

**Phase 2**  
**Remedial Investigation Report**  
*for*  
**Naval Weapons**  
**Industrial Reserve Plant**  
*Bethpage, New York*  
**Volume II**



**Northern Division**  
**Naval Facilities Engineering Command**

**Contract Number N62472-90-D-1298**

**Contract Task Order 0089**

*October 1993*

## **Volume II - Table of Contents**

### **Appendix**

- A - Plant No. 3 Inspection**
- B - Sample Log Sheets/Chain-of-Custody Forms**
- C - Boring Log Sheets/Gamma Ray Logs**
- D - Well Construction Log Sheets/Well Development Log Sheets**
- E - Pump Test Data and Results**
- F - Computer Modeling**
- G - Surveying Notes**
- H - Hydrogeological Calculations**
- I - Analytical Results**
- J - Data Validation Letters**
- K - Risk Assessment Calculations**

APPENDICES

APPENDIX A  
APPENDIX B  
APPENDIX C  
APPENDIX D  
APPENDIX E  
APPENDIX F  
APPENDIX G  
APPENDIX H  
APPENDIX I  
APPENDIX J  
APPENDIX K  
APPENDIX L  
APPENDIX M  
APPENDIX N  
APPENDIX O  
APPENDIX P  
APPENDIX Q  
APPENDIX R  
APPENDIX S  
APPENDIX T  
APPENDIX U  
APPENDIX V  
APPENDIX W  
APPENDIX X  
APPENDIX Y  
APPENDIX Z



**A**

**APPENDIX A**  
**PLANT NO. 3 INSPECTION**

## PLANT NO. 3 - SITE VISIT TRIP REPORT

OCTOBER 26 to 27, 1992

**OBJECTIVE:** Investigate the current and historic areas in and around Plant No. 3 to determine the potential for TCE to migrate into the soils and groundwater. In particular, source areas that may be associated with TCE contamination found in monitoring well HN-24I located south and west of Plant No. 3.

**PRESENT:** David Brayack (HALLIBURTON NUS)  
Kevin Kilmartin (HALLIBURTON NUS)  
Jack Dunleavy (Navy - 10/27 only)  
Tony Giouvalakis (Grumman - 10/27 only)  
Donald Miller (Grumman - 10/27 only)

**ACTIVITIES:** On October 26, 1992, HALLIBURTON NUS conducted an inspection of the exterior of Plant No. 3 and on October 27, 1992 HALLIBURTON NUS, Navy, and Grumman conducted an inspection of the interior of Plant No. 3. This inspection was visual and non-intrusive in nature and specifically addressed each historic production line identified in the IAS as well as current operations. See attached Figure 5-1 from the IAS with markups.

### EXTERIOR INSPECTION:

Overall the inspection of the exterior of the building did not indicate the presence of any potential major source areas of TCE contamination. Relevant observations are summarized as follows.

- Drums labeled as "reclaimed perchloroethylene" (PCE) were observed in the yard area (Site 1) east of Plant No. 3. Some of the drums contained residual liquids. Four additional, unlabeled and unknown drums are in the location of the former drum marshaling area.

- Above ground bulk tanks are prominent along the eastern edge of Plant No. 3. Based on labeling on the tanks, the tanks contain raw and/or waste TCE, sodium hydroxide, nitric acid, hydrofluoric acid, and Plant No. 3 process wastes. Visually, each of these tanks has competent secondary containment and there is no significant evidence of leak or spills in the areas.
- Foundations along the southern edge of Plant 3, near the eastern corner, indicate that heavy equipment was located here in the past. Grumman reports that these foundation were not tanks.
- Also along the southern edge of Plant No. 3 is a hazardous waste treatment unit, a maintenance shop, and a loading dock (cafeteria).
- The western edge of Plant No. 3 consists of office-type buildings. The western edge of the manufacturing portion is not visible.
- At the northwestern corner of Plant No. 3 there are dust collectors and transformers. A parts storage area, waste zygo tanks, paint booth tank, empty-drums storage area, and a scrap metal storage area are located near the center of the northern edge. None of these areas appear to be major source areas of TCE, although there is the potential for them to be minor source areas.

#### **INTERIOR INSPECTION:**

Overall, the inspection of the interior of Plant No. 3 did not find any obvious major source areas of the TCE contamination found in HN-24I. Specific potential areas include the TCE solvent tanks near north eastern corner of Plant No. 3 and the TCE solvent tank near the north western corner of Plant No. 3. Each of these areas as well of other areas investigated are discussed below.

TCE Solvent Tanks - Northwest Corner of Plant No. 3 - Two large (1000 gallon plus) TCE solvent tanks were in use in this area between approximately 1984 and 1991. Both tanks have secondary containment. For the larger of the two systems, there is no reports or evidence of leaks. Additionally, based on a visual inspection, the secondary containment is competent. The

second tank is smaller. There are reports of minor leaks, particularly near the recirculation pump. The pump is also located in the secondary containment. However, near the pump, there is what appears to be an expansion joint. This joint represents a potential pathway for leaked solvents to enter the soils (and groundwater) underneath Plant No. 3.

This location is approximately 700 feet north of monitoring well cluster HN-24. Based on the distance and the approximate groundwater velocity of 70 feet per year, the location is a potential, but unlikely, source of the contamination at HN-24I. However, because of local production wells and the potential migration of TCE as a DNAPL, this location cannot be eliminated.

Conclusion: The computer modeling will be used to determine if this is a potential source of groundwater contamination. If this location is a potential upgradient area, then an intermediate depth monitoring well will be placed between HN-24 and this area.

TCE Solvent Tank - Northeast Corner of Plant No. 3 - One large (1000 gallon plus) TCE solvent tank is currently in use in the new Chem Mill area since approximately 1978. Secondary containment is present under this tank and the majority of it is in good condition. During the inspection a very slight solvent odor was noted in the sump. Also, a minor crack was observed in the secondary containment.

Conclusion: This area is close to the former drum marshaling area (Site 1). If the computer modeling indicates this to be a potential source area, then an intermediate depth monitoring well will be placed between HN-24 and this area.

General Areas in Plant No. 3 - During the inspection, 55-gallon drums of solvent were noted to be present throughout the building. There were also corresponding solvent collection drums throughout the area. Because of the concrete foundation in Plant No. 3, each of these areas would not be expected to be a potentially significant source.

Alodine/Plating/Paint/Heat Treat Areas - TCE is not believed to have been used in this area (currently as well as historically) in significant quantities. Alodine and plating operations do not normally use solvents in quantity and paint stripping and application typically use non-chlorinated solvents such as toluene. There is a sump under the plating operation that could not be inspected because of the presence of water. The former heat treat area is gone.



Printed Circuits Area - No evidence of previous activities or potential problems remain in this area.

Zygl Inspection Area - Reportedly, no solvents are used in this process. Although based on work at another Navy facility, some zygl solutions may be 1,1,1 TCA based.

Paint/Polyethylene Glycol Areas - No evidence of previous activities or potential problems remain in this area. The use of TCE was not identified with this process.

Honeycomb Cleaning/Paint Areas - No evidence of previous activities or potential problems remain in the Honeycomb cleaning area. Approximately 50 gallons per month of TCE was reportedly used in this process in the past. Paint Booths remain in the general area of the reported paint locations. Paint stripping and application typically use non-chlorinated solvents such as toluene.

Sulfuric Acid Anodize - This area consists of an abandoned former TCE solvent tank with secondary containment, an abandoned acid treatment system, and a reclamation unit for PCE vapors from the Flo-Coat Clean Line. The TCE tank was built in the 1980s and abandoned in 1987 as part of a corporate effort to reduce solvent use. This tank was observed to have competent secondary containment. The acid treatment system also has secondary containment, however, there is visual evidence of acid leaks from pump seals and acid attack of the secondary containment concrete. The PCE reclamation unit is relatively new. There is no evidence of potential solvent leaks from this area.

Flo-Coat Clean Line - PCE is used in this area to thin the coating material. The PCE is volatilized from the coating material first in an enclosed/ventilated room and then in a heated dryer. The fumes from this unit are transferred to the reclamation unit near the sulfuric acid anodize. Visually, the building foundation in this area is competent.

Former Chem Mill Area - There is no evidence of previous potential problem areas.

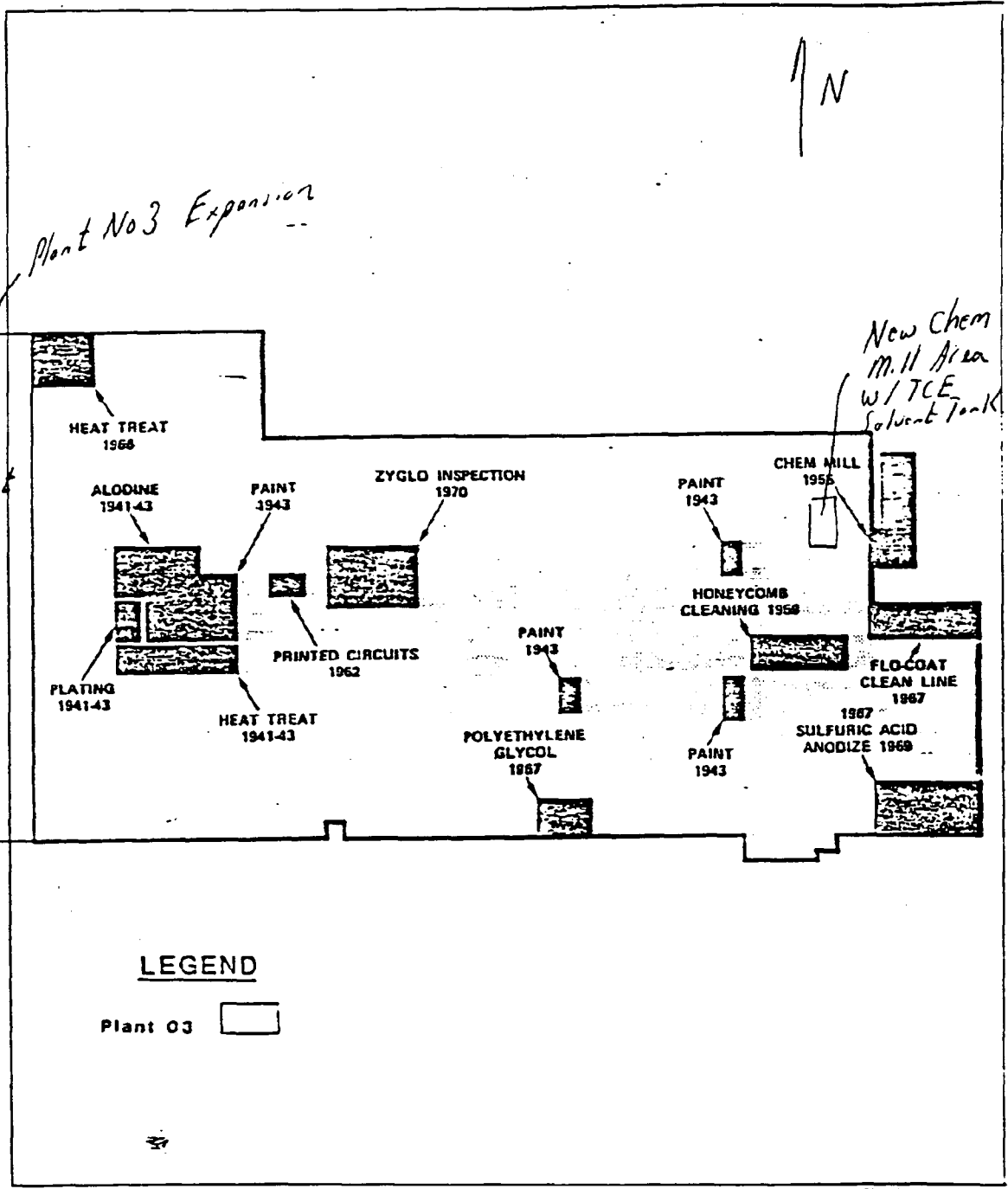


Figure 5-1

Major Production Lines,  
Plant 03,  
NWIRP Bethpage, New York  
Prior to 1980



**Initial Assessment Study**  
Naval Weapons Industrial  
Reserve Plant  
Bethpage and Calverton  
Long Island, New York



**B**

**APPENDIX B**

**SAMPLE LOG SHEETS/CHAIN-OF-CUSTODY FORMS**

# SAMPLE LOG SHEET



**HALLIBURTON NUS**  
Environmental Corporation

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Page 1 of 20

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-SS101-A Source Location In situ Drum Pile

Sample Method:		Composite Sample Data	
Depth Sampled:	Sample	Time	Color - Description
<u>SS. TROWEL</u>			/
<u>0-6"</u>			
Sample Date & Time:			
<u>12-15-92 0815 Hrs.</u>			
Sampled By:			
<u>TR</u>			
Signature(s):	N/A		
<i>[Signature]</i>			
Type of Sample			
<input checked="" type="checkbox"/> Low Concentration			
<input type="checkbox"/> High Concentration			
<input type="checkbox"/> Grab			
<input type="checkbox"/> Composite			
<input type="checkbox"/> Grab - Composite			
		Sample Data	
		Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
		<u>Brown</u>	<u>SANDY SILT w/ pebbles</u>
Analysis:	<input checked="" type="checkbox"/> IF TAKEN	PRESERV:	Observations/Notes  <u>taken in scrap area ~ 5' off fence</u>
<u>VOAs</u>		<u>Cool to 4°C</u>	
<u>PCBs</u>	<input checked="" type="checkbox"/>		
<u>Metals</u>			
<u>As TCLP</u>			
<u>Pest</u>	<input checked="" type="checkbox"/>	<u>"</u>	
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-SS102-A

Source Location In situ Drum File

Sample Method: <u>SS TROWEL</u>		Composite Sample Data	
Depth Sampled: <u>0-6"</u>		Sample	Time
Sample Date & Time: <u>12-15-92 0835 Hrs.</u>			Color Description
Sampled By: <u>TR</u>		<i>N/A</i>	
Signature(s): <i>[Signature]</i>			
Type of Sample			
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Sample Data	
		Color : Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
Analysis:	✓ <u>IF</u> TAKEN	PRESERV:	Observations/Notes
VOAs		<u>Cool to 4°C</u>	TAKEN 0' SOUTH OF CATCH BASIN, <sup>(FB)</sup> 10' LINE WITH E SIDE OF SITE 1'S <del>WEST</del> EAST BANK
PCBS	✓	↓	
Metals		↓	
As TCLP		↓	
Pst	✓	1"	
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			

SAMPLE LOG SHEET

Page 3 of 20



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-SB12103-A

Source Location In situ Drum Pile

Sample Method: <del>SS TROWEL</del> <u>SS Bucket Auger</u>		Composite Sample Data	
Depth Sampled: <u>3.0' - 3.5'</u>		Sample	Time
Sample Date & Time: <u>12-15-92 0900</u> Hrs.		Color Description	
Sampled By: <u>TR</u>		/	
Signature(s): <i>[Signature]</i>			
Type of Sample			
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
		Sample Data	
		Color Description: (Sand, Clay, Org, Moist, Visc, etc.)	
		<u>TAN</u> <u>SAND w/ pebbles</u>	
Analysis:	✓ IF TAKEN	PRESERV:	Observations / Notes
<u>VOAs</u>	<input checked="" type="checkbox"/>	<u>cool to 4°C</u>	
<u>PCBs</u>	<input checked="" type="checkbox"/>		
<u>Metals</u>			
<u>As TCLP</u>			
<u>Pest.</u>	<input checked="" type="checkbox"/>	"	
			/
		Organic	Inorganic
Traffic Report #			
Tag #			
Lab #			
Date Shipped			
Time Shipped			
Lab			
Volume			

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

 Case # NA

 By TR

 Project Site Name BETHPAGE

 Project Site Number 1953

 NUS Source No. BP-55103-A

 Source Location In situ Drum Pile

Sample Method: <u>S.S. TROWEL</u>		Composite Sample Data		
Depth Sampled: <u>0-6"</u>		Sample	Time	
Sample Date & Time: <u>12-15-92 0910</u> Hrs.		<del>Color Description</del>  <i>W/A</i>		
Sampled By: <u>TR</u>				
Signature(s): <i>[Signature]</i>				
Type of Sample				
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite				
		Sample Data		
		Color : Description: (Sand, Clay, Dry, Moist, Wet, etc.) <u>DARK BROWN Silt w/ Fine sand &amp; pebbles</u>		
Analysis:		Observations/Notes  <i>Possibly F. 11</i>  <u>10' 2.00</u> <u>Taken ~ 1/16 North of Boring 121</u> <u>in Western laydown area</u>		
VOAs	Y <input checked="" type="checkbox"/> TAKEN			PRESERV: <u>Cool to 4°C</u>
PCBS	<input checked="" type="checkbox"/>			
Metals				
As TCLP				
Pest	<input checked="" type="checkbox"/>			"
		Organic	Inorganic	
Traffic Report #				
Tag #				
AB #				
Date Shipped				
Time Shipped				
Lab				
Volume				



SAMPLE LOG SHEET

Page 5 of 20



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-55104-A Source Location In situ Drum Pile

Sample Method: <u>SS. TROWEL</u>	Composite Sample Data		
Depth Sampled: <u>0-6"</u>	Sample	Time	Color / Description
Sample Date & Time: <u>12-15-92 0920</u> Hrs.	(Diagonal line through table with handwritten 'N/A')		
Sampled By: <u>TR</u>			
Signature(s): 			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data			
Color : Description. (Sand, Clay, Dry, Moist, Wet, etc.)			
<u>DARK B/W FILL</u>			
Analysis: <input checked="" type="checkbox"/> IF TAKEN PRESERV:	Observations / Notes		
<u>VOAs</u>	<u>COOL to 4°C</u>		
<u>PCBS</u>	<u>X</u>		
<u>Metals</u>			
<u>As TCLP</u>	↓		
<u>Pest</u>	<u>X</u>		
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

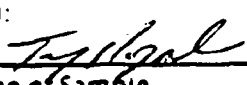
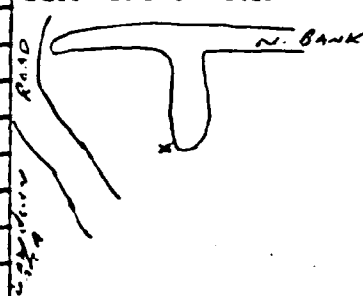
By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-SS/US-A

Source Location In situ Drum Pile

Sample Method: <u>SS TROWEL</u>		Composite Sample Data		
Depth Sampled: <u>0-6"</u>		Sample	Time	Color / Description
Sample Date & Time: <u>12-15-92 0930 Hrs.</u>				
Sampled By: <u>TR</u>				
Signature(s): 				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite				
		Sample Data		
		Color : Description: (Sand, Clay, Dry, Moist, Wet, etc.)		
		<u>BRN - DARK BRN F. 11</u>		
Analysis:	IF TAKEN	PRESERV:	Observations / Notes 	
<u>VOAs</u>		<u>Cool to 4°C</u>		
<u>PCBS</u>	<u>X</u>			
<u>Metals</u>				
<u>As TCLP</u>				
<u>Pest</u>	<u>X</u>	<u>"</u>		
			Organic	Inorganic
		Traffic Report #		
		Tag #		
		As #		
		Date Shipped		
		Time Shipped		
		Lab		
		Volume		

SAMPLE LOG SHEET

Page 7 of 20



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-55106-A Source Location In situ Drum File

Sample Method: <u>S S. TROWEL</u>		Composite Sample Data	
Depth Sampled: <u>0-6"</u>		Sample	Time
Sample Date & Time: <u>12-15-92 0940</u> Hrs.		/	
Sampled By: <u>TR</u>			
Signature(s): <i>[Signature]</i>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data Color : Description: (Sand, Clay, Dry, Moist, etc.) <u>Dark Grey Fill Moist</u>			
Analysis:	V. IF TAKEN	PRESERV:	Observations / Notes  <p style="text-align: center;"><i>concret</i> SE CORNER OF A BLDG Foundation</p>
VOAs		<u>Cool to 4°C</u>	
PCBS	<u>X</u>		
Metals			
As TCLP			
Pest	<u>X</u>	<u>"</u>	
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-SB21503-A

Source Location In situ Drum File

Sample Method:		Composite Sample Data		
<u>S.S. TROWEL S.S. Auger</u>		Sample	Time	Color Description
Depth Sampled: <u>3.0 - 3.5' in</u>		N/A		
Sample Date & Time: <u>12-15-92 1100 Hrs.</u>				
Sampled By: <u>TR</u>				
Signature(s): 				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite				
		Sample Data		
		Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
		<u>TAN</u>	<u>w/pebbles</u>	
Analysis:	TAKEN	PRESERV:	Observations / Notes	
VOAs	<input checked="" type="checkbox"/>	<u>Cool to 4°C</u>		
PCBS	<input checked="" type="checkbox"/>			
METALS				
As TCLP				
Pest.	<input checked="" type="checkbox"/>	<u>"</u>		
			Organic	Inorganic
Traffic Report #				
Tag #				
AB #				
Date Shipped				
Time Shipped				
Lab				
Volume				

Tried 8 times to 21'  
then 5th try to 3'

SAMPLE LOG SHEET

Page 9 of 20

Case # NA

By TR



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP- SB20603-A Source Location In situ Drum Pile

Sample Method: <u>S.S. TROWEL S.S. Auger</u>	Composite Sample Data	
Depth Sampled: <u>3.0-3.5'</u>	Sample	Time
Sample Date & Time: <u>12-15-92 1140 Hrs.</u>	Color - Description	
Sampled By: <u>TR</u>	<del>                             (Diagonal line through this section)                         </del>	
Signature(s): 		
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		
Sample Data Color: <u>TAN w/ BLUE STAIN</u> Description: (Sand) Clay, Dry, Moist, Wet, etc.: <u>w/ PEBBLES</u>		
Analysis: <input checked="" type="checkbox"/> VEF TAKEN PRESERV: <u>COOL to 4°C</u>	Observations/ Notes <p style="text-align: center;">@ FENCE TURNER</p> <div style="text-align: center;"> </div>	
VOA's PCBS METALS As TCLP PEST.	X X X	 ↓ 
Traffic Report # Tag # AB # Date Shipped Time Shipped Lab Volume	Organic	Inorganic



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-55322-A

Source Location In situ Drum File

Sample Method: <u>S.S. TROWEL</u>		Composite Sample Data		
		Sample	Time	Color / Description
Depth Sampled: <u>0-6"</u>				
Sample Date & Time: <u>12-15-92 1205 Hrs.</u>				
Sampled By: <u>TR</u>				
Signature(s): <i>[Signature]</i>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Sample Data		
		Color : Description: (Sand, Clay, Dry, Moist, Wet, etc.) <u>Dark Brown - Black Fill</u>		
Analysis:	V. IF TAKEN	PRESERV:	Observations/Notes  <u>2' soil original sample point inside salvage yard against the North Fence (original was taken inside Bone Yard @ Fences).</u>	
<u>VOAs</u>		<u>Cool to 4°C</u>		
<u>PCBs</u>	<u>X</u>			
<u>Metals</u>				
<u>As TCLP</u>				
<u>REST.</u>	<u>X</u>	<u>11</u>		
		Organic	Inorganic	
Traffic Report #				
Tag #				
A8 #				
Date Shipped				
Time Shipped				
Lab				
Volume				

SAMPLE LOG SHEET

Page 11 of 20



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-SS207-A Source Location In situ Drum Pile

Sample Method: <u>S S. TROWEL</u>		Composite Sample Data	
Depth Sampled: <u>0-6"</u>		Sample	Time
Sample Date & Time: <u>12-15-92 1300 Hrs.</u>		N/A	
Sampled By: <u>TR</u>			
Signature(s): <i>[Signature]</i>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
		Sample Data	
		Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
		<u>BRN</u>	<u>w/pebbles</u>
Analysis:	✓ IF TAKEN	PRESERV:	Observations/Notes @ FENCE NEXT TO CEMETARY  DUP & MS/MSD BP-SSDUP01-A BP-SSMS/MSD-A
VOAs		<u>COOL TO 4°C</u>	
PCBs	X		
Metals			
As TCLP		↓	
PEST	X	"	
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # TR NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-SS208-A

Source Location In situ Drum File

Sample Method: <u>S. S. TROWEL</u>		Composite Sample Data	
Depth Sampled: <u>0-6"</u>		Sample	Time
Sample Date & Time: <u>12-15-92 1315 Hrs.</u>		Color Description	
Sampled By: <u>TR</u>		/	
Signature(s): 			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data			
Color: _____ Description: <u>(Sand, Clay, Dry, Moist, Wet, etc.)</u> <u>TAN -&gt; Orangeish w/ pebbles</u>			
Analysis:	V. IF TAKEN	PRESERV:	Observations / Notes
<u>VOAs</u>		<u>Cool to 4°C</u>	
<u>PCBS</u>	<u>X</u>	↓	
<u>Metals</u>		↓	
<u>As TCLP</u>		↓	
<u>Pst</u>	<u>X</u>	↓	
		Organic	Inorganic
Traffic Road: #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			



SAMPLE LOG SHEET

Page 13 of 20

Case # NA

By TR



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-SD208-A

Source Location In situ Drum File

Sample Method: <u>S S. TRAWL</u>		Composite Sample Data	
Depth Sampled: <u>0-6"</u>		Sample	Time
Sample Date & Time: <u>12- -92 1335 Hrs.</u>		/A	
Sampled By: <u>TR</u>			
Signature(s): <i>[Signature]</i>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
		Sample Data	
		Color <u>Dark Brn</u> Description: <u>(Sandy) Clay, Dry, Moist, Wet etc.</u> <u>→ Organics &amp; Pebbles</u>	
Analysis:	✓ IF TAKEN	PRESERV:	Observations / Notes
<u>VOAs</u>		<u>Cool to 4°C</u>	
<u>PCBS</u>	<u>X</u>		
<u>Metals</u>			
<u>As TCLP</u>		↓	
<u>PEST</u>	<u>X</u>	<u>X</u>	
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			

# SAMPLE LOG SHEET



Page 14 of 20

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-SD202-A Source Location In situ Drum Pile

Sample Method: <u>S.S. TROWEL</u>	Composite Sample Data		
Depth Sampled: <u>0-6"</u>	Sample	Time	Color Description
Sample Date & Time: <u>12-15-92 1345 Hrs.</u>	/		
Sampled By: <u>TR</u>			
Signature(s): <i>[Signature]</i>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			

Sample Data	
Color <u>TAN</u>	Description: ( <u>Sand</u> , <u>Clay</u> , Dry, Moist, Wet, etc.) <u>&amp; Pebbles</u>

Analysis:	✓ IF TAKEN	PRESERV:	Observations / Notes
VOAs		<u>Cool to 4°C</u>	
PCBs	<u>X</u>	↓	
Metals			
As TCLP		↓	
<u>Co+</u>	<u>X</u>	"	

	Organic	Inorganic
Traffic Report #		
Tag #		
Lab #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

Page 15 of 20



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-SS212-A Source Location In situ Drum Pile

Sample Method:		Composite Sample Data		
Depth Sampled:		Sample	Time	Color / Description
S S. TROWEL				/
0-6"				
Sample Date & Time:				
12-15-92 <u>1400</u> Hrs.				
Sampled By:				
TR				
Signature(s):				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Sample Data		
		Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
		BRN	E Gravel	
Analysis:	✓ IF TAKEN	PRESERV: Observations / Notes		
VOAs		OFFSITE <sup>E (TR)</sup> Edge of Concrete Pad E. of Block Bldg & centerline of Dike Road.		
PCBs	X			
Metals				
As TCLP				
PbST	X			
		Organic	Inorganic	
		Traffic Report #		
		Tag #		
		AB #		
		Date Shipped		
		Time Shipped		
		Lap		
		Volume		



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953

NUS Source No. BP-SS216-A Source Location In situ Drum Pile

Sample Method:			Composite Sample Data		
S.S. TROWEL			Sample	Time	Color Description
Depth Sampled: <u>0-6"</u>			<i>N/A</i>		
Sample Date & Time: <u>12-15-92</u> <u>1410</u> Hrs.					
Sampled By: <u>TR</u>					
Signature(s): <i>TR</i>					
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
			Sample Data		
			Color	Description ( <u>Sand</u> Clay, Dry <u>Moist</u> Wet, etc.)	
			<u>BRN</u>	<u>GRAUD/PEBBLES</u> <u>Fill (P. Shandy)</u>	
Analysis	Y/N TAKEN	PRESERV:	Observations / Notes		
VOAs		<u>Cool to 4°C</u>			
PCBs	<u>X</u>				
Metals					
As TCLP					
Pest	<u>X</u>	<u>"</u>			
				Organic	Inorganic
			Traffic Report #		
			Tag #		
			AS #		
			Date Shipped		
			Time Shipped		
			Lab		
			Volume		

SAMPLE LOG SHEET

Page 17 of 20



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-SS214-A Source Location In situ Drum Pile

Sample Method: <u>S.S. TROWEL</u>	Composite Sample Data		
Depth Sampled: <u>0-6"</u>	Sample	Time	Color Description
Sample Date & Time: <u>12-15-92 1420</u> Hrs.	N/A		
Sampled By: <u>TR</u>			
Signature(s): 			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data			
Color : Description: <u>(Sand, Clay, Dry, Moist, Wet, etc.)</u> <u>TAN - BROWN</u> → <u>AND GRAVEL!</u>			
Analysis:	VIF TAKEN	PRESERV:	Observations / Notes
<u>VOAs</u>		<u>COOL to 4°C</u>	
<u>PCBS</u>	<u>X</u>	↓	
<u>Metals</u>		↓	
<u>As TCLP</u>		↓	
<u>Pst</u>	<u>+</u>	"	
			Organic
			Inorganic
Traffic Report #			
Tag #			
AG #			
Date Shipped			
Time Shipped			
Lab			
Volume			

**SAMPLE LOG SHEET**

 Page 18 of 20

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

 Case # NA

 By TR

 Project Site Name BETHPAGE

 Project Site Number 1953

 NUS Source No. BP-SSZ10-A

 Source Location In situ Drum File

Sample Method:		Composite Sample Data		
<u>S.S. TROWEL</u>		Sample	Time	Color / Description
Depth Sampled: <u>0-6"</u>				/
Sample Date & Time: <u>12-15-92 1430 Hrs.</u>				
Sampled By: <u>TR</u>				
Signature(s): <i>TR</i>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite				
		Sample Data		
		Color <u>TAN</u>	Description: (Sand, Clay, Dry, Moist, Wet, etc.) <u>→ Pebbles</u>	
Analysis:	Y IF TAKEN	PRESERV:	Observations / Notes <u>ALSO COLLECTED:</u> <u>BP-DUP02-A</u> <u>BP-MS/MSD02-A</u>  <u>At this location</u>	
VOAS		<u>Cool to 4°C</u>		
PCBS	<u>X</u>			
METALS				
AS TCLP		<u>↓</u>		
PEST.	<u>X</u>	<u>11</u>		
			Organic	Inorganic
		Traffic Report #		
		Tag #		
		AB #		
		Date Shipped		
		Time Shipped		
		Lab		
		Volume		

SAMPLE LOG SHEET

Page 19 of 20



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other RINSATE Blank

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-SS210-RB

Source Location In situ Drum Pile RINSATE

Sample Method: <u>LAB PAUK H2O OVER</u> <u>S.S. TROWEL</u>		Composite Sample Data	
Depth Sampled: _____	Sample	Time	Color Description
Sample Date & Time: <u>12-15-92</u> <u>1500</u> Hrs.			
Sampled By: <u>TR</u>			
Signature(s): <u>[Signature]</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Sample Data	
		Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Analysis:	<input checked="" type="checkbox"/> IF TAKEN	PRESERV:	Observations / Notes
VOAs		<u>Cool to 4°C</u>	
PCBs	<u>X</u>	↓	
Metals		↓	
As TCLP		↓	
Pest	<u>X</u>		
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			



# SAMPLE LOG SHEET

Page 20 of 20

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other FIELD BLANK

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-SS210-FB

Source Location In situ Drum Pike Field Bl

Sample Method: <u>LAB PURE H2O</u> <u>S.S. TROWEL TR</u> Directly into Bottle		Composite Sample Data	
Depth Sampled: _____	Sample	Time	Color / Description
Sample Date & Time: <u>12-15-92</u> <u>1505</u> Hrs.			
Sampled By: <u>TR</u>			
Signature(s): <u>[Signature]</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
		Sample Data	
		Color / Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
Analysis:	<input checked="" type="checkbox"/> IF TAKEN	PRESERV:	Observations / Notes
<u>VOAs</u>		<u>Cool to 4°C</u>	
<u>PCBS</u>	<input checked="" type="checkbox"/>		
<u>Metals</u>			
<u>As TCLP</u>			
<u>Pest.</u>	<input checked="" type="checkbox"/>	<u>"</u>	
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			





SAMPLE LOG SHEET

Page 1 of 11

Case # NA

By TR

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other TCLP BLANK

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP- R527-7B Source Location In situ Drum Pile

Sample Method: <u>LAB Prepared</u>		Composite Sample Data	
<u>S.S. TROWEL (TR) 12/10/92 1600 Hrs</u>		Time	Color / Description
Depth Sampled: _____			
Sample Date & Time: <u>12-17-92 1735 Hrs.</u>			
Sampled By: <u>TR</u>			
Signature(s): <u>[Signature]</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
		Sample Data	
		Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Analysis:	✓ IF TAKEN	PRESERV:	Observations / Notes
VOAs	✓	Cool to 4°C	
PCBs		↓	
Metals		↓	
As TCLP		↓	
		Organic	Inorganic
Traffic Report #			
Tag #			
A8 #			
Date Shipped			
Time Shipped			
Lab			
Volume			



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Rinsete Blank

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-RS27-RB

Source Location In situ Drum (Pile)

Sample Method: <u>LAG H<sub>2</sub>O OVER</u> <u>S S. TROWEL</u>		Composite Sample Data	
Depth Sampled: _____	Sample	Time	Color Description
Sample Date & Time: <u>12-17-92 0740</u> Hrs.			/
Sampled By: <u>TR</u>			
Signature(s): <u>[Signature]</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data			
		Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
ANALYSIS:	✓ TAKEN	PRESERV:	Observations / Notes
VOAs	✓	Cool to 4°C	
PCBs		↓	
Metals		↓	
As TCLP		↓	
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			

SAMPLE LOG SHEET

Page 3 of 11



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Soil Pile

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-RS27

Source Location In situ Drum (Pile)

Sample Method:		Composite Sample Data		
Depth Sampled:		Sample	Time	Color / Description
<u>S S. TROWEL</u>		/		
<u>3" - 12"</u>				
Sample Date & Time: <u>12-17-92</u> <u>0840</u> Hrs.				
Sampled By: <u>TR</u>				
Signature(s): <i>[Signature]</i>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite				
		Sample Data		
		Color : Description: (Sand, Clay, Org, Moist, Wet, etc.) <u>WHITE → BROWN SILT AND SAND W/ GRAVEL</u>		
Analysis:	✓ IF TAKEN	PRESERV:	Observations / Notes  <u>MW-27 soil pile</u>	
<u>VOAs</u>	<u>✓</u>	<u>COOL to 4°C</u>		
<u>PCBS</u>	<u>✓</u>			
<u>Metals</u>				
<u>As TCLP</u>		↓		
<u>pest.</u>	<u>x</u>	<u>1'</u>		
		Organic	Inorganic	
Traffic Report #				
Tag #				
A8 #				
Date Shipped				
Time Shipped				
Lab				
Volume				

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Soil Pile

 Case # NA

 By TR

 Project Site Name BETHPAGE

 Project Site Number 1953

 NUS Source No. BP-R528

 Source Location In situ Drum (Pile) MW 28

Sample Method:		Composite Sample Data			
Depth Sampled:		Sample	Time	Color / Description	
S S. TROWEL					
3" - 12"					
Sample Date & Time:		<div style="font-size: 2em; transform: rotate(45deg); opacity: 0.5;">N/A</div>			
12-17-92 0855 Hrs.					
Sampled By:					
TR					
Signature(s):					
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Sample Data Color: <u>Gray - tan - orange</u> Description: <u>(Sand) Clay, Dry (Moist Wet, etc.)</u> <u>some gravel</u>			
Analysis:	<input checked="" type="checkbox"/> IF TAKEN <input type="checkbox"/> PRESERV:	Observations / Notes			
VOAs	X				Cool to 4°C
PCBS	X				
Metals					↓
As TCLP					↓
Pest.	X				"
		Organic	Inorganic		
Traffic Report #					
Tag #					
AB #					
Date Shipped					
Time Shipped					
Lab					
Volume					

# SAMPLE LOG SHEET

Page 5 of 11



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Soil Pile

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-R529

Source Location In situ Drum Pile

Sample Method:		Composite Sample Data		
<u>S S. TROWEL</u>		Sample	Time	Color Description
Depth Sampled: <u>4" - 12"</u>				
Sample Date & Time: <u>12-17-92 0910 Hrs.</u>				
Sampled By: <u>TR</u>				
Signature(s): <u>[Signature]</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite				
		Sample Data		
		Color	Description: <u>(Sand, Clay, Dry, Moist, Wet, etc.)</u>	
			<u>TAN - CHANGISH - BROWN</u>	
Analysis:	<input checked="" type="checkbox"/> IF TAKEN	PRESERV: <u>COOL TO 4°C</u>		
<u>VOAs</u>	<u>X</u>	Observations / Notes <u>Pile UNDER Blue TARP</u>		
<u>PCBs</u>				
<u>Metals</u>				
<u>As TCLP</u>				
		Organic	Inorganic	
Traffic Report #				
Tag #				
AB #				
Date Shipped				
Time Shipped				
Lab				
Volume				

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Soil Pile

 Case # NA

 By TR

 Project Site Name BETHPAGE

 Project Site Number 1953

 NUS Source No. BP-25

 Source Location In situ Drum (Pile)

Sample Method:		Composite Sample Data		
<u>S S. TROWEL</u>		Sample	Time	Color Description
Depth Sampled: <u>3" - 12"</u>		/		
Sample Date & Time: <u>12-17-92 0930 Hrs.</u>				
Sampled By: <u>TR</u>				
Signature(s): <u>[Signature]</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite				
		Sample Data		
		Color : Description: <u>Sand</u> , <u>Clay</u> , <u>Dry</u> , <u>Moist</u> , <u>Wet</u> , etc.) <u>WHITE - BIN W/ GRAVEL</u>		
Analysis:	Y-IF TAKEN	PRESERV:	Observations / Notes  <u>SEMI COVERED w/ PLASTIC</u>	
<u>VOAS</u>	<u>X</u>	<u>COOL TO 4°C</u>		
<u>PCBS</u>		↓		
<u>Metals</u>	<u>X</u>	↓		
<u>As TCLP</u>		↓		
		Organic	Inorganic	
Traffic Record #				
Tag #				
AB #				
Date Shipped				
Time Shipped				
Lab				
Volume				

SAMPLE LOG SHEET

Page 7 of 11



- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Soil Pile

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-R524

Source Location In situ Drum Pile

Sample Method: <u>S S. TROWEL</u>		Composite Sample Data	
Depth Sampled: <u>3"-12"</u>		Sample	Time
Sample Date & Time: <u>12-17-92 0945 Hrs.</u>		Color Description	
Sampled By: <u>TR</u>		/	
Signature(s): <i>[Signature]</i>			
Type of Sample			
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data			
		Color Description: ( <u>Sand</u> , <u>Clay</u> , <u>Dry</u> , <u>Moist</u> , <u>Wet</u> , etc.)	
		<u>TAN</u>	
Analysis:	✓ IF TAKEN	PRESERV:	Observations / Notes  <p style="text-align: center; font-size: 1.2em;"><i>Pile Semi Covered w/ Plastic</i></p>
VOAs	X	<u>Cool to 4°C</u>	
PCBs			
Metals			
As TCLP		↓	
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			

SAMPLE LOG SHEET



Page 8 of 11

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Soil Pile

Case # NA

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-R530 ELABQA/QC Source Location In situ Drum (Pile)

Sample Method: <u>S.S. TROWEL</u>		Composite Sample Data	
Depth Sampled: <u>3" - 12"</u>		Sample	Time
Sample Date & Time: <u>12-17-92 1015</u> Hrs.		Color Description	
Sampled By: <u>TR</u>			
Signature(s): <u>[Signature]</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data Color: <u>CRANFISH</u> Description: (Sand, Clay, Dry, Moist, Wet, etc.) <u>w/ GRAVEL</u>			
Analysis:	IF TAKEN	PRESERV:	Observations / Notes
VOAS	X	<u>Cool to 4°C</u>	
PCBS	X		
Metals	X		
As TCLP		↓	
PEST	X	11	
			Also collected at this location: BP-RSDUP01 VOAS, METALS, PEST./PCBS BP-RSMS01 VOAS ONLY BP-RSMSD01 VOAS ONLY
		Organic	
		Inorganic	
Traffic Recor. #			
Tag #			
Lab #			
Date Shipped			
Time Shipped			
Lab			
Volume			



SAMPLE LOG SHEET

Page 9 of 11



- Surface Soil
  - Subsurface Soil
  - Sediment
  - Lagoon / Pond
  - Other Drummed Soil Cuttings
- Case # NA  
By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-DR229-1 Source Location In situ Drum Pile

Sample Method: <u>S.S. TRONEL</u>		Composite Sample Data	
Depth Sampled: <u>1" - 6"</u>		Sample	Time
Sample Date & Time: <u>12-17-92</u> <u>1100</u> Hrs.		Color Description	
Sampled By: <u>TR</u>		<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Sample Data</p> <p>Color Description (<u>Sand</u>, Clay, Dry, Moist, Wet, etc.)  <u>White - Tan - Orangeish - Red w/Gravel</u></p> </div>	
Signature(s): <u>[Signature]</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Analysis: <input checked="" type="checkbox"/> IF TAKEN PRESERV: <u>Cool to 4°C</u>			
VOAs		Observations / Notes  <u>Composite of 4 drums</u>	
PCBs	<u>X</u>		
Metals			
As TCLP	↓		
PEST.	<u>+</u>		
		Organic	Inorganic
Traffic Report #			
Tag #			
AB #			
Date Shipped			
Time Shipped			
Lab			
Volume			

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Drummed Soil / Cuttings

 Case # NA

 By TR

 Project Site Name BETHPAGE

 Project Site Number 1953

 NUS Source No. BP-DR229-2

 Source Location In situ (Drum) Pile

Sample Method:			Composite Sample Data		
	Sample	Time	Color	Description	
S S. TROWEL					
Depth Sampled: <u>1"-6"</u>					
Sample Date & Time: <u>12-17-92</u> <u>1115</u> Hrs.			/		
Sampled By: <u>TR</u>					
Signature(s): <u>[Signature]</u>					
Type of Sample					
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
			Sample Data		
			Color : Description: <u>(Sand, Clay, Dry, Moist, Wet, etc.)</u> <u>WHITE-TAN-ORANGISH w/ GRAVEL</u>		
Analysis:	V. EFF. TAKEN	PRESERV. :	Observations / Notes		
VOAs		<u>COOL TO 4°C</u>	Composite of 4 drums		
PCBs	<u>X</u>				
Metals					
As TCLP		<u>↓</u>			
Pest	<u>X</u>	<u>11</u>			
			Organic	Inorganic	
Traffic Record #					
Tag #					
Ad #					
Date Shipped					
Time Shipped					
Lab					
Volume					



SAMPLE LOG SHEET

Page 11 of 11

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Drummed Soil Cuttings

Case # NA

By TR

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-DR215

Source Location In situ Drum File

Sample Method:		Composite Sample Data		
S.S. TROWEL		Sample	Time	Color Description
Depth Sampled: <u>1"-8"</u>				<i>N/A</i>
Sample Date & Time: <u>12-17-92 1200 Hrs.</u>				
Sampled By: <u>TR</u>				
Signature(s): <i>[Signature]</i>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite				
		Sample Data		
		Color : Description: <u>Sand, Clay, Dry, Moist, Wet, etc.</u> <u>Tan → Lt Brn → Br w/Gravel</u>		
Analysis:	V.I.P. TAKEN	PRESERV:	Observations / Notes  <div style="font-size: 2em; font-weight: bold;">(1) DRUM SAMPLED</div>	
VOAs		<u>Cool to 4°C</u>		
PCBS	<u>X</u>	↓		
Metals		↓		
As TCLP		↓		
PEST	<u>X</u>			
		Organic	Inorganic	
		Traffic Report #		
		Tag #		
		AS #		
		Date Shipped		
		Time Shipped		
		Lab		
		Volume		

- 
- Monitoring Well Data
- 
- 
- Domestic Well Data
- 
- 
- Other
- Temp. Well

Case # \_\_\_\_\_

 By KCK

 Project Site Name Bethpage RI Project Site Number 1953  
 NUS Source No. BP-G-R-16 Source Location Temp. Boring No. 16

Total Well Depth:		Purge Data			
Well Casing Size & Depth: <u>60' deep, 2" φ</u>	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
	<u>I</u>	<u>5.89</u>	<u>380</u>	<u>13.8</u>	<u>light tan/very high</u>
Static Water Level: <u>~52'</u>					
One Casing Volume:					
Start Purge (hrs.):					
End Purge (hrs.):					
Total Purge Time (min.):					
Total Amount Purged (gal.): <u>5 gal</u>					
Monitor Reading: <u>No readings above background</u>					
Purge Method: <u>2" bailer</u>					
Sample Method: <u>11</u>					
Depth Sampled: <u>50-60'</u>					
Sample Date & Time: <u>12/15/92 1355</u>	Sample Data				
	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>KEVIN C. KIMARTIN</u>					
Signature(s): <u>Kevin C. Kimartin</u>	Observations / Notes:				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
Analysis	Preservative		Organic	Inorganic	
<u>VOA</u>	<u>HCL</u>	Traffic Report #			
		Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume			



# SAMPLE LOG SHEET

Page      of     

- Monitoring Well Data
- Domestic Well Data
- Other

Case #     

By TR

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-G-R-11 Source Location RES TEMP WELL 282 9th St.

Total Well Depth: <u>59.5'</u>		Purge Data				
Well Casing Size & Depth: <u>TEMP WELL 2" PVC</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
		<u>I</u>	<u>7.30</u>	<u>430</u>	<u>9.2</u>	<u>TAN High</u>
Static Water Level: <u>54.59</u>						
One Casing Volume: <u>-</u>						
Start Purge (hrs.): <u>0855</u>						
End Purge (hrs.): <u>0940</u>						
Total Purge Time (min.): <u>45</u>						
Total Amount Purged (gal.): <u>4701</u>						
Monitor Reading: <u>Amo 0.00ppm</u>						
Purge Method: <u>TEFLON BALL</u>						
Sample Method: <u>" "</u>						
Depth Sampled:						
Sample Date & Time: <u>12-16-92 0945</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>TR</u>		<u>7.95</u>	<u><sup>270</sup> 7.95 TR</u>	<u>8.0</u>	<u>TAN High</u>	
Signature(s) <u>Tracy Royal</u>		Observations / Notes: <u>DUP &amp; MS/MSD TAKEN HERE</u> <u>Recharge to slow</u> <u>(TR)</u> <u>BP-G-R-DUP02</u> <u>BP-G-R-MS02</u> <u>BP-G-R-MSD02</u> <u>DRIED OUT 4 TIMES DURING PURGE</u>				
Type of Sample						
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative		Organic	Inorganic		
<u>VMA</u>	<u>AC1</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



- Monitoring Well Data
- Domestic Well Data
- Other

Project Site Name BETHPAGE

Project Site Number 1953

NUS Source No. BP-G-R-5

Source Location ② Boring #5 / 206 Maple Ave

Total Well Depth: <u>59.6'</u>		Purge Data				
Well Casing Size & Depth: <u>Temp Well - 2" @</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
		<u>I</u>	<u>7.10</u>	<u>220</u>	<u>5.8</u>	<u>Orange Very High</u>
Static Water Level: <u>53.78</u>						
One Casing Volume: <u>-</u>						
Start Purge (hrs.): <u>1200</u>						
End Purge (hrs.): <u>1220</u>						
Total Purge Time (min.): <u>20</u>						
Total Amount Purged (gal.): <u>591</u>						
Monitor Reading: <u>0.0</u>						
Purge Method: <u>TEFLON Baiter</u>						
Sample Method: <u>" "</u>						
Depth Sampled: <u>-</u>						
Sample Date & Time: <u>12/16/92 1225</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>TR</u>		<u>6.65</u>	<u>200</u>	<u>5.4</u>	<u>Orange High</u>	
Signature(s) <u>[Signature]</u>		Observations/Notes: <u>Will collect DUP / MS / MSD</u> <u>BP-G-R-DUP 02</u> <u>BP-G-R-MS 02</u> <u>BP-G-R-MSD 02</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative		Organic	Inorganic		
<u>MS</u>	<u>HCl</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_  
 Case # \_\_\_\_\_  
 By \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

PHASE II

Project Site Name BETHPAGE 1953 Project Site Number 1  
 NUS Source No. HNPI-1 Source Location PIEZOMETER #4

Total Well Depth:		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
2" 61'		1	7.02	310	17.1	BRN HI
Static Water Level: 53.47			0			
One Casing Volume: 1.5 gal						
Start Purge (hrs.): 1220						
End Purge (hrs.): 1310						
Total Purge Time (min.):						
Total Amount Purged (gal.): 5 gal						
Monitor Reading: C/C HLW						
Purge Method: S S BAILER						
Sample Method: S S BAILER						
Depth Sampled: N/A 53'-61'						
Sample Date & Time:		Sample Data				
12-4-12 1310		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: FRED W RAMSBER		8.27	250	13.3	BRN HI	
Signature(s) <i>Fred Ramsber</i>		Observations / Notes:				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
VOCs	HCL	Traffic Report #				
	COOL TO 4°C	Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume		2 x 40ml vial		



- Monitoring Well Data
- Domestic Well Data
- Other

Project Site Name BETHPAGE PHASE II 1953 Project Site Number SITE #1  
NUS Source No. HWP2-1 Source Location PIEZOMETER #2

Total Well Depth: <u>61</u>		Purge Data				
Well Casing Size & Depth: <u>2"φ 61'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>53.47</u>						
One Casing Volume: <u>1.5 gal</u>						
Start Purge (hrs.): <u>1325</u>						
End Purge (hrs.): <u>1725</u>						
Total Purge Time (min.):						
Total Amount Purged (gal.): <u>5 gal</u>						
Monitor Reading:						
Purge Method: <u>PVC BATTERY</u>						
Sample Method: <u>"</u>						
Depth Sampled: <u>53'-61'</u>						
Sample Date & Time: <u>1730</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FWR</u>		<u>7.37</u>	<u>200</u>	<u>12.6</u>	<u>BRN HI</u>	
Signature(s): <u>Fred W. Roman</u>		Observations / Notes:				
Type of Sample						
<input checked="" type="checkbox"/> Low Concentration						
<input type="checkbox"/> High Concentration						
<input checked="" type="checkbox"/> Grab						
<input type="checkbox"/> Composite						
<input type="checkbox"/> Grab - Composite						
Analysis	Preservative		Organic	Inorganic		
<u>VVA</u>	<u>HCL, COOLANT</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				






- Monitoring Well Data
- Domestic Well Data
- Other Temporary well

Case # \_\_\_\_\_

By KCK

Project Site Name BETHPAGE RI Phase 2 Project Site Number 1953  
 NUS Source No. BP-G-R-01 Source Location Temporary well No. 1

Total Well Depth:	Purge Data				
Well Casing Size & Depth:	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
<u>2" Ø 60' Deep</u>					
Static Water Level:					
One Casing Volume:					
Start Purge (hrs.): <u>~1040</u>					
End Purge (hrs.): <u>1105</u>					
Total Purge Time (min.): <u>~25</u>					
Total Amount Purged (gal.): <u>5</u>					
Monitor Reading:					
<u>0 ppm above background</u>					
Purge Method: <u>PVC bailer</u>					
Sample Method: <u>STAINLESS bailer</u>					
Depth Sampled: <u>~55-60'</u>					
Sample Date & Time:	Sample Data				
<u>12/7/92 1105</u>	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By:	<u>6.99</u>	<u>100</u>	<u>11.3</u>	<u>Brown - High</u>	
<u>Kevin C. Kilmartin</u>	Observations / Notes:				
Signature(s): 					
Type of Sample <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
Analysis	Preservative	Organic		Inorganic	
<u>VCA</u>	<u>HCl, Cool to 4°C</u>				
		Traffic Report #			
		Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume		<u>Two 40 ml vials</u>	



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TEMP. MW

Case # \_\_\_\_\_

By FUR

Project Site Name BETHPAGE PHASE II RL Project Site Number 1953  
 NUS Source No. BP-G-R-02 Source Location BORING #2, RESIDENTIAL 9TH + MA

Total Well Depth: <u>60'</u>		Purge Data				
Well Casing Size & Depth: <u>2" φ 60'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>53'</u>						
One Casing Volume: <u>—</u>						
Start Purge (hrs.): <u>1345</u>						
End Purge (hrs.): <u>1415</u>						
Total Purge Time (min.): <u>30</u>						
Total Amount Purged (gal.): <u>5gal</u>						
Monitor Reading: <u>0 ppm</u>						
Purge Method: <u>PVC Bailer</u>						
Sample Method: <u>PVC Bailer</u>						
Depth Sampled: <u>~ 55-60'</u>						
Sample Date & Time: <u>12-7-92 / 1400/1415</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FUR</u>		<u>5.04</u>	<u>150</u>	<u>13.6</u>	<u>Yellow Brn HI</u>	
Signature(s):  <u>Fred W. Ransier</u>		Observations / Notes:				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis:	Preservative			Organic	Inorganic	
<u>VOA</u>	<u>HCL 100% 20°C</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume	<u>TWO 40ml VIALS</u>			



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other ~~TEMP. MTD EQUIPMENT~~  
(RINSE) BLANK

Case # \_\_\_\_\_

By FUR

Project Site Name BETHPAGE Project Site Number 1953 RESIDENTIAL  
 NUS Source No. BP-G-R-RB1 Source Location RINSE BLANK

Total Well Depth: <u>N/A</u>		Purge Data				
Well Casing Size & Depth: <u>N/A</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>N/A</u>						
One Casing Volume: <u>N/A</u>						
Start Purge (hrs.): <u>N/A</u>						
End Purge (hrs.): <u>N/A</u>						
Total Purge Time (min.): <u>N/A</u>						
Total Amount Purged (gal.): <u>N/A</u>						
Monitor Reading: <u>—</u>						
Purge Method: <u>—</u>						
Sample Method: <u>—</u>						
Depth Sampled: <u>—</u>						
Sample Date & Time: <u>12-7-92 1300</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FRED RAMSER</u>		<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	
Signature(s)		Observations/Notes: <u>RINSE BLANK OBTAINED BY POURING DI WATER THROUGH S.S. Filter.</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>VOA</u>	<u>HCL</u>					
	<u>COOL TO 4°C</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume		<u>TWO 40ml VIALS</u>		



# SAMPLE LOG SHEET

Page      of     

- Monitoring Well Data
- Domestic Well Data
- Other RINSE/TE BLANK

Case #     By KURProject Site Name BETH PAGE PHASE II RI Project Site Number 1953NUS Source No. BP-6-RB2 Source Location N/A

Total Well Depth: <u>    </u>		Purge Data				
Well Casing Size & Depth: <u>    </u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>    </u>						
One Casing Volume: <u>    </u>						
Start Purge (hrs.): <u>    </u>						
End Purge (hrs.): <u>    </u>						
Total Purge Time (min.): <u>    </u>						
Total Amount Purged (gal.): <u>    </u>						
Monitor Reading: <u>    </u>						
Purge Method: <u>    </u>						
Sample Method: <u>    </u>						
Depth Sampled: <u>    </u>						
Sample Date & Time: <u>12/8/92 0830</u>		Sample Data				
Sampled By: <u>E. Ramser</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s): <u>E. Ramser</u>		<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
Type of Sample		Observations / Notes:				
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		<u>DI H<sub>2</sub>O POURED THROUGH BAILER INTO TWO 40ml VIALS.</u>				
Analysis	Preservative	Organic		Inorganic		
<u>VOL'S</u>	<u>HCL</u>	Traffic Report #				
	<u>COOL TO 4°C</u>	Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume		<u>2x40ml</u>		



- Monitoring Well Data
- Domestic Well Data
- Other TEMPORARY WELL

Project Site Name BETHPAGE PHAZETRI Project Site Number 1953  
 NUS Source No. BP-G-R-03 Source Location SB-03 TEMP. WELL

Total Well Depth: <u>59'</u>		Purge Data				
Well Casing Size & Depth: <u>2"Ø</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>52.5'</u>						
One Casing Volume: <u>—</u>						
Start Purge (hrs.): <u>1015</u>						
End Purge (hrs.): <u>1045</u>						
Total Purge Time (min.): <u>30min</u>						
Total Amount Purged (gal.): <u>5gal</u>						
Monitor Reading: <u>0.0ppm</u>						
Purge Method: <u>BALER</u>						
Sample Method: <u>"</u>						
Depth Sampled: <u>~ 52.5-59'</u>						
Sample Date & Time: <u>12-8-42 1045</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FURAMSER</u>		<u>6.64</u>	<u>360</u>	<u>13.5</u>	<u>BRN HI</u>	
Signature(s) <u>Fred W. Ramsor</u>		Observations / Notes:				
Type of Sample						
<input checked="" type="checkbox"/> Low Concentration						
<input type="checkbox"/> High Concentration						
<input checked="" type="checkbox"/> Grab						
<input type="checkbox"/> Composite						
<input type="checkbox"/> Grab - Composite						
Analysis	Preservative		Organic	Inorganic		
<u>VOA's</u>	<u>HCL</u>	Traffic Report #				
	<u>COOL TO 4°C</u>	Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				
				<u>2x40ml</u>		



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_  
 Case # \_\_\_\_\_  
 By FWR

- Monitoring Well Data
- Domestic Well Data
- Other TEMPORARY WELL

Project Site Name BETHPAGE PHASE II RI Project Site Number 1953  
 NUS Source No. BP-G-R-04 Source Location SBO4

Total Well Depth: <u>59'</u>		Purge Data				
Well Casing Size & Depth: <u>2"φ 59'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>51.5'</u>						
One Casing Volume: <u>—</u>						
Start Purge (hrs.): <u>1325</u>						
End Purge (hrs.): <u>1355</u>						
Total Purge Time (min.): <u>30 min</u>						
Total Amount Purged (gal.): <u>5 gal</u>						
Monitor Reading: <u>0.0 ppm</u>						
Purge Method: <u>BAILER</u>						
Sample Method: <u>BAILER</u>						
Depth Sampled: <u>~ 51.5'-59'</u>						
Sample Date & Time: <u>12-8-92 1415</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FWR/RAMSER</u>		<u>7.16</u>	<u>220</u>	<u>12.5°</u>	<u>BRN HI</u>	
Signature(s) <u>Fred Ramser</u>		Observations/Notes: <u>DUPLICATE; BP-G-R-D1 TAKEN AT THIS LOC.</u> <u>MATRIX SPIKE; BP-G-R-HS1 TAKEN AT THIS LOC.</u> <u>MATRIX SPIKE DUP; BP-G-R-HSD1 TAKEN AT THIS LOC.</u>				
Type of Sample						
<input checked="" type="checkbox"/> Low Concentration						
<input type="checkbox"/> High Concentration						
<input checked="" type="checkbox"/> Grab						
<input type="checkbox"/> Composite						
<input type="checkbox"/> Grab - Composite						
Analysis	Preservative		Organic	Inorganic		
<u>VOLAT</u>	<u>HCL</u>	Traffic Report #				
	<u>COOL TO 4°C</u>	Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume	<u>2 x 40ml.</u>			



# SAMPLE LOG SHEET

Page      of     

- Monitoring Well Data
- Domestic Well Data
- Other FIELD BLANK

Case #     

By FWR

Project Site Name BETHPAGE PHASE II RI Project Site Number 1953  
 NUS Source No. BP-G-R-FBI Source Location     

Total Well Depth: <u>    </u>		Purge Data				
Well Casing Size & Depth: <u>    </u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>    </u>						
One Casing Volume: <u>    </u>						
Start Purge (hrs.): <u>    </u>						
End Purge (hrs.): <u>    </u>						
Total Purge Time (min.): <u>    </u>						
Total Amount Purged (gal.): <u>    </u>						
Monitor Reading: <u>    </u>						
Purge Method: <u>    </u>						
Sample Method: <u>    </u>						
Depth Sampled: <u>    </u>						
Sample Date & Time: <u>12-9-92 0750</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FWRAMSER</u>		<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
Signature(s) <u>Fred Ramser</u>		Observations / Notes: <u>DI H2O POURED DIRECTLY INTO TWO 40ml VIALS</u>				
Type of Sample <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
		Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



- Monitoring Well Data
- Domestic Well Data
- Other RINSE/TEBLANK

Project Site Name BETHPAGE PHASE II RI Project Site Number 1953  
NUS Source No. BP-6-R-RB3 Source Location M/A

Total Well Depth: _____		Purge Data				
Well Casing Size & Depth: _____		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: _____						
One Casing Volume: _____						
Start Purge (hrs.): _____						
End Purge (hrs.): _____						
Total Purge Time (min.): _____						
Total Amount Purged (gal.): _____						
Monitor Reading: _____						
Purge Method: _____						
Sample Method: _____						
Depth Sampled: _____						
Sample Date & Time: <u>12/9/92 0755</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FURRAMSER</u>						
Signature(s) <u>Fred W. Ramser</u>		Observations / Notes: <u>DI H<sub>2</sub>O POURED THROUGH BAILER INTO TWO 40 ml VIALS</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>VOC's</u>	<u>HCL</u>	Traffic Report #				
	<u>COOLED 4°C</u>	Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume		<u>2 x 40ml</u>		





# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TEMPORARY WELL

Case # \_\_\_\_\_

By JWR

Project Site Name BETHPAGE PHASE II RI Project Site Number 1953

NUS Source No. BP-G-R-08 Source Location RESIDENTIAL/TEMP SB-08

Total Well Depth: <u>55'</u>		Purge Data				
Well Casing Size & Depth: <u>2" 43'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>37'</u>						
One Casing Volume: <u>—</u>						
Start Purge (hrs.): <u>1315</u>						
End Purge (hrs.): <u>1415</u>						
Total Purge Time (min.): <u>60</u>						
Total Amount Purged (gal.): <u>8 gal<sup>LN</sup></u>						
Monitor Reading: <u>0.0 ppm</u>						
Purge Method: <u>BAILER</u>						
Sample Method: <u>BAILER</u>						
Depth Sampled: <u>~37-43'</u>						
Sample Date & Time: <u>12-9-72 1420</u>		Sample Data				
Sampled By: <u>FURAMSER</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s): <u>Fred Furamser</u>		<u>5.75</u>	<u>110.</u>	<u>13.1</u>	<u>DK BRN HI</u>	
Type of Sample		Observations / Notes:				
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		<p>ADDED 3 gals TO REPLACE PVC SCREEN TO DESIRED DEPTH DUE TO RUNNING SANDS.</p>				
Analysis	Preservative		Organic	Inorganic		
<u>NOA'S</u>	<u>HCL</u>	Traffic Report #				
	<u>COOL TO 4°C</u>	Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume	<u>2 x 40 ml vials</u>			



- Monitoring Well Data
- Domestic Well Data
- Other TEMPORARY WELL

Project Site Name BETHPAGE PHASE II RI Project Site Number 1953  
 NUS Source No. BP-G-R-07 Source Location RESIDENTIAL / BETHPAGE/GU

Total Well Depth: <u>59'</u>		Purge Data				
Well Casing Size & Depth: <u>2"Ø 59'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>50.5'</u>						
One Casing Volume: <u>—</u>						
Start Purge (hrs.): <u>1000</u>						
End Purge (hrs.): <u>1030</u>						
Total Purge Time (min.): <u>30</u>						
Total Amount Purged (gal.): <u>5gal</u>						
Monitor Reading: <u>0.0ppm</u>						
Purge Method: <u>Bailer</u>						
Sample Method: <u>"</u>						
Depth Sampled: <u>~ 50-59</u>						
Sample Date & Time: <u>12-9-92 1030</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FULLRAMSER</u>		<u>5.18</u>	<u>220 <sup>uod</sup>/<sub>cm</sub></u>	<u>12.2°C</u>	<u>BRN HI</u>	
Signature(s) <u>Fred Fullramser</u>		Observations / Notes:				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative		Organic	Inorganic		
<u>VOAs</u>	<u>HCL</u>	Traffic Report #				
	<u>COOL TO 4°C</u>	Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TEMPORARY WELL

Case # \_\_\_\_\_

By FUR

Project Site Name BETHPAGE RI PHASE II Project Site Number 1953

NUS Source No. BP-G-R-12 Source Location SB12

Total Well Depth: <u>59</u>		Purge Data				
Well Casing Size & Depth: <u>2"Ø 59</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>54.5' 863</u>						
One Casing Volume: <u>-</u>						
Start Purge (hrs.): <u>1005</u>						
End Purge (hrs.): <u>1030</u>						
Total Purge Time (min.): <u>25</u>						
Total Amount Purged (gal.): <u>5 gal</u>						
Monitor Reading: <u>0.0 ppm</u>						
Purge Method: <u>BAILER</u>						
Sample Method: <u>"</u>						
Depth Sampled: <u>54.5' - 57'</u>						
Sample Date & Time: <u>12-10-92 1030</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FLURANSEN</u>		<u>6.03</u>	<u>190</u>	<u>11.8</u>	<u>BRN HI</u>	
Signature(s): <u>[Signature]</u>		Observations / Notes:				
Type of Sample						
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative			Organic	Inorganic	
<u>VJA</u>	<u>HCL</u>	Traffic Report #				
	<u>COOL W/CL</u>	Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume		<u>2 x 40ml</u>		



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_  
 Case # \_\_\_\_\_  
 By FUR

- Monitoring Well Data
- Domestic Well Data
- Other RINSEATE BLANK

Project Site Name BETHPAGE PRAESERT Project Site Number 1953  
 NUS Source No. BP-G-R-RB4 Source Location FIELD

Total Well Depth: _____	Purge Data				
Well Casing Size & Depth: _____	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: _____					
One Casing Volume: _____					
Start Purge (hrs.): _____					
End Purge (hrs.): _____					
Total Purge Time (min.): _____					
Total Amount Purged (gal.): _____					
Monitor Reading: _____					
Purge Method: _____					
Sample Method: _____					
Depth Sampled: _____					
Sample Date & Time:	Sample Data				
<u>12-10-92 1100</u>	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FURMSER</u>					
Signature(s): <u>[Signature]</u>	Observations / Notes: <u>DI H<sub>2</sub>O POURED THROUGH BAILER INTO TWO 40ml VIALS</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
Analysis	Preservative	Organic	Inorganic		
<u>VOLTS</u>	<u>HCL</u>	Traffic Report #			
	<u>COOL TO 4°C</u>	Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume	<u>2x 40ml</u>		



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TEMPORARY WELL

Case # \_\_\_\_\_

By FUR

Project Site Name BETHPAGE RT PHASE II Project Site Number 1953  
 NUS Source No. BP-6-R-13 Source Location SB13

Total Well Depth: <u>59'</u>		Purge Data			
Well Casing Size & Depth: <u>2"Ø 59'</u>	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>51.5</u>					
One Casing Volume: <u>-</u>					
Start Purge (hrs.): <u>1300</u> <u>1200 HRS</u>					
End Purge (hrs.): <u>1345</u>					
Total Purge Time (min.): <u>45</u>					
Total Amount Purged (gal.): <u>8gal</u>					
Monitor Reading: <u>0.0ppm</u>					
Purge Method: <u>BAILER</u>					
Sample Method: <u>"</u>					
Depth Sampled: <u>9.5-59'</u>					
Sample Date & Time: <u>12-10-92 1345</u>		Sample Data			
	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>FLURBINSER</u>	<u>6.66</u>	<u>160</u>	<u>11.5</u>		
Signature(s) <u>JWRamser</u>	Observations / Notes: <u>PURGED AN ADDITIONAL 3GALS BECAUSE 3 GALS WERE ADDED TO WELL FOR PVC SCREEN IMPLACEMENT TO DESIRED DEPTH (59')</u>				
Type of Sample					
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
Analysis	Preservative	Organic		Inorganic	
<u>VCA's</u>	<u>HCL</u>	Traffic Report #			
	<u>(00-10+°C)</u>	Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume		<u>2 x 40ml</u>	

CLIENT: USN	FILE NO.: 1953	BY: EJR 3-23-93	PAGE 1 OF 1
SUBJECT: BETHPAGE - ROUND 2 GW SAMPLES		CHECKED BY:	DATE:

GW SAMPLING: 03-11-93 TO 03-19-93

WELLS:

- HN24S
- HN24I (MS/MSD)
- HN24I1
- HN24I2
- HN27S → NOT SAMPLED = DRY
- HN27I1
- HN28S → NOT SAMPLED = DRY
- HN28I
- HN29S
- HN29I (+ DUPLICATE #1)
- HN29D
- HN40S
- HN40I (+ DUPLICATE #2)
- HN41S
- HN41I
- HN42S
- HN42I
- USGS WELL

QA/QC

TRIP BLANKS: 3-11-93	RINSE BLANKS: 1	ANALYZE
3-12-93	2	HOLD
3-16-93	3	ANALYZE
3-17-93	4	HOLD
3-18-93	5	ANALYZE
3-19-93	6	HOLD

FIELD BLANK 1

- DUPLICATE 1 (HN29I)
- DUPLICATE 2 (HN40I)
- MS/MSD (HN24I)

- 
- Monitoring Well Data
- 
- 
- Domestic Well Data
- 
- 
- Other \_\_\_\_\_

 Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. BP-G-245-02 Source Location HN24S

Total Well Depth: 58.2' TPVC		Purge Data					
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity	
4" PVC 58.2'		0	7.04	220	7.0	TAN	Hi
Static Water Level: 53.43' TPVC		1	?	215	6.6	TAN	Hi
One Casing Volume: 3gal / 12 ft							
Start Purge (hrs.): 1555							
End Purge (hrs.): 1623							
Total Purge Time (min.): 28 min							
Total Amount Purged (gal.): 22 gal							
Monitor Reading: -							
Purge Method: SS BAUER							
Sample Method: SS BAUER							
Depth Sampled: 54.11' TPVC							
Sample Date & Time:		Sample Data					
03-11-93 1640		pH	S.C.	Temp. (°C)	Color & Turbidity		
Sampled By: ER		?	215	6.6 (?)	TAN	Hi	
Signature(s): <i>E. Hodman</i>		Observations/Notes: CHEMICAL ODOR - STRONG  pH METER FROZE.  purged dry at 22 gal					
Type of Sample							
<input checked="" type="checkbox"/> Low Concentration							
<input type="checkbox"/> High Concentration							
<input checked="" type="checkbox"/> Grab							
<input type="checkbox"/> Composite							
<input type="checkbox"/> Grab - Composite							
Analysis	Preservative	Organic		Inorganic			
TCL VOA	4" + HCL	Traffic Report #					
		Tag #					
		AB #					
		Date Shipped					
		Time Shipped					
		Lab					
		Volume					

Monitoring Well Data  
 Domestic Well Data  
 Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-6-24I-Ø2 Source Location HW24I

Total Well Depth: <u>~ 160</u>		Purge Data				
Well Casing Size & Depth: <u>4" PVC</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
		<u>0</u>	<u>11.40</u>	<u>1000</u>	<u>11.2</u>	<u>CLEAR LOW</u>
Static Water Level: <u>57.24 TOC</u>		<u>1</u>	<u>10.61</u>	<u>400</u>	<u>11.7</u>	<u>TAN MED/HI</u>
One Casing Volume: <u>~ 70 gal</u>		<u>2</u>	<u>8.34</u>	<u>275</u>	<u>11.0</u>	<u>LT TAN MED/LOW</u>
Start Purge (hrs.): <u>1400 hrs</u>		<u>3 *</u>	<u>7.75</u>	<u>260</u>	<u>11.1</u>	<u>" LOW</u>
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading: <u>—</u>						
Purge Method: <u>SUBMERS PUMP</u>						
Sample Method: <u>SS BAILER</u>						
Depth Sampled: <u>59'</u>						
Sample Date & Time: <u>03-16-93 1445</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>		<u>7.75*</u>	<u>260</u>	<u>11.1</u>	<u>LT TAN LOW</u>	
Signature(s): <u>Elyzabeth...</u>		Observations / Notes: <u>MS/MSD</u> <u>HW24I (STICK UP)</u> <u>HW245 (FLUSH MOUNT)</u> <u>TRUCK SCALE</u> <u>CHEMICAL ODOR</u> <u>H<sub>2</sub>O TEMPER</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
1) TCL VDA	<u>4° + HCL</u>	Traffic Report #				
		Tag #				
2) TCL VDA	<u>4° FOR</u>	AB #				
	<u>FAST</u>	Date Shipped				
	<u>TURN AROUND</u>	Time Shipped				
		Lab				
		Volume				

\* PH SUSPECT; METER NOT STABILIZING, AND TEMP FALLING - ONE MAY/IS CAUSING THE OTHER.





# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-G-24I1-02 Source Location HN24I1

107-21'

Total Well Depth: <u>159' bgs</u>		Purge Data				
Well Casing Size & Depth: <u>4" PVC 159'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>51.79'</u>		<u>0</u>	<u>10.69</u>	<u>305</u>	<u>11.5</u>	<u>CLEAR LOW</u>
One Casing Volume: <u>70 gal</u>		<u>1</u>	<u>8.26</u>	<u>145</u>	<u>12.0</u>	<u>TAN MED/LOW</u>
Start Purge (hrs.): <u>0920</u>		<u>2</u>	<u>7.97</u>	<u>120</u>	<u>11.9</u>	<u>CLEAR LOW</u>
End Purge (hrs.): <u>0938</u>		<u>3</u>	<u>7.03</u>	<u>125</u>	<u>11.9</u>	<u>" "</u>
Total Purge Time (min.): <u>18</u>						
Total Amount Purged (gal.): <u>210 gal</u>						
Monitor Reading: <u>-</u>						
Purge Method: <u>SUBMERS. PUMP</u>						
Sample Method: <u>SS BAILER</u>						
Depth Sampled: <u>Sl. 80</u>						
Sample Date & Time: <u>3-16-93 1000</u>		Sample Data				
Sampled By: <u>ER</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s): <u>Elyettey Noth</u>		<u>7.03</u>	<u>125</u>	<u>11.9</u>	<u>CLEAR LOW</u>	
Type of Sample		Observations / Notes: 				
<input checked="" type="checkbox"/> Low Concentration						
<input type="checkbox"/> High Concentration						
<input checked="" type="checkbox"/> Grab						
<input type="checkbox"/> Composite						
<input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
1) TCL VDA	HCL + 4°C	Traffic Report #				
		Tag #				
2) TCL VDA	4°C FAST	AB #				
	TURN	Date Shipped				
	AROUND	Time Shipped				
		Lab				
		Volume				

- Monitoring Well Data
- Domestic Well Data
- Other

Project Site Name BETH PAGE

Project Site Number 1953

NUS Source No. BP-G-24I2-Ø2

Source Location HN24I2

105.76

Total Well Depth: 160' B&B		Purge Data				
Well Casing Size & Depth: 4" PVC 160'		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
		0	10.03	355	10.4	CLEAR LOW
Static Water Level: 54.24		1	8.78	225	10.5	SLY CLOUDY LOW
One Casing Volume: 69 gal		2	8.03	220	10.4	CLEAR LOW
Start Purge (hrs.): 1135		3	7.96	220	10.4	" "
End Purge (hrs.): 1156						
Total Purge Time (min.): 21 min						
Total Amount Purged (gal.): 210 gal						
Monitor Reading: <u>    </u>						
Purge Method: SUBM. PUMP						
Sample Method: SS BAILER						
Depth Sampled: 54.50						
Sample Date & Time: 05-16-93 1230		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>		7.96	220	10.4	CLEAR LOW	
Signature(s): <i>Elytz Ash</i>		Observations / Notes: PARKING HN24I2 (ingress) H <sub>2</sub> O TOWER PARKING				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative		Organic	Inorganic		
1) TCL VOA	4°C + HCR	Traffic Report #				
		Tag #				
2) TCL VOA	4°C FOR FAST TURN AROUND	AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				

Handwritten notes and scribbles on the left margin.

Handwritten initials or mark at the bottom right.

# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name Beth page

Project Site Number 1953

HALLIBURTON NUS Source No. BP-G-275-02

Source Location HN 275

Total Well Depth:	Purge Data				
Well Casing Size and Depth:	Volume	OH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:					
One Casing Volume:					
Start Purge (hrs.):					
End Purge (hrs.):					
Total Purge Time (min.):					
Total Amount Purged (gal.):					
Monitor Reading:					
Purge Method:					
Sample Method:					
Depth Sampled:					
Sample Date and Time:	Sample Data				
<u>03-11-93</u>	OH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By:					
Signature(s):	Observations/Notes:  <div style="font-size: 1.5em; text-align: center;">WELL DRY!</div>				
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>Type of Sample</p> <p><input type="checkbox"/> Low Concentration</p> <p><input type="checkbox"/> High Concentration</p> <p><input type="checkbox"/> Grab</p> <p><input type="checkbox"/> Composite</p> <p><input type="checkbox"/> Grab - Composite</p> </div> </div>					
Analysis	Preservative	Organic	Inorganic		
		Traffic Report #			
		Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume			

# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_  
By ER

Project Site Name BETHPAGE

Project Site Number 1953

HALLIBURTON NUS Source No. BP-G-27I1-02

Source Location HN 27 I 1

SS. 13

Total Well Depth: <u>111' TPVC</u>	Purge Data				
Well Casing Size and Depth: <u>4" PVC</u>	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>55.87' Tol</u>	I	9.50	165	7.0	LT TAN MED-LOW
One Casing Volume: <u>36 gal</u>	1	9.69	150	6.9	" "
Start Purge (hrs.): <u>1000</u>	2	9.68	145	8.9	" "
End Purge (hrs.): <u>1114</u>	3	9.64	155	9.2	" "
Total Purge Time (min.): <u>1hr 14 min</u>					
Total Amount Purged (gal.): <u>120 gal</u>					
Monitor Reading: <u>-</u>					
Purge Method: <u>2" SUB PUMP</u>					
Sample Method: <u>SS BAILER</u>					
Depth Sampled: <u>56'</u>					
Sample Date and Time: <u>03-19-93 1130</u>	Sample Data				
Sampled By: <u>ER</u>	pH	S.C.	Temp. (°C)	Color & Turbidity	
	9.66	155	9.2	LT TAN MED/LOW	
Signature(s): <u>[Signature]</u>	Observations/Notes: <u>* 4" well OBSTRUCTED - USE 2" PUMP, 160TS IN RISK</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
Analysis	Preservative:	Organic		Inorganic	
<u>TCL VOA</u>	<u>40% HCl</u>	Traffic Report #			
		Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume			

# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE

Project Site Number 1953

HALLIBURTON NUS Source No. BP-G-285-02

Source Location HN285

Total Well Depth:	Purge Data				
Well Casing Size and Depth:	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:					
One Casing Volume:					
Start Purge (hrs.):					
End Purge (hrs.):					
Total Purge Time (min.):					
Total Amount Purged (gal.):					
Monitor Reading:					
Purge Method:					
Sample Method:					
Depth Sampled:					
Sample Date and Time:	Sample Data				
<u>03-11-93</u>	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By:					
Signatures(s):	Observations/Notes:				
<input type="checkbox"/> Type of Sample <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	WELL DRY!				
Analysis	Preservative	Organic		Inorganic	
		Traffic Report #			
		Tag #			
		AG #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume			



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. BP-G-28I-02 Source Location H428I

Total Well Depth: 141.5 TOL		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
4" PVC 141.5		0	11.45	580	9.7	CLEAR LOW
Static Water Level: 87.75 TOL		1	11.28	420	10.6	SLY CLOUDY LOW
One Casing Volume: 57.5 gal		2	10.10	210	9.9	LT. TAN MED
Start Purge (hrs.): 1040		3	—	—	—	—
End Purge (hrs.): 1200						
Total Purge Time (min.): 1 hr 20 min						
Total Amount Purged (gal.): ~135						
Monitor Reading: —						
Purge Method: SUBM. PUMP						
Sample Method: SS BAILER						
Depth Sampled: <del>ER-05</del> 61' TOL						
Sample Date & Time:		Sample Data				
03-11-93 1225		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: ER		9.28	200	10.6	LT TAN MED-LOW	
Signature(s): <i>E. Rodman</i>		Observations / Notes: purged DRY TWICE				
Type of Sample						
<input checked="" type="checkbox"/> Low Concentration						
<input type="checkbox"/> High Concentration						
<input checked="" type="checkbox"/> Grab						
<input type="checkbox"/> Composite						
<input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
TCLVDA	4°C + HCL	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-6-295-Ø2 Source Location HN 295

Total Well Depth: <u>50.20 TAVL</u>		Purge Data				
Well Casing Size & Depth: <u>4" PVC 50.20</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
		<u>0</u>	<u>7.20</u>	<u>540</u>	<u>6.8</u>	<u>TAN</u> <u>V.Hi</u>
Static Water Level: <u>49.49</u>		<u>1</u>	<u>7.60</u>	<u>600</u>	<u>7.6</u>	↓ ↓
One Casing Volume: <u>2 l</u>		<u>2</u>	<u>7.98</u>	<u>620</u>	<u>7.9</u>	↓ ↓
Start Purge (hrs.): <u>1135</u>		<u>3</u>	<u>7.98</u>	<u>640</u>	<u>7.7</u>	↓ ↓
End Purge (hrs.): <u>1155</u>						
Total Purge Time (min.): <u>20 MIN</u>						
Total Amount Purged (gal.): <u>6 l</u>						
Monitor Reading: <u>—</u>						
Purge Method: <u>SS BAILER</u>						
Sample Method: <u>SS BAILER</u>						
Depth Sampled: <u>50'</u>						
Sample Date & Time: <u>12<sup>00</sup> 03-12-93 1205</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>		<u>7.98</u>	<u>640</u>	<u>7.7</u>	<u>TAN</u> <u>V. HIGH</u>	
Signature(s) <u>E. Friedman</u>		Observations / Notes:  <u>VERY SILTY</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative			Organic	Inorganic	
<u>TCL VOA</u>	<u>4" HCL</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-6-29I-Ø2 Source Location HN29I

Total Well Depth: 133 TPVC		Purge Data				
Well Casing Size & Depth: 4' PVC 133 TPVC		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
		0	11.70	1200	11.0	CLEAR LOW
Static Water Level: 47.49		1	11.92	1400	9.6	LT TAN V. LOW
One Casing Volume: ~ 122# 56 gal		2	10.70	260	8.7	CLEAR TO SLTY CLOUDY
Start Purge (hrs.): 1225		3	10.08	255	10.8	↓
End Purge (hrs.): 1445		4	10.14	220	10.6	
Total Purge Time (min.): 2 hrs 20 min		4.5	10.17	210	10.8	
Total Amount Purged (gal.): ~ 252 gal						
Monitor Reading: _____						
Purge Method: SUBMERS PUMP						
Sample Method: SS BAILER						
Depth Sampled: 49'						
Sample Date & Time: 03-12-93 1455		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>		10.17	210	10.8	CLEAR TO SLTY CLOUDY	
Signature(s): <u>E. Rodman</u>		Observations / Notes:  <p style="text-align: right;">NO DRAWDOWN</p>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative			Organic	Inorganic	
TCL VOA	4 <sup>m</sup> HCL	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				





# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-G-DWP.1-Ø2 Source Location HN29I

Total Well Depth:	Purge Data				
Well Casing Size & Depth:	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:					
One Casing Volume:					
Start Purge (hrs.):					
End Purge (hrs.):					
Total Purge Time (min.):					
Total Amount Purged (gal.):					
Monitor Reading:					
Purge Method:					
Sample Method:					
Depth Sampled:					
Sample Date & Time:	Sample Data				
Sampled By:	pH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s):	Observations / Notes:  <div style="text-align: center;">             DUPLICATE SAMPLE OF              ( HN29I )               BP-G-29I-Ø2           </div>				
Type of Sample <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
Analysis	Preservative	Organic	inorganic		
		Traffic Report #			
		Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume			



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. BP-6-29D-Ø2 Source Location HN29D

Total Well Depth: <u>221' TPVC</u>		Purge Data				
Well Casing Size & Depth: <u>4" PVC 221</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>47.88' TPVC</u>		<u>0</u>	<u>7.61</u>	<u>160</u>	<u>10.1</u>	<u>clear low</u>
One Casing Volume: <u>113 GAL</u>		<u>1</u>	<u>7.15</u>	<u>140</u>	<u>10.5</u>	↓ ↓
Start Purge (hrs.): <u>0926</u>		<u>2</u>	<u>6.50</u>	<u>130</u>	<u>9.2</u>	↓ ↓
End Purge (hrs.): <u>1124</u>		<u>3</u>	<u>6.50</u>	<u>130</u>	<u>10.1</u>	↓ ↓
Total Purge Time (min.): <u>1 hr 58 min</u>						
Total Amount Purged (gal.): <u>~340 gal</u>						
Monitor Reading: <u>-</u>						
Purge Method: <u>SUBM. PUMP</u>						
Sample Method: <u>Sy BAIER</u>						
Depth Sampled: <u>~ 48'</u>						
Sample Date & Time: <u>03-12-93 1215</u>		Sample Data				
Sampled By: <u>ER</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s): <u>E. Rudman</u>		<u>6.50</u>	<u>130</u>	<u>10.1</u>	<u>clear</u>	<u>low</u>
Type of Sample		Observations / Notes: <u>NO DRAWDOWN</u>				
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TCL VOA</u>	<u>4" + HCL</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Project Site Name BETHPAGE Project Site Number 053  
 NUS Source No. BP-6-40S-02 Source Location HN40S

8.50'

Total Well Depth: <u>59' TOC</u>		Purge Data				
Well Casing Size & Depth: <u>4" PVC 59'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
		I	5.0	425	8.0	TAN H
Static Water Level: <u>50.50'</u>		1	5.25	385	8.2	" "
One Casing Volume: <u>6 gal</u>		2	4.93	250	8.1	" "
Start Purge (hrs.): <u>1505</u>		3	?	?	?	" "
End Purge (hrs.): <u>1610</u>						
Total Purge Time (min.): <u>1hr 5min</u>						
Total Amount Purged (gal.): <u>18gal</u>						
Monitor Reading: <u>-</u>						
Purge Method: <u>SS bailer</u>						
Sample Method: <u>SS bailer</u>						
Depth Sampled: <u>51'</u>						
Sample Date & Time: <u>03-17-93 1620</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>MM</u>		-	-	-	-	
Signature(s)		Observations/Notes:				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Meters got wet - went down. Purged 3 full volumes.  (144 7 <sup>th</sup> Street)				
Analysis	Preservative		Organic	Inorganic		
<u>TCL V/A</u>	<u>4" + HCL</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				

**SAMPLE LOG SHEET**

Page \_\_\_\_\_ of \_\_\_\_\_

- 
- Monitoring Well Data
- 
- 
- Domestic Well Data
- 
- 
- Other \_\_\_\_\_

Case # \_\_\_\_\_

 By ER

 Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. BP-6-40I-02 Source Location HW40I

Total Well Depth: <u>118' Toc</u>		Purge Data				
Well Casing Size & Depth: <u>4" PVC 118</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>50.00</u>		<u>0</u>	<u>7.48</u>	<u>200</u>	<u>9.4</u>	<u>clear</u>
One Casing Volume: <u>6800 45gal</u>		<u>1</u>	<u>8.40</u>	<u>230</u>	<u>10.8</u>	<u>brn Hi</u>
Start Purge (hrs.): <u>1310</u>		<u>2</u>	<u>8.77</u>	<u>140</u>	<u>11.3</u>	<u>" "</u>
End Purge (hrs.): <u>1455</u>		<u>3</u>	<u>8.40</u>	<u>140</u>	<u>11.3</u>	<u>gray "</u>
Total Purge Time (min.): <u>145</u>		<u>4</u>	<u>8.35</u>	<u>140</u>	<u>11.3</u>	<u>gray "</u>
Total Amount Purged (gal): <u>180gal</u>						
Monitor Reading: <u>180gal</u>						
Purge Method: <u>Submers Pump</u>						
Sample Method: <u>SS boiler</u>						
Depth Sampled: <u>51'</u>						
Sample Date & Time: <u>03-17-93 1610</u>		Sample Data				
Sampled By: <u>MM</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s)		<u>8.35</u>	<u>140</u>	<u>11.3</u>	<u>gray high</u>	
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Observations / Notes:  <p style="text-align: center;">(144 7<sup>th</sup> st)</p>				
Analysis	Preservative	Organic		Inorganic		
<u>TCL vWA</u>	<u>4" HCL</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-G-DWP2-Ø2 Source Location HN40I

Total Well Depth: 118		Purge Data				
Well Casing Size & Depth: 4" PVC 118		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: 50.00						
One Casing Volume: 45 gal						
Start Purge (hrs.): 1340						
End Purge (hrs.): 1455						
Total Purge Time (min.): 1hr 15 min						
Total Amount Purged (gal.): 180						
Monitor Reading: -						
Purge Method: Submers Pump						
Sample Method: SS bucket						
Depth Sampled: 51'						
Sample Date & Time: 03-17-93 1610		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: MM		8.35	140	11.3	grey high	
Signature(s)  Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Observations / Notes:  Duplicate of BP-G-40I-Ø2				
Analysis	Preservative	Organic		Inorganic		
TCL 60A	4" HCl	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				

# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_  
By \_\_\_\_\_

Project Site Name BETH PAGE

Project Site Number 1953

HALLIBURTON NUS Source No. BP-6-413-02

Source Location HN 41 I

Total Well Depth: <u>55</u>		Purge Data				
Well Casing Size and Depth: <u>4" - 55'</u>		Volume	OH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>41.10</u>		<u>INITIAL</u>	<u>5.20</u>	<u>300</u>	<u>11.5</u>	<u>brown / v turbid</u>
One Casing Volume: <u>10 GAL</u>		<u>1st</u>	<u>5.13</u>	<u>280</u>	<u>11.5</u>	<u>brown / v cloudy</u>
Start Purge (hrs.): <u>1005</u>		<u>2nd</u>	<u>5.09</u>	<u>260</u>	<u>11.6</u>	<u>brown / cloudy</u>
End Purge (hrs.): <u>1010</u>		<u>3rd</u>	<u>5.03</u>	<u>260</u>	<u>11.4</u>	<u>lt brown / cloudy</u>
Total Purge Time (min.): <u>5</u>						
Total Amount Purged (gal.): <u>40</u>						
Monitor Reading: <u>-</u>						
Purge Method: <u>SUB PUMP</u>						
Sample Method: <u>BAILER</u>						
Depth Sampled: <u>50'</u>						
Sample Date and Time: <u>3-12-93 1050</u>		Sample Data				
Sampled By: <u>M. MENDEL</u> <u>P. DAVIS</u>		OH	SC	Temp. (°C)	Color & Turbidity	
Signature(s):		<u>5.03</u>	<u>260</u>	<u>11.4</u>	<u>lt brn / cloudy</u>	
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		Observations/Notes:  <div style="text-align: center; font-size: 1.2em;">(72 3rd st)</div>				
Analysis	Preservative:	Organic		Inorganic		
<u>VOP</u>	<u>HCL 4m</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				

# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By \_\_\_\_\_

Project Site Name BETH PAGE

Project Site Number 1953

HALLIBURTON NUS Source No. BP-6-41E-02

Source Location HN-41E

Total Well Depth: <u>113'</u>		Purge Data				
Well Casing Size and Depth: <u>4" - 113'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>41.15</u>		<u>INITIAL</u>	<u>7.33</u>	<u>460</u>	<u>9.3</u>	<u>Brown / cloudy</u>
One Casing Volume: <u>47 GAL</u>		<u>1</u>	<u>7.10</u>	<u>380</u>	<u>9.5</u>	<u>LT brown / cloudy</u>
Start Purge (hrs.): <u>0915</u>		<u>2</u>	<u>6.20</u>	<u>300</u>	<u>10.8</u>	<u>clear / low</u>
End Purge (hrs.): <u>0955</u>		<u>3</u>	<u>5.41</u>	<u>300</u>	<u>10.7</u>	<u>clear / low</u>
Total Purge Time (min.): <u>35</u>						
Total Amount Purged (gal.): <u>160</u>						
Monitor Reading: <u>—</u>						
Purge Method: <u>Sub Pump</u>						
Sample Method: <u>BAILER</u>						
Depth Sampled: <u>50</u>						
Sample Date and Time: <u>3-12-93 1045</u>		Sample Data				
Sampled By: <u>M MENDEL</u> <u>P P. SUIIS</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s):		<u>5.41</u>	<u>300</u>	<u>10.7</u>	<u>clear / low</u>	
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab-Composite		Observations/Notes:  <div style="font-size: 2em; margin-top: 20px;">( 72 3<sup>rd</sup> st )</div>				
Analysis	Preservative	Organic		Inorganic		
<u>VOP</u>	<u>HCL 4%</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				

# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_  
By \_\_\_\_\_

Project Site Name BETH PAGE

Project Site Number 1953

HALLIBURTON NUS Source No. BP-6-<sup>425</sup>~~102~~-02

Source Location HN425

Total Well Depth: <u>60 <del>54</del>'</u>	Purge Data				
Well Casing Size and Depth: <u>4" <del>54'</del></u>	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>52.04</u>	<u>INITIAL</u>	<u>6.81</u>	<u>180</u>	<u>8.3</u>	<u>BROWN / V. TURBID</u>
One Casing Volume: <u><del>52</del> 2</u>	<u>1</u>	<u>6.33</u>	<u>200</u>	<u>8.1</u>	<u>BROWN / V. TURBID</u>
Start Purge (hrs.): <u>1000</u>	<u>3</u>				
End Purge (hrs.): <u>1010</u>	<u>4</u>	<u>6.10</u>	<u>210</u>	<u>9.9</u>	<u>BROWN / TURBID</u>
Total Purge Time (min.): <u>10</u>	<u>5</u>	<u>5.90</u>	<u>220</u>	<u>10.0</u>	<u>CLOUDY / SLIGHTLY TURBID</u>
Total Amount Purged (gal.): <u>50</u>					
Monitor Reading:					
Purge Method: <u>SUB PUMP</u>					
Sample Method: <u>BAKER</u>					
Depth Sampled: <u>55'</u>					
Sample Date and Time: <u>3-17-93 1030</u>	Sample Data				
Sampled By: <u>M MENDEL P DAVIS</u>	pH	S.C.	Temp. (°C)	Color & Turbidity	
	<u>5.90</u>	<u>220</u>	<u>10.0</u>	<u>CLOUDY SLIGHTLY TURBID</u>	
Signature(s):	Observations/Notes:				
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Type of Sample</li> <li><input checked="" type="checkbox"/> Low Concentration</li> <li><input type="checkbox"/> High Concentration</li> <li><input checked="" type="checkbox"/> Grab</li> <li><input type="checkbox"/> Composite</li> <li><input type="checkbox"/> Grab-Composite</li> </ul>	<p><u>22</u> <u>(240-27281) (Maple + 7th St)</u></p>				
Analysis	Preservative	Organic	Inorganic		
<u>VDA</u>	<u>HCL 14"</u>	Traffic Report #			
		Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume			



# SAMPLE LOG SHEET

Page      of     



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_  
By \_\_\_\_\_

Project Name BETH PAGE

Project Site Number 1953

HALLIBURTON NUS Source No. BP-6-<sup>42I</sup>~~42I~~-02

Source Location HN42I

Total Well Depth: <del>110'</del> <u>110'</u>		Purge Data			
Well Casing Size and Depth: <u>4" 110'</u>	Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
	<u>INITIAL</u>	<u>11.85</u>	<u>1000</u>	<u>10.1</u>	<u>Brown / cloudy</u>
Static Water Level: <u>51.49</u>	<u>1</u>	<u>11.02</u>	<u>360</u>	<u>10.1</u>	<u>Brown / v. silty</u>
One Casing Volume: <u>39 GAL.</u>	<u>2</u>	<u>9.50</u>	<u>180</u>	<u>9.9</u>	<u>grey / cloudy</u>
Start Purge (hrs.): <u>0920</u>	<u>3</u>	<u>8.25</u>	<u>170</u>	<u>10.0</u>	<u>clear</u>
End Purge (hrs.): <u>0945</u>					
Total Purge Time (min.): <u>25</u>					
Total Amount Purged (gal.): <u>140</u>					
Monitor Reading: <u>-</u>					
Purge Method: <u>Sub. Pump</u>					
Sample Method: <u>BAUER</u>					
Depth Sampled: <u>60'</u>					
Sample Date and Time: <u>3-17-93 1000</u>	Sample Data				
	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>M MENDEL P DAVIS</u>	<u>8.25</u>	<u>170</u>	<u>10.0</u>	<u>clear</u>	
Signature(s):	Observations/Notes:				
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	(Maple + 7 <sup>th</sup> st)				
Analysis	Preservative:	Organic		Inorganic	
<u>VOA</u>	<u>HCL + 4°</u>	Traffic Report #			
		Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume			



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By \_\_\_\_\_

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. HN 43 I Source Location \_\_\_\_\_

Total Well Depth: <u>153'</u>		Purge Data				
Well Casing Size & Depth: <u>4" 153'</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:	<u>58.00</u>	<u>1st</u>	<u>11.29</u>	<u>680</u>	<u>22.5</u>	
One Casing Volume:	<u>61.1 GAL</u>	<u>2nd</u>	<u>8.90</u>	<u>120</u>	<u>18.5</u>	
Start Purge (hrs.):	<u>1300</u>	<u>3rd</u>	<u>8.60</u>	<u>80</u>	<u>18.0</u>	
End Purge (hrs.):	<u>1500</u>	<u>end</u>	<u>8.70</u>	<u>80</u>	<u>18.0</u>	
Total Purge Time (min.):	<u>120</u>					
Total Amount Purged (gal.):	<u>185</u>					
Monitor Reading:	<u>HNU - NONE</u>					
Purge Method:	<u>submersible pump</u>					
Sample Method:	<u>SS bailer</u>					
Depth Sampled:	<u>70'</u>					
Sample Date & Time: <u>5/26/93 1510</u>		Sample Data				
Sampled By: <u>KEVIN KILMARTIN</u> <u>MARK MENDEL</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
		<u>11.00</u>	<u>400</u>	<u>17.5</u>	<u>clear</u>	
Signature(s): <u>Mark H. Mengel</u>		Observations / Notes:				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative		Organic	Inorganic		
<u>NOA'S</u>		Traffic Report #				
		Tag #				
		AB #				
		Date Shipped	<u>5/26/93</u>			
		Time Shipped				
		Lab	<u>PACC</u>			
		Volume				

# SAMPLE LOG SHEET

Page      of     



- Monitoring Well Data
- Domestic Well Data
- Other \_\_\_\_\_

Case # \_\_\_\_\_

By MM

Project Site Name BETH PAGE

Project Site Number 1953

HALLIBURTON NUS Source No. BP-6-US65-02

Source Location USGS WELL

Total Well Depth: <u>66'</u>	Purge Data				
Well Casing Size and Depth: <u>2" 66'</u>	Volume	OH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>45.00</u>	<u>INITIAL</u>	<u>805</u>	<u>60</u>	<u>13.1</u>	<u>BLACK / U HIGH</u>
One Casing Volume: <u>4</u>	<u>1</u>	<u>7.33</u>	<u>60</u>	<u>4.7</u>	<u>BLACK / U HIGH</u>
Start Purge (hrs.): <u>1355</u>	<u>2</u>	<u>6.75</u>	<u>1000</u>	<u>10.5</u>	<u>BLACK / U HIGH</u>
End Purge (hrs.): <u>1430</u>	<u>3</u>	<u>6.60</u>	<u>1600</u>	<u>10.0</u>	<u>BLACK / U HIGH</u>
Total Purge Time (min.): <u>35</u>					
Total Amount Purged (gal.): <u>15</u>					
Monitor Reading: <u>-</u>					
Purge Method: <u>SS BAILER</u>					
Sample Method: <u>SS BAILER</u>					
Depth Sampled: <u>60'</u>					
Sample Date and Time: <u>3-12-93 1435</u>	Sample Data				
Sampled By: <u>M. MENUELL P. DAVIS</u>	OH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s):	<u>6.60</u>	<u>1600</u>	<u>10.0</u>	<u>BLACK V-HIGH</u>	
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab-Composite	Observations/Notes:  <p style="text-align: right;">(ON 11<sup>th</sup> ST)</p> <p style="text-align: center;">Full of organics</p> <p style="text-align: center;">TD should be ~ 73' - well acts like a storm sewer.</p>				
Analysis	Preservative	Organic		Inorganic	
<u>VOL</u>	<u>HCL + 4m</u>				
		Traffic Report #			
		Tag #			
		AB #			
		Date Shipped			
		Time Shipped			
		Lab			
		Volume			



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TRIP BLANK

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE Project Site Number 1953

NUS Source No. TRIP BLANK 03-11-93 Source Location FROM LAB

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method:						
Depth Sampled:						
Sample Date & Time: <u>03-11-93 FROM LAB</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s): <i>E. Johnson</i>		Observations / Notes:  <u>TRIP BLANK</u>  <u>03-11-93</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis:	Preservative	Organic		Inorganic		
<u>TCL UDA</u>	<u>4" + HCl</u>					
		Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TRIP BLANK

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. TRIP BLANK 03-12-93 Source Location FROM LAB

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:		/				
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method:						
Depth Sampled:						
Sample Date & Time: <u>03-12-93 FROM LAB</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s):  <u>E. Anderson</u>		Observations / Notes:  <u>TRIP BLANK</u>  <u>03-12-93</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TCL VOA</u>	<u>4°C + HCL</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

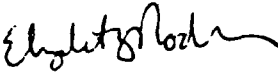
- Monitoring Well Data
- Domestic Well Data
- Other TRIP BLANK

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE Project Site Number 1953

NUS Source No. TRIP BLANK 03-16-93 Source Location FROM LAB

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method:						
Depth Sampled:						
Sample Date & Time:		Sample Data				
<u>03-16-93 FROM LAB</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s): 		Observations / Notes:				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input checked="" type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		TRIP BLANK 3/16/93				
Analysis	Preservative	Organic		Inorganic		
<u>TCL VOA</u>	<u>4° HCl</u>	Traffic Report #				
		Tag #				
		AG #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TRIP BLANK

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. TRIPBLANK 03-17-93 Source Location FROM PAGE LABS

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method:						
Depth Sampled:	↓					
Sample Date & Time:		Sample Data				
<u>03-17-93</u>	<u>FROM LABS</u>	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ERL</u>						
Signature(s) <u>[Signature]</u>		Observations / Notes:  <u>TRIP BLANK</u> <u>03-17-93</u>				
Type of Sample <input type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TEL VOA</u>	<u>4<sup>th</sup> HCL</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TRIP BLANK

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE

Project Site Number 1953

NUS Source No. TRIP BLANK 03-18-93

Source Location FROM PACE LABS

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method:						
Depth Sampled:						
Sample Date & Time:		Sample Data				
<u>03-18-93</u> <u>FROM LABS</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s) <u>ER</u>		Observations / Notes:  <u>TRIP BLANK 03-18-93</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TC - VOA</u>	<u>As HCL</u>					
		Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				





# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other TRIP BLANK

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. TRIPBLANK 03-19-93 Source Location FROM PAZ LABS

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method:						
Depth Sampled:						
Sample Date & Time: <u>03-19-93</u> <u>FROM LABS</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s): <u>ER</u>		Observations / Notes:  <p style="text-align: center; font-size: 1.2em;">TRIP BLANK 03-19-93</p>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TCL VOA</u>	<u>4°C HCL</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_  
 Case # \_\_\_\_\_  
 By ER

- Monitoring Well Data
- Domestic Well Data
- Other RINSATE

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-6-RB1-Ø2 Source Location RINSATE

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method: <u>Pour Through SS BAILER</u>						
Depth Sampled:						
Sample Date & Time:		Sample Data				
<u>03-11-93</u> <u>1545</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s): <u>E. Padman</u>		Observations / Notes: <u>STEAM DISTILLED</u> <u>THRU BAILER</u>  <u>RINSATE 1 - ANALYZE</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TCL VOA</u>	<u>HCL + 4~</u>					
		Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other RINSATE BLANK

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. BP-G-RB2-02 Source Location RINSATE

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal):						
Monitor Reading:						
Purge Method: <u>↓</u>						
Sample Method: <u>POUR THRU SS BAIER</u>						
Depth Sampled: <u>NA</u>						
Sample Date & Time:		Sample Data				
<u>03-12-93 1130</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s): <u>Eradman</u>		Observations / Notes:  <u>STEAM DISTILLED</u>  <u>RINSATE #2 - HOLD</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TCL VOA</u>	<u>4% HCl</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other RINSE

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. BP-G-RB3-Ø2 Source Location RINSE

Total Well Depth: <u>—</u>		Purge Data				
Well Casing Size & Depth: <u>—</u>		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level: <u>—</u>						
One Casing Volume: <u>—</u>						
Start Purge (hrs.): <u>—</u>						
End Purge (hrs.): <u>—</u>						
Total Purge Time (min.): <u>—</u>						
Total Amount Purged (gal.): <u>—</u>						
Monitor Reading: <u>—</u>						
Purge Method: <u>—</u>						
Sample Method: <u>over SS BAILER</u>						
Depth Sampled: <u>—</u>						
Sample Date & Time: <u>03-16-93 1225</u>		Sample Data				
Sampled By: <u>ER</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Signature(s): <i>Elyette Johnson</i>		Observations / Notes: STEAM DISTILLED H <sub>2</sub> O OVER SS BAILER				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		<u>RINSE # 3</u>  <u>ANALYZE</u>				
Analysis	Preservative		Organic	Inorganic		
<u>TCLVOA</u>	<u>Ac + HCL</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



- Monitoring Well Data
- Domestic Well Data
- Other Rinsate

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-G-RBA-02 Source Location Rinsate

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:	<u>↓</u>					
Sample Method:	<u>direct pour / bailer</u>					
Depth Sampled:	<u>NA</u>					
Sample Date & Time:		Sample Data				
<u>03-17-93</u>	<u>1600</u>	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By:	<u>ER</u>					
Signature(s)	<u>E. Rodman</u>	Observations / Notes:  <u>Rinsate blank</u>  <u>steam distilled over bailer</u>  <u>(H<sub>2</sub>O Analysis)</u>				
Type of Sample	<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite					
Analysis	Preservative	Organic	Inorganic			
<u>TCL VOA</u>	<u>40% rtcl</u>					
		Traffic Report #				
		Tag #				
		AG #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other RINSA-TE

Case # \_\_\_\_\_

By ER

Project Site Name BETHPAGE Project Site Number 1953  
 NUS Source No. BP-G-RBS-02 Source Location Rinsate

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method: <u>direct pour - subleak</u>						
Depth Sampled: <u>NA</u>						
Sample Date & Time: <u>03-18-93</u> <u>1230</u>		Sample Data				
		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s)  <u>Elyse Johnson</u>		Observations / Notes:  <u>Steam distilled thru boiler</u>  <u>Rinsate</u>  <u>(Analyze)</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TCL VOC</u>	<u>4% HCL</u>					
		Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



# SAMPLE LOG SHEET

Page \_\_\_\_\_ of \_\_\_\_\_

- Monitoring Well Data
- Domestic Well Data
- Other Rinsate

Case # \_\_\_\_\_

By ER

Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. BP-G-RBG-Ø2 Source Location Rinsate

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method: <u>pour thru bailer</u>						
Depth Sampled: <u>NA</u>						
Sample Date & Time:		Sample Data				
<u>03-19-93</u> <u>1115</u>		pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>ER</u>						
Signature(s): <u>E. Redman</u>		Observations / Notes:  <u>Rinsate - (H2O)</u>  <u>Steam Distilled thru bailer</u>				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite						
Analysis	Preservative	Organic		Inorganic		
<u>TEL WA</u>	<u>4<sup>th</sup> HCl</u>	Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				



- Monitoring Well Data
- Domestic Well Data
- Other FIELD BLANK

Project Site Name BETH PAGE Project Site Number 1953  
 NUS Source No. BP-G-FB1-02 Source Location FIELD BLANK

Total Well Depth: <u>NA</u>		Purge Data				
Well Casing Size & Depth:		Volume	pH	S.C.	Temp. (°C)	Color & Turbidity
Static Water Level:						
One Casing Volume:						
Start Purge (hrs.):						
End Purge (hrs.):						
Total Purge Time (min.):						
Total Amount Purged (gal.):						
Monitor Reading:						
Purge Method:						
Sample Method: <u>direct bottle pour</u>						
Depth Sampled: <u>NA</u>						
Sample Date & Time:		Sample Data				
<u>03-19-93</u>	<u>1130</u>	pH	S.C.	Temp. (°C)	Color & Turbidity	
Sampled By: <u>MM</u>						
Signature(s)		Observations / Notes:				
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite		<u>FIELD BLANK</u>  <u>Steam distilled direct pour</u>				
Analysis	Preservative	Organic		Inorganic		
<u>TOL VOA</u>	<u>10% HCL</u>					
		Traffic Report #				
		Tag #				
		AB #				
		Date Shipped				
		Time Shipped				
		Lab				
		Volume				





**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

Page 1 of 1

Case #           

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Rinsate Blank

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-RB102 Source Location PILOT Borehole HN24I3

Sample Method: <u>See NOTES</u>	Composite Sample Data		
Depth Sampled: <u>                  </u>	Sample	Time	Color / Description
Sample Date & Time: <u>1-14-93 1140</u>	/		
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C. Kilmartin</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Analysis: <u>TCL VOLATILES</u>			
Observations / Notes <u>STEAM H<sub>2</sub>O (LOT # 10791) poured over stainless steel trowel.</u>			
		Organic	Inorganic
Traffic Report #			
Tag #	<u>111473</u>		
Bottle No.	<u>111474</u>		
AB #	<u>FED EX 4799386701</u>		
Date Shipped	<u>1-14-93</u>		
Time Shipped	<u>1745</u>		
Lab	<u>PACE</u>		
Volume	<u>2: 40 ml vials</u>		



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Page 1 of 1

Case # -

By KCK

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-MS/MSD 101 Source Location PiLot Borehole HN24I1

Sample Method: <u>SPLIT-SPOON</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>150 - 152 FT.</u>	/		
Sample Date & Time: <u>1-14-93 1120</u>			
Sampled By: <u>STAN J. CONTI</u>			
Signature(s): <u>Kevin C. Filmar for STC</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
	<u>YL-Brown</u>	<u>Fine to medium sand; moist</u>	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes		
	<u>Matrix spike / matrix spike duplicate.</u>		
	<u>Sample depth not identified to Lab.</u>		
	<u>ID'D only as same sample as field dup.</u>		
	<u>HNU headspace of split sample = 0.4 ppv</u>		
		Organic	Inorganic
	Traffic Report #		
	Tag #		
	Bottle No.	<u>111829</u>	
	AB #	<u>FED EX 4799386701</u>	
	Date Shipped	<u>1-14-93</u>	
	Time Shipped	<u>1745</u>	
	Lab	<u>Pace</u>	
	Volume	<u>125 ml</u>	



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Page 1 of 1

Case #           

By KCK

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-FD101 Source Location PILOT Borehole HN24I1

Sample Method: <u>SPLIT - Spoon</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>150 - 152 FT.</u>			
Sample Date & Time: <u>1/14/93 1120</u>			
Sampled By: <u>STAN J. CONTI</u>			
Signature(s): <u>Kevin Kilmartin for SJC</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
	<u>YL-BROWN</u>	<u>FINE TO MEDIUM SAND; MOIST</u>	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes		
	<u>Field duplicate, sample depth not identified to lab. ID'd only as same sample as MS/MSD</u>		
	<u>HNu headspace of split sample = 0.4 ppm</u>		
		Organic	Inorganic
Traffic Report #			
Tag #			
Bottle No.	<u>111827</u>		
AB #	<u>FedEx 4799386701</u>		
Date Shipped	<u>1-14-93</u>		
Time Shipped	<u>1745</u>		
Lab	<u>Pace</u>		
Volume	<u>125 ml</u>		



**HALLIBURTON NUS**  
Environmental Corporation

# SAMPLE LOG SHEET

Page 1 of 1

Case #     

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-242I150 Source Location PILOT Borehole HN24I1

Sample Method: <u>SPLIT-SPoon</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>150-152 FT.</u>			/
Sample Date & Time: <u>1/14/93 1120</u>			
Sampled By: <u>STAN J. CONTI</u>			
Signature(s): <u>Kevin C Kilmartin for STC</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data			
Color		Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
<u>YL-Brown</u>		<u>Fine TO MEDIUM SAND, MOIST</u>	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes		
	<u>HNu headspace of split sample = 0.4 ppm</u>		
		Organic	Inorganic
Traffic Report #			
Tag #			
Bottle No.	<u>111835</u>		
AB #	<u>FedEx 4799386701</u>		
Date Shipped	<u>1-14-93</u>		
Time Shipped	<u>1745</u>		
Lab	<u>Pace</u>		
Volume	<u>125 ml</u>		



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

Page 1 of 1

Case # -

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-242I160 Source Location Pilot Borehole HN2421

Sample Method: <u>SPLIT - SPOON</u>	Composite Sample Data		
	Sample	Time	Color/Description
Depth Sampled: <u>160 - 161 ft</u>			/
Sample Date & Time: <u>1/14/93 1240</u>			
Sampled By: <u>STAN J. CONTI</u>			
Signature(s): <u>Kevin C Kilmartin for SJC</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Analysis: <u>TCL volatiles</u>			
	Sample Data		
	Color <u>Pink/Brown</u>	Description: (Sand, Clay, Dry, Moist, Wet, etc.) <u>SILTY fine sand; MOIST</u>	
	Observations / Notes  <u>HNu headspace of split sample = 28ppm</u>		
		Organic	Inorganic
	Traffic Report #		
	Tag #		
	Bottle No.	<u>111831</u>	
	AB #	<u>FeoEx 4799386701</u>	
	Date Shipped	<u>1-14-93</u>	
	Time Shipped	<u>1745</u>	
	Lab	<u>PACE</u>	
	Volume	<u>125 ml</u>	



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

Page 1 of 1

Case #       

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-242I140 Source Location Pilot Borehole HN24I1

Sample Method: <u>SPLIT-SPOON</u>	Composite Sample Data		
Depth Sampled: <u>140 - 141.5 FT</u>	Sample	Time	Color / Description
Sample Date & Time: <u>1/14/93 1015</u>			
Sampled By: <u>STAN J. CONTI</u>			
Signature(s): <u>Kevin C. Kilmartin for SSC</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
	<u>GY TO YI - Brn</u>	<u>FINE TO MEDIUM SAND; MOIST</u>	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes  <u>HNu headspace of split sample = 0.6 ppm</u>		
		Organic	Inorganic
	Traffic Report #		
	Tag #		
	Bottle No.	<u>111833</u>	
	AB #	<u>FedEx 4799386701</u>	
	Date Shipped	<u>1-14-93</u>	
	Time Shipped	<u>174.5</u>	
	Lab	<u>PACE</u>	
	Volume	<u>125 ml</u>	



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

Page 1 of 1

Case # -

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-242E10 Source Location Pilot Borehole HN24I1

Sample Method: <u>SPLIT-SPOON</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>10-12 ft</u>			/
Sample Date & Time: <u>1/13/93 1035</u>			
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C Kilmartin</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
	<u>OR-brown</u>	<u>course sand &amp; gravel</u>	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes <u>upper part of spoon = asphalt-like material (lag from surface?)</u> <u>HNU headspace of split sample ≈ 3.5 ppm</u>		
		Organic	Inorganic
	Traffic Report #		
	Tag # Bottle NO.	<u>111824</u>	
	AB #	<u>FedEx 4799386690</u>	
	Date Shipped	<u>1/13/93</u>	
	Time Shipped	<u>1300</u>	
	Lab	<u>PACE</u>	
	Volume	<u>125 ml</u>	



**SAMPLE LOG SHEET**

Page 1 of 1

Case # -

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Rinsate Blank

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-RB101 Source Location Pilot Borehole HN24I1

Sample Method: <u>See Notes</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled:			
Sample Date & Time: <u>1/13/93 1310</u>			
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C. Kilmartin</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes <u>STEAM H<sub>2</sub>O (LOT # 10791) poured through split-spoon sampler</u>		
		Organic	Inorganic
	Traffic Report #		
	Tag #	<u>111475</u>	
	Bottle No.	<u>111477</u>	
	AB #	<u>FEDEX 4799386690</u>	
	Date Shipped	<u>1/13/93</u>	
	Time Shipped	<u>1800</u>	
	Lab	<u>Pace</u>	
	Volume	<u>2: 40 ml vials</u>	







**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

Page 1 of 1

Case # —

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-243E130 Source Location Pilot borehole HN-24E2

Sample Method: <u>Split-Spoon</u>	Composite Sample Data		
	Sample	Time	Color/Description
Depth Sampled: <u>130-132 ft.</u>	/		
Sample Date & Time: <u>1/26/93 1115</u>			
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C. Kilmartin</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data			
Color		Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
<u>GRAY TO RED</u>		<u>Lithology: see notes; wet</u>	
Analysis: <u>TCL Volatiles</u>	Observations / Notes <u>Thin-bedded, variegated silts, fine sands, and clay stringers.</u> <u>HNU headspace of split sample = 4.4 pp</u>		
		Organic	Inorganic
Traffic Report #			
Tag #			
Bottle #.		<u>123880</u>	
AB #		<u>FDEx 4799386771</u>	
Date Shipped		<u>1/26/93</u>	
Time Shipped		<u>1555</u>	
Lao		<u>PACE</u>	
Volume		<u>125 ml</u>	



**SAMPLE LOG SHEET**

Page 1 of 1

Case #                     

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-243I140 Source Location PILOT borehole HW-24I2

Sample Method: <u>SPLIT-SPOON</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>140 - 142 FT.</u>			/
Sample Date & Time: <u>1/26/93 1155</u>			
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C. Kilmartin</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
Sample Data			
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)		
<u>Gray-black</u>	<u>VERY DENSE CLAY TO SILTY CLAY; WET</u>		
Analysis: <u>TCL VOLATILES</u>	Observations / Notes <u>HNu headspace of split sample = 92 ppm</u>		
	Organic	Inorganic	
Traffic Report #			
Tag # Bottle No.:	<u>123874</u>		
AB #	<u>Fed Ex 4799386771</u>		
Date Shipped	<u>1/26/93</u>		
Time Shipped	<u>1555</u>		
Lab	<u>PACE</u>		
Volume	<u>125 ml</u>		



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

Page 1 of 1

Case # —

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other \_\_\_\_\_

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-243I150 Source Location Pilot Borehole HN-24I2

Sample Method: <u>SPLIT-SPOON</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>150-152 FT.</u>	/		
Sample Date & Time: <u>1/26/93 1335</u>			
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C Kilmartin</u>			
Type of Sample			
<input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
	<u>See notes</u>	<u>See notes; WET</u>	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes		
	<u>gray to brown to reddish-brown, variegated medium sand with silt and clay stringers.</u>		
	<u>HNu headspace of split sample = 28 ppm</u>		
		Organic	Inorganic
	Traffic Report #		
	Tag #		
	Bottle #	<u>123878</u>	
	AB #	<u>FedEx 4799386771</u>	
	Date Shipped	<u>1/26/93</u>	
	Time Shipped	<u>1555</u>	
	Lab	<u>PACC</u>	
	Volume	<u>125 ml</u>	



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Field Blank

Page 1 of 1

Case # —

By KCK

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-FB101 Source Location Pilot Borehole HN24I'2

Sample Method: <u>See NOTES</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>—</u>			
Sample Date & Time: <u>1/26/93 1235</u>			
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C Kilmartin</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes <u>Steam distilled H<sub>2</sub>O, LOT # 10791</u>		
		Organic	Inorganic
	Traffic Report #		
	Tag #	<u>123895</u>	
	Bottle No.	<u>123894</u>	
	AB #	<u>FedEx 4799-386771</u>	
	Date Shipped	<u>1/26/93</u>	
	Time Shipped	<u>1555</u>	
	Lab	<u>PACE</u>	
	Volume	<u>2:40 ml vials</u>	



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

Page 1 of 1

Case # -

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other Rinsate Blank

Project Site Name BETHPAGE NWIRP

Project Site Number 1953

NUS Source No. BP-SB-RB104

Source Location Pilot Borehole HN24I2

Sample Method: <u>See NOTES</u>	Composite Sample Data		
	Sample	Time	Color/Description
Depth Sampled: <u>-</u>			
Sample Date & Time: <u>1/26/93 1255</u>			
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C. Kilmartin</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite			
	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes <u>Stream distilled H<sub>2</sub>O, LOT # 10791, POURED Through Split-Spoon sampler</u>		
		Organic	Inorganic
	Traffic Report #		
	Tag #	<u>111470</u>	
	Bottle No.	<u>111471</u>	
	AB #	<u>FEDEX 4799386771</u>	
	Date Shipped	<u>1/26/93</u>	
	Time Shipped	<u>1555</u>	
	Laboratory	<u>PACE</u>	
	Volume	<u>2: 40 ml vials</u>	



**HALLIBURTON NUS**  
Environmental Corporation

**SAMPLE LOG SHEET**

Page 1 of 1

Case #     

By KCK

- Surface Soil
- Subsurface Soil
- Sediment
- Lagoon / Pond
- Other RinSate Blank

Project Site Name BETHPAGE NWIRP Project Site Number 1953  
 NUS Source No. BP-SB-RB103 Source Location Pilot Borehole HN24I2

Sample Method: <u>See NOTES</u>	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: <u>    </u>			
Sample Date & Time: <u>1/25/93 1440</u>			
Sampled By: <u>KEVIN C. KILMARTIN</u>			
Signature(s): <u>Kevin C. KilMartin</u>			
Type of Sample <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> High Concentration <input checked="" type="checkbox"/> Grab <input type="checkbox"/> Composite <input type="checkbox"/> Grab - Composite	Sample Data		
	Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
Analysis: <u>TCL VOLATILES</u>	Observations / Notes <u>STEAM distilled H<sub>2</sub>O, Lot # 10791, poured over stainless steel trowel</u>		
		Organic	Inorganic
Traffic Report #			
Tag #	<u>123893</u>		
Bottle NO.	<u>123892</u>		
AB #	<u>FedEx 4799386771</u>		
Date Shipped	<u>1/26/93</u>		
Time Shipped	<u>1555</u>		
Lab	<u>PACE</u>		
Volume	<u>2: 40ml vials</u>		

**HALLIBURTON NUS Environmental Corporation and Subsidiaries**

**CHAIN OF CUSTODY RECORD**

PROJECT NO.: 1953		SITE NAME: BERTH HISE MUDP		NO. OF CON-TAINERS		REMARKS
SAMPLERS (SIGNATURE): Tony Sigala		STATION LOCATION				
STATION NO.	DATE	TIME	COMP	GRAB		
RS27	12/19/92	12:35		X	2	(LAB) → (Prepared 12/10/92 (600) AQUEOUS TO ANALYZE)
		12:40		X	2	↓ ↓ ↓
		0940		X	2	Soil RESIDUES →
RS28		0855		X	2	
RS29		0910		X	1	
RS25		0930		X	2	
RS24		0945		X	1	
RS30		1015		X	3	
DK224		1100		X	1	
DK229		1115		X	1	
DK215		1200		X	1	
DP001		-		X	3	SAME SAMPLE
MS01		-		X	1	
MSD01		-		X	1	
RELINQUISHED BY (SIGNATURE): Tony Sigala		DATE/TIME: 12/19/92	RECEIVED BY (SIGNATURE):		DATE/TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):		DATE/TIME: 1530	RECEIVED BY (SIGNATURE): FEDERAL EXPRESS		DATE/TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):		DATE/TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):		DATE/TIME:	REMARKS: SHIPPED TO PACE INC. AB# 4799386782



**HALLIBURTON NUS Environmental Corporation and Subsidiaries**

**CHAIN OF CUSTODY RECORD**

PROJECT NO.: 1953		SITE NAME: BETHPAGE NIXXP		STATION LOCATION	NO. OF COM. TAINERS	REMARKS
SAMPLERS (SIGNATURE): <i>Taylor</i>		DATE	TIME			
STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	REMARKS
SS212	12/18/82	1400		X	BP-SS212-A	
SS216		1410		X	BP-SS215-A	
SS214		1420		X	BP-SS214-A	
SS210		1430		X	BP-SS210-A	
DUP		-		X	BP-DUP 21-A	
MS/MSD		-		X	BP-MS/MSD 01-A	
DUP		-		X	BP-DUP 02-A	
MS/MSD		-		X	BP-MS/MSD 02-A	
BP-SS210-RB		1500		X	BP-SS210-RB	
BP-SS210-FB		1505		X	BP-SS210-FB	ANALYZE BLANKS ↓ ↓
RELINQUISHED BY (SIGNATURE): <i>Taylor</i> DATE/TIME: 12/15/82 1700 RECEIVED BY (SIGNATURE): FLORENCE CALONIS DATE/TIME: 12/15/82 1700						
RELINQUISHED BY (SIGNATURE): DATE/TIME: RECEIVED BY (SIGNATURE): DATE/TIME:						
RELINQUISHED BY (SIGNATURE): DATE/TIME: RECEIVED FOR LABORATORY BY (SIGNATURE): DATE/TIME: REMARKS: SAMPLED TO PHC Env. FOR ANALYSIS MS-1711336713						

NUS 440 REVISED 0891

**HALLIBURTON NUS Environmental Corporation and Subsidiaries** **CHAIN OF CUSTODY RECORD**

PROJECT NO.: 1953		SITE NAME: <i>DETAILED NIMTAP</i>		STATION NO.	DATE TIME	COMP	GRAB	STATION LOCATION	NO. OF CON-TAINERS	REMARKS		
SAMPLERS (SIGNATURE): <i>Tom Kojima</i>												
SS101	12/15/04	0815	X	BP-SS101-A	1							
SS102		0935	X	BP-SS102-A	1							
SB121		0930	X	BP-SB12103-A	1							
SS103		0910	X	BP-SS103-A	1							
SS104		0920	X	BP-SS104-A	1							
SS105		0930	X	BP-SS105-A	1							
SS106		0920	X	BP-SS106-A	1							
SB215		1100	X	BP-SB21503-A	1							
SB206		1140	X	BP-SB20603-A	1							
SS322		1205	X	BP-SS322-A	1							
SS207		1300	X	BP-SS207-A	1							
SS208		1315	X	BP-SS208-A	1							
SD201		1335	X	BP-SD201-A	1							
SD202		1345	X	BP-SD202-A	1							
RELINQUISHED BY (SIGNATURE): <i>Tom Kojima</i>		DATE/TIME:	14/02/05	RECEIVED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):		DATE/TIME:		RECEIVED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):		DATE/TIME:		RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE/TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):

REMARKS: SAMPLED TO STATE INC FOR ANALYSIS  
AD# 4799386793







# CHAIN OF CUSTODY RECORD

**HALLIBURTON NUS Environmental Corporation and Subsidiaries**

PROJECT NO.: 1953		SITE NAME: B. THORPE WIND		STATION LOCATION	NO. OF CON. TAINERS	REMARKS
SAMPLERS (SIGNATURE): <i>Templeton</i>						
STATION NO.	DATE	TIME	COMP	GRAB		
BPOR RBBG	12/14/92	0720		X	2	HOLD
BPOR 11		0730			2	
BPOR 5		1225			2	
BPOR RBBG	12/14/92				2	SAME SAMPLE FOR ANALYSIS
BPOR MSD					2	
BPOR MSD					2	
RELINQUISHED BY (SIGNATURE): <i>Templeton</i> / 12/14/92 DATE / TIME: 12/14/92 0730						
RECEIVED BY (SIGNATURE): DATE / TIME:						
RELINQUISHED BY (SIGNATURE): DATE / TIME:						
RECEIVED BY (SIGNATURE): DATE / TIME:						
RELINQUISHED BY (SIGNATURE): DATE / TIME:						
RECEIVED FOR LABORATORY BY (SIGNATURE): DATE / TIME:						
REMARKS:						

NUS 440 REVISED 06/91













1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50

1  
C  
1

**APPENDIX C**  
**BORING LOG SHEETS/GAMMA RAY LOGS**

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: Bethpage BORING NO.: HN24 I 1  
 PROJECT NO.: 1953 DATE: 1-13-93 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: KILMARTIN  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (ft) OR RUN NO.	BLOWS 5" OR 300 (1")	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.)	MATERIAL DESCRIPTION*		ROCK BR. OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR		
TIME 1035	10	2	12/24					1 4oz. Sample (111824 Bottle)
		4						
		15						
		14						
1110	20	11	14/24					1 4oz. Sample (111825 Bottle)
		11						
		18						
		18						
1135	30	25	12/24					1 4oz. Sample (111826 Bottle)
		26						
		26						
		21						
1205	40	11	8/24					1 4oz. Sample (111828 Bottle)
		50						
		100						

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

BORING HN24 I 1  
 PAGE 1 OF 3

\* See Legend on Back

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: \_\_\_\_\_ BORING NO.: HN24I1  
 PROJECT NO.: \_\_\_\_\_ DATE: 1-13-93 DRILLER: \_\_\_\_\_  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: KEVIN C. KILMARTIN  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (FL) OR RUN NO.	BLOWS 6" OR 300 (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, Ft.)	MATERIAL DESCRIPTION*		ROCK BR. OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR		
1420	100	5	14/24			BLK	9" Sand & Gravel - lag	
		11				RED-RED-BRN	5" MED sand	
		48				BRN-YI-BRN	4" MED sand	
		50						
1530	110	15	18/24			BLK	6" sand - lag	
		43				RED-YI-BRN	12" Fine to med sand, Some laminations of STICKY GRAY CLAY	
		50						
1615	120	6	24/24			BLK	12" sand - lag	
		26				BRN-RED-BRN-YI-BRN	12" SILTY TO CLAYEY, fine to med sand	
		47						
		50						
1650	130	27	24/24			BLK	12" sand - lag	
		42				BRN	6" fine - med sand	
		50				GY	6" clayey, v. fine sand	

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

BORING HN24I1  
 PAGE 2 OF 3

\* See Legend on Back

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE BORING NO.: HN 24 I 1  
 PROJECT NO.: 1953 DATE: 1-14-93 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: CONTI  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (FT.) OR RUN NO.	BLOWS 6" OR 400 (ft.)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.)	MATERIAL DESCRIPTION*			ROCK BR. OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
S-C	140.0	44 48	1.5/1.5		V-DENSE	GRAY YELLOW	FINE TO MED SAND	SP	MOIST
1015	141.5	50/2				BRN			TOOK 1-40Z JAR SAMPLE (111833) ALSO TOOK H.S.P SAMPLE WAS _____ PPM NO CLAY IN SAMPLE
S-	150.0				V DENSE	YELLOW BRN	FINE TO MED SAND	SP	MOIST - TOOK 3-40Z JARS 111827-111835 111829
1125		13 92	1.5/2.0						THIS FOR HS/MSD ALSO TOOK HSP SAMPLE ALSO NOTED 1/2" SEAM OF GRAY CLAY @ 151'
	152.0	101 72							
S-	160.0	13	1.5/1.5		V DENSE	LT BRN	SILTY FINE SAND	SP	MOIST TOOK 1-40Z
1240	161.	62 78						SM	SAMPLE CONT NO. JAR 111831

REMARKS FAILING RIGS - 2" SPT SAMPLES

BORING HN24I1  
 PAGE 2 OF 2

\* See Legend on Back



# GAMMA RAY LOG BY

DELTA WELL  
& PUMP CO., INC.  
97 Union Avenue P O Box 1309  
ROCKONKOMA NEW YORK 11779  
(516) 461-7255

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL ~~HN-24I1~~ HN-24I1 OWNER NAVY @ GRUMMAN

MEASURING POINT 1 feet above below ground level DATE 1-14-93

DRIILLER M. Pellegrino BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR C. Okon

COURTS SETTING (GR-73) 5m/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

SECONDS	DEPTH (ft)	COUNTS PER SECOND	INCREASING GAMMA RAY EMISSIONS			
			5	10	15	20
10	168	10				
20	162.9	5				
13	160	7.9				
15	157.9	6.9				
47	155	2				
29	152.9	3.9				
11	150	9				
23	147.9	4.9				
18	149	5.9				
33	142.9	3				
17	140	6				
23	137.9	4.9				
19	135	5.9				
26	132.9	4				
19	130	5.9				
23	127.9	4.9				
19	125	5.9				
22	122.9	4.9				
19	120	6.9				
17	117.9	6				
14	115	7				
17	112.9	6				
16	110	6.9				
22	107.9	4.9				
20	105	5				
22	100	4.9				
23	97.9	4.9				
17	95	6				
19	92.9	5.9				
18	90	5.9				
23	87.9	4.9				
24	85	4				
21	82.9	5				
17	80	6				
19	77.9	5.9				
17	75	6				
23	72.9	4.9				
8	70	12.9				
17	67.9	6				
15	65	6.9				
11	62.9	9				

HN-24I1

~~HN-24I2~~

1-14-93

SECONDS	DEPTH	COUNTS PER SECOND
15	60	6.5
22	57.5	4.5
19	55	5.5
20	52.5	5
20	50	5
23	47.5	4.5
22	45	4.5
24	42.5	4
20	40	5
24	37.5	4
14	35	7
23	32.5	4.5
18	30	5.5
16	27.5	6.5
21	25	5
22	22.5	4.5
17	20	6
16	17.5	6.5
17	15	6
16	12.5	6.5
20	10	5
21	7.5	5
14	5	7
10	2.5	10
11	1	9

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE NWERP BORING NO.: HW24I2  
 PROJECT NO.: 1953 DATE: 1-25-93 DRILLER: \_\_\_\_\_  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: KEVIN C. KILMARTIN  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (ft.) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.)	MATERIAL DESCRIPTION*			ROCK BR. OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
1300	10	4 39 25 24	6/24				4" brown CLAY	Bottle NO 123877	
							2" brown coarse sand with some silt		
							Small sample, insufficient for analytical; will use for headspace only	Headspace = 0.2	
1329	20	3 16 20 32	15/18				15" coarse brown sand with common gravel	Bottle NO 123876	
					*	*	Selected for analysis	Headspace = 0.2	
1350	30	15 33 32 35					Gravel stuck in tip; NO SAMPLE	Bottle NO	
1465	32		24/24				24" coarse brown sand with common gravel	123875 Headspace = 0.2	
1420	40	15 24 42 100	21/24				21" coarse brown to whitish sand with common gravel	Bottle NO 123872 Headspace = 0.2	

REMARKS Resate blank taken over  
Sampling travel at 1340.  
LOT NO 10791 BP-RB-103

BORING HW24I2  
 PAGE 1 OF 3

\* See Legend on Back

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: \_\_\_\_\_ BORING NO.: HN24I  
 PROJECT NO.: \_\_\_\_\_ DATE: 1-26-93 DRILLER: \_\_\_\_\_  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: \_\_\_\_\_  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (Fe.) OR RUN NO.	BLOWS 6" OR 100 (Fe.)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, Ft.)	MATERIAL DESCRIPTION*			ROCK BR. or USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
0920	100	14 33 43 61	8/15		LT BRN		4" coarse sand/gravel-LAE		HeadSpace - 22 ppm
					LT BRN TL		12" medium to coarse sand w/ silty stringers		
							1 ft of water at 110'		
0900	110	15 5 14	K 1/24		LT BRN TL MID		3" med. clean sand		HeadSpace: 11.2 ppm
					GY		2" very sticky dense clay. Trap is clogged.		
0945	120	16 13 23 30	24/24		LT BRN		10" med silty & sticky clay		HeadSpace: 11.0 ppm
					LT CL TL		14" med TL coarse sand		
					BUCK				
1115	130	25 11 14 55	22/24		LT BRN		14" coarse sand lay?		Bottom # 123830
					GY TL		9" variegated silts, fine sand, & clay stringers.		HeadSpace: 4.4 ppm
					RED		Thin-bedded		Sample
1155	140	23 9 63	24/24		GY		14" med TL coarse sand lay?		Bottom # 123874
					GY TL		10" very dense med hard clay		HeadSpace: 92 ppm
					BUCK		TO SILTY CLAY		Sample

REMARKS NOTE Field Blank BP-98-FB101 at 1235  
 LCT NO 10791  
 Rinsejar Blank BP 513-RB104 at 1255 over  
 Split - 3pcen.  
 \* See Legend on Back

BORING HN24I2  
 PAGE 2 OF 3

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: \_\_\_\_\_ BORING NO.: HN24I  
 PROJECT NO.: \_\_\_\_\_ DATE: 1-26-93 DRILLER: \_\_\_\_\_  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: \_\_\_\_\_  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (FT.) OR RUN NO.	BLOWS 6" OR 100 (FT.)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, Ft.)	MATERIAL DESCRIPTION*			ROCK STR. OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
<del>1935</del>		<u>14</u>	<u>24/24</u>		12"	BLK	med. sand, w. th 2" clay "plug"		Bottle no 123878
1935	150	<u>165</u> <u>57</u>			12"	gy to brn to	variegated med sand with silts and clay		Headspace: 28 ppm
					10.6 in		strings thin-bedded		
1435	160	<u>46</u> <u>78</u> <u>78</u>	<u>24/24</u>		16"	BLK	med sand clay?		Headspace: 1.4%
					3"	gy, brn, red brn	variegated clayey & silty, fine sand with some clay stringers. thin-bedded.		

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

BORING HN24I2  
 PAGE 3 OF 3

\* See Legend on Back

LC36

# GAMMA RAY LOG BY

DELTA WELL & PUMP CO., INC.  
97 Union Avenue P.O. Box 1309  
ROCKONKOMA NEW YORK 11779  
(516) 881-2255

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL HN2412

OWNER NAVY E GRUMMAN

MEASURING POINT 1 feet above below ground level DATE 1-26-93

DRIILLER Mike Pellegino BOREHOLE DEPTH 1685 feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Okon

COUNTS SETTING (GR-73) GM/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

All depths measured to top of probe. Probe is 18" long

SECONDS	DEPTH (FT)	COUNTS PER SECOND	INCREASING GAMMA RAY EMISSIONS			
			5	10	15	20
25	62.5	4				
24	60	4				
19	57.5	5.5				
20	55	5				
20	52.5	5				
19	50	5.5				
17	47.5	6				
24	45	4				
18	42.5	5.5				
18	40	5.5				
16	37.5	6.5				
16	35	6.5				
17	32.5	6				
16	30	6.5				
13	27.5	7.5				
13	25	7.5				
16	22.5	6.5				
53	20	2.5				
31	17.5	3				
13	15	5.5				
11	12.5	5.5				
13	10	5.5				
17	7.5	6				
12	5	8.5				
24	2.5	4				
3	1	12.5				

LC36

# GAMMA RAY LOG BY

DELTA WELL & PUMP CO., INC.  
97 Union Avenue P.O. Box 1309  
RONKONKOMA NEW YORK 11779  
(516) 981-2255

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL HN2412

OWNER NAVY@GRUMMAN

MEASURING POINT 1 feet above/below ground level DATE 1-26-93

DRILLER Mike Pellegrino BOREHOLE DEPTH 165.5 feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Okon

COUNTS SETTING (GR-73) GM/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

A.1 section measured at top of probe. Probe is 8" long.

SECONDS	DEPTH (FT)	COUNTS PER SECOND	INCREASING GAMMA RAY EMISSIONS			
			5	10	15	20
13	164	7.5				
13	162.5	7.5				
19	160	5.5				
16	157.5	6.5				
16	155	6.5				
22	152.5	4.5				
17	150	6				
20	147.5	5				
19	145	6.5				
5	142.5	20				
5	140	16.5				
7	137.5	14.5				
16	135	6.5				
18	132.5	11				
15	130	6.5				
23	127.5	4				
14	125	7				
11	122.5	5.5				
12	120	6				
13	117.5	5.5				
5	115	20				
7	112.5	14.5				
6	110	16.5				
10	107.5	6.5				
14	105	5.5				
20	102.5	4				
13	100	5.5				
23	97.5	4.5				
5	95	5.5				
24	92.5	4				
31	90	3				
27	87.5	3.5				
22	85	4.5				
23	82.5	4.5				
19	80	5.5				
20	77.5	5				
21	75	5				
17	72.5	6				
23	70	4.5				
14	67.5	7				
24	65	4				

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE RT, PHASE II<sup>JR</sup> 1953 BORING NO: SB01 / PIEZOMETER #1  
 PROJECT NO.: 1953 DATE: 12-2-92 DRILLER: NOT, RICH B. DENNIS  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED RAMSER / KEVIN KILMARTIN  
 WATER LEVEL DATA: 53.5' BGS 1600HRS/12-2-92  
 (Date, Time & Conditions) \_\_\_\_\_ \* HN2753 \*

SAMPLE NO. & TYPE OR ROD	DEPTH (FT) OR RUN OR ROD NO.	BLOWS 6" OR ROD (N)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DOUBLE) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	* HNJ READINGS BACKGROUND = 0.5ppm HS BE REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION				
											1120 HRS BEGINNING DRILL
	5							BLK. DR. BRN			
								YELLOW BRN		GRAVELS + SAND w/some SILT	3.0ppm H30* 0.0
										GRAVELS ~ 1.5" SUBROUND TO ROUNDED	MOIST
	10										70.0ppm 0.5
											DRAW TUBE CHECK - NO RESPONSE
	15										7-15ppm 0.0
								DK. YEL. DR. BRN		AS ABOVE	
	20										
	25									AS ABOVE	3.5ppm 5.0

REMARKS: POSITIVE DRILL RECORD, NO SAMPLES TAKEN AT THIS LOCATION  
OVERCAST CLOUD 35% A 2" PVC PIEZOMETER IS TO BE INSTALLED AT THIS LOC.  
 \* HS = HEAD SIGNAL, BE = BREATHING GUN, BORING w/ 4" ID HSA

DRILLER TUBE CHECK - NO RESPONSE SB01  
 BORING #1, PHASE II  
 PAGE 1 of 3

W.L. MEASURED AT MW 275 BGS 1100 HRS 12-2-92 (WELL DRILL AT THIS LOCATION TO 61 HEAD SIGNAL)



**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE RT. PHASE II BORING NO: SB-01/BIEZOMETER #  
 PROJECT NO.: 1953 DATE: 12-2-92 DRILLER: ADT. RICH B. DENNIS  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W. RAMSER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			REMARKS		
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION			
						AS ABOVE				
	30			GRADATIONAL CHANGE GRAVEL TO SAND			SAND + GRAVEL	HS	DZ	
						ORANGE BRN	SAND CONTENT INCREASES WITH DEPTH TO 37'			
	35							5.0	0.0	
						ORANGE BRN	SAND w/LOT GRA.		GRINNELS ~ 1" φ	0.5
	40									
	45									
	50					AS ABOVE				

REMARKS 1230 HRS STOPPED BORING, DRILLERS LEAVE SITE TO GET APPS UPGRADE TO LEVEL C

BORING SB01

PAGE 2 OF 3

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II BORING NO: SB-01/PIEZOMETER  
 PROJECT NO.: 1953 DATE: 12-2-92 DRILLER: ADT  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED WILCHNER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DOWN) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			SOUNDNESS TESTS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
							SAND w/ SOME GRAVEL		
	55								
	60								
							TD at 62		
							COMPLETED DRILLING @		
							1400 HRS		
	65								
	6								

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

BORING SB-01  
 PAGE 3 of 3

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II RT BORING NO: Piezometer #2  
 PROJECT NO.: 1953 DATE: 12-3-92 DRILLER: Rick B. DENNIS ADT  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W RAMSER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) PARTLY SUNNY, WINDY COLO 35°C \*HN2752\*

SAMPLE NO & TYPE OR ROD	DEPTH (ft) OR SUB NO.	BLOWS 6" OR ROD (N)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		SPT OR CON TESTS	HNU READINGS	
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR		MATERIAL CLASSIFICATION	REMARKS
					DK-BRN	SANDY GRAVEL w/SONA SILT		HS	BZ
	5				YELLOW-BN GRU	SILT GRAVEL w/FINE SAND TO SILT		0.0ppm	0.0
	10								
	15							0.0ppm	0.0ppm
	20				DK-YELL W/SP SANDY GRAVEL OR SILT GRU				
	25					AS ABOVE		0.0ppm	0.0ppm

REMARKS MCS-P Drill Pipe (61 HSA) NO SPT SAMPLES TAKEN AT THIS LOC.

BORING Piezometer #2

PAGE 1 of 3

REC'D 12-15-92

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II RC BORING NO: PIEZOMETER #2  
 PROJECT NO.: 1953 DATE: 12-3-92 DRILLER: RICH B. DENNIS ADT  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W. RAMSER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (ft)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DEPTH, FT) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	CORRECTIONS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR					
	30										
	35						YELLOW BROWN		SAND w/SOME GRAVEL ~20% TR SILT		
									GRAVEL CONTENT DECREASES WITH depth		
									↓		
	40										
	45						YELLOW BROWN		SAND TR GRAVEL + SILT		
	50						YELLOW BROWN		SAND w/SOME SILT		

GRADIENTUAL CHANGE FROM SAND TO SILT

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

BORING PIEZ. #2

PAGE 2 OF 3

PROJECT: BETH PAGE, PHASE II RE BORING NO: PIEZOMETER #2  
 PROJECT NO.: 1953 DATE: 12-3-92 DRILLER: RICH B. DENNIS  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W. RAMSER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DEPTH, FT.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		SOUNDING RECORDS	REMARKS	
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR			
						Yellowish BRN	SAND w/ coarse SILT	45	MOIST TO WET
	55							00	000
	60						AS ABOVE		
							TO @ 61.5'		
							COMPLETED @ 1505		

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

BORING PIEZ #2  
 PAGE 3 OF 3

LC36

**HN-2712**

# GAMMA RAY LOG BY

DELTA WELL & PUMP CO., INC.  
97 Union Avenue P.O. Box 1309  
ROCKY HILL, NEW YORK 11779  
(516) 881-7255

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL PW 1, SITE 1

OWNER NAVY@GRUMMAN

MEASURING POINT GRADE feet above/below ground level DATE 1-5-93

DRILLER R. ELMENDORF BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR C. OKON

COUNTS SETTING (GR-73) GM/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR 81) \_\_\_\_\_

\* All depths measured to top of probe. Probe is 18" long.

SECONDS	DEPTH (FT) *	COUNTS PER SECOND	INCREASING GAMMA RAY EMISSIONS			
			5	10	15	20
36	145	3				
16	142.5	6.5				
17	140	6				
25	137.5	4				
19	135	5.5				
39	132.5	2.5				
69	130	1.5				
48	127.5	2				
25	125	4				
33	122.5	3				
25	120	4				
36	117.5	3				
36	115	3				
38	112.5	2.5				
33	110	3				
25	107.5	4				
30	105	3.5				
24	102.5	4				
32	100	3				
37	95	2.5				
29	90	3.5				
23	85	4.5				
29	80	3.5				
32	75	3				
27	70	3.5				
35	65	3				
53	60	2				
53	55	2				
40	50	2.5				
30	45	3.5				
36	40	3				
44	35	2.5				
40	30	2.5				
46	25	2				
32	20	3				
36	15	3				
42	10	2.5				
36	5	3				
21	0	5				

PROJECT: BETH PAGE BORING NO: HN-43I  
 PROJECT NO: 1953 DATE: 5-6-93 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: M. MENDEL  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			B O R E H O L E S C E N E S	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
	0								
									SEE LOG FROM
	5								
	10								
	20								
	25								

REMARKS RIG: F10 FAILING

---



---

BORING HN43 Pilot  
 PAGE 1 . 7

**BORING LOG**

**NUS CORPORATION**

PROJECT: BETH PAGE BORING NO.: HN-43 I  
 PROJECT NO.: 1953 DATE: 5-6-93 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: M. MENDEL  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (ft)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			BORING RECORD SECTIONS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
	30								
	35								
	40								
	45								
	50								

SEE LOGS FROM

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

HN43  
 BORING Pilot  
 PAGE 2 OF 7



**BORING LOG**

**NUS CORPORATION**

PROJECT: BETHPAGE BORING NO.: HN-43 I  
 PROJECT NO.: 1953 DATE: 5-6-93 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: M. MENDEL  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		B O R I N G U S E R C O N S E N S E S	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR		
S-1	50-52'	36 42 49 58	1.1/20		DENSE	LIGHT BROWN		1015 FINE LIGHT BROWN SAND TRACE GRAVEL, TRACE MICA HEADSPACE 1 PPM HNU SL HNU 8 PPM H <sub>2</sub> O @ 57'
S-2	60-62'	11 15 18 43	1.2/20		LOOSE	LIGHT BROWN		S-2 HNU 5 PPM FINE SAND, TRACE SILT MICA TRACES THROUGHOUT
S-3	70-72'	14 10 5 3	1.30/20		VERY LOOSE	LIGHT BROWN		HEADSPACE 1 PPM S-3 HNU 0 PPM FINE TO MED SAND

REMARKS Using wire line to collect spoons  
Pilot hole Augers 3/4 ID 6 1/4 O.D

HN 43  
 BORING Pilot  
 PAGE 3 OF 7



**BORING LOG**

**NUS CORPORATION**

PROJECT: BETH PAGE BORING NO.: HN-43 I  
 PROJECT NO.: 1953 DATE: 5-6-83 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: M. Menasc  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (ft)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		B O R I N G U S R E C O N S E C E S S	REMARKS	
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	MATERIAL CLASSIFICATION			
S-6	100 -	12	1.3/2.0		med dense	2.45 2.2-2.3 to 2.5		1200	
	102	14							5-6 HNU @ 0 PPM
		17							
S-7	110 -	15	0					1230	
	120	21							Pool recovers d- to heaving sands
		25							HNU @ 57 @ PPM
		24							
S-8	120 -	20	-3/2.0		light brown sand (med)			1400	
	122	15							Pool recovery
		25							S-8 HNU = 0 PPM
		20						Having real problems with running sands	

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

HN43  
 BORING Pilot  
 PAGE 5 OF 7

**BORING LOG**

**NUS CORPORATION**

PROJECT: BETH PAGE BORING NO.: HN-43T  
 PROJECT NO.: 1953 DATE: 5-6-93 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: M. MENDEL  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	B O R I N G U S R E C O N S I D E R S	REMARKS
S-9	130-132	12 17 20 29	0.5/2.0		m DENSE	Light Brown			Fine sand mica frag		1425 S-9 HNU 0 PPM
S-10	135-137	11 13 21 25	0.5/2.0		m DENSE	Light Brown			Fine sand mica frag		1455 S-10 HNU 0 PPM
S-11	140-142	18 20 22 25	0.5/2.0		m DENSE	Light Brown			Fine sand mica frag Trace silt		1515 S-11 HNU 1 PPM
S-12	145-147	12 12 20 12	0.7/2.0		m DENSE	Light Brown			Fine to med sand trace M.S.		0745 S-12 HNU 5 PPM

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

HN 43  
 BORING P. 10T  
 PAGE 6 OF 7

**BORING LOG**

**NUS CORPORATION**

PROJECT: BERRYPAGE BORING NO.: HNU-93I  
 PROJECT NO.: 1953 DATE: \_\_\_\_\_ DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: M. McNEEL  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			CORROSION CONC'S	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
S-13	150 -	10	0.8/2.0		M	LIGHT	VERY FINE SAND TRACE		0815 HNU S-13 5 PPM
	152	12			DENSE	BROWN			
	20								
		23							
S-14	155 -	16	1.0/2.0		M	LIGHT	VERY FINE SAND TRACE		0915 HNU @ borehole of 2 S-14 HNU - 1 PPM
	157	14			DENSE	BROWN			
	20								
		17							
S-15	160 -	7	0.7/2.0		M	LIGHT	VERY FINE SAND TRACE		1000 HNU S-15 - 2 PPM
	162	3			DENSE	BROWN			
	11								
		16							
									Augered to 165'
									NO SAMPLE

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

HNU 43  
 BORING PILOT  
 PAGE 7 OF 7

LC36

# GAMMA RAY LOG BY

DELTA WELL & PUMP CO., INC.  
97 Union Avenue P.O. Box 1309  
ROCKONKOTA NEW YORK 11779  
(516) 981-2255

JOINSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL HN-43I

OWNER NAVY @ Grumman

MEASURING POINT 1 feet above below ground level DATE 5-10-93

DRILLER Joe Guggino BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Okon

COURTS SETTING (GR-73) Gm/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

\* All depths measured to top of probe. Probe is 18" long.

SECONDS	DEPTH (FT) #	COURTS PER SECOND	INCREASING GAMMA RAY EMISSIONS				
			5	10	15	20	25
19	160	5.5					
26	157.5	4					
14	155	7					
21	152.5	5					
8	150	12.5					
33	147.5	3					
32	145	3					
35	142.5	3					
24	140	4					
21	137.5	5					
22	135	4.5					
26	132.5	4					
17	130	6					
12	127.5	8.5					
10	125	10					
29	122.5	3.5					
18	120	5.5					
26	117.5	4					
21	115	5					
27	112.5	3.5					
33	110	3					
29	107.5	3.5					
31	105	3					
25	102.5	4					
22	100	4.5					
24	97.5	4					
22	95	4.5					
20	92.5	5					
15	90	6.5					
13	87.5	7.5					
17	85	6					
7	82.5	14.5					
8	80	12.5					
24	77.5	4					
31	75	3					
26	72.5	4					
24	70	4					
22	67.5	4.5					
22	65	4.5					
24	62.5	4					

LC36

# GAMMA RAY LOG BY

DELTA WELL  
& PUMP CO., INC.  
97 Union Avenue P.O. Box 1309  
ROCKFORD, ILL. 61179  
(815) 981-2255

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL HN-43I OWNER NAVY @ Grumman

MEASURING POINT 1 feet above below ground level DATE 5-10-93

DRILLER Joe Guggino BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Okon

COUNTS SETTING (GR-73) GM/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

SECONDS	DEPTH (FT)	COUNTS PER SECOND	INCREASING GAMMA RAY EMISSIONS				
			5	10	15	20	25
27	60	3.5					
29	57.5	4					
22	55	4.5					
28	52.5	3.5					
12	50	8.5					
13	47.5	7.5					
24	45	4					
20	42.5	5					
17	40	6					
11	37.5	9					
15	35	6.5					
19	32.5	5.5					
17	30	6					
17	27.5	6					
18	25	5.5					
16	22.5	6.5					
16	20	6.5					
13	17.5	7.5					
21	15	5					
17	12.5	6					
18	10	5.5					
18	7.5	5.5					
19	5	5.5					
7	2.5	14.5					
7	1	14.5					

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE NWIRP BORING NO.: HN-40 PILOT  
 PROJECT NO.: 1953 DATE: 2-2-93 DRILLER: \_\_\_\_\_  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: K.C. KILMARTIN  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (FL) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, Ft.)	MATERIAL DESCRIPTION*			ROCK BR. OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
1045	100	10 11 14 25	24/24		2"	BRN	GRAVEL-LAG		
					22"	BRN	MEDIUM SAND with a few SILTY & CLAYEY STREAKS	*	Headspace 1.5 ppm
1115	110	16 16 32 60	19/19		18"	BRN	MEDIUM TO MOSTLY COARSE SAND	*	Headspace 0.4 ppm
							2ft of heave at 120ft	←	
1149	120		24/24		18"	BRN	Brown coarse sand - lag?	*	Headspace 1.8 ppm
					6"	LT BRN	MED. TO FINE SAND INTERBEDDED WITH STICKY, SILTY CLAY		
							6ft of heave at 130ft	←	
230	130		24/24		24"	LT BRN	COARSE SAND (?)	*	Headspace 1.6 ppm
							NOTE: They were clogged with a very fine-grained, tightly packed sand similar to the heave		132-136" very tight according to DRILLER
							6ft of heave at 140ft	←	
315	140	16 16 5 7	24/24		18"	LT BRN	COARSE SAND - lag?	*	Headspace 1.8 ppm
					6"	LT BRN	SILTY & CLAYEY, very fine-grained sand		
							2ft of heave at 150ft	←	

REMARKS Samples obtained with a down-hole slide hammer

HN-40  
BORING PILOT  
PAGE 1 OF 2

\* See Legend on Back



**BORING LOG**

**HALLIBURTON NUS**

PROJECT: \_\_\_\_\_ BORING NO.: HN-40 PILOT  
 PROJECT NO.: \_\_\_\_\_ DATE: 2-2-93 DRILLER: \_\_\_\_\_  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: K.C. KILMARTIN  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (ft.) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.)	MATERIAL DESCRIPTION*			ROCK BR OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
	150	4 5 10	24 24		12"	BN	med-coarse sand - lag		Headspace 0.4 ppm
					12"	GY	very fine silty sand		

REMARKS Drillers drill to 155' to provide rat-hole  
for gamma-ray loggers.

HN-40  
 BORING PILOT  
 PAGE 2 OF 2

\* See Legend on Back

LC36

# GAMMA RAY LOG BY

DELTA WELL & PUMP CO., INC.  
97 Union Avenue P.O. Box 1309  
ROCKONKOMA NEW YORK 11779  
(516) 981-2259

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL HN40I OWNER NAKOGRUMMAN

MEASURING POINT 1 feet above/below ground level DATE 2-2-93

DRILLER Mike Pellegrino BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chay

COUNTS SETTING (GR-73) 4M/1000 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

SECONDS	DEPTH (FT)	COUNTS PER SECOND	INCREASING GAMMA RAY EMISSIONS			
			5	10	15	20
24	153.7	4				
16	150	4				
25	147.4	3				
30	147	3.5				
11	142.7	5.5				
28	140	3.5				
15	137	6.5				
26	130	4				
12	130.2	6.5				
10	13	10				
45	127.7	2				
34	127	3				
42	125.5	2.5				
18	121	6.5				
17	119	6				
17	117	6.5				
11	112.7	5				
15	110	5.5				
15	109	6.5				
6	102	10				
11	100	6.5				
15	95	4.5				
11	90	4				
11	87	4				
15	82	3.5				
10	80	5				
11	78	5.5				
16	77	6.5				
15	75	5				
15	70	4				
14	70	4				
15	70	3.5				
23	70	4.5				
22	70	4.5				
11	65	5				
10	65	5.5				
12	60	5				
52	60	2				
15	57.5	5.5				
52	55	1				
45	50	2				
18	50	5.5				

# GAMMA RAY LOG BY

DELTA WELL  
& PUMP CO., INC.  
97 Under Avenue P.O. Box 1309  
ROCKY HILL, NEW YORK 11770  
(516) 881-2255

JOINSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL HN401 OWNER NAVY @ GRUMMAN

MEASURING POINT 1 feet above below ground level DATE 2-2-93

DRIILLER Mike Pellegrina BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Okon

COURTS SETTING (GR-73) GM/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

SECONDS	DEPTH (FT)	COURTS PER SECOND	INCREASING GAMMA RAY EMISSIONS																	
			5	10	15	20														
39	47.5	2.9																		
23	45	3.9																		
4	42.5	7																		
10	40	5.9																		
12	37.5	5.9																		
13	35	5.9																		
15	32.5	4.9																		
20	30	5																		
21	27	5																		
26	25	5																		
21	22	5																		
16	20	6.9																		
13	17.5	7.9																		
17	15	6																		
15	12.5	5.9																		
10	10	6.9																		
10	7.5	8.9																		
12	5	6.9																		
10	2.5	7																		
1	1	7																		

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE NWIRP BORING NO.: HN-41 PILOT  
 PROJECT NO.: 1953 DATE: 2-8-93 DRILLER: \_\_\_\_\_  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: IC Kilmartin  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (1'-1)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Down ft.)	MATERIAL DESCRIPTION*			ROCK BR. OR USCS	Background H <sub>2</sub> O is 0.2 ppm REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
<del>100</del>	100	24 16	24/24		12"	BRN	coarse sand & gravel (lag)		
1315		16			12"	GY	very sticky clay with minor silt		Headspace: 0.4 ppm
							2.5 ft. of heave at 110'		CLAY PLUG IN AUER, cleaned out w/ split-spacer
1405	110	6 4 2 10	24/24		8"	BRN	coarse sand (lag)		
					16"	GY	med. sand with a few clayey-silt beds (v. thin)		Headspace: 0.4 ppm
							0 ft heave at 120'		
1432	120	3 4 8 10	24/24		8"	BRN	med-coarse sand (lag?)		
					12"	GY	CLAYEY TO SILTY, STICKY fine sand		Head space: 0.6 ppm
					4"	GY	STICKY CLAY TO SILTY CLAY		
							0 ft heave at 130'		
1455	130	2 4 4	24/24		12"	GY	very sticky silty clay		
					6"	GY	STICKY CLAY TO SILTY CLAY		Headspace: 0.3 ppm
					4"	GY-BLK	very dense, hard clay		
					2"	GY	MEDIUM SAND		Heave is a silty, v. fine sand with some rare PYRITIC (?) concretions
							2 ft of heave at 140'		
1525	140	4 6 14	24/24		16"	GY-BLK	very dense & hard clay		Headspace: 0.4 ppm
					8"	GY	SILTY TO CLAYEY, fine to medium sand		OUTSIDE of spoon packed w/ clay
							0 ft of heave at 150'		

REMARKS Samples driven by a down-hole slide hammer

HN-41  
BORING PILOT

\* See Legend on Back

PROJECT: \_\_\_\_\_ BORING NO.: HN-41 PILOT  
 PROJECT NO.: \_\_\_\_\_ DATE: 2-8-93 DRILLER: \_\_\_\_\_  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: KC KILMARTIN  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE Time	DEPTH (FT.) OR ROD RUN NO.	BLOWS 6" OR ROD (1")	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, Ft.)	MATERIAL DESCRIPTION*			ROCK BR. OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
1555	150	<u>2</u>	<u>24/24</u>		<u>8"</u>	<u>DR. GY</u>	<u>CLEAN MEDIUM SAND</u>		
		<u>6</u>			<u>4"</u>	<u>GY</u>	<u>SILTY and CLAYey, STICKY fine sand</u>		<u>Head space 0.2 ppt</u>
		<u>11</u>			<u>12"</u>	<u>GY TO GY-OLK</u>	<u>very dense &amp; hard clay</u>		

REMARKS Drillers drilled to 155' to provide rat hole  
for gamma-ray logging tool.

\* See Legend on Back

LC36

# GAMMA RAY LOG



DELTA WELL & PUMP Co., Inc.  
47 LAMONT AVENUE • PO BOX 1070 • BIRMINGHAM, AL • 35202  
(510) 981-2255

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

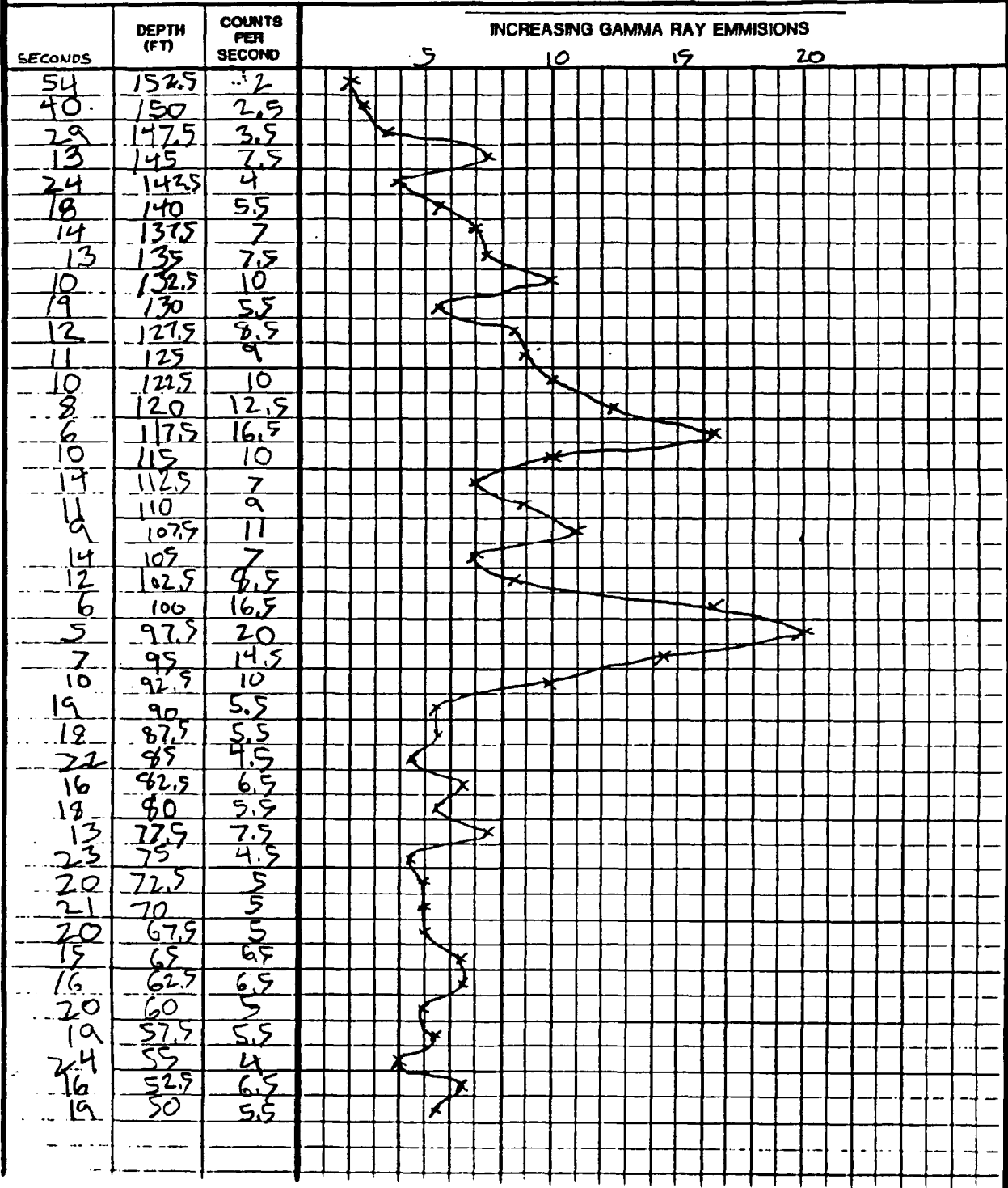
WELL HN41I, So. 3rd Street OWNER NAVY @ GRUMMAN

MEASURING POINT 1 feet above/below ground level DATE 2-8-93

DRILLER Mike Pellegrino BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Okon

COUNTS SETTING (GR-73) GR100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_



LC36

# GAMMA RAY LOG



DELTA WELL & PUMP Co., Inc.  
STURMWAYNE - DELAWARE  
1516991 0255

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

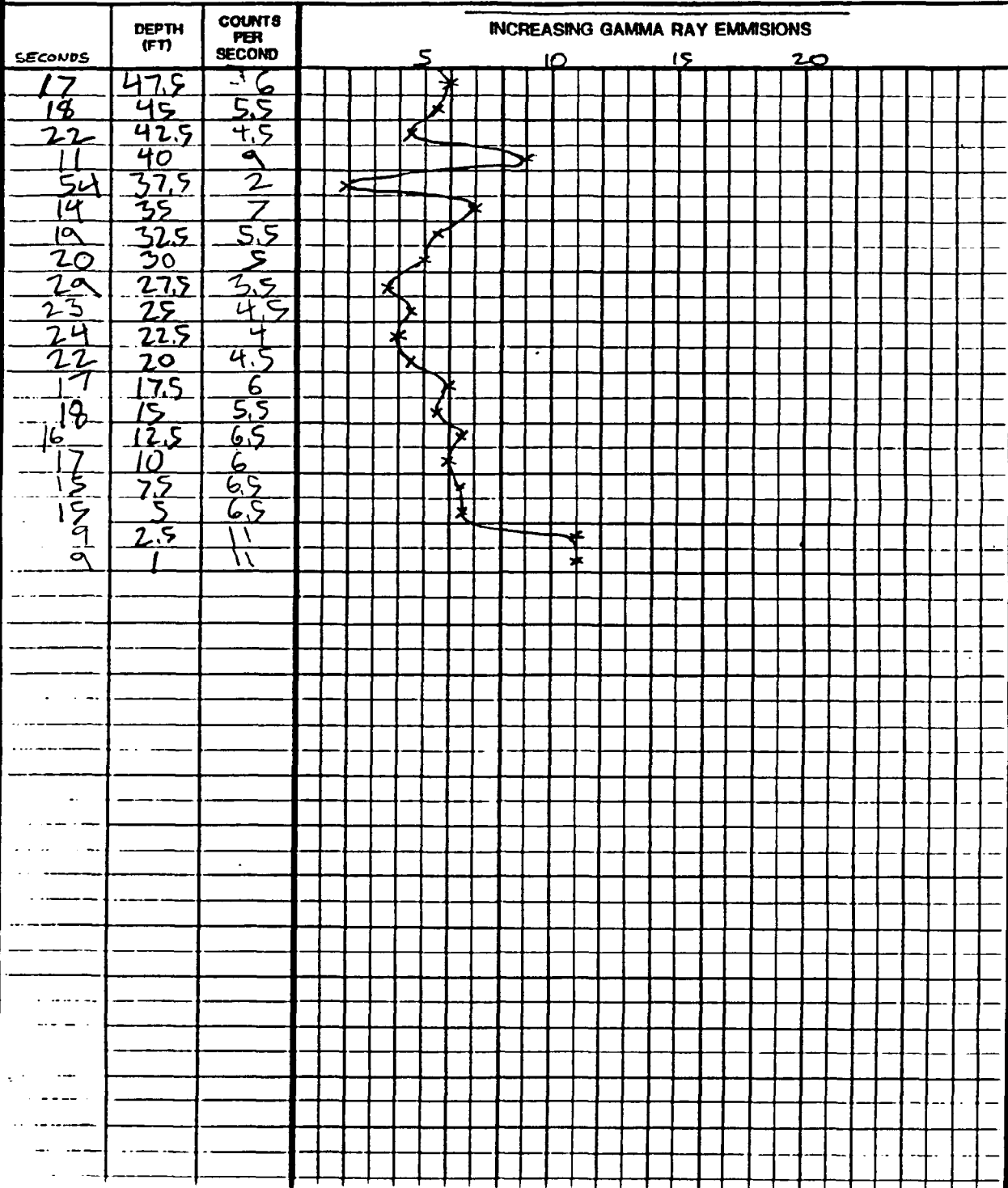
WELL HN42I, So. OWNER NAVY @ GRUMMAN

MEASURING POINT 1 feet above below ground level DATE 2-8-93

DRILLER Mike Pellegrino BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Okon

COUNTS SETTING (GR-73) SM/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_



**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE NWIRT BORING NO.: HN-42 PILOT  
 PROJECT NO.: 1953 DATE: 2-15-93 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: KC KILMARTIN  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (ft.) OR RUN NO.	BLOWS 5" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.)	MATERIAL DESCRIPTION*			ROCK BR. OR USCS	Background is 0.2 ppm REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
1040	100	6 20 19 15	24/24		24"	BEN	course sand with common gravel		Headspace: 0.5 ppm
							0 ft heave at 110 ft		
1105	110	7 10 10 19	18/18		18"	LT.GY TO BEN	uniform, MEDIUM sand		Headspace: 0.7 ppm
							0 ft heave at 120 ft		
1130	120	5 6 5 14	24/24		24"	LT.GY	uniform, medium sand		Headspace: 0.5 ppm
							5 ft of heave at 130 ft. Heave: LT.GY. MEDIUM sand		SOME MAY BE TAG (shut down, 5 hr = lunch)
1305	130	10 15 18 26	18/18		18"	LT.GY TO	uniform, MEDIUM sand		Headspace: 0.6 ppm
						LT BEN	D riller reports descent "tight" zone @ 132 - 140'		
							2 ft. of heave at 140 ft.		Heave is light gray med. sand.
1350	140	6 7 17 17	24/24		24"	LT.GY TO LT BEN	fine to med. sand matrix appears clayey to silty.		Headspace: 0.4 ppm
							3.5 ft of heave at 150 ft		
							Heave is light gray, no silt fine to medium sand.		

REMARKS Sharp decrease in gravel & change to uniform <sup>medium</sup> sand at ± 35'  
Depth to water ~ 45' No true readings above background.  
samples obtained with down-hole slide hammer.

HN-42  
BORING PILOT  
PAGE 1 OF 2

\* See Legend on Back



PROJECT: \_\_\_\_\_ BORING NO.: HN-42 P. LOT  
 PROJECT NO.: \_\_\_\_\_ DATE: 2-15-93 DRILLER: DELTA  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: KC KILMARTIN  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE	DEPTH (ft.) OR RUN NO.	BLOWS 6" OR 100 (1")	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.)	MATERIAL DESCRIPTION*			ROCK BR. OR USCS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
<i>Time</i> 1430	150	$\frac{3}{3}$ ID	18/18		6" 12"	LT. GY LT. GY	SILTY TO CLAYEY fine sand VERY STICKY TO STIFF CLAY		Head space: 0.4

REMARKS Drillers drilled to 155 ft to provide 5 ft of  
rethole for gamma ray loggel. size 125 ft  
As auger pulled, clay on auger starts on the 45' auger,  
 \* See Legend on Back grades downward from a clayey sand to a silty, sticky  
clay to a sticky clay to a stiff clay.  
Bottom 10 ft is extremely dense & "moldable", gray clay.

