



BECHTEL NATIONAL INC.

CLEAN II TRANSMITTAL/DELIVERABLE RECEIPT

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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 92132-5187

DATE: October 8, 1997

CTO #: 142

LOCATION: MCAS El Toro

FROM: Richard Brooks for
 D. J. Tedaldi, Ph.D., P.E., Project Manager

DESCRIPTION: Meeting Minutes, Site 24 Pilot Test Update - DTD October 1, 1997

OUZA

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- B. Sedlak, OHM (1C/1E)
- _____
- _____
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Date/Time Received





MEETING MINUTES

Meeting Subject: Site 24 Pilot Test Update	Meeting Date: October 1, 1997 Meeting Time: 10:00 AM Meeting Place: Conference Call Meeting Notes Prepared By: Tim Latas	
Attendees: (*Part Time)		
<u>Navy</u> Bernie Lindsey, RPM Andy Piszkin, RPM	<u>Bechtel</u> Tim Latas, Field Manager Julie Crosby, Geologist	<u>Other</u> Herb Levine, U.S. EPA Bill Sedlak, OHM
Additional Distribution: Document Control El Toro File		
<ol style="list-style-type: none"> 1. Bill Sedlak reported that the long-term constant-rate test was shut down last Thursday due to a power outage detected by the treatment system control panel. The following morning, on Friday, the pump test was re-initiated but also suffered a system shutdown later in the afternoon. It was suspected that the electric company had a brief (millisecond) interruption in power on Thursday and Friday and to remedy this problem OHM installed a timer on the control that will allow a system shutdown after at least 5 to 10 seconds of power failure to the control panel. The treatment has been running since Monday morning. 2. Mr. Sedlak also indicated that the SVE pilot unit has been operating on SVE-10 since last Thursday in order to reduce vadose soil gas concentrations in the area of EX-3 prior initiating the vacuum-enhanced pumping test on EX-3. In addition, CLEAN is beginning to review aquifer test curves to assess the effects of multiple pump tests on the same well and possible effects of the SVE test on SVE-10. 3. Tim Latas briefly reviewed the package of information provided with the BCT agenda notice and indicated that the purpose of the meeting is to present preliminary aquifer test findings from one week of constant-rate pumping; show results of capture zone analyses; use this data to consider placement of EX-4; and review the revised shallow groundwater unit/principal aquifer CPT/Hydropunch sampling locations. 4. Julie Crosby of CLEAN presented and discussed the aquifer test curves using the Jacob, Neuman, and Theis analyses (as shown on Table 5-4 of the package). The first chart in the package illustrates the drawdowns after adjustment for barometric pressure changes. Based on last week's curves, removing the effects of barometric pressure results in a smoother curve. Ms. Crosby then discussed the results of the analyses. Herb Levine of U.S. EPA suggested that the Boulton analysis be considered and that Ms. Crosby should consider the Neuman Type A (early response) curves be used in the analysis. Ms. Crosby also indicated that she was using the AQTESOLV computer program to analyze the aquifer test data and that analytical results may be available for next week's meeting. 		

MEETING MINUTES (continued)

5. Tim Latas discussed the results of the capture zone analyses for EX-3. Based on the results of aquifer test analyses, two transmissivity values were used to estimate the capture zone: a $T=2.32$ ft^2/min . for the upper saturated zone in wells OB1/OB2 and a $T=0.71$ ft^2/min . in the saturated zone in OB3. The first plot illustrates the capture zone at EX-3 using $T=2.32$ ft^2/min . and is elongated to the south. The second plot illustrates a $T=0.71$ ft^2/min and encompasses a broader area. Using the same program and plotting the capture zone for two weeks shows that placement of EX-4 in its original location may result in overlapping capture zones. When EX-4 is placed inside of Building 296, the capture zones of EX-3 and EX-4 are parallel to one another and cover more of the area of high TCE concentrations in soil and groundwater. Based on these plots of two weeks and their capture zones, placement of well EX-4 appears to be more effective inside Building 296. Mr. Levine requested copies of the plots with the two capture zones with the TCE contours overlain. Mr. Lindsey requested that this information be discussed at the latest by next Monday so utility clearances and base operations could commence.
6. As a follow-up to last week's meeting, the revision of the proposed CPT/Hydropunch locations was discussed. The attached map shows that the CPT/Hydropunch locations were moved according to Mr. Levine's suggestion. Mr. Lindsey requested that Bechtel review these locations in the field to make sure the locations can be accessed.
7. Also attached to the agenda was a comment from Mr. Levine on the Groundwater Remediation Work Plan. Mr. Lindsey asked Mr. Levine if the planned CPT/Hydropunch work would satisfy Mr. Levine's comment. Mr. Levine confirmed that the currently proposed locations would satisfy the comment.
8. The Plan of Action for Site 24 field work for the next two weeks included the following:
 1. Continue conventional pump test for 2 weeks starting from last Monday and review information for EX-4 location.
 2. Resolve the comment from Mr. Levine on the work plan (see above).
 3. Prepare for the vacuum-enhanced pump test by SVE on SVE-10 until vacuum-enhanced test is ready.
 4. Use the current SVE unit on SVE-10 until the permit expires and be prepared to connect the SVE unit for the vacuum-enhanced test for SVE on SVE-10.
 5. Continue long-term test at extraction well EX-3 and injection well IN1.
 6. Make preparations for additional drilling and CPT/HydroPunch work.
9. Mr. Lindsey requested that Bechtel provide the final information for the location of EX-4 by next Monday and that Mr. Levine, Mr. Larry Vitale of the RWQCB, and Mr. Tayseer Mahmoud be prepared to make the final decision on the location of EX-4 on Monday so the necessary clearances can be made next week for the drilling and CPT work.

CLEAN II PROGRAM
BECHTEL NATIONAL, INC.
401 West A Street, Suite 1000
San Diego, CA 92101-7905
Telephone: (619) 687-8700
Facsimile: (619) 687-8787/8786

CTO-142/0083
File Code: 0208

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

DATE: 09/30/97

SUBJECT: SITE 24 PILOT TEST UPDATE, MCAS EL TORO - 1 OCTOBER 1997

FROM: Patrick Brooks
for Bernie Lindsey

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

	PHONE NO.	FAX NO.
TO: LYNN HORNECKER (56MC.LH)	619/556-0250 XT. 241	619/556-0248
DAVID CRAWLEY	714/726-3309	714/726-2255
GLENN KISTNER	415/744-2210	415/744-1796
HERB LEVINE	415/744-2312	415/744-1916
BERNIE LINDSEY (56MC.BL)	619/556-0250 XT. 242	619/556-0248
TAYSEER MAHMOUD	562/590-4891	562/590-4932
ANDY PISZKIN (56MC.AP)	619/556-0250 XT. 240	619/556-0248
BILL SEDLAK	714/263-9124	714/263-1147
LARRY VITALE	909/782-4998	909/781-6288

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

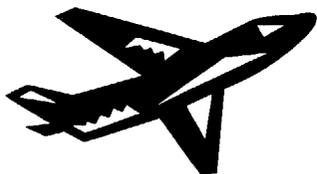
Number of pages including cover sheet: 18

Message:

The aquifer test was halted on Friday 26 September due to an electrical failure. The problem has been rectified and the test was restarted on Monday 29 September.

