

Vermejo Project

Jedediah S. Rogers
Historic Reclamation Projects
Bureau of Reclamation
2009
Reformatted, Edited, Reprinted
Andrew H. Gahan
June 2013

Contents

Vermejo Project	1
Project Location	1
Historic Setting	2
Authorization	6
The Plan	8
Construction History	10
Post-Construction History	12
Project Benefits	17
Conclusion	17
Bibliography	19
Index	21

Vermejo Project

The history of irrigation in the Southwest is well documented and its struggles well known. In the Vermejo River basin, a corner of rural northeastern New Mexico, these struggles have played out for over a century. Since the 1880s, with the first irrigation on the Vermejo River, private irrigation companies faced economic hardship, water shortages, and insufficient irrigation systems as they attempted to establish an agricultural base in Colfax County, New Mexico. Then, in the mid-twentieth century, Congress approved the Vermejo Project, which like the Sumner Project situated south on the Pecos River and authorized only a few years before, called for the Bureau of Reclamation to rehabilitate existing dilapidated irrigation structures previously constructed by private irrigation companies. Structures in need of repair included Vermejo Diversion Dam, Vermejo Canal, Eagle Tail Canal, dams and reservoirs No. 2, 12, 13, and 14, and a system of laterals; Reclamation also constructed new facilities such as Stubblefield Dam and the Eagle Tail Heading on the Eagle Tail Canal. Although not a panacea, this small-scale Reclamation water project proved capable of finally providing reliable water to agricultural interests in northeast New Mexico.

Project Location

The topography of Colfax County, New Mexico, consists of high mountain ranges, mesas, and flat, rolling plains. The project area is bounded on the northeast by high mesas, on the northwest by the Raton and Sangre de Cristo mountains, and on the southwest by the Rincon Mountains. The basin lies at an elevation of 6,000 feet and contains fertile soils covered with grasses and shrubs. Vermejo River and Chico Rico Creek supply the project with water but are of modest size. The waters of the Vermejo

originate in southern Colorado, but the river itself forms at the border with New Mexico, where it runs south into the South Canadian River, a tributary of the Arkansas River.¹

The largest city in the county is Raton, the county seat, about 27 miles north of Maxwell, a small town situated adjacent to the project lands. Also nearby since 1996 is Ted Turner's Vermejo Park Ranch, the largest privately owned, contiguous tract of land in the United States, encompassing approximately 900 square miles. It is the bygone site of numerous coal mines and is now a large wildlife preserve and tourist ranch.

Historic Setting

Before European contact, ancient and modern Indian cultures occupied present-day northern New Mexico and southern Colorado. The Anazasi established a vast cultural zone between 700 CE and 1300 CE that reached as far east as the Canadian River in northeastern New Mexico. The Anazasi and, later, Pueblo Indians congregated primarily where dependable water supplies existed and where it was possible to cultivate maize, various types of greens, and squash on small plots of land. Soon after the Anazasi disappeared, the Jicarilla Apache, one of six groups of Southern Athapaskans, migrated into the Southwest between 1300 and 1500. For sustenance they primarily hunted game and gathered berries, nuts, and seed-bearing grasses, but at least since the late 1600s they also farmed maize, melons, squash, and beans. Unlike other Indian cultures, Jicarilla men prepared the fields, irrigated, and helped the women to harvest the crops.²

¹ U.S. Department of the Interior, Bureau of Reclamation, "Annual Project History, Vermejo Project," Volume I, 1952, 4, in Record Group 115, Records of the Bureau of Reclamation, Entry 10, Box 603, National Archives and Records Administration, Denver, Colorado; hereafter cited as "Project History" with appropriate volume. Copies of certain Project Histories are also located in Accessions 8NN-115-90-011, 8NN-115-88-053, and 8NS-115-93-213, Record Group 115, Records of the Bureau of Reclamation, National Archives and Records Administration, Denver, Colorado.

² Alfonso Ortiz, ed., *Southwest*, vol. 10, of *Handbook of North American Indians*, William C. Sturtevant, ed. (Washington, D.C.: Smithsonian Institution, 1983), 440-41.

The Spanish established missions and permanent settlements along the Rio Grande, Pecos, and the upper reaches of the Mora and South Canadian rivers where there were reliable sources of water. Still, for several centuries the land in present-day Colfax County was primarily uninhabited. Not until the 1800s did the area begin to see foot traffic from travelers on the Santa Fe Trail which connected the Spanish settlements to the United States. In the 1850s the Apachean tribes moved to camps situated along the Vermejo, Ponil, and Cimarron rivers; later the U.S. Government forced some of these same Indians relocated to the Jicarilla Apache Reservation, where they became dependent on the government. The discovery of gold in 1867 brought an influx of Anglo Americans to northeastern New Mexico. More came a decade later with completion of the Atchison, Topeka and Santa Fe Railroad, a rail line that split Colfax County through Raton. The El Paso and Southwestern Railroad line (later purchased by Southern Pacific Railroad) crossed the A.T. & S.F. near the confluence of the Vermejo and South Canadian Rivers and hugged the Vermejo River to the mining town of Dawson, New Mexico (now a ghost town).³

