High Mountain Lakes Heritage

Lake Fork Watershed

Clements Lake inlet channel before the stabilization process.

From mountain tops to farm fields below, water has shaped the history of this area for thousands of years. Thirteen water-storing lakes or reservoirs in the High Uinta mountains, over six miles north of here, were built between 1916 and 1930 by settlers trying to make a living in the valleys. They created these small reservoirs to provide irrigation to farm fields during dry periods as part of a large irrigation network in the Uinta Basin.

From Many Lakes to One

Beginning in 2006, the dams that created these lakes were stabilized or made more reliable and safe as part of the Uinta Basin Replacement Project, a component of the Central Utah Project. Water that used to be held in these high elevation lakes is now stored downstream in the enlarged Big Sand Wash Reservoir, where the dam is easier to monitor and maintain. In the Lake Fork watershed, dams were stabilized at Brown Duck, Island, Kidney, and Clements Lakes. Stabilizing these historic dams restored lakes to their natural lake levels.

This project is a result of cooperation among the Department of Interior-Office of Central Utah Project Completion, Central Utah Water Conservancy District, Duchesne County Water Conservancy District, Moon Lake Water Users Association, Utah Department of Natural Resources, Utah Reclamation Mitigation and Conservation Commission, U.S. Bureau of Reclamation, and the Forest Service.

Photo Courtesy of Library of Congress

The headgate at Brown Duck Lake used to control the amount of water released downstream.

Wilderness Designation

On July 1, 1908, President Theodore Roosevelt established the Ashley National Forest out of a section of the larger Uinta Forest Reserve, created in 1897. The Utah Wilderness Act of 1984 designated portions of the High Uintas (part of the Ashley National Forest) as Wilderness, including the watershed that houses these reservoirs.

Through time, operating and maintaining these historic dams, particularly under Wilderness regulations restricting motorized vehicles or equipment, posed challenges and safety concerns. The stabilization project resolved these concerns by moving water storage from the high mountain lakes to a reservoir outside of the wilderness area.

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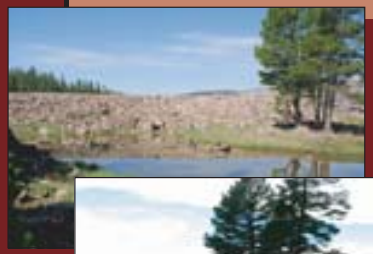
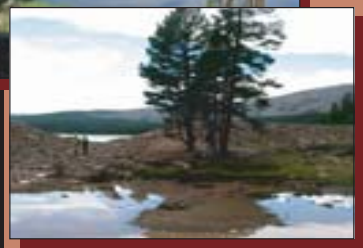
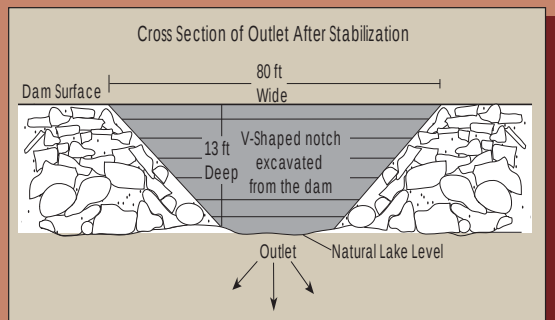




How was this Done?

The stabilization process required removing stop logs and rip-rap rock that lined the outlet portion of the historic dams. A V-shaped notch was cut into each dam creating a channel at each lake's natural lake level. Old headgates were removed and historic outlets either removed or plugged.

Clements Dam before (top) and after stabilization. Note the V- shaped notch in the dam in the bottom photo.



Visiting the Dams Today

Parts of each historic dam remain intact, preserving them as part of the local heritage. They can be accessed by many trails in the area.

The outlet control box at Clements Lake was removed, but portions of the dam remain. Note the names of the workers and the date the structure was built.

Photo courtesy of Library of Congress

Early Life in the Uintas

Recent excavations at Brown Duck Basin indicate obsidian, used used for making tools, was brought to Brown Duck Basin from sources over 250 miles to the south.