Agenda

Site 24 Pilot Test Update



MCAS El Toro

1 October 1997
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	Preliminary pumping test results from well 24EX3; proposed location of 24EX4.	Lindsey/Brooks
10:15 - 10:30	Two week forecast	Lindsey/Brooks

Special notes: The conference call telephone number is 1-800-593-8919 and the code word is El Toro.

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

**Table 5-4
Summary of Results from 24EX3 Constant-Rate Aquifer Pumping Test 4**

Well	Maximum Drawdown ^(a) (feet)	Transmissivity (ft ² /min)	K (ave) (ft/min)	K (ave) (ft/day)	Specific Yield	Method of Analysis	Curve/Line Fit
24EX3	24	0.04	5.7E-4	0.825	-	Jacob	good
		2.7E-2	3.5E-4	0.509	-	Neuman	good
EX3OB1	0.45	2.8	0.07	101	0.045	Jacob	poor
		1.59	0.04	57.24	0.072	Neuman	fair
EX3OB2	0.32	1.22	0.03	43.92	0.81	Jacob	poor
		1.68	0.04	60.48	0.014	Neuman	poor
EX3OB3	1.45	0.61	0.12	176	0.014	Jacob	poor
		1.17	0.234	337	1.33E-3	Theis	good

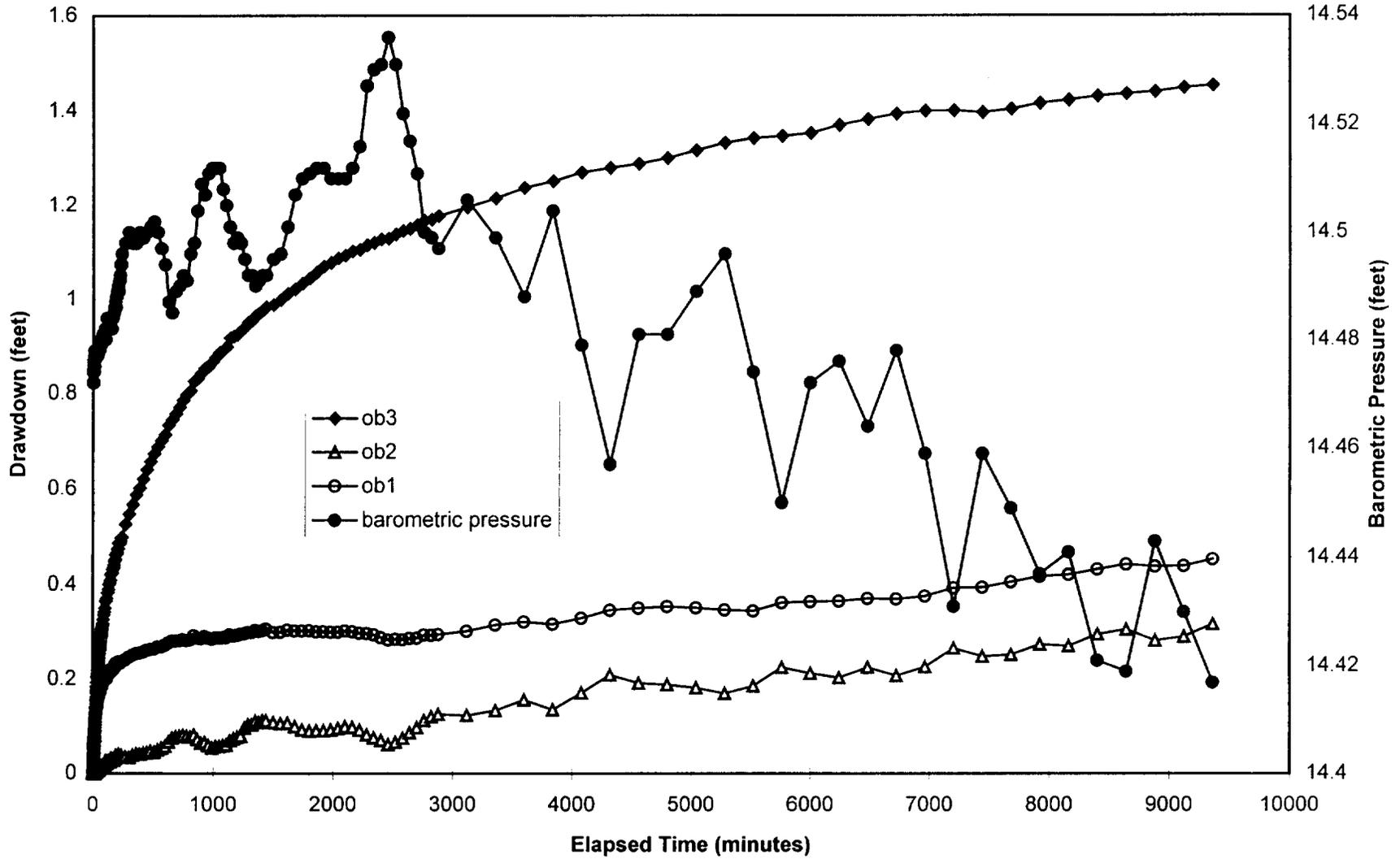
Notes:

- a. Maximum drawdown is corrected for barometric effects for all wells.

