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TECHNICAL REPORT HL-90-20



US Army Corps of Engineers

AD-A231 281

# DREDGING ALTERNATIVES STUDY CUBITS GAP, LOWER MISSISSIPPI RIVER

Report 2

TABS-2 NUMERICAL MODEL INVESTIGATION

VOLUME II  
APPENDIX B

by

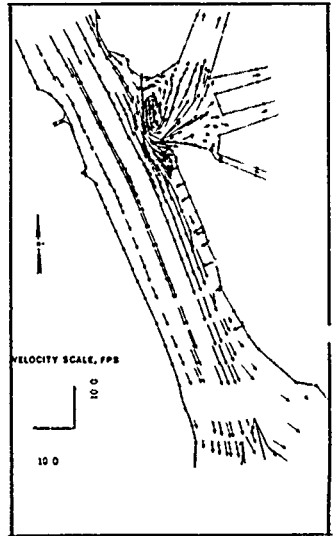
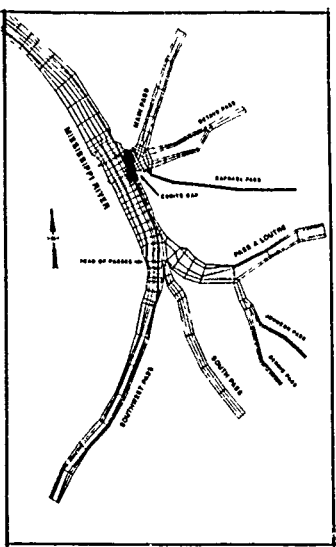
H. J. Lin, W. D. Martin, D. R. Richards

Hydraulics Laboratory

DEPARTMENT OF THE ARMY

Waterways Experiment Station, Corps of Engineers

3909 Halls Ferry Road, Vicksburg, Mississippi 39180-6199



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November 1990

Report 2 of a Series

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Prepared for US Army Engineer District, New Orleans  
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(such as dredging.)

13. (Concluded).

mathematical models of sedimentation

Results from the sedimentation modeling showed that the best nonstructural plan was advance maintenance. It provided a smaller quantity of shoaling than the sediment trap plan and affected a smaller area of the navigation channel. Both nonstructural plans, however, would increase the channel shoaling rate compared to existing conditions. For the structural plan, Plan 1 with a 2,800-ft-long angle dike and 800-ft-long headland dike provided the least amount of shoaling of any plan tested. All three dike plans tested would result in a substantial reduction in channel shoaling. Results from the hydrodynamic modeling showed that dike plan 1 returned the flow distribution at Cubits Gap to the amount expected with the supplement II works in place. This study did not address long-term sedimentation effects within Cubits Gap. If one of the structural plans is selected for implementation, a detailed study in the vicinity of Cubits Gap is recommended to optimize the performance of the structure.

(B)

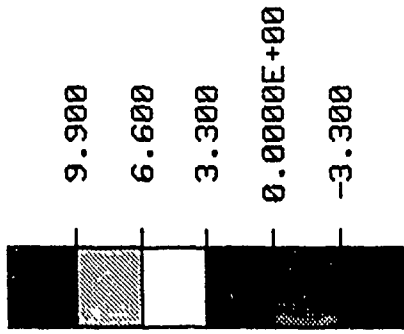
APPENDIX B: PLOTS OF BED CHANGE AND  
SUSPENDED SEDIMENT CONCENTRATION

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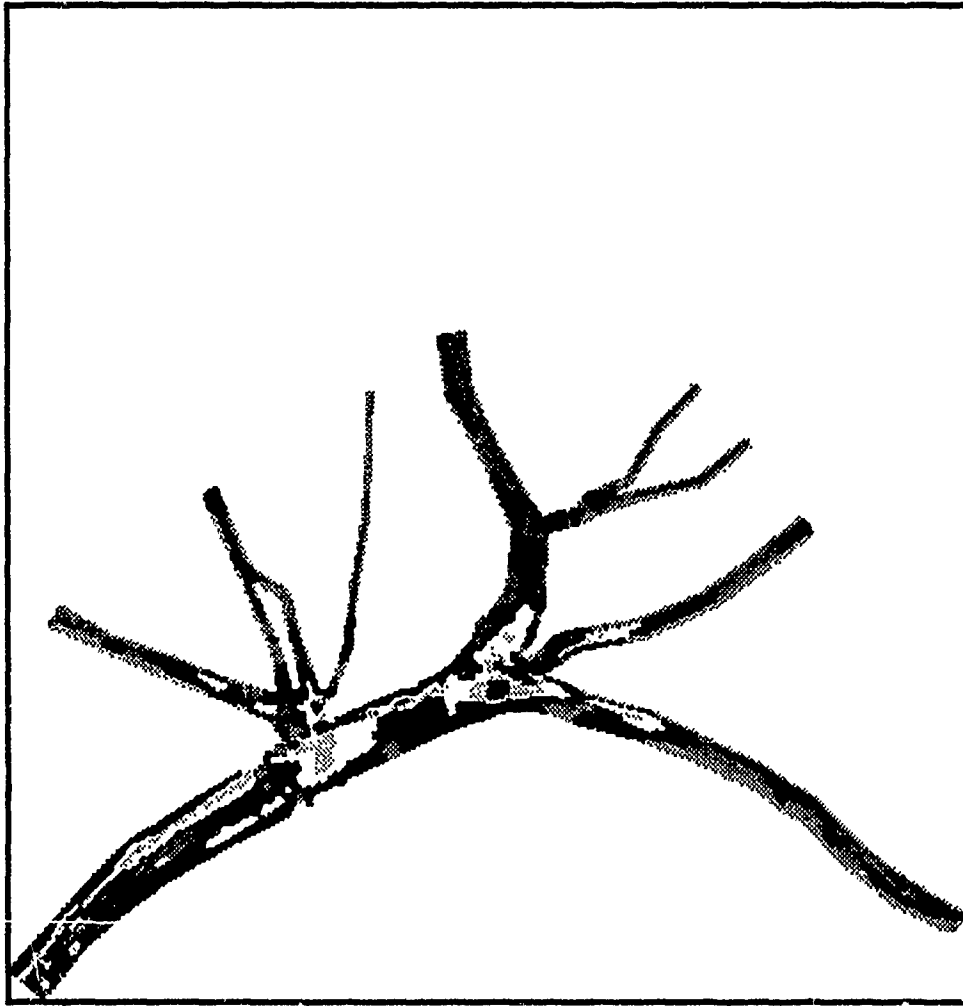


\*Original contains color  
plates: All DTIC reproductions  
will be in black and  
white\*

BED  
CHANGE

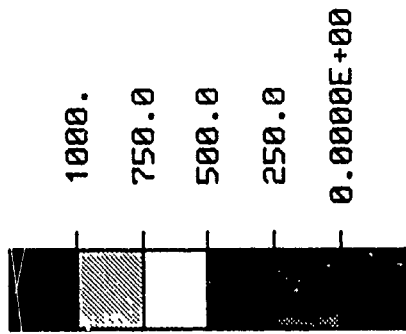


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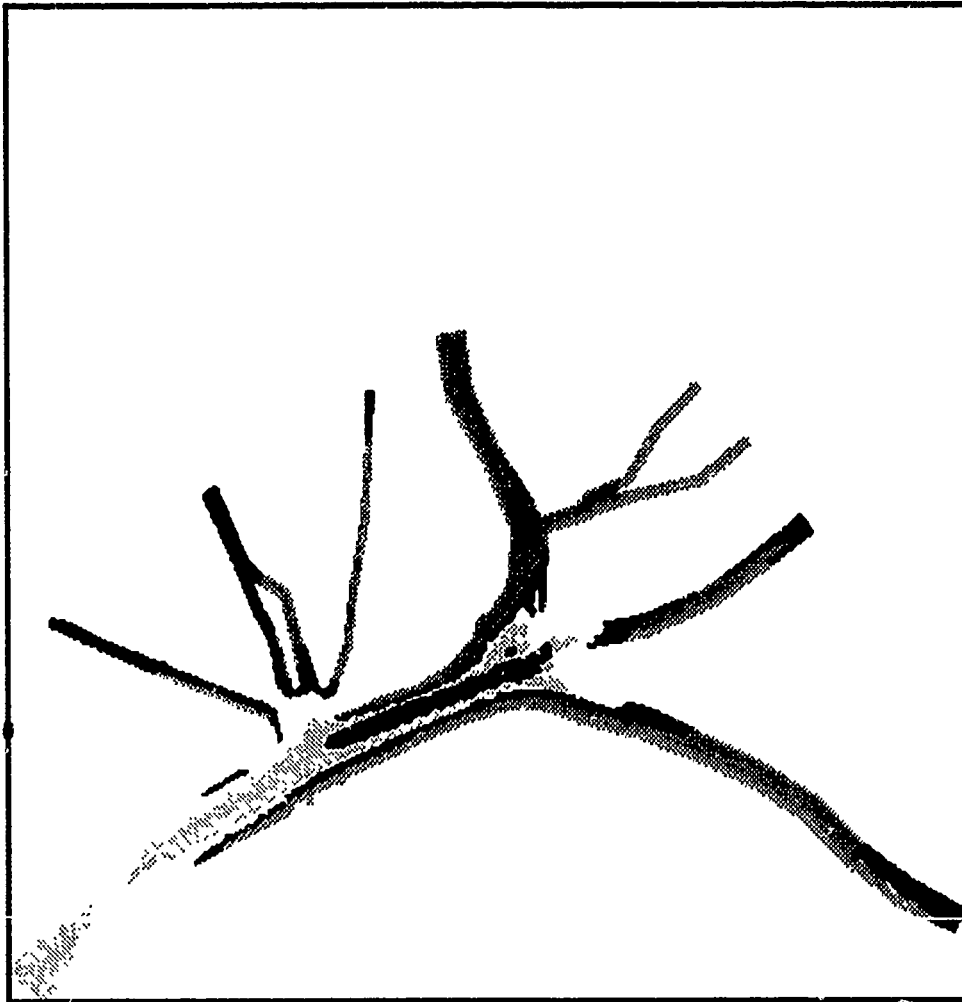


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BASE CONDITION  
7 FEBRUARY-28 MARCH 1989

