



BECHTEL NATIONAL INC.

**CLEAN II TRANSMITTAL/DELIVERABLE RECEIPT**

Contract No. N-68711-92-D-4670

Document Control No.: CTO-0142/0196

File Code: 0208

TO: Contracting Officer  
 Naval Facilities Engineering Command  
 Southwest Division  
 Mr. Richard Selby, Code 57CS1.RS  
 Building 127, Room 112  
 1220 Pacific Highway  
 San Diego, CA 92132-5190

DATE: February 6, 1998

CTO #: 142

LOCATION: MCAS El Toro

FROM:

*[Signature]*  
 D. J. Tedaldi, Ph.D., P.E., Project Manager

DESCRIPTION: Meeting Minutes, Site 24 Pilot Test Update - DTD January 28, 1998

TYPE:  Contract Deliverable (Cost)  CTO Deliverable (Technical)  Other

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ADMIN RECORD: Yes  No  Category  Confidential   
 (PM to Identify)

SCHEDULED DELIVERY DATE: 2/6/98 ACTUAL DELIVERY DATE: 2/6/98

NUMBER OF COPIES SUBMITTED: 0/3C/3E

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- G. Steinway, Code 56MC.GS (O)
- J. Rogers, Code 5723.JR (1C/1E)
- B. Lindsey, Code 56MC.BL (1C/1E)
- A. Pizskin, Code 56MC.AP (1C/1E)
- \_\_\_\_\_
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- \_\_\_\_\_
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**BECHTEL (Distributed by Bechtel):**

- P. Brooks (1C/1E)
- B. Kown (1C/1E)
- T. Latas (1C/1E)
- D. Tedaldi (1C/1E)
- B. Coleman (1C/2E AR, 1E IR)
- El Toro File (1C/1E)
- BNI Document Control (1C/1E)
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**OTHER (Distributed by Bechtel):**

- J. Broderick, RWQCB (1C/1E)
- T. Johnson, DTSC (1C/1E)
- G. Kistner, US EPA (1C/1E)
- H. Levine, US EPA (1C/1E)
- T. Mahmoud, DTSC (1C/1E)
- L. Vitale, RWQCB (1C/1E)
- P. Hannon, RWQCB (1C/1E)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Date/Time Received

O = Original Transmittal Sheet  
 C = Copy Transmittal Sheet  
 E = Enclosure



### MEETING MINUTES

<b>Meeting Subject:</b> Site 24 Pilot Test Update	<b>Meeting Date:</b> January 28, 1998 <b>Meeting Time:</b> 10:00 AM <b>Meeting Place:</b> Conference Call <b>Meeting Notes Prepared By:</b> Patrick Brooks	
<b>Attendees: (*Part Time)</b>		
<u>Navy</u> Bernie Lindsey, RPM	<u>Bechtel</u> Pat Brooks, CTOL Tim Latas, Field Manager Dante Tedaldi, PM	<u>Other</u> Glenn Kistner, U.S. EPA Herb Levine, U.S. EPA Tayseer Mahmoud, DTSC John Broderick, RWQCB Larry Vitale, RWQCB Patricia Hannon, RWQCB
<b>Additional Distribution:</b> Theodore Johnson, DTSC Andy Piszkin, Navy El Toro File Document Control		

Pat Brooks reviewed the field work that had been accomplished since the last Site 24 Update meeting. CPT/HydroPunch results from locations 1 and proposed depths for location 3 are provided. Location 1 had TCE in the upper part of the aquifer at about 400 micrograms per liter ( $\mu\text{g/L}$ ). Deeper samples were collected but the results are not yet available. Proposed sample depths are shown for Location 3. The group concurred with sample depths at Location 3 of 123, 141, 158, and 182 feet below ground surface.

The vacuum-enhanced test is complete at 24EX4. Drawdown steepened after 24EX3 was turned back on, but EX4 drawdown is still considerably less than during standard pumping when the well was nearly pumped dry in about 2 days.

The TCE mass removal graph for 24EX3 was modified to contrast the difference between standard and vacuum-enhanced extraction. During standard pumping, 1.28 pounds of TCE were removed in the liquid phase. During vacuum-enhanced extraction, 2.23 pounds were removed in the liquid phase and 41.4 pounds in the vapor phase with a total of 43.6 pounds.

Pat provided the group the abstract from the U.S. EPA paper on turbidity and VOC that concluded that there is no significant effect on VOC analyses by water sample turbidity. The abstract was provided. Herb Levine shared with the group his knowledge of the testing conducted on which the paper is based. The group agreed that wells sampled for VOCs alone need not attain a turbidity value of 5 NTUs. The RWQCB and DTSC asked for a copy of the paper and Pat said that he would mail it with an extra copy of the CPT/HydroPunch sample location map.

The step-drawdown test curves from 24EX5 are provided. They show that well EX5 has the greatest capacity of all wells tested to date. The pumping rate for the constant rate test will be determined after the injection buildup test is completed.

## MEETING MINUTES (continued)

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The Plan of Action for Site 24 field work for the next two weeks included the following:

1. Complete vacuum-enhanced extraction test at well 24EX4 (today).
2. Continue CPT/HydroPunch sampling at the leading edge of the TCE hot spot.
3. Complete step-buildup test at 24IN2.
4. Begin constant-rate test at 24EX5 and 24IN2.
5. Continue extraction at 24EX3.
6. Develop mass removal estimates for 24EX4.

**CLEAN II PROGRAM**  
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401 West A Street, Suite 1000  
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**CTO-142/0185**  
File Code: 0208

## F A X C O V E R S H E E T

**DATE:** 1/27/98

**SUBJECT:** SITE 24 PILOT TEST UPDATE, MCAS EL TORO - 28 JANUARY 1998

**FROM:** Patrick Brooks  
for Bernie Lindsey

**PHONE:** (619) 687-8851 (Direct)  
**FAX:** (619) 687-8787

	PHONE NO.	FAX NO.
<b>TO:</b> SWDIV - LYNN HORNECKER (56MC.LH) ANDY PISZKIN (56MC.AP) c/o BERNIE LINDSEY (56MC.BL)	619/532-4163	619/532-4160
DAVID CRAWLEY	714/726-5595	714/726-5577
THEODORE JOHNSON	562/590-4962	562/590-5511
GLENN KISTNER	415/744-2210	415/744-1917
HERB LEVINE	415/744-2312	415/744-1916
TAYSEER MAHMOUD	562/590-4891	562/590-4932
BILL SEDLAK	714/263-9124 XT. 403	714/263-1147
LARRY VITALE	909/782-4998	909/781-6288

**cc:** Pat Brooks  
Dan Eldredge Fax: (714) 654-8392  
Tim Latas  
Dante Tedaldi  
El Toro File  
Document Control

*Number of pages including cover sheet: 7*

**Message:**

Included with this fax are the following:

- Drawdown results from 24EX4.
- Mass removal rates for standard and vacuum-enhanced pumping from 24EX3.
- Abstract from article "Groundwater Sampling for Volatile Organics."

These topics will be discussed during the conference call.

# Agenda



## Site 24 Pilot Test Update

### MCAS El Toro

28 January 1998

10:00 am

Telephone Conference Call

**Vision:** Maximize restoration and reuse by 1999.  
**Mission:** Fast-track remediation of MCAS El Toro to expedite reuse and protect human health and environment.

