

Brantner Ditch  
Adams and Weld Counties  
Colorado

HAER No. CO-47

HAER  
COLO,  
1-PRIG.V,  
2-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record  
National Park Service  
Rocky Mountain Regional Office  
Department of the Interior  
P. O. Box 25287  
Denver, Colorado 80225

## HISTORIC AMERICAN ENGINEERING RECORD

### BRANTNER DITCH

- Location:** Beginning on the South Platte River in Section 4, Township 2 South, Range 67 West, 6th Principal Meridian, the ditch extends in a slight northeasterly direction, paralleling the South Platte for approximately seven miles. In Section 1, Township 1 South, Range 67 West, the ditch turns westward until it dumps into Little Dry Creek.
- Date of Construction:** 1860-1881
- Alterations:** 1900: Lower Clear Creek Canal added to Brantner Ditch.  
Ca. 1920: portion of ditch re-routed and four miles added.  
1959: twenty acres re-routed.  
1980s: five acres re-routed.
- Present Owner:** Brantner Ditch Co. and New Brantner Extension Ditch Co.
- Present Use:** Irrigation
- Significance:** The Brantner Ditch is the oldest irrigation system in Water District Number Two of the South Platte River in Colorado. The ditch was constructed by pioneer farmers and continues to serve as an important component of the agricultural industry in this portion of Colorado's northeastern plains.
- Historians:** R. Laurie Simmons, Christine Whitacre, and James E. Sherow, Front Range Research Associates, Inc., August 1988.

## INTRODUCTION

The Brantner Ditch is the oldest irrigation system in Water District Number Two of the South Platte River drainage in Colorado. The ditch was begun by pioneer farmers as a means of irrigating crops on the semi-arid eastern plains. Throughout the long history of the ditch, it has served as an important component in the agricultural industry of the region.

The Brantner Ditch system is an irrigation canal, approximately twenty miles in length, beginning in Adams County and terminating in Weld County, in northeastern Colorado. Its concrete diversion dam and headgates are located on the South Platte River, one-half mile south of East 120th Avenue and one-half mile west of Yosemite Street, in Adams County.<sup>1</sup> From the headworks, the canal line extends in a slight northeasterly direction, passing through the Adams County Regional Park, Golf Course, and Fairgrounds. At a distance of one mile from the head works, the ditch connects with the terminus of the Lower Clear Creek Canal.<sup>2</sup> At this point stands the Parshall measuring flume where the Brantner Ditch diversions are measured for the Colorado State Engineer's Office.

The next three-and-one-half miles of the ditch mark the line of what local farmers refer to as "old Brantner Ditch." At approximately five miles along the course of the ditch is the portion known as the "new Brantner Ditch." For the first seven miles, the ditch line follows a gravelly, land-shale outcrop that parallels the South Platte River. In this part of the system, the canal waters alluvial, sandy loams and clay loams. After crossing East 160th Avenue, the ditch line turns westward and overcomes the outcropping.<sup>3</sup> From this point on, until the end of the system, where the ditch dumps into Dry Creek, the line traverses well-drained, nearly level loams, once formed in the old South Platte alluvium. Two flumes are a part of the system, the larger of the two crossing Todd Creek, and the other passing over Big Dry Creek.<sup>4</sup>

<sup>1</sup>Section 4, Township 2 South, Range 67 West, 6th Principal Meridian.

<sup>2</sup>Section 34, Township 1 South, Range 67 West, 6th Principal Meridian.

<sup>3</sup>Section 1, Township 1 South, Range 67 West, 6th Principal Meridian.

