



Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

CASSIAR ASBESTOS CORPORATION LTD.
CLINTON CREEK MINE
MOVEMENT MONITOR DATA
TO APRIL 1979

CLINTON CREEK, YUKON TERRITORY

DISTRIBUTION:

- 4 copies - Cassiar Asbestos Corporation Ltd.
Vancouver, British Columbia
- 2 copies - Golder Associates
Vancouver, British Columbia

April 1979

772-1016



Golder Associates

CONSULTING GEOTECHNICAL ENGINEERS

E/79/423

March 28, 1979

Cassiar Asbestos Corporation Ltd.
2000 Guinness Tower
1055 West Hastings Street
Vancouver, B.C.
V6E 3V3

RECEIVED
MAR 29 1979

VANCOUVER OFFICE

ATTENTION: Mr. J.G. Berry

Re: Clinton Creek Mine Closure

Dear Sir:

We have had two meetings with R.M. Hardy & Associates Ltd. (RMHA) with regard to their recommendations made to the Yukon Territory Water Board in their October 1978 report, as well as to our respective analyses of the Wolverine Creek tailing pile. On January 30th, 1979, Dr. J.I. Clark, P. Eng., of RMHA, and Mr. H.F. McAlpine of the Department of Indian and Northern Affairs met with Mr. D.B. Campbell, P. Eng., and the writer in Vancouver. On March 1st, 1979, the writer met with Dr. J.I. Clark, P. Eng., in Calgary. As a result of these two meetings the status of our respective views is as follows:

1) Static Stability

Our approach to the assessment of the static stability of the tailing pile is predicated on the observations and test results presented in our July, 1978 report. The RMHA analysis is basically the same in terms of mathematical approach, but differs in terms of the interpretation of the strength characteristics of the foundation soils beneath the tailing pile.

On the basis of our analyses the tailing pile has been re-contoured. A plan showing the surface contours on the re-shaped pile and the locations of all of the survey monitors, including 10 new monitors installed on the recontoured pile, is included as Figure 2.

The rates of movement of the recontoured pile are being monitored and the data have been plotted as shown on the attached Figures. The data indicate that the north lobe of the tailing pile has slowed from a rate of movement of approximately 60 ft./year immediately prior to recontouring, to approximately a maximum average rate of 17.5 ft./year between November, 1978 and February, 1979. The maximum rates of movement near the toe of the 1974 failure lobe have changed from approximately 15 ft./year to approximately 3.7 ft./year since recontouring. The results of the monitor surveys over the next year will indicate whether or not the rates of movement are continuing to slow at an acceptable rate.

Static stability analyses for the recontoured tailing pile indicate factors of safety against massive shear failure of 1.2 and 1.6 for the north lobe and the 1974 failure lobe, respectively.

2) Seismic Stability

RMHA have assessed the resistance of the tailing pile to seismic loading by applying an earthquake factor equivalent to 0.10 g in a pseudo-static analysis. The application of this load factor results in a factor of safety of less than 1.0, which implies that the tailing pile would move downslope in the event of such an earthquake occurrence. We agree with RMHA that, indeed, some downslope movement of the pile may occur as a result of such an earthquake occurrence, but do not believe that a ground acceleration of 0.10 g would cause the tailing pile to fail catastrophically resulting in the encroachment of Wolverine Creek by tails. There are a number of analytical approaches that can be used to estimate the magnitudes of slope movements due to earthquake. These techniques can provide a wide range of answers, and RMHA and Golder Associates agree that such state-of-the-art predictions of the magnitudes of downslope movements, if they should occur at all, are difficult to interpret.

3) Movement Monitoring

RMHA and Golder Associates agree that movement monitor surveys done approximately every second month will be adequate to assess the significance of continuing movements of both the Wolverine Creek tailing pile and the Clinton Creek waste dump.

4) Contingency Plan for Wolverine Creek Tailing Pile

RMHA and Golder Associates agree that it is not possible to produce a detailed contingency plan for the rehabilitation

of Wolverine Creek in the event of the creek being inundated by a massive failure of the tailing pile without knowledge of specific post-failure conditions. At this time it is only possible to state that such rehabilitation would probably involve extending the Wolverine Creek by-pass channel, constructed at the toe of the 1974 failure lobe, upstream to include materials from subsequent failures.

The planned work for construction of weirs in the Clinton Creek channel is not expected to be completed until late summer, 1979. Consequently, no comment on the effectiveness of the work can be made at this time. Movement monitor data for the waste pile and data for the Clinton Creek channel closure monitors are attached. The data continue to indicate a general trend toward slower rates of movement of the waste pile. A plan showing the locations of the movement monitors and channel closure monitors is included as Figure 1.

The movement monitor plots for both the tailing pile and the waste pile will be updated following each subsequent survey and the revised plots forwarded to you.

Yours very truly,

GOLDER ASSOCIATES


E.B. Fletcher, P. Eng.

EBF/ba
772-1016

L

*Notes mailed Mr. W. G. Whitley
Mel Taylor
May 15/79*

B. H. LEVELTON & ASSOCIATES LTD. • 1755 WEST 4TH AVENUE, VANCOUVER 9, B.C. • 736-6516

April 26, 1979

File 78-151A

Cassiar Asbestos Corporation Ltd.
2000 Guinness Tower
1055 West Hastings Street
Vancouver, B. C.
V6E 3V3

Attention: Mr. J. Giles
Purchasing Manager

SUBJECT: Asbestos in Water, P.O. 51874

Dear Mr. Giles:

On February 28, 1979 we received from you a sample of water taken February 17, 1979 from Clinton Creek, downstream from Wolverine. Our analysis of asbestos fibre content by electron microscope is attached. A photograph by transmission electron microscope (TEM 24586) is attached as Plate 1 showing typical background material. Fibres counted as asbestos fibres are identified by an experienced observer. The fibre count of 11.45 million fibres/litre (MFL) is relatively low.

Our invoice No. 8156 for \$250.00 is attached.

Yours truly

B. H. LEVELTON & ASSOCIATES LTD.

A. J. Shaw

A. J. Shaw, P.Eng.

AJS:ml
Encl.

CHEMICAL LABORATORY REPORT

Analysis of Asbestos Fibre in Water

DATE : April 26/79

PROJECT NO.: 78-151A

P.O. NO. : 51874

TO: Cassiar Asbestos
2000 Guinness Tower
1055 West Hastings Street
Vancouver, B. C.

Attention: Mr. J. Giles, Purchasing Manager

We have analyzed the samples identified below as requested and report our results as follows:

Date Sampled : February 17/79
Date Submitted : February 28/79
Identification : From Clinton Creek, downstream from Wolverine
Description :
Laboratory No. : 86
Preservative added : don't know
(mercury chloride) not stated on label
Turbidity, FTU : 50
Sample Volume, ml : 10
(in 100 ml dilution)
Fibre count, number : 21
Fibre length, microns: 10.3 (average)
Range of fibre length: 1 - 120
(microns)
Fibre concentration : 11.45
(millions/litre)

Thank you for this opportunity to be of service.

B.H. LEVELTON & ASSOCIATES LTD.

A. J. Shaw

A.J. Shaw, P.Eng.



Golder Associates
CONSULTING GEOTECHNICAL ENGINEERS

E/79/568
April 30, 1979

RECEIVED
APR 30 1979

RECEPTION DESK

Cassiar Asbestos Corporation Ltd.
2000 Guinness Tower
1055 West Hastings Street
Vancouver, B.C.
V6E 3V3

ATTENTION: Mr. J.G. Berry

Re: Movement Monitor Data to April 1979 - Clinton Creek Mine

Dear Sir:

Movement monitor data for the tailing pile and the waste pile at the Clinton Creek Mine were received from Mr. Blair Corley on April 24th, 1979. All of the monitors were surveyed on April 22nd, 1979 and the updated plots are attached.

The data from the tailing pile indicate that the movements at the toe of the 1974 failure lobe are now averaging approximately 2.9 ft. per year as compared to approximately 3.7 ft. per year in mid-February 1979. The data for the north lobe of the tailing pile indicate that the most rapid movement is approximately 12.8 ft. per year as of the April 22nd, 1979 compared to approximately 17.5 ft. per year in mid-February. The movement monitor data for the waste pile is equally encouraging insofar as all of the data indicate a continuing slowing of movements in that area.

If you have any questions concerning the attached data, please call me.

Yours very truly,

GOLDER ASSOCIATES

E.B. Fletcher, P. Eng.

EBF/ba
772-1016



ONE OF THE



COMPANIES

SEED
DIVISION

1640 BOUNDARY ROAD

P.O. BOX 7000, VANCOUVER, B.C. V6B 4E1

PHONE 294-3851

TELEX 04-354779

SHIP TO WHITEPASS & YUKON ROUTE WHITEHORSE, Y.T. FOR CASSIAR ASBESTOS				SOLD TO CASSIAR ASBESTOS CORP LTD 1055 W. HASTINGS ST SUITE 2000 VANCOUVER, B.C. V6E 3V3				1 OF 2	
SHIP VIA	COL. FPD.	ORDER DATE	DATE REQ'D.	ACCOUNT NO.	YOUR ORDER NO.	TAX NO.	SALESMAN	INVOICE NO.	
WHITEHORSE&YUKONX		6/3/79	ASAP	22024619	51876		11	34724	
CODE	MFG. NO.	DESCRIPTION		ORDERED QUANTITY	SIZE	SHIPPED QUANTITY	COST PRICE	PER AMOUNT	
		NOTE ON BILL OF LADING HOLD UNTIL ADVISED FOR SHIPMENT TO DAWSON CITY							
		STORE IN DRY PLACE							
209-000	CAN #1	SPECIAL MIXTURE		112	50#	112x50	.90	5040.00	
	45%	CR RED FESCUE		2520#					
	10%	CANADA BLUEGRASS		560#					
	10%	KENTUCKY BLUEGRASS		560#					
PIECES		WEIGHT		YOUR BACK ORDER IS ON INVOICE NO.				SUB-TOTAL	
SACKS				SUBJECT TO THE LIMITATION OF LIABILITY HEREIN SET FORTH BUCKERFIELD'S LIMITED, AS SELLER, WARRANTS THAT SEEDS AND OTHER MERCHANDISE SOLD ARE AS DESCRIBED ON THE CON- TAINER OR LABEL FOR THE GOODS WITHIN RECOGNIZED TOLER- ANCES. BUCKERFIELD'S LTD., GIVE NO FURTHER OR OTHER WARRANTY, EXPRESSED OR IMPLIED, AND LIMITS ITS LIABILITY TO THE PURCHASER IN RESPECT OF EACH ITEM OF GOODS SOLD TO THE SALE PRICE THEREOF. FULL BENEFIT OF THE AMOUNTS AUTHORIZED UNDER THE FEDERAL FREIGHT ASSISTANCE POLICY HAS BEEN ALLOWED IN THE ELIGIBLE FEEDS ON THIS INVOICE.				DISC	
CTNS.								DISC	
BDLES								SUB-TOTAL	
PARCELS								TAX	
DRUMS								TOTAL	
TOTAL				Mar 12/79 Colinh To White Pass				97wd	

THIS IS YOUR INVOICE



ONE OF THE



COMPANIES

SEED
DIVISION

1640 BOUNDARY ROAD

P.O. BOX 7000, VANCOUVER, B.C. V6B 4E1

PHONE 294-3851

TELEX 04-354779

SHIP TO WHITEPASS & YUKON ROUTE WHITEHORSE, Y.T. FOR CASSIAR ASBESTOS				SOLD TO CASSIAR ASBESTOS CORP LTD 1055 W. HASTINGS ST SUITE 2000 VANCOUVER, B.C. V6E 3V3				2 OF 2	
SHIP VIA	COL. FPD.	ORDER DATE	DATE REQ'D.	ACCOUNT NO.	YOUR ORDER NO.	TAX NO.	SALESMAN	INVOICE NO.	
WHITEHORSE&YUKONX		6/3/79	ASAP	22024619	51876		11	34724	
CODE	MFG. NO.	DESCRIPTION		ORDERED QUANTITY	SIZE	SHIPPED QUANTITY	COST PRICE	PER AMOUNT	
	10%	ALSIKE CLOVER		560#					
	5%	WHITE DMF CLOVER		280#					
	10%	CR WHEATGRASS NORDAN		560#					
	10%	BROMEGRASS		560#					
				5600#					
		LEGUMES INOCULATED EACH BAG TAGGED WITH INGREDIENT LIST							
PIECES		WEIGHT		YOUR BACK ORDER IS ON INVOICE NO.				SUB-TOTAL	
SACKS		112 560#		SUBJECT TO THE LIMITATION OF LIABILITY HEREIN SET FORTH BUCKERFIELD'S LIMITED, AS SELLER, WARRANTS THAT SEEDS AND OTHER MERCHANDISE SOLD ARE AS DESCRIBED ON THE CON- TAINER OR LABEL FOR THE GOODS WITHIN RECOGNIZED TOLER- ANCES. BUCKERFIELD'S LTD., GIVE NO FURTHER OR OTHER WARRANTY, EXPRESSED OR IMPLIED, AND LIMITS ITS LIABILITY TO THE PURCHASER IN RESPECT OF EACH ITEM OF GOODS SOLD TO THE SALE PRICE THEREOF. FULL BENEFIT OF THE AMOUNTS AUTHORIZED UNDER THE FEDERAL FREIGHT ASSISTANCE POLICY HAS BEEN ALLOWED IN THE ELIGIBLE FEEDS ON THIS INVOICE.				DISC	
CTNS.								DISC	
BDLES								SUB-TOTAL	
PARCELS								TAX	
DRUMS								TOTAL	
TOTAL				Mar 12/79 Colinh To White Pass				5040.00	

Inter-office Correspondence Only

Cassiar Asbestos Corporation Limited

D. Acason -1

DATE March 14, 1979

ADDRESS Corporate Accountant, Vancouver

FROM Melvin S. Taylor

REPLY TO YOURS OF _____

ADDRESS Chief Eng. Env. & Safety

SUBJECT AMBIENT AIR SAMPLES - CLINTON CREEK

As requested by Vancouver Management, we forwarded necessary Membrane Filter pumps and cassettes to Blair Corley for the sampling of the ambient air in the Clinton Creek townsite and plantsite.

Samples were collected for both locations and returned to our laboratory in Cassiar for analyses. The collection and analyses were done by the standard NIOSH method for determination of fibres per cubic centimeter by the membrane filter technique

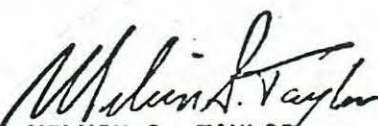
Plantsite Sample

Sampling Date : February 18, 1979
Sampling Time : 153 minutes
Volume of Air : 306,000 cubic centimeters
Results : No fibres counted in 100 fields

Townsite Sample

Sampling Date : February 18, 1979
Sampling Time : 123 minutes
Volume of Air : 246,000 cubic centimeters
Results : No fibres counted in 100 fields

We count 100 fields on the mounted slide through a 600X microscope identifying a fibre as having a length to width ratio of 3:1 longer than 5 microns and having a breadth less than 3 microns.


MELVIN S. TAYLOR

c.c. B. Pewsey
D. Cook
File

MST/bm

RECEIVED
15 MAR 21 1979
VICTORIA

INITIALS OF SENDER

Despite very heavy snowfall and a fast thaw and flooding, the wolvering channel and weir system and the culverts at the lake outlet, withstood the test.

We shall keep you and the Board further informed of progress in matters of mutual concern.

Yours very truly,

CASSIAR ASBESTOS CORPORATION LIMITED

L. Sellmer

for David Acason
Property Manager

Encl.

c.c. Mr. B. Pewsey
Cassiar, B.C.

DA/lis

CASSIAR ASBESTOS CORPORATION LIMITED
CLINTON CREEK, Y.T.

c/o #205 - 4133 4th Ave.
Whitehorse, Y.T.
Y1A 1H8

~~XXXXXX~~

File for:	
Regl Mgr. Water Resources	
Admin. Water Rights	
Project Technologist	
Water Rights Inspector	XXXXXX
Hydrologist	
Water Resources Technologist	
Admin. Pollution Control	
Water Quality Technologist	
Office Manager	
Water Resources Clerk	
Secretary	
File Number	

June 6, 1979

Mr. R. Keith Byram, Chairman
Yukon Territory Water Board
51 Pelly Road
Whitehorse, Y.T.

Dear Sir,

We enclose for the information of the Board:

1. Results of February 18th, 1979 Ambient Air Sampling.
2. Results of February 17th, 1979 Water Sampling downstream from Wolverine Creek.
3. Copy of Golder Associates letter dated March 28th, 1979 following meetings with R.M. Hardy & Associates Ltd.
4. Golder Associates report on 'Movement Monitor Data to April 1979.'
5. Golder Associates letter dated April 30th, 1979 re Movement Monitor Data.

We wish to advise that the seeding programme was carried out from a helicopter during the week of May 7th, 1979. Following seeding of the mine pit and waste dump areas, we made passes over the Plantsite and tailings pile, wolverine areas, etc. The enclosed invoice copy provides the special mixture made up following final discussions with the supplier, Buckerfield's Limited.

Water samples were taken again in May and shipped to Can Test Ltd. and B.P. Levelton & Associates Ltd., for testing and reporting.

Initial ground work has commenced on the approved drainage channel and weir system on Clinton Creek, below the culverts at the outlet from Hudgeon Lake.

CLINTON CREEK WASTE DUMP
AND
CHANNEL CLOSURE MOVEMENT MONITOR DATA



HUDGEON
LAKE
elev. 1345 approx

TOE OF ORIGINAL SLOPE

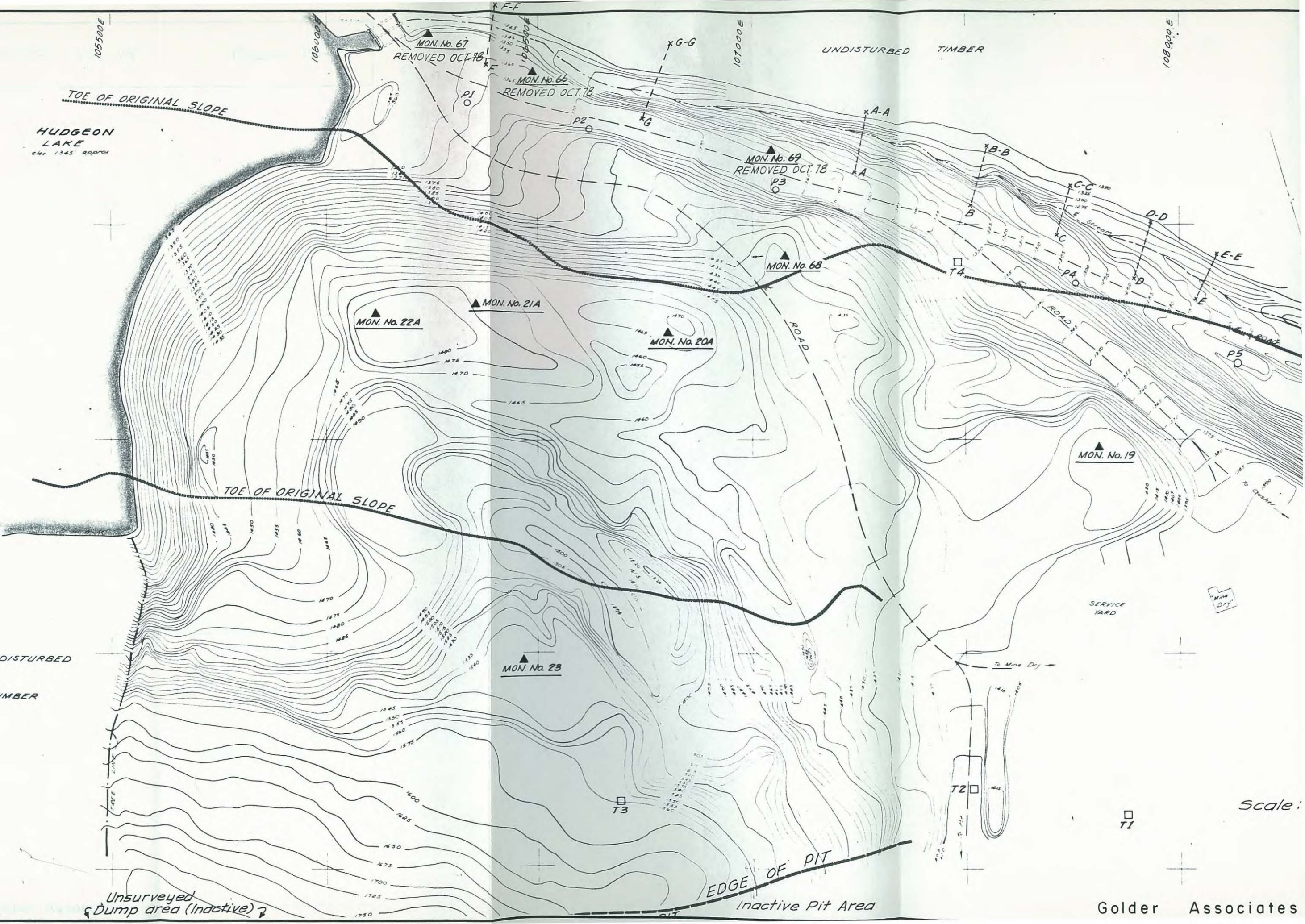
UNDISTURBED
TIMBER

UNDISTURBED
TIMBER

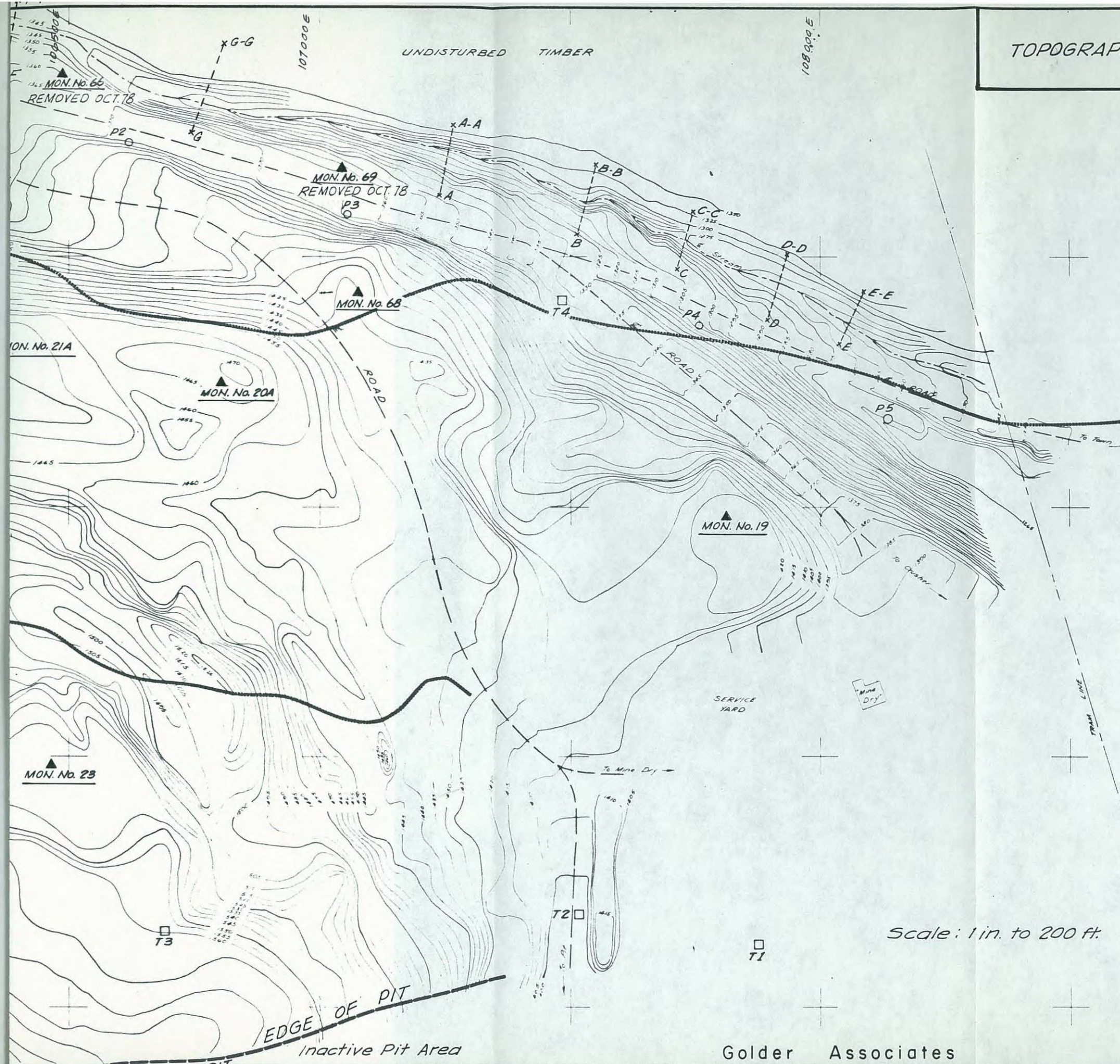
Unsurveyed
Dump area (Inactive)

EDGE OF PIT
Inactive Pit Area

Golder Associates



Scale:



LEGEND:

- ▲ MON. No. 19 Surface movement survey reference point.
- x-A-A- Cross-channel reference line.
- T2 Thermister installation
- P4 Piezometer.

REFERENCE:

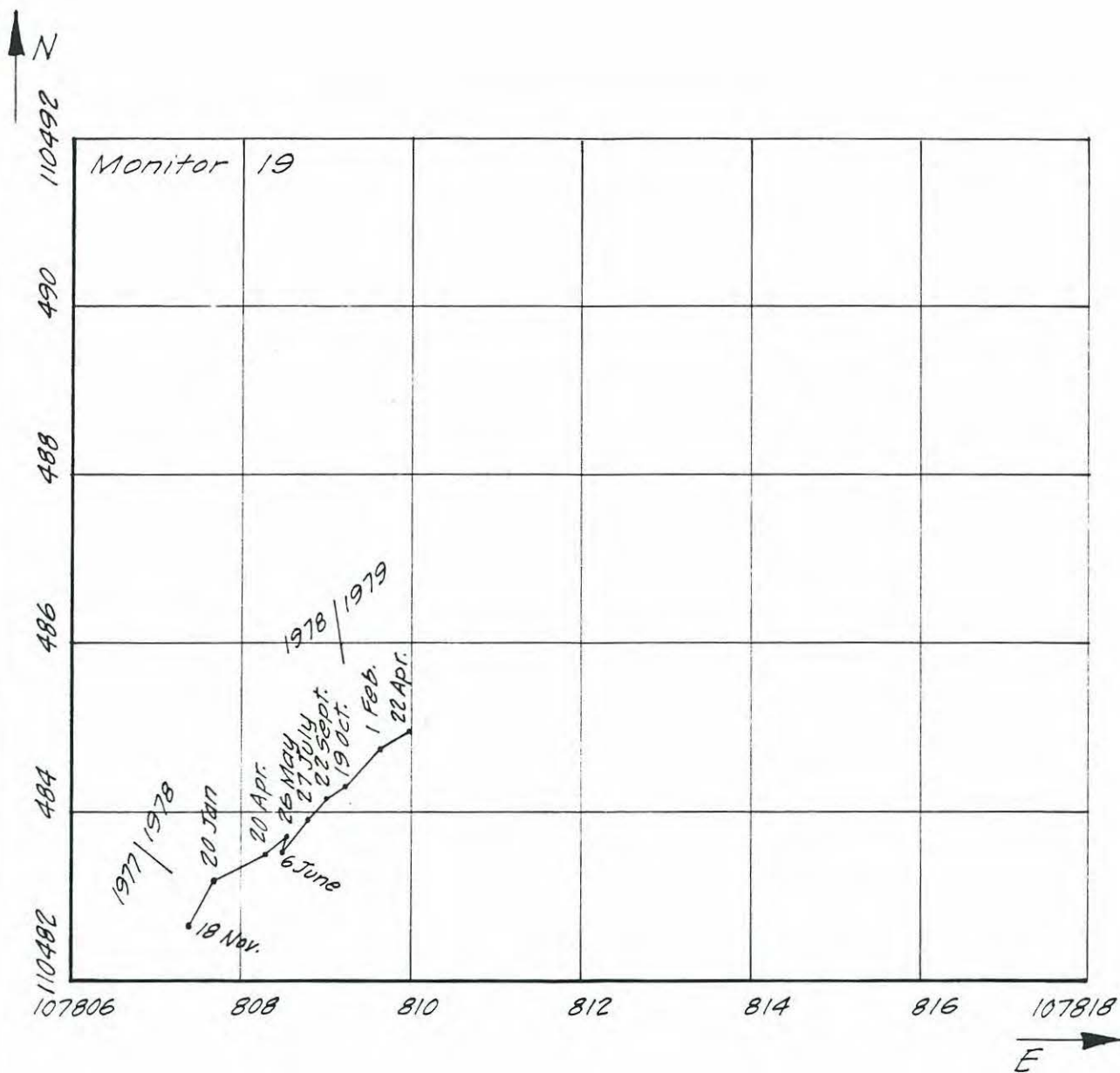
Topo. plan of Inactive Waste Dump for Clinton Cr. Mine by Underhill Engineering Ltd. - Mar. 30, 1978. Coordinate grid from CASSIAR Asbestos Corp. Grid Origin.

Scale: 1 in. to 200 ft.

To Crusher (approx. 108,150 N. approx.)