HN 42  
 BORING PILOT  
 PAGE 2 OF 2

LC36

# GAMMA RAY LOG BY

DELTA WELL & PUMP CO., INC.  
97 Union Avenue P.O. Box 1309  
ROCKY HILL, NEW YORK 11779  
(516) 911-7259

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL HN42I, 7th Street OWNER NAVY @ Grumman

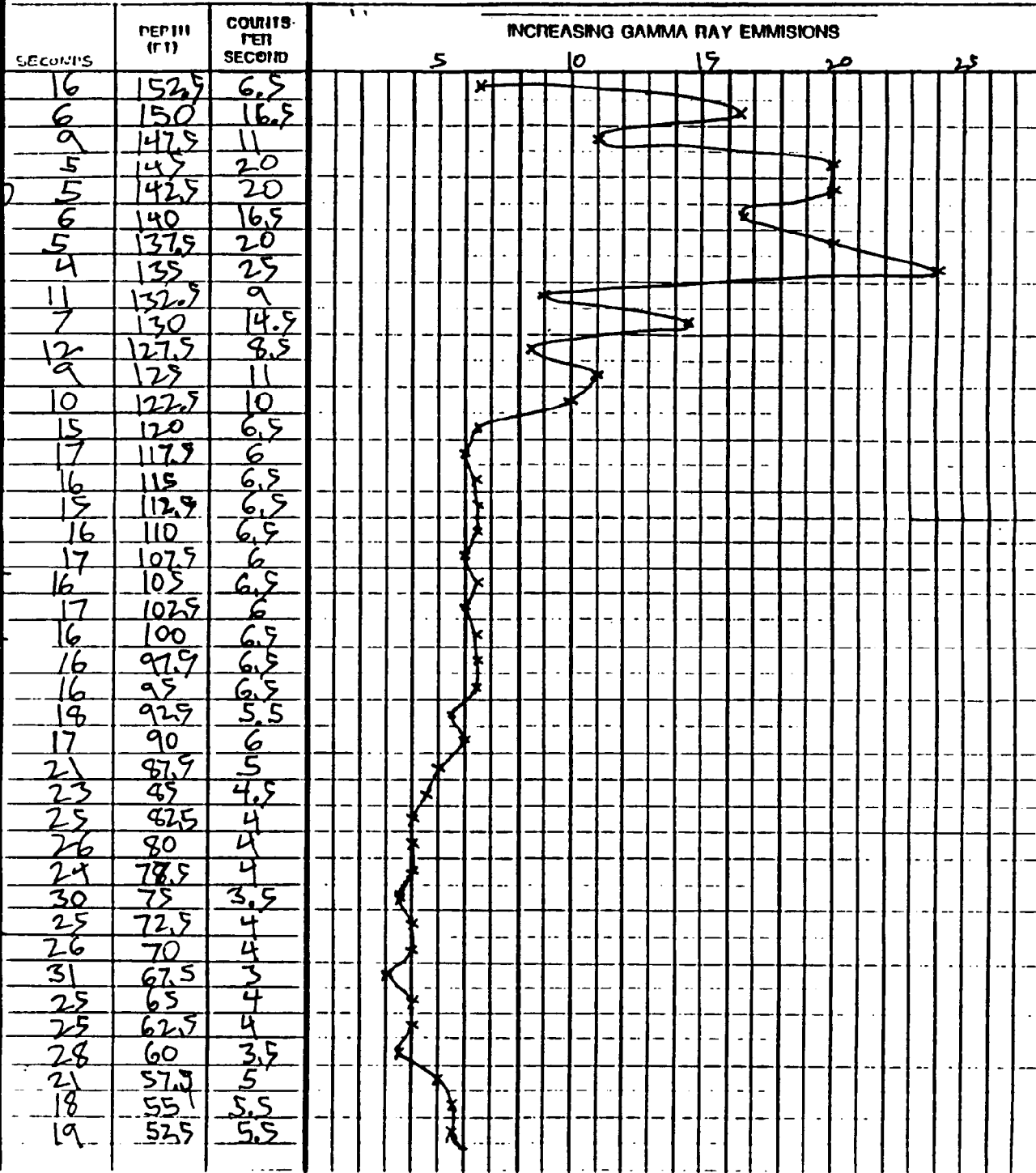
MEASURING POINT 1 feet (above) below ground level DATE 2-15-93

DRILLER Mike Pellegrino BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Oken

COUNTS SETTING (GR-73) GM/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

All depths measured to top of probe. Probe is 18" long.



LC36

# GAMMA RAY LOG BY

DELTA WELL & PUMP CO., INC.  
97 Union Avenue P.O. Box 1309  
ROCKONKOMA NEW YORK 11779  
(516) 981-2255

JOHNSON-KECK GR-73

GAMMA RAY LOGGING SYSTEM

WELL HN42I, 7th Street

OWNER NAVY @ Gruman

MEASURING POINT 1 feet above below ground level DATE 2-15-93

DRILLER Mike Pellegrino BOREHOLE DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches

CASING DEPTH \_\_\_\_\_ feet, DIAMETER \_\_\_\_\_ inches OPERATOR Chris Okon

COUNTS SETTING (GR-73) GM/100 RANGE SETTING (GR-81) \_\_\_\_\_ TIME CONSTANT (GR-81) \_\_\_\_\_

All depths measured to top of probe. Probe is 8" long.

SECONDS	DEPTH (FT)	COUNTS PER SECOND	INCREASING GAMMA RAY EMISSIONS				
			5	10	15	20	25
8	50	12.5					
14	47.5	7					
34	45	3					
13	42.5	7.5					
18	40	5.5					
21	37.5	5					
23	35	4.5					
10	32.5	10					
19	30	5.5					
7	27.5	14.5					
5	25	20					
8	22.5	12.5					
17	20	6					
15	17.5	6.5					
19	15	5.5					
17	12.5	6					
16	10	6.5					
10	7.5	10					
11	5	9					
18	2.5	5.5					
15	1	6.5					

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE 1453 PHASE II NW IRP BORING NO: SB-02 (RWH + TABLE)  
 PROJECT NO.: 1453 DATE: 12-7-92 DRILLER: RICH B. DENNIS ADT  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED LUTAMSKER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. B TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DOWN FT.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			SOUNDNESS TEST RESULTS	HS FINN READINGS	BZ
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION			
	5				YELLOWISH BRN		GRAVELS + SAND TR SILT		0.0 pm	
	10									
	15									
	20								0.0 pm	
	25									
	30						SILT - SAND - MISC GRAVEL ~ 30%		0.0 pm	
	35									

REMARKS MEUBLE RIG-61 HSA 3/4" SD, NO SAMPLES TAKEN AT THIS LOCATION

RESIDENTIAL BORING SB-02

PAGE 1 OF 2

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II VWIRP BORING NO. SB02  
 PROJECT NO.: 1953 DATE: 12-7-92 DRILLER: RICH B.  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W RAMSER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOW 5" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DOWN) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			SOUNDNESS TESTS	HS	HUU READINGS	REMARKS
					SOB DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION				
						YELLOW BRN	SAND W/SOME SILT				
	40									0.0ppm	
	45									0.0ppm	
	50									0.0ppm	
	55										
	60										TO @ 60' V

REMARKS BORING BACKFILLED WITH SAND TO 5' ABOVE WATER TABLE, REMAINING HOLE FILLED WITH CEMENT + BENTONITE GROUT.

BORING SB 02  
 PAGE 2 OF 2

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETH PAGE PHASE I RI BORING NO: SB-03/TEMP WELL  
 PROJECT NO.: 1953 DATE: \_\_\_\_\_ DRILLER: ADT  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED WRANISER  
 WATER LEVEL DATA: 52.5' BGS 12-8-92  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR SUB NO.	BLOWS 6" OR ROD (ft)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DOWNHOLE) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		SOL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	SOLUBLE CHLORIDES	REMARKS
								DK BRN	GRAVELLY LOAM		HNU READINGS 45 TOP SOIL 0-1"
								YELLOWISH BRN	SANDY GRAVEL TR/SILT		0.0 ppm
	10										
	20										0.0 ppm
	30										0.0 ppm
	40							YELLOWISH BRN	SAND w/ some silt TR GRAVEL ~1" GRA.		0.0 ppm
	50								AS ABOVE		

REMARKS MOBILE RIG B-57, HSA 2 1/4 ID, NO SPLIT SOIL SAMPLES TAKEN AT THIS LOC.

BORING SB03

PAGE 1 of 2

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II RI BORING NO: SBO3/TEMP WFL  
 PROJECT NO.: 1453 DATE: 12-8-92 DRILLER: ADT  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W. RAUSER  
 WATER LEVEL DATA: 52.5' 12-8-92  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (FT) OR RUN NO.	BLOWS 5' OR ROD (%)	SAMPLE RECOVERY OR SAMPLE LENGTH	LITHOLOGY CHANGE (Describe) OR SCREENED INTERVAL	MATERIAL DESCRIPTION				SPT CORRECTIONS	REMARKS
					SOIL DENSITY OR CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION			
							SAND w/ <sup>SOME</sup> SILT		0.0 ppm	
							TR/GRAVEL		GRA < 1" dia	
							↓			
			60				TD @ 59'			

REMARKS \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

BORING SBO3

PAGE 2 of 2

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE RT PHASE II BORING NO: SBO4, MADE/WINTH  
 PROJECT NO.: 1953 DATE: 12-8-92 DRILLER: ADT, RICHARD BENJAMIN, DEANISS  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W RAMSER  
 WATER LEVEL DATA: 51.5' BGS 1320 HRS 12-8-92  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. OR B TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR RQD (%)	SAMPLE RECOVERY OR SAMPLE LENGTH	LITHOLOGY CHANGE (DOWN FT.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			S O B O R E C O N D I T I O N S	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
						DR-BRN	0-1' DR BRN GRAVELLY LOAM 1-2' DR YELLOWISH BRN SANDY GRAVEL		
						YEL-BRN	SANDY GRAVEL W/ R SILT		
	10								
	20								
	30								
	40						YEL-BRN SAND W/ SOME SILT TRGRA		
	50						AS ABOVE		

REMARKS MOBILE G1 3/4" ID HSA, NO SPLIT SPOONS AT THIS LOC.

BORING SBO4

PAGE 1 of 2



**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE RT PHASE II BORING NO: SBO4  
 PROJECT NO.: 1953 DATE: 12-8-92 DRILLER: ADT, RICHARD BEAUMAN  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W RAMSER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			SOUNDNESS TESTS	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
							AS ABOVE		
							↓		
							TD @ 59'	1310 HRS	
	60		60	TO 59'					

REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

BORING SBO4  
 PAGE 2 of 2

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II RT BORING NO SB07 MEADE + TENTH  
 PROJECT NO.: 1953 DATE: 12-9-92 DRILLER: ADT. RICHARD BEAUMAN  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W RAMSER  
 WATER LEVEL DATA: 52.5' BGS 0955 HRS  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY OR SAMPLE LENGTH	LITHOLOGY CHANGE (Describe It) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			S O B O R E C O N D I T I O N S	REMARKS
					SOL DENSITY CONSISTENCY OR ROCE HARDNESS	COLOR	MATERIAL CLASSIFICATION		
						DK-BRN	LOAM w/ sand GRAVEL 0-1'		
							YEL-BRN GRAVEL + SAND		
	10								
	20								
	30								
	40						AS ABOVE		
							YEL-BRN SAND TR/GRA		
	50								

REMARKS MOBILE RIG B-57, 3 1/4" HSA, NO SPLIT SPOONS TAKEN  
AT THIS LOC.  
NO/ 0.0ppm READINGS ON HNU H3 + BZ

BORING SB07  
 PAGE 1 of 2

PROJECT: BETHPAGE PHASE IERI BORING NO: SB07  
PROJECT NO.: 1953 DATE: 12-9-92 DRILLER: ADT, RICHARD BEAUMAN  
ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W RAMSER  
WATER LEVEL DATA: \_\_\_\_\_  
(Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DOWN IT.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	
	60						AS ABOVE	
							TDR @ 54'	

REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II RT BORING NO: SB08 / IN SUMP  
 PROJECT NO.: 1953 DATE: 12-9-92 DRILLER: ADT, RICHARD BEAUMAN  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W. RAMSER  
 WATER LEVEL DATA: \_\_\_\_\_  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. S TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		SOL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	S U B S T R A T E G Y	H2O READINGS	
					REMARKS	BZ						
									DK-BRN GRAVEL + SAND		0.0ppm	
									↓			
									YEL-BRN GRAVEL + SAND		0.0ppm	
	10								↓			
									REDDISH ORANGE BRN SAND TR GRAVEL			
	20								↓			
									YEL BRN SAND TR/GRAVE		GRAS .5"φ	
	30								↓		0.0ppm	
									↓			
	40								↓		0.0ppm	
									↓			
	50								AS ABOVE			

REMARKS MOBILE RIG B-57 3 1/4" φ HSA, NO SPIT SPOON SAMPLES  
TAKEN AT THIS LOG.

BORING \_\_\_\_\_  
 PAGE \_\_\_\_ of \_\_\_\_

PROJECT: BETHPAGE PHASE II RT BORING NO: SBO8/INSUMP  
 PROJECT NO.: 1953 DATE: 12-9-92 DRILLER: ADT, RICHARD BEAUMAN  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W RAMSER  
 WATER LEVEL DATA: 37' BGS 1250 12-9-92  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DOWN FEET) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	
								HS 0.00ppm
							AS ABOVE	
							↓	
							TD @ 55' 1250	
	60							

REMARKS RUNNING SAND ENCOUNTERED, ADDED 3 GALS OF WATER TO REPLACE PVC TO DESIRED DEPTH  
 OR PLUGGED LEAD INGER

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETH PAGE RI PHASE II BORING NO: SB12, MAPLE/NINTH  
 PROJECT NO.: 1953 DATE: 12-10-92 DRILLER: ADT, RICHARD B., DENNIS M.  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W. RAUSCH  
 WATER LEVEL DATA: 54.5' BGS 12-10-92 18.05 HRS  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (ft) OR SUR NO.	BLOWS 5' OR 100 (%)	SAMPLE RECOVERY OR SAMPLE LENGTH	LITHOLOGY CHANGE (DEPTH) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	
						DR. BRN	2-3' GRAVELLY LOAM	
						YEL. BRN	GRAVEL + SAND	0.0ppm
	10							
						YEL BRN	GRAVEL 1/2 SOME SAND	GRA. ~ 1.5" ROUNDED TO SL. BOUND
	20							
						YEL BRN	SAND TR/GRAVEL	GRA. < 5" RD X DRD
	30							
						YEL BRN	SAND + GRAVEL	GRA ~ 1.6" RD X DRD
	40							
						YEL BRN	SAND TR GRAVEL	
	50							

REMARKS MOBILE RIG B-57, 3/4" HSA, NO. 5/8" FILTER PIPES TAKEN AT THIS LOC.

BORING SB12  
 PAGE 1 OF 2

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE

BORING NO: SB12

PROJECT NO.: 1953

DATE: 12-10-72

DRILLER: ADT

ELEVATION: \_\_\_\_\_

FIELD GEOLOGIST: FRED W. RAMSEY

WATER LEVEL DATA: \_\_\_\_\_

(Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (FT) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY LENGTH	LITHOLOGY CHANGE (DOWN IN.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			SOUNDING	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
							AS ABOVE		
	60			TD			TD @ 57'		
							955 HR		

REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

BORING SB12  
PAGE 2 OF 20

**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II RI BORING NO: SB13  
 PROJECT NO.: 1953 DATE: 12-10-92 DRILLER: ADT, RICH BRAUN, DENNIS M.  
 ELEVATION: \_\_\_\_\_ FIELD GEOLOGIST: FRED W. KASER  
 WATER LEVEL DATA: 56.5' 1300 HR 12-10-92  
 (Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (FT) OR RUN NO.	BLOWS 6" OR ROD (%)	SAMPLE RECOVERY OR SAMPLE LENGTH	LITHOLOGY CHANGE (Depth, Ft.) OR SCREENED INTERVAL	MATERIAL DESCRIPTION		SOL. DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION	SPT NO. OR CONC. TESTS	HS	HUU READINGS	REMARKS
								DK BRN	0-1 GRAVELLY LOAM			0-1	
								DK-BLU BRN	GRAVEL w/ SOME SAND GRAVELS ≤ 3" Ø RD TO SUBRD			0.0 ppm	0.0 ppm
	10												
	20												
	30												
	40							YEL BRN	SAND w/ SOME GRAVEL				
	50								AS ABOVE				

REMARKS MOBILE RIG B-57 3/4 ID HSA. NO SPLIT SPOON SAMPLES TAKEN  
TEMPORARY WELL

BORING SB13  
 PAGE 1 OF 2



**BORING LOG**

**HALLIBURTON NUS**

PROJECT: BETHPAGE PHASE II RT

BORING NO: SB13

PROJECT NO.: 1953

DATE: 12-10-92

DRILLER: ADT, RICH BEAUMAN, DENNIS

ELEVATION: \_\_\_\_\_

FIELD GEOLOGIST: FRED W. RAMSER

WATER LEVEL DATA: \_\_\_\_\_

(Date, Time & Conditions) \_\_\_\_\_

SAMPLE NO. & TYPE OR ROD	DEPTH (FT) OR RUN NO.	BLOWS 6" OR 30" (%)	SAMPLE RECOVERY SAMPLE LENGTH	LITHOLOGY CHANGE (DRAINAGE) OR SCREENED INTERVAL	MATERIAL DESCRIPTION			HUU READING	REMARKS
					SOIL DENSITY CONSISTENCY OR ROCK HARDNESS	COLOR	MATERIAL CLASSIFICATION		
					YEL BRN		SAND + GRAVEL		
									0.0000
	60								

REMARKS \_\_\_\_\_



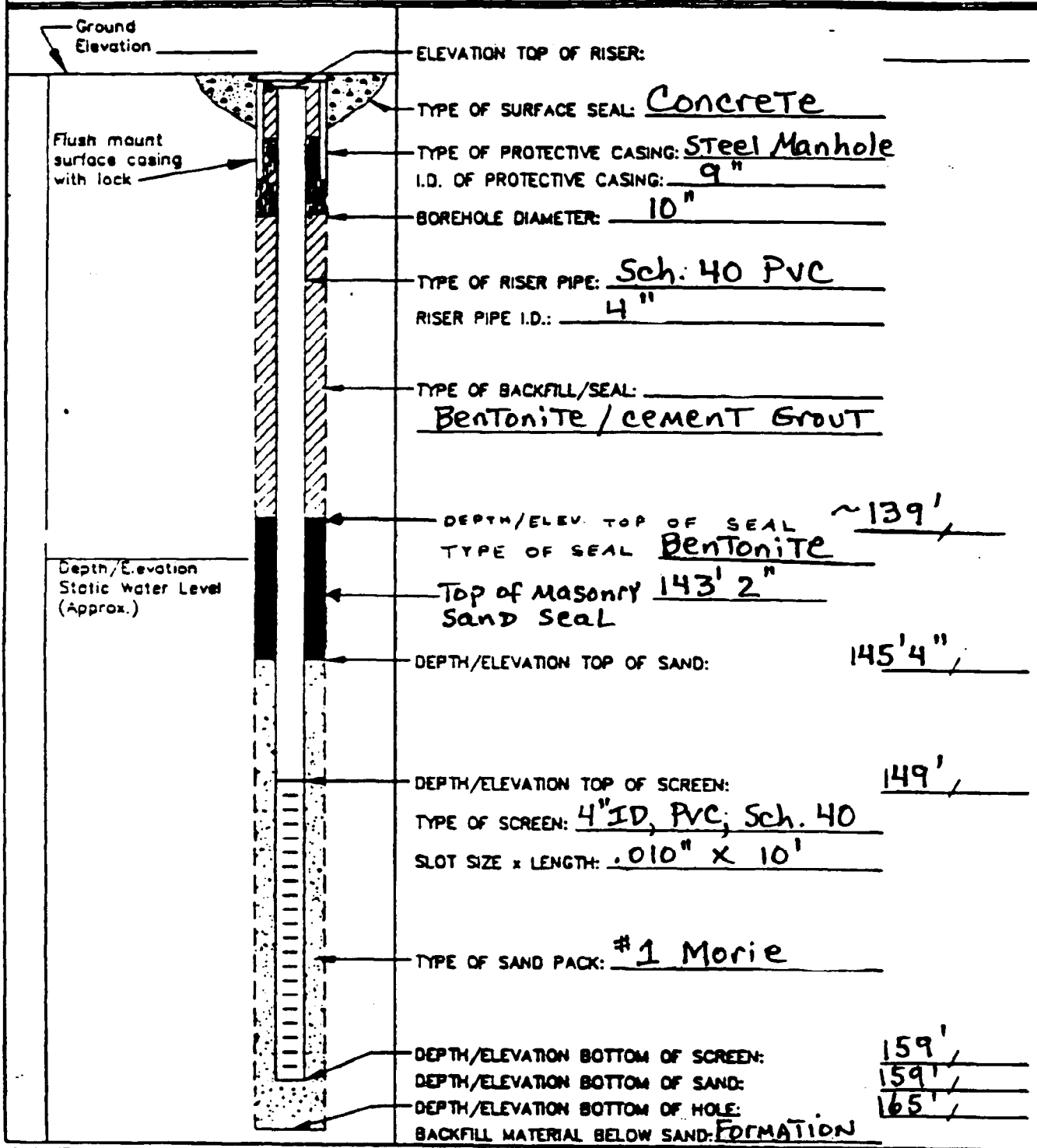
10  
D

**APPENDIX D**

**WELL CONSTRUCTION LOG SHEETS/WELL DEVELOPMENT  
LOG SHEETS**

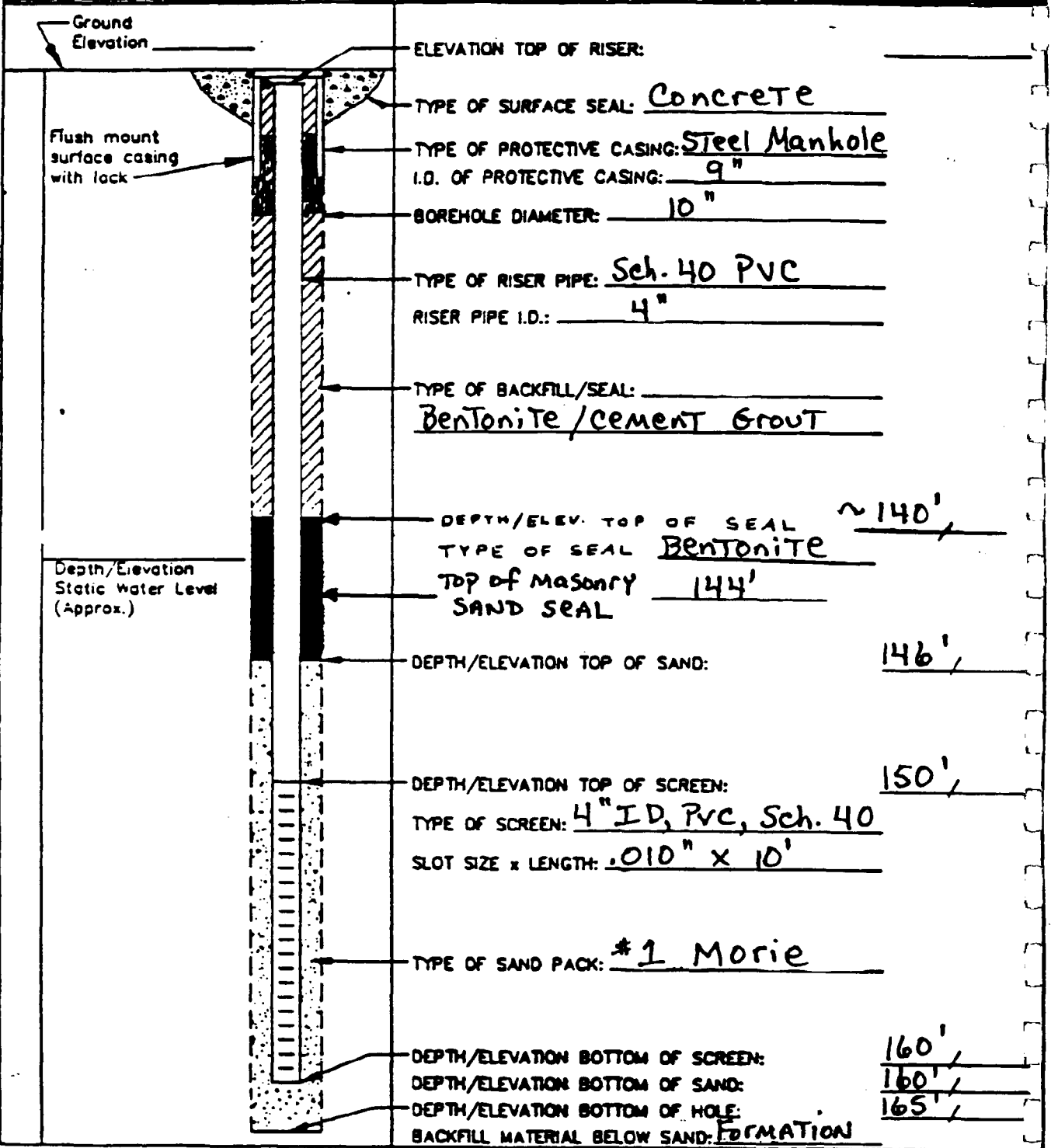
OVERBURNEN  
MONITORING WELL SHEET

PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN 24 I 2</u>	DRILLING METHOD: <u>HSA</u>
ELEVATION: _____	DATE: <u>1-20-93</u>	DEVELOPMENT METHOD: <u>Air Lift</u>
FIELD GEOLOGIST: <u>KEVIN C. KILMARTIN</u>		



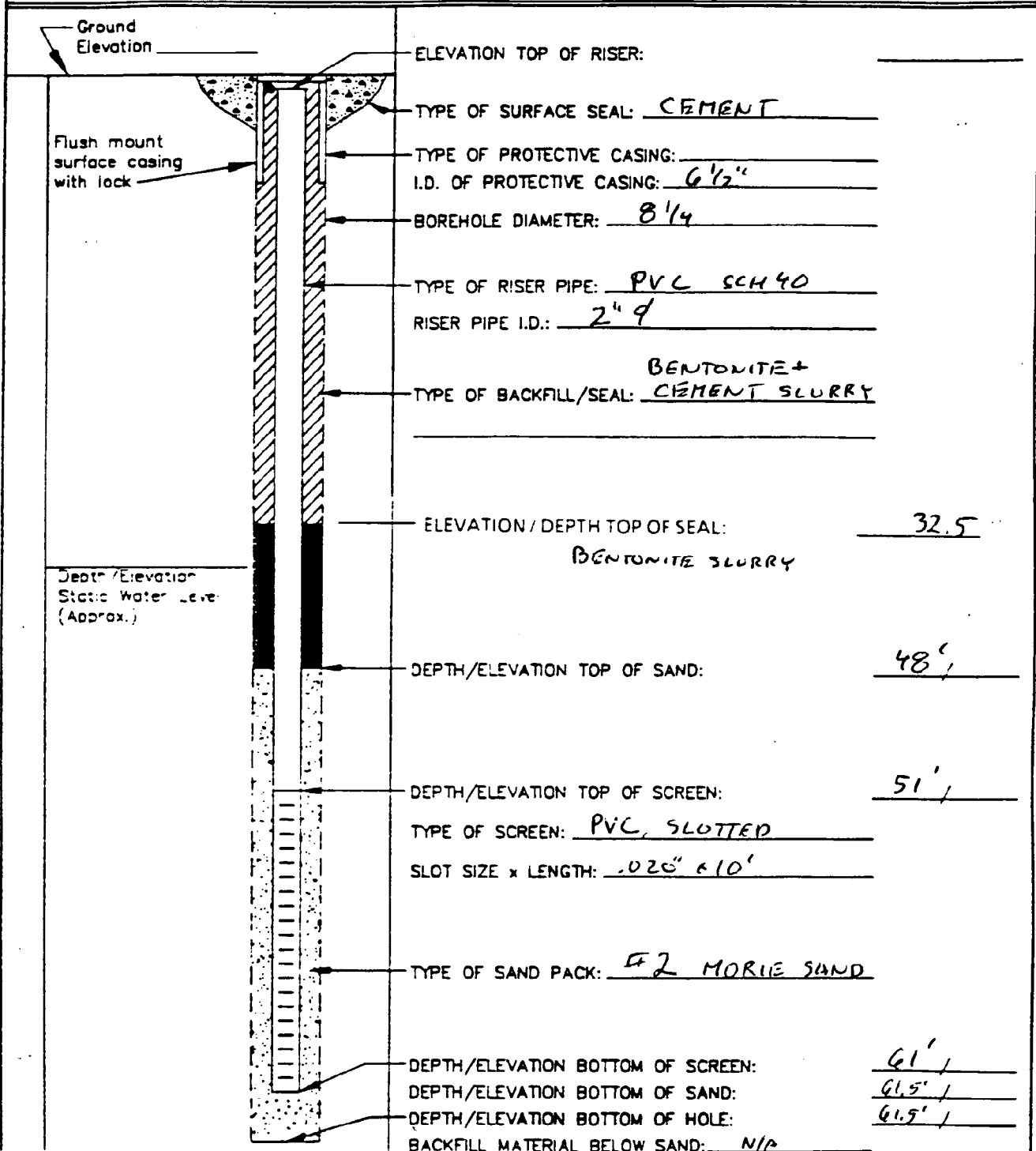
OVERBURDEN  
MONITORING WELL SHEET

PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN2413</u>	DRILLING METHOD: <u>HSA</u>
ELEVATION: _____	DATE: <u>1-28-93</u>	DEVELOPMENT METHOD: <u>Air Lift</u>
FIELD GEOLOGIST: <u>Kevin C. Kilmartin</u>		



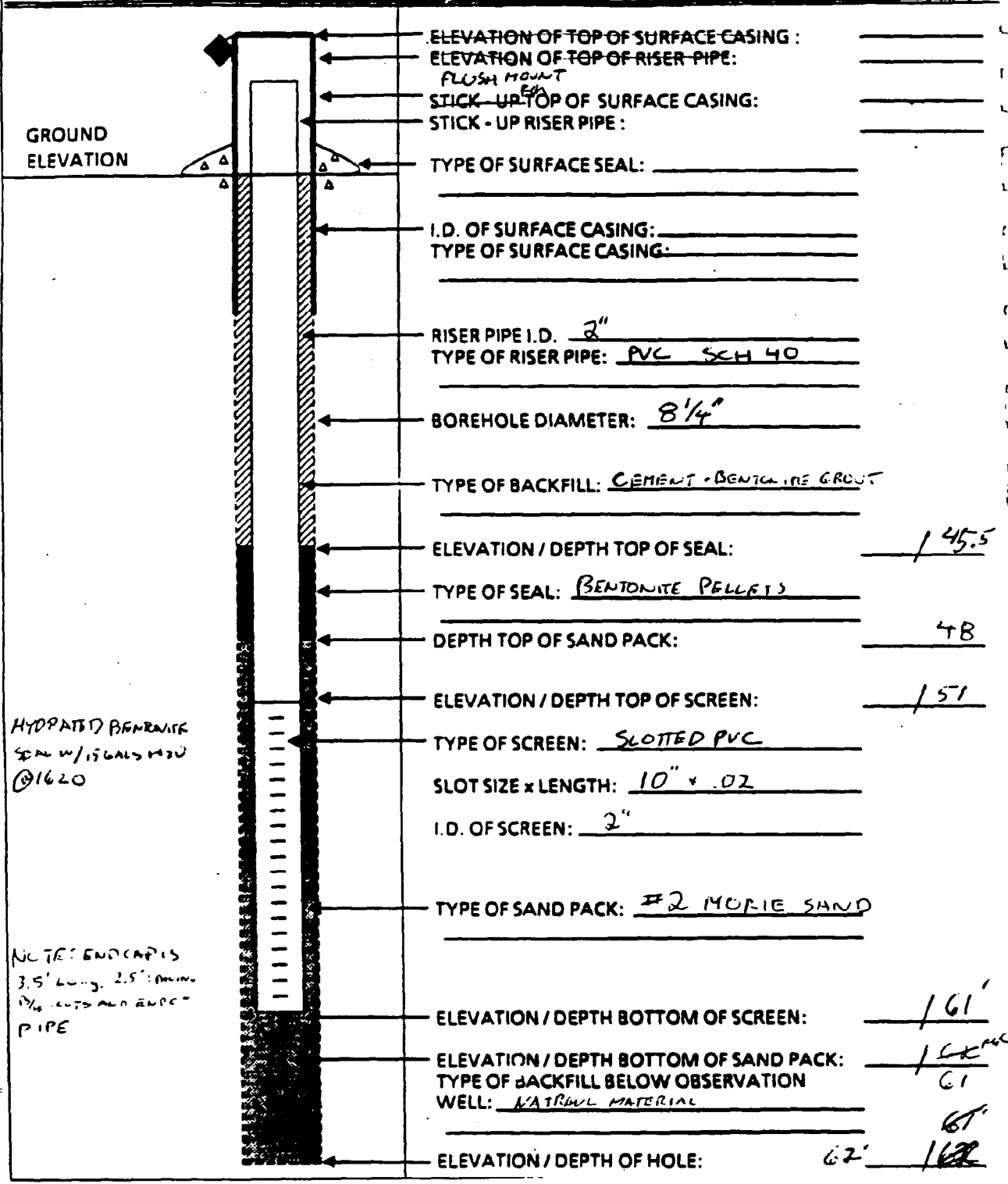
OVERBURDEN  
MONITORING WELL SHEET

PROJECT: <u>BETHPAGE RE PHASE II</u>	LOCATION: <u>SITE 1</u>	DRILLER: <u>ADT, R. BENNAN</u>
PROJECT NO.: <u>1953</u>	BORING: <u>PIEZOMETER #2</u>	DRILLING METHOD: <u>HSA 4 1/2" ID</u>
ELEVATION: _____	DATE: <u>12-4-92</u>	DEVELOPMENT METHOD: _____
FIELD GEOLOGIST: <u>FRED WRAMSER</u>		



**OVERBURDEN  
MONITORING WELL SHEET**

PROJECT <u>BETHPAGE</u> <span style="float: right;">RI - PHASE II</span>	LOCATION <u>SITE 1</u>	DRILLER <u>ADT, RICH B., DENNIS</u>
PROJECT NO. <u>1953</u>	BORING <u>PEREZONETER #1</u>	DRILLING METHOD <u>HSA</u>
ELEVATION _____	DATE <u>12-2-92</u>	DEVELOPMENT METHOD <u>/</u>
FIELD GEOLOGIST <u>FRED W. RAMSER</u>		



GROUND ELEVATION

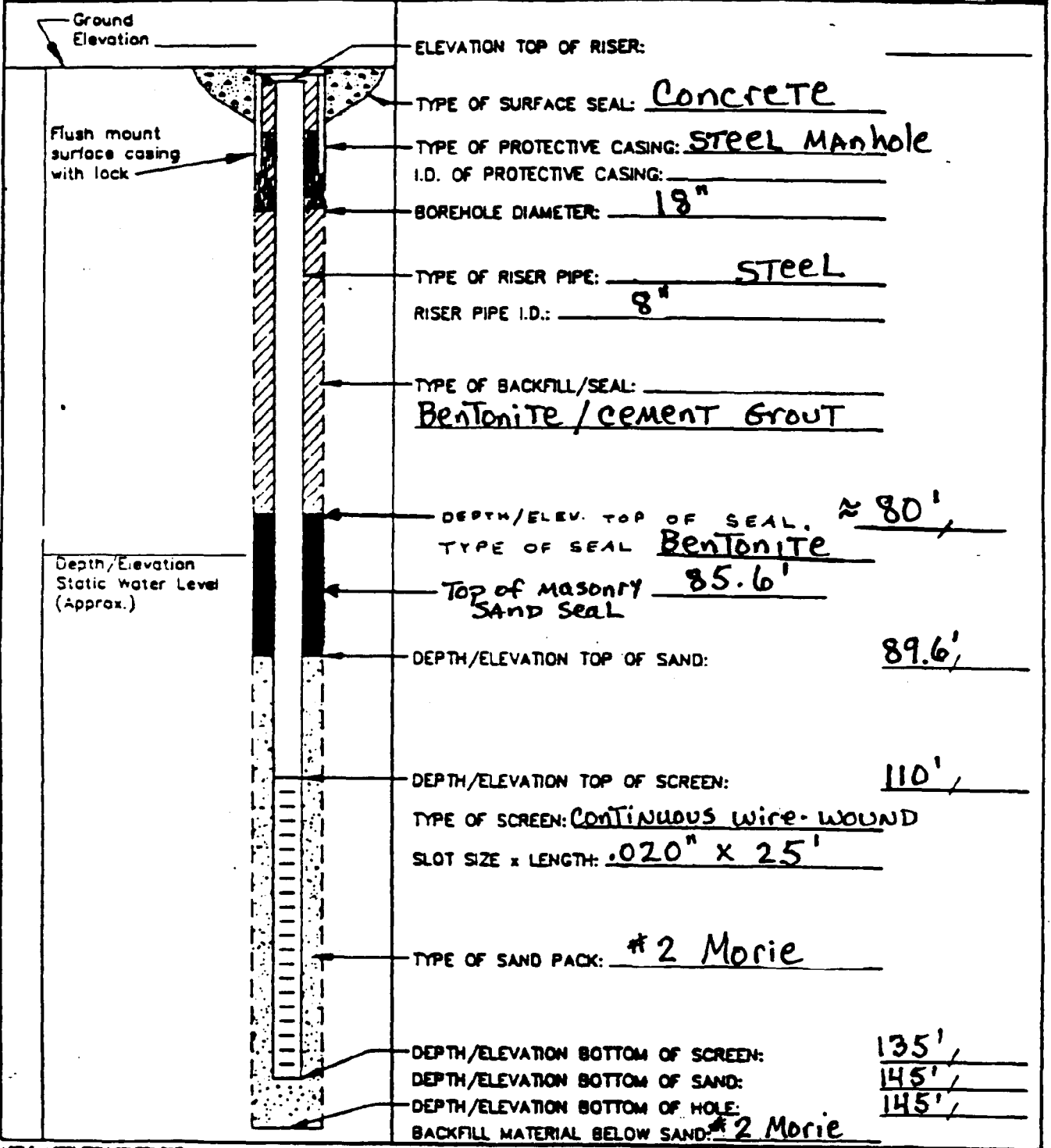
HYDRATED BENTONITE  
SAND W/ ISOLAS 120  
@ 1620

NOTES: END CAP IS  
3.5' LONG, 2.5" DIA.  
1 1/4" OUTSIDE RADIUS  
PIPE

- ELEVATION OF TOP OF SURFACE CASING: \_\_\_\_\_
- ELEVATION OF TOP OF RISER PIPE: \_\_\_\_\_
- FLUSH MOUNT
- STICK-UP TOP OF SURFACE CASING: \_\_\_\_\_
- STICK-UP RISER PIPE: \_\_\_\_\_
- TYPE OF SURFACE SEAL: \_\_\_\_\_
- I.D. OF SURFACE CASING: \_\_\_\_\_
- TYPE OF SURFACE CASING: \_\_\_\_\_
- RISER PIPE I.D. 2"
- TYPE OF RISER PIPE: PVC SCH 40
- BOREHOLE DIAMETER: 8 1/4"
- TYPE OF BACKFILL: CEMENT-BENTONITE GROUT
- ELEVATION / DEPTH TOP OF SEAL: 145.5
- TYPE OF SEAL: BENTONITE PELLETS
- DEPTH TOP OF SAND PACK: 48
- ELEVATION / DEPTH TOP OF SCREEN: 151
- TYPE OF SCREEN: SLOTTED PVC
- SLOT SIZE x LENGTH: 10" x .02
- I.D. OF SCREEN: 2"
- TYPE OF SAND PACK: #2 MURIE SAND
- ELEVATION / DEPTH BOTTOM OF SCREEN: 161
- ELEVATION / DEPTH BOTTOM OF SAND PACK: 161
- TYPE OF BACKFILL BELOW OBSERVATION WELL: NATURAL MATERIAL
- ELEVATION / DEPTH OF HOLE: 62' 162

OVERBURDEN  
MONITORING WELL SHEET

PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN-27I 2</u>	DRILLING METHOD: <u>Water: Reverse circulation</u>
ELEVATION: _____	DATE: _____	DEVELOPMENT METHOD: <u>Sub. Pump</u>
FIELD GEOLOGIST: <u>Kevin C. Kilmartin / Paul Davis</u>		

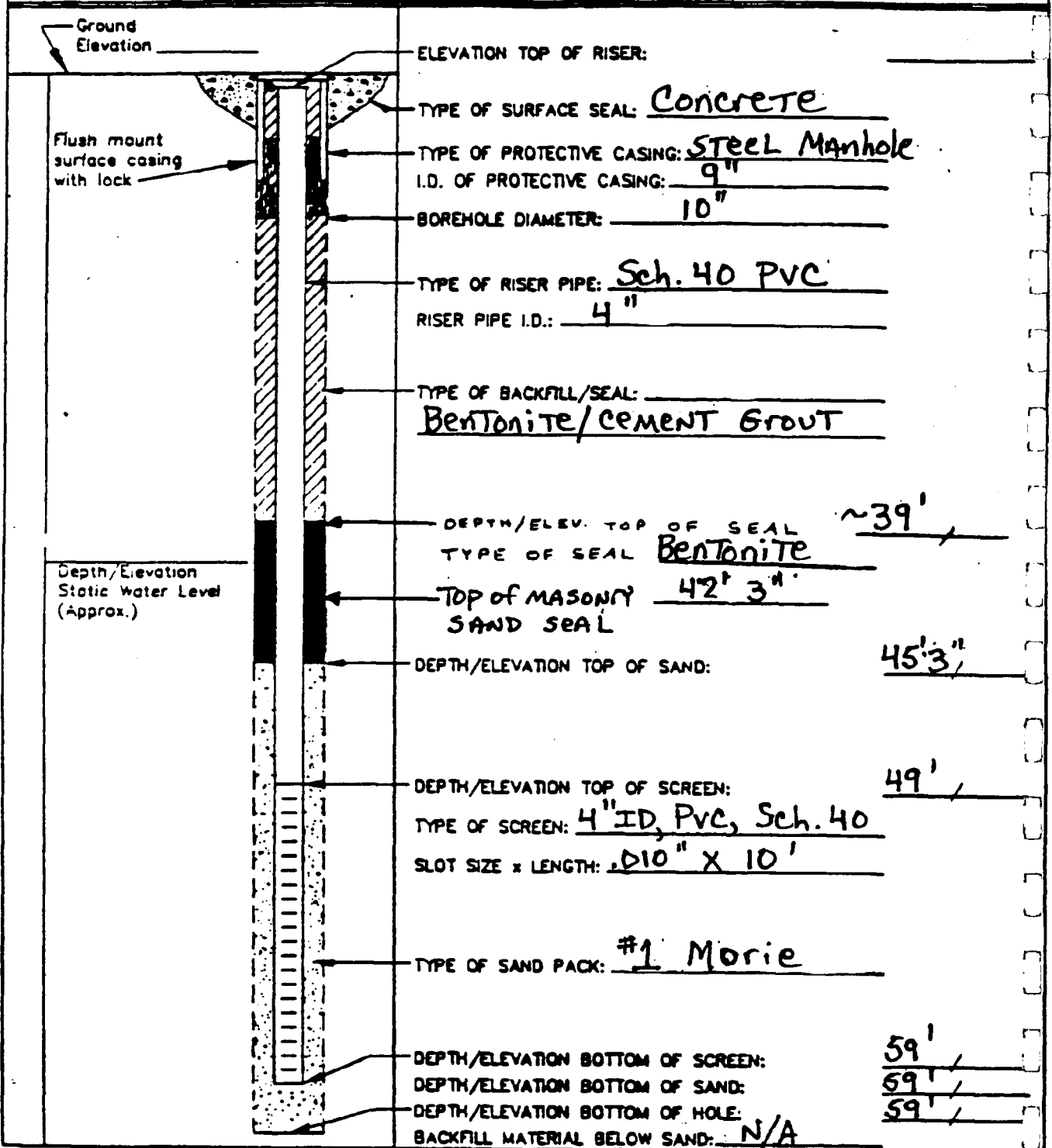


ACFILE: 1470\GCDL\GCDP01.DWG



OVERBURDEN  
MONITORING WELL SHEET

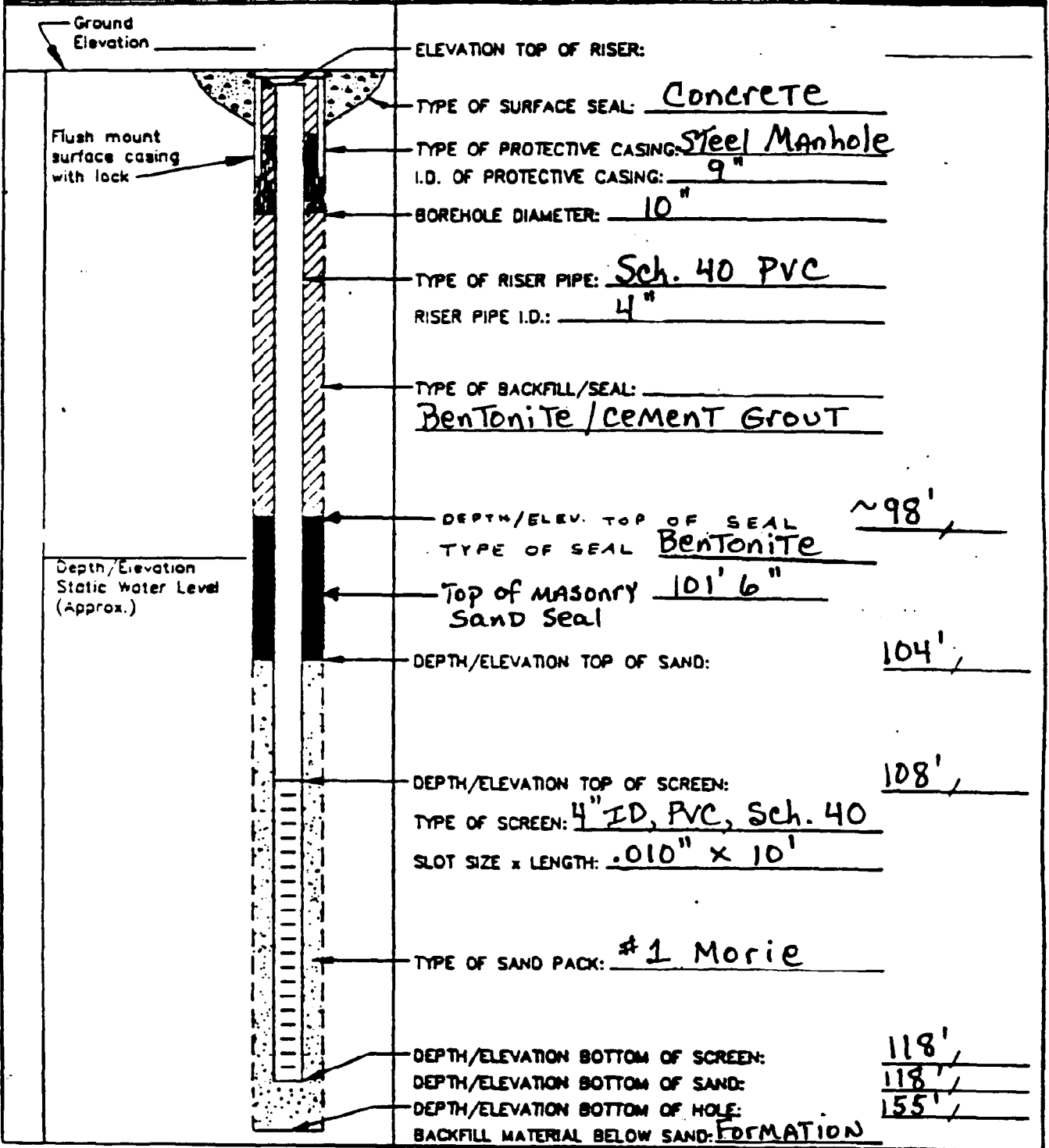
PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN 405</u>	DRILLING METHOD: <u>HSA</u>
ELEVATION: _____	DATE: <u>2-26-93</u>	DEVELOPMENT METHOD: <u>Sub. Pump</u>
FIELD GEOLOGIST: <u>KEVIN C. KILMARTIN</u>		



APPL. 1/70/022/02001.018

OVERBURNEN  
MONITORING WELL SHEET

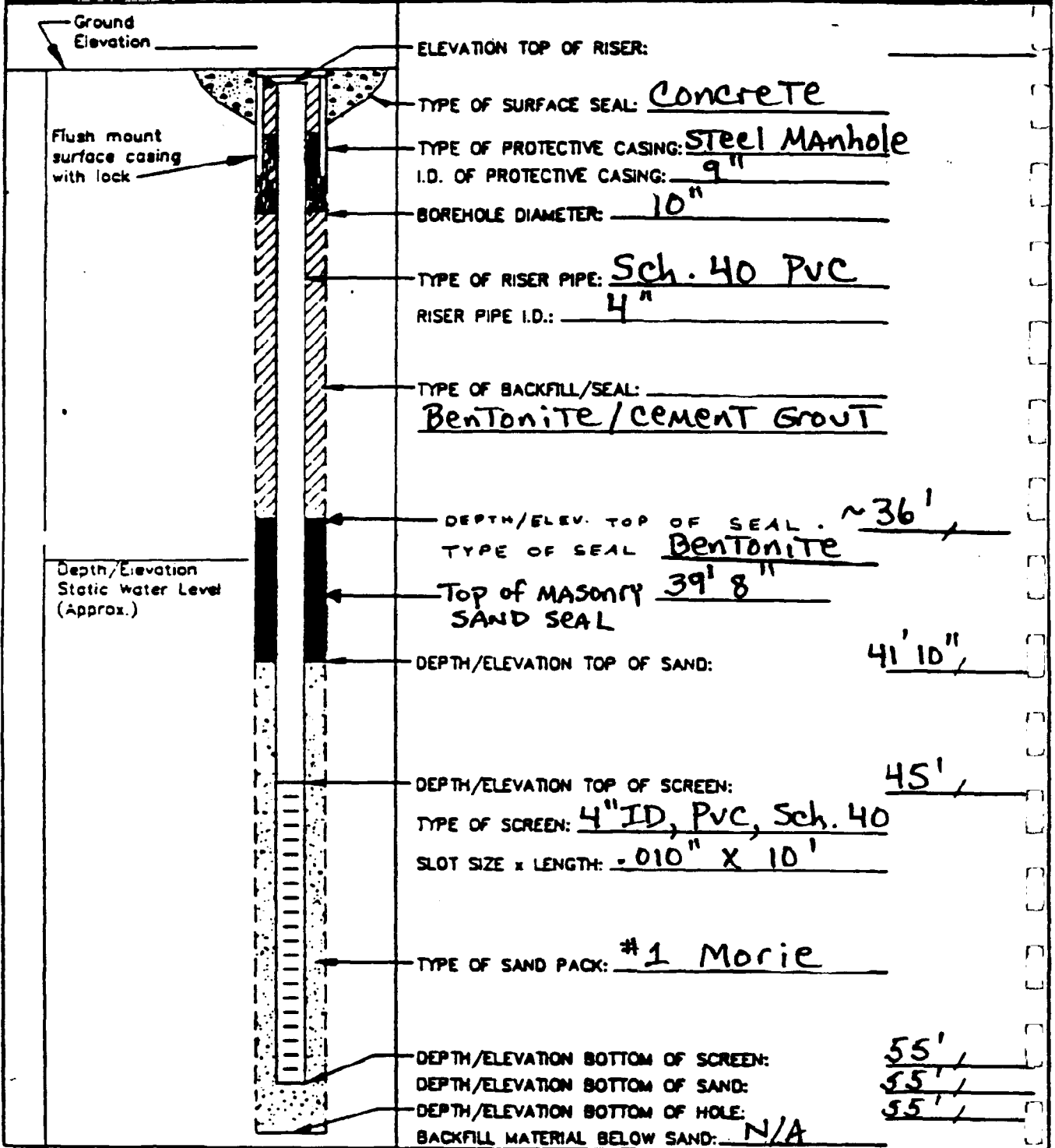
PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN40I</u>	DRILLING METHOD: <u>HSA</u>
ELEVATION: _____	DATE: <u>2-4-93</u>	DEVELOPMENT METHOD: <u>Air Lift</u>
FIELD GEOLOGIST: <u>Kevin C. Kilmartin</u>		



SCALE: 1/4" = 1' (SEE COMMENTS)

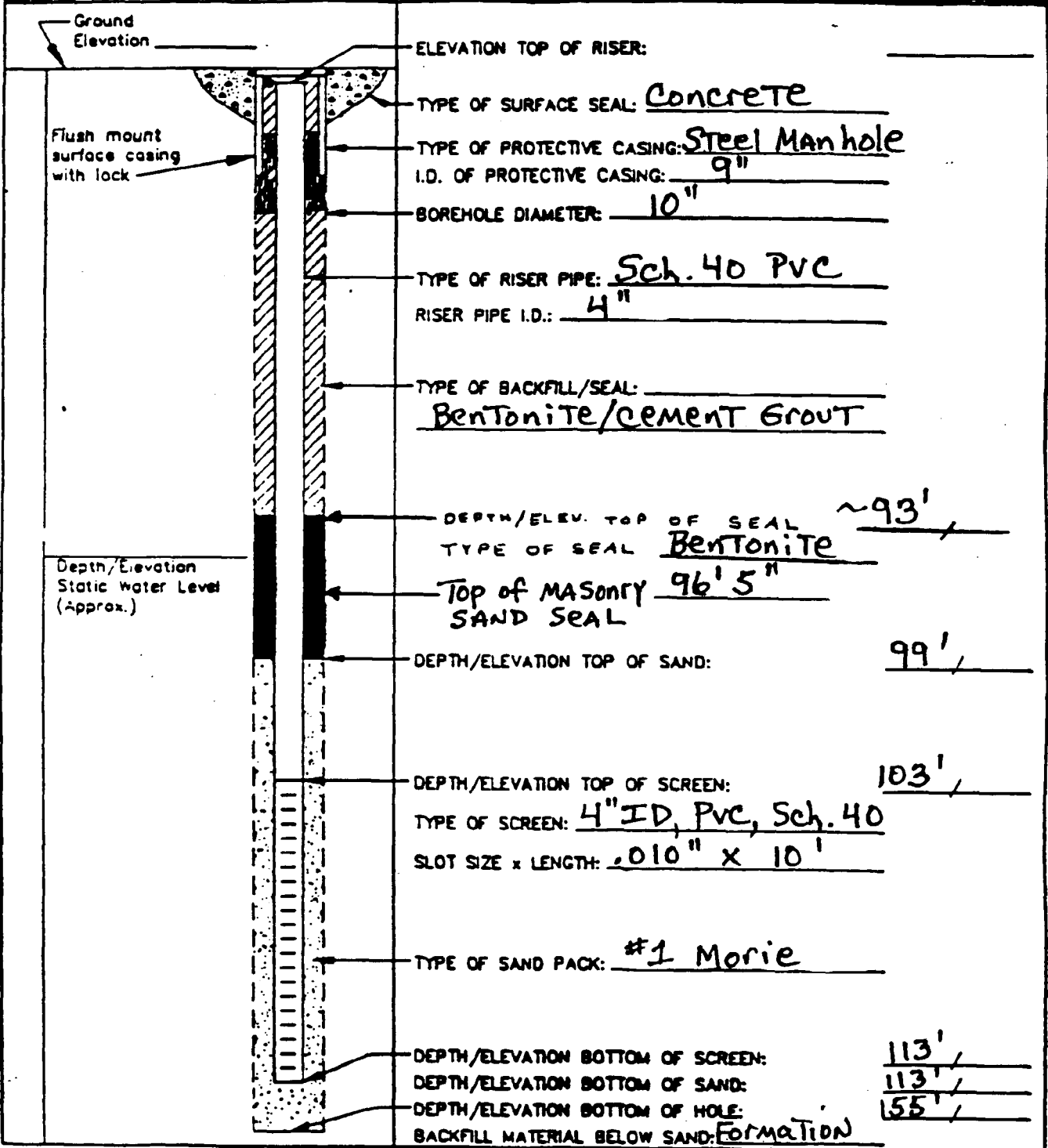
OVERBURDEN  
MONITORING WELL SHEET

PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN415</u>	DRILLING METHOD: <u>HSA</u>
ELEVATION: _____	DATE: <u>2-24-93</u>	DEVELOPMENT METHOD: <u>Sub. Pump</u>
FIELD GEOLOGIST: <u>Kevin C. Kilmartin</u>		



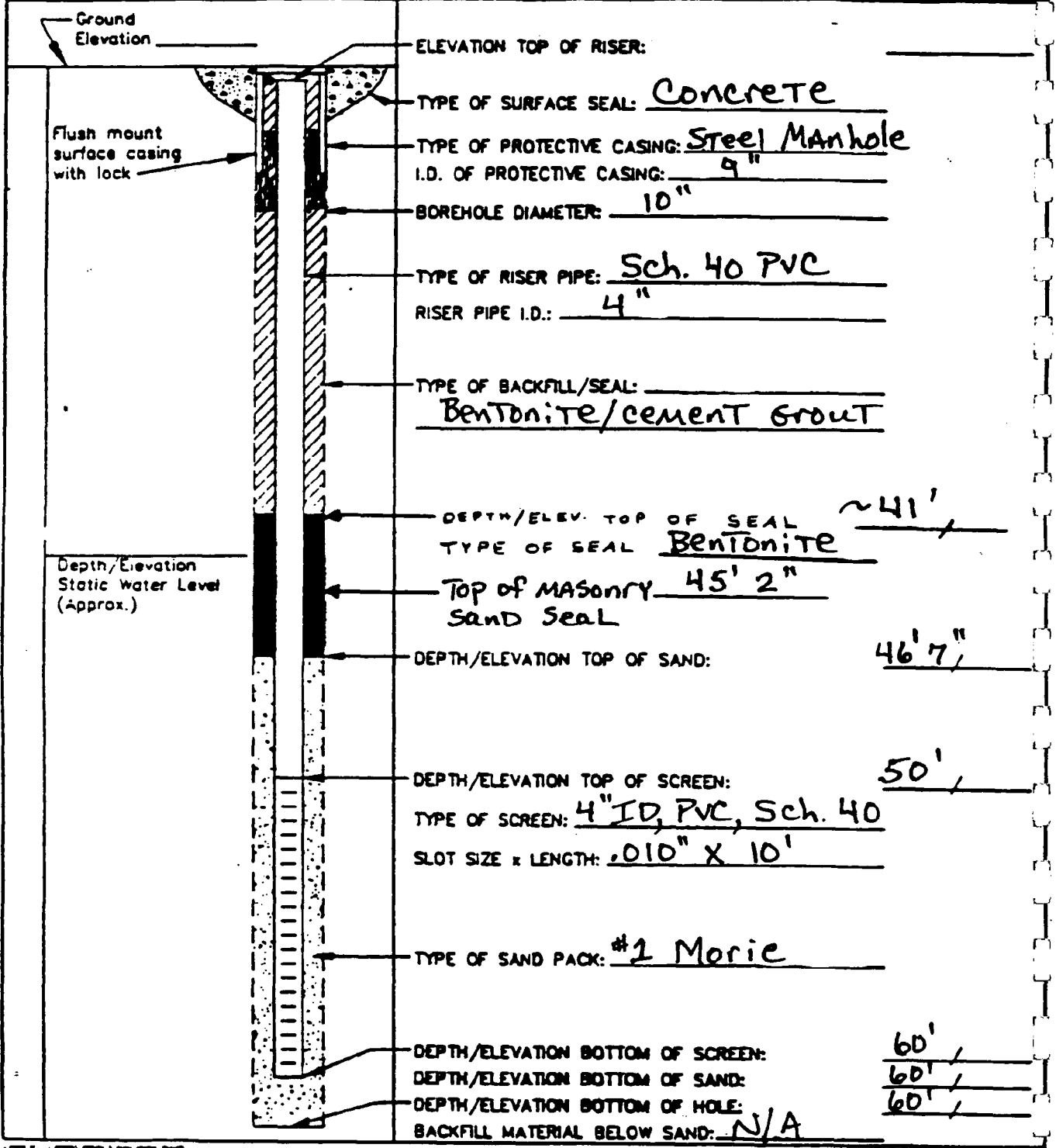
OVERBURDEN  
MONITORING WELL SHEET

PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN-41 I</u>	DRILLING METHOD: <u>HSA</u>
ELEVATION: _____	DATE: <u>2-10-93</u>	DEVELOPMENT METHOD: <u>Air Lift</u>
FIELD GEOLOGIST: <u>Kevin C. Kilmartin</u>		



OVERBURDEN  
MONITORING WELL SHEET

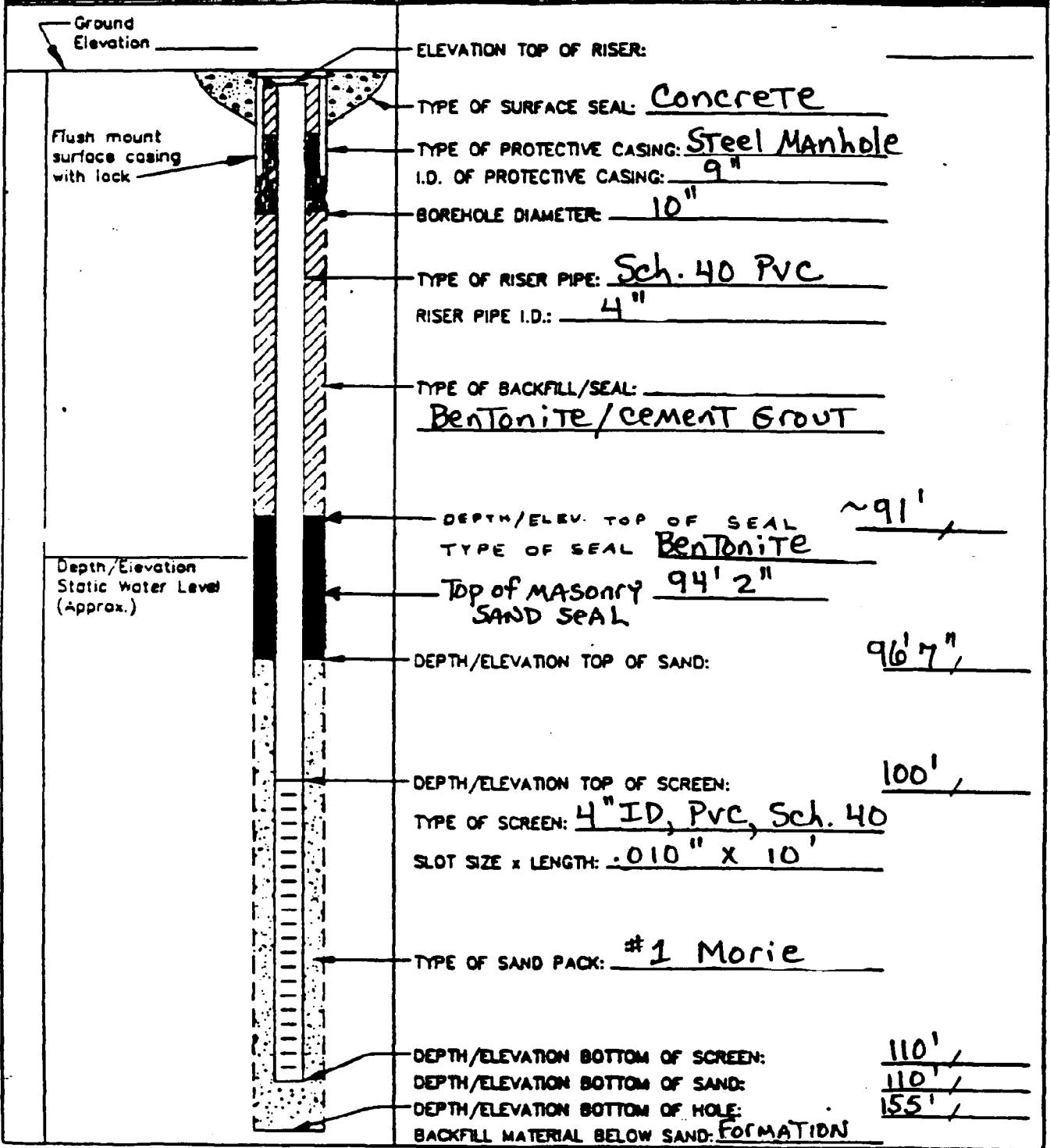
PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN425</u>	DRILLING METHOD: <u>HSA</u>
ELEVATION: _____	DATE: <u>2-19-93</u>	DEVELOPMENT METHOD: <u>Sub. Pump</u>
FIELD GEOLOGIST: <u>Kevin C. Kilmartin</u>		



ADFILE: L1770\GEOL\03BURN.DWG

OVERBURDEN  
MONITORING WELL SHEET

PROJECT: <u>BETHPAGE NWIRP</u>	LOCATION: <u>BETHPAGE NY</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN-42I</u>	DRILLING METHOD: <u>HSA</u>
ELEVATION: _____	DATE: <u>2-17-93</u>	DEVELOPMENT METHOD: <u>Air Lift</u>
FIELD GEOLOGIST: <u>Kevin C. Kilmartin</u>		





WELL NO.: HN-43I

## OVERBURDEN MONITORING WELL SHEET

PROJECT: <u>BETHPAGE</u>	LOCATION: <u>BETHPAGE N.Y.</u>	DRILLER: <u>DELTA</u>
PROJECT NO.: <u>1953</u>	BORING: <u>HN-43I</u>	DRILLING METHOD: <u>HOLLOW STEM AUGER</u>
ELEVATION: _____	DATE: <u>5-11-93</u>	DEVELOPMENT METHOD: _____
FIELD GEOLOGIST: <u>M. MENDEL</u>		

	<p>ELEVATION TOP OF RISER: _____</p> <p>TYPE OF SURFACE SEAL: _____</p> <p>TYPE OF PROTECTIVE CASING: _____</p> <p>I.D. OF PROTECTIVE CASING: _____</p> <p>BOREHOLE DIAMETER: _____</p> <p>TYPE OF RISER PIPE: <u>PVC</u></p> <p>RISER PIPE I.D.: _____</p> <p>TYPE OF BACKFILL/SEAL: <u>CEMENT/BENTONITE</u></p> <p><u>SLURRY</u> <span style="float: right;"><u>132</u></span></p> <p><u>SAND SEAL</u> <span style="float: right;"><u>134 /</u></span></p> <p>DEPTH/ELEVATION TOP OF SAND: <u>138 /</u></p> <p>DEPTH/ELEVATION TOP OF SCREEN: <u>141 /</u></p> <p>TYPE OF SCREEN: <u>PVC</u></p> <p>SLOT SIZE x LENGTH: _____ <u>10'</u></p> <p>TYPE OF SAND PACK: <u>MORIC</u></p> <p>DEPTH/ELEVATION BOTTOM OF SCREEN: <u>151.3 /</u></p> <p>DEPTH/ELEVATION BOTTOM OF SAND: <u>152.0 /</u></p> <p>DEPTH/ELEVATION BOTTOM OF HOLE: <u>152.0 /</u></p> <p>BACKFILL MATERIAL BELOW SAND: _____</p>
--	---

ACFILE: L870\GEOLOG\OBURD1.DWG

E



**APPENDIX E**  
**PUMP TEST DATA AND RESULTS**

**APPENDIX E: PUMPING TEST DATA AND CALCULATIONS:**

**- DATA SUMMARY OF CALCULATIONS FOR PUMP TEST #1 AND #2**

**- PUMP TEST #1:   SUMMARY OF GEOLOGIC CONDITIONS  
                  DRAWDOWN AND RECOVERY DATA  
                  GRAPHS OF DRAWDOWN AND RECOVERY**

**- PUMP TEST #2:   SUMMARY OF GEOLOGIC CONDITIONS  
                  DRAWDOWN AND RECOVERY DATA  
                  GRAPHS OF DRAWDOWN AND RECOVERY**

**- PUMPING TEST CALCULATIONS**

DATA SUMMARY OF CALCULATIONS FOR PUMP TEST #1 AND #2

BETHPAGE NWIPR  
DATA SUMMARY OF CALCULATIONS FOR PUMP TEST #1 AND #2

Well	Distance From Pumping Well (ft)	Screened Interval (ft bgs)	Transmissivity (ft <sup>2</sup> /d)	Horizontal Hyd. Conductivity (ft/d)	Vertical Hyd. Conductivity (ft/d)	Kv/Kh ratio (%)	Storability (Dimensionless)	Specific Yield (Dimensionless)	Calculation Method
<b>PUMP TEST #1</b>									
<b>SHALLOW WELLS:</b>									
HN27S2	31.5	51-61	7.002	41.19	-	-	0.054	-	Neuman (1) **
			24.511	144.0	-	-	-	-	Ferris (2)
			24.467	144.0	-	-	-	-	Dupuit (3)
HN27S3	108.5	51-61	13.199	77.64	-	-	0.044	-	Neuman (1) **
<b>INTERMEDIATE WELLS:</b>									
HN28I	520	115.3-125.3	16.340	96.12	10.27	10.68	0.0012	-	Neuman (1)
			39.218	231.0	-	-	-	-	Ferris (2)
			38.071	224.0	-	-	-	-	Dupuit (3)
HN27I	45	100-110	6.863	40.37	5.76	14.3	0.0041	-	Neuman (1)
			5.719	33.84	-	-	0.0045	-	Neuman (1) **
			16.740	98.0	-	-	-	-	Ferris (2)
			20.128	118.0	-	-	-	-	Dupuit (3)
HN28I	425	131-141	10.559	62.11	3.96	6.4	0.0012	-	Neuman (1)
			18.549	109.0	-	-	-	-	Ferris (2)
			19.574	115.0	-	-	-	-	Dupuit (3)
<b>OTHER:</b>									
Recharge Basin	500	-	-	-	23.36	-	-	-	Permeability (3)
HN28I, HN27I, HN28I, HN27S2, HN27S3	-	-	17.920	105.4	-	-	0.175	-	Distance-Drawdown(5) at 1000 Minutes **
HN28I, HN27I, HN28I, HN27S2, HN27S3	-	-	17,136.6	100.8	-	-	0.33	-	Distance-Drawdown(5) at 4000 Minutes **
<b>PUMP TEST #2</b>									
PW-11	-	429-490	60,000	85.7	-	-	0.26	-	Distance-Drawdown(5) at 4000 Minutes
			59,723	85.3	-	-	-	-	Specific Capacity (6)

Note: All calculations based on data from Pump Test #1, except calculations for PW-11 based on data from pump test #2. Saturated thickness for pump test #1 = 170 ft, saturated thickness for pump test #2 = 700 ft.

\*\* indicates analysis corrected for partial penetration effects.

- (1) Method described in: Neuman, 1975
- (2) Method described in: Ferris, et al., 1962. Theory of Aquifer Test, USGS Water Supply Paper.
- (3) Method described in: Dupuit, 1963.
- (4) Method described in: Geotechnical Engineering, Holtz, R.D. and Kovacs, W.D., 1981, pgs. 206-207.
- (5) Method described in: Fetter, C.F., Applied Hydrogeology, 1988.
- (6) Method described in Logan, 1964.

**PUMPING TEST # 1**  
**SUMMARY OF GEOLOGIC CONDITIONS**

## BETHPAGE PUMPING TEST # 1

Pumping Well HN-2712

Pumping Rate = 448 gpm

Trend data from 0.0 to 4320.0 minutes

Drawdown data from 4320.0 to 8420.0 minutes

Recovery data from 8420.0 to 13920.0 minutes.

The conceptual geologic/hydrogeologic model for the analysis of pumping test 1 was an unconfined aquifer with a pumping well and a recharge well operating at equal pumping/recharge rates. The recharge basin was conceptualized as the recharge well, with the hypothetical recharge well location considered to be the center of the basin. A clay layer encountered in three perimeter boring at a depth of about 220 feet was assumed to be present throughout the area of the test and was used to define the bottom of the unconfined aquifer for test evaluation purposes. The water table was considered the top of the aquifer, at an approximate depth of 50 feet, resulting in an aquifer thickness of approximately 170 feet.

Since the recharge basin was in use for an extended time period prior to the start of the pumping test, the recharge rate prior to pumping test startup was considered to be a steady state condition and the water levels observed in the area were reflective of this steady-state. As a result, the added discharge to the basin and resulting added recharge to groundwater due to the pumping test could be considered as a recharge well injecting water at the same rate as the groundwater extraction rate/added discharge rate into the basin.

The background discharge rate to the aquifer from the basin could be ignored for purposes of the test evaluation, as the water table configuration at the beginning of the test was considered to be a quasi-steady state condition reflective of this background recharge to the aquifer (and cyclic pumping activities at an unknown location nearby, seen in the trend data).

Several analysis methods were applied to the drawdown data generated. The early time-drawdown data,

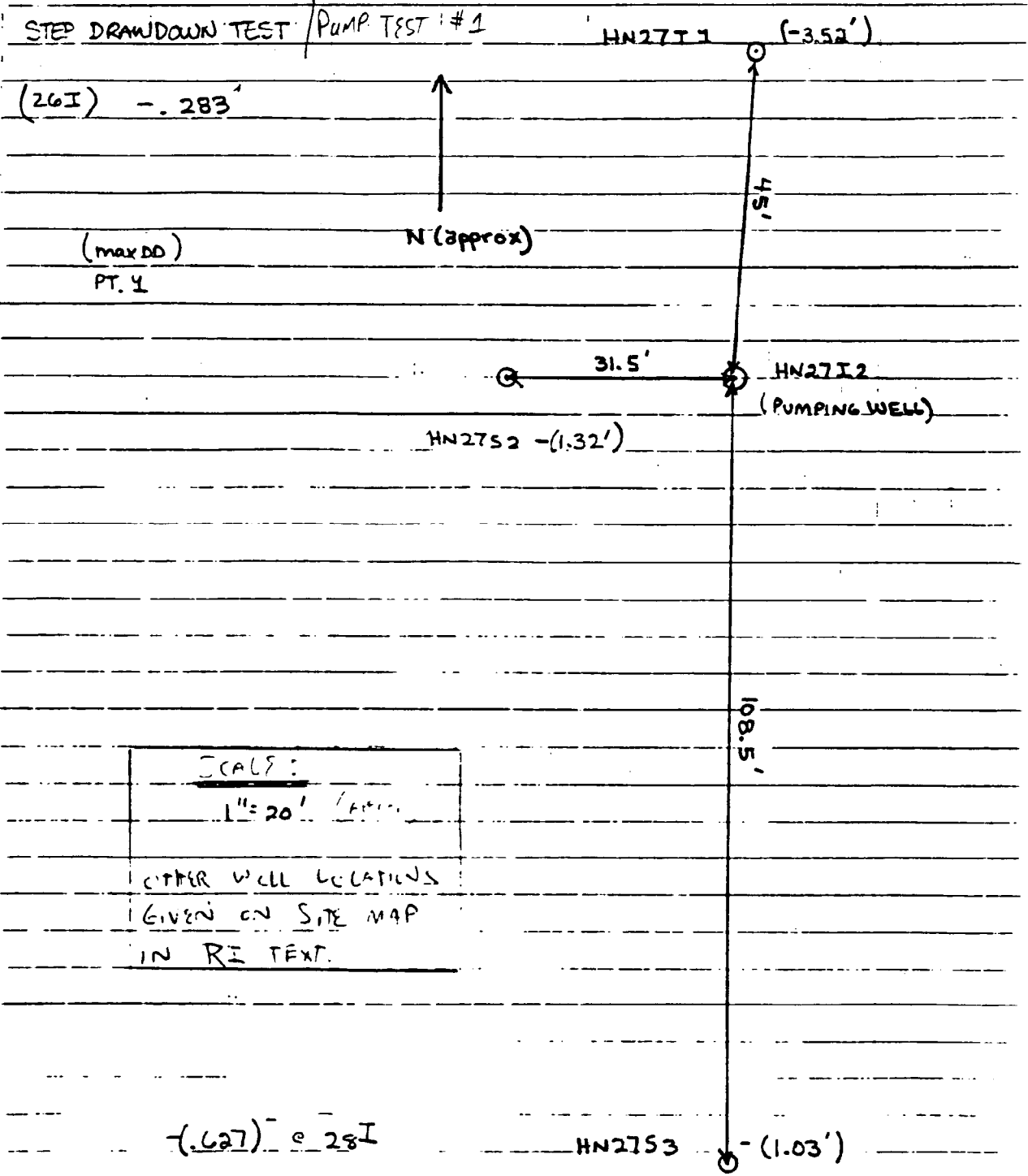
Pump Test #1 Summary, pg-1

affected by pumping only, was matched against Neuman's type curves for an unconfined aquifer to obtain preliminary estimates of transmissivity (T) and values for vertical permeability.

Later data, affected by both the pumping well drawdown and the recharge basin recharge, was analyzed using two methods applicable to aquifers with a pumping and a recharge well operating at equal rates. One method is a type curve matching method presented in Ferris, et.al., 1962. The other method is a steady-state drawdown analysis based on the Dupuit (1963) formula for steady state drawdown in an unconfined aquifer. For a pumping and recharge well operating at equal rates, drawdowns within the areas of influence should reach a steady-state level after the effects of both wells are established at a given observation point.

The steady-state assumption was considered a valid approximation as drawdowns appeared to be stabilizing near the end of the first 1000 minutes of pumping, prior to the manifestation of what is interpreted as additional drawdowns imposed by unknown pumping wells cycling on and off. The effects of these wells can also be seen in the trend data, which shows varying magnitudes of responses to the cyclical pumping. These differences are considered to be due to variations in the pumping rates of the wells responsible for the cyclic responses, and the cyclic drawdowns seen in the data after 1000 minutes of pumping are interpreted as cyclic pumping at higher rates than was occurring during the late portion of the trend data gathering and the early portion of the pumping test. This added extraction from the aquifer changed the quasi-equilibrium drawdown condition and resulted in further drawdowns in the observation wells.

