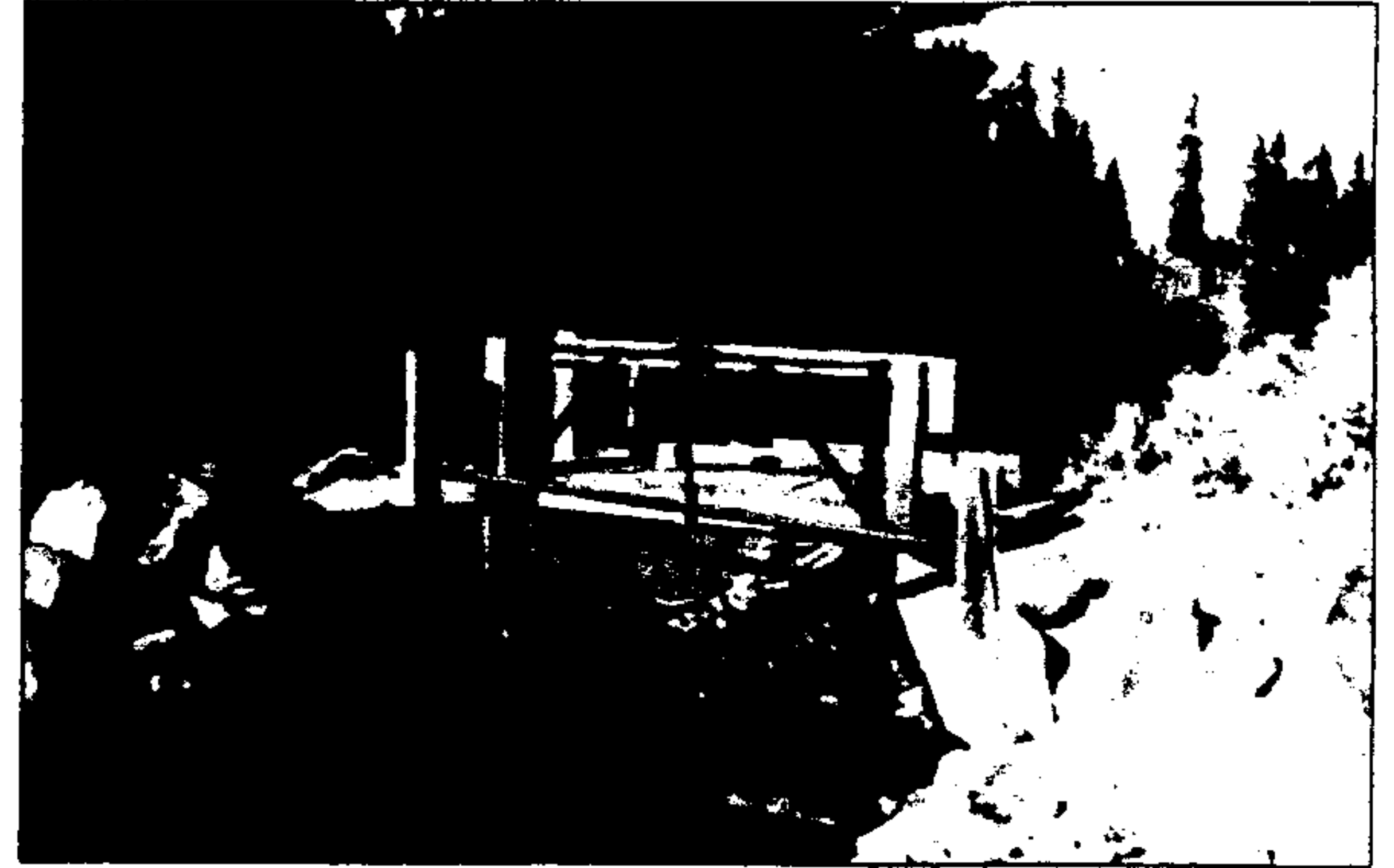


**BEAR RIVER, WYOMING KEY STRUCTURES AND DIVERSIONS
DESCRIPTION AND OPERATION MEMORANDUM**

(DRAFT)

HILLIARD EAST FORK

Diversion Description: Diversion consists of a 7-foot wide wood structure with a single rectangular steel slide gate. Placing a rock dam across the main channel diverts river.



Diversion Location: Diversion is on the East Fork of the Upper Bear in Utah. Irrigated lands are located in Wyoming.

Latitude N 40° 54' 12.5"
Longitude W 110° 48' 53.3"

Conveyance Description: Open Channel Canal, approximately 47,520 feet in length.¹

Wyoming Water Rights Summary:

Priority Date	Permit Number	Permitted Use	Acres	Flow (CFS)	Cumulative (CFS)	Comments
- 1914	U21-357	Irrigation	2644	28.00	28.00	

Storage Rights: None

Estimated Canal Losses: Canal losses are relatively high due to porous nature of soils in the higher reaches of the Upper Bear. When running at peak capacity, losses are estimated to be approximately 20%. Losses creep up to as much as 35% later in the season as the water is slowed due to vegetative growth in the canal.³

Irrigation Practices: Land is all flood irrigated. Irrigators reportedly take turns rotating irrigation with a full canal.²

Crop Types / Consumptive Use: Water is used almost entirely to irrigate meadow grasses, primarily Meadow Foxtail.³

Return Flows: Excess return flow is typically captured in the Hilliard West Side Canal.³

Other Operational Information: This diversion is typically one of the first regulated due to its relatively junior (1914) water right. The Hilliard East Diversion and upper portion of the canal are subject to ice problems during the early part of the irrigation season. Hilliard East irrigators, therefore, typically rely on a supplemental supply water right out of Mill Creek through June. Mill Creek is generally called into regulation after the month of June, at which time the Hilliard East irrigators utilize this diversion. The Hilliard Diversion is typically utilized from mid-July through mid-October.³

Sources: 1) USDA -Soil Conservation Service Economic Research Service-Forest Service in Cooperation with the States of Idaho, Utah, Wyoming, Irrigation Conveyance Systems, Working Paper for the Bear River Basin Type IV Study, Idaho-Utah-Wyoming, April 1976
2) Water rights summary obtained from State Engineer Interstate Reglist – revised April 14, 1999
3) Irrigation practices based on field investigation and interview with Mr. Don Shoemaker, Water Superintendent – November 6, 1999.

Prepared by: Clarence Kemp, P.E. – Forsgren Associates, Inc. – January 2000