Archaeological research completed as part of the high lakes stabilization led to discovery of the rich heritage of the Brown Duck Basin. For thousands of years, these lakes and their surroundings were an important resource for Native people who spent a portion of their summer and fall in this area hunting game and gathering plants.

Recent excavations in Brown Duck basin found a number of stone tools used for hunting. Tools like this Pinto Square-shoulder point was made from local materials like chert and quartzite. The presence of this point indicates human use of the area as early as 6,000 years ago.

Also found in the Brown Duck Basin, this Gatecliff Split- stem point dates roughly 5,000 to 3,000 years ago.

Photo courtesy of Corbis

Fremont petroglyph of elk and bighorn sheep in the Uinta Basin. Though the Fremont farmed crops like corn, they also hunted game and gathered plants in the High Uintas as early as 1500 years ago.

Photo courtesy of the Utah Historical Society

Ute Traditional Bear Dance, Uintah and Ouray Reservation ca. early 1900s

The High Uinta Mountains and its rivers are sacred to the Ute who gather plants with spiritual and medicinal properties here to be used in traditional ceremonies and individual blessings.

Ute Tribal Elder Clifford Duncan suggests the High Uinta Mountains were a place where shamans, or sacred healers, took their sick people to be healed.

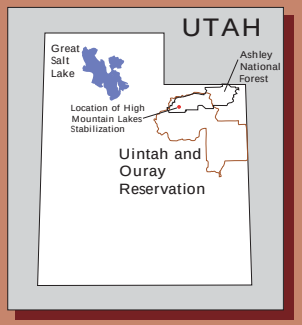
Photo courtesy of Library of Congress

A wooden drop in the Dry Gulch Irrigation Canal diverting water from the Lake Fork River (ca. early 1900s)

Land Rush!

Earliest Euro-American settlers were farmers from the Heber and Salt Lake City area arriving in the 1870s. These farmers established small homesteads where cattle grazed in mountain pastures and crops of wheat and corn were sown. A short growing season, and most importantly, limited water supplies made farming difficult. These farmers were the first to divert water from nearby rivers and creeks to irrigate their crops.

President Lincoln established the Uintah and Ouray Indian Reservation in 1861, before Euro-American settlers arrived. The Reservation was occupied by several bands of Ute Indians on over two million acres of land.



Map of the Uintah and Ouray Reservation

In 1905, the Reservation was opened to non-Indian settlers. Thousands of families flooded in looking for the best land available for farms and homesteads. The Uintah and Ouray Indian Reservation was the last region in Utah to be settled by European Americans.

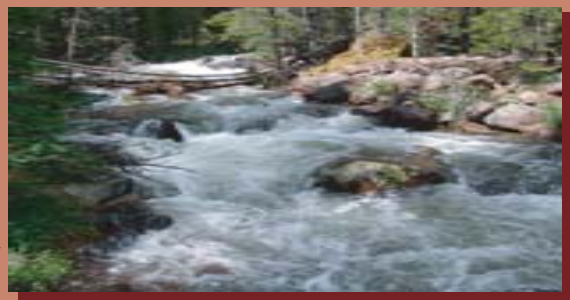
Photo courtesy of the Utah Historical Society

By August 1905, over 16,000 people arrived in Provo, Utah to register for the right to enter the Uintah and Ouray Indian Reservation.

Building a Future

"The factor that has held the Uintah Basin back much more than the absence of a railroad has been the unmerciful years of drought."

- Byron O. Colon, Uintah Basin Water Commissioner, cited by Dillman, Early History of Duchesne County.



Spring runoff in the Lake Fork River

Photo courtesy of Library of Congress

Outlet control gate on top of Island Lake dam regulating water flow downstream.

Exploration and development of these lakes brought hundreds of workers to the area in the early 1900s and resulted in establishing the nearby town of Mountain Home. Information gathering focused on how much water these lakes could store. By increasing storage capacity, captured runoff would provide Uinta Basin farming communites with necessary late season irrigation.