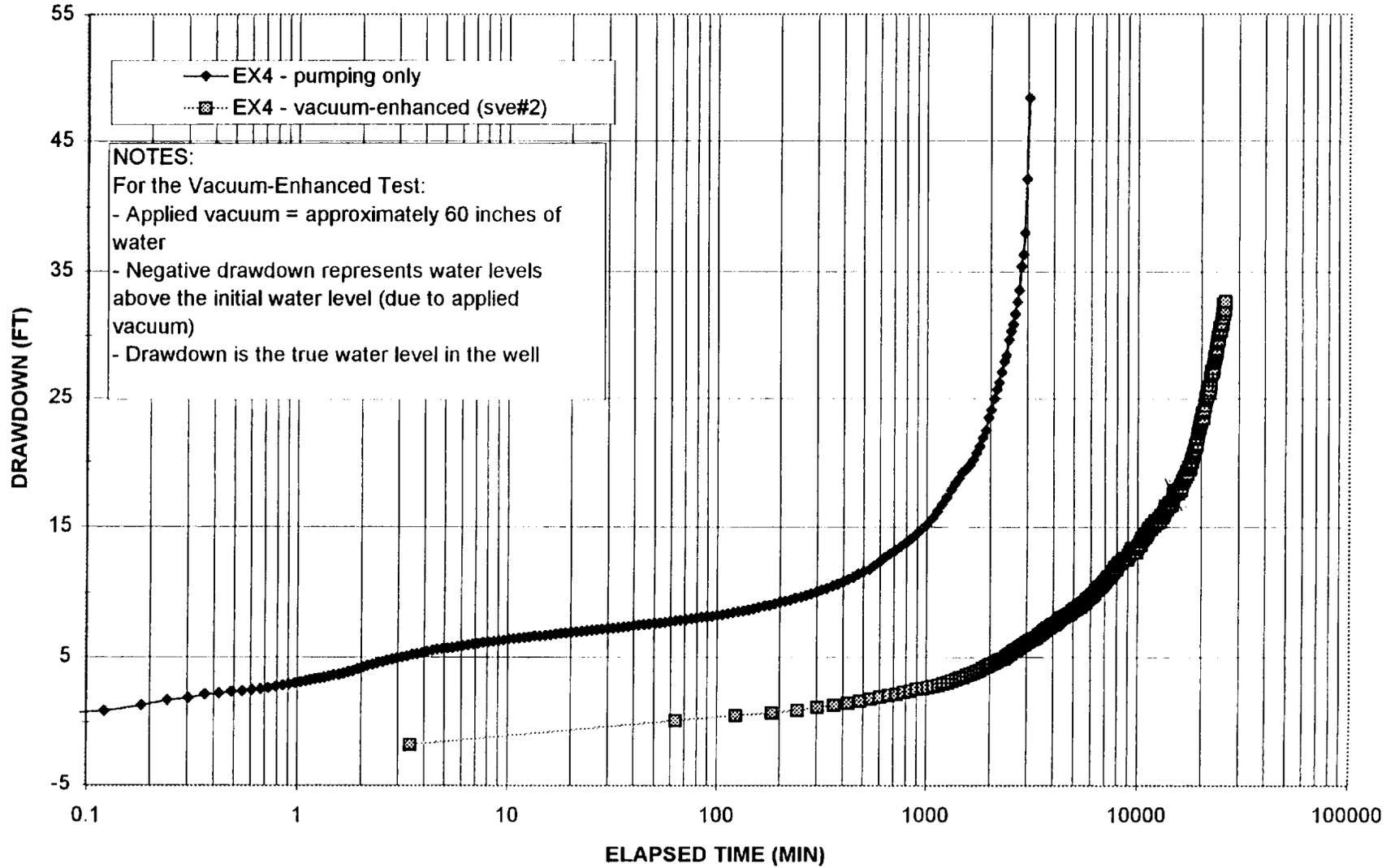
#### Agenda Topics

10:00 - 10:15	Site 24 field work update: Vacuum-enhanced pumping test at well 24EX4. Mass removal at 24EX3. CPT/HydroPunch update. VOC groundwater analyses and turbidity.	Lindsey/Brooks
10:15 - 10:30	Two week forecast	Lindsey/Brooks

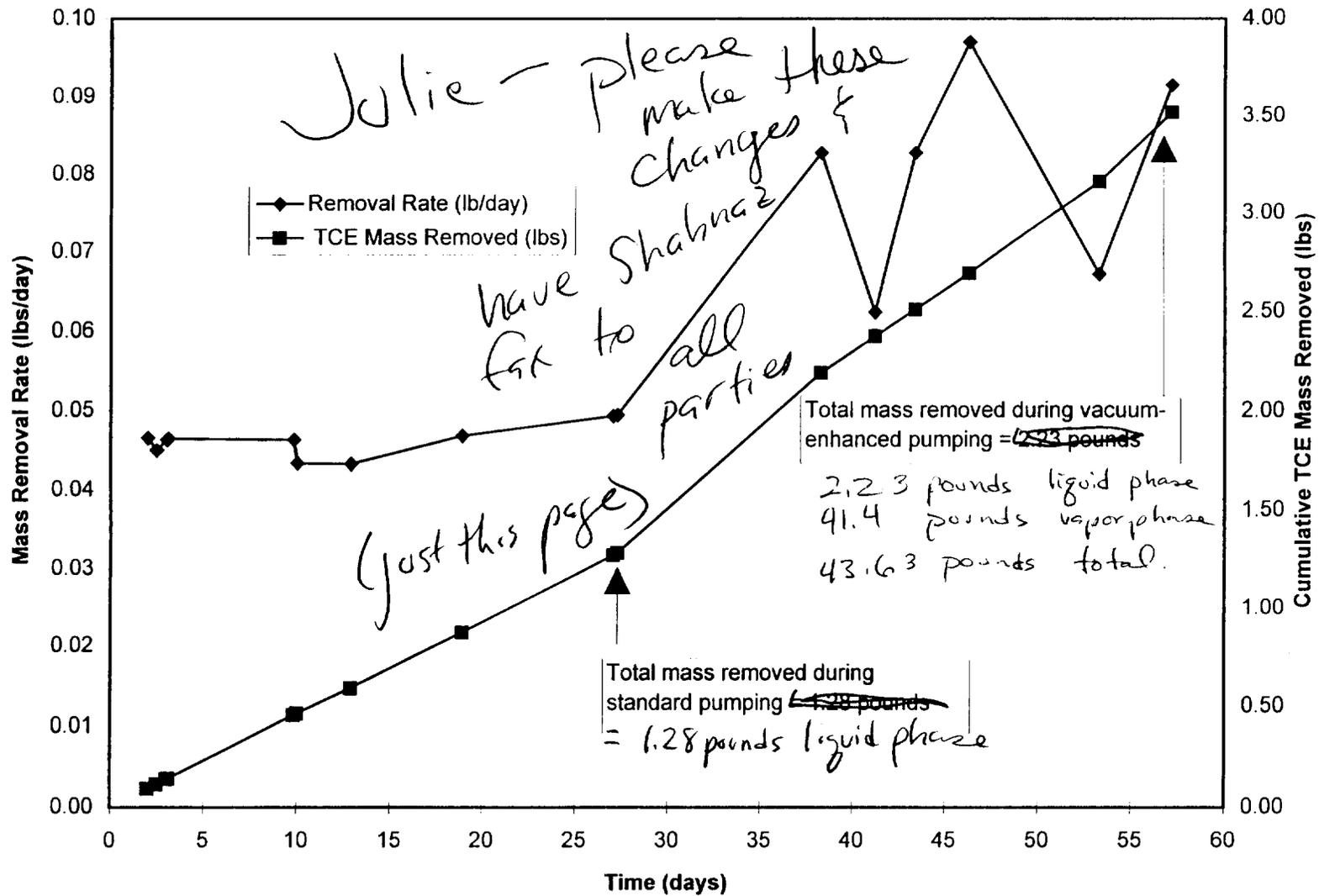
**Special notes:** The conference call telephone number is 1-888-391-7040 and the code word is El Toro. The conference leader is Patrick Brooks.

El Toro CLEAN II staff will be at the field office (Building 296).

### EX4 10 GPM AQUIFER TESTS



### TCE Mass Removal at 24EX3



# Ground-Water Sampling for Volatile Organics

Cynthia J. Paul and Robert W. Puls

U.S. Environmental Protection Agency, Robert S. Kerr Environmental  
Research Laboratory, Ada, OK 74820

## ABSTRACT

High suspended particulates in ground-water samples can complicate the interpretation of contaminant concentration data. This has been particularly problematic for metal analyses; however, few studies have been conducted to determine the impact of solids on volatile organic compound (VOC) concentrations. Laboratory batch studies and field investigations were conducted to evaluate the effects of suspended solids on VOC concentrations in ground-water samples analyzed by purge and trap gas chromatography techniques. Three solids were used to assess turbidity effects on sample quality: recovered aquifer material from a field site in North Carolina and, two reference clay minerals, kaolinite and Na-montmorillonite. During the laboratory portion of this study, the solids were used to determine effects on VOC concentrations under controlled laboratory conditions. The same solids were used in

the field portion of the study to attempt to differentiate turbidity effects from variations in sampling methodology. In addition to pre-spiking sample vials with solids, the sampling procedure was altered to intentionally increase turbidity levels from entrainment of natural aquifer materials collected with the water samples. Results of the study indicate essentially no differences in VOC concentrations, particularly trichloroethene (TCE), due to increased turbidity levels; however, some concentration differences were observed due to variations in sampling methodology.

*Base-wide monitoring  
OK for Site 24*

---

*→ noted aeration of samples  
due to pumping at too high  
a rate - turbidity not an  
issue because  
we are  
not  
sensitive  
metals*

## INTRODUCTION

According to the RCRA Ground Water Monitoring Draft Technical Guidance document (U.S. Environmental Protection Agency, 1992), ground water samples should be collected in a manner such that particulates are not artificially entrained in the samples. The document states that if the sample has a turbidity of less than five nephelometric turbidity units (NTUs), it is considered acceptable; otherwise, additional factors should be considered including additional well development, alteration of pumping rate, and re-evaluation of filter pack particle size and screen slot size. If the well is located in a karst environment with

**Plan of Action - January 28 to February 11, 1998**  
**Groundwater Remediation Pilot Testing - Site 24**  
**MCAS El Toro**

1. Complete vacuum-enhanced extraction test at well 24EX4 (today).
2. Continue CPT/HydroPunch sampling at the leading edge of the TCE hot spot.
3. Complete step-buildup test at 24IN2.
4. Begin constant-rate test at 24EX5 and 24IN2.
5. Continue extraction at 24EX3.
6. Develop mass removal estimates for 24EX4.