While the New Mexico territory was still a part of Mexico, the Mexican government established a land grant encompassing a vast area of present-day northern New Mexico and southern Colorado. Created in 1841, the grant became the center of land conflicts that lingered well into the twentieth century. The grant, with its extensive land holdings and disputed boundaries, initially belonged to two Mexican citizens, Carlos Beaubien and Guadalupe Miranda. After the treaty of Guadalupe-Hidalgo that ended the Mexican-American War in 1848, Miranda sold his portion of the grant to Lucien

³ "History: Timeline," Northeast New Mexico, http://nenewmexico.com/history_timeline.php (accessed March 3, 2008). Ortiz, 452-53.

Bonaparte Maxwell, Beaubien's son-in-law. With his new landholding Maxwell and his wife acquired great wealth and prominence in northeastern New Mexico, in part by selling off portions of the grant to prospectors and investors. Problems arose over the legality of some transactions because the actual size of the grant was always in question. For example, investors, who in 1869 purchased over one million acres for less than \$1 per acre, suffered setback in 1871 when the secretary of the interior ruled that the size of the grant was only 97,000 acres. Eventually, the conflict over ownership and size of the grant reached a breaking point in the Colfax County War in 1875, a series of violent acts between displaced Jicarilla Apaches, Hispano settlers, miners, and local investors.⁴

Ultimately, the U.S. Land Commissioner in 1879 and the U.S. Supreme Court in 1887 confirmed that the original size of the Maxwell Land Grant was almost two million acres. The court's decision essentially settled the longstanding dispute over ownership in favor of the Maxwell interests. However, the vast land grant and the Maxwell Land Grant Company never produced the wealth promised its investors.⁵

Irrigated farming was a major enterprise on the land grant but success did not come easily. From the time the Maxwell Land Grant Company organized in 1888 to the completion of the Vermejo Project in 1955, no fewer than six irrigation companies took possession of and financial responsibility for irrigation works on the project lands. These companies faced financial setbacks, poor crop yields, and the challenge of harnessing water in a land where drought and flood hindered development. Flooding has long been a major concern. For example, on September 29, 1904, heavy rains caused severe flooding

⁴ "Maxwell Land Grant Company," in Lamar, Howard R., ed., *The New Encyclopedia of the American West* (New Haven, Connecticut: Yale University Press, 1998), 685-6.

⁵ *Ibid.*, 686.

in the northern, eastern, and northeastern portion of New Mexico resulting in the loss of lives, livestock, and property damage to the tune of \$1 million.⁶

Development of water resources was often hampered by constant changes in ownership of irrigation works. Originally, the Maxwell Land Grant Company obtained title to 20,000 acres of land and constructed the High Line Vermejo Canal, only to abandon it when the Vermejo River changed course away from the point of diversion. In 1891 the Low Line Vermejo Canal occupied the approximate location of the present-day Vermejo Canal. In 1903 the Vermejo ditch system along with reservoirs No. 2, 5, 7, 8, 12, 13, and 20 came into possession of the Vermejo Ditch Company, then in 1908 passed to the Maxwell Irrigated Land Company. Each company invested thousands of dollars to maintain and enlarge the irrigation system; for example, the Maxwell Irrigated Land Company spent \$500,000 and expanded the system to Chico Rico Creek.⁷

In 1912 the Maxwell Ditch and Reservoir Company took over and developed about 18,000 acres of land with water from Vermejo River and Chico Rico Creek. All of the water rights were subject to prior appropriation and beneficial use, which caused controversies and further slowed development. The Chico Rico Creek (1935) and Vermejo River (1941) had been adjudicated by court decree that fixed the water duty at 1.5 acre feet per acre. That figure was the amount of water entitled to each share of stock in the irrigation company, though farmers did not always receive their full allotment. The company eventually had to abandon some 18,000 acres of land it put into production due to seepage, poor location, or water shortages. Although it operated for several decades,

⁶ “Major Floods and Droughts in New Mexico,” http://geochange.er.usgs.gov/sw/impacts/hydrology/state_fd/nmwater1.html (accessed March 3, 2008).