WORKING DRAFT

WORKING DRAFT

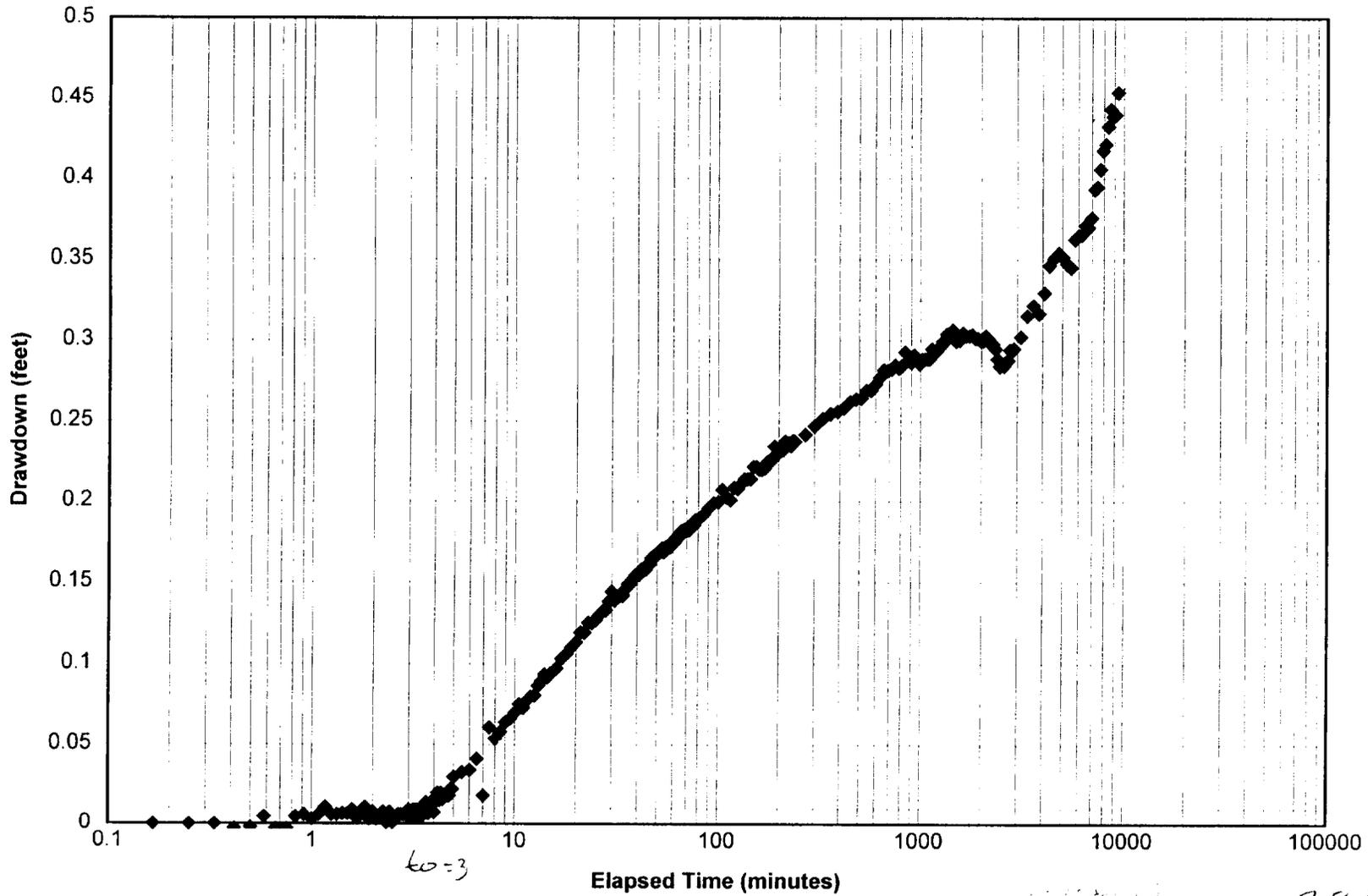
**OB1, OB2, and OB3 Constant Rate Test Data -- Test #4
(Barometric Effect Removed)**



WORKING DRAFT

WORKING DRAFT

OB1 Constant Rate Test Data -- Test #4



Poor

$$s = \frac{2.25 T t_0}{r^2} = \frac{2.25 \times 2.8 \times 3}{(20.5)^2} = .045$$

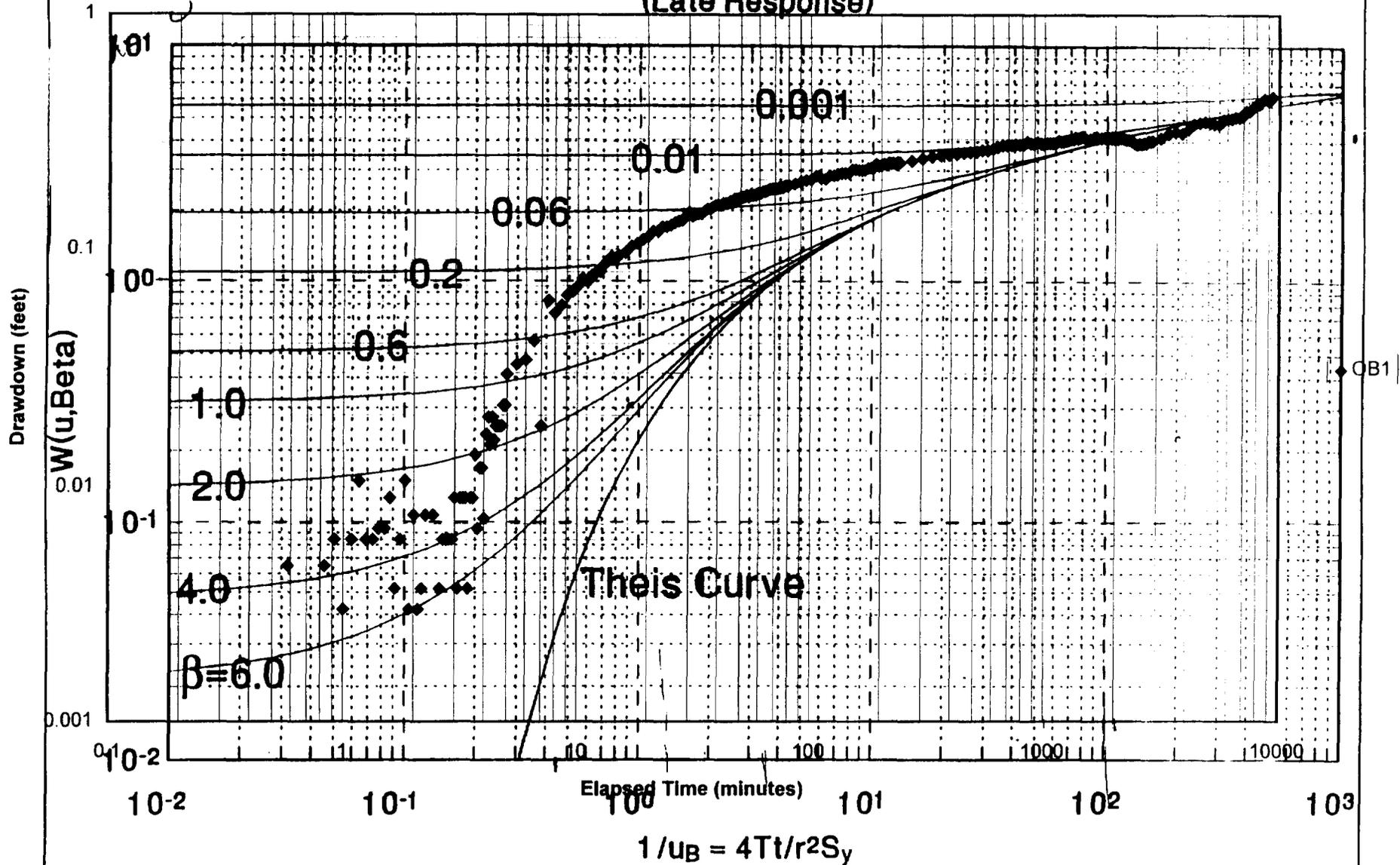
$$T = \frac{2.25 \times 2.8 \times 3}{4 \times (115 - 100)} = 2.8 \text{ ft}^2/\text{min}$$

