

INDIAN AND NORTHERN AFFAIRS  
WATER RESOURCES DIVISION  
BYG Tailings Dam, Mount Nansen YT - Project Data Review Report

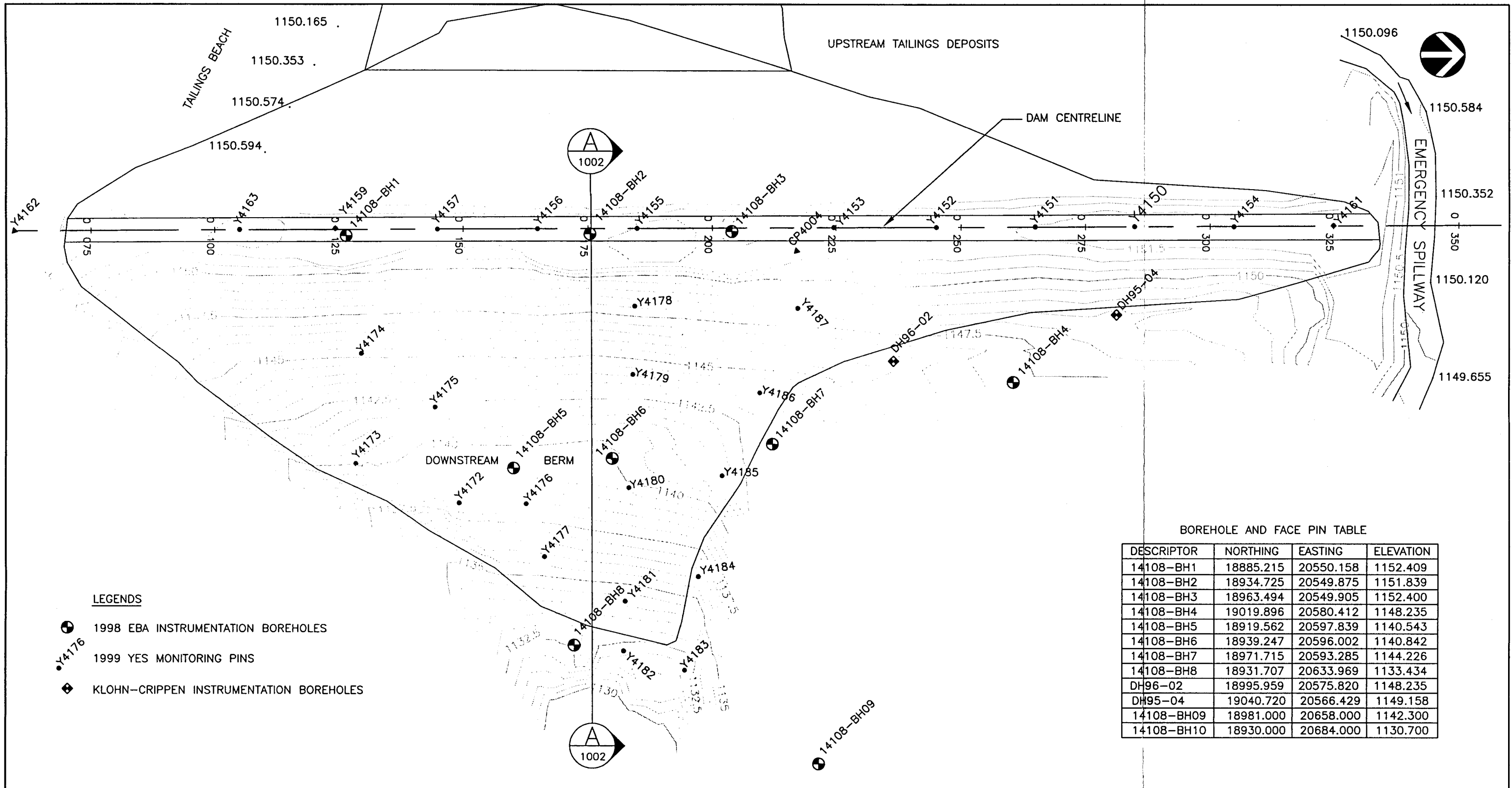
January 12, 2000

YES 1999. "Report on Mt. Nansen Tailings Dam Monitoring Survey", Yukon Engineering Services, December 17.