WASTE DUMP - MONITOR NO. 19

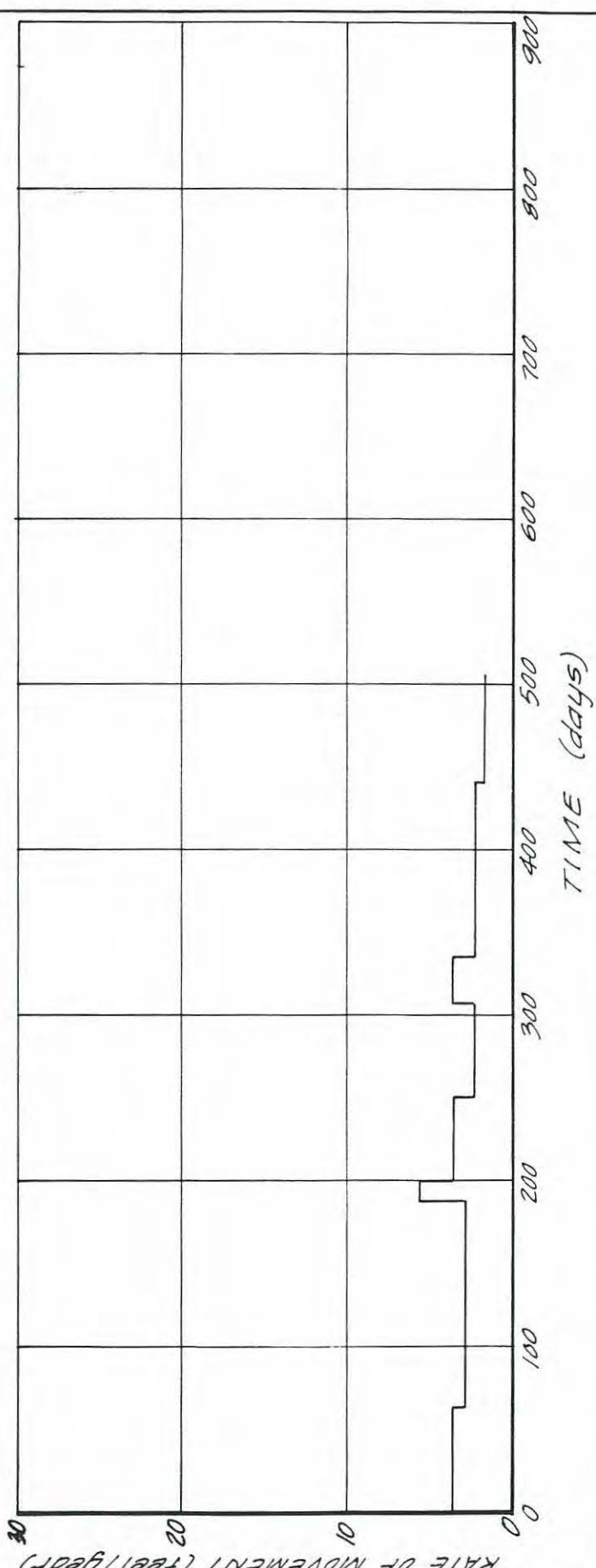
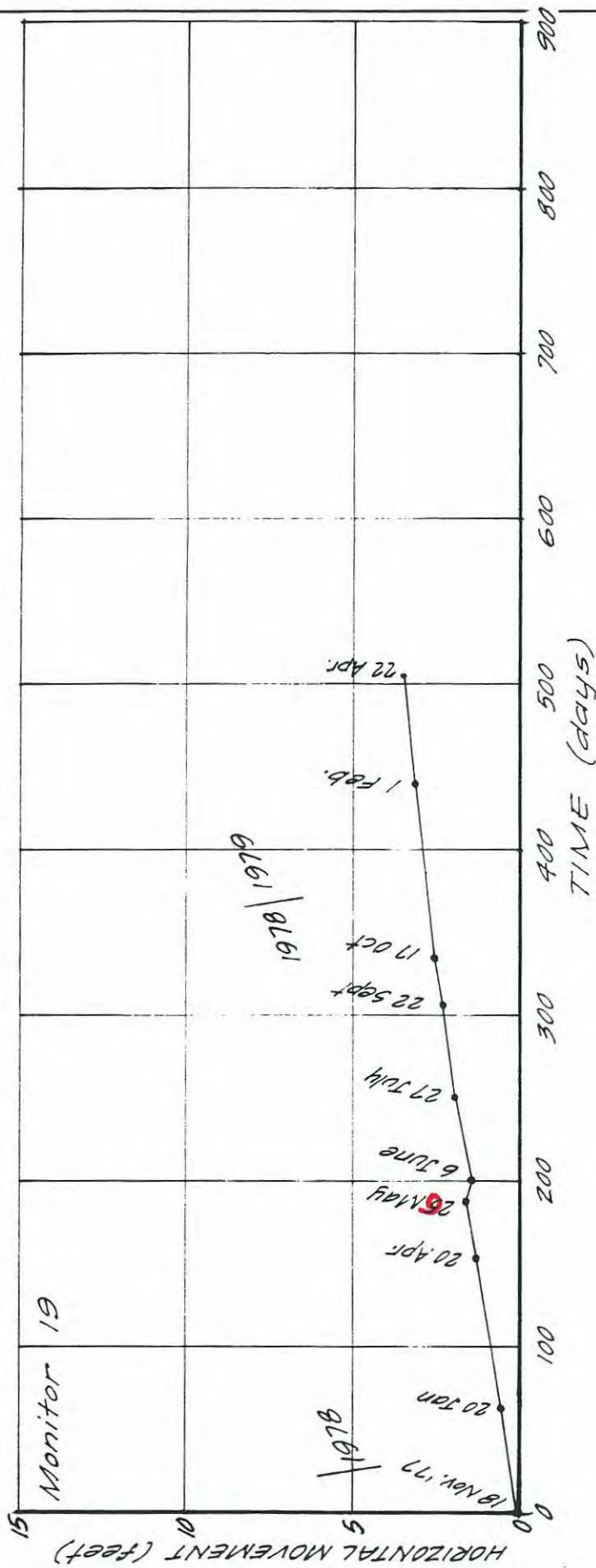
Figure 19-1



WASTE DUMP - MONITOR NO. 19

Figure 19-2

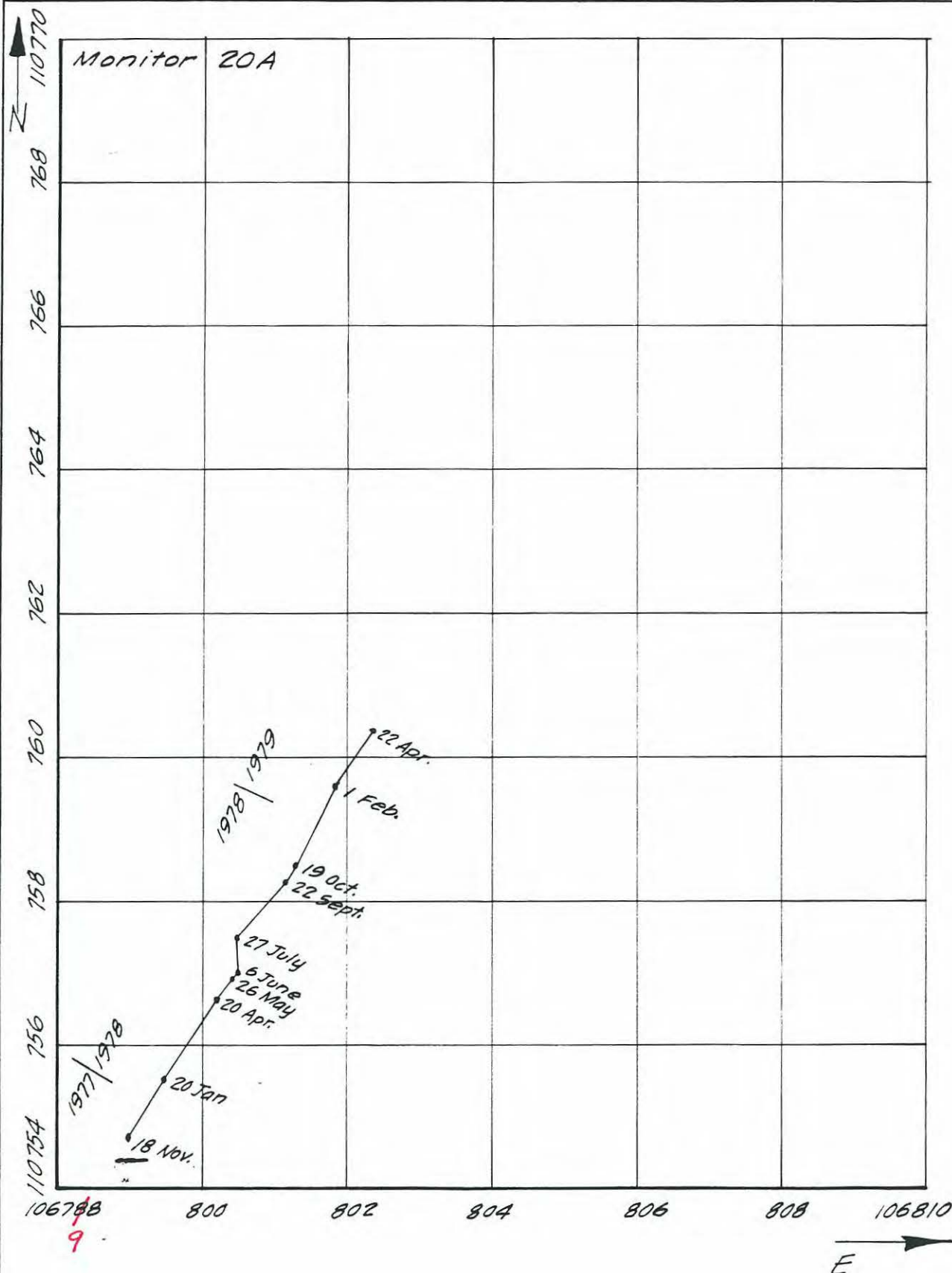
Project No. 772-1016 Drawn 1/19 Reviewed 1/19 Date Apr. '79



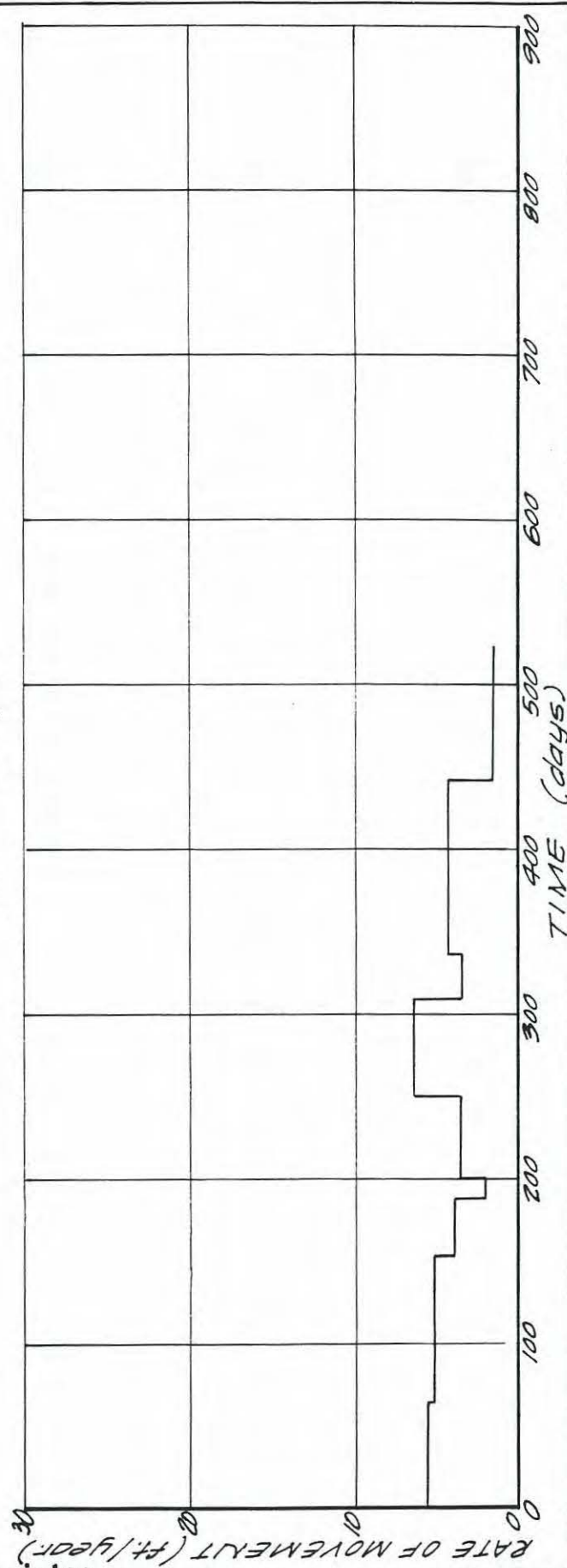
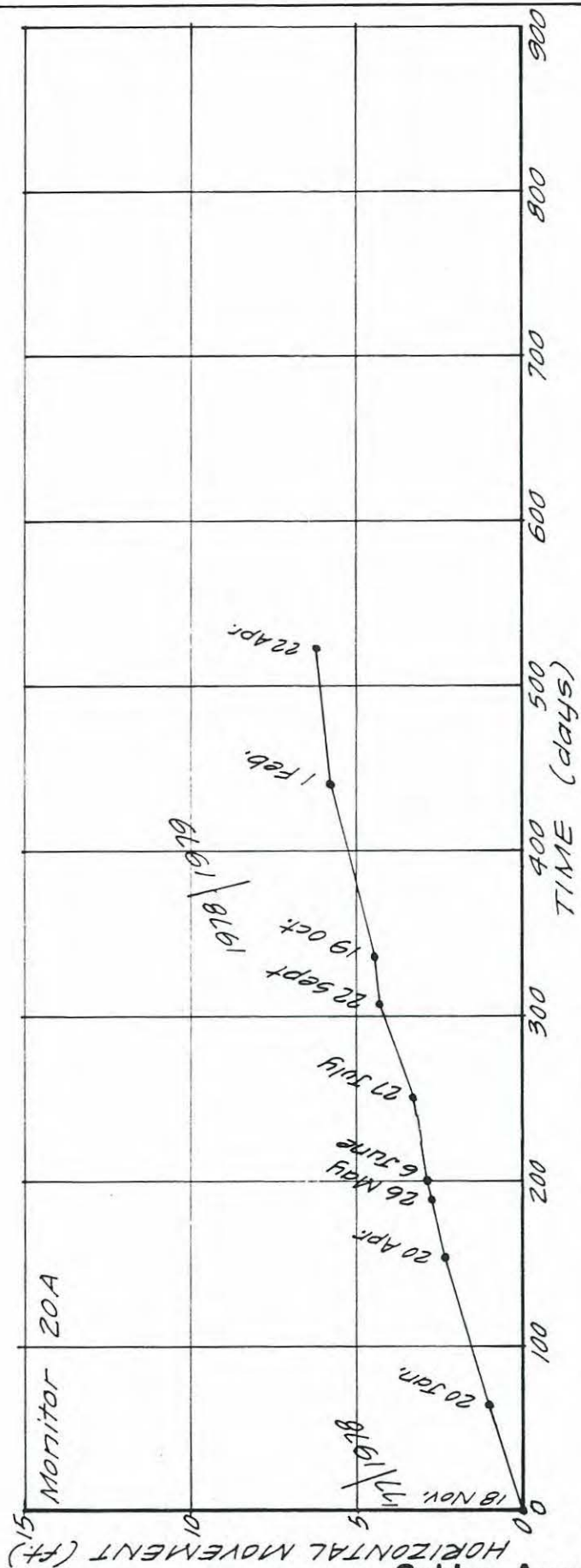
WASTE DUMP - MONITOR NO. 20 A

Figure 20 A-1

Project No. 772-1016 Drawn Ing Reviewed Date Apr. '79



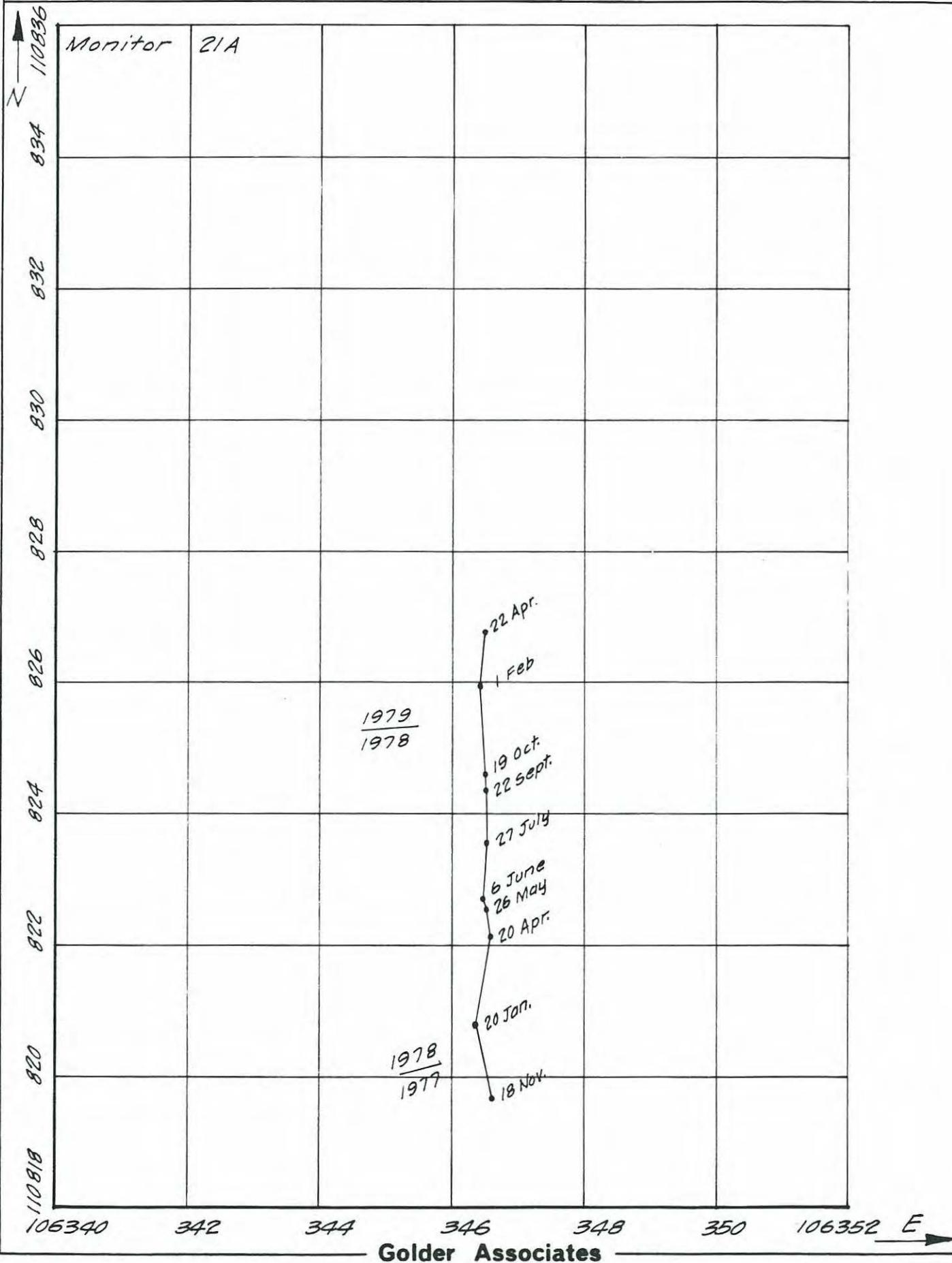
Project No. 172-1016 Drawn *mg* Reviewed Date Apr. '79



WASTE DUMP - MONITOR NO. 21A

Figure 21 A-1

Project No. 772-1010 Drawn 1/79 Reviewed Date Apr. 79

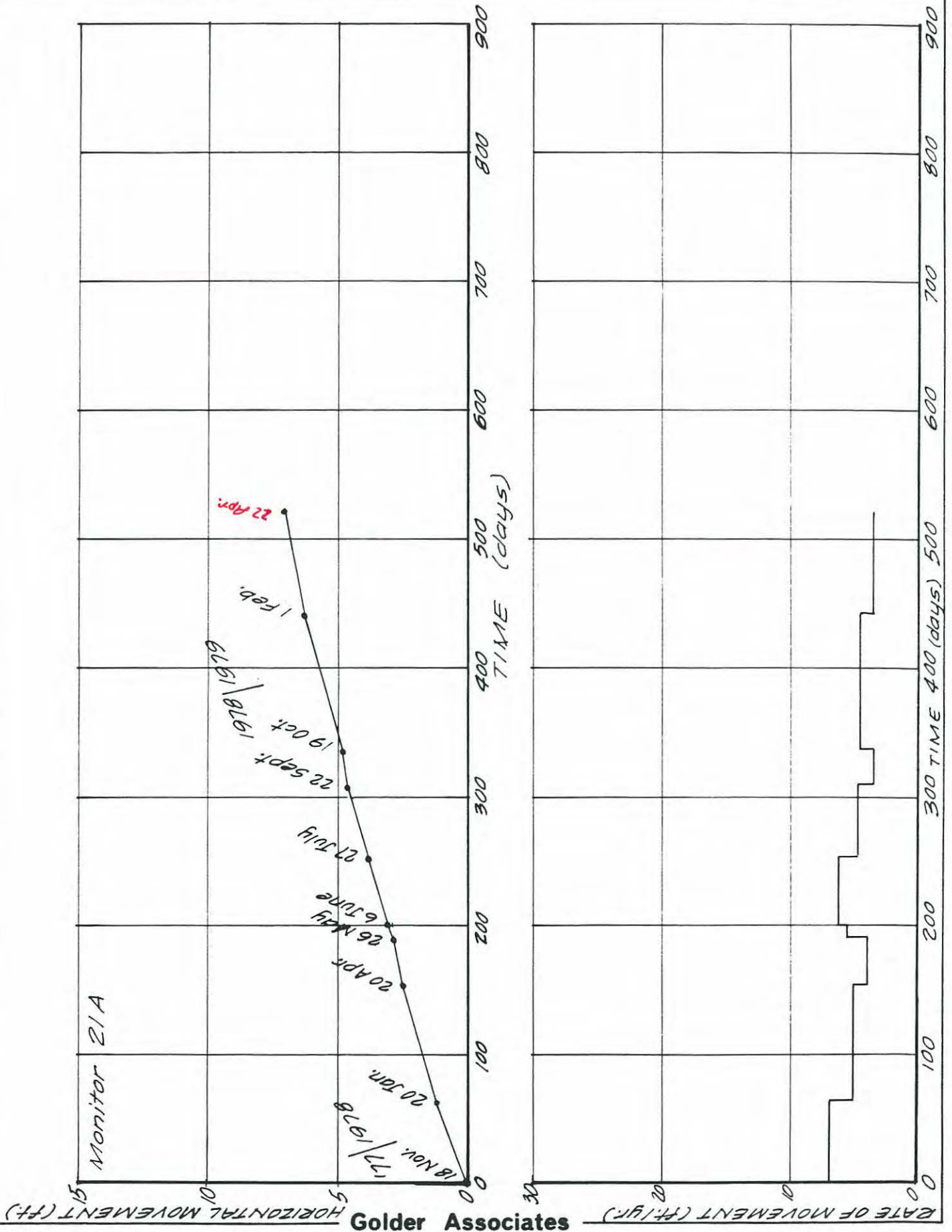


Golder Associates

WASTE DUMP - MONITOR NO. 21A

Figure 21 A-2

Project No. 772-1016 Drawn SF Reviewed Date Apr. 79

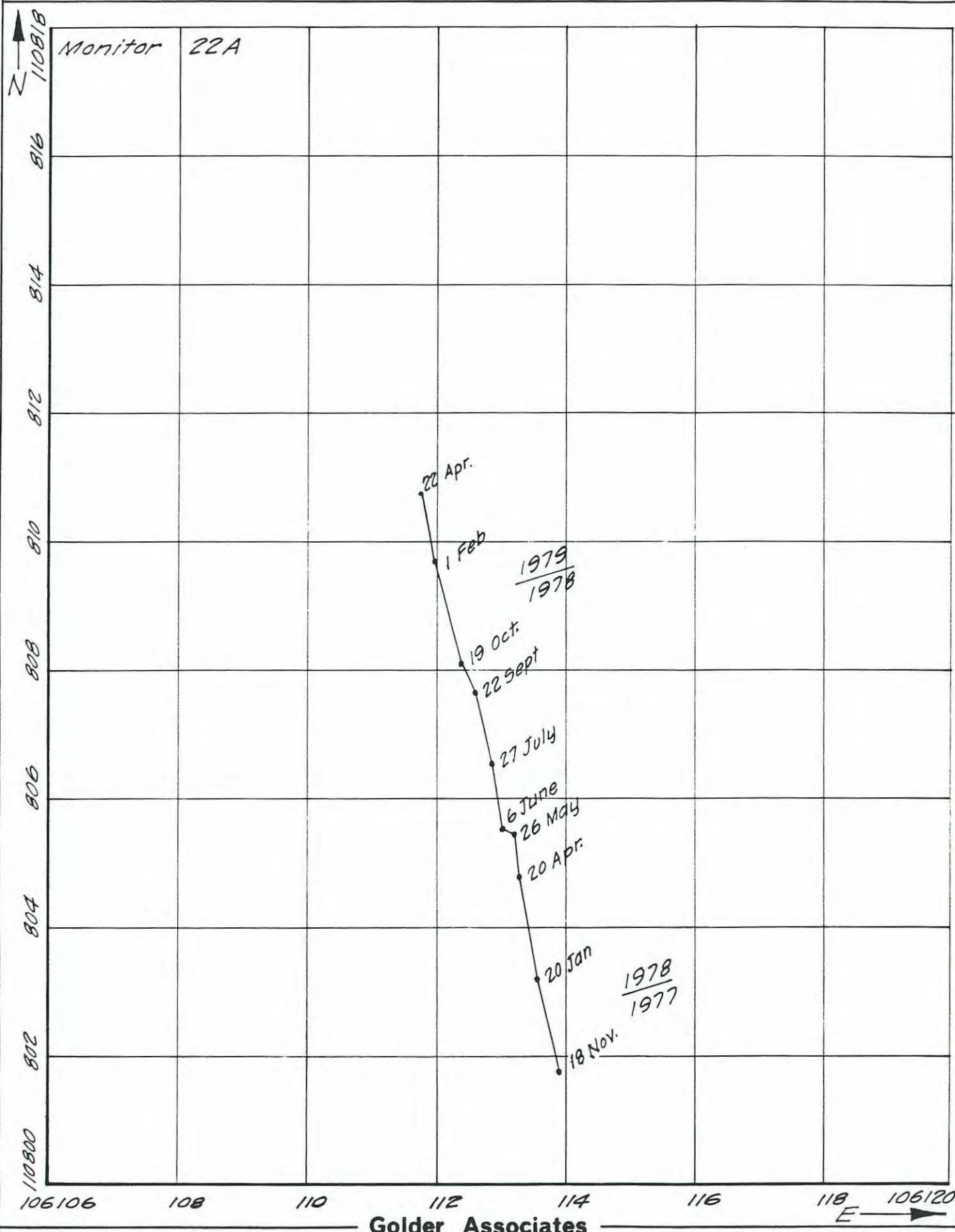


Golder Associates

WASTE DUMP - MONITOR NO. 22A

Figure 22 A-1

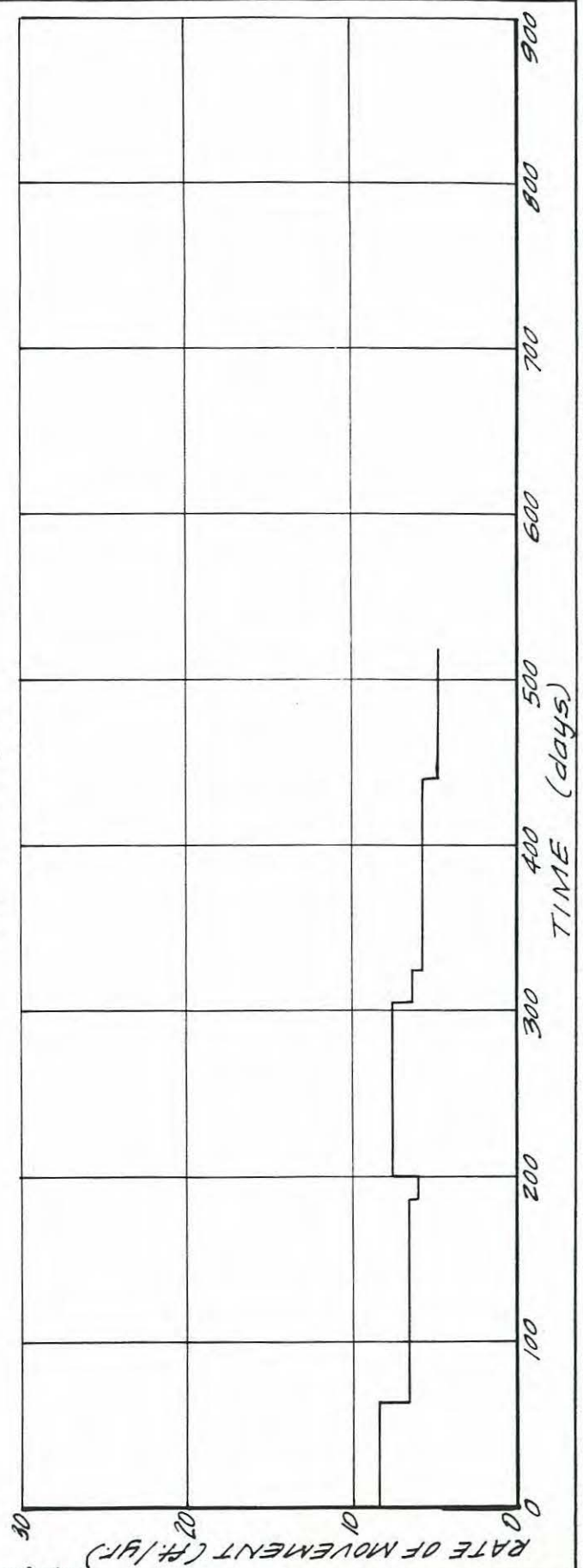
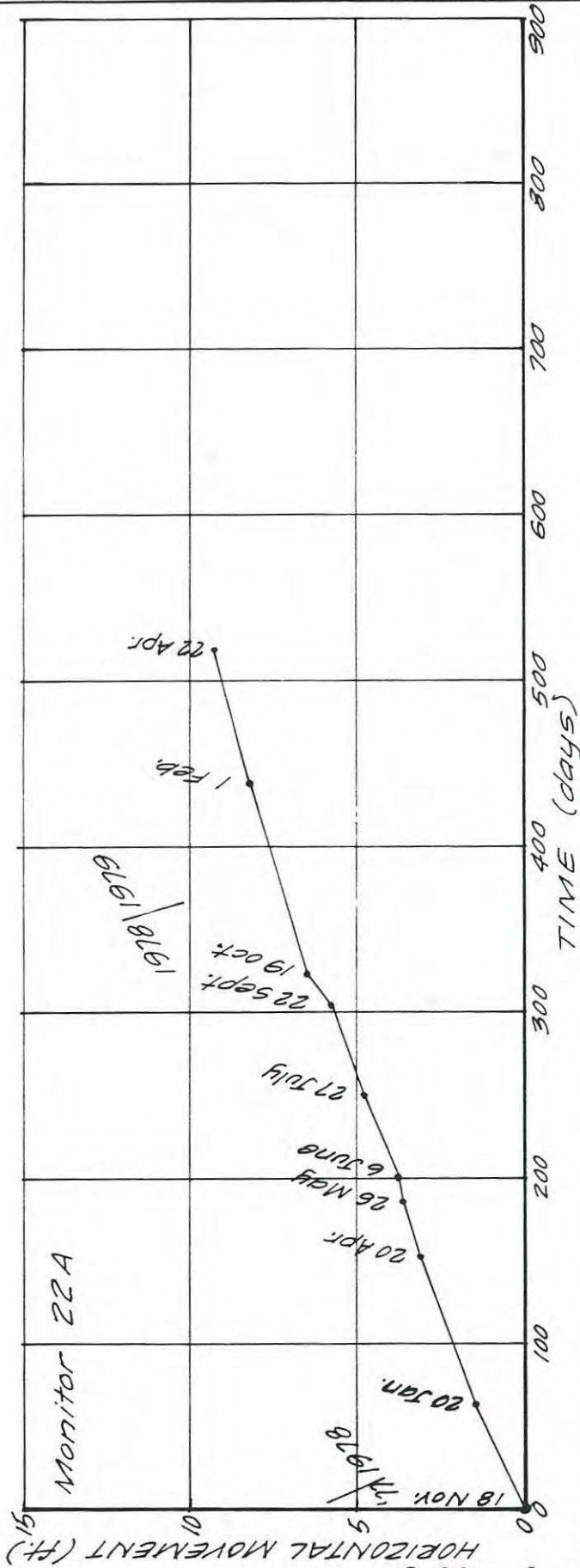
Project No. 712-1016 Drawn Inq Rev. 11/79 Date Apr. '79



