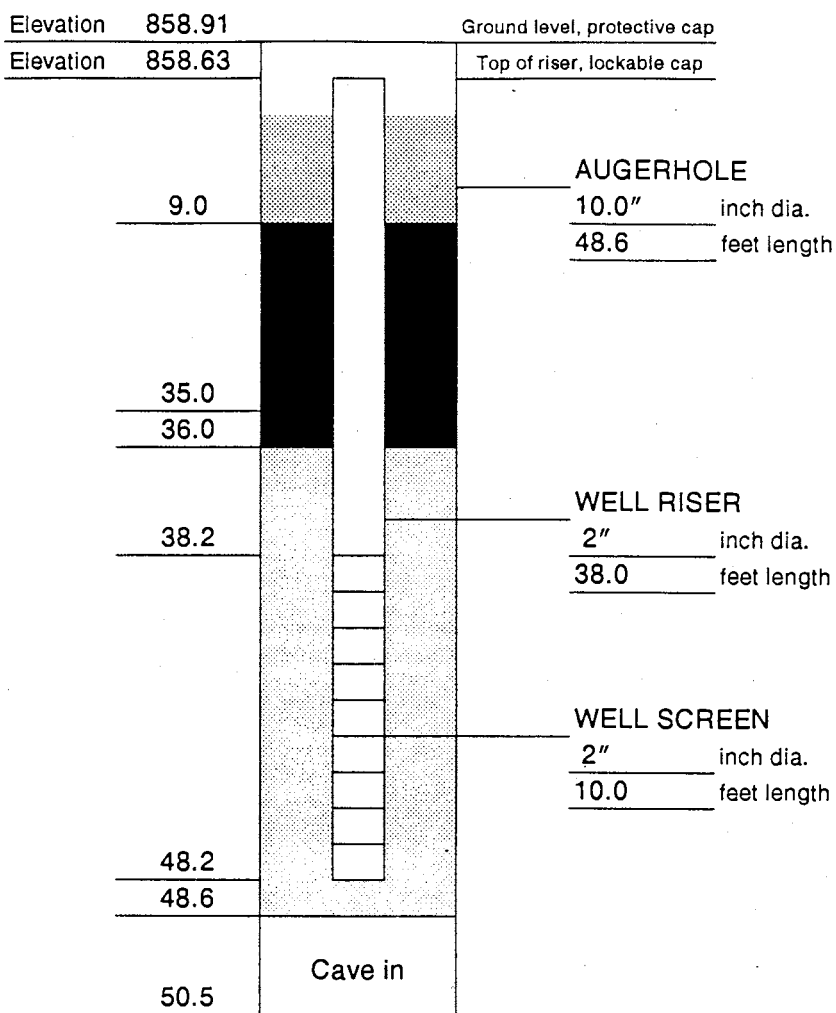
DRILLING SUMMARY

Geologist:
Daniel Sheldon
Drilling Company:
Buffalo Drilling Co.
Driller:
Larry Schroeder
Date:
6/20/91

GEOLOGIC LOG

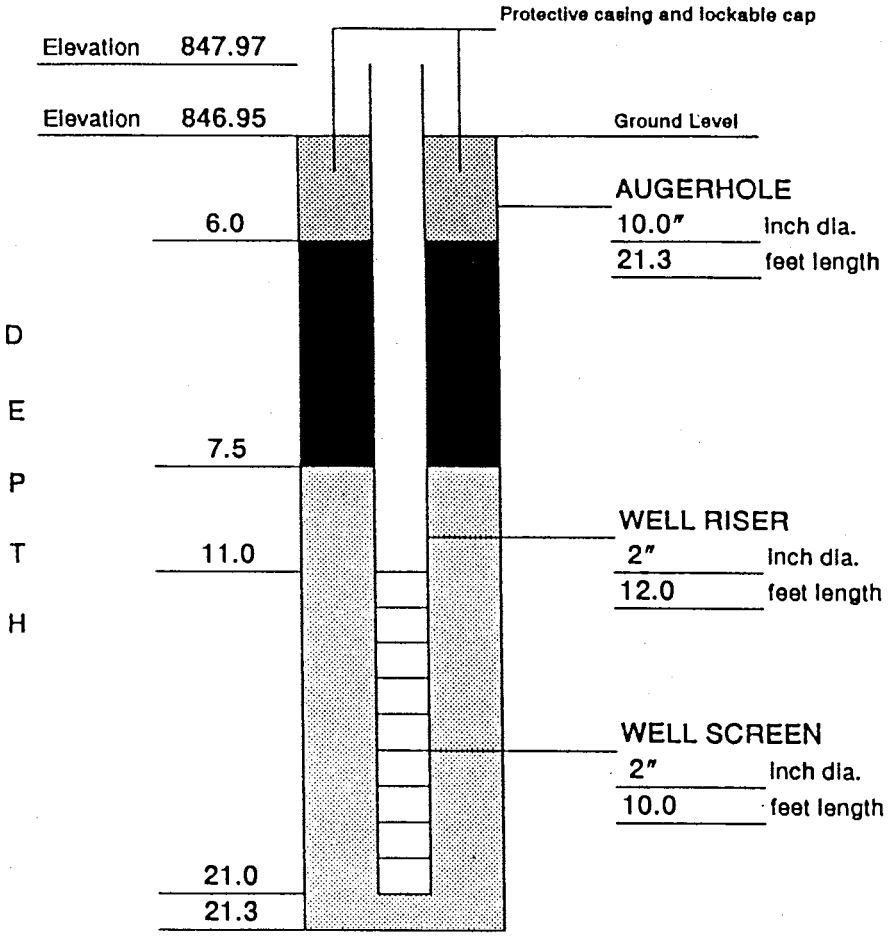
depth(ft.)	lithology
0-2.0	Gravel, some silt
2.0-5.5	Sand, some silt, trace gravel
5.5-36.0	Gravel, trace silt and sand
36.0-42.0	Sand and gravel
42.0-50.5	Silty sand, trace clay


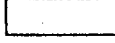


WELL DESIGN



<p><i>CASING MATERIAL</i></p> <p>Surface: Steel (Flush mount)</p> <p>Monitor: #304 Stainless Steel</p>		<p><i>SCREEN MATERIAL</i></p> <p>Type: #304 Stainless Steel</p> <p>Slot Size: .010"</p>		<p><i>SEAL MATERIAL</i></p> <p>Seal #1 Type Bentonite Pellets Setting: 35.0'-36.0'</p> <p>Seal #2 Type Bentonite Slurry Setting: 9.0'-35.0'</p>	
<p><i>FILTER MATERIAL</i></p> <p>Type: #2 Q-Rok</p> <p>Setting: 36.0-48.6'</p>		<p><i>ROCK CORING</i></p> <p>Cored Interval: None</p> <p>Core Diameter: None</p> <p>Reamed Diameter: None</p>		<p><i>LEGEND</i></p> <p> Cement/Bentonite Grout</p> <p> #1 Silica Sand</p> <p> Bentonite Seal</p> <p> Silica Sandpack</p>	
<p>Client: NYSDEC</p>		<p>Project: Gorick RI/FS</p>		<p>Project No. 35232.00</p>	
<p>URS Consultants Inc.</p>		<p>Monitoring Well Construction Details</p>		<p>Well Number: MW-111</p>	

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Mike Saeli	
Date: 6/14/91	
GEOLOGIC LOG	
depth(ft.)	lithology
0-12.0	Silt, trace sand and gravel
12-21.3	Sand and gravel
WELL DESIGN	

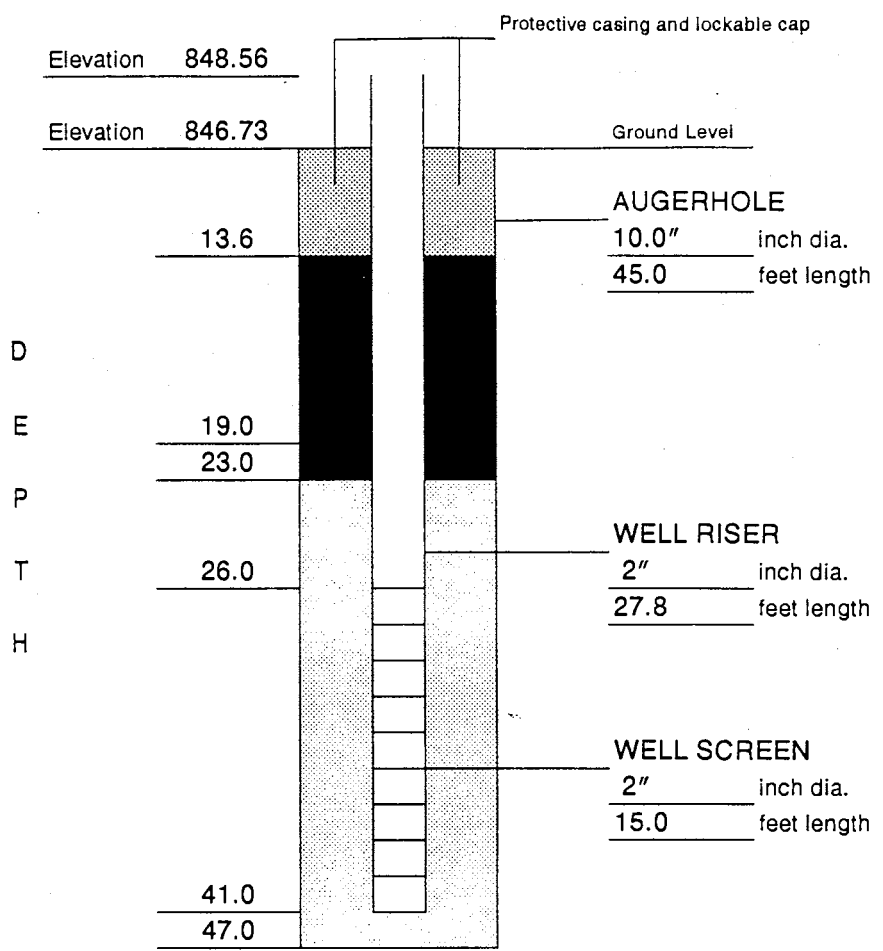


CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface: Steel		Type: #304 Stainless Steel		Seal #1 Type Bentonite Pellets Setting: 6.0'-7.5'	
Monitor: #304 Stainless Steel		Slot Size: .010"		Seal #2 Type None Setting:	
FILTER MATERIAL		ROCK CORING		LEGEND	
Type: #2 Q-Rok		Cored Interval: None		 Cement/Bentonite Grout  #1 Silica Sand  Bentonite Seal  Silica Sandpack	
Setting 7.5'-21.3'		Core Diameter: None			
		Reamed Diameter: None			
Client: NYSDEC		Project: Gorick RI/FS		Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW-12S	

DRILLING SUMMARY
 Geologist:
 Daniel Sheldon
 Drilling Company:
 Buffalo Drilling Co.
 Driller:
 Mike Saeli
 Date:
 6/13/91

GEOLOGIC LOG

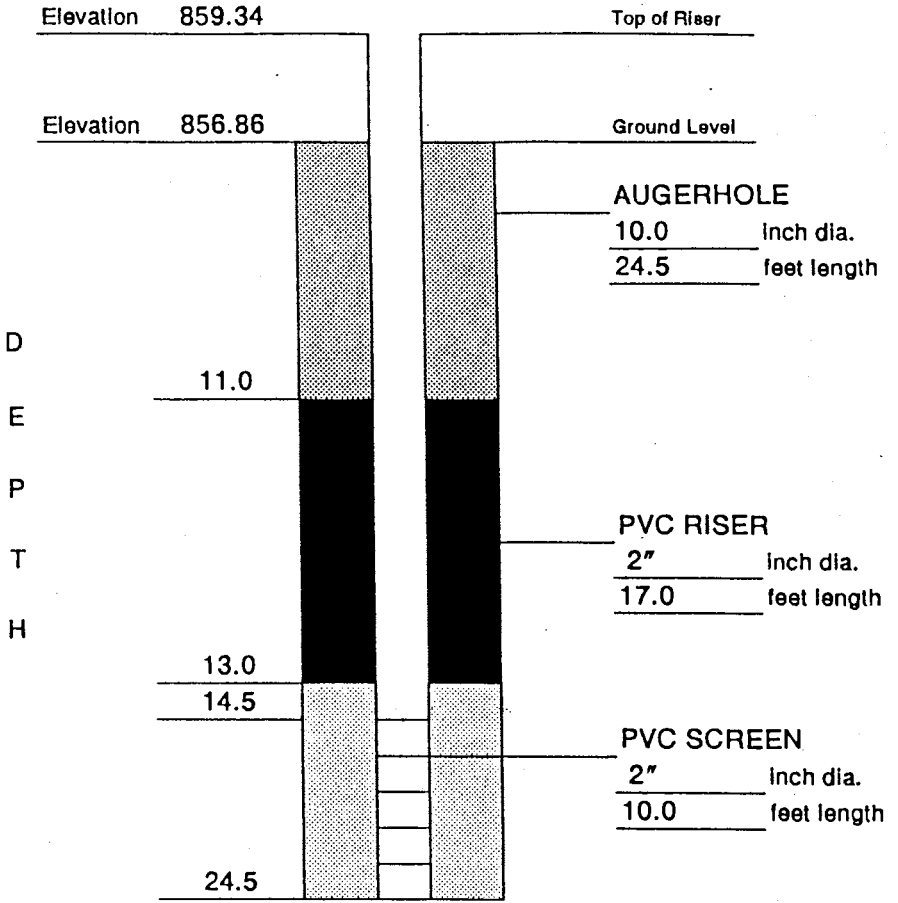
depth(ft.)	lithology
0-12.0	Silt, trace sand and gravel
12-32.0	Sand and gravel
32.0-40.0	Silty sand
40.0-47.0	Gravel in a clayey silt matrix



WELL DESIGN

<i>CASING MATERIAL</i>		<i>SCREEN MATERIAL</i>		<i>SEAL MATERIAL</i>	
Surface:	Steel	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Slurry
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	19.0'-23.0'
<i>FILTER MATERIAL</i>		<i>ROCK CORING</i>		<i>LEGEND</i>	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting:	23.0'-47.0'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW-12D	

DRILLING SUMMARY	
Geologist: Daniel Sheldon	
Drilling Company: Buffalo Drilling Co.	
Driller: Larry Schroeder	
Date: 6/19/91	
GEOLOGIC LOG	
depth(ft.)	lithology
0-15.0	Fill
15.0-20.0	Sand and gravel
20.0-25.5	Silt, some gravel, trace clay
WELL DESIGN	

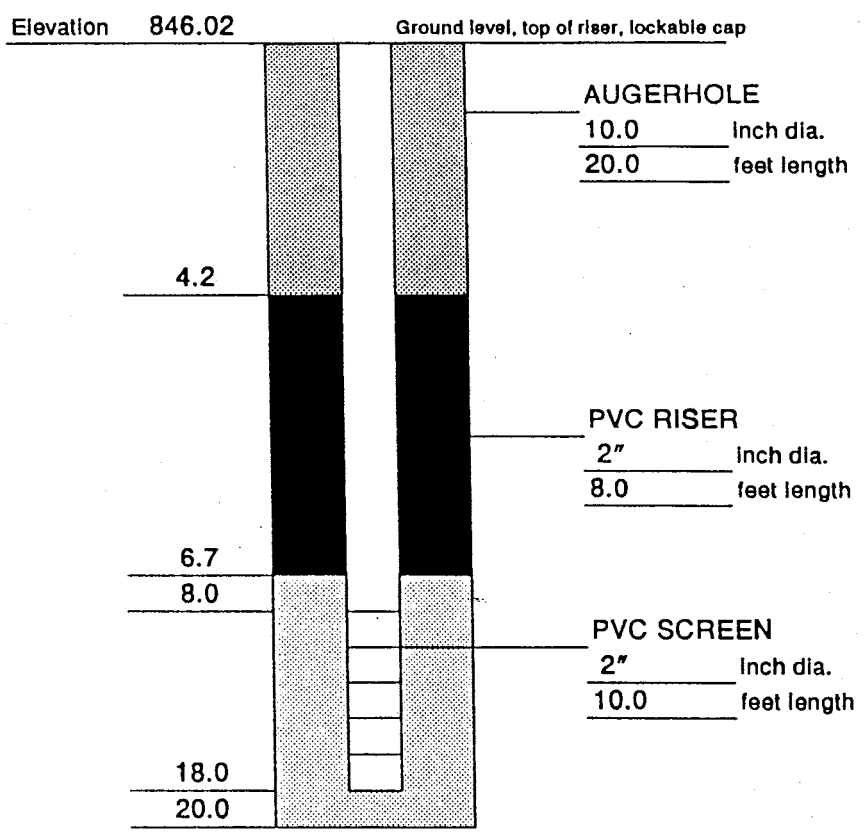


CASING MATERIAL	SCREEN MATERIAL	SEAL MATERIAL
Surface: PVC	Type: 2" PVC Schedule 40	Seal #1 Type Bentonite Pellets Setting: 11.0'-13.0'
Monitor: Schedule 40 2" PVC	Slot Size: .020"	Seal #2 Type None Setting:
FILTER MATERIAL	ROCK CORING	LEGEND
Type: #4 Q-Rok	Cored Interval: None	Cement/Bentonite Grout
Setting: 13.0'-24.5'	Core Diameter: None	#1 Silica Sand
	Reamed Diameter: None	Bentonite Seal
		Silica Sandpack
Client: NYSDEC	Project: Gorick RI/FS	Project No. 35232.00
URS Consultants Inc.	Monitoring Well Construction Details	Well-Number: P-13

DRILLING SUMMARY
 Geologist:
 Daniel Sheldon
 Drilling Company:
 Buffalo Drilling Co.
 Driller:
 Ken Huebert
 Date:
 6/11/91

GEOLOGIC LOG

depth(ft.)	lithology
0-14.0	Silt, trace to some fine sand
14.0-20.0	Sand and gravel

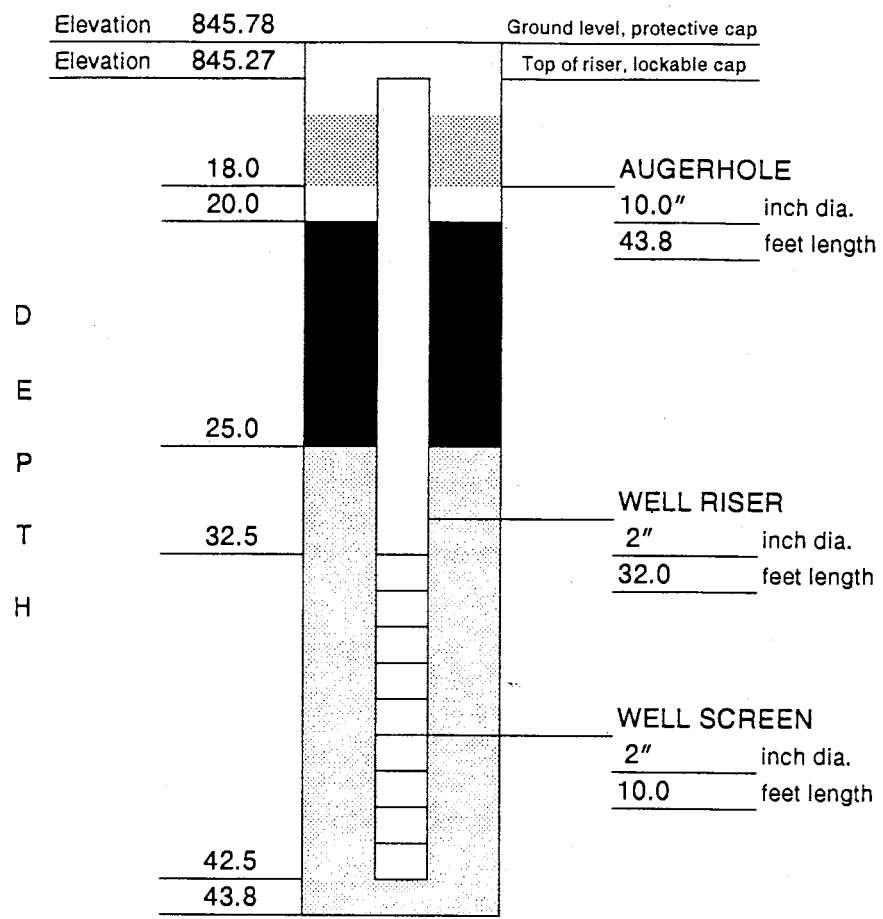


WELL DESIGN

<p>CASING MATERIAL</p> <p>Surface: PVC (Flush mount)</p> <p>Monitor: Schedule 40 2" PVC</p>	<p>SCREEN MATERIAL</p> <p>Type: 2" PVC Schedule 40</p> <p>Slot Size: .020"</p>	<p>SEAL MATERIAL</p> <p>Seal #1 Type Bentonite Pellets Setting: 4.2'-6.7'</p> <p>Seal #2 Type None Setting:</p>
<p>FILTER MATERIAL</p> <p>Type: #4 Q-Rok</p> <p>Setting: 6.7'-20.0'</p>	<p>ROCK CORING</p> <p>Cored Interval: None</p> <p>Core Diameter: None</p> <p>Reamed Diameter: None</p>	<p>LEGEND</p> <p> Cement/Bentonite Grout</p> <p> #1 Silica Sand</p> <p> Bentonite Seal</p> <p> Silica Sandpack</p>
<p>Client: NYSDEC</p>	<p>Project: Gorick RI/FS</p>	<p>Project No. 35232.00</p>
<p>URS Consultants Inc.</p>	<p>Monitoring Well Construction Details</p>	<p>Well Number: P-14S</p>

DRILLING SUMMARY
Geologist: Daniel Sheldon
Drilling Company: Buffalo Drilling Co.
Driller: Ken Huebert
Date: 6/11/91

GEOLOGIC LOG	
depth(ft.)	lithology
0-14.0	Silt, trace to some sand
14.0-28.0	Sand and gravel
28.0-43.8	Silty sand



WELL DESIGN

<i>CASING MATERIAL</i>		<i>SCREEN MATERIAL</i>		<i>SEAL MATERIAL</i>	
Surface:	Steel (Flush mount)	Type:	#304 Stainless Steel	Seal #1 Type	Bentonite Pellets
Monitor:	#304 Stainless Steel	Slot Size:	.010"	Setting:	20.0' - 25.0'
<i>FILTER MATERIAL</i>		<i>ROCK CORING</i>		<i>LEGEND</i>	
Type:	#2 Q-Rok	Cored Interval:	None		Cement/Bentonite Grout
Setting	25.0' - 43.8'	Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Silica Sandpack
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: MW-14I	

DRILLING SUMMARY

Geologist:
Daniel Sheldon

Drilling Company:
Buffalo Drilling Co.

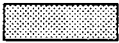
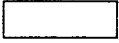

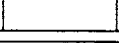
Driller:
Ken Huebert

Date:
6/10/91

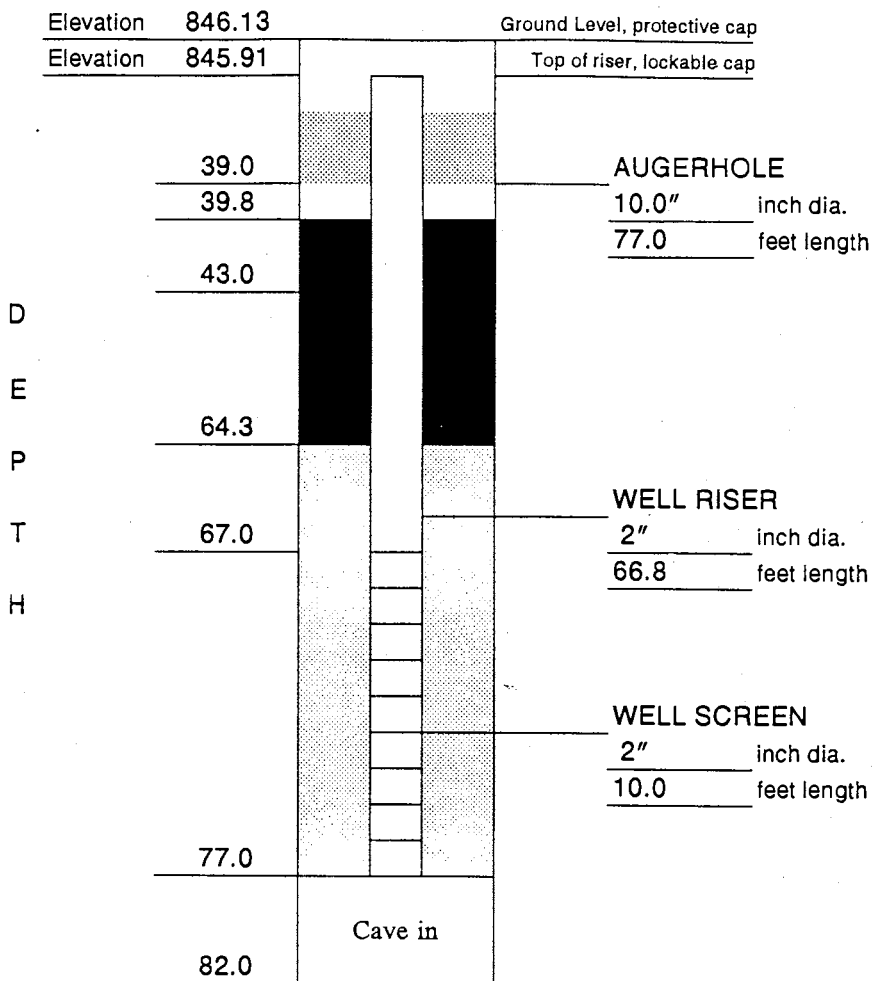
GEOLOGIC LOG

depth(ft.)	lithology
0-14.0	Silt, trace to some fine sand
14.0-28.0	Sand and gravel
28.0-74.0	Silty sand
74.0-77.0	Sand and gravel
77.0-82.0	Silty gravel, trace clay

WELL DESIGN

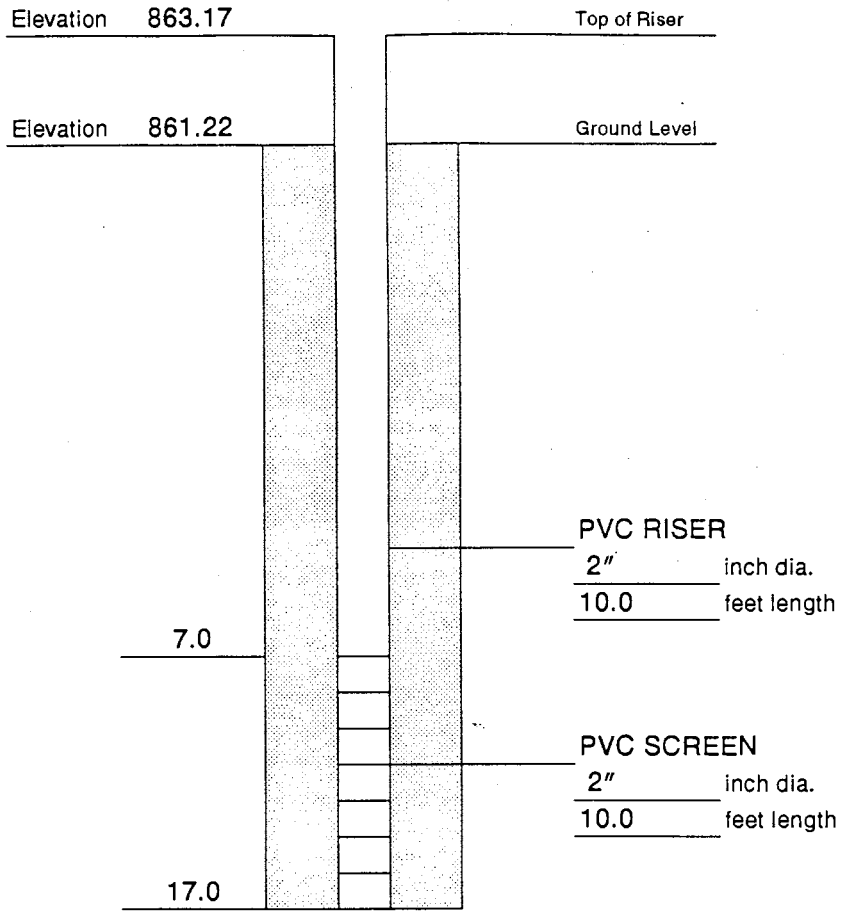
<p><i>CASING MATERIAL</i></p> <p>Surface: Steel (Flush mount)</p> <p>Monitor: #304 Stainless Steel</p>		<p><i>SCREEN MATERIAL</i></p> <p>Type: #304 Stainless Steel</p> <p>Slot Size: .010"</p>		<p><i>SEAL MATERIAL</i></p> <p>Seal #1 Type Bentonite Slurry Setting: 43.0 - 64.3'</p> <p>Seal #2 Type Bentonite Pellets Setting: 39.8 - 43.0'</p>	
<p><i>FILTER MATERIAL</i></p> <p>Type: #2 Q-Rok</p> <p>Setting: 64.3' - 77.0'</p>		<p><i>ROCK CORING</i></p> <p>Cored Interval: None</p> <p>Core Diameter: None</p> <p>Reamed Diameter: None</p>		<p><i>LEGEND</i></p> <p> Cement/Bentonite Grout</p> <p> #1 Silica Sand</p> <p> Bentonite Seal</p> <p> Silica Sandpack</p>	

Client: NYSDEC	Project: Gorick RI/FS	Project No. 35232.00
URS Consultants Inc.	Monitoring Well Construction Details	Well Number: MW-14D



DRILLING SUMMARY
Geologist: Steven Moeller
Drilling Company: NA
Driller: NA
Date: 6/10/91

GEOLOGIC LOG	
depth(ft.)	lithology
0-2.0	Reworked sand and gravel
2.0-17.0	Sand and gravel, some silty clay, some cobbles, few boulders



WELL DESIGN

CASING MATERIAL		SCREEN MATERIAL		SEAL MATERIAL	
Surface:	PVC	Type:	2" PVC Schedule 40	Seal #1 Type:	None
Monitor:	Schedule 40 2" PVC	Slot Size:	.020"	Setting:	
FILTER MATERIAL		ROCK CORING		LEGEND	
Type:	Piezometer set in backfilled test trench #2.	Cored Interval:	None		Cement/Bentonite Grout
Setting:		Core Diameter:	None		#1 Silica Sand
		Reamed Diameter:	None		Bentonite Seal
					Test Pit #1 Backfill
Client:	NYSDEC	Project:	Gorick RI/FS	Project No. 35232.00	
URS Consultants Inc.		Monitoring Well Construction Details		Well Number: P-15	

APPENDIX E

WELL DEVELOPMENT REPORTS

APPENDIX E

WELL DEVELOPMENT REPORTS

Monitoring wells installed by URS were developed prior to sampling by pumping (by a peristaltic, inertial and/or centrifugal pump) and surging. The wells were considered developed when the groundwater indicator parameters of pH, specific conductance and temperature had stabilized, and turbidity readings of less than 50 NTU had been achieved. This turbidity criteria was not attained for wells MW-1S, MW-2S, MW-4S, MW-5D, MW-6D, MW-12D, and MW-14D even after extended development. Therefore, after NYSDEC concurrence in each case, further development of the well was halted when it was considered possible to obtain sufficient clear sample for metals and VOC analysis.

PROJECT TITLE: Gorick C&D Landfill RI
 PROJECT NO.: 35232.00
 STAFF: R. West
 DATE: Development pg 1

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW1S		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.26</u>	1"	0.04
	2"	0.17
② CASING INTERNAL DIAMETER (in.): <u>2</u>	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	10	20	30	38	48	58	68	78	88	98
pH	12.20	10.95	7.73	6.86	6.78	instrument inoperable			7.79	8.29	7.63
Spec. Cond. (µmho)	4000	1800	1300	1100	1050	620	330	570	400		
Turbidity (NTU)	Very Highly Turbid >100			→			→			→	
Temperature (°C)	22	15	13	14	14	N/T	N/T	N/T	N/T	N/T	N/T
	Nov 8, 1990					Nov 15, 1990			Nov 16		

COMMENTS: purged with isco pump and HDPE tubing for 1st 2 gallons - then used stainless steel bailer for remainder (11/8). Bailed with 5/8" OD tubing with checkvalve (11/15, 16).

URS <small>CONSULTANTS, INC.</small>	WELL DEVELOPMENT/PURGING LOG
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PROJECT TITLE: GORICK LANDELL RIFES

PROJECT NO.: 35732-00

STAFF: R. WEST / D. SHEPPARD

DATE: 11-17-90

DEVELOPMENT
pg. 2

WELL NO.: <u>MW 15</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.26</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	108	118	128	138					
pH	Condi need	7.99	8.67	7.73	7.66					
Spec. Cond. (µmho)	from	440	400	330	350					
Turbidity (NTU)	Pg. 1.	>100	>100	>100	>100					
Temperature (°C)		9.0	11.4	7.3	7.6					

COMMENTS:

PROJECT TITLE: Gorick C & D Landfill R.I

PROJECT NO.: 35232.00

STAFF: Kevin Kearney DEVELOPMENT

DATE: 12.3.90, 12.4.90, 12.5.90 Pg. 3

WELL NO.: MW 15

WELL I.D. VOL. GAL./FT.

① TOTAL CASING AND SCREEN LENGTH (FT.): 41.26

1" 0.04

② CASING INTERNAL DIAMETER (in.): 2

2" 0.17

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

3" 0.38

④ VOLUME OF WATER IN CASING (GAL.) _____

4" 0.66

5" 1.04

6" 1.50

8" 2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	148	155	165	175	185	195	205	210	228	
pH	Continued	8.58	8.65	9.28	8.28	8.07	8.52	8.03	NT	8.04	
Spec. Cond. (µmho)	Continued	400	400	380	360	425	400	250	NT	325	
Turbidity (NTU)	From	7100	7100	>100	7100	7100	7100	7100	7100	7100	
Temperature (°C)	pg 2.	NT	NT	NT	NT	NT	NT	NT	NT	NT	

DATE 12.3.90 12.4.90 12.5.90

COMMENTS:
12.5.90 water level 8.00' at 7:30am pumped dry
12.5.90 water level 23.72' at 12:00on



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDELL RI/FS

PROJECT NO.: 35232-00

STAFF: R. WEST

DATE: 10-2-90 / 10-3-90 DEVELOPMENT

pg 1

WELL NO.: MW 2S

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	60	70	70	85	100	110	140	150	160	170
PH	6.70	6.44	6.34	6.44	6.27	6.39	6.45	6.49	6.29	6.30	6.18
Spec. Cond. (µmho)	580	480	520	610	540	480	520	600	540	560	510
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	13.6	14.9	14.3	13.3	13.5	14.0	14.4	15.1	14.2	14.1	13.9
	10-2				10-3						

COMMENTS: Purged with an ISCO pump + HDPE tubing. Surged with a 2" stainless steel bailer throughout development. Highly turbid, no odor

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LAUDFELK R/FS

PROJECT NO.: 35237-00

STAFF: D. SHEPARD

DATE: 11-7-90

DEVELOPMENT
Pg. 3

WELL NO.: MWZS

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	250	255	260	265	270	275	280	285	290	295
pH	Continued	6.40	6.44	6.44	6.34	6.32	6.31	6.30	6.22	6.19	6.01
Spec. Cond. (µmho)	Continued	490	550	500	520	470	480	470	500	500	470
Turbidity (NTU)	From	>100	>100	>100	75	>100	>100	54	99	>100	57
Temperature (°C)	Pg. 2	12.5	12.8	13.1	12.8	12.8	13.2	13.0	13.3	13.4	12.8

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORLIK LAUDFELL RI/FS
 PROJECT NO.: 35232-00
 STAFF: D. SHEPPARD
 DATE: 11-7-90

DEVELOPMENT
pg. 4

WELL NO.: <u>MW 25</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>18.30</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	300	305	310	315	320	325	330	335	340	345	
pH	Continued from PG 3	6.23	6.30	6.35	6.37	6.29	6.28	6.35	6.28	6.37	6.20	
Spec. Cond. (µmho)		430	490	500	500	460	460	510	470	500	470	
Turbidity (NTU)		>100	>100	>100	73	>100	>100	>100	>100	>100	46	97
Temperature (°C)		13.0	13.2	13.5	13.3	13.3	13.4	13.4	12.9	13.3	13.5	

COMMENTS:

PROJECT TITLE: GORICK LAURELL RI/FS

PROJECT NO.: 35237-00

STAFF: D. SHEPPARD

DATE: 11-7-90

DEVELOPMENT

pg. 5

WELL NO.: MWZ5

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (18.30 - 0) = \underline{\hspace{2cm}} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	350	355	360	365	370	375	380	385	390	395	
pH	Continued	6.37	6.34	6.24	6.27	6.28	6.28	6.30	6.31	6.33	6.29	
Spec. Cond. (µmho)	Continued	450	490	220	260	250	250	250	270	270	270	
Turbidity (NTU)	From	>100	>100	98	91	>100	>100	>100	82	>100	>100	
Temperature (°C)	From	13.0	13.0	12.9	12.9	13.0	13.0	12.9	12.6	13.3	12.9	

COMMENTS:

PROJECT TITLE: GORICK LANDELL R/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-7-90 DEVELOPMENT

WELL NO.: MW 25

pg. 6

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	200	405	410	415	420	425	430	435	440	445
pH	Continued from pg 5	6.28	6.28	6.29	6.30	6.31	6.25	6.07	6.26	6.25	6.22
Spec. Cond. (µmho)		250	270	270	290	290	290	250	260	270	270
Turbidity (NTU)		>100	>100	100	>100	44	>100	50	>100	>100	>100
Temperature (°C)		12.7	13.1	13.3	13.3	13.3	12.9	12.8	13.1	12.7	12.9

COMMENTS:

PROJECT TITLE: GORICK LANDFILL R/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-7-90

DEVELOPMENT
Pg. 7

WELL NO.: MWZS

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	450	455	460	465	470	475	480	485	490	495	
pH	Continued from Pg. 6	6.30	6.31	6.22	6.32	6.27	6.29	6.31	6.30	6.31	6.33	
Spec. Cond. (umho)		270	270	270	280	320	350	300	330	230	330	
Turbidity (NTU)		47	75	>100	>100	>100	>100	>100	>100	>100	87	80
Temperature (°C)		12.7	12.7	12.9	13.0	12.9	12.7	13.1	12.6	12.6	13.0	

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LAURELL R/ES

PROJECT NO.: 36232-00

STAFF: D. SHEPPARD

DATE: 11-7-90 / 11-8-90

DEVELOPMENT
pg. 8

WELL NO.: MWZS

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.): _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2)^2 \times (18.30 - 0) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	500	505	510	515	520	525	530	535	540	545
pH	Contained	6.31	N/T								
Spec. Cond. (µmho)	Contained	300	N/T								
Turbidity (NTU)	From Port	>100	>100	>100	>100	>100	>100	>100	34*	>100	>100
Temperature (°C)	Port	13.1	N/T								

11- 7 11- 8 →

COMMENTS:

* 5 gallon NTU value without agitation.

PROJECT TITLE: GORICK LANDFILL R/ES

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-8-90

DEVELOPMENT

pg. 9

WELL NO.: MW25

① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	550	555	560	565	570	575	580	585	590	595
pH	<i>Continued from pg. 8</i>	<i>N/T</i>									
Spec. Cond. (µmho)		<i>N/T</i>									
Turbidity (NTU)		>100	>100	>100	>100	17	>100	>100	82	27	>100
Temperature (°C)	<i>N/T</i>										

COMMENTS:

* 5 gallon NTU valve without agitation.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35 232-00

STAFF: D. SHEPPARD

DATE: 11-8-90

DEVELOPMENT
pg 10.

WELL NO.: MW2S

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.): _____
- ④ VOLUME OF WATER IN CASING (GAL.): _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (18.30 - 0) = \underline{\hspace{2cm}} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	600	605	610	615	620	625	630	635	640	645
pH	Continued from pg 9.	N/T									
Spec. Cond. (µmho)		N/T									
Turbidity (NTU)		>100	44	>100	>100	>100	86	17	>100	>100	>100
Temperature (°C)		N/T									

COMMENTS:

* 5 gallons NTU valve without agitation

A-2347

PROJECT TITLE: DOBICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-8-90

DEVELOPMENT

Pg. 11

WELL NO.: MW2S	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>18.30</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (18.30 - \text{Water Level}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	650	655	660	665	670	675	680	685	690	695	
pH	Continued from pg. 10	NT										
Spec. Cond. (µmho)		NT										
Turbidity (NTU)		>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	*
Temperature (°C)		NT										35

COMMENTS:

* 5 gallon NTU value without agitation.

PROJECT TITLE: GORICK LANDELL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-8-90

DEVELOPMENT

pg. 12.

WELL NO.: MW25

WELL I.D. VOL. GAL./FT.

① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30

1" 0.04

② CASING INTERNAL DIAMETER (in.): 2

2" 0.17

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

3" 0.38

④ VOLUME OF WATER IN CASING (GAL.) _____

4" 0.66

5" 1.04

6" 1.50

8" 2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	700								
pH	Continued from pg. 11.	6.31								
Spec. Cond. (µmho)		500								
Turbidity (NTU)		*	6.8							
Temperature (°C)		13.1								

COMMENTS: 700 gallon limit.

A-2347

* 5 gallon NTU value without agitation.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-1-90 / 11-2-90

DEVELOPMENT

pg 1

WELL NO.: MW35

① TOTAL CASING AND SCREEN LENGTH (FT.): 21.42

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 8.01

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	5	10	15	20	25	30	35	40	45		
pH	6.48	6.68	6.70	6.75	6.75	6.72	6.80	6.63	6.35	6.60	6.57	
Spec. Cond. (µmho)	560	460	390	350	360	390	360	440	550	440	460	
Turbidity (NTU)	10	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	
Temperature (°C)	16.4	17.5	17.2	16.8	16.9	17.4	16.8	14.5	15.9	16.5	16.4	

11-1

11-2

COMMENTS: Purged with an ISCO pump and HDPE tubing. Consistently surged with a 1" bailer from start of development. Turbid, lt. orange discoloration. Slight "menthol" odor.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35237-00

STAFF: D. SHEPPARD

DATE: 11-2-90 / 11-7-90

DEVELOPMENT
pg 2

WELL NO.: <u>MW35</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>21.42</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>8.01</u>	3"	0.38
	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	50	55	60	65	70	75	80	85	90	95	
pH	Continued from pg. 1.	6.57	6.56	6.56	6.56	6.56	6.63	6.59	6.52	6.48	6.28	
Spec. Cond. (µmho)		460	460	N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T	590
Turbidity (NTU)		>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)		16.3	16.2	16.3	16.0	16.2	16.9	17.0	17.4	17.2	16.7	

11-2 11-7 →

COMMENTS: Conductivity meter malfunction at 60 gallons.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-2-90 / 11-3 /

DEVELOPMENT

WELL NO.: MW3S

pg 3

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 21.42
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) 8.01
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	100	105	110	115	120	125	130	135	140	145
pH	Continued from pg. 2	6.19	N/T	6.54	6.50	N/T	N/T	6.62	6.50	6.48	6.51
Spec. Cond. (µmho)		6.30	N/T	595	600	590	545	280	540	575	525
Turbidity (NTU)		>100	N/T	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)		16.3	N/T	10.3	15.2	13.4	12.0	11.7	14.4	16.4	15.7

COMMENTS:

URS <small>CONSULTANTS, INC.</small>	WELL DEVELOPMENT/PURGING LOG
--	-------------------------------------

PROJECT TITLE: GORICK LANDFILL R/FS

PROJECT NO.: 35237-00

STAFF: D. SHEPPARD

DATE: 11-8-90 / 11-13-90

DEVELOPMENT
Pg. 4

WELL NO.: MW35	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>21.42</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	150	155	160	165	170	175	175	185	195	205
pH	Continued	6.56	6.50	6.54	6.60	6.47	6.43	6.16	6.00	6.10	6.00
Spec. Cond. (umho)	Continued	500	575	590	520	540	500	480	510	700	700
Turbidity (NTU)	From	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	Pg. 3	15.4	15.4	16.2	15.7	16.6	14.9	N/T	N/T	N/T	N/T

11-8

11-13

COMMENTS:

N/T - Not taken along with other parameters of the same interval.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-13-90

DEVELOPMENT

pg. 5.