## FIGURES

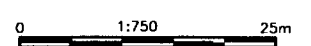
- Figure 1 Tailings Dam – Plan View
- Figure 2 Pond and Piezometric Levels – Bole Hole No. 1 (1998-1999)
- Figure 3 Pond and Piezometric Levels – Bole Hole No. 2 (1998-1999)
- Figure 4 Pond and Piezometric Levels – Bole Hole No. 3 (1998-1999)
- Figure 5 Pond and Piezometric Levels – Bole Hole No. 5 (1998-1999)
- Figure 6 Pond and Piezometric Levels – Bole Hole No. 7 (1998-1999)
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BOREHOLE AND FACE PIN TABLE

DESCRIPTOR	NORTHING	EASTING	ELEVATION
14108-BH1	18885.215	20550.158	1152.409
14108-BH2	18934.725	20549.875	1151.839
14108-BH3	18963.494	20549.905	1152.400
14108-BH4	19019.896	20580.412	1148.235
14108-BH5	18919.562	20597.839	1140.543
14108-BH6	18939.247	20596.002	1140.842
14108-BH7	18971.715	20593.285	1144.226
14108-BH8	18931.707	20633.969	1133.434
DH96-02	18995.959	20575.820	1148.235
DH95-04	19040.720	20566.429	1149.158
14108-BH09	18981.000	20658.000	1142.300
14108-BH10	18930.000	20684.000	1130.700

- LEGENDS**
- 1998 EBA INSTRUMENTATION BOREHOLES
  - Y4176 1999 YES MONITORING PINS
  - ◆ KLOHN-CRIPPEN INSTRUMENTATION BOREHOLES



TO BE READ WITH KLOHN-CRIPPEN REPORT DATED JAN. 12, 2000

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS REQUIRED FROM OUR CLIENT'S APPROVAL.	CLIENT	PROJECT
	INDIAN AND NORTHERN AFFAIRS WATER RESOURCES DIVISION	BYG TAILINGS DAM DAM SAFETY ASSESSMENT
 KLOHN-CRIPPEN	TAILINGS DAM - PLAN VIEW Figure 1	
	PROJECT No.	DWG. No.
	PM8808 01	B-1001

JAN. 12, 2000	ISSUED FOR FINAL REPORT	CYW/KMK	RL	PWH	RJB
NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN

BASE PLAN AND SURVEY PROVIDED BY YUKON ENGINEERING SERVICES (YES 1999)

Title: 14-108-01  
 Date: 1/12/2000  
 Drawing File: \\V18808\Cadd\14-108.dwg (WGNOC)