*Tayseer*  
*Patricia*

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**CTO-142/0182**  
File Code: 0208

## F A X C O V E R S H E E T

**DATE:** 1/22/98

**SUBJECT:** SITE 24 PILOT TEST UPDATE, MCAS EL TORO - 22 JANUARY 1998

**FROM:** Patrick Brooks  
for Bernie Lindsey

**PHONE:** (619) 687-8851 (Direct)  
**FAX:** (619) 687-8787

	PHONE NO.	FAX NO.
<b>TO:</b> SWDIV - LYNN HORNECKER (56MC.LH) ANDY PISZKIN (56MC.AP) c/o BERNIE LINDSEY (56MC.BL)	619/532-4163	619/532-4160
DAVID CRAWLEY	714/726-5595	714/726-5577
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BILL SEDLAK	714/263-9124 XT. 403	714/263-1147
LARRY VITALE	909/782-4998	909/781-6288

**cc:** Pat Brooks  
Dan Eldredge Fax: (714) 654-8392  
Dante Tedaldi  
El Toro File  
Document Control

*Number of pages including cover sheet: 8*

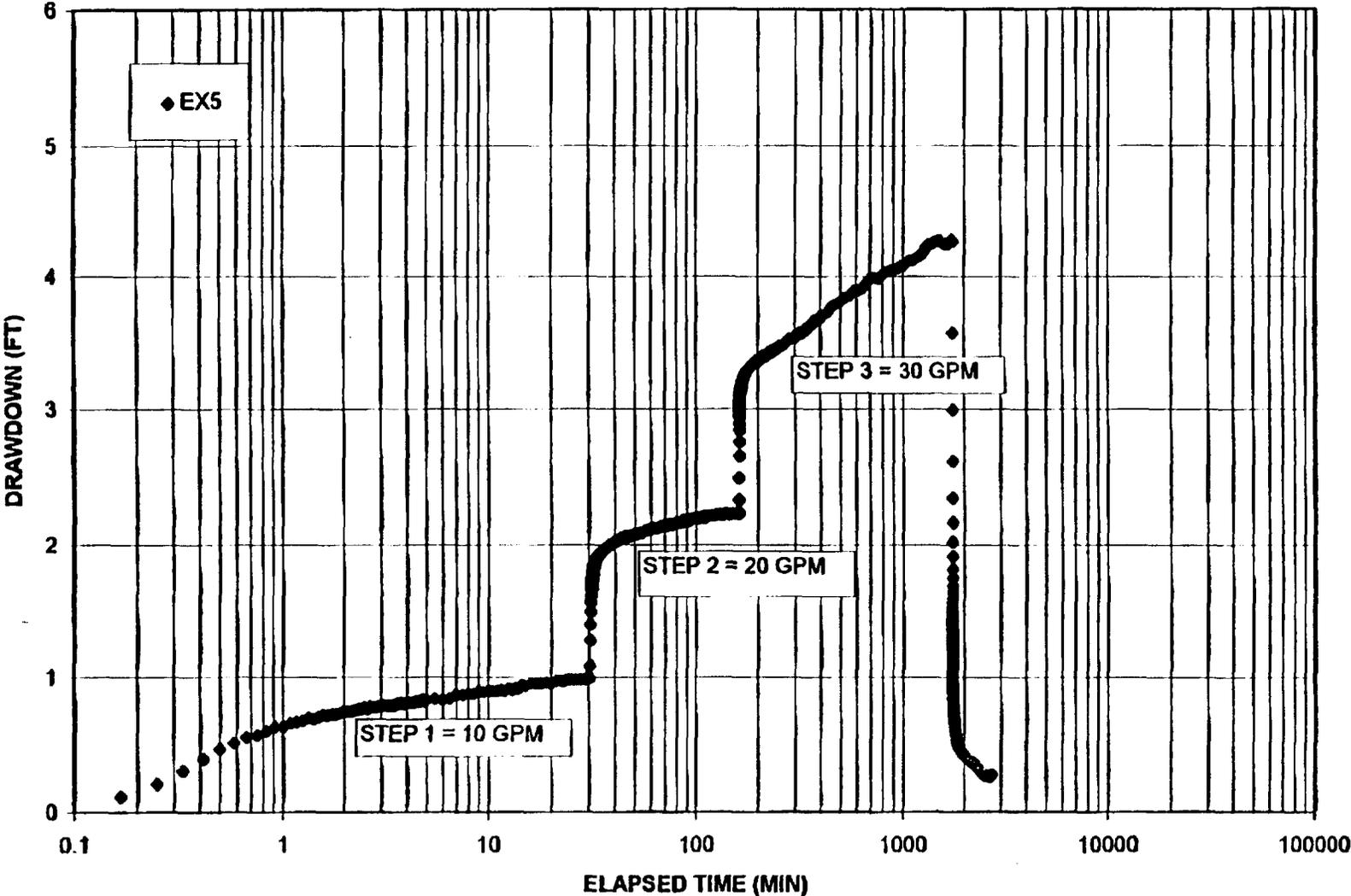
**Message:**

Included with this fax are the following:

- Step-drawdown results from 24EX5 and observation wells.
- Vacuum-enhanced results from 24EX3 and 24EX4 and monitoring wells.
- Injection well 24IN1 summary.

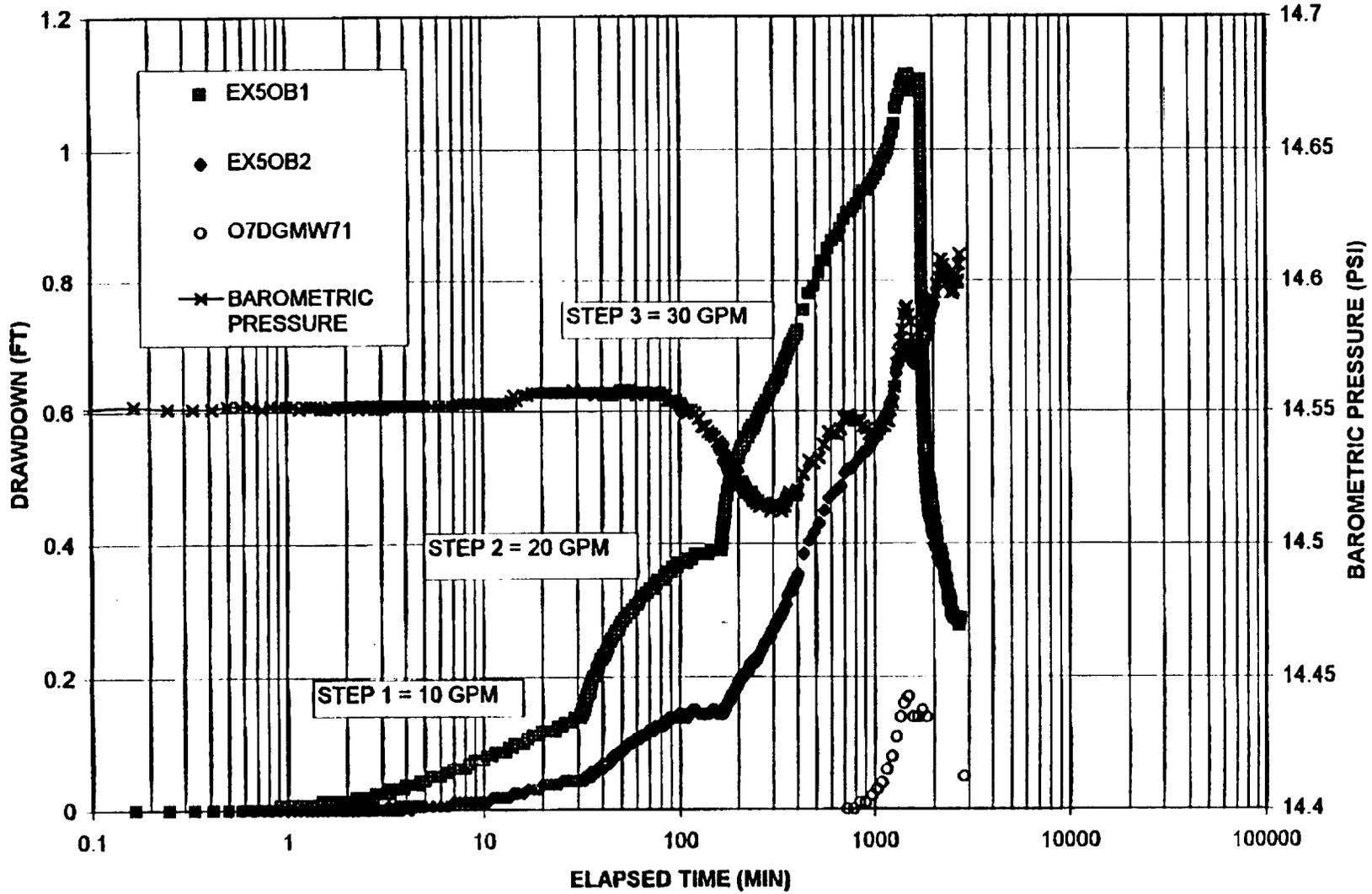
These results will be discussed during next conference call.