WELL NO.: MW35

① TOTAL CASING AND SCREEN LENGTH (FT.): 21.42

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	215	225	235	245	245	255	265	275	285	295
pH	Continued From Pg. 5.	6.00	6.00	6.00	6.20	6.41	6.45	6.56	6.52	6.54	6.48
Spec. Cond. (µmho)		670	670	650	680	640	660	460	460	450	460
Turbidity (NTU)		>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)		N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T

11-13

11-14

→

COMMENTS:

N/T - Not taken.

A-2347

PROJECT TITLE: GORICK LAURELL R1/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPARD

DATE: 11-16-90 / 11-17-90 DEVELOPMENT

WELL NO.: MW35

pg. 6

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 21.42

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	305	315	325	335	380	385	390	395	400	
pH	Cont'd	6.07	6.27	6.01	6.23	5.92	5.86	5.84	5.93	5.94	
Spec. Cond. (µmho)	Cont'd	910	790	700	850	970	970	900	800	800	
Turbidity (NTU)	from pg-5.	43	>100	58	77	37	19	25	33	14	
Temperature (°C)		N/T	N/T	N/T	N/T	14.8	15.3	15.7	15.4	15.8	

11-16

11-17

COMMENTS:

PROJECT TITLE: GORICK LANDELL RIFES

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-13-90

DEVELOPMENT

WELL NO.: MW4S

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 20.68

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$V = 0.0408 (2)^2 \times (20.68 - \text{③}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	20	40	50	60	70	80	90	100	110	120
pH	5.77	5.79	5.07	5.00	4.89	4.92	5.10	4.98	4.95	4.87	4.87
Spec. Cond. (µmho)	210	220	200	150	140	140	150	150	150	140	150
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	11.4	11.8	13.2	13.0	12.8	13.0	12.8	12.8	12.3	13.2	12.4

COMMENTS: Purged with a McCullough pump and a 1" stainless steel bailer. Water is very highly turbid, no odor

PROJECT TITLE: Genick Landfill R/ES

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-13-90 DEVELOPMENT

WELL NO.: MW4S

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 20.68
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

Pg. 2

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (20.68 - 0) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	130	140	150	160	170	180	190	200	210	220
pH	Continued	4.82	4.92	4.92	4.97	4.94	4.88	4.94	4.96	4.90	4.89
Spec. Cond. (µmho)	Continued	140	150	150	140	160	140	130	140	150	150
Turbidity (NTU)	From	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	pg. 1.	13.0	17.7	12.8	12.4	12.2	12.4	12.6	12.4	11.6	12.5

COMMENTS:

PROJECT TITLE: GORICK LANDELL RIFES

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-13-90

DEVELOPMENT

Pg. 3.

WELL NO.: <u>MW45</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>20.68</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	230	250	270	290	300	320	330	340	350	360	
pH	Continued From pg. 2.	4.93	4.94	4.93	4.92	4.86	4.90	4.94	4.97	5.00	5.02	
Spec. Cond. (µmho)		150	150	180	160	180	190	180	220	200	200	
Turbidity (NTU)		>100	>100	>100	>100	>100	>100	>100	>100	74*	>100	>100
Temperature (°C)		12.5	12.4	12.7	12.8	13.1	12.96	12.3	12.5	12.5	12.7	

11- 13

COMMENTS:

A-2347

* Not agitated with bailer for given interval.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-14-90

DEVELOPMENT

pg. 4

WELL NO.: MW4S

① TOTAL CASING AND SCREEN LENGTH (FT.): 20.68

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (1) - (3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	370	380	390	400	410	420	430	440	460	480
pH	5.04	5.02	5.05	5.07	5.09	5.16	5.11	5.12	5.11	5.10	5.10
Spec. Cond. (µmho)	210	210	216	210	215	220	220	220	220	N/A	N/A
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	13.1	13.2	12.8	13.3	13.3	13.1	13.3	13.2	12.9	13.0	13.0

COMMENTS:

PROJECT TITLE: GORICK LAURELLE R/FS

PROJECT NO.: 35232-60

STAFF: D. SHEPPARD

DATE: 11-14-90

DEVELOPMENT

pg. 5

WELL NO.: MW45

① TOTAL CASING AND SCREEN LENGTH (FT.): 20.68

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (20.68 - 0) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	490	500	520	540	560	580	600	620	640	660
pH	Continued	N/T	5.16	5.08	5.10	5.15	5.30	5.15	5.12	5.05	5.09
Spec. Cond. (umho)	Continued	N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T
Turbidity (NTU)	From pg. 4	N/T	>100	>100	>100	98*	>100	>100	>100	>100	>100
Temperature (°C)		N/T	13.0	13.0	11.3	13.0	13.0	12.5	12.8	13.2	13.7

COMMENTS:

A-2347

* Not agitated with bailer for given interval.

PROJECT TITLE: GORICK LANDFILL RIF/S

PROJECT NO.: 35737-00

STAFF: D. SHEPPARD

DATE: 11-13-90 DEVELOPMENT

WELL NO.: <u>MW4I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>38.60</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (38.60 - 0) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	20	40	60	80	100	120	140	160	180	200
pH	5.91	5.86	5.79	5.88	5.79	5.81	5.92	5.85	5.87	5.86	5.86
Spec. Cond. (µmho)	1600	1550	1500	1340	1430	1640	1480	1540	1380	1540	1600
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	12.0	12.4	12.4	12.5	12.4	12.4	14.0	12.8	14.3	12.8	13.5

COMMENTS: Purged with a McCollough pump and a 1" stainless steel bailer. Water is turbid, no odor.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-13-90 DEVELOPMENT

WELL NO.: MW4I

Pg. 2

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 38.60

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	220	240	250	260	270	280	290	300	310	320
pH	Continued	5.86	5.85	5.98	5.91	5.95	5.97	5.95	5.91	5.96	6.00
Spec. Cond. (µmho)	from	1450	1650	1650	1530	1600	1570	1700	1470	1680	1660
Turbidity (NTU)	Pg. 1.	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)		14.1	13.4	13.2	13.5	13.5	13.7	14.1	13.4	13.8	13.4

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LAURELL R/FS

PROJECT NO.: 35232-00

STAFF: D. SHEEPARD

DATE: 11-13-90 / 11-14-90

DEVELOPMENT

pg. 3.

WELL NO.: MW4 I

WELL I.D. VOL. GAL./FT.

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 38.60
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	336	340	350	360	370	380	390	400	410	420
pH	Continued	5.94	6.18	6.19	6.15	6.11	6.15	6.20	6.14	6.15	6.18
Spec. Cond. (µmho)	From	1620	1480	1480	1500	1500	1540	1550	1550	1480	1540
Turbidity (NTU)	pg. 2.	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)		13.2	14.3	16.0	14.6	14.6	14.5	14.8	14.8	14.5	14.4

11-13

11-14

COMMENTS:

A-2347

URS <small>CONSULTANTS, INC.</small>	WELL DEVELOPMENT/PURGING LOG
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PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-14-90

DEVELOPMENT
Pg. 4

WELL NO.: <u>MW4I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>38.60</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	430	440	460	480	500	520	540	560	580	600
pH	Cont'd	5.11	5.12	5.11	5.10	5.16	5.08	5.10	5.15	5.30	5.15
Spec. Cond. (µmho)	Cont'd	220	220	N/T	N/T	N/T	N/T	N/T	N/T	N/T	N/T
Turbidity (NTU)	From	>100	>100	>100	>100	>100	>100	>100	>100	98	>100
Temperature (°C)	Pg. 5.	13.3	13.2	12.9	13.0	13.0	13.0	11.3	13.0	13.0	12.5

COMMENTS:

* - Not agitated for associated interval.

N/T - Not taken - Specific Conductivity Meter malfunction.

A-2347

PROJECT TITLE: GORICK LANDELL R1/ES

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-14-90

DEVELOPMENT

pg. 5

WELL NO.: MW4I

WELL I.D. VOL. GAL./FT.

① TOTAL CASING AND SCREEN LENGTH (FT.): 38.60

1" 0.04

② CASING INTERNAL DIAMETER (in.): 2

2" 0.17

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

3" 0.38

④ VOLUME OF WATER IN CASING (GAL.) _____

4" 0.66

5" 1.04

6" 1.50

8" 2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	620	640	660	680	700	705	710	715		
pH	Continued	6.18	6.04	6.09	6.13	6.15	6.19	6.19	6.18		
Spec. Cond. (µmho)		1490	1500	1500	1460	1520	1500	1500	1500		
Turbidity (NTU)	From	>100	>100	>100	>100	52*	32*	30*	25*		
Temperature (°C)	pg. 4										

COMMENTS:

A-2347

* Not agitated for associated interval. Bailer removed.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDELL R/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-8-90 DEVELOPMENT

WELL NO.: MWSS

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 17.42

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	10	20	30	40	50	60	70	80	90	100
pH	6.24	6.38	6.38	6.42	6.48	6.44	6.45	6.38	6.37	6.34	6.40
Spec. Cond. (µmho)	320	220	330	400	420	420	460	400	420	460	480
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	17.2	11.8	11.7	11.9	12.0	11.3	10.8	10.9	11.1	11.0	11.6

COMMENTS:

PROJECT TITLE: GORICK LANDFILL R/PS

PROJECT NO.: 35237-00

STAFF: D. SHEPARD

DATE: 11-13-90 / 11-9-90 / 11-16-90 /

DEVELOPMENT

pg. 2

WELL NO.: MW5S

WELL I.D. VOL. GAL./FT.

① TOTAL CASING AND SCREEN LENGTH (FT.): 17.42

1" 0.04

② CASING INTERNAL DIAMETER (in.): 2

2" 0.17

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

3" 0.38

④ VOLUME OF WATER IN CASING (GAL.) _____

4" 0.66

5" 1.04

6" 1.50

8" 2.60

$V = 0.0408 (2)^2 \times (17.42 - 0) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	110	120	130	140	150	160	170	180	190	200
pH	Continued	6.40	5.42	5.44	5.46	5.44	5.40	6.22	6.23	6.11	6.09
Spec. Cond. (µmho)	Continued	460	440	450	400	450	450	260	250	290	300
Turbidity (NTU)	From	>100	>100	>100	>100	>100	>100	17*	>100	>100	>100
Temperature (°C)	pg.1	11.7	11.2	13.0	13.1	12.8	12.8	9.5	8.6	9.6	9.4

11-8

11-9

11-16

→

COMMENTS:

A-2347

* Not agitated for associated interval.

PROJECT TITLE: GORICK LANDELL RIFES

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-16-90 / 11-17-90

DEVELOPMENT

Pg. 3

WELL NO.: MW55

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 17.42
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	220	240	260	280	300	310	320	330	340	350
pH	Continued	6.20	6.04	6.07	6.10	6.10	5.81	5.74	5.81	5.76	6.00
Spec. Cond. (µmho)	From	300	300	440	380	340	300	300	330	320	350
Turbidity (NTU)	Pg. 2	>100	>100	>100	>100	>100	>100	28	45	19	29
Temperature (°C)		8.8	8.5	9.0	8.3	8.0	8.0	7.3	7.4	7.6	7.3

11-16

11-17

→

COMMENTS:



CONSULTANTS, INC.

WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDELL R/FS

PROJECT NO.: 35237-00

STAFF: D. SHEPARD

DATE: 11-17-90

DEVELOPMENT

pg. 4

WELL NO.: MW55

① TOTAL CASING AND SCREEN LENGTH (FT.): 17.42

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	360	370	380	390	400				
pH	Continued	6.05	6.01	6.04	6.02	6.04				
Spec. Cond. (µmho)	Continued	340	330	310	320	320				
Turbidity (NTU)	From	43	15	32	14	12				
Temperature (°C)	pg. 3.									

COMMENTS:

A-2347

PROJECT TITLE: GORICK LANDFILL R/ES

PROJECT NO.: 35237-00

STAFF: D. SHEPPARD

DATE: 11-8-90 / 11-9-90 DEVELOPMENT

WELL NO.: <u>MW5 I</u>	PS. 1 WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>36.87</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	10	20	30	40	50	60	70	80	90	100	
pH	6.41	6.51	6.56	6.51	6.58	6.51	5.84	5.75	5.75	5.68	5.65	
Spec. Cond. (µmho)	1275	1275	1285	1166	1320	1320	1400	1400	1380	1380	1440	
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	
Temperature (°C)	9.8	11.6	11.9	11.0	11.4	10.3	10.5	10.5	10.6	10.6	10.5	
	11-8						11-9					→

COMMENTS: Purged with a McCullough pump and a 1" stainless steel bailer. Turbid, no odor.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-9-90 / 11-16-90

DEVELOPMENT
pg. 2

WELL NO.: MW5 I

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 36.87
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	110	120	130	140	150	160	170	180	190	200
pH	Continued	5.65	5.60	5.48	5.44	6.41	6.29	6.37	6.29	6.27	6.31
Spec. Cond. (µmho)	From	1440	1410	1410	1250	900	900	890	910	900	890
Turbidity (NTU)	ps. 1	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)		10.7	10.6	10.4	10.1	9.2	8.7	8.8	9.0	9.2	9.3

11-9

11-16



COMMENTS:

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL R/ES

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-16-90

DEVELOPMENT

pg. 3.

WELL NO.: MW5I

① TOTAL CASING AND SCREEN LENGTH (FT.): 36.87

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	210	220	230	240	250	260	270	280	290	300
pH	Continued	6.29	6.32	6.29	6.27	6.21	6.36	6.16	6.29	6.40	6.31
Spec. Cond. (µmho)	From	890	890	860	880	820	840	910	900	910	890
Turbidity (NTU)	AS.	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	?	9.1	9.0	9.2	9.7	9.8	9.5	9.9	9.6	9.6	10.1

COMMENTS:

PROJECT TITLE: GORICK LANDFILL R/ES

PROJECT NO.: 35232-00

STAFF: D. SHEPARD

DATE: 11-16-90 DEVELOPMENT

WELL NO.: MW5I

pg. 4.

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 36.87

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	330	340	350	360	370	380	390	400	410	420
pH	Contained	6.13	6.29	6.15	6.17	6.37	6.23	6.37	6.26	6.30	6.16
Spec. Cond. (µmho)	Contained	860	880	880	880	866	850	870	850	880	880
Turbidity (NTU)	From	>100	>100	100	100	>100	>100	72	>100	>100	<100
Temperature (°C)	Pg. 3.	10.1	9.9	10.2	10.1	9.8	10.3	10.0	10.2	10.3	10.4

COMMENTS:

URS <small>CONSULTANTS, INC.</small>	WELL DEVELOPMENT/PURGING LOG
--	-------------------------------------

PROJECT TITLE: GORICK LANDFILL RIFES

PROJECT NO.: 35232-00

STAFF: D. SHEPARD

DATE: 11-16-90 DEVELOPMENT

WELL NO.: <u>MW5I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>36.87</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	430	440	450	460	470	480	490	500	510	520
pH	Continued	6.16	6.00	6.20	6.28	6.32	6.20	6.14	6.28	6.26	6.06
Spec. Cond. (µmho)	Continued	960	910	910	920	940	920	920	910	910	910
Turbidity (NTU)	From	<100	100	100	100	<100	49	47	11	37	11
Temperature (°C)	Pg. 4	11.3	10.6	10.1	10.0	10.6	9.9	9.9	9.9	10.1	10.3

COMMENTS:

PROJECT TITLE: GORICK LANDFILL R1/F5

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-16-96

DEVELOPMENT
pg. 6

WELL NO.: MW51

① TOTAL CASING AND SCREEN LENGTH (FT.): 36.87

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	530	540							
pH	Continued	6.18	6.24							
Spec. Cond. (µmho)	From	920	910							
Turbidity (NTU)		27	14							
Temperature (°C)	Pg. 5	11.0	10.8							

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232.00
 STAFF: D. McCall
 DATE: 11-16-90

WELL NO.: MW5D	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>68.48</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	10	20	30	40	50	60	70	80	85	
pH	NT	6.69	6.48	6.67	6.73	6.43	6.47	6.35	6.35	6.42	
Spec. Cond. (µmho)	NT	1100	1250	1240	1290	1330	1350	1410	1320	1410	
Turbidity (NTU)	NT	>100	>100	>100	>100	>100	>100	>100	>100	>100	
Temperature (°C)	NT	12.1	11.6	11.3	11.6	11.6	11.1	10.8	10.9	10.6	

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: Gorick Landfill RI/FS

PROJECT NO.: 35232.00

STAFF: Kevin Kearney DEVELOPMENT

DATE: 12.3.90 12.5.90 Pg. 2

WELL NO.: <u>MW 5D</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>68.48</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	95	105	115	125	135	145	155	165	175	185
pH	Continued from pg # 1	5.60	5.51	5.47	5.53	5.49	5.56	5.67	NT	NT	NT
Spec. Cond. (µmho)		1630	1630	1625	1600	1580	1575	1550	NT	NT	NT
Turbidity (NTU)		7100	7100	7100	7100	70	78	35	7100	7100	7100
Temperature (°C)		NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DATE	12.3.90 →								12.5.90		

COMMENTS: 12.3.90 70 gallons purged

PROJECT TITLE: Gorick Landfill RF/FS

PROJECT NO.: 35232.00

STAFF: Kevin Kearney DEVELOPMENT

DATE: 12.7.90 pg 3

WELL NO.: MW 5D	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>68.48</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	195	205	215						
pH	Continued from pg # 2	NT	6.64	6.80						
Spec. Cond. (umho)		NT	1600	1650						
Turbidity (NTU)		7100	7100	30						
Temperature (°C)		NT	NT	NT						
		12.5.90	12.7.90							

COMMENTS:
 12.5.90 50 gallons purged
 12.7.90 10 gallons purged to clearness.
 did not agitate.

PROJECT TITLE: GORICK LANDFILL R/ES

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-1-90

DEVELOPMENT

WELL NO.: MW65

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 19.71

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 5.64

④ VOLUME OF WATER IN CASING (GAL.) _____

$V = 0.0408 (2)^2 \times (19.71 - 5.64) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	5	10	15	20	25	40	45	55	65	75
pH	6.19	6.17	6.20	6.13	6.14	-	6.22	6.15	6.20	6.21	6.21
Spec. Cond. (µmho)	280	420	440	480	480	-	540	490	490	580	580
Turbidity (NTU)	73	>100	>100	>100	>100	-	>100	>100	>100	>100	>100
Temperature (°C)	13.4	12.3	12.2	12.3	12.1	-	12.7	12.3	13.3	12.9	12.2

COMMENTS: Purged with an ISCO pump + HDPE tubing. Surged with a 1" stainless steel bailer from 40 gallons on. Turbid, no odor.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-1-90 / 11-5-90 / 11-6-90

DEVELOPMENT

pg 2

WELL NO.: MW65

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 19.71

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 5.64

④ VOLUME OF WATER IN CASING (GAL.) _____

$V = 0.0408 (2)^2 \times (19.71 - 5.64) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	85	95	105	110	110	165	220	275	300	330
pH	Cont. nued	6.18	6.15	6.19	6.23	N/T	N/T	6.42	6.31	6.36	6.39
Spec. Cond. (µmho)	From	580	520	580	660	580	540	610	620	520	520
Turbidity (NTU)	pg. 1.	>100	>100	>100	>100	>100	>100	>100	>100	47	100
Temperature (°C)		12.3	12.2	12.4	12.3	13.8	13.4	12.0	12.4	12.3	11.4

11-5

11-6 →

COMMENTS:

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-6-90 DEVELOPMENT

pg. 3

WELL NO.: <u>MW65</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>19.71</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	340	350	360	370	385	395	405	410	415	425
pH	Continued From pg	N/T									
Spec. Cond. (µmho)		N/T									
Turbidity (NTU)		90	82	86	90	87	100	>100	5.2	90	31
Temperature (°C)		N/T									

COMMENTS: Turbidity is the only non-linear parameter

PROJECT TITLE: GORICK LANDFILL R1/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-6-90

DEVELOPMENT

pg 4.

WELL NO.: MW65

① TOTAL CASING AND SCREEN LENGTH (FT.): 19.71

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	435	440							
pH	Cont	N/T								
Spec. Cond. (µmho)	used	N/T								
Turbidity (NTU)	From	27	24							
Temperature (°C)	pg. 4.	N/T								

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232-00
 STAFF: D. SHEPARD
 DATE: 11-1-90 DEVELOPMENT

WELL NO.: MW 6 I

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 30.65
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) 5.49
- ④ VOLUME OF WATER IN CASING (GAL.) _____

pg 1

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	10	20	30	40	50	55	60	65	75	85
pH	6.57	6.51	6.46	6.47	6.45	6.42	6.42	-	6.43	6.41	6.42
Spec. Cond. (µmho)	520	490	490	500	480	480	490	-	440	470	450
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	-	>100	>100	>100
Temperature (°C)	11.6	11.8	11.8	11.5	13.3	11.8	11.9	-	12.0	11.7	11.9

COMMENTS: Purged with Homelite pump and HDPE tubing. Surged with a stainless steel bailer every 10 gallons.
 Turbid, no odor.

A-2347

PROJECT TITLE: GORICK LANDELL RIFES
 PROJECT NO.: 35237-00
 STAFF: D. SHEPARD
 DATE: 11-1-90 / 11-5-90 / 11-6-90 DEVELOPMENT

WELL NO.: <u>MW6 I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.65</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>5.49</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	95	105	110	110	165	220	275	330	385	410	
pH	Continued from Pg. 1.	6.39	6.42	6.40	N/T	N/T	N/T	N/T	6.50	6.44	6.48	
Spec. Cond. (µmho)		430	420	410	400	400	410	440	400	410	460	
Turbidity (NTU)		>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	95
Temperature (°C)		12.7	11.8	11.6	12.3	12.4	11.5	11.7	11.8	11.2	11.3	
		11-1				11-5				11-6		

COMMENTS:

PROJECT TITLE: GORICK LAURELL R/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-6-90

DEVELOPMENT

pg 3

WELL NO.: MW6I

① TOTAL CASING AND SCREEN LENGTH (FT.): 30.65

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	440	455	465	475	485	505	515	525	530	535
pH	Continued from pg. 2.	6.47	N/T								
Spec. Cond. (µmho)		450	N/T								
Turbidity (NTU)		88	100	98	96	100	92	100	>100	48	92
Temperature (°C)		11.1	N/T								

COMMENTS: Turbidity is the only non-linear parameter.

PROJECT TITLE: GORKIK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPARD

DATE: 11-6-90

DEVELOPMENT

pg. 4

WELL NO.: MW6I

① TOTAL CASING AND SCREEN LENGTH (FT.): 30.65

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (2)^2 \times (30.65 - 0) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	545	550	560						
pH	Cont. inv. ed	N/T		6.42						
Spec. Cond. (µmho)		N/T		440						
Turbidity (NTU)	From pg. 3	77	65	22						
Temperature (°C)		N/T		11.8						

COMMENTS:

PROJECT TITLE: Gorlick Landfill RI/FS
 PROJECT NO.: 35232
 STAFF: S. Moeller, D. McCall
 DATE: 6/17/91 Development

Pg. 1

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-6D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>68.48</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	5	10	20	25	30	35	40	45	50	60	
pH	6.2	6.2	6.1	6.3	6.3	6.2	6.3	6.2	6.3	6.3	6.2	
Spec. Cond. (µmho)	425	480	510	445	450	550	500	495	620	680	680	
Turbidity (NTU)	>100										>	
Temperature (°C)	15.7	15.1	16.0	14.1	14.0	13.5	13.4	13.8	13.9	14.0	13.8	

COMMENTS: Well Development with a centrifugal pump AND agitation with a stainless steel bailer.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL

PROJECT NO.: 35232

STAFF: DON Mc CALL

DATE: 6/17/91 Development

Pg. 2

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-6D</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>68.48</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	70	80	90	100	110	120	130	140	150	160	170
pH	6.1	6.0	6.1	6.1	6.1	6.1	6.0	6.0	5.9	6.2	6.0
Spec. Cond. (µmho)	720	680	590	700	580	640	600	660	690	660	710
Turbidity (NTU)	7100										→
Temperature (°C)	14.5	13.8	14.4	13.9	13.9	13.7	14.1	13.7	13.8	15.2	13.5

COMMENTS:

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: Don McCall
 DATE: 6/17/91 Development

Pg. 3

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-6D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>68.48</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	180	190	200	210	220	230	240	250	260	270	280	
pH	6.0	6.0	6.0	5.9	6.0	6.6	6.3	6.0	6.0	6.0	5.9	
Spec. Cond. (µmho)	720	630	680	710	770	710	700	760	740	690	770	
Turbidity (NTU)	7100											
Temperature (°C)	13.3	13.6	13.5	13.3	13.3	16.9	13.7	13.8	13.5	13.9	13.7	

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. Mc CALL

DATE: 6/18/91 Development
Pg. 7

WELL NO.: MW-6D

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 68.48
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

$V = 0.0408 (2)^2 \times (1) - (3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	620	630	640	650	660	670	680	690	700		
pH	5.90	5.79	6.07	5.97	5.87	5.90	5.84	5.86	5.86		
Spec. Cond. (µmho)	730	770	720	750	750	770	750	750	740		
Turbidity (NTU)	7100	7100	68	7100	7100	77	7100	7100	7100		
Temperature (°C)	13.7	13.5	12.6	12.3	12.4	12.3	12.3	12.2	12.9		

COMMENTS: Development Complete. 700 gallon limit ATTAINED.

PROJECT TITLE: GORICK LANDELL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 10-31-90 DEVELOPMENT

WELL NO.: <u>AW75</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>26.52</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>12.78</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	5	10	15	20	25	30	35	40	45	50	
pH	6.02	5.92	5.93	5.92	5.91	5.92	5.95	5.89	5.91	5.93	5.99	
Spec. Cond. (µmho)	1140	1280	1360	1320	1330	1260	1190	1290	1340	1320	1260	
Turbidity (NTU)	11	>100	>100	77	70	>100	>100	>100	>100	>100	>100	
Temperature (°C)	16.7	14.4	14.2	14.1	14.0	13.8	13.9	13.5	13.4	13.3	13.0	

COMMENTS: Purged with ISO pump + HDPE tubing. Surged with a bailer every 10 gallons. Turbid, No odor

PROJECT TITLE: Gorick Landfill RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 10-31-90 / 11-1-90

DEVELOPMENT

pg 2

WELL NO.: URS-75

① TOTAL CASING AND SCREEN LENGTH (FT.): 26.52

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 12.78

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (1) - (3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	55	60	65	70	75	80	85	90	95	100	
pH	Continued From pg (1)	5.99	6.64	6.67	6.78	6.69	6.65	6.69	6.59	6.59	6.55	
Spec. Cond. (µmho)		1240	1360	1380	1330	1330	1290	1310	1360	1340	1346	
Turbidity (NTU)		>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)		13.1	12.7	13.0	13.1	12.9	12.7	11.9	12.9	13.2	13.1	

10-31

11-1

COMMENTS:

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPARD

DATE: 11-1-90 / 11-6-90

DEVELOPMENT

pg 3

WELL NO.: MW 75

① TOTAL CASING AND SCREEN LENGTH (FT.): 26.52

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 12.78

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	105	110	110	115	120	125	130	135	140	145
pH	Continued	6.61	6.60	6.89	6.92	6.98	6.95	6.95	6.97	6.97	7.02
Spec. Cond. (µmho)	Continued	1260	1300	1500	1500	1500	1450	1426	1470	1400	1400
Turbidity (NTU)	From	>100	>100	>100	>100	>100	>100	>100	>100	>100	50
Temperature (°C)	pg. 7	13.5	13.4	13.7	14.1	14.8	14.1	14.5	14.4	14.7	14.2

11-1

11-6

COMMENTS:

PROJECT TITLE: GORICK LANDFILL R/FS

PROJECT NO.: 35 732-00

STAFF: D. SHEPPARD

DATE: 11-6-90 DEVELOPMENT

WELL NO.: MW75

Pg. 4

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 26.52

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$V = 0.0408 (2)^2 \times (1) - (3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	150	155	160	165	170	175	180	185	190	195
pH	Continued from Pg 3	6.96	6.86	6.88	6.89	6.83	6.83	6.85	6.73	6.71	6.70
Spec. Cond. (µmho)		1450	1450	1480	1450	1430	1500	1500	1550	1460	1500
Turbidity (NTU)		97	87	86	85	>100	>100	98	90	77	>100
Temperature (°C)		14.2	14.4	14.5	14.4	14.4	14.6	14.5	14.5	14.6	14.6

COMMENTS:

PROJECT TITLE: GORICK LANDFILL R1/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-6-90 DEVELOPMENT

pg. 5

WELL NO.: MW7S

① TOTAL CASING AND SCREEN LENGTH (FT.): 26.52

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	200	205	210	215	220	225	230	235	240	245
pH	Continued	6.66	6.73	6.66	6.75	6.68	6.65	6.52	6.68	6.71	6.67
Spec. Cond. (µmho)	Continued	1400	1510	1530	1500	1500	1470	1550	1400	1530	1500
Turbidity (NTU)	From	>100	>100	50	37	41	63	73	55	83	77
Temperature (°C)	pg 4	14.4	14.2	14.7	14.4	14.4	14.5	14.3	14.2	14.4	14.1

COMMENTS:

PROJECT TITLE: GORICK LANDFILL R/LFS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-6-90

DEVELOPMENT

pg. 6

WELL NO.: MW75

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 26.52

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	250	255	260	265	270	275	280	285	290	295
pH	Continued from pg. 5.	6.61	6.64	6.65	6.69	6.74	6.70	6.69	6.61	6.58	6.77
Spec. Cond. (µmho)		1450	1520	1540	1550	1500	1520	1500	1460	1410	1400
Turbidity (NTU)		32	69	47	55	59	42	54	87	31	10
Temperature (°C)		14.1	14.7	14.3	14.1	14.4	14.0	13.7	14.2	14.0	14.5

COMMENTS:

PROJECT TITLE: GORICK LANDFILL RIFES

PROJECT NO.: 35732-00

STAFF: D. SHEPPARD

DATE: 11-6-90 DEVELOPMENT

WELL NO.: <u>MW75</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>26.52</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	300									
pH	Confined	6.79									
Spec. Cond. (µmho)	From	1350									
Turbidity (NTU)	Pg. 6.	7.1									
Temperature (°C)		13.7									

COMMENTS:

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-15-90

DEVELOPMENT

Pg. 1

WELL NO.: MW85

① TOTAL CASING AND SCREEN LENGTH (FT.): 36.47

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	10	20	30	40	50	60	70	80	90	100
pH	6.40	6.40	6.40	6.40	6.52	6.41	6.52	6.56	6.56	6.56	6.57
Spec. Cond. (µmho)	1790	1670	2000	2000	2000	1960	1970	2000	2000	2000	2000
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	9.6	9.8	9.8	10.5	11.6	12.4	12.3	12.6	13.4	13.7	14.0

COMMENTS: Purged with 5/8" HDPE tubing and check valve. Highly turbid e 60 gallons turning turbid to slightly turbid to 210 gallons. Slight odor.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD

DATE: 11-15-90 DEVELOPMENT

WELL NO.: MWBS

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 36.47
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

$V = 0.0408 (2)^2 \times (1) - (3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	110	120	130	140	150	160	170	180	190	200
pH	Continued	6.60	6.62	6.60	6.61	6.62	N/T	N/T	N/T	N/T	N/T
Spec. Cond. (µmho)	Continued	2200	2200	2300	2200	2000	1660	1700	1660	1680	1700
Turbidity (NTU)	from	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	pg. 1.										

COMMENTS:

N/T - Not taken - pH Meter malfunction.

PROJECT TITLE: GORICK LANDFILL R/FS

PROJECT NO.: 35232-00

STAFF: D. SHEPPARD / D. McCAUL

DATE: 11-15-90 DEVELOPMENT

pg 3

WELL NO.: <u>MW8S</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>36.47</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	210	220	230	240	250	260	270	280	285	290
pH	Continued	N/T	6.41	6.76	6.56	6.69	6.93	6.69	6.65	6.61	6.68
Spec. Cond. (µmho)	From	1700	1840	1820	1840	1860	1840	1830	1860	1840	1840
Turbidity (NTU)	pg. 2	88	>100	>100	>100	>100	27	23	66	67	48
Temperature (°C)		13.2	23.2	22.7	22.6	21.9	21.5	21.6	23.0	22.5	22.0

11-15

11-16

COMMENTS:

PROJECT TITLE: GORICK LANDFILL R1/FS

PROJECT NO.: 35232-00

STAFF: D. McCALL

DATE: 11-16-90 DEVELOPMENT

p. 4

WELL NO.: MW8S

① TOTAL CASING AND SCREEN LENGTH (FT.): 36.47

② CASING INTERNAL DIAMETER (in.): _____

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 ((2)^2 \times (1) - (3)) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	300	305	310	315	320				
pH	CONTINUED FROM p. 3	6.78	6.65	6.64	6.74	6.58				
Spec. Cond. (µmho)		1840	1800	1820	1810	1800				
Turbidity (NTU)		20	80	25	33	30				
Temperature (°C)		21.7	20.1	20.3	19.7	19.2				

11-16-90 ←

COMMENTS:

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232.00

STAFF: D. McCALL

DATE: 11-14-90 DEVELOPMENT p. 1

WELL NO.: MW 9S

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 34.55
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (34.55 - 0) = \underline{\hspace{2cm}} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	10	20	30	40	50	60	70	80	90	100
pH	N/T	6.42	6.42	6.39	6.36	6.30	6.37	6.40	6.39	6.39	6.39
Spec. Cond. (µmho)	1150	1360	1350	1360	1370	1370	1370	1370	1350	1340	1320
Turbidity (NTU)	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)	10	13	15	N/T	N/T	8	10	13	12	9	13

COMMENTS:

PURGED WITH 5/8" HDPE TUBING AND A CHECK VALVE.
WELL WAS DEVELOPED TO ALL CRITERIA.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232.00

STAFF: D. McCall

DATE: 11-14-90 DEVELOPMENT p.2

WELL NO.: MW9S

WELL I.D. VOL. GAL./FT.

① TOTAL CASING AND SCREEN LENGTH (FT.): 34.55

1" 0.04

② CASING INTERNAL DIAMETER (in.): 2

2" 0.17

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

3" 0.38

4" 0.66

④ VOLUME OF WATER IN CASING (GAL.) _____

5" 1.04

6" 1.50

8" 2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	110	120	130	140	150	160	170			
pH	CONTINUED FROM P. 1	6.43	6.43	6.48	6.52	6.52	6.52	6.66			
Spec. Cond. (µmho)		1310	1300	1290	1290	1290	1280	1270			
Turbidity (NTU)		>100	>100	>100	47	35	53	41			
Temperature (°C)		14	13	9	9	10	8	7			

COMMENTS:

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232.00
 STAFF: D McCall
 DATE: 11-15-90 DEVELOPMENT

WELL NO.: MW 105	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>28.97</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (2)^2 \times (1) - (3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	10	20	30	40	50	60	65	70	75	80	
pH	6.68	6.80	6.84	6.89	6.87	6.80	6.57	6.37	6.50	6.65	6.53	
Spec. Cond. (µmho)	1300	1600	1500	1500	1500	1500	1500	1500	1500	1500	1500	
Turbidity (NTU)	>100	7100	>100	>100	>100	>100	>100	>100	>100	>100	>100	
Temperature (°C)	NT	4	8	12	14	14	10	11.2	14.6	15.6	16.3	

11-14-90 ←

COMMENTS:

PURGED WITH 5/8" HDPE TUBING AND A CHECK VALVE, ISCO PUMPED USED FOR 140 TO 255 GALLONS.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232.00

STAFF: D. McCALL

DATE: 11-15-90 DEVELOPMENT

p. 2

WELL NO.: mw 105

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 28.97

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	85	90	95	100	105	110	115	120	125	130
pH	CONTINUED FROM P. 1	6.63	6.64	6.47	6.54	6.54	6.54	6.55	6.72	7.02	7.04
Spec. Cond. (µmho)		1500	1500	1600	1600	1600	1600	1600	1700	1700	1750
Turbidity (NTU)		>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Temperature (°C)		13.2	16.7	18.8	18.3	19.4	19.2	19.3	18.9	22.2	20.4

COMMENTS:

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232.00
 STAFF: D. McCALL
 DATE: 11-15-90 DEVELOPMENT

p. 3

WELL NO.: MW 105	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>28.97</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	135	140	150	160	170	180	190	200	210	215
pH	p. 2	6.72	6.95	NT	7.05	6.53	6.86	7.08	7.1	6.17	6.04
Spec. Cond. (µmho)	FROM	1900	2000	2100	2100	1900	2000	1900	1600	1000	1000
Turbidity (NTU)	CONTINUED	>100	>100	>100	>100	>100	>100	54	65	>100	>100
Temperature (°C)		20.2	19.9	20.0	20.0	21.1	19.2	19.3	19.6	18.6	18.4

COMMENTS:

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232.00

STAFF: D. McCall

DATE: 11-15-90 DEVELOPMENT

P. 4

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW105		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>28.97</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	220	225	230	235	240	245	250	255		
pH	P.3	6.07	6.06	5.97	6.06	6.34	6.42	6.8	6.85		
Spec. Cond. (µmho)	FROM	1000	1000	1000	1000	1000	1000	1900	1920		
Turbidity (NTU)	CONTINUED	94	>100	79	18.0	71.0	38.0	3.5	1.5		
Temperature (°C)		18.0	18.1	18.8	18.9	18.5	18.9	15.1	16.8		

11-15-90 ← 11-16-90 ←

COMMENTS:

PROJECT TITLE: GORICK LANDFILL

PROJECT NO.: 35232

STAFF: D. McCall

DATE: 6/25/91 Development
Pg. 1

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW - 11 S		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	10	15	20	25	30	35	40	45	50	60
pH	6.73	6.71	6.72	6.89	6.43	6.58	7.45	7.50	6.85	6.47	6.49
Spec. Cond. (µmho)	820	810	770	280	750	285	290	760	770	780	800
Turbidity (NTU)	7100										→
Temperature (°C)	14.1	16.2	14.1	15.3	14.2	13.3	13.7	13.0	12.8	12.8	12.5

COMMENTS: Well Developed with a stainless steel bailer to 370 gallons. An inertial type pump (WATERA) utilized thereafter.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. Mc CALL

DATE: 6/25/91, 6/26/91 Development

Pg. 2

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-115		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	70	80	90	100	110	120	130	140	150	160	170
pH	6.50	6.49	6.63	6.40	6.74	6.52	6.30	6.37	6.74	6.39	6.39
Spec. Cond. (µmho)	750	720	730	740	770	720	780	780	790	820	840
Turbidity (NTU)	7100										→
Temperature (°C)	12.8	13.2	13.1	12.5	12.7	12.5	5.8	NT	NT	NT	NT
	6/25 →									6/26 →	

COMMENTS: NT : Meter MalFunction

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: D. McCall
 DATE: 6/26/91 Development

Pg. 3

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-115		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	180	190	200	210	220	230	240	250	260	270	280
pH	6.34	6.27	5.96	6.13	6.89	6.78	6.76	6.71	6.68	6.65	6.63
Spec. Cond. (µmho)	810	800	760	730	785	790	770	785	775	780	775
Turbidity (NTU)	7100										→
Temperature (°C)	10.0	10.1	16.7	14.5	10.0	8.9	9.0	8.5	9.8	9.5	9.2

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS
 PROJECT NO.: 35232
 STAFF: Steve Moeller, Dan McCall
 DATE: 6/26-27/91 Development

Pg. 4

WELL NO.: <u>MW-11 S</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	290	300	310	320	330	340	350	360	370	380	390
pH	6.63	6.61	6.52	6.06	6.29	6.32	6.39	6.40	6.41	6.42	6.41
Spec. Cond. (µmho)	760	755	730	600	600	595	600	610	615	605	605
Turbidity (NTU)	7100	7100	63	74	7100	7100	7100	7100	.82	11	5
Temperature (°C)	9.0	8.8	9.0	8.0	8.3	8.9	9.0	8.9	9.1	11.0	11.1

6/26 → → 6/27 →

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: S. Moeller, D. McCall

DATE: 6/27/91 Development Pg. 5

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-115		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	400									
pH	6.50									
Spec. Cond. (µmho)	590									
Turbidity (NTU)	5									
Temperature (°C)	11.5									

COMMENTS: Well developed AT 400 gallons.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: S. Moeller

DATE: 6/25/91 Development

Pg. 1

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-11 I		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>48.20</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	5	10	15	20	25	30	35	40	45	50
pH	6.81	6.71	6.70	6.70	6.24	6.21	6.35	6.61	6.42	6.45	6.45
Spec. Cond. (µmho)	570	550	560	590	620	685	715	740	735	745	735
Turbidity (NTU)	7100										→
Temperature (°C)	17.0	15.6	13.8	14.1	14.3	13.8	14.0	13.7	11.7	11.2	13.5

COMMENTS: Well develop. with a STAINLESS STEEL bailer to 170 gallons. An inertial type pump (WATERA) utilized thereafter.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GOLICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: S. MOELLER

DATE: 6/25-26/91 Development

Pg. 2

WELL NO.: MW-11I

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 48.20
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
- ④ VOLUME OF WATER IN CASING (GAL.) _____

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	60	70	80	90	100	110	120	130	140	150	160
pH	6.50	6.23	6.43	6.44	6.34	6.41	6.34	6.31	6.37	6.16	6.31
Spec. Cond. (µmho)	720	680	740	740	740	745	800	795	750	695	665
Turbidity (NTU)	7100										→
Temperature (°C)	12.0	14.5	13.1	9.0	NT	NT	NT	NT	NT	12.0	12.1

COMMENTS: NT: meter malfunction

A-2347

PROJECT TITLE: Gorick Landfill RI/FS
 PROJECT NO.: 35232
 STAFF: D. McCall, S. Moeller
 DATE: 6/26/91 Development

Pg. 3

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-11 I		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>48.20</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	170	180	190	200	210	220	230	240	250	260	270
pH	6.62	6.48	6.39	6.29	6.21	6.07	6.16	6.22	6.26	6.29	6.32
Spec. Cond. (µmho)	715	720	720	715	700	710	720	710	720	725	725
Turbidity (NTU)	7100										*
Temperature (°C)	14.0	9.8	NT	10.0	10.0	10.0	10.0	10.0	9.8	10.5	9.8

COMMENTS: NT: Meter Malfunction
 * Sampled turned red/orange before turbidities could be taken



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL REIFS
 PROJECT NO.: 35232
 STAFF: S. Moeller, D. McCall
 DATE: 6/26-27/91 Development
Pg. 4

WELL NO.: <u>MW-11I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): _____	1"	0.04
② CASING INTERNAL DIAMETER (in.): _____	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	280	290	300	310	320	330	340	350	360	370	380
pH	6.36	6.38	6.39	6.41	6.41	6.40	6.06	6.12	6.18	6.23	6.26
Spec. Cond. (µmho)	725	720	720	715	705	700	540	540	550	540	540
Turbidity (NTU)	*	*	7100	7100	*	*	7100	7100	7100	86	60
Temperature (°C)	9.2	9.9	9.3	9.2	9.7	10.0	8.6	8.8	9.0	9.0	9.3

6/26 → 6/27 →

COMMENTS:

* Samples turned red/orange overnight before turbidity test could be run.

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL REIFS

PROJECT NO.: 35232

STAFF: S. Moeller, R. McCall

DATE: 6/27/91 Development
Pg. 5

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-11 I</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>48.20</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	390	400	410							
pH	6.28	6.27	6.21							
Spec. Cond. (µmho)	515	515	520							
Turbidity (NTU)	48	40	36							
Temperature (°C)	9.8	10.0	11.1							

COMMENTS: Well developed AT 410 gallons.

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. SHELDON, M.E. FRANK

DATE: 6/21, 6/24/91 Development

Pg. 1

WELL NO.: <u>MW-12S</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>22.15</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	0	5	10	15	20	25	30	35	40	45	50	
pH	6.84	6.75	6.71	6.70	6.64	6.67	6.72	6.70	6.68	NT	6.67	
Spec. Cond. (µmho)	490	490	495	500	485	430	420	415	405	NT	405	
Turbidity (NTU)	7100	→										
Temperature (°C)	NT	→										
	6/21 →					6/24 →						

COMMENTS: Bailed with a stainless steel bailer to 350 gallons. Centrifugal pump utilized thereafter. Agitated with stainless steel bailer during pumping.