WASTE DUMP - MONITOR NO. 22A

Figure 22 A-2

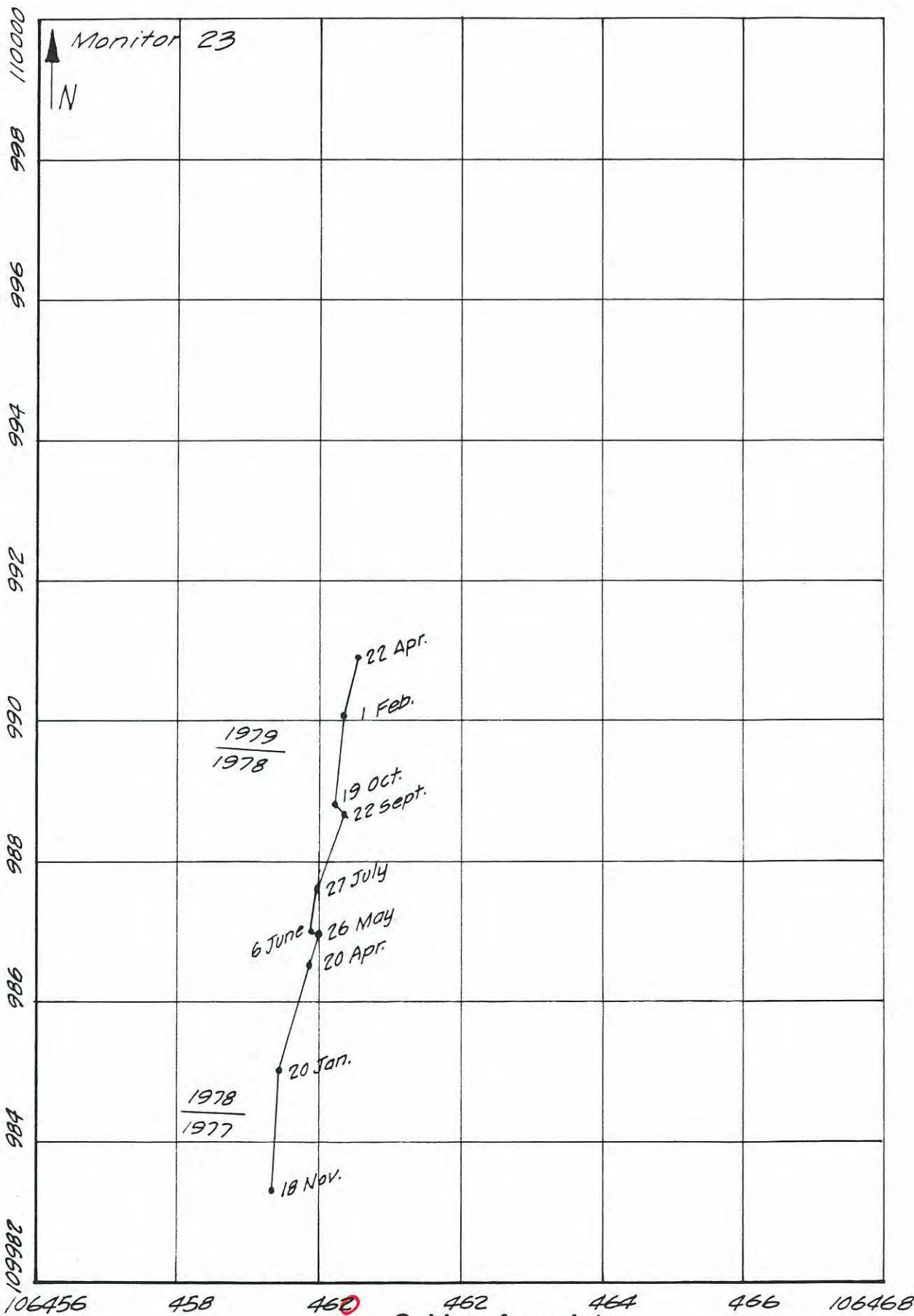
Project No. 772-1016 Drawn ing Review Date Apr. '79



WASTE DUMP - MONITOR NO. 23

Figure 23-1

Project No. 712-1016 Drawn by *ng* Reviewed *ng* Date Apr. '79

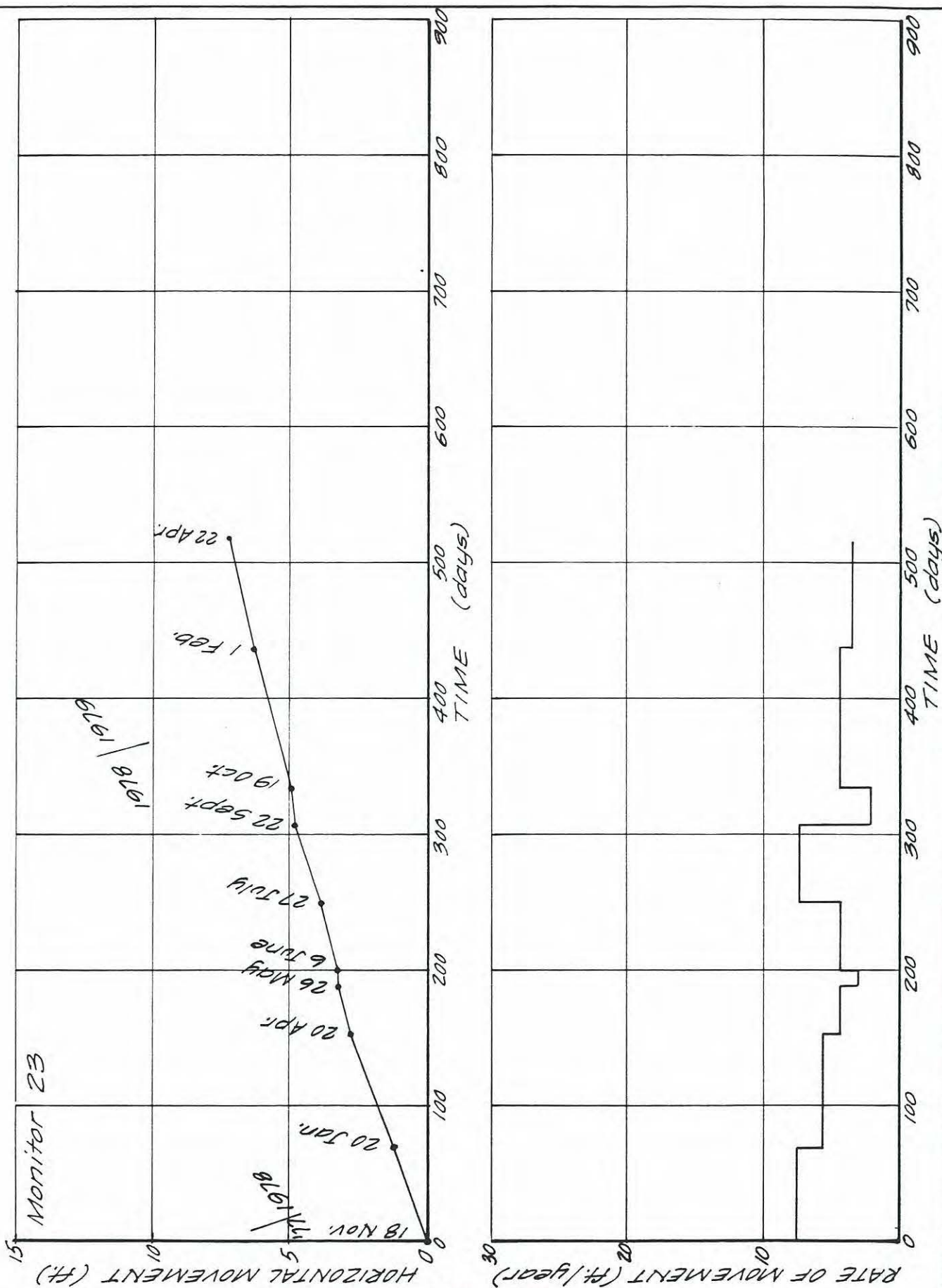


Golder Associates

WASTE DUMP - MONITOR NO. 23

Figure 23-2

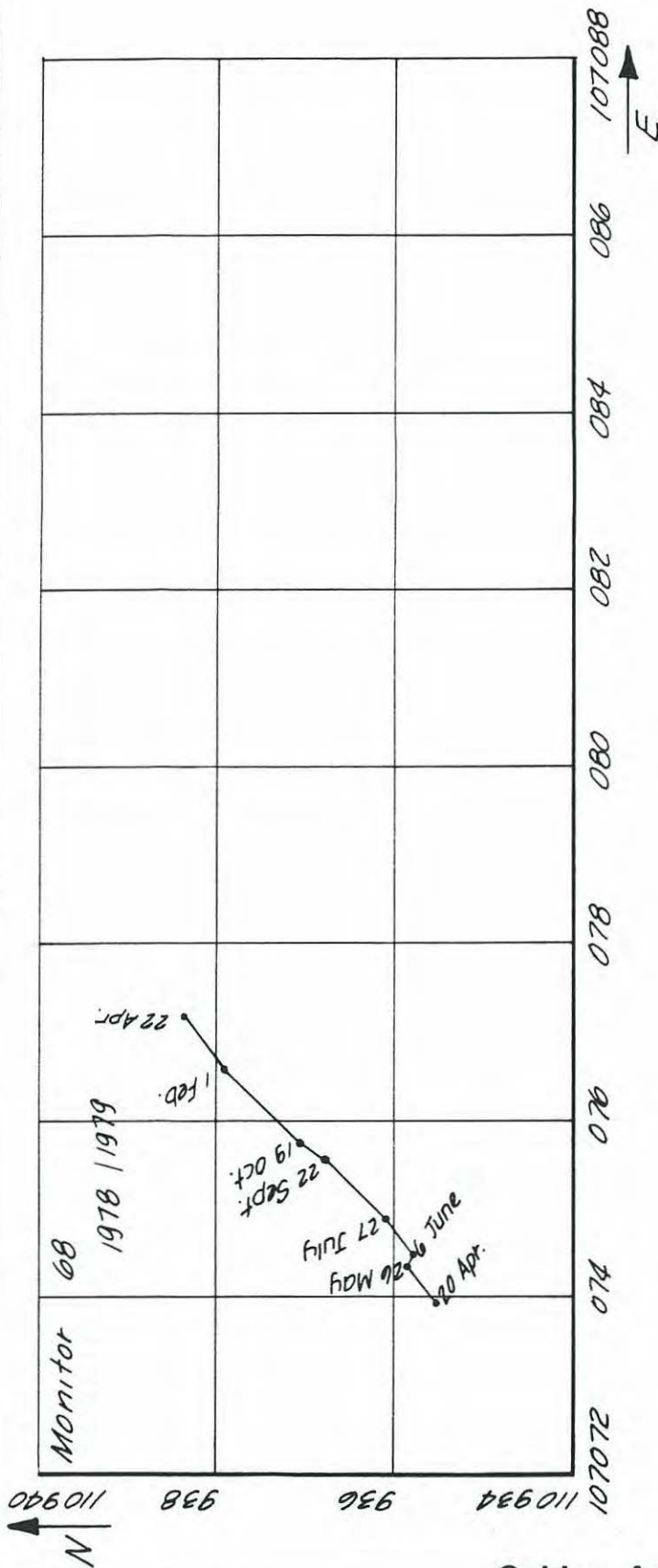
Project No. 172-1010 Drawn by Reviewed Date Apr. 79



WASTE DUMP - MONITOR NO. 68

Figure 68-1

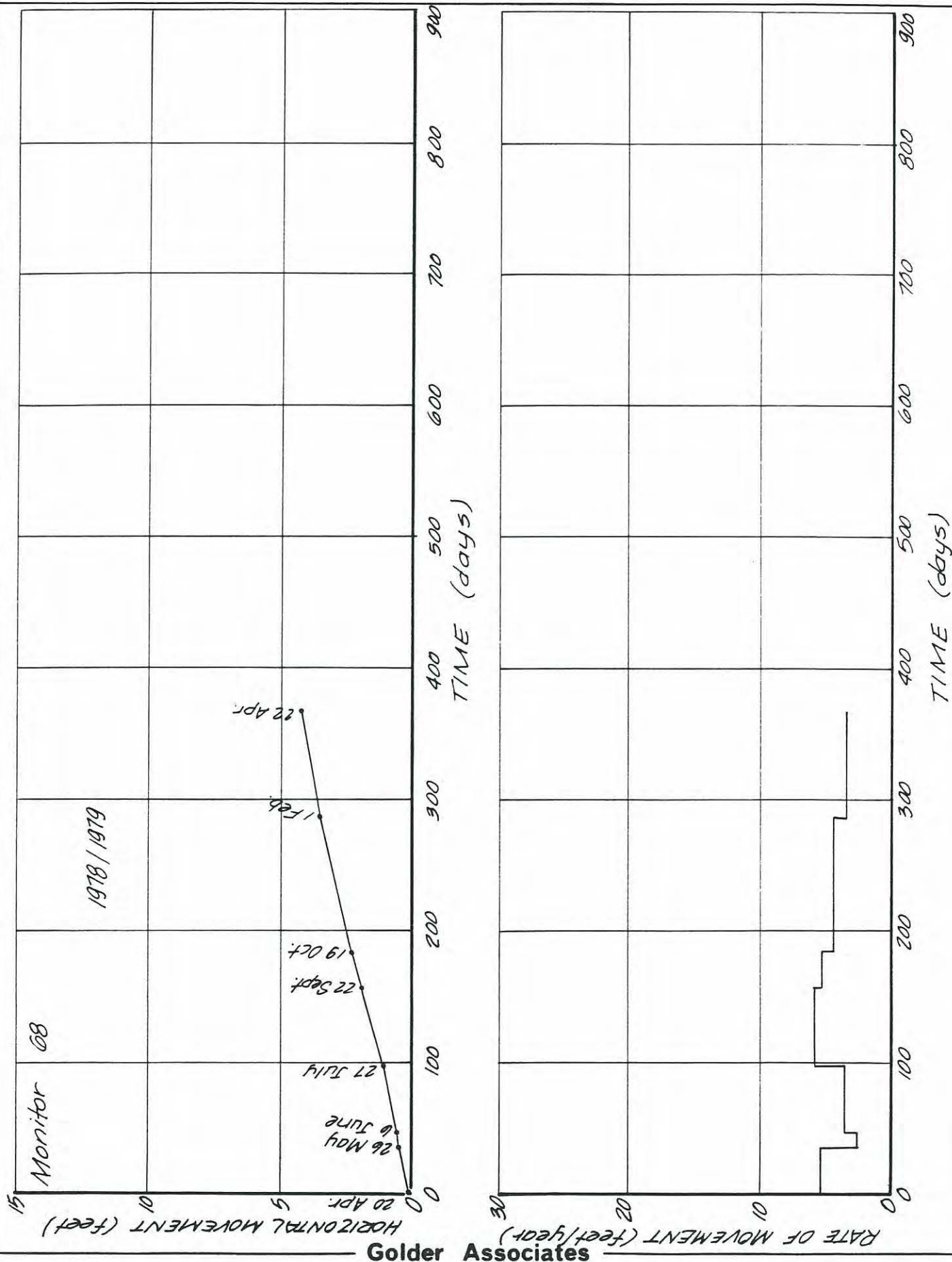
Project No. 112-1016 Drawn SF Reviewed Date Apr. '79



WASTE DUMP - MONITOR NO. 68

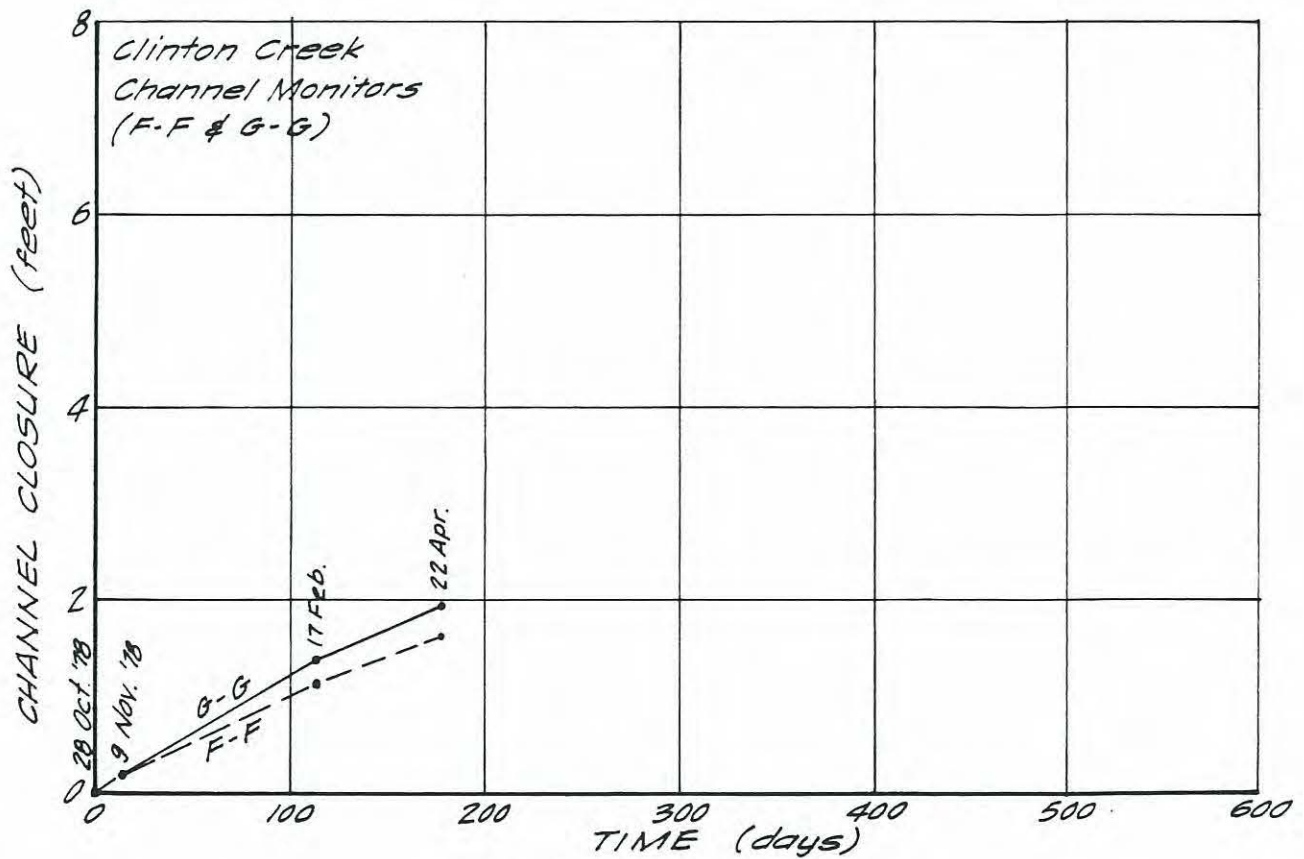
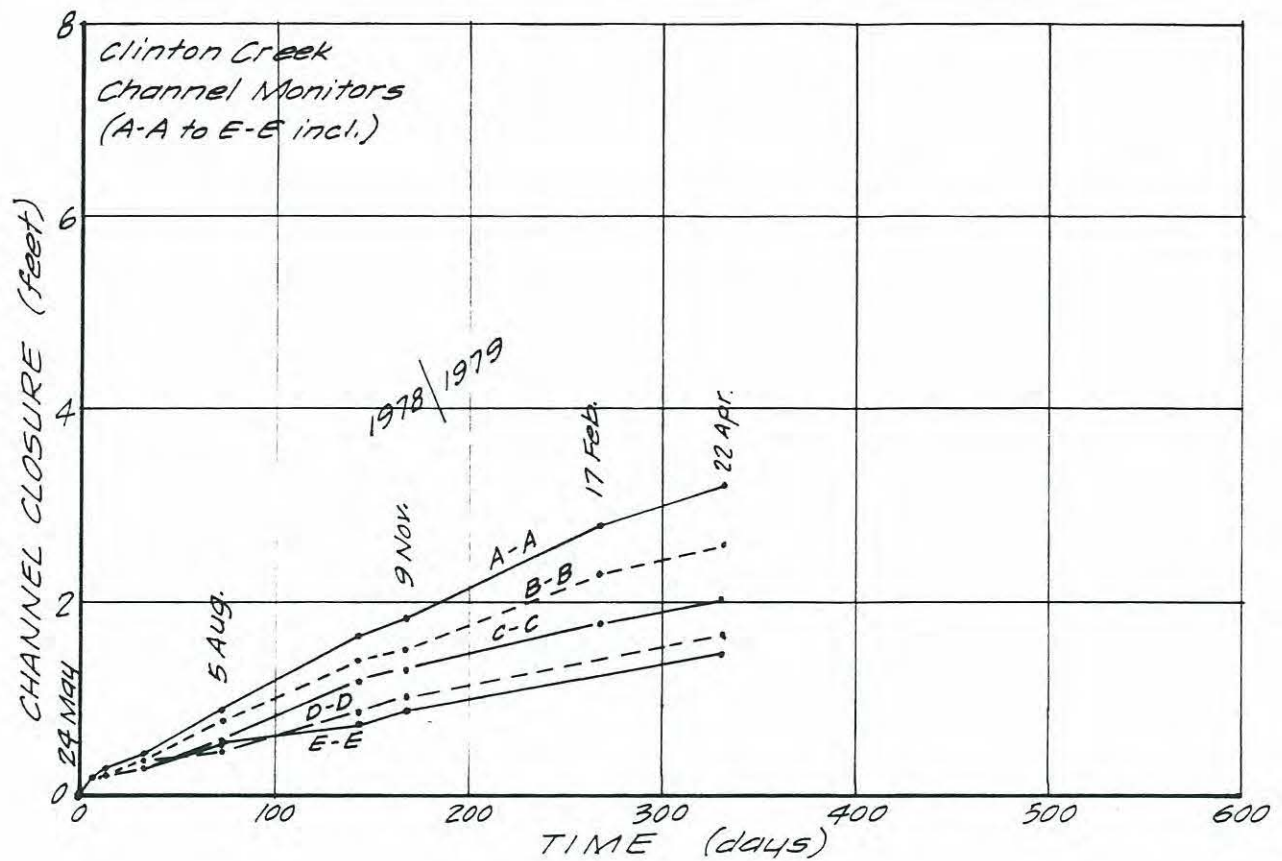
Figure 68-2