⁷ “Project History, Vermejo Project,” Volume I, 1952, 5-6; United States Department of the Interior, Water and Power Resources Service, *Project Data* (Denver: United States Government Printing Office, 1981), 1268-69.

the Maxwell Ditch and Reservoir Company sustained heavy losses until the U.S. District Court ruled it bankrupt in 1935.⁸

The Maxwell Irrigation Company organized in 1938, after three years of operation and maintenance by the court-appointed trustee. The company sought and obtained federal grants from the Reconstruction Finance Corporation for repair and improvement to deteriorated and flood-destroyed irrigation works. The first loan was secured in 1939, the next in 1943 after a major flood washed out Hebron Dam, and the third in 1950 for emergency repairs to the inlet structure of the Canadian River Siphon that had been damaged by a flood. Still, these efforts were not enough to save the dilapidated and poorly operational irrigation system.⁹

Authorization

By the time the Bureau of Reclamation began serious investigations into the Vermejo Project, the irrigation system was in disrepair and the plight of farmers serious. In some cases water shortages and the poor condition of the irrigation system had forced farmers to abandon their fields or operate at a loss. Reclamation's involvement in rehabilitating the irrigation works appears to have been motivated by a desire to assist existing water users in securing a reliable source of water for their crops. But there were other reasons to get involved. Reclamation originally perceived the project as a multiple purpose project to not only provide a dependable supply of water, efficient distribution system, and drainage, but offer other benefits such as flood control, recreation, and wildlife conservation. In its 1949 report, Reclamation recommended partnering with the Fish and Wildlife Service in regulating small ponds for wildlife and with the National

⁸ "Project History, Vermejo Project," Volume I, 1952, 6.

⁹ Ibid.

Park Service to develop recreational facilities for picnicking and camping facilities. From an economic, engineering, and hydraulic standpoint the project seemed feasible. Plans called for the Vermejo Conservancy District to clean out the canals and to build the protective dikes and bridges, while Reclamation would take on the rehabilitation of dams, siphons, sluice boxes, and drains. Reclamation projected three years of construction and seven years of development before requiring project beneficiaries to repay project costs, according to a seventy-five year repayment schedule.¹⁰

In 1949 Congress passed legislation authorizing the Vermejo Project the bill arrived on the desk of President Harry Truman for his signature (H.R. 3788, S. 1382). Truman vetoed the bill and returned it with a thoughtful response of his reasons for doing so. First, he argued, the Department of Agriculture had not reviewed Reclamation's estimates of the ability of the water users to repay the costs of the project. Furthermore, the bill noted sediment control and recreation as non-reimbursable benefits, but federal water projects, Truman observed, did not normally include these classifications. Next, the president expressed concern over the non-reimbursable allocations to fish and wildlife, the estimated costs of flood control, and the extension of the repayment period beyond forty years. In essence, the proposed project seemed to diverge from previous authorizations. There was one more strike against Vermejo. Whereas Truman had approved the Fort Sumner rehabilitation project the year before because the dam had been considered unsafe, the rehabilitation of the irrigation system at Vermejo did not

¹⁰ U.S. Department of the Interior, Bureau of Reclamation, "Plan for Rehabilitation, Vermejo Project, Canadian River Basin, New Mexico," June 1948, 15, Box 860; U.S. Department of the Interior, Bureau of Reclamation, "Plan for Rehabilitation, Vermejo Project, Canadian River Basin, New Mexico," February 1949, 14, 19, in Record Group 115, Records of the Bureau of Reclamation, Accession 8NN-115-85-019, Box 859, National Archives and Records Administration, Denver, Colorado.

require immediate attention. In his estimation, no emergency in the Canadian River basin justified authorization.¹¹

Without hesitation, the New Mexico congressional delegation introduced substitute bills in both houses of Congress (H.R. 8309, S. 3517). Congress authorized the project on September 27, 1950, (Public Law No. 848, 81st Cong., 2d sess. 64 Stat. 1072), and appropriated \$691,789 of the \$2,919,000 estimated costs. This time the president signed the legislation authorizing the project, but the caveat was that the project was “a rescue project of an emergency nature and should not be considered as a precedent for similar authorizations in the future.”¹² Congress later amended the project by the act of March 5, 1952 (Public Law No. 269, 82d Cong., 2d sess. 66 Stat. 13).

The Plan

Reclamation’s Definite Plan Report, released in July 1952, eliminated or revised several features on the final project plan. Reclamation removed from the construction list dams No. 11 and 14 and the Stubblefield Detention Dam. It would forgo repairs on Dam No. 5, and deferred construction of Dam No. 12 until sediment buildup made it necessary to build. The new plan also eliminated the participation of the National Park Service and the Fish & Wildlife Service. Finally, two proposed reservoirs were dropped because they were deemed economically infeasible. The dam at Horseshoe Bend had been planned on the Vermejo River five miles north of the old mining town of Dawson. The reservoir would have released water downstream for diversion at the head of the Vermejo Canal.

¹¹ *Message from the President of the United States regarding the Vermejo Reclamation Project, New Mexico*, H. Doc. 316, 81st Cong., 1st sess., August 23, 1949, in RG 115, Accession 8NN-115-85-019, Box 859; “President Vetoes Vermejo Project Bill,” *Reclamation Era*, 35 (November 1949): 219.

¹² “Project History, Vermejo Project,” Volume I, 1952, 8; U.S. Department of the Interior, Bureau of Reclamation, *Definite Plan Report on Vermejo Project, Canadian River Basin, New Mexico*, Volume 1 (July 1952), Exhibit C, in RG 115, Accession 8NN-115-85-019, Box 859.