NT: Not taken

PROJECT TITLE: GORICK LANDFILL

PROJECT NO.: 35232

STAFF: D. SHELDON

DATE: 6/24/91 Development
Pg. 2

WELL NO.:	<u>MW-12 S</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	<u>22.15</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.):	<u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	_____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	_____	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
		60	65	70	75	80	85	90	100	110	120
pH	6.62	6.61	6.63	6.60	6.61	6.58	6.56	6.47	6.50	6.45	6.45
Spec. Cond. (µmho)	395	395	385	390	380	370	370	400	385	380	375
Turbidity (NTU)	7100	_____	_____	_____	_____	_____	_____	_____	_____	_____	→
Temperature (°C)	NT	_____	_____	_____	_____	_____	→	10.0	10.0	10.0	10.0

COMMENTS: NT: NOT TAKEN

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. SHELDON

DATE: 6/24/91 Development

Pg. 3

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-128		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>22.15</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	130	140	150	160	170	180	190	200	210	220	230
pH	6	6.51	6.53	6.55	6.52	6.49	6.48	6.50	6.44	6.62	6.64
Spec. Cond. (µmho)	390	390	385	360	380	380	365	370	365	400	380
Turbidity (NTU)	7100	—	—	—	—	—	—	—	—	—	—
Temperature (°C)	9.5	9.0	9.0	9.0	9.5	8.6	9.0	9.0	8.8	9.5	9.0

COMMENTS:

PROJECT TITLE: GoRICK LANDFILL
 PROJECT NO.: 35232
 STAFF: D. SHELDON, M.E. FRANK
 DATE: 6/24/91 Development

Pg. 4

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-125		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>22.15</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	240	250	260	270	280	290	300	310	320	330	340
pH	6.60	6.58	6.44	6.54	6.57	6.60	6.63	6.62	6.62	6.70	6.65
Spec. Cond. (µmho)	390	385	400	375	375	375	380	385	380	370	385
Turbidity (NTU)	>100										→
Temperature (°C)	NT	8.8	NT	8.0	NT	NT	NT	9.0	9.0	NT	NT

COMMENTS: NT: NOT TAKEN



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: P. SHELDON
 DATE: 6/25/91 Development

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-125		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>22.15</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	350	360	370	380	390	400	410	420	430	440	450
pH	6.70	6.55	6.30	6.43	6.54	6.45	6.44	6.40	6.40	6.44	6.39
Spec. Cond. (µmho)	375	345	360	360	360	370	380	330	350	360	360
Turbidity (NTU)	7100										→
Temperature (°C)	NT	12.0	NT	NT	11.0	14.0	10.0	10.5	11.0	NT	NT

COMMENTS:

A-2347

PROJECT TITLE: Gorick Landfill RI/FS
 PROJECT NO.: 35232
 STAFF: D. SHELDON
 DATE: 6/25/91 Development

Pg. 6

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-12 S		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>22.15</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	460	470	480	490	500	510	520	530	560	580	600
pH	6.40	6.43	6.41	6.50	6.37	6.40	6.45	6.42	6.47	6.48	6.47
Spec. Cond. (µmho)	330	360	360	350	350	340	330	360	350	320	340
Turbidity (NTU)	7/00	7/00	7/00	7/00	7/00	*	7/00	7/00	7/00	7/00	88
Temperature (°C)	NT	NT	11.0	11.5	11.0	10.0	NT	NT	11.0	10.5	11.0

COMMENTS: * Well not AgITATED with bailer.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS

PROJECT NO.: 35232

STAFF: D. SHELDON

DATE: 6/25/91 Development
Pg. 7

WELL NO.: <u>MW-125</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>22.15</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (1) - (3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	620	640								
pH	6.44	6.49								
Spec. Cond. (µmho)	360	345								
Turbidity (NTU)	70	25								
Temperature (°C)	10.0	9.0								

COMMENTS: Well developed at 640 gallons.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS

PROJECT NO.: 35232

STAFF: M. E. FRANK

DATE: 6/24/91, 6/25/91 Development

Pg. 3

WELL NO.: <u>MW-12D</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>43.75</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	120	130	140	150	160	170	180	190	200	210	220
pH	7.12	7.14	7.22	7.19	7.26	7.25	7.36	7.35	7.41	6.83	6.96
Spec. Cond. (µmho)	440	430	410	460	430	420	420	430	395	440	440
Turbidity (NTU)	7100	→									→
Temperature (°C)	15.5	16.5	15.0	15.0	15.0	15.5	14.0	14.5	14.0	13.5	13.5

6/24 → → → → → → → → → → 6/25 →

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: M.E. FRANK, D. SHELDON
 DATE: 6/25/91 Development Pg. 4

WELL NO.: <u>MW-12 D</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>43.75</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	230	240	250	260	270	280	290	300	310	320	330
pH	7.03	7.07	7.11	7.18	7.21	7.02	7.16	7.26	7.27	7.28	7.35
Spec. Cond. (µmho)	430	425	405	405	400	380	395	370	390	390	385
Turbidity (NTU)	7100	—									→
Temperature (°C)	13.8	14.0	14.5	14.5	14.5	13.0	13.5	15.0	13.5	14.5	14.0

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: M.E. FRANK

DATE: 6/25/91 Development

Pg. 5

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-12D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>43.75</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (43.75 - 0) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	340	350	360	370	380	390	400	410	420	430	440
pH	7.40	7.40	7.39	7.88	7.86	NT	5.54	5.70	5.80	5.85	5.89
Spec. Cond. (µmho)	385	395	390	420	400	NT	395	400	400	400	400
Turbidity (NTU)	7100										
Temperature (°C)	14.0	13.0	14.5	14.0	14.5	NT	NT	NT	13.5	14.0	14.0

COMMENTS: * Meter malfunctioning, recalibrated.

A-2347

PROJECT TITLE: Gorick RI/FS

PROJECT NO.: 35232

STAFF: M.E. FRANK

DATE: 6/25/91 Development

Pg. 6

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW - 12 D</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>43.75</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	450	460	470	480	490	500	510	520	530	540	550
pH	5.91	6.04	6.04	6.07	6.15	6.21	6.28	6.29	NT	6.30	NT
Spec. Cond. (µmho)	400	400	400	400	400	400	400	400	NT	400	NT
Turbidity (NTU)	7100	7100	7100	7100	7100	7100	7100	7100	NT	7100	NT
Temperature (°C)	14.0	14.5	14.5	15.0	14.5	14.0	14.0	14.0	NT	14.0	NT

COMMENTS: NT : NOT TAKEN



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: M. E. FRANK

DATE: 6/25/91 *Development Pg. 7*

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-12D</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>43.75</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (43.75 - 3) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	560	580	600	620	640	660	680	700		
pH	6.40	6.35	6.35	6.36	6.40	6.41	6.42	6.47		
Spec. Cond. (µmho)	400	400	400	400	400	420	410	400		
Turbidity (NTU)	7100									
Temperature (°C)	13.5	14.0	14.5	13.5	12.5	13.0	13.5	13.0		

COMMENTS: Development complete, 700 gallon limit attained.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: S. Moeller, M.E. FRANK
 DATE: 6/19/91 Development

WELL NO.: <u>MW-14 I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.95</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	5	10	15	20	25	30	35	40	45	50
pH	NT	7.55	7.18	7.75	7.08	7.04	7.30	7.11	6.89	7.24	6.75
Spec. Cond. (µmho)	NT	520	470	445	425	420	405	405	405	385	375
Turbidity (NTU)	7100	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Temperature (°C)	NT	16.0	15.8	18.7	19.2	18.8	15.6	15.6	16.6	16.5	16.8

COMMENTS: Well development by centrifugal pump with Agitation by stainless steel bailer.

NT: Not Taken

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: J. MOELLER, M.E. FRANK
 DATE: 6/20/91 Development

Pg. 2

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-14 I</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.95</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	55	60	65	70	75	80	85	90	95	100	105
pH	6.70	6.56	6.75	7.06	6.92	7.25	6.81	6.60	6.83	6.97	6.96
Spec. Cond. (µmho)	345	260	285	260	290	300	295	285	280	280	265
Turbidity (NTU)	7100	—									→
Temperature (°C)	13.4	15.1	14.9	15.3	15.9	15.6	16.2	17.4	17.2	16.3	18.5

COMMENTS:

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL REIFS

PROJECT NO.: 35232

STAFF: M.E. FRANK, S. MOELLER

DATE: 6/20/91 Development

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-14I</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.95</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	110	120	130	140	150	160	170	180	190	200	210
pH	7.03	7.10	6.54	7.01	6.94	6.77	6.74	6.83	6.53	6.66	6.50
Spec. Cond. (µmho)	240	245	245	240	280	270	260	230	260	250	240
Turbidity (NTU)	7100	—	—	—	—	—	—	—	—	—	—
Temperature (°C)	16.5	16.6	17.7	16.8	NT	18.4	19.5	17.3	18.8	19.2	19.6

COMMENTS: NT: Not taken, meter malfunction.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. McCall

DATE: 6/20-21/91 Development

Pg. 4

WELL NO.: <u>MW-14I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.95</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	220	230	240	250	260	270	280	290	300	310	320
pH	6.73	6.89	6.73	8.10*	7.29	7.50	7.36	7.15	7.10	7.19	6.99
Spec. Cond. (µmho)	205	210	240	260	215	210	205	210	210	200	210
Turbidity (NTU)	7100	_____									→ 65
Temperature (°C)	18.4	16.7	15.9	16.6	15.6	15.1	15.2	15.6	15.5	16.1	18.3
	6/20 →					6/21 →					

COMMENTS: * pH meter probe malfunction, probe adjusted.

A-2347

PROJECT TITLE: Gorick Landfill RI/FS
 PROJECT NO.: 35232
 STAFF: S. Moeller, P. McCall
 DATE: 6/21, 6/24/91 Development

WELL NO.: MW-14 I Pg 5
 WELL I.D. VOL. GAL./FT.
 ① TOTAL CASING AND SCREEN LENGTH (FT.): 41.95
 ② CASING INTERNAL DIAMETER (in.): 2
 ③ WATER LEVEL BELOW TOP OF CASING (FT.) _____
 ④ VOLUME OF WATER IN CASING (GAL.) _____

1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	330	340	350	360	370	380	390	400	410	420	430
pH				6.48	6.52	6.45	6.77	6.91	6.87	6.91	6.86
Spec. Cond. (µmho)	205	305	300	300	285	290	320	295	265	275	250
Turbidity (NTU)	62	74	54	94	69	7100	7100	48	7100	7100	72
Temperature (°C)	16.9	15.7	14.9	14.5	16.7	15.1	NT	17.6	17.7	17.2	17.6
	6/21	6/24	→								

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS
 PROJECT NO.: 35232
 STAFF: D. McCall, S. Moeller
 DATE: 6/24/91 Development

Pg. 6

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14 I		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.95</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	440	450	460	470	480	490	500	510	520	530	540
pH	6.91	6.88	6.79	6.81	6.86	6.84	6.57	6.76	6.55	6.58	6.13
Spec. Cond. (µmho)	260	245	235	260	280	280	295	290	290	300	305
Turbidity (NTU)	7100	86	7100	7100	85	7100	55	59	50	50	56
Temperature (°C)	15.9	17.1	16.4	15.1	16.1	15.8	14.9	14.8	15.0	14.6	14.6

COMMENTS:



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL REIFS
 PROJECT NO.: 35232
 STAFF: D. McCall, S. Moeller
 DATE: 6/24/91 Development
Pg. 7

WELL NO.: <u>MW-14I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.75</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (41.75 - 1) = \underline{\hspace{2cm}} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	550	560								
pH	6.08	7.03								
Spec. Cond. (µmho)	300	295								
Turbidity (NTU)	59	45								
Temperature (°C)	14.0	14.4								

COMMENTS:

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PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: S. MOELLER, M.E. FRANK

DATE: 6/17/91 Development Pg. 1

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	5	10	15	20	25	30	35	40	45	50
pH	9.40	7.62	7.10	6.30	6.20	6.15	6.03	5.96	6.16	6.21	6.14
Spec. Cond. (µmho)	440	490	660	790	825	825	820	810	880	860	830
Turbidity (NTU)	7100	—	—	—	—	—	—	—	—	—	—
Temperature (°C)	NT	NT	NT	17.9	NT	NT	NT	16.2	NT	NT	17.7

COMMENTS: Well development by centrifugal pump with agitation with a stainless steel bailer.

NT: Not taken

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: S. Moeller, M.E. FRANK
 DATE: 6/18/91 Development

Pg. 2

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	55	60	65	70	75	80	85	90	95	100	105
pH	6.11	6.25	6.16	6.09	6.17	6.08	5.96	6.00	6.02	6.01	6.03
Spec. Cond. (µmho)	890	900	880	860	860	860	845	840	825	860	860
Turbidity (NTU)	7100										→
Temperature (°C)	NT										→

COMMENTS:

NT : Not taken



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. McCall

DATE: 6/18/91, 6/19/91 Development

Pg. 3

WELL NO.: MW-14D

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 76.70

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	110	115	120	125	130	135	140	145	150	155	160	
pH	6.01	5.99	5.93	5.96	5.92	5.98	5.89	5.92	5.84	6.05	6.05	
Spec. Cond. (µmho)	850	840	840	835	810	800	805	800	795	785	800	
Turbidity (NTU)	>100										→	
Temperature (°C)	NT									→ 12.9	11.9	
	6/18	→								6/19	→	

COMMENTS:

NT: NOT TAKEN

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. McCall

DATE: 6/19/91 Development

Pg. 4

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-14D</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	165	170	175	180	185	190	195	200	205	210	215
pH	6.08	6.06	6.00	5.96	5.93	6.00	6.01	5.88	5.76	5.89	5.85
Spec. Cond. (µmho)	805	790	785	780	805	810	810	750	710	745	715
Turbidity (NTU)	7100										→
Temperature (°C)	12.0	11.9	11.9	11.9	12.1	12.4	8.9	14.6	15.8	14.2	13.8

COMMENTS:

A-2347

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: S. Moeller, D. McCall

DATE: 6/19/91 Development

Pg. 5

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-14 D</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	220	225	230	235	240	245	250	255	260	265	270
pH	5.73	5.94	6.01	6.06	6.02	5.99	5.95	5.97	6.02	6.01	6.00
Spec. Cond. (µmho)	705	695	700	685	685	700	715	715	715	720	685
Turbidity (NTU)	7100	—	—	—	—	—	—	—	—	—	—
Temperature (°C)	14.8	14.9	13.3	14.2	13.1	12.6	14.4	12.4	12.7	13.0	12.3

COMMENTS:

PROJECT TITLE: COLICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: S. MOELLER, M.E. FRANK

DATE: 6/19/91 Development

Pg. 6

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
	2"	0.17
② CASING INTERNAL DIAMETER (in.): <u>2</u>	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	275	280	285	290	295	300	310	320	330	340	350
pH	5.92	6.23	6.33	6.70	6.92	6.42	6.66	6.75	6.75	6.58	6.65
Spec. Cond. (µmho)	695	690	710	720	700	700	710	710	720	720	740
Turbidity (NTU)	7100										→
Temperature (°C)	13.3	13.3	13.4	13.8	13.7	13.1	12.8	12.8	13.5	12.7	12.7

COMMENTS:

PROJECT TITLE: GOLICK LANDFILL RI / FS

PROJECT NO.: 35232

STAFF: D. McCall, S. Moeller

DATE: 6/20/91 Development

Pg. 7

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) _____	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	360	370	380	390	400	410	420	430	440	450	460
pH	6.55	5.90	5.90	5.87	6.21	6.08	6.09	6.31	6.49	6.32	6.16
Spec. Cond. (µmho)	780	740	750	720	690	680	690	680	620	600	620
Turbidity (NTU)	>100	>100	>100	>100	>100	59*	>100	>100	>100	>100	>100
Temperature (°C)	14.7	11.8	12.3	11.9	14.0	13.4	14.3	14.3	14.7	14.3	17.5

COMMENTS: * No bailer Agitation



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GONICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: S. Moeller, D. McCall
 DATE: 6/20/91 Development

Pg. 8

WELL NO.: <u>MW-140</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	470	480	490	500	510	520	530	540	550	560	570
pH	6.30	6.17	6.25	6.29	6.50	6.27	6.00	5.87	6.05	6.14	6.27
Spec. Cond. (µmho)	620	650	640	650	610	620	640	640	610	620	625
Turbidity (NTU)	>100									>48	7100
Temperature (°C)	NT	14.1	14.2	15.9	14.2	16.5	15.8	15.8	13.9	15.4	15.3

COMMENTS:

NT: Not taken

A-2347

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: S. Moeller, D. McCall
 DATE: 6/20/91 Development

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WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) _____	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	580	590	600	610	620	630	640	650	660	670	680
pH	6.35	6.04	6.31	6.42	6.19	6.41	6.36	6.41	8.2*	6.90	6.59
Spec. Cond. (µmho)	595	615	620	660	675	640	680	660	680	675	670
Turbidity (NTU)	7100	75	7100	7100	80	69	7100	7100	69	77	23
Temperature (°C)	15.2	16.2	15.1	14.6	14.4	14.4	15.9	14.0	13.6	13.7	13.6

COMMENTS: * pH probe malfunction

PROJECT TITLE: Gorick Landfill RIIS

PROJECT NO.: 35232

STAFF: E. S. Moeller, D. McCall

DATE: 6/20/91 Development

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14 D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.70</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) _____	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \text{_____ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	690	700								
pH	6.59	7.09								
Spec. Cond. (µmho)	660	660								
Turbidity (NTU)	68	23								
Temperature (°C)	13.7	14.1								

COMMENTS:

APPENDIX F

WELL PURGING LOGS

APPENDIX F

WELL PURGING LOGS

Three well volumes of water were removed from each monitoring well prior to collection of groundwater samples to ensure that only fresh groundwater was sampled. Records of each well purging are shown, separated into first and second phases of sampling

"FIRST PHASE SAMPLING"

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00-23000

STAFF: R. WEST

DATE: 12-5-90 PURGE

WELL NO.: MW2S

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 18.30

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 9.05

④ VOLUME OF WATER IN CASING (GAL.) 1.57

$$V = 0.0408 (2)^2 \times (18.30 - 9.05) = 4.72 \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	5.1								
pH	6.44	6.62								
Spec. Cond. (µmho)	360	300								
Turbidity (NTU)	2.1	7.5								
Temperature (°C)	8.1	6.8								
Time	1500	1515								

COMMENTS: Clear, no odor.

Well purged with an ISCO pump and dedicated HDPE tubing from top of water column.

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232-00-23000
 STAFF: D. SHELDON
 DATE: 12-3-90 PURGE

WELL NO.: MW4S	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>20.68</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.06</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>1.98</u>	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 ((2)^2 \times ((1) - (3))) = \underline{5.94} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	6								
pH	5.09	5.19								
Spec. Cond. (µmho)	190	200								
Turbidity (NTU)	>100	18								
Temperature (°C)	3.0	3.0								
Time	1500	1515								

COMMENTS: Turbid to clear after 1 gallon. No Odor

Well purged with an ISCO pump and dedicated HDPE tubing.

A-2347

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00-23000

STAFF: D. SHELDON

DATE: 12-3-90 PURGE

WELL NO.: MW4I

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 38.60
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) 9.04
- ④ VOLUME OF WATER IN CASING (GAL.) 5.03

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (2)^2 \times (38.60 - 9.04) = 15.09$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	15								
pH	6.05	5.90								
Spec. Cond. (µmho)	1600	1580								
Turbidity (NTU)	>100	13								
Temperature (°C)	4.0	6.0								
Time	1520	1535								

COMMENTS: Turbid to clear after 1 gallon. Slight sulfur odor

Well purged with an ISCO pump and dedicated HDPE tubing.

PROJECT TITLE: GORICK LANDFILL R/FS

PROJECT NO.: 35232-00-23000

STAFF: K. KEARNEY

DATE: 12-6-90 PURGE

WELL NO.: MW55

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 17.42
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) 2.95
- ④ VOLUME OF WATER IN CASING (GAL.) 2.46

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{7.38} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	10								
pH	6.47	6.53								
Spec. Cond. (µmho)	400	300								
Turbidity (NTU)	17	5								
Temperature (°C)	9.8	9.4								
Time	1110	1120								

COMMENTS: Clear, no odor

A-2347

Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

PROJECT TITLE: GORICK LANDFILL R1/ES

PROJECT NO.: 35232-00-23000

STAFF: K KEARNEY

DATE: 12-6-90 PURGE

WELL NO.: <u>MW5I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>36.87</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>3.24</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>5.72</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 ((2)^2 \times ((1) - (3))) = \underline{17.16} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	16								
pH	6.74	6.82								
Spec. Cond. (µmho)	1250	1300								
Turbidity (NTU)	16	10								
Temperature (°C)	9.2	9.2								
Time	1125	1145								

COMMENTS: Clear, no odor

Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

PROJECT TITLE: GORICK LANDFILL R/FS

PROJECT NO.: 35232-00-23000

STAFF: K. KEARNEY

DATE: 12-6-90 Purge

WELL NO.: MW5D

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 68.48

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 3.15

④ VOLUME OF WATER IN CASING (GAL.) 11.1

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{33.33} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	33								
pH	6.80	6.64								
Spec. Cond. (µmho)	1650	1550								
Turbidity (NTU)	30	20								
Temperature (°C)	11.0	10.5								
Time	1010	1100								

COMMENTS: Clear, no odor

Well purged from top of water column with an 1500 pump and dedicated HDPE tubing.

A-2347

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232-00-23000
 STAFF: D. SHELDON
 DATE: 12-3-90 PURGE

WELL NO.: <u>MW6S</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>19.71</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>7.00</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>2.16</u>	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{6.48} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	6.5								
pH	N/T	N/T								
Spec. Cond. (µmho)	435	450								
Turbidity (NTU)	>100	43								
Temperature (°C)	6.0	6.0								
Time	1600	1615								

COMMENTS: Turbid to very slightly turbid with rust flock for first gallon. No odor.

N/T - Not taken - meter malfunction.

Well purged with an ISCO pump and dedicated HDPE tubing.

PROJECT TITLE: GORICK LANDFILL R/FS

PROJECT NO.: 35732-00-23000

STAFF: D. SHELTON

DATE: 12-3-90 PURGE

WELL NO.: MW6I

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 30.65

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 6.85

④ VOLUME OF WATER IN CASING (GAL.) 4.05

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{12.15} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	12								
pH	4.94	5.32								
Spec. Cond. (µmho)	625	720								
Turbidity (NTU)	>100	44								
Temperature (°C)	6.0	6.0								
Time	1620	1640								

COMMENTS: Turbid to very slightly turbid. Slight sulfur odor.

Well purged with an ISCO pump and dedicated HDPE tubing.

A-2347

PROJECT TITLE: GORICK LANDFILL R/FS
 PROJECT NO.: 35737-00-23000
 STAFF: K. KEARNEY / D. SHEPPARD
 DATE: 12-7-90 PURGE

WELL NO.: MW65	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>19.71</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>4.28</u>	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) <u>2.62</u>	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{7.86} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	6.9								
pH	6.20	6.02								
Spec. Cond. (µmho)	400	450								
Turbidity (NTU)	2.8	1.6								
Temperature (°C)	8.5	8.9								
Time	1030	1040								

COMMENTS: Clear, slight sulfur odor.
 Resample due to laboratory error.
 Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

A-2347

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35237-00-23000
 STAFF: K. KEARNEY / D. SHEPPARD
 DATE: 12-7-90 PURGE

WELL NO.: <u>MW6 I</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.65</u>	1"	0.04
	2"	0.17
② CASING INTERNAL DIAMETER (in.): <u>2</u>	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>4.42</u>	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) <u>4.46</u>	8"	2.60

$$V = 0.0408 (②)^2 \times (① - ③) = \underline{13.38} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	13.5								
pH	6.41	6.47								
Spec. Cond. (µmho)	500	850								
Turbidity (NTU)	6.4	2.0								
Temperature (°C)	7.2	8.9								
Time	1045	1100								

COMMENTS: Clear, slight sulfur odor.
 Resample due to laboratory error.
 Well purged from top of water column with an LSCO pump and dedicated HDPE tubing.

A-2347

PROJECT TITLE: GORICK LANDFILL R/V/S

PROJECT NO.: 35232-00-23000

STAFF: R. West

DATE: 12-6-90 PURGE

WELL NO.: MW7S

WELL I.D. VOL. GAL./FT.

① TOTAL CASING AND SCREEN LENGTH (FT.): 26.52

1" 0.04

② CASING INTERNAL DIAMETER (in.): 2

2" 0.17

③ WATER LEVEL BELOW TOP OF CASING (FT.) 14.60

3" 0.38

④ VOLUME OF WATER IN CASING (GAL.) 2.03

4" 0.66

5" 1.04

6" 1.50

8" 2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{6.09} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	6								
pH	6.77	6.68								
Spec. Cond. (µmho)	1500	1450								
Turbidity (NTU)	3.1	3.6								
Temperature (°C)	11.6	12.5								
Time	1110	1135								

COMMENTS: Clear, no odor

Well Purged with an ISCO pump and dedicated HDPE tubing from top of water column.

A-2347

PROJECT TITLE: GORICK LANDELL RI/FS

PROJECT NO.: 35232-00-23000

STAFF: R. WEST

DATE: 12-6-90 PURGE

WELL NO.: MW85	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>36.47</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>25.60</u>	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) <u>1.85</u>	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{5.55} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	5.5								
pH	6.49	6.60								
Spec. Cond. (µmho)	1850	1750								
Turbidity (NTU)	4.5	5.4								
Temperature (°C)	11.6	10.6								
Time	0845	0920								

COMMENTS: Clear, no odor

Well purged with ISO pump and dedicated HDPE tubing from top of water column.

PROJECT TITLE: GORICK LANDELL RI/FS

PROJECT NO.: 35232-00-23000

STAFF: R. WEST

DATE: 12-6-90 Page

WELL NO.: MW 95	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>34.55</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>23.39</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>1.90</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{5.70} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	6								
pH	6.81	6.76								
Spec. Cond. (µmho)	1050	1050								
Turbidity (NTU)	5.0	2.2								
Temperature (°C)	11.8	11.8								
Time	0930	1015								

COMMENTS: Clear, no odor

Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

A-2347

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00-23000

STAFF: R. WEST

DATE: 12-6-90 PURGE

WELL NO.: MW105

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 28.97
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) 20.11
- ④ VOLUME OF WATER IN CASING (GAL.) 1.51

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{4.53} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	5								
pH	6.91	6.89								
Spec. Cond. (µmho)	2600	2700								
Turbidity (NTU)	30	3.7								
Temperature (°C)	16.4	17.9								
Time	1025	1055								

COMMENTS: Clear, no odor.

Well purged from top of water column with an ISC pump and dedicated HDPE tubing.

A-2347

PROJECT TITLE: GORICK LANDELL R/FS

PROJECT NO.: 35232-00-23000

STAFF: D. SHELDON / R. WEST

DATE: 12-5-90 PURGE

WELL NO.: MW 31

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 70.02
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) 3.50
- ④ VOLUME OF WATER IN CASING (GAL.) 11.31

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$$V = 0.0408 ((2)^2 \times ((1) - (3))) = \underline{33.93} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	35								
pH	7.37	6.55								
Spec. Cond. (µmho)	165	900								
Turbidity (NTU)	18	1.5								
Temperature (°C)	8.9	11.3								
Time	0935	1015								

COMMENTS: Clear, No Odor

A-2347

Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

PROJECT TITLE: GORISK LANDFILL RI/FS

PROJECT NO.: 35232-00-23000

STAFF: D. SHELDON / R. WEST

DATE: 12-5-90 PURGE

WELL NO.: MW32

WELL I.D.

VOL.
GAL./FT.

① TOTAL CASING AND SCREEN LENGTH (FT.): 70.49

1"

0.04

② CASING INTERNAL DIAMETER (in.): 2

2"

0.17

③ WATER LEVEL BELOW TOP OF CASING (FT.) 4.84

3"

0.38

4"

0.66

5"

1.04

④ VOLUME OF WATER IN CASING (GAL.) 11.16

6"

1.50

8"

2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{33.48} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	32								
pH	6.42	6.26								
Spec. Cond. (µmho)	130	1250								
Turbidity (NTU)	26	10								
Temperature (°C)	7.8	8.1								
Time	1010	1045								

COMMENTS: Clear with a slight sulfur odor.

A-2347

Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232-00-23000

STAFF: K. KEARNEY

DATE: 12-5-90 PURGE

WELL NO.: MW 33

- ① TOTAL CASING AND SCREEN LENGTH (FT.): 69.99
- ② CASING INTERNAL DIAMETER (in.): 2
- ③ WATER LEVEL BELOW TOP OF CASING (FT.) 6.05
- ④ VOLUME OF WATER IN CASING (GAL.) 10.87

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) = \underline{32.61}$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	33								
pH	7.28	6.63								
Spec. Cond. (µmho)	150	525								
Turbidity (NTU)	14	6.2								
Temperature (°C)	9.2	9.3								
Time	1040	1130								

COMMENTS: Clear to turbid to clear, no odor.

A-2347

Well purged from top of water column with a stainless steel bailer to 13 gal (turbid) then pumped with an ISCO and dedicated HDPE tubing. (clear)



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232-00-23000
 STAFF: D. SHELDON / R. WEST
 DATE: 12-5-90 PURGE

WELL NO.: <u>MW34</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>71.22</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>6.54</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>11.0</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \underline{33.0} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	32								
pH	7.09	6.50								
Spec. Cond. (µmho)	190	350								
Turbidity (NTU)	11	6								
Temperature (°C)	8.6	9.2								
Time	0925	1005								

COMMENTS: Clear, no odor.

Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

A-2347

PROJECT TITLE: GORICK LANDFILL RI/PS

PROJECT NO.: 35232-00-230

STAFF: D. SHELDON / R WEST

DATE: 12-5-90 PURGE

WELL NO.: MW35

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

① TOTAL CASING AND SCREEN LENGTH (FT.): 25.17

② CASING INTERNAL DIAMETER (in.): 2

③ WATER LEVEL BELOW TOP OF CASING (FT.) 8.27

④ VOLUME OF WATER IN CASING (GAL.) 2.87

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{8.61} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	15								
pH	6.27	6.19								
Spec. Cond. (µmho)	390	400								
Turbidity (NTU)	6	20								
Temperature (°C)	8.6	9.6								
Time	1115	1140								

COMMENTS: Clear with iron flock, no odor.

Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232-00-23000
 STAFF: D. SHELDON / R. WEST
 DATE: 12-5-90 PURGE

WELL NO.: MW 36	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>70.89</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>7.87</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>10.71</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \underline{32.13} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	32								
pH	12.14	6.20								
Spec. Cond. (µmho)	1550	1550								
Turbidity (NTU)	4.2	2.4								
Temperature (°C)	9.9	10.1								
Time	1140	1220								

COMMENTS: Clean, no odor

A-2347

Well purged from top of water column with an ISCO pump and dedicated HDPE tubing.

"SECOND PHASE SAMPLING"



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon
 DATE: 6/27/91 PURGE

WELL NO.: <u>MW-15</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.26</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>8.50</u>	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) <u>5.57</u>	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1}) - (\textcircled{3}) = \underline{16.71} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	Sample							
		<u>14</u>	<u>Bailer</u>							
pH	<u>11.05</u>	<u>9.29</u>	<u>9.83</u>							
Spec. Cond. (µmho)	<u>1220</u>	<u>270</u>	<u>320</u>							
Turbidity (NTU)	<u>15</u>	<u>89</u>	<u>4.5</u>							
Temperature (°C)	<u>NT</u>	<u>16.2</u>	<u>13.4</u>							
Time	<u>1700</u>	<u>1745</u>	<u>0855 (6/28)</u>							

COMMENTS: Purged to dryness with aISCO pump and bailer
Slightly turbid, clear when sampled.

Sampled on 6/28 @ 0855

A-2347

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: P. Sheldon

DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-2 S</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>18.30</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.55</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>1.49</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (18.30 - 9.55) = 4.46$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	(FINAL) 5	Sample Bailer							
pH	6.51	6.46	6.54							
Spec. Cond. (µmho)	280	320	240							
Turbidity (NTU)	6	8	>100							
Temperature (°C)	NT	18.0	17.8							
Time	1500	1510	1655							

COMMENTS: Purged with a Isco pump. Five gallons removed. Clean during purge.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. Sheldon / M. FRANK

DATE: 6/26/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW - 3 S</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>21.5</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>12.53</u>	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) <u>1.52</u>	6"	1.50
	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{4.57} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 5	Sample Bailer							
pH	7.28	6.39	7.22							
Spec. Cond. (µmho)	260	270	265							
Turbidity (NTU)	7.5	5.5	50							
Temperature (°C)	18.2	16.6	20.7							
Time	1223	1230	1255							

COMMENTS: 5 gallons purged with a centrifugal pump. Clear.

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. SHELDON / M. FRANK

DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-4 S</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>21.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2"</u>	2"	0.17
	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>12.00</u>	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) <u>1.53</u>	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{4.59} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	Sample							
		<u>6</u>	<u>BAI-101</u>							
pH	<u>4.76</u>	<u>5.21</u>	<u>5.32</u>							
Spec. Cond. (µmho)	<u>250</u>	<u>280</u>	<u>240</u>							
Turbidity (NTU)	<u>16</u>	<u>7</u>	<u>7100</u>							
Temperature (°C)	<u>14.6</u>	<u>12.8</u>	<u>17.5</u>							
TIME	<u>0752</u>	<u>0800</u>	<u>1000</u>							

COMMENTS: 6 gallons removed with an Isoo pump. Clean during purge.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon / M. FRANK
 DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-4I</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>38.40</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>12.00</u>	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) <u>4.49</u>	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (38.40 - 12.00) = 13.47$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	SAMPLE							
		15	Bailer							
pH	5.80	5.92	6.32							
Spec. Cond. (µmho)	790	840	930							
Turbidity (NTU)	10.5	2	13.5							
Temperature (°C)	13.9	14.5	15.6							

TIME: 0755 0810 0945

COMMENTS: Removed 15 gallons with a centrifugal pump. Clear.

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. Sheldon

DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-55		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>17.0</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
	3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.23</u>	4"	0.66
	5"	1.04
④ VOLUME OF WATER IN CASING (GAL.) <u>1.32</u>	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{3.96} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 6	Sample Bailey							
pH	6.05	6.06	6.30							
Spec. Cond. (µmho)	680	325	290							
Turbidity (NTU)	7100	60	72							
Temperature (°C)	14.8	14.5	14.8							
Time	1040	1055	1125							

COMMENTS: Removed 6 gallons with a centrifugal pump. Intermittent bands of rust colored water, clearing at 5.5 gallons.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: Golick Landfill RI/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon
 DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-5I		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>32.0</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.54</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>4.67</u>	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 (2)^2 \times (32.0 - 9.54) = 14.00 \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 15	Sample 15 min							
pH	6.42	6.06	6.26							
Spec. Cond. (umho)	530	730	430							
Turbidity (NTU)	6	2	4.5							
Temperature (°C)	15.0	15.0	15.7							
Time	1000	1015	1135							

COMMENTS: Removed 15 gallons with a centrifugal pump. Water clear.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon
 DATE: 6/27/91 PURGE

WELL NO.: <u>MW-5D</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>69.0</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.27</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>10.15</u>	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{30.46} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 32	Sample Bailer							
pH	6.63	6.60	6.39							
Spec. Cond. (µmho)	230	590	580							
Turbidity (NTU)	14	9	13							
Temperature (°C)	NT	14.1	14.6							
Time	1055	1115	1140							

COMMENTS: Removed 32 gallons with a centrifugal pump.

PROJECT TITLE: GORICK LANDFILL RE/FS
 PROJECT NO.: 35232
 STAFF: D. SHELDON
 DATE: 6/22/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-65		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>19.71</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.85</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>1.68</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{5.03} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINNL 6	SAMPLE Bailer							
pH	6.18	6.16	6.42							
Spec. Cond. (µmho)	560	450	440							
Turbidity (NTU)	7100	16	80							
Temperature (°C)	14.5	12.7	12.7							
Time	1505	1509	1600							

COMMENTS: Removed 6 gallons with a centrifugal pump. Water rust colored, clearing by 6 gallons.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon / M. FRANK
 DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-6I		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.65</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.90</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>3.53</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{10.58} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	Sample							
			Barrel							
pH	6.06	6.34	6.43							
Spec. Cond. (µmho)	410	520	560							
Turbidity (NTU)	9	9	18							
Temperature (°C)	12.8	12.9	13.7							
Time	1452	1500	1545							

COMMENTS: Removed 11 gallons with a centrifugal pump.

PROJECT TITLE: GORICKE LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: P. Sheldon
 DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-6D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>68.48</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.25</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>10.07</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{30.21} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 32	Sample Bailer							
pH	5.15	6.00	6.30							
Spec. Cond. (µmho)	320	500	550							
Turbidity (NTU)	9.3	1	9							
Temperature (°C)	12.4	13.2	15.9							
Time	1437	1448	1535							

COMMENTS: REMOVED 32 gallons with a centrifugal pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon / M. Frank
 DATE: 6/26/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-75		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>26.5</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>19.12</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>1.25</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \underline{3.75} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	Sample							
		5	Bailer							
pH	6.37	7.17	6.96							
Spec. Cond. (µmho)	910	900	900							
Turbidity (NTU)	57	3	8							
Temperature (°C)	18.5	13.8	15.3							
Time	1828	1838	1850							

COMMENTS: Removed 5 gallons with a Isco peristaltic pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: K. NOSSAUAGE, M. FRANK

DATE: 6/27/91 PURGE

WELL NO.:		WELL I.D.	VOL. GAL./FT.
MW-85			
① TOTAL CASING AND SCREEN LENGTH (FT.):	<u>36.47</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.):	<u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	<u>29.22</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	<u>1.23</u>	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{3.69} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 4	SAMPLE BAILER							
pH	6.61	6.56	7.30							
Spec. Cond. (µmho)	820	800	780							
Turbidity (NTU)	9	7/00	65							
Temperature (°C)	NT	NT	15.4							

Time: 1930 1942 0915 (6/28)

COMMENTS: Purged with a deconned stainless steel bailer. 4 gallons removed.

Sampled on 6/28/91 @ 9:15 AM

A-2347

PROJECT TITLE: Gorick Landfill RI/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon
 DATE: 6/28/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-95		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>34.55</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>28.45</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>1.04</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (34.55 - 28.45) = 3.11$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	SAMPLE							
		5	Bailer							
pH	6.58	6.60	6.94							
Spec. Cond. (µmho)	420	780	820							
Turbidity (NTU)	11	>100	>100							
Temperature (°C)	17.4	18.6	20.01							
TIME	1020	1040	1550							

COMMENTS: 5 gallons removed with a pre-cleaned stainless steel bailer.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon
 DATE: 6/28/91 PURGE

WELL NO.: <u>MW-105</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>28.97</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>23.66</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>0.85</u>	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{2.56} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	Sample							
		5	Bailer							
pH	6.76	6.85	7.34							
Spec. Cond. (µmho)	960	1080	1220							
Turbidity (NTU)	6	7100	59							
Temperature (°C)	22	22.6	24.8							
Time	1045	1105	1540							

COMMENTS: Removed 5 gallons with a pre-cleaned stainless steel bailer.

	<h2 style="margin: 0;">WELL DEVELOPMENT/PURGING LOG</h2>
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PROJECT TITLE: GORICK LANDFILL

PROJECT NO.: 35232

STAFF: D. Sheldon, M. FRANK

DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-11 S		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>30.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>25.78</u>	3"	0.38
	4"	0.66
	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) <u>0.71</u>	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{2.16} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	Sample							
		5	Bailer							
pH	8.16	8.01	6.04							
Spec. Cond. (µmho)	510	580	760							
Turbidity (NTU)	18	90	19							
Temperature (°C)	15.8	15.1	14.4							
Time	1830	1845	0835 (6/28)							

COMMENTS: 5 gallons removed with a pre-cleaned stainless steel bailer

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon, M. Frank
 DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW 11 I		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>48.20</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>25.99</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>3.78</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (48.20 - 25.99) = 11.33$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	SAMPLE							
		12	Bailer							
pH	7.50	7.03	6.01							
Spec. Cond. (µmho)	610	580	650							
Turbidity (NTU)	41	98	26.5							
Temperature (°C)	15.9	14.6	13.7							

Time: 1900 1925 0845 (6/28)

COMMENTS: Removed 12 gallons with a pre-cleaned stainless steel bailer.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS
 PROJECT NO.: 35232
 STAFF: D. SHELDON, M. FRANK
 DATE: 6/26/91 PURGE

WELL NO.: <u>MW-12 5</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>22.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>15.76</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>1.06</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{3.18} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	FINAL 3.5	Sample BAKER								
pH	6.82	6.77	6.74								
Spec. Cond. (µmho)	370	355	350								
Turbidity (NTU)	12	12.5	22.0								
Temperature (°C)	11.0	11.0	11.0								
Time	1028	1034	1042								

COMMENTS: Removed 3.5 gallons with a Isco peristaltic pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: M.E. FRANK
 DATE: 7/11/91 PURGE

WELL NO.: <u>MW-125 (Resample)</u>	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>22.15</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>15.99</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>1.05</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{3.15} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	FINAL 4	Sample Bailer								
pH	7.49	7.33	7.39								
Spec. Cond. (µmho)	250	255	200								
Turbidity (NTU)	4.5	7/00	7/00								
Temperature (°C)	9.8	10.6	12.8								
Time	1125	1136	1205								

COMMENTS: Removed 4 gallons with a dedicated HOPE bailer.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL REIFS
 PROJECT NO.: 35232
 STAFF: D. SHELDON, M. FRANK
 DATE: 6/26/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-12 D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>43</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>16.48</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>4.51</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{13.53} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 15	Sample Bailed							
pH	6.82	7.10	7.12							
Spec. Cond. (µmho)	400	350	350							
Turbidity (NTU)	8.7	6.6	5.7							
Temperature (°C)	13.5	13.5	13.5							
Time	1038	1111	1120							

COMMENTS: Removed 15 gallons with a centrifugal pump.

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL REIFS
 PROJECT NO.: 35232
 STAFF: M.E. FRANK
 DATE: 7/11/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-12 D (Resample)		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>43.75</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>16.58</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>4.62</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{13.86} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	Sample							
		14.5	Bailer							
pH	7.16	7.42	7.36							
Spec. Cond. (µmho)	220	200	245							
Turbidity (NTU)	5	25	22							
Temperature (°C)	10.8	10.1	12.2							
Time	1043	1120	1145							

COMMENTS: REMOVED 14.5 gallons with a dedicated HDPE bailer.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL REIFS
 PROJECT NO.: 35252
 STAFF: D. SHELDON
 DATE: 6/28/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14 I		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>41.95</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>13.22</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>4.88</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (41.95 - 13.22) = 14.65$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 15	Sample Bales							
pH	8.48	7.98	6.47							
Spec. Cond. (µmho)	230	240	300							
Turbidity (NTU)	16	11	5							
Temperature (°C)	13.3	13.8	13.5							
Time	1310	1335	1440							

COMMENTS: Removed 15 gallons with a centrifugal pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS
 PROJECT NO.: 35232
 STAFF: D. SHELDON
 DATE: 6/28/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-14D		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>76.20</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>13.97</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>10.67</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (76.20 - 13.97) = 32.01$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	Sample							
		33	Bailer							
pH	NT	NT	NT							
Spec. Cond. (µmho)	1120	720	890							
Turbidity (NTU)	17	1	30							
Temperature (°C)	10.4	10.1	10.5							
TIME	1340	1405	1445							

COMMENTS: Removed 33 gallons with a centrifugal pump.