<sup>4</sup>For a description of the soils and geography of the area in which the Brantner Ditch is located, see: John J. Sampson

## CONSTRUCTION OF THE DITCH

The Brantner Ditch dates to Colorado's gold rush days. Brothers Samuel and Jonas Brantner, both veterans of the California gold fields, were lured to the Pike's Peak region by news of gold discoveries in 1859. The Brantners, however, were not interested in mining. They sought land for their agricultural pursuits and knew the gold camps and argonauts would provide a ready market for their produce. Sometime after August, 1859, Samuel and Elizabeth Brantner established a farm four miles south of the site of Denver, facing the Cherokee and Smoky Hill Trails. Here Samuel built a log house, now listed on the National Register of Historic Places.<sup>5</sup> The house was utilized by immigrants traveling over the Cherokee Trail as a stop on the route to and from Denver. Eventually, the Brantner farm became known as "Four Mile Station."<sup>6</sup>

In the spring of 1860, Samuel and his wife moved to a more promising agricultural area near Henderson Island, a stage station some fifteen miles north of Denver on the South Platte River. Brantner preempted 160 acres of land and began to farm. His brother, Jonas, preempted 160 acres adjacent to Samuel's land.<sup>7</sup> During the same year, the brothers started digging an irrigation system that would evolve into the Brantner Ditch, one of the earliest in the state. By the end of the year, they had completed a line one and one-quarter miles in length, five feet in width, and three feet deep. The construction cost the men about three hundred dollars.<sup>8</sup>

---

and Thomas G. Baber, Soil Survey of Adams County, Colorado (Washington, D. C.: Government Printing Office, 1974).

<sup>5</sup>The Four Mile House was listed on the National Register on 3 December 1969. Maria Davis McGrath, "Real Pioneers of Colorado," vol. 1, (Denver: n.p., 1934), p. 143; and Vickers, William B. History of the City of Denver, Arapahoe County, and Colorado (Chicago: O. L. Baskin Co., 1880), p. 346.

<sup>6</sup>Bette D. Peters, Denver's Four Mile House (Denver: Golden Bell Press, 1980), pp. 4-10.

<sup>7</sup>Ibid., p. 9.

<sup>8</sup>Statement of Samuel Brantner, 21 September 1880, In Re Adjudication of Water Rights for District No. 2, (No. 6009), County of Arapahoe, District Court, Colorado.

During the next three years, the Brantners, along with other local settlers, completed the length of the "old" Brantner Ditch. Involving others in their efforts, the Brantners were able to expand the ditch considerably. Those listed as ~~early claimants in the unincorporated ditch company~~ were P.W. Snyder, Margaret Brantner (wife of Jonas), Samuel Brantner, Maggie McCool, A. R. McCool, William Murray, and William S. Lee.<sup>9</sup>

In 1862, the ditch was extended another one to one-and-a-half miles. By 1863, the total length was over three miles, the head of the canal was eight feet across the bottom, and the depth was four to five feet deep. In 1864, a flood washed out the first three-quarters of a mile, enlarging the diversion capacity of the ditch somewhat. In 1865, the ditch was extended to over four miles in length. In 1867, 1871, and 1872, the ditch was enlarged in width and depth to further increase its carrying capacity. By 1872, the system irrigated 1,200 acres, and the stockholders estimated its value at five thousand dollars.<sup>10</sup>

The early operations of the Brantner Ditch were primitive and difficult. A brush diversion dam channeled river water into the canal. Each spring, before mountain thaws filled the South Platte, the farmers would cut brush and lay it in the river. Sediment would fill the brush making a dam that diverted water into the canal. This structure required constant maintenance, as any high river flow would wash parts of it, or the entire structure, downstream.<sup>11</sup>

The farmers lined the head of the canal with riprap in hopes of preventing river erosion. Once diverted into the canal, water flowed for three-quarters of a mile until reaching the headgate. This structure was a flume, nine feet in width and seven feet deep, with a gate that regulated flow into the canal. Built into the headgate was a waste gate that returned surplus flow to the river. The farmers had to constantly plow and scrape the ditch bottom to prevent sand

---

<sup>9</sup> Ibid.

<sup>10</sup> Statement of John S. McCool and Samuel Brantner, 12 February 1880, Statement of John S. McCool, 2 September 1880, and "Statement of Claims in Brantner Ditch and Brantner Extension Ditch Co.," 26 December 1882, In Re Adjudication of Water Rights for District No. 2, (No. 6009), County of Arapahoe, District Court, Colorado.