CLIENT: NAVY	FILE NO.: 1953	BY: SJC 1-19-93	PAGE OF
SUBJECT: PUMP TEST 2 (LAYOUT)		CHECKED BY:	DATE:





**PUMPING TEST #1**  
**DRAWDOWN AND RECOVERY DATA**

BETHPAGE NWIRP  
 PUMPING TEST #1  
 PUMPING WELL: HN-2712 PUMPING RATE: 448 GPM

	Total Time	Step Time	HN30S	HN30I	Basin	HN26I	HN28S	HN28I	HN-2712	HN-2711	HN27S2	HN27S3	USGS Well
TREND DATA PUMP TEST 1	0.000	0.000	-0.003	0.009	0.006	0.038	-0.003	-0.019					
	60.000	60.000	-0.012	0.037	0.044	0.038	-0.003	-0.180					
	120.000	120.000	-0.022	-0.028	0.050	-0.018	-0.003	-0.285					
	180.000	180.000	-0.041	-0.047	0.066	-0.028	0.000	-0.351					
	240.000	240.000	-0.050	-0.056	0.107	-0.047	0.000	-0.370					
	300.000	300.000	-0.065	-0.066	0.136	-0.056	-0.003	-0.437					
	360.000	360.000	-0.085	-0.085	0.170	-0.085	0.000	-0.361					
	420.000	420.000	-0.101	-0.066	0.199	-0.038	0.000	-0.038					
	480.000	480.000	-0.110	-0.009	0.189	0.028	-0.003	-0.019					
	540.000	540.000	-0.123	0.000	0.180	0.038	0.000	-0.009					
	600.000	600.000	-0.129	0.000	0.167	0.047	0.003	-0.009					
	660.000	660.000	-0.139	-0.009	0.155	0.038	0.003	-0.009					
	720.000	720.000	-0.145	0.000	0.139	0.056	0.003	0.000					
	780.000	780.000	-0.152	0.009	0.126	0.065	0.003	0.009					
	840.000	840.000	-0.161	0.009	0.120	0.065	0.003	0.009					
	900.000	900.000	-0.164	0.018	0.113	0.065	0.006	0.019					
	960.000	960.000	-0.174	0.028	0.104	0.084	0.003	0.028					
	1020.000	1020.000	-0.180	0.018	0.085	0.075	0.006	0.028					
	1080.000	1080.000	-0.183	0.018	0.072	0.084	0.003	0.028					
	1140.000	1140.000	-0.190	0.028	0.053	0.094	0.003	0.028					
	1200.000	1200.000	-0.202	0.018	0.041	0.094	0.003	0.028					
	1260.000	1260.000	-0.209	0.009	0.028	0.084	0.003	0.028					
	1320.000	1320.000	-0.218	0.009	0.015	0.084	0.003	0.028					
	1380.000	1380.000	-0.228	0.000	0.012	0.084	0.000	0.028					
	1440.000	1440.000	-0.237	-0.009	-0.003	0.084	0.003	0.028					
	1500.000	1500.000	-0.243	-0.018	-0.015	0.084	-0.003	0.028					
	1560.000	1560.000	-0.259	-0.047	-0.034	0.075	-0.003	0.028					
	1620.000	1620.000	-0.262	-0.047	-0.041	0.065	-0.003	0.028					
	1680.000	1680.000	-0.275	-0.066	-0.053	0.065	-0.003	0.019					
	1740.000	1740.000	-0.281	-0.066	-0.050	0.056	-0.003	0.009					
	1800.000	1800.000	-0.294	-0.075	-0.066	0.047	0.000	0.009					
	1860.000	1860.000	-0.304	-0.066	-0.072	0.065	0.003	0.019					
	1920.000	1920.000	-0.316	-0.066	-0.085	0.065	0.003	0.019					
	1980.000	1980.000	-0.326	-0.066	-0.088	0.084	0.003	0.028					
	2040.000	2040.000	-0.335	-0.066	-0.094	0.094	0.003	0.038					
	2100.000	2100.000	-0.342	-0.075	-0.101	0.094	0.003	0.047					
	2160.000	2160.000	-0.357	-0.066	-0.110	0.104	0.003	0.057					
	2220.000	2220.000	-0.364	-0.066	-0.113	0.104	0.003	0.057					
	2280.000	2280.000	-0.370	-0.056	-0.126	0.113	0.003	0.066					
	2340.000	2340.000	-0.380	-0.056	-0.126	0.113	0.000	0.066					
	2400.000	2400.000	-0.392	-0.056	-0.132	0.113	0.000	0.066					
	2460.000	2460.000	-0.402	-0.056	-0.136	0.104	0.000	0.066					
	2520.000	2520.000	-0.408	-0.056	-0.139	0.104	0.000	0.066					
2580.000	2580.000	-0.421	-0.056	-0.148	0.104	0.000	0.066						
2640.000	2640.000	-0.430	-0.066	-0.148	0.104	0.000	0.066						
2700.000	2700.000	-0.443	-0.075	-0.151	0.094	0.000	0.057						
2760.000	2760.000	-0.452	-0.075	-0.158	0.094	0.000	0.057						
2820.000	2820.000	-0.465	-0.085	-0.161	0.094	0.000	0.057						
2880.000	2880.000	-0.475	-0.094	-0.151	0.094	-0.006	0.057						
2940.000	2940.000	-0.487	-0.113	-0.167	0.084	-0.006	0.057						
3000.000	3000.000	-0.503	-0.123	-0.189	0.084	-0.003	0.066						
3060.000	3060.000	-0.503	-0.142	-0.148	0.084	-0.066	0.047						
3120.000	3120.000	-0.522	-0.142	-0.183	0.075	-0.006	0.047						
3180.000	3180.000	-0.532	-0.151	-0.170	0.075	-0.006	0.038						
3240.000	3240.000	-0.544	-0.170	-0.183	0.065	-0.006	0.028						
3300.000	3300.000	-0.557	-0.170	-0.193	0.047	-0.006	0.009						
3360.000	3360.000	-0.570	-0.100	-0.186	0.047	-0.006	0.000						
3450.000	3450.000	-0.589	-0.189	-0.190	0.047	-0.006	-0.009						
3480.000	3480.000	-0.595	-0.199	-0.202	0.038	-0.006	-0.019						
3540.000	3540.000	-0.604	-0.227	-0.183	0.028	-0.006	-0.019						
3600.000	3600.000	-0.617	-0.236	-0.196	0.028	-0.009	-0.028						
3660.000	3660.000	-0.630	-0.236	-0.180	0.018	-0.006	-0.028						
3720.000	3720.000	-0.639	-0.246	-0.218	0.018	-0.009	-0.038						
3780.000	3780.000	-0.652	-0.255	-0.174	0.018	-0.003	-0.038						
3840.000	3840.000	-0.665	-0.255	-0.208	0.009	-0.003	-0.038						
3900.000	3900.000	-0.680	-0.265	-0.208	0.000	-0.003	-0.038						
3960.000	3960.000	-0.690	-0.255	-0.221	0.018	-0.003	-0.038						
4020.000	4020.000	-0.696	-0.265	-0.199	0.009	-0.003	-0.038						
4080.000	4080.000	-0.712	-0.265	-0.212	0.018	-0.006	-0.038						
4140.000	4140.000	-0.725	-0.265	-0.224	0.009	-0.006	-0.047						
4200.000	4200.000	-0.737	-0.274	-0.212	0.009	-0.006	-0.047						
4260.000	4260.000	-0.747	-0.284	-0.183	-0.009	-0.006	-0.066						
4320.000	4320.000	-0.756	-0.303	-0.189	-0.009	-0.009	-0.076						
DRAWDOWN DATA	4320.000	0.000	-0.047	-0.018	0.025	0.018	0.018	0.000	0.000	-0.009	-0.015	-0.241	
	4320.100	0.100	-0.047	-0.018	0.079	0.009	0.009	-15.927	-0.009	0.003	-0.015	-0.241	
	4320.200	0.200	-0.044	-0.009	0.069	0.009	0.009	-23.046	-0.037	0.006	0.000	-0.241	
	4320.300	0.300	-0.044	-0.018	0.006	0.009	0.009	-25.707	-0.085	0.003	0.000	-0.238	

BETHPAGE NWIRP  
PUMPING TEST #1  
PUMPING WELL: HN-2712 PUMPING RATE: 448 GPM

Total Time	Step Time	HN30S	HN30I	Basin	HN26I	HN28S	HN28I	HN-2712	HN-2711	HN27S2	HN27S3	USGS Well
4320.500	0.500	-0.044	-0.018	0.063	0.009		0.018	-27.423	-0.227	-0.019	-0.015	-0.241
4320.750	0.750	-0.041	-0.018	0.063	0.009		0.009	-28.053	-0.407	-0.038	0.000	-0.234
4321.000	1.000	-0.044	-0.018	0.028	0.009		0.009	-27.140	-0.540	-0.055	-0.015	-0.241
4322.000	2.000	-0.044	-0.037	0.072	0.000		0.009	-27.093	-0.938	-0.087	-0.015	-0.244
4323.000	3.000	-0.047	-0.056	0.069	-0.009		-0.009	-27.565	-1.252	-0.110	-0.031	-0.250
4324.000	4.000	-0.044	-0.066	0.053	-0.019		-0.028	-27.723	-1.517	-0.119	-0.031	-0.257
4325.000	5.000	-0.044	-0.085	0.056	-0.028		-0.047	-28.227	-1.764	-0.129	-0.031	-0.260
4326.000	6.000	-0.047	-0.113	0.037	-0.047		-0.066	-26.510	-1.973	-0.139	-0.047	-0.257
4328.000	8.000	-0.044	-0.142	0.025	-0.075		-0.114	-15.754	-2.181	-0.139	-0.047	-0.250
4330.000	10.000	-0.047	-0.170	0.053	-0.085		-0.161	-18.132	-2.172	-0.126	-0.047	-0.263
4332.000	12.000	-0.050	-0.189	0.069	-0.085		-0.180	-22.070	-2.314	-0.145	-0.063	-0.247
4336.000	16.000	-0.050	-0.189	0.044	-0.094		-0.237	-22.180	-2.580	-0.165	-0.078	-0.273
4340.000	20.000	-0.050	-0.189	0.072	-0.104		-0.285	-21.944	-2.751	-0.181	-0.094	-0.263
4344.000	24.000	-0.050	-0.199	0.075	-0.104		-0.323	-21.975	-2.874	-0.191	-0.094	-0.273
4350.000	30.000	-0.053	-0.189	0.094	-0.123		-0.361	-22.085	-2.969	-0.203	-0.094	-0.276
4354.000	34.000	-0.053	-0.199	0.094	-0.123		-0.380	-22.196	-3.007	-0.213	-0.110	-0.292
4360.000	40.000	-0.057	-0.189	0.098	-0.132		-0.418	-21.975	-3.045	-0.226	-0.110	-0.301
4366.000	46.000	-0.057	-0.199	0.101	-0.132		-0.418	-22.038	-3.064	-0.229	-0.110	-0.304
4370.000	50.000	-0.060	-0.189	0.107	-0.132		-0.418	-22.007	-3.073	-0.242	-0.110	-0.311
4374.000	54.000	-0.060	-0.199	0.075	-0.142		-0.427	-22.227	-3.073	-0.246	-0.110	-0.311
4380.000	60.000	-0.060	-0.189	0.110	-0.142		-0.437	-22.133	-3.083	-0.259	-0.126	-0.314
4390.000	70.000	-0.063	-0.189	0.101	-0.142		-0.446	-22.196	-3.092	-0.268	-0.126	-0.330
4400.000	80.000	-0.066	-0.189	0.104	-0.151		-0.446	-22.117	-3.092	-0.278	-0.142	-0.342
4410.000	90.000	-0.069	-0.189	0.120	-0.160		-0.456	-21.959	-3.102	-0.291	-0.142	-0.355
4420.000	100.000	-0.066	-0.199	0.145	-0.160		-0.456	-21.975	-3.102	-0.284	-0.142	-0.361
4440.000	120.000	-0.072	-0.151	0.167	-0.151		-0.456	-22.227	-3.111	-0.310	-0.157	-0.390
4460.000	140.000	-0.076	-0.142	0.177	-0.151		-0.465	-22.164	-3.121	-0.323	-0.173	-0.406
4480.000	160.000	-0.082	-0.142	0.196	-0.151		-0.465	-21.928	-3.130	-0.333	-0.189	-0.422
4500.000	180.000	-0.088	-0.151	0.196	-0.151		-0.475	-22.101	-3.130	-0.349	-0.189	-0.438
4520.000	200.000	-0.091	-0.151	0.218	-0.151		-0.475	-21.865	-3.140	-0.365	-0.205	-0.434
4570.000	250.000	-0.101	-0.161	0.243				-22.164	-3.159	-0.398	-0.236	
4620.000	300.000	-0.114	-0.161	0.275	-0.151		-0.494	-22.133	-3.179	-0.433	-0.268	-0.485
4670.000	350.000	-0.120	-0.161	0.300				-21.975	-3.187	-0.462	-0.284	
4720.000	400.000	-0.126	-0.161	0.335	-0.142		-0.504	-22.290	-3.206	-0.492	-0.299	-0.530
4770.000	450.000	-0.139	-0.170	0.344				-22.180	-3.206	-0.521	-0.331	
4820.000	500.000	-0.142	-0.161	0.360	-0.151		-0.504	-22.196	-3.225	-0.547	-0.347	-0.571
4870.000	550.000	-0.148	-0.161	0.386				-22.164	-3.234	-0.547	-0.363	
4920.000	600.000	-0.152	-0.151	0.411	-0.142		-0.494	-22.259	-3.244	-0.592	-0.394	-0.606
4970.000	650.000	-0.155	-0.142	0.420				-22.274	-3.253	-0.621	-0.394	
5020.000	700.000	-0.155	-0.142	0.433	-0.142		-0.494	-22.259	-3.263	-0.647	-0.426	-0.647
5070.000	750.000	-0.155	-0.142	0.449				-21.865	-3.272	-0.673	-0.442	
5120.000	800.000	-0.152	-0.132	0.458	-0.132		-0.494	-22.070	-3.272	-0.689	-0.457	-0.692
5220.000	900.000	-0.142	-0.132	0.484	-0.142		-0.494	-22.337	-3.301	-0.721	-0.489	-0.736
5320.000	1000.000	-0.126	-0.123	0.509	-0.132		-0.504	-22.322	-3.320	-0.773	-0.520	-0.781
5420.000	1100.000	-0.114	-0.123	0.522				-22.526	-3.339	-0.809	-0.568	
5520.000	1200.000	-0.098	-0.151	0.550	-0.198		-0.541	-22.227	-3.367	-0.838	-0.598	-0.835
5620.000	1300.000	-0.076	-0.151	0.601				-22.259	-3.377	-0.870	-0.615	
5720.000	1400.000	-0.060	-0.132	0.557	-0.217		-0.541	-22.699	-3.396	-0.906	-0.647	-0.920
5820.000	1500.000	-0.034	-0.142	0.613				-22.432	-3.415	-0.935	-0.678	
5920.000	1600.000	-0.015	-0.123	0.626	-0.227		-0.579	-22.243	-3.424	-0.968	-0.694	-1.015
6020.000	1700.000	0.006	-0.113	0.613				-22.699	-3.434	-0.993	-0.710	
6120.000	1800.000	0.034	-0.113	0.617	-0.227		-0.589	-22.605	-3.443	-1.019	-0.742	-1.120
6220.000	1900.000	0.060	-0.085	0.617				-22.463	-3.453	-1.042	-0.757	
6320.000	2000.000	0.091	-0.066	0.613	-0.217		-0.589	-22.558	-3.453	-1.061	-0.773	-1.196
6420.000	2100.000	0.117	-0.037	0.610				-22.715	-3.453	-1.084	-0.789	
6520.000	2200.000	0.145	-0.028	0.601	-0.208		-0.560	-22.715	-3.453	-1.100	-0.805	-1.273
6620.000	2300.000	0.174	-0.009	0.591				-22.495	-3.453	-1.116	-0.820	
6720.000	2400.000	0.199	0.000	0.623	-0.198		-0.541	-22.558	-3.462	-1.139	-0.836	-1.355
6820.000	2500.000	0.224	0.009	0.626				-22.259	-3.462	-1.155	-0.868	
6920.000	2600.000	0.247	0.000	0.629	-0.227		-0.551	-22.448	-3.472	-1.172	-0.868	-1.435
7020.000	2700.000	0.269	-0.009	0.607				-22.479	-3.491	-1.184	-0.899	
7120.000	2800.000	0.294	-0.009	0.623	-0.264		-0.570	-22.699	-3.491	-1.204	-0.915	-1.511
7220.000	2900.000	0.316	-0.009	0.613				-22.778	-3.500	-1.217	-0.915	
7320.000	3000.000	0.338	-0.009	0.632	-0.274		-0.589	-22.542	-3.500	-1.227	-0.931	-1.584
7420.000	3100.000	0.361	0.000	0.636				-22.416	-3.510	-1.240	-0.931	
7520.000	3200.000	0.380	0.009	0.632	-0.283		-0.627	-22.652	-3.519	-1.252	-0.947	-1.676
7620.000	3300.000	0.405	0.018	0.623				-22.495	-3.510	-1.262	-0.963	
7720.000	3400.000	0.424	0.028	0.607	-0.274		-0.627	-22.747	-3.519	-1.272	-0.963	-1.746
7820.000	3500.000	0.446	0.047	0.601				-22.605	-3.510	-1.275	-0.963	
7920.000	3600.000	0.468	0.066	0.582	-0.264		-0.608	-22.747	-3.519	-1.288	-0.978	-1.812
8020.000	3700.000	0.484	0.075	0.566				-22.699	-3.510	-1.291	-0.978	
8120.000	3800.000	0.500	0.094	0.557	-0.245		-0.579	-22.589	-3.510	-1.301	-0.994	-1.882
8220.000	3900.000	0.516	0.084	0.557				-22.605	-3.500	-1.308	-1.010	
8320.000	4000.000	0.525	0.075	0.560	-0.264		-0.589	-22.463	-3.510	-1.314	-1.010	-1.949
8420.000	4100.000	0.538	0.066	0.560				-22.589	-3.510	-1.320	-1.026	
RECOVERY DATA	8420.000	0.000	0.544	0.066	0.569	-0.283	-0.589	-22.478	-3.519	-1.314	-1.026	-1.987
	8420.100	0.100	0.547	0.066	0.572	-0.302	-0.598	-4.411	-3.510	-1.320	-1.010	-1.987

BETHPAGE NWIRP

PUMPING TEST #1

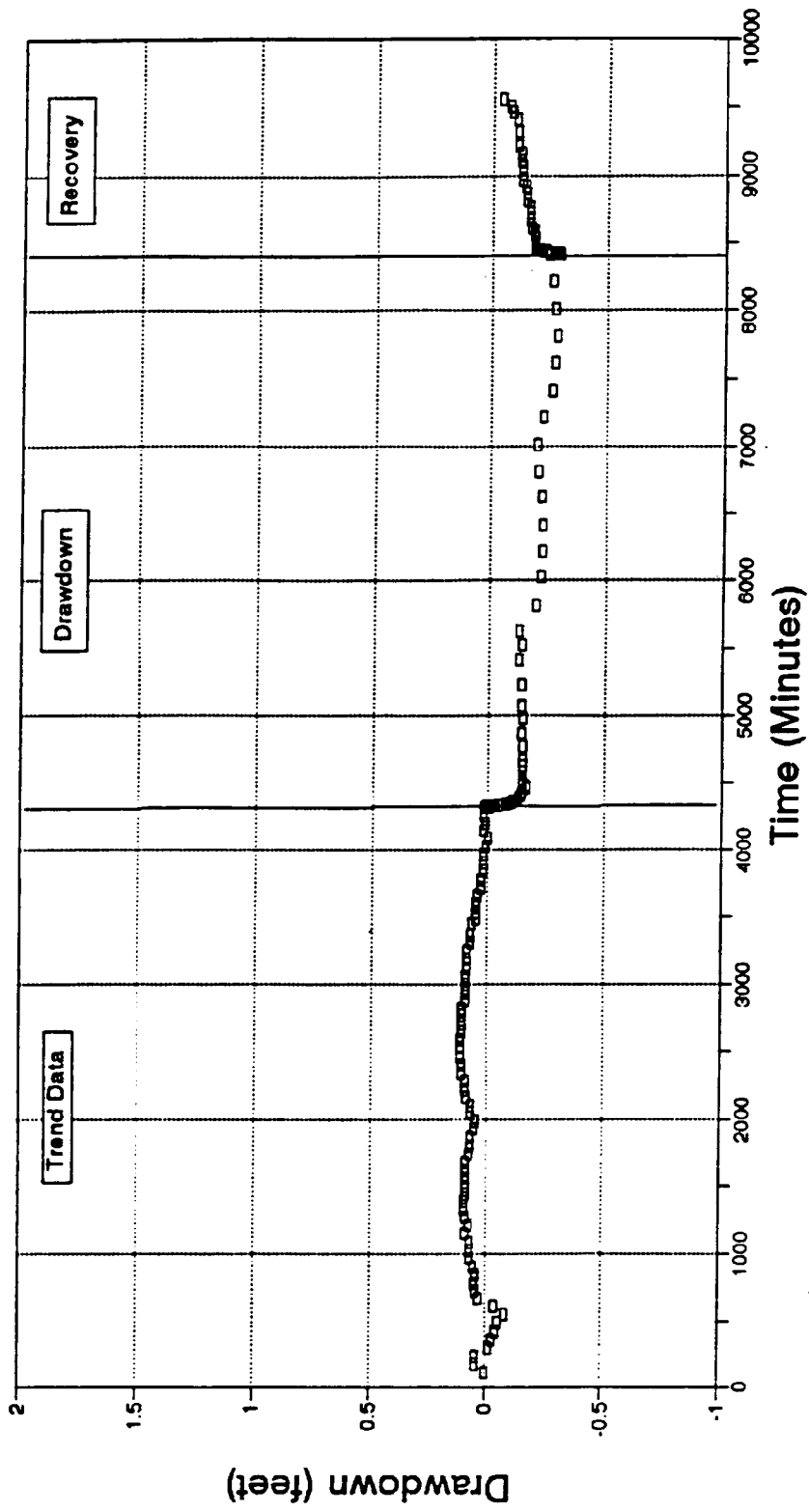
PUMPING WELL: HN-2712 PUMPING RATE: 448 GPM

Total Time	Step Time	HN30S	HN30I	Basin	HN26I	HN28S	HN28I	HN-2712	HN-2711	HN27S2	HN27S3	USGS Well
8420.200	0.200	0.547	0.066	0.572	-0.302		-0.598	-0.677	-3.472	-1.320	-1.010	-1.987
8420.300	0.300	0.547	0.066	0.569	-0.302		-0.608	-1.749	-3.424	-1.317	-1.010	-1.987
8420.500	0.500	0.547	0.066	0.566	-0.302		-0.598	-1.859	-3.358	-1.304	-1.010	-1.987
8420.750	0.750	0.547	0.066	0.566	-0.302		-0.598	-1.670	-3.291	-1.291	-1.010	-1.987
8421.000	1.000	0.547	0.066	0.563	-0.302		-0.598	-1.465	-3.225	-1.285	-1.010	-1.987
8422.000	2.000	0.547	0.056	0.563	-0.293		-0.589	-0.992	-2.978	-1.259	-0.994	-1.987
8423.000	3.000	0.544	0.047	0.563	-0.283		-0.589	-0.772	-2.741	-1.240	-0.994	-1.987
8424.000	4.000	0.544	0.037	0.560	-0.274		-0.570	-0.661	-2.532	-1.223	-0.978	-1.990
8425.000	5.000	0.547	0.037	0.569	-0.274		-0.560	-0.598	-2.333	-1.217	-0.978	-1.987
8426.000	6.000	0.544	0.028	0.553	-0.264		-0.551	-0.535	-2.162	-1.204	-0.963	-1.987
8428.000	8.000	0.547	0.028	0.560	-0.245		-0.504	-0.488	-1.859	-1.188	-0.963	-1.987
8430.000	10.000	0.547	0.028	0.566	-0.236		-0.475	-0.456	-1.603	-1.175	-0.947	-1.987
8432.000	12.000	0.544	0.028	0.557	-0.217		-0.427	-0.441	-1.404	-1.165	-0.947	-1.987
8436.000	16.000	0.557	0.047	0.575	-0.208		-0.361	-0.409	-1.090	-1.142	-0.931	-1.984
8440.000	20.000	0.554	0.066	0.563	-0.198		-0.304	-0.393	-0.891	-1.133	-0.931	-1.987
8444.000	24.000	0.551	0.085	0.557	-0.189		-0.266	-0.378	-0.749	-1.116	-0.915	-1.990
8450.000	30.000	0.557	0.104	0.560	-0.189		-0.227	-0.362	-0.616	-1.097	-0.899	-1.890
8454.000	34.000	0.554	0.113	0.557	-0.189		-0.199	-0.362	-0.569	-1.087	-0.884	-1.993
8460.000	40.000	0.557	0.113	0.553	-0.189		-0.180	-0.346	-0.512	-1.074	-0.868	-1.993
8466.000	46.000	0.557	0.123	0.553	-0.189		-0.161	-0.346	-0.483	-1.065	-0.868	-1.997
8470.000	50.000	0.557	0.123	0.550	-0.189		-0.161	-0.346	-0.464	-1.055	-0.868	-1.993
8474.000	54.000	0.560	0.132	0.553	-0.189		-0.152	-0.346	-0.455	-1.048	-0.868	-1.993
8480.000	60.000	0.560	0.132	0.557	-0.189		-0.142	-0.330	-0.445	-1.039	-0.852	-2.000
8490.000	70.000	0.560	0.132	0.553	-0.189		-0.133	-0.330	-0.426	-1.026	-0.836	-2.000
8500.000	80.000	0.563	0.142	0.547	-0.189		-0.133	-0.315	-0.417	-1.010	-0.820	-2.003
8510.000	90.000	0.566	0.142	0.534	-0.179		-0.123	-0.315	-0.407	-0.993	-0.805	-2.008
8520.000	100.000	0.566	0.151	0.534	-0.179		-0.123	-0.315	-0.398	-0.980	-0.805	-2.012
8540.000	120.000	0.573	0.189	0.519	-0.179		-0.114	-0.283	-0.379	-0.955	-0.773	-2.019
8560.000	140.000	0.576	0.208	0.503	-0.170		-0.114	-0.283	-0.360	-0.929	-0.757	-2.022
8580.000	160.000	0.579	0.208	0.490	-0.160		-0.114	-0.283	-0.351	-0.906	-0.757	-2.035
8600.000	180.000	0.582	0.208	0.481	-0.160		-0.104	-0.267	-0.351	-0.887	-0.742	-2.035
8620.000	200.000	0.585	0.198	0.477	-0.160		-0.114	-0.267	-0.341	-0.864	-0.726	-2.044
8670.000	250.000	0.598	0.208	0.465	-0.151		-0.114	-0.252	-0.322	-0.822	-0.694	-2.063
8720.000	300.000	0.604	0.208	0.436	-0.151		-0.104	-0.236	-0.303	-0.783	-0.678	-2.073
8770.000	350.000	0.617	0.217	0.408	-0.142		-0.095	-0.220	-0.284	-0.744	-0.647	-2.092
8820.000	400.000	0.623	0.217	0.385	-0.132		-0.095	-0.204	-0.265	-0.715	-0.631	-2.104
8870.000	450.000	0.630	0.217	0.370	-0.132		-0.095	-0.189	-0.246	-0.686	-0.615	-2.127
8920.000	500.000	0.636	0.208	0.357	-0.132		-0.104	-0.189	-0.237	-0.657	-0.584	-2.136
8970.000	550.000	0.642	0.227	0.335	-0.123		-0.085	-0.173	-0.218	-0.637	-0.584	-2.152
9020.000	600.000	0.646	0.217	0.310	-0.123		-0.085	-0.173	-0.208	-0.611	-0.552	-2.165
9070.000	650.000	0.652	0.217	0.294	-0.113		-0.085	-0.157	-0.199	-0.586	-0.536	-2.178
9120.000	700.000	0.655	0.227	0.287	-0.113		-0.085	-0.157	-0.189	-0.563	-0.520	-2.190
9170.000	750.000	0.658	0.227	0.287	-0.104		-0.066	-0.126	-0.170	-0.540	-0.505	-2.209
9220.000	800.000	0.658	0.246	0.291	-0.085		-0.056	-0.126	-0.161	-0.521	-0.489	-2.216
9320.000	900.000	0.658	0.255	0.392	-0.075		-0.037	-0.094	-0.132	-0.485	-0.457	-2.247
9420.000	1000.000	0.655	0.265	0.452	-0.038		-0.028	-0.063	-0.104	-0.453	-0.426	4.443
9470.000	1050.000	0.677	0.284	0.753				-0.063	-0.094	-0.433	-0.426	
9520.000	1100.000	0.690	0.293	1.128				-0.047	-0.075	-0.424	-0.410	
9570.000	1150.000	0.687	0.303	1.328				-0.031	-0.066	-0.404	-0.394	
9620.000	1200.000	0.709	0.322	1.443				-0.015	-0.056	-0.388	-0.394	4.443
9670.000	1250.000	0.728	0.331	1.560				-0.015	-0.047	-0.375	-0.378	
9720.000	1300.000	0.744	0.350	1.671				0.000	-0.037	-0.362	-0.363	
9820.000	1400.000							-0.047	-0.066	-0.339	-0.347	
9920.000	1500.000								0.075	-0.314	-0.315	
10120.000	1700.000								0.123	-0.262	-0.284	
10320.000	1900.000								0.180	-0.210	-0.236	
10520.000	2100.000								0.218	-0.161	-0.205	
10720.000	2300.000								0.256	-0.116	-0.157	
10920.000	2500.000								0.294	-0.074	-0.142	
11120.000	2700.000								0.313	-0.042	-0.110	
11320.000	2900.000								0.332	0.003	-0.078	
11520.000	3100.000								0.341	0.029	-0.047	
11720.000	3300.000								0.341	0.058	-0.031	
11920.000	3500.000								0.360	0.087	0.015	
12120.000	3700.000								0.379	0.116	0.031	
12320.000	3900.000								0.398	0.135	0.047	
12520.000	4100.000								0.398	0.152	0.063	
12720.000	4300.000								0.379	0.165	0.063	
12920.000	4500.000								0.379	0.178	0.078	
13120.000	4700.000								0.369	0.178	0.094	
13320.000	4900.000								0.360	0.178	0.094	
13520.000	5100.000								0.341	0.161	0.078	
13720.000	5300.000								0.341	0.152	0.094	
13920.000	5500.000								0.332	0.155	0.078	

Note: Shaded block indicates data not recorded for time interval.

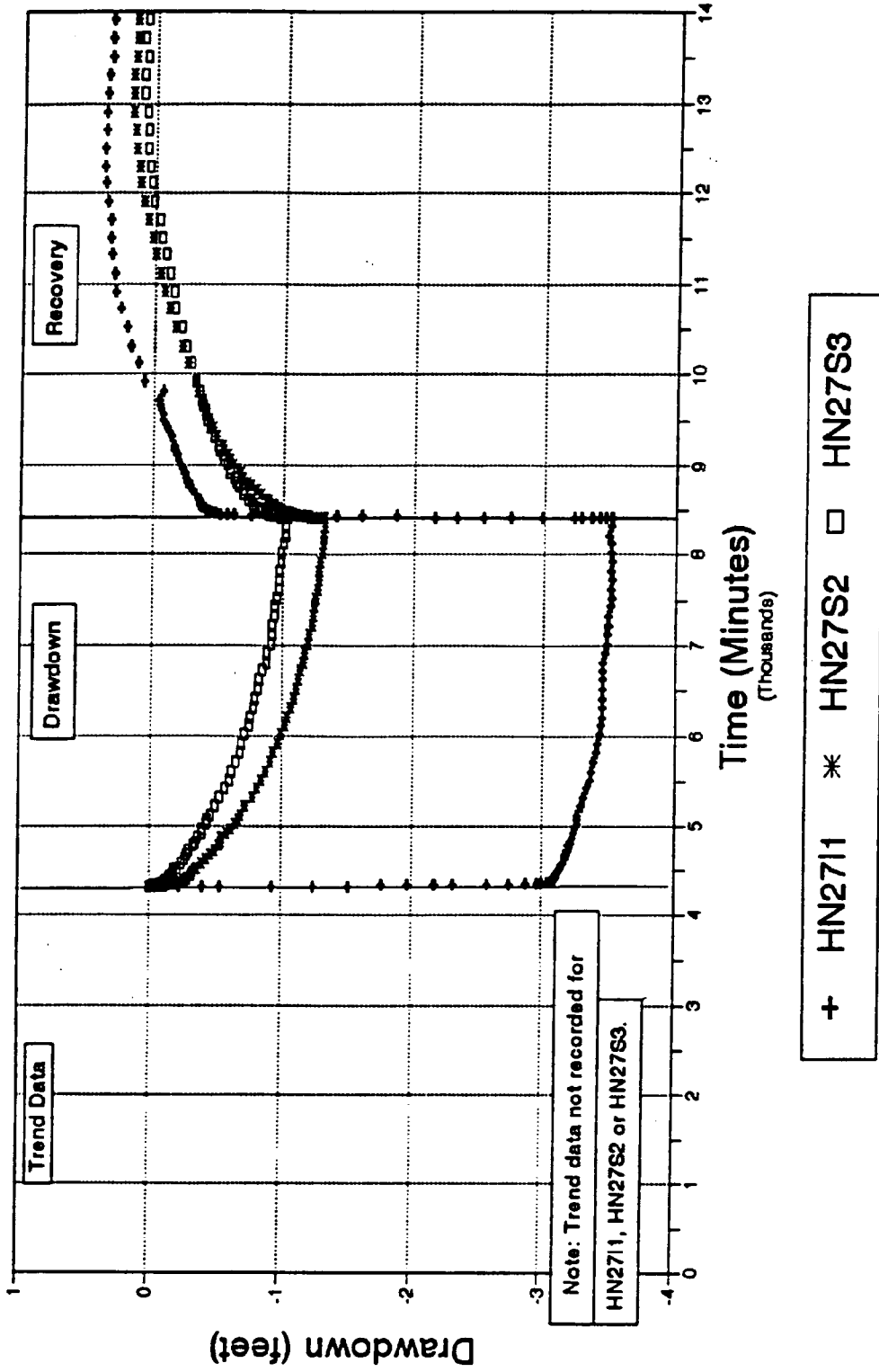
**PUMPING TEST #1**  
**GRAPHS OF DRAWDOWN AND RECOVERY DATA**

Pump Test 1  
Bethpage NWTRP

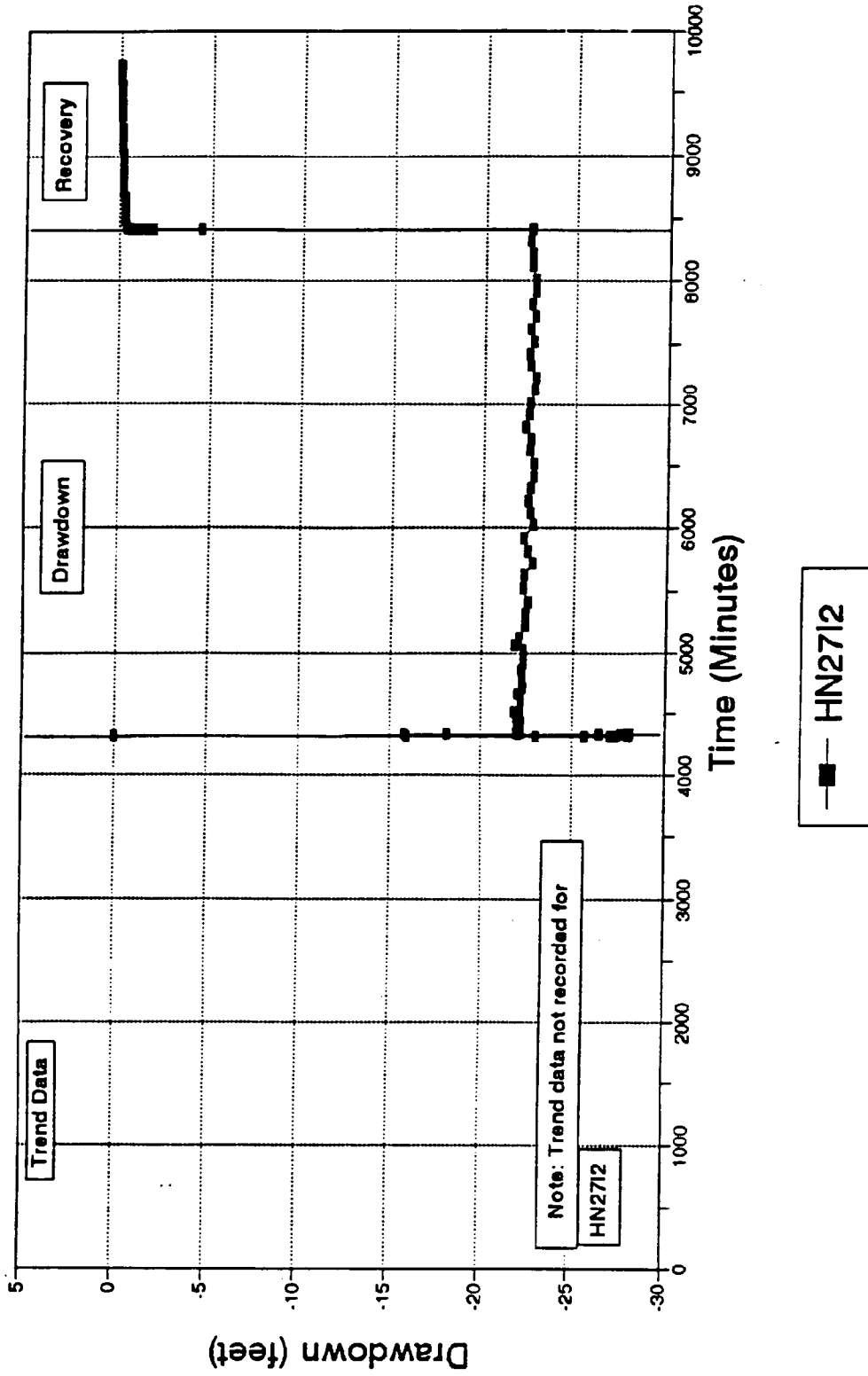


□ HN26I

Pump Test 1  
Bethpage NWIRP

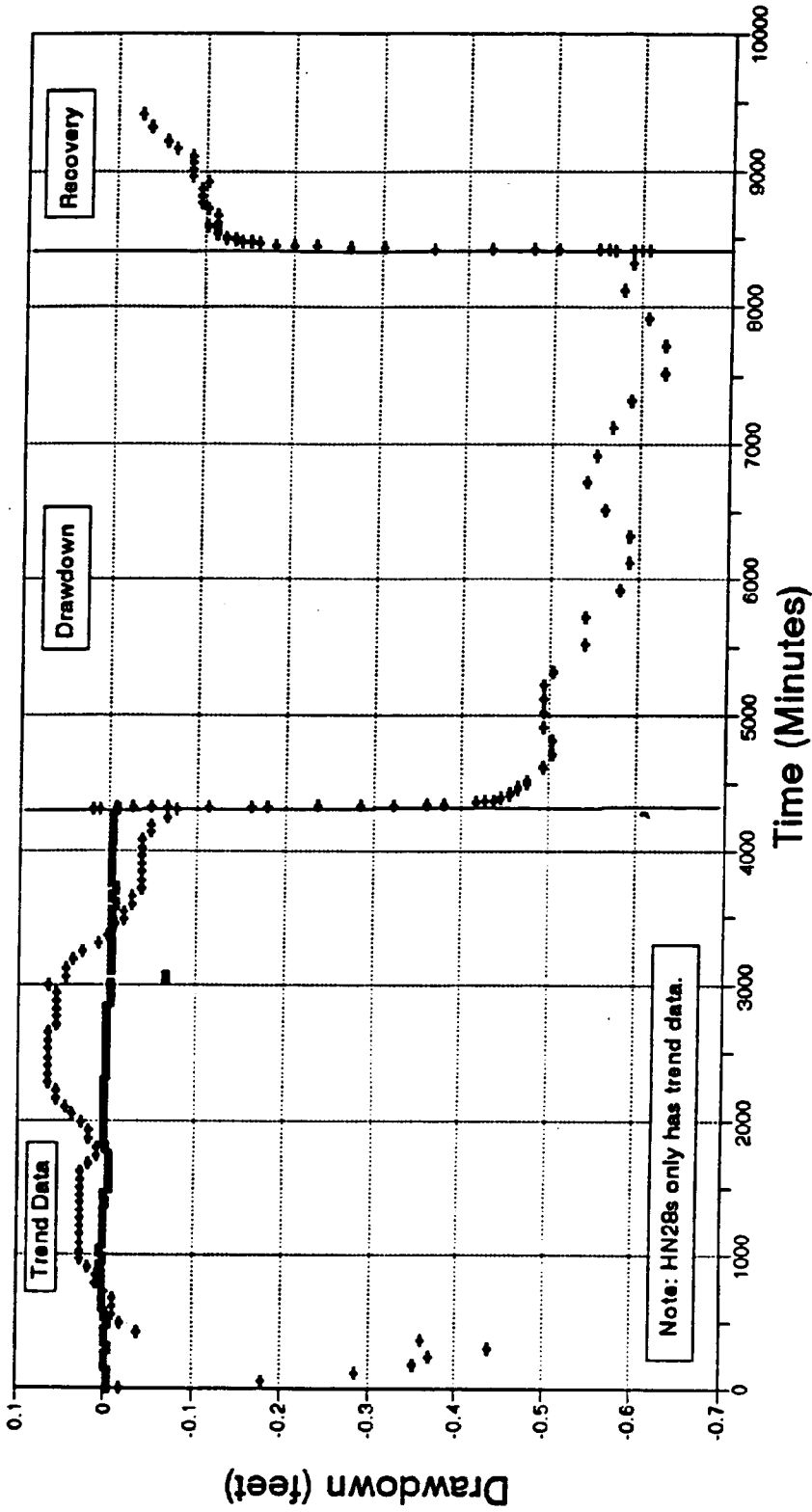


Pump Test 1  
Bethpage NWIRP



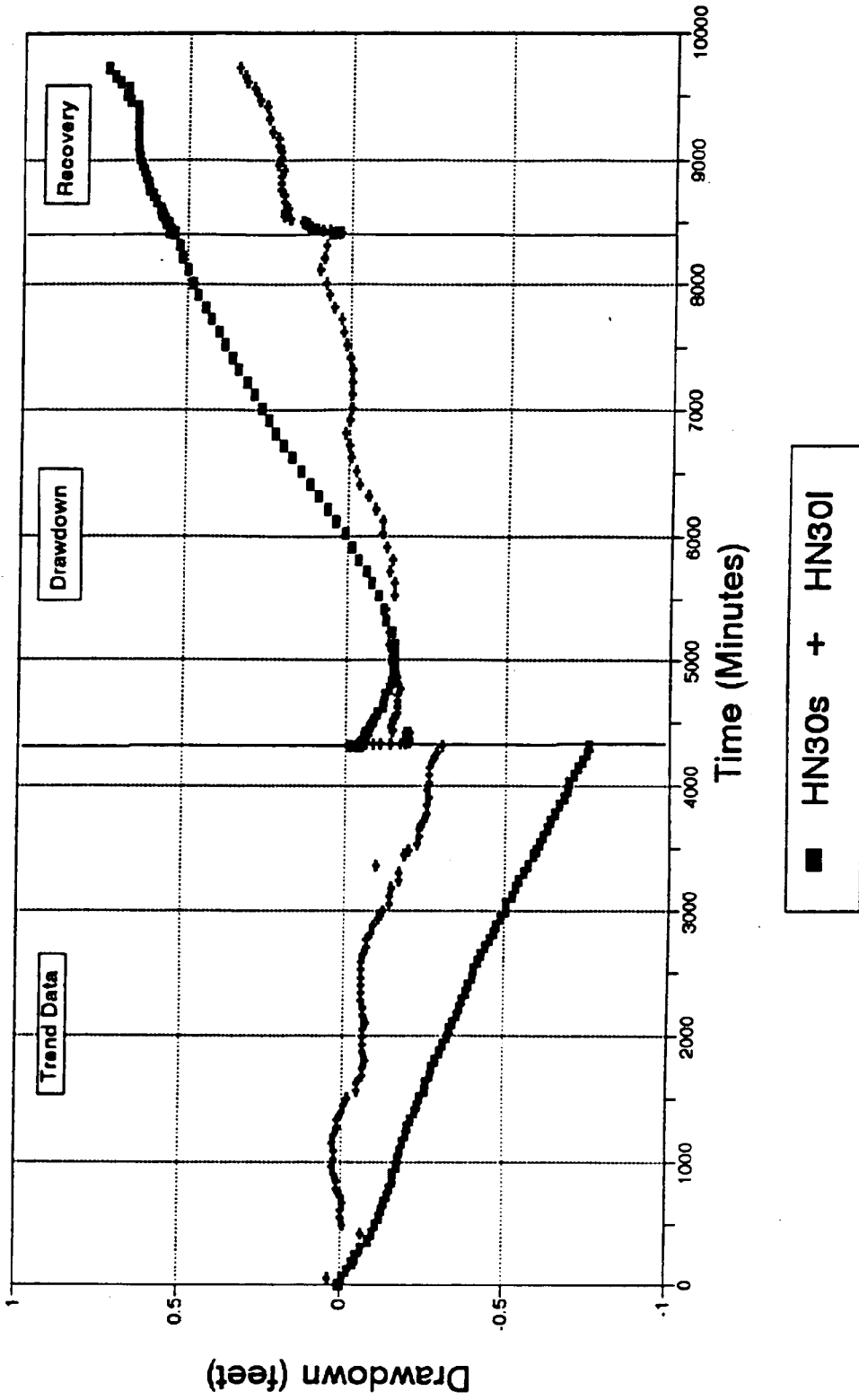


Pump Test 1  
Bethpage NWRP

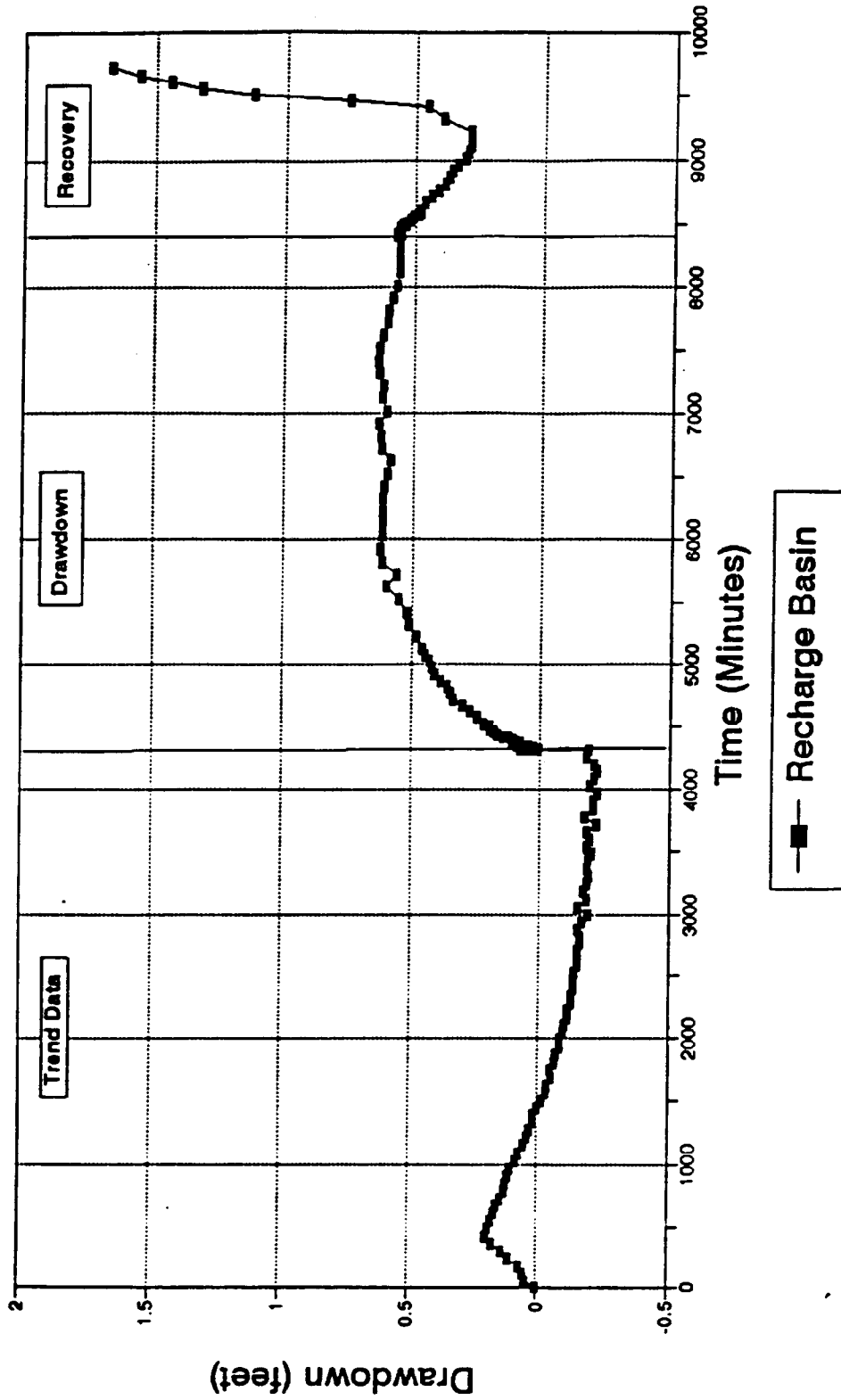


■ HN28S + HN28I

Pump Test 1  
Bethpage NW/RP

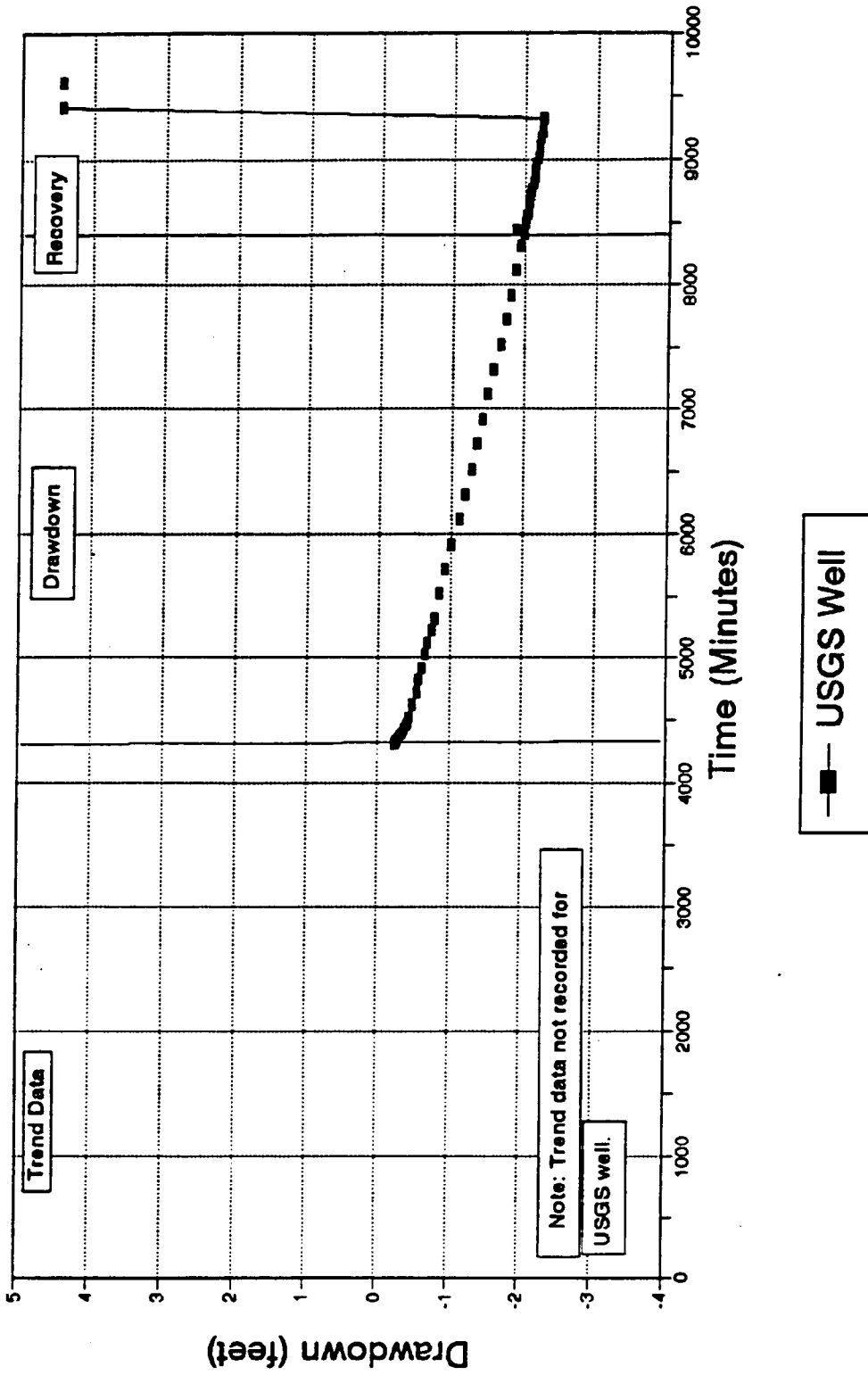


Pump Test 1  
Bethpage NWIRP



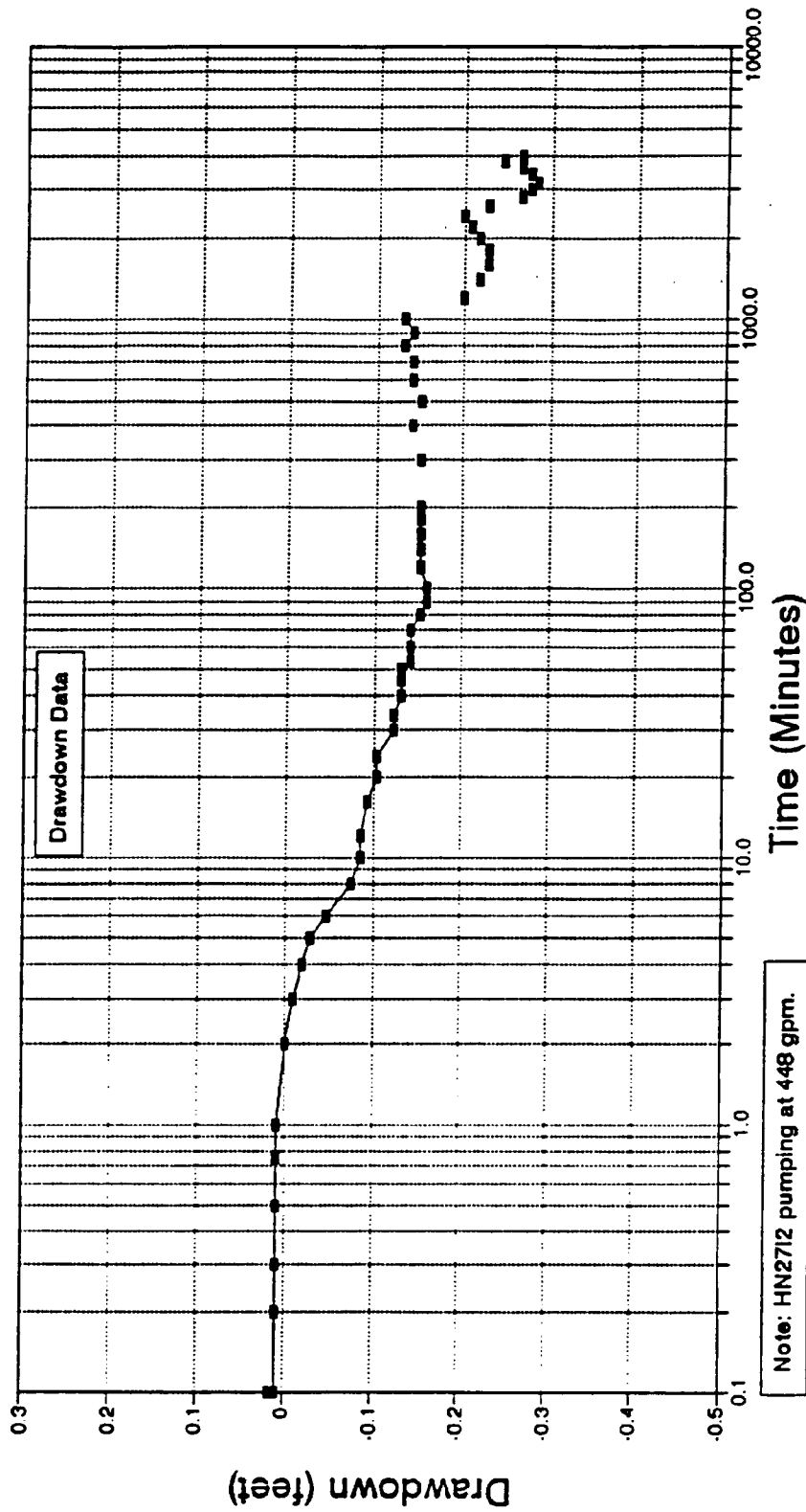
# Pump Test 1

Beitpage NWIRP

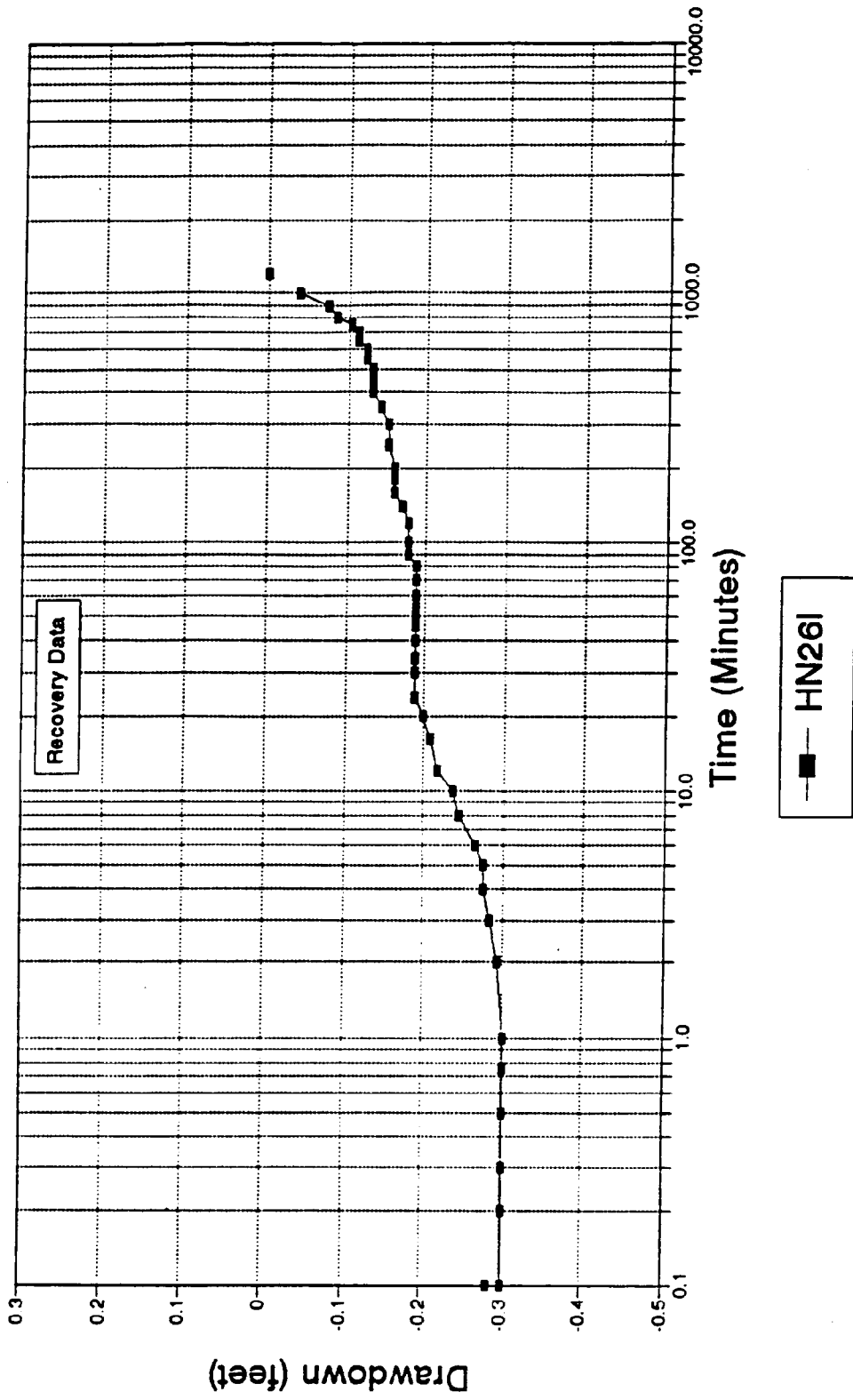


# Pump Test 1

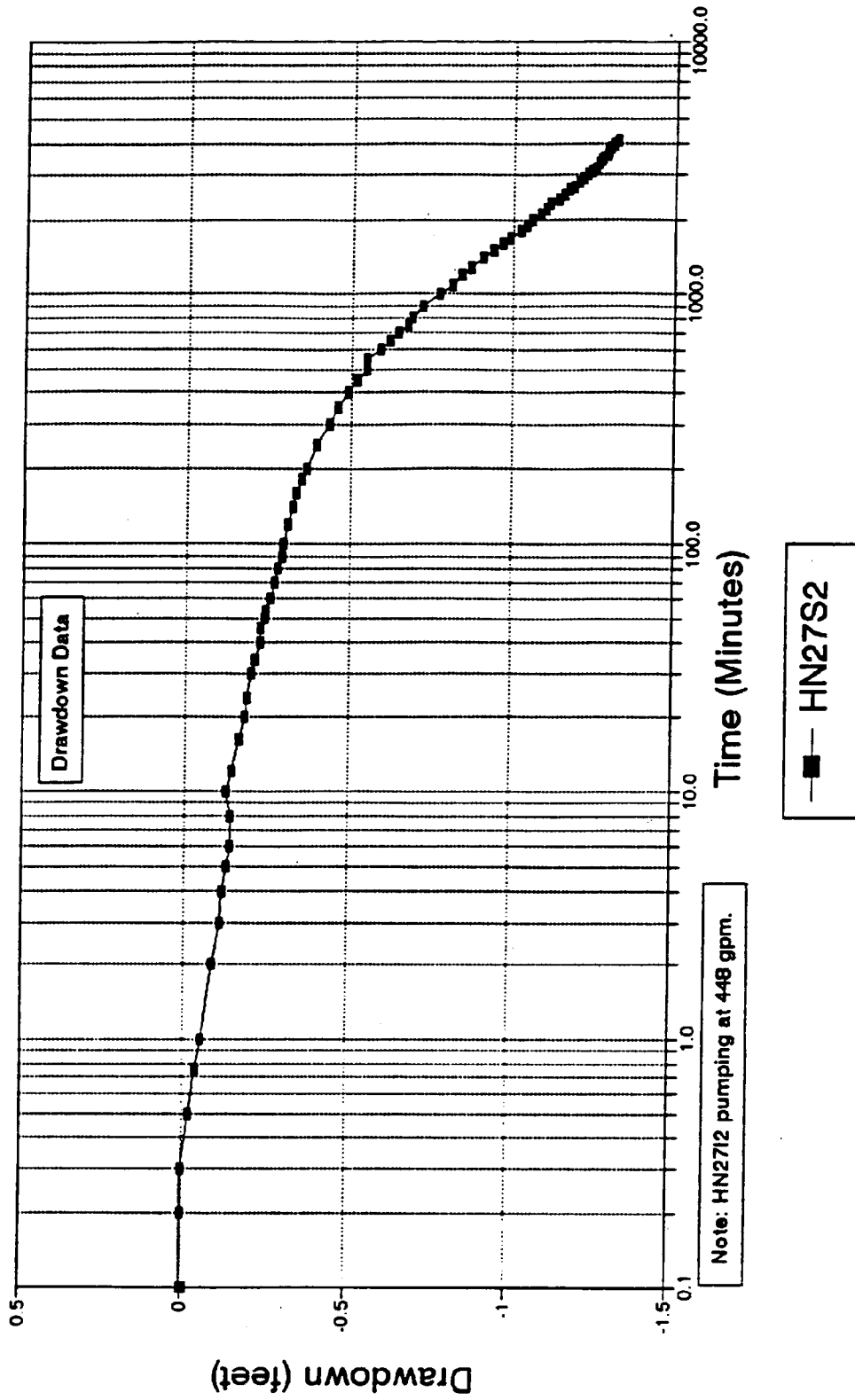
Bathpage NW/1RP



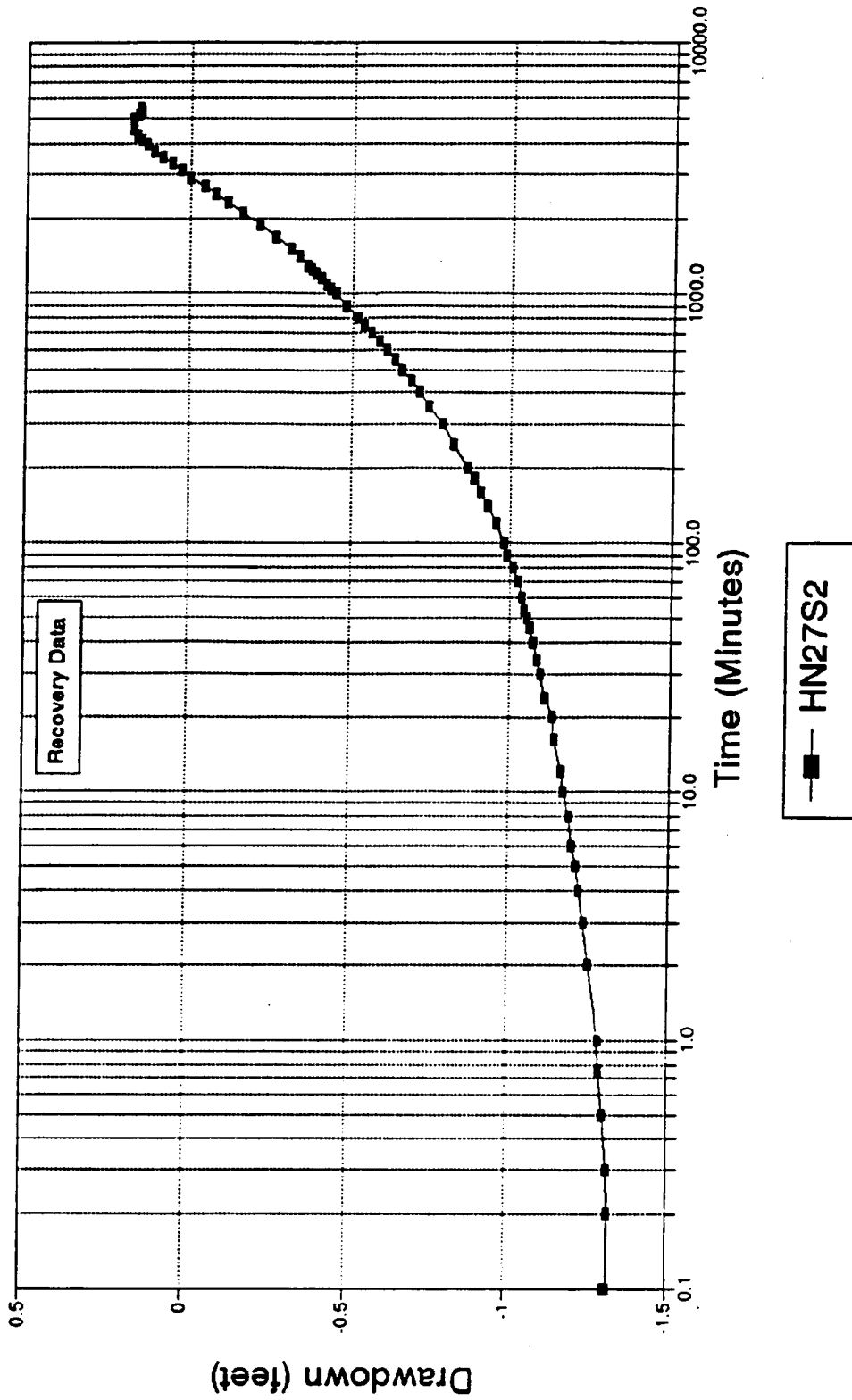
Pump Test 1  
Bathpage NW/FP



Pump Test 1  
Bathpage NWIRP



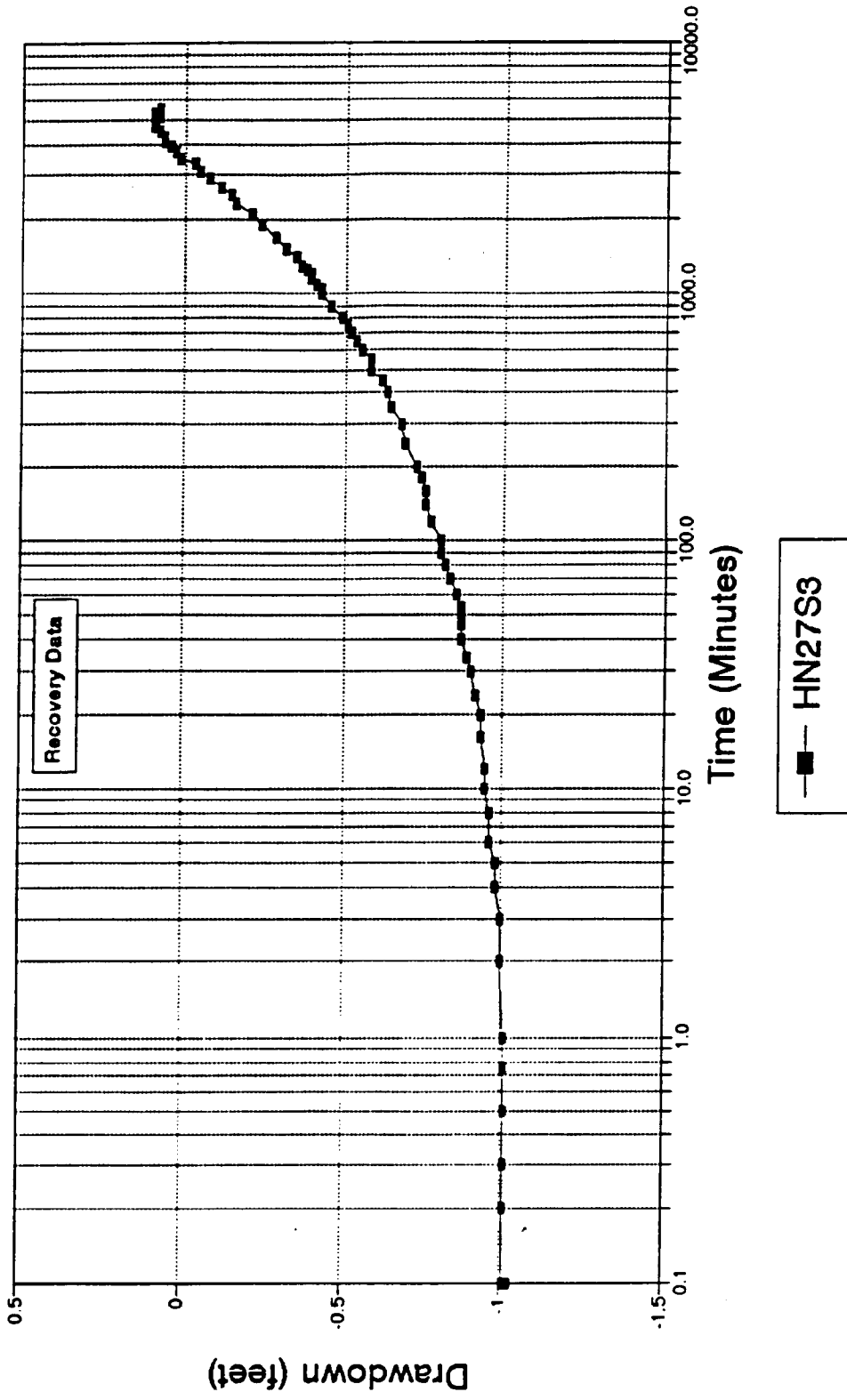
Pump Test 1  
Bethpage NWIRP





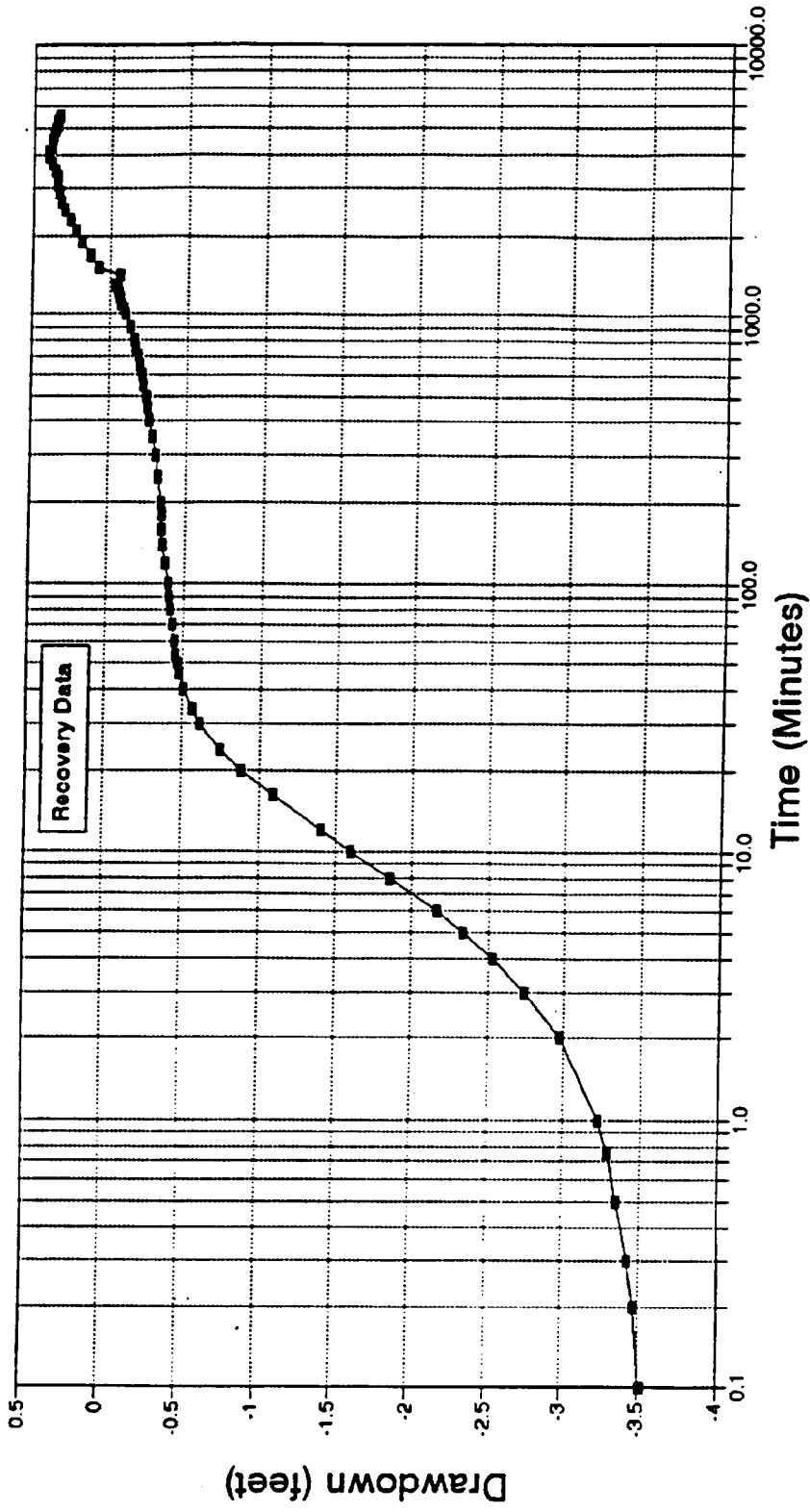


Pump Test 1  
Beinpage NWIRP



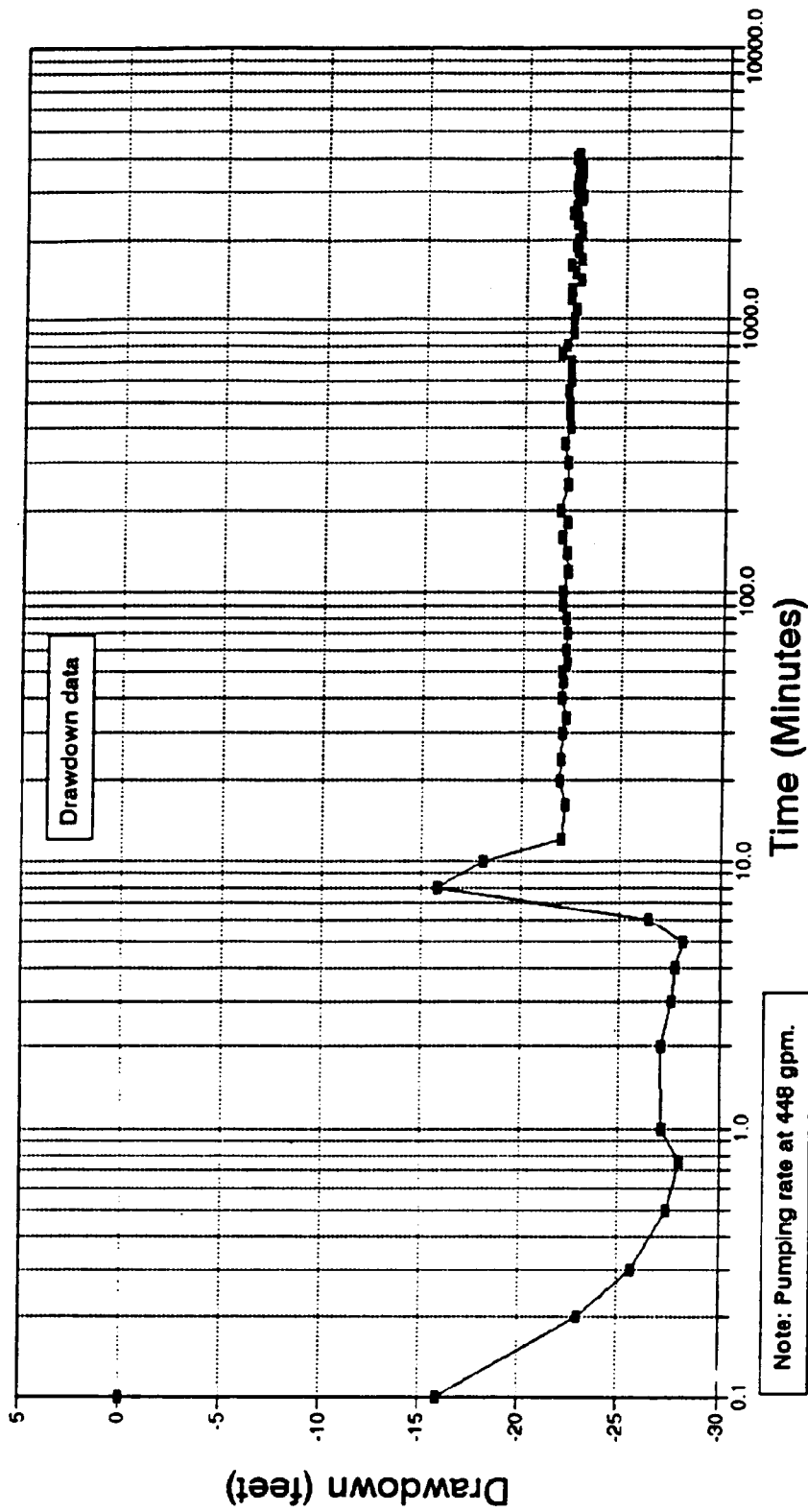


Pump Test 1  
Bethpage NWIRP

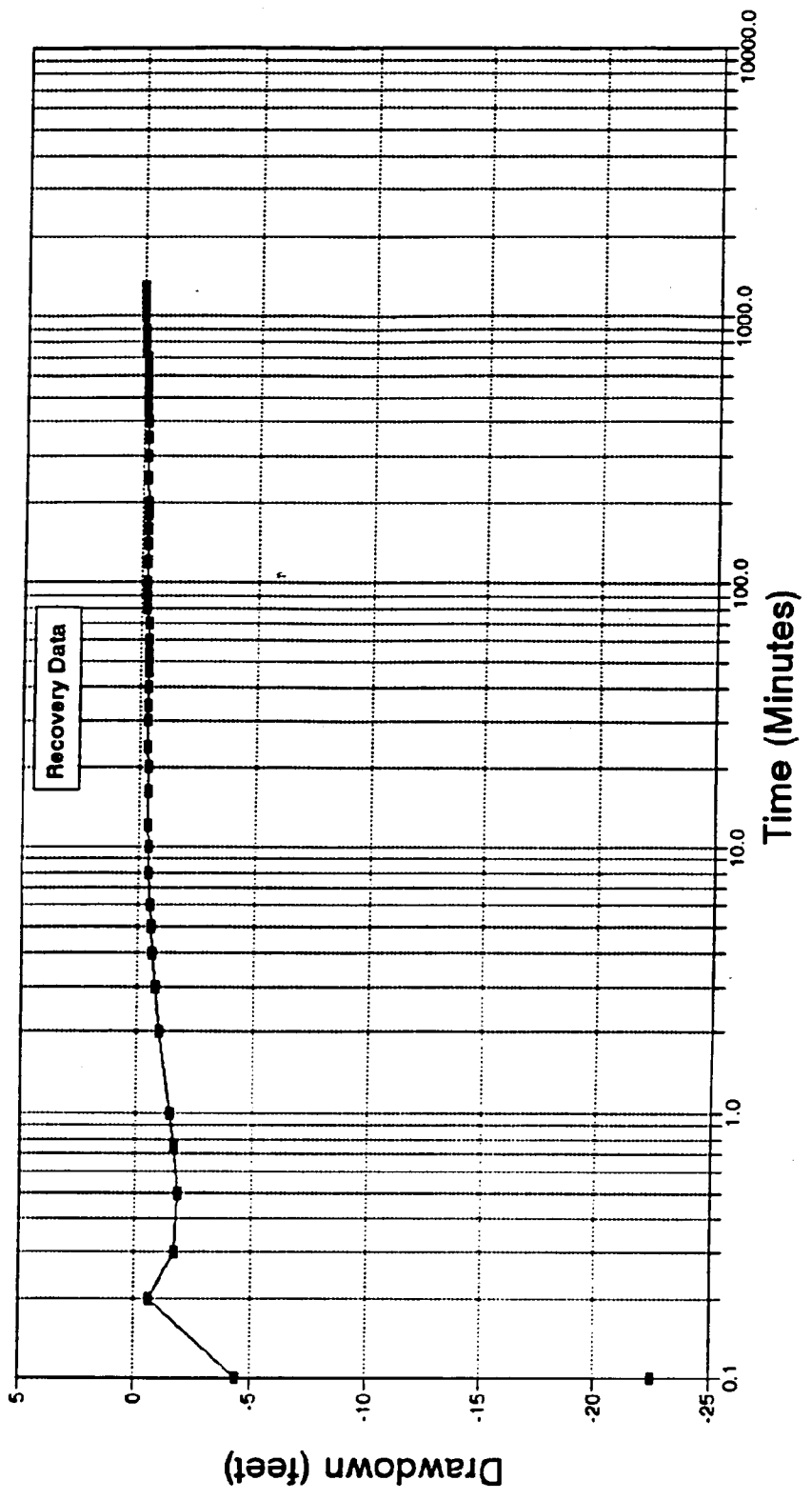


■ HN2711

Pump Test 1  
Bethpage NWMP

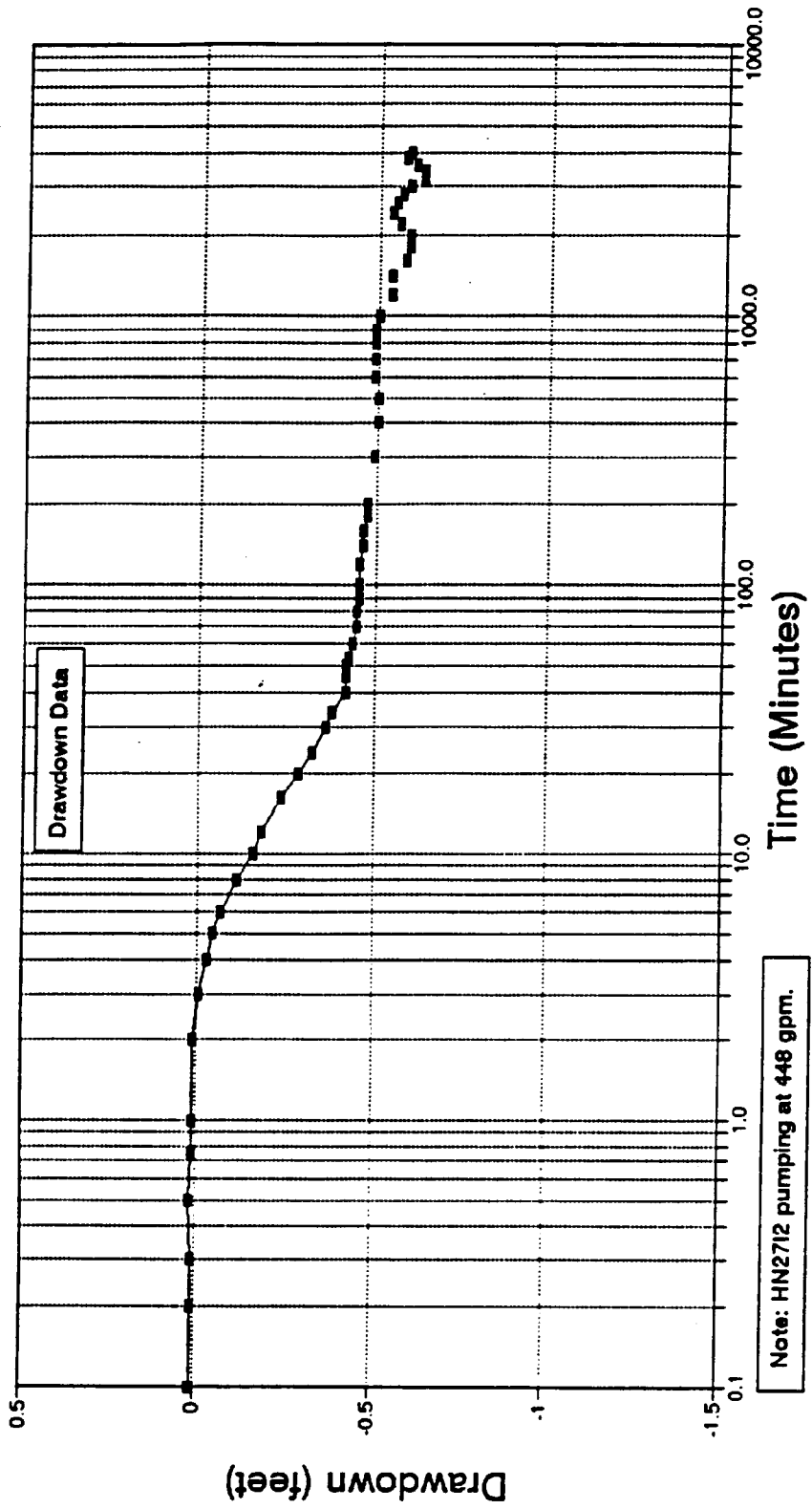


Pump Test 1  
Bethpage NW/FP



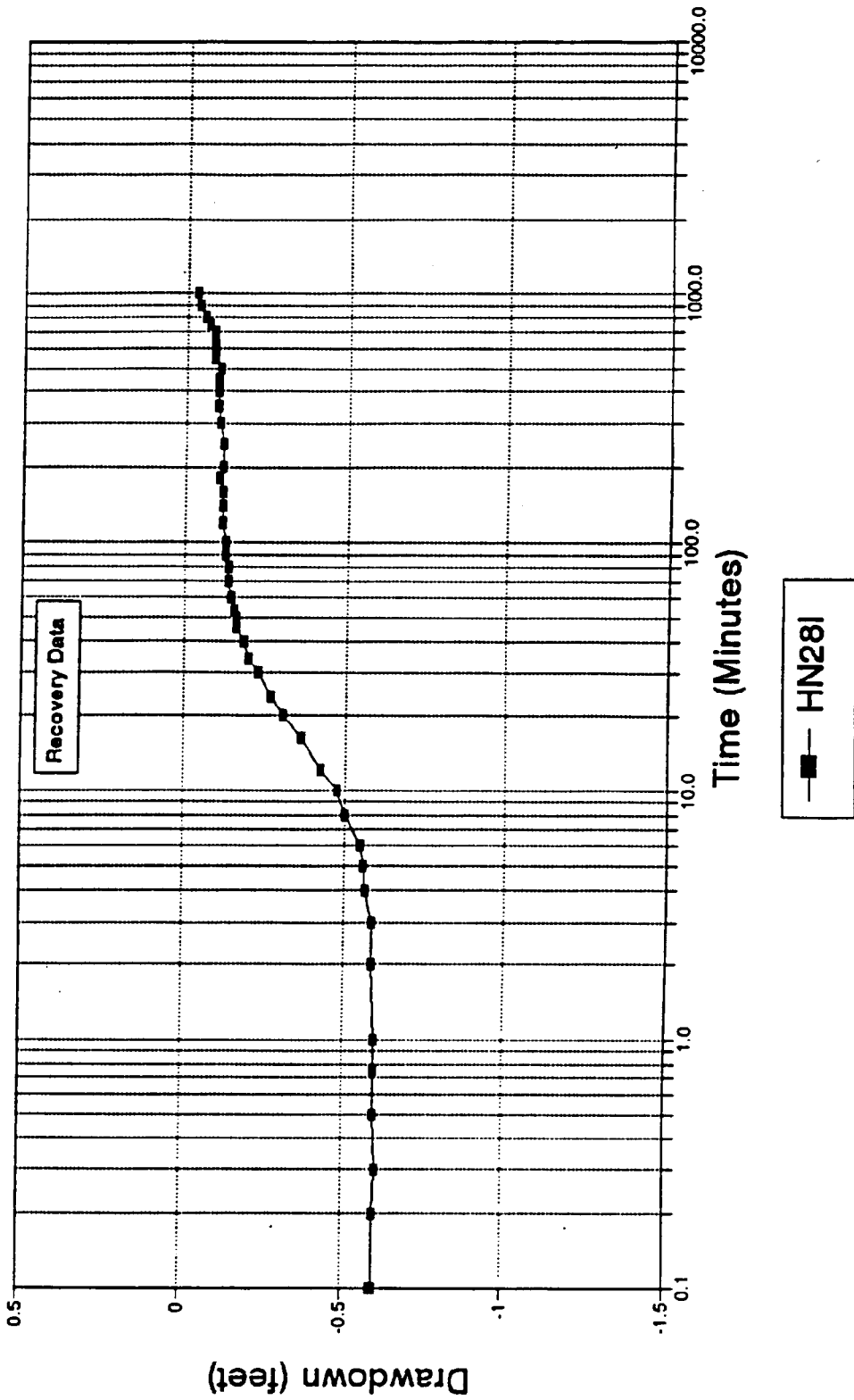
—■— HN2712

Pump Test 1  
Bethpage NWIRP



HN281

Pump Test 1  
Bethpage NW/RP





**PUMPING TEST # 2**  
**SUMMARY OF GEOLOGIC CONDITIONS**

## BETHPAGE PUMPING TEST # 2

**Pumping Well PW-11**

**Pumping Rate= approximately 890 gpm**

**Drawdown from 0.0 to 4259.0 minutes**

**Recovery from 4250.0 to 9700.0 minutes**

The second pumping test performed at Bethpage involved pumping production well 11 at a rate of approximately 890 gpm for a period of approximately 3 days and monitoring nearby production and monitoring wells for drawdown. The data generated from the test was of questionable usefulness in general due to a combination of factors.

The drawdown data from the pumping well reflected a much greater drawdown than actually occurred in the aquifer adjacent to the well during the test, due to a combination of partial penetration and well efficiency effects.

Drawdown data from the nearby production wells used as observation wells was not of sufficient resolution to measure the small changes in drawdowns that may have occurred, as the devices used to measure drawdowns (air pressure gauges) were calibrated in two foot intervals and the actual drawdowns in the wells (if any) were significantly less than 2 feet.

Some slight drawdown effects were noted in the nearby monitoring wells (less than 0.2 feet). These wells are screened at much higher depths than PW 11 and the resulting partial penetration corrections are substantial. In addition, there are strong influences of cyclical pumping from an outside well evident in the water level data from these wells. As a result of this combination of factors, the quality of the monitoring well data is questionable for use in a detailed analysis.

The data analysis approach taken to evaluating this test is to develop an assumed real drawdown level in aquifer adjacent to the pumping well, considering partial penetration effects and the water level

Pump Test #2 Summary, pg-1

response to the early stages of pumping and recovery, and using this drawdown at the well as the basis for a distance-drawdown approximation of the aquifer transmissivity. From the lack of measurable drawdown response nearby production wells, we know that the drawdown in the nearest production well was probably one foot or less. Also, the monitoring wells that exhibited slight drawdowns due to pumping confirm the minor amount of drawdown that occurred at distance from the pumping well. Using these assumptions and the Jacob semilog distance-drawdown analysis approach, an approximate overall transmissivity was obtained for the aquifer of approximately 60,000 ft<sup>2</sup>/day.