### EX5 STEP DRAWDOWN TEST *Pumping Well*



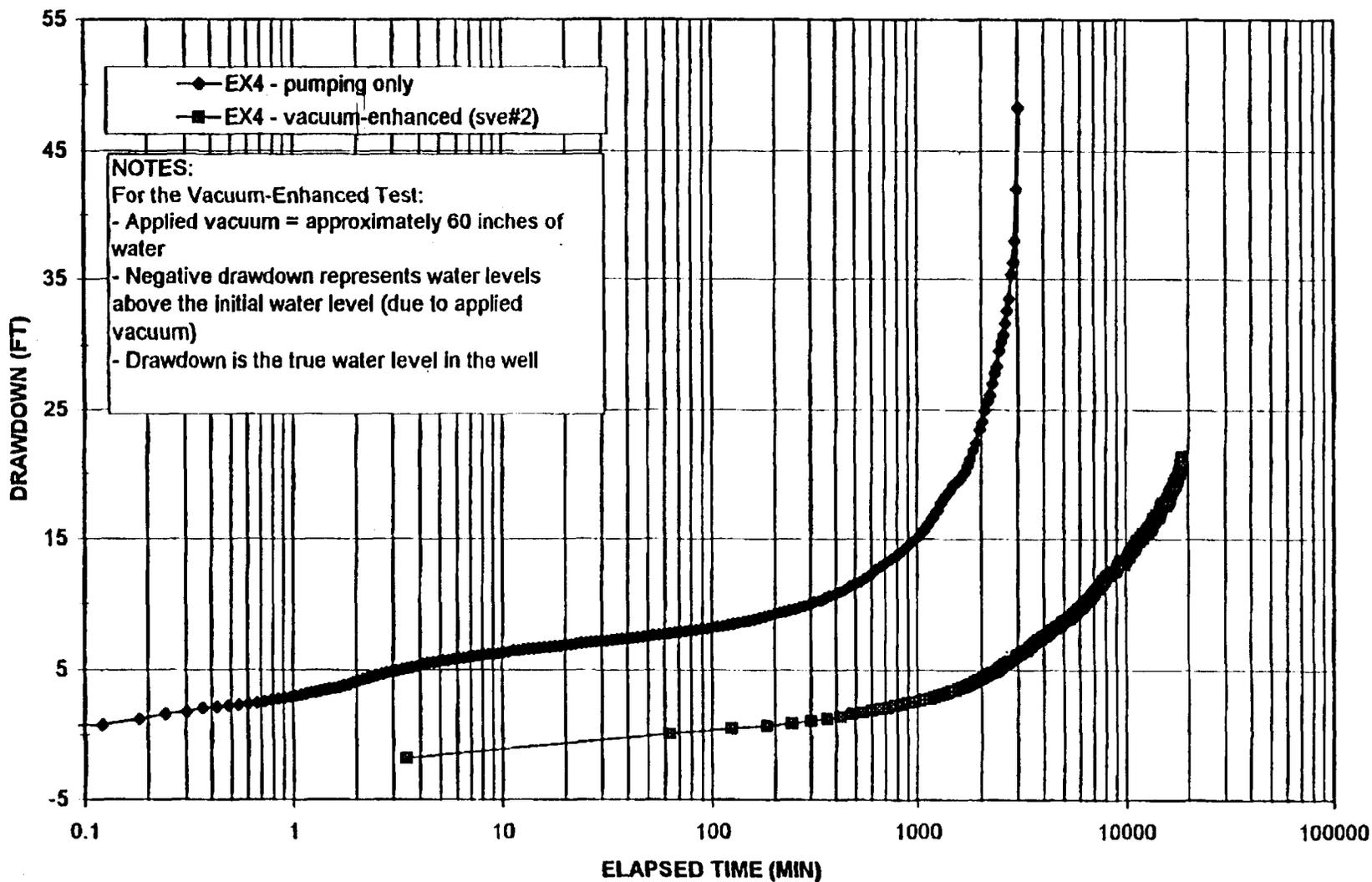
01/22/98 14:33 0714 654 8392 BECHTEL

### EX5 STEP DRAWDOWN TEST OBSERVATION WELLS

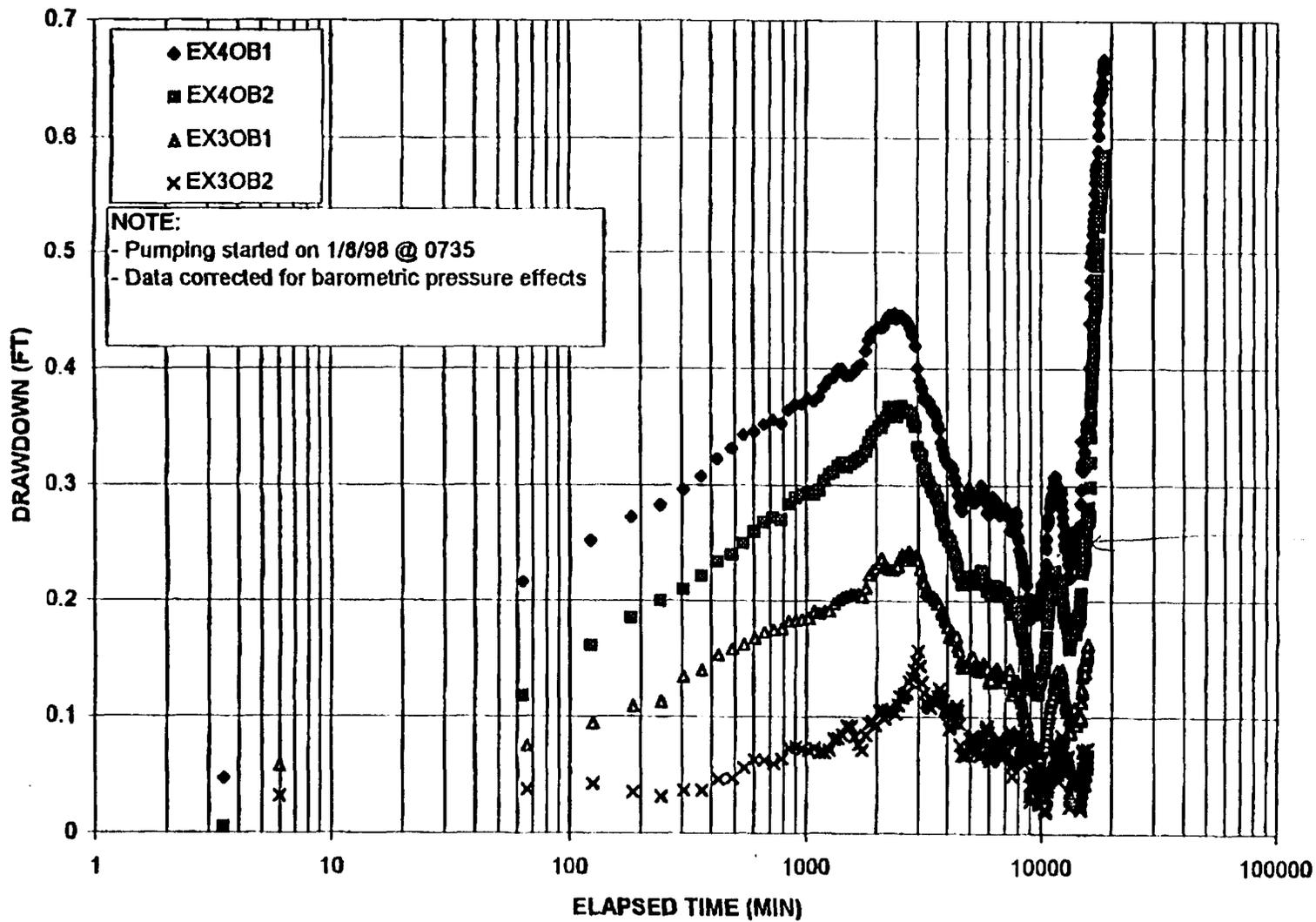


01/22/98 14:34 0714 654 8392 DECHIEL

### EX4 10 GPM AQUIFER TESTS

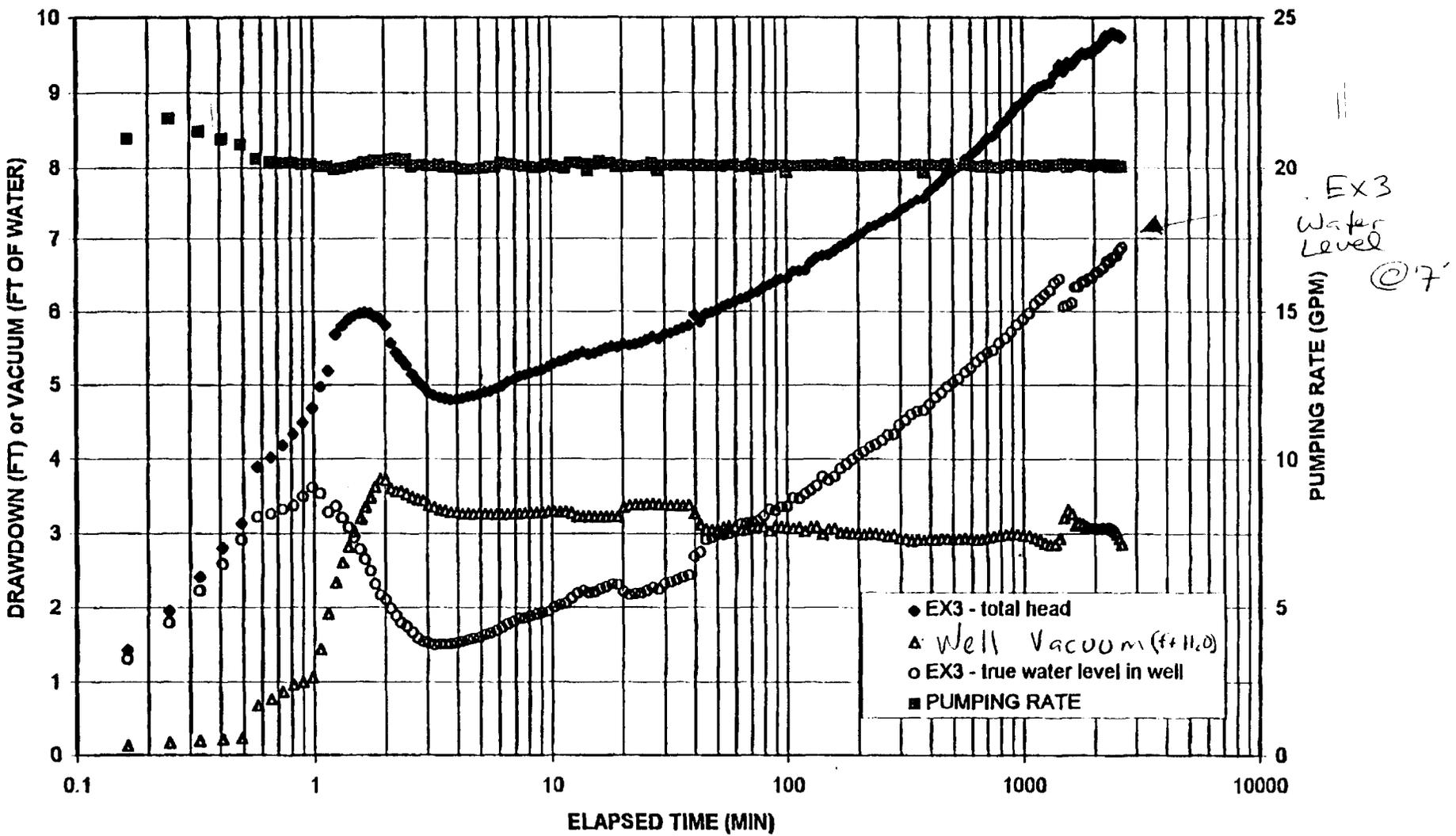


EX4 VACUUM-ENHANCED AQUIFER TEST (SVE#2)  
OBSERVATION WELLS - PUMPING



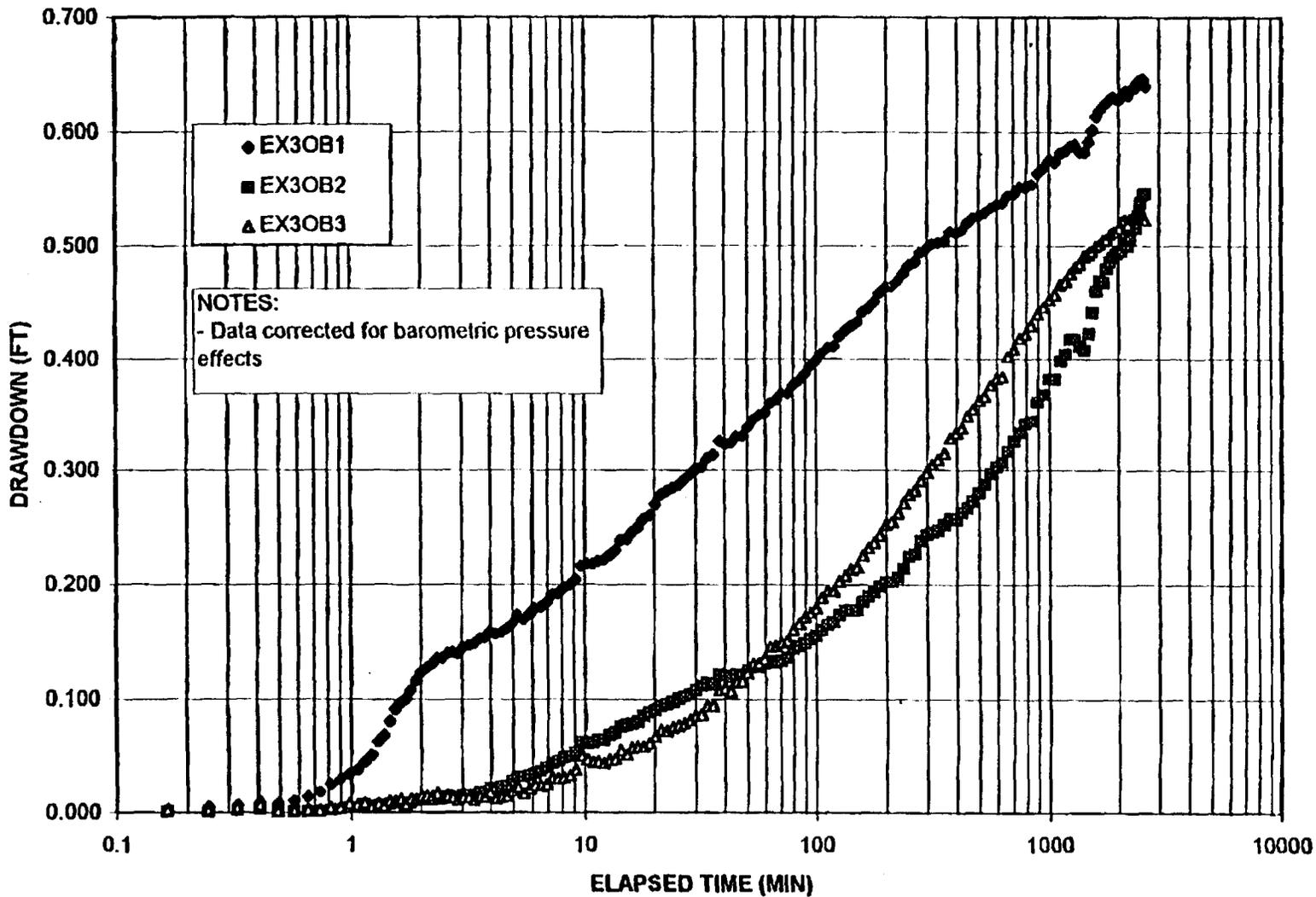
01/21/98 17:31 00714 004 0092 RECEIVED

### EX3 VACUUM ENHANCED AQUIFER TEST #2 EXTRACTION WELL - PUMPING



01/14 004 0002  
11:32  
06/21/96

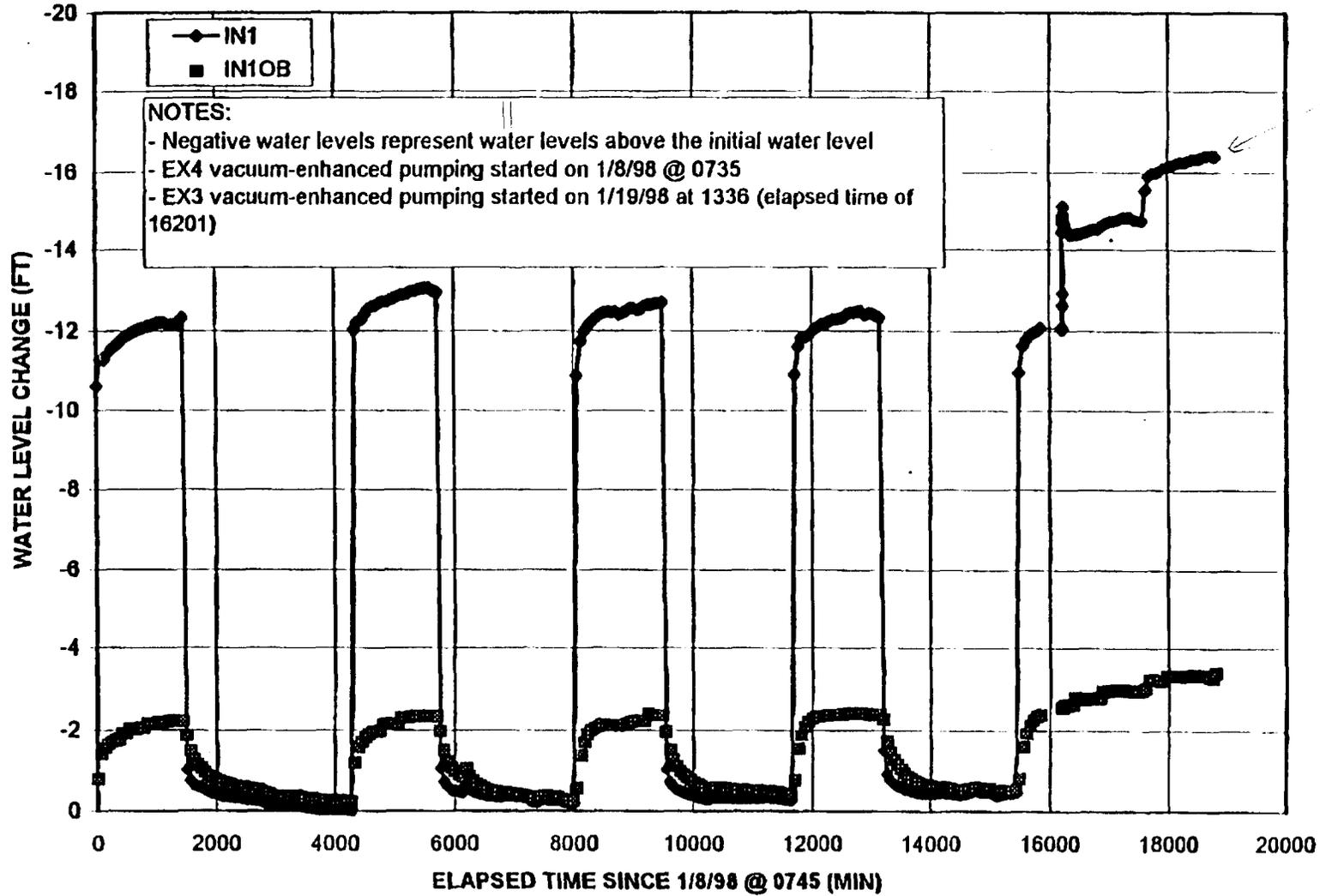
### EX3 VACUUM ENHANCED AQUIFER TEST #2 OBSERVATION WELLS - PUMPING



NOTES:  
- Data corrected for barometric pressure effects

01/21/98 17:33 01/14 004 0394 DECHIEL