The Hebron Dam, on the Canadian River, would have replaced an older, existing dam that had been damaged but never repaired.¹³

Despite these revisions, the core of the plan remained the same: rehabilitate the irrigation system that diverted water from Vermejo River and Chico Rico Creek to farmers in the vicinity of Maxwell. This entailed the rehabilitation of Reservoirs Nos. 2, 7, 8, 13, Stubblefield, and, eventually, No. 12; repair and cleaning of siphons, Vermejo Canal, Eagle Tail Canal, and sixty-three miles of laterals; construction of 2.5 miles of surface drains and some sub-surface drains. The new plan increased storage capacity of Nos. 7 and 8, and Stubblefield.¹⁴ The project called for the rehabilitation of Dam No. 12, though work would not begin until sediment accumulation in Reservoir No. 13 necessitated additional storage.

The system Reclamation set about to restore was small yet complex with its maze of canals and reservoirs. Water first flows from the Vermejo Diversion Dam at a maximum diversion of 600 cubic feet per second into the Vermejo Canal, eventually making its way to Stubblefield Reservoir and Reservoir No. 2. From Stubblefield Reservoir, which was rehabilitated with backfill to strengthen the embankment and increase storage capacity to 16,074 acre-feet, water is diverted to the Stubblefield Lateral and Laguna Lateral systems. The water continues its journey via Stubblefield, Eagle Tail, and Laguna Eagle Tail laterals to Eagle Tail Canal. During period of high floods, Eagle Tail Heading diverts the flow of Chico Rico Creek into Eagle Tail Canal. The

¹³ *Definite Plan Report*, 1, 11, 19, in RG 115, Accession 8NN-115-85-019, Box 859; U.S. Department of the Interior, Bureau of Reclamation, *Preliminary Geological Report, Horseshoe Bend Dam and Reservoir Sites, Vermejo Project Investigations*, February 1947, in RG 115, Accession 8NN-115-85-019, Box 861.

¹⁴ *Definite Plan Report*, e, in RG 115, Accession 8NN-115-85-019, Box 859.

canal then conveys flood waters to the Canadian River and, from there, to off-stream storage reservoirs within the project area.

Within the project there exists a complex system of laterals, about sixty-five miles in length, that irrigate only 7,379 acres. Perhaps learning from the struggles of nearby water projects at Tucumcari and Carlsbad, project planners understood financial restraints, seepage, and drought meant developing a cautious irrigation scheme. They envisioned a modestly successful venture, given the pitfalls that frequently befell water schemes in the semi-arid soils of New Mexico. There were no visions of a well-watered, fertile garden; any dreams were tempered by the reality of what the land would give, and nothing more.

Construction History

On April 7, 1953, the Vermejo Conservancy District and Reclamation's Director of the Operation and Maintenance Division E. D. Eaton kicked off construction with a ground-breaking ceremony at the site of old Stubblefield Dam. Because the water project at Vermejo was a long time in coming, it was a major event for the locals and district officials and the 1,200 people in attendance.¹⁵

Prior to the ceremony, the construction engineer set up headquarters at the regional office in Amarillo, Texas, and a field office in Maxwell, New Mexico. Personnel began conducting field tests and surveys of project features. In early 1952, however, the Bureau of the Budget impounded funds, forcing the project office to close and personnel to transfer to other projects. On May 23 the Bureau released the impounded funds, and in June the Congress appropriated \$635,000 for fiscal year 1953. With the project office reopened, Reclamation completed the Design Data Report and

¹⁵ "Construction Begun on Vermejo Project," *Reclamation Era*, 39 (June 1953): 117.

Material Report for rehabilitating the Stubblefield Dam and Dam Nos. 2 and 13. It continued inspection of canal and lateral structures and dams and right-of-ways and land acquisition. It also began to locate impervious material for the embankment at Dam No. 2, Dams 7 and 8, Stubblefield Dam, and Dam No. 13. The “borrow areas” were situated above the elevation of the dam sites to avoid the threat of seepage.¹⁶

Rehabilitation of Dams No. 2, 13, and Stubblefield Dam entailed enlarging the earthfill dams and constructing new canal outlets. Reclamation opened bids for this work opened on January 20, 1953, and was awarded the contract on March 4 to Colorado Constructors, Inc., of Denver, Colorado, for \$850,212. Within a few weeks, the contractor began to set up a work camp, moved dozers, tractors, shovels, and cranes into the project area, and began to work on the emergency spillway at Stubblefield Dam. Colorado Constructors excavated the foundation of Stubblefield Dam and Dike, Dam No. 2, and 13. With Terra Cobras, scrapers, and Euclids, it excavated and hauled Zone 1 material to the embankments and placed Zone 2 material on downstream slopes of Dam No. 2 and Stubblefield Dike. The contractor first used a Bucyrus-Erie 22-B dragline to lay a 12-inch layer of gravel blanket but then replaced that with the Cat D-8 and 12. The contractor also laid Zone 3 material, a filter blanket, and riprap at Stubblefield Dam.¹⁷