<sup>11</sup> Interview with the Board of Directors of the Brantner Ditch, at the United Bank of Brighton, Colorado, 11 July 1988.

and river silt from decreasing the canal volume. Sometime before 1880, the Clear Creek and Platte River Ditch ruptured, filling the Brantner with "hundreds of tons" of earth, rock, and other debris.<sup>12</sup>

Floods and river erosion caused the early irrigators serious problems. Freshets could either fill the ditch with silt or cause breaks in canal walls. In 1873, river erosion had worn away the upper portion of the ditch as originally constructed. The shareholders of the Brantner Ditch contracted to build a new ditch beginning at the original head, then following a line extending to the west of the original ditch for three-eighths of a mile before reconnecting with the original line at the headgate. This work cost the shareholders \$1,200. Because the small group was comprised of only eight persons, ditch maintenance was a costly obligation. Undoubtedly, the shareholders looked for ways to reduce such expenditures.<sup>13</sup>

In 1880, an opportunity arose for the claimants of the ditch to lessen their costs. A group of farmers in Weld County formed the Brantner Extension Ditch Company, which was incorporated in March 1880. The stated purpose of the company was "to construct, build, and operate" irrigation ditches.<sup>14</sup> Shortly before its incorporation, the company entered into a contract with the unincorporated shareholders of the "old" Brantner Ditch.<sup>15</sup> The agreement gave the extension company a right-of-way through the "old" Brantner Ditch. Beginning in the spring of 1880, the extension company built approximately seventeen additional miles of

<sup>12</sup>Statement of William S. Lee, 21 September 1880, *In Re* Adjudication of Water Rights for District No. 2, (No. 6009), County of Arapahoe, District Court, Colorado.

<sup>13</sup>Statements of John S. McCool and Samuel Brantner, 21 September 1880, *In Re* Adjudication of Water Rights for District No. 2, (No. 6009), County of Arapahoe, District Court, Colorado.

<sup>14</sup>"The Brantner Extension Ditch Company," Corporation Files, Colorado Secretary of State, Denver, Colorado.

<sup>15</sup>"Statement of the Claims of the Brantner Ditch, now the Brantner Extension Ditch Company's Ditch," 22 December 1882, *In Re* Adjudication of Water Rights for District No. 2, (No. 6009), County of Arapahoe, District Court, Colorado. The contract between the stockholders of the Brantner Ditch and the Brantner Extension Ditch Company was set in a court decree, (No. 46217), City and County of Denver, District Court, Colorado.

canal, which is still referred to as the "new" Brantner. The "new" Brantner begins, approximately, at 148th and Riverdale Road and historically terminated where the canal dumped into Dry Creek.<sup>16</sup> The extension company finished the construction in July 1881.<sup>17</sup>

In 1881, with the completion of the extension company's work, the water rights of the Brantner Ditch were established. The "old" Brantner Ditch had three court-affirmed water rights. The first, dated 1 April 1860, provided 29.77 cubic feet per second; the second, dated 1 May 1863, gave an additional 5.93 cubic feet per second; and the third, dated 1 July 1872, added 12.18 cubic feet per second. This insured the "old" Brantner Ditch shareholders the right to divert 47.88 cubic feet per second. When the Brantner Extension Ditch Company lengthened and increased the diversion capacity of the canal, it also secured a right, dated 15 January 1881, to 63.30 cubic feet per second.<sup>18</sup>

In 1900, the New Brantner Extension Ditch Company succeeded the Brantner Extension Ditch Company and expanded the operations of the Brantner system. The new company's incorporation papers also allowed it to "acquire, build, operate, and maintain other ditches and reservoirs."<sup>19</sup>

Accordingly, the New Extension company purchased controlling shares of stock in the Lower Clear Creek Canal. Afterwards, the terminus of the Lower Clear Creek Canal was joined to the Brantner Ditch. (See HAER photo no. CO-47-2) At that location, the Parshall measuring flume for the Brantner was constructed. (See HAER photo no. CO-47-3)

<sup>16</sup>Section 28, Township 1 North, Range 67 West, 6th Principal Meridian.