2-3-51
T-3-51
C-3-51

WORKING DRAFT

Constant Rate Test Data for OB1, Test #4

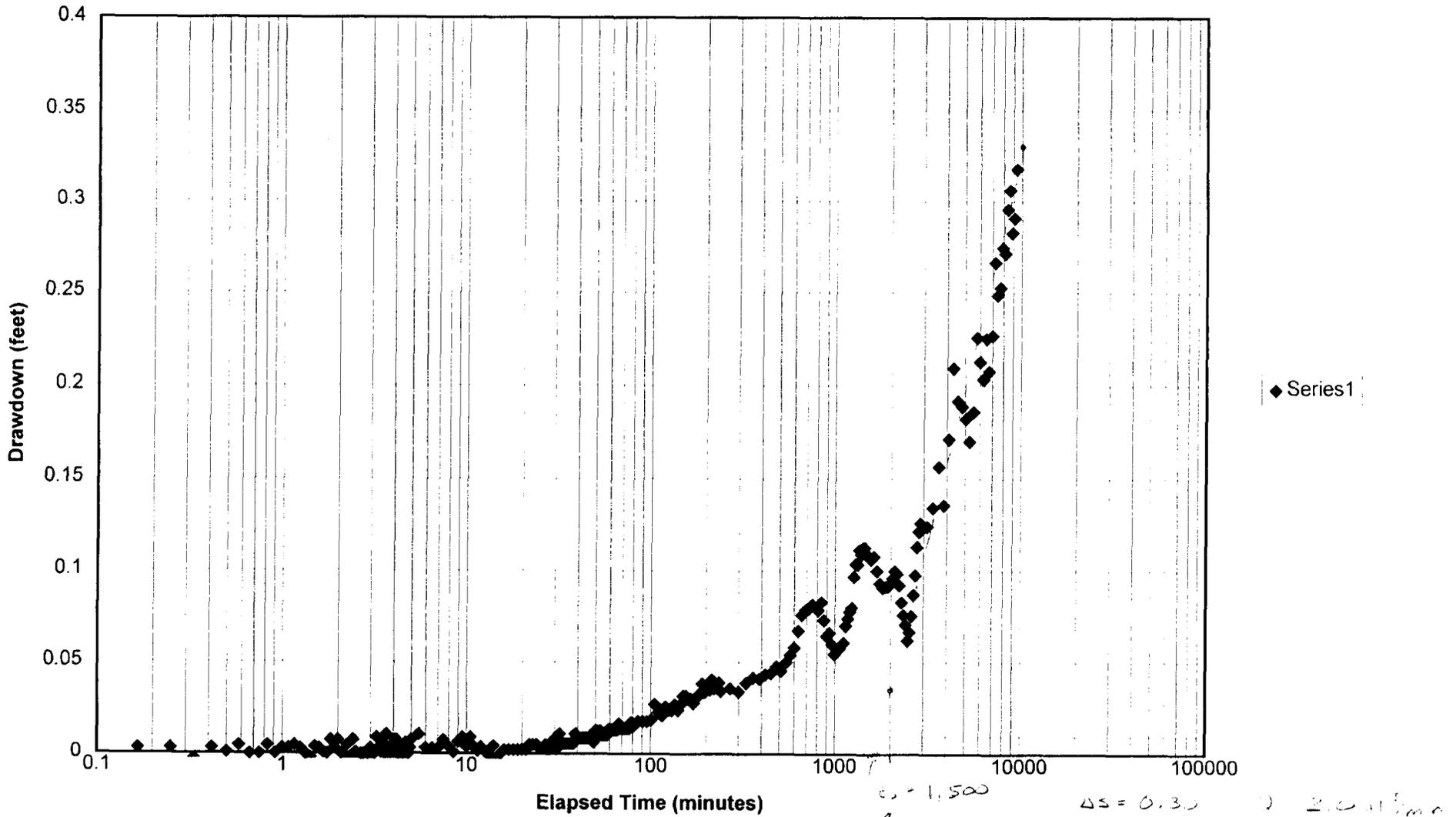
UNCONFINED AQUIFER (Late Response)