### IN1 DURING EX4 AND EX3 VACUUM ENHANCED TESTS (SVE#2)



*Injecting @ 35 gpm*

01/21/98 17:34 07/14 004 8894 DEUBIEL

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**CTO-142/0184**  
File Code: 0208

**F A X C O V E R S H E E T**

**DATE:** 1/26/98

**SUBJECT:** SITE 24 PILOT TEST UPDATE, MCAS EL TORO

**FROM:** Patrick Brooks  
for Bernie Lindsey  
**PHONE:** (619) 687-8851 (Direct)  
**FAX:** (619) 687-8787

	<b>PHONE NO.</b>	<b>FAX NO.</b>
<b>TO:</b> SWDIV - LYNN HORNECKER (56MC.LH) ANDY PISZKIN (56MC.AP) c/o BERNIE LINDSEY (56MC.BL)	619/532-4163	619/532-4160
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Dante Tedaldi  
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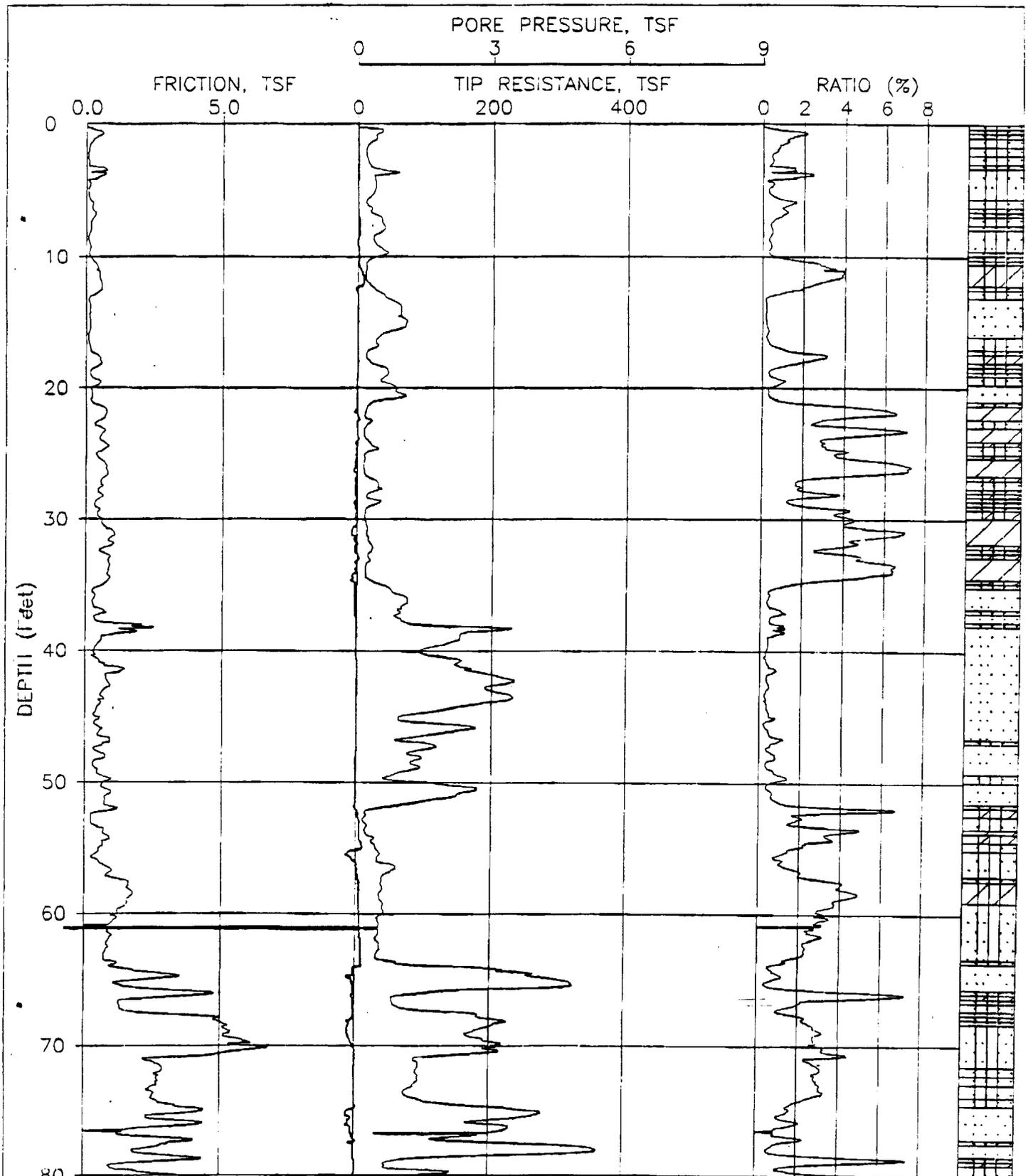
*John Broderick*  
*→ Patricia Hannon*