<sup>17</sup>"Statement of Claims," 26 December 1882; also, see: Plat of Portion of Water District No. 2, in South Platte Division (No. 1), 30 November 1888, in Fourth Biennial Report of the State Engineer to the Governor of Colorado for the Years 1887 and 1888, Part II, (Denver: State Printers, 1889).

<sup>18</sup>Findings of the Referee, *In Re Adjudication of Water Rights for District No. 2, (No. 6009), County of Arapahoe, District Court, Colorado; and Interview with Larry Gallegos, Ditch Rider, Brantner Ditch Company, Adams County, Colo., July 1988.*

<sup>19</sup>"The New Brantner Extension Ditch Company," Corporation Files, Colorado Secretary of State, Denver, Colorado.

In response to the growing threat to water rights posed by the expansion and development of the Denver metropolitan area, representatives from twelve local ditch companies, including the New Brantner Extension Ditch Company, incorporated the Consolidated Ditches Company of Water District No. 2. In March 1902, the company was organized to guard and defend the priority rights of Water District Number Two against encroachments by Denver. The company continues to protect water rights of its members. At the present time, it is involved in litigation contesting some of the operations of the Denver Water Board.<sup>20</sup>

<sup>20</sup>"Consolidated Ditches Company of Water District Number Two," Corporation Files, Colorado Secretary of State, Denver, Colorado; and interview with the Board of Directors of the Brantner Ditch, 11 July 1988.

## DITCH STRUCTURES AND MODIFICATIONS

By 1930, the New Extension Company had re-routed some of the ditch and constructed an additional four miles of main canal, giving the line its present-day configuration. The ditch now dumps into the Little Dry Creek, northwest of Fort Lupton, Colorado.<sup>21</sup> (See HAER photo no. CO-47-7) After 1930, the stockholders of the unincorporated Brantner Ditch and the New Brantner Extension Ditch Company made few changes to the system. One major piece of construction was the diversion works. By 1948, a concrete diversion dam spanned the South Platte River about 500 feet up stream from the ditch inlet. Concrete headworks with steel headgates and a waste gate were attached to the dam. (See HAER photo no. CO-47-1) This diversion work was a marked improvement over the old and inefficient brush diversion dam.<sup>22</sup> Other large structures on the ditch include the wooden and concrete flume over Todd Creek and the metal and concrete flume over Big Dry Creek. (See HAER photos nos. CO-47-6 and CO-47-4)

In the late 1950s and mid-1980s, minor changes in the route of the Brantner Ditch occurred. Adams County constructed a golf course whose lands included part of the ditch.<sup>23</sup> In 1959, the line of the Brantner Ditch in this area was changed, affecting about twenty acres of the system. By 1986, in the same area, the path of the ditch was altered, affecting an additional five to six acres of land.<sup>24</sup>

In addition to the threat that a growing urban area poses to the Brantner Ditch water rights, large scale construction projects in the Denver area have altered the nature of the South Platte River. After 1950, the construction of office buildings, suburban homes, and highways necessitated the acquisition of vast quantities of gravel and sand for concrete and other building materials. In response, gravel companies dug large pits along the river course. Subsequently, the farmers of the Brantner Ditch began

<sup>21</sup>Interview with the Board of Directors of the Brantner Ditch, 11 July 1988. The re-routed portions were north of Section 11, Township 1 South, Range 67 West, 6th Principal Meridian.

<sup>22</sup>Ibid.

<sup>23</sup>Sections 27 and 34, Township 1 South, Range 67 West, 6th Principal Meridian.