$$1/u_B = 4Tt/r^2S_y$$

WORKING DRAFT

OB2 Constant Rate Test Data -- Test #4

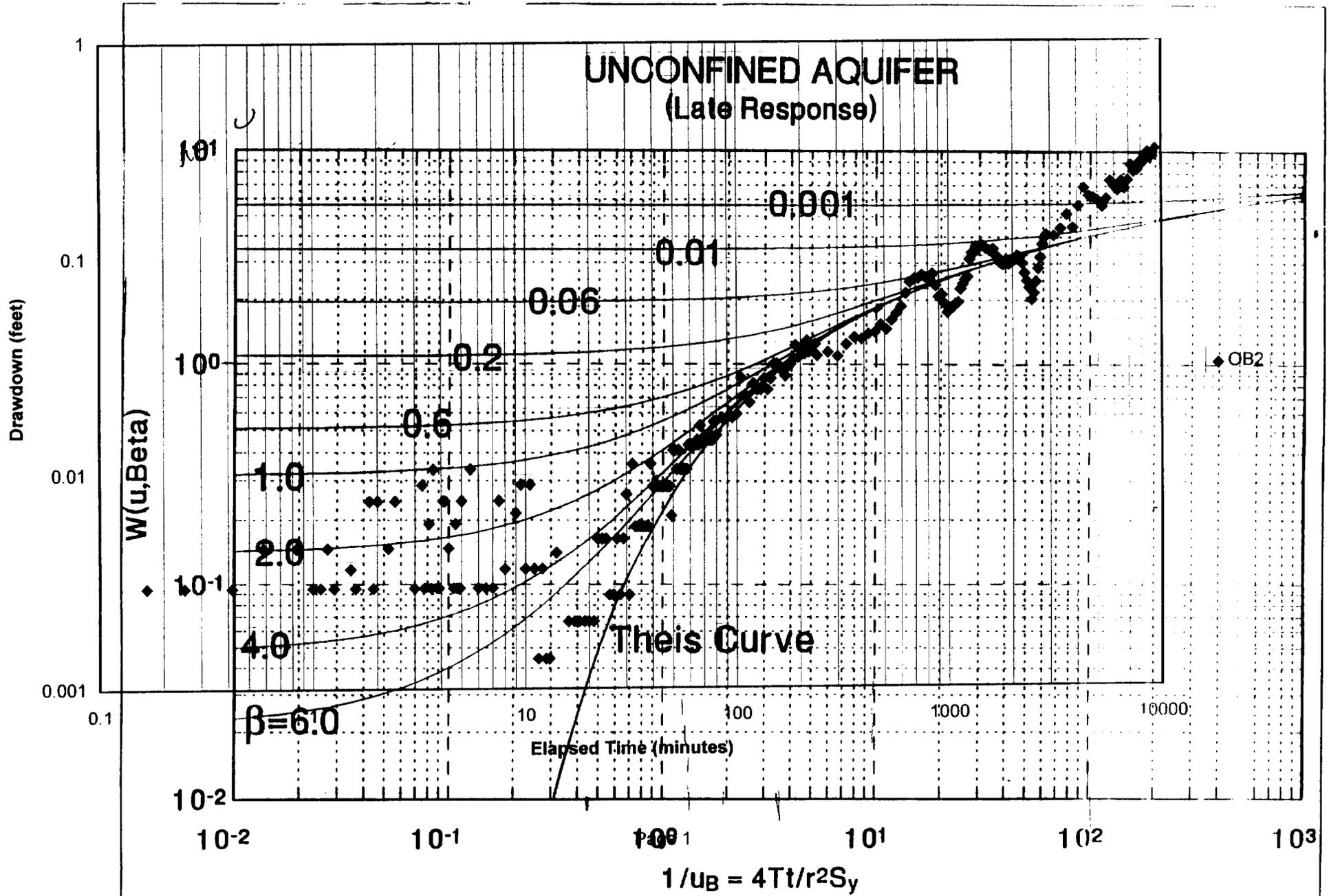


$$T = 122 \text{ ft}^2/\text{min}$$
$$S = \frac{2.25 T \epsilon_0}{r^2} = 0.81$$

Handwritten notes:
1/10
0.001
0.01
0.06
0.2
0.6
1.0
2.0
4.0
6.0

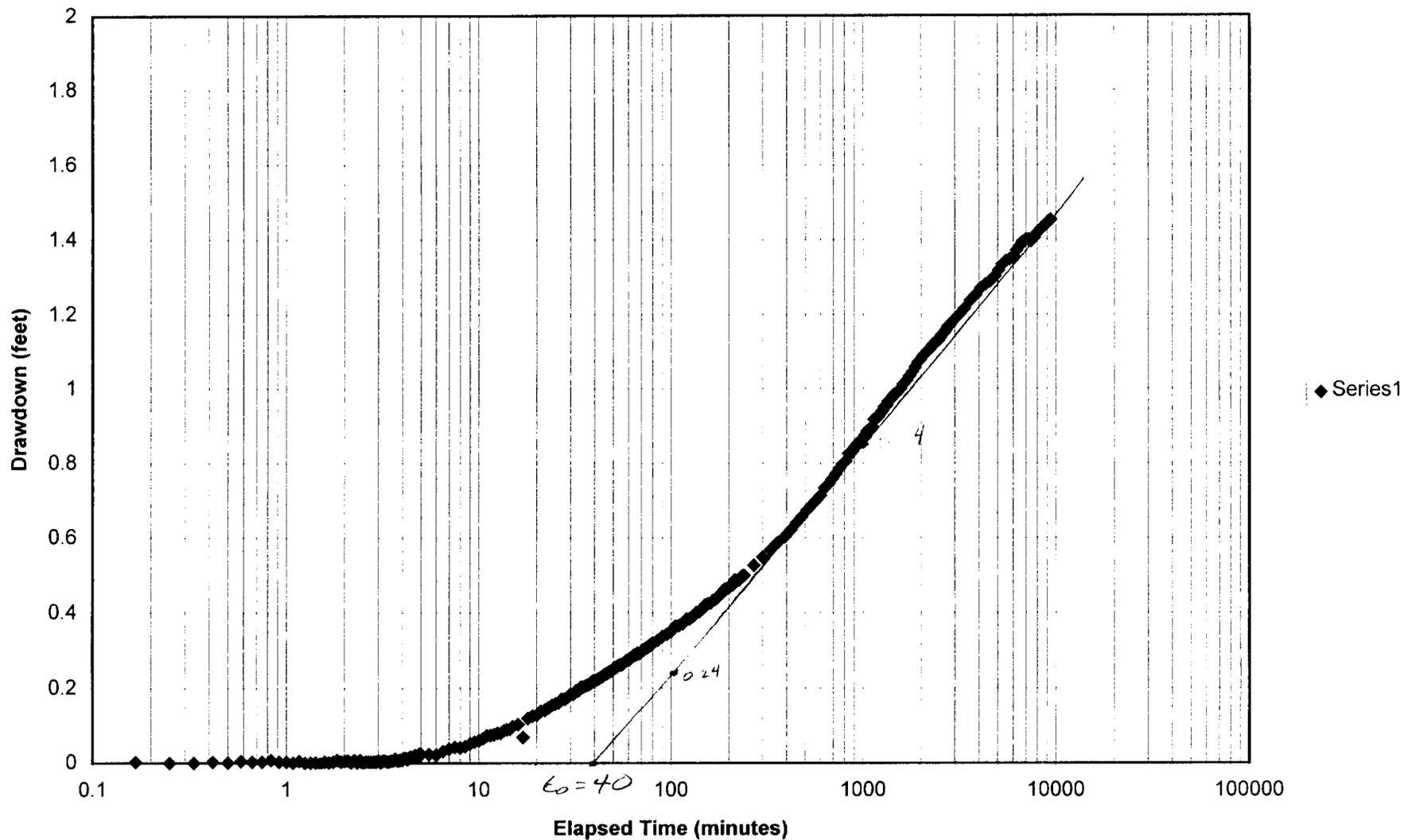
WORKING DRAFT

Constant Rate Test Data for OB2-- Test #4



WORKING DRAFT

OB3 Constant Rate Test Data -- Test #4



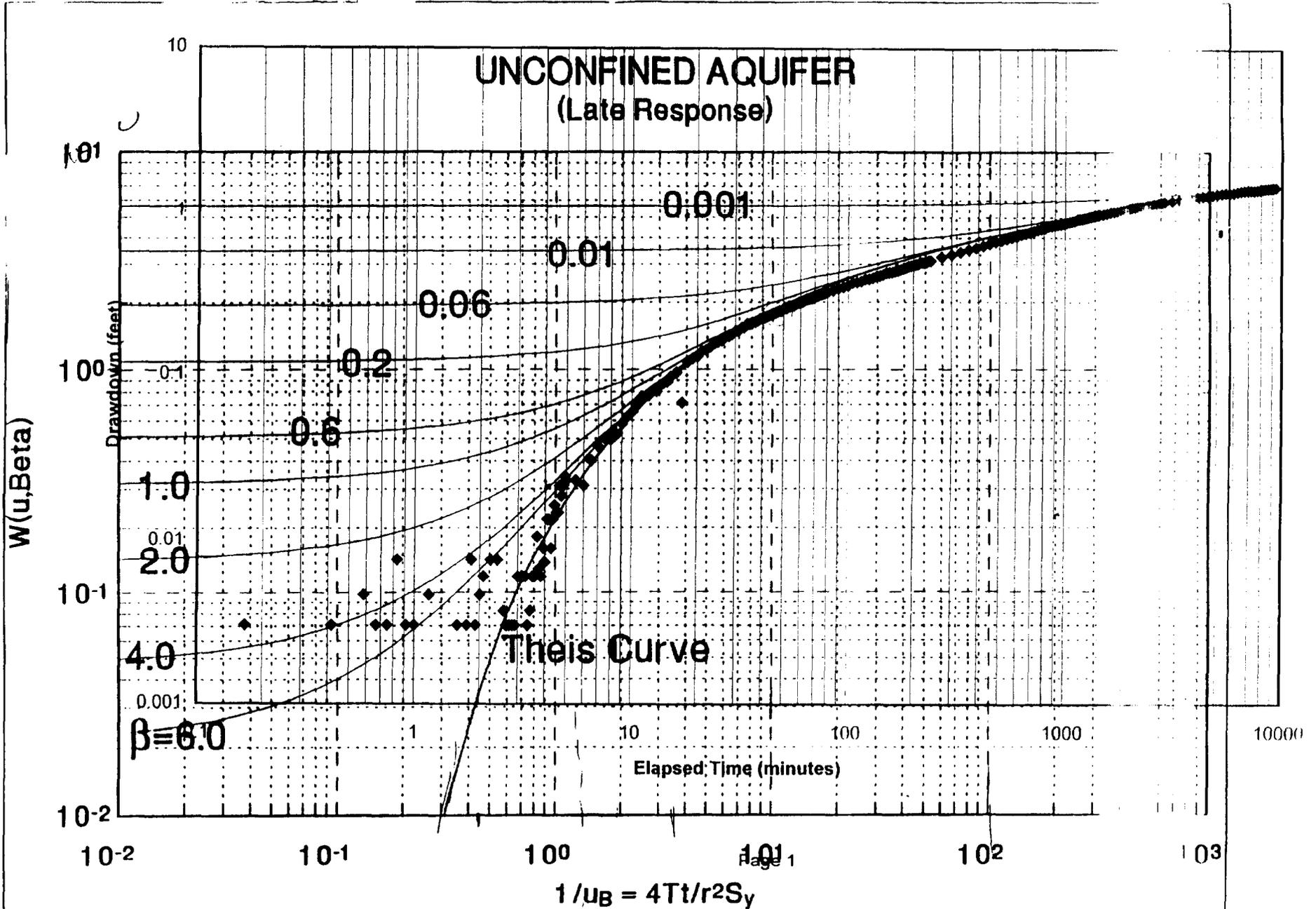
$$T = \frac{(2.3)(2.0)}{4\pi(0.60)} = 0.61$$

