

# HISTORIC AMERICAN ENGINEERING RECORD

## INDEX TO PHOTOGRAPHS

### MCKAY DAM

HAER OR-18

Spanning McKay Creek, 6 miles south of Pendleton  
Pendleton vicinity  
Umatilla County  
Oregon

Glade Walker, U.S. Bureau of Reclamation, took view OR-18-1 in August 1974 and OR-18-2 in June 1979.

Clayton B. Fraser, Fraserdesign, photographer, November 1989

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| OR-18-1  | Aerial view of dam and reservoir, with Pendleton, Oregon, at right background. View to north.                                  |
| OR-18-2  | Aerial view of dam and reservoir, with spillway at left. View to southeast.  |
| OR-18-3  | Overall view upstream of dam from southwest abutment. View to northeast.   |
| OR-18-4  | Overall view downstream of dam from southwest abutment. View to north.   |
| OR-18-5  | Overall view upstream of dam, showing dam afterbay and McKay Creek bed in foreground, with valve house at right. View to east. |
| OR-18-6  | Overall view downstream of dam from northeast abutment, showing dam forebay. View to west.                                     |
| OR-18-7  | Spillway Tainter gates on northeast end of dam, with upstream face of dam in background. View to southwest.                    |
| OR-18-8  | Dam crest from southwest abutment, with spillway gates in center background. View to northeast.                                |
| OR-18-9  | Upstream face of dam, showing parapet wall. View to northeast.   |
| OR-18-10 | Detail of upstream face of dam, showing poured-in-place concrete steps and parapet wall with coved coping. View to northwest.  |