NT: Meter MALfunction

A-2347



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon, M.E. FRANK
 DATE: 6/26/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-31		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>700</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>9.57</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>10.27</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (700 - 9.57) = 30.82$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL	SAMPLE							
		32	Bailed							
pH	5.87	6.12	7.16							
Spec. Cond. (µmho)	230	690	230							
Turbidity (NTU)	6.8	33	37							
Temperature (°C)	NT	19.2	16.2							
Time	1515	1530	1700							

COMMENTS: Removed 32 gallons with a centrifugal pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RE/FS
 PROJECT NO.: 35232
 STAFF: D. Sheldon, M.E. FRANK
 DATE: 6/26/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-32		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>71.5</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>10.88</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>10.31</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (71.5 - 10.88) = 30.92 \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 32	SAMPLE BATER							
pH	6.10	6.48	6.88							
Spec. Cond. (µmho)	360	490	420							
Turbidity (NTU)	8	8	18							
Temperature (°C)	12.2	15.2	15.4							
Time	1530	1555	1710							

COMMENTS: REMOVED 32 gallons with a centrifugal pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. SHELDON, M.E. FRANK

DATE: 6/26/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-33		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>71.5</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>11.16</u>	3"	0.38
	4"	0.66
④ VOLUME OF WATER IN CASING (GAL.) <u>10.26</u>	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (71.5 - 11.16) = 30.77$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 32	SAMPLE BAILER							
pH	6.76	6.32	6.92							
Spec. Cond. (µmho)	250	310	280							
Turbidity (NTU)	6	3	9							
Temperature (°C)	13.0	12.8	14.8							
Time	1607	1632	1717							

COMMENTS: Removed 32 gallons with a centrifugal pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICKE LANDFILL RI/FS

PROJECT NO.: 35232

STAFF: D. SHELDON, M.E. FRANK

DATE: 6/26/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-34		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>71.0</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>12.54</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>9.94</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$$V = 0.0408 (\textcircled{2})^2 \times (\textcircled{1} - \textcircled{3}) = \underline{29.81} \text{ GAL. (3 casings)}$$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 30	SAMPLE BAILEY							
pH	5.44	6.21	6.59							
Spec. Cond. (umho)	230	260	245							
Turbidity (NTU)	19.5	7100	71							
Temperature (°C)	22.2	14.4	13.4							

TIME | 1430 | 1505 | 1645

COMMENTS: REMOVED 30 gallons with a centrifugal pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL RI/FS
 PROJECT NO.: 35232
 STAFF: D. SHELDON, M.E. FRANK
 DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
<u>MW-35</u>		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>27.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>14.26</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>2.17</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) = \underline{6.50} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	FINAL 8	SAMPLE BATER							
pH	6.06	6.12	6.10							
Spec. Cond. (µmho)	295	440	395							
Turbidity (NTU)	32	39	7/00							
Temperature (°C)	14.3	14.3	14.8							

Time 0825 0839 1030

COMMENTS: Removed 8 gallons with a Isco peristaltic pump.



WELL DEVELOPMENT/PURGING LOG

PROJECT TITLE: GORICK LANDFILL REIFS
 PROJECT NO.: 35232
 STAFF: D. SHELDON, M.E. FRANK
 DATE: 6/27/91 PURGE

WELL NO.:	WELL I.D.	VOL. GAL./FT.
MW-36		
① TOTAL CASING AND SCREEN LENGTH (FT.): <u>71.00</u>	1"	0.04
② CASING INTERNAL DIAMETER (in.): <u>2</u>	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.) <u>13.95</u>	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.) <u>9.70</u>	4"	0.66
	5"	1.04
	6"	1.50
	8"	2.60

$V = 0.0408 (2)^2 \times (1 - 3) = \underline{29.10} \text{ GAL. (3 casings)}$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	FINAL 35	Sample Bailed								
pH	6.32	6.02	5.95								
Spec. Cond. (µmho)	790	805	790								
Turbidity (NTU)	70.5	4.5	58								
Temperature (°C)	16.4	14.5	14.8								

Time 0830 0858 1040

COMMENTS: Removed 35 gallons with a centrifugal pump.

APPENDIX G

**LOCATIONS AND ELEVATIONS OF WELLS AND
ENVIRONMENTAL SAMPLING LOCATIONS**

GORICK LANDFILL

WELLS AND SAMPLE POINT LOCATIONS AND ELEVATIONS

Station	North	East	Elevation	
URS-MW-1S	762,200.402	706,574.609	Casing	875.33
			Riser	875.18
			Ground	874.02
URS-MW-2S	761,491.603	706,571.247	Casing	860.18
			Riser	859.94
			Ground	857.64
URS-MW-3S	761,145.127	705,634.233	Casing	845.01
			Riser	844.86
			Ground	842.44
URS-MW-4I	761,449.717	705,460.371	Casing	843.94
			Riser	843.73
			Ground	841.33
URS-MW-4S	761,442.278	705,459.326	Casing	843.89
			Riser	843.74
			Ground	842.06
URS-MW-5S	761,765.520	705,467.182	Casing	841.49
			Riser	841.15
			Ground	839.23
URS-MW-5I	761,762.624	705,472.252	Casing	841.60
			Riser	841.45
			Ground	839.08
URS-MW-5D	761,772.038	705,462.725	Casing	841.66
			Riser	841.34
			Ground	838.86
URS-MW-6S	762,111.112	705,445.956	Casing	842.40
			Riser	842.25
			Ground	839.54
URS-MW-6I	762,117.521	705,446.056	Casing	842.46
			Riser	842.29
			Ground	839.34
URS-MW-6D	762,123.674	705,443.197	Casing	841.69
			Riser	841.59
			Ground	839.66
URS-MW-7S	762,265.467	705,808.964	Casing	852.09
			Riser	851.96
			Ground	849.44
URS-MW-8S	761,900.403	705,863.109	Casing	862.39
			Riser	862.17
			Ground	859.70

GORICK LANDFILL

WELLS AND SAMPLE POINT LOCATIONS AND ELEVATIONS

Station	North	East	Elevation	
URS-MW-9S	761,666.857	705,660.339	Casing	860.84
			Riser	860.72
			Ground	859.17
URS-MW-10S	761,389.007	705,767.932	Casing	858.45
			Riser	858.08
			Ground	856.41
URS-MW-11S	762,420.083	705,614.730	Casing	858.99
			Riser	858.48
			Ground	858.99
URS-MW-11I	762,421.930	705,608.127	Casing	858.91
			Riser	858.63
			Ground	858.91
URS-MW-12S	760,954.321	705,692.929	Casing	847.98
			Riser	847.97
			Ground	846.95
URS-MW-12D	760,960.324	705,691.502	Casing	848.53
			Riser	848.56
			Ground	846.73
URS-MW-14I	762,294.994	704,949.016	Casing	845.78
			Riser	845.27
			Ground	845.78
URS-MW-14D	762,302.879	704,948.877	Casing	846.13
			Riser	845.91
			Ground	846.13
URS-P-13	762,343.781	706,051.448	Ground	856.86
			Top of PVC	859.34
URS-P-14S	762,297.045	704,941.494	Ground	846.02
			Top of PVC	846.02
URS-P-15S	761,924.897	706,303.727	Ground	861.22
			Top of PVC	863.71
VO-1	761,145.062	705,153.264	Casing	856.91
			Ground	855.41
VO-3	761,272.786	705,348.388	Casing	841.61
			Riser	841.70
			Ground	841.38
VO-4	761,009.504	705,536.793	Casing	845.90
			Riser	845.58
			Ground	843.48
VO-5	760,975.870	705,134.689	Casing	846.48

GORICK LANDFILL

WELLS AND SAMPLE POINT LOCATIONS AND ELEVATIONS

Station	North	East	Elevation	
GS-7	761,153.316	705,620.950	Casing	843.62
			Riser	843.39
			Ground	841.66
GS-10	761,414.422	705,531.965	Casing	848.45
			Riser	848.45
			Ground	845.02
GS-12	761,791.207	705,827.321	Top Conc. MH	860.85
			Top cap on riser	852.48
			Ground outside MH	860.18
			Ground inside MH	849.73
GS-13	761,593.481	706,541.715	Riser	862.05
			Ground	859.42
GS-15A	760,901.415	705,166.797	Casing	848.14
			Riser	848.29
			Ground	846.49
GS-15B	760,899.145	705,163.527	Top of cap	848.32
			Riser	848.19
			Ground	846.54
MW-31	761,363.029	705,314.024	Casing	841.66
			Riser	841.30
			Ground	839.28
MW-32	761,426.265	705,300.824	Casing	842.78
			Riser	842.64
			Ground	840.15
MW-33	761,445.617	705,244.260	Casing	843.15
			Riser	842.91
			Ground	840.92
MW-34	761,298.790	705,297.234	Casing	844.44
			Riser	844.29
			Ground	841.07
MW-35	761,525.709	705,435.830	Casing	846.23
			Riser	846.08
			Ground	842.91
MW-36	761,523.169	705,435.627	Casing	846.14
			Riser	845.77
			Ground	842.88
MW-37	761,413.064	705,530.060	Casing	848.25
			Riser	847.58
			Ground	845.15

GORICK LANDFILL

WELLS AND SAMPLE POINT LOCATIONS AND ELEVATIONS

Station	North	East	Elevation	
MW-20	761,797.884	705,398.587	Casing	839.49
			Riser	839.35
			Ground	837.92
RT-7-1	760,817.025	704,540.608	Casing	851.19
			Riser	850.97
			Ground	848.91
RT-7-2	761,000.161	704,596.525	Casing	852.52
			Riser	852.16
			Ground	850.18
RT-7-3	761,801.267	703,400.162	Casing	848.07
			Riser	848.02
			Ground	845.38
RT-7-4	761,980.616	703,272.789	Casing	848.44
			Riser	848.50
			Ground	845.96
RT-7-5	761,878.930	703,114.470	Casing	850.33
			Riser	850.68
			Ground	848.08
C-2	762,172.389	704,391.297	Ground	843.41
			Top of PVC	846.68
B-11	762,000.779	706,359.740		861.44
B-3A	761,213.433	706,045.733		843.47
B-10A	761,589.849	706,095.834		860.72
SW/SS-1	761,679.703	706,948.629		
SW/SS-4	761,182.937	706,119.372		
SW/SS-5	761,223.749	706,108.636		
SW/SS-6	761,148.523	705,853.678		
SW/SS-7	761,461.108	705,266.345		
SW/SS-8	761,151.276	705,162.581		
SW/SS-8 (6-28-91 resample)	45' west of: 761,098.272	705,087.448		
SW/SS-9	761,800.813	705,286.767		
SW/SS-10	761,349.962	706,469.254		
SW/SS-11	62' west of: 762,099.382	705,359.236		

GORICK LANDFILL

WELLS AND SAMPLE POINT LOCATIONS AND ELEVATIONS

Station	North	East	Elevation
T-6	761,928.665	706,056.723	860.35
T-7	761,886.379	705,934.674	
T-8	761,936.162	705,960.758	
T-9	761,905.195	705,943.717	
T-10	762,061.490	706,006.211	
T-11	762,002.408	705,954.530	
T-12	762,013.039	705,866.032	
T-13	762,016.653	705,912.637	
T-14	762,070.000	705,944.930	
T-15	762,127.277	705,996.498	
T-16	762,243.165	705,871.158	
T-17	762,175.544	705,902.765	852.03
T-18	762,192.986	705,968.916	
T-19	762,122.354	705,897.836	853.02
T-20	762,214.459	705,750.552	
T-21	762,102.552	705,822.374	850.58
T-22	762,026.172	705,950.685	
T-23	762,035.382	705,918.561	
T-24	761,986.064	705,987.914	851.85
T-25	761,982.254	706,007.872	
T-26	762,010.027	706,053.719	
T-27	761,856.993	705,870.012	
T-28	761,924.948	705,897.374	

APPENDIX H

HYDRAULIC CONDUCTIVITY TESTING RESULTS

APPENDIX H

HYDRAULIC CONDUCTIVITY TESTING RESULTS

Hydraulic conductivity testing of water-bearing formations beneath the Gorick Landfill consisted of slug-testing the monitoring wells installed at the site. Slug-testing is performed by instantaneously raising the water level in the well by dropping in a stainless-steel "slug" (a stainless-steel bar on a cord, used to displace the water column upwards by the volume of the slug) and electronically monitoring the return of water to static conditions over time. Monitoring is done with a pressure transducer to give a graph of water level versus time. This rate of return to static water level is directly proportional to the hydraulic conductivity of the formation screened. A second slug test is done, to check the first, when the slug is pulled out of the well, depressing the well's water level relative to the static level. Again, the rate of return to static water level is monitored with the pressure transducer.

The aquifer in which all monitoring wells at the Gorick Landfill are screened is unconfined. Therefore, all slug test results were interpreted using the Bouwer and Rice method for unconfined or leaky confined aquifers (1976). The method is valid for wells which fully or partially penetrate the aquifer.

This appendix contains the calculations of the hydraulic conductivity from the slug tests done in the RI investigation.

BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.03	0.45	0.450	2.2	-0.7985
2	0.05	0.37	0.370	3.0	-0.9943
3	0.06	0.29	0.290	3.6	-1.2379
4	0.10	0.17	0.170	6.0	-1.7720
5	0.11	0.15	0.150	6.6	-1.8971
6	0.13	0.12	0.120	7.8	-2.1203
7	0.15	0.10	0.100	9.0	-2.3026
8	0.16	0.09	0.090	9.6	-2.4079
9	0.18	0.08	0.080	10.8	-2.5257
10	0.21	0.07	0.070	12.6	-2.6593
11	0.25	0.06	0.060	15.0	-2.8134
12	0.30	0.05	0.050	18.0	-2.9957
13	0.41	0.03	0.030	24.6	-3.5066
14	0.50	0.00	0.000	30.0	ERR

*PROJECT NAME	:GORICK RI/FS INVESTIGATION
*PROJECT NO	:35232.00
*WELL NO	:MM-2S (SLUG IN)
*ANALYST	:SHELDON
*DATE COLLECTED	:12/6/90
*RISER PIPE (ID):	(2 r sub c) =
*EFFECTIVE SCREEN DIAMETER:(2 r sub w) =	2.0 in. =
*EFFECTIVE SCREEN LENGTH: (L) =	2.0 in. =
*MAX DRAWDOWN (IN SUBSET): (Ymax) =	9.16 Ft.
*STATIC WATER LEVEL: (SWL) =	0.45 Ft.
*DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =	0.00 Ft.
*EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =	9.16 Ft.
*INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	29.16 Ft.
*SANDPACK'S SPECIFIC YIELD (Sy) =	0

BOUWER AND RICE CURVE COEFFICIENTS:	
RATIO OF L/(r sub w) =	109.92
---LOG OF L/(r sub w) =	2.0411
FOR PARTIALLY PENETRATING WELLS--	
A =	4.54
B =	0.80
C =	4.69
FOR FULLY PENETRATING WELLS--	

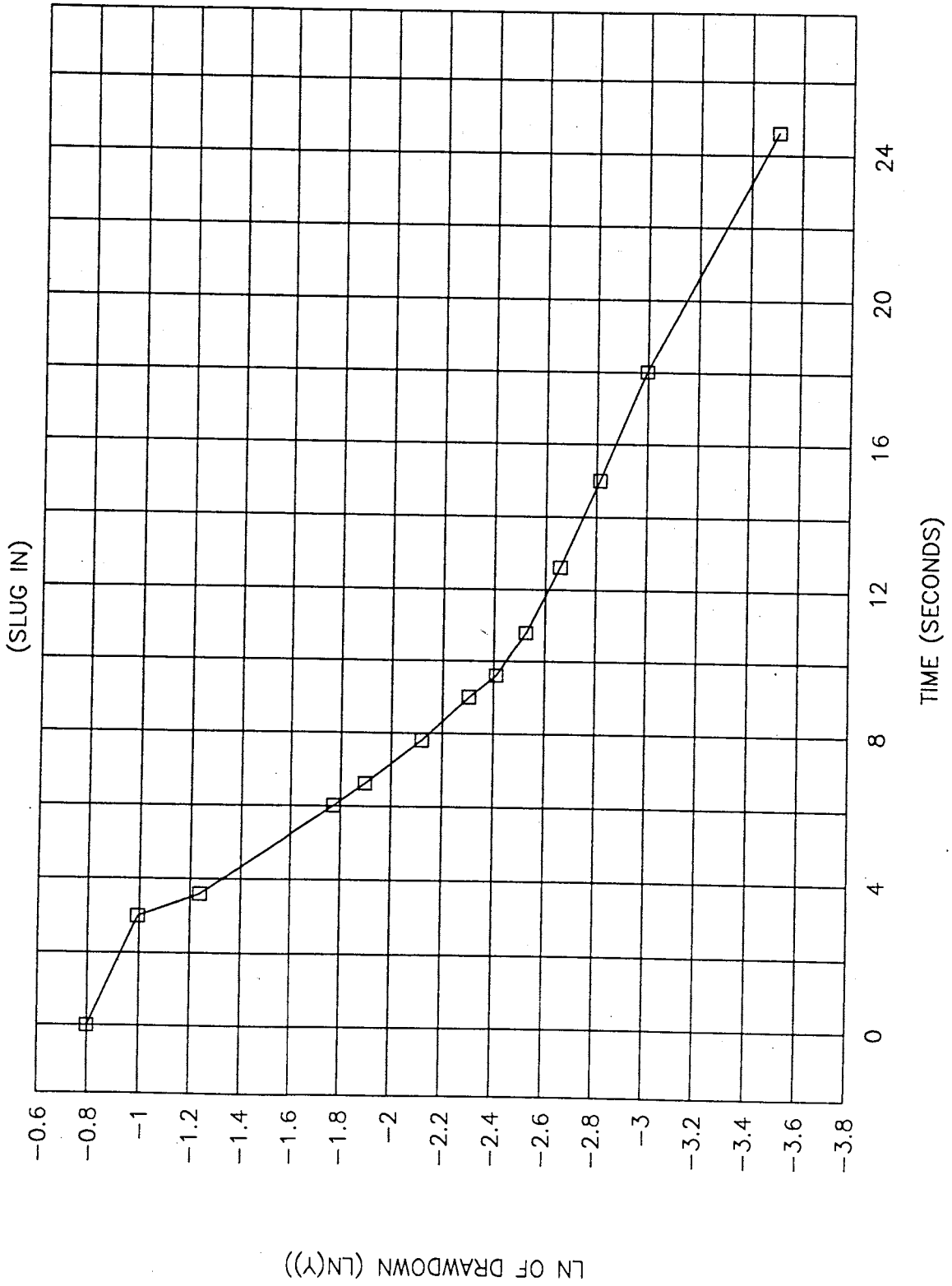
EVALUATION OF LN(Re/(r sub w)):	
CONST.1 =	0.2341
CONST.2 =	5.4806
LN(Re/(r sub w) =	=(MAX. OF 6.0)= 5.4806
	3.17

EFFECTIVE r sub c (for sandpack dewatering) =	0.0833
(1/T)(LN(Yo/Yt)) (SLOPE) =	-1.93E-01 sec ⁻¹

HYDRAULIC CONDUCTIVITY (K) =	2.32E-04 ft/sec
	7.08E-03 cm/sec

Regression Output:	
Constant	-5.84E-01
Std Err of Y Est	0.0394
R Squared	0.9931
No. of Observations	6
Degrees of Freedom	4
X Coefficient(s)	-1.93E-01
Std Err of Coef.	0.0080

RATE OF RECOVERY TEST: WELL MW-2S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft. (Y)	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.05	-0.68	0.620	3.0	-0.4780
2	0.06	-0.66	0.600	3.6	-0.5108
3	0.08	-0.48	0.420	4.8	-0.8675
4	0.10	-0.36	0.300	6.0	-1.2040
5	0.11	-0.27	0.210	6.6	-1.5606
6	0.13	-0.20	0.140	7.8	-1.9661
7	0.15	-0.16	0.100	9.0	-2.3026
8	0.16	-0.13	0.070	9.6	-2.6593
9	0.18	-0.11	0.050	10.8	-2.9957
10	0.20	-0.10	0.040	12.0	-3.2189
11	0.21	-0.09	0.030	12.6	-3.5066
12	0.23	-0.08	0.020	13.8	-3.9120
13	0.25	-0.07	0.010	15.0	-4.6052
14	0.28	-0.06	0.000	16.8	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-2S (SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/6/90
 *RISER PIPE (ID) : (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 9.16 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.62 Ft.
 *STATIC WATER LEVEL: (SWL) = -0.06 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 9.16 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 29.16 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 109.92
 ---LOG OF L/(r sub w) = 2.0411
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.54
 B = 0.80
 C = 4.69
 FOR FULLY PENETRATING WELLS---

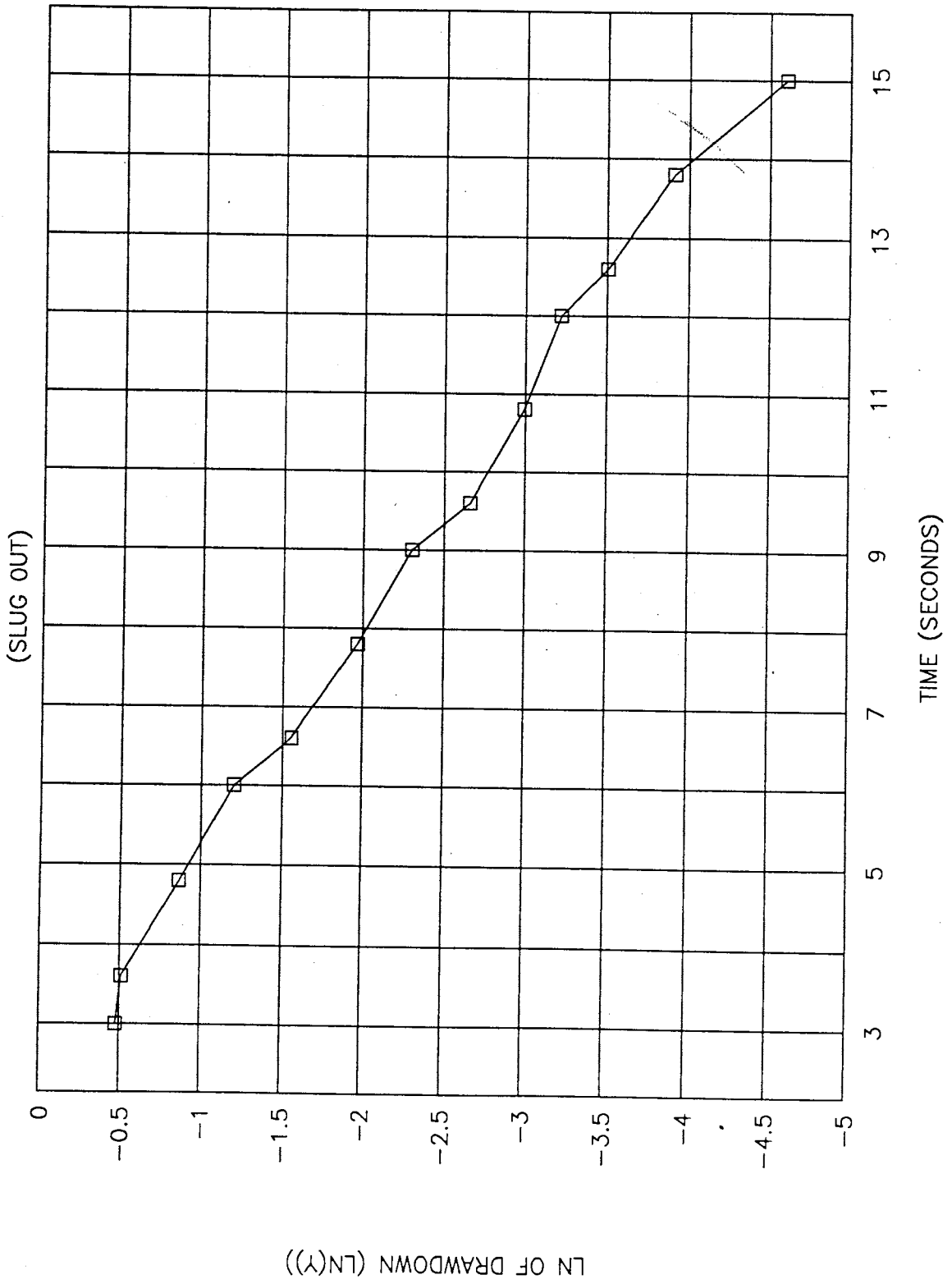
---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2341
 CONST.2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 LN(Re/(r sub w) = 3.17

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -3.36E-01 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 4.04E-04 ft/sec
 1.23E-02 cm/sec

Regression Output:
 Constant 7.04E-01
 Std Err of Y Est 0.0783
 R Squared 0.9956
 No. of Observations 11
 Degrees of Freedom 9
 X Coefficient(s) -3.36E-01
 Std Err of Coef. 0.0074

RATE OF RECOVERY TEST: WELL MW-2S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.08	0.60	0.600	4.8	-0.5108
2	0.11	0.58	0.580	6.6	-0.5447
3	0.13	0.52	0.520	7.8	-0.6539
4	0.15	0.50	0.500	9.0	-0.6931
5	0.16	0.47	0.470	9.6	-0.7550
6	0.18	0.45	0.450	10.8	-0.7985
7	0.20	0.44	0.440	12.0	-0.8210
8	0.21	0.41	0.410	12.6	-0.8916
9	0.28	0.37	0.370	16.8	-0.9943
10	0.30	0.35	0.350	18.0	-1.0498
11	0.31	0.32	0.320	18.6	-1.1394
12	0.33	0.31	0.310	19.8	-1.1712
13	0.41	0.25	0.250	24.6	-1.3863
14	0.50	0.20	0.200	30.0	-1.6094
15	0.58	0.16	0.160	34.8	-1.8326
16	0.66	0.14	0.140	39.6	-1.9661
17	0.75	0.11	0.110	45.0	-2.2073
18	0.83	0.09	0.090	49.8	-2.4079
19	0.91	0.06	0.060	54.6	-2.8134
20	1.08	0.04	0.040	64.8	-3.2189
21	1.16	0.03	0.030	69.6	-3.5066
22	1.33	0.02	0.020	79.8	-3.9120
23	1.41	0.01	0.010	84.6	-4.6052
24	1.59	0.00	0.000	95.4	ERR

*PROJECT NAME	:GORICK RI/FS INVESTIGATION
*PROJECT NO	:35232.00
*WELL NO	:MW-3S (SLUG IN)
*ANALYST	:SHELDON
*DATE COLLECTED	:12/6/90
*RISER PIPE (ID):	(2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
*EFFECTIVE SCREEN DIAMETER:(2 r sub w) =	2.0 in. = 0.0833 (radius in ft.)
*EFFECTIVE SCREEN LENGTH: (L) =	10.00 Ft.
*MAX DRAWDOWN (IN SUBSET): (Ymax) =	0.60 Ft.
*STATIC WATER LEVEL: (SWL) =	0.00 Ft.
*DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =	14.76 Ft.
*EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =	34.76 Ft.
*INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	0
*SANDPACK'S SPECIFIC YIELD (Sy) =	0.15

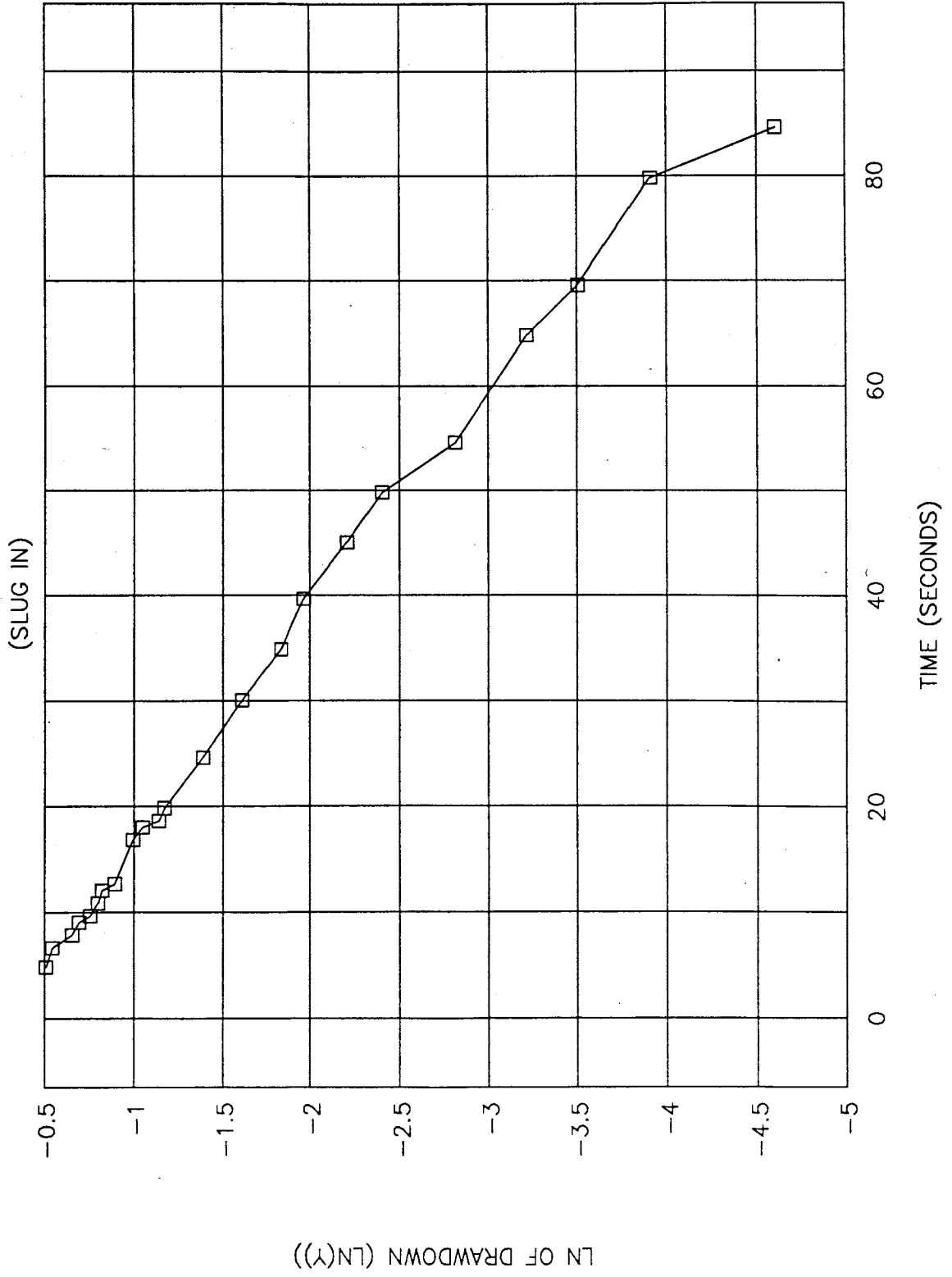
BOUWER AND RICE CURVE COEFFICIENTS:	
RATIO OF L/(r sub w) =	120.00
---LOG OF L/(r sub w) =	2.0792
FOR PARTIALLY PENETRATING WELLS--	
A =	4.73
B =	0.85
C =	4.98
FOR FULLY PENETRATING WELLS--	
---EVALUATION OF LN(Re/(r sub w)):	
CONST.1 =	0.2125
CONST.2 =	5.4806
LN(Re/(r sub w) =	3.44
=(MAX. OF 6.0) =	5.4806

EFFECTIVE r sub c (for sandpack dewatering) =	0.0833
(1/T)(LN(Yo/Yt)) (SLOPE) =	-4.18E-02 sec ⁻¹

HYDRAULIC CONDUCTIVITY (K) =	4.99E-05 ft/sec
	1.52E-03 cm/sec

Regression Output:	
Constant	-3.36E-01
Std Err of Y Est	0.0262
R Squared	0.9980
No. of Observations	16
Degrees of Freedom	14
X Coefficient(s)	-4.18E-02
Std Err of Coef.	0.0005

RATE OF RECOVERY TEST: WELL MW-3S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.05	-0.68	0.680	3.0	-0.3857
2	0.08	-0.66	0.660	4.8	-0.4155
3	0.10	-0.63	0.630	6.0	-0.4620
4	0.11	-0.61	0.610	6.6	-0.4943
5	0.13	-0.59	0.590	7.8	-0.5276
6	0.15	-0.57	0.570	9.0	-0.5621
7	0.16	-0.55	0.550	9.6	-0.5978
8	0.18	-0.53	0.530	10.8	-0.6349
9	0.21	-0.51	0.510	12.6	-0.6733
10	0.20	-0.50	0.500	12.0	-0.6931
11	0.23	-0.48	0.480	13.8	-0.7340
12	0.25	-0.46	0.460	15.0	-0.7765
13	0.26	-0.45	0.450	15.6	-0.7985
14	0.28	-0.43	0.430	16.8	-0.8440
15	0.31	-0.41	0.410	18.6	-0.8916
16	0.33	-0.40	0.400	19.8	-0.9163
17	0.41	-0.34	0.340	24.6	-1.0788
18	0.50	-0.29	0.290	30.0	-1.2379
19	0.58	-0.24	0.240	34.8	-1.4271
20	0.66	-0.21	0.210	39.6	-1.5606
21	0.75	-0.18	0.180	45.0	-1.7148
22	0.83	-0.15	0.150	49.8	-1.8971
23	0.91	-0.13	0.130	54.6	-2.0402
24	1.00	-0.11	0.110	60.0	-2.2073
25	1.08	-0.09	0.090	64.8	-2.4079
26	1.11	-0.08	0.080	66.6	-2.5257
27	1.25	-0.07	0.070	75.0	-2.6593
28	1.33	-0.06	0.060	79.8	-2.8134
29	1.41	-0.05	0.050	84.6	-2.9957
30	1.50	-0.04	0.040	90.0	-3.2189
31	1.58	-0.03	0.030	94.8	-3.5066
32	1.66	-0.02	0.020	99.6	-3.9120
33	1.83	-0.01	0.010	109.8	-4.6052
34	2.00	0.00	0.000	120.0	ERR

*PROJECT NAME :GORICK RI/FIS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-3S (SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/6/90

*RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.68 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 14.76 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 34.76 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792

FOR PARTIALLY PENETRATING WELLS--
 A = 4.73
 B = 0.85

FOR FULLY PENETRATING WELLS--
 C = 4.98

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2125
 CONST.2 = 5.4806 = (MAX. OF 6.0) = 5.4806
 LN(Re/(r sub w)) = 3.44

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -3.22E-02 sec⁻¹

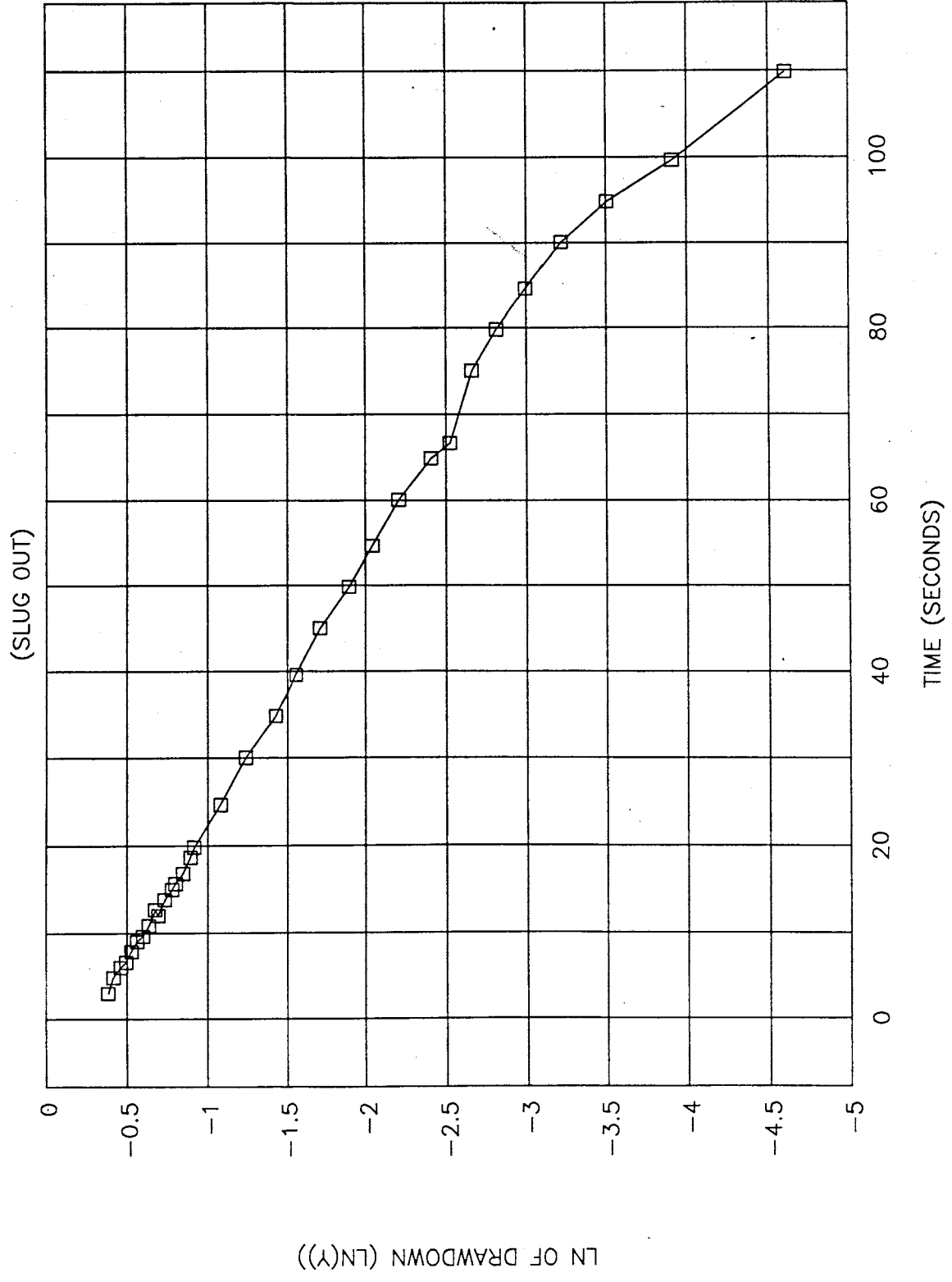
HYDRAULIC CONDUCTIVITY (K) = 3.85E-05 ft/sec
 1.17E-03 cm/sec

Regression Output:

Constant -2.85E-01
 Std Err of Y Est 0.0262
 R Squared 0.9990
 No. of Observations 28
 Degrees of Freedom 26

X Coefficient(s) -3.22E-02
 Std Err of Coef. 0.0002

RATE OF RECOVERY TEST: WELL MW-3S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.03	0.32	0.320	1.8	-1.1394
2	0.05	0.24	0.240	3.0	-1.4271
3	0.06	0.14	0.140	3.6	-1.9661
4	0.08	0.08	0.080	4.8	-2.5257
5	0.10	0.05	0.050	6.0	-2.9957
6	0.11	0.04	0.040	6.6	-3.2189
7	0.13	0.03	0.030	7.8	-3.5066
8	0.15	0.02	0.020	9.0	-3.9120
9	0.18	0.01	0.010	10.8	-4.6052

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MM-4S (SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/6/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.32 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 15.22 Ft. 55.22 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 0
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK S SPECIFIC YIELD (SY) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS--
 A = 4.73
 B = 0.85
 C = 4.98
 FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):

CONST.1 = 0.2112
 CONST.2 = 6.1738 = (MAX. OF 6.0) = 6.0000
 LN(Re/(r sub w)) = 3.41

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833

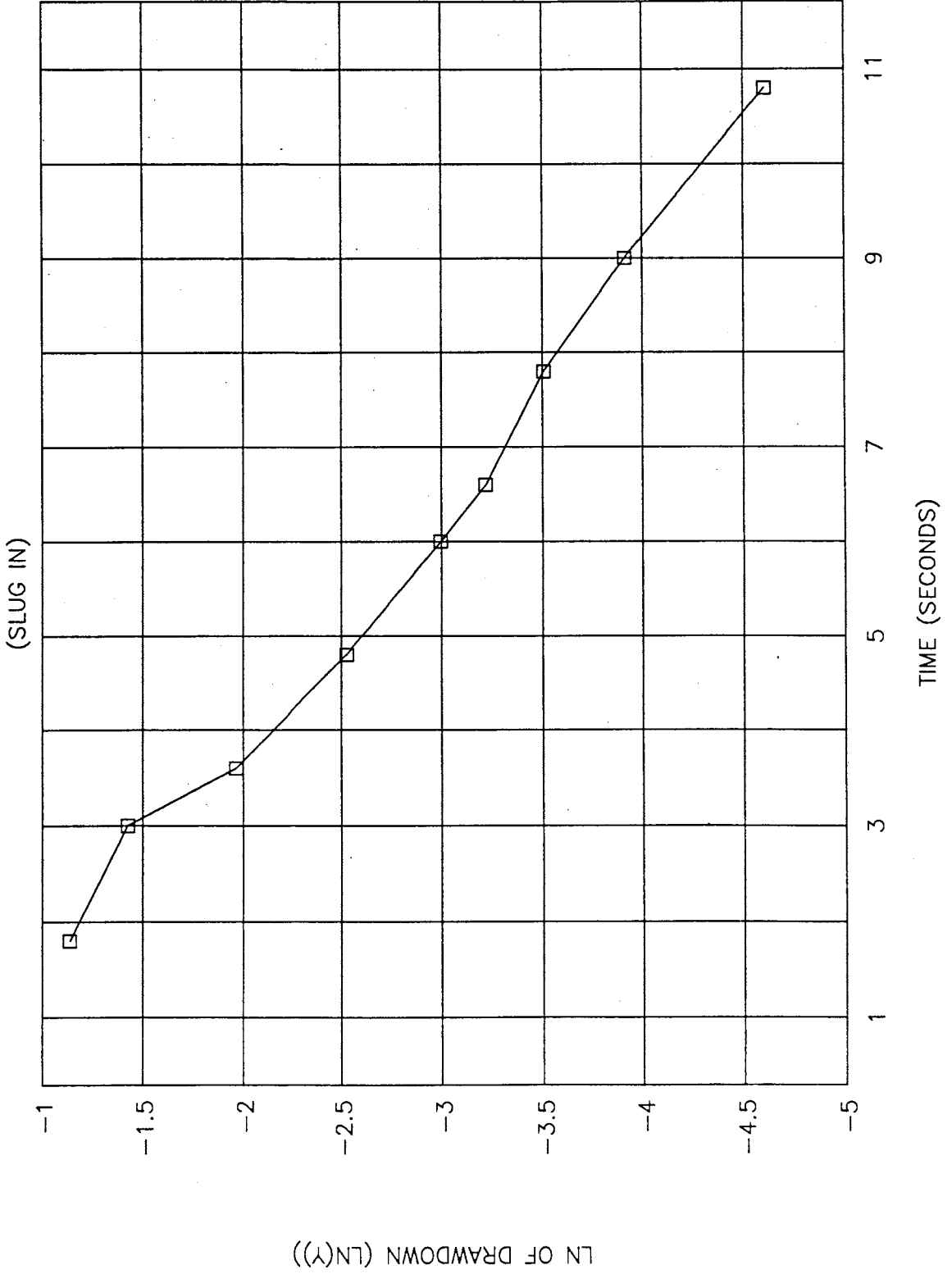
(1/T)(LN(Yo/Yt)) (SLOPE) = -3.52E-01 sec (-1)

HYDRAULIC CONDUCTIVITY (K) = 4.17E-04 ft/sec
 1.27E-02 cm/sec

Regression Output:

Constant -8.01E-01
 Std Err of Y Est 0.0803
 R Squared 0.9930
 No. of Observations 7
 Degrees of Freedom 5
 X Coefficient(s) -3.52E-01
 Std Err of Coef. 0.0133

RATE OF RECOVERY TEST: WELL MW-4S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATI 0.00
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.030	-0.55	0.540	1.8	-0.6162
2	0.033	-0.52	0.510	2.0	-0.6733
3	0.05	-0.22	0.210	3.0	-1.5606
4	0.06	-0.10	0.090	3.6	-2.4079
5	0.08	-0.07	0.060	4.8	-2.8134
6	0.10	-0.06	0.050	6.0	-2.9957
7	0.11	-0.05	0.040	6.6	-3.2189
8	0.13	-0.04	0.030	7.8	-3.5066
9	0.16	-0.03	0.020	9.6	-3.9120
10	0.23	-0.02	0.010	13.8	-4.6052
11	0.41	-0.01	0.000	24.6	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-4S (SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/6/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.54 Ft.
 *STATIC WATER LEVEL: (SWL) = -0.01 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 15.22 Ft. 55.22 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 0
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792