**PUMPING TEST DATA SHEET**

**NUS CORPORATION**

PROJECT NAME: BETH PAGE MEASURED WELL: PW-11  
 PROJECT NO.: 1953 DATE: 1/25/93 PUMPING WELL: PW-11  
 GEOLOGIST: CONTI/RODMAN/KILMARTIN CHECKED: \_\_\_\_\_ TEST NO.: PT 2  
 DISTANCE FROM PUMPING WELL(ft.)(r): \_\_\_\_\_ PUMP SETTING, FEET BELOW MONITORING POINT: \_\_\_\_\_  
 STATIC H<sub>2</sub>O LEVEL (ft.)(s<sub>0</sub>): \_\_\_\_\_ MONITORING POINT: \_\_\_\_\_  
 TIME PURGE START OR STOP (t<sub>0</sub>): \_\_\_\_\_ ELEVATION OF MONITORING POINT (ft. above MSL): \_\_\_\_\_

TIME	(t) MIN. SINCE PUMP START OR STOP	WATER LEVEL MEASUREMENTS (ft.)			(s) DD Or RECOVERY (ft.)	PUMPING RATE (Q) GPM	REMARKS Page 1 USED PRESSURE GAUGE TO TAKE READINGS
		READING	CORRECTION	DTW			
1445	0	59.50	59.50		0		
1458	0	59.50	59.50		0		START PUMP
	.5	37.00			22.5		
1459	1	35.50			24.0		
1501	3	33.25			26.25		
1503	5	33.00			26.50		
1505	7	32.50			27.00		
1503	10	33.00			26.50		WATER PRESSURE 71
1510	12	33.00			26.50		
1514	16	32.75			26.75		900 GPM
1513	20	32.75			26.75		
1523	25	32.75			26.75		
1523	30	32.75			26.75		
1533	35	31.50			28.00		890 GPM
1533	40	31.50			28.00		
1543	50	31.00			28.50		
1553	60	31.50			28.00		
1603	70	31.75			27.75		
1618	75	31.75			27.75		
1623	77	31.75			27.75		890 GPM WATER PRESSURE 72
1638	100	31.50			28.00		
1658	120	31.75			27.75		
1728	150	—			—		
1753	180	32.75			26.75		
1813	200	34.00			25.50		890 GPM WATER PRESSURE 72
1908	250	34.00			25.50		890 GPM
2000	300	34.00			25.50		
2050	350	34.00	▽		25.50		

7:08 PM  
 02  
 33  
 350

**PUMPING TEST DATA SHEET**

**NUS CORPORATION**

PROJECT NAME: BETHPAGE MEASURED WELL: PW11  
 PROJECT NO.: 1953 DATE: 1/25-1/26 PUMPING WELL: PW11  
 GEOLOGIST: CONTI/RODMAN/KILMARTIN CHECKED: \_\_\_\_\_ TEST NO.: PT 2  
 DISTANCE FROM PUMPING WELL(ft.)(r): \_\_\_\_\_ PUMP SETTING, FEET BELOW MONITORING POINT: \_\_\_\_\_  
 STATIC H<sub>2</sub>O LEVEL (ft.)(s<sub>0</sub>): \_\_\_\_\_ MONITORING POINT: \_\_\_\_\_  
 TIME PURGE START OR STOP (t<sub>0</sub>): \_\_\_\_\_ ELEVATION OF MONITORING POINT (ft. above MSL): \_\_\_\_\_

TIME	(t) MIN. SINCE PUMP START OR STOP	WATER LEVEL MEASUREMENTS (ft.)			(s) DD Or RECOVERY (ft.)	PUMPING RATE (Q) GPM	REMARKS
		READING	CORRECTION	DTW			
	400	34.50	59.50	—	25.00	← CHANGED BICYCLE PUMP THIS ONE HOLDS PRESSURE BETTER	
1:20 PM	2320	34.50			25.00	← 880 GPM	
1/26	0100	34.00			25.50	890 GPM	
	0240	34.50			25.00		
	0420	34.50			25.00	890 GPM	
	0600	34.50			25.00		
	0740	34.00			25.50	885 GPM	
	0920	34.50			25.00		
	1100	33.00			26.50	925 GPM	
	1240	33.00			26.50	→ 925 GPM @ 1220 HRS	
	1420	34.00			25.50	BETWEEN 920 @ 930 GPM. 900 GPM @ 1420 HRS	
	1600	34.00			25.50	900 GPM @ 1600 HRS	
	1740	34.25			25.25	" " "	
7:20	1920	34.25			25.25	890 GPM WATER PRESSURE @ 72	
9:00	2100	34.25*			25.25	← 880 GPM	
10:40	2240	34.25			25.25	← 885 GPM	
1/27	0020	34.25*			25.25	1220 AM + 100 MIN = 200 AM 890 GPM	
11:00	0200	34.25			25.25	885 GPM @ 0200	
	0340	34.25*			25.25	885 GPM @ 0340	
	0520	34.0			25.50	890 GPM @ 0520	
	0700	34.0*			25.50	890 GPM @ 0700	
	0840	34.25			25.25	890 GPM @ 0840	
	1020	34.25*			25.25	885 GPM @ 1020	
	1200	34.50			25.00	885 GPM @ 1200 HRS	
	1340	34.25*			25.25	890 " " 1340	
	1520	34.50			25.00	900 GPM @ 1520	
5:00 PM	1700	34.00*			25.50		
6:40 PM	1840	34.25			25.25	900 GPM @ 1840	

Page 2

\* TAKE RDS AT OTHER PW'S

**PUMPING TEST DATA SHEET**

**NUS CORPORATION**

PROJECT NAME: BETHPAGE MEASURED WELL: PW 11  
 PROJECT NO.: 1953 DATE: 1/27/93 PUMPING WELL: PW 11  
 GEOLOGIST: SJC/PN/PD CHECKED: \_\_\_\_\_ TEST NO.: PT 2  
 DISTANCE FROM PUMPING WELL(ft.)(r): \_\_\_\_\_ PUMP SETTING, FEET BELOW MONITORING POINT: \_\_\_\_\_  
 STATIC H<sub>2</sub>O LEVEL (ft.)(s<sub>0</sub>): \_\_\_\_\_ MONITORING POINT: \_\_\_\_\_  
 TIME PURGE START OR STOP (t<sub>0</sub>): \_\_\_\_\_ ELEVATION OF MONITORING POINT (ft. above MSL): \_\_\_\_\_

TIME	(t) MIN. SINCE PUMP START OR STOP	WATER LEVEL MEASUREMENTS (ft.)			(s) DD Or RECOVERY (ft.)	PUMPING RATE (Q) GPM	REMARKS <i>Page 3</i>
		READING	CORRECTION	DTW			
3:20 Pm	2000*	34.25	59.50		25.25		890 GPM @ 2101 h <sub>1</sub>
1/27	2200	34.50			25.00		880 GPM
11:40	2340	34.50			25.00		900 G.P.M
1/28	0120	34.25			25.25		885 GPM <small>WATER PRESS. @ 2101 h<sub>1</sub></small>
Thur	0300	34.50			25.00		880 GPM
	0440	34.25			25.25		890 GPM
	0620	34.25			25.25		885 GPM
	0800	32.0			27.5		960 GPM <small>WATER PRESS @ 62 PSI</small>
	0940	32.25			27.25		960 GPM " @ 62 PSI
	1120	34.25			25.25		890 GPM @ 72 PSI
	1300	34.25			25.25		890 " @ 72 PSI
2:00	1440	34.25			25.25		
	PUMP OFF			1500	1/28/93		
	1500	34.25			25.25		
	.5	43.00			16.50		15 SEC 42.5
	1.0	52.00			7.50		
	1.5	57.25			2.25		1:15 - 57.00
	1502	57.50			2.00		
	2.0	58.00			1.5		
	3.0	58.00			1.25		
	4.0	58.25			1.25		
	5.0	58.25			1.25		
1505	5.0	58.50			1.00		
	7.0	58.50			1.00		
1510	10.0	59.00			.50		
1512	12.0	59.00			.50		
1515	15.0	59.25			.25		
1518	13.0	59.25					
1520	20.0	59.25					
1522	22.0	59.25					

\* - Take rdgs at other wells



**PUMPING TEST #2**  
**DRAWDOWN AND RECOVERY DATA**



Pumping Well DATA: (PW-11)

	Step Time (min.)	Total Time (min.)	PW-11 Drawdown (ft)
Drawdown	0	0	0
	0.5	0.5	-22.5
	1	1	-24
	3	3	-26.25
	5	5	-26.5
	7	7	-27
	10	10	-26.5
	12	12	-26.5
	16	16	-26.75
	20	20	-26.75
	25	25	-26.75
	30	30	-26.75
	35	35	-28
	40	40	-28
	50	50	-28.5
	60	60	-28
	70	70	-27.75
	80	80	-27.75
	90	90	-27.75
	100	100	-28
	120	120	-27.75
	180	180	-26.75
	200	200	-25.5
	250	250	-25.5
	300	300	-25.5
	350	350	-25.5
	400	400	-25
	500	500	-25
	600	600	-25.5
	700	700	-25
	800	800	-25
	900	900	-25.5
	1000	1000	-25.5
	1100	1100	-25
	1200	1200	-26.5
	1300	1300	-26.5
	1400	1400	-25.5
	1500	1500	-25.5
	1600	1600	-25.25
	1700	1700	-25.25
	1800	1800	-25.25
	1900	1900	-25.25
	2000	2000	-25.25
	2100	2100	-25.25
	2200	2200	-25.25
	2300	2300	-25.5
	2400	2400	-25.25
	2500	2500	-25.25
	2600	2600	-25.25
	2700	2700	-25
	2800	2800	-25.25
	2900	2900	-25
	3000	3000	-25.5
	3100	3100	-25.25

	Step Time (min.)	Total Time (min.)	PW-11 Drawdown (ft)
	3200	3200	-25.25
	3300	3300	-25
	3400	3400	-25
	3500	3500	-25.25
	3600	3600	-25
	3700	3700	-25.25
	3800	3800	-25.25
	3900	3900	-27.5
	4000	4000	-27.25
	4100	4100	-25.25
	4200	4200	-25.25
	4300	4300	-25.25
Recovery	0	4300	-25.25
	0.5	4300.5	-16.25
	1	4301	-7.5
	1.5	4301.5	-2.25
	2	4302	-2
	2.5	4302.5	-1.5
	3	4303	-1.5
	3.5	4303.5	-1.25
	4	4304	-1.25
	4.5	4304.5	-1.25
	5	4305	-1
	7	4307	-1
	10	4310	-0.5
	12	4312	-0.5
	15	4315	-0.25
	18	4318	-0.25
	20	4320	-0.25
	22	4322	-0.25
	25	4325	-0.25
	30	4330	-0.25
	35	4335	-0.25
	40	4340	-0.25
	50	4350	0

BETHPAGE NWIRP  
PUMPING TEST #2  
PUMPING WELL: PRODUCTION WELL 11  
PUMPING RATE: 890 GPM

	STEP TIME	TOTAL TIME	HN25S	HN25I	HN25D	HN29I	HN29D	HN28I	HN26I	HN27S2	HN27I2
DRAWDOWN	0.000	0.000	0.006	0.047	-0.063	-0.066	-0.063	-0.025	0.151	-0.009	0.000
	0.017	0.017	0.006	0.047	-0.063	-0.075	-0.047	-0.029	0.151	-0.009	-0.003
	0.033	0.033	0.006	0.047	-0.063	-0.075	-0.047	-0.029	0.151	-0.009	-0.003
	0.050	0.050	0.006	0.047	-0.063	-0.075	-0.047	-0.032	0.151	-0.009	0.000
	0.067	0.067	0.006	0.047	-0.063	-0.075	-0.031	-0.029	0.151	-0.009	0.000
	0.083	0.083	0.009	0.047	-0.063	-0.075	-0.031	-0.032	0.151	-0.009	-0.003
	0.100	0.100	0.006	0.047	-0.063	-0.075	-0.031	-0.032	0.151	-0.009	0.000
	0.117	0.117	0.006	0.047	-0.063	-0.075	-0.031	-0.032	0.151	-0.009	0.000
	0.133	0.133	0.009	0.056	-0.063	-0.075	-0.031	-0.032	0.151	-0.009	-0.003
	0.150	0.150	0.006	0.047	-0.063	-0.075	-0.031	-0.032	0.141	-0.009	-0.003
	0.167	0.167	0.006	0.047	-0.063	-0.075	-0.031	-0.032	0.141	-0.009	-0.003
	0.183	0.183	0.006	0.056	-0.063	-0.075	-0.031	-0.032	0.141	-0.009	-0.003
	0.200	0.200	0.006	0.047	-0.063	-0.075	-0.031	-0.035	0.141	-0.009	-0.003
	0.217	0.217	0.006	0.047	-0.047	-0.075	-0.031	-0.032	0.151	-0.006	-0.003
	0.233	0.233	0.006	0.056	-0.063	-0.075	-0.031	-0.035	0.141	-0.009	-0.003
	0.250	0.250	0.006	0.047	-0.063	-0.075	-0.031	-0.032	0.141	-0.009	-0.003
	0.267	0.267	0.006	0.047	-0.047	-0.075	-0.031	-0.032	0.141	-0.009	-0.003
	0.283	0.283	0.006	0.047	-0.047	-0.075	-0.015	-0.032	0.141	-0.006	-0.003
	0.300	0.300	0.006	0.047	-0.063	-0.085	-0.015	-0.032	0.141	-0.009	-0.003
	0.317	0.317	0.006	0.047	-0.063	-0.075	-0.015	-0.035	0.141	-0.006	-0.003
	0.333	0.333	0.006	0.047	-0.047	-0.075	-0.015	-0.032	0.141	-0.009	-0.003
	0.417	0.417	0.006	0.047	-0.063	-0.075	-0.015	-0.035	0.151	-0.009	0.000
	0.500	0.500	0.006	0.047	-0.047	-0.075	-0.031	-0.032	0.151	-0.009	0.000
	0.583	0.583	0.003	0.047	-0.047	-0.075	-0.015	-0.032	0.151	-0.009	0.000
	0.667	0.667	0.003	0.047	-0.063	-0.075	-0.015	-0.032	0.141	-0.009	0.000
	0.750	0.750	0.006	0.047	-0.063	-0.075	-0.015	-0.035	0.151	-0.006	0.000
	0.833	0.833	0.006	0.047	-0.047	-0.075	-0.031	-0.032	0.151	-0.006	0.000
	0.917	0.917	0.003	0.047	-0.047	-0.085	-0.031	-0.032	0.151	-0.006	0.003
	1.000	1.000	0.006	0.047	-0.063	-0.085	-0.031	-0.032	0.151	-0.003	0.000
	2.000	2.000	0.009	0.056	-0.063	-0.085	-0.031	-0.029	0.160	-0.006	0.009
	3.000	3.000	0.006	0.047	-0.063	-0.085	-0.031	-0.035	0.160	-0.003	0.009
	4.000	4.000	0.003	0.047	-0.063	-0.075	-0.031	-0.029	0.170	-0.006	0.012
	5.000	5.000	0.006	0.037	-0.063	-0.075	-0.031	-0.029	0.170	-0.006	0.015
	6.000	6.000	0.003	0.037	-0.078	-0.075	-0.031	-0.032	0.160	-0.009	0.012
	7.000	7.000	-0.003	0.028	-0.094	-0.075	-0.031	-0.029	0.151	-0.012	0.009
	8.000	8.000	-0.003	0.028	-0.094	-0.075	-0.031	-0.029	0.151	-0.009	0.012
	9.000	9.000	0.000	0.026	-0.110	-0.075	-0.047	-0.035	0.141	-0.006	0.012
	10.000	10.000	0.000	0.018	-0.126	-0.075	-0.063	-0.032	0.132	-0.009	0.009
	12.000	12.000	0.000	0.018	-0.141	-0.066	-0.047	-0.032	0.132	-0.009	0.006
	14.000	14.000	0.003	0.009	-0.141	-0.075	-0.078	-0.032	0.123	-0.009	0.003
	16.000	16.000	0.003	0.009	-0.157	-0.075	-0.078	-0.032	0.123	-0.006	0.003
	18.000	18.000	0.000	0.000	-0.189	-0.066	-0.094	-0.035	0.104	-0.009	0.000
	20.000	20.000	0.000	0.000	-0.189	-0.075	-0.110	-0.038	0.094	-0.006	-0.003
	22.000	22.000	-0.003	-0.009	-0.205	-0.066	-0.110	-0.038	0.094	-0.009	-0.009
	24.000	24.000	0.000	-0.009	-0.220	-0.075	-0.126	-0.045	0.085	-0.012	-0.012
	26.000	26.000	0.000	-0.018	-0.220	-0.075	-0.142	-0.051	0.085	-0.009	-0.012
	28.000	28.000	-0.003	-0.018	-0.236	-0.085	-0.142	-0.058	0.075	-0.009	-0.019
	30.000	30.000	-0.003	-0.028	-0.236	-0.085	-0.142	-0.061	0.066	-0.012	-0.025
	32.000	32.000	-0.003	-0.028	-0.252	-0.085	-0.157	-0.067	0.058	-0.015	-0.028
	34.000	34.000	-0.003	-0.028	-0.252	-0.094	-0.173	-0.067	0.058	-0.012	-0.028
	36.000	36.000	-0.003	-0.037	-0.268	-0.094	-0.173	-0.077	0.047	-0.015	-0.031
	38.000	38.000	-0.003	-0.037	-0.268	-0.104	-0.173	-0.080	0.047	-0.012	-0.031
	40.000	40.000	-0.006	-0.037	-0.268	-0.104	-0.173	-0.087	0.047	-0.015	-0.038

BETHPAGE NWIRP  
PUMPING TEST #2  
PUMPING WELL: PRODUCTION WELL 11  
PUMPING RATE: 890 GPM

STEP TIME	TOTAL TIME	HN25S	HN25I	HN25D	HN29I	HN29D	HN28I	HN28I	HN27S2	HN27I2
42.000	42.000	-0.003	-0.037	-0.268	-0.104	-0.189	-0.090	0.038	-0.012	-0.038
44.000	44.000	-0.003	-0.037	-0.268	-0.104	-0.189	-0.093	0.038	-0.015	-0.041
46.000	46.000	-0.006	-0.037	-0.268	-0.113	-0.189	-0.100	0.038	-0.015	-0.041
48.000	48.000	-0.003	-0.037	-0.268	-0.113	-0.205	-0.103	0.038	-0.012	-0.041
50.000	50.000	0.000	-0.037	-0.268	-0.113	-0.205	-0.103	0.038	-0.012	-0.038
52.000	52.000	-0.003	-0.037	-0.268	-0.123	-0.205	-0.110	0.038	-0.015	-0.041
54.000	54.000	-0.006	-0.037	-0.252	-0.132	-0.205	-0.113	0.028	-0.019	-0.044
56.000	56.000	-0.006	-0.037	-0.268	-0.132	-0.221	-0.116	0.028	-0.015	-0.044
58.000	58.000	-0.003	-0.037	-0.252	-0.123	-0.221	-0.119	0.028	-0.015	-0.044
60.000	60.000	-0.006	-0.037	-0.252	-0.132	-0.205	-0.122	0.028	-0.019	-0.047
62.000	62.000	-0.006	-0.037	-0.252	-0.132	-0.221	-0.126	0.028	-0.022	-0.047
64.000	64.000	-0.009	-0.037	-0.252	-0.142	-0.221	-0.126	0.028	-0.019	-0.047
66.000	66.000	-0.009	-0.047	-0.252	-0.142	-0.221	-0.132	0.028	-0.022	-0.047
68.000	68.000	-0.009	-0.037	-0.252	-0.142	-0.221	-0.132	0.018	-0.022	-0.050
70.000	70.000	-0.012	-0.047	-0.252	-0.151	-0.221	-0.132	0.018	-0.022	-0.054
72.000	72.000	-0.012	-0.037	-0.252	-0.151	-0.221	-0.139	0.018	-0.022	-0.050
74.000	74.000	-0.009	-0.037	-0.236	-0.151	-0.221	-0.135	0.028	-0.019	-0.050
76.000	76.000	-0.009	-0.037	-0.236	-0.151	-0.221	-0.142	0.018	-0.022	-0.050
78.000	78.000	-0.009	-0.037	-0.236	-0.161	-0.236	-0.142	0.018	-0.019	-0.054
80.000	80.000	-0.009	-0.037	-0.236	-0.161	-0.236	-0.145	0.018	-0.019	-0.054
82.000	82.000	-0.009	-0.037	-0.236	-0.161	-0.221	-0.145	0.018	-0.019	-0.050
84.000	84.000	-0.006	-0.037	-0.236	-0.161	-0.236	-0.145	0.018	-0.019	-0.054
86.000	86.000	-0.006	-0.037	-0.220	-0.161	-0.236	-0.145	0.018	-0.015	-0.047
88.000	88.000	-0.006	-0.037	-0.220	-0.161	-0.236	-0.148	0.018	-0.019	-0.050
90.000	90.000	-0.003	-0.028	-0.220	-0.161	-0.236	-0.148	0.028	-0.019	-0.047
92.000	92.000	-0.006	-0.028	-0.220	-0.161	-0.236	-0.148	0.028	-0.022	-0.050
94.000	94.000	-0.006	-0.028	-0.220	-0.170	-0.236	-0.148	0.018	-0.022	-0.054
96.000	96.000	-0.009	-0.037	-0.220	-0.161	-0.236	-0.152	0.018	-0.022	-0.050
98.000	98.000	-0.009	-0.028	-0.205	-0.170	-0.236	-0.152	0.028	-0.022	-0.047
100.000	100.000	-0.009	-0.028	-0.205	-0.161	-0.221	-0.152	0.018	-0.022	-0.050
120.000	120.000	-0.012	-0.028	-0.173	-0.170	-0.236	-0.148	0.028	-0.025	-0.054
140.000	140.000	-0.019	-0.028	-0.157	-0.170	-0.236	-0.152	0.028	-0.034	-0.057
160.000	160.000	-0.019	-0.028	-0.157	-0.180	-0.236	-0.152	0.038	-0.031	-0.060
180.000	180.000	-0.025	-0.028	-0.141	-0.180	-0.236	-0.148	0.038	-0.041	-0.063
200.000	200.000	-0.025	-0.028	-0.141	-0.180	-0.236	-0.148	0.038	-0.044	-0.066
220.000	220.000	-0.028	-0.037	-0.141	-0.180	-0.252	-0.155	0.038	-0.044	-0.066
240.000	240.000	-0.028	-0.037	-0.126	-0.180	-0.252	-0.152	0.038	-0.047	-0.066
260.000	260.000	-0.031	-0.037	-0.110	-0.189	-0.252	-0.155	0.038	-0.047	-0.066
280.000	280.000	-0.031	-0.037	-0.110	-0.189	-0.252	-0.155	0.038	-0.050	-0.066
300.000	300.000	-0.034	-0.037	-0.110	-0.189	-0.252	-0.158	0.038	-0.053	-0.066
320.000	320.000	-0.034	-0.037	-0.110	-0.189	-0.252	-0.155	0.038	-0.053	-0.066
340.000	340.000	-0.038	-0.037	-0.110	-0.189	-0.252	-0.155	0.038	-0.060	-0.069
360.000	360.000	-0.034	-0.037	-0.094	-0.189	-0.252	-0.152	0.047	-0.050	-0.063
380.000	380.000	-0.038	-0.037	-0.094	-0.180	-0.236	-0.152	0.047	-0.060	-0.066
400.000	400.000	-0.038	-0.028	-0.094	-0.180	-0.236	-0.152	0.047	-0.057	-0.060
420.000	420.000	-0.038	-0.037	-0.078	-0.180	-0.236	-0.155	0.047	-0.057	-0.063
440.000	440.000	-0.041	-0.037	-0.078	-0.180	-0.236	-0.148	0.047	-0.063	-0.060
460.000	460.000	-0.041	-0.037	-0.078	-0.180	-0.236	-0.145	0.047	-0.063	-0.060
480.000	480.000	-0.038	-0.028	-0.078	-0.180	-0.236	-0.145	0.047	-0.066	-0.060
500.000	500.000	-0.041	-0.037	-0.078	-0.180	-0.236	-0.148	0.047	-0.066	-0.057
520.000	520.000	-0.041	-0.037	-0.078	-0.180	-0.221	-0.145	0.047	-0.066	-0.060
540.000	540.000	-0.041	-0.028	-0.078	-0.180	-0.221	-0.145	0.047	-0.063	-0.057
560.000	560.000	-0.041	-0.028	-0.078	-0.180	-0.221	-0.142	0.047	-0.063	-0.057

BETHPAGE NWIRP  
 PUMPING TEST #2  
 PUMPING WELL: PRODUCTION WELL 11  
 PUMPING RATE: 890 GPM

STEP TIME	TOTAL TIME	HN25S	HN25I	HN25D	HN29I	HN29D	HN28I	HN26I	HN27S2	HN27I2
580.000	580.000	-0.041	-0.028	-0.078	-0.180	-0.221	-0.145	0.047	-0.063	-0.057
600.000	600.000	-0.044	-0.028	-0.078	-0.170	-0.221	-0.142	0.047	-0.069	-0.057
620.000	620.000	-0.044	-0.037	-0.094	-0.180	-0.221	-0.145	0.047	-0.069	-0.057
640.000	640.000	-0.041	-0.037	-0.094	-0.170	-0.221	-0.145	0.047	-0.066	-0.054
660.000	660.000	-0.047	-0.037	-0.094	-0.180	-0.221	-0.142	0.047	-0.072	-0.057
680.000	680.000	-0.047	-0.037	-0.078	-0.170	-0.221	-0.142	0.047	-0.072	-0.054
700.000	700.000	-0.044	-0.028	-0.094	-0.170	-0.205	-0.135	0.056	-0.072	-0.050
720.000	720.000	-0.047	-0.028	-0.141	-0.170	-0.205	-0.139	0.056	-0.079	-0.050
740.000	740.000	-0.047	-0.028	-0.126	-0.170	-0.205	-0.135	0.056	-0.079	-0.050
760.000	760.000	-0.050	-0.028	-0.141	-0.170	-0.205	-0.132	0.056	-0.079	-0.050
780.000	780.000	-0.047	-0.028	-0.126	-0.181	-0.189	-0.126	0.056	-0.076	-0.044
800.000	800.000	-0.047	-0.028	-0.126	-0.181	-0.189	-0.126	0.066	-0.079	-0.047
820.000	820.000	-0.050	-0.028	-0.126	-0.181	-0.189	-0.126	0.066	-0.079	-0.041
840.000	840.000	-0.050	-0.028	-0.126	-0.181	-0.189	-0.122	0.066	-0.082	-0.044
860.000	860.000	-0.047	-0.028	-0.126	-0.181	-0.189	-0.119	0.066	-0.079	-0.041
880.000	880.000	-0.050	-0.028	-0.126	-0.151	-0.189	-0.119	0.066	-0.085	-0.041
900.000	900.000	-0.050	-0.018	-0.126	-0.181	-0.189	-0.119	0.066	-0.088	-0.044
920.000	920.000	-0.053	-0.028	-0.141	-0.151	-0.189	-0.119	0.066	-0.091	-0.044
940.000	940.000	-0.053	-0.028	-0.126	-0.181	-0.189	-0.119	0.056	-0.091	-0.047
960.000	960.000	-0.057	-0.028	-0.126	-0.181	-0.189	-0.122	0.056	-0.091	-0.050
980.000	980.000	-0.060	-0.037	-0.141	-0.181	-0.189	-0.126	0.056	-0.098	-0.054
1000.000	1000.000	-0.057	-0.037	-0.157	-0.181	-0.189	-0.129	0.047	-0.095	-0.054
1050.000	1050.000	-0.063	-0.047	-0.189	-0.180	-0.221	-0.139	0.038	-0.098	-0.060
1100.000	1100.000	-0.063	-0.066	-0.252	-0.199	-0.252	-0.152	0.009	-0.101	-0.069
1150.000	1150.000	-0.063	-0.066	-0.268	-0.199	-0.268	-0.156	0.009	-0.104	-0.069
1200.000	1200.000	-0.057	-0.066	-0.315	-0.208	-0.284	-0.158	0.000	-0.101	-0.066
1250.000	1250.000	-0.053	-0.066	-0.394	-0.199	-0.268	-0.161	0.009	-0.098	-0.060
1300.000	1300.000	-0.060	-0.066	-0.410	-0.199	-0.284	-0.165	0.000	-0.098	-0.063
1350.000	1350.000	-0.057	-0.066	-0.394	-0.208	-0.284	-0.165	-0.009	-0.107	-0.069
1400.000	1400.000	-0.057	-0.075	-0.410	-0.199	-0.268	-0.168	-0.009	-0.104	-0.066
1450.000	1450.000	-0.053	-0.066	-0.378	-0.199	-0.268	-0.165	-0.009	-0.104	-0.069
1500.000	1500.000	-0.053	-0.066	-0.347	-0.208	-0.268	-0.168	0.000	-0.107	-0.073
1550.000	1550.000	-0.053	-0.066	-0.299	-0.199	-0.268	-0.161	0.009	-0.110	-0.073
1600.000	1600.000	-0.063	-0.066	-0.315	-0.199	-0.268	-0.168	0.000	-0.117	-0.079
1650.000	1650.000	-0.060	-0.066	-0.283	-0.199	-0.268	-0.168	0.009	-0.114	-0.076
1700.000	1700.000	-0.057	-0.056	-0.299	-0.199	-0.268	-0.168	0.009	-0.114	-0.076
1750.000	1750.000	-0.053	-0.056	-0.283	-0.199	-0.268	-0.168	0.018	-0.110	-0.073
1800.000	1800.000	-0.053	-0.056	-0.268	-0.199	-0.268	-0.161	0.018	-0.110	-0.073
1850.000	1850.000	-0.053	-0.047	-0.268	-0.199	-0.268	-0.168	0.009	-0.117	-0.076
1900.000	1900.000	-0.044	-0.047	-0.252	-0.189	-0.268	-0.161	0.018	-0.114	-0.073
1950.000	1950.000	-0.050	-0.047	-0.236	-0.199	-0.268	-0.161	0.018	-0.117	-0.073
2000.000	2000.000	-0.047	-0.037	-0.189	-0.189	-0.252	-0.155	0.018	-0.117	-0.066
2050.000	2050.000	-0.041	-0.028	-0.141	-0.180	-0.236	-0.145	0.028	-0.114	-0.057
2100.000	2100.000	-0.038	-0.028	-0.110	-0.170	-0.221	-0.132	0.038	-0.114	-0.054
2150.000	2150.000	-0.038	-0.018	-0.094	-0.161	-0.205	-0.122	0.047	-0.114	-0.047
2200.000	2200.000	-0.028	-0.009	-0.078	-0.151	-0.189	-0.113	0.047	-0.110	-0.044
2250.000	2250.000	-0.034	-0.018	-0.063	-0.151	-0.189	-0.110	0.038	-0.117	-0.047
2300.000	2300.000	-0.028	-0.009	-0.063	-0.151	-0.189	-0.106	0.047	-0.110	-0.044
2350.000	2350.000	-0.034	-0.018	-0.047	-0.151	-0.189	-0.106	0.038	-0.117	-0.047
2400.000	2400.000	-0.025	-0.009	-0.047	-0.142	-0.173	-0.100	0.047	-0.107	-0.041
2450.000	2450.000	-0.025	-0.009	-0.063	-0.142	-0.173	-0.106	0.038	-0.110	-0.047
2500.000	2500.000	-0.028	-0.018	-0.047	-0.142	-0.189	-0.106	0.038	-0.114	-0.050
2550.000	2550.000	-0.025	-0.018	-0.064	-0.151	-0.205	-0.116	0.028	-0.114	-0.047

BETHPAGE NWIRP  
PUMPING TEST #2  
PUMPING WELL: PRODUCTION WELL 11  
PUMPING RATE: 890 GPM

STEP TIME	TOTAL TIME	HN25S	HN25I	HN25D	HN29I	HN29D	HN28I	HN26I	HN27S2	HN27I2	
2600.000	2600.000	-0.034	-0.037	-0.126	-0.161	-0.221	-0.126	0.009	-0.114	-0.060	
2650.000	2650.000	-0.022	-0.028	-0.205	-0.170	-0.221	-0.119	0.018	-0.104	-0.047	
2700.000	2700.000	-0.009	-0.028	-0.252	-0.151	-0.205	-0.119	0.028	-0.107	-0.047	
2750.000	2750.000	-0.015	-0.018	-0.220	-0.161	-0.221	-0.119	0.009	-0.053	-0.054	
2800.000	2800.000	-0.015	-0.028	-0.252	-0.151	-0.221	-0.126	0.009	-0.053	-0.050	
2850.000	2850.000	-0.015	-0.037	-0.299	-0.161	-0.236	-0.129	-0.009	-0.060	-0.060	
2900.000	2900.000	-0.025	-0.037	-0.283	-0.170	-0.236	-0.139	-0.019	-0.063	-0.069	
2950.000	2950.000	-0.025	-0.037	-0.220	-0.180	-0.236	-0.148	-0.019	-0.069	-0.073	
3000.000	3000.000	-0.034	-0.047	-0.189	-0.180	-0.252	-0.152	-0.019	-0.069	-0.079	
3050.000	3050.000	-0.044	-0.056	-0.173	-0.189	-0.268	-0.158	-0.028	-0.079	-0.092	
3100.000	3100.000	-0.050	-0.056	-0.157	-0.189	-0.252	-0.165	-0.028	-0.076	-0.089	
3150.000	3150.000	-0.050	-0.056	-0.126	-0.189	-0.252	-0.158	-0.019	-0.082	-0.092	
3200.000	3200.000	-0.057	-0.056	-0.126	-0.189	-0.252	-0.165	-0.028	-0.082	-0.095	
3250.000	3250.000	-0.060	-0.056	-0.110	-0.199	-0.268	-0.165	-0.019	-0.085	-0.092	
3300.000	3300.000	-0.063	-0.056	-0.110	-0.199	-0.268	-0.168	-0.019	-0.085	-0.095	
3350.000	3350.000	-0.063	-0.066	-0.110	-0.199	-0.268	-0.165	-0.028	-0.086	-0.104	
3400.000	3400.000	-0.063	-0.066	-0.110	-0.199	-0.268	-0.171	-0.028	-0.085	-0.101	
3450.000	3450.000	-0.066	-0.066	-0.094	-0.199	-0.268	-0.168	-0.019	-0.086	-0.101	
3500.000	3500.000	-0.072	-0.066	-0.094	-0.199	-0.252	-0.165	-0.019	-0.095	-0.101	
3550.000	3550.000	-0.076	-0.056	-0.094	-0.199	-0.252	-0.161	-0.019	-0.095	-0.101	
3600.000	3600.000	-0.076	-0.056	-0.094	-0.199	-0.236	-0.158	-0.009	-0.095	-0.098	
3650.000	3650.000	-0.076	-0.047	-0.078	-0.189	-0.236	-0.148	0.000	-0.098	-0.095	
3700.000	3700.000	-0.076	-0.047	-0.078	-0.189	-0.221	-0.148	0.000	-0.095	-0.098	
3750.000	3750.000	-0.082	-0.056	-0.110	-0.180	-0.221	-0.142	-0.009	-0.101	-0.101	
3800.000	3800.000	-0.085	-0.047	-0.110	-0.180	-0.221	-0.145	-0.009	-0.101	-0.098	
3850.000	3850.000	-0.088	-0.056	-0.110	-0.180	-0.221	-0.145	-0.009	-0.104	-0.101	
3900.000	3900.000	-0.095	-0.085	-0.189	-0.189	-0.252	-0.158	-0.037	-0.110	-0.117	
3950.000	3950.000	-0.091	-0.085	-0.205	-0.208	-0.252	-0.168	-0.047	-0.107	-0.120	
4000.000	4000.000	-0.085	-0.075	-0.220	-0.199	-0.236	-0.158	-0.037	-0.104	-0.114	
4050.000	4050.000	-0.088	-0.085	-0.236	-0.189	-0.236	-0.158	-0.047	-0.107	-0.117	
4100.000	4100.000	-0.079	-0.075	-0.205	-0.189	-0.236	-0.158	-0.047	-0.101	-0.114	
4150.000	4150.000	-0.076	-0.066	-0.173	-0.189	-0.236	-0.155	-0.028	-0.101	-0.111	
4200.000	4200.000	-0.076	-0.066	-0.173	-0.199	-0.252	-0.161	-0.037	-0.104	-0.114	
4250.000	4250.000	-0.076	-0.075	-0.173	-0.208	-0.268	-0.171		-0.107	-0.123	
RECOVERY DATA	0.000	4250.000	-0.072	-0.085	-0.173	-0.218	-0.268	-0.178	-0.056	-0.104	-0.130
	0.017	4250.017	-0.069	-0.075	-0.173	-0.218	-0.252	-0.178	-0.066	-0.101	-0.133
	0.033	4250.033	-0.069	-0.075	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.130
	0.050	4250.050	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.130
	0.067	4250.067	-0.069	-0.075	-0.189	-0.218	-0.236	-0.178	-0.066	-0.104	-0.130
	0.083	4250.083	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.133
	0.100	4250.100	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.130
	0.117	4250.117	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.130
	0.133	4250.133	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.133
	0.150	4250.150	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.133
	0.167	4250.167	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.130
	0.183	4250.183	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.133
	0.200	4250.200	-0.069	-0.085	-0.189	-0.218	-0.236	-0.181	-0.066	-0.104	-0.130
	0.217	4250.217	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.066	-0.104	-0.133
	0.233	4250.233	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.075	-0.104	-0.133
	0.250	4250.250	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.066	-0.104	-0.133
	0.267	4250.267	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.066	-0.104	-0.133
	0.283	4250.283	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.075	-0.101	-0.130
	0.300	4250.300	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.066	-0.104	-0.133

BETHPAGE NWIRP  
PUMPING TEST #2  
PUMPING WELL: PRODUCTION WELL 11  
PUMPING RATE: 890 GPM

STEP TIME	TOTAL TIME	HN25S	HN25I	HN25D	HN29I	HN29D	HN28I	HN28I	HN27S2	HN27I2
0.317	4250.317	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.075	-0.101	-0.133
0.333	4250.333	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.075	-0.104	-0.133
0.417	4250.417	-0.069	-0.085	-0.189	-0.218	-0.221	-0.181	-0.075	-0.104	-0.130
0.500	4250.500	-0.069	-0.094	-0.189	-0.218	-0.221	-0.181	-0.075	-0.104	-0.130
0.583	4250.583	-0.069	-0.094	-0.189	-0.218	-0.221	-0.181	-0.086	-0.104	-0.130
0.667	4250.667	-0.069	-0.094	-0.189	-0.218	-0.221	-0.181	-0.075	-0.104	-0.130
0.750	4250.750	-0.069	-0.094	-0.189	-0.218	-0.221	-0.181	-0.075	-0.104	-0.130
0.833	4250.833	-0.069	-0.104	-0.205	-0.218	-0.221	-0.181	-0.075	-0.104	-0.130
0.917	4250.917	-0.069	-0.104	-0.205	-0.218	-0.221	-0.181	-0.075	-0.104	-0.130
1.000	4251.000	-0.069	-0.104	-0.205	-0.218	-0.221	-0.184	-0.075	-0.104	-0.130
2.000	4252.000	-0.069	-0.113	-0.220	-0.208	-0.221	-0.181	-0.085	-0.101	-0.130
3.000	4253.000	-0.072	-0.113	-0.220	-0.218	-0.236	-0.181	-0.094	-0.104	-0.133
4.000	4254.000	-0.072	-0.113	-0.220	-0.208	-0.236	-0.181	-0.094	-0.104	-0.139
5.000	4255.000	-0.072	-0.113	-0.220	-0.208	-0.236	-0.181	-0.104	-0.104	-0.136
6.000	4256.000	-0.072	-0.104	-0.220	-0.218	-0.236	-0.181	-0.104	-0.104	-0.139
7.000	4257.000	-0.072	-0.104	-0.220	-0.218	-0.252	-0.181	-0.104	-0.104	-0.139
8.000	4258.000	-0.078	-0.094	-0.205	-0.218	-0.252	-0.184	-0.104	-0.104	-0.139
9.000	4259.000	-0.078	-0.094	-0.189	-0.218	-0.252	-0.184	-0.104	-0.104	-0.139
10.000	4260.000	-0.078	-0.094	-0.189	-0.218	-0.252	-0.187	-0.104	-0.107	-0.143
12.000	4262.000	-0.072	-0.094	-0.173	-0.218	-0.252	-0.187	-0.085	-0.107	-0.136
14.000	4264.000	-0.072	-0.085	-0.157	-0.218	-0.236	-0.190	-0.075	-0.107	-0.136
16.000	4266.000	-0.078	-0.075	-0.141	-0.218	-0.236	-0.187	-0.066	-0.104	-0.133
18.000	4268.000	-0.076	-0.075	-0.126	-0.218	-0.221	-0.190	-0.056	-0.107	-0.130
20.000	4270.000	-0.078	-0.066	-0.110	-0.218	-0.221	-0.187	-0.056	-0.107	-0.127
22.000	4272.000	-0.076	-0.066	-0.094	-0.218	-0.205	-0.187	-0.047	-0.104	-0.120
24.000	4274.000	-0.078	-0.056	-0.078	-0.218	-0.205	-0.184	-0.037	-0.104	-0.117
26.000	4276.000	-0.078	-0.056	-0.078	-0.218	-0.189	-0.184	-0.037	-0.107	-0.114
28.000	4278.000	-0.072	-0.056	-0.063	-0.218	-0.189	-0.181	-0.028	-0.104	-0.111
30.000	4280.000	-0.072	-0.056	-0.063	-0.208	-0.173	-0.178	-0.028	-0.101	-0.104
32.000	4282.000	-0.069	-0.047	-0.047	-0.208	-0.157	-0.174	-0.019	-0.104	-0.104
34.000	4284.000	-0.072	-0.047	-0.047	-0.208	-0.157	-0.168	-0.019	-0.104	-0.101
36.000	4286.000	-0.076	-0.047	-0.047	-0.208	-0.157	-0.168	-0.019	-0.104	-0.098
38.000	4288.000	-0.072	-0.037	-0.031	-0.199	-0.142	-0.161	-0.009	-0.104	-0.098
40.000	4290.000	-0.078	-0.037	-0.031	-0.199	-0.142	-0.158	-0.009	-0.110	-0.095
42.000	4292.000	-0.079	-0.037	-0.031	-0.199	-0.126	-0.155	-0.009	-0.110	-0.095
44.000	4294.000	-0.079	-0.037	-0.031	-0.189	-0.126	-0.152	-0.009	-0.110	-0.095
46.000	4296.000	-0.078	-0.037	-0.031	-0.189	-0.126	-0.148	-0.009	-0.104	-0.092
48.000	4298.000	-0.078	-0.037	-0.031	-0.189	-0.126	-0.145	-0.009	-0.104	-0.089
50.000	4300.000	-0.072	-0.037	-0.031	-0.189	-0.126	-0.142	0.000	-0.104	-0.089
52.000	4302.000	-0.076	-0.028	-0.015	-0.180	-0.110	-0.139	0.000	-0.104	-0.085
54.000	4304.000	-0.072	-0.028	-0.031	-0.180	-0.110	-0.135	0.000	-0.104	-0.085
56.000	4306.000	-0.072	-0.028	-0.015	-0.170	-0.110	-0.132	0.000	-0.107	-0.082
58.000	4308.000	-0.072	-0.028	-0.015	-0.170	-0.110	-0.129	0.000	-0.101	-0.082
60.000	4310.000	-0.072	-0.028	-0.015	-0.170	-0.094	-0.126	0.000	-0.104	-0.079
62.000	4312.000	-0.072	-0.028	-0.015	-0.161	-0.094	-0.122	0.009	-0.101	-0.079
64.000	4314.000	-0.072	-0.028	-0.015	-0.161	-0.094	-0.119	0.009	-0.101	-0.076
66.000	4316.000	-0.072	-0.028	-0.015	-0.161	-0.078	-0.119	0.000	-0.101	-0.079
68.000	4318.000	-0.072	-0.018	-0.015	-0.161	-0.094	-0.116	0.000	-0.101	-0.076
70.000	4320.000	-0.069	-0.018	-0.015	-0.161	-0.078	-0.113	0.000	-0.101	-0.076
72.000	4322.000	-0.069	-0.018	-0.015	-0.151	-0.078	-0.113	0.000	-0.101	-0.076
74.000	4324.000	-0.069	-0.018	0.000	-0.151	-0.078	-0.110	0.009	-0.101	-0.073
76.000	4326.000	-0.066	-0.018	0.000	-0.151	-0.078	-0.110	0.009	-0.101	-0.073
78.000	4328.000	-0.069	0.009	0.000	-0.142	-0.063	-0.106	0.009	-0.101	-0.069

BETHPAGE NWIRP  
PUMPING TEST #2  
PUMPING WELL: PRODUCTION WELL 11  
PUMPING RATE: 890 GPM

STEP TIME	TOTAL TIME	HN25S	HN25I	HN25D	HN29I	HN29D	HN28I	HN26I	HN27S2	HN27I2
80.000	4330.000	-0.068	0.009	0.000	-0.142	-0.063	-0.106	0.009	-0.101	-0.073
82.000	4332.000	-0.068	0.009	0.000	-0.142	-0.063	-0.103	0.009	-0.101	-0.073
84.000	4334.000	-0.068	0.009	0.000	-0.142	-0.078	-0.103	0.009	-0.101	-0.069
86.000	4336.000	-0.068	0.009	0.000	-0.142	-0.078	-0.100	0.009	-0.104	-0.069
88.000	4338.000	-0.068	0.018	0.000	-0.142	-0.063	-0.100	0.009	-0.101	-0.069
90.000	4340.000	-0.069	0.009	0.000	-0.132	-0.063	-0.100	0.009	-0.104	-0.073
92.000	4342.000	-0.069	0.009	0.000	-0.132	-0.063	-0.100	0.009	-0.104	-0.069
94.000	4344.000	-0.069	0.009	0.000	-0.132	-0.063	-0.097	0.009	-0.101	-0.069
96.000	4346.000	-0.069	0.009	0.000	-0.142	-0.063	-0.100	0.009	-0.098	-0.069
98.000	4348.000	-0.068	0.018	0.000	-0.132	-0.063	-0.100	0.009	-0.101	-0.073
100.000	4350.000	-0.068	0.009	0.000	-0.132	-0.063	-0.103	0.009	-0.101	-0.069
120.000	4370.000	-0.069	0.009	0.000	-0.123	-0.063	-0.087	0.018	-0.101	-0.069
140.000	4390.000	-0.068	0.018	0.015	-0.113	-0.047	-0.080	0.028	-0.098	-0.069
160.000	4410.000	-0.069	0.018	0.000	-0.113	-0.063	-0.077	0.028	-0.098	-0.069
180.000	4430.000	-0.069	0.009	0.000	-0.113	-0.063	-0.077	0.028	-0.101	-0.073
200.000	4450.000	-0.069	0.009	0.000	-0.113	-0.078	-0.077	0.028	-0.104	-0.073
220.000	4470.000	-0.063	0.018	0.015	-0.113	-0.078	-0.074	0.028	-0.098	-0.069
240.000	4490.000	-0.063	0.018	0.015	-0.113	-0.078	-0.074	0.038	-0.098	-0.073
260.000	4510.000	-0.060	0.018	0.031	-0.113	-0.078	-0.071	0.038	-0.098	-0.073
280.000	4530.000	-0.068	0.009	0.031	-0.113	-0.078	-0.074	0.038	-0.098	-0.076
300.000	4550.000	-0.063	0.009	0.031	-0.113	-0.078	-0.074	0.038	-0.098	-0.073
320.000	4570.000	-0.063	0.009	0.031	-0.123	-0.094	-0.074	0.028	-0.101	-0.076
340.000	4590.000	-0.060	0.009	0.031	-0.113	-0.094	-0.077	0.028	-0.098	-0.076
360.000	4610.000	-0.057	0.009	0.047	-0.123	-0.094	-0.077	0.038	-0.098	-0.079
380.000	4630.000	-0.060	0.009	0.047	-0.123	-0.094	-0.077	0.028	-0.098	-0.076
400.000	4650.000	-0.057	0.009	0.063	-0.113	-0.094	-0.080	0.038	-0.095	-0.085
420.000	4670.000	-0.050	0.018	0.063	-0.113	-0.094	-0.074	0.038	-0.095	-0.073
440.000	4690.000	-0.050	0.028	0.078	-0.113	-0.094	-0.077	0.047	-0.091	-0.073
460.000	4710.000	-0.047	0.018	0.078	-0.113	-0.094	-0.071	0.047	-0.091	-0.079
480.000	4730.000	-0.041	0.028	0.078	-0.113	-0.094	-0.071	0.047	-0.091	-0.063
500.000	4750.000	-0.041	0.028	0.078	-0.113	-0.078	-0.067	0.047	-0.088	-0.069
520.000	4770.000	-0.038	0.037	0.078	-0.104	-0.078	-0.067	0.056	-0.091	-0.066
540.000	4790.000	-0.038	0.037	0.078	-0.104	-0.078	-0.064	0.056	-0.091	-0.066
560.000	4810.000	-0.034	0.037	0.078	-0.104	-0.078	-0.061	0.056	-0.088	-0.063
580.000	4830.000	-0.034	0.047	0.078	-0.104	-0.078	-0.058	0.056	-0.091	-0.063
600.000	4850.000	-0.034	0.037	0.110	-0.094	-0.063	-0.055	0.086	-0.091	-0.063
620.000	4870.000	-0.034	0.047	0.110	-0.094	-0.063	-0.051	0.086	-0.088	-0.063
640.000	4890.000	-0.034	0.047	0.110	-0.094	-0.063	-0.045	0.066	-0.091	-0.060
660.000	4910.000	-0.034	0.047	0.110	-0.094	-0.047	-0.045	0.075	-0.091	-0.057
680.000	4930.000	-0.034	0.047	0.110	-0.085	-0.047	-0.045	0.075	-0.095	-0.057
700.000	4950.000	-0.034	0.047	0.110	-0.085	-0.047	-0.042	0.075	-0.091	-0.054
720.000	4970.000	-0.034	0.056	0.126	-0.085	-0.031	-0.035	0.075	-0.091	-0.054
740.000	4990.000	-0.028	0.066	0.141	-0.085	-0.031	-0.032	0.085	-0.085	-0.050
760.000	5010.000	-0.028	0.066	0.157	-0.075	-0.015	-0.025	0.094	-0.088	-0.044
780.000	5030.000	-0.028	0.066	0.157	-0.075	-0.015	-0.022	0.094	-0.091	-0.047
800.000	5050.000	-0.028	0.066	0.173	-0.075	-0.015	-0.019	0.085	-0.095	-0.044
820.000	5070.000	-0.034	0.056	0.173	-0.066	-0.015	-0.019	0.094	-0.095	-0.050
840.000	5090.000	-0.028	0.066	0.189	-0.066	-0.015	-0.019	0.094	-0.091	-0.044
860.000	5110.000	-0.025	0.066	0.189	-0.066	-0.015	-0.016	0.094	-0.088	-0.041
880.000	5130.000	-0.031	0.066	0.189	-0.066	-0.015	-0.012	0.094	-0.095	-0.047
900.000	5150.000	-0.034	0.066	0.189	-0.066	-0.015	-0.016	0.094	-0.098	-0.047
920.000	5170.000	-0.034	0.056	0.189	-0.066	-0.015	-0.016	0.085	-0.098	-0.047
940.000	5190.000	-0.034	0.056	0.189	-0.066	-0.015	-0.019	0.085	-0.101	-0.047



BETHPAGE NWIRP  
 PUMPING TEST #2  
 PUMPING WELL: PRODUCTION WELL 11  
 PUMPING RATE: 890 GPM

STEP TIME	TOTAL TIME	HN25S	HN25I	HN25D	HN29I	HN29D	HN28I	HN28I	HN27S2	HN27I2
960.000	5210.000	-0.034	0.056	0.189	-0.068	-0.015	-0.019	0.085	-0.098	-0.050
980.000	5230.000	-0.028	0.056	0.189	-0.075	-0.015	-0.019	0.085	-0.091	-0.047
1000.000	5250.000	-0.034	0.056	0.173	-0.075	-0.015	-0.022	0.085	-0.098	-0.054
1050.000	5300.000	-0.041	0.047	0.141	-0.075	-0.031	-0.025	0.075		
1100.000	5350.000	-0.050	0.037	0.141	-0.085	-0.047	-0.035			
1150.000	5400.000	-0.041	0.028	0.110	-0.094	-0.063	-0.048			
1200.000	5450.000	-0.041	0.028	0.015	-0.104	-0.078	-0.051			
1250.000	5500.000	-0.041	0.018	-0.015	-0.113	-0.094	-0.067			
1300.000	5550.000	-0.044	0.018	-0.031	-0.113	-0.078	-0.064			
1350.000	5600.000	-0.038	0.028	-0.015	-0.104	-0.094	-0.055			
1400.000	5650.000	-0.050	0.009	-0.031	-0.104	-0.078	-0.061			
1450.000	5700.000	-0.066	-0.009	-0.094	-0.142	-0.126	-0.129			
1500.000	5750.000	-0.066	0.000	-0.110	-0.142	-0.126	-0.132			
1550.000	5800.000	-0.069	-0.009	-0.126	-0.142	-0.126	-0.142			
1600.000	5850.000	-0.076	-0.009	-0.126	-0.151	-0.126	-0.142			
1650.000	5900.000	-0.082	-0.009	-0.110	-0.151	-0.142	-0.152			
1700.000	5950.000	-0.079	0.000	-0.141	-0.151	-0.142	-0.155			
1750.000	6000.000	-0.085	0.000	-0.126	-0.151	-0.142	-0.152			
1800.000	6050.000	-0.082	0.000	-0.126	-0.151	-0.142	-0.148			
1850.000	6100.000	-0.082	0.008	-0.489	-0.142	-0.126	-0.145			
1900.000	6150.000	-0.079	0.009	-0.489	-0.142	-0.126	-0.145			
1950.000	6200.000	-0.076	0.018	-0.469	-0.142	-0.126	-0.135			
2000.000	6250.000	-0.072	0.018	-0.473	-0.142	-0.126	-0.135			
2050.000	6300.000	-0.069	0.028	-0.457	-0.132	-0.110	-0.126			
2100.000	6350.000	-0.066	0.037	-0.441	-0.123	-0.094	-0.116			
2150.000	6400.000	-0.063	0.037	-0.425	-0.113	-0.078	-0.110			
2200.000	6450.000	-0.060	0.047	-0.410	-0.104	-0.063	-0.100			
2250.000	6500.000	-0.057	0.056	-0.394	-0.104	-0.063	-0.093			
2300.000	6550.000	-0.050	0.066	-0.376	-0.094	-0.047	-0.084			
2350.000	6600.000	-0.050	0.066	-0.362	-0.085	-0.031	-0.077			
2400.000	6650.000	-0.050	0.066	-0.347	-0.075	-0.015	-0.071			
2450.000	6700.000	-0.047	0.066	-0.331	-0.075	-0.015	-0.067			
2500.000	6750.000	-0.044	0.075	-0.299	-0.075	-0.015	-0.067			
2550.000	6800.000	-0.047	0.066	-0.220	-0.075	-0.031	-0.067			
2600.000	6850.000	-0.044	0.056	0.063	-0.094	-0.063	-0.084			
2650.000	6900.000	-0.025	0.066	0.031	-0.085	-0.047	-0.084			
2700.000	6950.000	-0.031	0.056	-0.015	-0.094	-0.078	-0.097			
2750.000	7000.000	-0.019	0.066	-0.015	-0.085	-0.063	-0.087			
2800.000	7050.000	-0.028	0.047	-0.031	-0.104	-0.078	-0.097			
2850.000	7100.000	-0.028	0.047	-0.047	-0.104	-0.078	-0.105			
2900.000	7150.000	-0.022	0.056	-0.047	-0.104	-0.078	-0.100			
2950.000	7200.000	-0.022	0.056	-0.047	-0.113	-0.078	-0.103			
3000.000	7250.000	-0.025	0.056	-0.031	-0.104	-0.078	-0.103			
3050.000	7300.000	-0.025	0.047	-0.015	-0.113	-0.078	-0.103			
3100.000	7350.000	-0.028	0.047	0.000	-0.113	-0.094	-0.106			
3150.000	7400.000	-0.022	0.056	0.015	-0.113	-0.078	-0.110			
3200.000	7450.000	-0.022	0.056	0.031	-0.113	-0.094	-0.110			
3250.000	7500.000	-0.022	0.056	0.031	-0.113	-0.094	-0.116			
3300.000	7550.000	-0.015	0.066	0.047	-0.113	-0.094	-0.116			
3350.000	7600.000	-0.012	0.066	0.063	-0.113	-0.094	-0.113			
3400.000	7650.000	-0.012	0.066	0.063	-0.113	-0.094	-0.110			
3450.000	7700.000	0.000	0.085	0.094	-0.104	-0.063	-0.097			
3500.000	7750.000	0.003	0.094	0.110	-0.094	-0.063	-0.087			

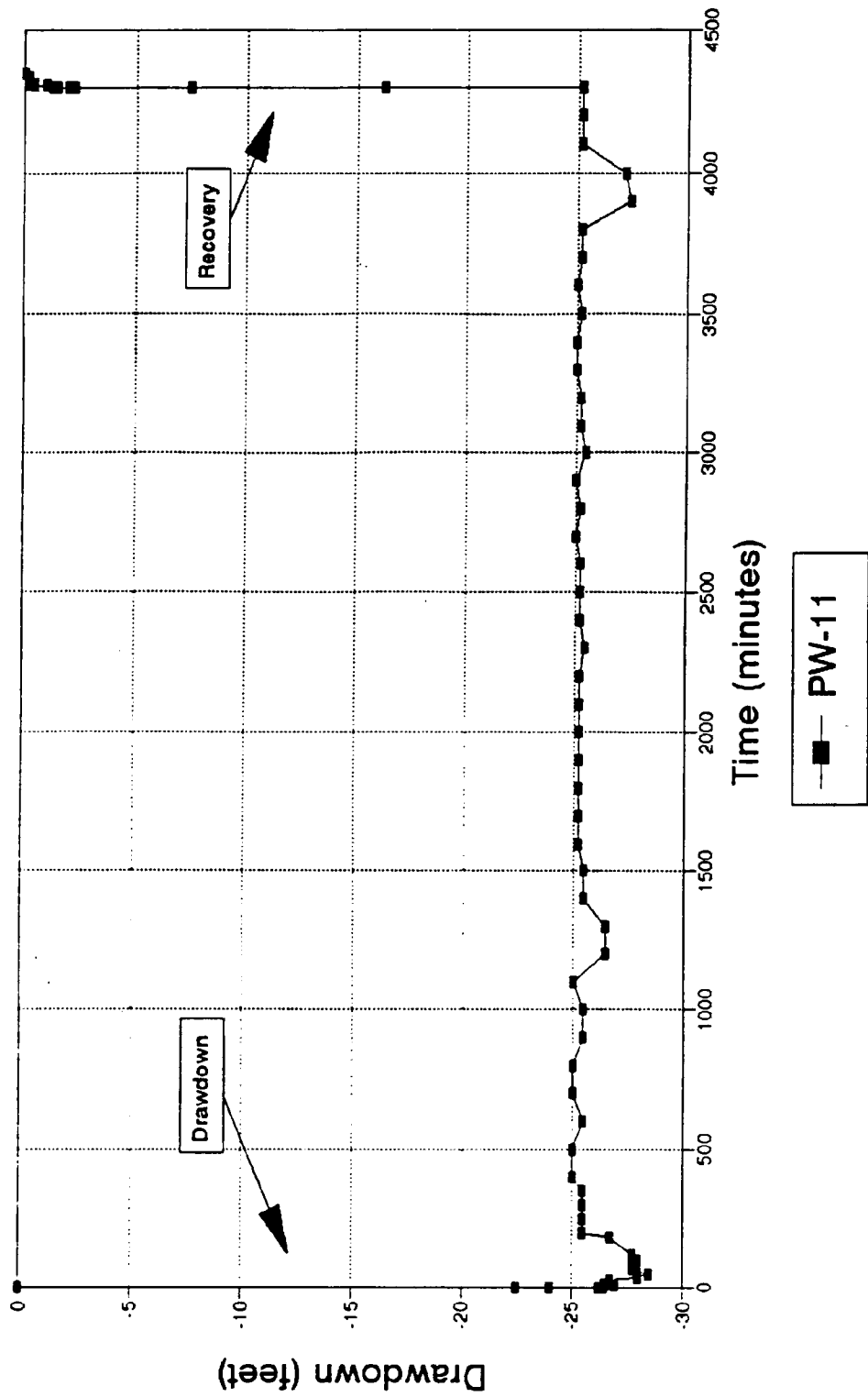
BETHPAGE NWIRP  
 PUMPING TEST #2  
 PUMPING WELL: PRODUCTION WELL 11  
 PUMPING RATE: 890 GPM

STEP TIME	TOTAL TIME	HN25S	HN25I	HN25D	HN29I	HN29D	HN28I	HN26I	HN27S2	HN27I2
3550.000	7800.000	0.008	0.094	0.126	-0.085	-0.047	-0.080			
3600.000	7850.000	0.012	0.113	0.157	-0.075	-0.031	-0.087			
3650.000	7900.000	0.025	0.123	0.189	-0.056	-0.015	-0.058			
3700.000	7950.000	0.034	0.142	0.220	-0.047	0.000	-0.042			
3750.000	8000.000	0.028	0.123	0.236	-0.047	0.000	-0.042			
3800.000	8050.000	0.034	0.132	0.268	-0.047	0.015	-0.035			
3850.000	8100.000	0.034	0.132	0.283	-0.037	0.031	-0.029			
3900.000	8150.000	0.041	0.142	0.299	-0.037	0.031	-0.029			
3950.000	8200.000	0.041	0.142	0.331	-0.037	0.031	-0.025			
4000.000	8250.000	0.044	0.151	0.362	-0.028	0.031	-0.025			
4050.000	8300.000	0.047	0.142	0.347	-0.028	0.031	-0.025			
4100.000	8350.000	0.050	0.142	0.362	-0.037	0.015	-0.035			
4150.000	8400.000	0.057	0.142	0.362	-0.037	0.015	-0.035			
4200.000	8450.000	0.057	0.142	0.331	-0.037	0.000	-0.042			
4250.000	8500.000	0.050	0.132	0.283	-0.047	0.000	-0.048			
4300.000	8550.000	0.053	0.132	0.252	-0.056	-0.015	-0.055			
4350.000	8600.000	0.060	0.123	0.236	-0.056	-0.015	-0.061			
4400.000	8650.000	0.044	0.113	0.263	-0.075	-0.047	-0.071			
4450.000	8700.000	0.047	0.113	0.236	-0.075	-0.031	-0.077			
4500.000	8750.000	0.038	0.104	0.220	-0.085	-0.047	-0.090			
4550.000	8800.000	0.038	0.104	0.220	-0.094	-0.063	-0.097			
4600.000	8850.000	0.038	0.104	0.220	-0.094	-0.078	-0.110			
4650.000	8900.000	0.041	0.104	0.220	-0.104	-0.078	-0.103			
4700.000	8950.000	0.041	0.104	0.220	-0.104	-0.078	-0.106			
4750.000	9000.000	0.041	0.104	0.220	-0.104	-0.078	-0.106			
4800.000	9050.000	0.044	0.113	0.220	-0.104	-0.078	-0.106			
4850.000	9100.000	0.047	0.113	0.220	-0.094	-0.063	-0.100			
4900.000	9150.000	0.050	0.113	0.220	-0.085	-0.063	-0.093			
4950.000	9200.000	0.047	0.113	0.220	-0.085	-0.047	-0.093			
5000.000	9250.000	0.047	0.123	0.220	-0.085	-0.047	-0.087			
5050.000	9300.000	0.047	0.123	0.236	-0.085	-0.031	-0.080			
5100.000	9350.000	0.047	0.123	0.236	-0.075	-0.031	-0.074			
5150.000	9400.000	0.044	0.123	0.236	-0.075	-0.031	-0.077			
5200.000	9450.000	0.041	0.123	0.236	-0.075	-0.015	-0.074			
5250.000	9500.000	0.034	0.113	0.205	-0.075	-0.015	-0.077			
5300.000	9550.000	0.031	0.113	0.157	-0.075	-0.015	-0.080			
5350.000	9600.000	0.034	0.113	0.094	-0.085	-0.031	-0.087			
5400.000	9650.000				-0.094	-0.047	-0.103			
5450.000	9700.000				-0.104	-0.063	-0.110			

Note: Shading indicates data not recorded for time interval.

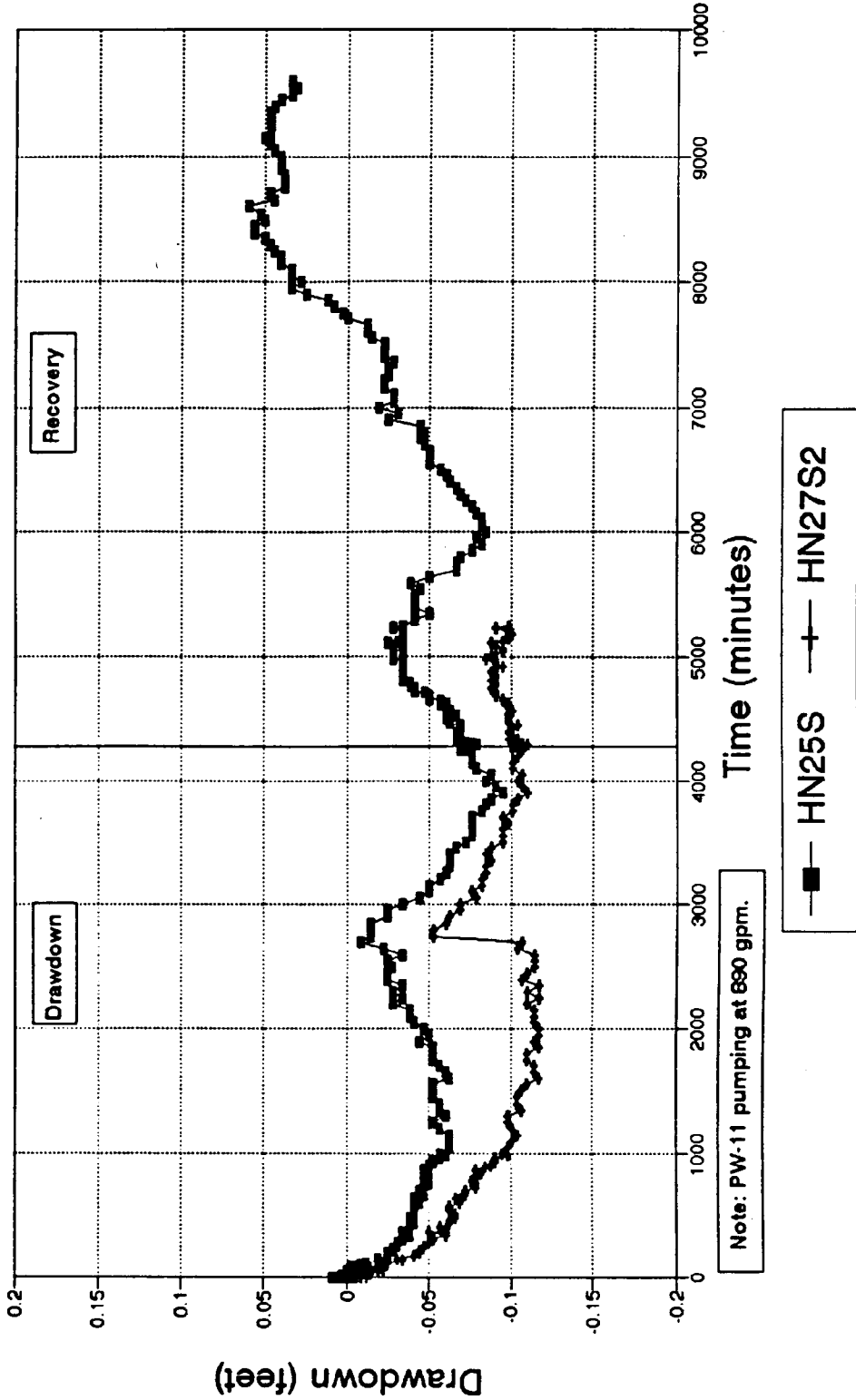
**PUMPING TEST #2**  
**GRAPHS OF DRAWDOWN AND RECOVERY DATA**

**Pump Test 2**  
Bethpage NWIRP



**Pump Test 2**  
Bethpage NWIRP

Swallow Observation Wells

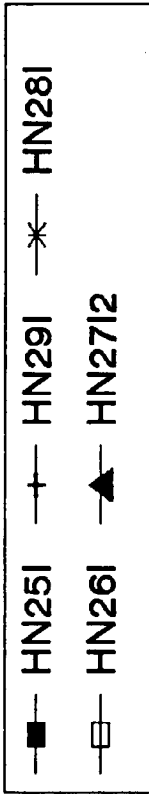
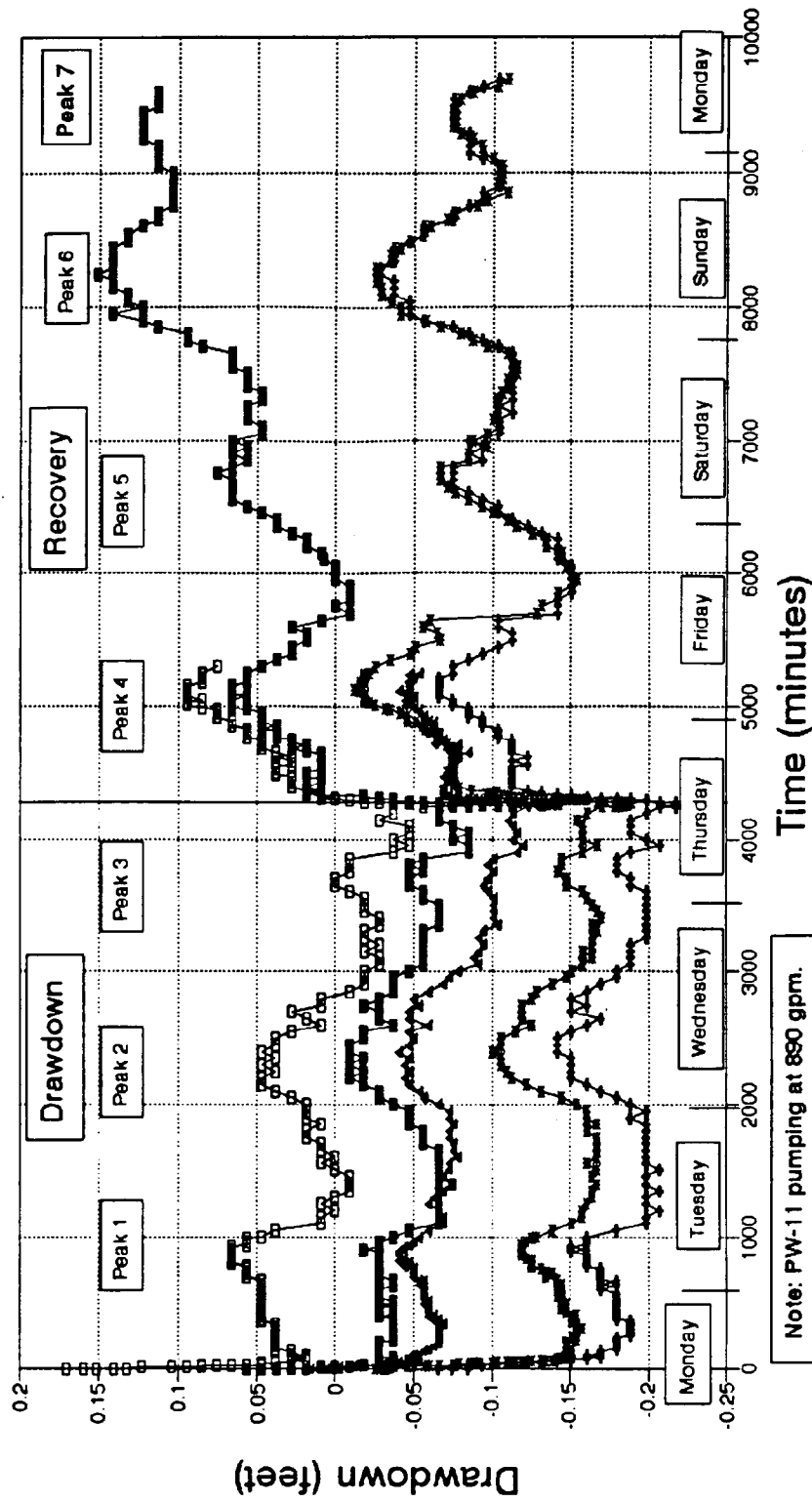


Note: PW-11 pumping at 690 gpm.

■ HN25S    + HN27S2

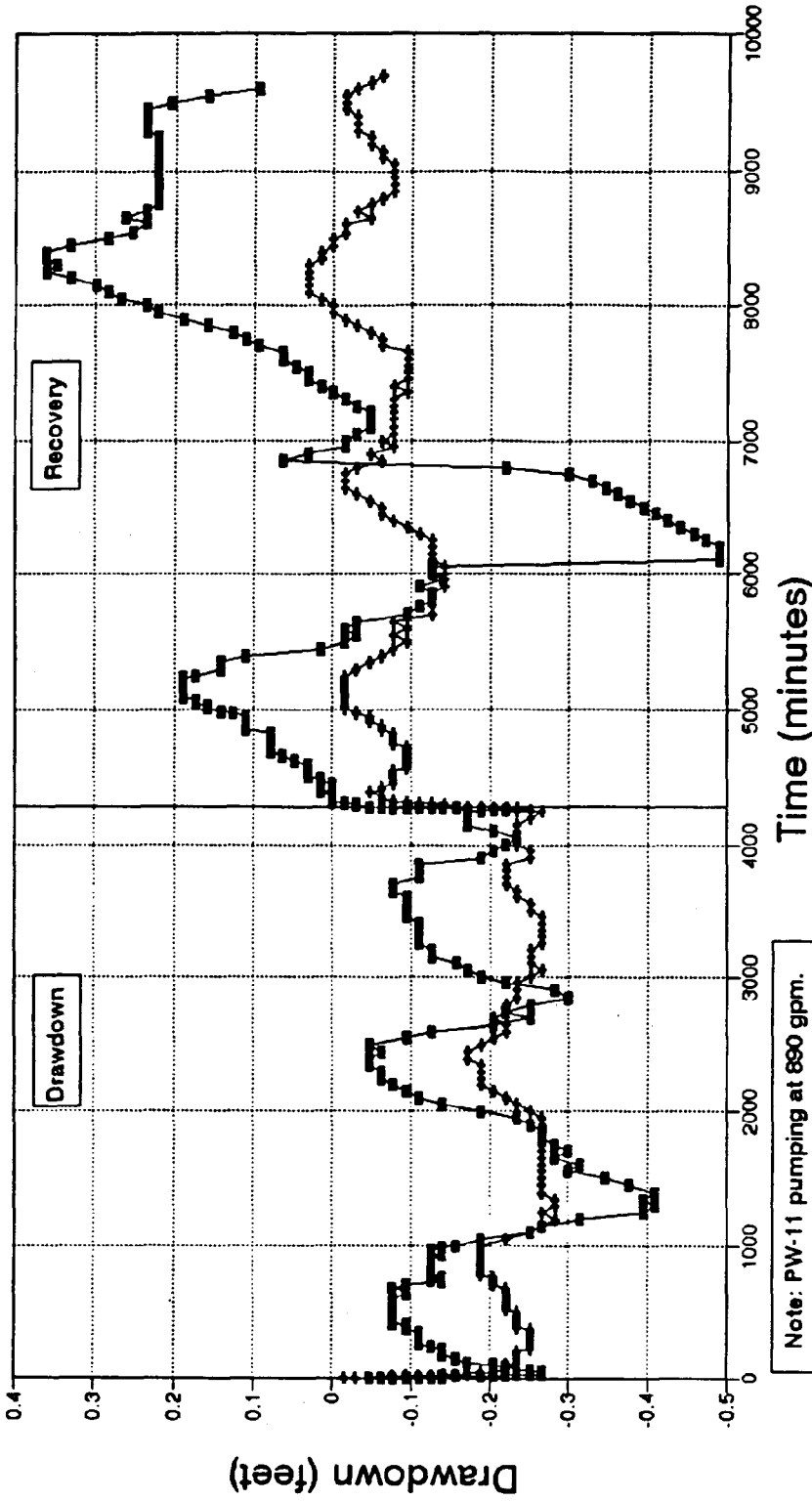
**Pump Test 2**  
Bethpage NWIRP

Intermediate Observation Wells



Pump Test 2  
Bathpage NWRP

Deep Observation Wells



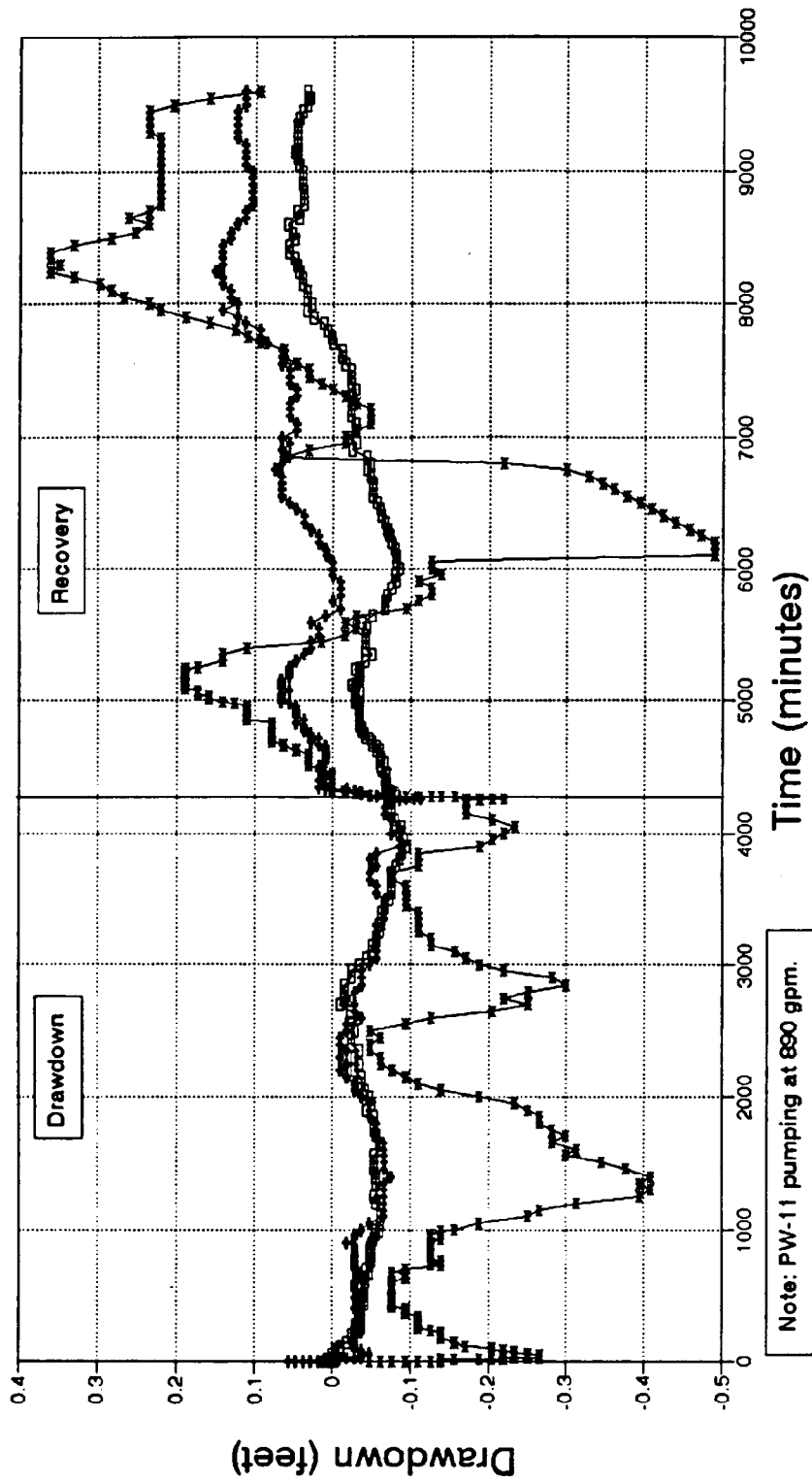
Note: PW-11 pumping at 690 gpm.

■ HN25D + HN29D



# Pump Test 2

Bethpage NWIRP



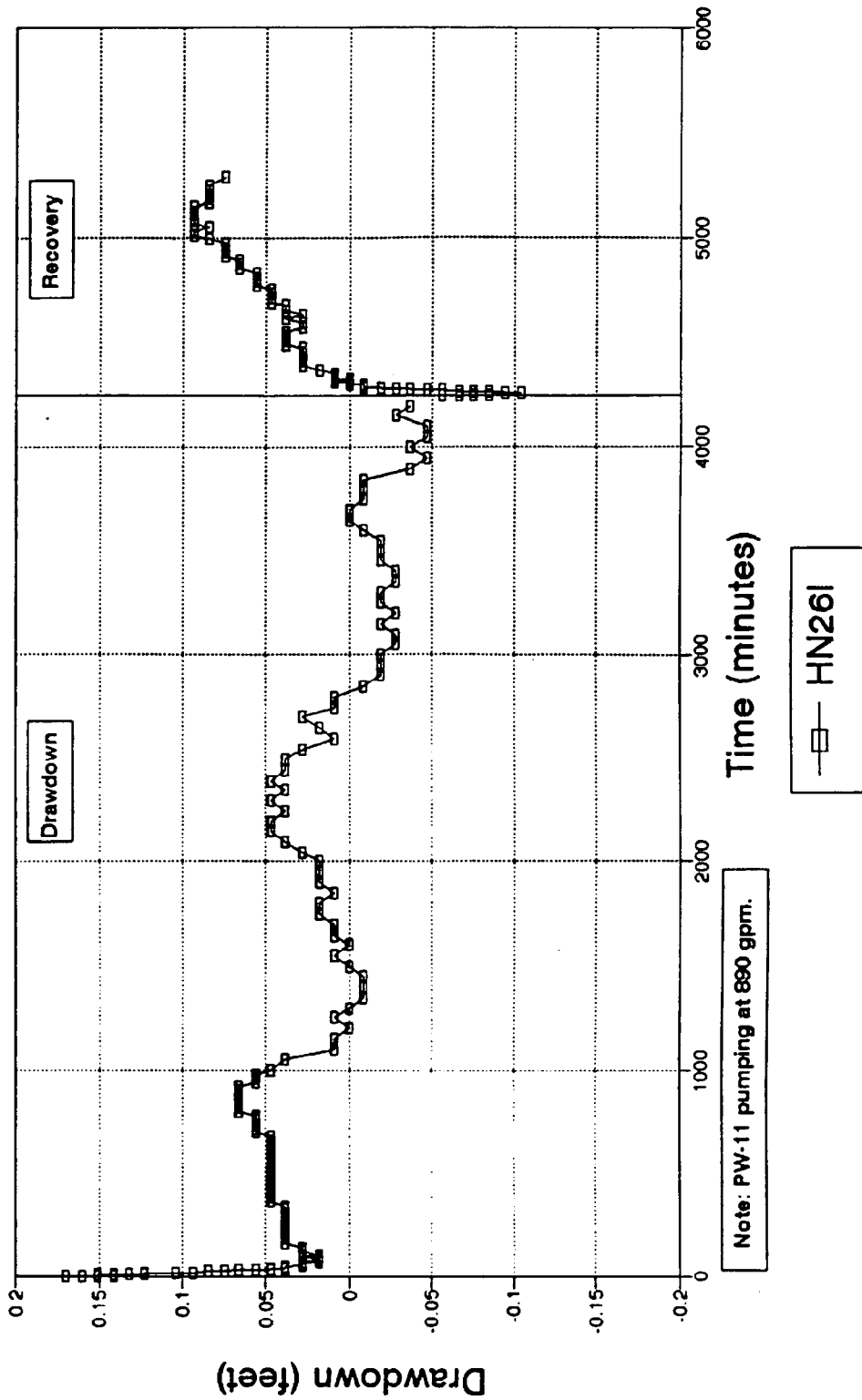
—□— HN25S —+— HN25I —\*— HN25D

Note: PW-11 pumping at 890 gpm.