SEDIMENT  
CONCENTRATION

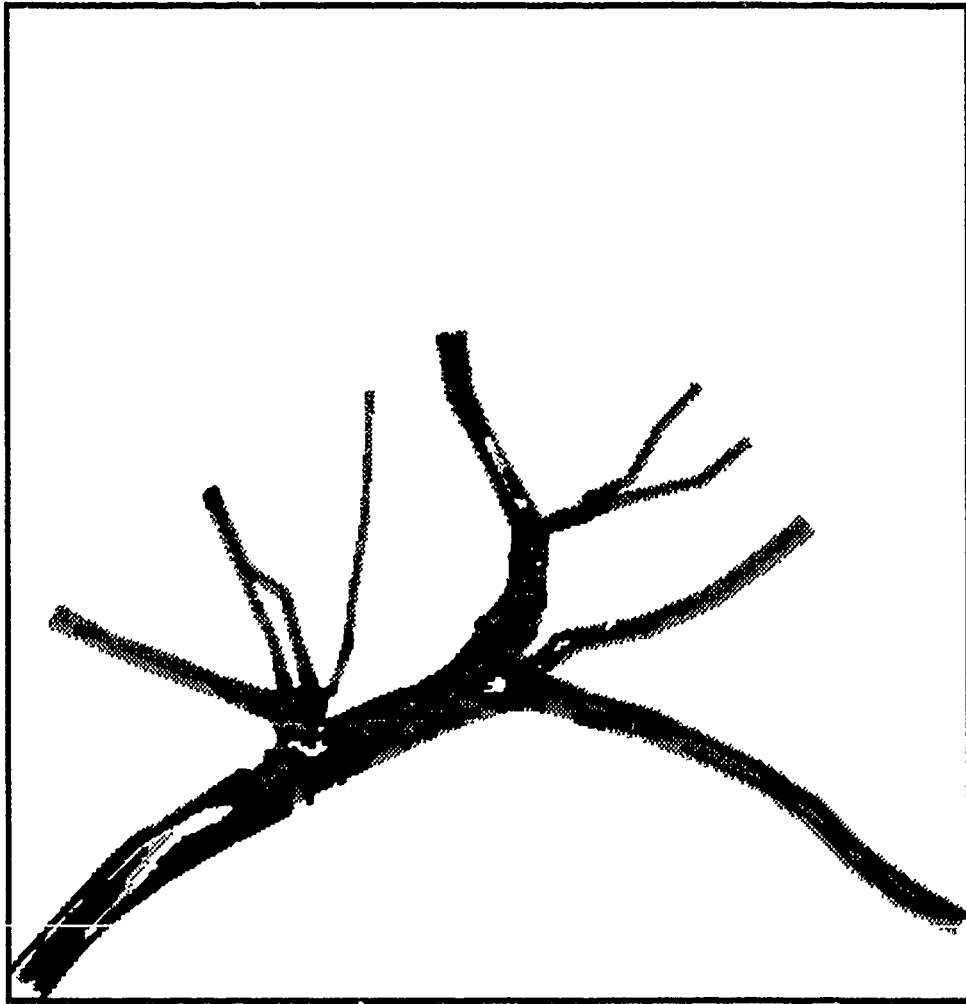
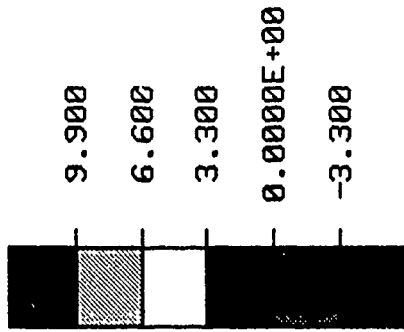


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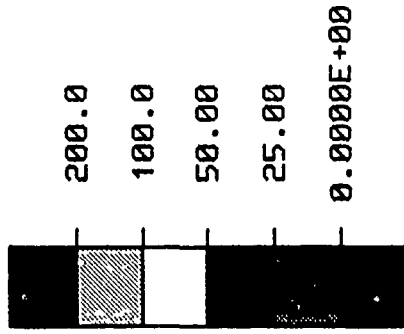
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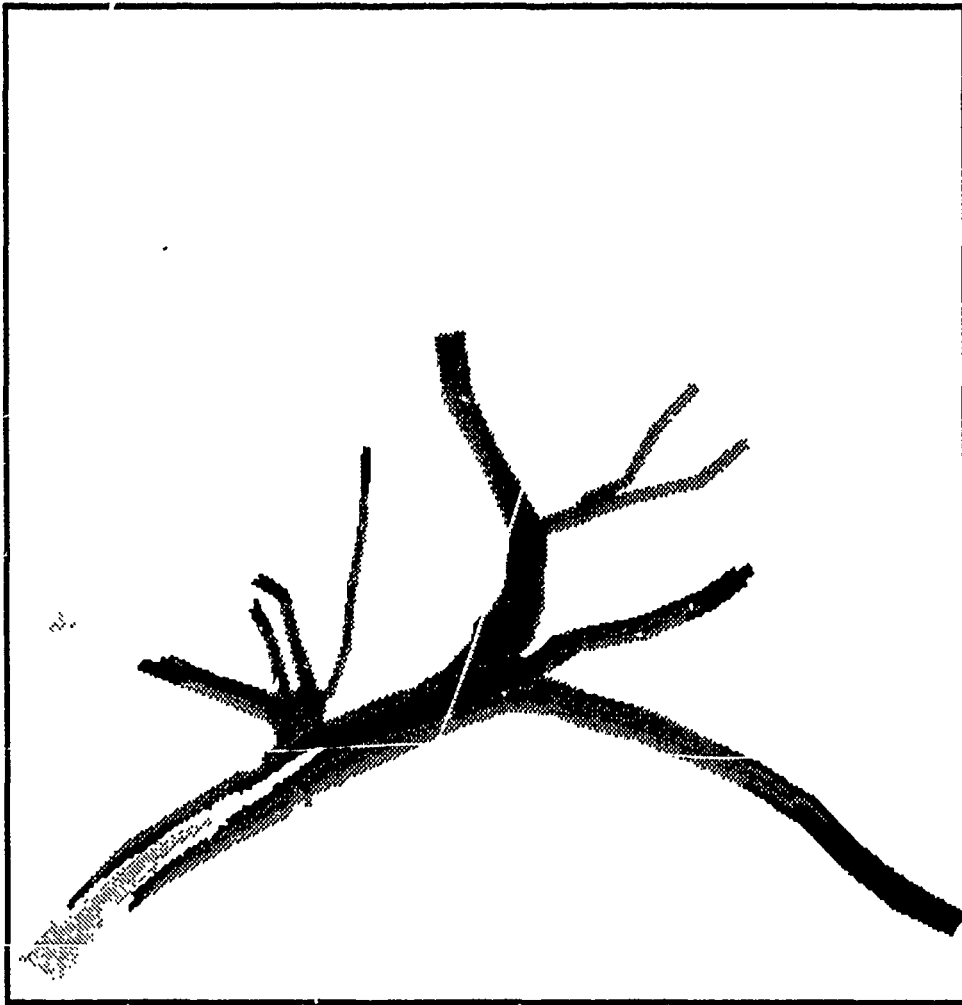


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CONCENTRATION

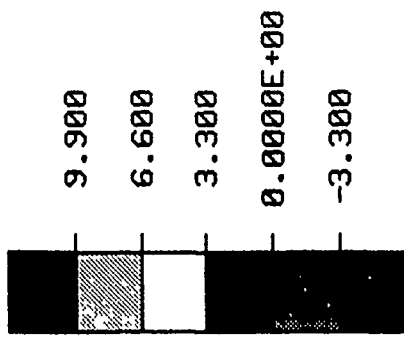


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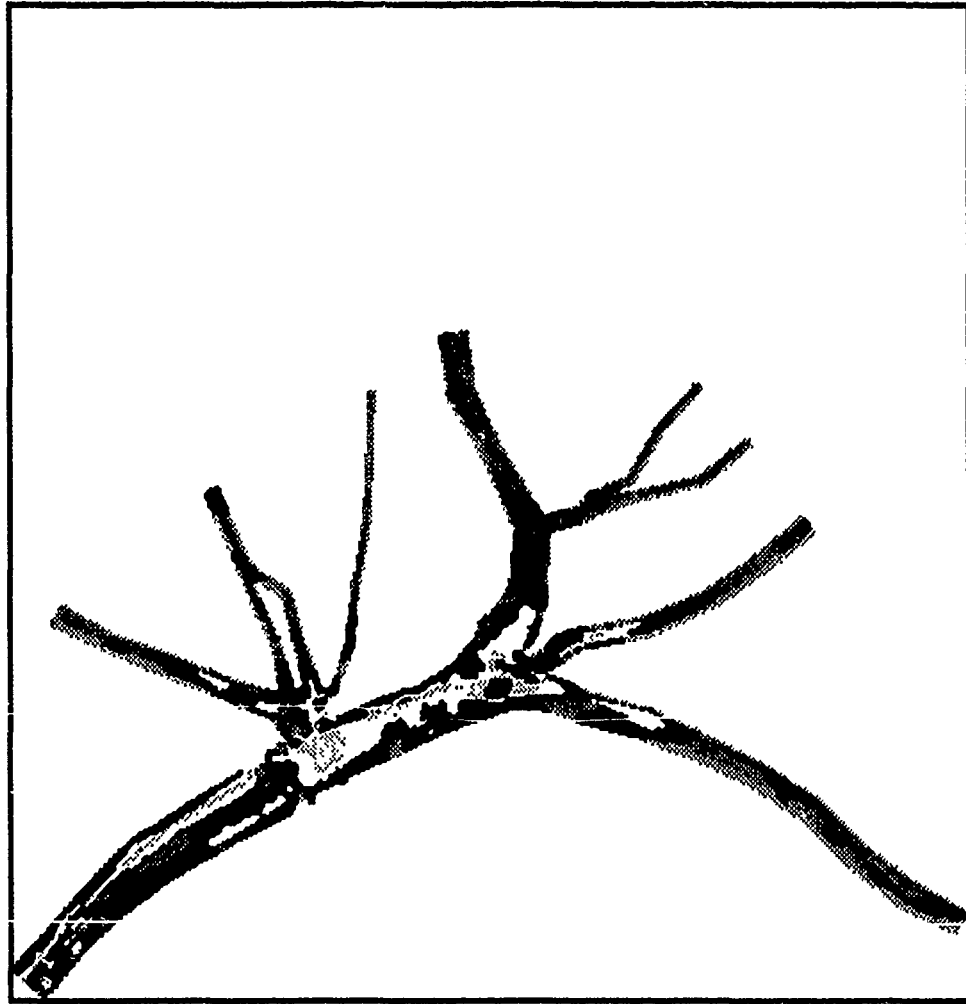