By the end of 1953, seventy-seven percent of the work had been completed in less than half of the allotted time. The placement of Zone 1 material in Dam No. 13 stopped for several months beginning in December due to frozen soil but shortly resumed in

¹⁶ “Project History, Vermejo Project,” Volume I, 1952, 12; “Project History, Vermejo Project,” Volume II, 1953, 8-11; U.S. Department of the Interior, Bureau of Reclamation, “Vermejo Dams Materials Report Explorations for Impervious Material,” September 24, 1952, in RG 115, Accession 8NN-115-85-019, Box 859; “Unit Record of Construction for Dam No. 2, Dam No. 13 & Stubblefield Dam and Dike, Vermejo Project, New Mexico,” October 1, 1954, 2-3, in RG 115, Accession 8NN-115-85-019, Box 860.

¹⁷ “Project History, Vermejo Project,” Volume II, 1953, 12-14, 16-17.

February 1954. The contractor completed the placement of Zone 1 and 2 materials in April and the filter blanket and riprap in May. By June, all the work on the contract had been completed.¹⁸

Barnard-Curtiss Company of Minneapolis, Minnesota, received the contract for earthwork and structures on Vermejo Diversion Dam, Canal, and Eagle Tail Canal. Reclamation awarded the contract for rehabilitation of laterals and drains to D. W. Falls Construction Company. Work on both contracts began in early 1954. Barnard-Curtiss Company first excavated at the Saltpeter Siphon for the placement of concrete. The first concrete was laid at the Vermejo Diversion Dam and then on the canals. D. W. Falls Construction Company placed concrete on the fifteen-foot drop on No. 13 Inflow Lateral and completed all work on the contract in June 1955. For a short time, heavy rains in spring delayed the construction of the diversion dam and canals; washouts caused some damage to project sites. Despite these setbacks, Reclamation accepted the work completed in October.¹⁹

Post-Construction History

The Vermejo Conservancy District, created on February 6, 1952 by a decree in the Eighth Judicial District Court, hoped that completion of the project and initiation of a weed control program would ignite interest in irrigation and provide a solid agricultural economy in the area. They faced major obstacles to these aspirations. The rehabilitated irrigation system did provide more water to the project area, but it did not entirely solve the problems caused by climate, water shortage, seepage, and poor crop yields. Mostly,

¹⁸ “Project History, Vermejo Project,” Volume II, 1953, 12; “Unit Record of Construction for Dam No. 2, Dam No. 13 & Stubblefield Dam and Dike, Vermejo Project, New Mexico,” 4-6.

¹⁹ “Project History, Vermejo Project,” Volume II, 1953, 20; “Project History, Vermejo Project,” Volume III, 1954, 9; “Project History, Vermejo Project,” Volume IV, 1955, 4.

little rainfall was the primary problem, but even heavy precipitation caused farmers fits. In May 1955 heavy rains and snowfall filled the storage reservoirs, prompting farmers to prepare their lands for irrigation and the district to expedite work on cleaning out laterals for the first delivery of water from the project. However, the rains caused branches from willow trees and other debris to flow down and obstruct the canals and laterals, resulting in a loss of water.²⁰

Although it did not matter much in the first years because farmers had seven years to produce a profitable crop before beginning the repayment schedule, the project lands produced smaller yields than expected. Farmers irrigated 950 acres in 1953 and 1954, 3,763 acres in 1955, and 4,941 acres in 1956. At the beginning of the 1957 irrigation season some farmers did not plant or prepare their fields for crops for lack of water in the reservoirs. In fact, in the first years some men went elsewhere for work or farmed part time while working another job, and a good number required assistance from the Farmers Home Administration, the Soil Conservation Service, and the County Commission of the Agricultural Stabilization and Conservation agency. The plight of the farmers was partly exacerbated by a depressed market for crops, but the primary source of their condition was the lack of water. At the end of the seven years the reservoir storage declined to a low of 6,060 acre feet after a particularly poor rain fall, and disappointing crop return continued. In 1963 the situation became even more severe when the already low storage levels dipped to only 1,220 acre feet in July.²¹

²⁰ "Project History, Vermejo Project," Volume IV, 1955, 4, 6.

²¹ "Project History, Vermejo Project," Volume IV, 1955, 7-9; "Project History, Vermejo Project," Volume V, 1956, 4; "Project History, Vermejo Project," Volume VI, 1957; "Project History, Vermejo Project," Volume VII, 1958, 1; "Project History, Vermejo Project," Volume VIII, 1959-1962, 4; Volume IX, 1963, 5.

