

5 August, 1980

HOWARD DAM NUMBER THREE



Upstream concrete wall on structure.



5 August, 1980

HOWARD DAM NUMBER THREE



Dam crest viewed from right  
abutment prior to clearing.



Crest viewed from spillway bridge prior to clearing.



August, 18 1980



Crest of dam from spillway bridge.



Reservoir shoreline.



August 18, 1980

HOWARD NUMBER <sup>3</sup>~~TWO~~ DAM



Seepage weir, downstream face of dam and spillway.



August 18, 1980



Upstream face of dam showing one foot high concrete wall addition and concrete plug at old outlet area. Note also deterioration of existing concrete.



Spillway channel from crest of dam.



HOWARD #3

22  
August, 1980

Upstream face of dam showing remains of low level outlet  
upstream gate. Diver had located the top of the valve.





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August, 1980

Spillway channel during rehabilitation. Note green 12"  
siphon used to draw the lake down.





A concrete plug was used to patch a hole through the dam. Although no date was available the hole had been made several years ago for rapid drawdown during heavy rains.



Concrete plug from upstream face after stripping.



Initial excavation showing heavy  
seepages encountered.



Seepages at downstream toe prior to excavation.



Heavy seepage noted passing through the original fill.



Excavation while attempting to locate wood stave low level outlet.



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22  
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Beginning of excavation after drain rock placement was complete.





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Downstream face of dam from crest during excavation.





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22

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Left abutment wing wall added to spillway was completed.





Beginning of original log crib dam was exposed - note log protruding from fill.



Original log crib dam exposed - logs were still intact.



A 12" high lift was added to the upstream concrete wall after construction. Note old sand bags on upstream face.





Replacement of fill in 12-18" lifts. A nuclear density tester was used to monitor compaction and moisture content after compaction on each lift.



Downstream toe during construction showing edge of drain rock and impervious cover.



HOWARD #3

22  
August, 1980

Beginning of fill replacement - note, vibratory compaction  
on left of photo.





HOWARD #3

16 September, 1980

Recently repaired dam - note coarse drainrock at base  
to accommodate heavy seepages.





HOWARD #3

16 September, 1980

Trout re-stocking at Howard #3 Dam.





HOWARD DAM #3

October 6, 1982

Upstream face of dam.





HOWARD DAM #3

October 6, 1982

Downstream face.





Crest view from left abutment.



Seepage path to wier.





Lake level at full pool elevation.



Spillway channel seen from walkway.



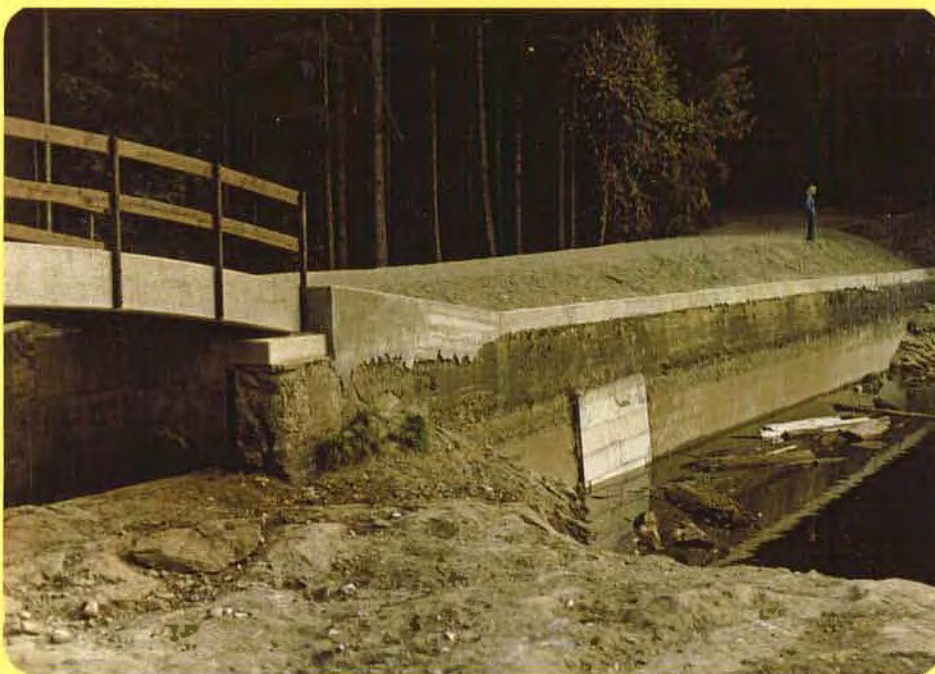


Spillway flowing at right of photo into monitoring weir.



Water flowing from sillway into monitoring weir.





Upstream face of completed renovations.  
Note concrete plug repairing hole  
through concrete face.



Temporary weir monitoring heavy seepages.



February 24, 1981

HOWARD #3 DAM



Seepage at downstream toe.