*Number of pages including cover sheet: 7*

**Message:**

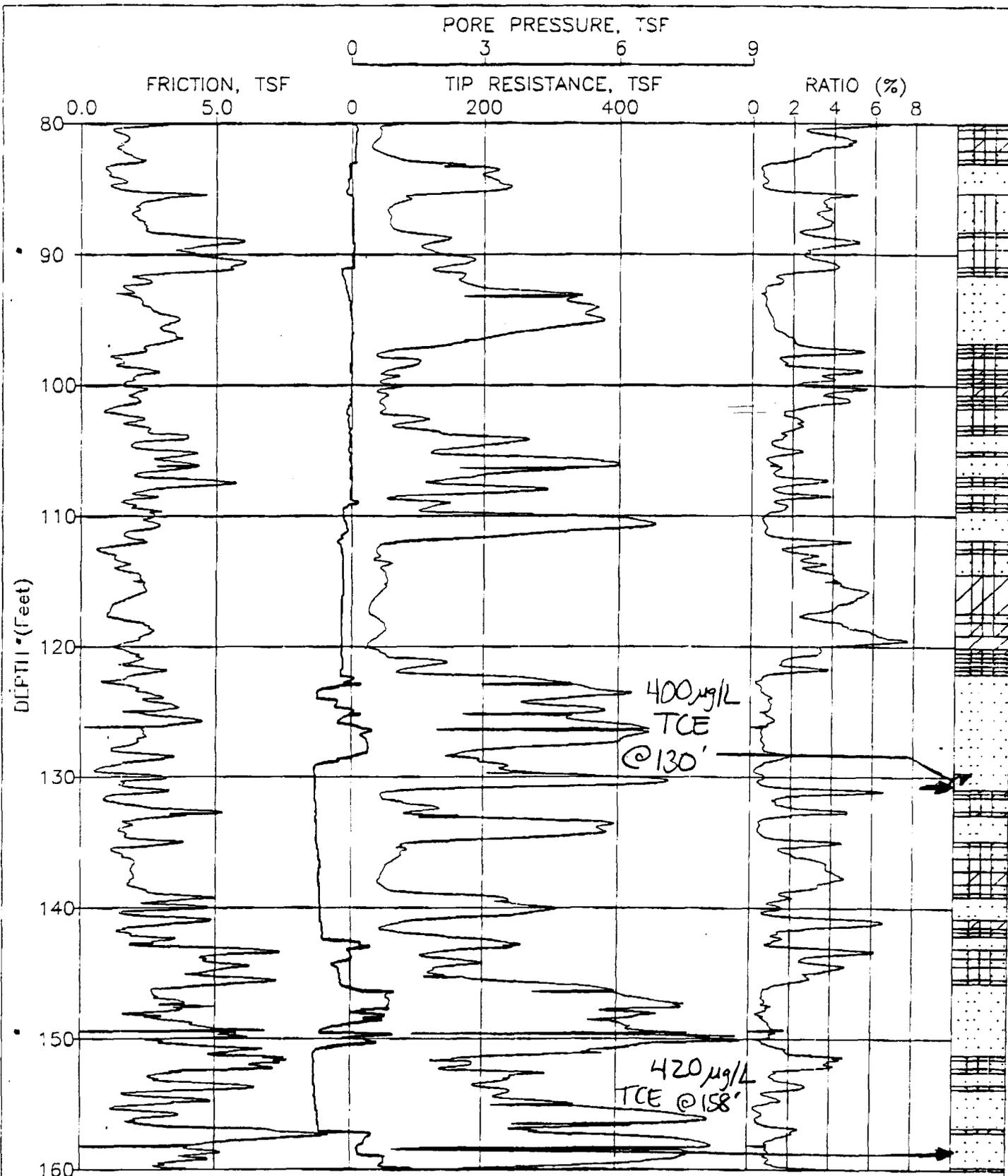
Enclosed are CPT logs for CPT105 (Sample location No. 1) and CPT 106 (Sample location No. 3). Sample locations are shown on the oversize drawing distributed earlier. The log for CPT 105 has a total depth of 232 feet. At CPT 106, refusal was encountered at 196 feet. Samples have been collected at the locations shown on the CPT 105 log. Proposed sample depths for location No. 3 are at 123, 141, 158, and 182 feet below ground surface (bgs) based on the presence of sandy interbeds. A sample is proposed at 215 bgs based on the CPT 105 log. Please call to discuss if you do not concur with the proposed sample locations at CPT 106. I can be reached at 619-687-8851. Thanks, Pat