<sup>24</sup>Interview with the Board of Directors of the Brantner Ditch, 11 July 1988.

noticing that the South Platte River bed was lowering. The farmers claim that the river bed is now six to seven feet lower than it was thirty years ago. This situation has severely aggravated the operations of the Brantner Ditch diversion works. The farmers of the Brantner Ditch have worked to prevent water from eroding the river bed from under and around the diversion dam.<sup>25</sup>

---

<sup>25</sup>Ibid.

## OPERATIONS UNDER THE DITCH

The Brantner Ditch has operated in a very stable manner over the long span of its history. This is consistent with what would be expected of a system with such exceptional water rights. Tracing the records of the ditch in five year intervals reveals that it carried a daily average of 38.77 cubic feet per second and diverted water on an average of 181 days during each irrigation year. The yearly amount of water diverted by the system was 13,884 acre feet. During the period 1889-1985, the smallest amount of water diverted was 11,460 acre feet in 1889, and the highest amount was 17,970 acre feet in 1985.<sup>26</sup>

Agricultural operations under the Brantner system have mirrored the economic changes on the plains of northeastern Colorado. Agricultural production records for intervals during the period 1889-1950 reveal a wide variety of crops grown using Brantner water. In 1901, the first South Platte Valley sugar beet factory was built in Loveland, Colorado. By 1909, Colorado was the leading producer of sugar beets in the nation, and a boom in beet production occurred in lands irrigated by the Brantner Ditch. Beginning in the early 1900s, sugar beets comprised the greatest percentage of crops grown under the Brantner Ditch, averaging twenty-nine percent for the period 1911-1950.

A pivotal date came in the 1970s, when local sugar beet factories closed their operations and farmers sought replacement crops. Corn, hay, and other crops were planted instead of beets. Before 1950, alfalfa averaged twenty percent of the total crop production of the system. After the late 1970s, that percentage increased. Cereals averaged a healthy nineteen percent of crop production before 1950, and the percentage has increased since the late 1970s.<sup>27</sup> Market gardens, beans, potatoes, cabbage, lettuce, peas and other crops have filled out the remaining percentages of historic crop production. Some local canneries closed in the late 1970s, causing a decline in vegetable production, and a corresponding increase in the growing of alfalfa and corn.<sup>28</sup>

<sup>26</sup> "Water Commissioner's Field Books, 1911-1985, District No. 2, State of Colorado," State Engineer's Office, Denver; and Fifth Biennial Report of the State Engineer to the Governor of Colorado for the Years 1887 and 1888, Part I, (Denver: State Printers, 1891), p. 76.

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.; and interview with the Board of Directors of the Brantner Ditch, 11 July 1988.

One very large vegetable operation is still irrigated by the Brantner Ditch. Sakata Farms, Incorporated, a diversified agricultural enterprise, farms approximately three thousand acres. Robert Sakata, a native of California, was relocated to the Topaz, Utah, Japanese internment camp during World War II. In 1942, he came to Colorado, where he was later joined by several other family members. In 1944, the family bought a forty acre farm near Brighton, Colorado, which they subsequently expanded to the present size. The farm is the largest individual grower of sweet corn in the United States. Other crops include onions, broccoli, cabbage, and cauliflower. During the 1960s, the farm was one of the largest growers of sugar beets in the state. Today the Sakata farm aids researchers in developing new varieties of seed and in developing new agricultural machinery.<sup>29</sup>

One of the oldest operational ditches in Colorado, the Brantner Ditch still functions in much the same manner as it did over one hundred years ago. The changes to the system over the years have been minor in nature, reflecting the farmers' attempts to improve the efficiency of the line. The early dated water rights of the ditch give farmers operating under its system a reliable and adequate water supply to grow a variety of crops. Even though it is a comparatively small system, the Brantner Ditch has survived the challenges of modern agriculture and it continues to serve irrigators well.

---

<sup>29</sup> Joanna Sakata, "Sakata, Robert and Joanna," in The History of Brighton, Colorado and Surrounding Area, (Dallas: Curtis Media Corp., 1987), p. 572.