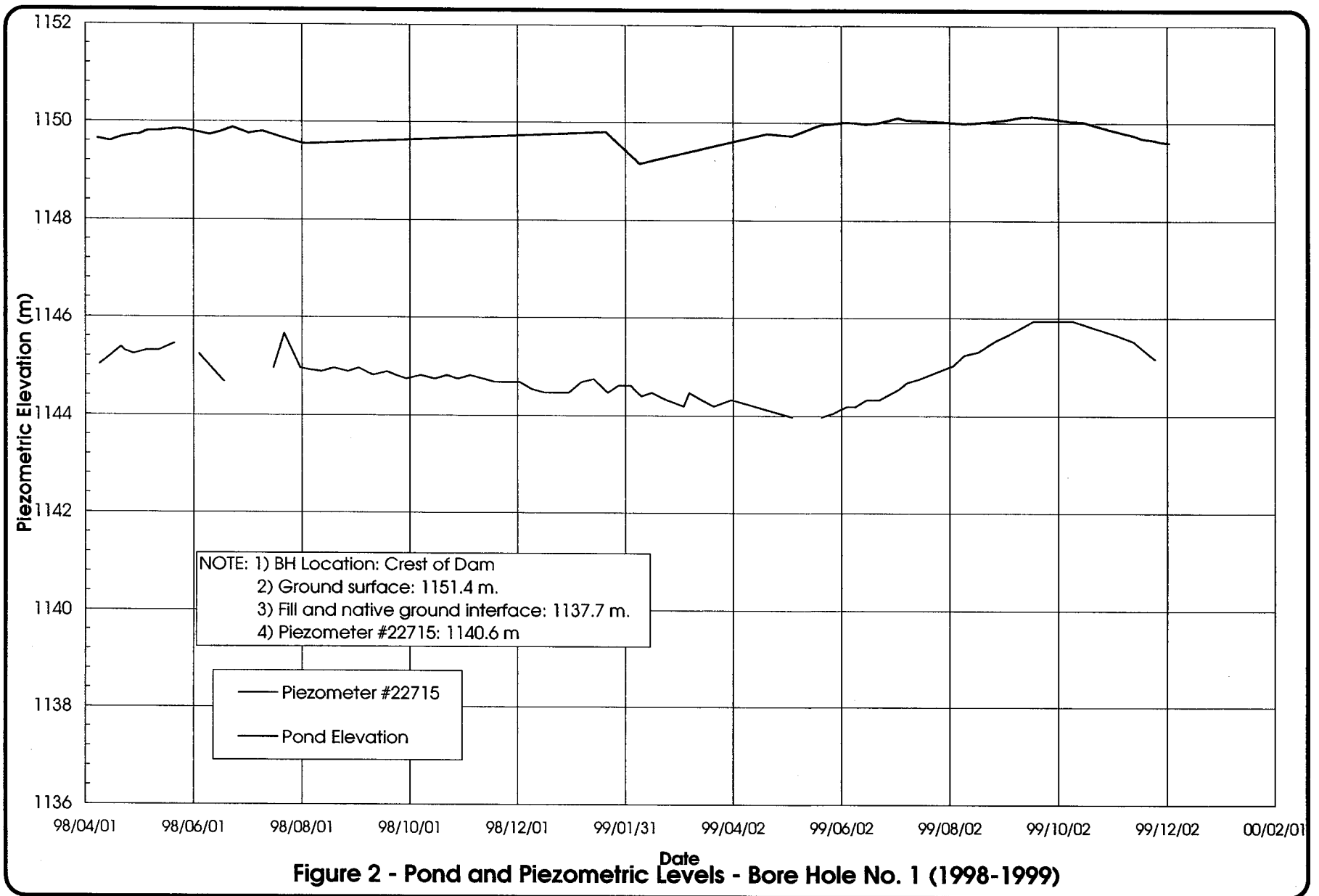


Figure 2 - Pond and Piezometric Levels - Bore Hole No. 1 (1998-1999)