Project No. 772-1016 Drawn SF Reviewed JMT Date Apr. '79



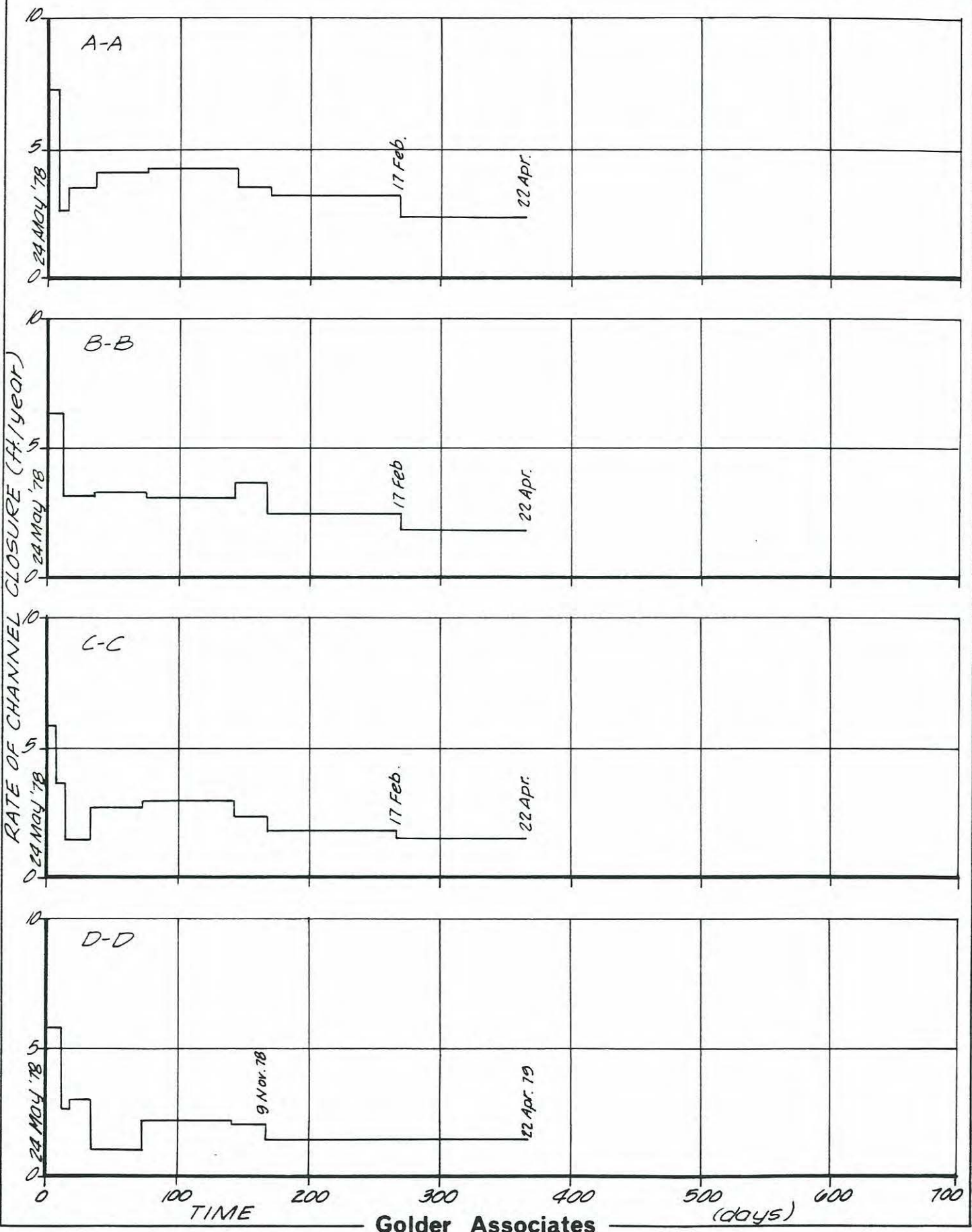
CLINTON CHANNEL CLOSURE MONITORS

Figure CM-1



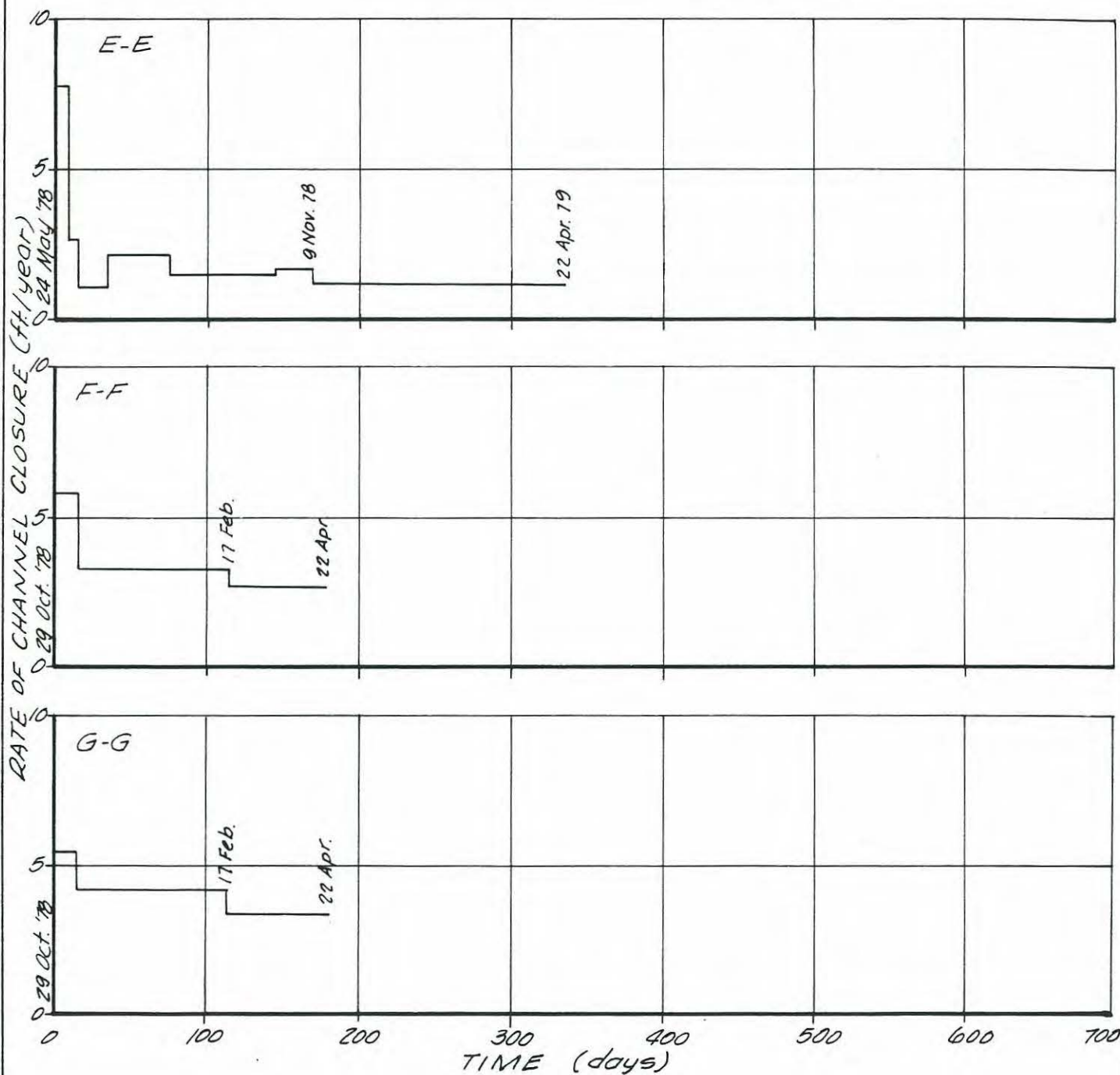
CLINTON CHANNEL CLOSURE MONITORS

Figure CM-2

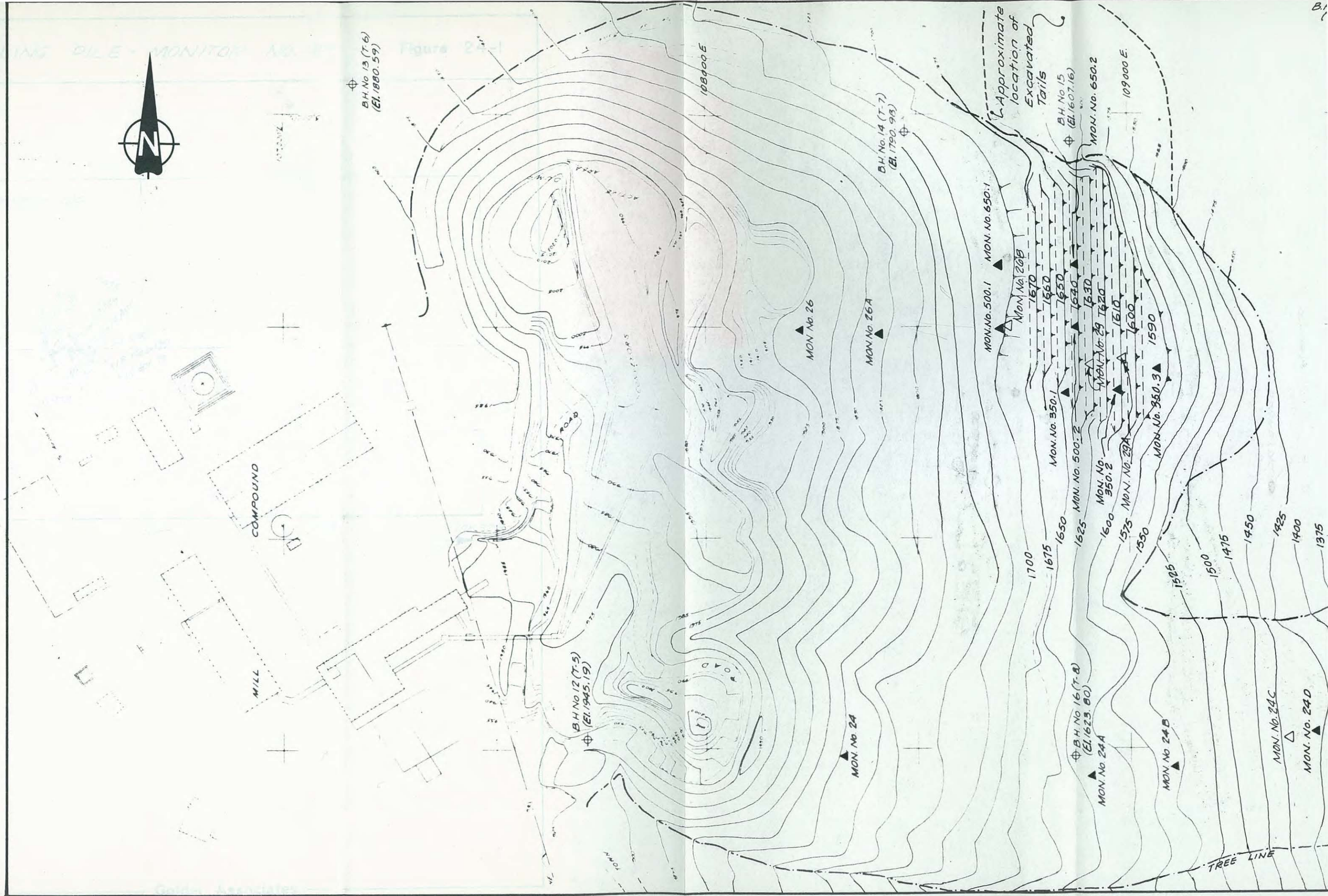


CLINTON CHANNEL CLOSURE MONITORS

Figure CM-3

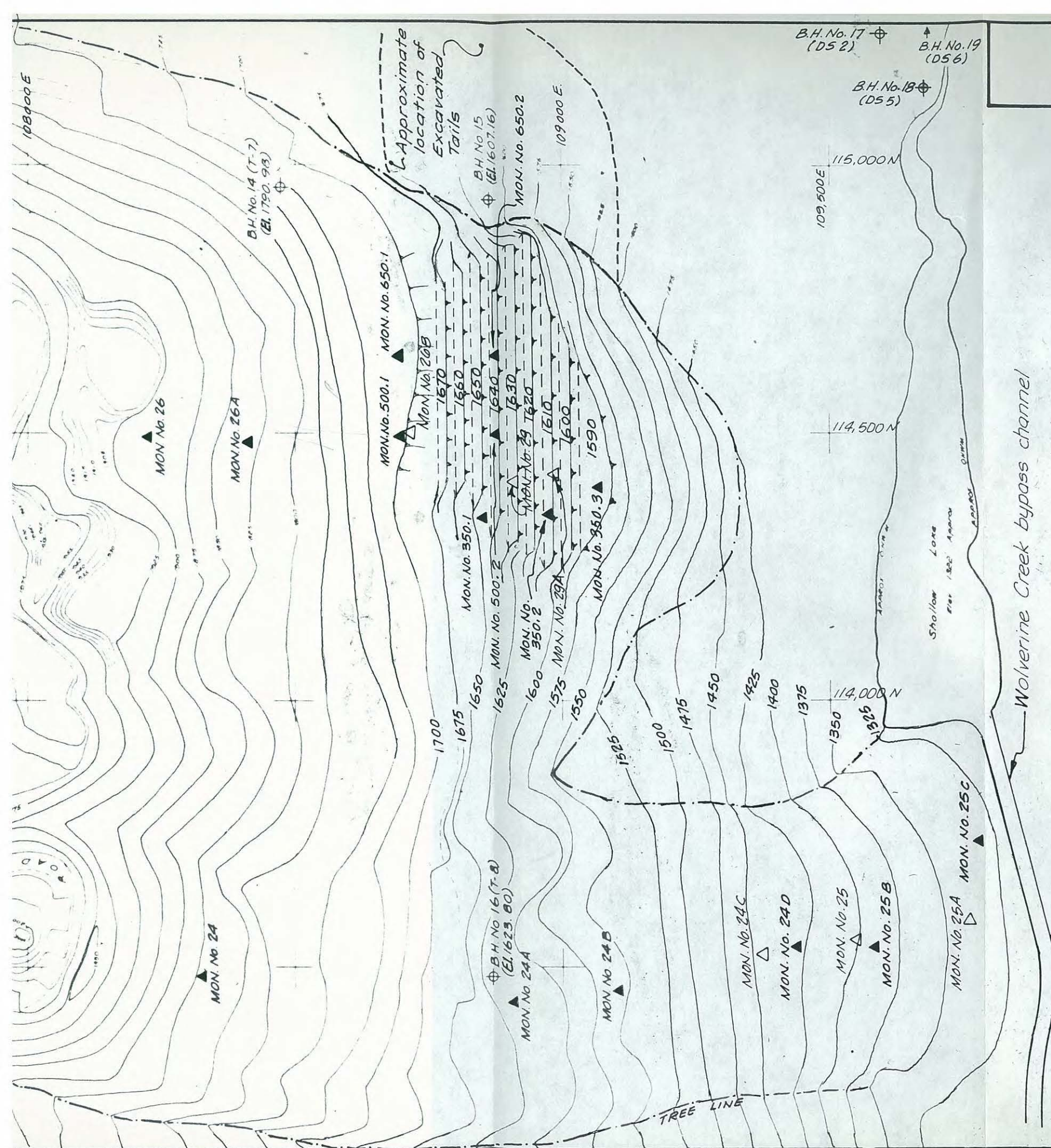


WOLVERINE CREEK TAILING PILE
MOVEMENT MONITOR DATA



RECONTOURED TAILING PILE.

FIGURE 2



LEGEND:

- ▲ Surface movement survey reference point.
MON. No. 19
- ⊕ Borehole
B.H. No. 12
- △ Surface movement monitor removed for recontouring
MON. No. 25

NOTE:

The contours shown on the 1974 failure lobe represent the average slopes of the recontoured area.

REFERENCE:

Topo. plan of Mill Tailings Pile for Clinton Creek Mine. by Underhill Engineering Ltd. - April 29, 1978.
Coordinate grid from Cassiar Asbestos Corp. Grid Origin.

Scale: 1 in. to 200 ft.

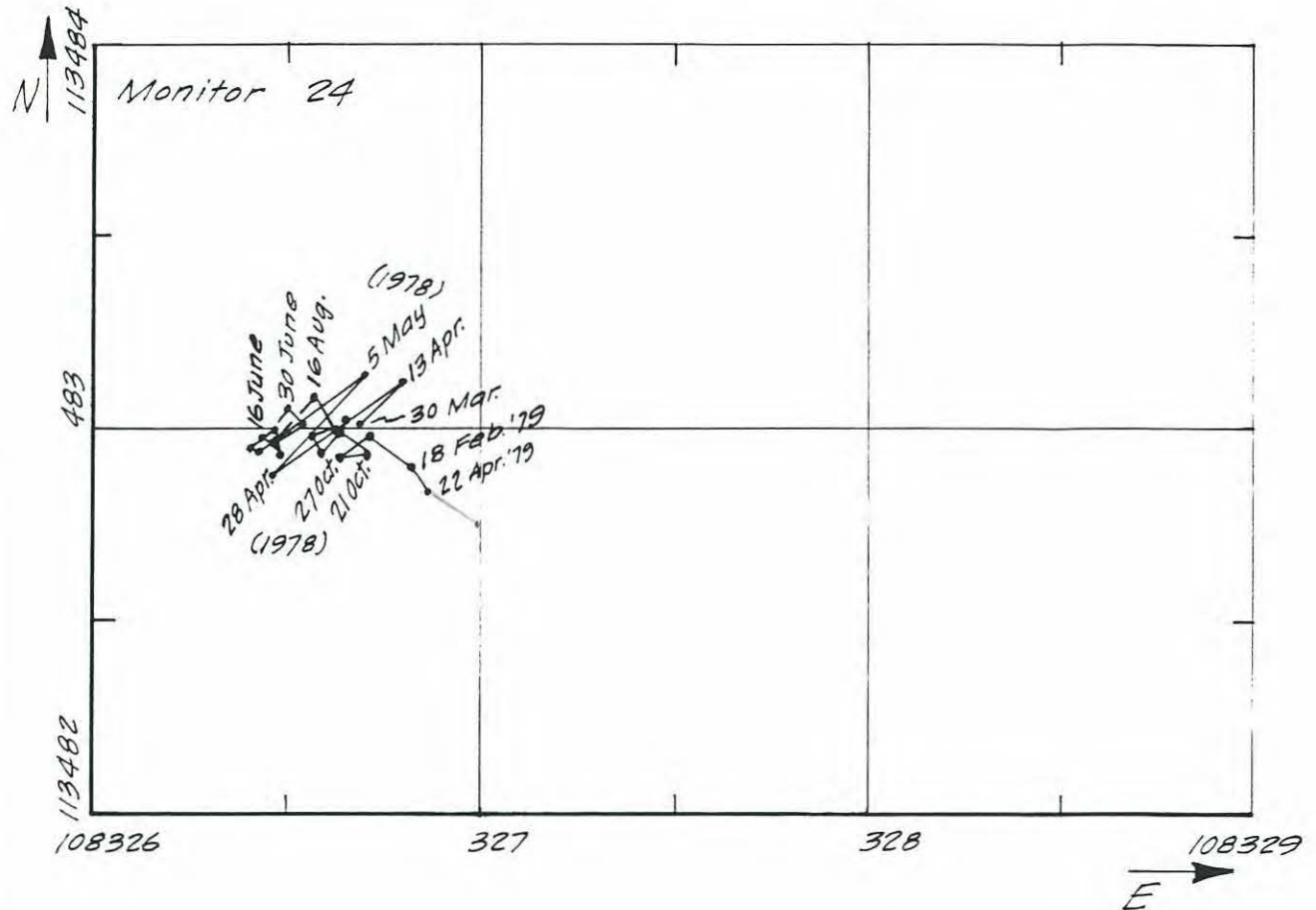
Golder Associates

Drawn Ing
Reviewed 88
Date Dec. '78

V77016

TAILING PILE - MONITOR NO. 24

Figure 24-1



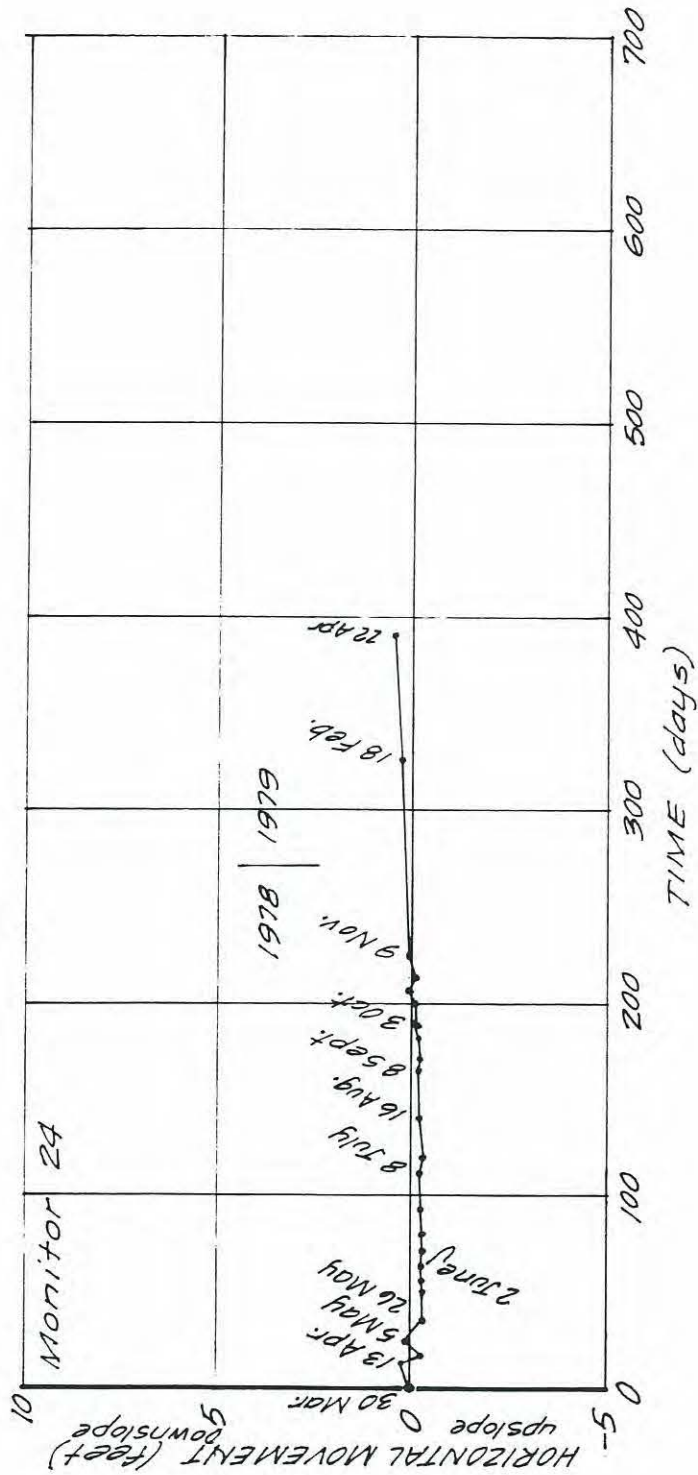
Date Apr. '79

Reviewed

Drawn by

Project No. 772-1016

Project No.

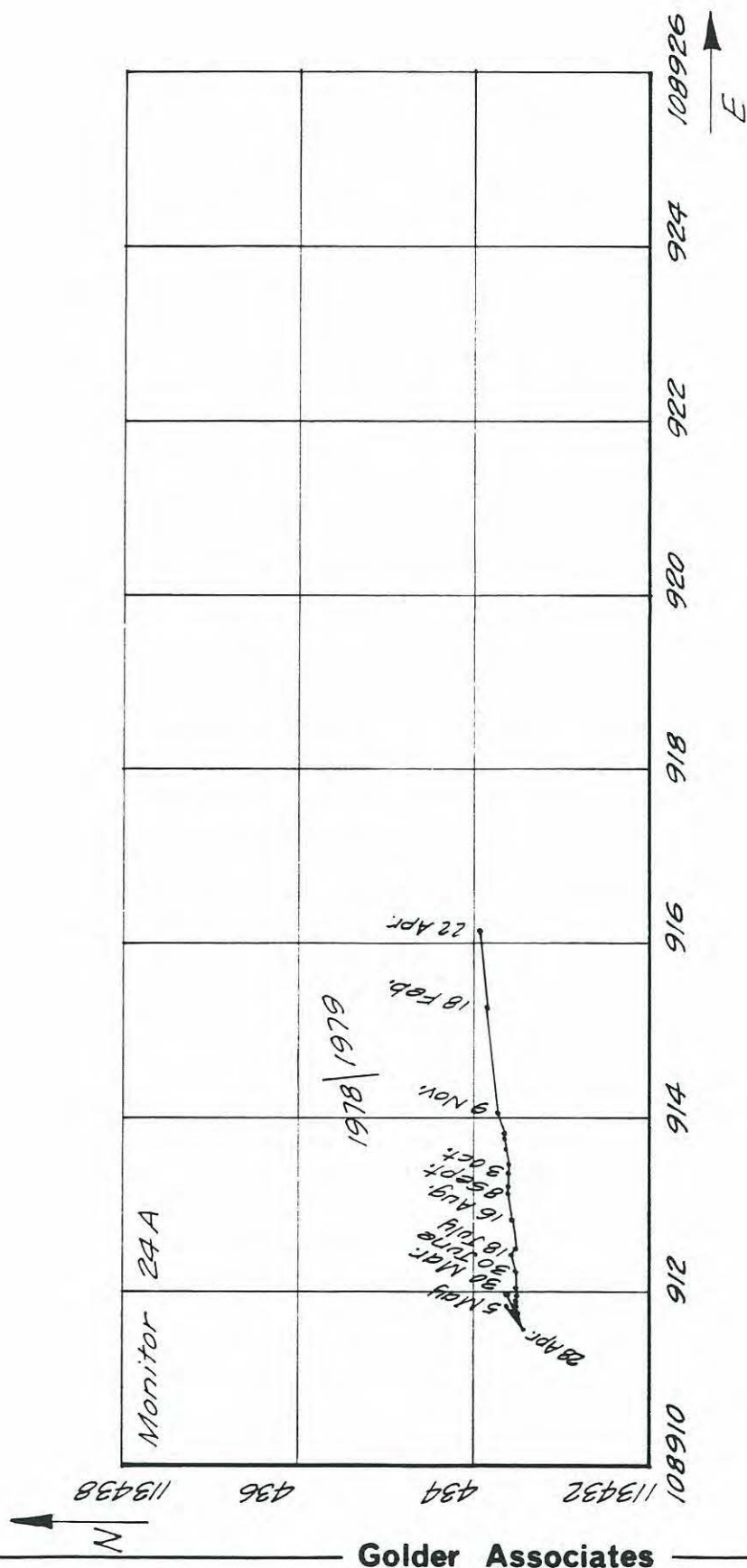


NOTE: The average rate of downslope movement of Monitor 24 between May 26, 1978 and April 22, 1979 is approximately 0.44 ft./yr.

TAILING PILE - MONITOR NO. 24A

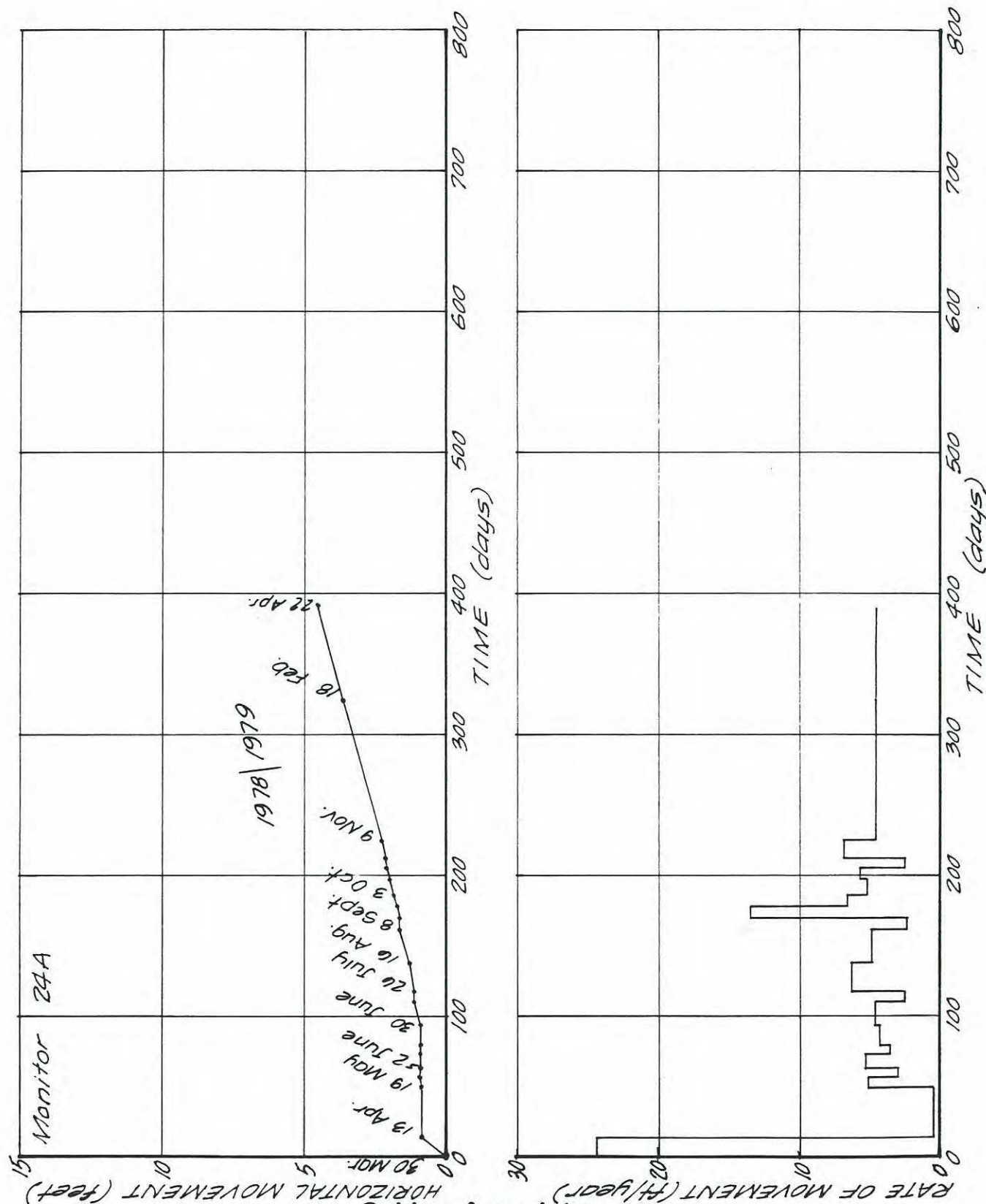
Figure 24 A-1

Project No. 772-1010 Drawn Ing. Reviewed Ing. Date Apr. 79



Golder Associates

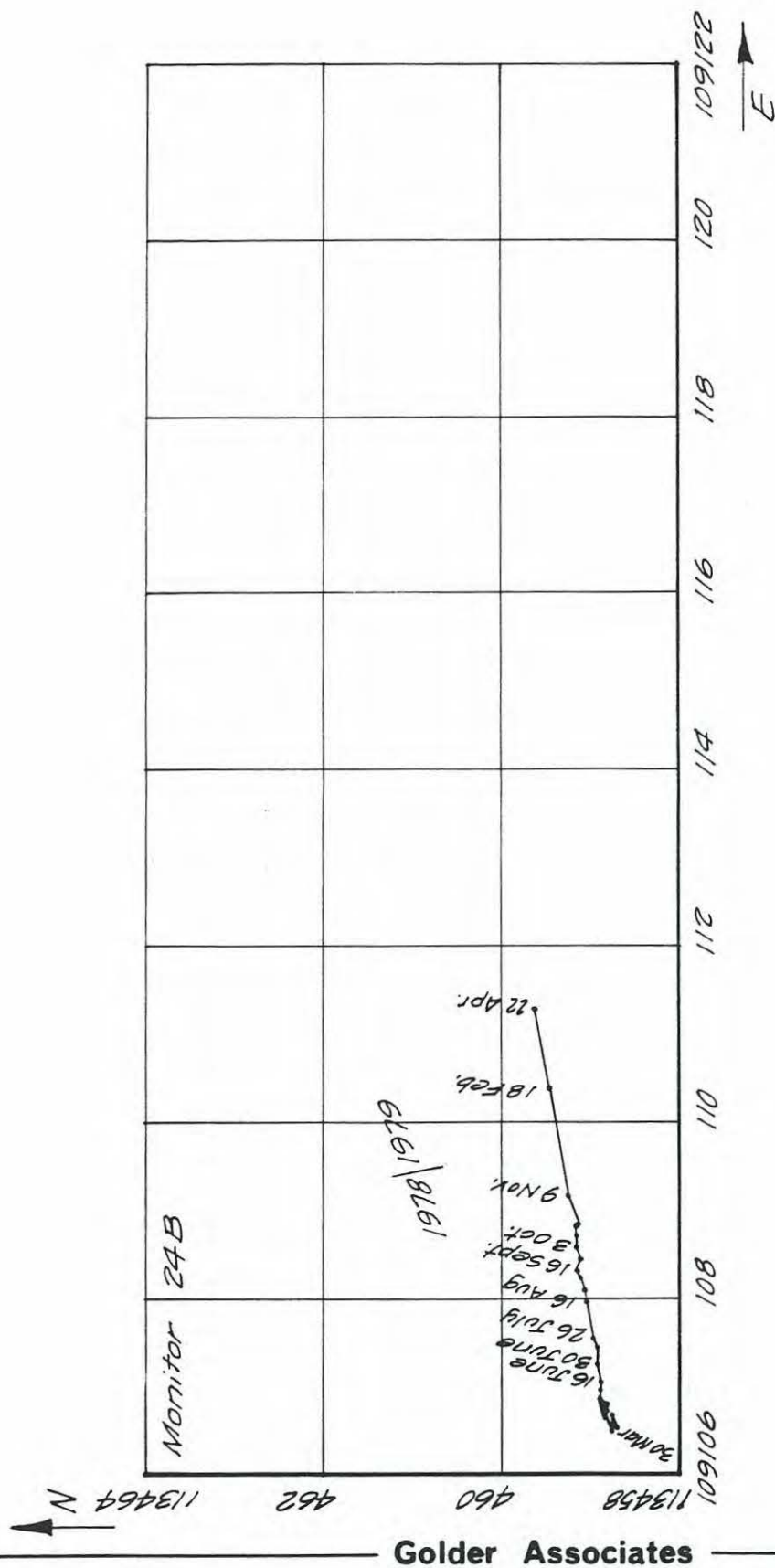
Project No. 772-1016 Drawn 1/19 Reviewed Jinto Apr. '79