FOR PARTIALLY PENETRATING WELLS--
 A = 4.73
 B = 0.85
 C = 4.98

FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2112
 CONST.2 = 6.1738 =(MAX. OF 6.0)= 6.0000
 LN(Re/(r sub w) = 3.41

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -2.47E-01 sec⁻¹

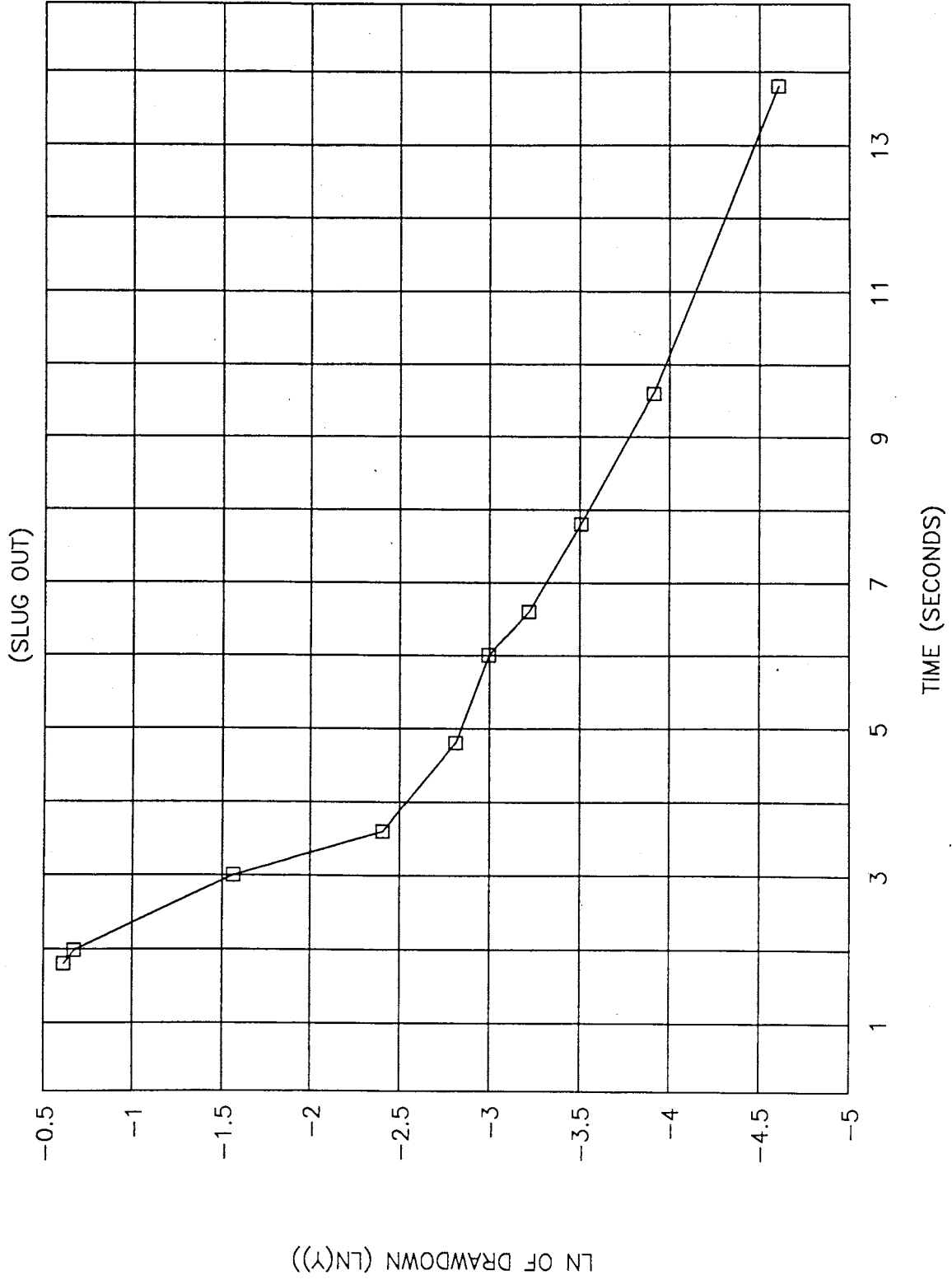
HYDRAULIC CONDUCTIVITY (K) = 2.92E-04 ft/sec
 8.91E-03 cm/sec

Regression Output:

Constant -1.56E+00
 Std Err of Y Est 0.0500
 R Squared 0.9928
 No. of Observations 6
 Degrees of Freedom 4

X Coefficient(s) -2.47E-01
 Std Err of Coef. 0.0105

RATE OF RECOVERY TEST: WELL MW-4S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "X".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.10	0.13	0.130	6.0	-2.0402	
2	0.11	0.07	0.070	6.6	-2.6593	
3	0.13	0.06	0.060	7.8	-2.8134	
4	0.15	0.05	0.050	9.0	-2.9957	
5	0.16	0.04	0.040	9.6	-3.2189	
6	0.18	0.03	0.030	10.8	-3.5066	
7	0.20	0.02	0.020	12.0	-3.9120	
8	0.25	0.01	0.010	15.0	-4.6052	
9	0.33	0.00	0.000	19.8	ERR	

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-5S (SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/6/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.13 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 13.37 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 33.37 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

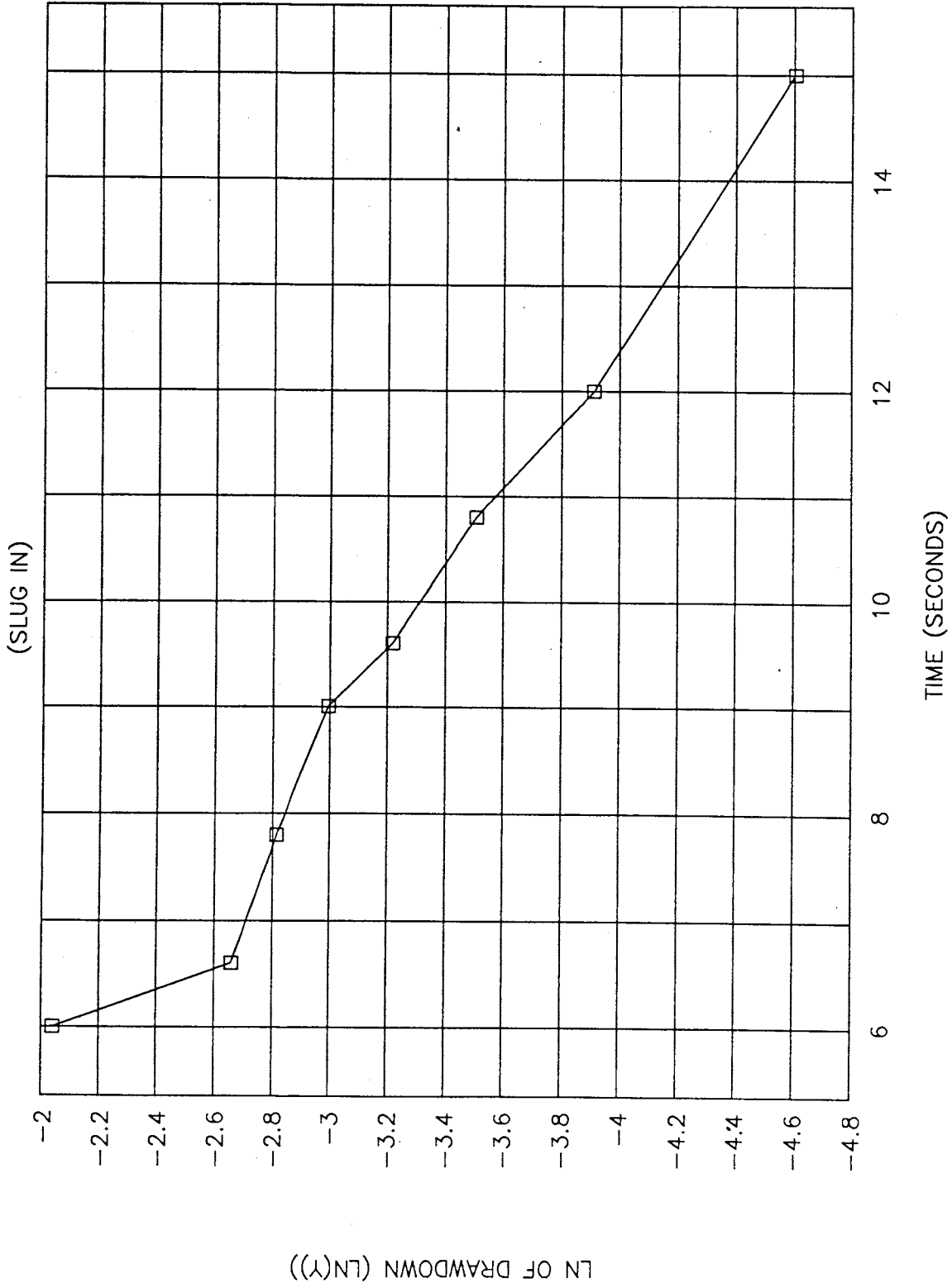
BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.73
 B = 0.85
 C = 4.98
 FOR FULLY PENETRATING WELLS---

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2166
 CONST.2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 LN(Re/(r sub w)) = 3.39

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -2.58E-01 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 3.04E-04 ft/sec
 9.27E-03 cm/sec
 <-----<

Regression Output:
 Constant -7.45E-01
 Std Err of Y Est 0.0590
 R Squared 0.9937
 No. of Observations 6
 Degrees of Freedom 4
 X Coefficient(s) -2.58E-01
 Std Err of Coef. 0.0103

RATE OF RECOVERY TEST: WELL MW-5S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*" PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER FT.	DRAWDOWN (Y)	TIME sec (X)	LN (Y)
1	0.03	-0.53	0.530	1.8	-0.6349
2	0.05	-0.40	0.400	3.0	-0.9163
3	0.06	-0.21	0.210	3.6	-1.5606
4	0.08	-0.14	0.140	4.8	-1.9661
5	0.10	-0.11	0.110	6.0	-2.2073
6	0.11	-0.08	0.080	6.6	-2.5257
7	0.13	-0.07	0.070	7.8	-2.6593
8	0.15	-0.06	0.060	9.0	-2.8134
9	0.16	-0.05	0.050	9.6	-2.9957
10	0.18	-0.04	0.040	10.8	-3.2189
11	0.21	-0.03	0.030	12.6	-3.5066
12	0.28	-0.02	0.020	16.8	-3.9120
13	0.41	-0.01	0.010	24.6	-4.6052

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-5S (SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/6/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.53 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 13.37 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 33.37 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK S SPECIFIC YIELD (Sy) = 0.15

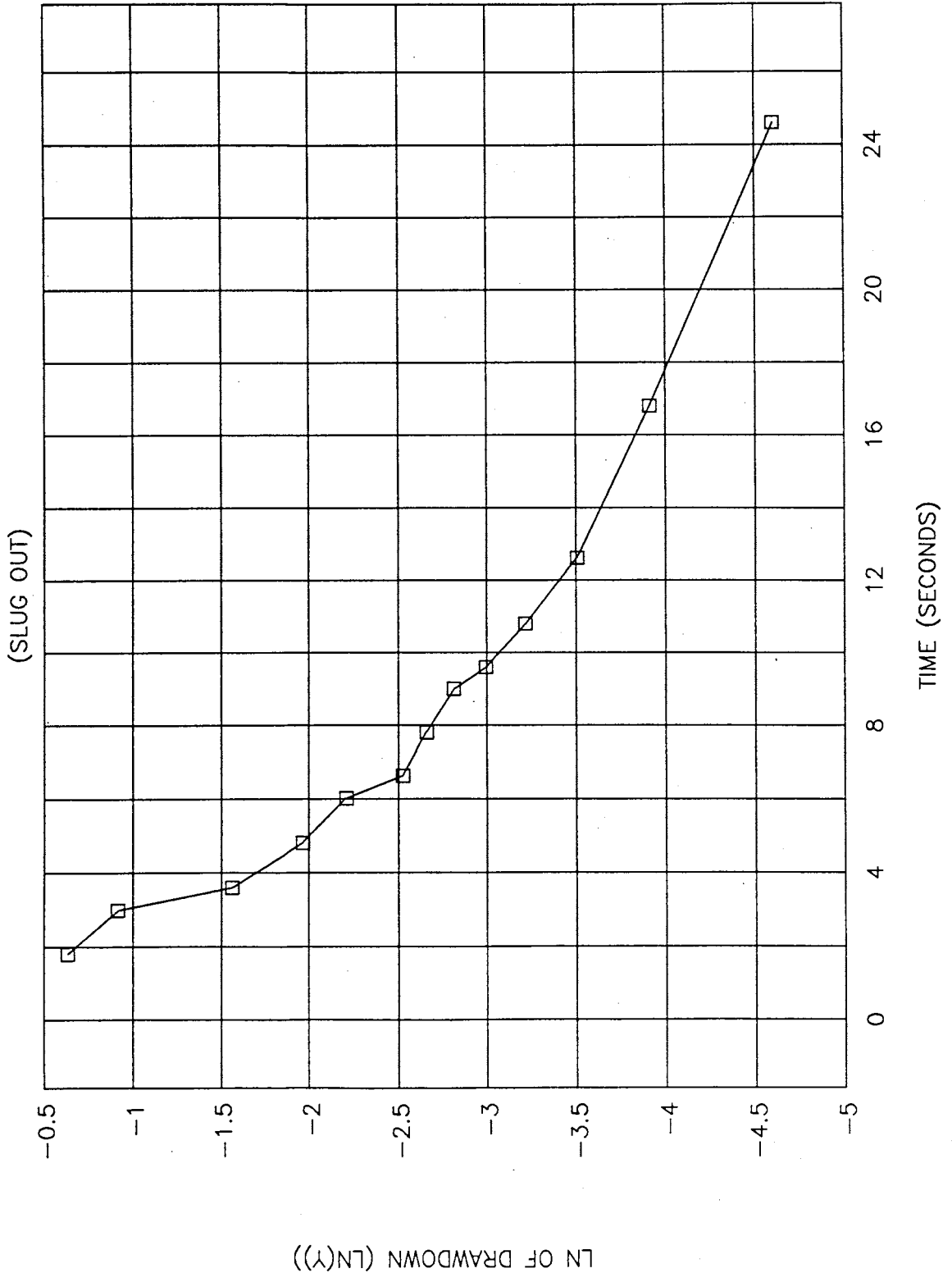
BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ----LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.73
 B = 0.85
 C = 4.98
 FOR FULLY PENETRATING WELLS--

----EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2166
 CONST.2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 LN(Re/(r sub w) = 3.39

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yc/Yt)) (SLOPE) = -1.70E-01 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 2.00E-04 ft/sec
 6.10E-03 cm/sec
 Regression Output:
 Constant -1.36E+00
 Std Err of Y Est 0.0472
 R Squared 0.9866
 No. of Observations 6
 Degrees of Freedom 4
 X Coefficient(s) -1.70E-01
 Std Err. of Coef. 0.0099

RATE OF RECOVERY TEST: WELL MW-5S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	*DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.08	0.30	0.300	4.8	-1.2040
2	0.10	0.29	0.290	6.0	-1.2379
3	0.11	0.25	0.250	6.6	-1.3863
4	0.13	0.22	0.220	7.8	-1.5141
5	0.15	0.18	0.180	9.0	-1.7148
6	0.16	0.16	0.160	9.6	-1.8326
7	0.18	0.14	0.140	10.8	-1.9661
8	0.20	0.12	0.120	12.0	-2.1203
9	0.21	0.10	0.100	12.6	-2.3026
10	0.23	0.09	0.090	13.8	-2.4079
11	0.25	0.08	0.080	15.0	-2.5257
12	0.26	0.07	0.070	15.6	-2.6593
13	0.28	0.06	0.060	16.8	-2.8134
14	0.30	0.05	0.050	18.0	-2.9957
15	0.31	0.04	0.040	18.6	-3.2189

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-6S (SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/6/90
 *RISER PIPE (ID): 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.30 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 16.07 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 36.07 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792

FOR PARTIALLY PENETRATING WELLS---

A = 4.73
 B = 0.85
 C = 4.98

FOR FULLY PENETRATING WELLS---

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2091
 CONST.2 = 5.4806 = (MAX. OF 6.0) = 5.4806
 LN(Re/(r sub w)) = 3.48

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -1.43E-01 sec⁻¹

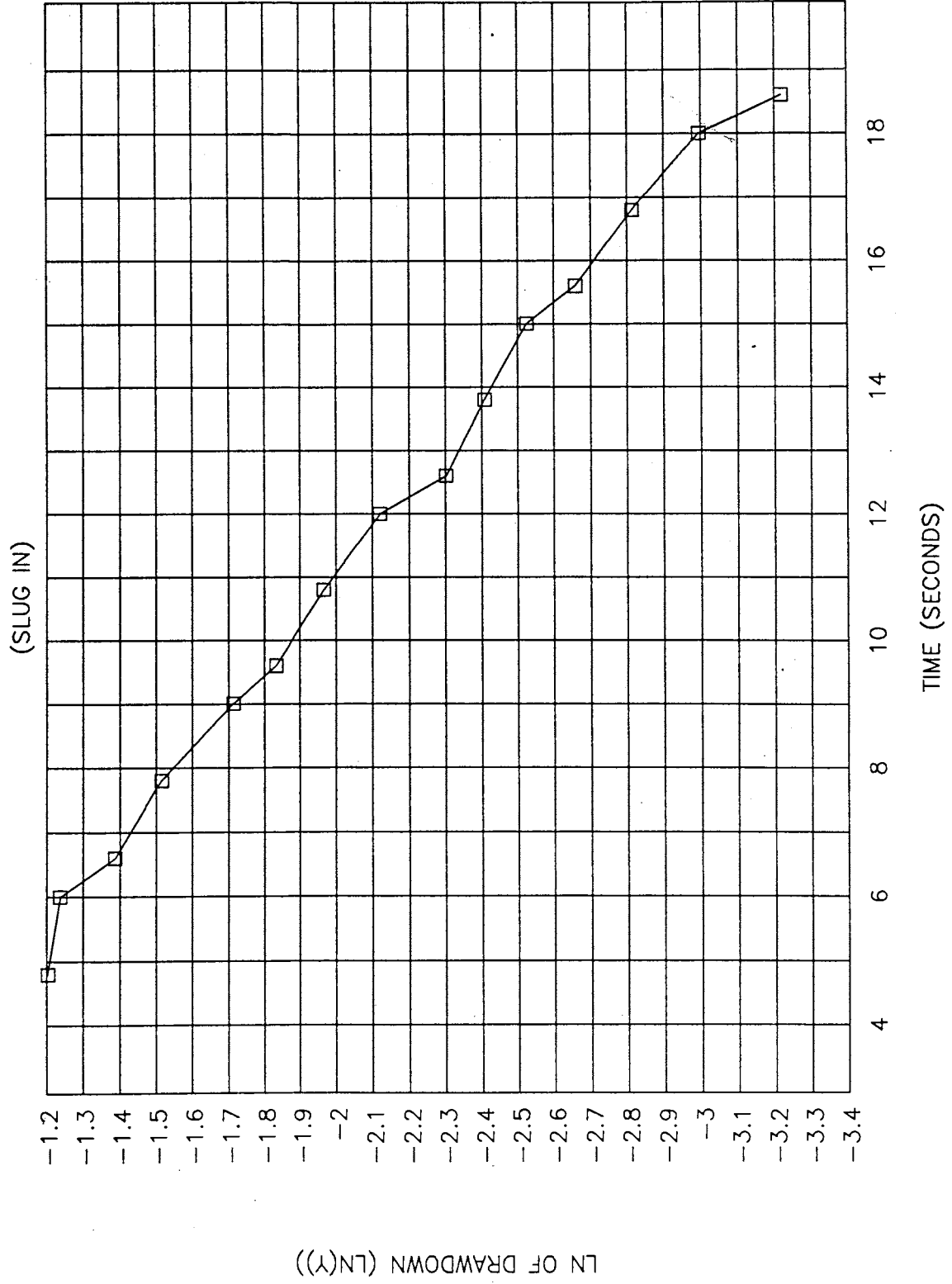
HYDRAULIC CONDUCTIVITY (K) = 1.73E-04 ft/sec
 5.28E-03 cm/sec

Regression Output:

Constant -4.21E-01
 Std Err of Y Est 0.0339
 R Squared 0.9966
 No. of Observations 13
 Degrees of Freedom 11

X Coefficient(s) -1.43E-01
 Std Err of Coef. 0.0025

RATE OF RECOVERY TEST: WELL MW-6S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.10	-0.60	0.640	6.0	-0.4463
2	0.11	-0.53	0.570	6.6	-0.5621
3	0.13	-0.47	0.510	7.8	-0.6733
4	0.15	-0.42	0.460	9.0	-0.7765
5	0.16	-0.39	0.430	9.6	-0.8440
6	0.18	-0.35	0.390	10.8	-0.9416
7	0.20	-0.32	0.360	12.0	-1.0217
8	0.21	-0.29	0.330	12.6	-1.1087
9	0.23	-0.27	0.310	13.8	-1.1712
10	0.25	-0.25	0.290	15.0	-1.2379
11	0.26	-0.23	0.270	15.6	-1.3093
12	0.28	-0.22	0.260	16.8	-1.3471
13	0.30	-0.21	0.250	18.0	-1.3863
14	0.31	-0.20	0.240	18.6	-1.4271
15	0.33	-0.19	0.230	19.8	-1.4697
16	0.41	-0.15	0.190	24.6	-1.6607
17	0.50	-0.13	0.170	30.0	-1.7720
18	0.58	-0.12	0.160	34.8	-1.8326
19	0.66	-0.11	0.150	39.6	-1.8971
20	0.91	-0.10	0.140	54.6	-1.9661

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-6S (SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/6/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.64 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.04 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 16.07 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 36.07 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

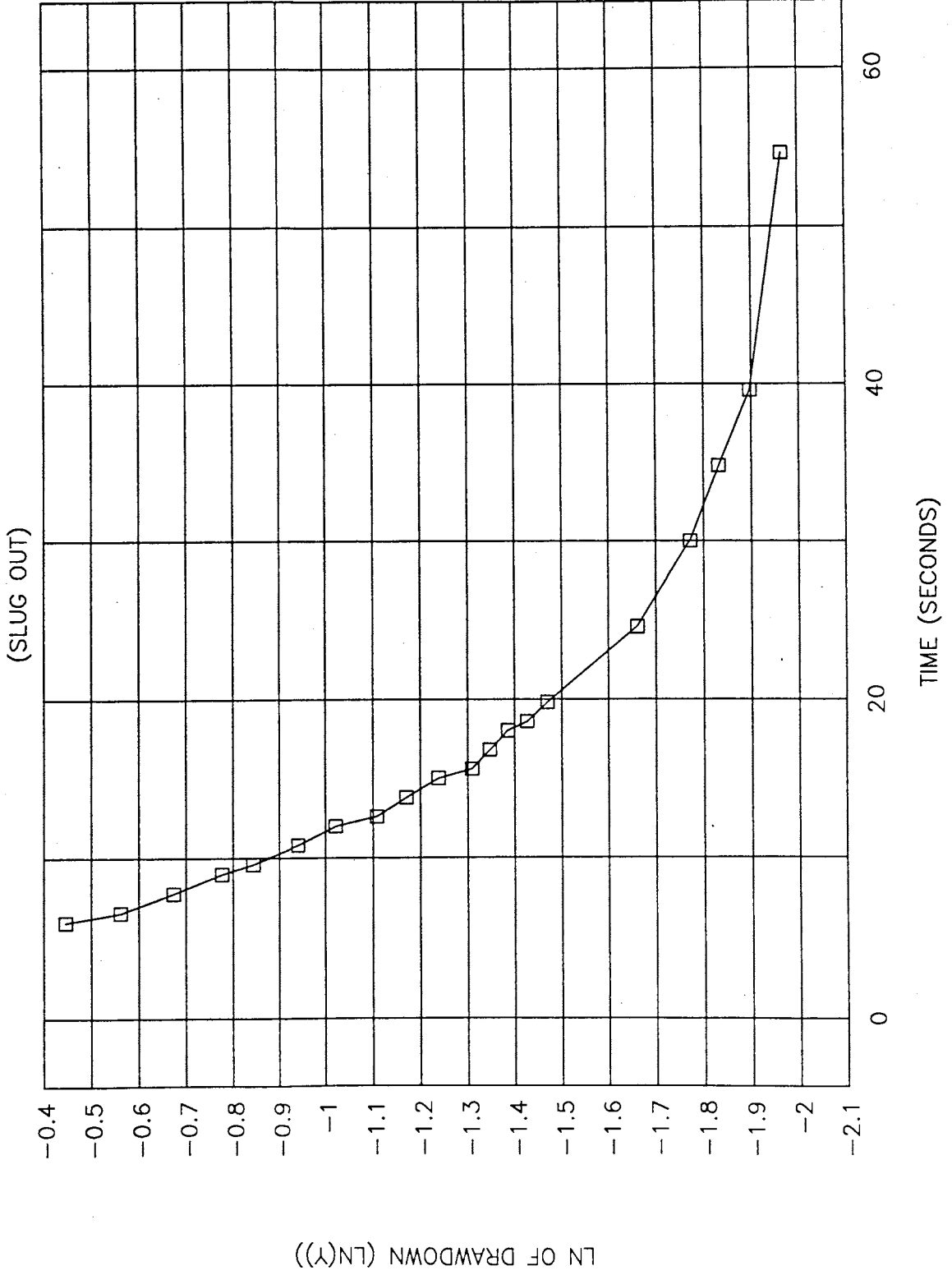
BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.73
 B = 0.85
 FOR FULLY PENETRATING WELLS---
 C = 4.98

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2091
 CONST.2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 LN(Re/(r sub w)) = 3.48

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -8.15E-02 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 9.85E-05 ft/sec
 3.00E-03 cm/sec

Regression Output:
 Constant -4.50E-02
 Std Err of Y Est 0.0204
 R Squared 0.9941
 No. of Observations 10
 Degrees of Freedom 8
 X Coefficient(s) -8.15E-02
 Std Err of Coef. 0.0022

RATE OF RECOVERY TEST: WELL MW-6S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN ***.
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	TIME min (X)	DEPTH TO WATER FL.	DRAWDOWN (V)	TIME sec (X')	LN (Y)	ERR
1	0.00	-0.01	0.000	0	ERR	
2	0.21	0.28	0.290	13	-1.2379	
3	0.23	0.22	0.230	14	-1.4697	
4	0.25	0.21	0.220	15	-1.5141	
5	0.26	0.19	0.200	16	-1.6094	
6	0.28	0.16	0.170	17	-1.7720	
7	0.30	0.14	0.150	18	-1.8971	
8	0.31	0.12	0.130	19	-2.0402	
9	0.33	0.11	0.120	20	-2.1203	
10	0.41	0.04	0.050	25	-2.9957	
11	0.50	0.01	0.020	30	-3.9120	
12	0.58	0.00	0.010	35	-4.8052	

CHECKED BY: *RT*

PROJECT NAME : GORICK
 PROJECT NO : 35232.00
 WELL NO : WELL 6 D (SLUG IN)
 ANALYST : OSTROWSKI
 DATE COLLECTED : 07/01/81
 RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 EFFECTIVE SCREEN LENGTH: (L) = 6.40 Ft.
 MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.29 Ft.
 STATIC WATER LEVEL: (SWL) = -0.01 Ft.
 DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 49.05 Ft.
 EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 49.05 Ft.
 INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 76.80
 LOG OF L/(r sub w) = 1.8854

FOR PARTIALLY PENETRATING WELLS--
 A = 3.82
 B = 0.61
 FOR FULLY PENETRATING WELLS--
 C = 3.62

EVALUATION OF LN(Re/(r sub w)):
 CONST. 1 = 0.1725
 CONST. 2 = ERR
 LN(Re/(r sub w)) = 4.55

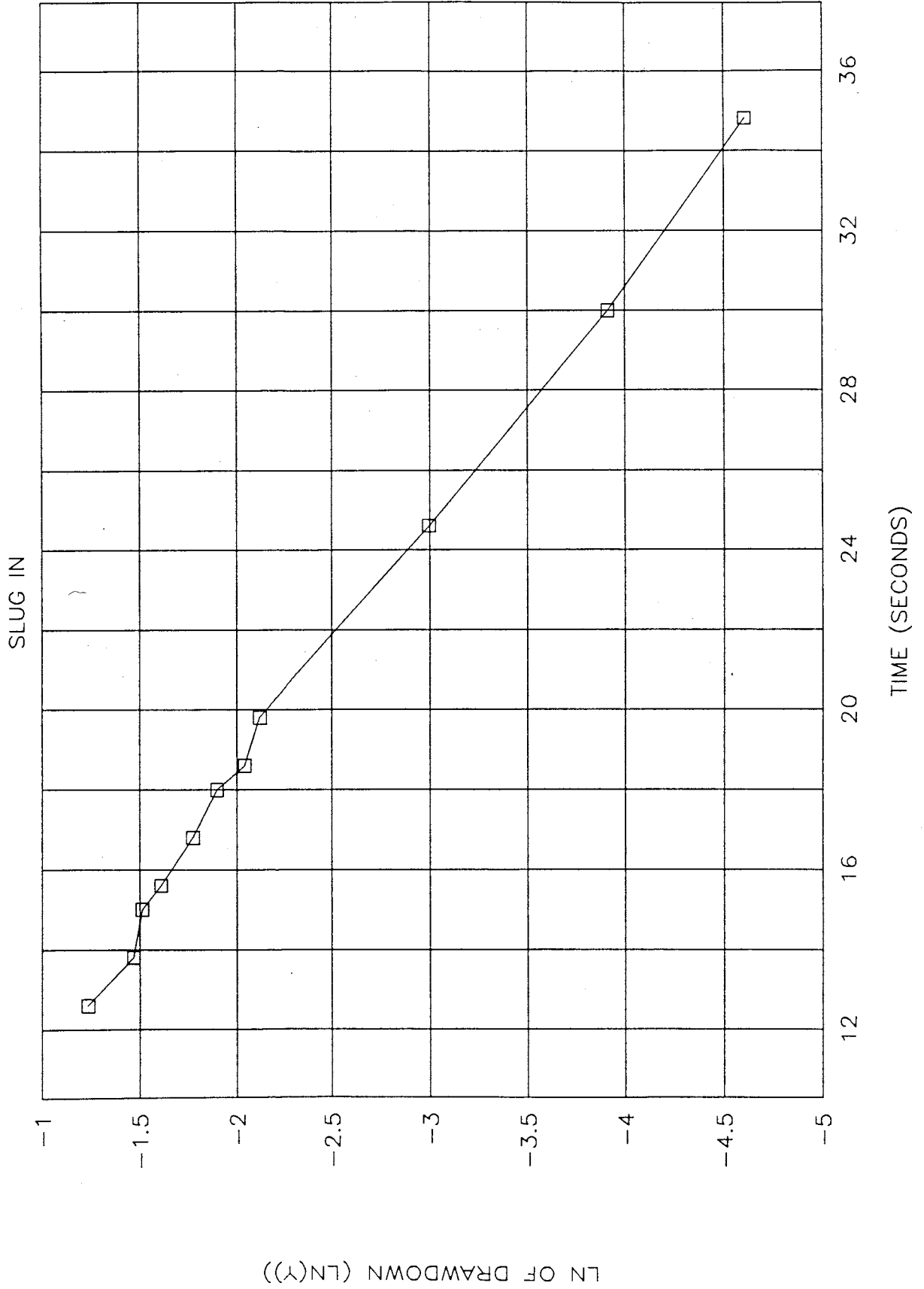
EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -1.54E-01 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 3.82E-04 ft/sec
 1.16E-02 cm/sec

Regression Output:

Constant 7.95E-01
 Std Err of Y Est 0.0829
 R Squared 0.9948
 No. of Observations 11
 Degrees of Freedom 9
 X Coefficient(s) -1.54E-01
 Std Err of Coef. 0.0037

REGRESSION FROM 13 TO 35 SECONDS.

RATE OF RECOVERY TEST: WELL 6 D



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN ***.
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	TIME min (X)	DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	LN (Y)	ERR
1	0.00	0.00	0.000	0	ERR	ERR	
2	0.05	0.89	0.890	3	-0.1165	0	
3	0.06	0.72	0.720	4	-0.3285	3	
4	0.08	0.61	0.610	5	-0.4943	4	
5	0.10	0.52	0.520	6	-0.6539	5	
6	0.11	0.45	0.450	7	-0.7985	6	
7	0.13	0.39	0.390	8	-0.9418	7	
8	0.15	0.34	0.340	9	-1.0788	8	
9	0.16	0.29	0.290	10	-1.2379	9	
10	0.18	0.26	0.260	11	-1.3471	10	
11	0.20	0.22	0.220	12	-1.5141	11	
12	0.21	0.19	0.190	13	-1.6607	12	

* PROJECT NAME : GORICK
 * PROJECT NO : 35232
 * WELL NO : WELL # D (SLUG OUT)
 * ANALYST : OSTROWSKI
 * DATE COLLECTED : 07/01/91
 * RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN LENGTH: (L) = 6.40 Ft.
 * MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.89 Ft.
 * STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 * DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 49.05 Ft.
 * EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 49.05 Ft.
 * INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 * SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 76.80
 ---LOG OF L/(r sub w) = 1.8854
 FOR PARTIALLY PENETRATING WELLS---
 A = 3.82
 B = 0.61
 FOR FULLY PENETRATING WELLS---
 C = 3.62

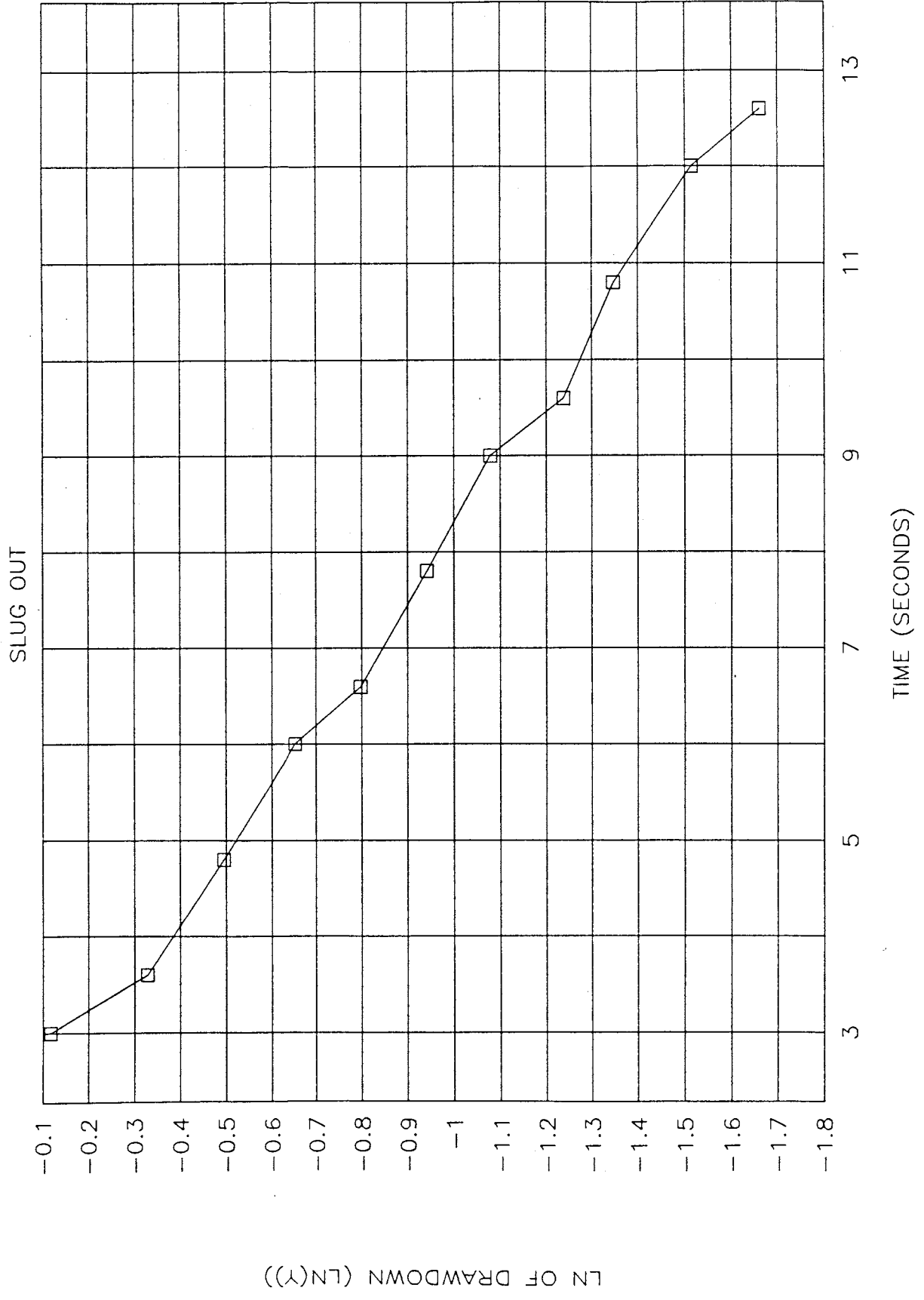
---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1725
 ERR = 0.1725
 CONST.2 = 4.55
 LN(Re/(r sub w)) = 4.55

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/r)(LN(Yc/Y)) (SLOPE) = -1.50E-01 sec^-1
 HYDRAULIC CONDUCTIVITY (K) = 3.71E-04 ft/sec
 1.13E-02 cm/sec

Regression Output:
 Constant = 2.47E-01
 Std Err of Y Est = 0.0443
 R Squared = 0.9929
 No. of Observations = 11
 Degrees of Freedom = 9
 X Coefficient(s) = -1.50E-01
 Std Err of Coef. = 0.0043

REGRESSION FROM 3 TO 13 SECONDS.