# SAMPLE LOCATION NO. 1



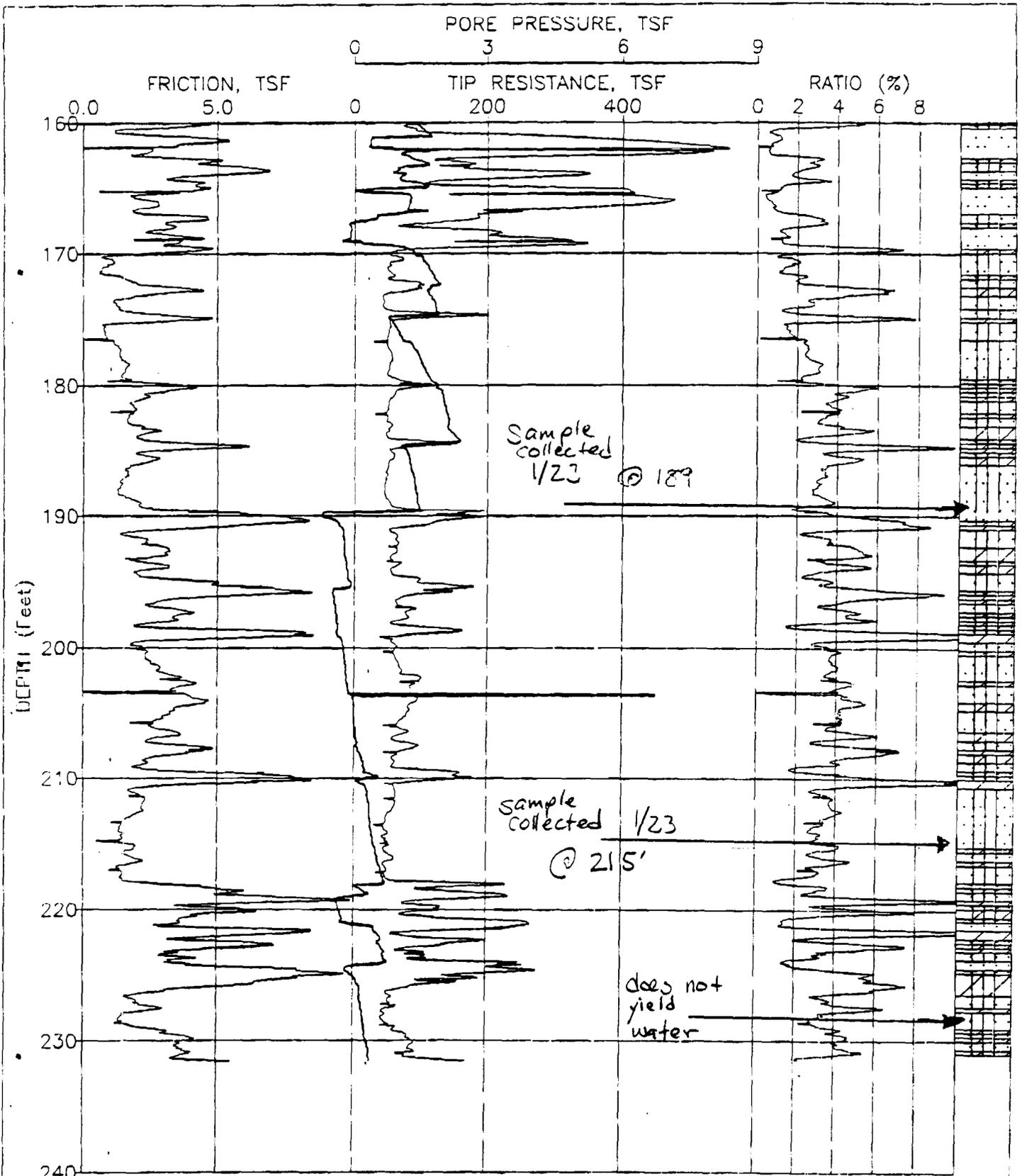
JOB NUMBER: 0303-0204 CPT NUMBER: CPT105A DATE: 01-20-1998  
 ELEVATION: 0.00 CONE NUMBER: F7.5CKEW871 PLATE: 1 OF 3

# SAMPLE LOCATION NO. 1



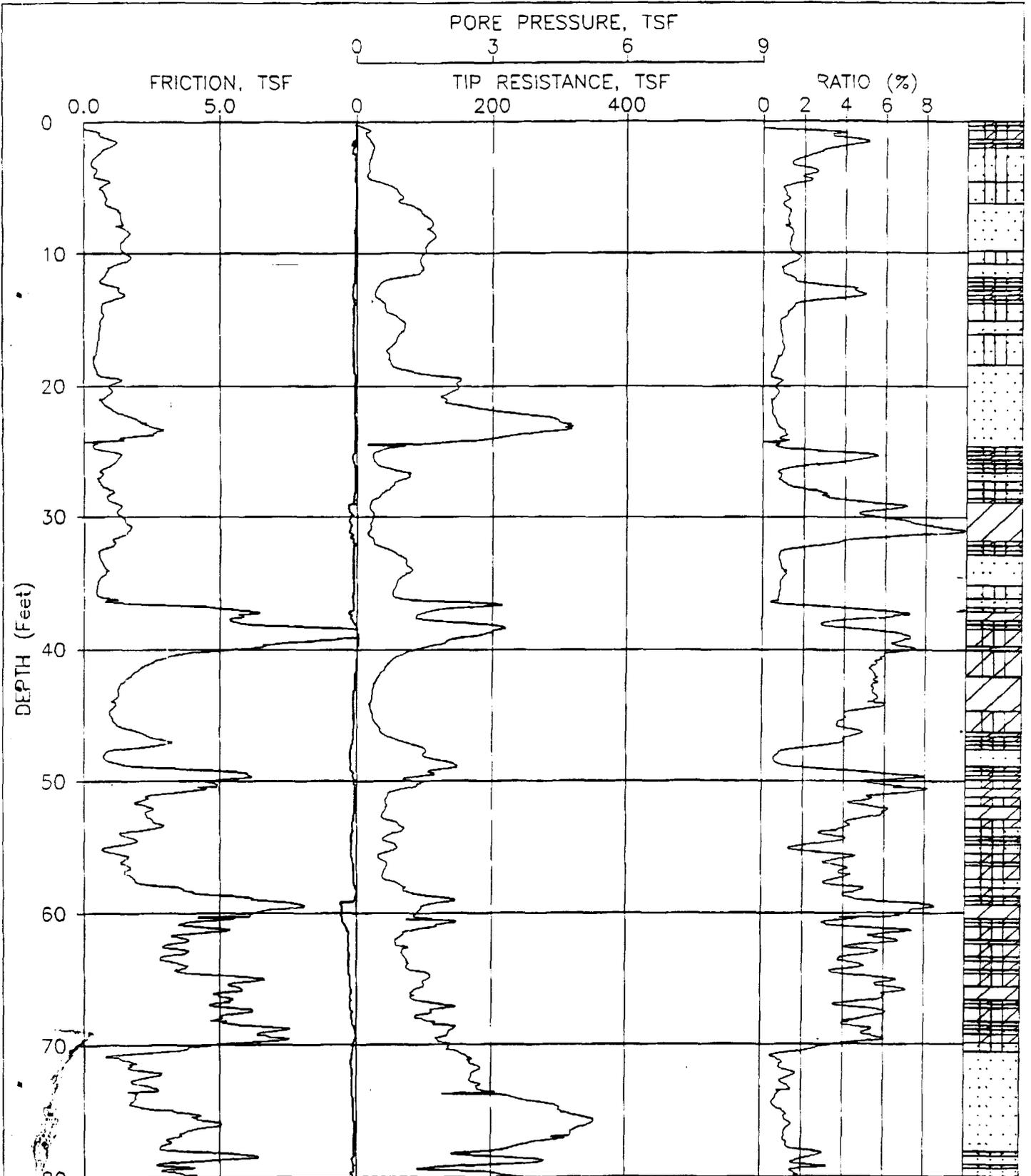
JOB NUMBER: 0303-0204 CPT NUMBER: CPT105A DATE: 01-20-1998  
 ELEVATION: 0.00 CONE NUMBER: F7.5CKEW871 PLATE: 2 OF 3