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-11 Upstream face of spillway Tainter gates, located at northeast end of dam. View to northeast.
- OR-18-12 Downstream face of spillway Tainter gates. View to south.
- OR-18-13 Downstream face of spillway Tainter gates. View to west.
- OR-18-14 Upstream face of spillway Tainter gates. View to east.
- OR-18-15 Detail of upstream face of spillway Tainter gates, showing siphon spillway in right foreground. View to northwest.
- OR-18-16 Detail of upstream face of spillway Tainter gates, showing gates, concrete pier and bridge, and gate-lifting cable and radial track.
- OR-18-17 Detail of downstream face of spillway Tainter gates, showing gates, gate arms, trunnion pins and lifting machinery on overhead bridge. View to south.
- OR-18-18 Spillway gate lifting motors and gears mounted on concrete bridge above gates. View to southeast.
- OR-18-19 Detail of spillway gate lifting motor and gear mounted on concrete bridge above gates. View to south.
- OR-18-20 Detail of upstream face of spillway siphon located at southeast end of spillway gate row. View to northeast.
- OR-18-21 Inlet end of spillway channel located at northeast end of dam, showing spillway Tainter gates at left and downstream face of spillway siphon in center foreground. View to west.
- OR-18-22 Outlet end of spillway channel and dam afterbay, with valve house at right. View to east.
- OR-18-23 Detail of spillway channel. View to northeast.
- OR-18-24 Valve house located at northeast end of dam, showing partially disassembled needle valve no. 2 at valve house base and hoist gantry overhead. View to northwest.
- OR-18-25 Valve house located at northeast end of dam. View to southeast.
- OR-18-26 Valve house located at northeast end of dam, with hoist gantry at left. View to northeast.
- OR-18-27 East and south sides of valve house, view to northwest.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-28 South and west sides of valvehouse. View to northeast.
- OR-18-29 West and south sides of valvehouse, with hoist gantry in left foreground. View to east.
- OR-18-30 Detail of hoist gantry mounted over needle valves on west side of valve house. View to southeast.
- OR-18-31 Dedication plaque mounted on south side of valve house. View to north.
- OR-18-32 Needle valve no. 1 (assembled), view to east.
- OR-18-33 Needle valve no. 2 (disassembled) with maintenance crew. View to east. [Note: crew foreman Robert Rockholt is standing third from left.]
- OR-18-34 Detail of needle valve no. 1. View to southeast.
- OR-18-35 Detail of needle valve no. 1. View to southeast.
- OR-18-36 Detail of needle valve no. 2 (disassembled). View to east.
- OR-18-37 Detail of needle valve housing inside valve house. View to northwest.
- OR-18-38 Outlet penstocks between needle valves and emergency slide gates in tunnel beneath northeast end of dam. View to east.
- OR-18-39 Interior of valve house. View to north.
- OR-18-40 Three-cylinder hydraulic oil pump (manufactured by Worthington Pump and Machinery Company, Holyoke, Massachusetts) and overhead oil tank in valve house. [Note: pump provides hydraulic pressure for emergency slide gate hoists located in machinery changer beneath northeast end of dam.] View to north.
- OR-18-41 Detail of three-cylinder hydraulic oil pump. View to east.
- OR-18-42 Hydraulic oil lines, valves and gauge for emergency slide gate hoists in valve house. View to north.
- OR-18-43 Emergency slide gate hoists (two total) in machinery chamber beneath northeast end of dam. View to northeast.
- OR-18-44 Headgate (background) and weir (foreground) for Marion-Jack Ditch located near dam afterbay. View to south.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-45            Photographic copy of photograph, Bureau of Reclamation, 20 November 1923 (original print located at National Archives and Record Center, Denver, Colorado). Camp at McKay Dam.
- OR-18-46            Photographic copy of photograph, Bureau of Reclamation, 20 November 1923 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Excavation, cut-off trench.
- OR-18-47            Photographic copy of photograph, Bureau of Reclamation, 20 November 1923 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Upper portal of outlet works.
- OR-18-48            Photographic copy of photograph, Bureau of Reclamation, 20 November 1923 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Lower portal of outlet works.
- OR-18-49            Photographic copy of photograph, Bureau of Reclamation, 20 November 1923 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Excavation of first lift of railroad track. Bucyrus 80-8 electric shovel.
- OR-18-50            Photographic copy of photograph, Bureau of Reclamation, 20 November 1923 (original print located at National Archives and Record Center, Denver, Colorado). Placing rockfill in lower toe.
- OR-18-51            Photographic copy of photograph, Bureau of Reclamation, 20 November 1923 (original print located at Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Gravel screening plant.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-52 Photographic copy of photograph, Bureau of Reclamation, 20 November 1923 (original print located at National Archives and Record Center, Denver, Colorado). Transferring rock from tunnel cars to surface cars.
- OR-18-53 Photographic copy of photograph, Bureau of Reclamation, 15 December 1923 (original print located at National Archives and Record Center, Denver, Colorado). Stripping dam site.
- OR-18-54 Photographic copy of photograph, Bureau of Reclamation, 15 December 1923 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Cut-off trench excavation.
- OR-18-55 Photographic copy of photograph, Bureau of Reclamation, 15 December 1923 (original print located at National Archives and Record Center, Denver, Colorado). Cut-off trench. Forms for concrete.
- OR-18-56 Photographic copy of photograph, Bureau of Reclamation, 11 January 1924 (original print located at National Archives and Record Center, Denver, Colorado). Upstream section of tunnel looking toward gate chamber.
- OR-18-57 Photographic copy of photograph, Bureau of Reclamation, 11 January 1924 (original print located at Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Loading trap at spillway.