RATE OF RECOVERY TEST: WELL 6 D



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.030	0.13	0.130	1.8	-2.0402	
2	0.033	0.11	0.110	2.0	-2.2073	
3	0.11	0.02	0.020	6.6	-3.9120	
4	0.16	0.01	0.010	9.6	-4.6052	
5	0.18	0.00	0.000	10.8		

*PROJECT NAME :GORICK RI/FIS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-8S (SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.13 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 11.75 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 31.75 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792

FOR PARTIALLY PENETRATING WELLS---

A = 4.73
 B = 0.85
 C = 4.98

FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2223
 CONST.2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 LN(Re/(r sub w) = 3.33

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -2.51E-01 sec⁻¹

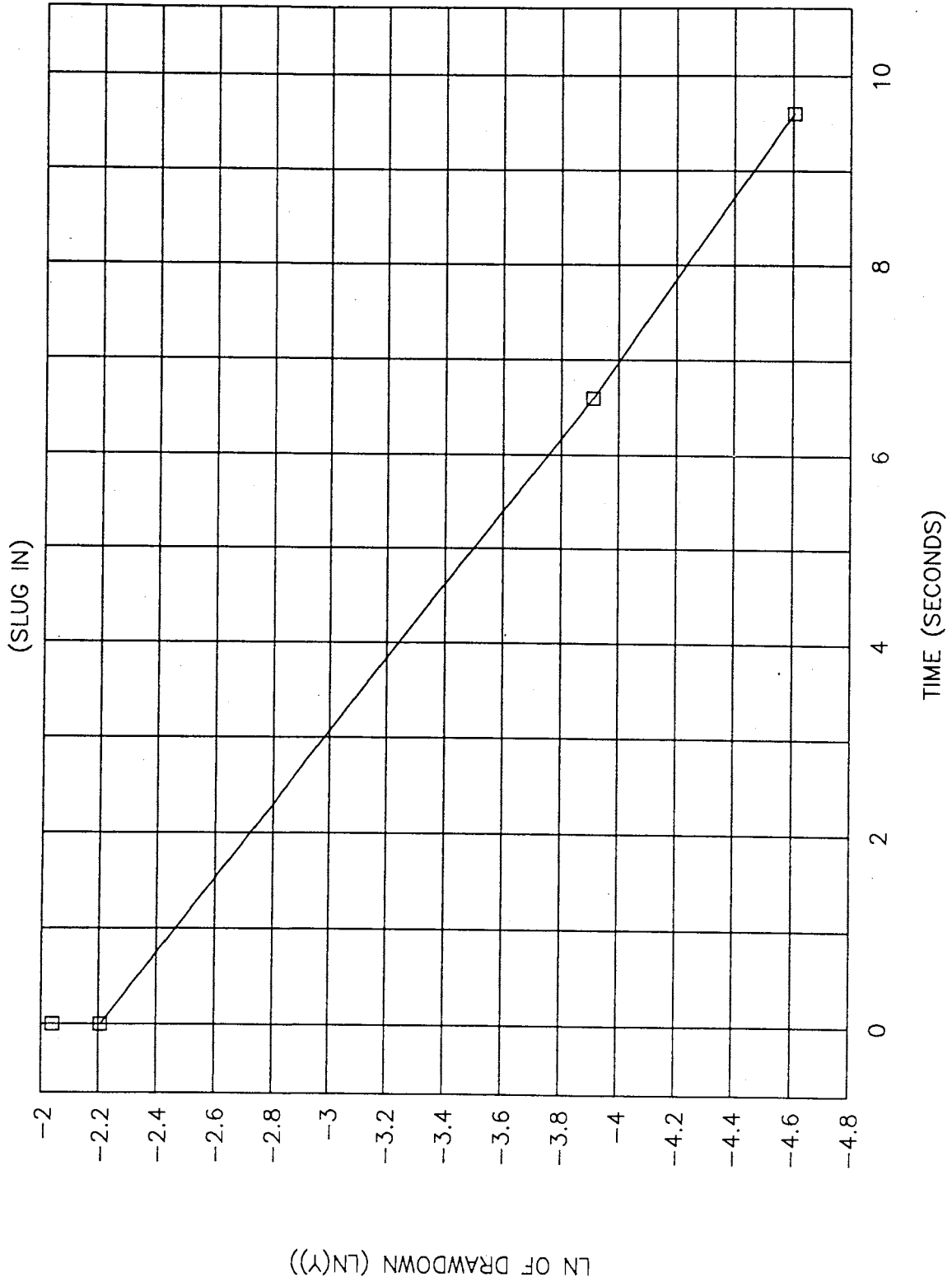
HYDRAULIC CONDUCTIVITY (K) = 2.90E-04 ft/sec
 8.84E-03 cm/sec

Regression Output:

Constant -2.22E+00
 Std Err of Y Est 0.0448
 R Squared 0.9993
 No. of Observations 3
 Degrees of Freedom 1

X Coefficient(s) -2.51E-01
 Std Err of Coef. 0.0065

RATE OF RECOVERY TEST: WELL MW-8S



BOUMER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.030	0.14	0.150	1.8	-1.8971
2	0.033	0.08	0.090	2.0	-2.4079
3	0.05	0.06	0.070	3.0	-2.6593
4	0.06	0.04	0.050	3.6	-2.9957
5	0.08	0.03	0.040	4.8	-3.2189
6	0.11	0.01	0.020	6.6	-3.9120
7	0.13	0.00	0.010	7.8	-4.6052
8	0.18	-0.01	0.000	10.8	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-9S (SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.15 Ft.
 *STATIC WATER LEVEL: (SWL) = -0.01 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 11.29 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 33.29 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUMER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS--
 A = 4.73
 B = 0.85
 C = 4.98
 FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2241
 CONST.2 = 5.5759 =(MAX. OF 6.0)= 5.5759
 LN(Re/(r sub w)) = 3.30

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -3.23E-01 sec⁻¹

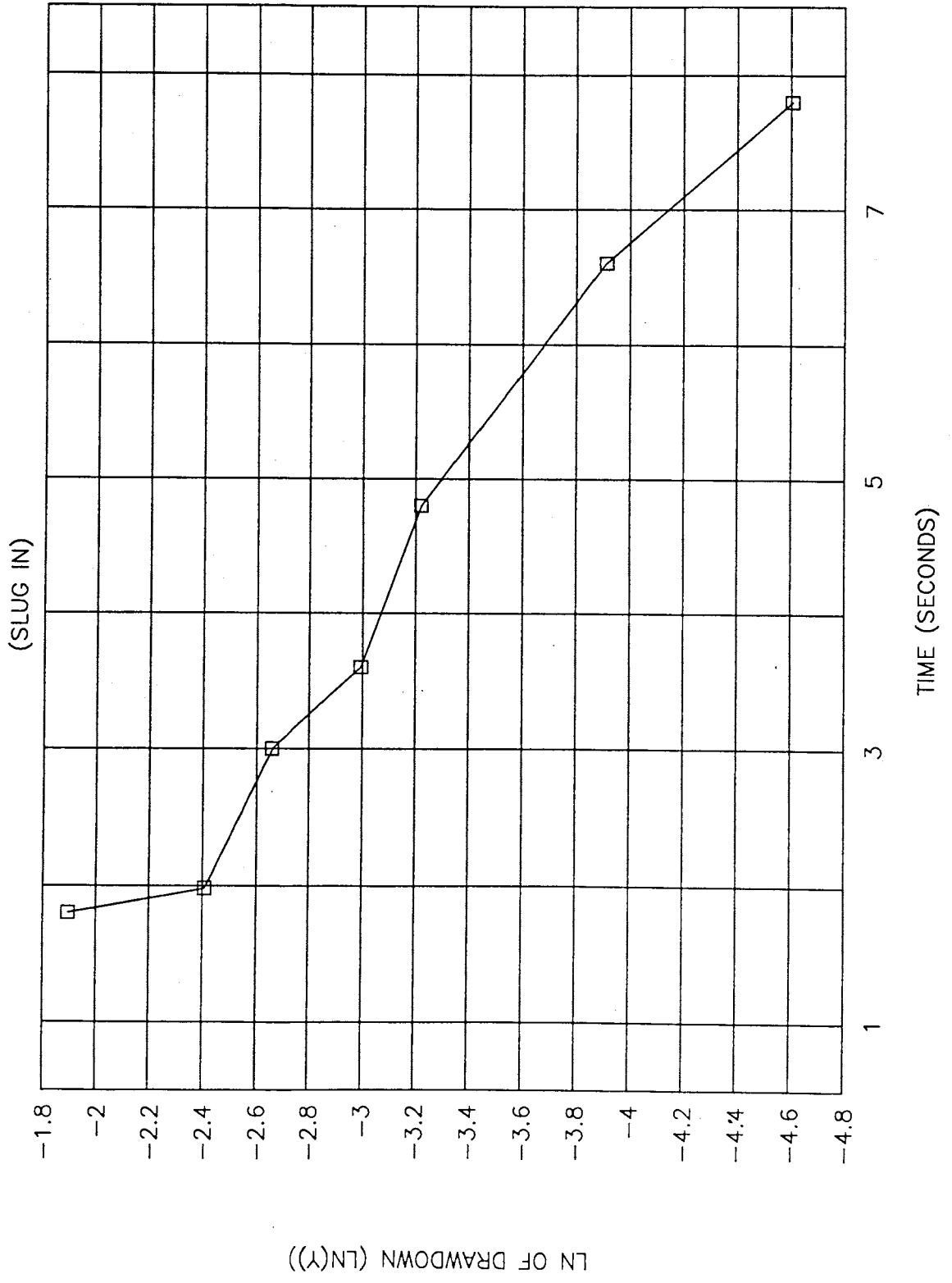
HYDRAULIC CONDUCTIVITY (K) = 3.70E-04 ft/sec
 1.13E-02 cm/sec

Regression Output:

Constant -1.75E+00
 Std Err of Y Est 0.0782
 R Squared 0.9863
 No. of Observations 5
 Degrees of Freedom 3

X Coefficient(s) -3.23E-01
 Std Err of Coef. 0.0220

RATE OF RECOVERY TEST: WELL MW-9S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*" PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.08	-0.09	0.080	4.8	-2.5257	
2	0.13	-0.03	0.020	7.8	-3.9120	
3	0.15	-0.02	0.010	9.0	-4.6052	
4	0.25	-0.01	0.000	15.0		ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-9S (SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.08 Ft.
 *STATIC WATER LEVEL: (SWL) = -0.01 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 11.29 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 33.29 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (SY) = 0.15

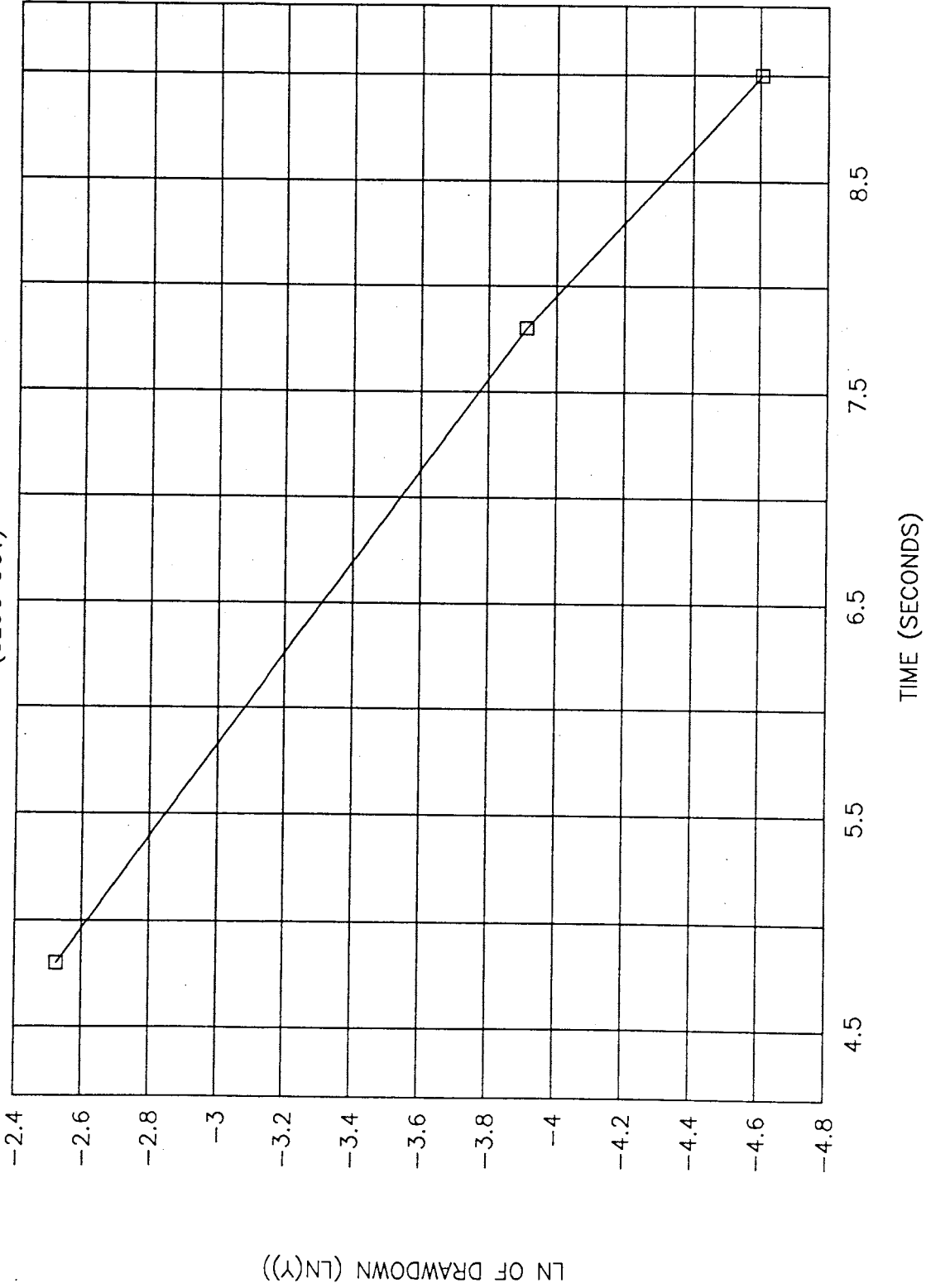
BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS--
 A = 4.73
 B = 0.85
 C = 4.98
 FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2241
 CONST.2 = 5.5759 = (MAX. OF 6.0) = 5.5759
 LN(Re/(r sub w)) = 3.30

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -4.89E-01 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 5.60E-04 ft/sec
 1.71E-02 cm/sec

Regression Output:
 Constant -1.62E-01
 Std Err of Y Est 0.0785
 R Squared 0.9973
 No. of Observations 3
 Degrees of Freedom 1
 X Coefficient(s) -4.89E-01
 Std Err of Coef. 0.0257

RATE OF RECOVERY TEST: WELL MW-9S
(SLUG OUT)



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.030	0.33	0.340	1.8	-1.0788
2	0.033	0.21	0.220	2.0	-1.5141
3	0.06	0.04	0.050	3.6	-2.9957
4	0.13	0.03	0.040	7.8	-3.2189
5	0.23	0.02	0.030	13.8	-3.5066
6	0.25	0.00	0.010	15.0	-4.6052
7	0.58	-0.01	0.000	34.8	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-10S (SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 9.33 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.34 Ft.
 *STATIC WATER LEVEL: (SWL) = -0.01 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 9.33 Ft., 29.33 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 0
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) = 111.96
 ---LOG OF L/(r sub w) = 2.0491

FOR PARTIALLY PENETRATING WELLS--

A = 4.58
 B = 0.81
 C = 4.75

FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2331
 CONST.2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 LN(Re/(r sub w) = 3.19

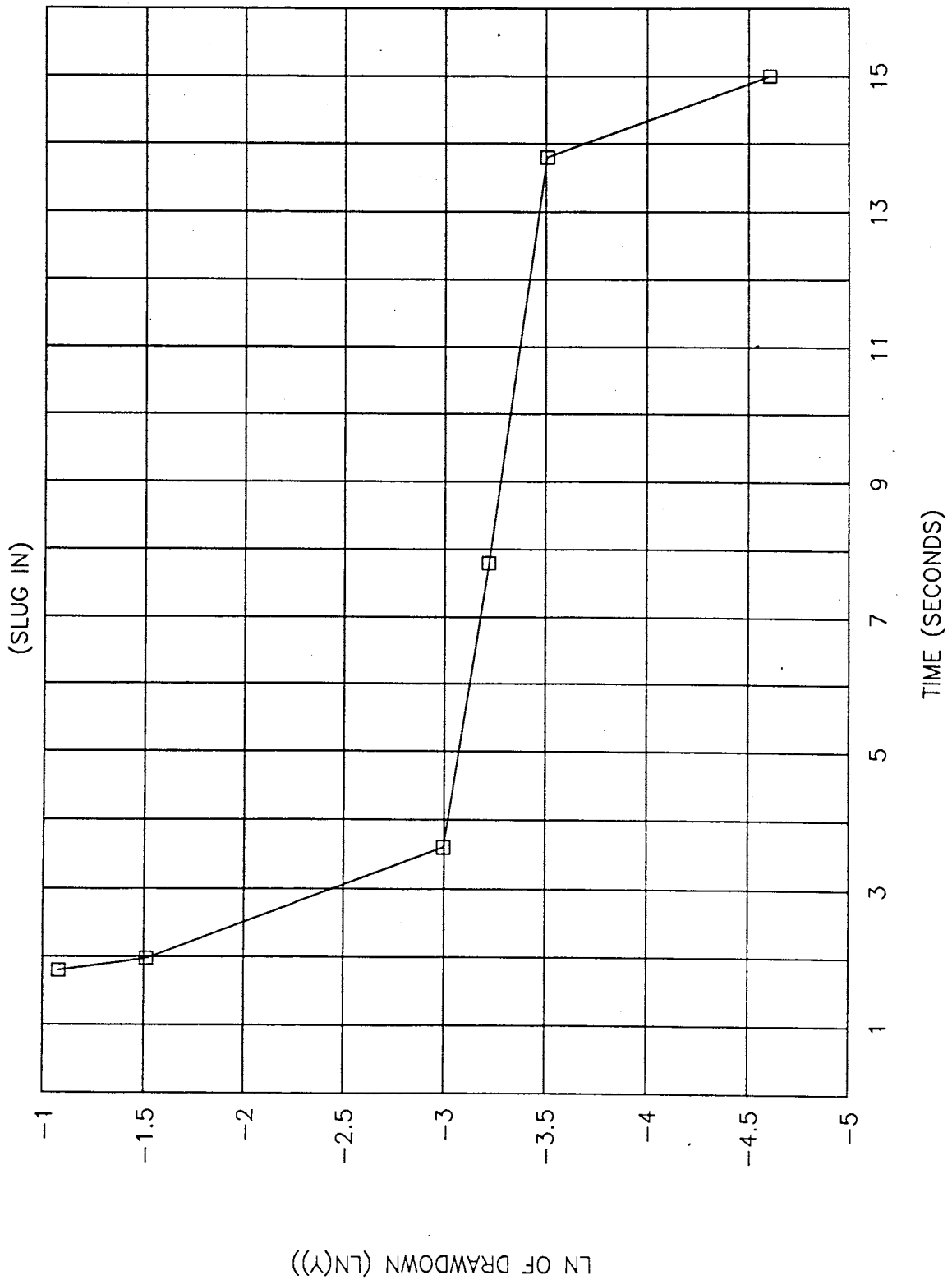
EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -4.99E-02 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 5.93E-05 ft/sec
 1.81E-03 cm/sec

Regression Output:

Constant -2.82E+00
 Std Err of Y Est 0.0104
 R Squared 0.9992
 No. of Observations 3
 Degrees of Freedom 1
 X Coefficient(s) -4.99E-02
 Std Err of Coef. 0.0014

RATE OF RECOVERY TEST: WELL MW-10S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS; FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*" IN THIS PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.05	-0.33	0.320	3.0	-1.1394
2	0.06	-0.14	0.130	3.6	-2.0402
3	0.08	-0.05	0.040	4.8	-3.2189
4	0.10	-0.03	0.020	6.0	-3.9120
5	0.11	-0.02	0.010	6.6	-4.6052
6	0.13	-0.01	0.000	7.8	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :MW-10S (SLUGOUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 9.33 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.32 Ft.
 *STATIC WATER LEVEL: (SWL) = -0.01 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 9.33 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 29.33 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) = 111.96
 ---LOG OF L/(r sub w) = 2.0491

FOR PARTIALLY PENETRATING WELLS--

A = 4.58
 B = 0.81
 C = 4.75

FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):

CONST.1 = 0.2331
 CONST.2 = 5.4806 = (MAX. OF 6.0) = 5.4806
 LN(Re/(r sub w)) = 3.19

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -8.17E-01 sec⁻¹

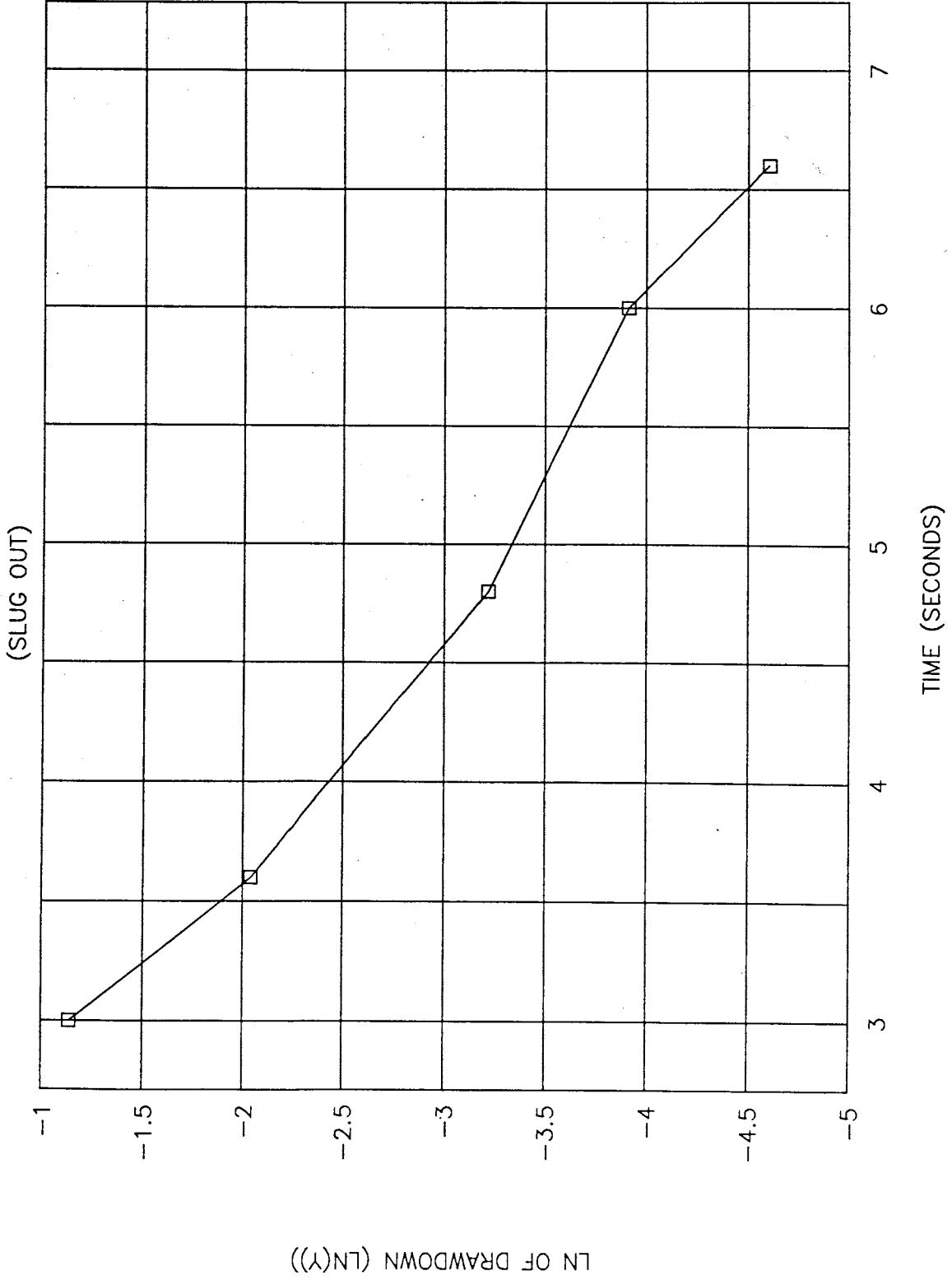
HYDRAULIC CONDUCTIVITY (K) = 9.69E-04 ft/sec
 2.95E-02 cm/sec

Regression Output:

Constant 8.43E-01
 Std Err of Y Est 0.1545
 R Squared 0.9867
 No. of Observations 4
 Degrees of Freedom 2

X Coefficient(s) -8.17E-01
 Std Err of Coef. 0.0671

RATE OF RECOVERY TEST: WELL MW-10S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	TIME min (X)	DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.00	0.00	0.000	0		
2	0.00	-0.26	0.260	0.20	-1.3471	
3	0.01	-0.24	0.240	0.40	-1.4271	
4	0.01	-0.19	0.190	0.60	-1.6607	
5	0.01	-0.16	0.160	0.80	-1.8326	
6	0.02	-0.13	0.130	1.00	-2.0402	
7	0.02	-0.10	0.100	1.20	-2.5257	
8	0.02	-0.08	0.080	1.40	-2.5257	
9	0.03	-0.07	0.070	1.80	-2.8593	
10	0.03	-0.05	0.050	1.80	-2.9957	
11	0.03	-0.04	0.040	2.00	-3.2189	
12	0.05	-0.02	0.020	3.00	-3.9120	
13	0.07	-0.01	0.010	4.00	-4.6052	

PROJECT NAME : GORICK
 PROJECT NO : 35232
 WELL NO : WELL 11 S (SLUG OUT)
 ANALYST : OSTROWSKI
 DATE COLLECTED : 07/01/81
 RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 EFFECTIVE SCREEN LENGTH: (L) = 4.19 Ft.
 MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.26 Ft.
 STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 4.19 Ft.
 EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 35.00 Ft.
 INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

CHECKED BY: *NO*

BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) = 50.28
 ---LOG OF L/(r sub w) = 1.7014

FOR PARTIALLY PENETRATING WELLS---

A = 3.09
 B = 0.45
 C = 2.64

FOR FULLY PENETRATING WELLS---

---EVALUATION OF LN(Re/(r sub w)):

CONST.1 = 0.2808
 CONST.2 = 5.9127 = (MAX. OF 6.0) = 5.9127
 LN(Re/(r sub w)) = 2.53

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833

(1/T)(LN(YorY')) (SLOPE) = -9.02E-01 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) =

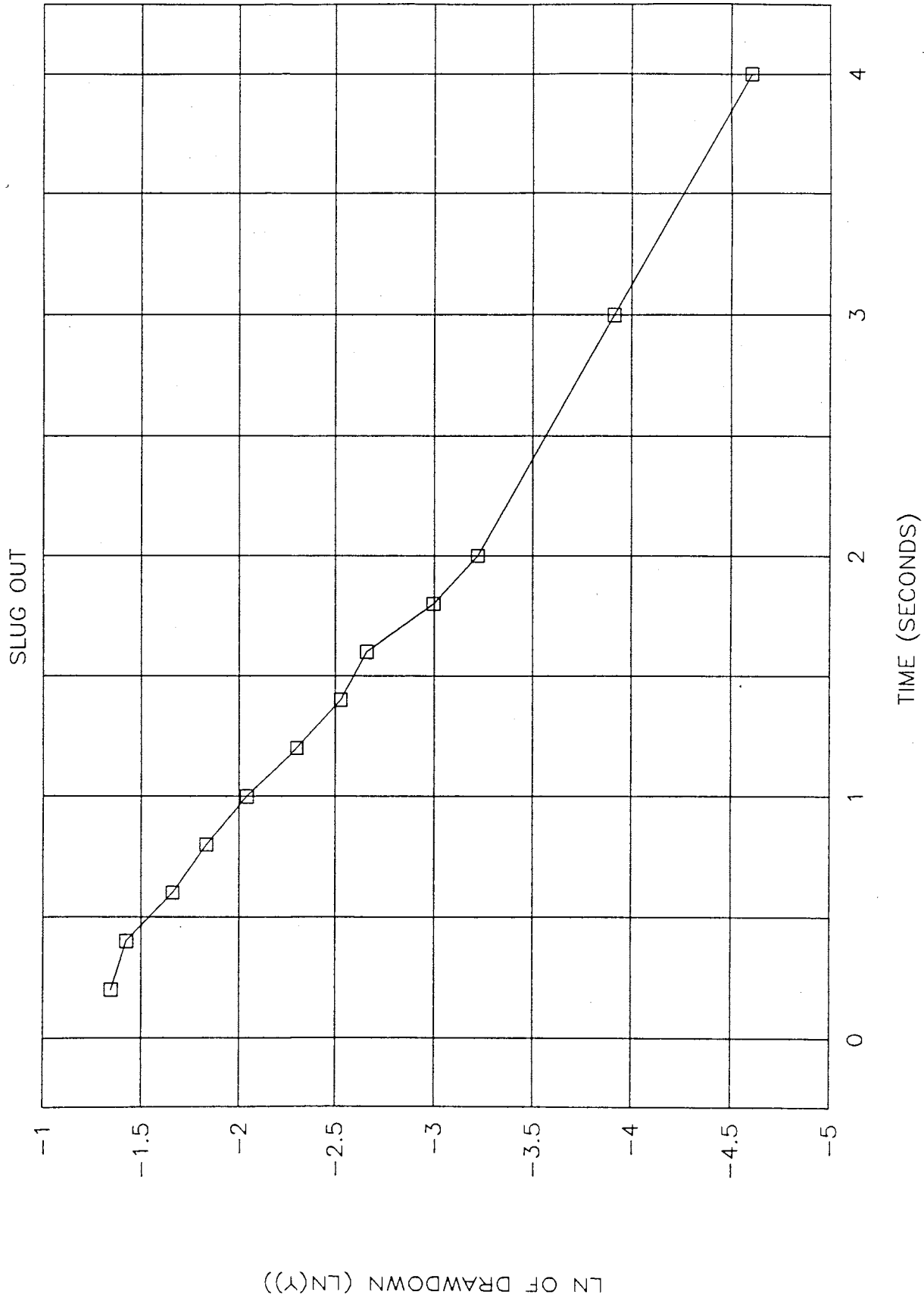
1.89E-03 ft/sec
 5.78E-02 cm/sec

Regression Output:

Constant = -1.19E+00
 Std Err of Y Est = 0.1256
 R Squared = 0.9857
 No. of Observations = 12
 Degrees of Freedom = 10
 X Coefficient(s) = -9.02E-01
 Std Err of Coef. = 0.0343

REGRESSION FROM 0.2 TO 4.0 SECONDS.

RATE OF RECOVERY TEST: WELL 11 S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN ***.
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	TIME min (X)	DEPTH TO WATER FL.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.00	0.02	0.000	0		
2	0.21	0.61	0.590	13	-0.5276	
3	0.25	0.60	0.580	15	-0.5447	
4	0.26	0.59	0.570	16	-0.5621	
5	0.28	0.58	0.560	17	-0.5798	
6	0.30	0.57	0.550	18	-0.5978	
7	0.31	0.56	0.540	19	-0.6162	
8	0.33	0.55	0.530	20	-0.6349	
9	0.41	0.48	0.460	25	-0.7765	
10	0.50	0.47	0.450	30	-0.7885	
11	0.58	0.43	0.410	35	-0.8916	
12	0.66	0.40	0.380	40	-0.9676	
13	0.75	0.37	0.350	45	-1.0498	
14	0.83	0.35	0.330	50	-1.1087	
15	0.91	0.32	0.300	55	-1.2040	
16	1.00	0.30	0.280	60	-1.2730	
17	1.08	0.28	0.260	65	-1.3471	
18	1.16	0.27	0.250	70	-1.3863	
19	1.25	0.25	0.230	75	-1.4697	
20	1.33	0.24	0.220	80	-1.5141	
21	1.41	0.22	0.200	85	-1.6094	
22	1.50	0.21	0.190	90	-1.6607	
23	1.58	0.20	0.180	95	-1.7148	
24	1.66	0.19	0.170	100	-1.7720	
25	1.75	0.18	0.160	105	-1.8326	
26	1.91	0.17	0.150	115	-1.8971	
27	2.00	0.16	0.140	120	-1.9661	

PROJECT NAME : GORICK
 PROJECT NO : 35232.00
 WELL NO : WELL 11 (SLUG IN)
 ANALYST : OSTROWSKI
 DATE COLLECTED : 07/01/81
 RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.59 Ft.
 STATIC WATER LEVEL: (SWL) = 0.02 Ft.
 DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 21.97 Ft.
 EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 35.00 Ft.
 INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 LOG OF L/(r sub w) = 2.0792

FOR PARTIALLY PENETRATING WELLS--
 A = 4.73
 B = 0.85

FOR FULLY PENETRATING WELLS--
 C = 4.98

EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1973
 CONST.2 = 5.0522 = (MAX. OF 6.0) = 5.0522
 LN(Re/(r sub w)) = 3.67

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -1.29E-02 sec⁻¹

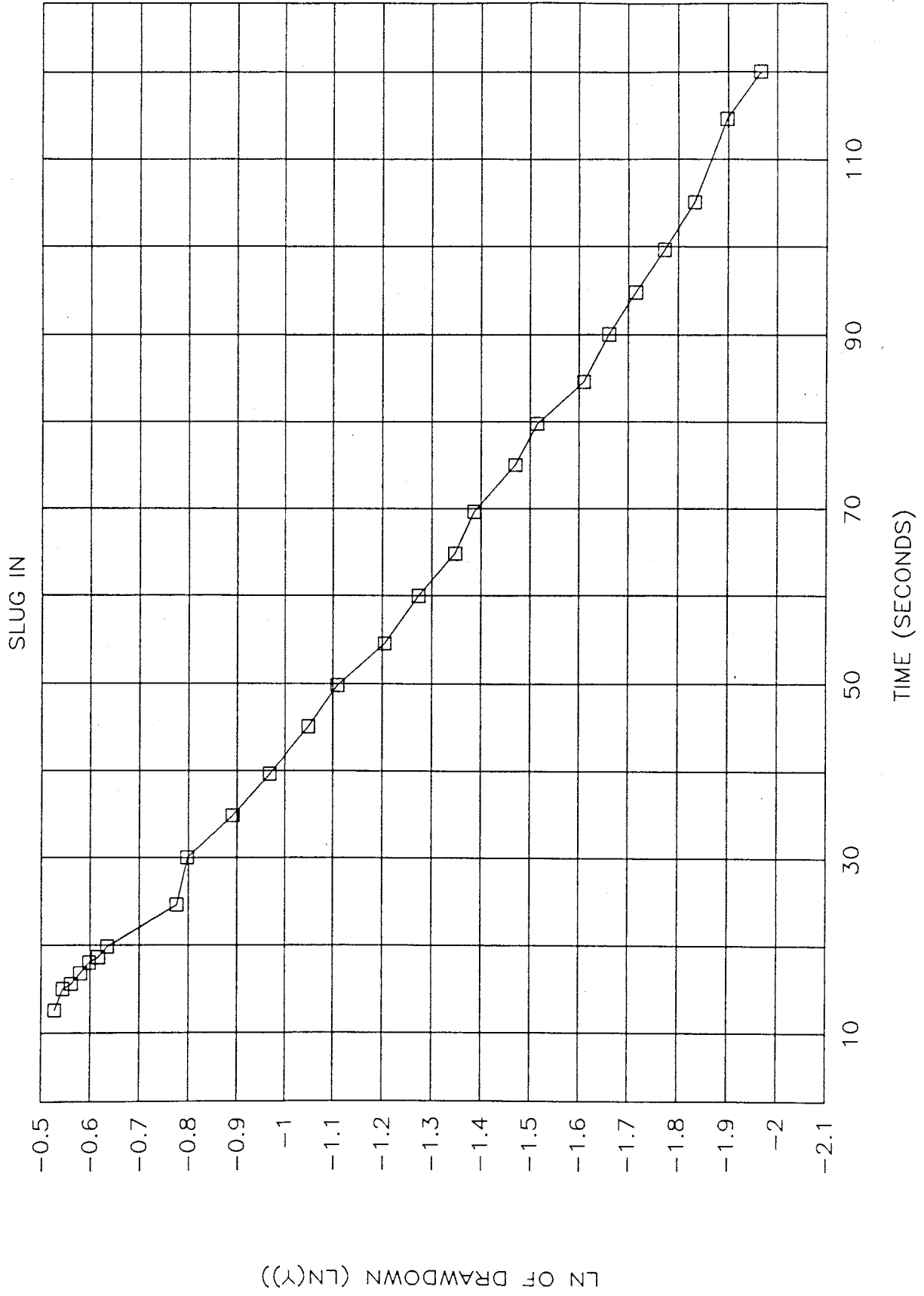
HYDRAULIC CONDUCTIVITY (K) = 1.65E-05 ft/sec
 = 5.03E-04 cm/sec

Regression Output:
 Constant = -4.71E-01
 Std Err of Y Est = 0.0338
 R Squared = 0.9916
 No. of Observations = 18
 Degrees of Freedom = 16

X Coefficient(s) = -1.29E-02
 Std Err of Coef. = 0.0003

REGRESSION FROM 30 TO 120 SECONDS.

RATE OF RECOVERY TEST: WELL 11 I



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN ***.
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	TIME min (X)	DEPTH TO WATER Ft. (Y)	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.00	0.00	0.000	0	0	0
2	0.13	-0.82	0.820	8	-0.1985	8
3	0.15	-0.73	0.730	9	-0.3147	9
4	0.16	-0.72	0.720	10	-0.3285	10
5	0.18	-0.70	0.700	11	-0.3567	11
6	0.20	-0.68	0.680	12	-0.3857	12
7	0.21	-0.67	0.670	13	-0.4005	13
8	0.23	-0.66	0.660	14	-0.4155	14
9	0.25	-0.64	0.640	15	-0.4463	15
10	0.26	-0.63	0.630	16	-0.4620	16
11	0.28	-0.62	0.620	17	-0.4780	17
12	0.30	-0.61	0.610	18	-0.4943	18
13	0.31	-0.59	0.590	19	-0.5276	19
14	0.33	-0.58	0.580	20	-0.5447	20
15	0.41	-0.53	0.530	25	-0.6349	25
16	0.50	-0.48	0.480	30	-0.7340	30
17	0.58	-0.44	0.440	35	-0.8210	35
18	0.66	-0.39	0.390	40	-0.9416	40
19	0.75	-0.35	0.350	45	-1.0498	45
20	0.83	-0.31	0.310	50	-1.1712	50
21	0.91	-0.28	0.280	55	-1.2730	55
22	1.00	-0.25	0.250	60	-1.3863	60
23	1.08	-0.23	0.230	65	-1.4697	65
24	1.16	-0.20	0.200	70	-1.6084	70
25	1.25	-0.18	0.180	75	-1.7148	75
26	1.33	-0.16	0.160	80	-1.8326	80
27	1.41	-0.14	0.140	85	-1.9661	85
28	1.50	-0.12	0.120	90	-2.1203	90
29	1.58	-0.11	0.110	95	-2.2073	95
30	1.66	-0.09	0.090	100	-2.4079	100
31	1.75	-0.08	0.080	105	-2.5257	105
32	1.83	-0.07	0.070	110	-2.6593	110
33	1.91	-0.06	0.060	115	-2.8134	115
34	2.00	-0.05	0.050	120	-2.9957	120

PROJECT NAME : GORICK
 PROJECT NO : 35232.00
 WELL NO : WELL 11 (SLUG OUT)
 ANALYST : OSTROWSKI
 DATE COLLECTED : 07/01/81
 RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.82 Ft.
 STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 21.97 Ft.
 EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 35.00 Ft.
 INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.73
 B = 0.85
 FOR FULLY PENETRATING WELLS---
 C = 4.98

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1973
 CONST.2 = 5.0522 = (MAX. OF 6.0) = 5.0522
 LN(Re/(r sub w)) = 3.67

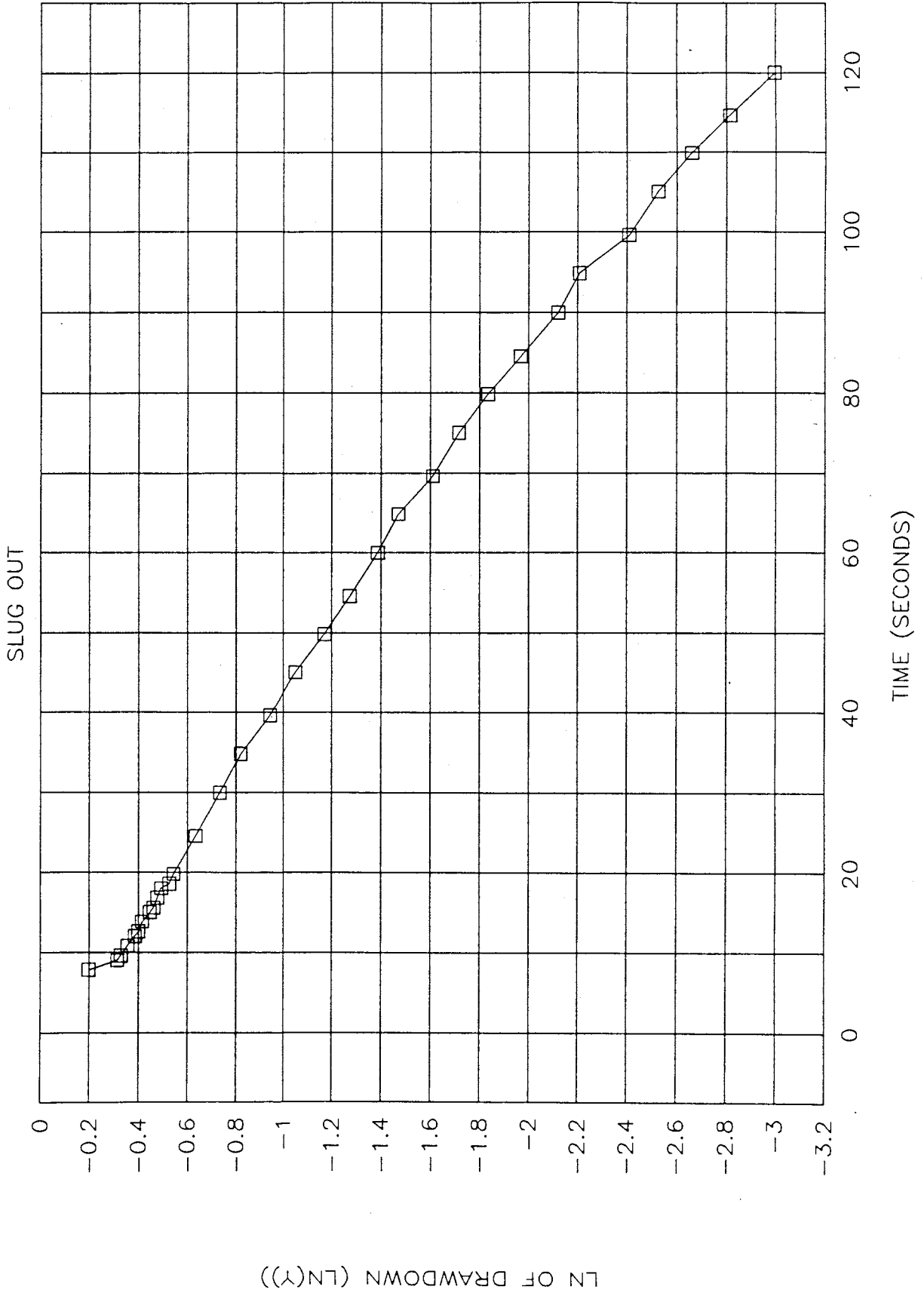
EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Y)) (SLOPE) = -2.31E-02 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 2.95E-05 ft/sec
 8.98E-04 cm/sec

Regression Output:
 Constant = -6.37E-02
 Std Err of Y Est = 0.0594
 R Squared = 0.9953
 No. of Observations = 31
 Degrees of Freedom = 29
 X Coefficient(s) = -2.31E-02
 Std Err of Coef. = 0.0003

REGRESSION FROM 10 TO 120 SECONDS.

RATE OF RECOVERY TEST: WELL 11 I



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
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 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.000	0.00	0.000	0		ERR
2	0.020	0.39	0.390	1.20	-0.9416	
3	0.023	0.32	0.320	1.40	-1.1394	
4	0.027	0.28	0.260	1.60	-1.3471	
5	0.030	0.19	0.190	1.80	-1.6607	

 * PROJECT NAME : GORICK
 * PROJECT NO : 35232.00
 * WELL NO : WELL 12 S (SLUG IN)
 * ANALYST : OSTROWSKI
 * DATE COLLECTED : 07/01/91
 * RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN LENGTH: (L) = 6.04 Ft.
 * MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.39 Ft.
 * STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 * DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 6.04 Ft.
 * EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 40.00 Ft.
 * INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 * SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

 BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 72.48
 ---LOG OF L/(r sub w) = 1.8602
 FOR PARTIALLY PENETRATING WELLS---
 A = 3.71
 B = 0.58
 C = 3.47
 FOR FULLY PENETRATING WELLS---

 ---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2568
 CONST.2 = 6.0101 --- (MAX. OF 6.0) = 6.0000
 LN(Re/(r sub w)) = 2.81

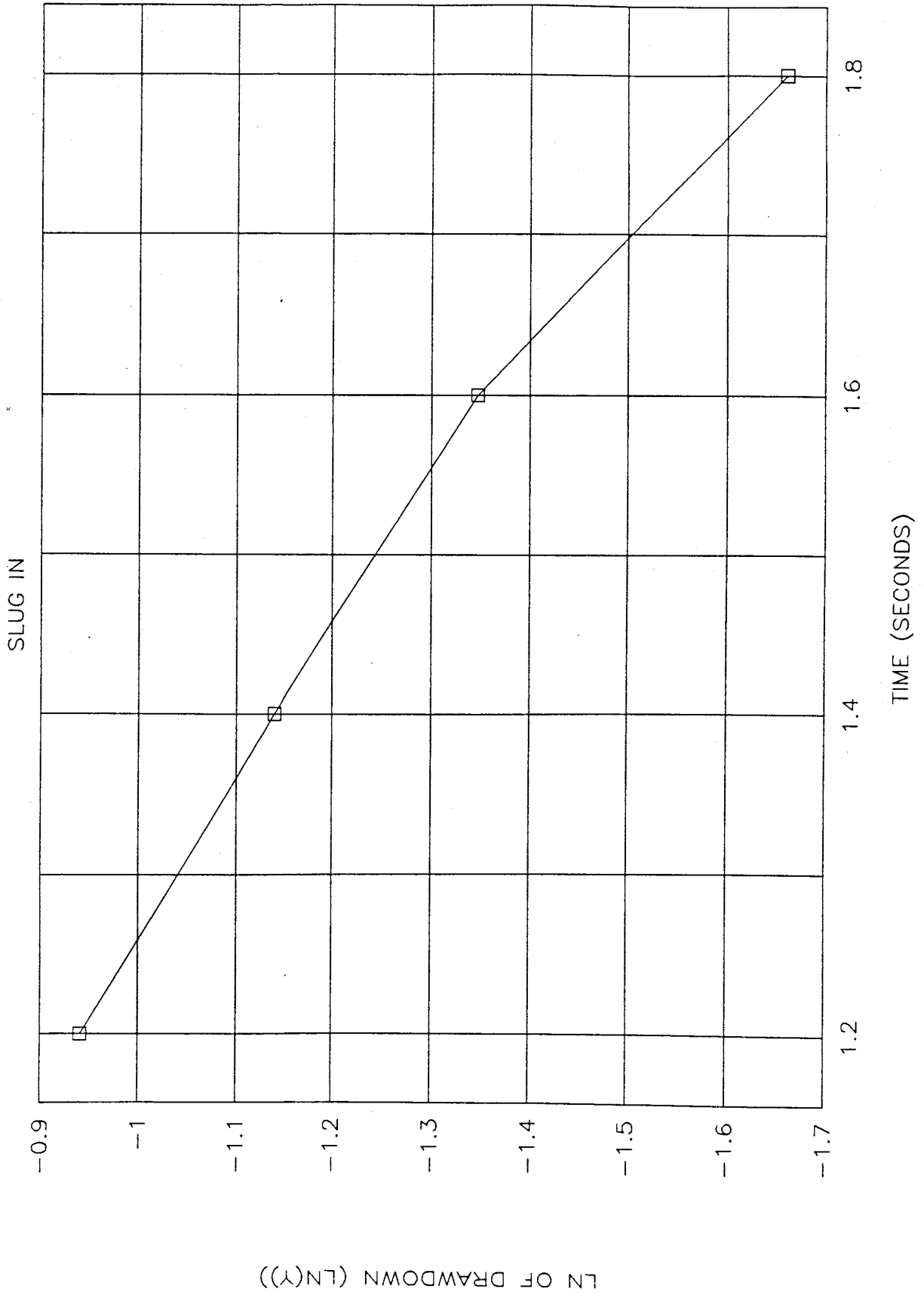
 EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)/(LN(Y0/Yt)) (SLOPE) = -1.18E+00 sec⁻¹

 HYDRAULIC CONDUCTIVITY (K) = 1.91E-03 ft/sec
 5.82E-02 cm/sec

 Regression Output:
 Constant 5.02E-01
 Std Err of Y Est 0.0437
 R Squared 0.9865
 No. of Observations 4
 Degrees of Freedom 2
 X Coefficient(s) -1.18E+00
 Std Err of Coef. 0.0977

 REGRESSION FROM 1.2 TO 1.8 SECONDS.