Photo courtesy of Library of Congress

Outlet at Island Lake with concrete collar releasing a large volume of water dowstream.

Photo courtesy of Library of Congress

Top photo: Headgate used to control the amount of water released downstream at Island Lake.

Birth of Irrigation Companies

By 1884, farmers created the very first irrigation company in the greater Uinta Basin known as the Ashley Central Irrigation Company. This company established large-scale irrigation canals to provide for the valley's growing farming communities.

Soon after, several other prominant irrigation companies developed in the Uinta Basin. In 1905, the Dry Gulch Irrigation Company was granted water storage rights at Clements Lake. In 1916, the Farnsworth Canal and Reservoir Company acquired water storage rights at Kidney, Island, and Brown Duck Lakes. In 1934, the Moon Lake Water Users Association was organized. It was an association of eight irrigation companies, of which the Farnsworth Reservoir and Canal Company was a member.

Drawn by horse cart, the Fresno Scraper leveled and scraped large volumes of soil during dam construction.

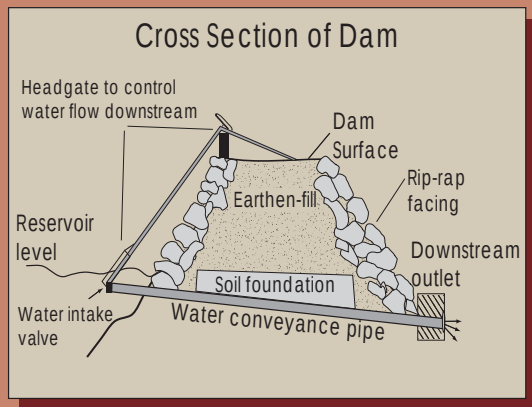
The Long Haul

Dam construction was hard work. By 1916, a rough road was cut to the Brown Duck Basin. Teams of horses hauled excavation equipment, dynamite, concrete mix, corrugated metal pipe, canal gates, lumber, and food supplies. Workers built a cabin at Kidney Lake to store these materials. Transporting heavy, bulky, and explosive materials over steep terrain was difficult. Dam workers eventually resorted to bringing provisions on sturdy sleds or sleighs during winter months.

Stockrollers compacted earthen-filled dams. The roller was made on site from corrugated metal and concrete hauled up to the lakes.

Dam Architecture

These dams were simply designed, but required hard labor to construct. They are a monument to early irrigation companies' pioneering efforts to boost agricultural potential of the Uinta Basin. Each dam has a compacted soil foundation and an earthen-fill structure reinforced with a stone riprap face.



Ashley National Forest

Caring for the Land and Serving People

High Mountain Lakes Heritage

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Garfield Basin

View of Superior Lake from the Superior Lake Dam

From Many Lakes to One

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Superior Lake outlet with stone riprap to reinforce stream banks when large volumes of water were released downstream.

Wilderness Designation

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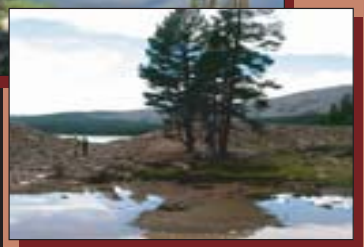
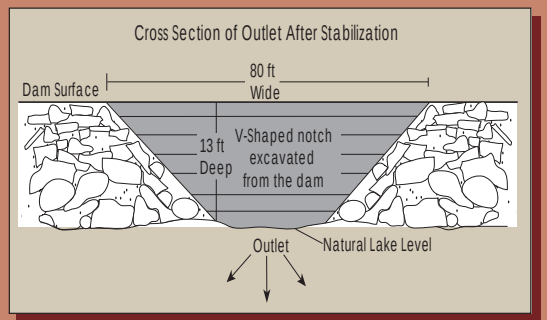


View of dam before (top) and after stabilization. Note the V- shaped notch in the dam in the bottom photo.

How was this Done?