BIBLIOGRAPHY

- Board of Directors of the Brantner Ditch. Brighton, Colorado. Interview, 11 July 1988.
- Brown, F. Lee and Ingram, Helen M. Water and Poverty in the Southwest. Tucson: University of Arizona Press, 1987.
- Colorado. Colorado Geological Survey. Prairie, Peak and Plateau: A Guide to the Geology of Colorado, by J. Chronic and H. Chronic. Colorado Geological Survey Bulletin 32. Denver: State Printer's Office, 1972.
- Colorado. Secretary of State. Corporation Files. "Consolidated Ditches Company of Water District No. 2."
- Colorado. Secretary of State. Corporation Files. "The Brantner Extension Ditch Company."
- Colorado. Secretary of State. Corporation Files. "The New Brantner Extension Ditch Company."
- Colorado. State Engineer's Office. "Water Commissioner's Field Books, 1911-1985."
- Colorado. Water Conservation Board. A Hundred Years of Irrigation in Colorado: 100 Years of Organized and Continuous Irrigation, 1852-1952. Denver: Colorado Water Conservation Board, 1952.
- Dunbar, Robert G. Forging New Rights in Western Waters. Lincoln: University of Nebraska Press, 1983.
- \_\_\_\_\_. "The Origins of the Colorado System of Water-right Control." Colorado Magazine 27(October 1950): 241-262.
- Englebert, Ernest A. and Scheuring, Ann Foley, eds. Water Scarcity: Impacts on Western Agriculture. Berkeley: University of California Press, 1984.
- Fifth Biennial Report of the State Engineer to the Governor of Colorado For the Years 1887 and 1888. Part I. Denver: State Printers, 1891.
- Fourth Biennial Report of the State Engineer to the Governor of Colorado For the Years 1887 and 1888. Part II. Denver: State Printers, 1889.

- Hall, Frank. History of the State of Colorado, Vol. III. Chicago: Blakely Printing Co., 1895.
- In Re Adjudication of Water Rights for District No. 2, (No. 6009), County of Arapahoe, District Court, Colorado.
- 
- Lee, Lawrence B. Reclaiming the American West: An Historiography and Guide. Santa Barbara: ABC-CLIO, 1980.
- Maass, Arthur and Anderson, Raymond. ...and the Desert Shall Rejoice. Cambridge: MIT Press, 1978.
- McGrath, Maria Davis. "Real Pioneers of Colorado." Denver: n.p., 1934.
- McHendrie, A. W. "The Hatcher Ditch (1846-1928): The Oldest Colorado Irrigation Ditch Now in Use." Colorado Magazine 5(June 1928): 81-95.
- Mutel, Cornellia Fleischer and Emerick, John C. From Grassland to Glacier: The Natural History of Colorado. Boulder, Colo.: Johnson Books, 1984.
- Peters, Bette D. Denver's Four Mile House. Denver: Golden Bell Press, 1980.
- Radosevich, G. E., ed. Colorado Water Laws: A Compilation of Statutes, Regulations, Compacts and Selected Cases. Fort Collins: Colorado State University, 1983.
- Radosevich, G. E.; Nobe, K. C.; Allardice, D.; and Kirkwood, C. Evolution and Administration of Colorado Water Law: 1876-1976. Littleton, Colo.: Water Resources Publications, 1976, 1985.
- Sakata, Joanna. "Sakata, Robert and Joanna." In The History of Brighton, Colorado and Surrounding Area, p. 572. Ed. Pat Reither. Dallas: Curtis Media Corp., 1987.
- Sampson, John J. and Baber, Thomas G. Soil Survey of Adams County, Colorado. Washington, D. C.: Government Printing Office, 1974.
- Steinel, Alvin. History of Agriculture in Colorado. Fort Collins, Colo.: The State Agricultural College, 1926.
- Stone, Wilbur E., ed. History of Colorado. 4 vols. Chicago: S. J. Clarke Publishing Co.
- Vickers, William B. History of the City of Denver, Arapahoe County, and Colorado. Chicago: O. L. Baskin Co., 1880.