The district did not sit by passively without taking steps to counteract the affects of the drought. It installed new drains, eradicated weeds, widened the banks on Dam No. 14, and placed gravel on slop of Stubblefield Dam to stabilize the irrigation system, reduce seepage, and prevent erosion. The district also began removing silt in canals, laterals, and drains, but drought conditions exacerbated these efforts because there was less water available to flush out debris. Despite these actions, crop production on the Vermejo Project remained disappointingly low, and in some years like 1977 farmers did not irrigate at all due to crippling drought.²²

The government extended the development period for three years, but it was clear to everyone involved that at the current water supply and crop output the project was not sustainable. When the district requested a deferment of all but \$5,000 of its repayment costs in 1975, Reclamation denied the request but instead recommended the district go through legislative channels to reach a permanent solution. The acting regional director of the Lower Basin Region believed the only probable solution was to cancel the remaining obligation and transfer title from the United States to the district. In return the United States would be relieved of “all future liability” of operation and maintenance on the project. New Mexico Senator Pete Domenici introduced such a bill on April 6, 1976, but it was never passed. An alternative to full title transfer was to pass a law that forgave the districts its debts and renegotiate the repayment schedule “based strictly on the amount of water available.” The Vermejo Conservancy Board strongly opposed the plan on the grounds that the government could “wash its hands of all responsibility and liability for ownership” yet maintain control through contract. The board also feared that

²² “Project History, Vermejo Project,” Volume II, 1953, 5; “Project History, Vermejo Project,” Volume VIII, 1959-1962, 4-6; Volume IX, 1963, 5.

continued connection to the government would disqualify the district for federal aid such as cost sharing and grants.²³

Despite these reservations, Congress passed a law that gave the interior secretary authority to defer payments and absolve other costs under the existing contract. The secretary would also have authority to transfer title to the district “except that any lands or interests in land, or interests in water, or other contractual arrangements which may be held by the Secretary for management of the Maxwell National Wildlife Refuge, for wildlife enhancement purposes, shall not be transferred.” In return, the district could no longer accept federal funding and would be required to operate and maintain the project “in accordance with the authorized project purposes.” And the district still had a repayment obligation “according to the district’s ability to repay as determined by the Secretary.”²⁴ Despite this agreement, it would be over fifteen years before the district finally acquired title to the Vermejo Project.

Aside from the repayment and title negotiations, another serious challenge facing the district was water rights and interstate competition for waters of the Vermejo River. This was not always so; in mid-century, although the headwaters of the Vermejo River originated in Colorado, only landowners in New Mexico claimed the river’s water since only they had put the water to beneficial use. However, in 1975 a Colorado state court gave a Colorado corporation the right to seventy-five cubic feet per second from the headwaters of the Vermejo. When New Mexico objected, the court appointed a Special

²³ “Project History, Vermejo Project,” Volume XII, 1977-1980, 1-2, 43, 49-51, 57-58, 71-72.

²⁴ “Relief of the Vermejo Conservancy District” (December 19, 1980), in U.S. Department of the Interior, Bureau of Reclamation, *Federal Reclamation and Related Laws Annotated*, Vol. IV, 1967-1982, Louis D. Mauro and Richard K. Pelz, editors (Denver, Colorado: United States Government Printing Office, 1989), 3274-75.

Master to review the case who recommended 4,000 cubic feet per second to Colorado.²⁵ In *Colorado v. New Mexico* 459 U.S. 176 (1982), the Special Master recommended fact finding to determine if it would be “just and equitable” to allow Colorado to divert for future use 4,000 acre feet per year from the Vermejo River. However, the U.S. Supreme Court upheld New Mexico’s right to the water and dismissed the case.²⁶

In a second legal dispute, *Raton v. Vermejo Conservancy District*, the city of Raton sued the district over water in Chico Rico Creek that had been adjudicated in 1935 by the Colfax County District Court. The dispute was over the district’s right to use its full allotment of water from Hebron Dam, which broke in 1942. Neither the district nor the city of Maxwell used its full share of the water from the dam. In 1980 the district demanded its full allotment and insisted that “all waters stored in Raton’s reservoirs in excess of Raton’s storage rights under the 1935 decree be released from storage and allowed to flow downstream.” Raton claimed the district had failed to use its full allotment of water, and had therefore lost the right to the water. The trial court and New Mexico Supreme Court disagreed and ruled in favor of the district.²⁷

In recent years, there has been concern over the potentially harmful effects of irrigation on fish and wildlife, especially migratory birds. In 1983 the U.S. Fish and Wildlife Service found incidences of mortality, deformities, and birth defects among birds in the Kesterson National Wildlife Refuge in the heavily irrigated area of the

²⁵ George William Sherk, *Dividing the Waters: The Resolution of Interstate Water Conflicts in the United States* (Kluwer Law International, 2000), 165-76.

²⁶ *Colorado v. New Mexico*, 467 U. S. 310 (1984), U.S. Supreme Court Center, <http://supreme.justia.com/us/467/310/case.html> (accessed May 2, 2008).