$$S = \frac{2.25(0.61)(40)}{1.7272} = 0.014$$

*Theis Curve of 1st (1/2) ...
W(u, beta) ... S = 1.25 ...
S = 0.25*

WORKING DRAFT

Constant Rate Test Data for OB3-- Test #4

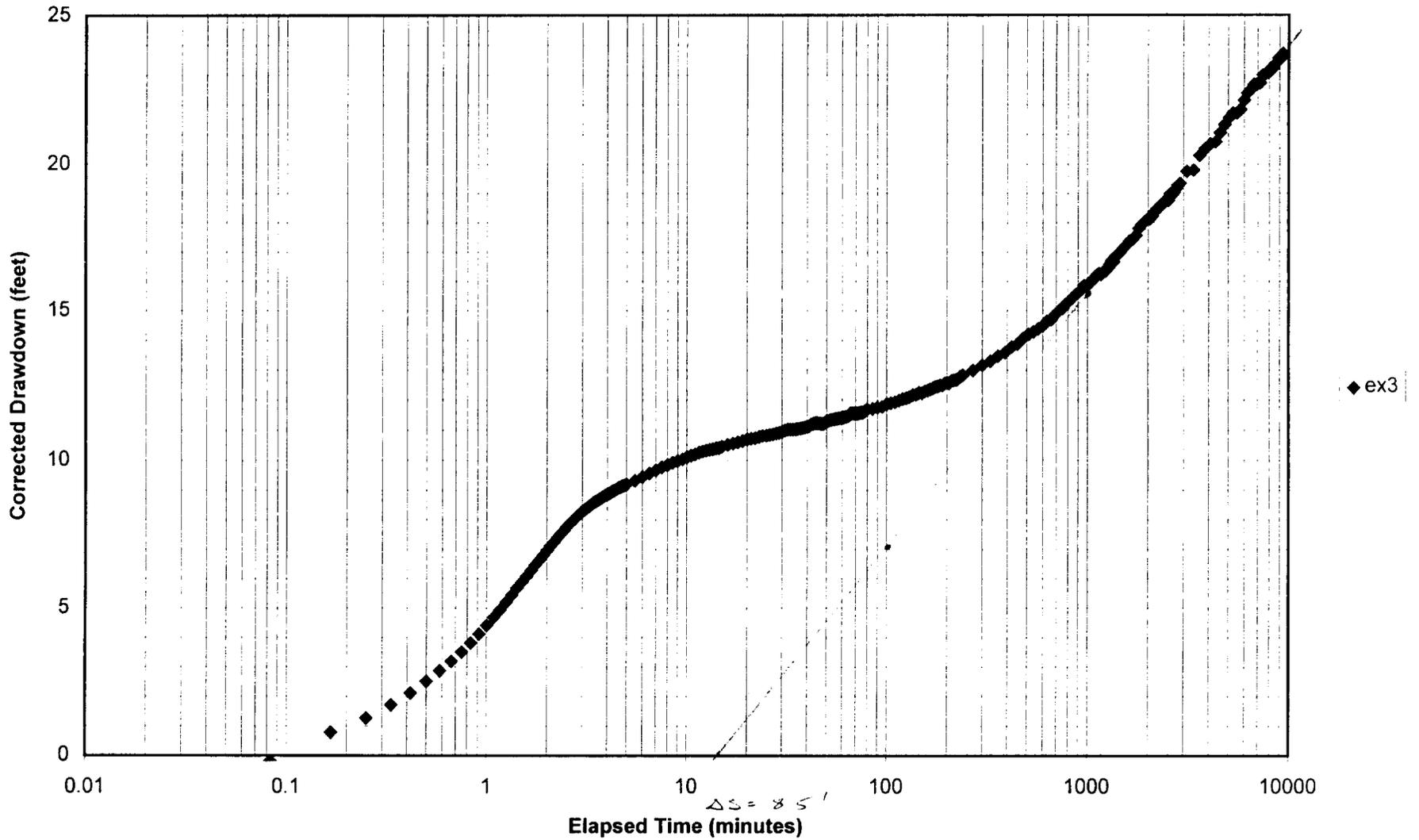


WORKING DRAFT

ex3semi

4.22
41.55
T = 0.0431

Test #4 EX3 Constant Rate Discharge Test Drawdown Data