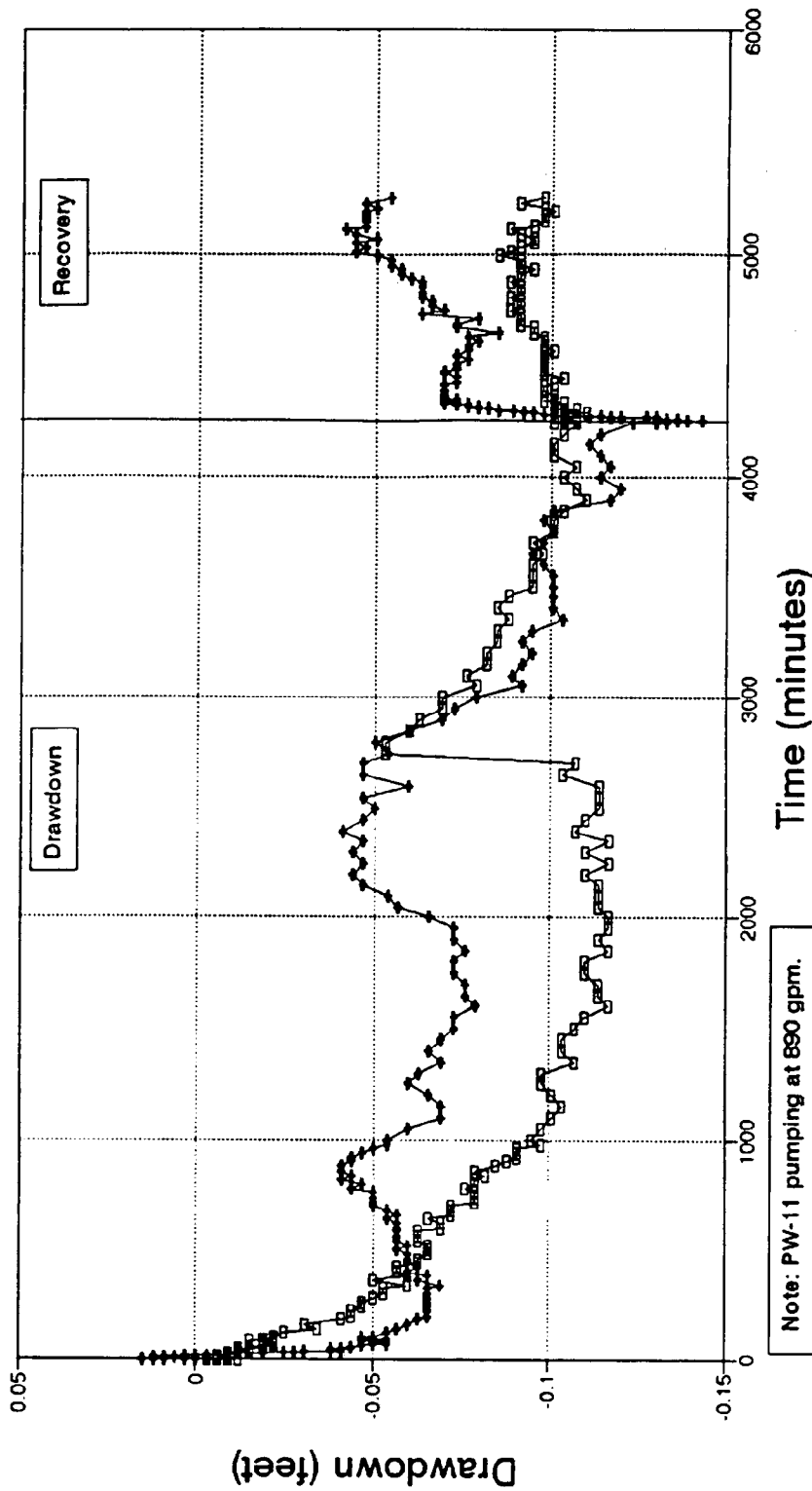


# Pump Test 2

Bethpage NWIRP



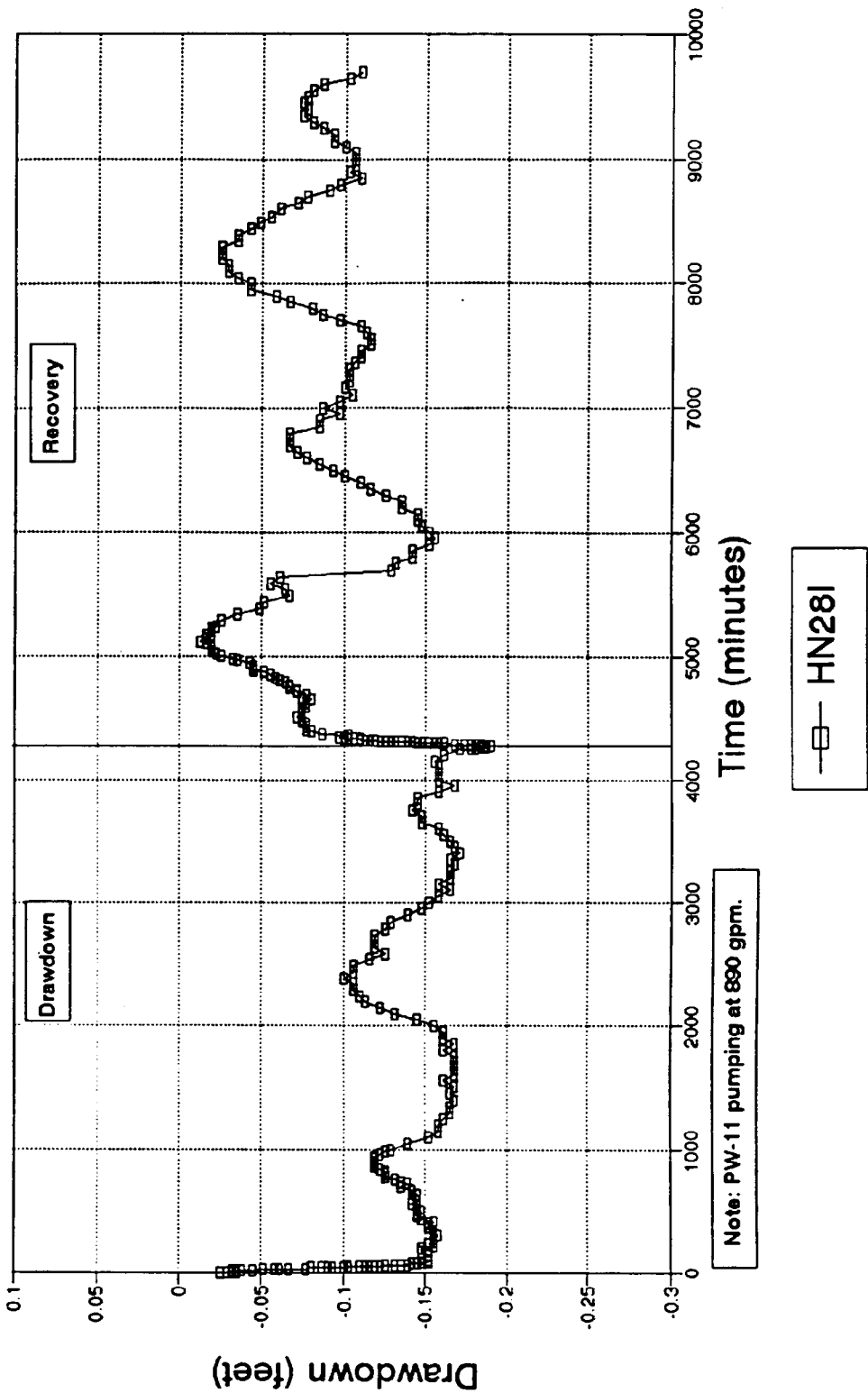
**Pump Test 2**  
Bethpage NWIRP



Note: PW-11 pumping at 890 gpm.

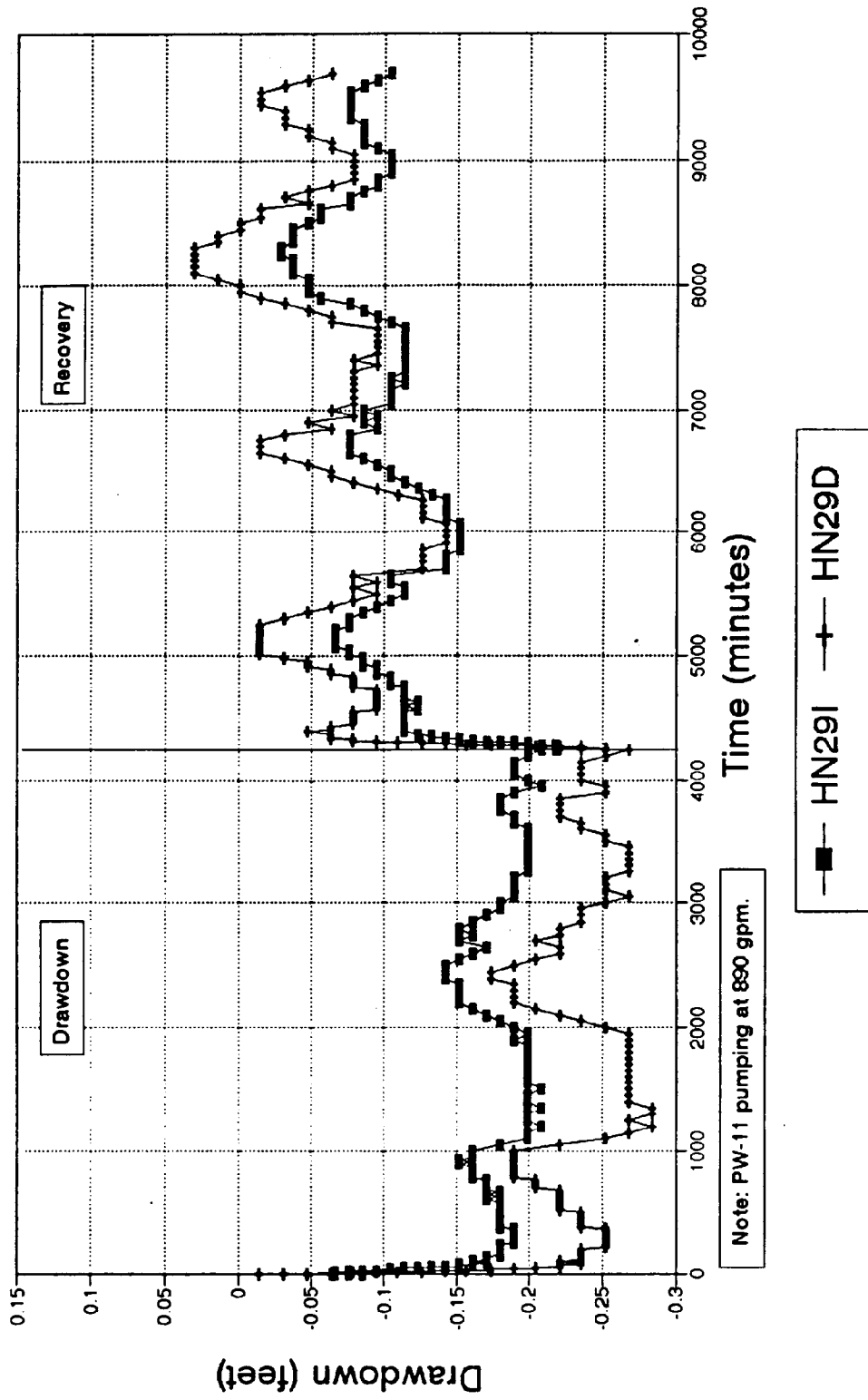
—□— HN27S2 —+— HN27I2

**Pump Test 2**  
Bethpage NWIRP

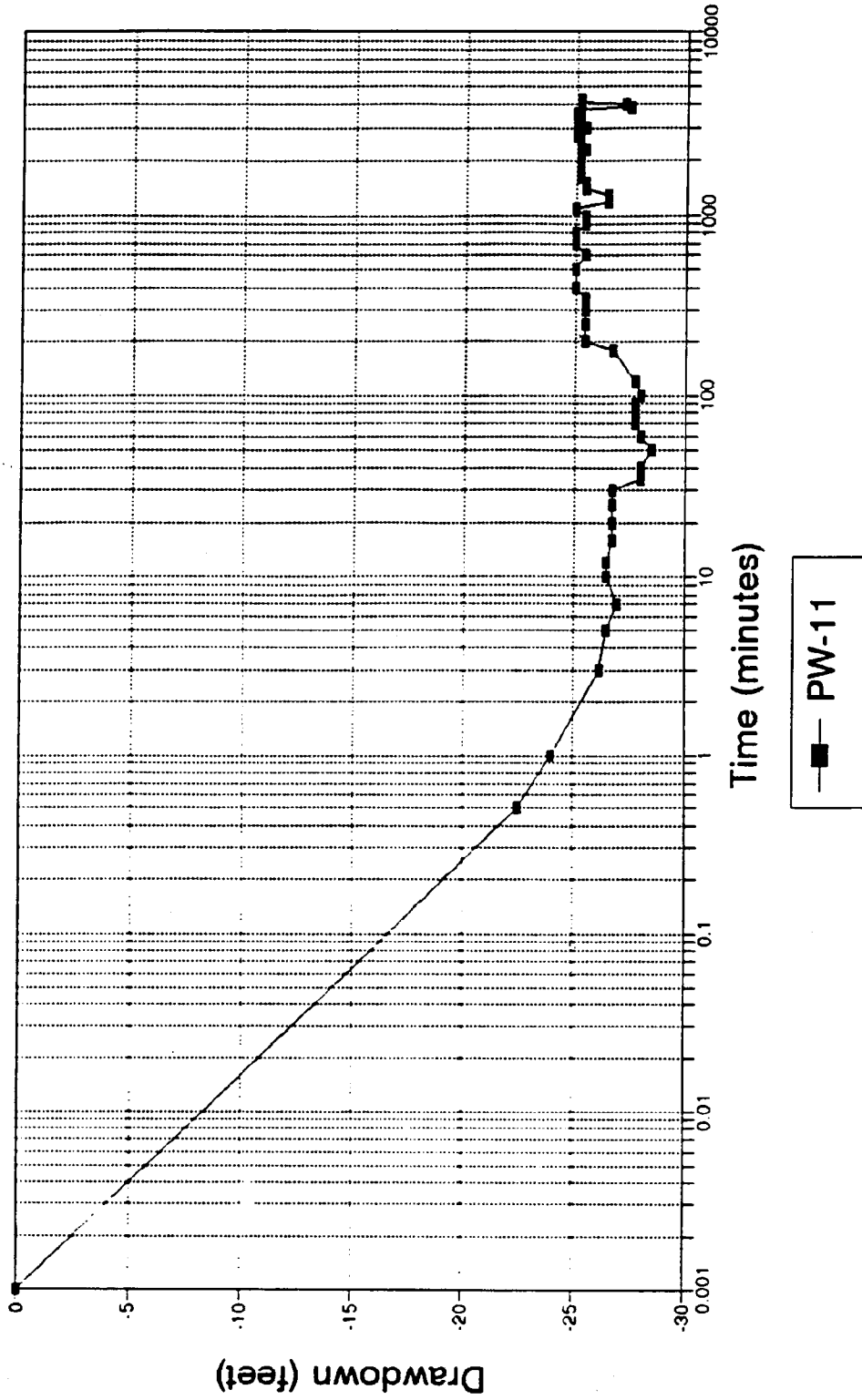


# Pump Test 2

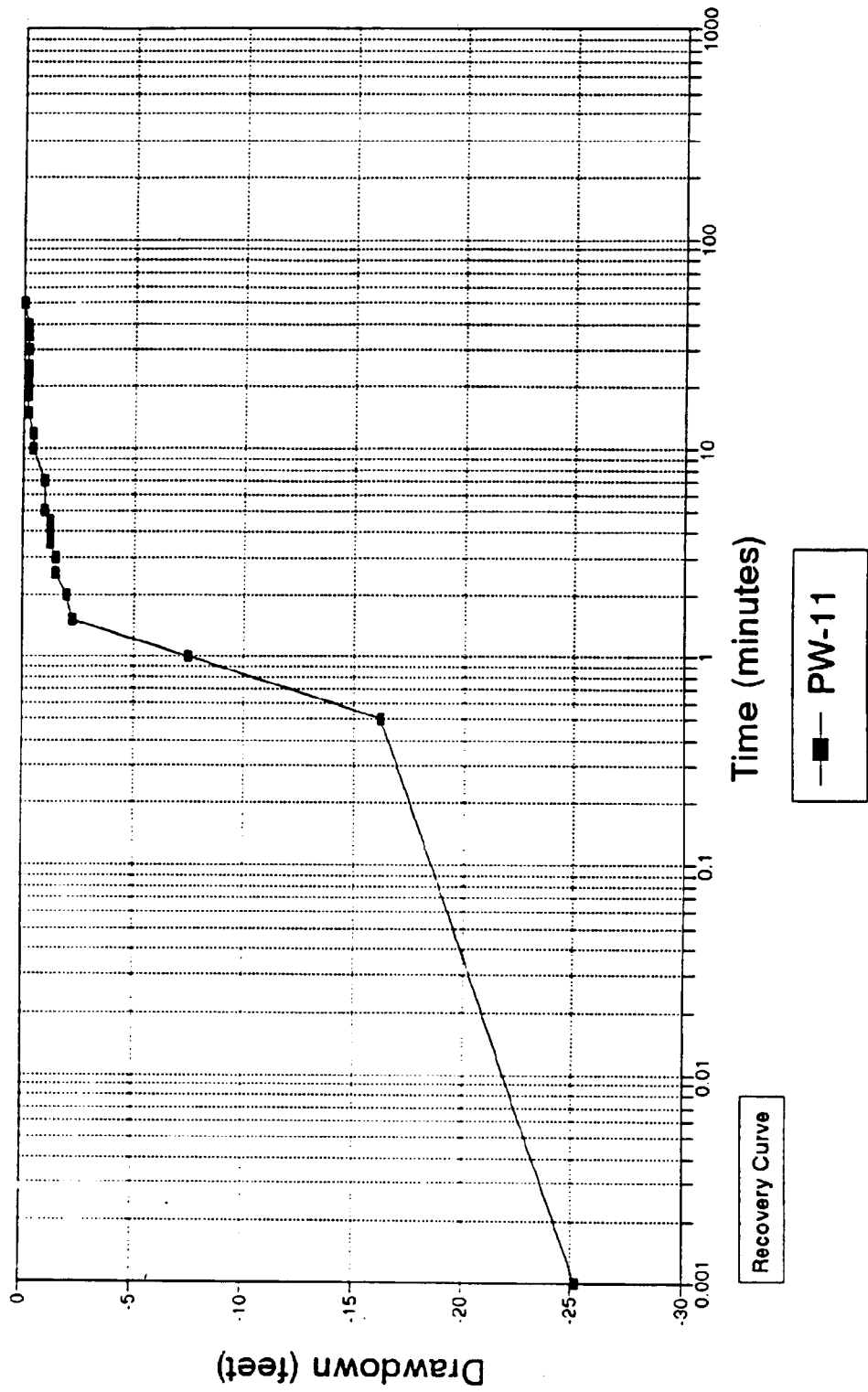
Bethpage NWIRP



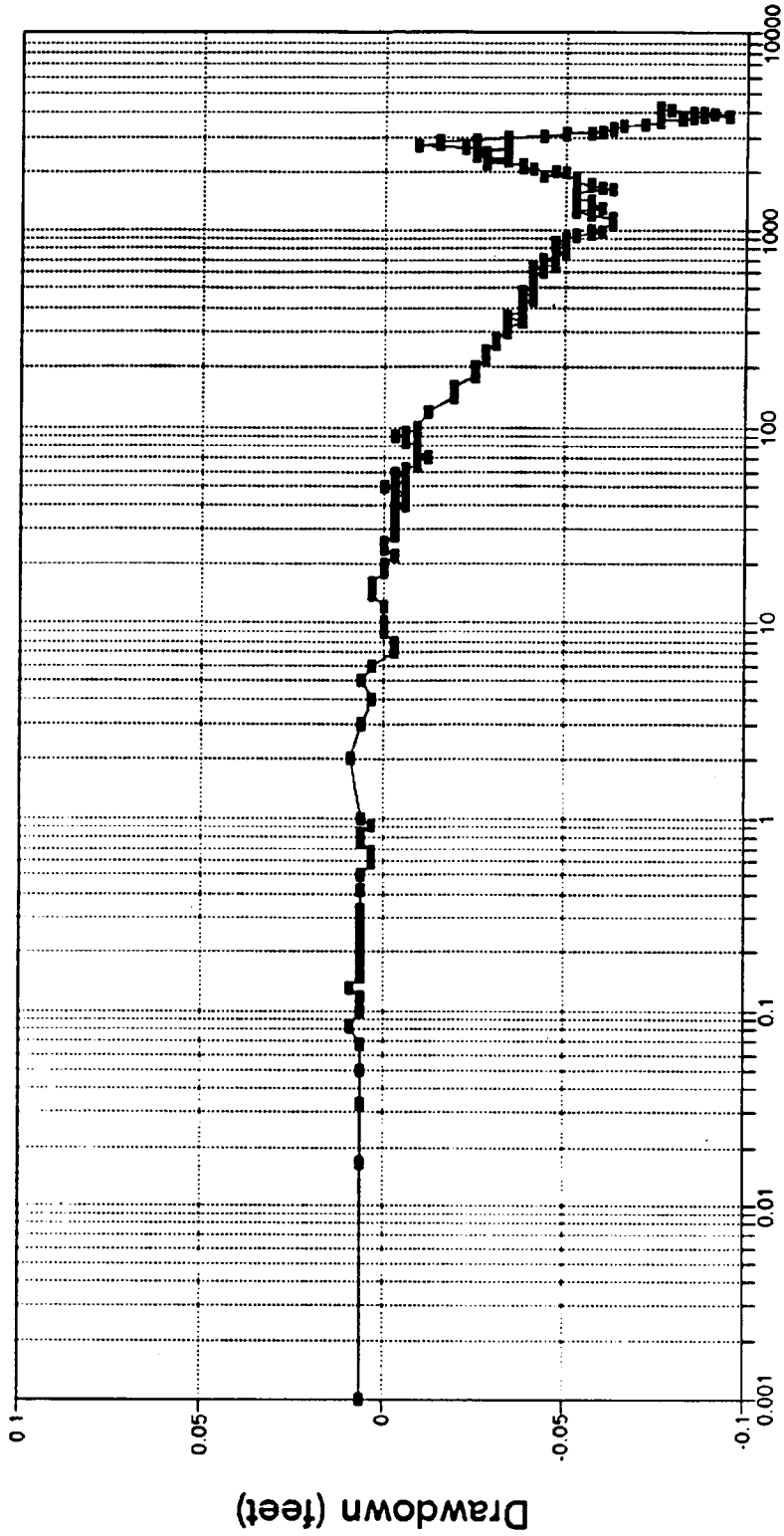
**Pump Test 2**  
Bethpage NWIRP



Pump Test 2  
Bethpage NWIRP



**Pump Test 2**  
Bethpage NWIRP

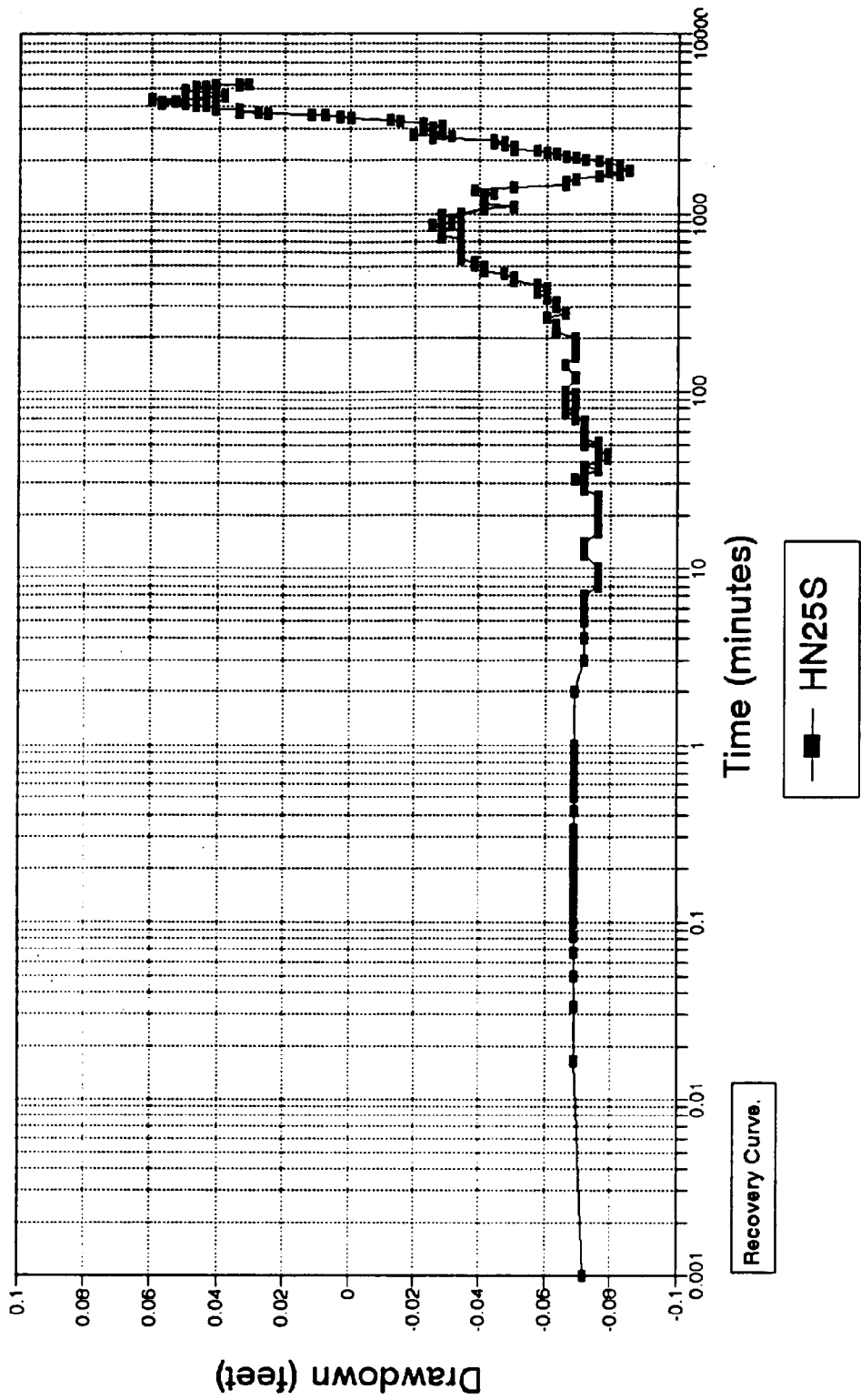


Time (minutes)

Note: PW-11 pumping at 890 gpm.

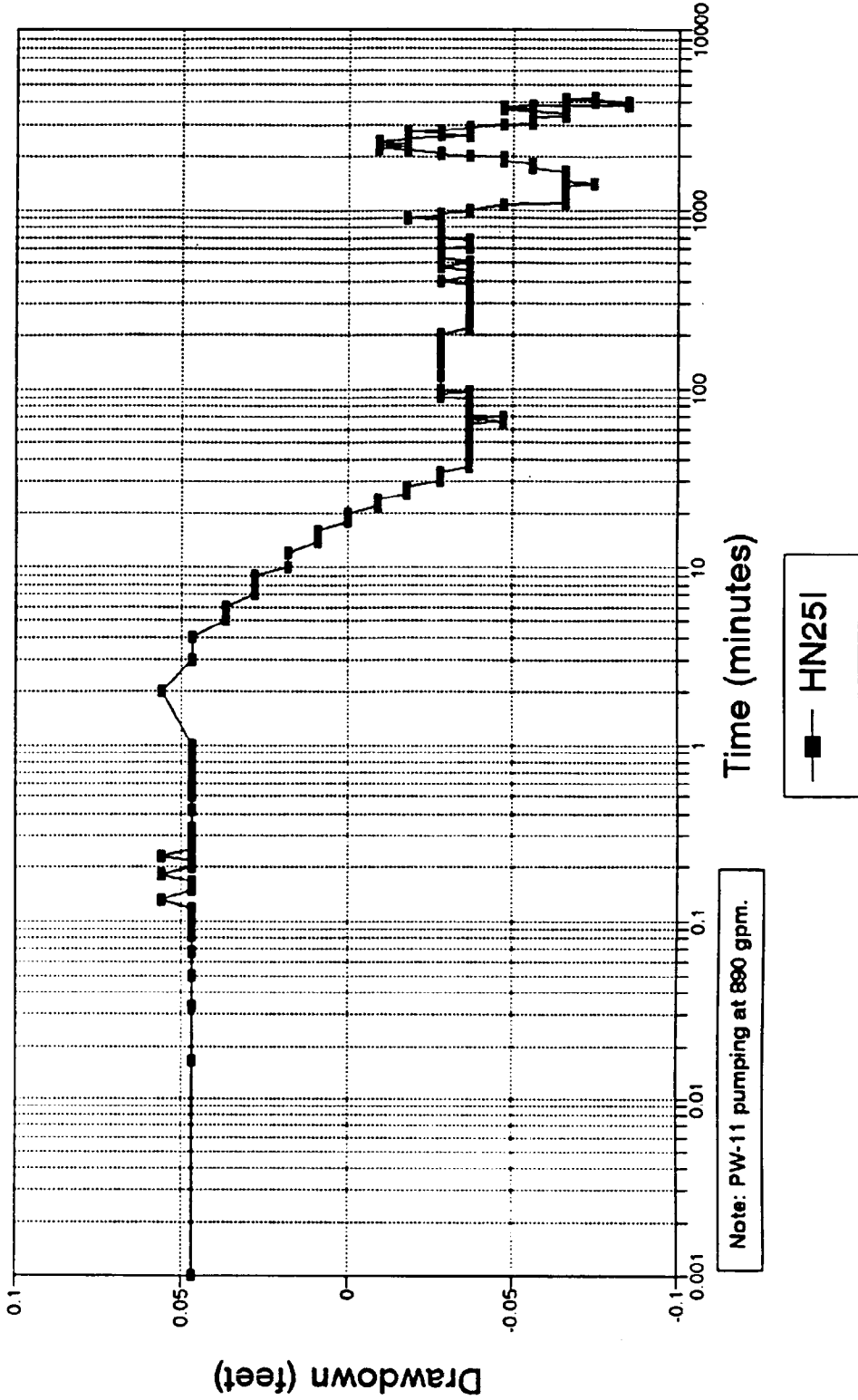
■ HN25S

Pump Test 2  
Bethpage NW1P

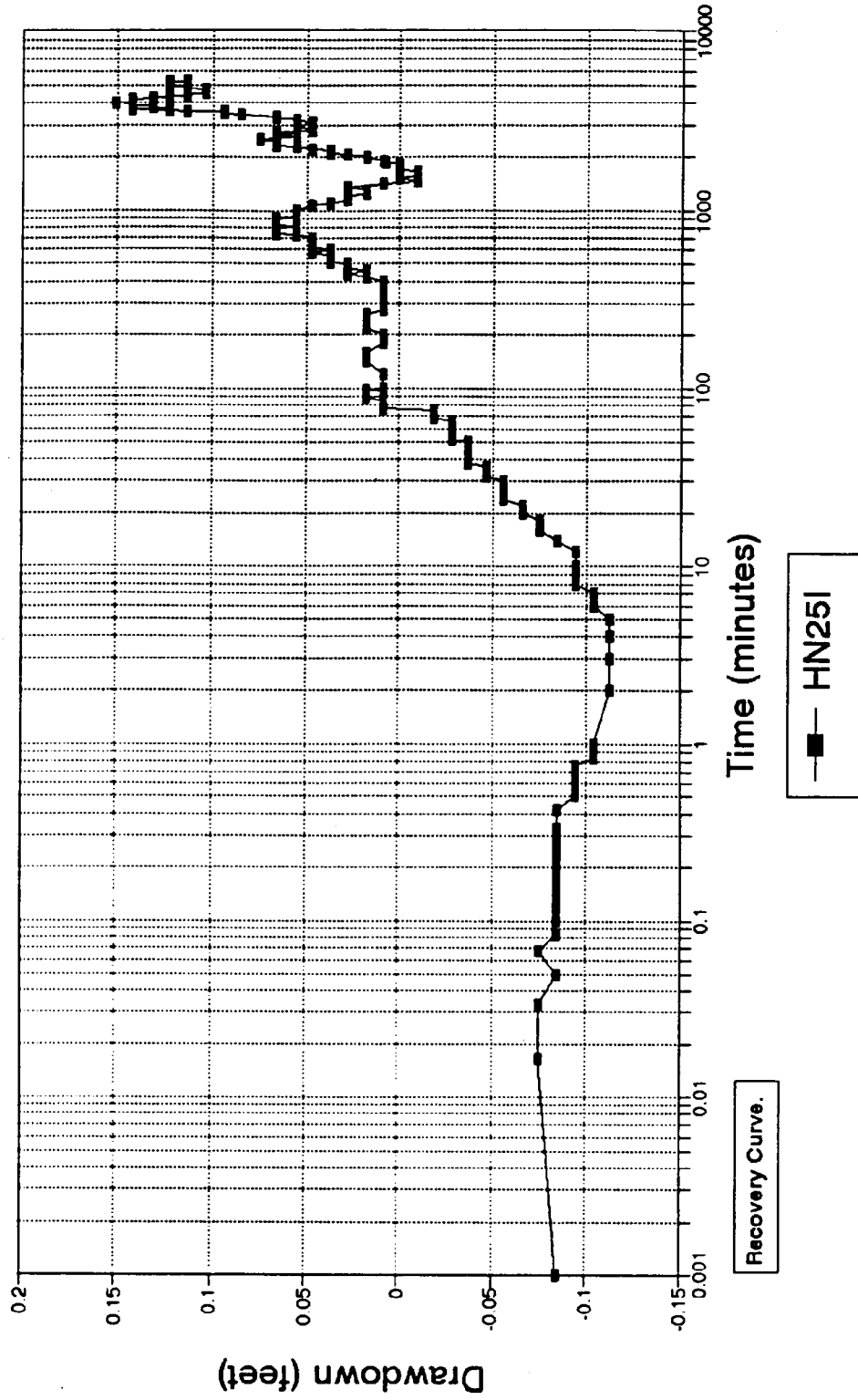




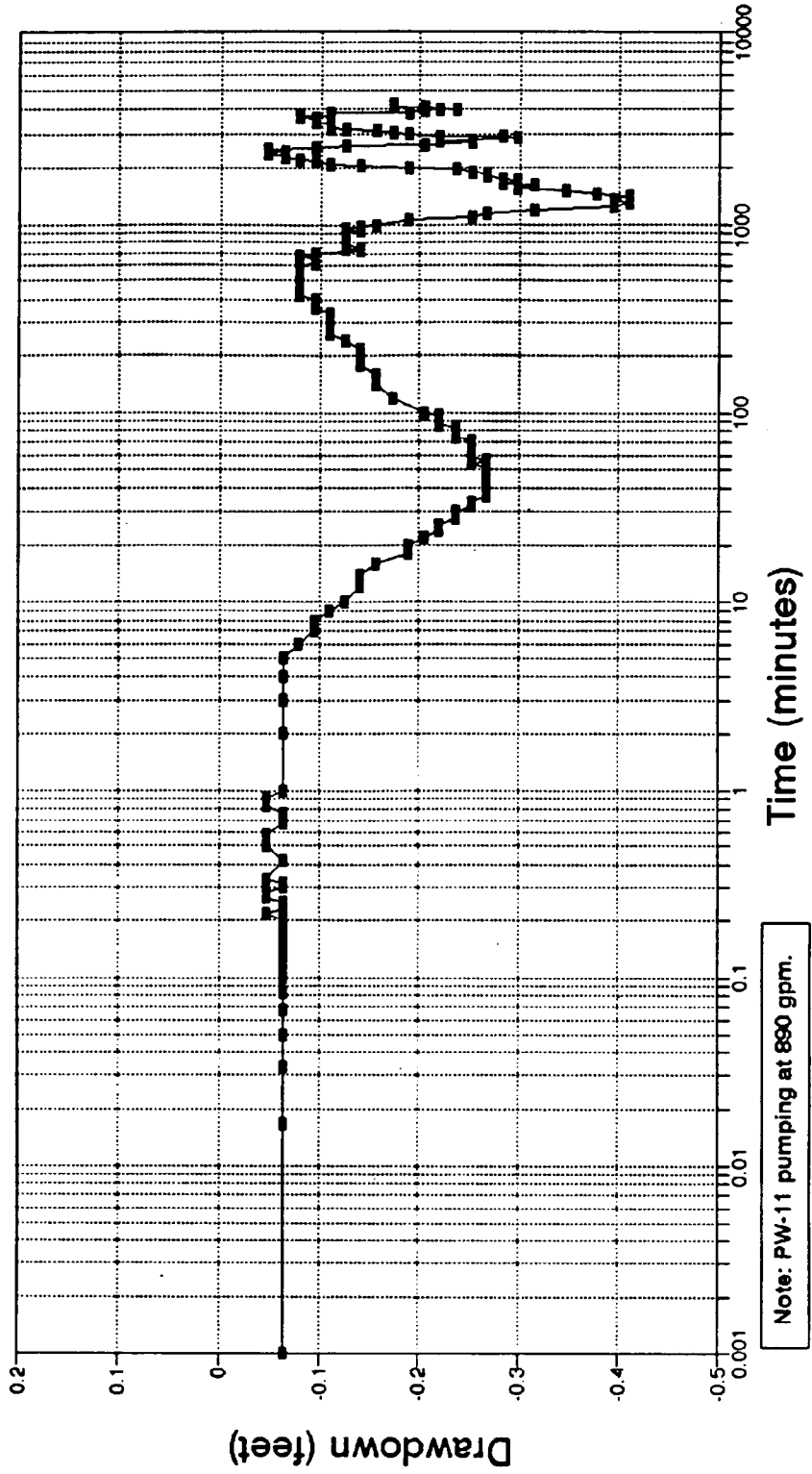
**Pump Test 2**  
Bethpage NWRP



**Pump Test 2**  
Bethpage NWIRP



**Pump Test 2**  
Bethpage NWIRP

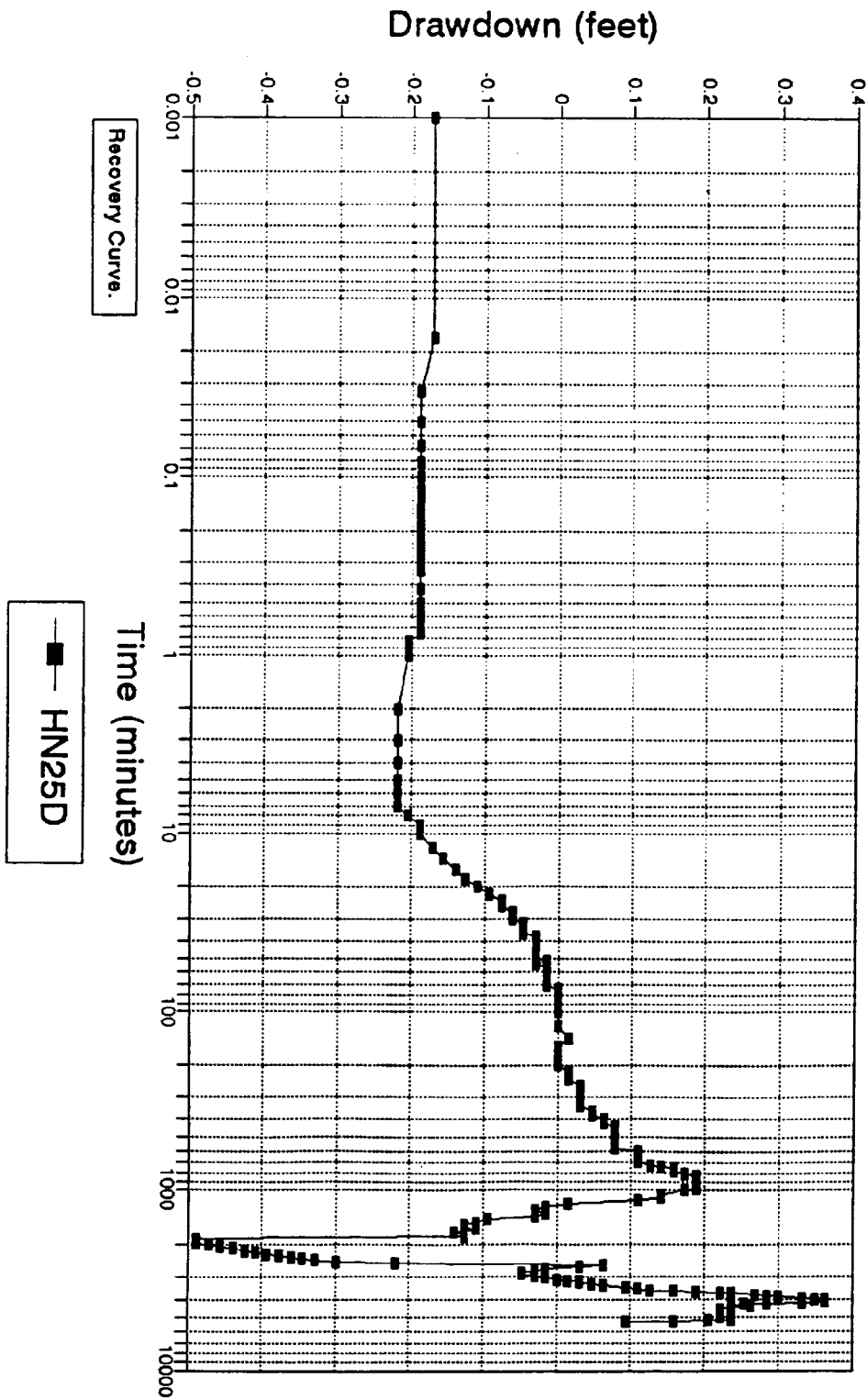


Note: PW-11 pumping at 890 gpm.

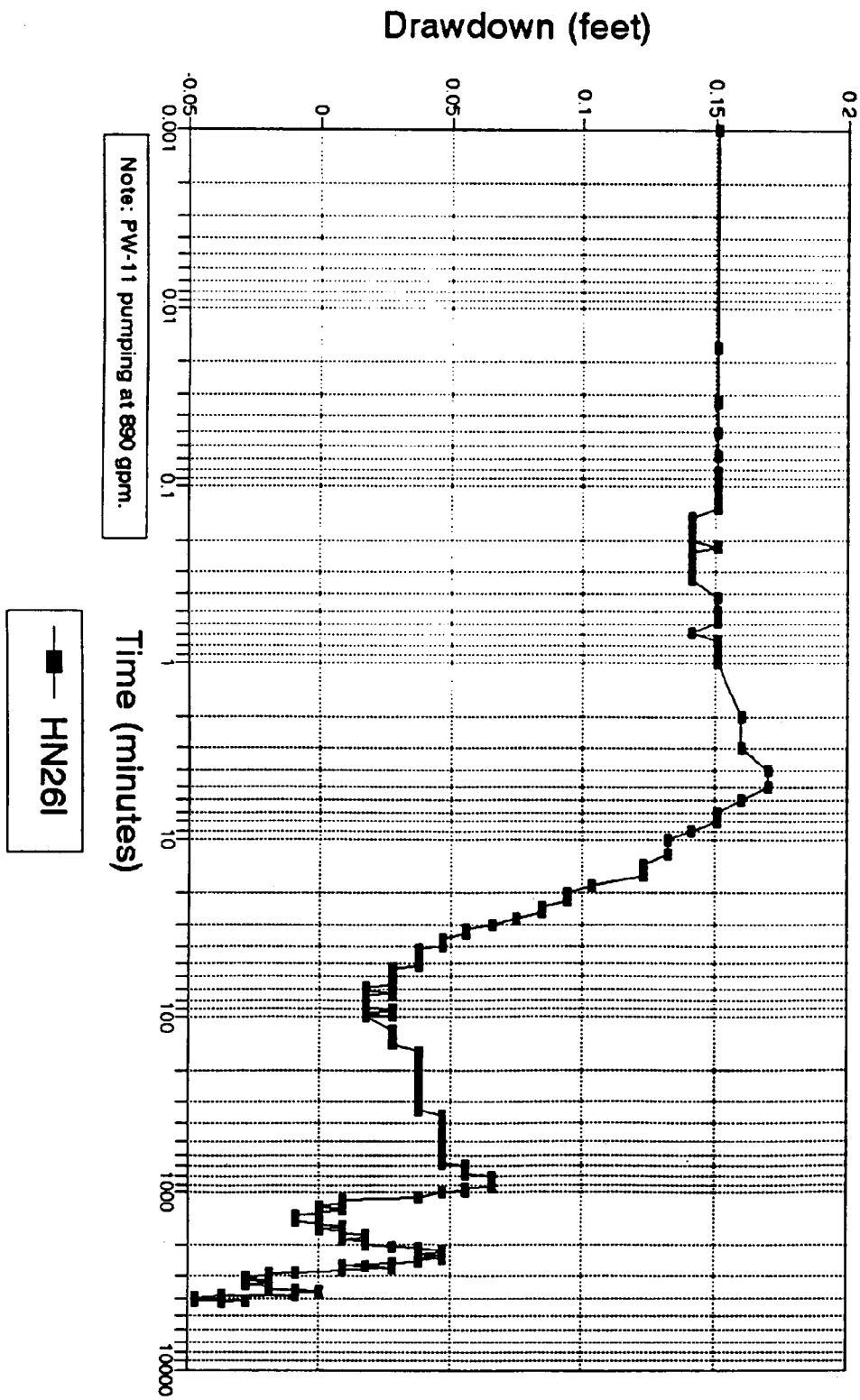
—■— HN25D

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

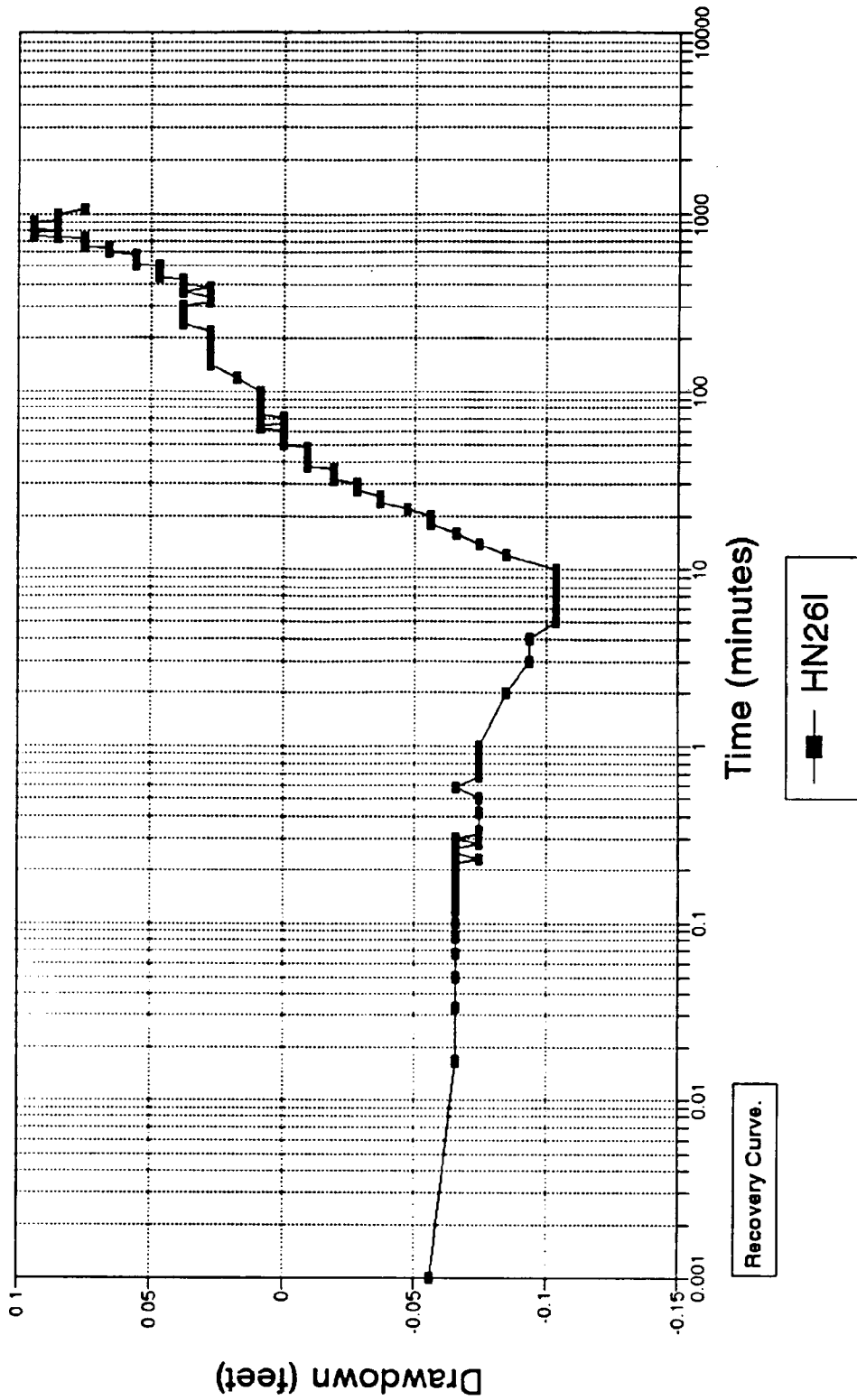
Pump Test 2  
Bohpage NWIRP



**Pump Test 2**  
Bethpage NWIRP

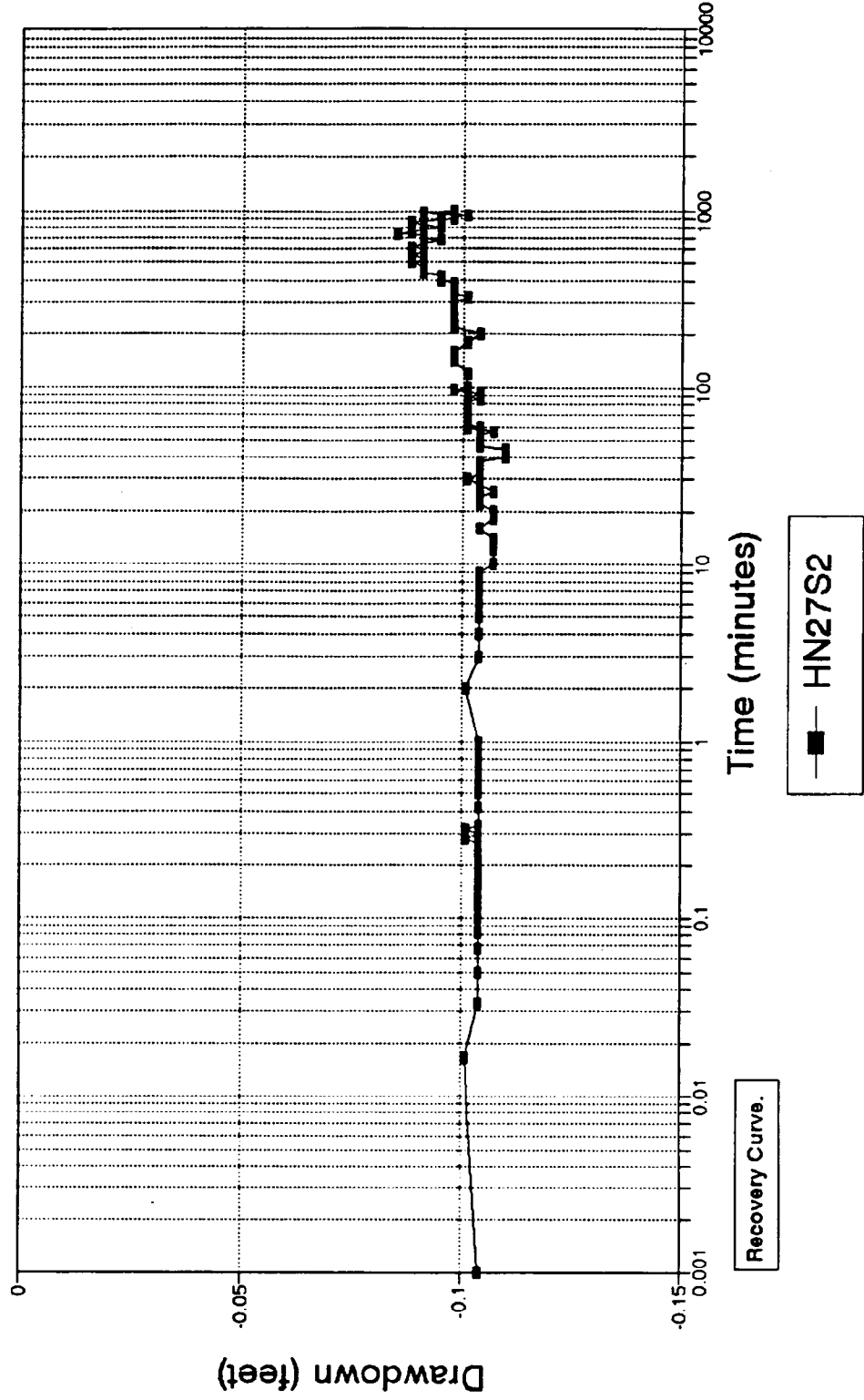


Pump Test 2  
Bethpage NWIRP



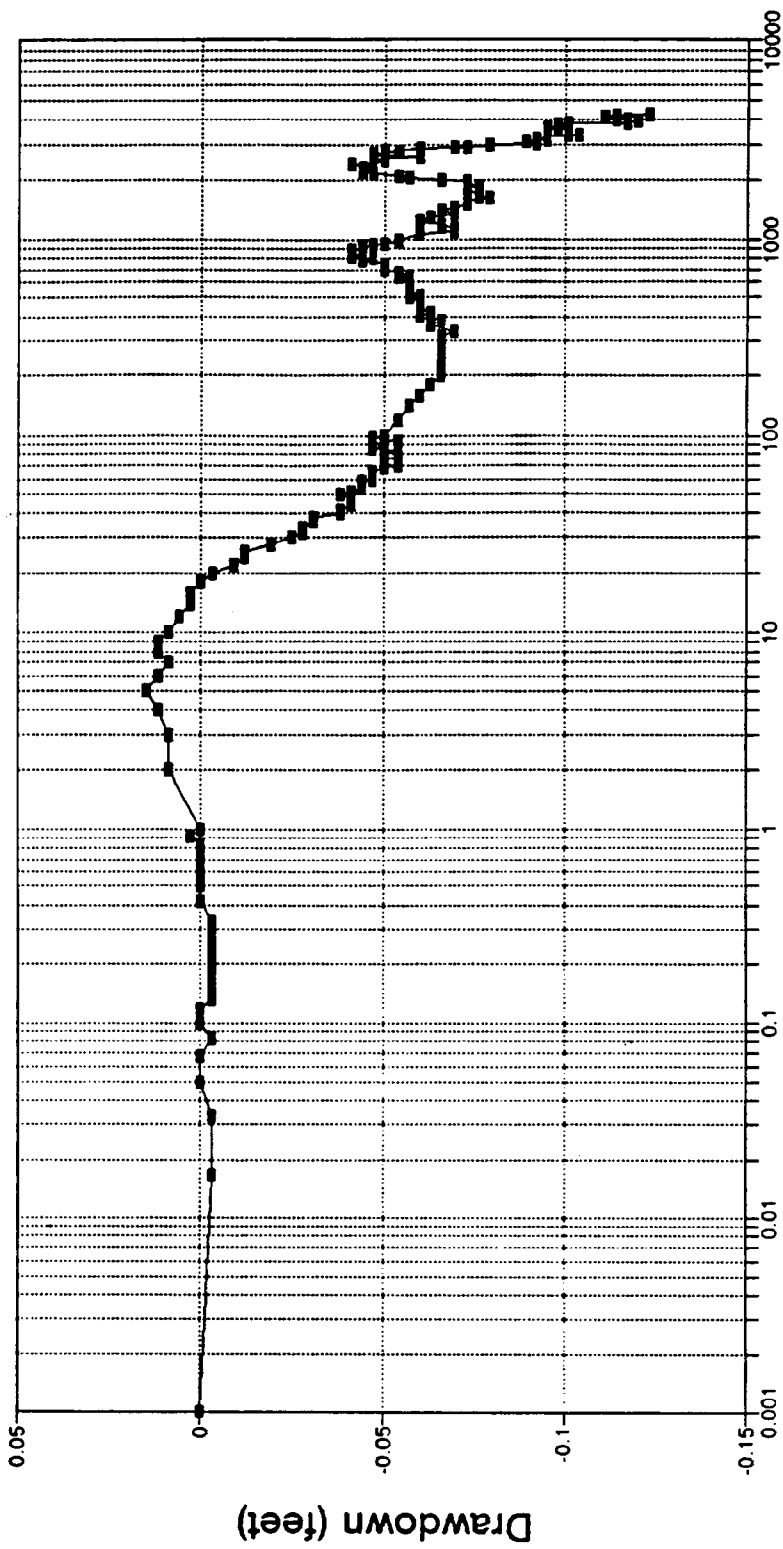


**Pump Test 2**  
Bethpage NWIRP





Pump Test 2  
Bethpage NWIRP

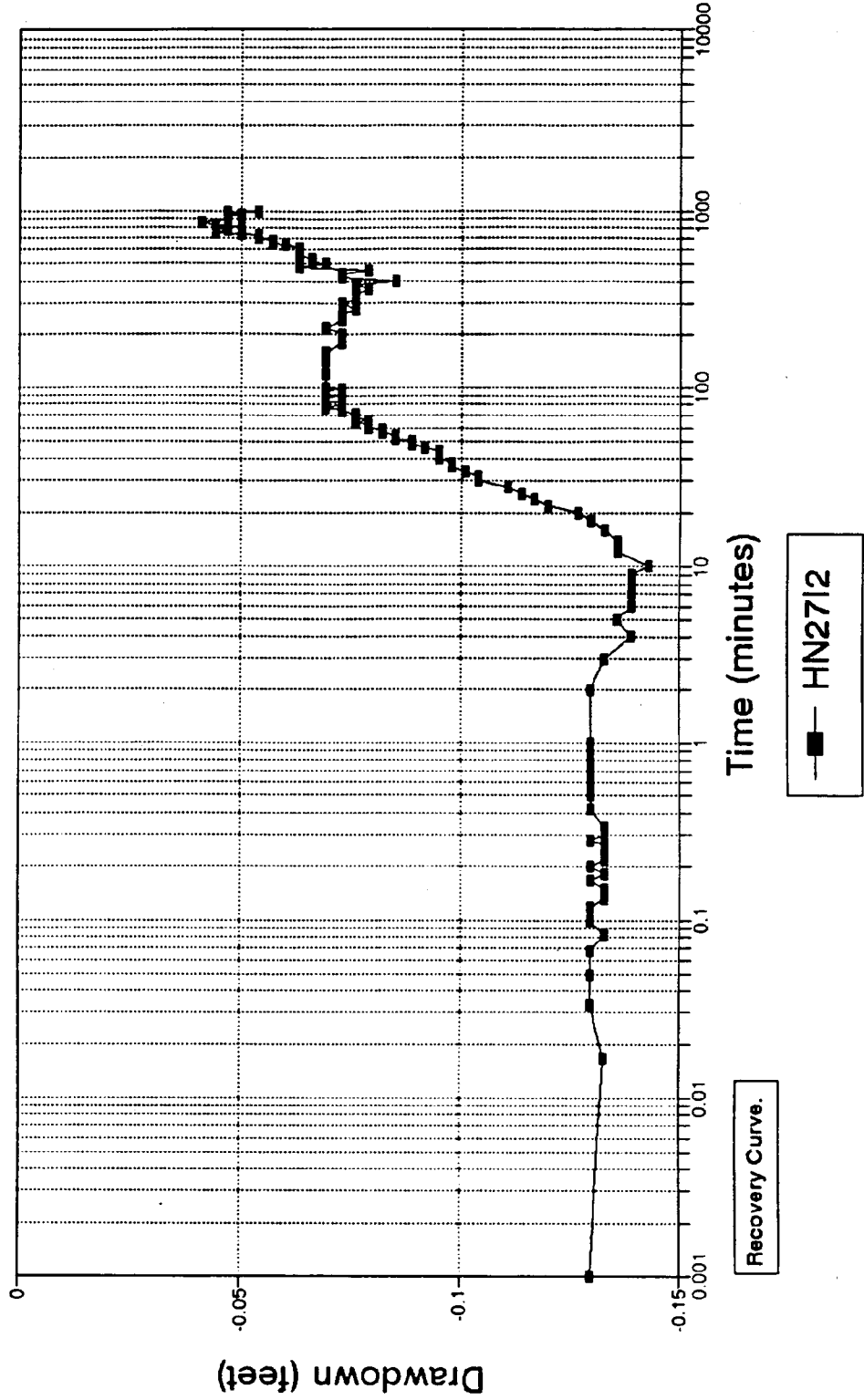


Note: PW-11 pumping at 890 gpm.

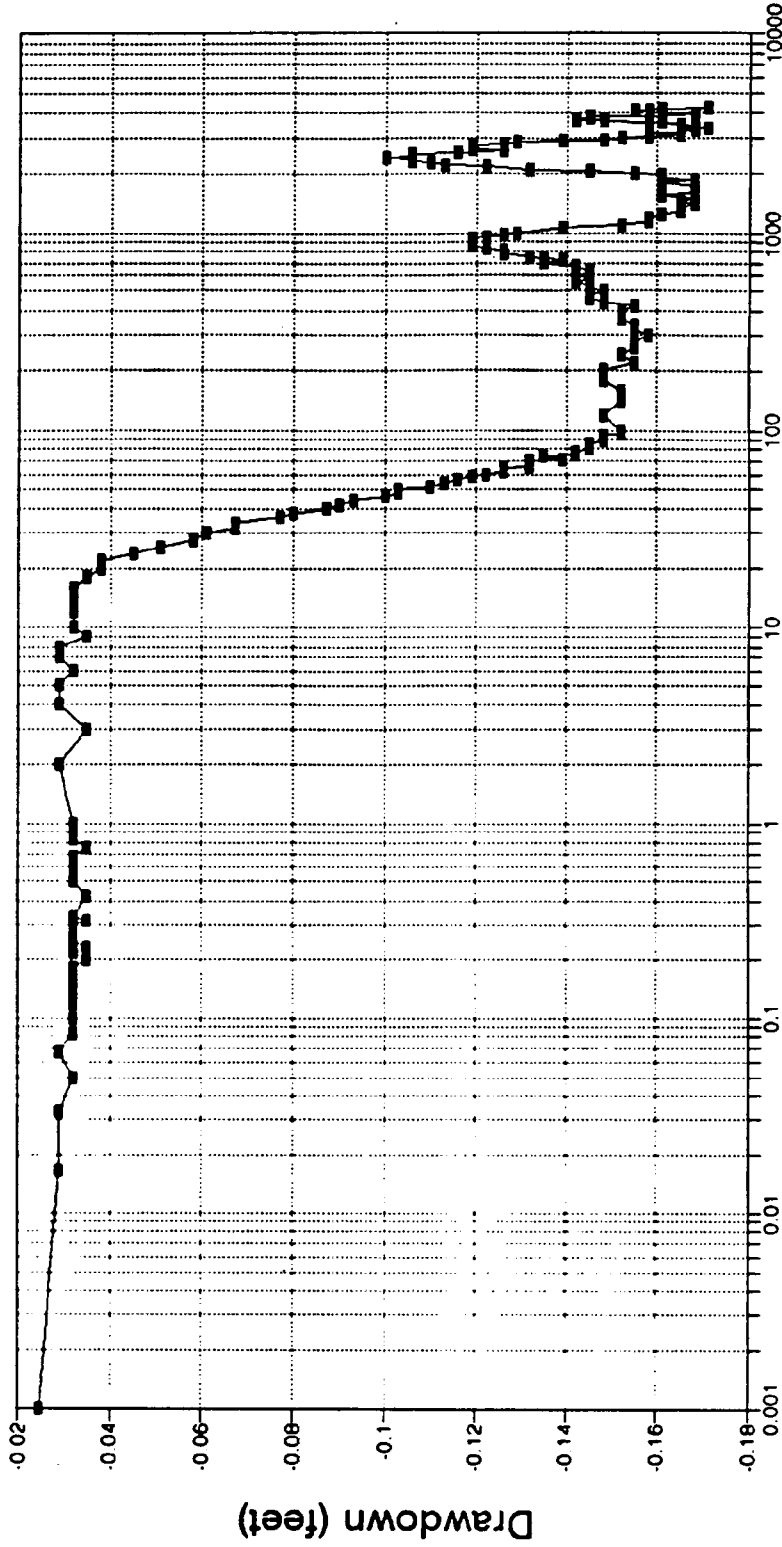
Time (minutes)

—■— HN2712

**Pump Test 2**  
Bethpage NWIRP



**Pump Test 2**  
Bethpage NWIRP

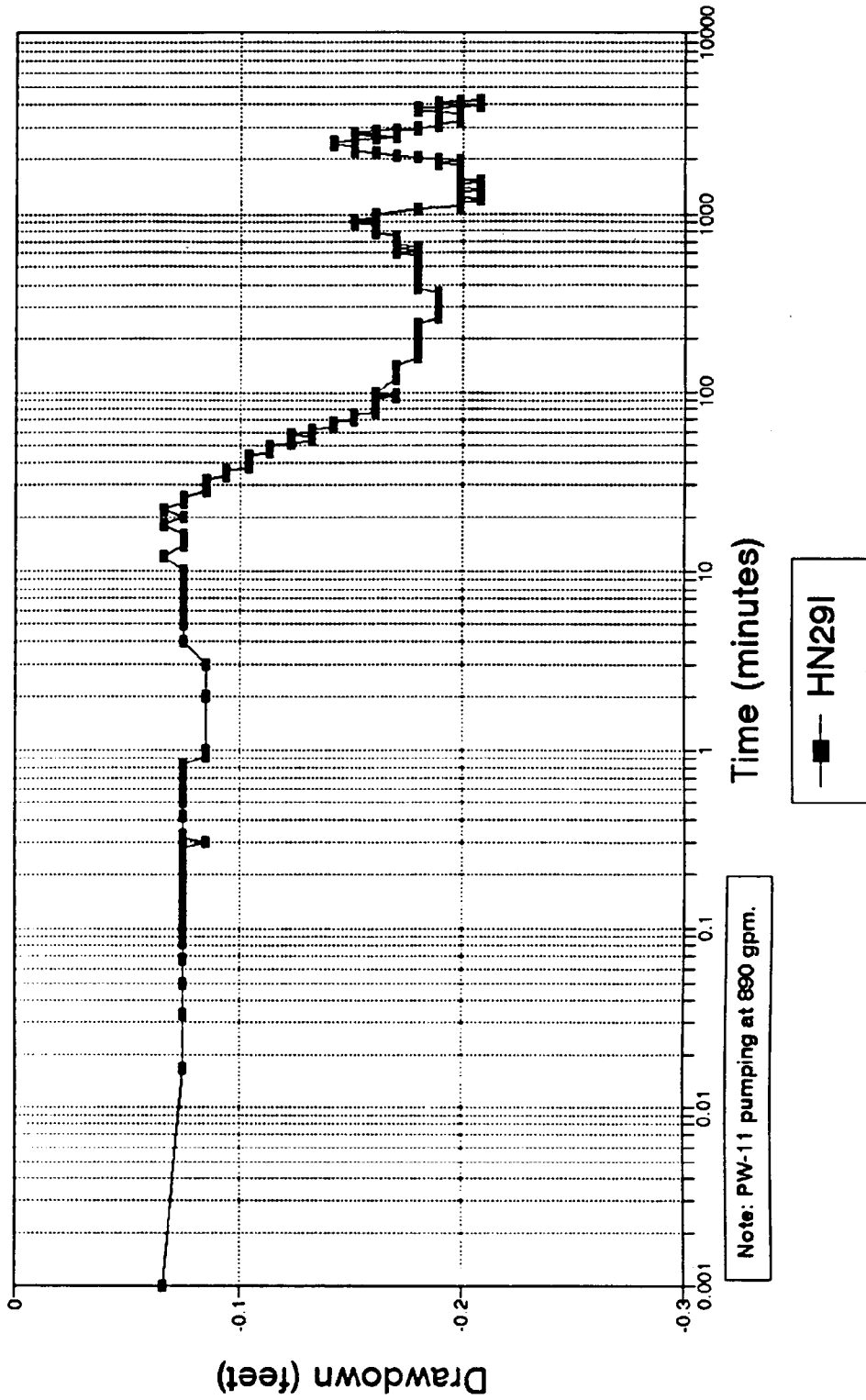


Time (minutes)

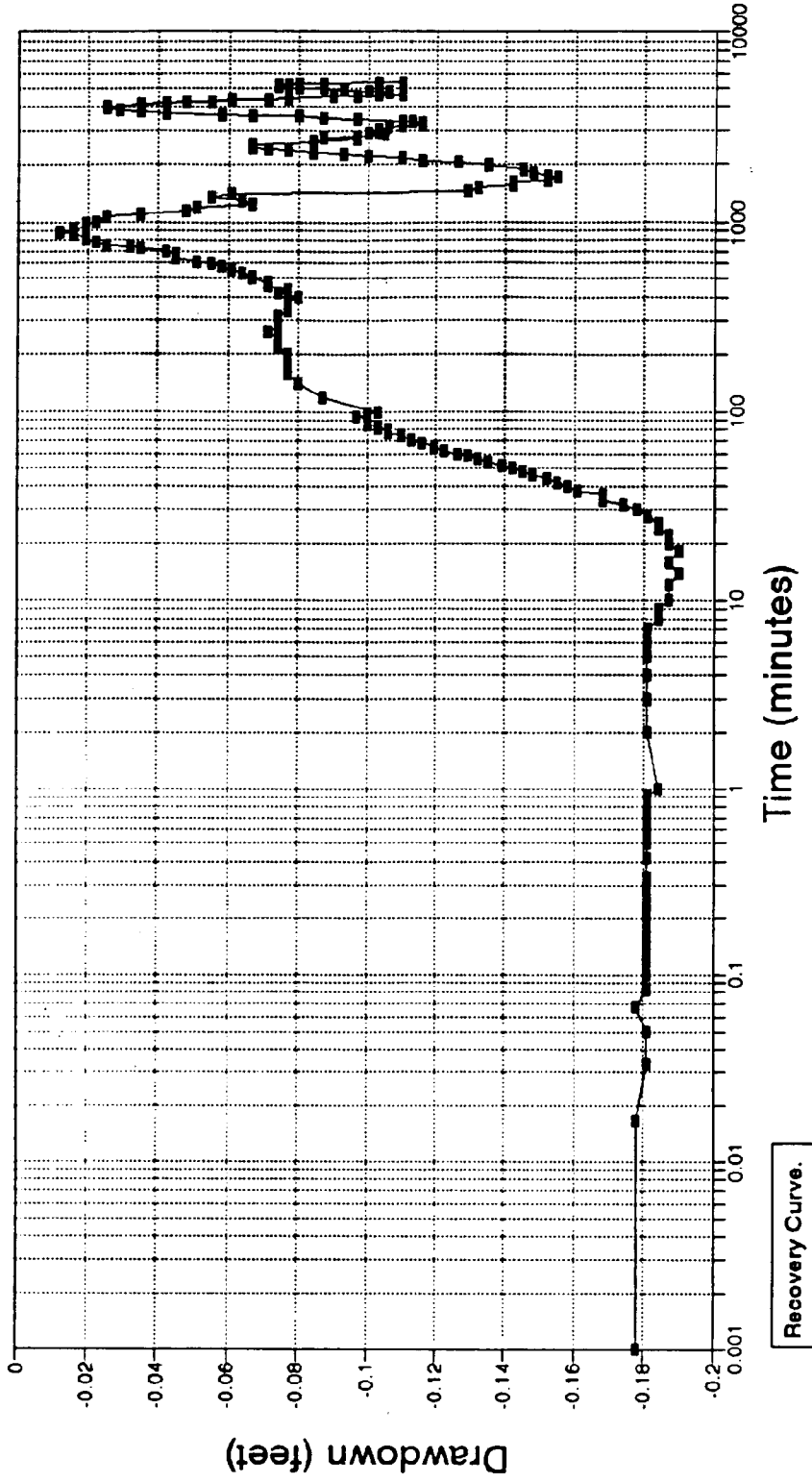
Note: PW-11 pumping at 890 gpm.

—■— HN281

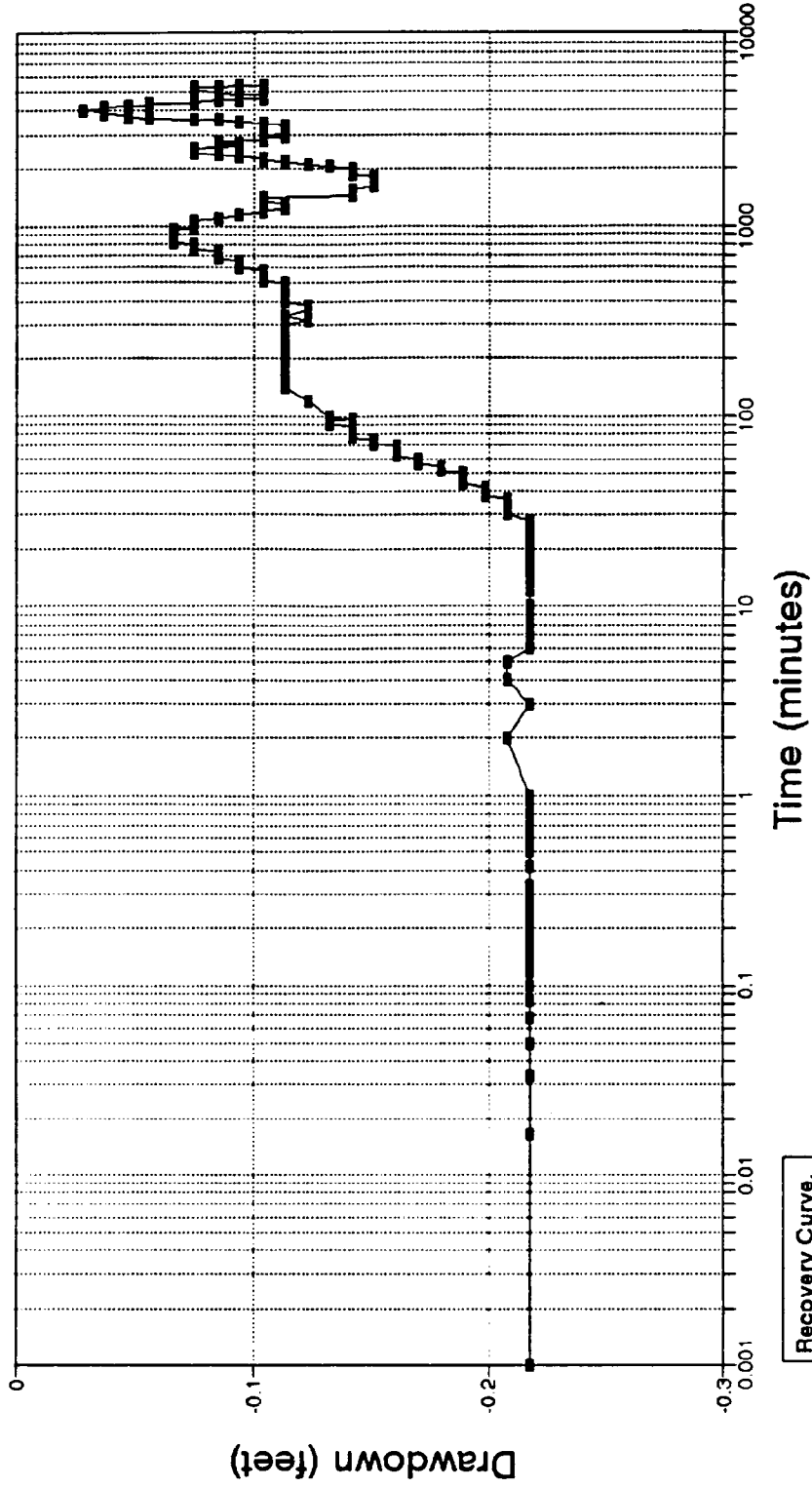
**Pump Test 2**  
Bethpage NWIRP



Pump Test 2  
Bethpage NWIRP



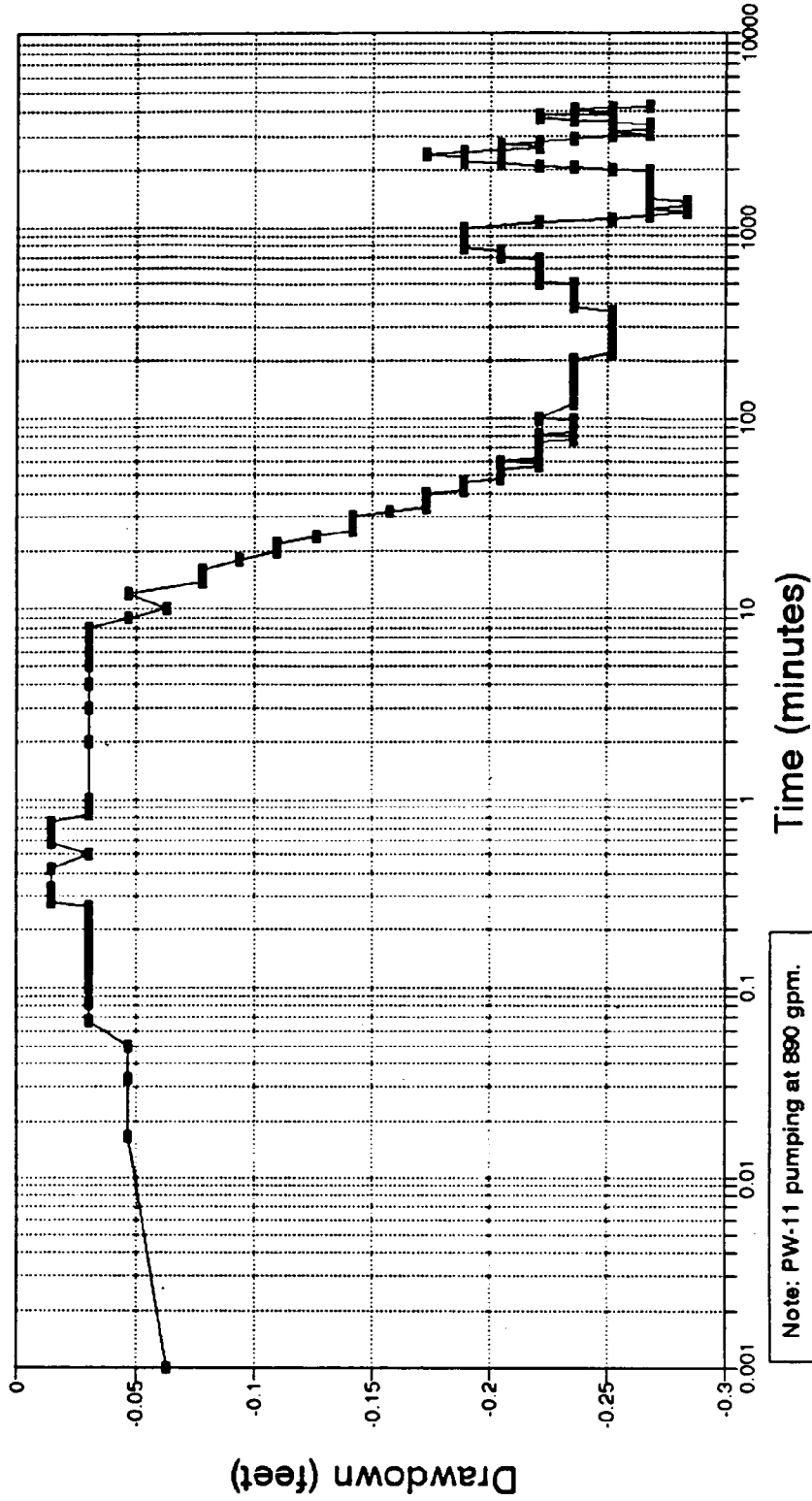
**Pump Test 2**  
Bethpage NWIRP



Recovery Curve.