²⁷ *Raton v. Vermejo Conservancy District*, 101 N.M. 95, 678 P.2d 1170 (1984), cited in “New Mexico Water Markets: A Seminar on Buying, Selling, and Leasing Water Rights, May 14, 2007,” Middle Rio Grande Conservancy District <http://www.mrgcd.com/content.asp?IntLinkKey=277611&CustComKey=277608&CategoryKey=277609&pn=LinksIntView&domname=mrgcd.com> (accessed March 3, 2008).

western San Joaquin Valley in California. In other parts of the West studies noted the presence of toxic trace elements and pesticides in and around irrigated lands. The concern prompted the U.S. Department of the Interior to organize the National Irrigation Water-Quality Program, which funded a preliminary study and reconnaissance study report in the Maxwell National Wildlife Refuge, established in 1965 on 3,699 acres in the center of the Vermejo Project. In 1993 the U.S. Geological Survey, Fish & Wildlife Service, and Reclamation jointly collected samples of water, sediment, and biota from sixteen sites in and around the Vermejo Project area. The study found high selenium levels and trace elements in the water, sediment, plants, and animals at several of the sites.²⁸

Uses of Project Water

The Vermejo Project continues to operate despite recent problems with water supply and crop conditions. Drought conditions did not allow the district to deliver water for irrigation in 2001. At present, there are 7,389 acres irrigated on project lands, farmed by about sixty to sixty-five individuals.²⁹

Conclusion

However limited in scope, the Vermejo Project guaranteed the more efficient and reliable use of water from the Vermejo Creek and Chico Rico Creek. It kept the local farmers from worrying about the failure of the distribution system or flood waters washing out the diversion dams and destroying crops. Although the project irrigates less

²⁸ U.S. Department of the Interior, U.S. Geological Survey, "U.S. Geological Survey Programs in New Mexico," <http://pubs.usgs.gov/fs/FS-031-96/> (accessed February 27, 2008); U.S. Department of the Interior, U.S. Geological Survey, *Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Vermejo Project Area and the Maxwell National Wildlife Refuge, Colfax County, Northeastern New Mexico, 1993*, Water-Resources Investigations Report 96-4157, Albuquerque, New Mexico, 1996, 1-2, 6-7, 52-53.

²⁹ Joe Hroinch, Vermejo Conservancy District, conversation with the author, April 21, 2008.

acreage than it was designed to irrigate, without it the old, dilapidated project works would have continued to plague water users with costly losses of water, continued high operation costs, and reduced crop yields.

Bibliography

Manuscript and Archival Collections

Record Group 115. Records of the Bureau of Reclamation. Entry 10. U.S. Department of the Interior, Bureau of Reclamation. "Annual Project History, Vermejo Project." Volumes I-VII, 1952-1958, Box 603, Volumes VIII-IX, 1959-1963, Accession 8NN-115-85-008, Box 149, Volumes XII-XIII, 1977-1983, Accession 8NS-115-93-213, Box 176. National Archives and Records Administration, Denver, Colorado.

Record Group 115. Records of the Bureau of Reclamation. Copies of certain Project Histories are also located in Accession 8NN-115-90-011, 8NN-115-88-053, and 8NS-115-93-213. National Archives and Records Administration, Denver, Colorado.

Record Group 115. Records of the Bureau of Reclamation. U.S. Department of the Interior, Bureau of Reclamation. Project Reports, 1910-55. Accession 8NN-115-85-019, Boxes 859-861. National Archives and Records Administration, Denver, Colorado.

Government Documents

U.S. Department of the Interior, Bureau of Reclamation. *Federal Reclamation and Related Laws Annotated*. Vol. IV, 1967-1982. Louis D. Mauro and Richard K. Pelz, editors. Denver, Colorado: United States Government Printing Office, 1989.

U.S. Department of the Interior, Water and Power Resources Service. *Project Data*. Denver: United States Government Printing Office, 1981.

U.S. Department of the Interior, U.S. Geological Survey. *Reconnaissance Investigation of Water Quality, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Vermejo Project Area and the Maxwell National Wildlife Refuge, Colfax County, Northeastern New Mexico, 1993*. Water-Resources Investigations Report 96-4157. Albuquerque, New Mexico, 1996.

U.S. Department of the Interior, U.S. Geological Survey. "U.S. Geological Survey Programs in New Mexico." <http://pubs.usgs.gov/fs/FS-031-96/>.

Secondary Sources

"Construction Begun on Vermejo Project." *Reclamation Era*. 39 (June 1953): 117.

Lamar, Howard R., editor. *The New Encyclopedia of the American West*. New Haven, Connecticut: Yale University Press, 1998.

Ortiz, Alfonso, editor. *Southwest*, Volume 9. From *Handbook of North American Indians*. William C. Strutvant, editor. Washington, D.C.: Smithsonian Institution, 1979.

“President Vetoes Vermejo Project Bill.” *Reclamation Era*. 35 (November 1949): 219.