# SAMPLE LOCATION NO.1



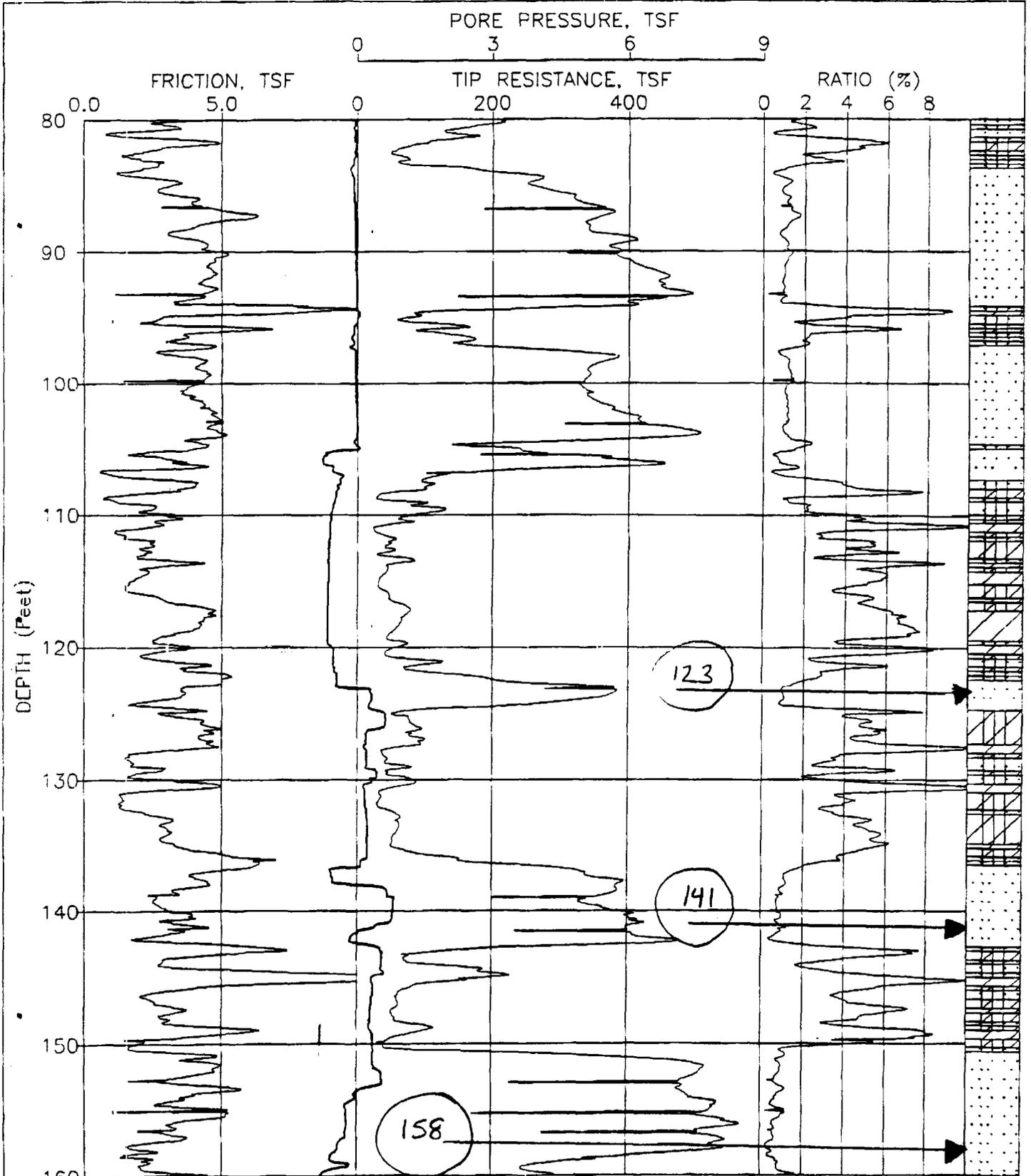
JOB NUMBER: 0303-0204 CPT NUMBER: CPT105A DATE: 01-20-1998  
 ELEVATION: 0.00 CONE NUMBER: F7.5CKEW871 PLATE: 3 OF 3

SAMPLE LOCATION NO. 3

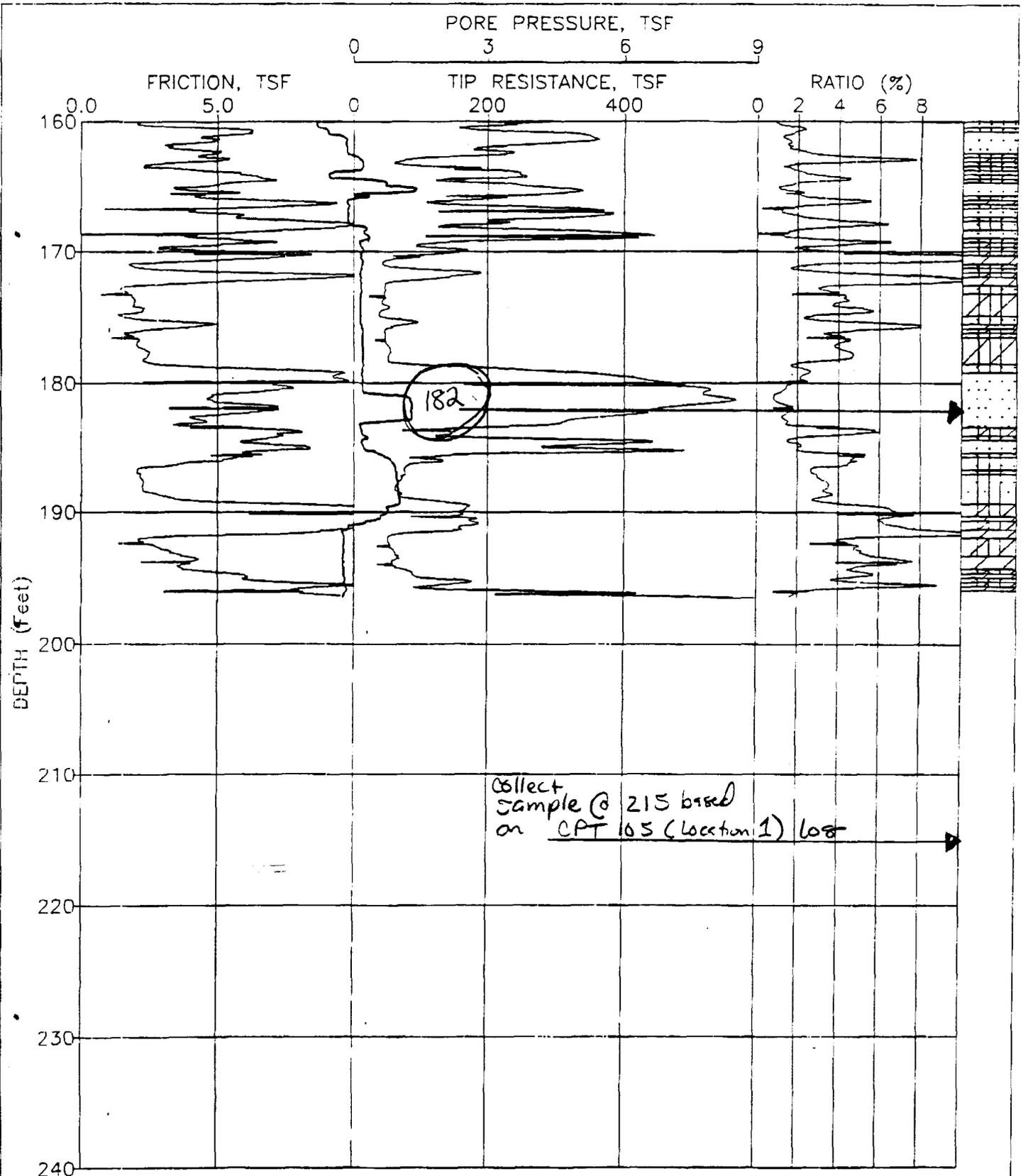


JOB NUMBER: 0303-0204 CPT NUMBER: CPT106A DATE: 01-26-1998  
 ELEVATION: 0.00 CONE NUMBER: F7.5CKEW871 PLATE: 1 OF 3

SAMPLE LOCATION NO. 3



JOB NUMBER: 0303-0204 CPT NUMBER: CPT106A DATE: 01-26-1998  
 ELEVATION: 0.00 CONE NUMBER: F7.5CKEW871 PLATE: 2 OF 3



JOB NUMBER: 0303-0204 CPT NUMBER: CPT106A DATE: 01-26-1998  
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW871 PLATE: 3 OF 3