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BASE CONDITION  
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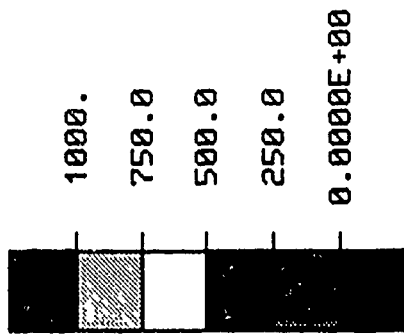


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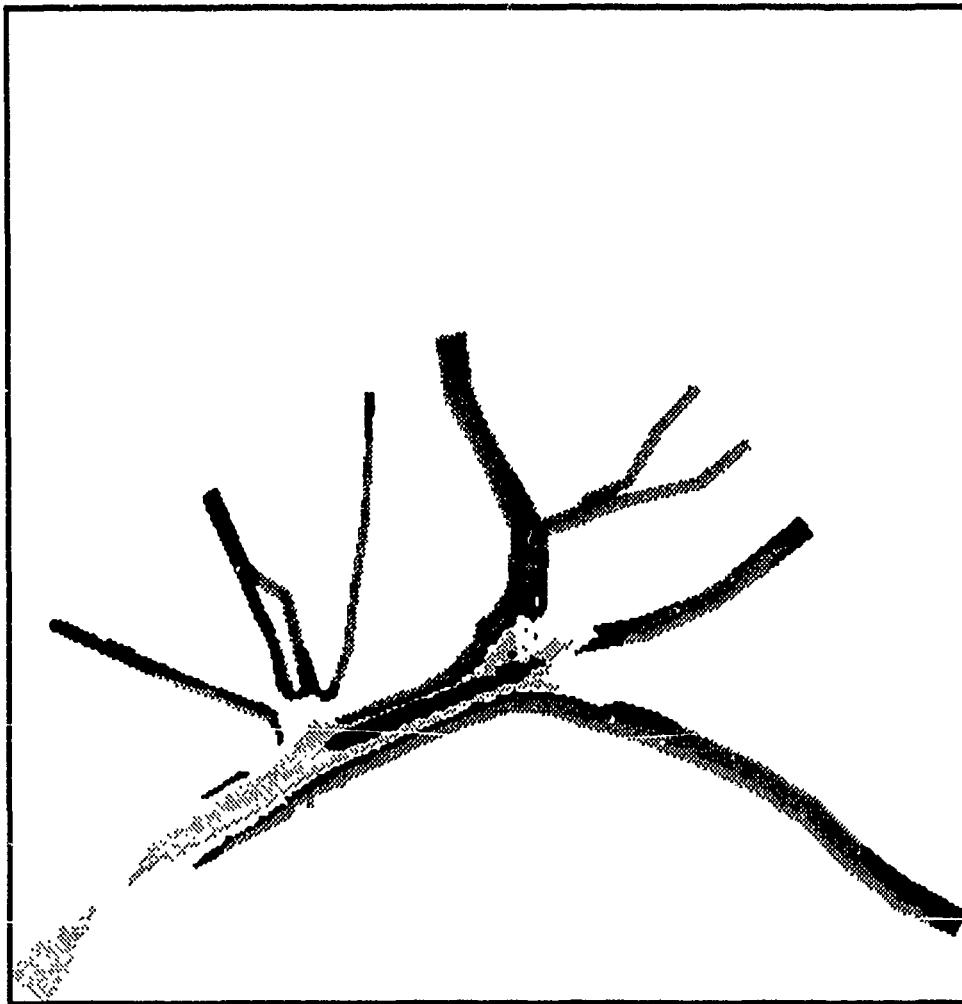


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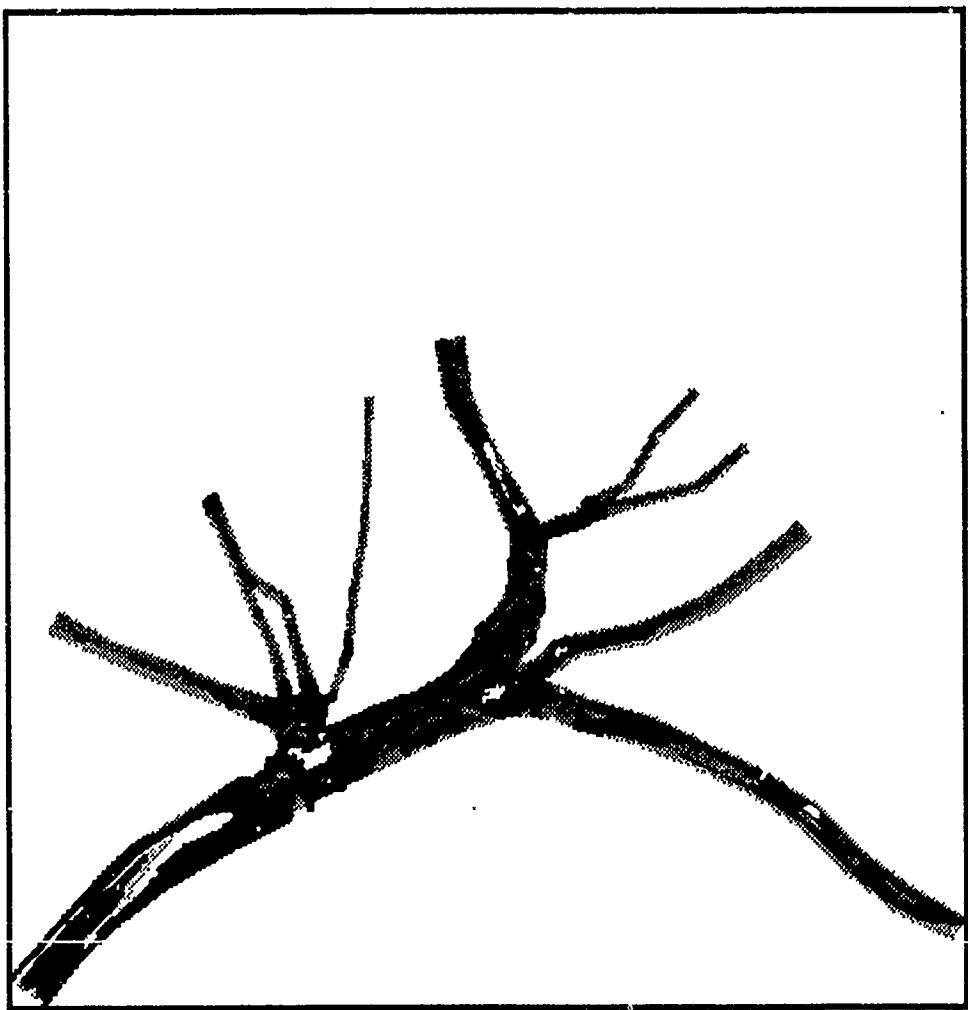
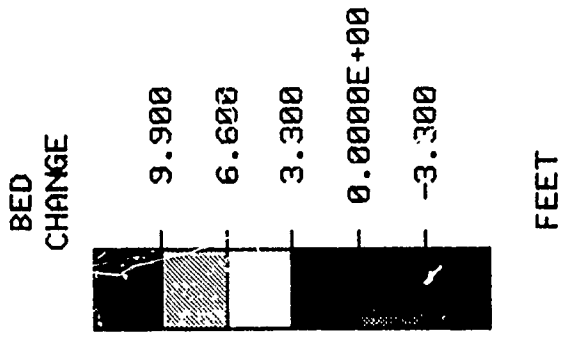
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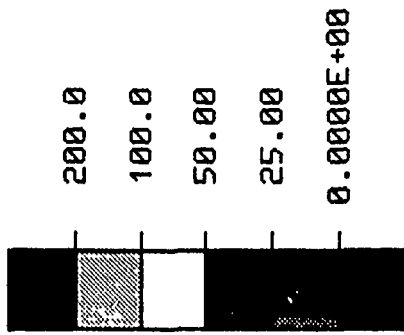


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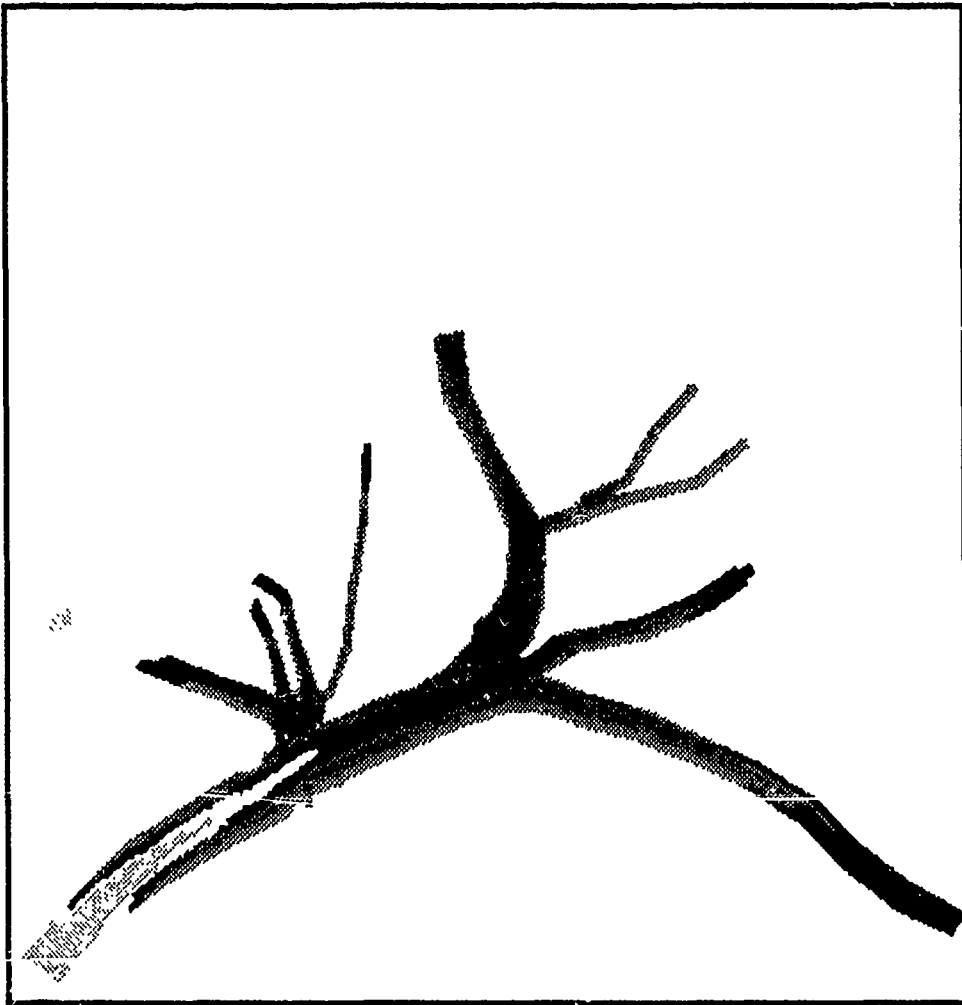