TAILING PILE - MONITOR NO. 24B

Figure 24 B-1

Project No. 772-1016 Drawn SF Date Apr. '79

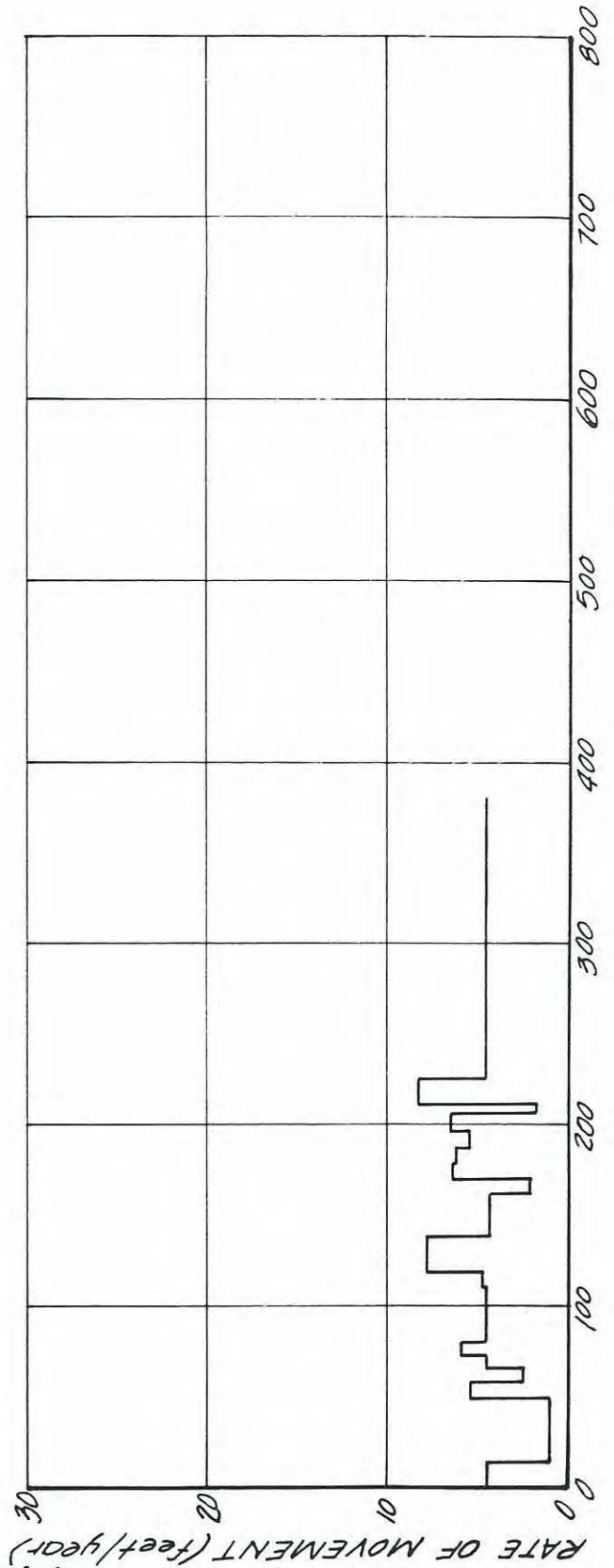
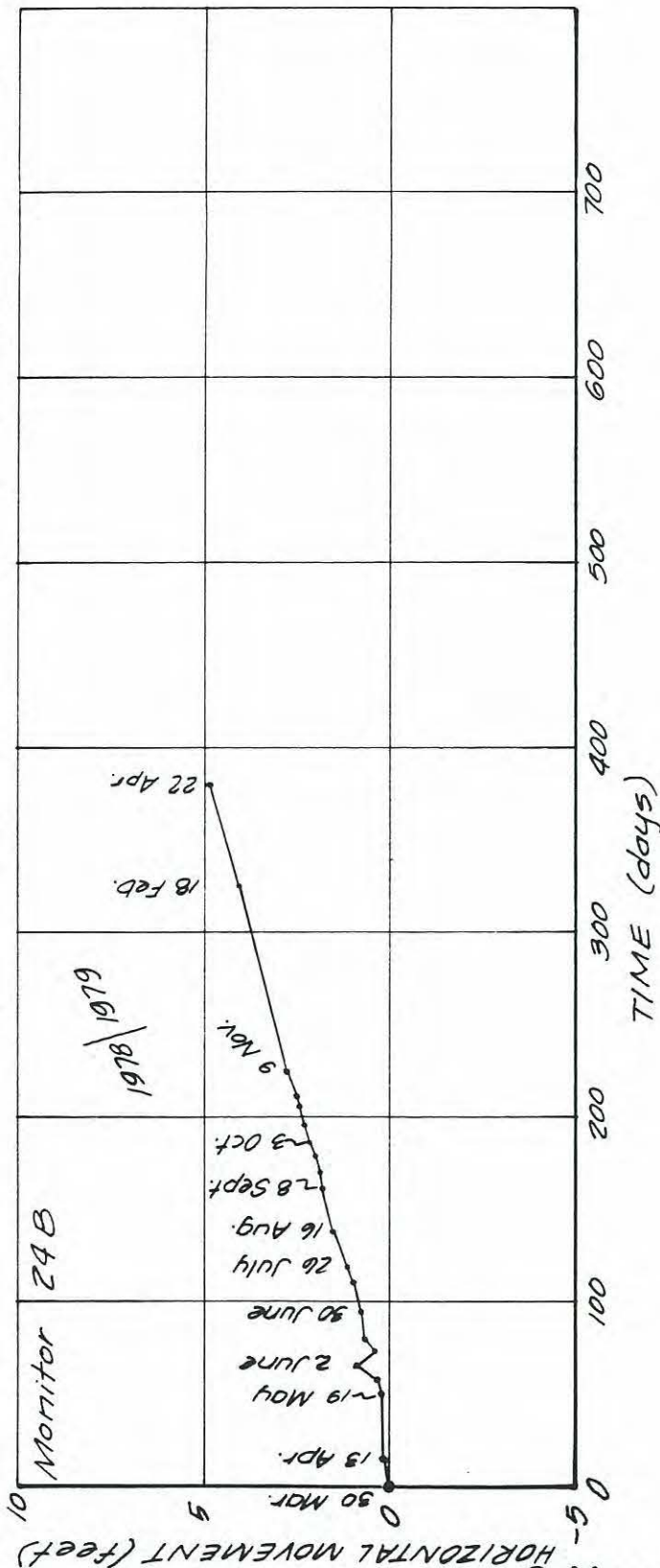


Golder Associates

TAILING PILE - MONITOR NO. 24B

Figure 24 B-2

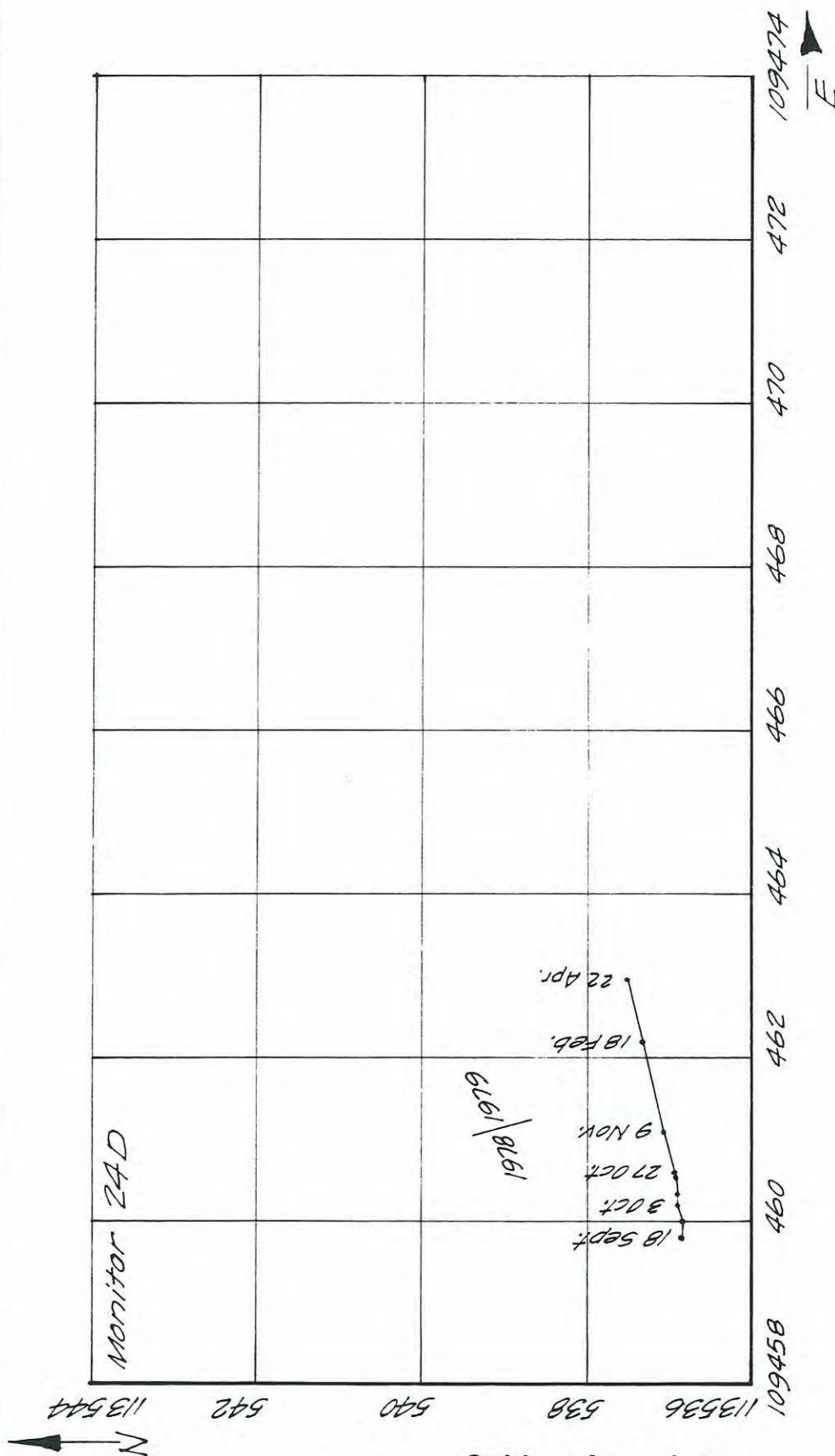
PROJECT NO. T72-1016 DRAWN SF REVISED DATE Apr. '79



TAILING PILE - MONITOR NO. 24D

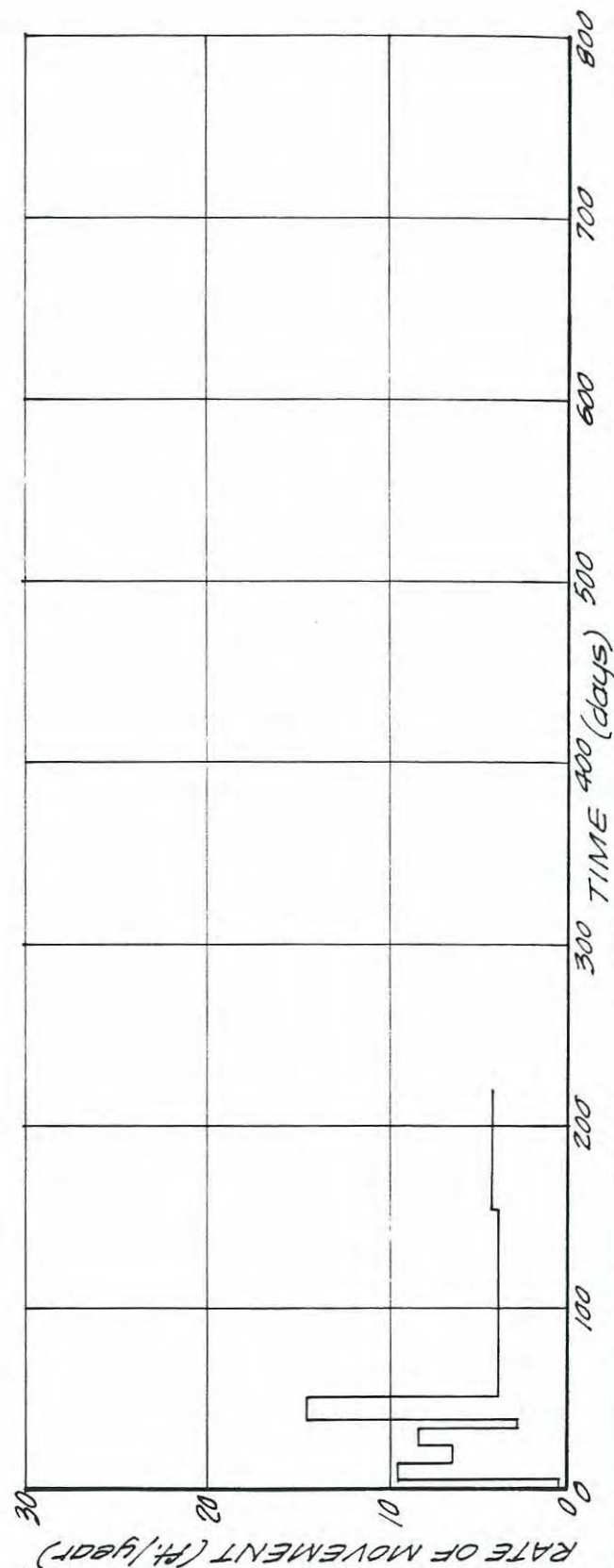
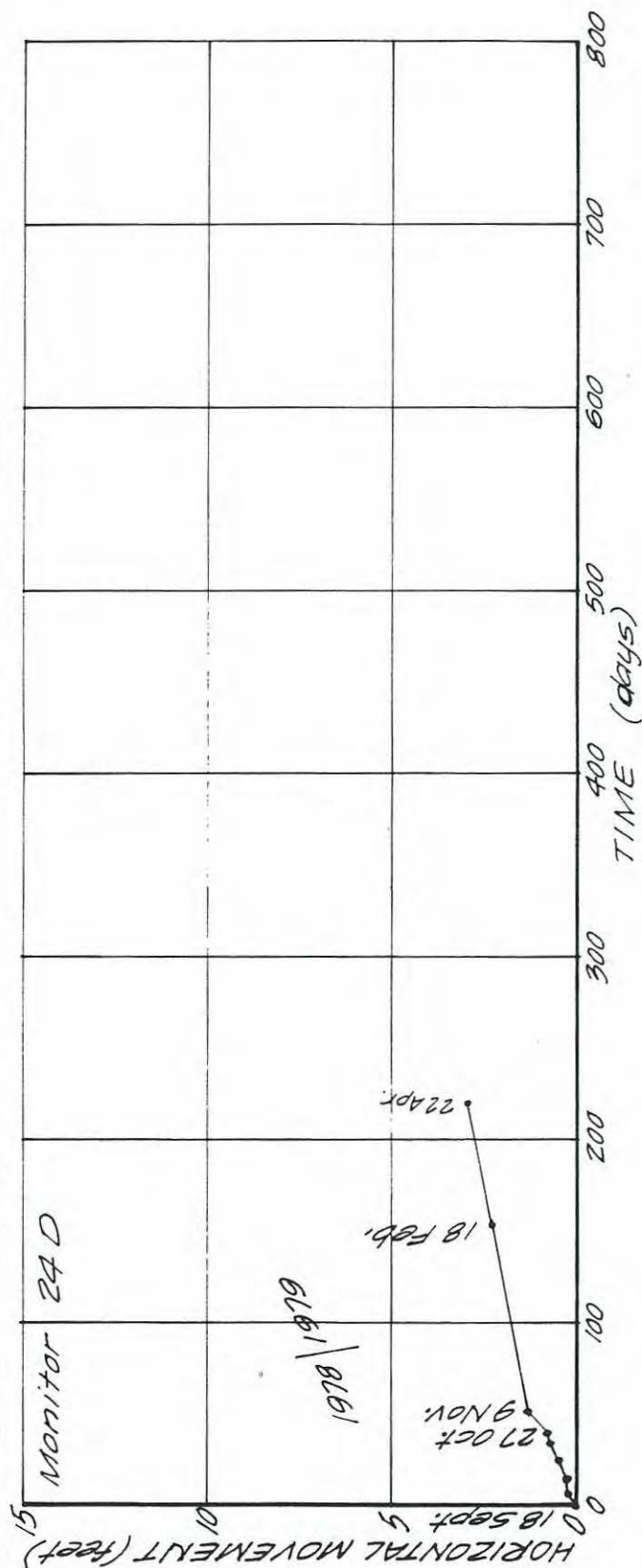
Figure 24 D-1

Project No. 772-1016 Drawn by [signature] Reviewed [signature] Date Apr. '79



PROJECT NO. 172-1016 DRAWN BY NG DATE APR. '79

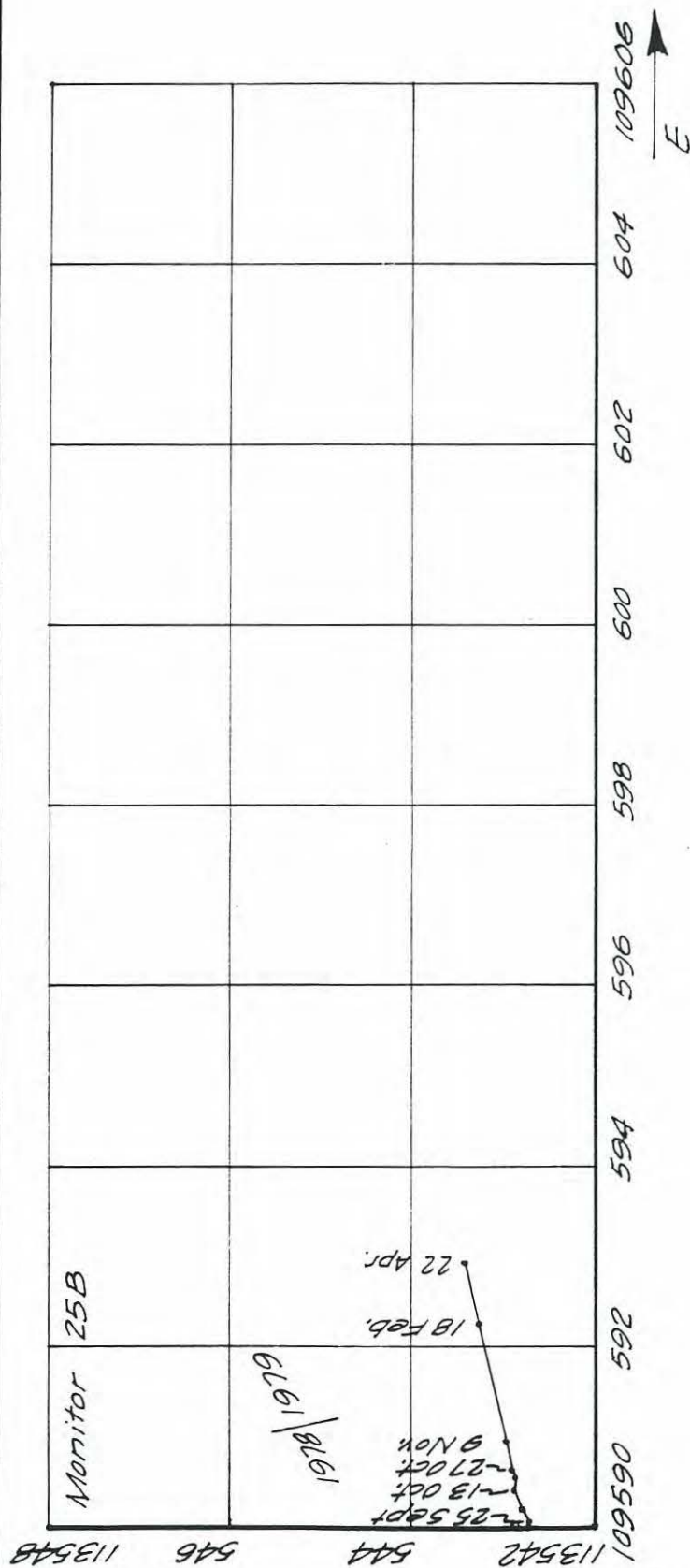
REVISED



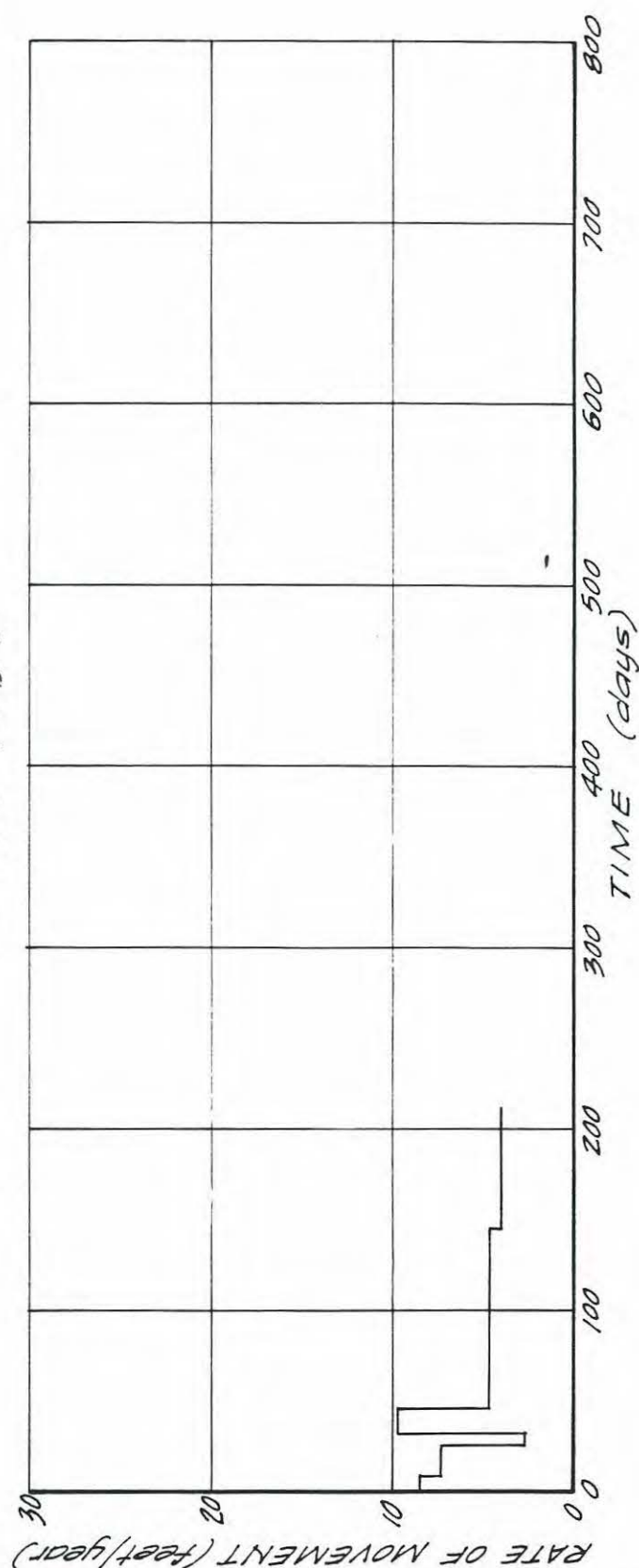
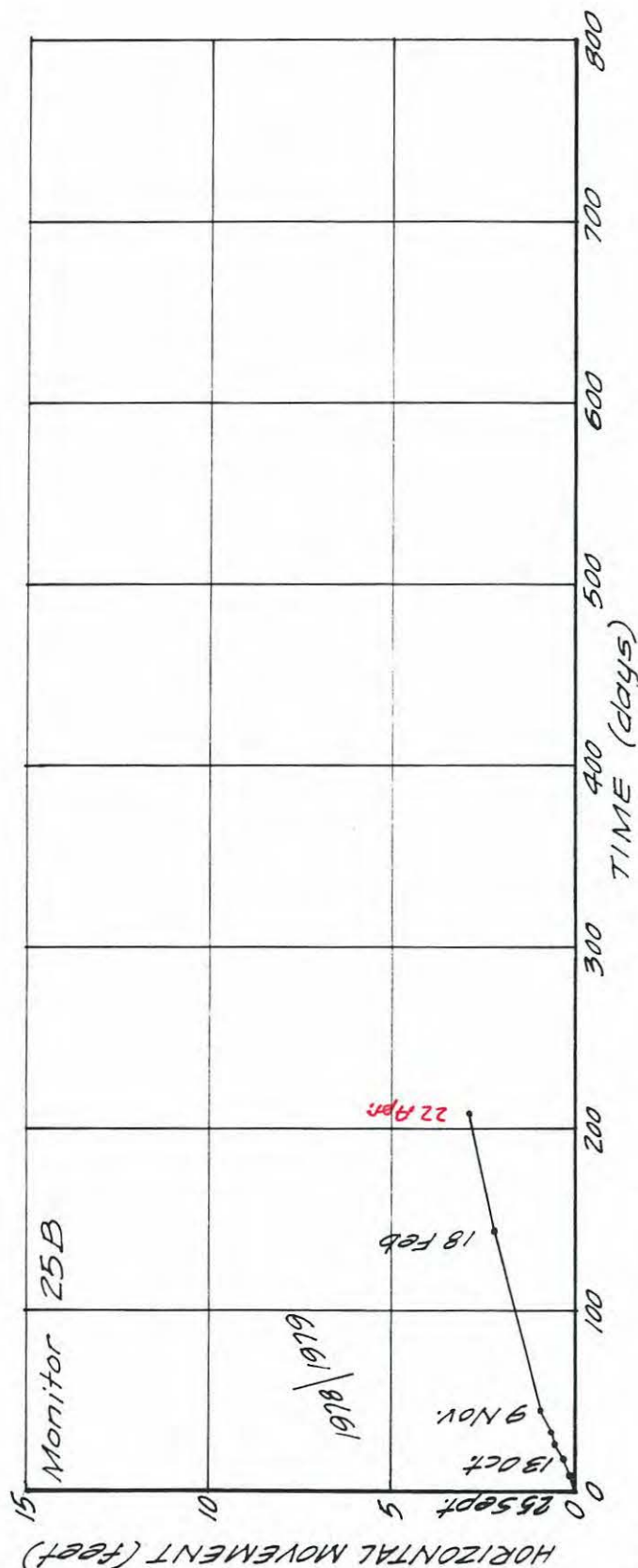
TAILING PILE - MONITOR NO. 25B

Figure 25 B-1

Project No. 772-1016 Drawn by: Date Apr. '79



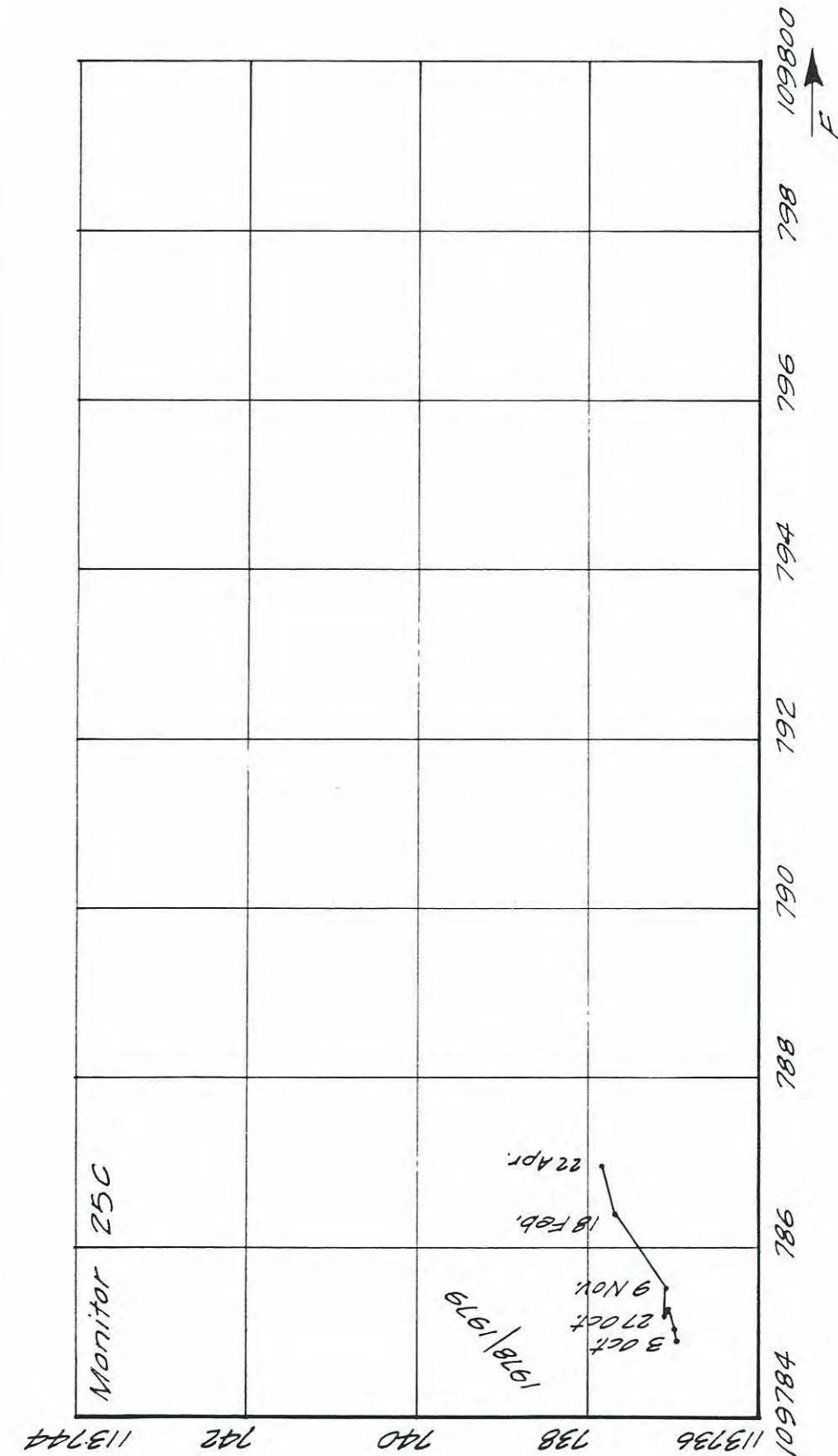
Project No. 772-1016 Draw 119 Date Apr. '79