The stabilization process required removing stop logs and rip-rap rock that lined the outlet portion of the historic dams. A V-shaped notch was cut into each dam creating a channel at each lake's natural lake level. Old headgates were removed and historic outlets either removed or plugged.



Visiting the Dams Today

Parts of each historic dam remain intact, preserving them as part of the local heritage. They can be accessed by many trails in the area.

Headgate to control water flow downsteam at Five Point Lake was removed during stabilization, although portions of the dam remain intact.

Early Life in the Uintas

Recent excavations in the area indicate obsidian, used used for making tools, was brought to the High Uintas from sources over 250 miles to the south.

Archaeological research completed as part of the high lakes stabilization led to discovery of the rich heritage of the High Uinta Mountains. For thousands of years, these lakes and their surroundings were an important resource for Native people who spent a portion of their summer and fall in this area hunting game and gathering plants.

Recent excavations in Brown Duck Basin, west of the Lake Fork Watershed, found a number of stone tools used for hunting. Tools like this Gatecliff Split-stem point was made from local materials like chert and quartzite. The presence of this point indicates human use of the area as early as 5,000 years ago.

This Humboldt Concave-base point, found in the adjacent Swift Creek Basin to the east, dates as early as 6,000 years ago.

Photo courtesy of Conke

Fremont petroglyph of elk and bighorn sheep in the Uinta Basin. Though the Fremont farmed crops like corn, they also hunted game and gathered plants in the High Uintas as early as 1500 years ago.

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Ute Traditional Bear Dance, Uintah and Ouray Reservation ca. early 1900s

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Ute Tribal Elder Clifford Duncan suggests the High Uinta Mountains were a place where shamans, or sacred healers, took their sick people to be healed.

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A wooden drop in the Dry Gulch Irrigation Canal diverting water from the Lake Fork River (ca. early 1900s)

Land Rush!

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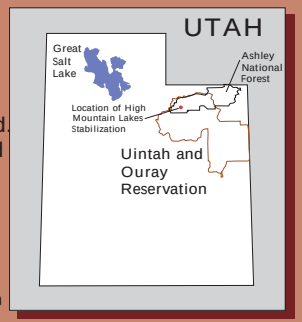
President Lincoln established the Uintah and Ouray Indian Reservation in 1861, before Euro-American settlers arrived. The Reservation was occupied by several bands of Ute Indians on over two million acres of land.



Map of the Uintah and Ouray Reservation

In 1905, the Reservation was opened to non-Indian settlers. Thousands of families flooded in looking for the best land available for farms and homesteads. The Uintah and Ouray Indian Reservation was the last region in Utah to be settled by European Americans.

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By August 1905, over 16,000 people arrived in Provo, Utah to register for the right to enter the Uintah and Ouray Indian Reservation.

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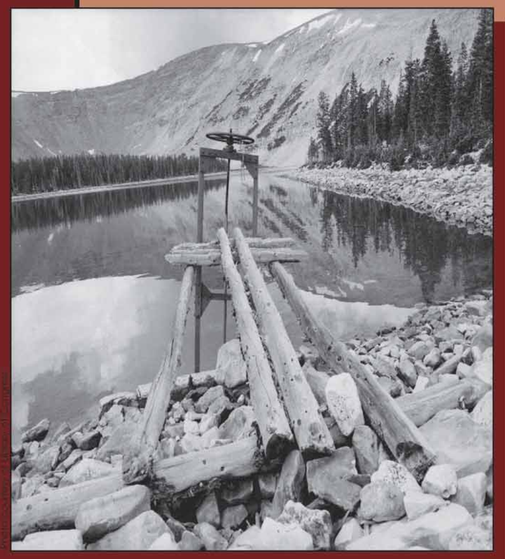
Yellowstone watershed east of Garfield Basin



Water control gate on top of Drift Lake regulating water flow downstream.

Exploration and development of these lakes brought hundreds of workers to the area in the early 1900s and resulted in establishing the nearby town of Mountain Home. Information gathering focused on how much water these lakes could store. By increasing storage capacity, captured runoff would provide Uinta Basin farming communites with necessary late season irrigation.