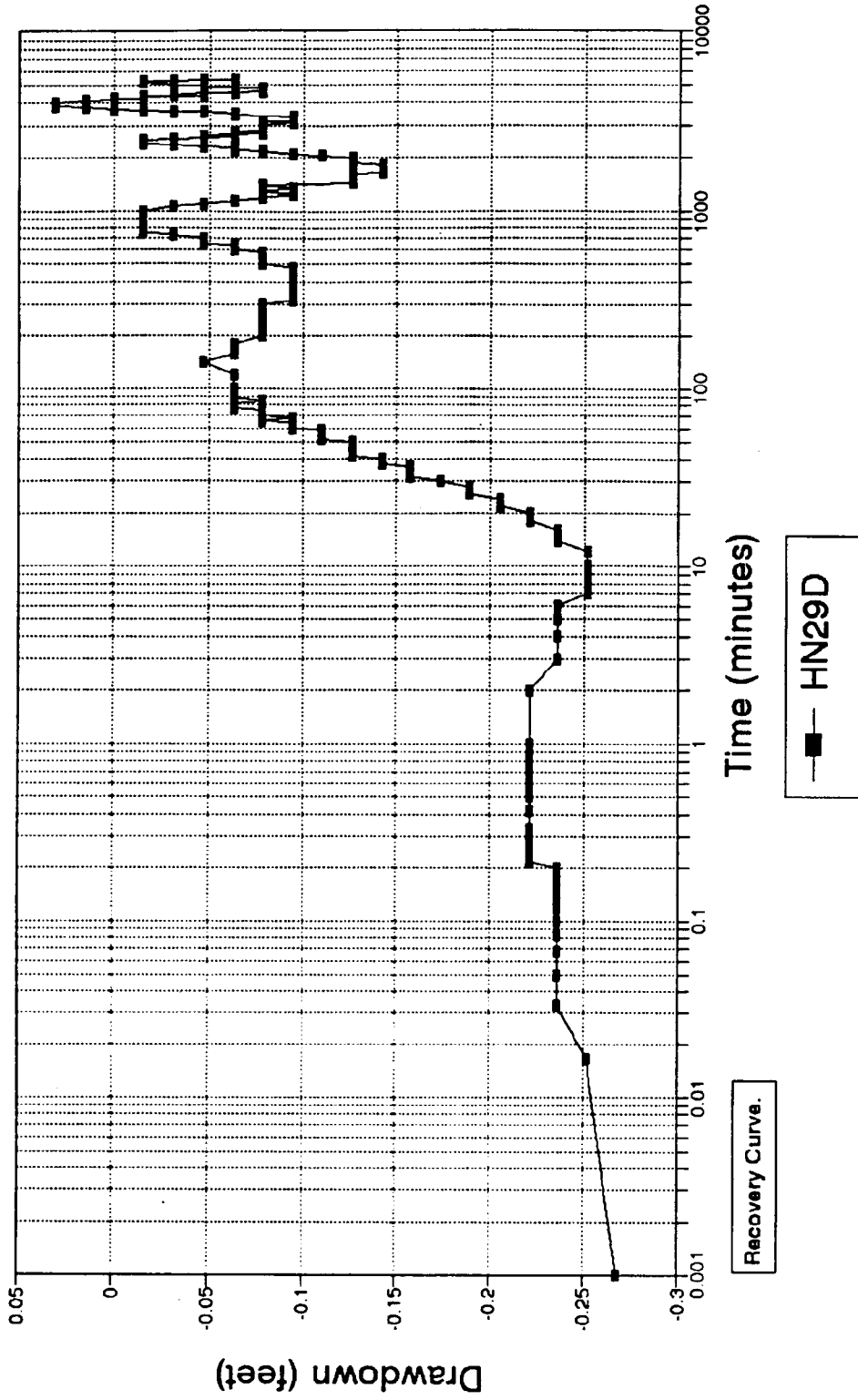
■ — HN29I

**Pump Test 2**  
Bethpage NWIRP



—■— HN29D

Pump Test 2  
Bethpage NWIRP





**BETHPAGE PUMPING TEST #1 AND #2:**

**PUMPING TEST CALCULATIONS**

46 5490  
 CORRECTED FOR PARTIAL PENETRATION

TRANSMISSIVITY  
 $M(h_0-h) = (1.95 - 0.2) \cdot 1.75$   
 $Q = 418 \text{ GPM}$

$T = \frac{70 Q}{\Delta(h_0-h)}$

$T = \frac{70 \cdot 418}{105 \cdot 1.75}$

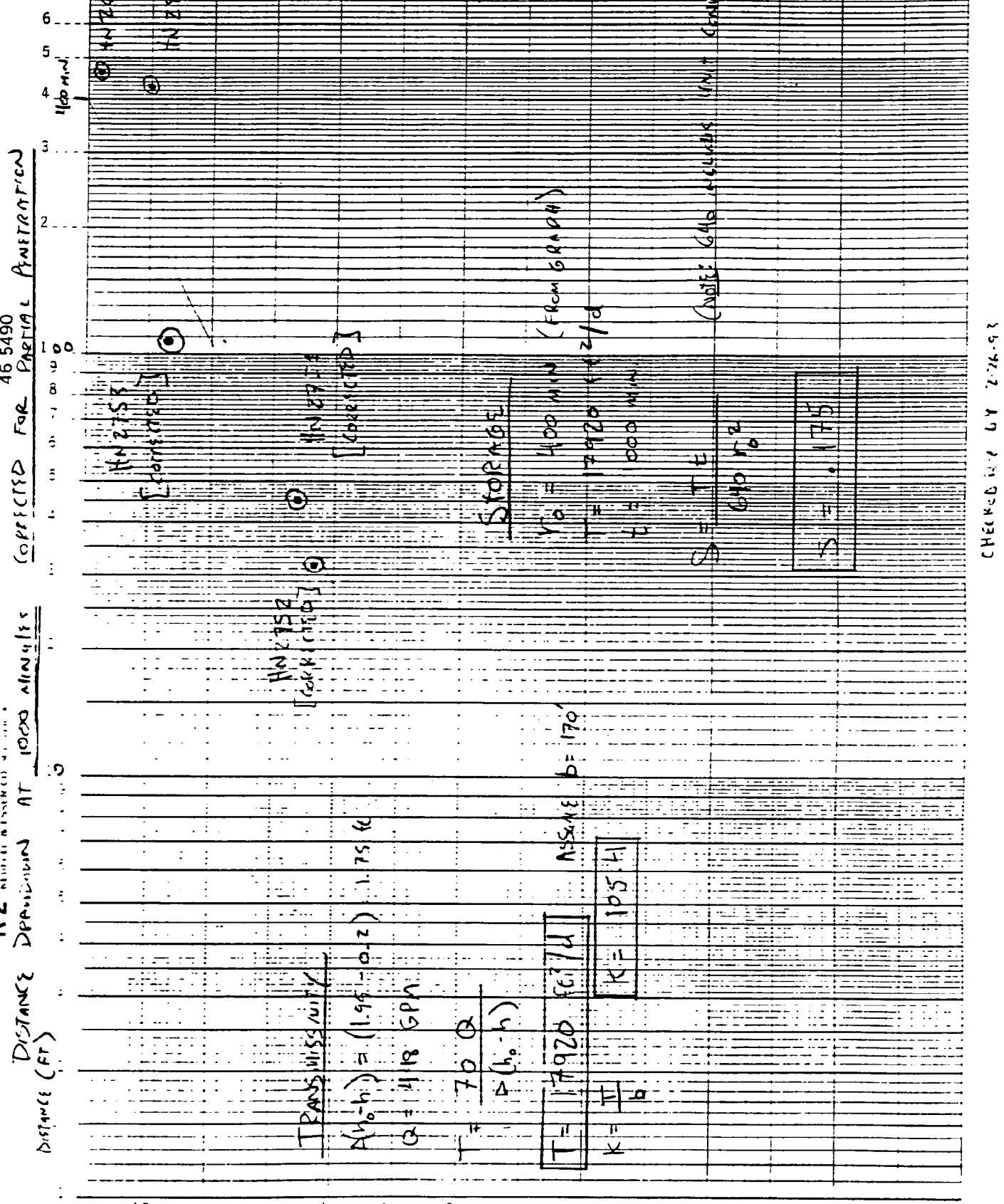
$T = 17920 \text{ FC}^2/\mu$   
 $K = \frac{T}{b}$

ASSUME  $b = 170'$   
 $K = 105 \text{ ft}$

STORAGE  
 $V_0 = 400 \text{ MIN (FROM GRAPH)}$   
 $T = 17920 \text{ FC}^2/\mu$   
 $H = 1000 \text{ MIN}$

$S = T F$   
 $640 \text{ FT}^2$   
 $S = .175$

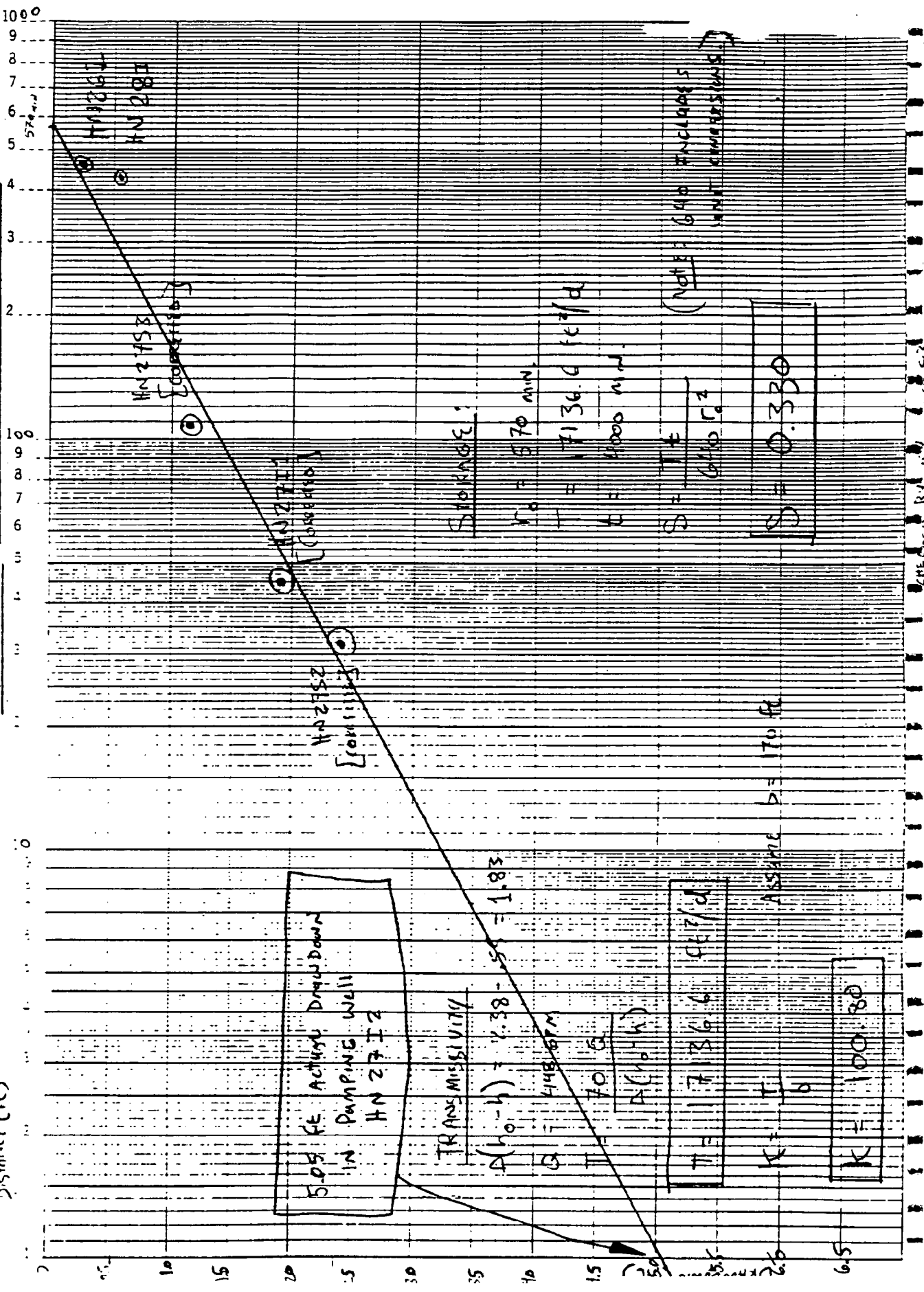
(NOTE 640 SQUARE FEET)



**BETHABE PUMP TEST # 1**  
 REPLY TO BETHABE PUMP TEST # 1

46 5490  
 DISTANCE DEPENDANT AT 1000 GAL/DAYS - CORRECTED FOR PUMP PENETRATION

Distance (ft)



5.05 FE Actual Drawdown  
 IN PUMPING WELL  
 HN 2712

TRANSMISSIVITY

$(h_0 - h) = 6.38 - 5.5 = 1.83$

$Q = 448 \text{ GPM}$

$T = 70 \text{ G}$

$A(h_0 - h)$

$T = 17136.6 \text{ ft/d}$

$K = 100.80$

Assume  $b = 170 \text{ ft}$

$S = 0.330$

(NOTE: 640 INCREASES  
 IN PUMP PENETRATION)

STORAGE:

$S_0 = 570 \text{ MIN.}$

$T = 17136.6 \text{ ft/d}$

$b = 1000 \text{ MIN.}$

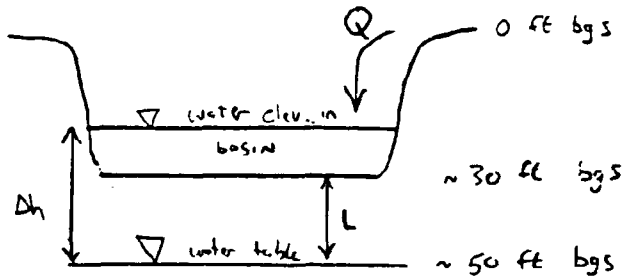
$S = \frac{T \cdot b}{640 \text{ G}^2}$

$K = 100.80$

CLIENT:	FILE NO.: 1953	BY: PEN	PAGE OF
SUBJECT: Bethpage Pumping Test #1	CHECKED BY:	DATE: 2/22/93	

ESTIMATE OF VERTICAL Conductivity FROM RECHARGE BASIN DATA:

Method from Holtz - Kovacs, 1981, Pg. 206-207.



$$K = \frac{\Delta Q L}{\Delta h A t}$$

$$\Delta Q = \text{Change in flow into basin} = 448 \text{ gpm (From Kv2?I?)} \\ = 86246 \text{ ft}^3/\text{d}$$

$$L = 20 \text{ ft}$$

$$\Delta h = 0.8 \text{ ft}$$

$$A = \text{Length} \times \text{width} = 370 \times 320' = 92300 \text{ ft}^2$$

$$t = 1 \text{ day}$$

$$K = \frac{(86246 \text{ ft}^3/\text{d})(20 \text{ ft})}{(0.8 \text{ ft})(92,300 \text{ ft}^2)(1 \text{ d})} = \boxed{23.36 \text{ ft/d}}$$

CLIENT:	FILE NO.: 1953	BY: PLN	PAGE 1 OF 3
SUBJECT: BETH PAGE Pump TEST #1		CHECKED BY: JAY	DATE: 2/18/93

NEUMAN CURVE FITTING - EARLY TIME FOR HN 27I<sub>1</sub>

HORIZONTAL HYDRAULIC CONDUCTIVITY KRUSIMAN 1989, Equation 5.2

$$S = \frac{Q}{4\pi K_h D} W(u_A, B)$$

$$Q = 448 \text{ gpm} = 86246.0 \text{ ft}^3/\text{d}$$

$$D = 170 \text{ ft}$$

$$S = 1.0 \text{ ft (FROM EARLY MATCH-POINT)}$$

$$W(u_A, B) = 1 \text{ (FROM EARLY MATCH-POINT)}$$

$$K_h = \frac{Q}{4\pi D S} W(u_A, B)$$

$$K_h = \frac{86246.0 \text{ ft}^3/\text{d}}{4\pi (170 \text{ ft})(1.0 \text{ ft})} = \boxed{40.37 \text{ ft/d}}$$

STORAGE KRUSIMAN, 1989, Equation 5.3

$$u_A = \frac{r^2 S_A}{4 K_h D t}$$

$$r = 45 \text{ ft}$$

$$D = 170 \text{ ft}$$

$$t = .45 \text{ min.} = .0003 \text{ d (FROM EARLY MATCH-POINT)}$$

$$u_A = 1.0 \text{ (FROM EARLY MATCH-POINT)}$$

$$K_h = 40.37 \text{ ft/d}$$

$$S_A = u_A \frac{4 \cdot K_h D t}{r^2}$$

$$S_A = \frac{1.0 (4) (40.37 \text{ ft/d}) (170 \text{ ft}) (.0003 \text{ d})}{(45 \text{ ft})^2}$$

$$\boxed{S_A = 0.0041}$$

CLIENT:	FILE NO.: 1953	BY: PLW	PAGE 2 OF 3
SUBJECT: Bethpage Pump Test #1		CHECKED BY: DAY	DATE: 2/18/93

NEUMAN CURVE FITTING FOR HN27J1

VERTICAL HYDRAULIC CONDUCTIVITY : KRUSEMAN EQUATION 5.6

$$\beta = \frac{r^2 k_v}{D^2 k_h}$$

$$r = 45 \text{ ft}$$

$$D = 170 \text{ ft}$$

$$\beta = 0.01 \text{ (FROM CURVE MATCH)}$$

$$k_v = \frac{\beta D^2 k_h}{r^2}$$

$$k_h \text{ early} = 40.37 \text{ ft/d}$$

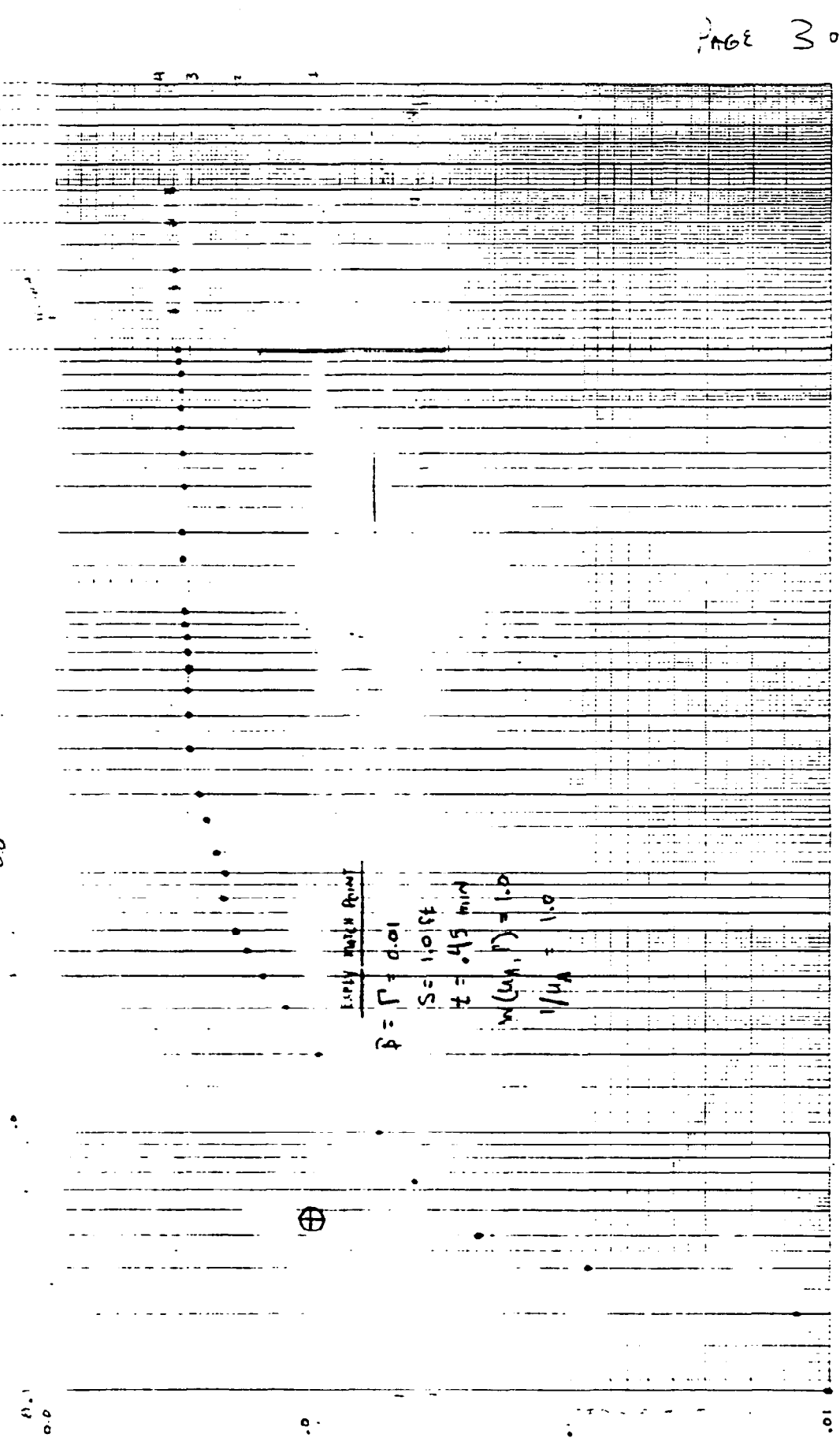
$$k_v \text{ early} = \frac{(0.01)(170 \text{ ft})^2 (40.37 \text{ ft/d})}{(45 \text{ ft})^2}$$

$k_v \text{ early} = 5.76 \text{ ft/d}$
---

46/5022

# HN 2711 TIME - DRAINAGE PLOT (PUMP TEST 45)

TIME (MINUTES)



NOTE: Using Newman, 1975 type curve for delayed gravity drainage.

CLIENT:	FILE NO.: 1953	BY: PLN	PAGE 1 OF 3
SUBJECT: BETHPAGE Pump TEST #1		CHECKED BY: DAY	DATE: 2/25/13

NEUMAN CURVE FITTING - EARLY TIME FOR HW 2752  
CORRECTED FOR PARTIAL PENETRATION.

HORIZONTAL HYDRAULIC CONDUCTIVITY : Kruseman 1989, Equation 5.2

$$S = \frac{Q}{4\pi k_h D}$$

$$Q = 448 \text{ gpm} = 86246.0 \text{ ft}^3/\text{d}$$

$$D = 170 \text{ ft}$$

$$S = .98 \text{ ft (From EARLY match point)}$$

$$W(u_a, \beta) = 1$$

$$k_h = \frac{Q}{4\pi D S}$$

$$k_h = \frac{86246.0 \text{ ft}^3/\text{d}}{4\pi (170 \text{ ft})(.98 \text{ ft})} =$$

$41.19 \text{ ft/d}$

STORAGE : Kruseman, 1989 Equation 5.3

$$u_a = \frac{r^2 S_A}{4 k_h D t}$$

$$r = 31.5 \text{ ft}$$

$$D = 170 \text{ ft}$$

$$t = 2.8 \text{ min} = 0.0019 \text{ days (From EARLY match point)}$$

$$u_a = 1.0 \text{ (from EARLY match point)}$$

$$k_h = 41.19 \text{ ft/d}$$

$$S_A = \frac{u_a 4 k_h D t}{r^2}$$

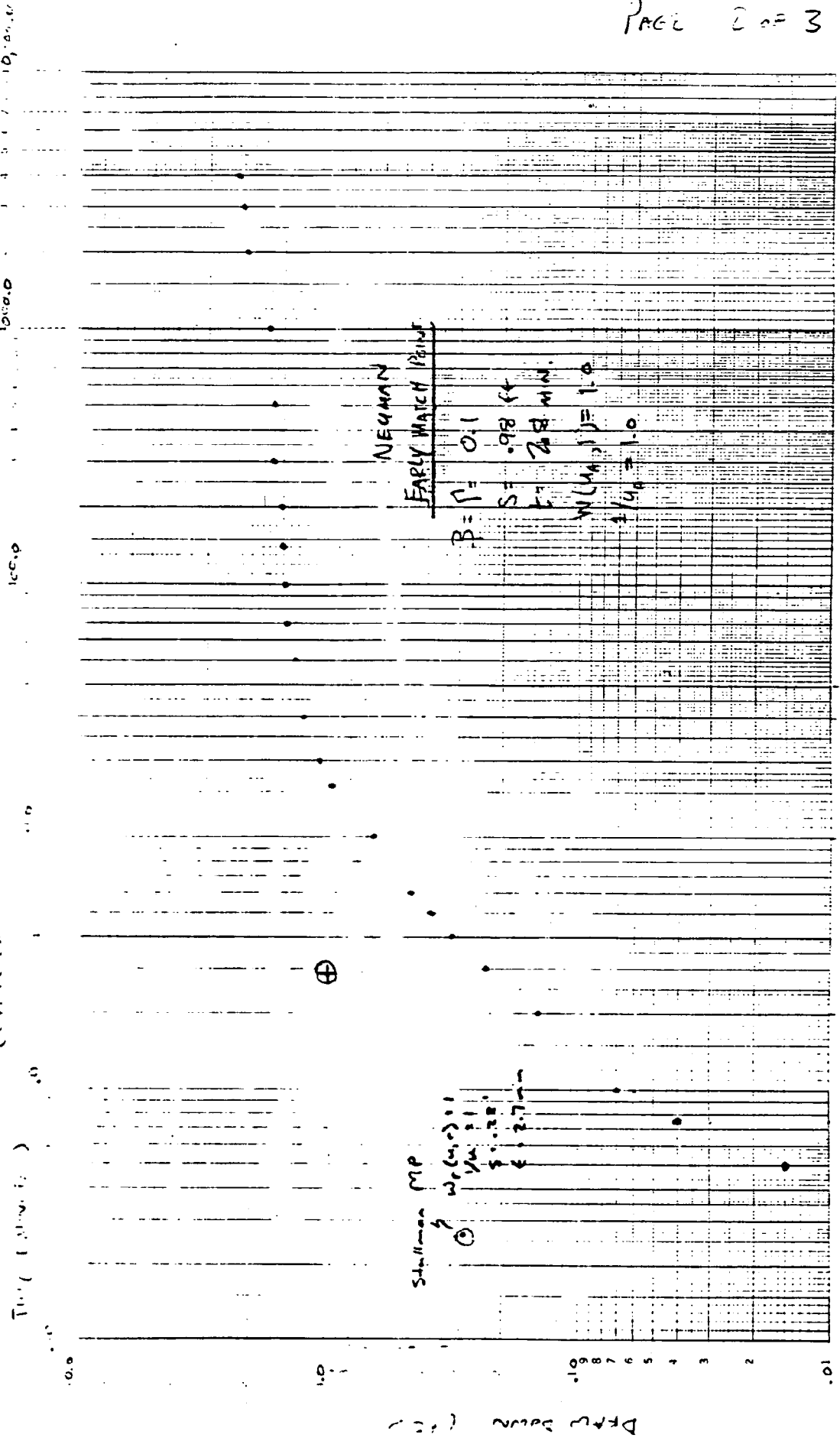
$$S_A = \frac{1.0 (4) (41.19 \text{ ft/d})(170 \text{ ft})(.0019 \text{ d})}{(31.5 \text{ ft})^2}$$

$S_A = 0.054$



HN2152 TIME - DRAWDOWN PLOT (PUMP TEST #1)

CORRECTED FOR POTENTIAL EVAPORATION EFFECTS



NOTE: NEUMAN CURVES FOR UNCONFINED AQUIFER WITH DELAYED GRAVITY RESPONSE USES EARLY CURVE MATCH.

CLIENT: NAW	FILE NO.: 1953	BY: PLN	PAGE 1 OF 3
SUBJECT: BETHPAGE Pump Test #1		CHECKED BY: DAY	DATE: 2/24/93

NEUMAN CURVE FITTING : EARLY TIME For HN2753  
CORRECTED FOR PARTIAL PENETRATION EFFECTS

HORIZONTAL HYDRAULIC CONDUCTIVITY : Kruseman, 1989, Equation 5.2

$$S = \frac{Q}{4\pi K_h D}$$

$$Q = 448 \text{ gpm} = 86246.0 \text{ ft}^3/\text{d}$$

$$D = 170 \text{ ft}$$

$$S = 0.52 \text{ ft (From EARLY match point)}$$

$$W(u_A, \beta) = 1 \text{ (From EARLY match point)}$$

$$K_h = \frac{Q}{4\pi D S}$$

$$K_h = \frac{86246.0 \text{ ft}^3/\text{d}}{4\pi (170 \text{ ft})(0.52 \text{ ft})} = \boxed{77.64 \text{ ft/d}}$$

STORAGE Kruseman 1989 Equation 5.3

$$u_A = \frac{r^2 S_A}{4 K_h D t}$$

$$r = 108.5 \text{ ft}$$

$$D = 170 \text{ ft}$$

$$t = 14.0 \text{ min} = 0.0097 \text{ d (From EARLY match point)}$$

$$u_A = 1.0 \text{ (From EARLY match point)}$$

$$K_h = 77.64 \text{ ft/d}$$

$$S_A = \frac{u_A 4 K_h D t}{r^2}$$

$$S_A = \frac{(1.0)(4)(77.64 \text{ ft/d})(170 \text{ ft})(0.0097 \text{ d})}{(108.5 \text{ ft})^2}$$

$$\boxed{S_A = 0.044}$$

CLIENT:	FILE NO.: 1953	BY: PLN	PAGE 3 OF 3
SUBJECT: ZETHORGE Pump TEST #1		CHECKED BY:	DATE: 2/23/93

TIME -DRAW DOWN DATA FOR HN275Z, CORRECTED FOR PARTIAL PENETRATION EFFECTS

TIME into TEST (min)	UNCORRECTED DRAWDOWN	PARTIAL PENETRATION correction	CORRECTED DRAWDOWN (ft)	PTZ.bas INPUTS
0.3	0	0		Production well discharge = 448 gpm Aq. Stenativity = 0.1 TIME = _____ min DP with fill Penetration = 1.0 ft Horiz. hydraulic conductivity = 580 gpd/ft <sup>2</sup> Vert. hyd. conductivity = 72 gpd/ft <sup>2</sup> radial distance to well = 31.5 ft Aq. Thickness = 170 ft Dist. to lateral Prod. well = 85 ft Distance to top Prod. well = 55 ft Dist to bottom a- obs. well = 10 ft Dist. to top obs well = 0 ft
0.5	0.015	0	0.015	
0.75	0.04	0	0.04	
1.0	0.06	0.01	0.07	
2.0	0.087	.00	.147	
3.0	0.11	.13	.24	
4.0	0.119	.20	.319	
5.0	0.129	.26	.389	
6.0	0.14	.33	.47	
10.0	0.126	.54	.666	
16	.165	.81	.975	
20	0.18	.91	1.09	
30	0.203	1.04	1.24	
50	0.24	1.15	1.39	
70	0.268	1.17	1.44	
100	0.29	1.20	1.49	
140	0.323	1.19	1.51	
200	0.37	1.16	1.53	
300	0.433	1.12	1.55	
500	0.55	1.09	1.64	
700	0.647	1.02	1.73	
1000	.77	1.08	1.85	
2000	1.06	1.08	2.14	
3000	1.23	1.02	2.31	
4000	1.31	1.08	2.39	

Notes: Partial Penetration correction determined using PTZ.bas Program, WALTON, 1985 -

CLIENT: NAUy	FILE NO.: 1953	BY: PCN	PAGE 2 OF 3
SUBJECT: BERTPAGE Pump TEST #1		CHECKED BY:	DATE: 2/24/93

HN2753 CORRECTION FOR PARTIAL PENETRATION

TIME (min)	MEASURED DRAWDOWN	CORRECTION (FE)	CORRECTED DRAWDOWN
0.75	0	0	0
1.0	0.015	0	0.015
2.0	0.015	0	0.015
3.0	0.031	0	0.031
4.0	0.031	0	0.031
5.0	0.031	0	0.031
6.0	0.047	0	0.047
8.0	0.047	0.01	0.057
10.0	0.047	0.01	0.057
12	0.063	0.01	0.073
16	0.078	0.03	0.108
20	0.094	0.05	0.144
30	0.094	0.10	0.194
40	.11	.12	.23
60	0.126	.19	.316
100	0.142	.21	.352
140	0.173	0.19	.363
200	0.205	0.13	.375
300	0.268	0.14	.408
400	0.299	0.13	.429
900	0.347	0.12	.467
600	0.374	0.12	.514
700	0.426	0.12	.546
1000	0.520	0.12	.64
2000	0.773	0.11	.873
3000	0.931	.11	1.04
4000	1.01	0.11	1.12

INPUT FOR PTZ PROGRAM

Discharge = 448 gpm  
 Storage = 0.1  
 $K_h = 580 \text{ gal/ft}^2$   
 $K_v = 72 \text{ gal/ft}^2$   
 distance = 108.5  
 aqu. thickness  
 bot. prod. well = 85  
 top. prod. well = 55  
 bot. obs. well = 10  
 Top obs well = 0

10/5/82

# HNZ753 TIME-DRAWDOWN PLOT (PUMP TEST #1) CORRECTED FOR PARTIAL PENETRATION EFFECTS

1000.0 100000.0

TIME (MIN)

0.0

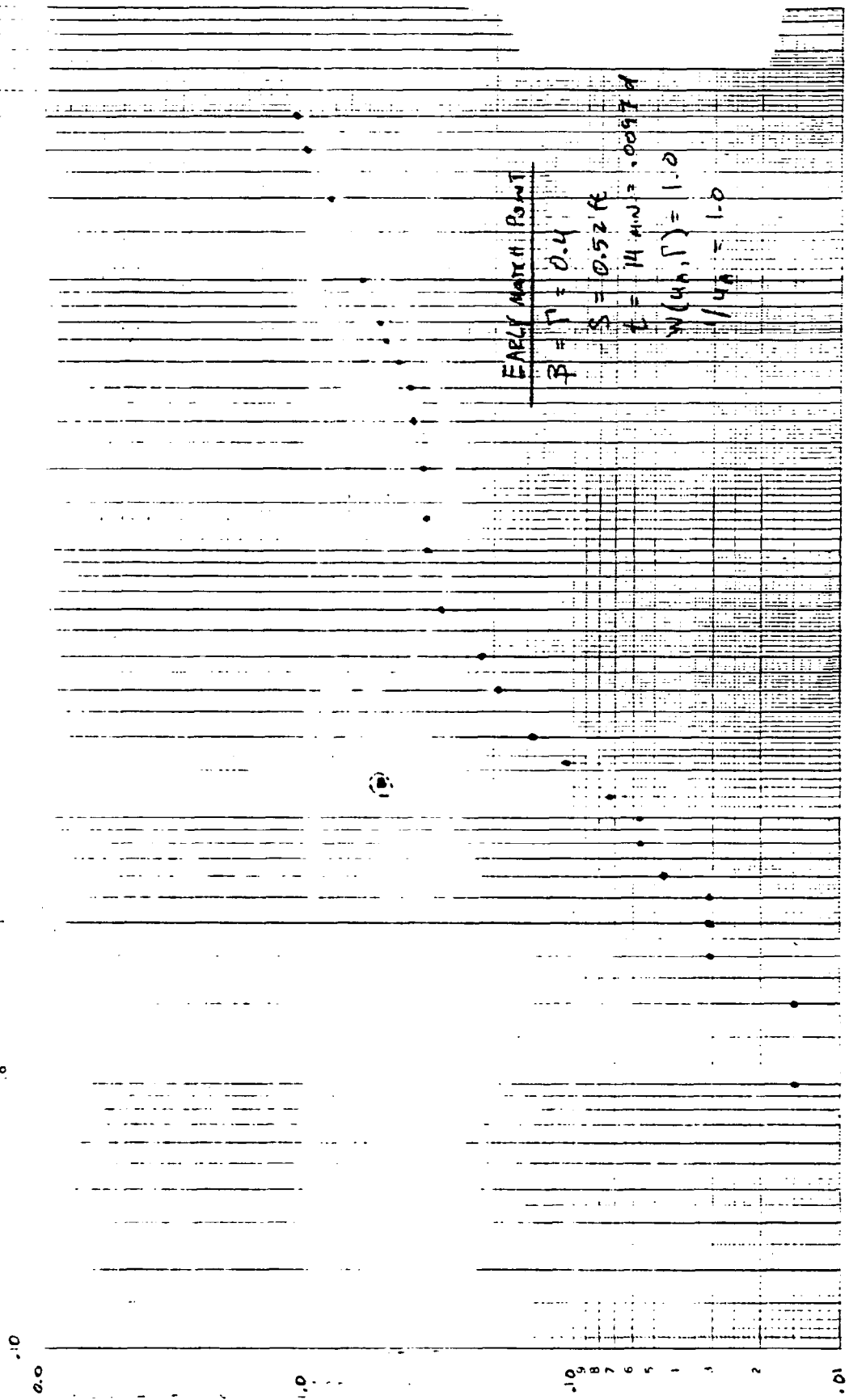
100

1000

10000

100000

1000000



CLIENT:	FILE NO.: 1953	BY: PEN	PAGE 1 OF 2
SUBJECT: BETHPAGE Pump TEST #1		CHECKED BY: NUS	DATE: 2-19-93

NEUMAN CURVE FITTING - EARLY TIME FOR  $HN 27I_1$ , CORRECTED FOR PARTIAL PENETRATION EFFECTS.

HORIZONTAL HYDRAULIC CONDUCTIVITY - Kruxman 1989, Equation 5.2

$$S = \frac{Q}{4\pi k_h D} W(u_A, \beta)$$

$$Q = 448 \text{ gpm} = 86246.0 \text{ ft}^3/\text{d}$$

$$D = 170 \text{ ft}$$

$$S = 1.2 \text{ ft (From early match point)}$$

$$W(u_A, \beta) = 1 \text{ (From early match point)}$$

$$\text{TYPE CURVE} = 0.1 \text{ ft}$$

$$k_h = \frac{Q}{4\pi D S} W(u_A, \beta)$$

$$k_h = \frac{86246 \text{ ft}^3/\text{d}}{4\pi (170 \text{ ft})(1.2 \text{ ft})} (1) = \boxed{33.64 \text{ ft/d}}$$

STORAGE: Kruxman, 1989 Equation 5.3

$$u_A = \frac{r^2 S_A}{4 k_h D t}$$

$$r = 45 \text{ ft}$$

$$D = 170 \text{ ft}$$

$$t = .54 \text{ min} = .0004 \text{ d (From early match)}$$

$$u_A = 1.0 \text{ (From early match)}$$

$$k_h = 33.64 \text{ ft/d}$$

$$S_A = u_A \frac{4 k_h D t}{r^2}$$

$$S_A = \frac{(1)(4)(33.64 \text{ ft/d})(170 \text{ ft})(.0004 \text{ d})}{(45 \text{ ft})^2}$$

$$\boxed{S_A = 0.0045}$$

HN 2771 TIME TEMPERATURE PLANT - Pump Test #1

PERCENTAGE PERCENTAGE

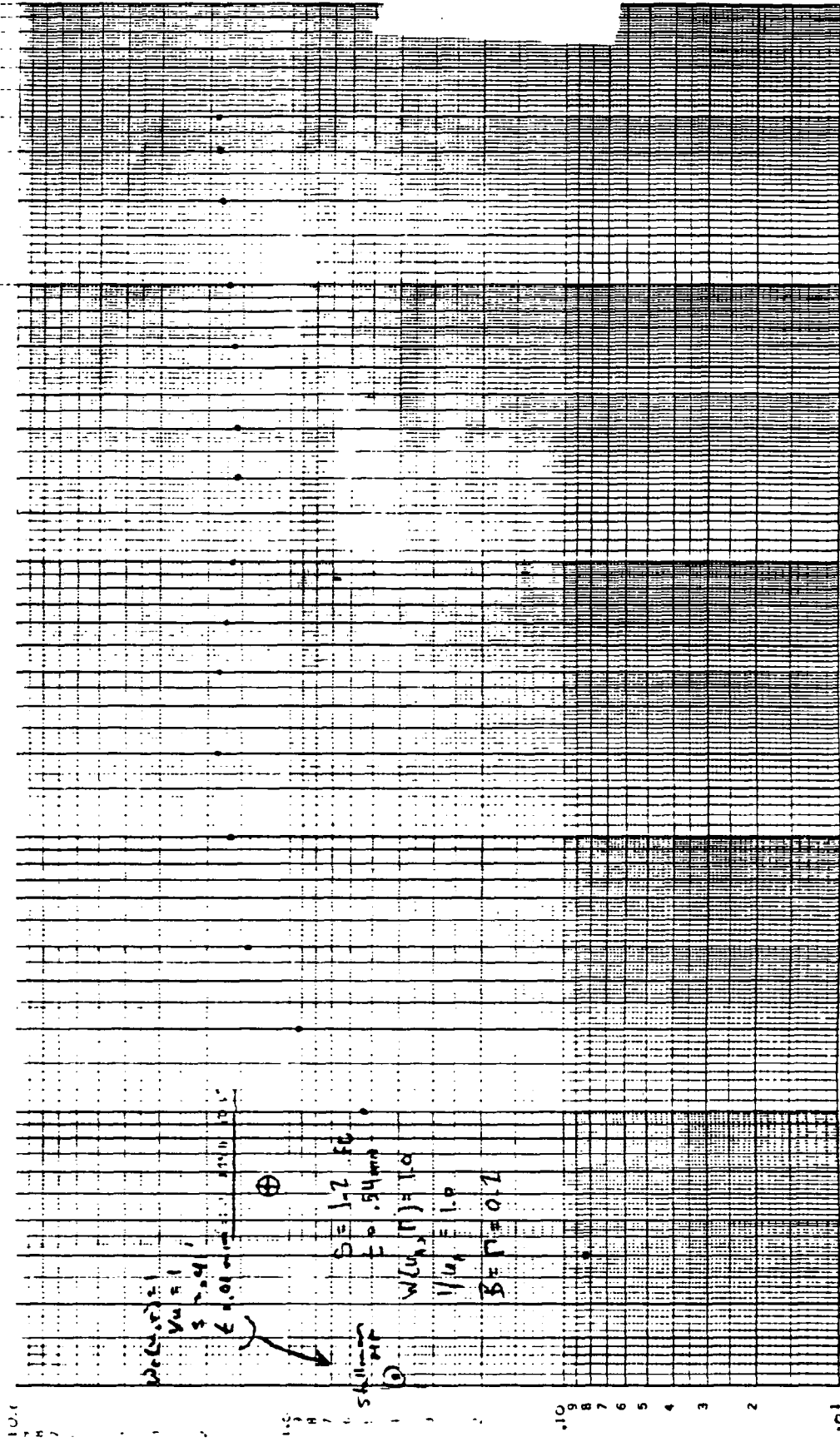
10000 2 3 4 5 6 7 8 9 100000

10000 2 3 4 5 6 7 8 9 100000

10000 2 3 4 5 6 7 8 9 100000

10000 2 3 4 5 6 7 8 9 100000

Time (min)



Drawn (12)

CLIENT:	FILE NO.: 1953	BY: PLN	PAGE 1 OF 3
SUBJECT: BETHPAGE Pump Test #1		CHECKED BY: SJC	DATE: 2/18/03

Neuman Curve - Fitting - EARLY TIME FOR HN28I

HORIZONTAL HYDRAULIC CONDUCTIVITY: KRUSEMAN equation 5.2

$$S = \frac{Q}{4\pi k_h D} W(u_A, B)$$

$$Q = 448 \text{ gpm} = 86246.0 \text{ ft}^3/\text{d}$$

$$D = 170 \text{ ft}$$

$$S = .65 \text{ ft (From early MATCH-POINT)}$$

$$W(u_A, B) = 1 \text{ (From early MATCH-POINT)}$$

$$k_h = \frac{Q}{4\pi D S} W(u_A, B)$$

$$k_h = \frac{86246.0 \text{ ft}^3/\text{d}}{4\pi (170 \text{ ft})(.65 \text{ ft})} (1.0) = \boxed{62.11 \text{ ft/d}}$$

STORAGE: KRUSEMAN equation 5.3

$$u_A = \frac{r^2 S_A}{4 K_h D t}$$

$$r = 425 \text{ ft}$$

$$D = 170 \text{ ft}$$

$$t = 7.4 \text{ min.} = 0.0051 \text{ days (MATCH-POINT)}$$

$$u_A = 1.0 \text{ (From early MATCH-POINT)}$$

$$S_A = u_A \frac{4 K_h D t}{r^2}$$

$$S_A = \frac{1.0 (4) (62.11 \text{ ft/d}) (170 \text{ ft}) (0.0051 \text{ d})}{(425 \text{ ft})^2}$$

$$\boxed{S_A = 0.0012}$$



CLIENT:	FILE NO.: 1953	BY: PWN	PAGE 2 OF 3
SUBJECT: Bethpage Pump Test # 1		CHECKED BY: SJC	DATE: 2/18/93

NEUMAN CURVE FITTING FOR HN 28I

VERTICAL HYDRAULIC CONDUCTIVITY: Kruseman equation 5.6

$$\beta = \frac{r^2 K_v}{D^2 K_h}$$

- r = 425 ft
- D = 170 ft
- $\beta = 0.4$  (From Match Points)
- $K_h = 62.11$  ft/d

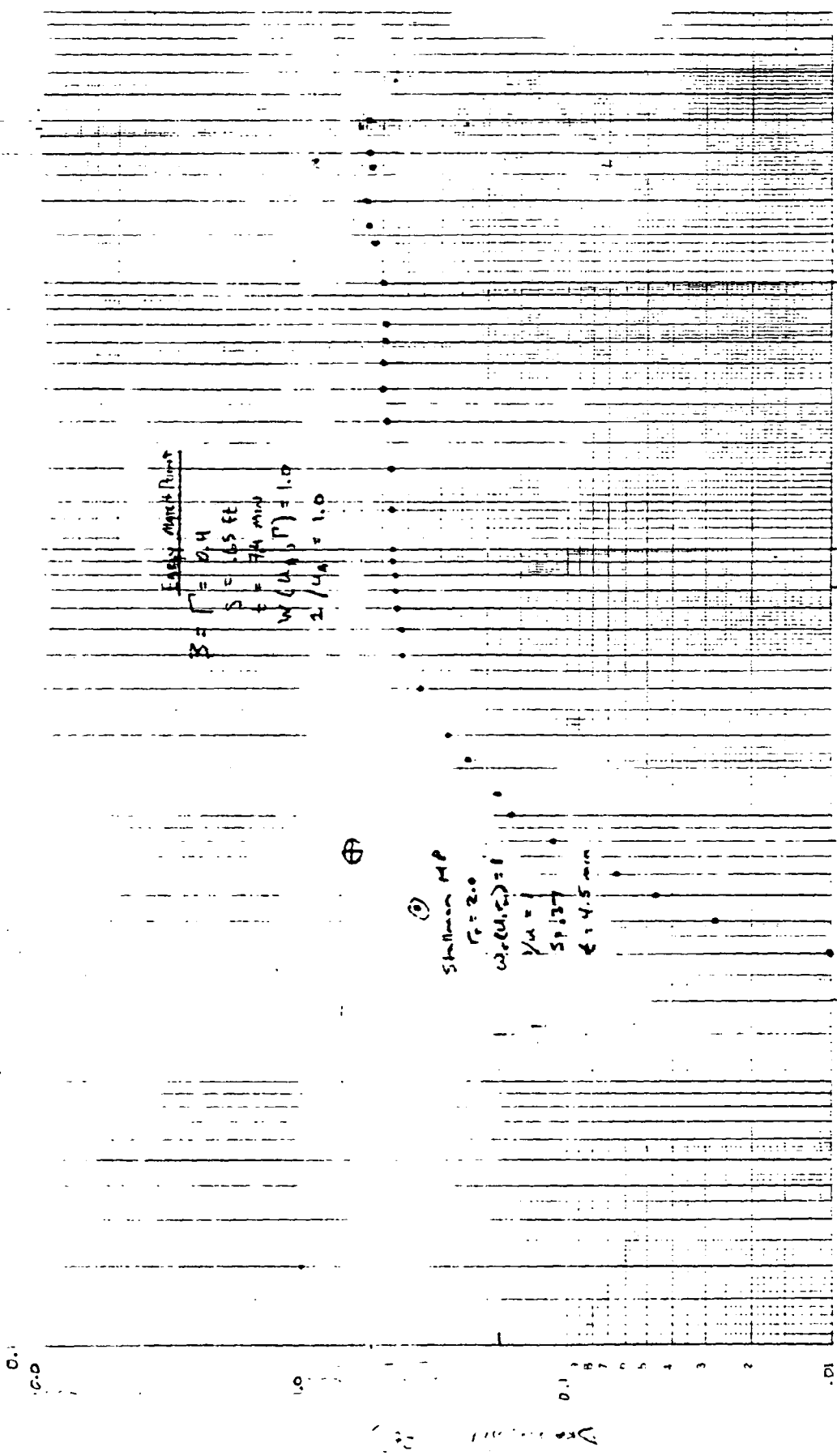
$$K_v = \frac{\beta D^2 K_h}{r^2} = \frac{0.4 (170 \text{ ft})^2 (62.11 \text{ ft/d})}{(425 \text{ ft})^2}$$

$K_v = 3.975 \text{ ft/d}$
----------------------------

467011

TIME DEPENDENT TEST (Pump Test #1)

1000.0 10,000.0



CLIENT:	FILE NO.: 1953	BY: PLN	PAGE 1 OF 3
SUBJECT: BETHPAGE Pump TEST #1		CHECKED BY: SJC	DATE: 2/18/93

NEUMAN CURVE FITTING - EARLY TIME FOR HN 26 I

HORIZONTAL HYDRAULIC CONDUCTIVITY : KRUSMAN 1989, Equation 5-2

$$S = \frac{Q}{4\pi k_h D} W(u_A, \beta)$$

Q = 448 gpm = 86246.0 ft<sup>3</sup>/d  
 D = 170 ft  
 S = .42 ft (From Early Match Point)  
 W(u<sub>A</sub>, β) = 1.0 (From Early Match Point)

$$k_h = \frac{Q}{4\pi D S} W(u_A, \beta)$$

$$k_h = \frac{86246.0 \text{ ft}^3/\text{d}}{4\pi (170 \text{ ft})(.42 \text{ ft})} = \boxed{96.12 \text{ ft/d}}$$

STORAGE KRUSMAN 1989 Equation 5.3

$$u_A = \frac{r^2 S_A}{4 k_h D t}$$

r = 520 ft  
 D = 170 ft  
 t = 6.8 min = 0.005 d (From Early Match Point)  
 u<sub>A</sub> = 1.0 (From early match point)  
 k<sub>h</sub> = 96.12 ft/d

$$S_A = u_A \frac{4 k_h D t}{r^2}$$

$$S_A = \frac{1.0 (4) (96.12 \text{ ft/d}) (170 \text{ ft}) (.005 \text{ d})}{(520 \text{ ft})^2}$$

$$\boxed{S_A = .0012}$$

CLIENT:	FILE NO.: 1953	BY: PLN	PAGE 2 OF 3
SUBJECT: Bethpage Pump Test #1		CHECKED BY: SJC	DATE: 2/18/93

NEUMAN CURVE FITTING FOR HN 26 I

VERTICAL Hydraulic Conductivity : KRUSEMAN Equation 5.6

$$\beta = \frac{r^2 k_v}{D^2 k_h}$$

$$r = 420 \text{ ft}$$

$$D = 170 \text{ ft}$$

$$\beta = 1.0 \text{ (From Curve Match)}$$

$$k_h \text{ early} = 96.12 \text{ ft/d}$$

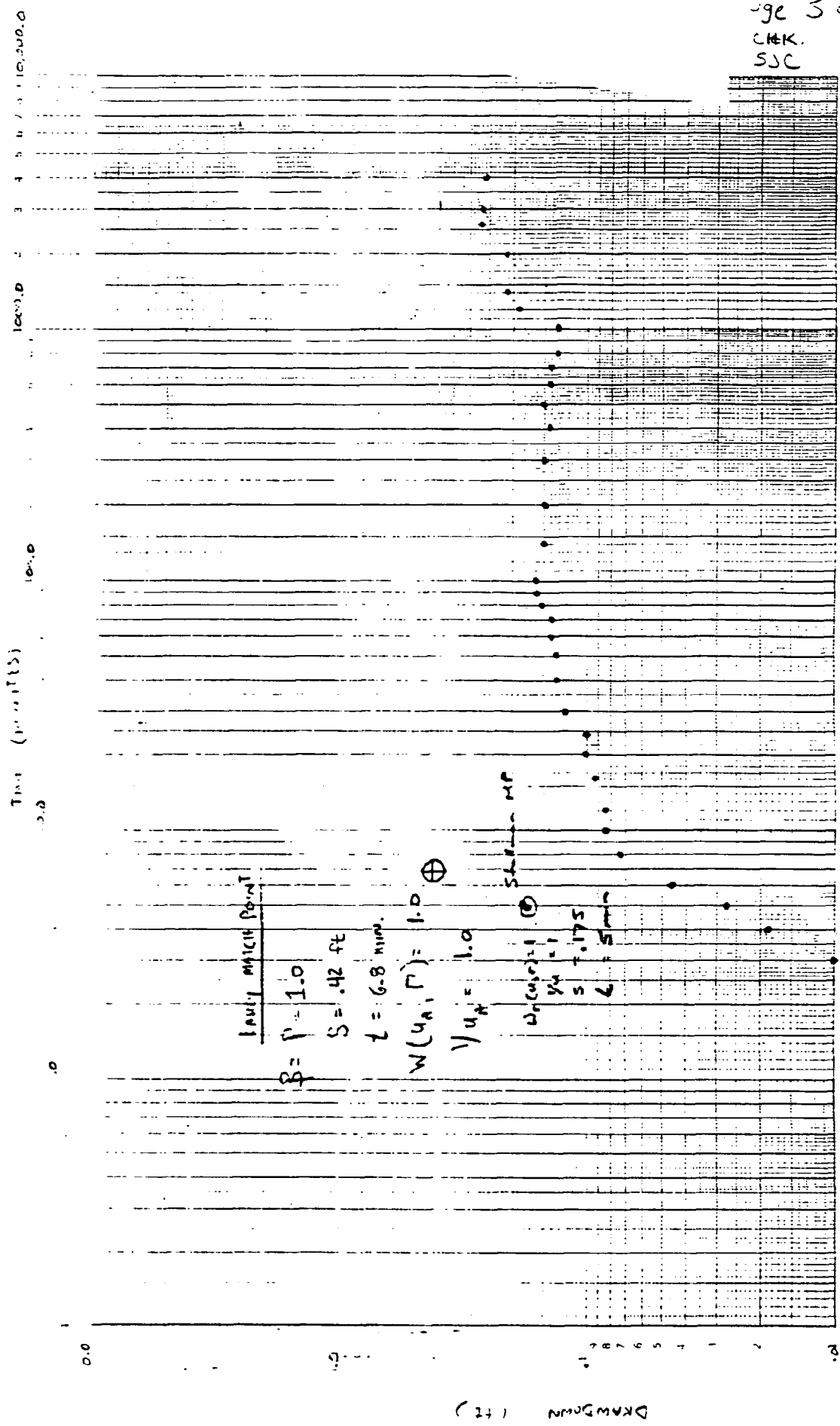
$$k_v = \frac{\beta D^2 k_h}{r^2}$$

$$k_v \text{ early} = \frac{(1.0)(170 \text{ ft})^2 (96.12 \text{ ft/d})}{(420 \text{ ft})^2}$$

$k_v \text{ early} = 10.27 \text{ ft/d}$
--

# H1126I TIME - DRAWDOWN PLOT (PUMP TEST #1)

Page 3 of 3  
CHK.  
SJC



CLIENT: Naus/Bethpage	FILE NO.: 1953	BY: JPO	PAGE 2 OF 4
SUBJECT: MW 27E2 Pumping Test Analysis		CHECKED BY: PCW 2/26/92	DATE: 2/26/92

Well 26 I (cont.)

$$T = \frac{Q}{4\pi s} W(u, r)$$

$$= 39,218 \text{ ft}^3/\text{day}$$

$$K = T/b$$

$$= 231 \text{ ft}^2/\text{day}$$

For Well 27 E1

$$r_r = r_i/r, \quad r_i = 470'$$

$$= 10.4, \quad r = 45'$$

2 MP u/ Type curve  $r_r = 10.0$ ,

$$W_r(u, r) = 1$$

$$1/u = 1$$

$$s = .41'$$

$$t = .01 \text{ min} = .0000069 \text{ days}$$

$$T = \frac{Q}{4\pi s} W_r(u, r)$$

$$= 16,740 \text{ ft}^3/\text{day}$$

$$K = T/b$$

$$= 98 \text{ ft}^2/\text{day}$$

CLIENT: Navy/Bethpage	FILE NO.: 1953	BY: JPO	PAGE 1 OF 4
SUBJECT: MW 2732 Pumping Test Analysis		CHECKED BY: PCW 2/26/93	DATE: 2/26/93

Reference: Ferris, et. al, 1962. Theory of Aquifer Tests. USGS Water Supply Paper 1536E.

Stallman Type Curve Analysis - 1 Pumping & 1 Recharge Well

$$Q = 86,246 \text{ ft}^3/\text{day} \quad (Q = Q_{\text{pumping}} = Q_{\text{recharge}})$$

For well 28 I,

$$r_r = r_i / r \quad r_i = 860'$$

$$r_r = 420'$$

$$r_r = 2.05$$

2 Match Point w/ Type curve  $r_r = 2.0$ ,

$$W_r(u, r_r) = 1$$

$$1/u = 1$$

$$s = .37$$

$$t = 4.5 \text{ min} = .003 \text{ days}$$

$$T = \frac{Q (W_r(u, r_r))}{4\pi s}$$

$$= 18,549 \text{ ft}^2/\text{day}$$

$$K = T/b, \quad b = 170 \text{ ft}$$

$$= 109 \text{ ft/day}$$

For well 26 I,

$$r_r = r_i / r, \quad r_i = 850'$$

$$= 1.6$$

$$r = 530'$$

2 MP w/ Type curve  $r_r = 1.6$ ,

$$W_r(u, r_r) = 1$$

$$1/u = 1$$

$$s = .175$$

$$t = 5 \text{ min} = .003 \text{ days}$$

CLIENT: Navy/Bethpage	FILE NO.: 1953	BY: JFO	PAGE 3 OF 4
SUBJECT: MW 2752 Pumping Test Analysis		CHECKED BY: PCW 2/26/93	DATE: 2/26/93

For Well 2752,

$$r_w = r_i/r_o = 550' / 31.5' = 17.4$$

2 MP w/ Type Curve  $r_w = 20$ ,

$$W_u(u, r) = 1$$

$$u = 1$$

$$s = .28'$$

$$t = 2.7 \text{ min}$$

$$T = \frac{Q}{4\pi s} W(u, r)$$

$$= 24,511 \text{ ft}^3/\text{day}$$

$$K = T/b$$

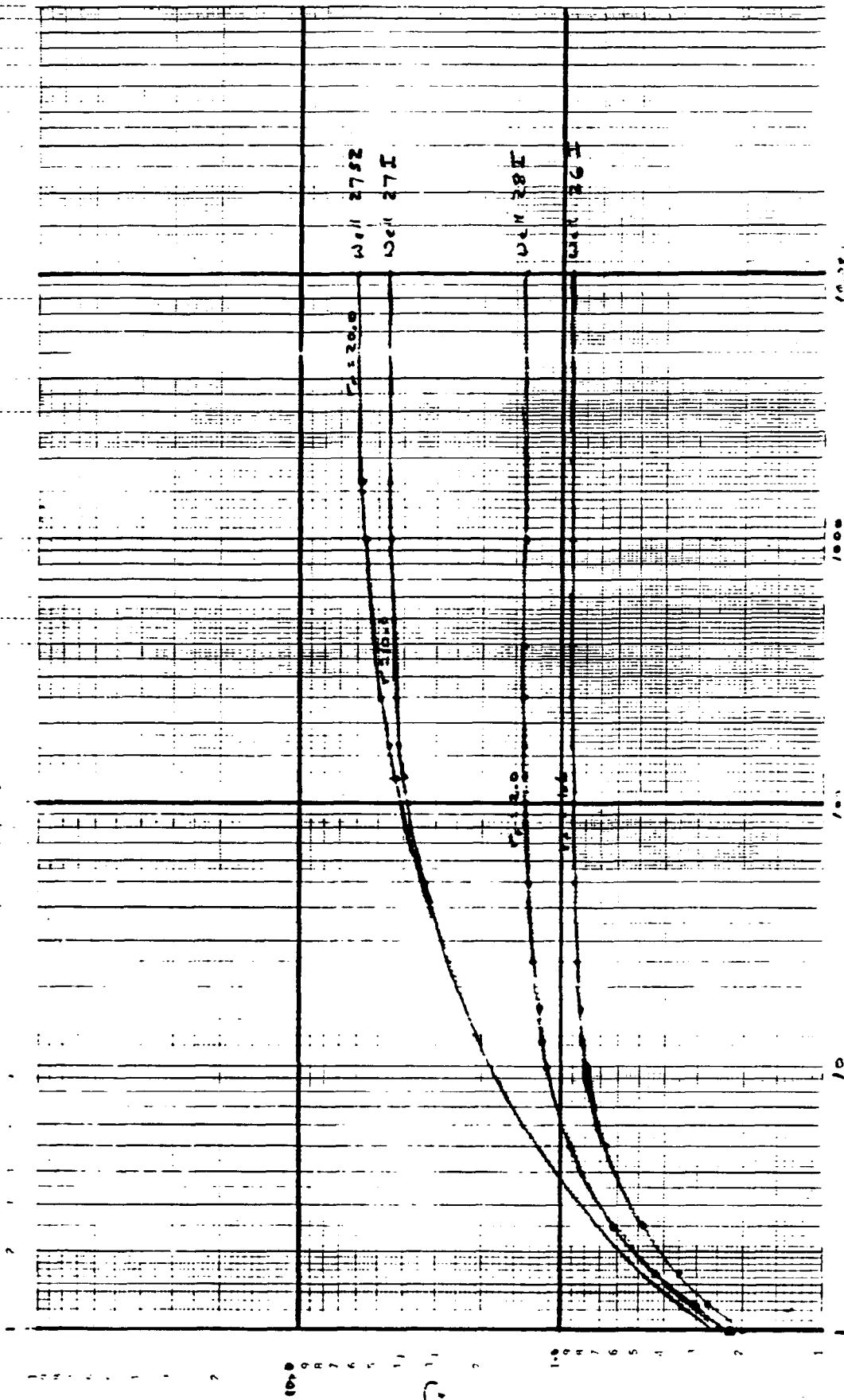
$$= 144 \text{ ft}/\text{day}$$



Type Curves

Ferris, et al., 1962

1 2 3 4 5 6 7 8 9 10



1/2

CLIENT: Navy/Bethpage	FILE NO.: 1953	BY: JPO	PAGE 1 OF 2
SUBJECT: MW 27I2 Pumping Test Analysis		CHECKED BY: PLW z/cd/93	DATE: 2/26/93

Method: For 1 pumping & 1 recharge well, where  $Q_p = Q_r$ , steady-state drawdowns will be reached in observation wells after extended periods of pumping; the steady-state drawdown will be proportional to the relative distances from the observation well to the pumping and recharge wells (Treat the system as 2 separate obs. well/pumping (recharge) well complet., w/as the change in dd per change in radial distance).

$$\Delta s = \frac{Q}{4\pi T} 2(\ln r_2/r_1)$$

$$\Delta s = \frac{2.3Q}{4\pi T} 2(\log r_2/r_1) = \frac{2.3Q}{2\pi T} (\log r_2/r_1)$$

For OW 26I,

$$r_1 = 530'$$

$$r_2 = 850'$$

$$s = .17' \quad (avg. \sim 100-1000 \text{ min})$$

$$.17' = \frac{2.3Q}{4\pi T} 2(\log 850/530)$$

$$= \frac{2.3Q}{4\pi T} 2(.205)$$

$$= \frac{2.3Q}{4\pi T} (.41)$$

$$T = 38,071 \text{ ft}^2/\text{day}$$

For OW 28I,

$$r_1 = 420'$$

$$r_2 = 860'$$

$$s = 0.5' \quad (avg. \sim 400-1000 \text{ min})$$

$$.50' = \frac{2.3Q}{4\pi T} 2(\log 860/420)$$

$$= \frac{2.3Q}{4\pi T} 2(.31)$$

$$= \frac{2.3Q}{4\pi T} (.62)$$

$$T = 19,574 \text{ ft}^2/\text{day}$$

Assumptions:

- Steady-state conditions approached by  $t = 1000$  min - later data affected by outside pumping.
- $Q_p = Q_r = 86,246 \text{ ft}^3/\text{day}$
- $r_1$  = distance from obs. well to pumping well
- $r_2$  = distance from obs. well to recharge well
- Recharge well location equals center of recharge basin.
- Drawdowns negligible relative to aquifer thickness - no dewatering correction needed for drawdown data.

CLIENT: Navy/Bethpage	FILE NO.: 1953	BY: JPO	PAGE 2 OF 2
SUBJECT: MW 27E2 Pumping Test Analysis		CHECKED BY: PLW 2/26/93	DATE: 2/26/93

For OW 27E1,

$$r_1 = 45'$$

$$r_2 = 470'$$

$$s(\text{corrected for pp}) = 1.6' \text{ (avg } \sim 100-1000 \text{ min)}$$

$$1.6 = \frac{2.3Q}{4\pi T} 2(\log 470/45)$$

$$= \frac{2.3Q}{4\pi T} 2(1.02)$$

$$= \frac{2.3Q}{4\pi T} (2.04)$$

$$T = 29,126 \text{ ft}^2/\text{day}$$

For OW 27E2,

$$r_1 = 31.5'$$

$$r_2 = 550'$$

$$s(\text{corrected for pp}) = 1.6' \text{ (avg } 100-1000 \text{ min)}$$

$$1.6 = \frac{2.3Q}{4\pi T} 2(\log 550/31.5)$$

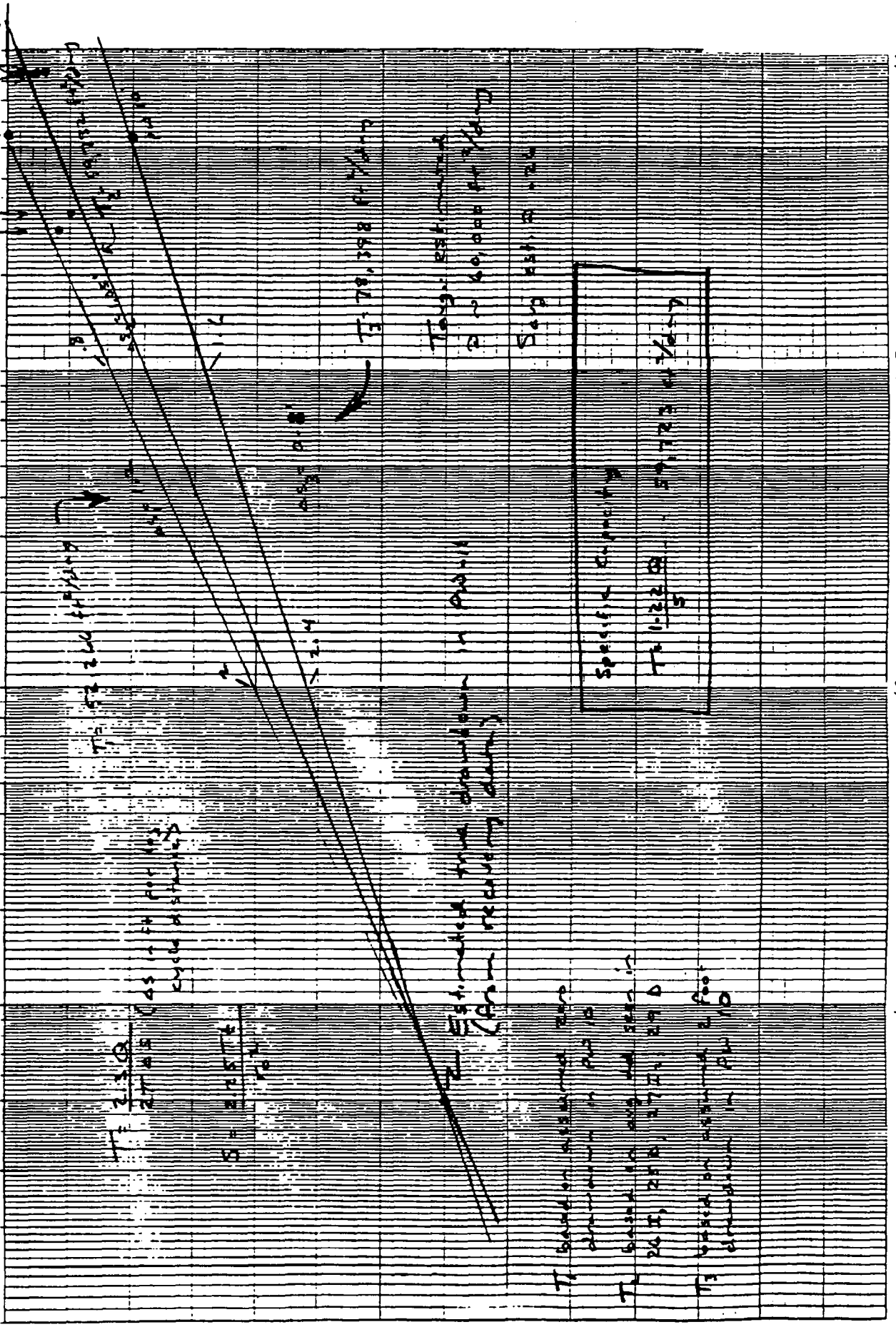
$$= \frac{2.3Q}{4\pi T} 2(1.24)$$

$$T = 24,467 \text{ ft}^2/\text{day}$$

40 WDU  
DRAWDOWN @  
t = 4,000 minutes

Well Radius

t = 4,000 minutes



1.5

2.0

2.5

3.0

3.5

4.0

4.5

5.0

5.5

6.0

6.5

7.0

7.5

8.0

8.5

9.0

9.5

10.0

1

2

3

4

5

10

20

30

40

50

60

70

80

90

100

1

2

3

4

5

10

20

30

40

50

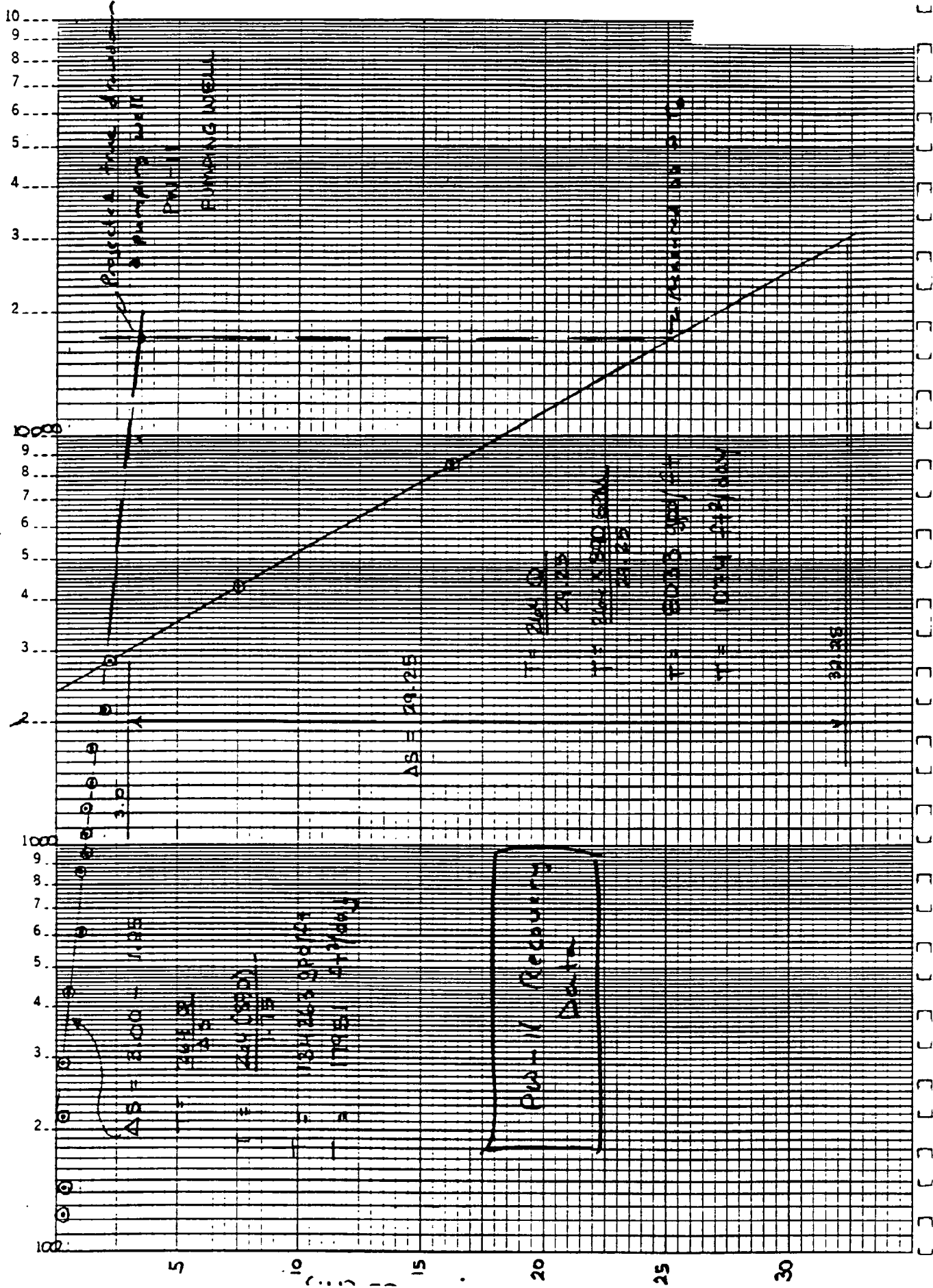
60

70

80

90

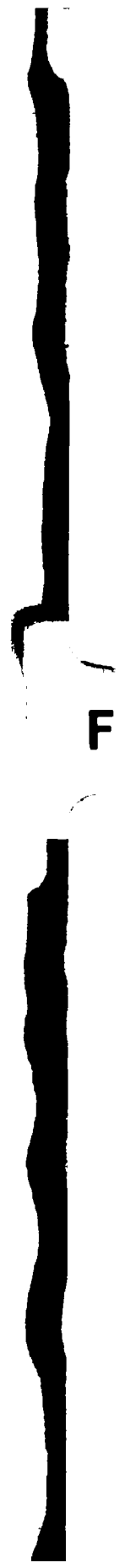
100



CLIENT: <b>BETHPAGE</b>	FILE NO.: <b>1953</b>	BY: <b>SJC 3/8/93</b>	PAGE <b>1</b> OF <b>8</b>
SUBJECT: <b>PW-11 RESIDUAL DRAWDOWN PLOT</b>		CHECKED BY:	DATE:

**PUMP TEST #2**

Time Since pump Started (min) (t)	Time since pump Stopped (min) (t')	Ratio t/t'	Drawdown (ft)	
4300	0	—	25.25	
4300.5	0.5	8601	16.25	.64
4301	1	4301	7.50	.30
4301.5	1.5	2867.7	2.25	.09
4302	2	2151	2.0	.08
4302.5	2.5	1721	1.5	.06
4303	3	1434.3	1.5	
4303.5	3.5	1229.6	1.25	.05
4304	4	1076	1.25	
4304.5	4.5	956.6	1.25	
4305	5	861	1.0	.04
4307	7	615.3	1.0	
4310	10	431	0.5	.02
4312	12	359.3	0.5	
4315	15	287.7	0.25	
4320	20	216	0.25	
4330	30	144.3	0.25	
4335	35	123.9	0.25	



0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0

G



**APPENDIX G**  
**SURVEYING NOTES**

GS. GROUND SURFACE  
TC TOP CASING

EASTING

NORTHING

GROUND SURFACE ELEV.

TOP CASING

DESCRIPTION

HN 42 EAST GS 2144055

HN 42 EAST TC 2144055

194699

194699

119.98

119.61

HN 42 EAST GS

HN 42 EAST TC

G.S. GROUND SURFACE  
T.C. TOPCASING

DESCRIPTION	WELL DEPTH	OTHER	GROUND SURFACE ELEV	EASTING	
				NORTHING	EASTING
TRAV INT "K"		112.83	TOP PK NAIL	192663	2145222
TRAV INT 20		112.60		192673	2145282
TRAV INT L		109.63	TOP PK NAIL	193055	2145898
HN 41 North G.S.			110.23	192967	2145984
HN 41 North T.C.	109.91			192967	2145984
HN 41 South G.S.			110.29	192945	2145997
HN 41 South T.C.	109.90			192946	2145997
Loc #11			123.56	194750	2143465
Loc #12			122.12	194307	2143647
HN 42 WEST G.S.			120.59	194690	2144032
HN 42 WEST T.C.	120.32			194690	2144032

CONTINUED

G.S. GROUND SURFACE  
T.C. TOP CASING

Description	WELL CASING ELV.	OTHER	GROUND SURFACE ELV.	EASTING	
				NORTHING	EASTING
Loc # 4			117.88	193452	2143910
TRAV PNT 19		115.23	TOP PK NAIL	193060	2143659
TRAV PNT H		117.41	TOP PK NAIL	193577	2144220
Loc # 13			118.08	193676	2144146
TRAV PNT I		117.22	TOP PK NAIL	193633	2144428
HN 40 NORTH G.S.			116.51	193441	2144585
HN 40 NORTH IC	115.91			193441	2144585
HN 40 South G.S.			116.64	193407	2144605
HN 40 South T.C.	116.35			193407	2144605
TRAV PNT J		115.70	TOP PK NAIL	192925	2144285
Loc # 16			116.28	193069	2144250

CONTINUED

DESCRIPTION	WEST ENDING ELEV.	ORIG. ELEV.	GEOL. SURFACE ELEV.	NOONING	FASTING
Loc. # 1			124.39	194793	2142911
TRAV PNT "C"		122.16	TOP PK. NAIL	194291	2143130
Loc. # 5			123.23	194351	2143204
Loc. # 2			122.69	194482	2143521
TRAV PNT "D"		120.45	TOP PK. NAIL	193795	2143305
TRAV PNT "E"		122.77	TOP PK. NAIL	194461	2143557
Loc. # 3			119.91	193922	2143698
TRAV PNT "F"		116.93	TOP PK. NAIL	193602	2142878
TRAV PNT "G"		115.86	TOP P.K. NAIL	193283	2143577
Loc. # 8 BOTTOM RECHARGE BASIN			101.84	193318	2142867
Loc. # 7			116.77	193379	2143733

CONTINUED

G.S. = GROUND SURFACE  
T.C. = TOP CASING

DESCRIPTION	WELL CASING ELEVATION	OTHER	GROUND SURFACE ELEVATION	NORTHING	EASTING
HN 24 S	EXISTING TOP CASING 122.73			193710	2141412
TRAV PNT 35				193958	2142249
G.M. 12 North		121.11		193815	2141736
HN 24 I G.S.			122.69	193712	2141395
HN 24 I T.C.	125.80			193712	2141395
HN 24 I 2 G.S.			123.29	193795	2141467
HN 24 I 2 T.C.	122.89			193796	2141467
HN 24 I 1 G.S.			121.20	193793	2141453
HN 24 I 1 T.C.	120.46			193793	2141453
TRAV PNT B		123.75	TOP PK NAIL	194127	2142950

CONTINUED

G.S. = Ground Surface  
T.C. = Top Casing

DESCRIPTION	ELEVATIONS		LOCATIONS	T.C. = TOP CASING
	WELL CASING ELEV.	GROUND SURFACE ELEV.		
TRAV PNT 21	—	—	195030	2142809
HN 26 I	12484	—	194845	2142226
TRAV PNT A	ELEVATION 131.33	TOP SITE	194802	2142731
HN 27 I 1 G.S.	12728	125.17	194769	2142770
HN 27 I 1 T.C.	—	—	194770	2142769
HN 27 I 2 G.S.	125.06	125.53	194726	2142783
HN 27 I 2 T.C.	—	—	194727	2142783
HN 27 S 2 G.S.	—	125.14	194711	2142756
HN 27 S 2 T.C.	12488	—	194711	2142756
HN 27 S 3 G.S.	—	124.67	194627	2142825
HN 27 S 3 T.C.	12439	—	194627	2142824

CONTINUED

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

**H**



**APPENDIX H**  
**HYDROGEOLOGICAL CALCULATIONS**

CLIENT: BETHPAGE NWIRP	FILE NO.: 1953	BY: KC KILMARTIN	PAGE OF
SUBJECT:	CHECKED BY:	DATE:	

GEOMETRIC MEAN OF HYDRAULIC CONDUCTIVITIES  
(Fetter, 1988, p. 82)

Well No.	Kh (ft/day)	ln (Kh)	} n = 14
HN2752	41.19	3.72	
	144	4.97	
HN2753	144	4.97	
	77.64	4.35	
HN26I	96.12	4.57	
	231	5.44	
	224	5.41	
HN27I1	40.37	3.70	
	33.64	3.52	
	98	4.58	
HN28I	118	4.77	
	62.11	4.13	
	109	4.69	
	115	4.74	
		$\Sigma = 63.56$	

$$\text{MEAN } \ln(Kh) = 63.56 / 14 = 4.54$$

$$K_h \text{ (Geometric mean)} = e^{4.54} = 94$$

$$K_h = 94 \text{ FT/DAY}$$

CLIENT: BETHPAGE NWIRP	FILE NO.: 1953	BY: KC KILMARTIN	PAGE 1 OF 1
SUBJECT:		CHECKED BY:	DATE:

Average Linear Velocities For April, 1993

$$V_{AL} = \frac{K}{n_e} \frac{dh}{dl} \quad (\text{Fetter, 1988, p. 126})$$

$$K \approx 100 \text{ ft/DAY} \quad (\text{This document, SECTION 3})$$

$$n_e \approx 0.30 \quad (\text{Fetter, 1988, p. 68})$$

(A) AT WATER TABLE:

$$dl \text{ (GM-25 TO GM-145)} = 5,520 \text{ ft}$$

$$dh \text{ (73.80 ft - 68.28 ft)} = 5.52 \text{ ft}$$

$$\text{gradient} = dh/dl = 5.52/5,520 = 0.001$$

$$V_{AL} = \frac{100 \text{ ft/DAY}}{0.30} \cdot \frac{5.52 \text{ ft}}{5,520 \text{ ft}} = 0.33 \text{ ft/DAY}$$

(B) AT INTERMEDIATE WELLS

$$dl \text{ (GM-21 TO GM-141)} = 4,740 \text{ ft}$$

$$dh \text{ (72.73 ft - 68.12 ft)} = 4.61 \text{ ft}$$

$$\text{gradient} = dh/dl = 4.61/4,740 \approx 0.001$$

$$V_{AL} = \frac{100 \text{ ft/DAY}}{0.30} \cdot \frac{4.61 \text{ ft}}{4,740 \text{ ft}} = 0.32 \text{ ft/DAY}$$

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

1  
2

**APPENDIX I**  
**ANALYTICAL RESULTS**

CLEAN CTO 88  
 NMARP BETHPAGE, BETHPAGE, NEW YORK  
 PACE, INC. - HAMPTON

TCL AQUEOUS VOLATILES (µg/L)

CLIENT ID: LABORATORY ID:	BP-	T83-12 35309-1	T83-16 35407-2	T83-17 35424-6	G2402 35407-5	G24102 35407-1	G241202 35407-4
ANALYTE	CRQL	MDL					
CHLOROMETHANE	10	2.32	10	10	620	10	1000
BROMOMETHANE	10	3.95	10	10	620	10	1000
VINYL CHLORIDE	10	2.48	10	10	620	10	1000
CHLOROETHANE	10	2.41	10	10	620	10	1000
METHYLENE CHLORIDE	10	3.08	10	6	620	10	1000
ACETONE	10	2.82	10	10	620	10	1000
CARBON DISULFIDE	10	3.86	10	10	620	10	1000
1,1-DICHLOROETHENE	10	4.34	10	10	620	10	1000
1,1-DICHLOROETHANE	10	1.57	10	10	620	10	1000
1,2-DICHLOROETHENE	10	4.89	10	10	620	10	1000
CHLOROFORM	10	1.84	10	10	620	10	1000
1,2-DICHLOROETHANE	10	1.89	10	10	620	10	1000
2-BUTANONE	10	0.44	10	10	620	10	1000
1,1,1-TRICHLOROETHANE	10	2.29	10	10	620	10	1000
CARBON TETRACHLORIDE	10	1.58	10	10	620	10	1000
BROMODICHLOROMETHANE	10	1.05	10	10	620	10	1000
1,2-DICHLOROPROPANE	10	0.86	10	10	620	10	1000
CIS-1,3-DICHLOROPROPENE	10	0.85	10	10	620	10	1000
TRICHLOROETHENE	10	0.91	10	10	9000	91	12000
DIBROMOCHLOROMETHANE	10	1.12	10	10	620	10	1000
1,1,2-TRICHLOROETHANE	10	0.93	10	10	620	10	1000
BENZENE	10	1	10	10	620	10	1000
TRANS-1,3-DICHLOROPROPENE	10	0.2	10	10	620	10	1000
BROMOFORM	10	1.06	10	10	620	10	1000
4-METHYL-2-PENTANONE	10	1.97	10	10	620	10	1000
2-HEXANONE	10	0.9	10	10	620	10	1000
TETRACHLOROETHENE	10	1	10	10	620	10	1000
1,1,2,2-TETRACHLOROETHANE	10	0.61	10	10	620	10	1000
TOLUENE	10	1.81	10	10	620	10	1000
CHLOROBENZENE	10	0.44	10	10	620	10	1000
ETHYLBENZENE	10	0.73	10	10	620	10	1000
STYRENE	10	0.61	10	10	620	10	1000
XYLENES (TOTAL)	10	0.92	10	10	620	10	1000
DILUTION FACTOR:			1	1	82.0	1.0	100.0

CLEAN CTO 89  
 MWIRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE, INC. - HAMPTON

TCL AQUEOUS VOLATILES (ug/l)

CLIENT ID: 783-11  
 LABORATORY ID: 35347-2

GRB102 35347-3  
 GRB302 35407-3

ANALYTE	CPOL	MDL	GRB102 35347-3	GRB302 35407-3	783-11 35347-2
CHLOROMETHANE	10	2.32	10 U	10 U	10 U
BROMOMETHANE	10	3.95	10 U	10 U	10 U
VINYL CHLORIDE	10	2.48	10 U	10 U	10 U
CHLOROETHANE	10	2.41	10 U	10 U	10 U
METHYLENE CHLORIDE	10	3.08	10 U	10 U	10 U
ACETONE	10	2.82	96	93	10 U
CARBON DISULFIDE	10	3.66	10 U	10 U	10 U
1,1-DICHLOROETHENE	10	4.34	10 U	10 U	10 U
1,1-DICHLOROETHANE	10	1.57	10 U	10 U	10 U
1,2-DICHLOROETHENE	10	4.89	10 U	10 U	10 U
CHLOROFORM	10	1.84	10 U	10 U	10 U
1,2-DICHLOROETHANE	10	1.89	10 U	10 U	10 U
2-BUTANONE	10	0.44	10 U	10 U	10 U
1,1,1-TRICHLOROETHANE	10	2.29	10 U	10 U	10 U
CARBON TETRACHLORIDE	10	1.58	10 U	10 U	10 U
BROMODICHLOROMETHANE	10	1.05	10 U	10 U	10 U
1,2-DICHLOROPROPANE	10	0.66	10 U	10 U	10 U
CIS-1,3-DICHLOROPROPENE	10	0.85	10 U	10 U	10 U
TRICHLOROETHENE	10	0.81	10 U	10 U	10 U
DIBROMOCHLOROMETHANE	10	1.12	10 U	10 U	10 U
1,1,2-TRICHLOROETHANE	10	0.93	10 U	10 U	10 U
BENZENE	10	1	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10	0.2	10 U	10 U	10 U
BROMOFORM	10	1.06	10 U	10 U	10 U
4-METHYL-2-PENTANONE	10	1.97	10 U	10 U	10 U
2-HEXANONE	10	0.9	10 U	10 U	10 U
TETRACHLOROETHENE	10	1	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	10	0.61	10 U	10 U	10 U
TOLUENE	10	1.61	10 U	10 U	10 U
CHLORO BENZENE	10	0.44	10 U	10 U	10 U
ETHYLBENZENE	10	0.73	10 U	10 U	10 U
STYRENE	10	0.61	10 U	10 U	10 U
XYLENES (TOTAL)	10	0.92	10 U	10 U	10 U

DILUTION FACTOR: 1

CLEAN CTG 89  
 NWIRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE, INC. - HAMPTON

TCL AQUEOUS VOLATILES (ug/L)

ANALYTE	CRQL	BP-	G4202 35424-2	G42502 35424-1	GDUP102 55369-6	GDUP202 35424-5
	MDL					
CHLOROMETHANE	10	2.32	10	10	10	10
BROMOMETHANE	10	3.95	10	10	10	10
VINYL CHLORIDE	10	2.46	10	10	10	10
CHLOROETHANE	10	2.41	10	10	10	10
METHYLENE CHLORIDE	10	3.08	5	5	10	5
ACETONE	10	2.62	10	10	10	10
CARBON DISULFIDE	10	3.66	10	10	10	10
1,1-DICHLOROETHENE	10	4.34	10	10	10	10
1,1-DICHLOROETHANE	10	1.57	10	10	10	10
1,2-DICHLOROETHENE	10	4.88	10	10	10	10
CHLOROFORM	10	1.84	10	10	10	10
1,2-DICHLOROETHANE	10	1.89	10	10	10	10
2-BUTANONE	10	0.44	10	10	10	10
1,1,1-TRICHLOROETHANE	10	2.29	10	10	10	10
CARBON TETRACHLORIDE	10	1.58	10	10	10	10
BROMODICHLOROMETHANE	10	1.05	10	10	10	10
1,2-DICHLOROPROPANE	10	0.68	10	10	10	10
Cis-1,3-DICHLOROPROPENE	10	0.85	10	10	10	10
TRICHLOROETHENE	10	0.91	6	10	17	6
DIBROMOCHLOROMETHANE	10	1.12	10	10	10	10
1,1,2-TRICHLOROETHANE	10	0.83	10	10	10	10
BENZENE	10	1.00	10	10	10	10
TRANS-1,3-DICHLOROPROPENE	10	0.20	10	10	10	10
BROMOFORM	10	1.06	10	10	10	10
4-METHYL-2-PENTANONE	10	1.97	10	10	10	10
2-HEXANONE	10	0.90	10	10	10	10
TETRACHLOROETHENE	10	1.00	2	10	5	10
1,1,2,2-TETRACHLOROETHANE	10	0.61	10	10	10	10
TOLUENE	10	1.61	3	4	10	6
CHLORO BENZENE	10	0.44	10	10	10	10
ETHYL BENZENE	10	0.73	10	10	10	10
STYRENE	10	0.61	10	10	10	10
XYLENES (TOTAL)	10	0.92	10	10	10	10
DILUTION FACTOR:			1.0	1.0	1.0	1.0



CLEAN CTO #89  
 NWIRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE, INC. - HAMPTON

TCL AQUEOUS VOLATILES (ug/l)

CLIENT ID:  
 LABORATORY ID:

G40S02  
 35424-3

G40I02  
 35424-4

G29S02  
 35389-4

G29I02  
 35389-5

G29D02  
 35389-3

G29B02  
 35347-1

G24S02  
 34347-4

BP--

MDL

CRDL

ANALYTE

CHLOROMETHANE	10	2.32	10	10	10	10	10	83	U	10	U	10	U
BROMOMETHANE	10	3.95	10	10	10	10	10	83	U	10	U	10	U
VINYL CHLORIDE	10	2.48	10	10	10	10	10	83	U	10	U	10	U
CHLOROETHANE	10	2.41	10	10	10	10	10	83	U	10	U	10	U
METHYLENE CHLORIDE	10	3.08	10	10	10	10	10	97	U(b)	4	U(b)	5	U(b)
ACETONE	10	2.82	10	10	10	10	10	83	U(j)	10	U	10	U
CARBON DISULFIDE	10	3.86	10	10	10	10	10	83	U(j)	10	U	10	U
1,1-DICHLOROETHENE	10	4.34	10	10	10	10	10	30	J	10	U	10	U
1,1-DICHLOROETHANE	10	1.57	10	10	10	10	10	120	U	10	U	10	U
1,2-DICHLOROETHENE	10	4.89	10	10	10	10	10	229	J(q)	10	U	10	U
1,2-DICHLOROETHANE	10	1.84	10	10	10	10	10	83	U	10	U	10	U
CHLOROFORM	10	1.89	10	10	10	10	10	83	U	10	U	10	U
1,2-DICHLOROETHANE	10	0.44	10	10	10	10	10	83	U	10	U	10	U
2-BUTANONE	10	0.44	10	10	10	10	10	83	U	10	U	10	U
1,1,1-TRICHLOROETHANE	10	2.29	10	10	10	10	10	83	U	10	U	10	U
CARBON TETRACHLORIDE	10	1.58	10	10	10	10	10	83	U	10	U	10	U
BROMODICHLOROMETHANE	10	1.05	10	10	10	10	10	83	U	10	U	10	U
1,2-DICHLOROPROPANE	10	0.86	10	10	10	10	10	83	U	10	U	10	U
CIS-1,3-DICHLOROPROPENE	10	0.85	10	10	10	10	10	83	U	10	U	10	U
TRICHLOROETHENE	10	0.91	10	10	10	10	10	340	U	7	J	10	U
DIBROMOCHLOROMETHANE	10	1.12	10	10	10	10	10	83	U	10	U	10	U
1,1,2-TRICHLOROETHANE	10	0.93	10	10	10	10	10	83	U	10	U	10	U
BENZENE	10	1.00	10	10	10	10	10	83	U	10	U	10	U
TRANS-1,3-DICHLOROPROPENE	10	0.20	10	10	10	10	10	83	U	10	U	10	U
BROMOFORM	10	1.06	10	10	10	10	10	83	U	10	U	10	U
4-METHYL-2-PENTANONE	10	1.97	10	10	10	10	10	83	U(j)	10	U	10	U
2-HEXANONE	10	0.90	10	10	10	10	10	1400	U	10	U	10	U
TETRACHLOROETHENE	10	1.00	7	J	10	10	10	83	U	10	U	10	U
1,1,2,2-TETRACHLOROETHANE	10	0.81	10	10	10	10	10	83	U	10	U	10	U
TOLUENE	10	1.81	10	10	10	10	10	83	U	7	J	4	J
CHLORO BENZENE	10	0.44	10	10	10	10	10	83	U	10	U	10	U
ETHYL BENZENE	10	0.73	10	10	10	10	10	83	U	10	U	10	U
STYRENE	10	0.81	10	10	10	10	10	83	U	10	U	10	U
XYLENES (TOTAL)	10	0.82	10	10	10	10	10	83	U	10	U	10	U
DILUTION FACTOR:			1.0	1.0	1.0	1.0	1.0	8.3		1.0	1.0	1.0	1.0

CLEAN CTO 89  
 NMRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE INC. - HAMPTON

TCL AQUEOUS VOLATILES (ug/L)

CLIENT ID:  
 LABORATORY ID:

ANALYTE	CRQL	MDL	9PSBRB101 34848-1	8BF B101 34825-7	SBRB103 34825-5	TB3 34825-6	TRPBLK 34848-3	TRPBLK2 34860-6
CHLOROMETHANE	10	2.32	10	10	10	10	10	10
BROMOMETHANE	10	3.95	10	10	10	10	10	10
VINYL CHLORIDE	10	2.18	10	10	10	10	10	10
CHLOROETHANE	10	2.41	10	10	10	10	10	10
METHYLENE CHLORIDE	10	3.06	10	10	10	10	20	10
ACETONE	10	2.82	76	100	100	10	10	10
CARBON DISULFIDE	10	3.86	10	10	10	10	10	10
1,1-DICHLOROETHENE	10	4.34	10	10	10	10	10	10
1,1-DICHLOROETHANE	10	1.57	10	10	10	10	10	10
1,2-DICHLOROETHENE	10	4.89	10	10	10	10	10	10
CHLOROFORM	10	1.84	10	10	10	10	10	10
1,2-DICHLOROETHANE	10	1.89	10	10	10	10	10	10
2-BUTANONE	10	0.44	8	10	10	10	10	10
1,1,1-TRICHLOROETHANE	10	2.29	10	10	10	10	10	10
CARBON TETRACHLORIDE	10	1.58	10	10	10	10	10	10
BROMODICHLOROMETHANE	10	1.05	10	10	10	10	10	10
1,2-DICHLOROPROPANE	10	0.88	10	10	10	10	10	10
Cis-1,3-DICHLOROPROPENE	10	0.85	10	10	10	10	10	10
TRICHLOROETHENE	10	0.91	10	10	10	10	10	10
DIBROMOCHLOROMETHANE	10	1.12	10	10	10	10	10	10
1,1,2-TRICHLOROETHANE	10	0.93	10	10	10	10	10	10
BENZENE	10	1	10	10	10	10	10	10
TRANS-1,3-DICHLOROPROPENE	10	0.2	10	10	10	10	10	10
BROMOFORM	10	1.08	10	10	10	10	10	10
4-METHYL-2-PENTANONE	10	1.97	10	10	10	10	10	10
2-HEXANONE	10	0.9	10	10	10	10	10	10
TETRACHLOROETHENE	10	1	10	10	10	10	10	10
1,1,2,2-TETRACHLOROETHANE	10	0.81	10	10	10	10	10	10
TOLUENE	10	1.61	10	10	10	10	10	10
CHLOROBENZENE	10	0.44	10	10	10	10	10	10
ETHYLBENZENE	10	0.73	10	10	10	10	10	10
STYRENE	10	0.61	10	10	10	10	10	10
XYLENES (TOTAL)	10	0.92	10	10	10	10	10	10

DILUTION FACTOR:

CLEAN GTO 89  
 NWTRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE INC. - HAMPTON

TCL SOIL VOLATILES (mg/kg)

CLIENT ID:	LABORATORY ID:	ANALYTE	CRCL	MDL	BPS824211 34660-2	BPS8FD101 34660-4	SB2421140 34660-1	SB2421150 34660-3	SB2421160 34660-2	SB2431130 34625-3
		CHLOROMETHANE	10	2.32	10	11	12	11	12	12
		BROMOMETHANE	10	3.95	10	11	12	11	12	12
		VINYL CHLORIDE	10	2.48	10	11	12	11	12	12
		CHLOROETHANE	10	2.41	10	11	12	11	12	12
		METHYLENE CHLORIDE	10	3.08	20	11	12	11	12	25
		ACETONE	10	2.82	27	21	24	11	17	12
		CARBON DISULFIDE	10	3.86	10	11	12	11	12	12
		1,1-DICHLOROETHENE	10	4.34	10	11	12	11	12	12
		1,1-DICHLOROETHANE	10	1.57	10	11	12	11	12	12
		1,2-DICHLOROETHENE	10	4.89	10	11	12	11	12	12
		CHLOROFORM	10	1.84	10	11	12	11	12	12
		1,2-DICHLOROETHANE	10	1.89	10	11	12	11	12	12
		2-BUTANONE	10	0.44	10	11	12	11	12	12
		1,1,1-TRICHLOROETHANE	10	2.20	10	11	12	11	12	12
		CARBON TETRACHLORIDE	10	1.58	10	11	12	11	12	12
		BROMODICHLOROMETHANE	10	1.05	10	11	12	11	12	12
		1,2-DICHLOROPROPANE	10	0.86	10	11	12	11	12	12
		CH-1,3-DICHLOROPROPENE	10	0.85	10	11	12	11	12	12
		TRICHLOROETHENE	10	0.91	4	10	17	6	3	12
		DIBROMOCHLOROMETHANE	10	1.12	10	11	12	11	12	12
		1,1,2-TRICHLOROETHANE	10	0.93	10	11	12	11	12	12
		BENZENE	10	1	10	11	12	11	12	12
		TRANS-1,3-DICHLOROPROPENI	10	0.2	10	11	12	11	12	12
		BROMOFORM	10	1.06	10	11	12	11	12	12
		4-METHYL-2-PENTANONE	10	1.97	10	11	12	11	12	12
		2-HEXANONE	10	0.9	10	11	12	11	12	12
		TETRACHLOROETHENE	10	1	10	11	12	11	12	12
		1,1,2,2-TETRACHLOROETHANE	10	0.61	10	11	12	11	12	12
		TOLUENE	10	1.81	13	16	27	12	6	5
		CHLOROBENZENE	10	0.44	10	11	12	11	12	12
		ETHYLBENZENE	10	0.73	10	11	12	11	12	12
		STYRENE	10	0.81	10	11	12	11	12	12
		XYLENES(TOTAL)	10	0.92	10	11	12	11	12	12

% SOLIDS: 86  
 DILUTION FACTOR: 1

CLEAN CO 88  
 MWIRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE INC. - HAMPTON

TCL SOIL VOLATILES (mg/kg)

CLIENT ID:	88243120	88243150	88243140	88243120
LABORATORY ID:	34825-1	34825-4	34825-2	34825-1
ANALYTE	CRQL	MDL	UR(c)	UR(c)
CHLOROMETHANE	10	2.32	12	10
BROMOMETHANE	10	3.95	12	10
VINYL CHLORIDE	10	2.48	12	10
CHLOROETHANE	10	2.41	12	10
METHYLENE CHLORIDE	10	3.08	16	10
ACETONE	10	2.82	12	10
CARBON DISULFIDE	10	3.66	12	10
1,1-DICHLOROETHENE	10	4.34	12	10
1,1-DICHLOROETHANE	10	1.57	12	10
1,2-DICHLOROETHENE	10	4.89	12	10
CHLOROFORM	10	1.84	12	10
1,2-DICHLOROETHANE	10	1.89	12	10
2-BUTANONE	10	0.44	12	10
1,1,1-TRICHLOROETHANE	10	2.20	12	10
CARBON TETRACHLORIDE	10	1.58	12	10
BROMODICHLOROMETHANE	10	1.05	12	10
1,2-DICHLOROPROPANE	10	0.88	12	10
Cis-1,3-DICHLOROPROPENE	10	0.85	12	10
TRICHLOROETHENE	10	0.91	38	10
DIBROMOCHLOROMETHANE	10	1.12	12	10
1,1,2-TRICHLOROETHANE	10	0.93	12	10
BENZENE	10	1	12	10
TRANS-1,3-DICHLOROPROPENE	10	0.2	12	10
BROMOFORM	10	1.06	12	10
4-METHYL-2-PENTANONE	10	1.97	12	10
2-HEXANONE	10	0.9	12	10
TETRACHLOROETHENE	10	1	12	10
1,1,2,2-TETRACHLOROETHANE	10	0.61	12	10
TOLUENE	10	1.61	12	10
CHLOROBENZENE	10	0.44	12	10
ETHYLBENZENE	10	0.73	12	10
STYRENE	10	0.61	12	10
XYLENES(TOTAL)	10	0.92	12	10

% SOLIDS: 88 95  
 DILUTION FACTOR: 1 1

Summary of Tentatively Identified Compounds (TICs)  
Remaining After Data Qualification

<u>Fraction</u>	<u>Named TIC</u>
Volatile	Unknown(s) Acetic acid, ethyl ester

Data Qualifier Key

- U - Value is a nondetect as reported by the laboratory.
- U(b) - Value is considered to be a false positive attributable to blank contamination.
- UR - Nondetect (quantitation limit) is considered to be unreliable.
- J - Value is estimated because it is reported at a concentration less than the associated CRQL.
- J(c) - Positive result is considered to be estimated based on exceedance of associated calibration criteria.
- J(s) - Positive result is considered to be estimated because associated surrogate recovery failed to meet quality control criteria.
- J(a) - Positive result is considered to be estimated because of poor performance of the associated internal standard.
- UJ(s) - Nondetect is considered to be estimated based on poor surrogate recovery.
- J(a) - Nondetect is considered to be estimated because of poor performance of the associated internal standard.