RATE OF RECOVERY TEST: WELL 12 S



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN ***.
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.00	0.04	0.000	0		ERR
2	0.13	0.76	0.720	8	-0.3285	
3	0.15	0.74	0.700	9	-0.3567	
4	0.16	0.71	0.870	10	-0.4005	
5	0.18	0.70	0.860	11	-0.4155	
6	0.20	0.69	0.850	12	-0.4308	
7	0.21	0.68	0.840	13	-0.4463	
8	0.23	0.67	0.830	14	-0.4620	
9	0.25	0.66	0.820	15	-0.4780	
10	0.28	0.65	0.810	16	-0.4943	
11	0.28	0.64	0.800	17	-0.5108	
12	0.30	0.63	0.590	18	-0.5276	
13	0.31	0.62	0.580	19	-0.5447	
14	0.33	0.61	0.570	20	-0.5621	
15	0.41	0.57	0.530	25	-0.6349	
16	0.50	0.53	0.490	30	-0.7133	
17	0.58	0.49	0.450	35	-0.7985	
18	0.68	0.46	0.420	40	-0.8875	
19	0.75	0.43	0.390	45	-0.9416	
20	0.83	0.40	0.360	50	-1.0217	
21	0.91	0.38	0.340	55	-1.0788	
22	1.00	0.36	0.320	60	-1.1394	
23	1.08	0.34	0.300	65	-1.2040	
24	1.16	0.32	0.280	70	-1.2730	
25	1.25	0.30	0.260	75	-1.3471	
26	1.33	0.28	0.240	80	-1.4271	
27	1.41	0.27	0.230	85	-1.4697	
28	1.50	0.26	0.220	90	-1.5141	
29	1.58	0.24	0.200	95	-1.6094	
30	1.66	0.23	0.190	100	-1.6607	
31	1.75	0.22	0.180	105	-1.7148	
32	1.83	0.21	0.170	110	-1.7720	
33	2.00	0.20	0.160	120	-1.8326	
34	2.50	0.16	0.120	150	-2.1203	
35	3.00	0.15	0.110	180	-2.2073	
36	3.50	0.14	0.100	210	-2.3026	
37	4.00	0.13	0.090	240	-2.4079	
38	4.50	0.12	0.080	270	-2.5257	
39	5.50	0.11	0.070	330	-2.6593	

* PROJECT NAME : GORICK
 * PROJECT NO : 35232.00
 * WELL NO : WELL 12 D (SLUG IN)
 * ANALYST : OSTROWSKI
 * DATE COLLECTED : 07/01/81
 * RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN LENGTH: (L) = 14.00 Ft.
 * MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.72 Ft.
 * STATIC WATER LEVEL: (SWL) = 0.04 Ft.
 * DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 25.16 Ft.
 * EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 25.16 Ft.
 * INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 * SANDPACK'S SPECIFIC YIELD (SY) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 168.00
 ---LOG OF L/(r sub w) = 2.2253
 FOR PARTIALLY PENETRATING WELLS---
 A = 5.50
 B = 1.09
 FOR FULLY PENETRATING WELLS---
 C = 6.18

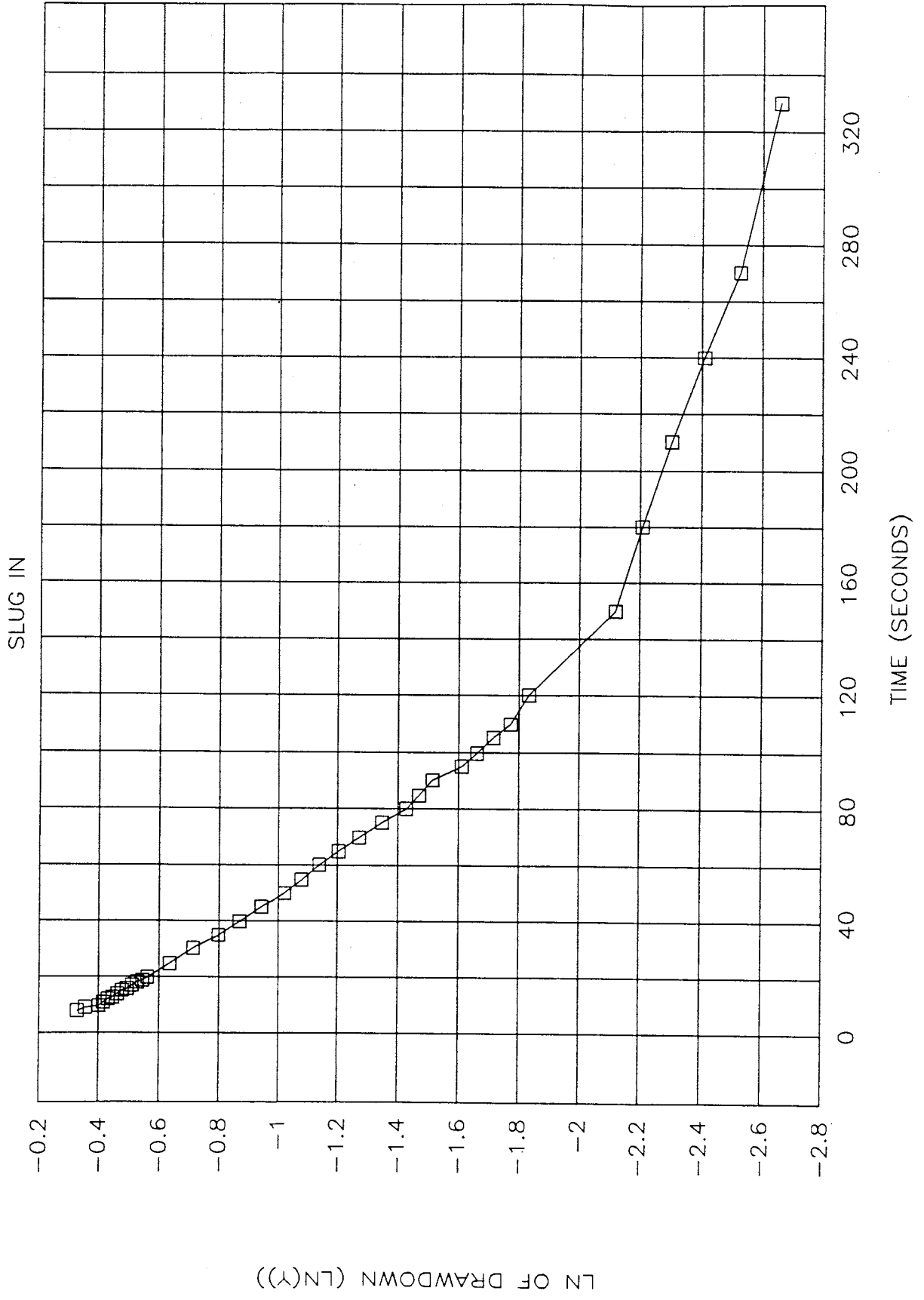
---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1928
 CONST.2 = ERR
 LN(Re/(r sub w)) = ERR
 ERR = (MAX. OF 6.0) = 4.36

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Y0/Y1)) (SLOPE) = -1.41E-02 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 1.52E-05 ft/sec
 4.64E-04 cm/sec

Regression Output:
 Constant = -2.77E-01
 Std Err of Y Est = 0.0263
 R Squared = 0.9970
 No. of Observations = 31
 Degrees of Freedom = 29
 X Coefficient(s) = -1.41E-02
 Std Err of Coef. = 0.0001

REGRESSION FROM 8 TO 110 SECONDS.

RATE OF RECOVERY TEST: WELL 12 D



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN ***.
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	TIME min (X)	DEPTH TO WATER Ft. (Y)	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.00	0.00	0.000	0	0	ERR
2	0.10	-0.95	0.950	6	-0.0513	
3	0.11	-0.90	0.900	7	-0.1054	
4	0.13	-0.86	0.860	8	-0.1508	
5	0.15	-0.84	0.840	9	-0.1744	
6	0.16	-0.83	0.830	10	-0.1863	
7	0.18	-0.81	0.810	11	-0.2107	
8	0.20	-0.80	0.800	12	-0.2231	
9	0.21	-0.79	0.790	13	-0.2357	
10	0.23	-0.77	0.770	14	-0.2614	
11	0.25	-0.76	0.760	15	-0.2744	
12	0.26	-0.75	0.750	16	-0.2877	
13	0.28	-0.74	0.740	17	-0.3011	
14	0.30	-0.73	0.730	18	-0.3147	
15	0.31	-0.72	0.720	19	-0.3285	
16	0.33	-0.71	0.710	20	-0.3425	
17	0.41	-0.66	0.660	25	-0.4155	
18	0.50	-0.61	0.610	30	-0.4843	
19	0.58	-0.57	0.570	35	-0.5621	
20	0.66	-0.53	0.530	40	-0.6349	
21	0.75	-0.50	0.500	45	-0.6931	
22	0.83	-0.47	0.470	50	-0.7550	
23	0.91	-0.44	0.440	55	-0.8210	
24	1.00	-0.41	0.410	60	-0.8916	
25	1.08	-0.39	0.390	65	-0.9416	
26	1.16	-0.37	0.370	70	-0.9943	
27	1.25	-0.35	0.350	75	-1.0498	
28	1.33	-0.33	0.330	80	-1.1087	
29	1.41	-0.31	0.310	85	-1.1712	
30	1.50	-0.30	0.300	90	-1.2040	
31	1.58	-0.29	0.290	95	-1.2379	
32	1.66	-0.27	0.270	100	-1.3093	
33	1.75	-0.26	0.260	105	-1.3471	
34	1.83	-0.25	0.250	110	-1.3863	
35	1.91	-0.24	0.240	115	-1.4271	
36	2.00	-0.23	0.230	120	-1.4697	
37	2.50	-0.19	0.190	150	-1.6607	
38	3.00	-0.16	0.160	180	-1.8326	
39	3.50	-0.15	0.150	210	-1.8971	
40	4.00	-0.14	0.140	240	-1.9661	
41	4.50	-0.13	0.130	270	-2.0402	
42	5.00	-0.12	0.120	300	-2.1203	

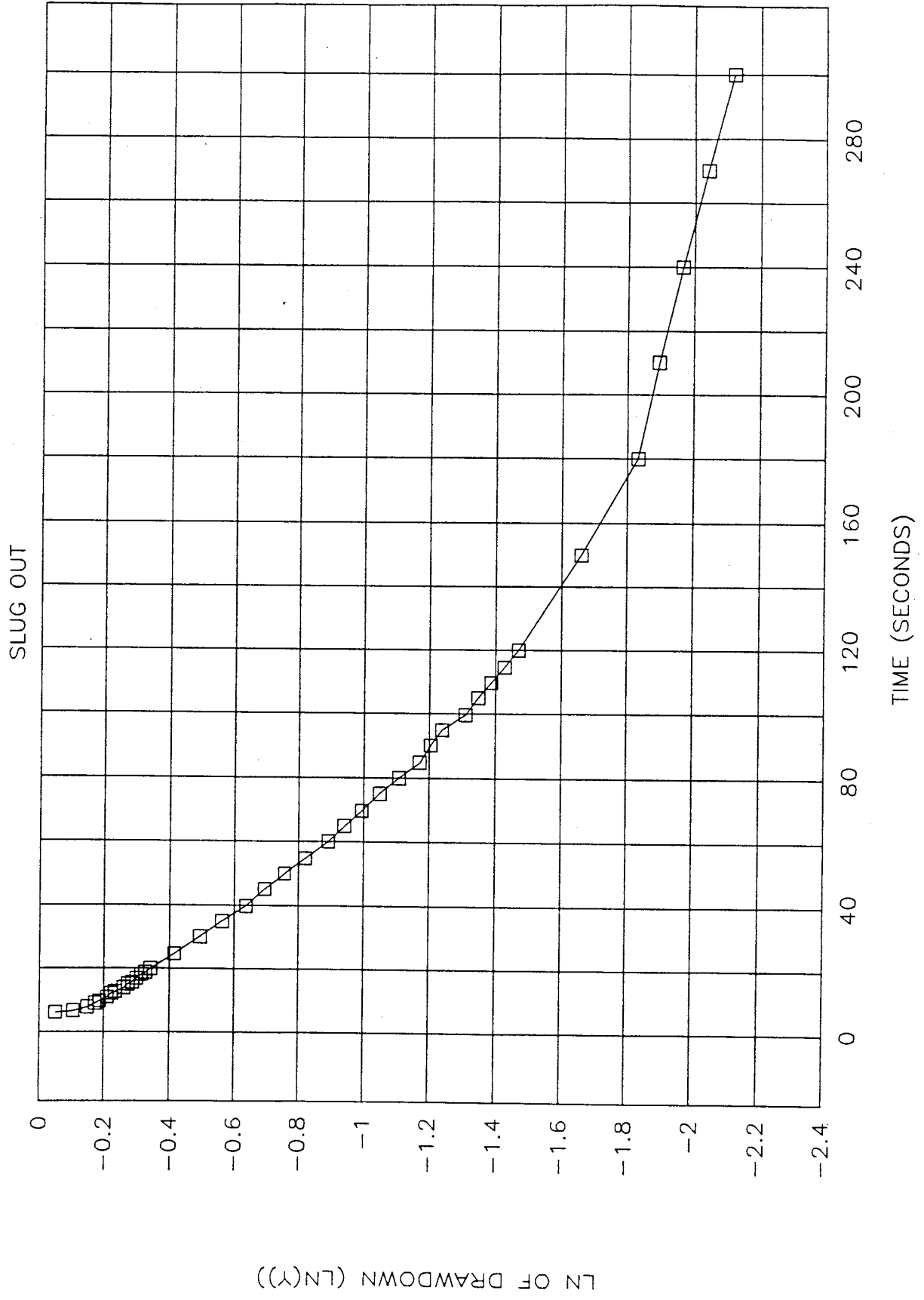
* PROJECT NAME : GORICK
 * PROJECT NO : 35232.00
 * WELL NO : WELL 12 D (SLUG OUT)
 * ANALYST : OSTROWSKI
 * DATE COLLECTED : 07/01/81
 * RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN LENGTH: (L) = 14.00 Ft.
 * MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.95 Ft.
 * STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 * DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 25.16 Ft.
 * EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 25.16 Ft.
 * INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 * SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 168.00
 ---LOG OF L/(r sub w) = 2.2253
 FOR PARTIALLY PENETRATING WELLS---
 A = 5.50
 B = 1.09
 FOR FULLY PENETRATING WELLS---
 C = 6.18
 ---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1926
 ERR = (MAX. OF 8.0) = ERR
 LN(Re/(r sub w)) = 4.36
 EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/7)(LN(Y0/Y1)) (SLOPE) = -1.32E-02 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 1.42E-05 ft/sec
 4.34E-04 cm/sec

Regression Output:
 Constant = -8.25E-02
 Std Err of Y Est = 0.0165
 R Squared = 0.9975
 No. of Observations = 24
 Degrees of Freedom = 22
 X Coefficient(s) = -1.32E-02
 Std Err of Coef. = 0.0001

REGRESSION FROM 10 TO 85 SECONDS.

RATE OF RECOVERY TEST: WELL 12 D



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN ***.
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

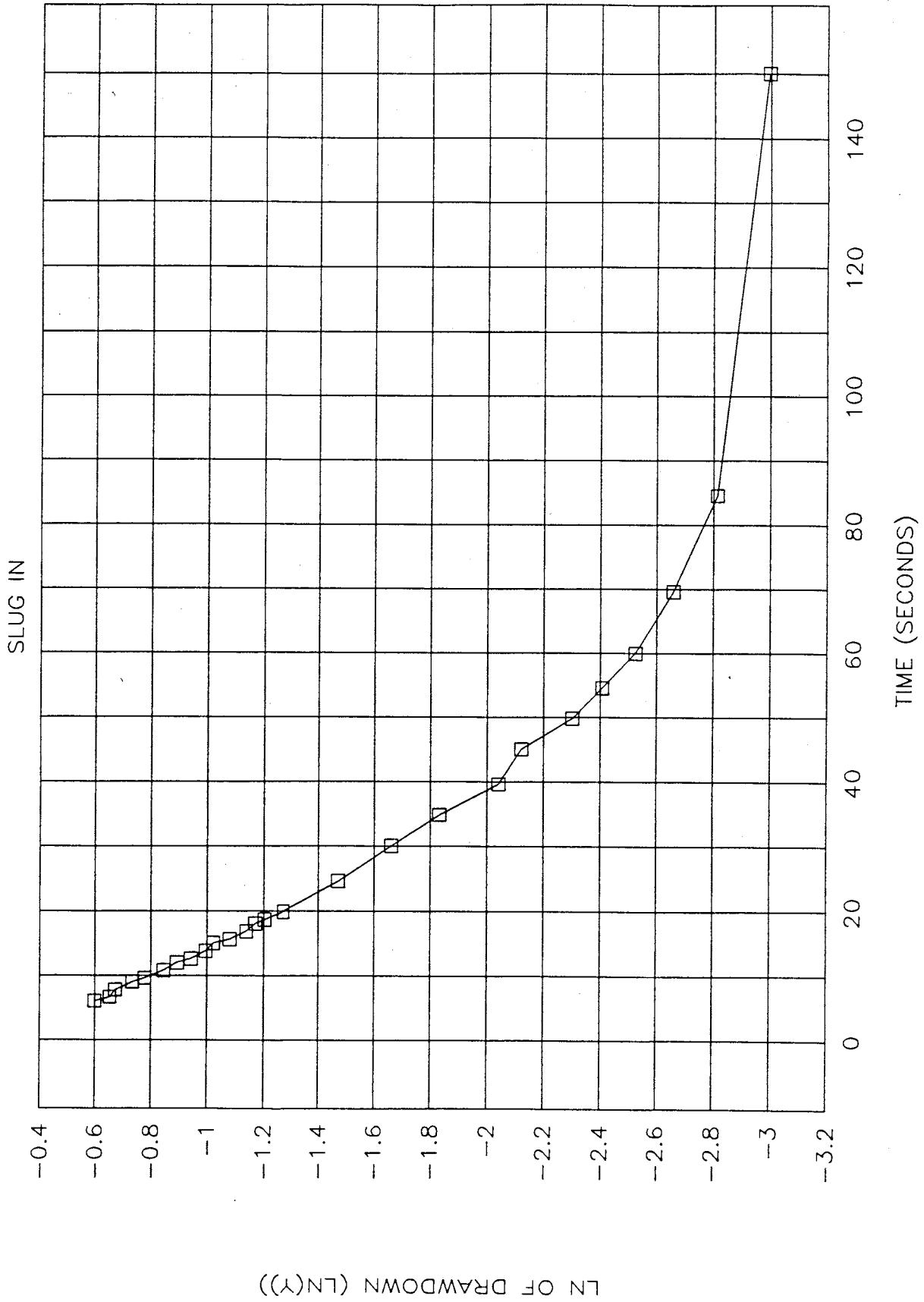
#	TIME min (X)	DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)	ERR
1	0.00	0.01	0.000	0		
2	0.10	0.56	0.550	6	-0.5978	
3	0.11	0.53	0.520	7	-0.6539	
4	0.13	0.52	0.510	8	-0.6733	
5	0.15	0.49	0.480	9	-0.7340	
6	0.16	0.47	0.460	10	-0.7765	
7	0.18	0.44	0.430	11	-0.8440	
8	0.20	0.42	0.410	12	-0.8916	
9	0.21	0.40	0.390	13	-0.9416	
10	0.23	0.38	0.370	14	-0.9943	
11	0.25	0.37	0.360	15	-1.0217	
12	0.26	0.35	0.340	16	-1.0788	
13	0.28	0.33	0.320	17	-1.1394	
14	0.30	0.32	0.310	18	-1.1712	
15	0.31	0.31	0.300	19	-1.2040	
16	0.33	0.29	0.280	20	-1.2730	
17	0.41	0.24	0.230	25	-1.4687	
18	0.50	0.20	0.190	30	-1.6607	
19	0.58	0.17	0.160	35	-1.8326	
20	0.66	0.14	0.130	40	-2.0402	
21	0.75	0.13	0.120	45	-2.1203	
22	0.83	0.11	0.100	50	-2.3026	
23	0.91	0.10	0.090	55	-2.4079	
24	1.00	0.09	0.080	60	-2.5257	
25	1.16	0.08	0.070	70	-2.6593	
26	1.41	0.07	0.060	85	-2.8134	
27	2.50	0.06	0.050	150	-2.9957	

 * PROJECT NAME : GORICK
 * PROJECT NO : 35232.00
 * WELL NO : WELL 14 I (SLUG IN)
 * ANALYST : OSTROWSKI
 * DATE COLLECTED : 07/02/91
 * RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 * MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.55 Ft.
 * STATIC WATER LEVEL: (SWL) = 0.01 Ft.
 * DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 28.81 Ft.
 * EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 40.00 Ft.
 * INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 * SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.73
 B = 0.85
 FOR FULLY PENETRATING WELLS---
 C = 4.98
 ---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1882
 CONST.2 = 4.8999 = (MAX. OF 6.0) = 4.8999
 LN(Re/(r sub w)) = 3.81
 EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)X(LN(Yo/Yt)) (SLOPE) = -3.94E-02 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 5.22E-05 ft/sec
 1.59E-03 cm/sec
 Regression Output:
 Constant -4.30E-01
 Std Err of Y Est 0.0515
 R Squared 0.9903
 No. of Observations 21
 Degrees of Freedom 19
 X Coefficient(e) -3.94E-02
 Std Err of Coef. 0.0009

REGRESSION FROM 6 TO 50 SECONDS.

RATE OF RECOVERY TEST: WELL 14 I



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "X".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	TIME (X)	DEPTH TO WATER FT.	DRAWDOWN (Y)	TIME sec (X)	LN (Y)	ERR
1	0.00	-0.02	0.000	0		
2	0.03	-0.78	0.760	2	-0.2744	
3	0.05	-0.76	0.740	3	-0.3011	
4	0.08	-0.73	0.710	5	-0.3425	
5	0.10	-0.69	0.670	6	-0.4005	
6	0.11	-0.68	0.640	7	-0.4463	
7	0.13	-0.63	0.610	8	-0.4943	
8	0.15	-0.60	0.580	9	-0.5447	
9	0.18	-0.58	0.560	10	-0.5798	
10	0.18	-0.56	0.540	11	-0.6162	
11	0.20	-0.54	0.520	12	-0.6539	
12	0.21	-0.52	0.500	13	-0.6931	
13	0.23	-0.50	0.480	14	-0.7340	
14	0.25	-0.48	0.460	15	-0.7765	
15	0.26	-0.46	0.440	16	-0.8210	
16	0.28	-0.45	0.430	17	-0.8440	
17	0.30	-0.44	0.420	18	-0.8675	
18	0.31	-0.42	0.400	19	-0.9163	
19	0.33	-0.41	0.390	20	-0.9416	
20	0.41	-0.35	0.330	25	-1.1087	
21	0.50	-0.30	0.280	30	-1.2730	
22	0.58	-0.26	0.240	35	-1.4271	
23	0.66	-0.22	0.200	40	-1.6094	
24	0.75	-0.19	0.170	45	-1.7720	
25	0.83	-0.17	0.150	50	-1.8971	
26	0.91	-0.15	0.130	55	-2.0402	
27	1.00	-0.13	0.110	60	-2.2073	
28	1.08	-0.11	0.090	65	-2.4079	
29	1.16	-0.10	0.080	70	-2.5257	
30	1.25	-0.09	0.070	75	-2.6593	
31	1.33	-0.08	0.060	80	-2.8134	
32	1.41	-0.07	0.050	85	-2.9957	
33	1.58	-0.06	0.040	95	-3.2189	
34	1.83	-0.05	0.030	110	-3.5066	
35	2.50	-0.04	0.020	150	-3.9120	
36	4.00	-0.03	0.010	240	-4.6052	
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* PROJECT NAME : GORICK
 * PROJECT NO : 35232.00
 * WELL NO : WELL 141 (SLUG OUT)
 * ANALYST : OSTROWSKI
 * DATE COLLECTED : 07/02/91
 * RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 * MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.76 Ft.
 * STATIC WATER LEVEL: (SWL) = -0.02 Ft.
 * DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (h) = 28.81 Ft.
 * EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 40.00 Ft.
 * INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 * SANDPACK'S SPECIFIC YIELD (SY) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.73
 B = 0.85
 C = 4.98
 FOR FULLY PENETRATING WELLS---

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1882
 CONST.2 = 4.8999 =-(MAX. OF 6.0)= 4.8999
 LN(Re/(r sub w)) = 3.81

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Y0/Y1)) (SLOPE) = -3.25E-02 sec⁻¹

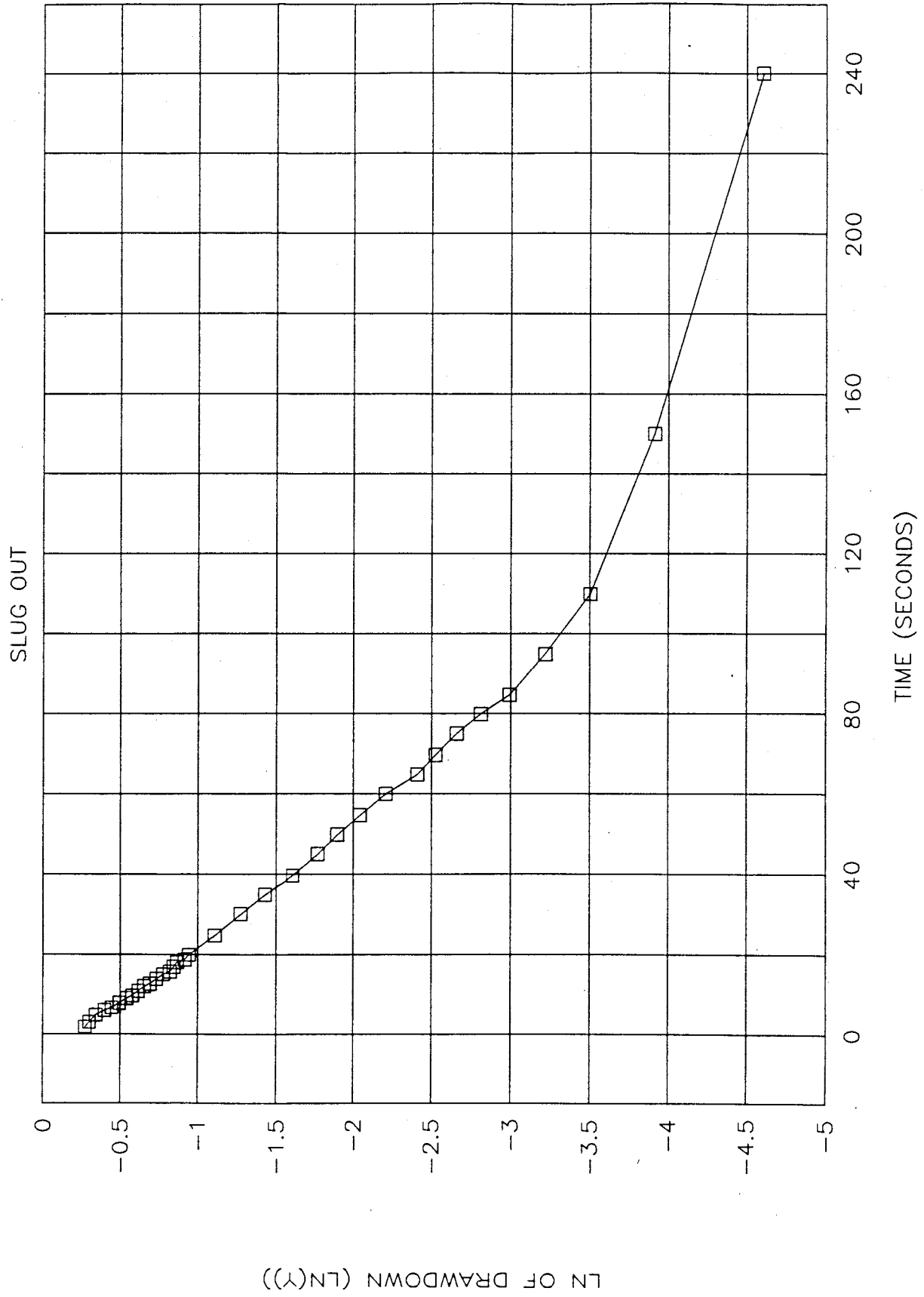
HYDRAULIC CONDUCTIVITY (K) = 4.30E-05 ft/sec
 1.31E-03 cm/sec

Regression Output:
 Constant = -2.72E-01
 Std Err of Y Est = 0.0358
 R Squared = 0.9979
 No. of Observations = 28
 Degrees of Freedom = 26

X Coefficient(s) = -3.25E-02
 Std Err of Coef. = 0.0003

REGRESSION FROM 5 TO 80 SECONDS.

RATE OF RECOVERY TEST: WELL 14 I



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS; FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN ***.
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X)	LN (Y)	ERR
1	0.000	0.01	0.000	0.0		
2	0.020	-0.37	0.380	1.2	-0.9676	
3	0.027	-0.30	0.310	1.6	-1.1712	
4	0.030	-0.26	0.270	1.8	-1.3093	
5	0.050	-0.11	0.120	3.0	-2.1203	
6	0.060	-0.04	0.050	3.6	-2.9957	
7	0.080	-0.01	0.020	4.8	-3.9120	
8	0.100	0.00	0.010	6.0	-4.6052	
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CHECKED BY: *AS*

* PROJECT NAME: GORICK
 * PROJECT NO: 35232
 * WELL NO: WELL P-14 (SLUG OUT)
 * ANALYST: OSTROWSKI
 * DATE COLLECTED: 07/02/81
 * RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 * EFFECTIVE SCREEN LENGTH: (L) = 4.17 Ft.
 * MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.38 Ft.
 * STATIC WATER LEVEL: (SWL) = 0.01 Ft.
 * DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 4.17 Ft.
 * EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 50.00 Ft.
 * INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 * SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF L/(r sub w) = 50.04
 ---LOG OF L/(r sub w) = 1.6993

FOR PARTIALLY PENETRATING WELLS---

A = 3.09
 B = 0.44
 C = 2.83

FOR FULLY PENETRATING WELLS---

---EVALUATION OF LN(Re/(r sub w)):

CONST.1 = 0.2811
 CONST.2 = 6.3098 -(MAX. OF 6.0) = 6.0000
 LN(Re/(r sub w)) = 2.53

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833

(1/T)X(LN(Y0/Yt)) (SLOPE) = -8.00E-01 sec^-1

HYDRAULIC CONDUCTIVITY (K) = 1.68E-03 ft/sec
 5.13E-02 cm/sec

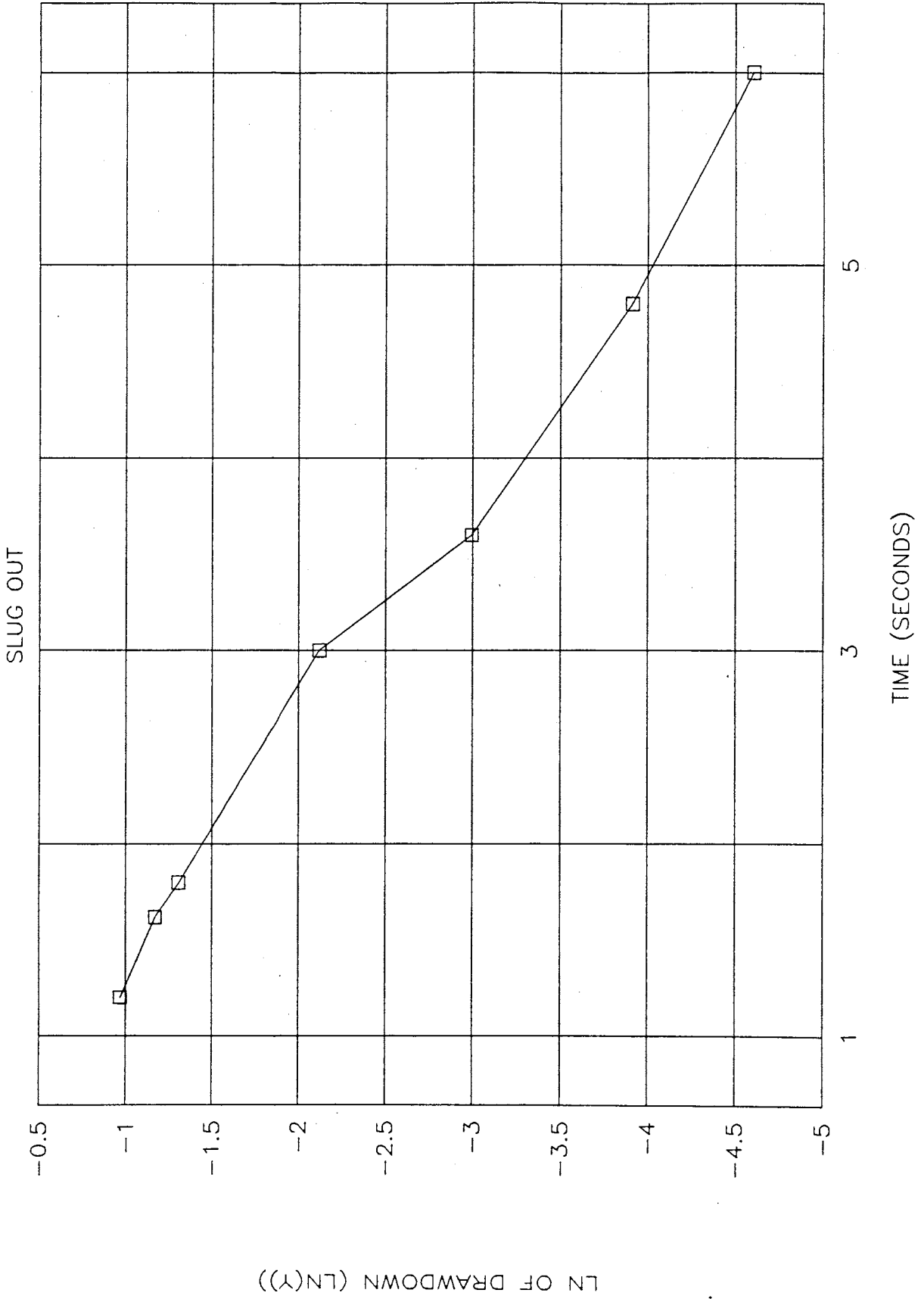
Regression Output:

Constant 7.77E-02
 Std Err of Y Est 0.1592
 R Squared 0.9897
 No. of Observations 7
 Degrees of Freedom 5

X Coefficient(e) -8.00E-01
 Std Err of Coef. 0.0365

REGRESSION FROM 1.2 TO 6.0 SECONDS.

RATE OF RECOVERY TEST: WELL P-14



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
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 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.03	0.61	0.610	1.8	-0.4943
2	0.05	0.38	0.380	3.0	-0.9676
3	0.06	0.22	0.220	3.6	-1.5141
4	0.18	0.11	0.110	10.8	-2.2073
5	0.20	0.07	0.070	12.0	-2.6593
6	0.21	0.01	0.010	12.6	-4.6052
7	0.28	0.00	0.000	16.8	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :33(SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 15.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.61 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 64.20 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 84.20 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 180.00
 ---LOG OF L/(r sub w) = 2.2553

FOR PARTIALLY PENETRATING WELLS--
 A = 5.67
 B = 1.14
 C = 6.44

FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1655
 CONST.2 = 5.4806 = (MAX. OF 6.0) = 5.4806
 LN(Re/(r sub w)) = 4.32

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (L/T)(LN(Yo/Yt)) (SLOPE) = -1.22E-01 sec⁻¹

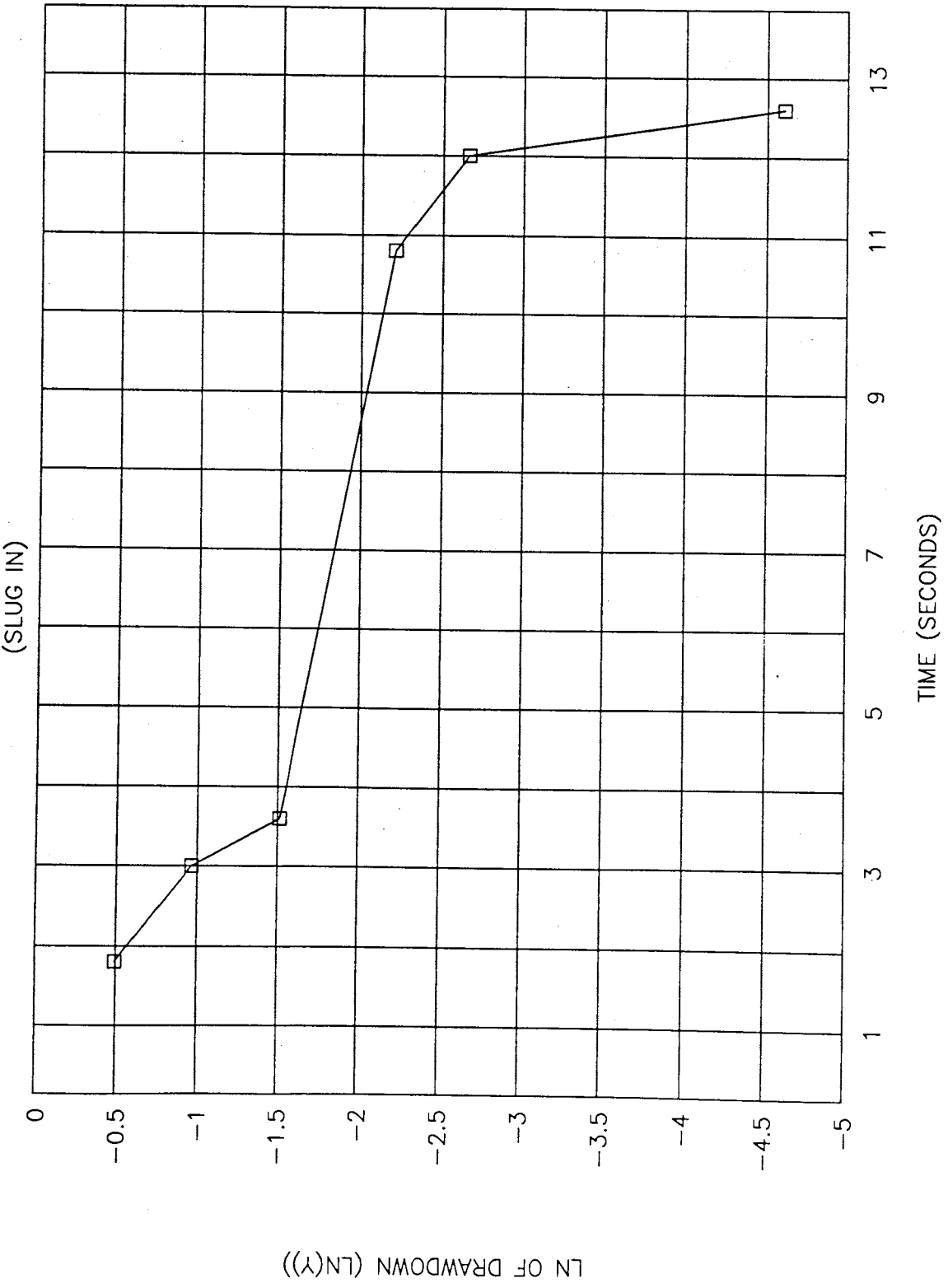
HYDRAULIC CONDUCTIVITY (K) = 1.22E-04 ft/sec
 3.73E-03 cm/sec

Regression Output:

Constant -1.05E+00
 Std Err of Y Est 0.2177
 R Squared 0.9288
 No. of Observations 3
 Degrees of Freedom 1

X Coefficient(s) -1.22E-01
 Std Err of Coef. 0.0339

RATE OF RECOVERY TEST: WELL 33



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "X".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.18	-0.14	0.140	10.8	-1.9661
2	0.21	-0.09	0.090	12.6	-2.4079
3	0.23	-0.03	0.030	13.8	-3.5066
4	0.25	0.00	0.000	15.0	ERR

*PROJECT NAME :GORICK RI/FIS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :33(SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 15.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.14 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 64.20 Ft. 84.20 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 0 IF NO?
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 180.00
 ---LOG OF L/(r sub w) = 2.2553
 FOR PARTIALLY PENETRATING WELLS---
 A = 5.67
 B = 1.14
 C = 6.44
 FOR FULLY PENETRATING WELLS---

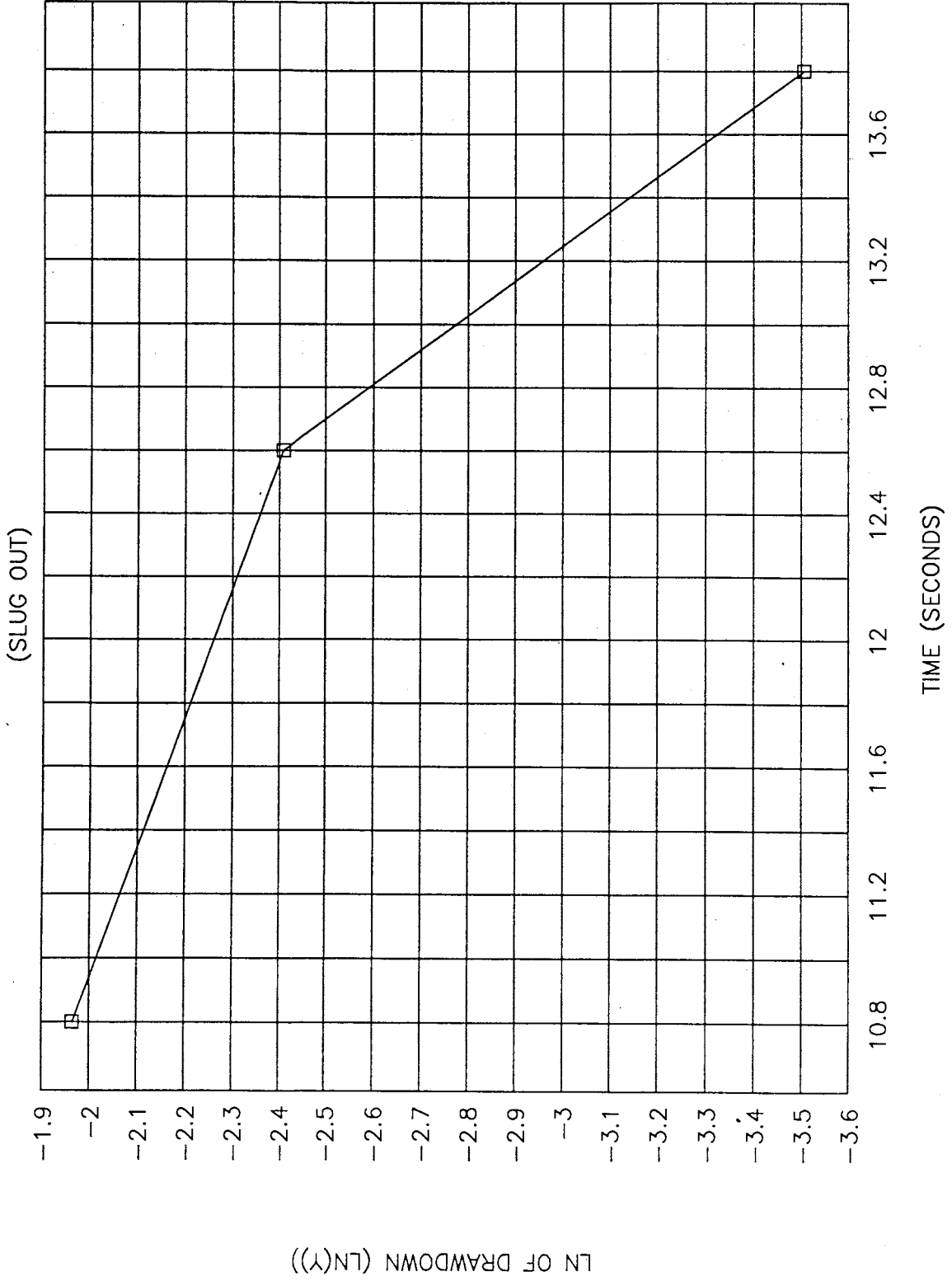
---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1655
 CONST.2 = 5.4806 = (MAX. OF 6.0) = 5.4806
 LN(Re/(r sub w)) = 4.32

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -4.92E-01 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 4.92E-04 ft/sec
 1.50E-02 cm/sec

Regression Output:
 Constant 3.48E+00
 Std Err of Y Est 0.3913
 R Squared 0.8783
 No. of Observations 3
 Degrees of Freedom 1
 X Coefficient(s) -4.92E-01
 Std Err of Coef. 0.1832