Top photo: Superior Lake headgate used to control water flow downstream.

Drift Lake headgate. Note the different headgate styles between Drift and Superior Lakes.

Birth of Irrigation Companies

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Soon after, several prominant irrigation companies developed in the Uinta Basin. By the late 1920s, Farmers Irrigation Company was granted water storage rights to Superior, Five Point, Drift, and Bluebell Lakes.

Drawn by horse cart, the Fresno Scraper moved and leveled large volumes of soil during dam construction.

The Long Haul

Dam construction was hard work. By the late 1920s construction began at the lakes in Garfield Basin. Teams of horses hauled excavation equipment, dynamite, concrete mix, corrugated metal pipe, canal gates, lumber, and food supplies. Transporting heavy, bulky, and explosive materials over steep terrain was difficult. Dam workers eventually resorted to bringing provisions on sturdy sleds or sleighs during winter months.

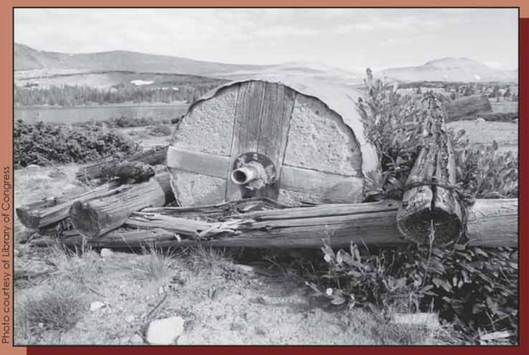
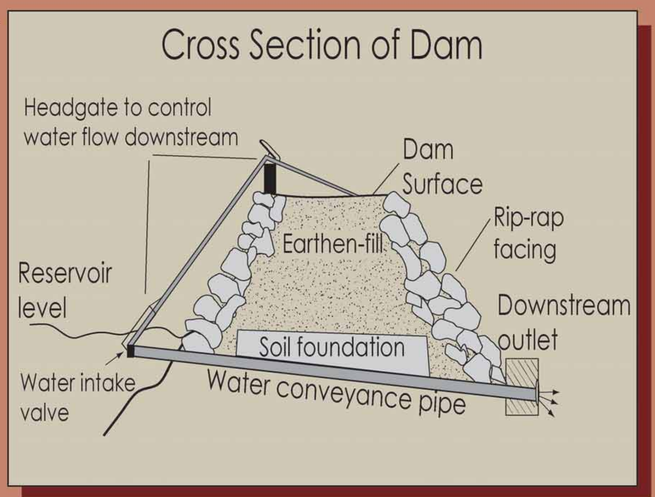


Photo courtesy of Library of Congress

Stockrollers compacted earthen-filled dams. The roller was made on site from corrugated metal and concrete hauled up to the lakes.

Dam Architecture

These dams were simply designed, but required hard labor to construct. They are a monument to early irrigation companies' pioneering efforts to boost agricultural potential of the Uinta Basin. Each dam has a compacted soil foundation and an earthen-fill structure reinforced with a stone riprap face.



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Yellowstone Watershed

View of Farmers Lake from the upstream outlet channel.

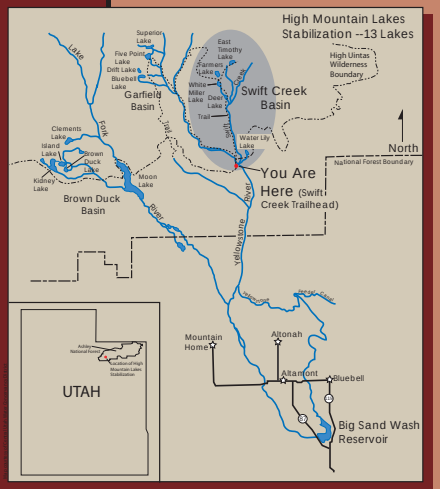

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Photo Courtesy of Library of Congress

The log crib outlet at White Miller Lake was used to control water flow downstream. Note the stone reinforcements.