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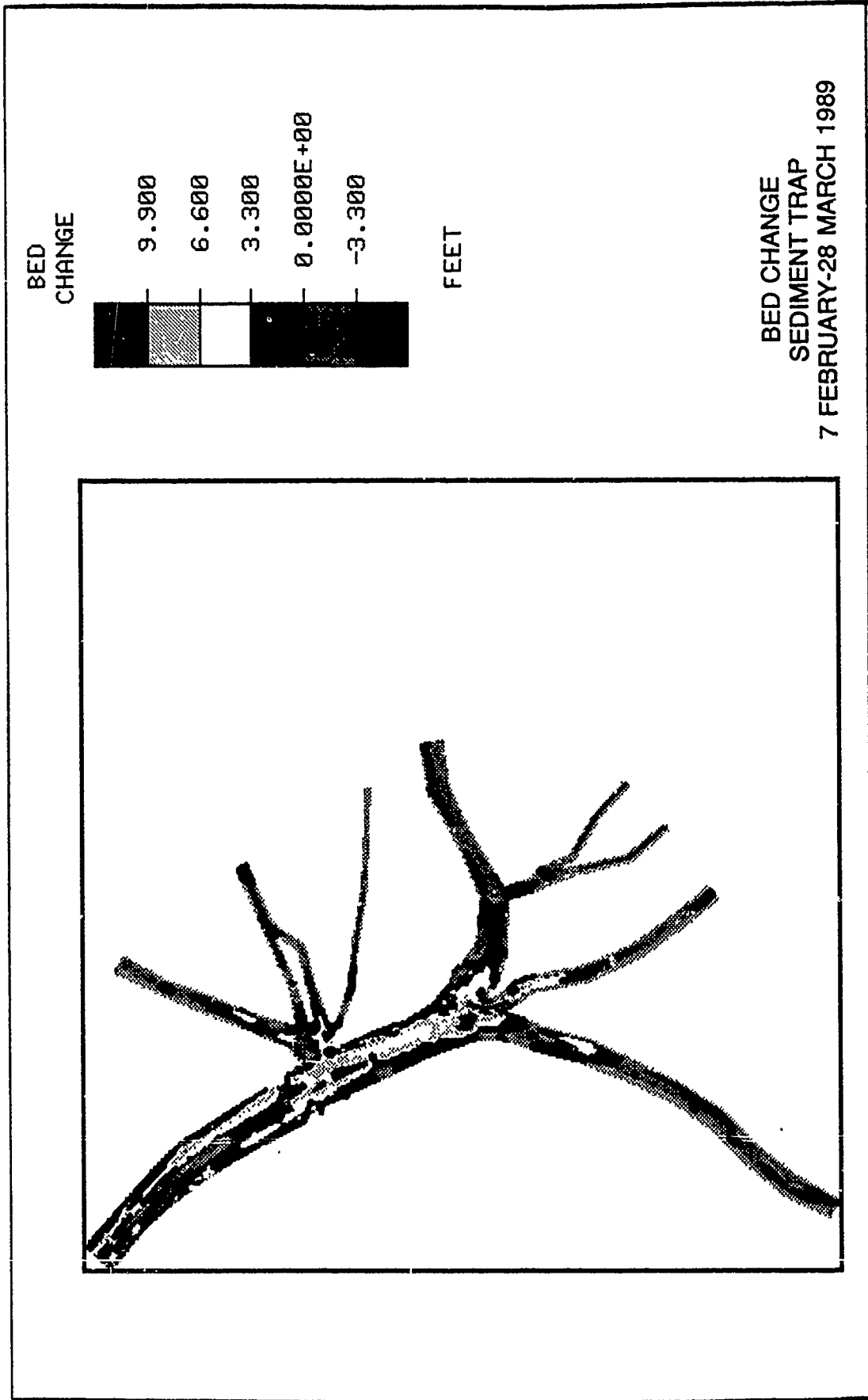
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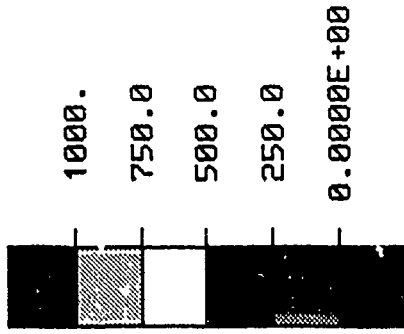


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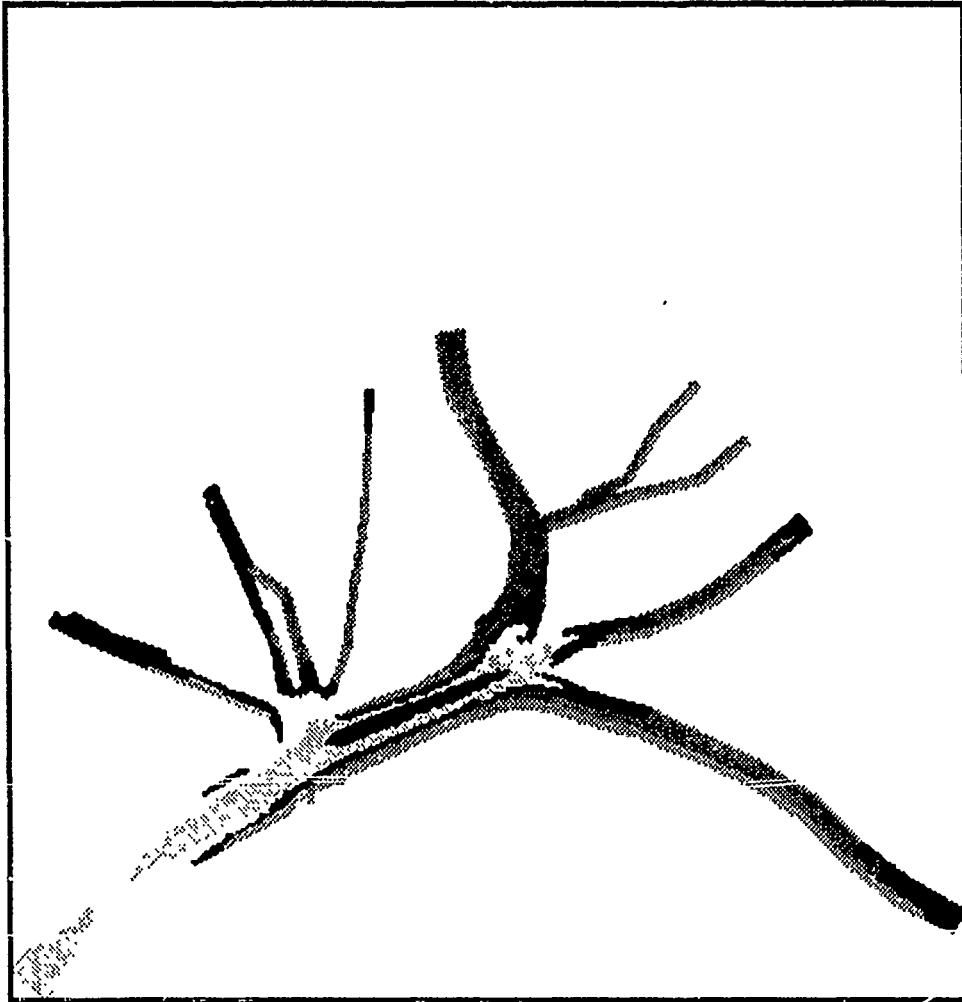


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 SEDIMENT TRAP  
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SEDIMENT  
CONCENTRATION

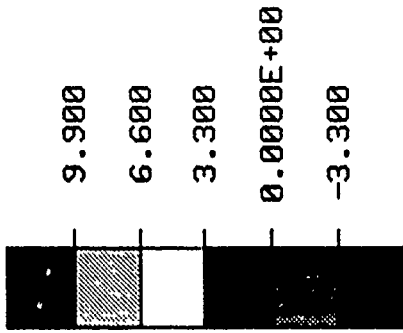


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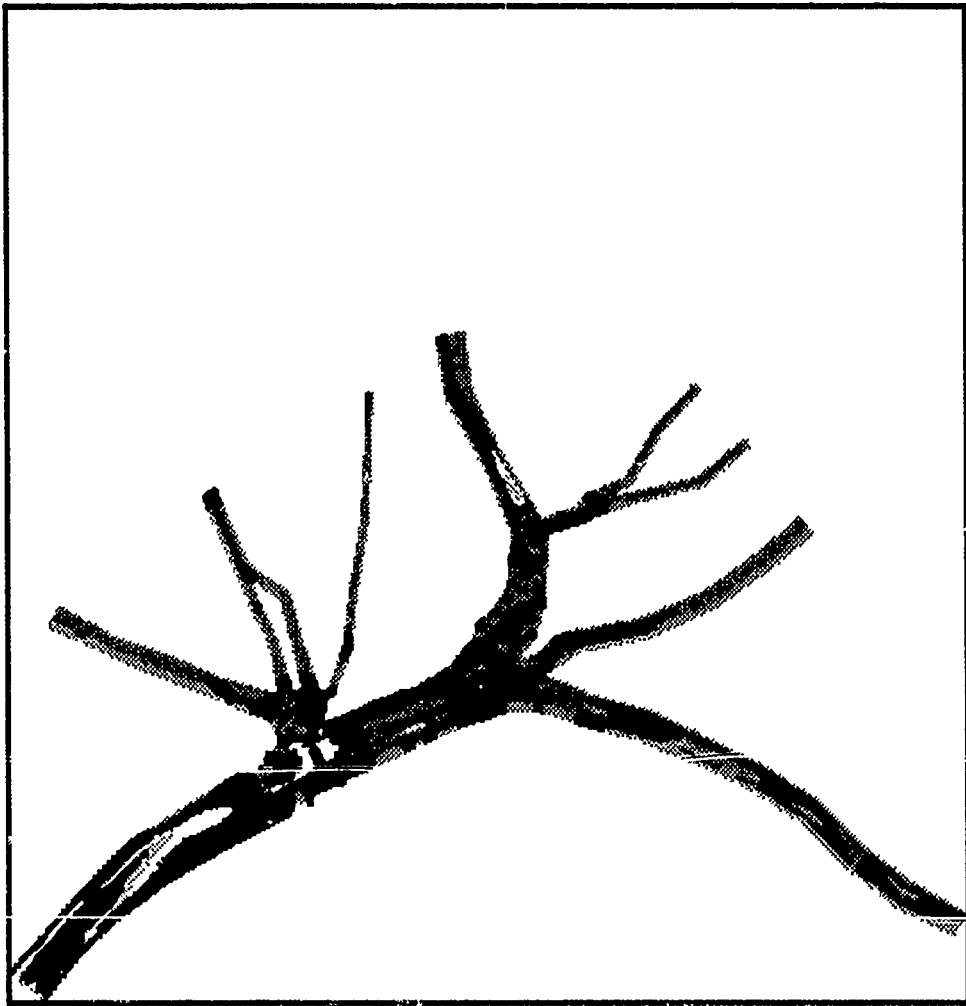