TAILING PILE - MONITOR NO. 25C

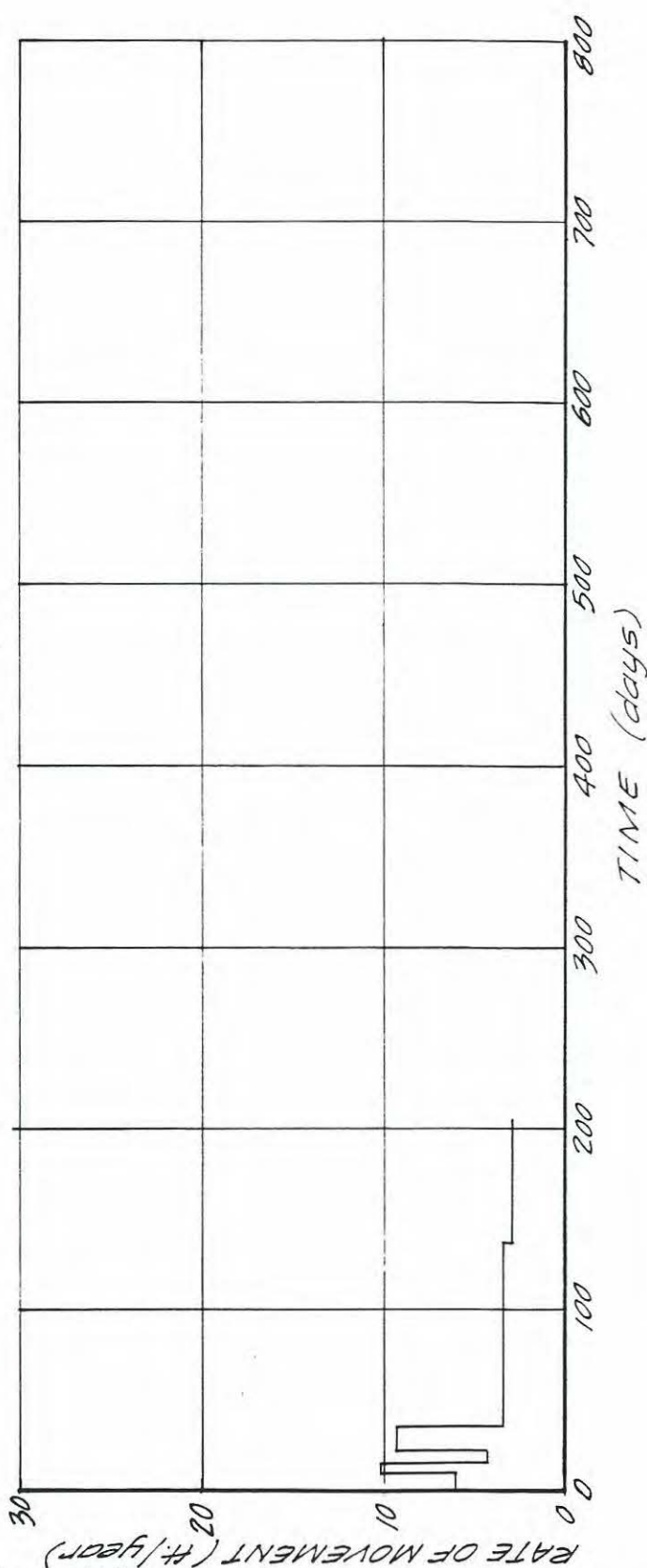
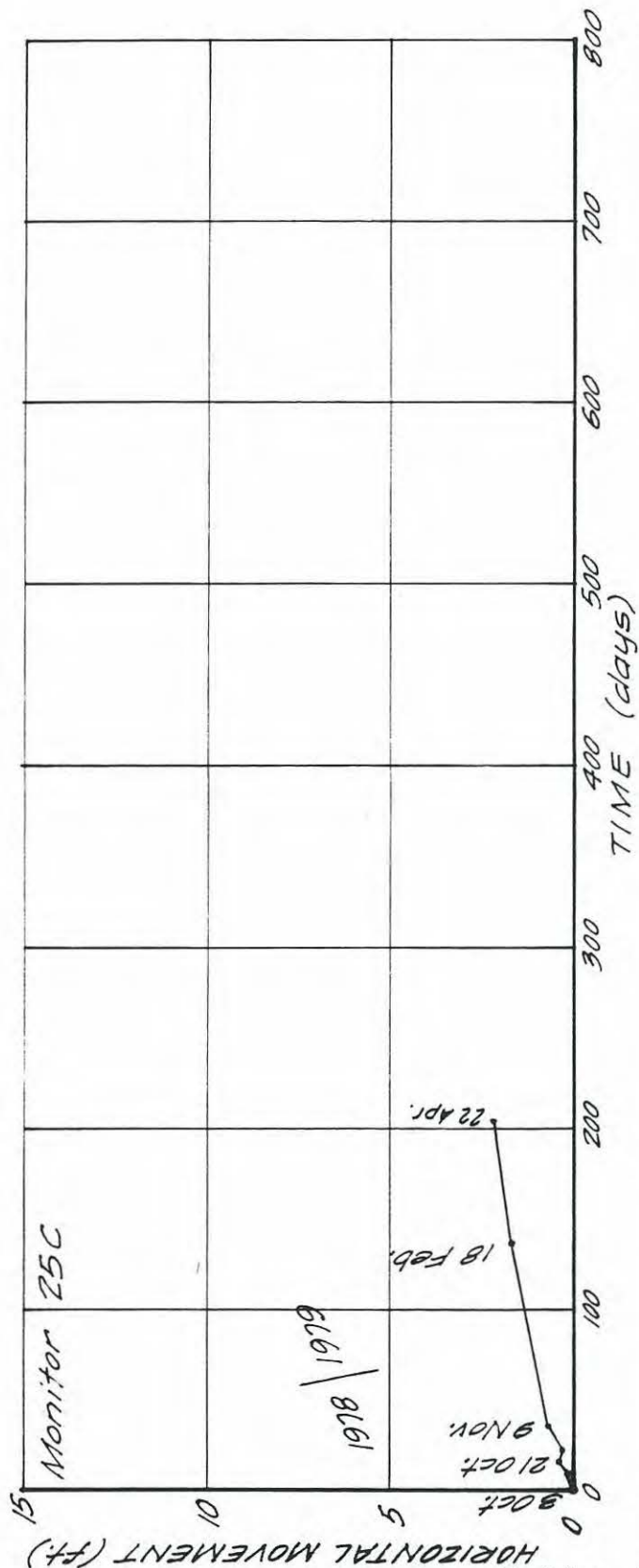
Figure 25 C-1

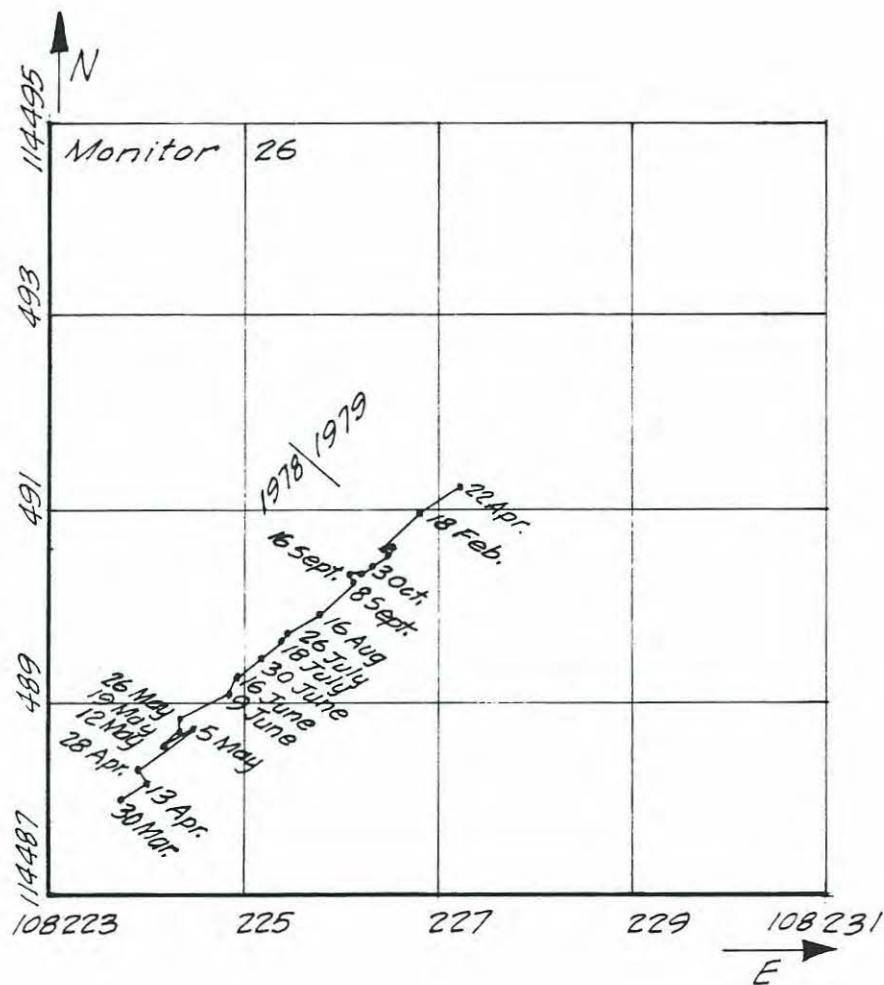
Project No. 772-1016 Drawn 179. Rev: 179 Date Apr. '79



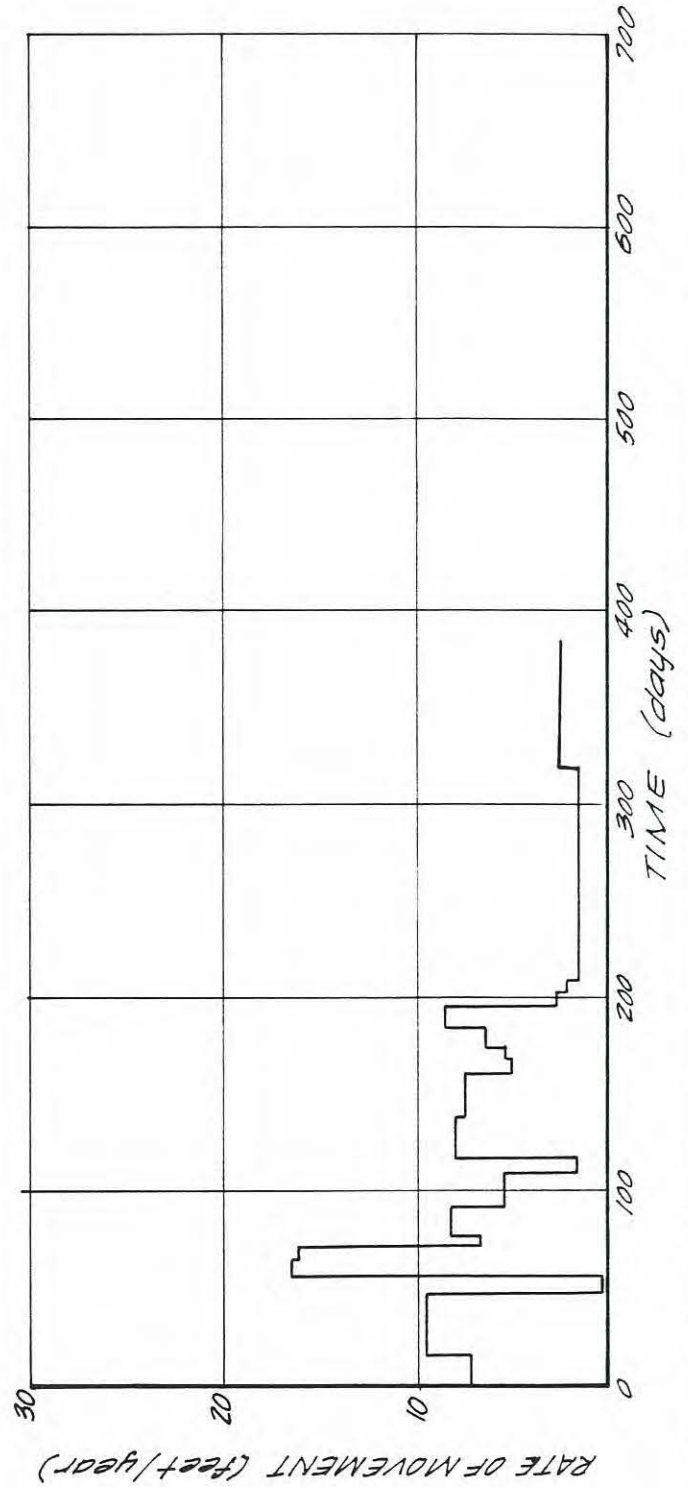
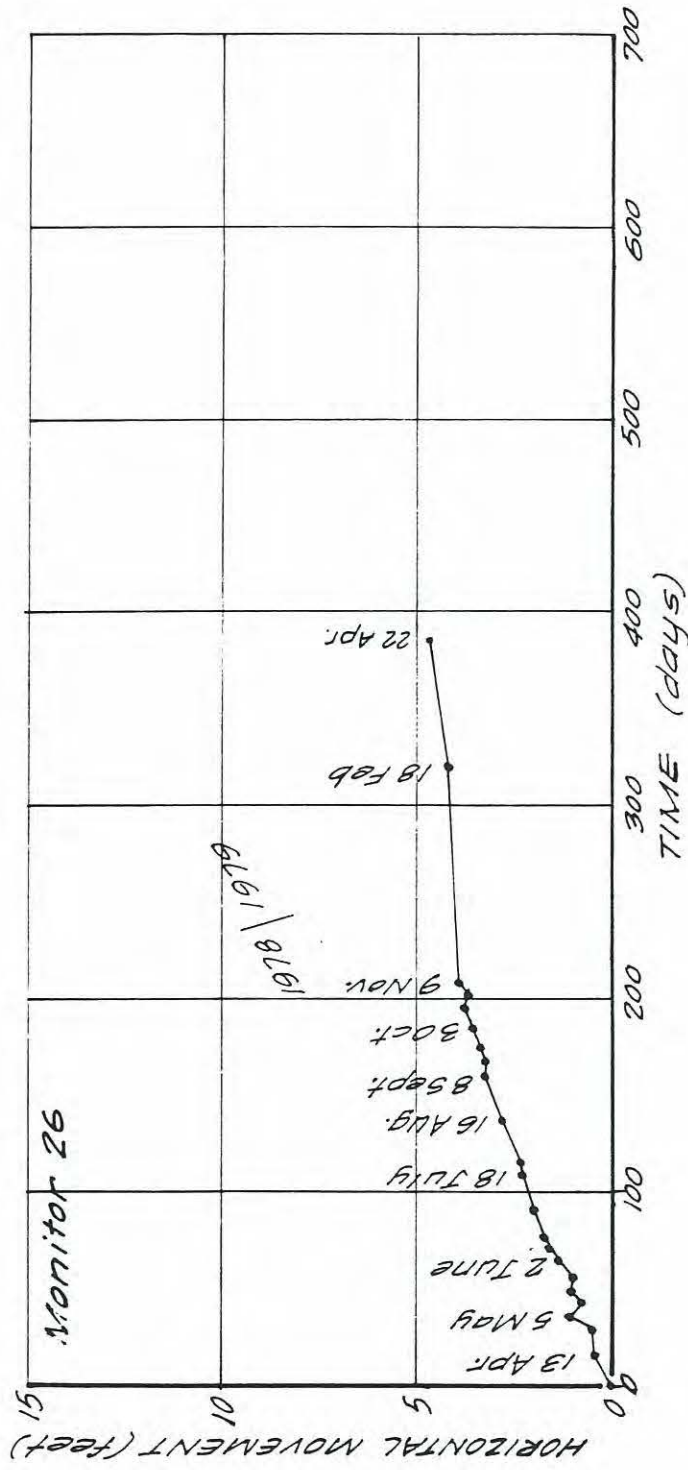
Project No. 772-1016 Drawn 1/26 Date Apr. '79

Revised



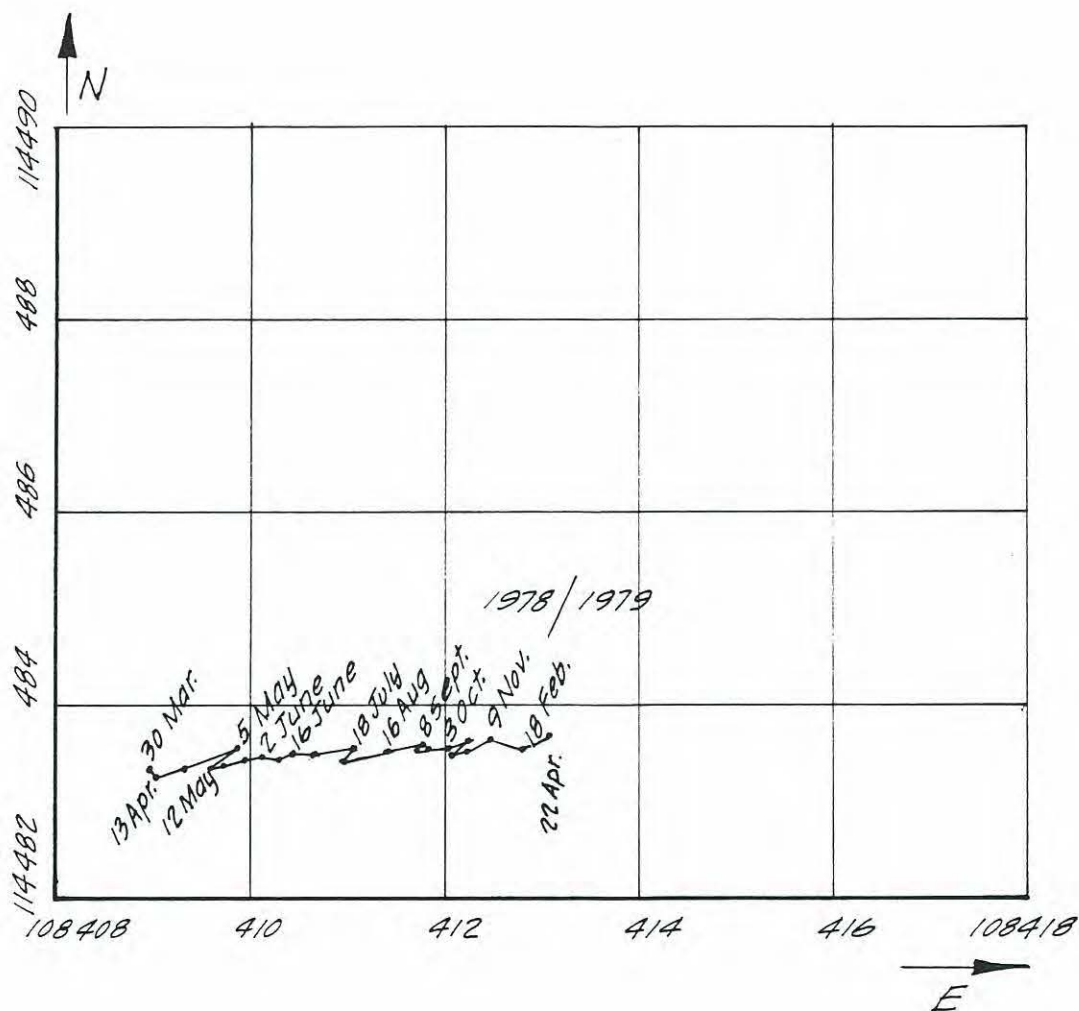


Project No. 772-1010 Drawn SF Reviewed Date Apr. '79



TAILING PILE - MONITOR NO. 26A

Figure 26 A-1



Apr. '79

Date

Reviewed

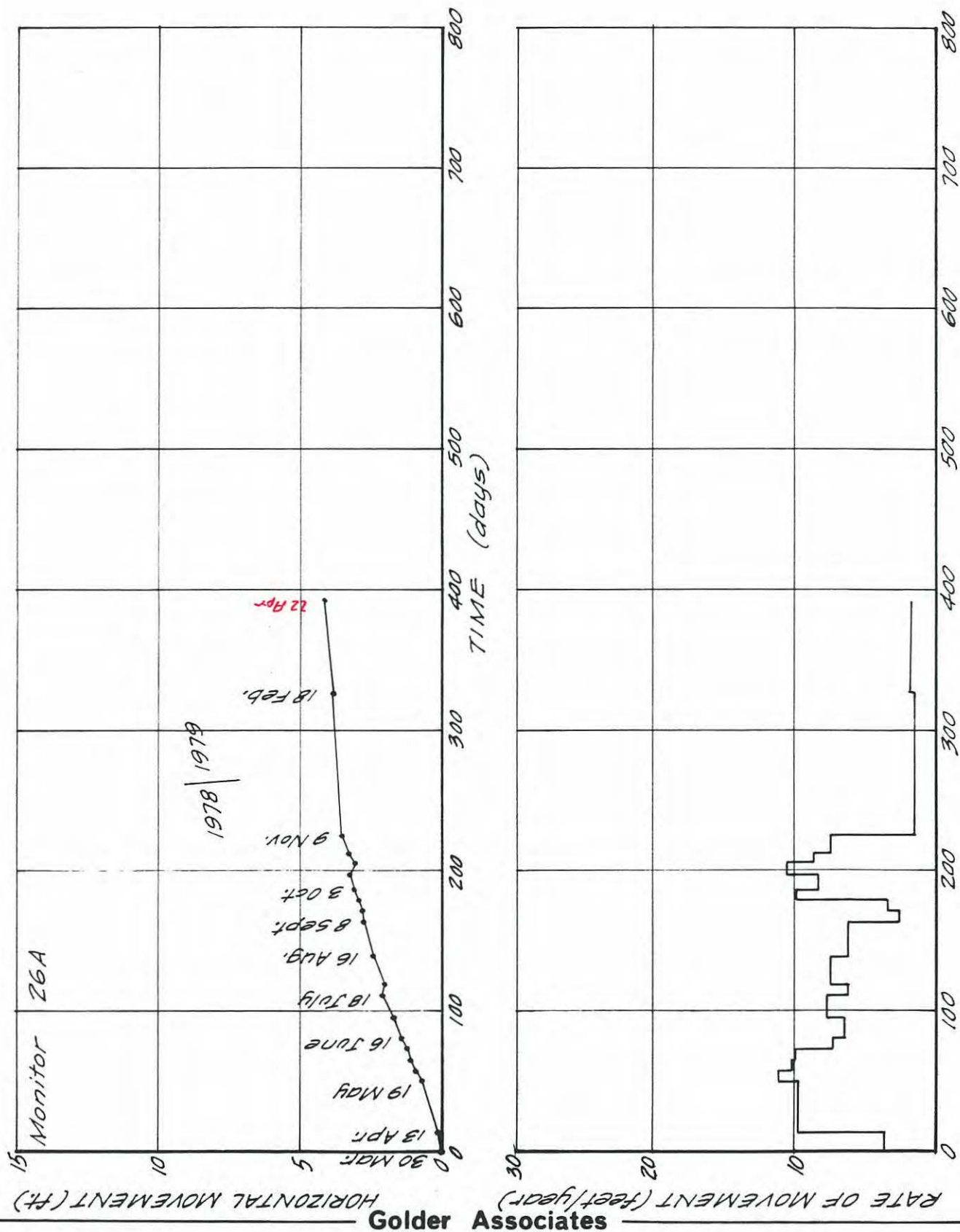
ing

Drawn

712-1016

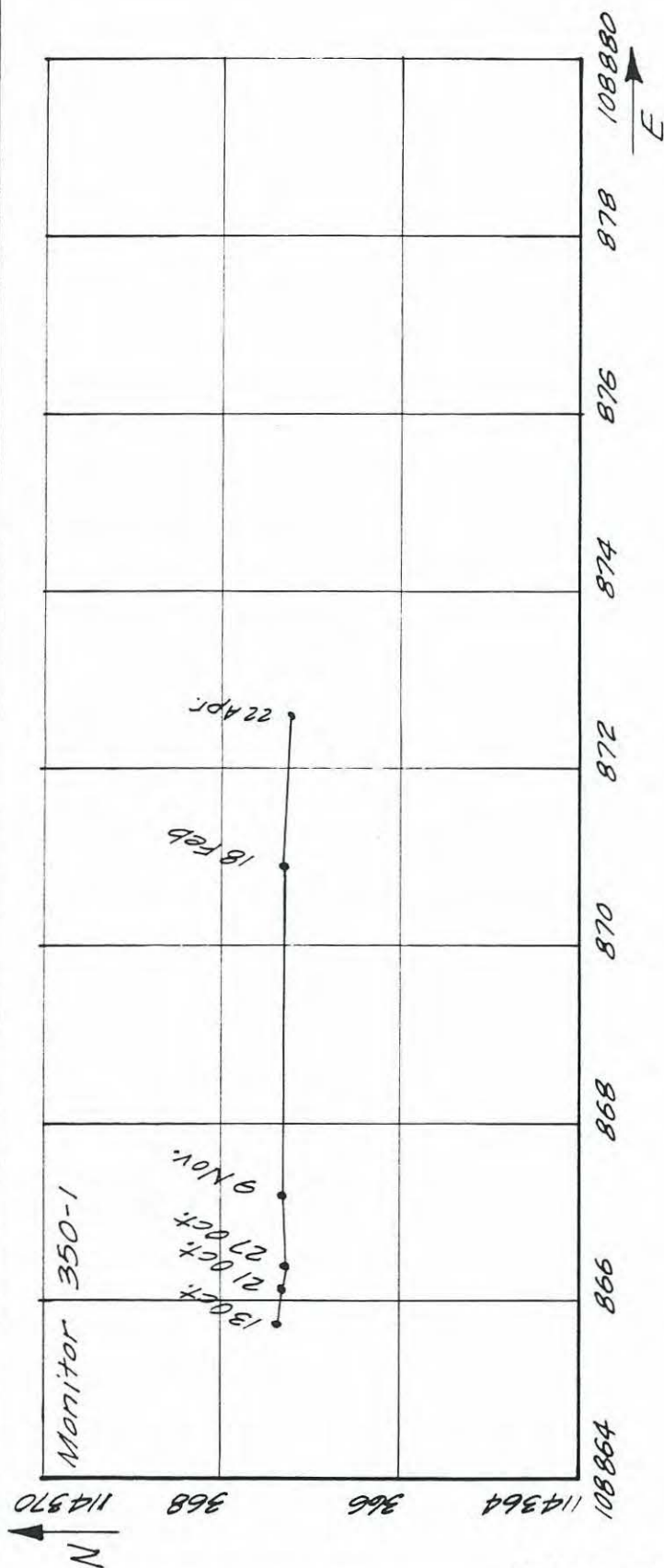
Project No.