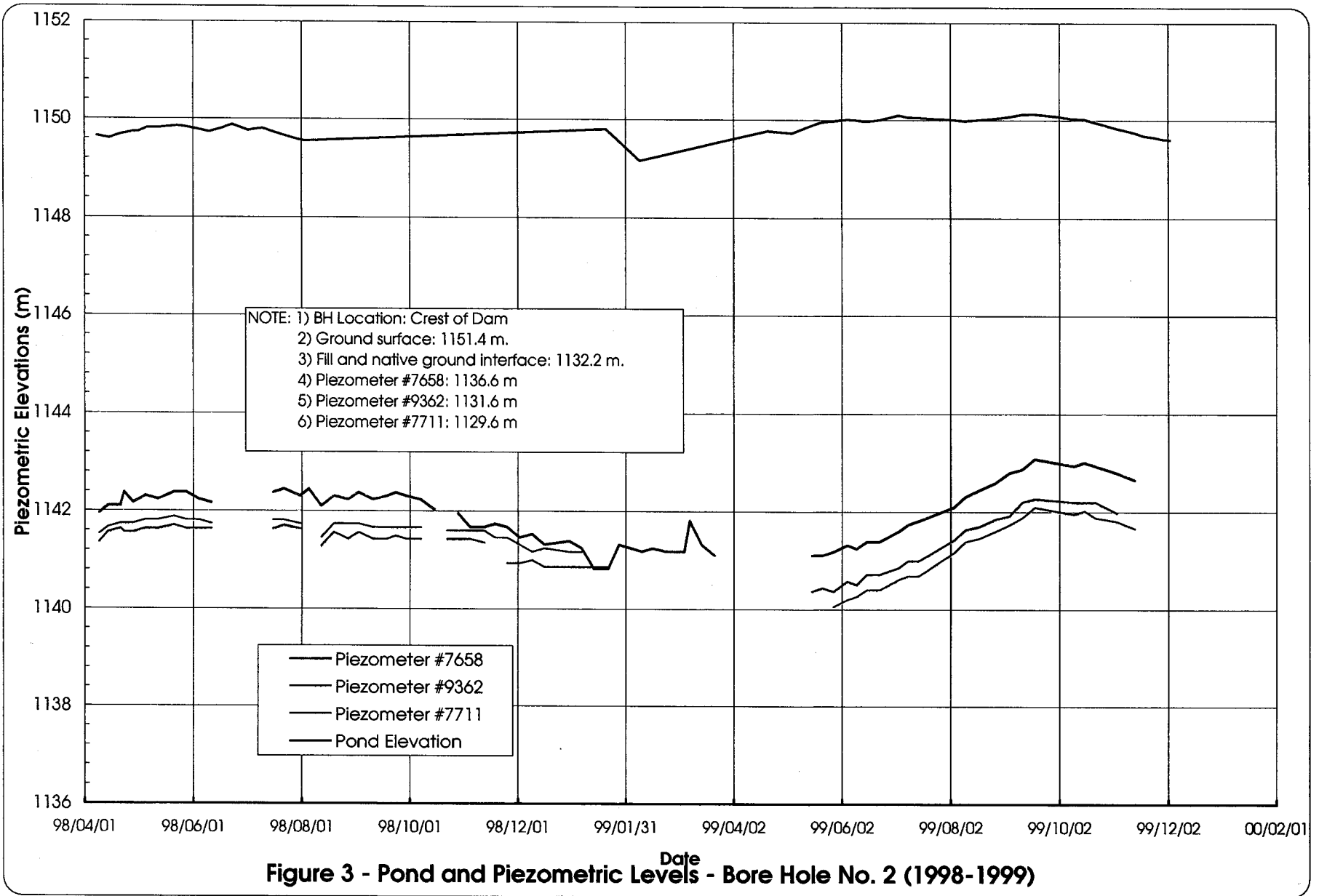
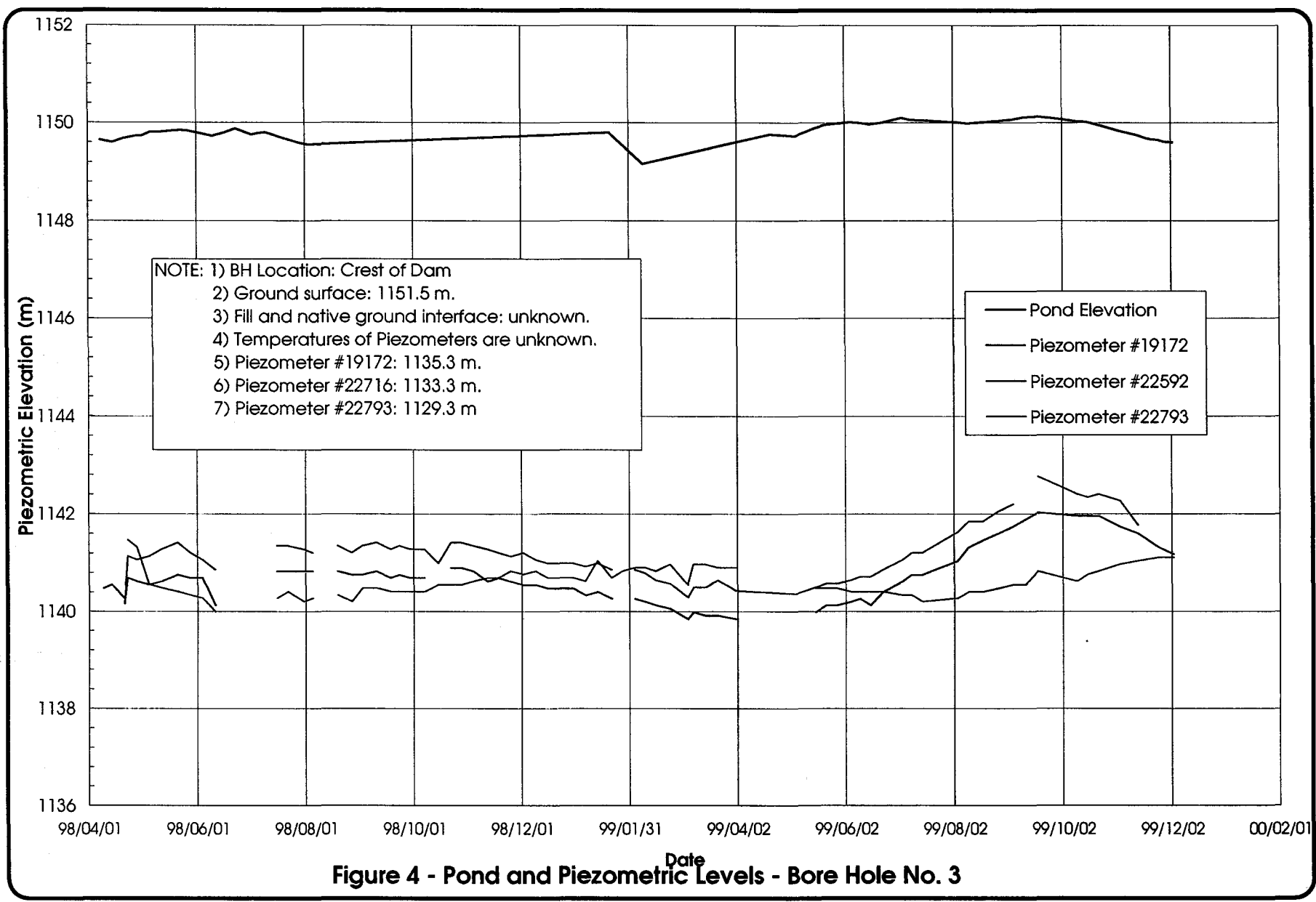