CLEAN CTO 89  
 NWIRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE INC. - HAMPTON

TOL SOIL PESTICIDES (mg/kg)

ANALYTE	GRQL	MDL	9PDUJ01A 34366-19	BP6B12103 34366-3	BPSB20603 34366-9	BP6B21503 34366-8	BP6D201A 34366-13	BP6D202A 34366-14
ALPHA-BHC	1.7	0.867	2	1.8	32	1.8	3	2
BETA-BHC	1.7	0.87	2	1.8	32	1.8	3	2
DELTA-BHC	1.7	0.5	2	1.8	32	1.8	3	2
GAMMA-BHC (LINDANE)	1.7	0.467	2	1.8	32	1.8	3	2
HEPTACHLOR	1.7	0.566	2	1.8	32	1.8	3	2
ALDRIN	1.7	0.367	2	1.8	32	1.8	12	2
HEPTACHLOR EPOXIDE	1.7	0.633	2	1.8	32	1.8	3	2
ENDOSULFAN I	3.3	1.367	3.6	3.5	61	3.5	7.9	3.8
DIELDRIN	3.3	1.367	130	4.7	61	3.5	5.8	3.8
4,4'-DDE	3.3	1.6	3.6	3.5	61	3.5	5.8	3.8
ENDRIN	3.3	1.6	3.6	4.7	61	3.5	5.8	3.8
ENDOSULFAN II	3.3	1.6	3.6	3.5	61	3.5	5.8	3.8
4,4'-DDD	3.3	1.333	6.3	3.5	61	3.5	5.8	3.8
ENDOSULFAN SULFATE	3.3	3.2	3.6	3.5	61	3.5	5.8	3.8
4,4'-DDT	3.3	1.5	620	3.5	61	3.5	5.8	3.8
METHOXYCHLOR	1.7	6.266	20	1.8	320	1.8	30	20
ENDRIN KETONE	3.3	1.067	3.6	3.5	61	3.5	5.8	3.8
ENDRIN ALDEHYDE	3.3	1.866	3.6	3.5	61	3.5	5.8	3.8
ALPHA-CHLORDANE	1.7	0.7	2	1.8	32	1.8	3	2
GAMMA-CHLORDANE	1.7	0.666	2	1.8	32	1.8	3	2
TOXAPHENE	170	17.33	200	180	3200	180	300	200
AROCLOR-1016	33	6.333	36	35	610	35	58	38
AROCLOR-1221	67	6	77	70	1200	70	120	78
AROCLOR-1242	33	3.666	36	35	610	35	58	38
AROCLOR-1248	33	4	36	35	610	35	58	38
AROCLOR-1254	33	8.333	230	1000	33000	270	2500	48
AROCLOR-1260	33	6.999	61	210	3600	78	58	38
	33	5	36	35	610	35	58	38

% SOLIDS: 86 94 80 56 86  
 DILUTION FACTOR: 1 1 1/150\* 2/10\* 1

CLEAN CTO 89  
 NWRRP BETHPAGE, BETHPAGE, NEW YORK  
 PAGE INC. - HAMPTON

TCL SOIL PESTICIDES (mg/kg)

CLIENT ID:  
 LABORATORY ID:

BPSS101A  
 34368-1

BPSS102A  
 34368-2

BPSS103A  
 34368-4

BPSS104A  
 34368-5

BPSS105A  
 34368-6

BPSS106A  
 34368-7

ANALYTE	CRCL	MDL	BPSS101A 34368-1	BPSS102A 34368-2	BPSS103A 34368-4	BPSS104A 34368-5	BPSS105A 34368-6	BPSS106A 34368-7
ALPHA-BHC	1.7	0.667	30	2	1800	2	94	1.8
BETA-BHC	1.7	0.67	30	2	1800	2	94	1.8
DELTA-BHC	1.7	0.5	30	2	1800	2	94	1.8
GAMMA-BHC (LINDANE)	1.7	0.467	30	2	1800	2	94	1.8
HEPTACHLOR	1.7	0.568	30	2	1800	2	94	1.8
ALDRIN	1.7	0.367	30	2	1800	2	94	1.8
HEPTACHLOR EPOXIDE	1.7	0.633	30	2	1800	2	94	1.8
ENDOSULFAN I	3.3	1.367	57	3.6	3700	3.8	180	3.6
DIELDRIN	3.3	1.367	57	27	3700	3.8	180	3.6
4,4'-DDE	3.3	1.367	57	3.6	3700	3.8	180	3.6
ENDRIN	3.3	1.6	57	3.6	3700	3.8	180	3.6
ENDOSULFAN II	3.3	1.6	57	3.6	3700	3.8	180	3.6
4,4'-DDD	3.3	1.333	57	3.6	3700	3.8	180	3.6
ENDOSULFAN SULFATE	3.3	3.2	57	3.6	3700	3.8	180	3.6
4,4'-DDT	3.3	1.5	57	37	3700	3.8	180	3.6
METHOXYCHLOR	1.7	6.266	300	20	18000	20	940	1.8
ENDRIN KETONE	3.3	1.067	57	3.6	3700	3.8	180	3.6
ENDRIN ALDEHYDE	3.3	1.866	57	3.6	3700	3.8	180	3.6
ALPHA-CHLORDANE	1.7	0.7	30	2	1800	2	94	1.8
GAMMA-CHLORDANE	1.7	0.668	30	2	1800	2	94	1.8
TOXAPHENE	170	17.33	3000	200	180000	200	9400	180
AROCLOR-1016	33	6.333	570	36	37000	36	1800	36
AROCLOR-1221	67	8	1200	76	75000	77	3700	72
AROCLOR-1232	33	3.666	570	36	37000	36	1800	36
AROCLOR-1242	33	4	570	36	37000	36	1800	36
AROCLOR-1246	33	8.333	25000	1100	1300000	2500	25000	1700
AROCLOR-1254	33	8.999	5000	660	170000	530	1800	400
AROCLOR-1260	33	5	570	36	37000	36	1800	36

% SOLIDS: 86  
 DILUTION FACTOR: 1/150\*  
 86 1/10\*  
 88 1120/10,000\*  
 82 1/10\*  
 54



CLEAN CTO 89  
 NWRRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE INC. - HAMPTON

TCL SOIL PESTICIDES (mg/kg)

ANALYTE	CRCL	MDL	BPSS207A 34366-11	BPSS208A 34366-12	BPSS210A 34366-10	BPSS212A 34366-15	BPSS214A 34366-17	BPSS216A 34366-16
ALPHA-BHC	1.7	0.887	3.8	1.7	1.8	1.8	1.9	9.1
BETA-BHC	1.7	0.87	3.8	1.7	1.8	1.8	1.9	9.1
DELTA-BHC	1.7	0.5	3.8	1.7	1.8	1.8	1.9	9.1
GAMMA-BHC (LINDANE)	1.7	0.487	3.8	1.7	1.8	1.8	1.9	9.1
HEPTACHLOR	1.7	0.586	3.8	1.7	1.8	1.8	1.9	9.1
ALDRIN	1.7	0.387	3.8	1.7	1.8	1.8	1.9	9.1
HEPTACHLOR EPOXIDE	1.7	0.633	3.8	1.7	1.8	1.8	1.9	9.1
ENDOSULFAN I	1.7	0.733	3.8	1.7	1.8	1.8	1.9	9.1
DIELDRIN	3.3	1.387	7.4	3.3	3.6	3.6	3.8	18
4,4'-DDE	3.3	1.387	9.3	3.3	3.6	3.6	3.8	18
ENDRIN	3.3	1.8	7.4	3.3	3.6	3.6	3.8	18
ENDOSULFAN II	3.3	1.8	7.4	3.3	3.6	3.6	3.8	18
4,4'-DDD	3.3	1.333	7.4	3.3	3.6	3.6	3.8	18
ENDOSULFAN SULFATE	3.3	3.2	7.4	3.3	3.6	3.6	3.8	18
4,4'-DDT	3.3	1.5	17.0	3.3	3.6	3.6	13	18
METHOXYCHLOR	1.7	6.286	3.8	1.7	1.8	1.8	1.9	9.1
ENDRIN KETONE	3.3	1.087	7.4	3.3	3.6	3.6	3.8	18
ENDRIN ALDEHYDE	3.3	1.886	7.4	3.3	3.6	3.6	3.8	18
ALPHA-CHLORDANE	1.7	0.7	3.8	1.7	1.8	1.8	1.9	9.1
GAMMA-CHLORDANE	1.7	0.688	3.8	1.7	1.8	1.8	1.9	9.1
TOXAPHENE	170	17.33	380	170	180	180	180	910
AROCLOR-1016	33	6.333	74	33	36	36	38	180
AROCLOR-1221	87	8	150	68	72	72	73	360
AROCLOR-1232	33	3.666	74	33	36	36	38	180
AROCLOR-1242	33	4	74	33	36	36	38	180
AROCLOR-1248	33	8.333	74	73	48	2500	2200	6200
AROCLOR-1254	33	6.999	74	33	36	480	580	1000
AROCLOR-1260	33	5	74	33	36	36	38	180

% SOLIDS: 88 98 92 90 92 92 90 92 92  
 DILUTION FACTOR: 2/20\* 1 1 1/10\* 1 1 1/10\* 5/50\*

CLEAN CTO 89  
 NWIRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE INC - HAMPTON

TCL SOIL PESTICIDES (mg/kg)

CLIENT ID:  
 LABORATORY ID:

BP6832A  
 34368-10

ANALYTE	CRQL	MDL	
ALPHA-BHC	1.7	0.667	UJ(c)
BETA-BHC	1.7	0.67	2 U
DELTA-BHC	1.7	0.5	2 UJ(c)
GAMMA-BHC (INDANE)	1.7	0.467	2 U
HEPTACHLOR	1.7	0.566	17 .
ALDRIN	1.7	0.387	2 U
HEPTACHLOR EPOXIDE	1.7	0.633	2 U
ENDOSULFAN I	1.7	0.733	2 U
DIELDRIN	3.3	1.387	5 J(c)
4,4'-DDE	3.3	1.387	69
ENDRIN	3.3	1.6	39 U
ENDOSULFAN II	3.3	1.6	36 U
4,4'-DDD	3.3	1.333	39 U
ENDOSULFAN SULFATE	3.3	3.2	39 U
4,4'-DDT	3.3	1.5	9.1
METHOXYCHLOR	1.7	6.266	20 UJ(c)
ENDRIN KETONE	3.3	1.087	39 U
ENDRIN ALDEHYDE	3.3	1.866	39 U
ALPHA-CHLORDANE	1.7	0.7	46 .
GAMMA-CHLORDANE	1.7	0.866	62 .
TOXAPHENE	170	17.33	200 U
AROCLOR-1016	33	6.333	39 U
AROCLOR-1221	67	6	60 U
AROCLOR-1232	33	3.666	39 U
AROCLOR-1242	33	4	39 U
AROCLOR-1248	33	8.333	39 U
AROCLOR-1254	33	6.999	39 U
AROCLOR-1260	33	5	39 U

% SOLIDS: 83  
 DILUTION FACTOR: 1/5\*

CLEAN CTO 89  
 NYTRIP BETHPAGE, BETHPAGE, NEW YORK  
 PACE INC. - HAMPTON

TOLUENE AQUEOUS PESTICIDES (µg/L)

CLIENT ID: BP98210RB  
 LABORATORY ID: 34306-20

ANALYTE	CRCL	MDL	U/L(c)
ALPHA-BHC	0.05	0.028	0.05
BETA-BHC	0.05	0.021	0.05
DELTA-BHC	0.05	0.015	0.05
GAMMA-BHC (LINDANE)	0.05	0.014	0.05
HEPTACHLOR	0.05	0.017	0.05
ALDRIN	0.05	0.011	0.05
HEPTACHLOR EPOXIDE	0.05	0.019	0.05
ENDOSULFAN I	0.05	0.022	0.05
DIELDRIN	0.1	0.041	0.1
4,4'-DDE	0.1	0.041	0.1
ENDRIN	0.1	0.048	0.1
ENDOSULFAN II	0.1	0.048	0.1
4,4'-DDD	0.1	0.04	0.1
ENDOSULFAN SULFATE	0.1	0.098	0.1
4,4'-DDT	0.1	0.045	0.1
METHOXYCHLOR	0.05	0.188	0.3
ENDRIN KETONE	0.1	0.032	0.1
ENDRIN ALDEHYDE	0.1	0.056	0.1
ALPHA-CHLORDANE	0.05	0.021	0.05
GAMMA-CHLORDANE	0.05	0.02	0.05
TOXAPHENE	5	0.52	5
AROCLOR-1016	1	0.19	1
AROCLOR-1221	2	0.24	2
AROCLOR-1222	1	0.11	1
AROCLOR-1242	1	0.12	1
AROCLOR-1246	1	0.25	1
AROCLOR-1254	1	0.21	1
AROCLOR-1260	1	0.15	1

DILUTION FACTOR:

Data Qualifier Key

- U - Value is a nondetect as reported by the laboratory.
- J - Value is estimated because it is reported at a concentration less than the associated CRQL.
- UR - Nondetect (quantitation limit) is considered to be unreliable.
- U(b) - Value is considered to be a false positive attributable to blank contamination.
- J(c) - Positive result is considered to be estimated based on exceedance of associated calibration criteria.
- J(q) - Positive result is considered to be estimated due to factors which could affect quantitation, that are not associated with instrument calibration.
- J(s) - Positive result is considered to be estimated because associated surrogate recovery failed to meet quality control criteria.
- UJ(s) - Nondetect is considered to be estimated based on poor surrogate recovery.

CLEAN CTO 89  
 HWIRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE, INC. - HAMPTON

TCL AQUEOUS VOLATILES (ug/L)

CLIENT ID: Q41802 GUSGS02  
 LABORATORY ID: 35444-2 35444-3 35444-5

ANALYTE	BP-	G2H102	G41102	G41802	GUSGS02
	MDL	35444-2	35444-1	35444-3	35444-5
ANALYTE	MDL				
CHLOROMETHANE	10	10	10	10	10
BROMOMETHANE	10	10	10	10	10
VINYL CHLORIDE	10	10	10	10	10
CHLOROETHANE	10	10	10	10	10
METHYLENE CHLORIDE	10	10	10	10	10
ACETONE	10	10	10	10	10
CARBONDISULFIDE	10	10	10	10	10
1,1-DICHLOROETHENE	10	10	10	10	10
1,1-DICHLOROETHANE	10	10	10	10	10
1,2-DICHLOROETHENE	10	10	10	10	10
CHLOROFORM	10	10	10	10	10
1,2-DICHLOROETHANE	10	10	10	10	10
2-BUTANONE	10	10	10	10	10
1,1,1-TRICHLOROETHANE	10	10	10	10	10
CARBON TETRACHLORIDE	10	10	10	10	10
BROMODICHLOROMETHANE	10	10	10	10	10
1,2-DICHLOROPROPANE	10	10	10	10	10
CIS-1,3-DICHLOROPROPENE	10	10	10	10	10
TRICHLOROETHENE	10	10	10	10	10
DIBROMOCHLOROMETHANE	10	10	10	10	10
1,1,2-TRICHLOROETHANE	10	10	10	10	10
BENZENE	10	10	10	10	10
TRANS-1,3-DICHLOROPROPENE	10	10	10	10	10
BROMOFORM	10	10	10	10	10
4-METHYL-2-PENTANONE	10	10	10	10	10
2-HEXANONE	10	10	10	10	10
TETRACHLOROETHENE	10	10	10	10	10
1,1,2,2-TETRACHLOROETHANE	10	10	10	10	10
TOLUENE	10	10	10	10	10
CHLORO BENZENE	10	10	10	10	10
ETHYL BENZENE	10	10	10	10	10
STYRENE	10	10	10	10	10
XYLENES (TOTAL)	10	10	10	10	10

DILUTION FACTOR: 1

CLEAN CTO 89  
 MWIRP BETHPAGE, BETHPAGE, NEW YORK  
 PACE, INC. - HAMPTON

TCL AQUEOUS VOLATILES (ug/L)

CLIENT ID:	BP-	GRB502	TB3-18	TB3-18
LABORATORY ID:	GF8102	35444-3	35444-4	35458-1
ANALYTE	CRQL	MDL		
CHLOROMETHANE	10	2.32	U	10
BROMOMETHANE	10	3.95	U	10
VINYL CHLORIDE	10	2.48	U	10
CHLOROETHANE	10	2.41	U	10
METHYLENE CHLORIDE	10	3.08	U(b)	10
ACETONE	10	2.82	73	10
CARBON DISULFIDE	10	3.86	U	10
1,1-DICHLOROETHENE	10	4.34	U	10
1,1-DICHLOROETHANE	10	1.97	U	10
1,2-DICHLOROETHENE	10	4.89	U	10
CHLOROFORM	10	1.84	U	10
1,2-DICHLOROETHANE	10	1.89	U	10
2-BUTANONE	10	0.44	U	10
1,1-TRICHLOROETHANE	10	2.29	U	10
CARBON TETRACHLORIDE	10	1.58	U	10
BROMODICHLOROMETHANE	10	1.05	U	10
1,2-DICHLOROPROPANE	10	0.66	U	10
Cis-1,3-DICHLOROPROPENE	10	0.85	U	10
TRICHLOROETHENE	10	0.91	U	10
DIBROMOCHLOROMETHANE	10	1.12	U	10
1,1,2-TRICHLOROETHANE	10	0.93	U	10
BENZENE	10	1	U	10
TRANS-1,3-DICHLOROPROPENE	10	0.2	U	10
BROMOFORM	10	1.08	U	10
4-METHYL-2-PENTANONE	10	1.97	U	10
2-HEXANONE	10	0.9	U	10
TETRACHLOROETHENE	10	1	U	10
1,1,2,2-TETRACHLOROETHANE	10	0.61	U	10
TOLUENE	10	1.61	U	10
CHLOROBENZENE	10	0.44	U	10
ETHYLBENZENE	10	0.73	U	10
STYRENE	10	0.61	U	10
XYLENES (TOTAL)	10	0.92	U	10

DILUTION FACTOR:

SITE: BETHPAGE, NY NMRRP  
 LABORATORY: PACE INC. - HAMPTON

TCL VOLATILE AQUEOUS ANALYSES (ug/l)

CLIENT ID: LABORATORY ID:	BFDRTB01 35871-1	BFDRRB01 35871-2	MDL	CRQL	BFPW08 35856-3	BFPW09 35856-4	BFPW10 35856-5
PARAMETER							
CHLOROMETHANE	10	10	2.32	10	33	10	10
BROMOMETHANE	10	10	3.95	10	33	10	10
VINYL CHLORIDE	10	10	2.49	10	33	10	10
CHLOROETHANE	10	10	2.41	10	33	10	10
METHYLENE CHLORIDE	10	10	3.08	10	33	10	10
ACETONE	10	10	2.82	10	33	10	10
CARBON DISULFIDE	10	10	3.86	10	33	10	10
1,1-DICHLOROETHENE	10	10	4.34	10	250	10	10
1,1-DICHLOROETHANE	10	10	1.57	10	33	10	10
1,2-DICHLOROETHENE	10	10	4.89	10	33	10	10
CHLOROFORM	10	10	1.84	10	33	10	10
1,2-DICHLOROETHANE	10	10	1.89	10	33	10	10
2-BUTANONE	10	10	0.44	10	33	10	10
1,1,1-TRICHLOROETHANE	10	10	2.29	10	300	12	3
CARBON TETRACHLORIDE	10	10	1.56	10	33	10	10
BROMODICHLOROMETHANE	10	10	1.05	10	33	10	10
1,2-DICHLOROPROPANE	10	10	0.68	10	33	10	10
Cis-1,3-DICHLOROPROPENE	10	10	0.85	10	33	10	10
TRICHLOROETHENE	10	10	0.81	10	160	30	13
DIBROMOCHLOROMETHANE	10	10	1.12	10	33	10	10
1,1,2-TRICHLOROETHANE	10	10	0.93	10	33	10	10
BENZENE	10	10	1	10	33	10	10
TRANS-1,3-DICHLOROPROPENE	10	10	0.2	10	33	10	10
BROMOFORM	10	10	1.06	10	33	10	10
4-METHYL-2-PENTANONE	10	10	1.97	10	33	10	10
2-HEXANONE	10	10	0.9	10	33	10	10
TETRACHLOROETHENE	10	10	1	10	190	9	3
1,1,2,2-TETRACHLOROETHANE	10	10	0.61	10	33	10	10
TOLUENE	10	10	1.81	10	33	10	10
CHLOROBENZENE	10	10	0.44	10	33	10	10
ETHYLBENZENE	10	10	0.73	10	33	10	10
STYRENE	10	10	0.81	10	33	10	10
XYLENES (TOTAL)	10	10	0.92	10	33	10	10
DILUTION FACTOR:	1	1		1	33	1	1

SITE: BETHPAGE, NY MWIRP  
 LABORATORY: PACE INC. - HAMPTON

TCL VOLATILE AQUEOUS ANALYSES (ug/L)

PARAMETER	CRQL	MDL	BPPW11 35856-6	BPPW14 35856-2	BPPWDU01 35856-7	BPPWMS01 35856-8	BPPWBT01 35856-1
CHLOROMETHANE	10	2.32	10	100	20	100	10
BROMOMETHANE	10	3.95	10	100	20	100	10
VINYL CHLORIDE	10	2.48	10	1400	20	1500	10
CHLOROETHANE	10	2.41	10	100	20	100	10
METHYLENE CHLORIDE	10	3.08	10	100	20	100	10
ACETONE	10	2.82	10	100	20	100	10
CARBON DISULFIDE	10	3.86	10	100	20	100	10
1,1-DICHLOROETHENE	10	4.34	10	100	350	100	10
1,1-DICHLOROETHANE	10	1.57	10	100	12	100	10
1,2-DICHLOROETHENE	10	4.89	10	57	20	66	10
1,2-DICHLOROETHANE	10	1.84	10	100	5	100	10
CHLOROFORM	10	1.89	10	100	20	100	10
2-BUTANONE	10	0.44	10	100	20	100	10
1,1,1-TRICHLOROETHANE	10	2.29	3	100	420	100	10
CARBON TETRACHLORIDE	10	1.58	10	100	20	100	10
BROMODICHLOROMETHANE	10	1.05	10	100	20	100	10
1,2-DICHLOROPROPANE	10	0.68	10	100	20	100	10
Cis-1,3-DICHLOROPROPENE	10	0.85	10	100	20	100	10
TRICHLOROETHENE	10	0.91	13	280	220	330	10
DIBROMOCHLOROMETHANE	10	1.12	10	100	20	100	10
1,1,2-TRICHLOROETHANE	10	0.93	10	100	20	100	10
BENZENE	10	1	10	100	20	100	10
TRANS-1,3-DICHLOROPROPENE	10	0.2	10	100	20	100	10
BROMOFORM	10	1.08	10	100	20	100	10
4-METHYL-2-PENTANONE	10	1.87	10	100	20	100	10
2-HEXANONE	10	0.9	10	100	20	100	10
TETRACHLOROETHENE	10	1	3	250	310	320	10
1,1,2,2-TETRACHLOROETHANE	10	0.61	10	100	20	100	10
TOLUENE	10	1.61	10	100	20	100	10
CHLOROBENZENE	10	0.44	10	100	20	100	10
ETHYLBENZENE	10	0.73	10	100	20	100	10
STYRENE	10	0.61	10	100	20	100	10
XYLENES (TOTAL)	10	0.92	10	100	20	100	10

DILUTION FACTOR:

1 2 10 10 1



SITE: BETHPAGE, NY NWIRP  
 LABORATORY: PACE INC. - HAMPTON

TCL VOLATILE LOW SOIL ANALYSES (mg/Kg)

CLIENT ID: BFD119  
 LABORATORY ID: 35871-4

BFD119  
 35871-3

PARAMETER	CRQL	MDL	U	UJ (c)	UJ (b)	UJ (a)
CHLOROMETHANE	10	2.32	U	U	U	U
BROMOMETHANE	10	3.95	U	U	U	U
VINYL CHLORIDE	10	2.48	U	U	U	U
CHLOROETHANE	10	2.41	U	U	U	U
METHYLENE CHLORIDE	10	3.08	U	U (b)	U (b)	U (b)
ACETONE	10	2.82	U	U (b)	U (b)	U (b)
CARBON DISULFIDE	10	3.68	U	UJ (c)	UJ (c)	UJ (c)
1,1-DICHLOROETHENE	10	4.34	U	U	U	U
1,1-DICHLOROETHANE	10	1.57	U	U	U	U
1,2-DICHLOROETHENE	10	4.89	U	U	U	U
CHLOROFORM	10	1.84	U	U	U	U
1,2-DICHLOROETHANE	10	1.89	U	U	U	U
2-BUTANONE	10	0.44	U	U	U	U
1,1,1-TRICHLOROETHANE	10	2.28	U	U	U	U
CARBON TETRACHLORIDE	10	1.58	U	U	U	U
BROMODICHLOROMETHANE	10	1.05	U	U	U	U
1,2-DICHLOROPROPANE	10	0.66	U	U	U	U
Cis-1,3-DICHLOROPROPENE	10	0.85	U	U	U	U
TRICHLOROETHENE	10	0.91	U	U	U	U
DIBROMOCHLOROMETHANE	10	1.12	U	U	U	U
1,1,2-TRICHLOROETHANE	10	0.93	U	U	U	U
BENZENE	10	1	U	U	U	U
TRANS-1,3-DICHLOROPROPENE	10	0.2	U	U	U	U
BROMOFORM	10	1.06	U	U	U	U
4-METHYL-2-PENTANONE	10	1.97	U	U	U	U
2-HEXANONE	10	0.9	U	U	U	U
TETRACHLOROETHENE	10	1	U	U	U	U
1,1,2,2-TETRACHLOROETHANE	10	0.81	U	U	U	U
TOLUENE	10	1.61	U	U	U	U
CHLOROBENZENE	10	0.44	U	U	U	U
ETHYLBENZENE	10	0.73	U	U	U	U
STYRENE	10	0.81	U	U	U	U
XYLENES (TOTAL)	10	0.82	U	U	U	U

DILUTION FACTOR: 1  
 %SOLIDS: 97

SITE: BETHPAGE, NY NWIRP  
LABORATORY: PACE INC. - HAMPTON

TCL PCB LOW SOIL ANALYSES (mg/Kg)

CLIENT ID: BPDR121  
LABORATORY ID: 35871-5

PARAMETER	CRQL	MDL	
AROCOR-1016	33	6.33	33 U
AROCOR-1221	67	8	67 U
AROCOR-1232	33	3.67	33 U
AROCOR-1242	33	4	33 U
AROCOR-1248	33	8.33	470 J (V) *
AROCOR-1254	33	7	R (V)
AROCOR-1260	33	5	33 U

DILUTION FACTOR: 1  
%SOLID: 97

\* Result taken from dilution analysis.

Summary of Tentatively Identified Compounds (TICs)  
Remaining After Data Qualification

Fraction

Volatile

Named TIC

Trichlorofluoromethane

Data Qualifier Key

- U - Value is a nondetect as reported by the laboratory.
- U(b) - Value is considered to be a false positive attributable to blank contamination.
- J - Value is estimated because it is reported at a concentration less than the associated CRQL.
- J(c) - Positive result is considered to be estimated based on exceedance of associated calibration criteria.
- J(y) - Positive result is considered to be estimated based on exceedance of associated %D between the two GC columns in PCB analysis.
- R(y) - Positive result is considered to be rejected based on exceedance of associated %D between the two GC columns in PCB analysis.

CTO 089  
 SITE: BETHPAGE NWIRP  
 LABORATORY: PACE INC. -- HAMPTON

TCL VOLATILE AQUEOUS ANALYSES (ug/L)

ANALYTE	CRQL	MDL	BP-G-431-01 36253-2	BP-G-DUP5-26 36253-3	BP-G-RB5-28 36253-1	TRIPBLANK 5-28 36253-4
CHLOROMETHANE	10	2.3	U	10	U	10
BROMOMETHANE	10	4	U	10	U	10
VINYL CHLORIDE	10	2.5	U	10	U	10
CHLOROETHANE	10	2.4	U	10	U	10
METHYLENE CHLORIDE	10	3.1	U	3 U(b)	U	10
ACETONE	10	2.8	U	10	88 J(c)	10
CARBON DISULFIDE	10	3.9	U	10	UJ(e)	10
1,1-DICHLOROETHENE	10	4.3	U	10	U	10
1,1-DICHLOROETHANE	10	1.6	U	10	U	10
1,2-DICHLOROETHENE	10	4.9	U	10	U	10
CHLOROFORM	10	1.8	U	10	U	10
1,2-DICHLOROETHANE	10	1.9	U	10	U	10
2-BUTANONE	10	0.4	U	10	U	10
1,1,1-TRICHLOROETHANE	10	2.3	U	10	U	10
CARBON TETRACHLORIDE	10	1.6	U	10	U	10
BROMODICHLOROMETHANE	10	1.1	U	10	U	10
1,2-DICHLOROPROPANE	10	0.7	U	10	U	10
Cis-1,3-DICHLOROPROPENE	10	0.9	U	10	U	10
TRICHLOROETHENE	10	0.9	U	10	U	10
DIBROMOCHLOROMETHANE	10	1.1	U	10	U	10
1,1,2-TRICHLOROETHANE	10	0.9	U	10	U	10
BENZENE	10	1	U	10	U	10
TRANS-1,3-DICHLOROPROPENE	10	0.2	U	10	U	10
BROMOFORM	10	1.1	U	10	U	10
4-METHYL-2-PENTANONE	10	2	U	10	U	10
2-HEXANONE	10	0.9	U	10	UJ(e)	10
TETRACHLOROETHENE	10	1	U	10	U	10
1,1,2,2-TETRACHLOROETHANE	10	0.6	U	10	U	10
TOLUENE	10	1.6	3 J	4 J	U	10
CHLOROBENZENE	10	0.4	U	10	U	10
ETHYLBENZENE	10	0.7	U	10	U	10
STYRENE	10	0.6	U	10	U	10
XYLENES(TOTAL)	10	0.9	U	10	U	10

DILUTION FACTOR: 1

0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0

J

**APPENDIX J**  
**DATA VALIDATION LETTERS**





MEMO TO: DAVE BRAYACK  
DATE: APRIL 22, 1993 - PAGE 2

The data contained in this SDG were validated with regard to the following parameters:

- \* • Holding times
- \* • GC/MS tuning and system performance
- Initial/continuing calibrations
- Field and laboratory method blank analysis
- \* • Internal standards performance
- \* • Surrogate spike recoveries
- \* • Matrix spike/matrix spike duplicate results
- \* • Compound identification
- \* • Detection limits
- \* • Compound quantitation
- \* • Data completeness

The symbol (\*) indicates that all quality control criteria were met for this parameter. Documentation of compliance for these indicated parameters is provided in the attached Appendix C (Regional Worksheets).

Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix D. Qualified Analytical Results are presented in Appendix A.

#### SUMMARY

##### Volatile Organic Compound Analysis

Two of the continuing calibrations performed displayed some noncompliances. For the continuing calibrations performed on 3/18 and 3/19/93 the Percent Differences (%Ds) between the initial and continuing calibration response factors for acetone, carbon disulfide, 1,2-dichloroethene, and 4-methyl-2-pentanone exceeded the 25% quality control criterion. Positive and nondetected results reported for these compounds in the associated samples were qualified as estimated, coded [J(c) and UJ(c)], respectively. No bias can be determined.

Methylene chloride was detected at a maximum concentration of 6  $\mu\text{g/L}$  in the analysis of laboratory method blanks, and acetone was detected in a maximum concentration of 96  $\mu\text{g/L}$  in the analysis of an associated rinsate blank. Action levels of 60  $\mu\text{g/L}$  methylene chloride and 960  $\mu\text{g/L}$  acetone were used to evaluate the data. Sample aliquot size and dilution factors were considered during

MEMO TO: DAVE BRAYACK  
DATE: APRIL 22, 1993 - PAGE 3

application of the action levels. Positive results reported for the blank contaminants at concentrations less than the Contract Required Quantitation Limit (CRQL) and within the action level, have been replaced by the CRQL value and are qualified as undetected, coded [U(b)]. These results are believed to be false positives. Positive results reported for the blank contaminants at concentrations above the CRQL but within the validation action level are likewise qualified as undetected, coded [U(b)]. No actions were necessary for acetone as the only positive results reported for this compound were detected in the two rinsate blanks.

#### ADDITIONAL COMMENTS

No other problems were noted. Positive results reported at concentrations below the associated Contract Required Quantitation Limit (CRQL), are qualified as estimated, [J]. No Tentatively Identified Compounds (TICs) were detected in the laboratory method blanks or environmental samples.

#### EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Methylene chloride was detected in the laboratory method blank. The %D between initial and continuing calibration response factors for several compounds was greater than 25%.

**Other Factors Affecting Data Quality:** Acetone was detected in the rinsate blanks. Positive sample results reported at concentrations below the CRQL are qualified as estimates, coded [J].

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (3/90), as amended for use within EPA Region II, and the NEESA guidelines "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (20.2-047B, 6/88). The text of this report has been formulated to address only those problem areas affecting data quality.

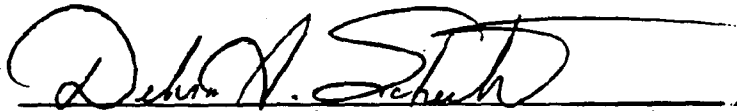
MEMO TO: DAVE BRAYACK  
DATE: APRIL 22, 1993 - PAGE 4

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NEESA guidelines and the Quality Assurance Project Plan (QAPP)."



Brown & Root Environmental Corporation

Kelly A. Johnson  
Chemist/Data Validator



Brown & Root Environmental Corporation

Debra A. Scheib  
CLEAN Quality Assurance Manager

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. ApNavy Installation Restoration Program" (20.2-047B, 6/88).  
The text of this report has been formulated to address only those problem areas affecting data quality.



MEMO TO: DAVE BRAYACK  
DATE: MARCH 17, 1993 - PAGE 2

The data contained in this SDG were validated with regard to the following parameters:

- \* • Holding times
- \* • C/MS tuning and system performance
- Initial/continuing calibrations
- Field and laboratory method blank results
- \* • Internal standards performance
- Surrogate spike recoveries
- \* • Matrix spike/matrix spike duplicate results
- \* • Field duplicate precision
- \* • Compound identification
- \* • Detection limits
- \* • Compound quantitation
- \* • Tentatively Identified Compounds (TICs)
- \* • Data completeness

The symbol (\*) indicates that all quality control criteria were met for this parameter. Documentation of compliance for these indicated parameters is provided in the attached Appendix C (Regional Worksheets).

Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix D. Qualified Analytical results are presented in Appendix A.

#### SUMMARY

##### Volatile Organic Compound Analysis

For sample BP-SB-242I10, the toluene-d8 surrogate spike percent recovery (%R) exceeded the upper quality control limit, and the bromofluorobenzene surrogate %R was below the lower quality control limit. In addition, the chlorobenzene-d5 internal standard area was below the lower quality control limit. The laboratory reanalyzed the sample, however, there were no marked improvements regarding the aforementioned quality control criteria. All positive results and nondetects are qualified as estimated, [coded J(s,a) and UJ(s,a)], respectively.

Some continuing calibration percent differences (%Ds) reported for 4-methyl-2-pentanone, 2-hexanone, and carbon disulfide exceeded the 25% quality control limit. Nondetects for these compounds are

MEMO TO: DAVE BRAYACK  
DATE: MARCH 17, 1993 - PAGE 3

qualified as estimated, [coded UJ(c)], in affected samples; no positive results were reported.

A continuing calibration %D for chloromethane exceeded 90%. The nondetected results reported for this compound in the associated samples are considered to be unusable and are qualified as rejected, [coded R(c)]. No associated positive results were reported.

Methylene chloride was detected at a maximum concentration of 4  $\mu\text{g}/\text{Kg}$  in a laboratory method blank and 76  $\mu\text{g}/\text{L}$  acetone was detected in a rinsate blank. Action levels of 40  $\mu\text{g}/\text{Kg}$  and 760  $\mu\text{g}/\text{Kg}$ , respectively, were used to evaluate the data. Moisture correction and dilution factors were considered during the application of the action levels. Positive results reported for methylene chloride and acetone at concentrations less than the Contract Required Quantitation Limit (CRQL) and the validation action level, have been replaced by the CRQL value and are qualified as undetected, [coded U(b)]. These results are considered to be false positives. Positive results reported for methylene chloride and acetone at concentrations above the CRQL but within the validation action level, remain as reported and are likewise qualified as undetected, [coded U(b)]. The common laboratory contaminant 2-butanone was also detected in a field quality control blank, however, no actions were warranted because no positive results were reported for this compound in any associated environmental sample.

#### ADDITIONAL COMMENTS

No other problems were noted. Positive results reported at concentrations below the CRQL are qualified as estimated, [J].

#### EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Chloromethane nondetects in some samples are considered to be unreliable because the laboratory could not demonstrate sustained calibration for this compound. Minor calibration exceedances were noted for several other compounds. Methylene chloride was detected in laboratory method blanks.

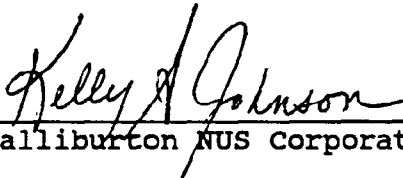
**Other Factors Affecting Data Quality:** Sample BP-SB-242I10 demonstrated matrix interferences as evidenced by problems with surrogate recovery and internal standards performance. Acetone and

MEMO TO: DAVE BRAYACK  
DATE: MARCH 17, 1993 - PAGE 4

2-butanone were detected in associated field quality control blanks. Positive results reported at concentrations below the CRQL are qualified as estimates.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (3/90), as amended for use within EPA Region II, and the NEESA guidelines "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (20.2-047B, 6/88). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NEESA guidelines and the Quality Assurance Project Plan (QAPP)."

  
Halliburton NUS Corporation

Kelly A. Johnson  
Chemist/Data Validator

  
Halliburton NUS Corporation

Debra A. Scheib  
CLEAN Quality Assurance Manager

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation





MEMO TO: DAVE BRAYACK  
DATE: MARCH 31, 1993 - PAGE 2

The data contained in this SDG were validated with regard to the following parameters:

- \* • Holding times
- \* • GC/MS tuning and system performance
- Initial/continuing calibrations
- \* • Field and laboratory method blank analysis
- \* • Internal standards performance
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate results
- \* • Field duplicate precision
- Compound identification
- \* • Detection limits
- Compound quantitation
- Data completeness

The symbol (\*) indicates that all quality control criteria were met for this parameter. Documentation of compliance for these indicated parameters is provided in the attached Appendix C (Regional Worksheets).

Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix D. Qualified Analytical Results are presented in Appendix A.

#### SUMMARY

##### Pesticide/PCB Compound Analysis

The initial calibration Percent Relative Standard Deviations (%RSDs) for  $\alpha$ -BHC and  $\Delta$ -BHC on the SPB-608 analytical column were less than the 20% quality control limit. Nondetects reported for these compounds are qualified as estimated, [coded UJ(c)], in all affected samples.

The Relative Percent Difference (RPD) exceeded 25% for methoxychlor for the continuing calibration INDA mixture analysis performed on the SPB-608 analytical column (01/09/93, 0845 hours). Nondetects reported for methoxychlor are qualified as estimated, [coded UJ(c)], in affected samples.

The retention time window established by the initial calibration on the SPB-608 analytical column was marginally exceeded by the

MEMO TO: DAVE BRAYACK  
DATE: MARCH 31, 1993 - PAGE 3

endosulfan II continuing calibration standard analyzed on 01/10/93 at 1045 hours. No action was taken because review of the affected sample chromatograms did not indicate the presence of endosulfan II in an expanded retention time window.

The percent recovery (%R) reported for the surrogate spike compound Tetrachloro-m-xylene (TCX) on one or both analytical columns was marginally below the lower advisory limit for samples BP-: SB21503-A, SS104-A, SS208-A, SS210-A and SS214-A. In accordance with EPA Region II data validation protocol, positive results in these samples are qualified as estimated, [coded J(s)]; no action is taken for associated nondetects. These results are potentially biased low.

One decachlorobiphenyl (DCB) surrogate spike compound recovery was < 10% while one or both TCX recoveries were marginally below the lower advisory limit for samples BP-: SD201-A, SD202-A, SS207-A and SS216-A. In accordance with EPA Region II data validation protocol, positive results reported in these affected samples have been qualified as estimated, [coded J(s)]; associated nondetects have been rejected, [coded R(s)].

Zero percent recoveries of both surrogates for both analytical columns were reported for sample BP-SB12103-A and its dilution analysis. It is believed that the laboratory failed to surrogate spike this sample. In accordance with EPA Region II data validation protocol, positive results reported in this sample are qualified as estimated, [coded J(s)]; nondetects are rejected, [coded R(s)].

The Matrix Spike/Matrix Spike Duplicate (MS/MSD) %Rs reported for 4,4'-DDT in the spiked sample analyses of BP-DUP01-A greatly exceeded the upper quality control limit. No action was taken in accordance with USEPA Region II data validation protocol.

Reported positive results for some samples exceeded the linear calibration range and required dilution analyses. The dilution analysis results are reported in Appendix A for the affected over range target compounds.

Positive results reported for 4,4'-DDE and 4,4'-DDT in sample BP-DUP01-A were greater than the respective upper linear calibration limits for these compounds, however, dilution analyses were not performed as required. These results are therefore, then,

MEMO TO: DAVE BRAYACK  
DATE: MARCH 31, 1993 - PAGE 4

qualified as estimated, [coded J(q)], due to the uncertainty associated with quantitation beyond the established calibration range.

The laboratory, in violation of CLP analytical protocol, used only a designated singular peak to quantify the multicomponent analytes. The laboratory was contacted on 03/20/93 and a request for recalculation and resubmission of incorrect data summary forms (Forms 1 and 10B) was made at that time. The corrected forms were received on 04/12/93.

Some sample results reported for aroclor-1248 and aroclor-1254 and one result reported for 4,4'-DDT in sample BP-DUP01-A were not confirmed by GC/MS as required by the analytical SOW OLM01.8. The laboratory did, however, perform GC/MS confirmation on one sample (BP-SB20603) for aroclor-1248. The laboratory stated that additional GC/MS analyses were not performed because it was felt that the confirmed analytical result was representative of all other positive results reported for aroclor-1248 in samples collected in this sampling round. No validation actions were taken, because review of the affected sample chromatograms indicated that a correct identification of the affected compound mixture was made based on retention times.

The quantitative agreement between corollary analyte values generated on both analytical columns was greater than 25% for some samples with positive results reported for aroclor-1248, aroclor-1254, 4,4'-DDT, 4,4'-DDD, 4,4'-DDE, heptachlor epoxide, and dieldrin. These positive values have been qualified as estimated, [coded J(q)].

#### ADDITIONAL COMMENTS

No other problems were noted. Some results were reported at concentrations below the associated Contract Required Quantitation Limit (CRQL).

#### EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Initial calibration %RSDs were not met for two BHC compounds. The continuing calibration RPD for methoxychlor failed to meet quality control limits. Endosulfan II responded outside the established retention time window for a continuing calibration run. Sample BP-DUP01-A should have been run

MEMO TO: DAVE BRAYACK  
DATE: MARCH 31, 1993 - PAGE 5

as a dilution and was not. The laboratory incorrectly quantitated the multicomponent analytes and had to be contacted for recalculation and resubmission of the affected data. The laboratory failed to perform several confirmatory analyses. It is believed that the laboratory failed to spike one sample with surrogates.

**Other Factors Affecting Data Quality:** Surrogate recoveries were outside of advisory limits for several samples. MS/MSD %Rs for 4,4'-DDT exceeded quality control limits.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (3/90), as amended for use within EPA Region II, and the NEESA guidelines "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (20.2-047B, 6/88). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NEESA guidelines and the Quality Assurance Project Plan (QAPP)."

  
Halliburton NUS Corporation

Norman J. Straub  
Chemist/Data Validator

  
Halliburton NUS Corporation

Debra A. Scheib  
CLEAN Quality Assurance Manager

MEMO TO: DAVE BRAYACK  
DATE: MARCH 31, 1993 - PAGE 6

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation



MEMO TO: DAVE BRAYACK  
DATE: APRIL 14, 1993 - PAGE 2

- \* • Matrix spike/matrix spike duplicate results
- \* • Compound identification
- \* • Detection limits
- \* • Compound quantitation
- \* • Data completeness

The symbol (\*) indicates that all quality control criteria were met for this parameter. Documentation of compliance for these indicated parameters is provided in the attached Appendix C (Regional Worksheets).

Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix D. Qualified Analytical Results are presented in Appendix A.

#### SUMMARY

##### Volatile Organic Compound Analysis

Methylene chloride was detected at a maximum concentration of 6 µg/L in the analysis of laboratory method blanks, and acetone was detected in a maximum concentration of 91 µg/L in the analysis of an associated field blank. Action levels of 60 µg/L methylene chloride and 910 µg/L acetone were used to evaluate the data. Sample aliquot size and dilution factors were considered during application of the action levels. Positive results reported for the blank contaminants at concentrations less than the Contract Required Quantitation Limit (CRQL) and within the action level, have been replaced by the CRQL value and are qualified as undetected, coded [U(b)]. These results are believed to be false positives. Positive results reported for the blank contaminants at concentrations above the CRQL but within the validation action level are likewise qualified as undetected, coded [U(b)].

#### ADDITIONAL COMMENTS

No other problems were noted. Positive results reported at concentrations below the associated Contract Required Quantitation Limit (CRQL), are qualified as estimated, [J]. No Tentatively Identified Compounds (TICs) were detected in the laboratory method blanks or environmental samples.

MEMO TO: DAVE BRAYACK  
DATE: APRIL 14, 1993 - PAGE 3

EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Methylene chloride was detected in the laboratory method blank.

**Other Factors Affecting Data Quality:** Acetone was detected in the field and rinsate blanks. Positive sample results reported at concentrations below the CRQL are qualified as estimates.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (3/90), as amended for use within EPA Region II, and the NEESA guidelines "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (20.2-047B, 6/88). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NEESA guidelines and the Quality Assurance Project Plan (QAPP)."

  
\_\_\_\_\_  
Halliburton NUS Corporation

Kelly A. Johnson  
Chemist/Data Validator

  
\_\_\_\_\_  
Halliburton NUS Corporation

Debra A. Scheib  
CLEAN Quality Assurance Manager



C-49-4-3-171

MEMO TO: DAVE BRAYACK  
DATE: APRIL 14, 1993 - PAGE 4

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation



MEMO TO: DAVE BRAYACK  
DATE: JUNE 15, 1993 - PAGE 2

The data contained in this SDG were validated with regard to the following parameters:

- \* • Holding times
- \* • GC/MS tuning and system performance
- Initial/continuing calibrations
- Field and laboratory method blank results
- \* • Internal standards performance
- Surrogate spike recoveries
- \* • Matrix spike/matrix spike duplicate results
- Field duplicate precision
- Compound identification
- \* • Detection limits
- Compound quantitation
- \* • Tentatively Identified Compounds (TICs)
- \* • Data completeness

The symbol (\*) indicates that all quality control criteria were met for this parameter. Documentation of compliance for these indicated parameters is provided in the attached Appendix C (Regional Worksheets).

Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix D. Qualified Analytical Results are presented in Appendix A.

SUMMARY

Volatile Organic Compound Analysis

The initial calibration Percent Relative Standard Deviation (%RSD) for acetone exceeded 30%. No actions were taken as no positive results were reported for this compound in the affected samples and nondetects were not compromised. In addition, some continuing calibration Percent Differences (%Ds) reported for acetone and carbon disulfide exceeded the 25% quality control limit. Nondetects for these compounds are qualified as estimated, [coded UJ(c)], in affected samples; no positive results were reported.

Methylene chloride was detected at a maximum concentration of 4 µg/Kg, and acetone was detected at a maximum concentration of 7 µg/Kg in the laboratory method blanks. Action levels of 40 µg/Kg and 70 µg/Kg, respectively, were used to evaluate the low level soil data. Moisture correction and dilution factors were

MEMO TO: DAVE BRAYACK  
DATE: JUNE 15, 1993 - PAGE 3

considered during the application of the action levels. Positive results reported for methylene chloride and acetone at concentrations less than the Contract Required Quantitation Limit (CRQL) and the validation action level, have been replaced by the CRQL value and are qualified as undetected, [coded U(b)]. These results are considered to be false positives. Positive results reported for acetone at concentrations above the CRQL but within the validation action level, remain as reported and are likewise qualified as undetected, [coded U(b)]. No contamination was found in either the aqueous laboratory method blanks or the field quality control blanks, therefore, the aqueous samples were not qualified for blank contamination.

Field duplicate imprecision was noted for the sample pair BP-PW-08 and BP-PW-DU-01. The Relative Percent Difference (RPD) for several compounds exceeded 30%, which is generally considered to be the evaluation limit used for aqueous samples. However, in accordance with EPA Region II data validation protocol, no actions were taken for the affected positive results because the exceedances were not considered to be "gross".

According to the laboratory case narrative, the compound 1,1,1-trichloroethane was flagged with an "E" qualifier on the Form I for sample BP-PW-DU-01. This compound slightly exceeded the calibration range but, theoretically, was still within the linear range of the instrument (209 > 200). No dilution analysis was performed because the laboratory contends this value is accurate. The positive result for this compound in sample BP-PW-DU-01 has been qualified as estimated, [coded J(q)], as it is the professional opinion of the data reviewer that the exact quantitation of this compound is not known despite the laboratory's contention that quantitation is accurate.

#### PCB Compound Analysis

The surrogate spike compound Tetrachloro-m-xylene (TCX) yielded Percent Recoveries (%Rs) that were less than the lower advisory limit yet > 10% for the environmental sample, laboratory method blank, and the laboratory control spike/laboratory control spike duplicate (LCS/LCSD). Surrogate recoveries outside of quality criteria suggest sample preparation, instrument performance, and/or sample matrix interference problems which may compromise the detection and quantitation of target contaminants present in the sample. According to EPA Region II data validation protocol, no

MEMO TO: DAVE BRAYACK  
DATE: JUNE 15, 1993 - PAGE 4

action was taken for affected sample since only one surrogate compound was below the quality control limit.

The initial calibration %RSD for alpha-BHC exceeded the 20% quality control limit. No action was warranted because the affected environmental sample was not analyzed for this compound.

The Relative Percent Difference (RPD) for alpha-BHC for Performance Evaluation Mixture (PEM) analysis (PEMH1) exceeded 25% on one analytical column. No action were taken because the associated environmental sample was not analyzed for this compound.

A retention time shift was observed for endrin on one GC column (SPB-1710) in the PEM analyses (PEMHG). Retention time shifts were also reported on the same column for endosulfan II, endosulfan sulfate, and endrin aldehyde in the Independent B Mixture (INDBMHE). No actions were taken in the associated environmental sample since this sample was not analyzed for these compounds and the compounds were within the retention time windows on the other GC column (SPB-608).

The Percent Difference (%D) of the positive results obtained on the two GC columns exceeded 25% for the PCB results reported in the sample, BP-DR-121. The positive result for Aroclor-1254 was > 90% between the two GC columns, and the positive result for Aroclor-1248 (taken from the sample dilution) was > 25% yet < 50%. The diluted result was chosen because the original result exceeded the instrument's linear calibration range. In addition, the aforementioned compounds were quantified from two peaks (instead of three) due to interference between the Aroclors. In accordance with EPA Region II data validation protocol, positive results for Aroclor 1254 and 1248 in the affected sample were qualified as rejected, [coded R(y)] and estimated, [coded J(y)], respectively.

#### ADDITIONAL COMMENTS

No other problems were noted. Positive results reported at concentrations below the associated Contract Required Quantitation Limit (CRQL), are qualified as estimated, coded [J]. A summary of Tentatively Identified Compounds (TICs) are included in Appendix A.

#### EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Minor calibration exceedances were

**MEMO TO: DAVE BRAYACK**  
**DATE: JUNE 15, 1993 - PAGE 5**

noted for some compounds. Methylene chloride and acetone were detected in laboratory method blanks. TCX surrogate recoveries were below quality control limits for the laboratory method blank and laboratory control spike MS and MSD. Alpha-BHC RPD criteria was not met for one column for one PEM analyses. The %Ds between the two GC columns exceeded quality control criteria for positive PCB results.

**Other Factors Affecting Data Quality:** Field duplicate imprecision was observed for one field duplicate pair in the volatile fraction. TCX surrogate recoveries failed to meet advisory limits for the PCB sample.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (3/90), as amended for use within EPA Region II, and the NEESA guidelines "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B, 6/88). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NEESA guidelines and the Quality Assurance Project Plan (QAPP)."

MEMO TO: DAVE BRAYACK  
DATE: JUNE 15, 1993 - PAGE 6

Michelle L. Allen  
Brown & Root Environmental

Michelle L. Allen  
Chemist/Data Validator

Debra A. Scheib  
Brown & Root Environmental

Debra A. Scheib  
CLEAN Quality Assurance Manager

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation



**Brown & Root Environmental**

**INTERNAL CORRESPONDENCE**

C-49-07-3-084

**TO: DAVE BRAYACK**                      **DATE: JULY 12, 1993**  
**FROM: MICHELLE L. ALLEN**              **COPIES: D. A. SCHEIB**  
**SUBJECT: ORGANIC DATA VALIDATION**  
**TCL VOLATILES**  
**CTO 089, NWIRP BETHPAGE, BETHPAGE, NEW YORK**  
**CASE NO. BTHPG, SDG NO. 43I01**

**SAMPLES: 4/Aqueous/**

BP-G-43I-01      BP-G-DUP5-26  
BP-G-RB5-26      TRIPBLANK 5-26

**INTRODUCTION**

A validation was performed on the CTO 089 NIWIRP Bethpage site analytical data from the Target Compound List (TCL) volatile organic compound analysis of four (4) aqueous samples analyzed by PACE, Inc. - Hampton under Case No. BETHP, SDG 43I01. These samples were collected by Brown & Root Environmental on May 26, 1993.

Included with this sample set is one field duplicate pair (samples BP-G-43I-01 and BP-G-DU5-26), one rinsate blank (designated -RB5-), and one trip blank (designated TRIPBLANK 5-). A Matrix Spike/Matrix Spike Duplicate (MS/MSD) was not requested for these volatile aqueous samples since they are an addendum to a previous Bethpage sampling round. Hence, the data could not be validated for this parameter.

All analyses were conducted in accordance with Naval Energy and Environmental Support Activity (NEESA) Level D Quality Assurance/Quality Control (QA/QC) criteria, using Contract Laboratory Program (CLP) Statement of Work (SOW) OLM01.8 analytical and reporting protocols.



MEMO TO: DAVE BRAYACK  
 DATE: JULY 12, 1993 - PAGE 2

The data contained in this SDG were validated with regard to the following parameters:

- \* • Holding times
- \* • GC/MS tuning and system performance
- Initial/continuing calibrations
- Field and laboratory method blank results
- \* • Internal standards performance
- \* • Surrogate spike recoveries
- \* • Field duplicate precision
- \* • Compound identification
- \* • Detection limits
- \* • Compound quantitation
- \* • Tentatively Identified Compounds (TICs)
- \* • Data completeness

The symbol (\*) indicates that all quality control criteria were met for this parameter. Documentation of compliance for these indicated parameters is provided in the attached Appendix C (Regional Worksheets).

Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix D. Qualified Analytical Results are presented in Appendix A.

#### SUMMARY

##### Volatile Organic Compound Analysis

The initial calibration Percent Relative Standard Deviation (%RSD) for acetone exceeded 30%. The positive result reported for this compound in sample BP-G-RB5-26 was qualified as estimated [coded J(c)]. Nondetected results in the other affected samples were not compromised. In addition, the continuing calibration Percent Differences (%Ds) reported for carbon disulfide and 2-hexanone were greater than 25%. Nondetects for these compounds are qualified as estimated, [coded UJ(c)], in affected samples; no positive results were reported.

Methylene chloride was detected at a maximum concentration of 3 µg/L in the laboratory method blank and acetone was detected at a maximum concentration of 86 µg/L in the field quality control blank, BP-G-RB5-26. Action levels of 30 µg/L and 860 µg/L, respectively, were used to evaluate the low level water data.

MEMO TO: DAVE BRAYACK  
DATE: JULY 12, 1993 - PAGE 3

Aliquot size used for analysis was considered during the application of the action levels. A positive result reported for methylene chloride in sample BP-G-DU5-26 at a concentration less than the Contract Required Quantitation Limit (CRQL) and the validation action level, has been replaced by the CRQL value and is qualified as undetected, [coded U(b)]. This result is considered to be a false positive. No positive results were reported for acetone, therefore, associated environmental samples were not qualified for blank contamination for this compound.

No other problems were noted. Positive results reported at concentrations below the associated Contract Required Quantitation Limit (CRQL), are qualified as estimated, coded [J].

#### EXECUTIVE SUMMARY

**Laboratory Performance Issues:** Minor calibration exceedances were noted for some compounds. Methylene chloride was detected in laboratory method blank.

**Other Factors Affecting Data Quality:** Acetone was detected in the rinsate field quality control blank.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (3/90), as amended for use within EPA Region II, and the NEESA guidelines "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (NEESA 20.2-047B, 6/88). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NEESA guidelines and the Quality Assurance Project Plan (QAPP)."

  
Brown & Root Environmental

Michelle L. Allen  
Chemist/Data Validator

MEMO TO: DAVE BRAYACK  
DATE: JULY 12, 1993 - PAGE 4



Brown & Root Environmental

Debra A. Scheib  
CLEAN Quality Assurance Manager

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

Data Qualifier Key

- U - Value is a nondetect as reported by the laboratory.
- U(b) - Value is considered to be a false positive attributable to blank contamination.
- J - Value is estimated because it is reported at a concentration less than the associated CRQL.
- J(c) - Positive result is considered to be estimated based on exceedance of associated calibration criteria.
- UJ(c) - Nondetected result is considered to be estimated based on exceedance of associated calibration criteria.



**K**

**APPENDIX K**  
**RISK ASSESSMENT CALCULATIONS**

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1242 (Site 1)

Enter Matrix: Soil

Enter number of samples: 9

Degrees of Freedom: 8

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	1800	7.495542	11985829	2.882395
2	1700	7.438384	12688240	2.691579
3	285	5.652489	24771082	.0211095
4	19	2.944439	27489632	8.141556
5	18500	9.825526	1.7524e8	16.22274
6	19	2.944439	27489632	8.141556
7	25000	10.12663	3.8959e8	18.73895
8	18	2.890372	27500119	8.453024
9	17.5	2.862201	27505363	8.617626
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
44		0	0	0
Mean:	5262.056	5.797780	9514.854	3.039542
		329.5672		

Upper 95% confidence limit on arithmetic mean: 11161.26  
 Upper 95% confidence limit on geometric mean: 3.7051e8

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1248 (Site 1)

Enter Matrix: Soil

Enter number of samples: 9

Degrees of Freedom: 8

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	7900	8.974618	2.012e10	.0896094
2	7500	8.922658	2.023e10	.0612011
3	25000	10.12663	1.556e10	2.106450
4	1100	7.003065	2.209e10	2.796267
5	1300000	14.07787	1.323e12	29.18814
6	2500	7.824046	2.168e10	.7245818
7	900	6.802395	2.215e10	3.507661
8	1700	7.438384	2.191e10	1.529887
9	1000	6.907755	2.212e10	3.124107
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
Mean:	149733.3	8.675270 5856.279	431418.5	2.321850

Upper 95% confidence limit on arithmetic mean: 417212.8  
 Upper 95% confidence limit on geometric mean: 21465442



UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1254 (Site 1)  
 Enter Matrix: Soil

Enter number of samples: 9  
 Degrees of Freedom: 8

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	3600	8.188689	2.8636e8	.4313792
2	3400	8.131531	2.9317e8	.3595636
3	5000	8.517193	2.4094e8	.9708135
4	660	6.492240	3.9451e8	1.080882
5	17000	12.04355	2.234e10	20.35507
6	530	6.272877	3.9969e8	1.585125
7	900	6.802395	3.8503e8	.5321699
8	400	5.991465	4.0490e8	2.372924
9	210	5.347108	4.1259e8	4.773294
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
Mean:	20522.22	7.531894 1866.638	56081.19	2.014362

Upper 95% confidence limit on arithmetic mean: 55292.56  
 Upper 95% confidence limit on geometric mean: 938416.6

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1242 (Site 1) - Future soil (post remediation).  
 Enter Matrix: Soil

Enter number of samples: 8  
 Degrees of Freedom: 7

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	Log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	1800	7.495542	3266378.	4.845413
2	1700	7.438384	3637841.	4.597043
3	285	5.652489	11037760	.1282909
4	19	2.944439	12875987	5.521903
5	19	2.944439	12875987	5.521903
6	25000	10.12663	4.5765e8	23.35131
7	18	2.890372	12883164	5.778929
8	17.5	2.862201	12886754	5.915165
9		0	0	0
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
44		0	0	0
Mean:	3607.313	5.294312 199.2005	8677.647	2.819827

Upper 95% confidence limit on arithmetic mean: 9421.195  
 Upper 95% confidence limit on geometric mean: 1.1449e8

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1248 (Site 1) - Future soil (post remediation).  
 Enter Matrix: Soil

Enter number of samples: 8  
 Degrees of Freedom: 7

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	7900	8.974618	3802500	.9499894
2	7500	8.922658	2402500	.8514016
3	25000	10.12663	3.6290e8	4.522798
4	1100	7.003065	23522500	.9937669
5	2500	7.824046	11902500	.0309401
6	900	6.802395	25502500	1.434124
7	1700	7.438384	18062500	.3153502
8	1000	6.907755	24502500	1.192876
9		0	0	0
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
Mean:	5950	7.999944 2980.791	8216.708	1.212509

Upper 95% confidence limit on arithmetic mean: 11455.06  
 Upper 95% confidence limit on geometric mean: 38557.68

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1254 (Site 1) - Future soil (post remediation).  
 Enter Matrix: Soil

Enter number of samples: 8  
 Degrees of Freedom: 7

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	3600	8.188689	3106406.	1.490236
2	3400	8.131531	2441406.	1.353950
3	5000	8.517193	10001406	2.400194
4	660	6.492240	1386506.	.2262879
5	530	6.272877	1709556.	.4831085
6	900	6.802395	878906.3	.0274043
7	400	5.991465	2066406.	.9534986
8	210	5.347108	2648756.	2.627088
9		0	0	0
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
Mean:	1837.5	6.967937 1062.030	1860.850	1.168746

Upper 95% confidence limit on arithmetic mean: 3084.239  
 Upper 95% confidence limit on geometric mean: 11534.63

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1248 (Site 2)

Enter Matrix: Soil

Enter number of samples: 10

Degrees of Freedom: 9

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	1900	7.549609	11660176	.3072468
2	6800	8.824678	2206116.	3.346584
3	133.5	4.894101	26844833	4.415080
4	73	4.290459	27475419	7.316220
5	60.5	4.102643	27606618	8.367524
6	2500	7.824046	7922536.	.6868022
7	2200	7.696213	9701356.	.4912635
8	6200	8.732305	783756.1	3.017148
9	33000	10.40426	7.6648e8	11.62095
10	280	5.634790	25348204	1.851018
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
Mean:	5314.7	6.995311	10033.42	2.145275
		1091.503		

Upper 95% confidence limit on arithmetic mean: 11130.52  
 Upper 95% confidence limit on geometric mean: 666346.8

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1254 (Site 2)  
 Enter Matrix: Soil

Enter number of samples: 10  
 Degrees of Freedom: 9

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	Log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	1250	7.130899	27406.80	2.015914
2	3750	8.229511	7105157.	6.342546
3	49	3.891820	1072157.	3.309669
4	16.5	2.803360	1140517.	8.454775
5	18	2.890372	1137316.	7.956338
6	490	6.194405	353370.8	.2336131
7	580	6.363028	254469.8	.4250494
8	1000	6.907755	7131.803	1.432056
9	3600	8.188689	6327992.	6.138597
10	91	4.510860	986942.9	1.440505
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
Mean:	1084.45	5.711070 302.1942	1430.325	2.048009

Upper 95% confidence limit on arithmetic mean: 1913.531  
 Upper 95% confidence limit on geometric mean: 106109.0

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1248 (Site 3)

Enter Matrix: Soil

Enter number of samples: 6

Degrees of Freedom: 5

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
1	830	6.721426	380791.8	4.691983
2	250	5.521461	1375.174	.9334147
3	44	3.784190	28532.84	.5946529
4	19.5	2.970414	37410.01	2.511948
5	85	4.442651	16362.67	.0126958
6	49	3.891820	26868.67	.4402412
7		0	0	0
8		0	0	0
9		0	0	0
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
Mean:	212.9167	4.555327	313.4777	1.355355
		95.13786		

Upper 95% confidence limit on arithmetic mean: 470.7898  
 Upper 95% confidence limit on geometric mean: 1296.072

UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN

Enter Chemical: Aroclor-1254 (Site 3)  
 Enter Matrix: Soil

Enter number of samples: 6  
 Degrees of Freedom: 5

Enter sample results (use 1/2 CRDL for non-detects)

No.	Conc.	Log(Conc.)	(Xi-Xbar)**2	(Xi-Xbar)**2
-----	-----	-----	-----	-----
1	1800	7.495542	1882155.	6.636888
2	530	6.272877	10387.01	1.832100
3	85	4.442651	117706.2	.2272188
4	19.5	2.970414	166940.3	3.798256
5	85	4.442651	117706.2	.2272188
6	49	3.891820	143704.2	1.055768
7		0	0	0
8		0	0	0
9		0	0	0
10		0	0	0
11		0	0	0
12		0	0	0
13		0	0	0
14		0	0	0
15		0	0	0
16		0	0	0
17		0	0	0
18		0	0	0
19		0	0	0
20		0	0	0
21		0	0	0
22		0	0	0
23		0	0	0
24		0	0	0
25		0	0	0
26		0	0	0
27		0	0	0
28		0	0	0
29		0	0	0
30		0	0	0
31		0	0	0
32		0	0	0
33		0	0	0
34		0	0	0
35		0	0	0
36		0	0	0
37		0	0	0
38		0	0	0
39		0	0	0
40		0	0	0
41		0	0	0
42		0	0	0
43		0	0	0
Mean:	428.0833	4.919326	698.3694	1.659967
		136.9103		

Upper 95% confidence limit on arithmetic mean: 1002.576  
 Upper 95% confidence limit on geometric mean: 4549.970



**SAMPLE CALCULATIONS**

CLIENT NAVY CLEAN - NWIRD BETHPAGE		JOB NUMBER 1953	
SUBJECT CALCULATION ON REPRESENTATIVE CONCENTRATION			
BASED ON		DRAWING NUMBER	
BY NORMAN J STRAMB NJS	CHECKED BY HJ	APPROVED BY	DATE 05/26/93

PURPOSE: CALCULATION OF CHEMICAL-SPECIFIC REPRESENTATIVE CONCENTRATION BASED ON ONE-TAILED UPPER 95% CONFIDENCE LIMIT ON THE ARITHMETIC MEAN OF A GIVEN DATA SET.

RELEVANT EQUATIONS:

$$S = \sqrt{\frac{\sum x_i^2 - \frac{(\sum x_i)^2}{n}}{n-1}}$$

WHERE: S = STANDARD DEVIATION FOR A SMALL SAMPLE POPULATION  
 $x_i$  = INDIVIDUAL SAMPLE VALUE  
 n = SAMPLE SET POPULATION

THE UPPER 95% CONFIDENCE LIMIT OF A DATA SET IS CALCULATED BY:

$$UCL = \bar{x} + t_{1-\alpha} \left( \frac{S}{\sqrt{n}} \right)$$

WHERE: UCL = ONE-TAILED UPPER 95% CONFIDENCE LIMIT  
 $\bar{x}$  = ARITHMETIC MEAN OF A DATA SET  
 $t_{1-\alpha}$  = ONE-TAILED t DISTRIBUTION FACTOR  
 S = STANDARD DEVIATION  
 n = DATA SET POPULATION

CLIENT NAVY CLEAN - NWIRP BETHPAGE		JOB NUMBER 1953	
SUBJECT CALCULATION OF REPRESENTATIVE CONCENTRATION			
BASED ON		DRAWING NUMBER	
BY TJS	CHECKED BY [Signature]	APPROVED BY	DATE 05/26/93

SAMPLE CALCULATION:

FOR NWIRP BETHPAGE, SITE 2, AROCLOR-1248 DATA:

SAMPLE	DATA VALUE (mg/kg)	$x^2$
1	1,900	$3.61 \times 10^6$
2	6,800	$4.624 \times 10^7$
3	133.5	$1.782 \times 10^4$
4	73	$5.329 \times 10^3$
5	60.5	$3.66 \times 10^3$
6	2,500	$6.25 \times 10^6$
7	2,200	$4.84 \times 10^6$
8	6,200	$3.844 \times 10^7$
9	33,000	$1.089 \times 10^9$
10	280	$7.840 \times 10^4$

n=10  
df=9

$$\sum x_i = 5.315 \times 10^4 \quad \sum x_i^2 = 1.188 \times 10^9$$

$$\bar{X} = 5.315 \times 10^3$$

$$S = \left[ \frac{(1.188 \times 10^9) - \frac{(5.315 \times 10^4)^2}{10}}{9} \right]^{1/2}$$

$$S = 1.003 \times 10^4$$

CLIENT <b>NAVY CLEAN - NWIRP BETHPAGE</b>		JOB NUMBER <b>1953</b>	
SUBJECT <b>CALCULATION OF REPRESENTATIVE CONCENTRATION</b>			
BASED ON		DRAWING NUMBER	
BY <b>JAS</b>	CHECKED BY <i>[Signature]</i>	APPROVED BY	DATE <b>05/26/93</b>

FOR  $df = 9$ ,  $t_{1-\alpha} = 1.833$  (FROM GILBERT, TABLE A2)  
19

$$UCL = 5.315 \times 10^3 + (1.833) \left( \frac{1.003 \times 10^4}{\sqrt{10}} \right)$$

$$UCL = 1.11 \times 10^4 = 11,000 \text{ mg/kg}$$

Table A2 Quantiles of the t Distribution (Values of t Such That 100p% of the Distribution Is Less Than  $t_p$ )

Degrees of Freedom	$t_{0.60}$	$t_{0.70}$	$t_{0.80}$	$t_{0.90}$	$t_{0.95}$	$t_{0.975}$	$t_{0.990}$	$t_{0.995}$
1	.325	.727	1.376	3.078	6.314	12.706	31.821	63.657
2	.289	.617	1.061	1.886	2.920	4.303	6.965	9.925
3	.277	.584	.978	1.638	2.353	3.182	4.541	5.841
4	.271	.569	.941	1.533	2.132	2.776	3.747	4.604
5	.267	.559	.920	1.476	2.015	2.571	3.365	4.032
6	.265	.553	.906	1.440	1.943	2.447	3.143	3.707
7	.263	.549	.896	1.415	1.895	2.365	2.998	3.499
8	.262	.546	.889	1.397	1.860	2.306	2.896	3.355
9	.261	.543	.883	1.383	1.833	2.262	2.821	3.250
10	.260	.542	.879	1.372	1.812	2.228	2.764	3.169
11	.260	.540	.876	1.363	1.796	2.201	2.718	3.106
12	.259	.539	.873	1.356	1.782	2.179	2.681	3.055
13	.255	.538	.870	1.350	1.771	2.160	2.650	3.012
14	.256	.537	.868	1.345	1.761	2.145	2.624	2.977
15	.256	.536	.866	1.341	1.753	2.131	2.602	2.947
16	.256	.535	.865	1.337	1.746	2.120	2.583	2.921
17	.257	.534	.863	1.333	1.740	2.110	2.567	2.898
18	.257	.534	.862	1.330	1.734	2.101	2.552	2.878
19	.257	.533	.861	1.328	1.729	2.093	2.539	2.861
20	.257	.533	.860	1.325	1.725	2.086	2.528	2.845
21	.257	.532	.859	1.323	1.721	2.080	2.518	2.831
22	.256	.532	.858	1.321	1.717	2.074	2.506	2.819
23	.256	.532	.858	1.319	1.714	2.069	2.500	2.807
24	.256	.531	.857	1.318	1.711	2.064	2.492	2.797
25	.256	.531	.856	1.316	1.708	2.060	2.485	2.787
26	.256	.531	.856	1.315	1.706	2.056	2.479	2.779
27	.256	.531	.855	1.314	1.703	2.052	2.473	2.771
28	.256	.530	.855	1.313	1.701	2.048	2.467	2.763
29	.256	.530	.854	1.311	1.699	2.045	2.462	2.756
30	.256	.530	.854	1.310	1.697	2.042	2.457	2.750
40	.255	.529	.851	1.303	1.684	2.021	2.423	2.704
60	.254	.527	.848	1.296	1.671	2.000	2.390	2.660
120	.254	.526	.845	1.289	1.658	1.980	2.358	2.617
$\infty$	.253	.524	.842	1.282	1.645	1.960	2.326	2.576

Source: From Fisher and Yates, 1974. Used by permission.

REFERENCES:

GILBERT, R.O., 1987. STATISTICAL METHODS FOR ENVIRONMENTAL POLLUTION MONITORING. VAN NOSTRAND REINHOLD COMPANY, INC., NEW YORK, NEW YORK.

CLIENT NAVY CLEAN - NWIRP BETHPAGE		JOB NUMBER 1953	
SUBJECT PCB ASSOCIATED CARCINOGENIC RISK REVISION			
BASED ON RAGS, PART A GUIDANCE		DRAWING NUMBER	
BY NORMAN J. STRAUB NJS	CHECKED BY [Signature]	APPROVED BY	DATE 05/27/93

PURPOSE: CALCULATE REVISED CARCINOGENIC RISKS BASED ON RESULTS OF PREVIOUS PHASE I RI RISK ASSESSMENT and INCORPORATING PHASE II RESULTS FOR PCBs CONCENTRATIONS IN SOILS.

RELEVANT EQUATIONS:

FOR EVALUATION OF CANCER RISK INCREASE DUE TO EXPOSURE TO CARCINOGENIC CHEMICALS, THE FOLLOWING EQUATION IS USED:

$$ICR = DOSE \left( \frac{mg}{kg \cdot day} \right) \times CSF \left( \frac{kg \cdot day}{mg} \right) \quad (1)$$

WHERE:

ICR = INCREMENTAL CANCER RISK

DOSE = TIME-WEIGHTED CHEMICAL EXPOSURE AMOUNT PER UNIT RECEPTOR BODY WEIGHT

CSF = CHEMICAL-SPECIFIC CANCER SLOPE FACTOR FOR SPECIFIED EXPOSURE ROUTE.

ESTIMATION OF DOSE (CHEMICAL UPTAKE) BY A RECEPTOR IS QUANTIFIED BY:

$$DOSE \left( \frac{mg}{kg \cdot day} \right) = \frac{C \times IR \times EF \times ED}{BW \times AT} \quad (2)$$

CLIENT	NAVY CLEAN-NWIRP BETHPAGE	JOB NUMBER	1953
SUBJECT	PCB ASSOCIATED CARCINOGENIC RISK REVISION		
BASED ON	RAGS, PART A	DRAWING NUMBER	
BY	TLS	CHECKED BY	shy
		APPROVED BY	
		DATE	05/27/93

## WHERE:

- C = CHEMICAL CONCENTRATION IN SITE MEDIA
- IR = INGESTION RATE OF SITE MEDIA
- EF = EXPOSURE FREQUENCY
- ED = EXPOSURE DURATION
- BW = RECEPTOR BODY WEIGHT
- AT = AVERAGING-TIME (i.e. PERIOD OF TIME OVER WHICH EXPOSURE IS AVERAGED)

FOR CARCINOGENS, AT IS EQUAL TO THE RECEPTOR LIFETIME.

REVISION OF THE PHASE I CANCER RISK ESTIMATES FOR NWIRP BETHPAGE IS BASED ON CALCULATION OF A NEW REPRESENTATIVE CONCENTRATION (C) FOR PCBs IN SOIL AT SITES 1, 2, and 3, and SUBSTITUTING THIS REVISED CONCENTRATION INTO THE PREVIOUSLY EMPLOYED DOSE ESTIMATION EQUATIONS. SINCE RECEPTOR IR, EF, ED, BW, and AT ARE IDENTICAL IN BOTH PHASE I and II RISK ASSESSMENTS, EQUATIONS (1) and (2) CAN BE COMBINED and REDUCED TO YIELD

CLIENT NAVY CLEAN - NWIRP BETHPAGE		JOB NUMBER 1953	
SUBJECT PCB ASSOCIATED CARCINOGENIC RISK REVISION			
BASED ON RAGS, PART A		DRAWING NUMBER	
BY TJS	CHECKED BY [Signature]	APPROVED BY	DATE 05/28/93

THE FOLLOWING EQUATIONS (3) and (4), RESPECTIVELY :

$$\text{REVISED RISK} = \frac{\text{DOSE (REVISED)}}{\text{DOSE (PHASE I)}} \times \text{PHASE I RISK} \quad (3)$$

$\text{REVISED RISK} = \frac{\text{RC (REVISED)}}{\text{RC (PHASE I)}} \times \text{PHASE I RISK} \quad (4)$
--

WHERE:

RC (REVISED) = REVISED REPRESENTATIVE CONCENTRATION FOR PHASE I and II PCBs IN SOIL (SITE-SPECIFIC)

RC (PHASE I) = PHASE I REPRESENTATIVE CONCENTRATION FOR PCBs IN SOIL (SITE-SPECIFIC)

SAMPLE CALCULATION :

FOR PCBs IN SOIL AT SITE 2 - PHASE I PCB RISK =  $5.7 \times 10^{-9}$   
 (OFFSITE RESIDENT EXPOSURE) PHASE I TOTAL RISK =  $4.5 \times 10^{-7}$   
 PHASE I REP CONC = 1,900 mg/kg  
 PHASE I and II REP CONC = 12,900 mg/kg  
 (REVISED RC)

①

$$\text{REVISED CANCER RISK} = \left( \frac{12,900 \text{ mg/kg}}{1,900 \text{ mg/kg}} \right) \times (5.7 \times 10^{-9})$$

$\text{REVISED CANCER RISK} = 3.9 \times 10^{-8}$
---

CLIENT NAVY CLEAN - NWIRP BETHPAGE		JOB NUMBER 1953	
SUBJECT PCB ASSOCIATED CARCINOGENIC RISK REVISION			
BASED ON RAGS, PART A		DRAWING NUMBER	
BY YHS	CHECKED BY [Signature]	APPROVED BY	DATE 05/27/93

$$\begin{aligned}
 \textcircled{2} \text{ REVISED TOTAL CANCER RISK} &= \left( \text{PHASE I TOTAL CANCER RISK} \right) - \left( \text{PHASE I PCB CANCER RISK} \right) + \left( \text{PHASE I and II (REVISED) PCB CANCER RISK} \right) \\
 &= \left( 4.5 \times 10^{-7} \right) - \left( 5.7 \times 10^{-9} \right) + \left( 3.9 \times 10^{-8} \right)
 \end{aligned}$$

REVISED TOTAL CANCER RISK = $4.8 \times 10^{-7}$
---

REFERENCES:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA), DECEMBER 1989.  
RISK ASSESSMENT GUIDANCE FOR SUPERFUND (RAGS) - VOLUME I: HUMAN  
HEALTH EVALUATION MANUAL (PART A) - INTERIM FINAL. EPA/540/1-89/002,  
 OFFICE OF EMERGENCY AND REMEDIAL RESPONSE, WASHINGTON D.C.