- OR-18-58 Photographic copy of photograph, Bureau of Reclamation, 11 January 1924 (original print located at National Archives and Record Center, Denver, Colorado). Pouring concrete in cut-off trench.
- OR-18-59 Photographic copy of photograph, Bureau of Reclamation, 24 January 1924 (original print located at National Archives and Record Center, Denver, Colorado). Cut-off trench excavation.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-60 Photographic copy of photograph, Bureau of Reclamation, 26 February 1924(original print located at National Archives and Record Center, Denver, Colorado). Placing gravel fill.
- OR-18-61 Photographic copy of photograph, Bureau of Reclamation, 26 February 1924 (original print located at National Archives and Record Center, Denver, Colorado). Intermediate cut-off walls.
- OR-18-62 Photographic copy of photograph, Bureau of Reclamation, 21 June 1924 (original print located at Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Trash rack at tunnel intake, showing temporary gates.
- OR-18-63 Photographic copy of photograph, Bureau of Reclamation, 21 June 1924 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Placing gravel embankment.
- OR-18-64 Photographic copy of photograph, Bureau of Reclamation, 10 November 1924 (original print located at National Archives and Record Center, Denver, Colorado). Method of spreading.
- OR-18-65 Photographic copy of photograph, Bureau of Reclamation, 16 November 1924 (original print located at National Archives and Record Center, Denver, Colorado). Shifting track on fill.
- OR-18-66 Photographic copy of photograph, Bureau of Reclamation, 20 November 1924 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Lower toe drain showing track for hauling.
- OR-18-67 Photographic copy of photograph, Bureau of Reclamation, 20 November 1924 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Looking along upstream face.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-68 Photographic copy of photograph, Bureau of Reclamation, 20 November 1924 (original print located at Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Lower end of spillway.
- OR-18-69 Photographic copy of photograph, Bureau of Reclamation, 18 June 1925 (original print located at Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Cut-off and intermediate walls. Also stripping east end of dam.
- OR-18-70 Photographic copy of photograph, Bureau of Reclamation, 18 June 1925 (original print located at National Archives and Record Center, Denver, Colorado). Setting up rock crusher at gravel screen.
- OR-18-71 Photographic copy of photograph, Bureau of Reclamation, 23 September 1925 (original print located at Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Spillway viewed from upstream end.
- OR-18-72 Photographic copy of photograph, Bureau of Reclamation, 18 June 1925 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Progress on upstream face from spillway hill.
- OR-18-73 Photographic copy of photograph, Bureau of Reclamation, 23 July 1925 (original print located at National Archives and Record Center, Denver, Colorado). Spreading gravel on dam - tractor.
- OR-18-74 Photographic copy of photograph, Bureau of Reclamation, 23 July 1925 (original print located at National Archives and Record Center, Denver, Colorado). Compacting gravel on dam - steam tractors.
- OR-18-75 Photographic copy of photograph, Bureau of Reclamation, 29 July 1925 (original print located at National Archives and Record Center, Denver, Colorado). Pouring concrete in cut-off walls and trench.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-76 Photographic copy of photograph, Bureau of Reclamation, 29 July 1925 (original print located at National Archives and Record Center, Denver, Colorado). Showing progress in paving face.
- OR-18-77 Photographic copy of photograph, Bureau of Reclamation, 23 September 1925 (original print located at National Archives and Record Center, Denver, Colorado). Upstream slope - progress toward paving.
- OR-18-78 Photographic copy of photograph, Bureau of Reclamation, 23 September 1925 (original print located at National Archives and Record Center, Denver, Colorado). Progress toward paving.
- OR-18-79 Photographic copy of photograph, Bureau of Reclamation, 22 October 1925 (original print located at National Archives and Record Center, Denver, Colorado). General view from east of dam.
- OR-18-80 Photographic copy of photograph, Bureau of Reclamation, 22 October 1925 (original print located at National Archives and Record Center, Denver, Colorado). Mixing concrete for paving face of dam (from top of dam).
- OR-18-81 Photographic copy of photograph, Bureau of Reclamation, 22 October 1925 (original print located at National Archives and Record Center, Denver, Colorado, and Bureau of Reclamation Pacific Northwest Regional Office, Boise, Idaho). Dumping and placing concrete on paving.
- OR-18-82 Photographic copy of photograph, Bureau of Reclamation, 22 October 1925 (original print located at National Archives and Record Center, Denver, Colorado). Progress on downstream slope from coal bunker at mess.
- OR-18-83 Photographic copy of photograph, Bureau of Reclamation, 18 November 1925 (original print located at National Archives and Record Center, Denver, Colorado). Concreting gate structure.
- OR-18-84 Photographic copy of photograph, Bureau of Reclamation, 18 November 1925 (original print located at National Archives and Record Center, Denver, Colorado). Downstream slope.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-85            Photographic copy of photograph, Bureau of Reclamation, 20 April 1926 (original print located at National Archives and Record Center, Denver, Colorado). Paving progress on upstream face of dam.
- OR-18-86            Photographic copy of construction drawing, Bureau of Reclamation, 17 March 1923 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-C-14 McKay Creek Reservoir - Gravel Fill Dam with Concrete Core Wall.
- OR-18-87            Photographic copy of construction drawing, Bureau of Reclamation, 17 March 1923 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-C-14 McKay Creek Dam - Combination Reversed Multiple Arch and Earth Fill Type.
- OR-18-88            Photographic copy of construction drawing, Bureau of Reclamation, 17 March 1923 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 20-C-16 McKay Creek Reservoir - Rock Fill Dam.