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SEDIMENT TRAP  
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CHANGE

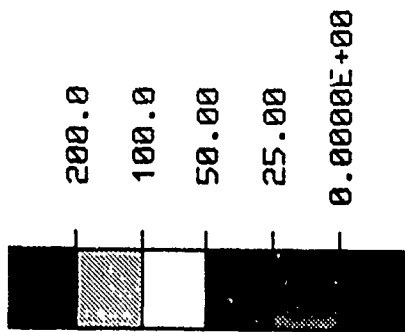


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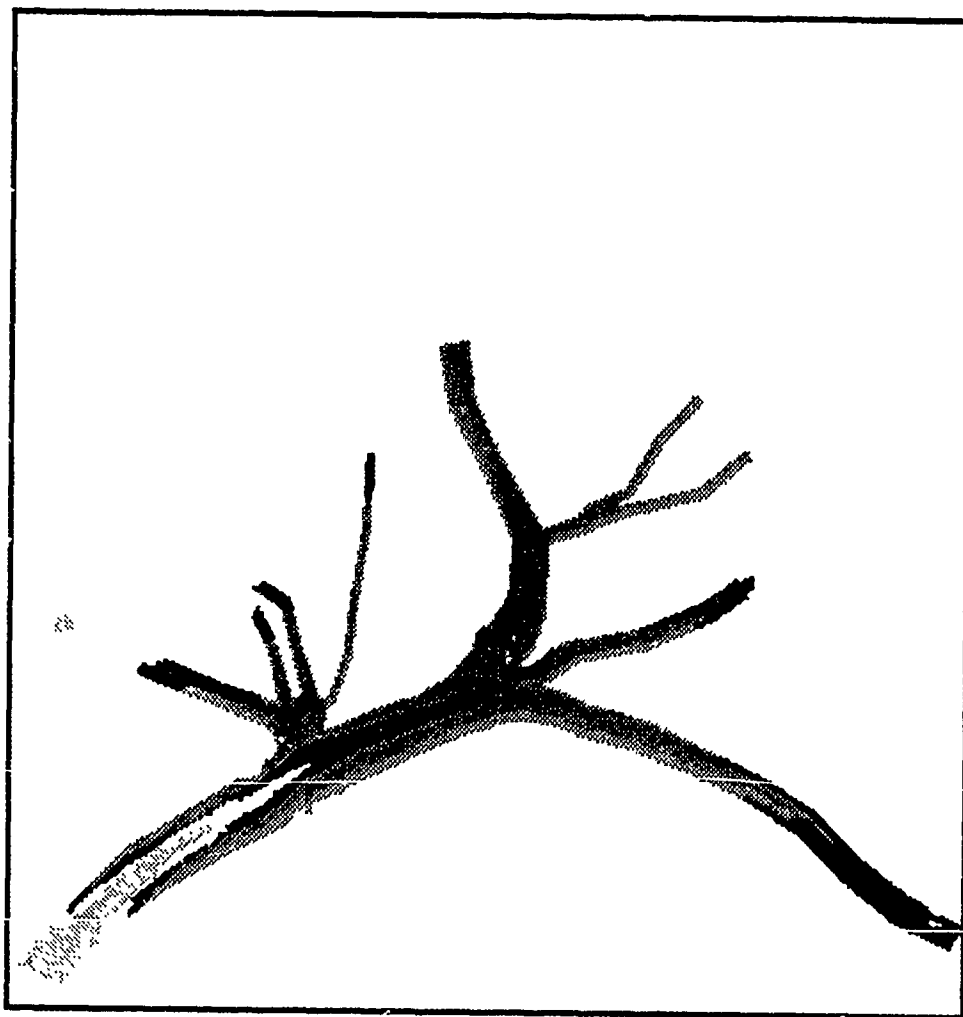


BED CHANGE  
SEDIMENT TRAP  
29 MARCH-4 MAY 1989

SEDIMENT  
CONCENTRATION



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SEDIMENT CONCENTRATION  
SEDIMENT TRAP  
29 MARCH-4 MAY 1989

BED  
CHANGE

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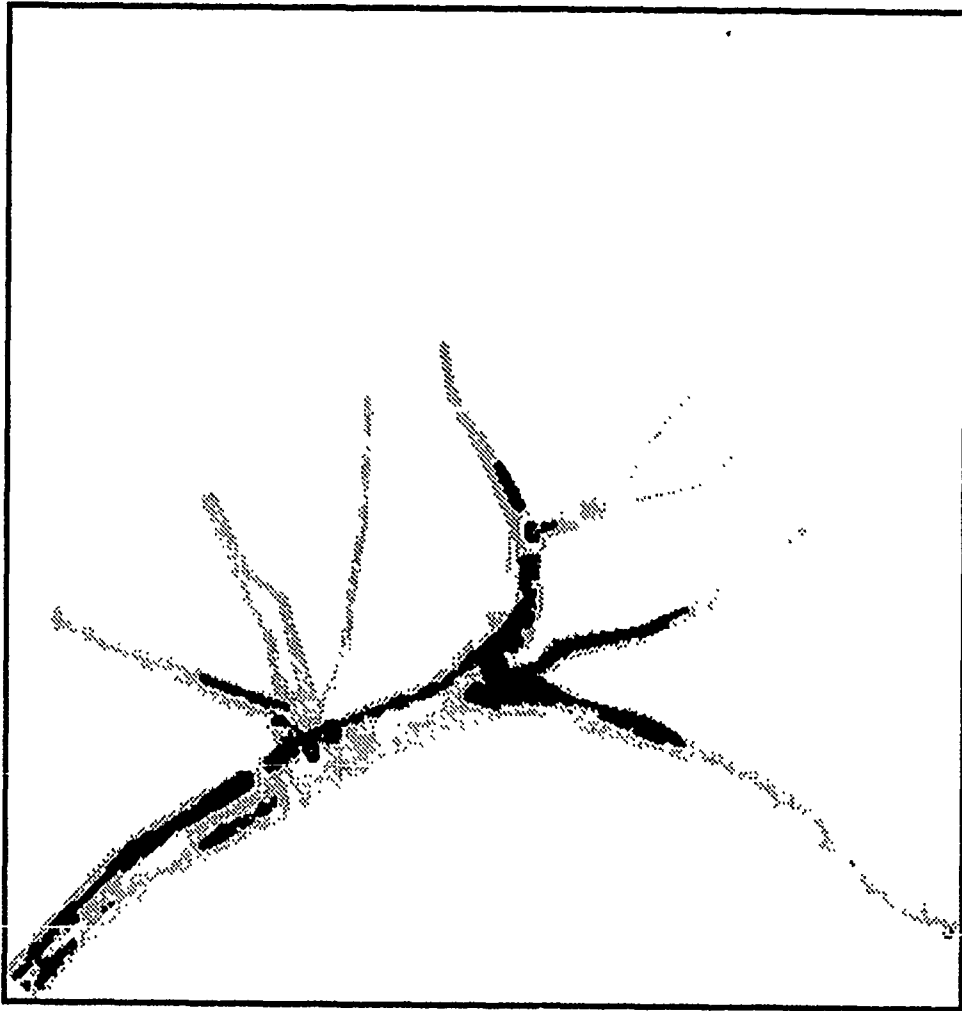
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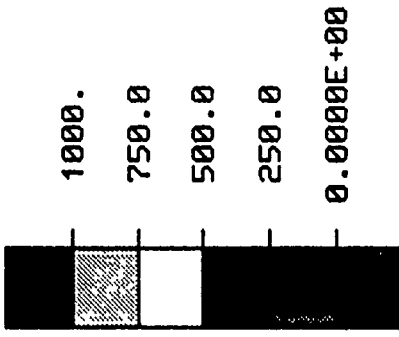
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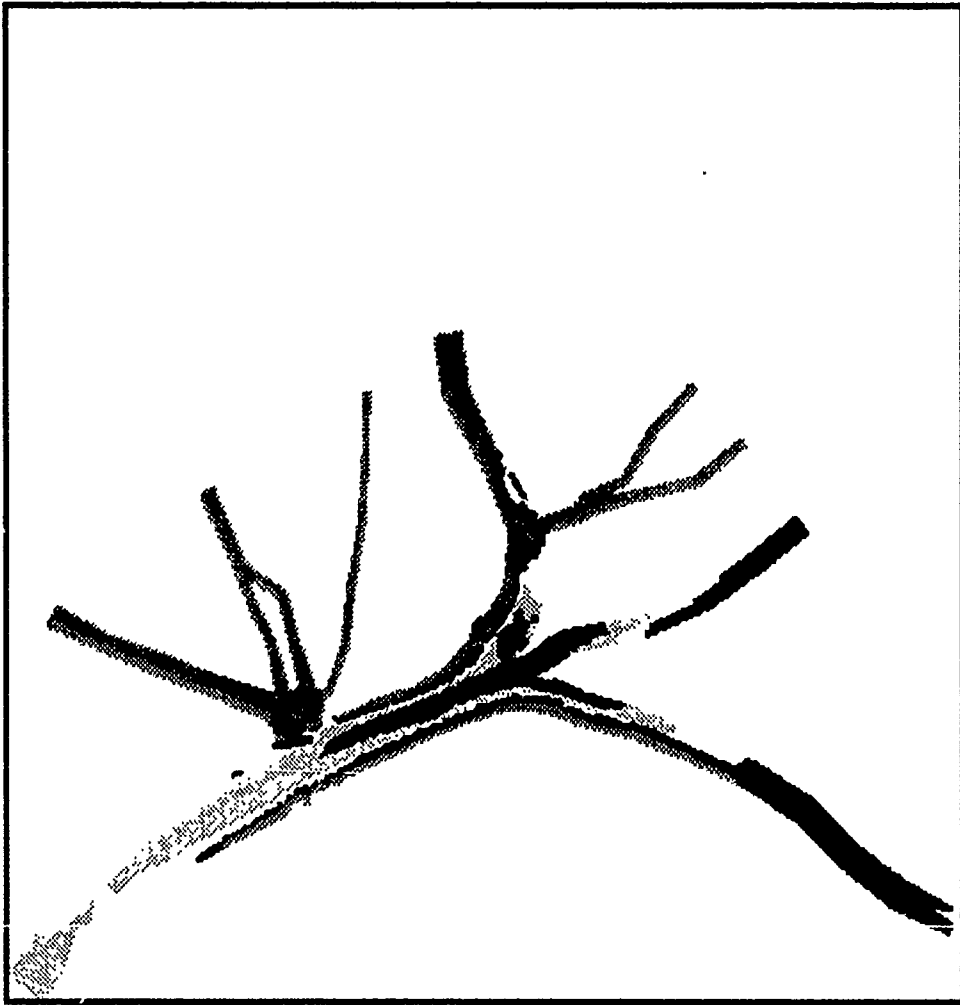