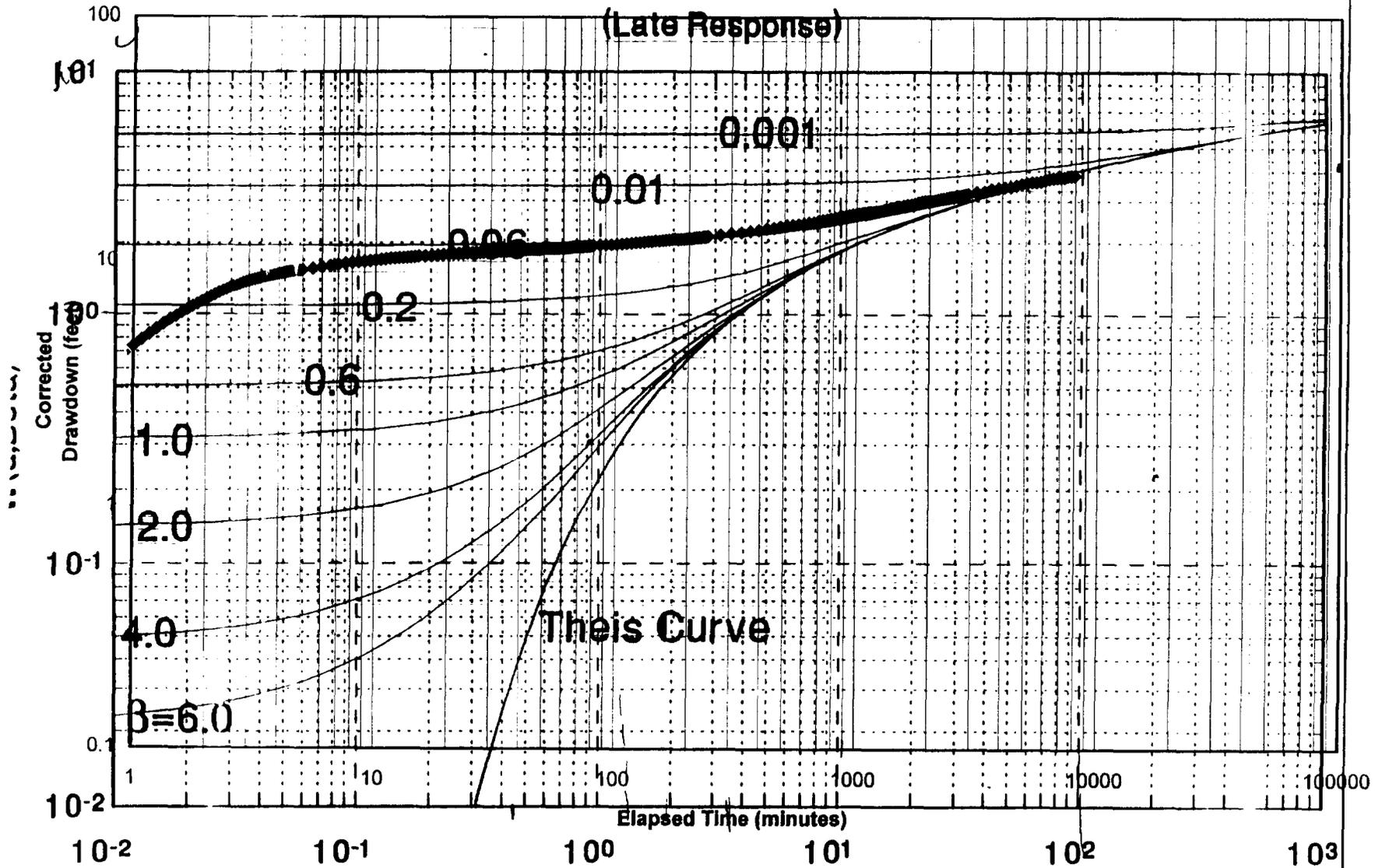


WORKING DRAFT

ex3match

Handwritten notes:
B = 6.0
u_B = 0
C(1,0,0) = 2.5
E = 100
S = 0.1

Curve match
UNCONFINED AQUIFER
(Late Response)

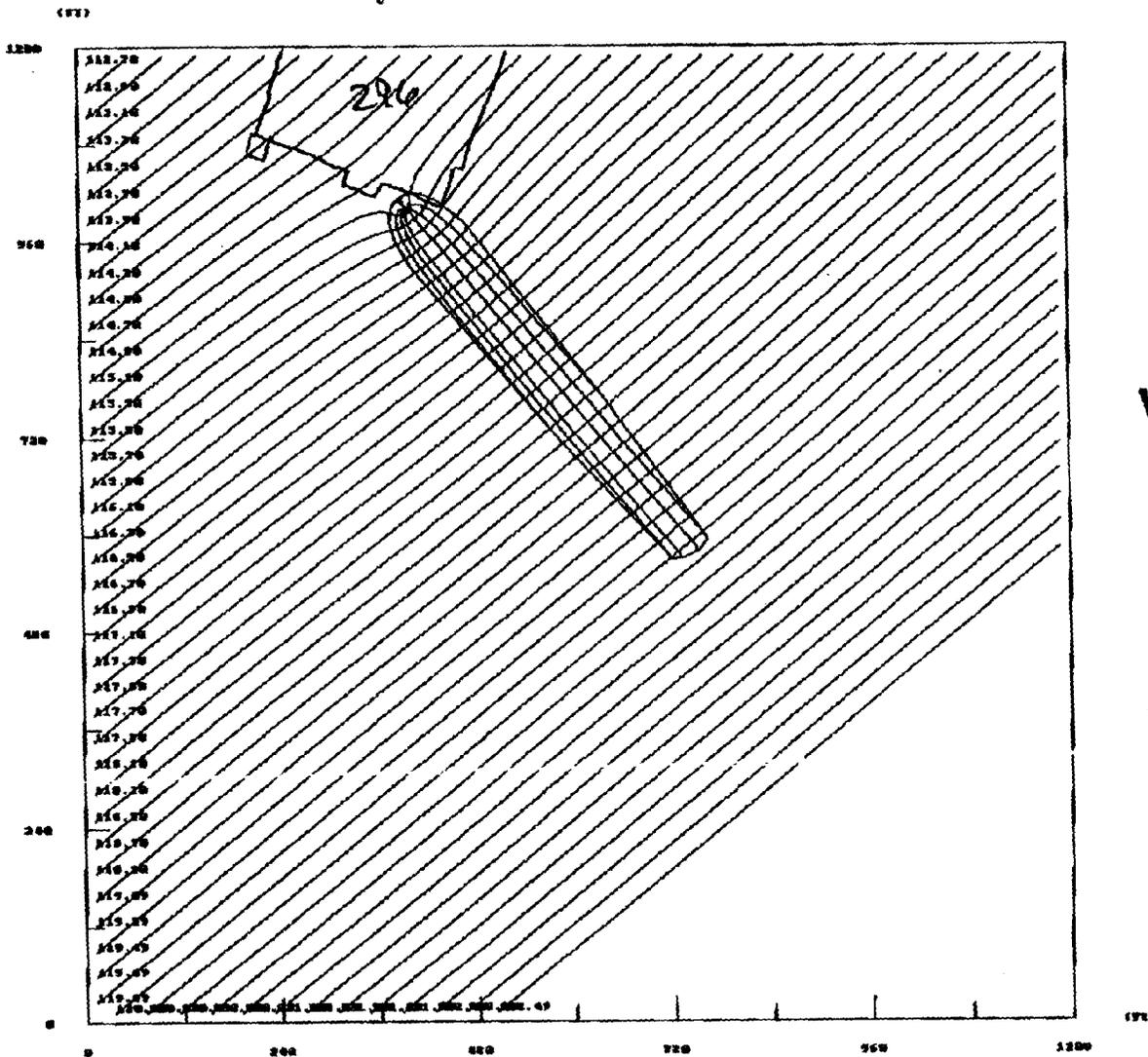


$1/u_B = 4Tt/r^2S_y$
Page 1

$T = 2.32 \text{ ft}^2/\text{min}$ (minimum T from 081/082)