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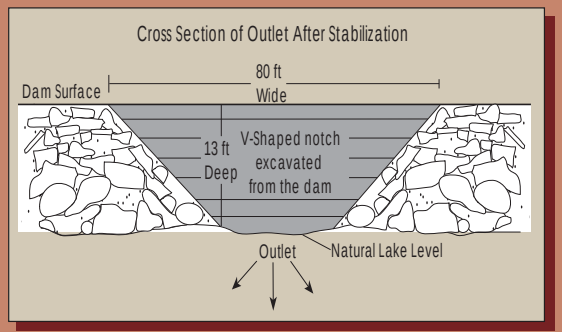
How was this Done?

The stabilization process required removing stop logs and rip-rap rock that lined the outlet portion of the historic dams. A V-shaped notch was cut into each dam creating a channel at each lake's natural lake level. Old headgates were removed and historic outlets were either removed or plugged.

Stabilization at Farmers Lake required plugging a tunnel that carried naturally stored water, which dropped 12 feet down to White Miller Lake.

Farmers Tunnel was 300 feet long and 3 feet wide(top). The tunnel intake has been filled in and is no longer visible after stabilization.



Visiting the Dams Today

Parts of each historic dam remain intact, preserving them as part of the local heritage. They can be accessed by many trails in the area.

Photo Courtesy of Library of Congress

This steel downstream outlet valve at East Timothy Lake has been removed, but portions of the dam remain intact.

Early Life in the Uintas

Careful collection and dating of charcoal from the Swift Creek Basin provides archaeologists with clues to early use of the basin.

Archaeological research completed as part of the high lakes stabilization led to discovery of the rich heritage of the Swift Creek Basin. For thousands of years, these lakes and their surroundings were an important resource for Native people who spent a portion of their summer and fall in this area hunting game and gathering plants.

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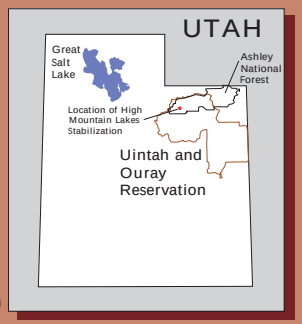

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Spring runoff in the Yellowstone watershed west of Swift Creek Basin

Photo courtesy of Library of Congress

Headgate wheel above intake valve at Deer Lake used to regulate water flow downstream.

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Photo Courtesy of Library of Congress

Top photo: Deer Lake timber water spillway

Photo Courtesy of Library of Congress

At 11,000 feet in elevation, East Timothy Dam was the largest in the basin at 1,390 feet long and 34 feet high.

Birth of Irrigation Companies

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Between the 1910s and 1920s, Farmers Irrigation Company was granted water storage rights to the natural lakes in Swift Creek Basin, except at East Timothy Lake, which was the only privately financed dam in the Basin. By 1920, farmer Brigham Timothy constructed a simple sod dam across the lake's outlet. Timothy's water rights were later transferred to the Swift Creek Reservoir Company and the sod dam was replaced by an earthen-filled structure in 1951.

Drawn by horse cart, the Fresno Scraper moved and leveled large volumes of soil during dam construction.

The Long Haul

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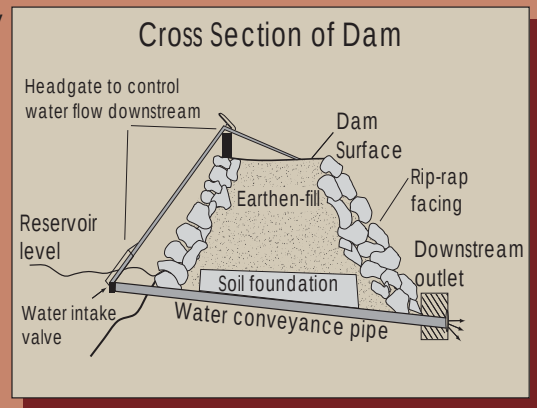

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