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DIKE PLAN 1  
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CONCENTRATION

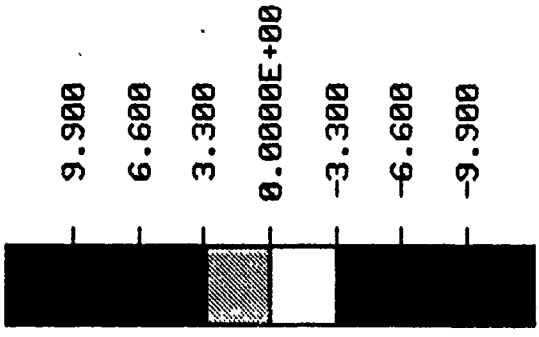


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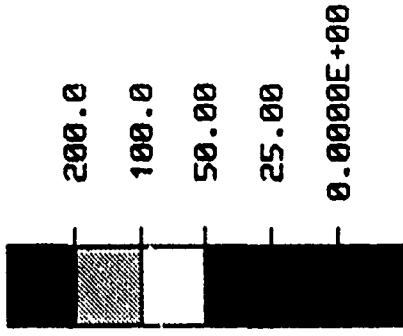


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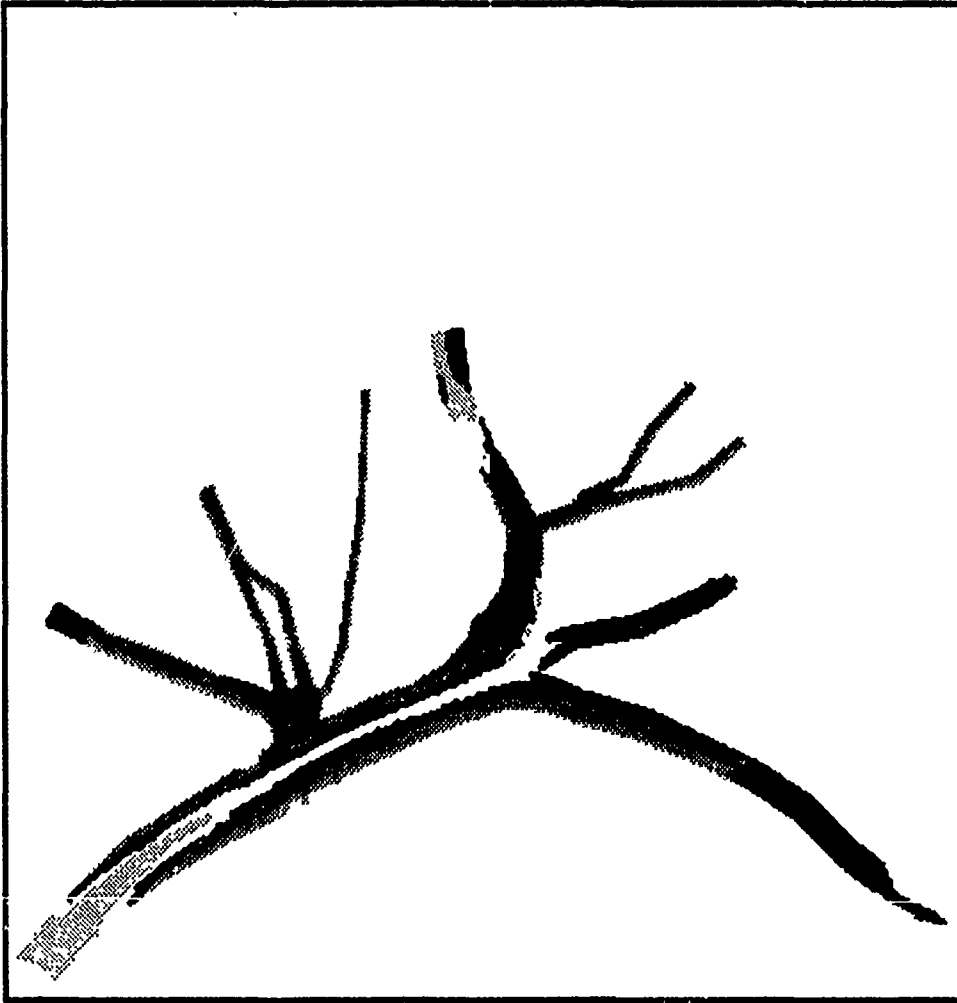


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29 MARCH-4 MAY 1989

SEDIMENT  
CONCENTRATION



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SEDIMENT CONCENTRATION  
DIKE PLAN 1  
29 MARCH-4 MAY 1989

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CHANGE

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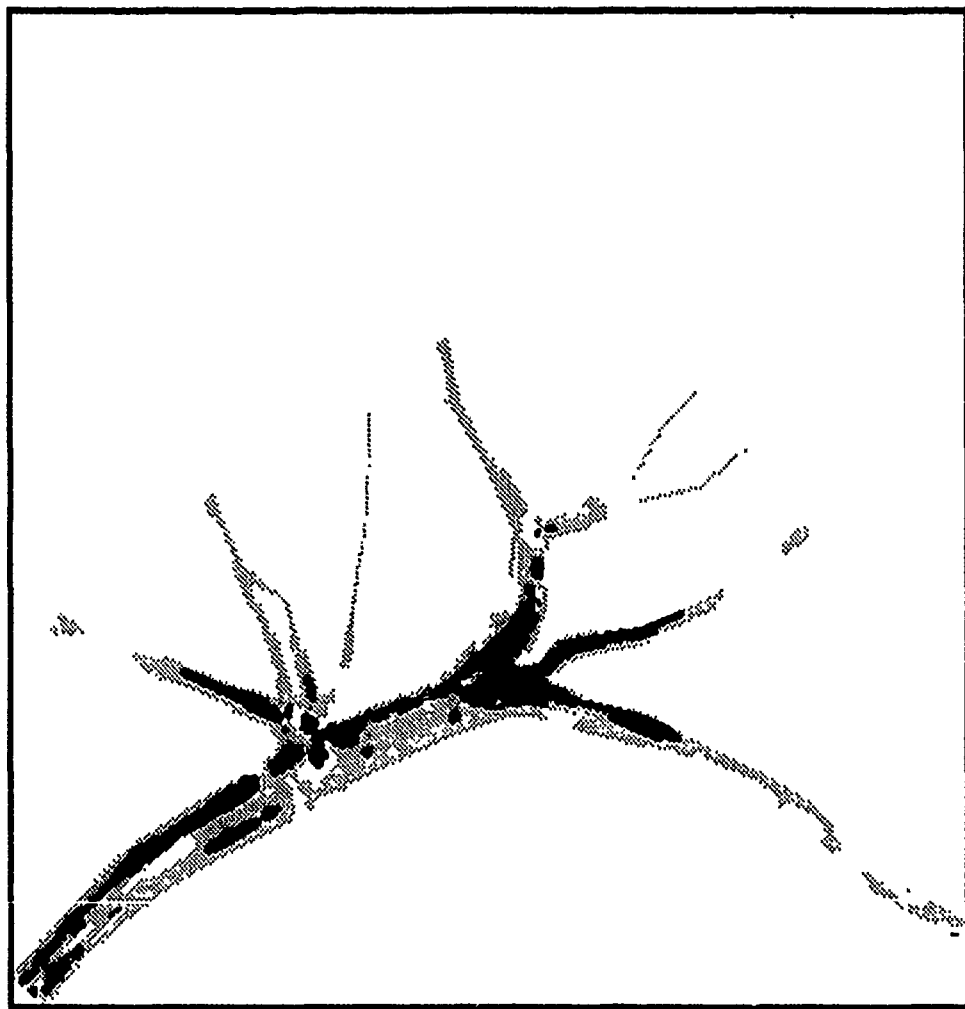
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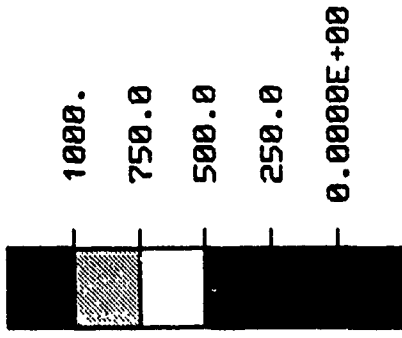


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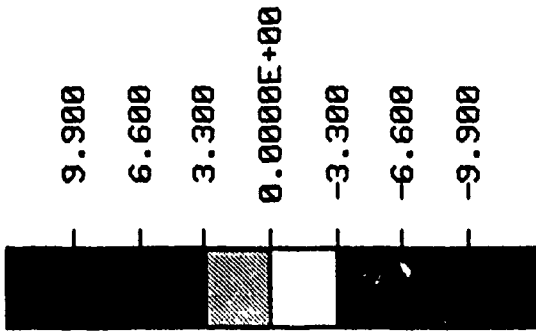