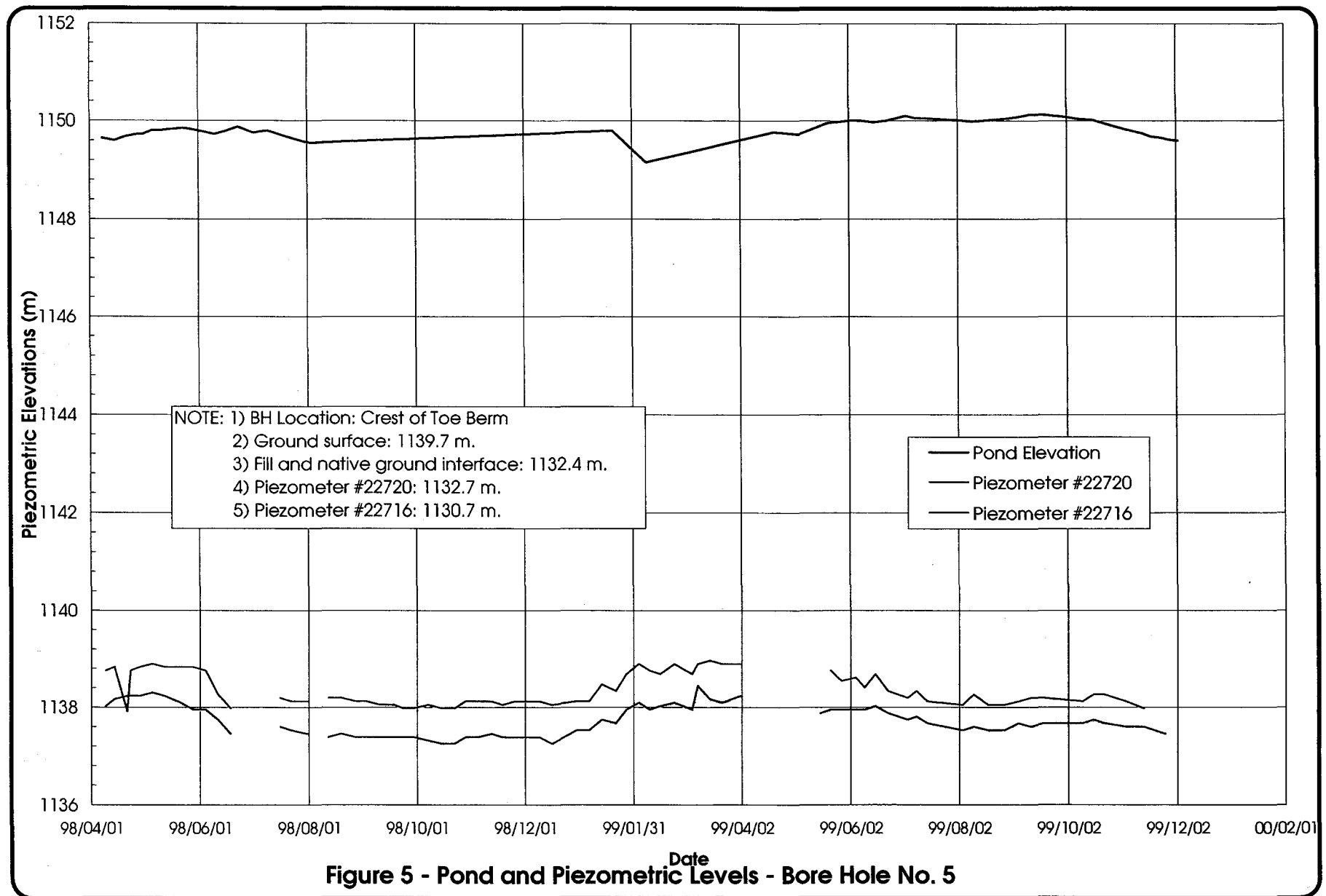