- OR-18-89            Photographic copy of construction drawing, Bureau of Reclamation, 21 March 1923 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-C-18 McKay Creek Reservoir - Cylinder Gate Outlet Works - Preliminary Estimate Drawing.
- OR-18-90            Photographic copy of construction drawing, Bureau of Reclamation, 25 July 1923 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 20-C-24 McKay Creek Dam - General Plan and Sections.
- OR-18-91            Photographic copy of construction drawing, Bureau of Reclamation, 14 July 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-55 McKay Dam - Method of Placing Concrete Paving.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-92                      Photographic copy of construction drawing, Bureau of Reclamation, 10 August 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-56 McKay Dam - 10" Balanced Needle Valve Assembly.
- OR-18-93                      Photographic copy of construction drawing, Bureau of Reclamation, 10 August 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-57 McKay Dam - 10" Balanced Needle Valve - Valve Body and Nozzle.
- OR-18-94                      Photographic copy of construction drawing, Bureau of Reclamation, 10 August 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-58 McKay Dam - 10" Balanced Needle Valve - Piston and Control.
- OR-18-95                      Photographic copy of construction drawing, Bureau of Reclamation, 1 September 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-60 McKay Creek Dam - General Plan and Sections of Spillway and Details of Channel
- OR-18-96                      Photographic copy of construction drawing, Bureau of Reclamation, 1 September 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-61 McKay Creek Dam - Details of Spillway Structure and Siphon Spillway.
- OR-18-97                      Photographic copy of construction drawing, Bureau of Reclamation, 1 September 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-62 McKay Creek Dam - Details of Retaining Wall at Right Abutment.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-98                      Photographic copy of construction drawing, Bureau of Reclamation, 22 October 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-63 McKay Dam - Spillway - 20' x 10' Radial Gate and Wall Plate.
- OR-18-99                      Photographic copy of construction drawing, Bureau of Reclamation, 1 September 1925 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-65 McKay Dam Outlet 12" x 7" Venturi Meter.
- OR-18-100                     Photographic copy of construction drawing, Bureau of Reclamation, 19 January 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-69 McKay Dam Outlet Works - Emergency Gate Chamber - Air, By-Pass, Drain, Pressure and Service Piping.
- OR-18-101                     Photographic copy of construction drawing, Bureau of Reclamation, 16 January 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-70 McKay Dam Outlet Works Balanced Valve House Foundation Plan and Sections.
- OR-18-102                     Photographic copy of construction drawing, Bureau of Reclamation, 13 January 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-71 McKay Dam Outlet Works Balanced Needle Valve House Foundation Sections.
- OR-18-103                     Photographic copy of construction drawing, Bureau of Reclamation, 9 January 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-72 McKay Dam Outlet Works - 54" Outlet Pipes.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-104 Photographic copy of construction drawing, Bureau of Reclamation, 8 March 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-73 McKay Dam Outlet Works - Balanced Valve House Superstructure.
- OR-18-105 Photographic copy of construction drawing, Bureau of Reclamation, 13 March 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-74 McKay Dam Outlet Works - 4' x 4' Emergency Gates Control Installation.
- OR-18-106 Photographic copy of construction drawing, Bureau of Reclamation, 5 March 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-75 McKay Dam Outlet Works - Balanced Valve House Roof Truss and Miscellaneous Steel.
- OR-18-107 Photographic copy of construction drawing, Bureau of Reclamation, 8 March 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-76 McKay Dam Outlet Works Balance Valve House - 48" Balanced Needle Valve Drain and Control Piping.
- OR-18-108 Photographic copy of construction drawing, Bureau of Reclamation, 18 June 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-77 McKay Dam Outlet Works 4' x 4' Emergency Gates Control Piping.
- OR-18-109 Photographic copy of construction drawing, Bureau of Reclamation, 19 January 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-78 McKay Dam Outlet Works Balanced Needle Valve Baffle Plate, Anchor Ring and Inlet Strainer.

MCKAY DAM  
HAER OR-18  
INDEX TO PHOTOGRAPHS

- OR-18-110                      Photographic copy of construction drawing, Bureau of Reclamation, 5 January 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 20-D-84, McKay Dam Outlet Works Balanced Valve House Venturi Meter - 10" Valve Installation.
- OR-18-111                      Photographic copy of construction drawing, Bureau of Reclamation, 19 January 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-88 McKay Dam Parapet Lighting Details.
- OR-18-112                      Photographic copy of construction drawing, Bureau of Reclamation, 16 June 1926 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-104 McKay Dam Outlet Works - Balanced Valve House Gantry Crane Assembly.
- OR-18-113                      Photographic copy of construction drawing, Bureau of Reclamation, 31 March 1967 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-116 McKay Dam Enlargement Reconnaissance Design Drawing.
- OR-18-114                      Photographic copy of construction drawing, Bureau of Reclamation, 3 May 1974 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-130 McKay Dam - Spillway Enlargement Feasibility Design Drawing.
- OR-18-115                      Photographic copy of construction drawing, Bureau of Reclamation, 10 January 1978 (original microfiche print located at Bureau of Reclamation Engineering and Research Center, Denver, Colorado). Drawing 30-D-133 McKay Dam - Spillway Modification.