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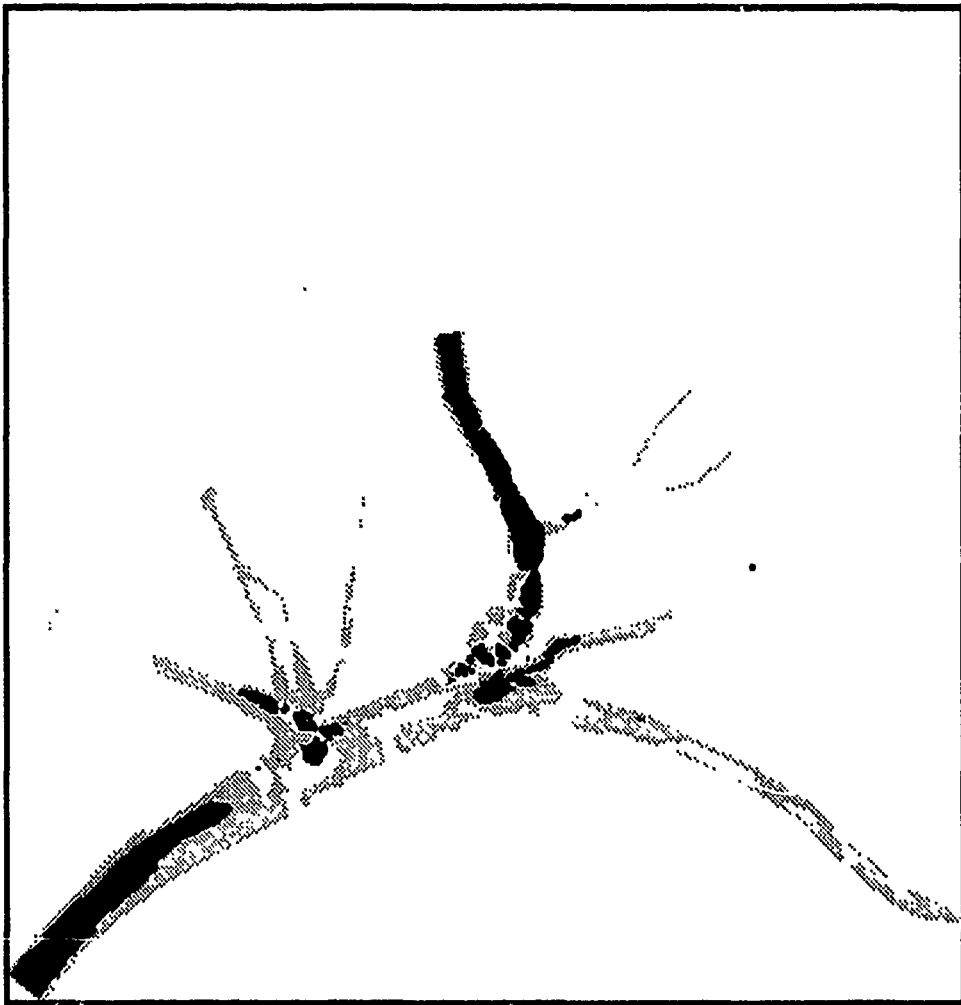


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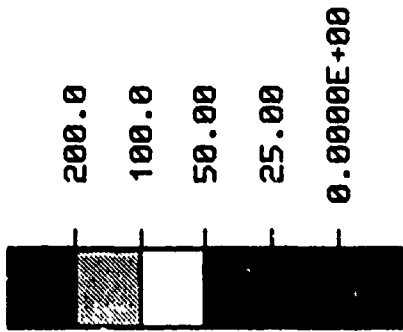


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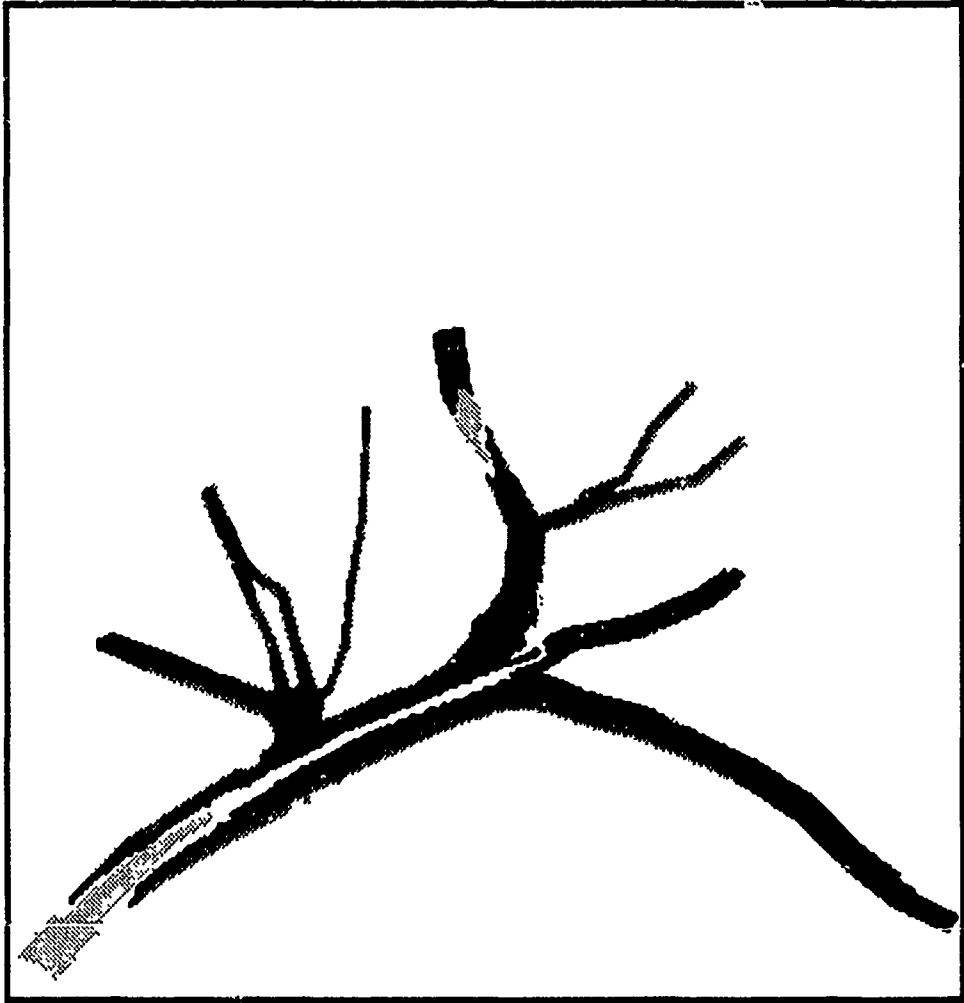


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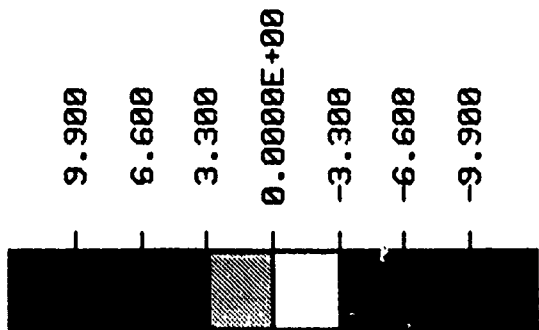


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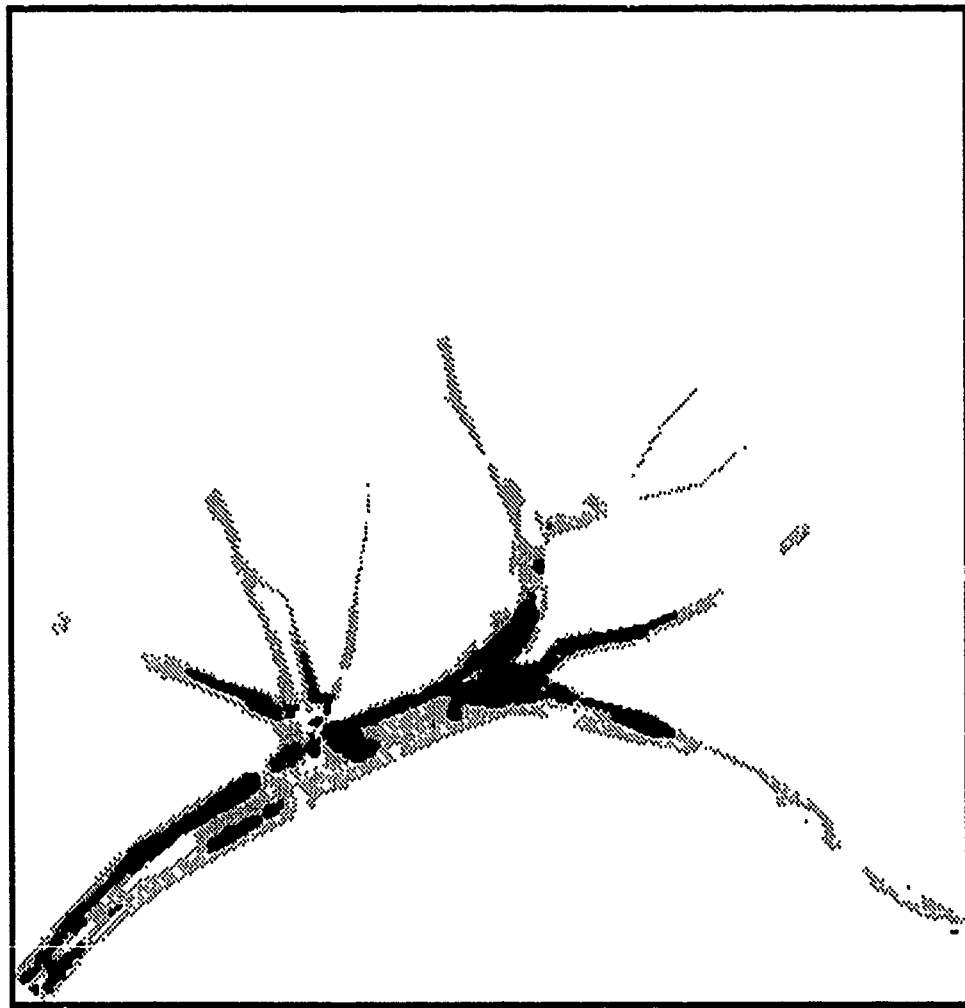


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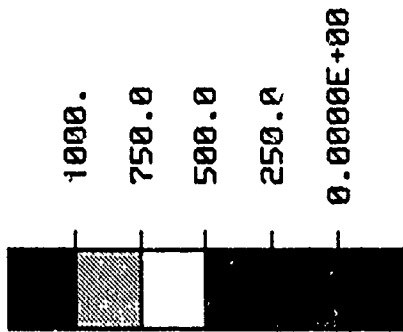