Time = 1 yr

⑧ ⑨



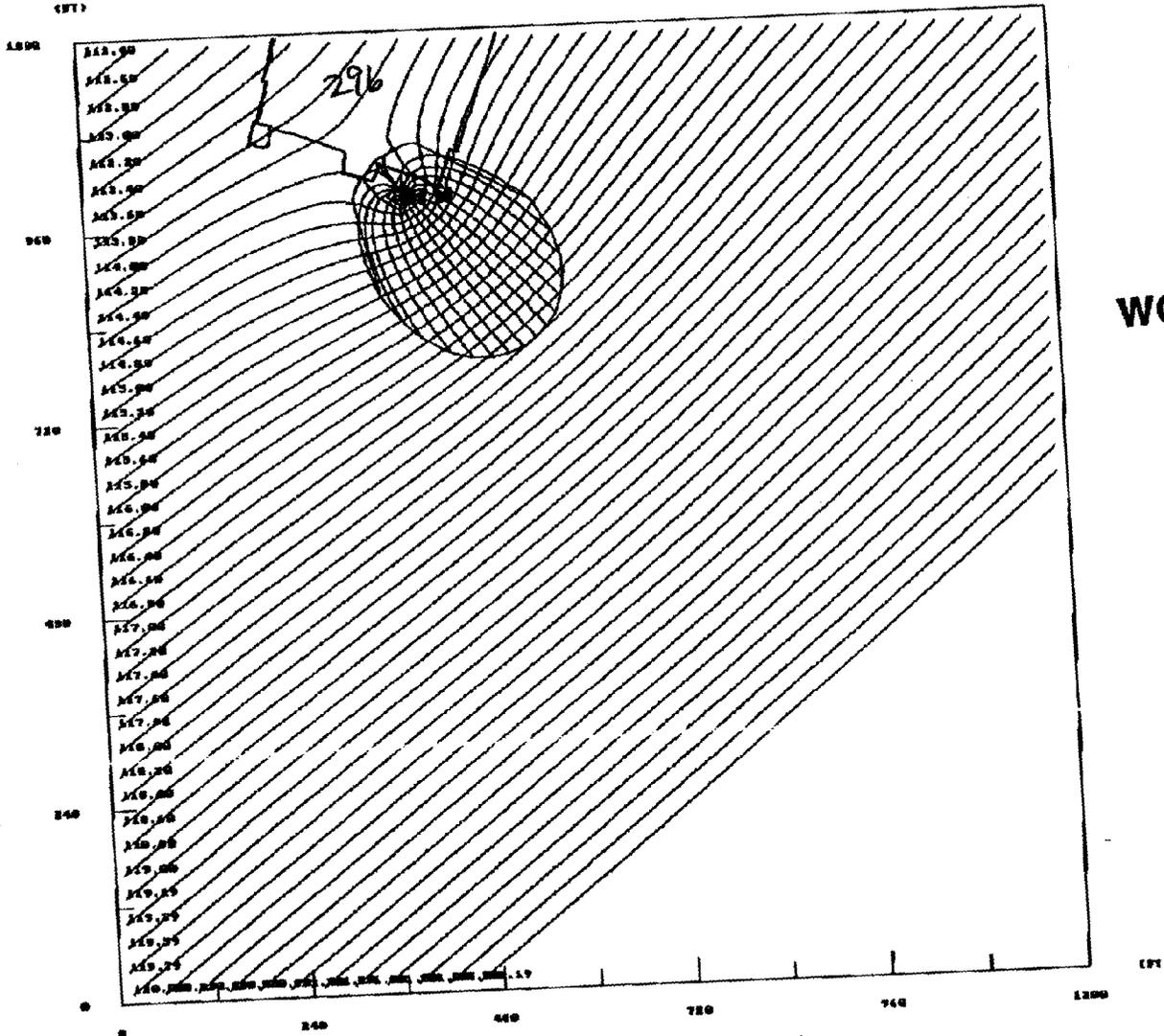
Note: Same as previous different scale.

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Scale 1" = 200'
CI = 0.2 ft

$T = 0.71 \text{ ft}^2/\text{min}$ (maximum T from OBS3)
 Time = 14r

(19)



WORKING DRAFT

19/25/87 16:06 0714 654 8392

BECHTEL

Scale 1"=200'
 CI = 0.2 ft

Table 1
Summary of Potential Sampling Locations

Location Number	Proposed Location	Rationale
1	Downgradient of AW-4	Abandoned well AW-4 may provide a conduit for movement of VOC-contaminated water from the shallow groundwater unit to the principal aquifer.
2	North of 18_PS6	Evaluate horizontal and vertical distribution of VOC
3	North of 12_UGMW31	Evaluate horizontal and vertical distribution of VOC
4	Northwest of 18_PS6	Evaluate horizontal and vertical distribution of VOC
5	South of 18_TIC055 in unpaved area	Evaluate horizontal and vertical distribution of VOC
6	18_TIC055	Well 18_TIC055 is an active production well. The vertical gradient developed by this well may induce flow of VOC-contaminated water from the shallow groundwater unit to the principal aquifer.
7	Northeast of 18_BGMW101	Evaluate horizontal and vertical distribution of VOC
8	East of 18_IDP1-S	Evaluate horizontal and vertical distribution of VOC

MEMORANDUM

Date: August 18, 1997

SUBJECT: Review of Draft Final Groundwater Remediation Pilot Test Work Plan
MCAS El Toro

TO: Glenn Kisnter, RPM
Navy Section

FROM: Herbert Levine, Hydrogeologist
Technical Support Team

One comment made previously to the Draft version of this document has not been adequately addressed in the Draft Final. That is regarding the pathway between the shallow and principle aquifers. During previous discussions with the Navy regarding this comment to the Draft document we were informed that it was omitted due to an oversight and would be added to the Draft Final. This has been added to the Draft Final in the discussion of DQOs. However that discussion is incomplete. The fourth DQO step, to define the study boundary is not complete to answer this question since the location where the pathway occurs is restricted to Figure 1.2. The fifth DQO, to develop a decision rule is also not complete since , for this problem item 1 only states that CPT and HydroPunch data will be used. There should be more detail as to how that data will be used and how the decision to step out or expand the boundary will be made. It would be helpful to add the evaluation of this pathway to the flow chart of Figure 1-3.

The other comments made to the Draft document have been adequately addressed in the Draft Final.

Plan of Action - October 1 to October 15, 1997
Groundwater Remediation Pilot Testing - Site 24
MCAS El Toro

1. Present test data from 24EX3 and select drilling location for 24EX4 (30 September).
2. Discuss resolution of CPT/HydroPunch sampling plan for the leading edge of the TCE plume (for discussion during 1 October meeting).
3. Prepare for vacuum-enhanced test at well 24EX3.
4. Continue SVE at well 24SVE10 to reduce soil gas background concentrations (SVE began at well 24SVE10 on 24 September).
5. Continue long-term test at extraction well 24EX3 and injection well 24IN1.
6. Make preparations for additional drilling and CPT/HydroPunch work (14 October).