Figure 3 - Pond and Piezometric Levels - Bore Hole No. 2 (1998-1999)



**Figure 4 - Pond and Piezometric Levels - Bore Hole No. 3**



**Figure 5 - Pond and Piezometric Levels - Bore Hole No. 5**

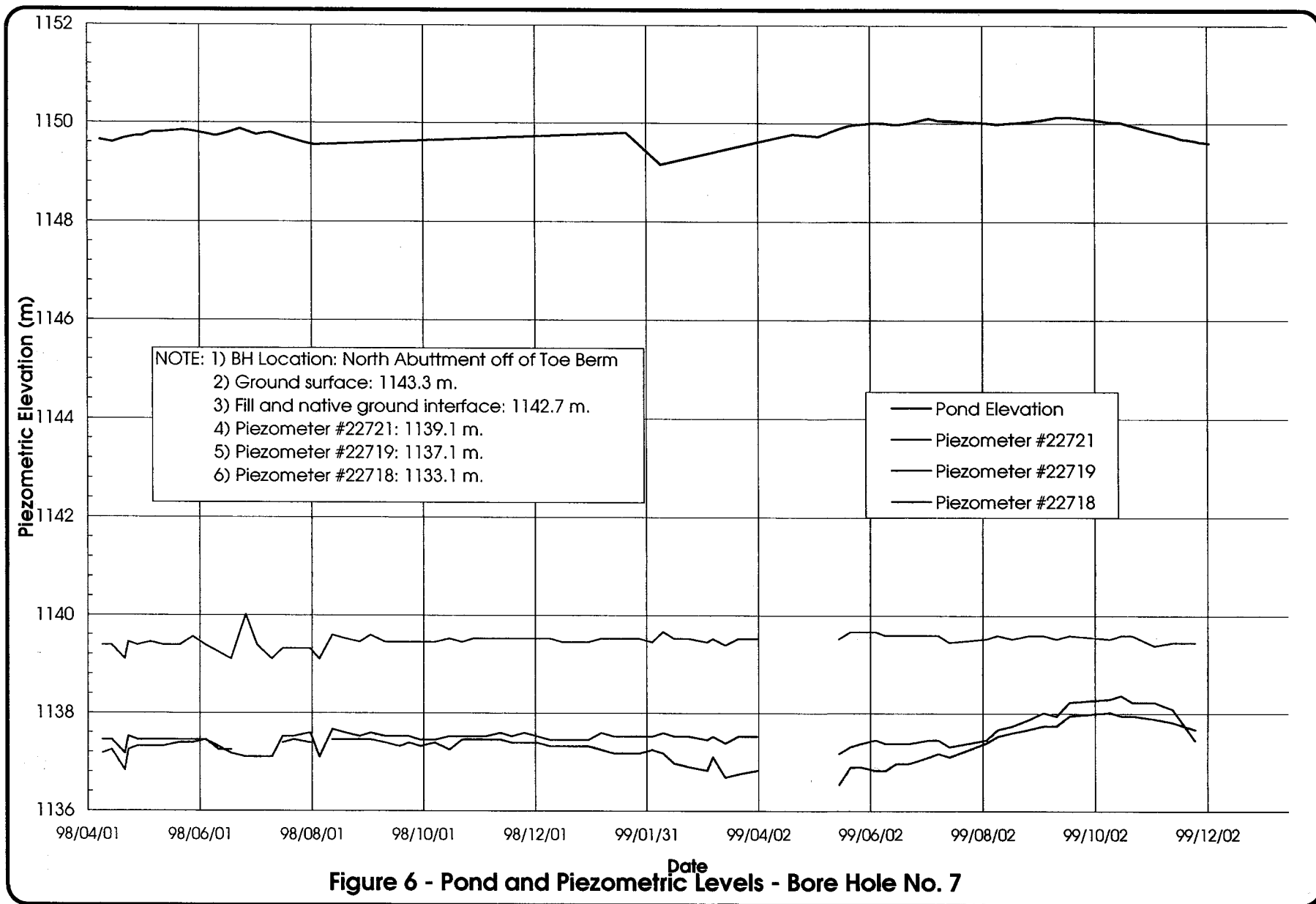
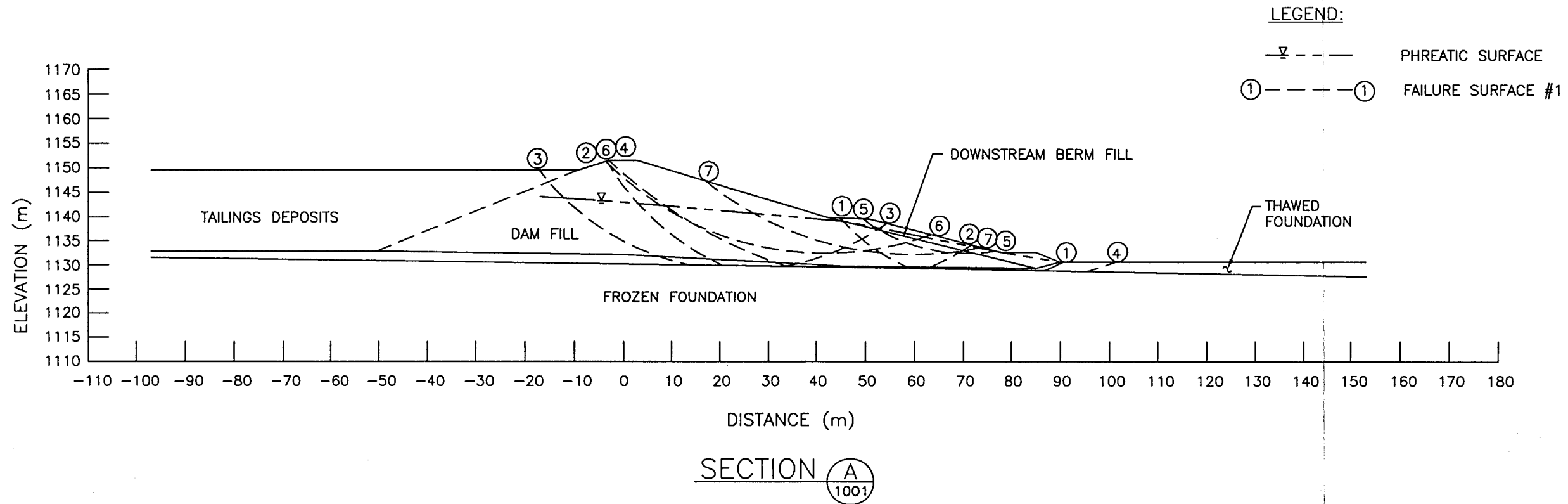