RATE OF RECOVERY TEST: WELL 33



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

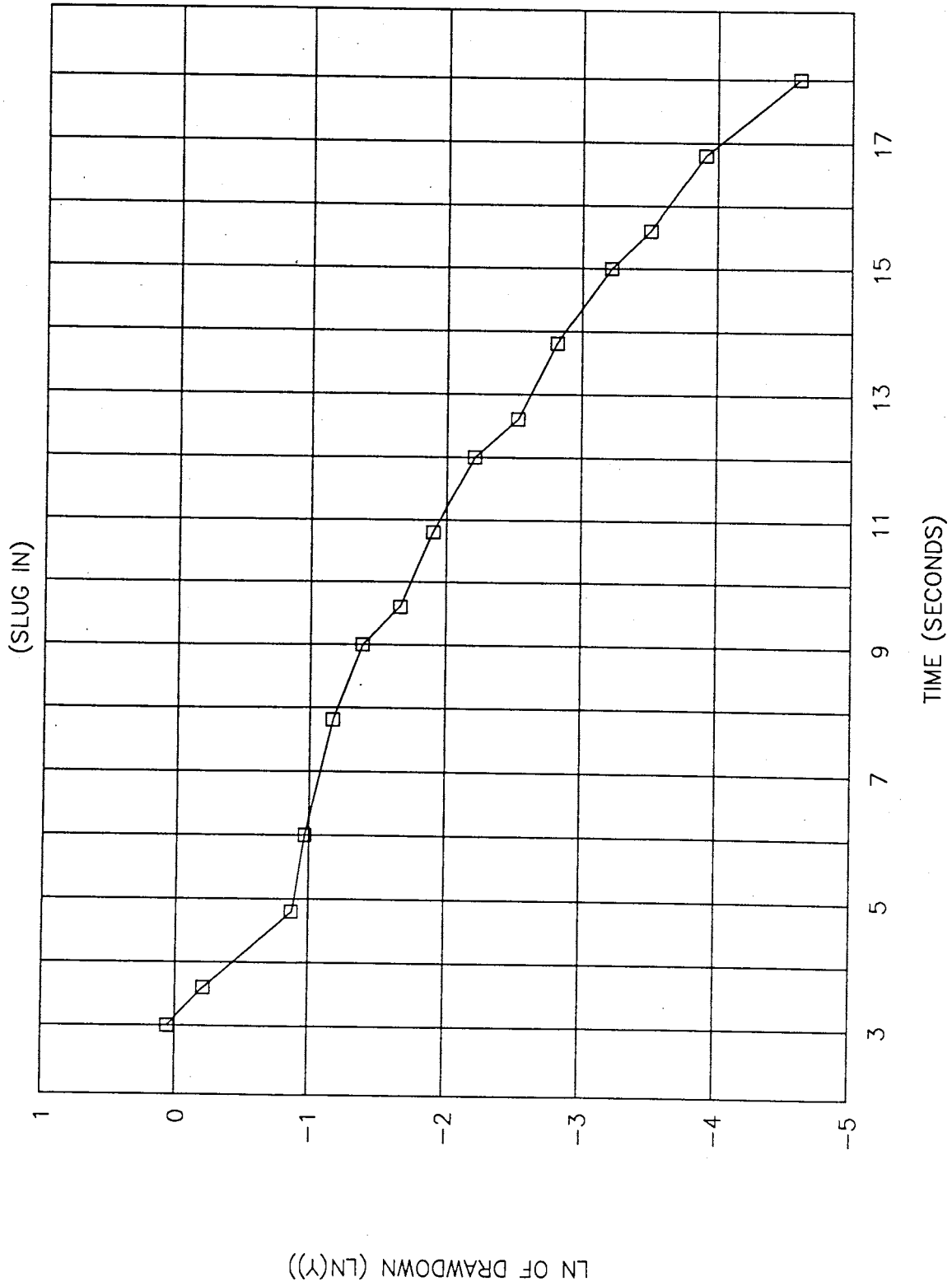
#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.05	1.07	1.060	3.0	0.0583
2	0.06	0.82	0.910	3.6	-0.2107
3	0.08	0.43	0.420	4.8	-0.8675
4	0.10	0.39	0.380	6.0	-0.9676
5	0.13	0.32	0.310	7.8	-1.1712
6	0.15	0.26	0.250	9.0	-1.3863
7	0.16	0.20	0.190	9.6	-1.6607
8	0.18	0.16	0.150	10.8	-1.8971
9	0.20	0.12	0.110	12.0	-2.2073
10	0.21	0.09	0.080	12.6	-2.5257
11	0.23	0.07	0.060	13.8	-2.8134
12	0.25	0.05	0.040	15.0	-3.2189
13	0.26	0.04	0.030	15.6	-3.5066
14	0.28	0.03	0.020	16.8	-3.9120
15	0.30	0.02	0.010	18.0	-4.6052
16	0.31	0.01	0.000	18.6	ERR

*PROJECT NAME :GORICK RI/FIS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :34(SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 15.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 1.06 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.01 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 64.11 Ft. 84.11 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 0
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 180.00
 ---LDG OF L/(r sub w) = 2.2553
 FOR PARTIALLY PENETRATING WELLS--
 A = 5.67
 B = 1.14
 C = 6.44
 FOR FULLY PENETRATING WELLS--
 ---EVALUATION OF LN(Re/(r sub w)):
 CONST. 1 = 0.1655
 CONST. 2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 LN(Re/(r sub w)) = 4.32

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -3.17E-01 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 3.17E-04 ft/sec
 9.65E-03 cm/sec
 Regression Output:
 Constant 1.49E+00
 Std Err of Y Est 0.0765
 R Squared 0.9931
 No. of Observations 9
 Degrees of Freedom 7
 X Coefficient(s) -3.17E-01
 Std Err of Coef. 0.0100

RATE OF RECOVERY TEST: WELL 34



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.05	-1.21	1.190	3.0	0.1740
2	0.06	-0.93	0.910	3.6	-0.0943
3	0.08	-0.69	0.670	4.8	-0.4005
4	0.10	-0.52	0.500	6.0	-0.6931
5	0.11	-0.41	0.390	6.6	-0.9416
6	0.13	-0.33	0.310	7.8	-1.1712
7	0.15	-0.27	0.250	9.0	-1.3863
8	0.16	-0.21	0.190	9.6	-1.6607
9	0.18	-0.16	0.140	10.8	-1.9661
10	0.20	-0.12	0.100	12.0	-2.3026
11	0.21	-0.09	0.070	12.6	-2.6593
12	0.23	-0.07	0.050	13.8	-2.9957
13	0.25	-0.05	0.030	15.0	-3.5066
14	0.26	-0.04	0.020	15.6	-3.9120
15	0.28	-0.03	0.010	16.8	-4.6052
16	0.30	-0.02	0.000	18.0	ERR

*PROJECT NAME	:GORICK RI/FS INVESTIGATION
*PROJECT NO	:35232.00
*WELL NO	:34(SLUG OUT)
*ANALYST	:SHELDON
*DATE COLLECTED	:12/7/90
*RISER PIPE (ID):	(2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
*EFFECTIVE SCREEN DIAMETER:(2 r sub w) =	2.0 in. = 0.0833 (radius in ft.)
*EFFECTIVE SCREEN LENGTH: (L) =	15.00 Ft.
*MAX DRAWDOWN (IN SUBSET): (Ymax) =	1.19 Ft.
*STATIC WATER LEVEL: (SWL) =	-0.02 Ft.
*DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) =	64.11 Ft.
*EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) =	84.11 Ft.
*INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	0
*SANDPACK'S SPECIFIC YIELD (Sy) =	0.15

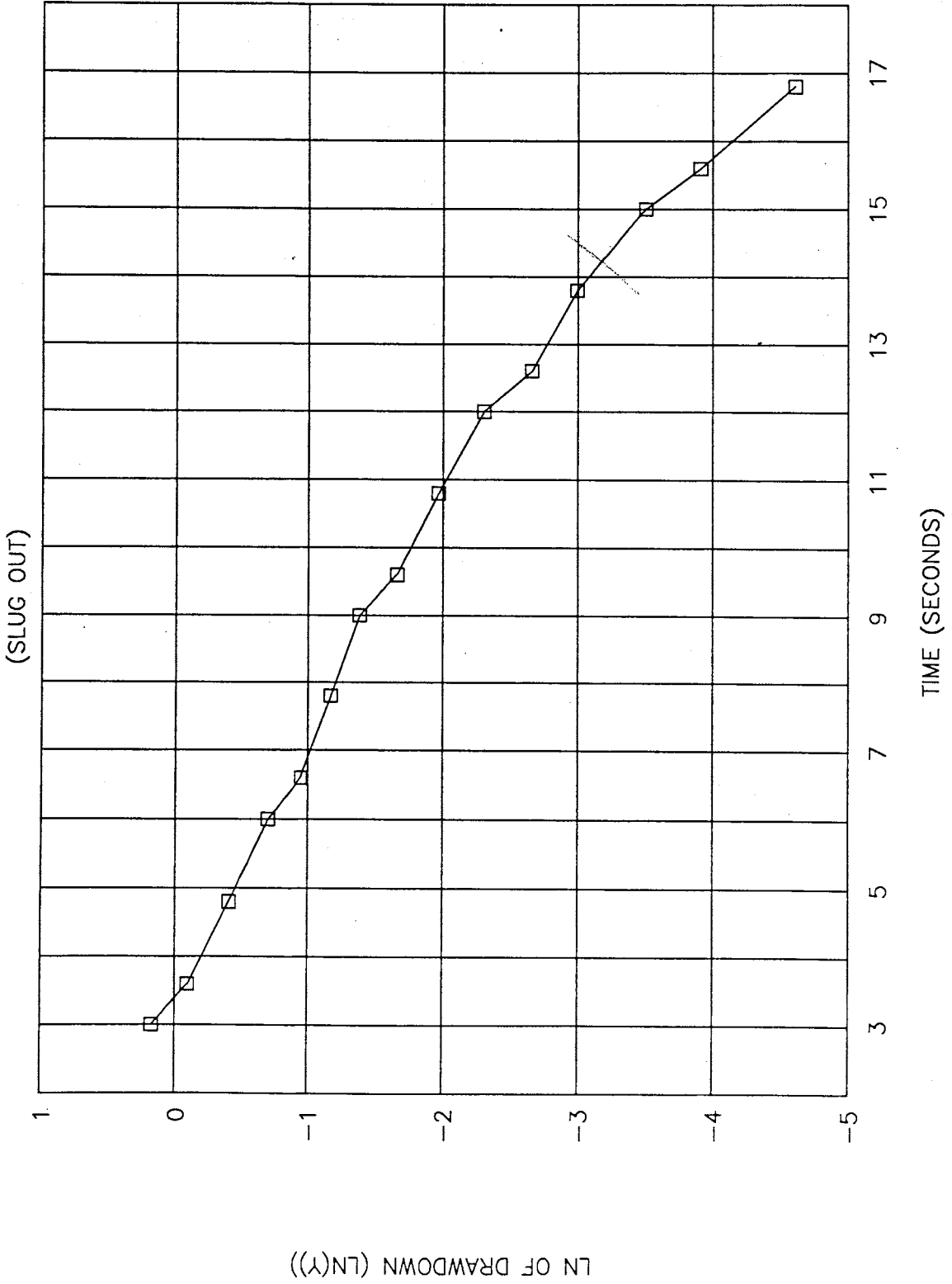
BOUWER AND RICE CURVE COEFFICIENTS:	
RATIO OF L/(r sub w) =	180.00
---LOG OF L/(r sub w) =	2.2553
FOR PARTIALLY PENETRATING WELLS--	
A =	5.67
B =	1.14
C =	6.44
FOR FULLY PENETRATING WELLS--	
---EVALUATION OF LN(Re/(r sub w)):	
CONST.1 =	0.1655
CONST.2 =	5.4806
LN(Re/(r sub w) =	(MAX. OF 6.0) = 5.4806
	4.32

EFFECTIVE r sub c (for sandpack dewatering) =	0.0833
(1/T)(LN(Yo/Yt)) (SLOPE) =	-2.79E-01 sec ⁻¹

HYDRAULIC CONDUCTIVITY (K) =	2.79E-04 ft/sec
	8.50E-03 cm/sec

Regression Output:	
Constant	9.72E-01
Std Err of Y Est	0.0913
R Squared	0.9914
No. of Observations	11
Degrees of Freedom	9
X Coefficient(s)	-2.79E-01
Std Err of Coef.	0.0087

RATE OF RECOVERY TEST: WELL 34



BOUMER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.06	0.87	0.950	3.6	-0.0513
2	0.08	0.71	0.790	4.8	-0.2357
3	0.10	0.53	0.610	6.0	-0.4943
4	0.11	0.47	0.550	6.6	-0.5978
5	0.13	0.41	0.490	7.8	-0.7133
6	0.15	0.36	0.440	9.0	-0.8210
7	0.16	0.31	0.390	9.6	-0.9416
8	0.18	0.27	0.350	10.8	-1.0498
9	0.20	0.23	0.310	12.0	-1.1712
10	0.21	0.20	0.280	12.6	-1.2730
11	0.23	0.17	0.250	13.8	-1.3863
12	0.25	0.14	0.220	15.0	-1.5141
13	0.26	0.12	0.200	15.6	-1.6094
14	0.28	0.10	0.180	16.8	-1.7148
15	0.30	0.08	0.160	18.0	-1.8326
16	0.31	0.07	0.150	18.6	-1.8971
17	0.33	0.06	0.140	19.8	-1.9661
18	0.41	0.00	0.080	24.6	-2.5257
19	0.50	-0.01	0.070	30.0	-2.6593
20	0.58	-0.02	0.060	34.8	-2.8134
21	0.66	-0.03	0.050	39.6	-2.9957
22	0.75	-0.04	0.040	45.0	-3.2189
23	0.91	-0.05	0.030	54.6	-3.5066
24	1.16	-0.06	0.020	69.6	-3.9120
25	1.50	-0.07	0.010	90.0	-4.6052
26	1.83	-0.08	0.000	109.8	ERR

*PROJECT NAME	:GORICK RI/FS INVESTIGATION
*PROJECT NO	:35232.00
*WELL NO	:35(SLUG IN)
*ANALYST	:SHELDON
*DATE COLLECTED	:12/7/90
*RISER PIPE (ID):	(2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
*EFFECTIVE SCREEN DIAMETER:(2 r sub w) =	2.0 in. = 0.0833 (radius in ft.)
*EFFECTIVE SCREEN LENGTH: (L)	= 10.00 Ft.
*MAX DRAWDOWN (IN SUBSET): (Ymax)	= 0.95 Ft.
*STATIC WATER LEVEL: (SWL)	= -0.08 Ft.
*DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H)	= 17.74 Ft.
*EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D)	= 37.74 Ft.
*INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)?	0
*SANDPACK'S SPECIFIC YIELD (Sy)	= 0.15

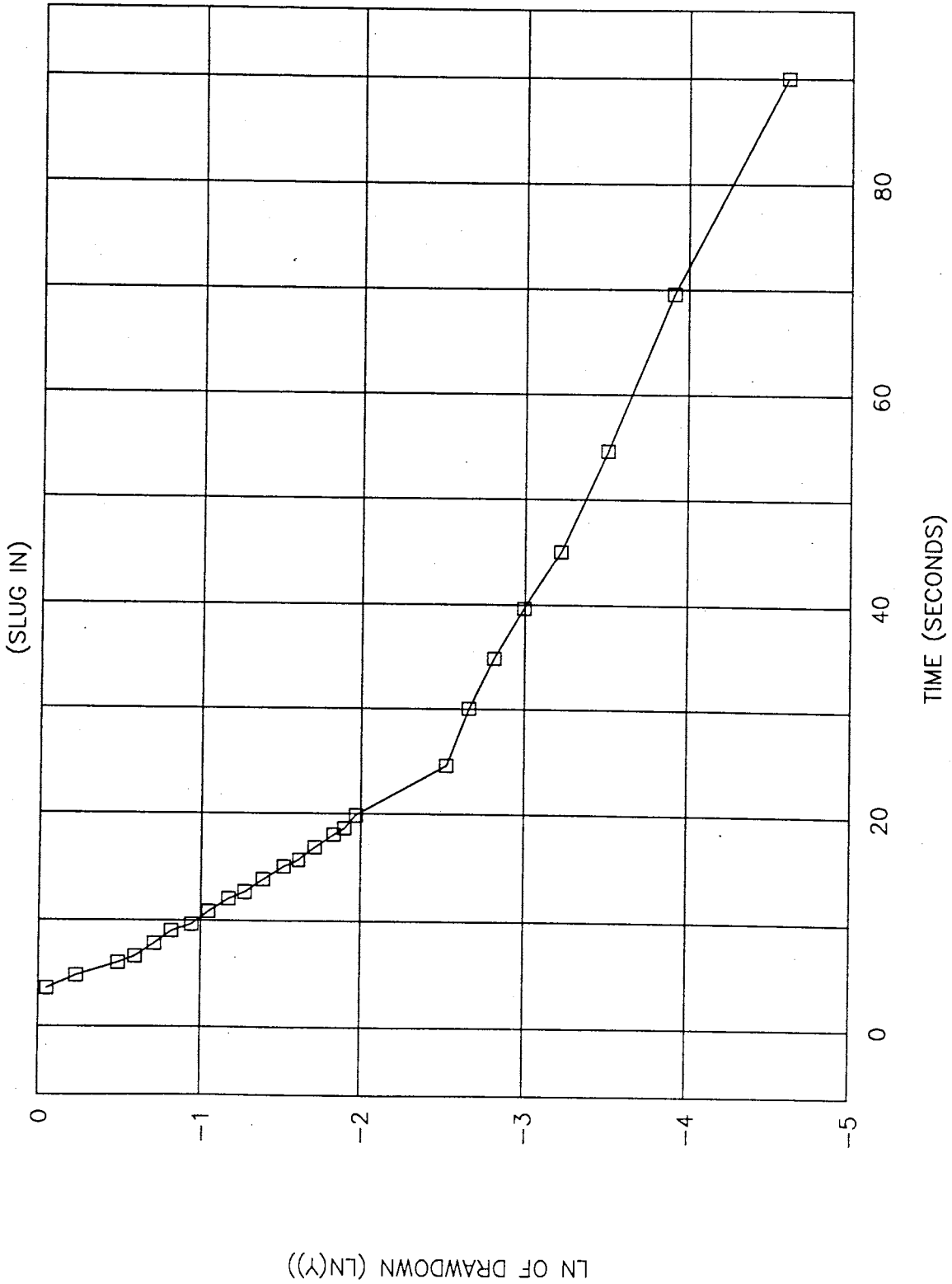
BOUMER AND RICE CURVE COEFFICIENTS:	
RATIO OF L/(r sub w) =	120.00
---LOG OF L/(r sub w) =	2.0792
FOR PARTIALLY PENETRATING WELLS---	
A =	4.73
B =	0.85
C =	4.98
FOR FULLY PENETRATING WELLS---	
---EVALUATION OF LN(Re/(r sub w)):	
CONST.1 =	0.2052
CONST.2 =	5.4806
LN(Re/(r sub w)) =	=(MAX. OF 6.0) = 5.4806
	3.53

EFFECTIVE r sub c (for sandpack dewatering) =	0.0833
(1/T)(LN(Yo/Yt)) (SLOPE) =	-1.08E-01 sec ⁻¹

HYDRAULIC CONDUCTIVITY (K) =	1.33E-04 ft/sec
	4.04E-03 cm/sec

Regression Output:	
Constant	1.21E-01
Std Err of Y Est	0.0263
R Squared	0.9980
No. of Observations	16
Degrees of Freedom	14
X Coefficient(s)	-1.08E-01
Std Err of Coef.	0.0013

RATE OF RECOVERY TEST: WELL 35



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.05	-0.95	0.940	3.0	-0.0619
2	0.06	-0.81	0.800	3.6	-0.2231
3	0.08	-0.71	0.700	4.8	-0.3567
4	0.10	-0.62	0.610	6.0	-0.4943
5	0.11	-0.54	0.530	6.6	-0.6349
6	0.13	-0.48	0.470	7.8	-0.7550
7	0.15	-0.42	0.410	9.0	-0.8916
8	0.16	-0.37	0.360	9.6	-1.0217
9	0.18	-0.33	0.320	10.8	-1.1394
10	0.20	-0.29	0.280	12.0	-1.2730
11	0.21	-0.25	0.240	12.6	-1.4271
12	0.23	-0.22	0.210	13.8	-1.5606
13	0.25	-0.20	0.190	15.0	-1.6607
14	0.26	-0.17	0.160	15.6	-1.8326
15	0.28	-0.15	0.140	16.8	-1.9661
16	0.30	-0.14	0.130	18.0	-2.0402
17	0.31	-0.12	0.110	18.6	-2.2073
18	0.33	-0.11	0.100	19.8	-2.3026
19	0.41	-0.06	0.050	24.6	-2.9957
20	0.50	-0.03	0.020	30.0	-3.9120
21	0.58	-0.02	0.010	34.8	-4.6052
22	0.66	-0.01	0.000	39.6	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :35(SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.94 Ft.
 *STATIC WATER LEVEL: (SWL) = -0.01 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 17.74 Ft. 37.74 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 0
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.73
 B = 0.85
 C = 4.98
 FOR FULLY PENETRATING WELLS---

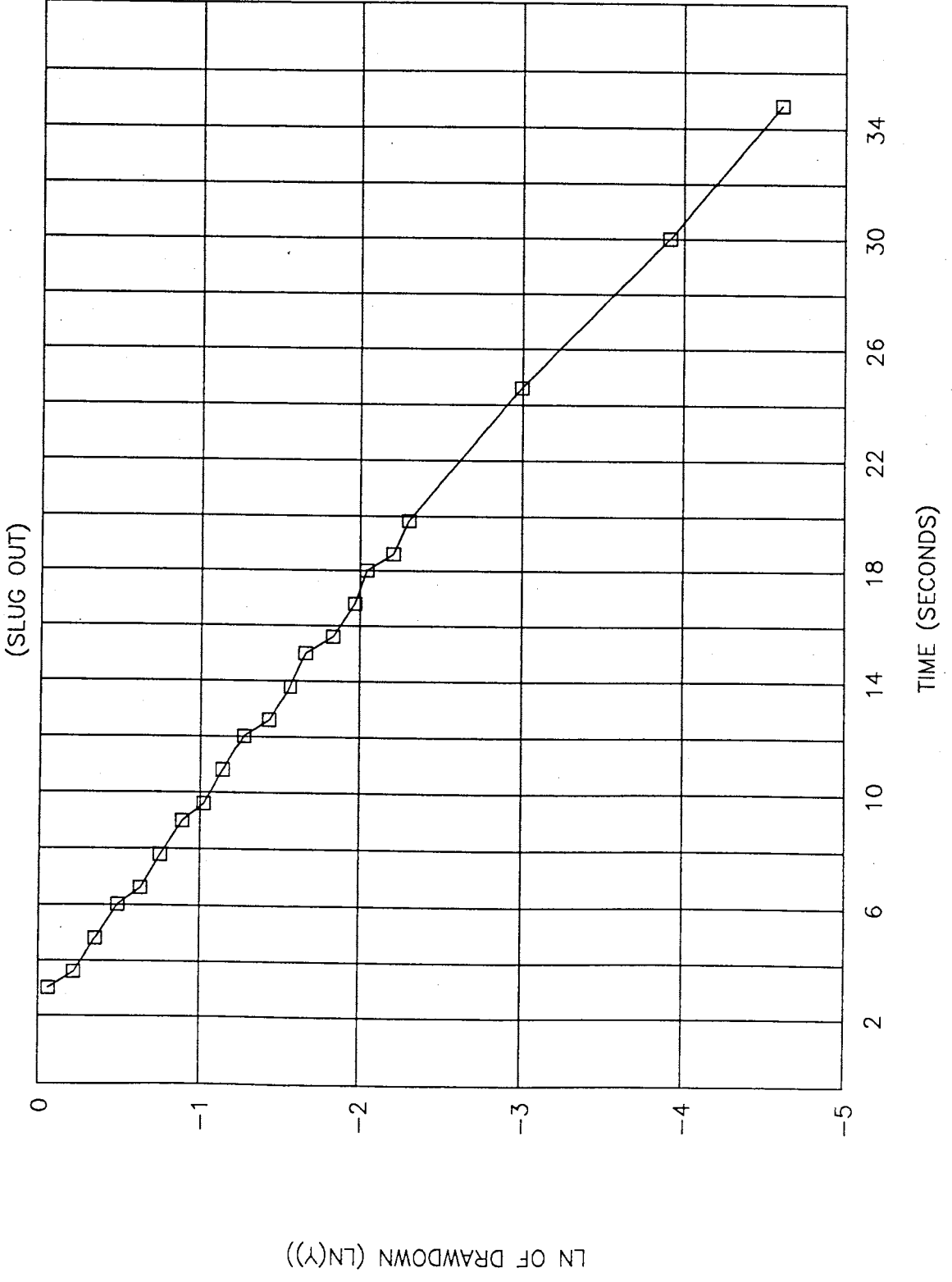
---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.2052
 CONST.2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 LN(Re/(r sub w)) = 3.53

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -1.39E-01 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 1.70E-04 ft/sec
 5.19E-03 cm/sec

Regression Output:
 Constant 3.49E-01
 Std Err of Y Est 0.0639
 R Squared 0.9971
 No. of Observations 20
 Degrees of Freedom 18
 X Coefficient(s) -1.39E-01
 Std Err of Coef. 0.0018

RATE OF RECOVERY TEST:WELL 35



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.05	0.38	0.380	3.0	-0.9676
2	0.06	0.21	0.210	3.6	-1.5606
3	0.13	0.06	0.060	7.8	-2.8134
4	0.20	0.04	0.040	12.0	-3.2189
5	0.21	0.03	0.030	12.6	-3.5066
6	0.23	0.02	0.020	13.8	-3.9120
7	0.25	0.00	0.000	15.0	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :GS-15A(SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 1.5 in. = 0.0625 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 1.5 in. = 0.0625 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 5.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.38 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 15.88 Ft. 35.88 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 0
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

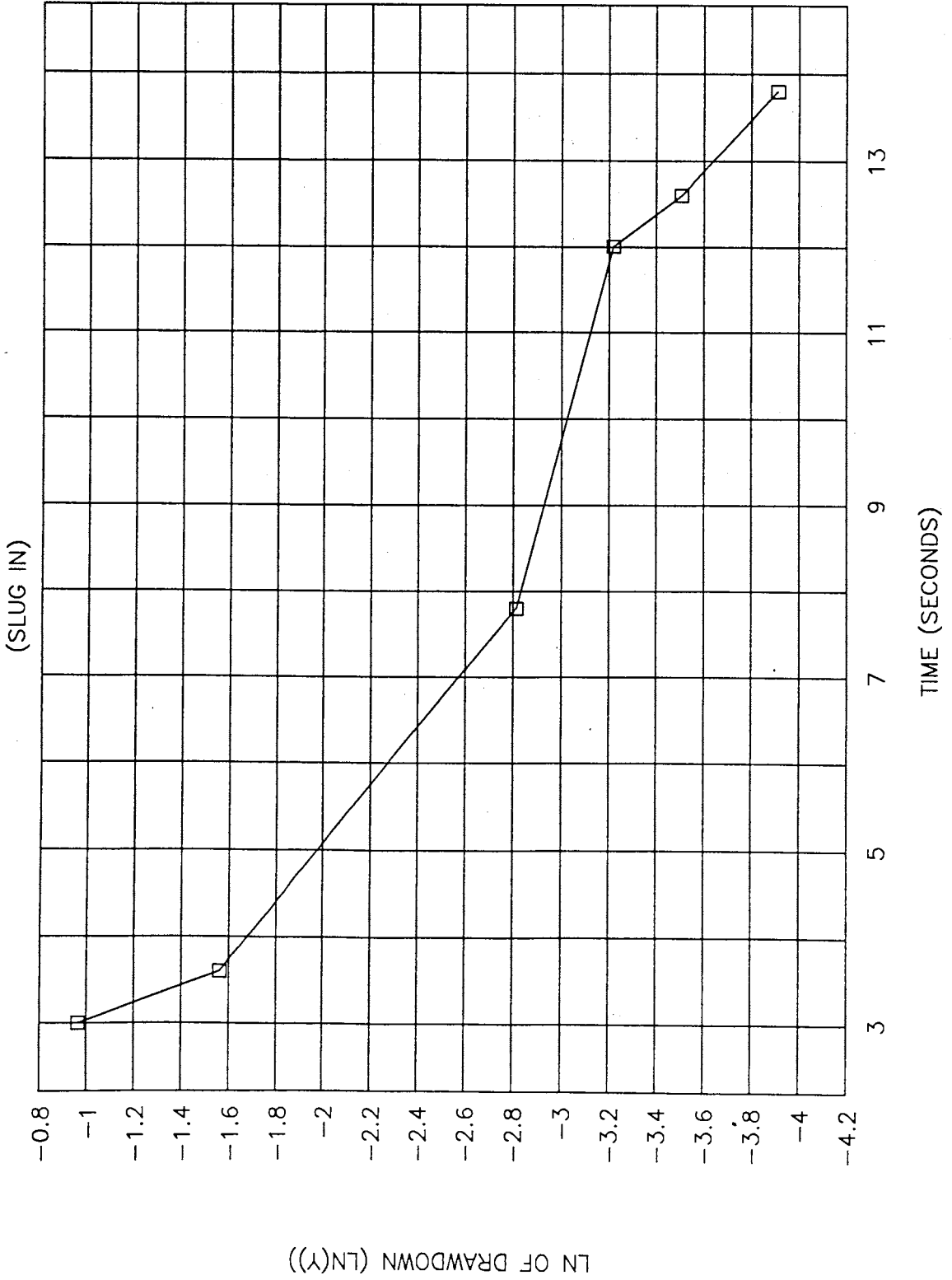
BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 80.00
 ---LOG OF L/(r sub w) = 1.9031
 FOR PARTIALLY PENETRATING WELLS--
 A = 3.89
 B = 0.63
 C = 3.73
 FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):
 CONST. 1 = 0.1986
 CONST. 2 = 5.7683 = (MAX. OF 6.0) = 5.7683
 LN(Re/(r sub w)) = 3.42

EFFECTIVE r sub c (for sandpack dewatering) = 0.0625
 (1/T)(LN(Yo/Yt)) (SLOPE) = -2.09E-01 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 2.79E-04 ft/sec
 8.51E-03 cm/sec
 Regression Output:
 Constant -9.20E-01
 Std Err of Y Est 0.2155
 R Squared -0.9570
 No. of Observations 5
 Degrees of Freedom 3
 X Coefficient(s) -2.09E-01
 Std Err of Coef. D.0256

RATE OF RECOVERY TEST: WELL GS-15A



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.10	-0.05	0.050	6.0	-2.9957
2	0.13	-0.03	0.030	7.8	-3.5066
3	0.15	-0.02	0.020	9.0	-3.9120
4	0.26	-0.01	0.010	15.6	-4.6052
5	0.28	0.00	0.000	16.8	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :GS-15A(SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 1.5 in. = 0.0625 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 1.5 in. = 0.0625 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 5.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.05 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 15.88 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 35.88 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

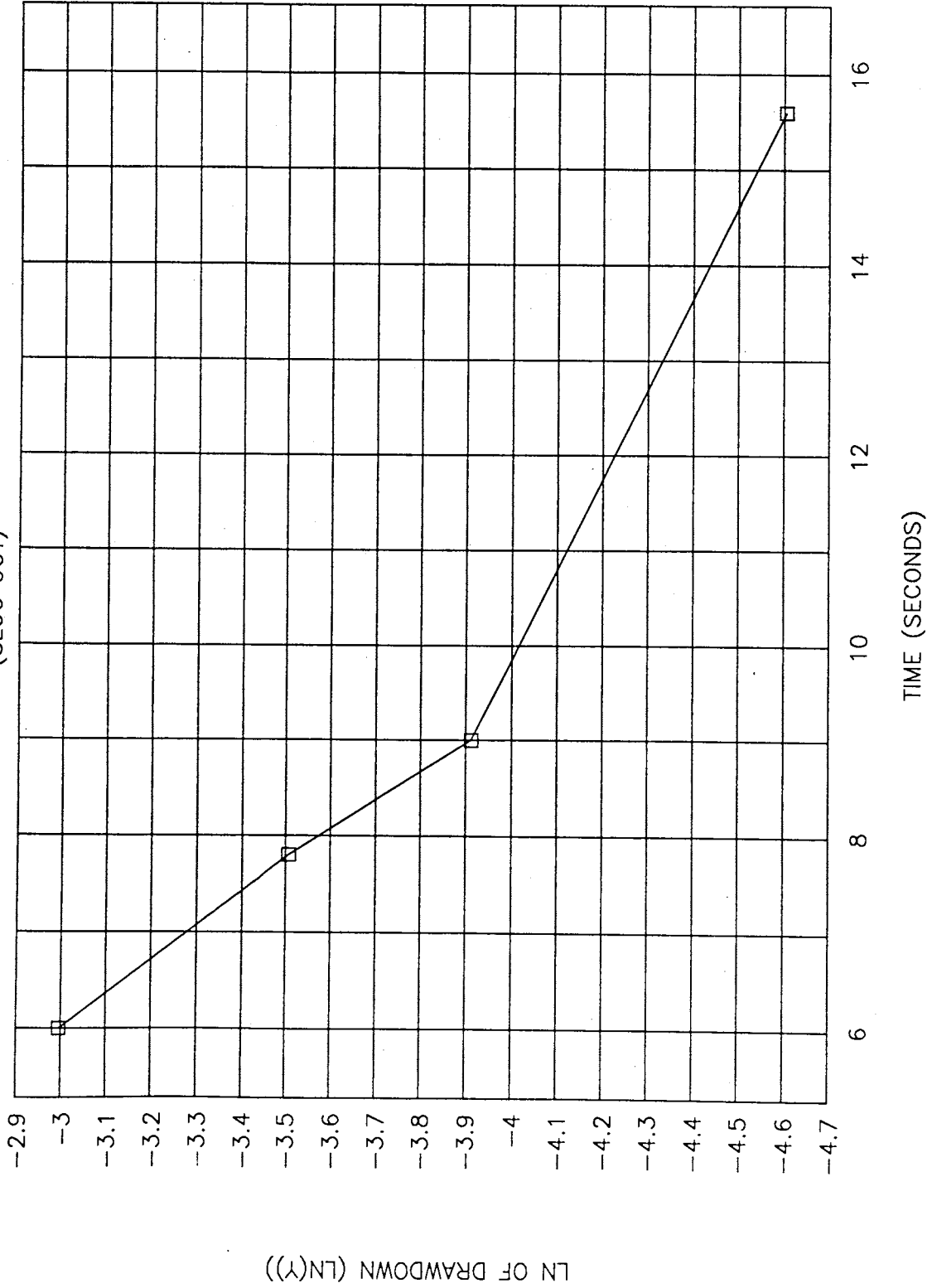
BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 80.00
 ---LOG OF L/(r sub w) = 1.9031
 FOR PARTIALLY PENETRATING WELLS--
 A = 3.89
 B = 0.63
 C = 3.73
 FOR FULLY PENETRATING WELLS--

---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1986
 CONST.2 = 5.7683 = (MAX. OF 6.0) = 5.7683
 LN(Re/(r sub w)) = 3.42

EFFECTIVE r sub c (for sandpack dewatering) = 0.0625
 (1/T)(LN(Yo/Yt)) (SLOPE) = -3.04E-01 sec⁻¹
 HYDRAULIC CONDUCTIVITY (K) = 4.06E-04 ft/sec
 1.24E-02 cm/sec

Regression Output:
 Constant -1.16E+00
 Std Err of Y Est 0.0316
 R Squared 0.9976
 No. of Observations 3
 Degrees of Freedom 1
 X Coefficient(s) -3.04E-01
 Std Err of Coef. 0.0148

RATE OF RECOVERY TEST: WELL GS-15A
(SLUG OUT)



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft.	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.03	0.53	0.530	1.8	-0.6349
2	0.05	0.28	0.280	3.0	-1.2730
3	0.06	0.12	0.120	3.6	-2.1203
4	0.08	0.07	0.070	4.8	-2.6593
5	0.15	0.01	0.010	9.0	-4.6052
6	0.16	0.00	0.000	9.6	ERR

*PROJECT NAME :GORICK RI/FS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :GS-158(SLUG IN)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER: (2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.53 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.00 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 50.94 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 70.94 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:
 RATIO OF L/(r sub w) = 120.00
 ---LOG OF L/(r sub w) = 2.0792
 FOR PARTIALLY PENETRATING WELLS---
 A = 4.73
 B = 0.85
 C = 4.98
 FOR FULLY PENETRATING WELLS---

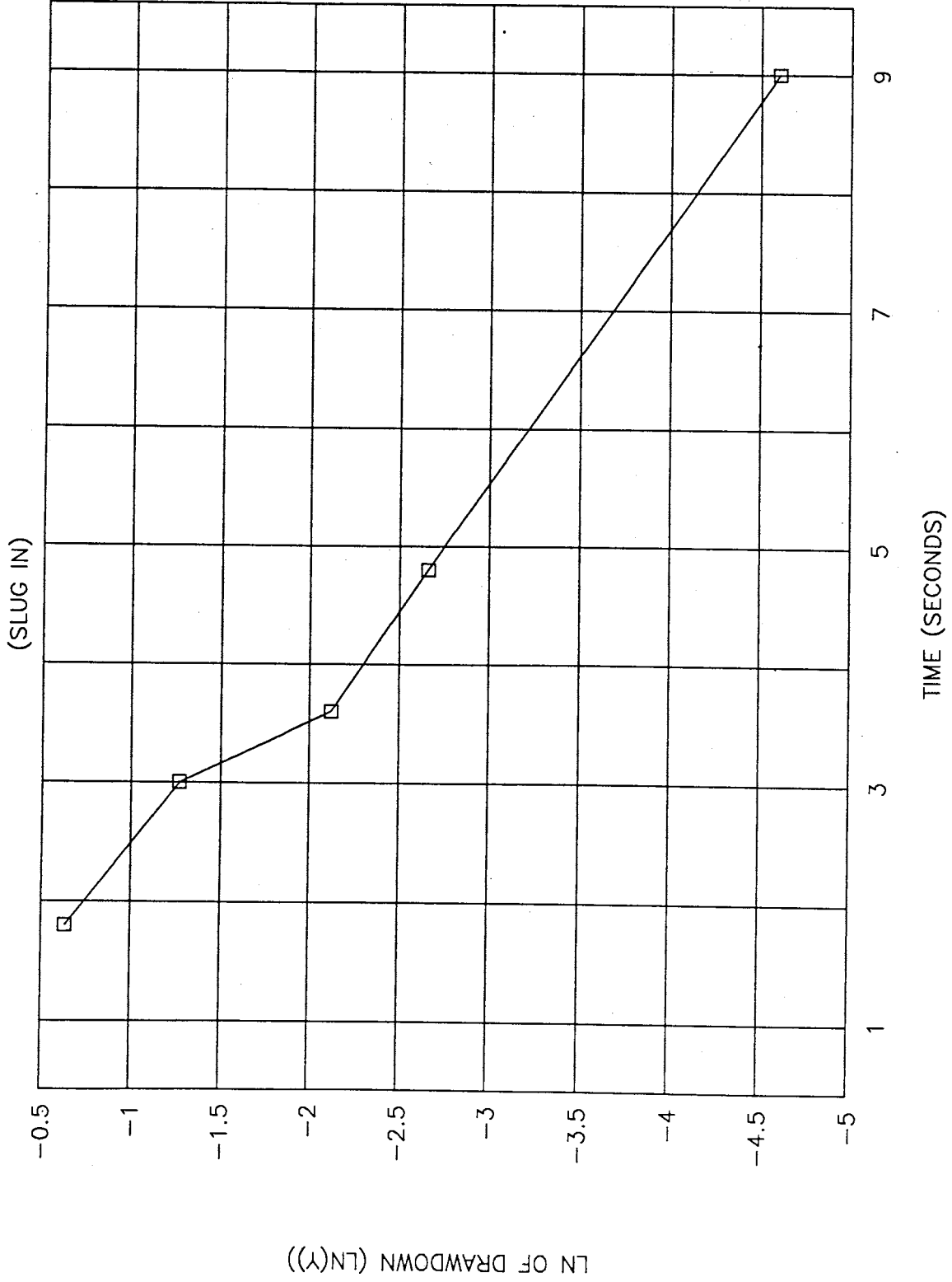
---EVALUATION OF LN(Re/(r sub w)):
 CONST.1 = 0.1715
 CONST.2 = 5.4806 = (MAX. OF 6.0) = 5.4806
 LN(Re/(r sub w)) = 4.00

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 (1/T)(LN(Yo/Yt)) (SLOPE) = -4.61E-01 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 6.41E-04 ft/sec
 1.95E-02 cm/sec
 Regression Output:
 Constant -4.54E-01
 Std Err of Y Est 0.0103
 R Squared 1.0000
 No. of Observations 3
 Degrees of Freedom 1

X Coefficient(s) -4.61E-01
 Std Err of Coef. 0.0026

RATE OF RECOVERY TEST: WELL GS-15B



BOUWER AND RICE METHOD FOR INTERPRETATION OF SLUG TESTS: FOR UNCONFINED AND LEAKY CONFINED AQUIFERS.
 TO UTILIZE THIS WORKSHEET, ENTER YOUR DATA AT LOCATIONS MARKED BY AN "*".
 PROGRAM CAN INCLUDE EFFECTS OF SANDPACK DEWATERING (ASSUMING WATER IS RISING WITHIN THE SANDPACK).

#	*TIME min (X)	*DEPTH TO WATER Ft. (Y)	DRAWDOWN (Y)	TIME sec (X')	LN (Y)
1	0.05	-0.69	0.710	3.0	-0.3425
2	0.06	-0.48	0.500	3.6	-0.6931
3	0.08	-0.22	0.240	4.8	-1.4271
4	0.10	-0.04	0.060	6.0	-2.8134
5	0.11	0.02	0.000	6.6	ERR

*PROJECT NAME :GORICK RI/FIS INVESTIGATION
 *PROJECT NO :35232.00
 *WELL NO :GS-15B(SLUG OUT)
 *ANALYST :SHELDON
 *DATE COLLECTED :12/7/90
 *RISER PIPE (ID): (2 r sub c) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN DIAMETER:(2 r sub w) = 2.0 in. = 0.0833 (radius in ft.)
 *EFFECTIVE SCREEN LENGTH: (L) = 10.00 Ft.
 *MAX DRAWDOWN (IN SUBSET): (Ymax) = 0.71 Ft.
 *STATIC WATER LEVEL: (SWL) = 0.02 Ft.
 *DEPTH FROM SWL TO EFF. SCREEN BOTTOM: (H) = 50.94 Ft.
 *EST. AQUIFER DEPTH (SWL TO AQUIFER BOTTOM): (D) = 70.94 Ft.
 *INCLUDE SANDPACK DEWATERING (ENTER 1 IF YES, 0 IF NO)? 0
 *SANDPACK'S SPECIFIC YIELD (Sy) = 0.15

BOUWER AND RICE CURVE COEFFICIENTS:

RATIO OF $L/(r \text{ sub } w)$ = 120.00
 ---LOG OF $L/(r \text{ sub } w)$ = 2.0792

FOR PARTIALLY PENETRATING WELLS---

A = 4.73
 B = 0.85
 C = 4.98

FOR FULLY PENETRATING WELLS--

---EVALUATION OF $\ln(Re/(r \text{ sub } w))$:
 CONST.1 = 0.1715
 CONST.2 = 5.4806 =(MAX. OF 6.0)= 5.4806
 $\ln(Re/(r \text{ sub } w))$ = 4.00

EFFECTIVE r sub c (for sandpack dewatering) = 0.0833
 $(1/T)(\ln(Y_0/Y_t))$ (SLOPE) = -6.04E-01 sec⁻¹

HYDRAULIC CONDUCTIVITY (K) = 8.39E-04 ft/sec
 2.56E-02 cm/sec

Regression Output:

Constant 1.47E+00
 Std Err of Y Est 0.0087
 R Squared 0.9999
 No. of Observations 3
 Degrees of Freedom 1

X Coefficient(s) -6.04E-01
 Std Err of Coef. 0.0067

RATE OF RECOVERY TEST: WELL GS-15B