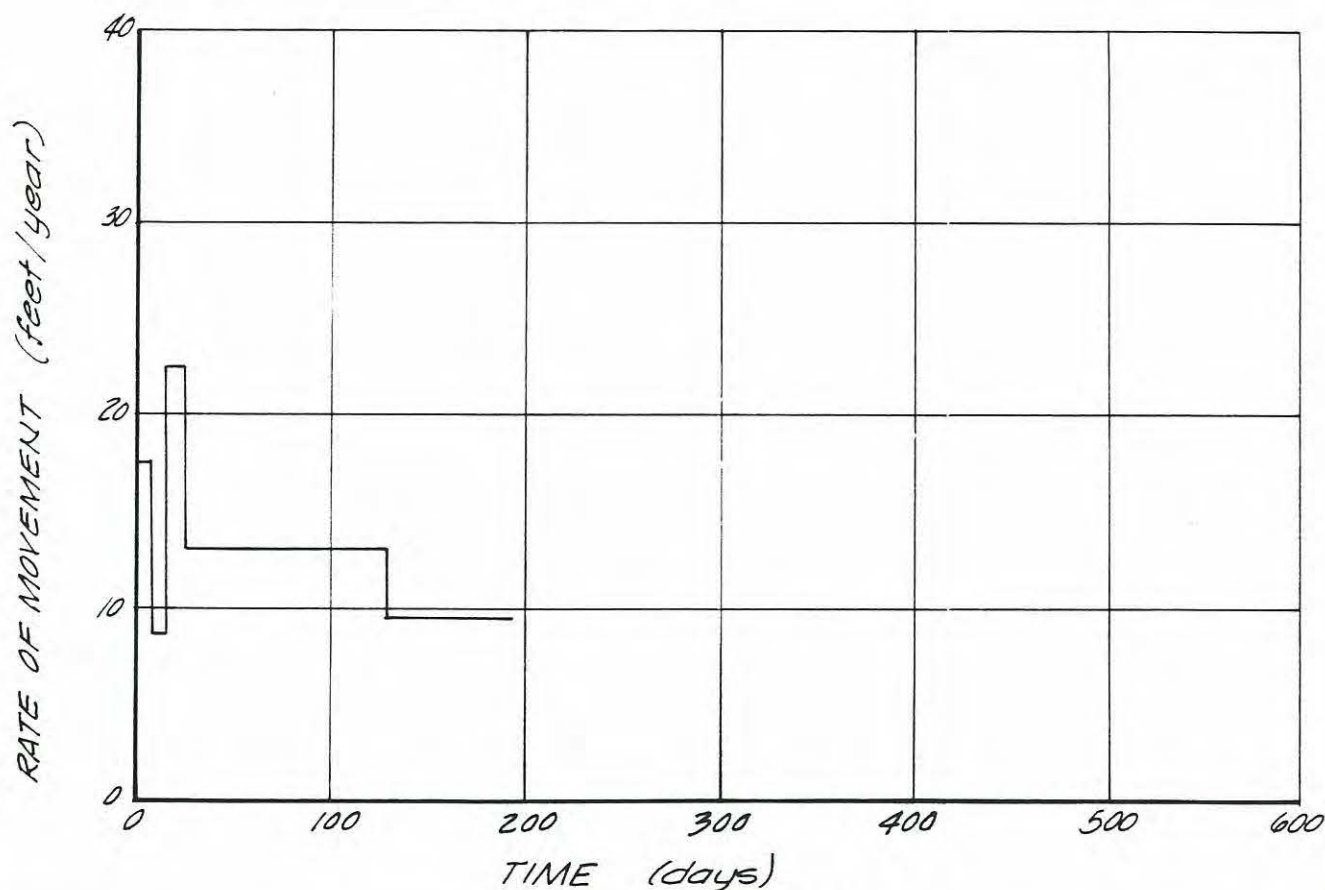
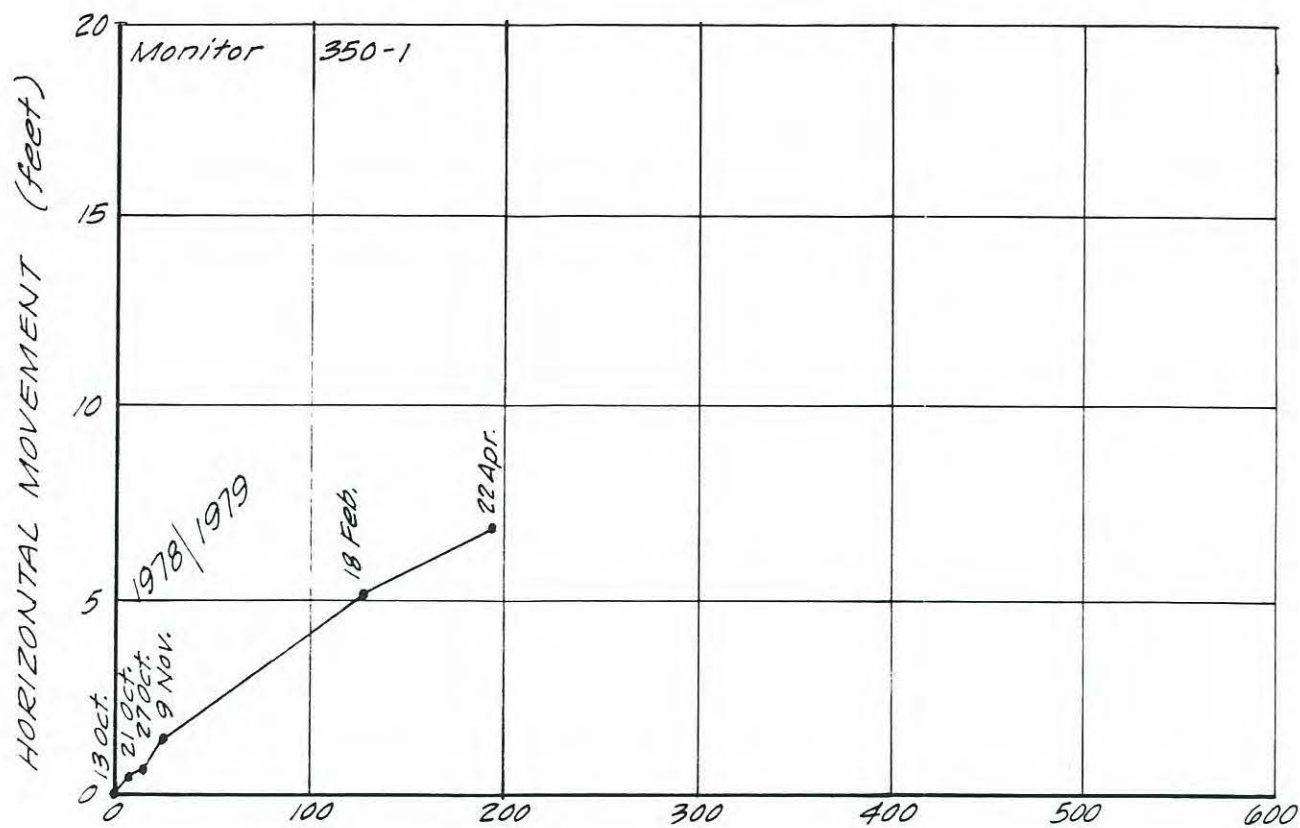
Project No. 772-1016 Drawn 1/19 Reviewed Date Apr. '79



Project No. 772-1016 Drawn by Date Apr. '79

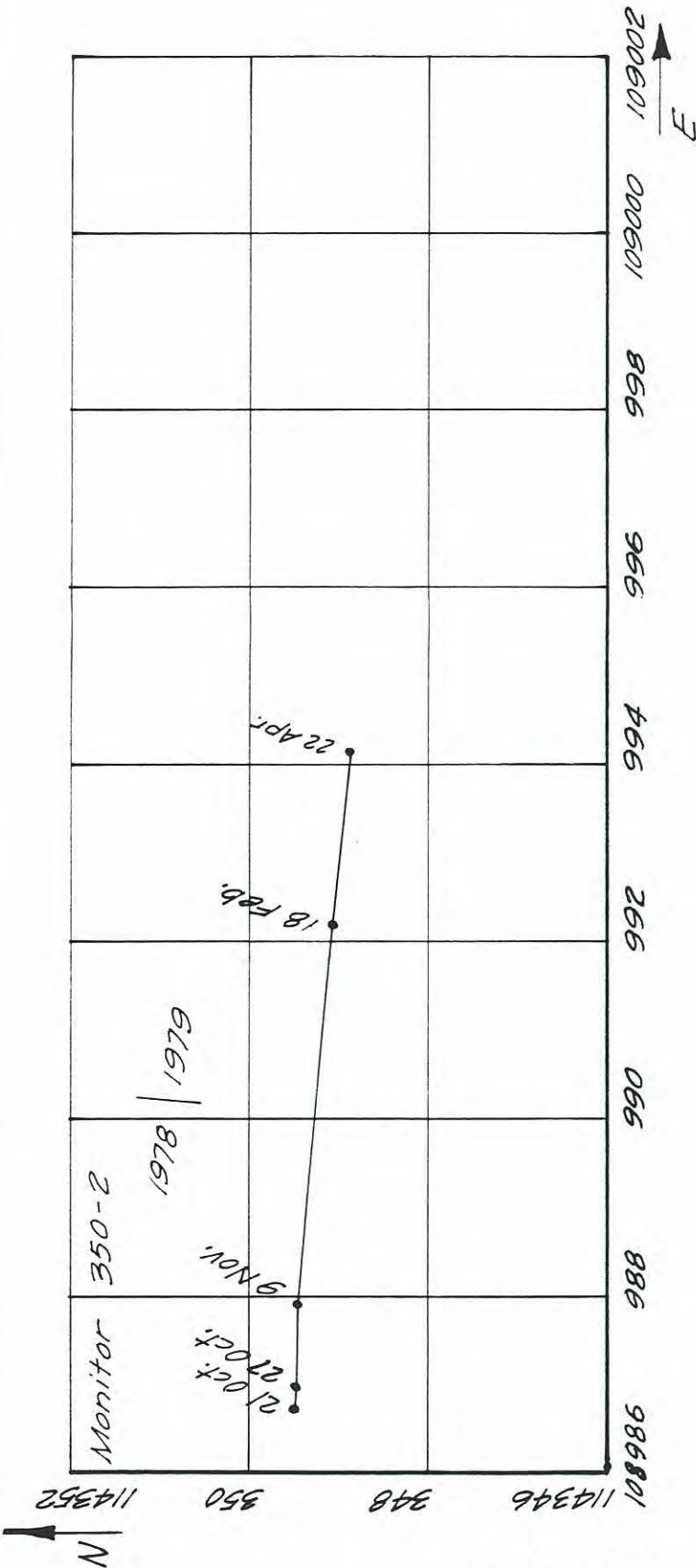
Revised

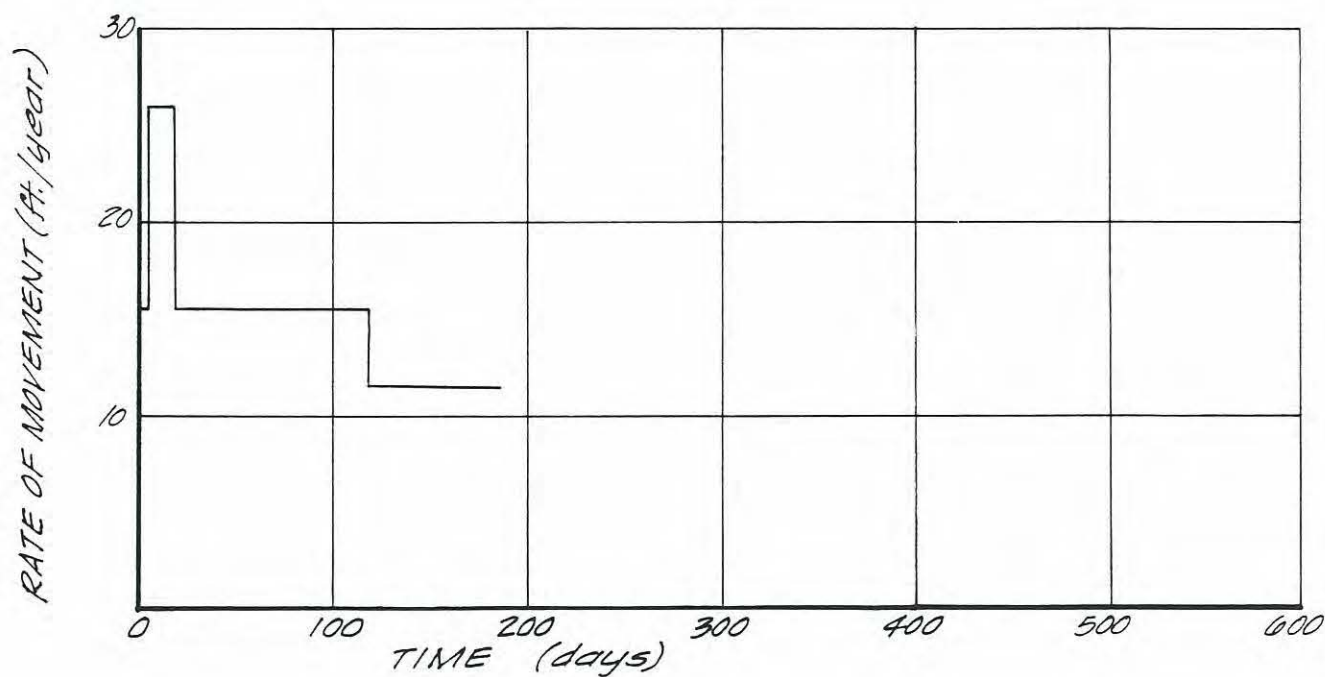
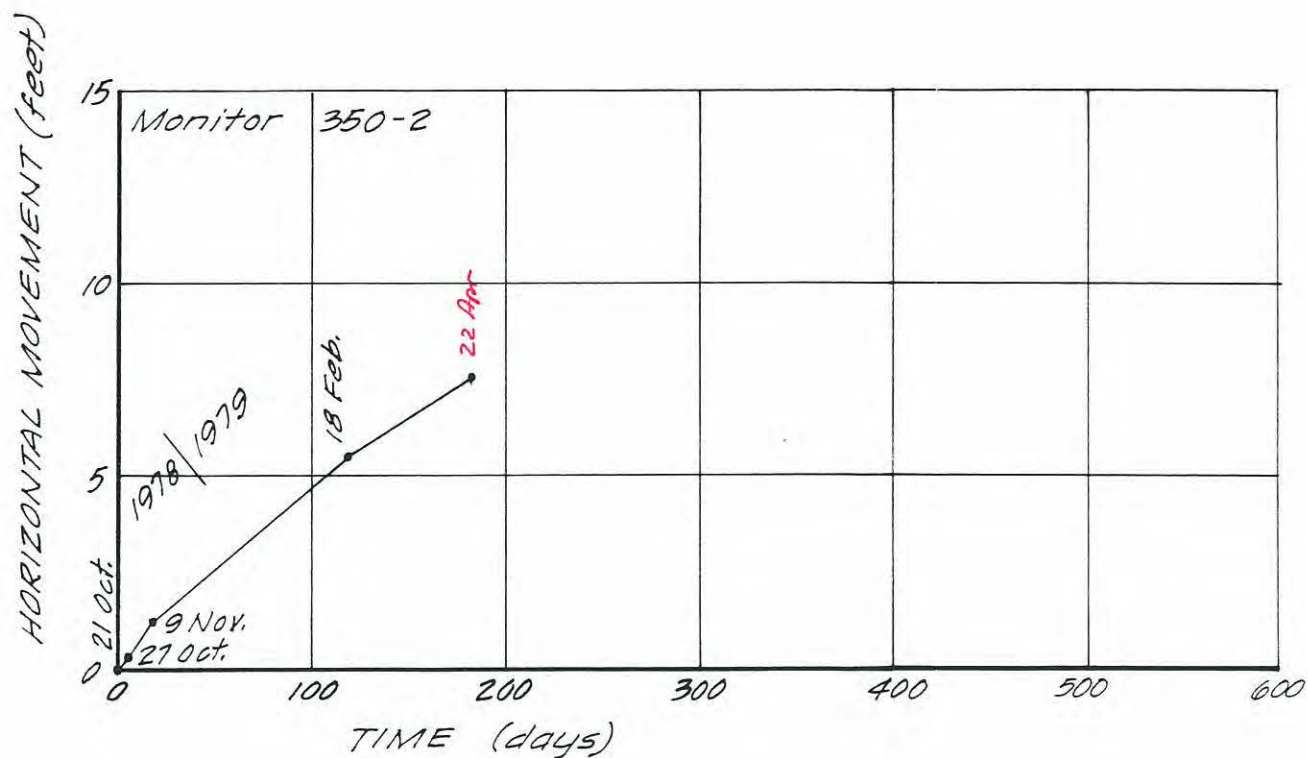




TAILING PILE - MONITOR NO. 350-2

Figure 350-2-1

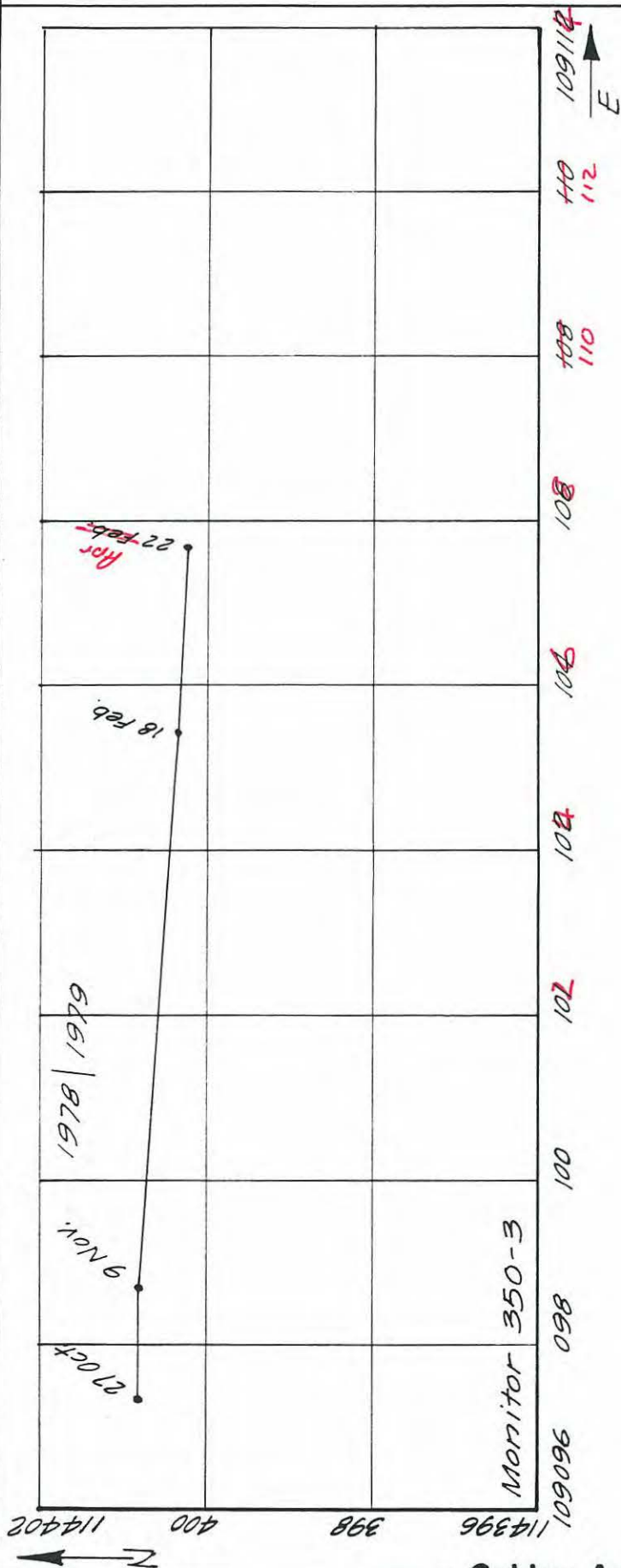




TAILING PILE - MONITOR NO. 350-3

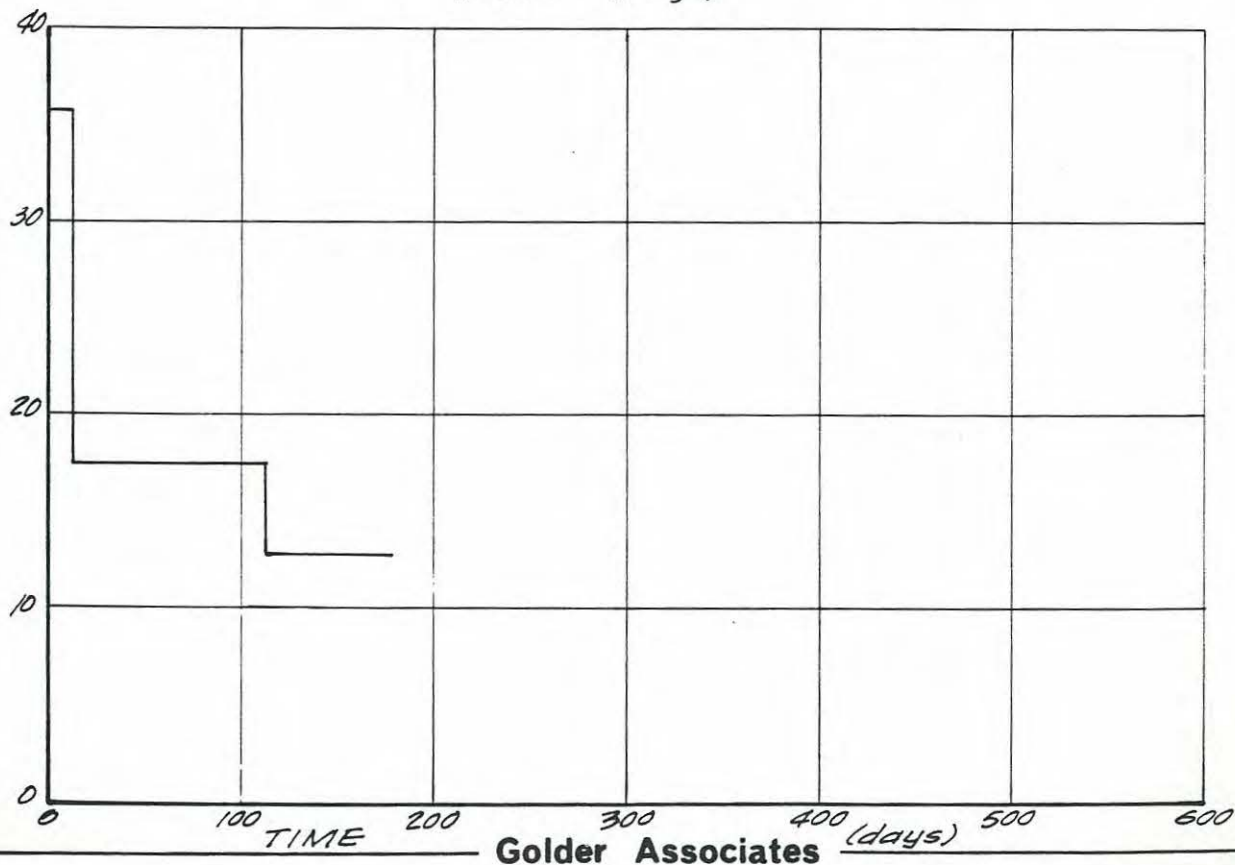
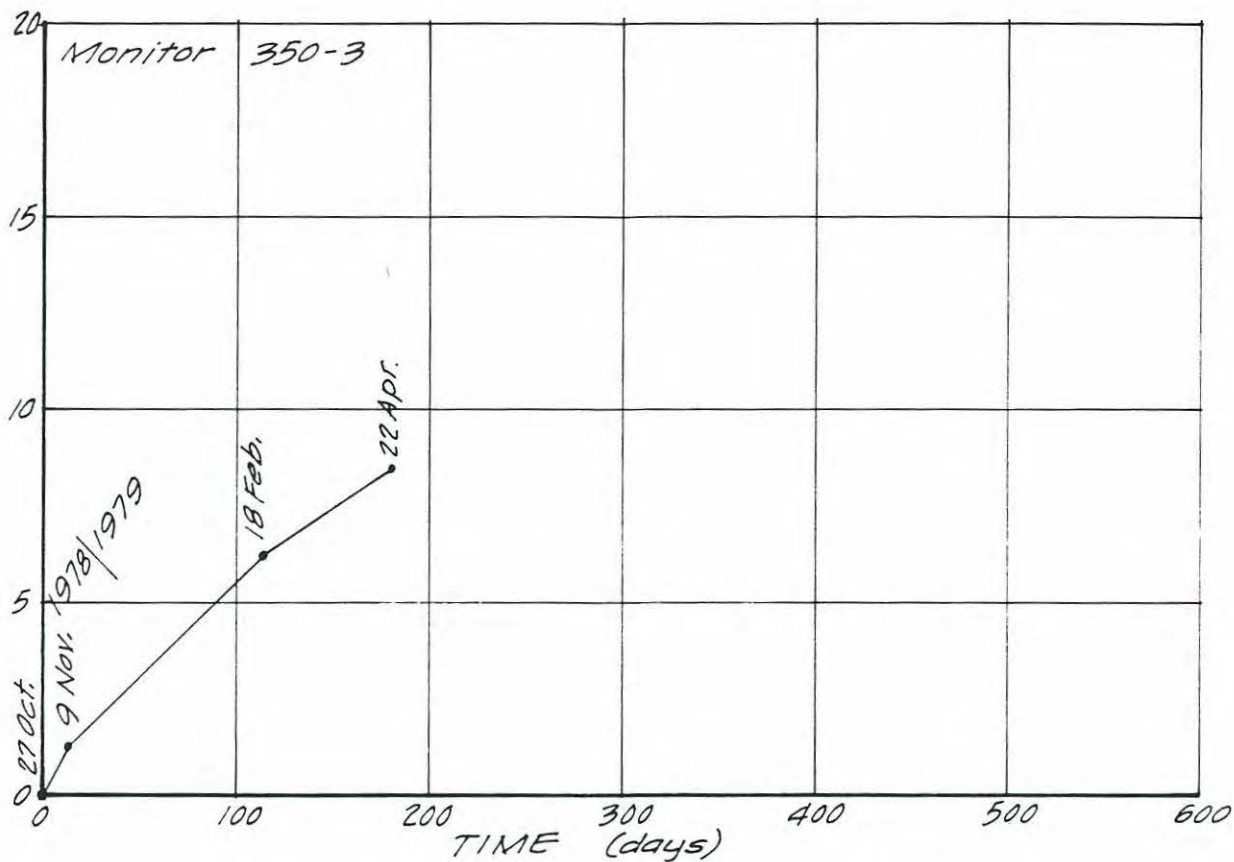
Figure 350-3-1

Project No. 772-1016 Drawn by R.E. Ewas Date Apr. '79



TAILING PILE - MONITOR NO. 350-3

Figure 350-3-2

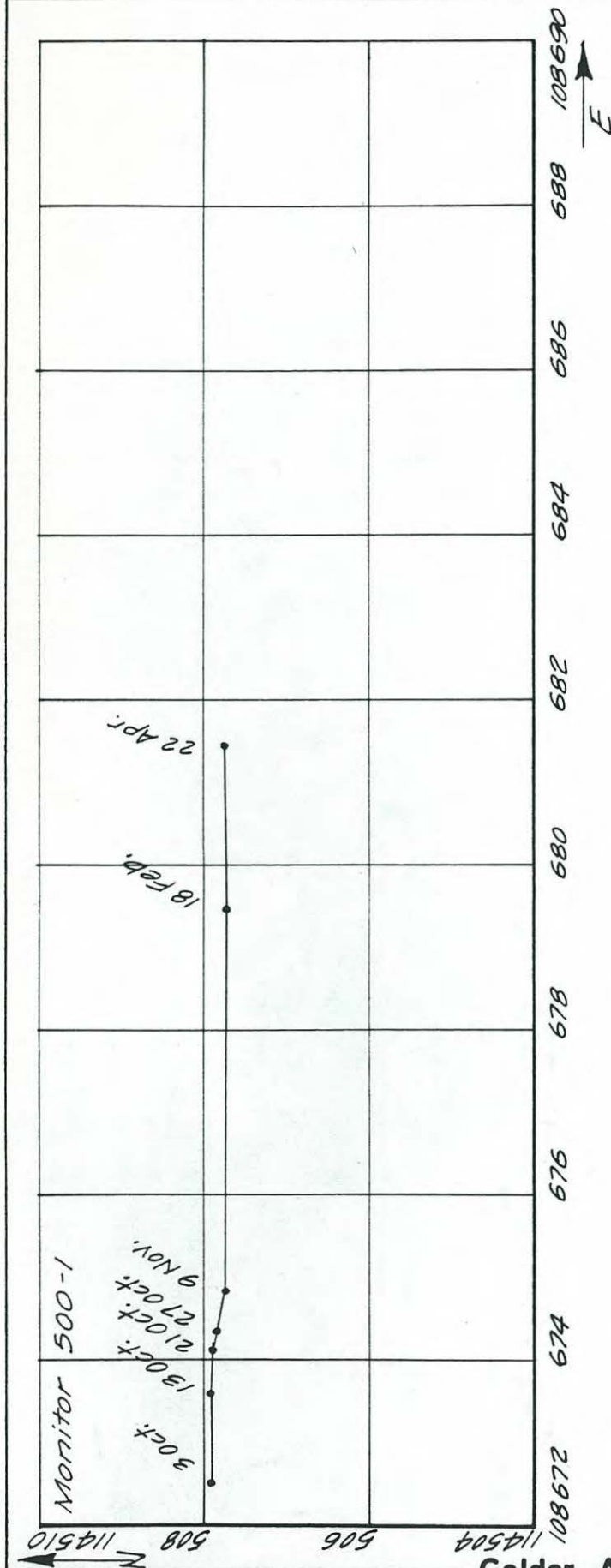


Golder Associates

TAILING PILE - MONITOR NO. 500-1

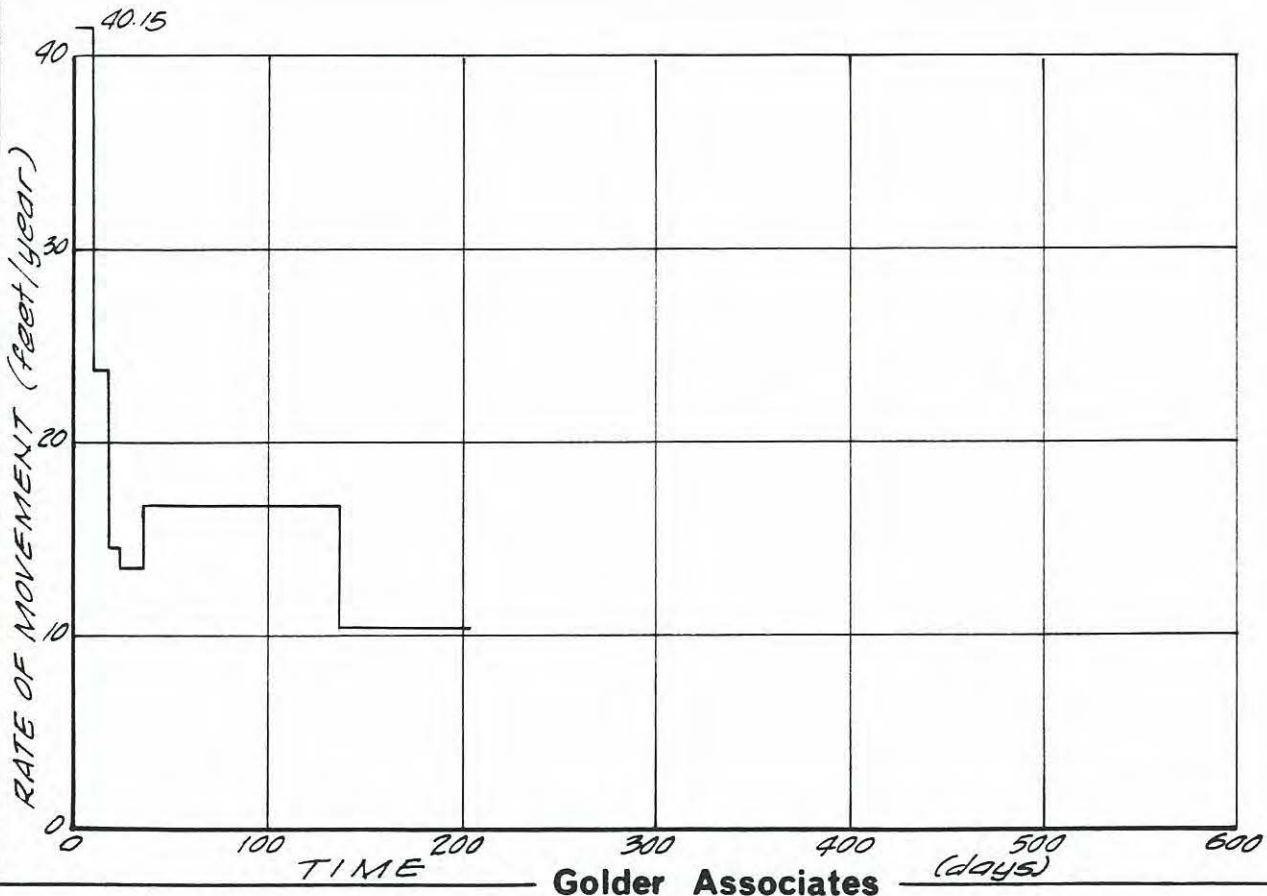
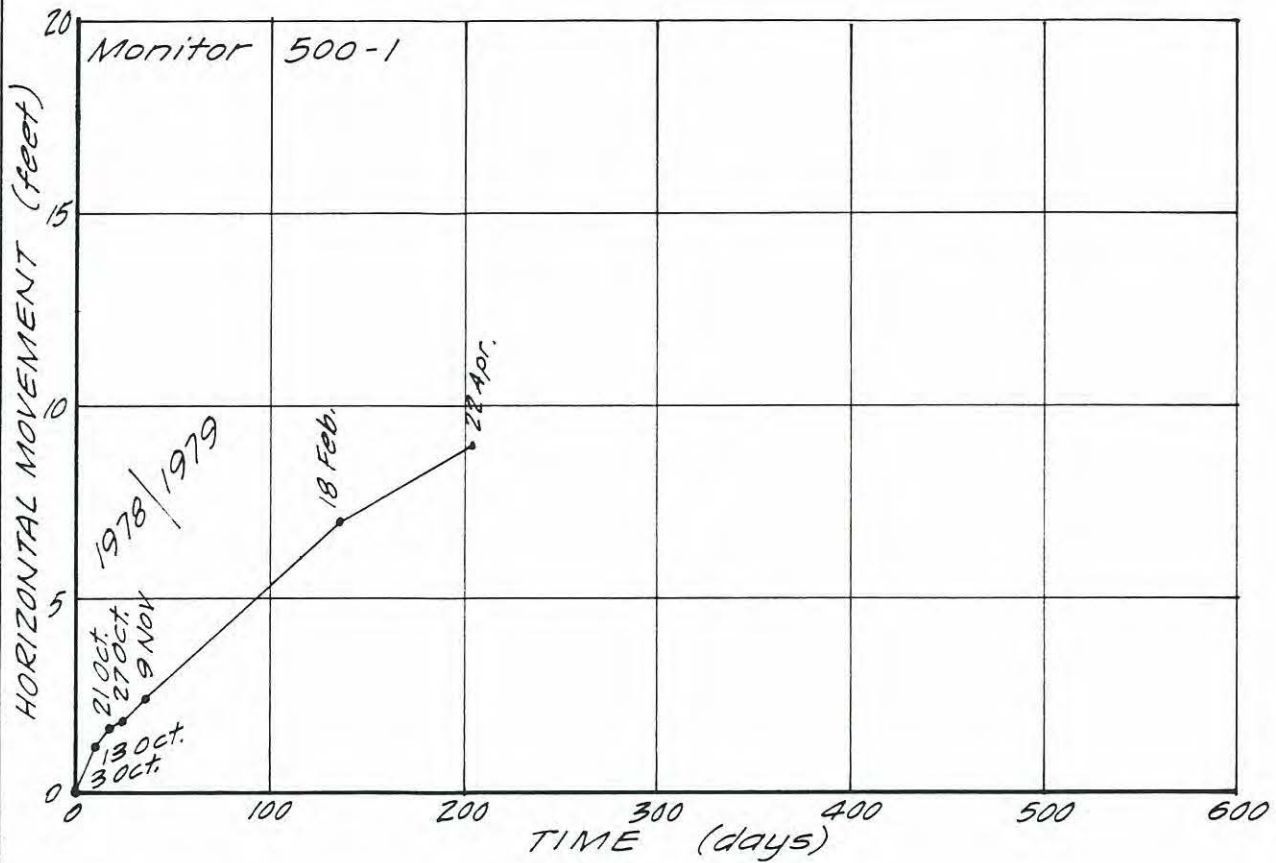
Figure 500-1-1