Figure 6 - Pond and Piezometric Levels - Bore Hole No. 7





**SUMMARY OF STATIC SAFETY FACTOR AGAINST DOWNSTREAM SLOPE INSTABILITY**

FAILURE (1) SURFACE	FACTOR OF SAFETY (BISHOP METHOD)	
	REDUCED STRENGTH	DESIGN STRENGTH
1	1.48	1.80
2	1.67	2.02
3	2.47	2.96
4	1.54	1.85
5	1.62	1.89
6	1.94	2.27
7	1.86	2.17

(1) INFINITE SLOPE PARALLEL TO DOWNSTREAM BERM SURFACE: FACTOR OF SAFETY = 1.46 (DESIGN STRENGTH)  
1.25 (REDUCED STRENGTH)

**SUMMARY OF SOIL PROPERTIES**

MATERIAL	UNIT WEIGHT (kN/m <sup>3</sup> )	FRICTION ANGLE $\phi$ (DEGREES)	
		REDUCED STRENGTH	DESIGN STRENGTH
UPSTREAM TAILINGS DEPOSITS	17	25	30
DAM FILL	19	30	34
DOWNSTREAM BERM FILL	19	30	34
THAWED FOUNDATION	19	25	30

SECTION **A**  
1001

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	INDIAN AND NORTHERN AFFAIRS WATER RESOURCES DIVISION	BYG TAILINGS DAM DAM SAFETY ASSESSMENT
	TITLE	
	TAILINGS DAM - STABILITY ANALYSES Figure 7	
PROJECT No.		REV.
PM8808 01		B-1002