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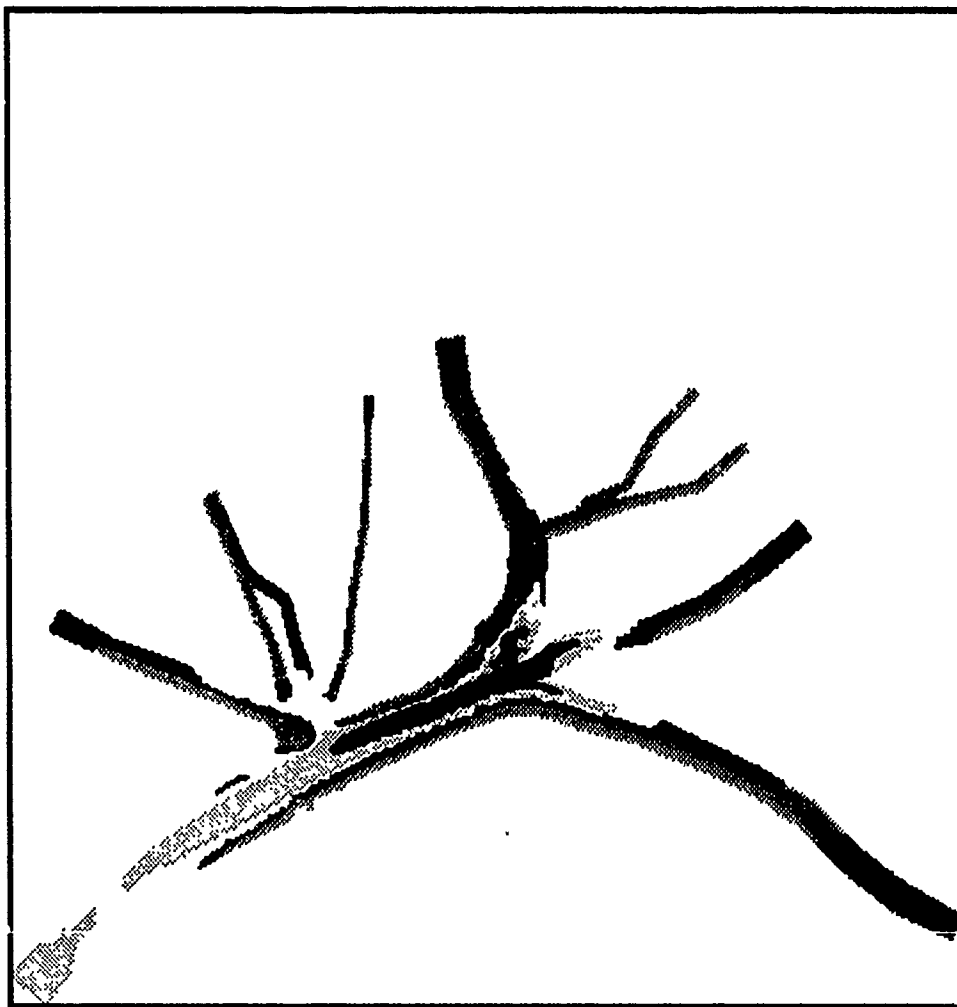


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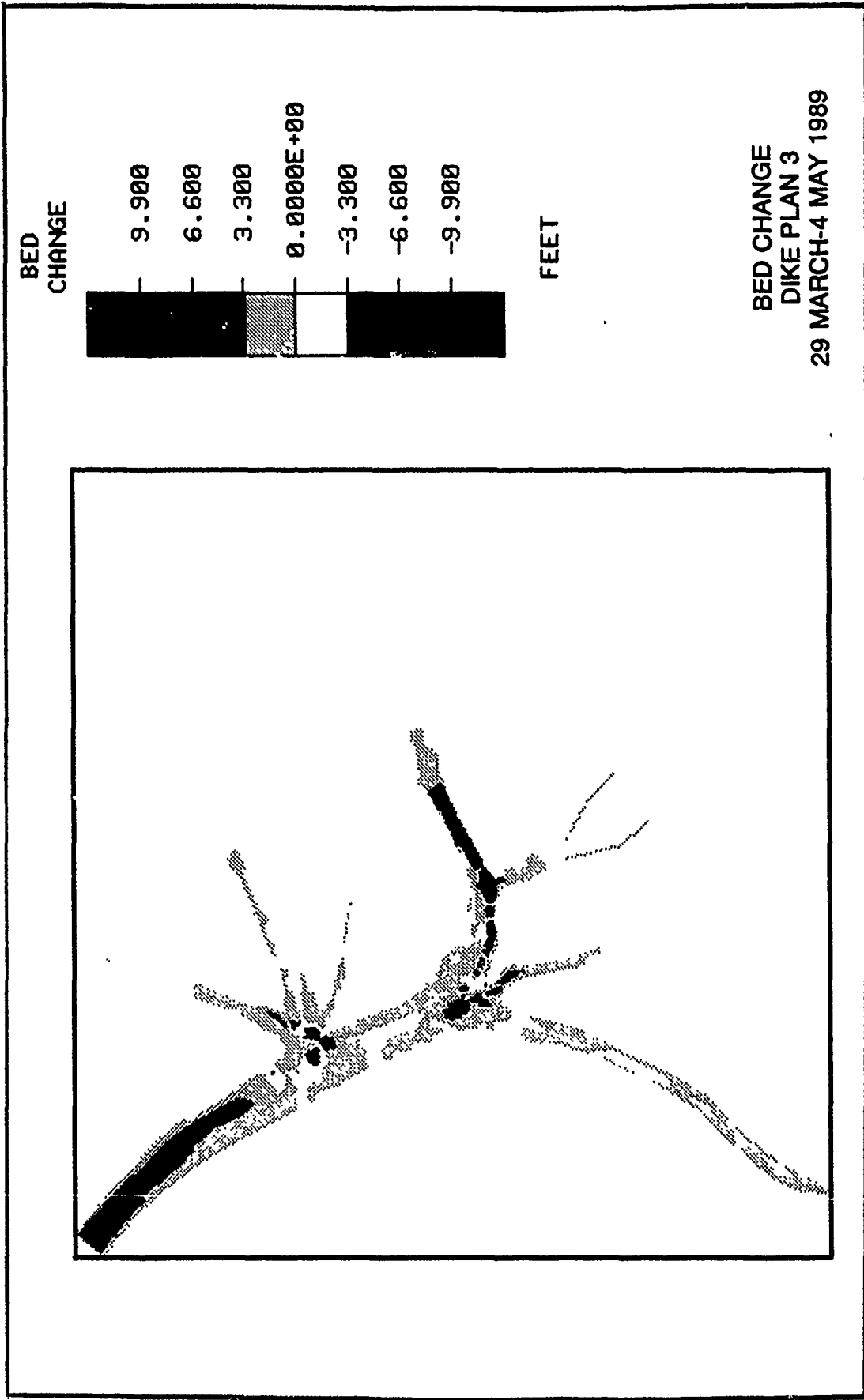
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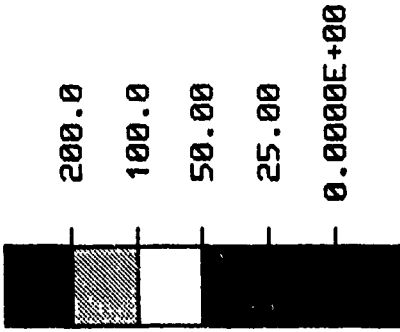
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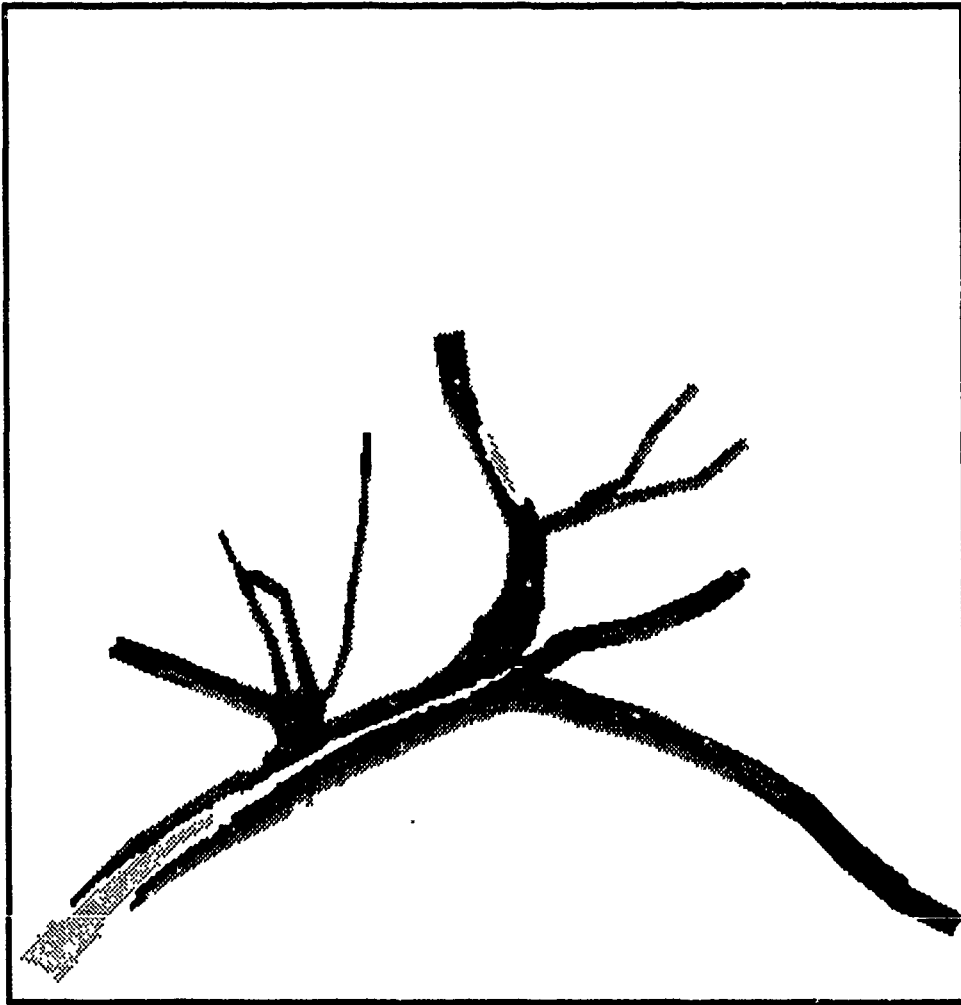
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DIKE PLAN 3  
7 FEBRUARY-28 MARCH 1989



SEDIMENT  
CONCENTRATION



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SEDIMENT CONCENTRATION  
DIKE PLAN 3  
29 MARCH-4 MAY 1989