Project No. 772-1016
 Date: Apr. '79
 Reviewer: [Signature]
 Drawn: [Signature]



TAILING PILE - MONITOR NO. 500-1

Figure 500-1-2

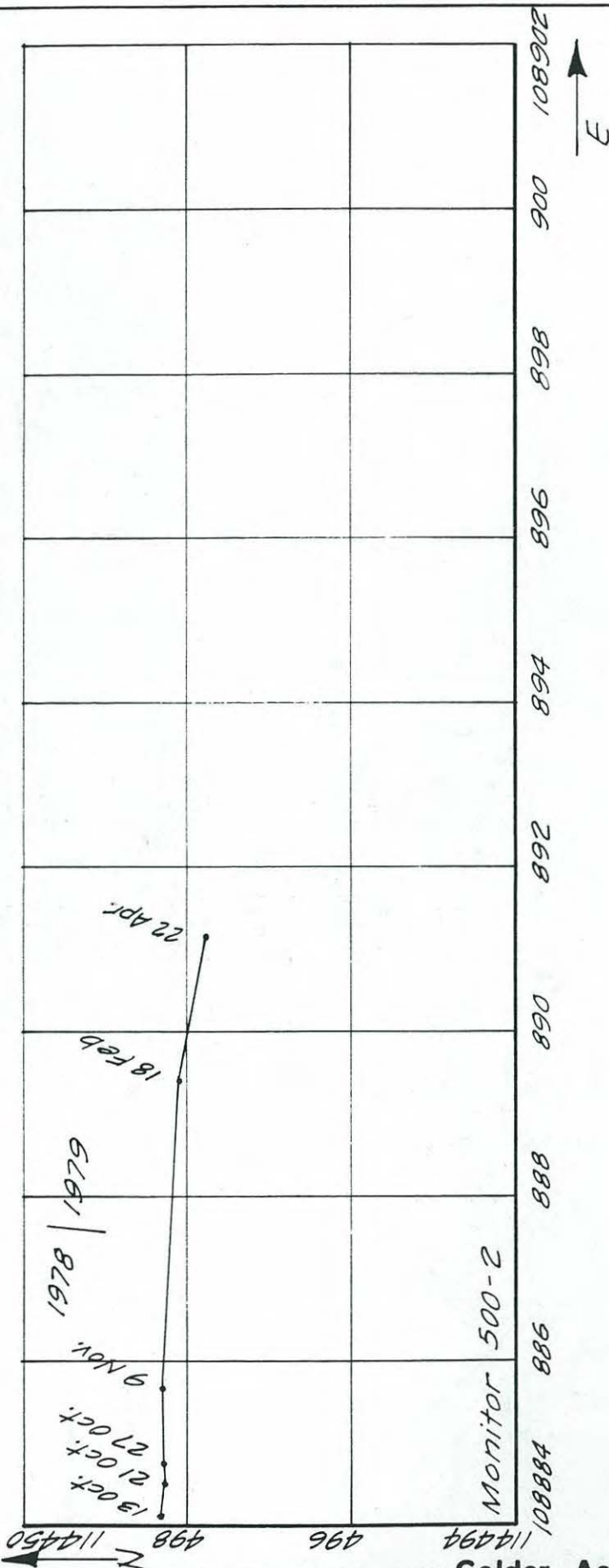


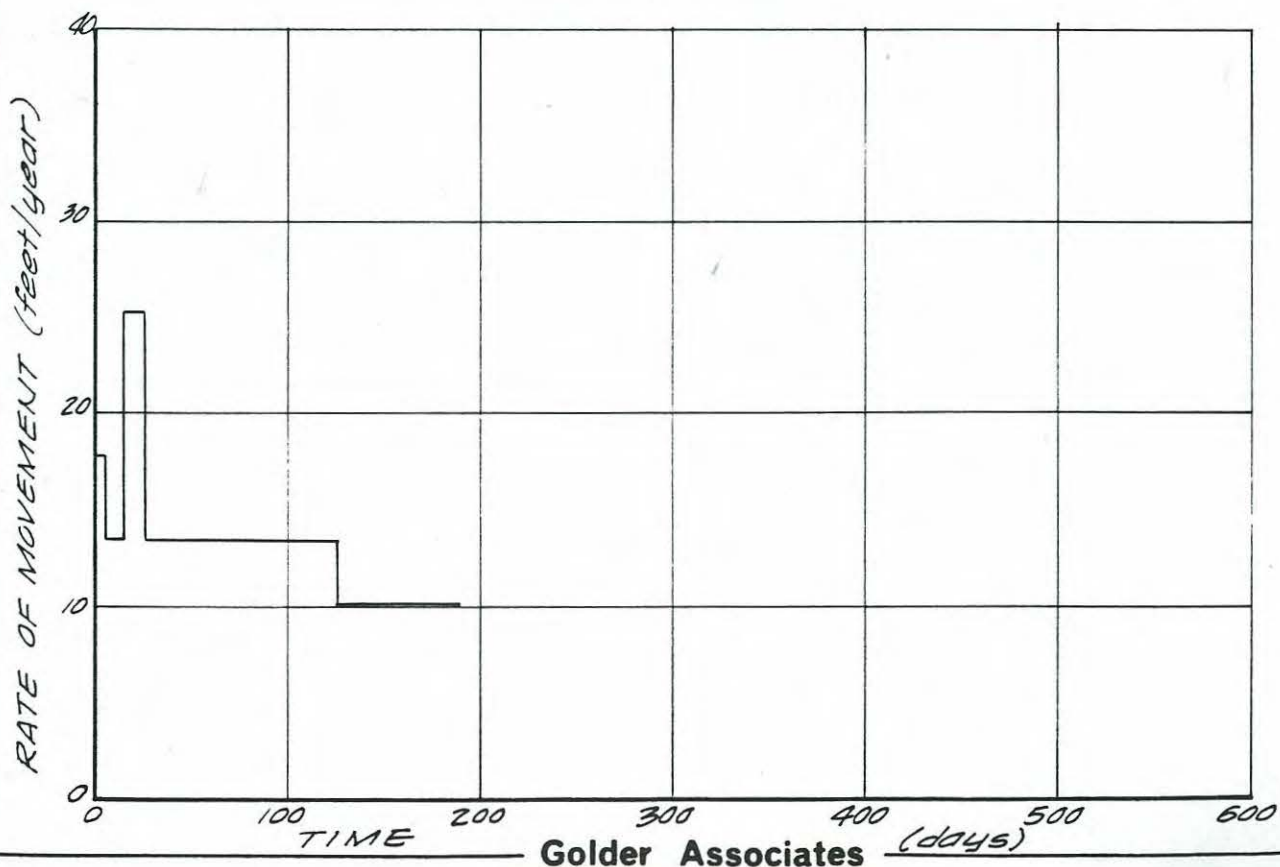
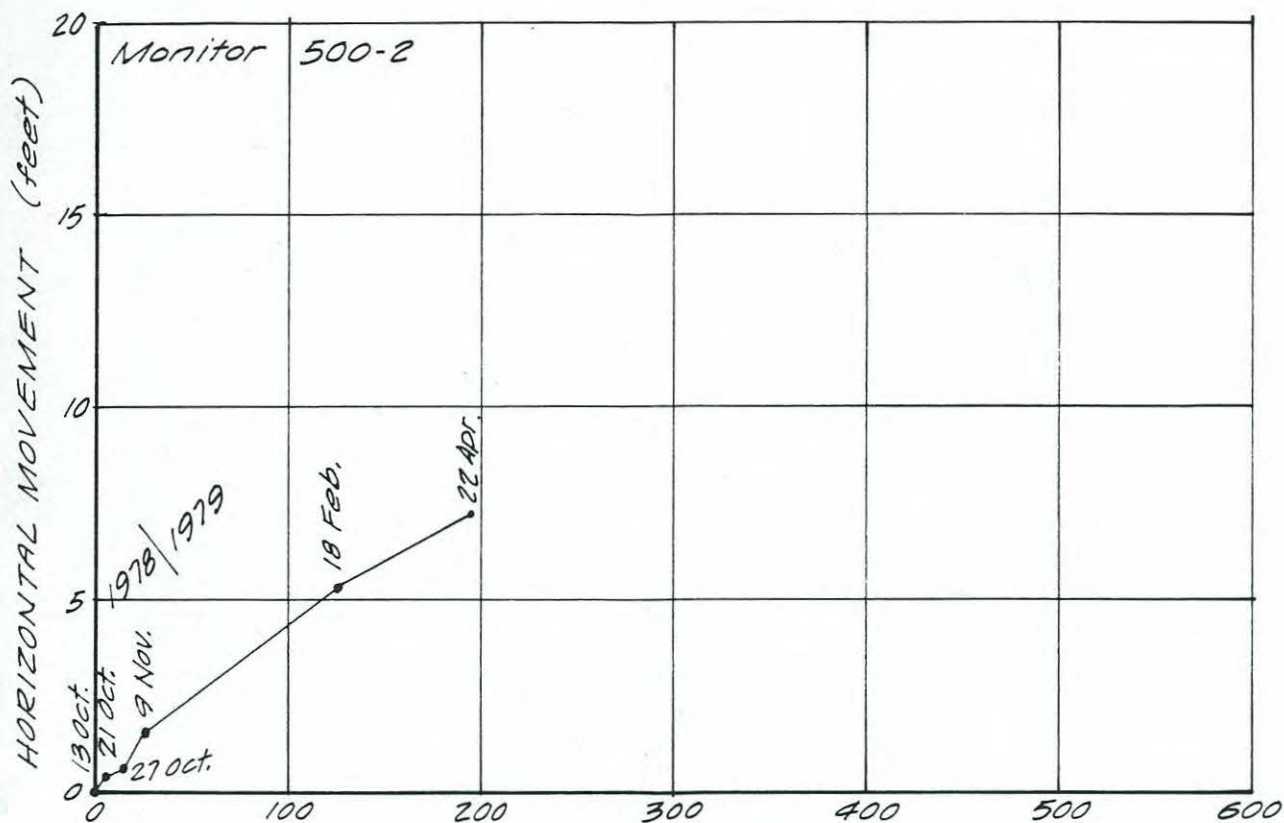
Project No. 172-1016 Drawn 179. Reviewed Date Apr. '79

TAILING PILE - MONITOR NO. 500-2

Figure 500-2-1

Project No. 772-1016 Drawn by ng Reviewed Date Apr. '79





Project No. 712-1016

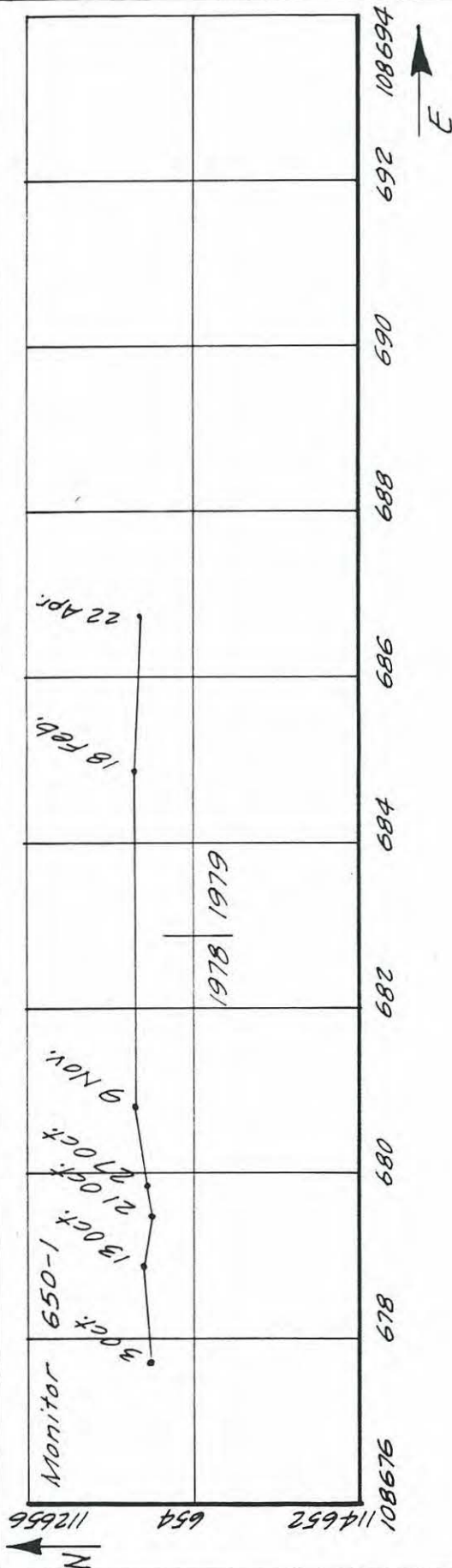
Date

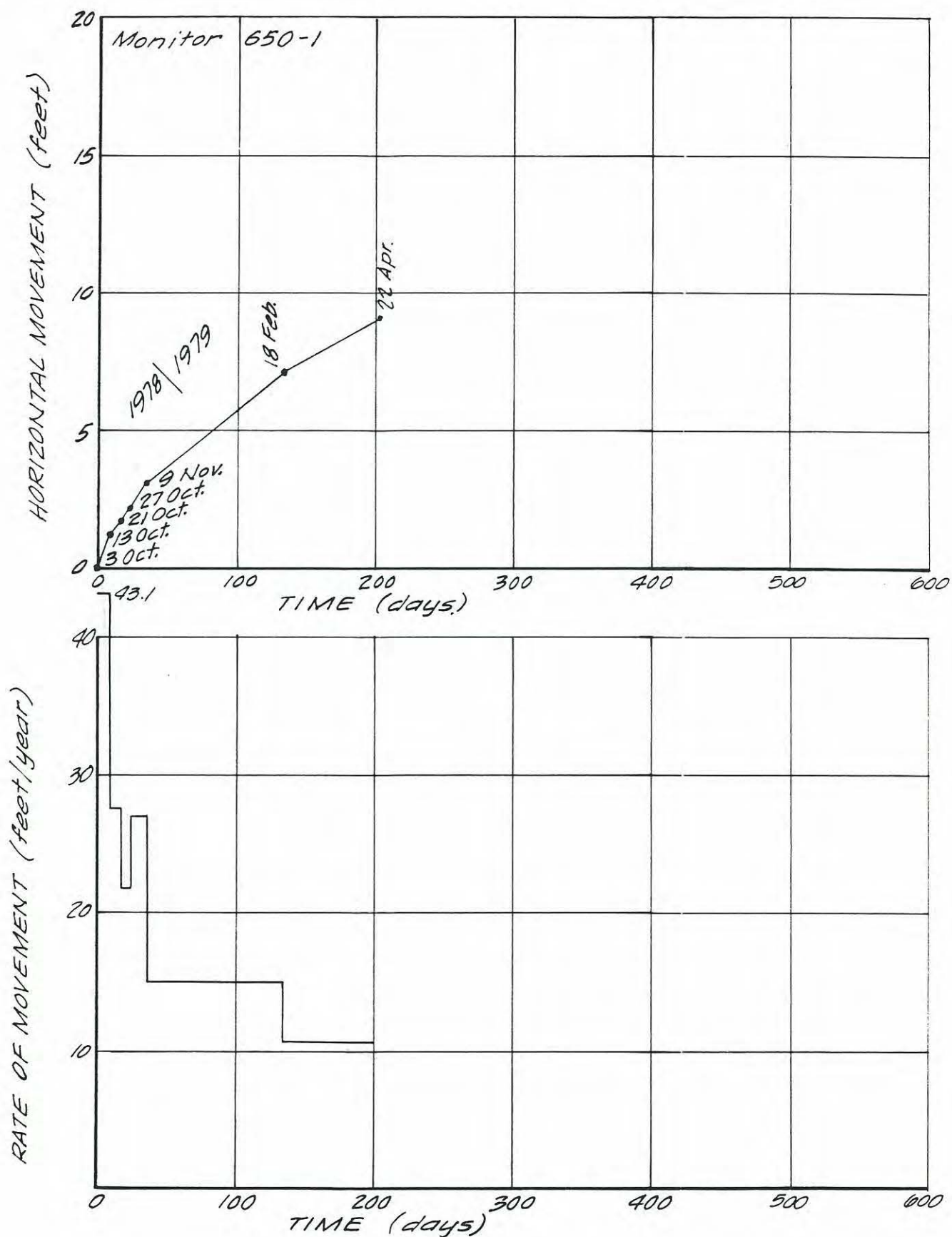
Drawn

Ing

Reviewed

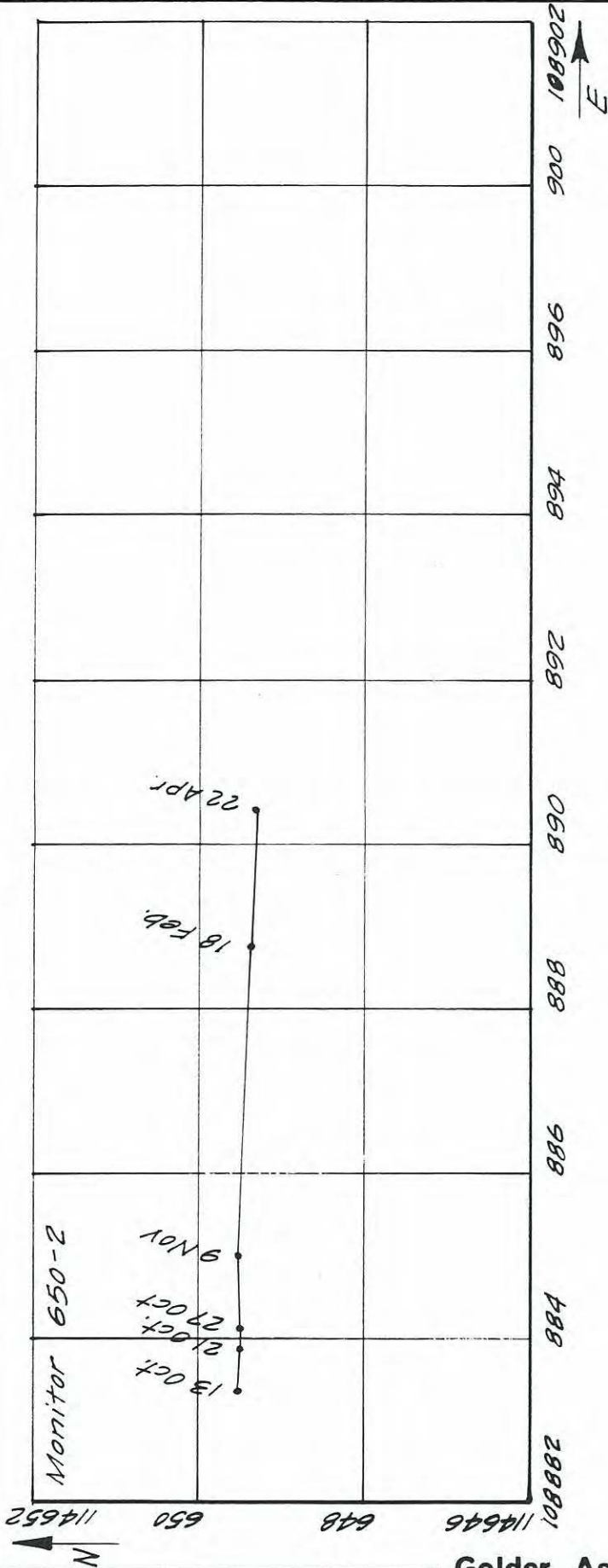
Apr. '79

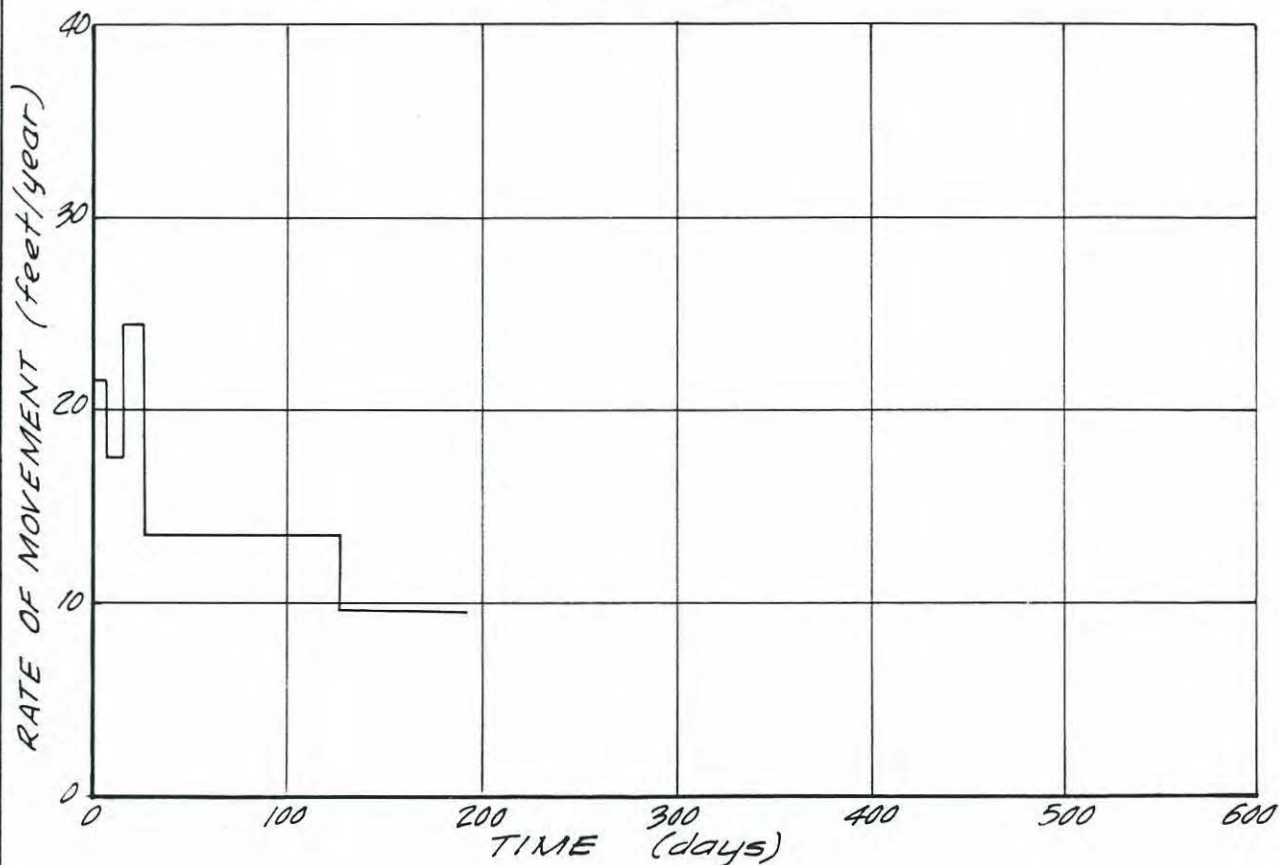
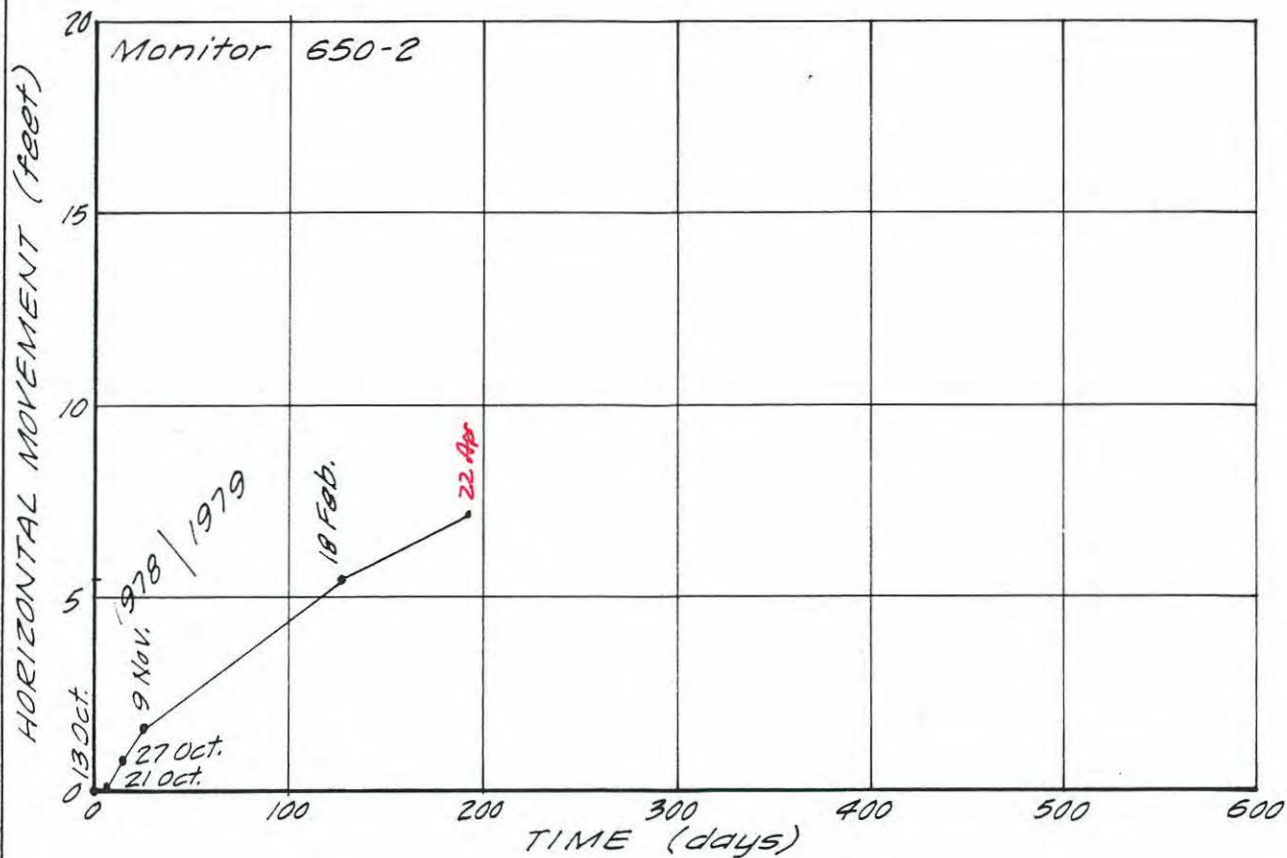




TAILING PILE - MONITOR NO. 650-2 Figure 650-2-1

Project No. 772-1016 Crown Ing Reviewed Date Apr. '79





Project No. 172-1010 Drawn: 1/19 Rev: w0.2 Date: Apr. '79