JAN. 12, 2000	ISSUED FOR FINAL REPORT	KNH	RL	PWH	<i>RF</i>	
NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D

CANCEL PRINTS BEARING PREVIOUS

Date: 1/12/2000  
Scale: 1=7(P.S.)  
Drawing: M. Webb 1002.dwg (W01002)

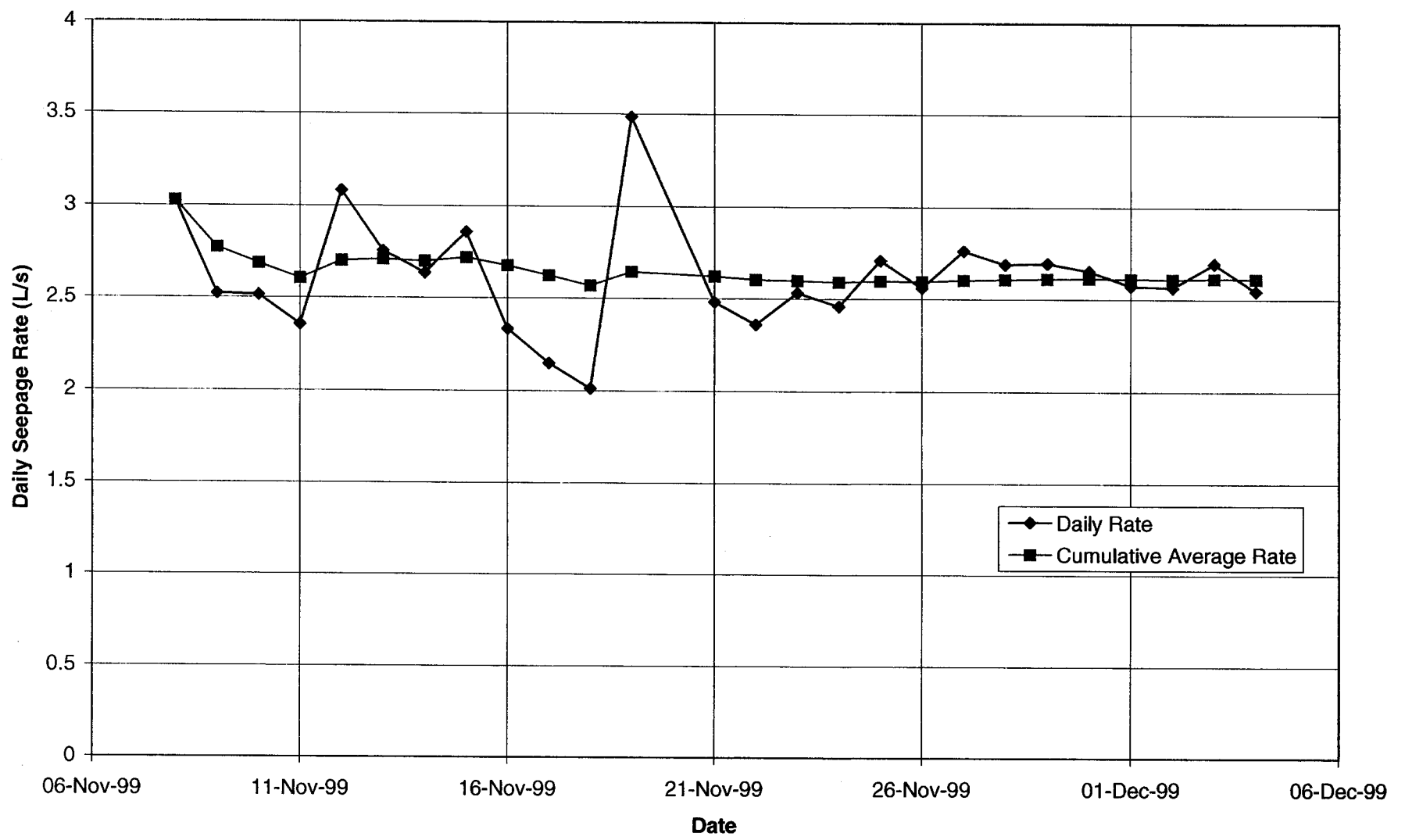


Figure 8 - Tailings Dam - Seepage Pump-back Rate Monitored by Flow Meter