Sherk, George William. *Dividing the Waters: The Resolution of Interstate Water Conflicts in the United States*. London: Kluwer Law International, 2000.

Internet Sources

“Colorado v. New Mexico, 467 U. S. 310 (1984).” U.S. Supreme Court Center.
<http://supreme.justia.com/us/467/310/case.html>.

“Major Floods and Droughts in New Mexico.”
http://geochange.er.usgs.gov/sw/impacts/hydrology/state_fd/nmwater1.html.

“New Mexico Water Markets: A Seminar on Buying, Selling, and Leasing Water Rights, May 14, 2007.” Middle Rio Grande Conservancy District.
<http://www.mrgcd.com/content.asp?IntLinkKey=277611&CustComKey=277608&CategoryKey=277609&pn=LinksIntView&domname=mrgcd.com>.

“History: Timeline.” Northeast New Mexico.
http://nenewmexico.com/history_timeline.php.

Index

<p>Agricultural Stabilization and Conservation agency..... 13</p> <p>Amarillo, Texas..... 10</p> <p>Anazasi Indians..... 2</p> <p>Apache Indians..... 3</p> <p>Arkansas River..... 2</p> <p>Atchison, Topeka and Santa Fe Railroad 3</p> <p>authorization 8</p> <p>Barnard-Curtiss Company of Minneapolis, Minnesota..... 12</p> <p>Beaubien, Carlos 3</p> <p>Bureau of Reclamation 2, 19</p> <p>Canadian River Basin 8</p> <p>Canadian River Siphon 6</p> <p>canals and laterals Eagle Tail Canal..... 1, 9, 12 High Line Vermejo Canal..... 5 Laguna Eagle Tail Lateral..... 9 laterals 1, 9, 13 Low Line Vermejo Canal..... 5 Stubblefield Lateral..... 9 Vermejo Canal 1, 8, 9, 12 Vermejo Ditch System..... 5</p> <p>Chico Rico Creek 1, 5, 9, 16, 17</p> <p>Cimarron River 3</p> <p>Colfax County..... 1, 3</p> <p>Colfax County District Court..... 16</p> <p>Colfax County War 4</p> <p>Colfax County, New Mexico 1</p> <p>Colorado Constructors, Inc., of Denver, Colorado..... 11</p> <p>D. W. Falls Construction Company 12</p> <p>dams and reservoirs Hebron Dam..... 6, 9, 16 No. 11..... 8 No. 12..... 1, 5, 8, 9 No. 13..... 1, 5, 9, 11, 12 No. 14..... 1, 8 No. 2..... 1, 5, 9, 11, 12 No. 5..... 5, 8 No. 7..... 5, 9, 11 No. 8..... 5, 9, 11</p>	<p> old Stubblefield Dam 10</p> <p> Stubblefield..... 9</p> <p> Stubblefield Dam 11</p> <p> Stubblefield Dam 1, 11</p> <p> Stubblefield Dam 11</p> <p> Stubblefield Reservoir 9</p> <p> Vermejo Diversion Dam 1, 12</p> <p>Dawson, New Mexico..... 3</p> <p>Definite Plan Report 8</p> <p>Department of Agriculture..... 7</p> <p>Eagle Tail Canal..... 9</p> <p>Eagle Tail Heading 1, 9</p> <p>Eaton, E. D..... 10</p> <p>Eighth Judicial District Court 12</p> <p>Farmers Home Administration 13</p> <p>Fish & Wildlife Service 8, 17</p> <p>Fish and Wildlife Service..... 6</p> <p>flood 4</p> <p>flood control..... 6, 7</p> <p>Fort Sumner Project 7</p> <p>ground-breaking ceremony 10</p> <p>laterals 10</p> <p>Maxwell Ditch and Reservoir Company5</p> <p>Maxwell Irrigated Land Company 5</p> <p>Maxwell Irrigation Company..... 6</p> <p>Maxwell land grant 3, 4 U.S. Supreme Court ruling..... 4</p> <p>Maxwell Land Grant Company 4</p> <p>Maxwell, Lucien Bonaparte..... 4</p> <p>Maxwell, New Mexico..... 2, 4, 9, 10, 16</p> <p>Miranda, Guadalupe..... 3</p> <p>Mora River 3</p> <p>National Park Service 7, 8</p> <p>New Mexico..... 2</p> <p>New Mexico Supreme Court 16</p> <p>Pecos River 1, 3</p> <p>Ponil River 3</p> <p>Raton Mountains 1, 3</p> <p><i>Raton v. Vermejo Conservancy District</i> 16</p> <p>Raton, New Mexico 2, 16</p> <p>Reconstruction Finance Corporation 6</p> <p>recreation..... 6, 7</p>
---	---

repayment contract.....	7	Truman, President Harry.....	7, 8
Rincon Mountains.....	1	Tucumcari Project.....	10
Rio Grande River.....	3	Turner, Ted.....	2
Saltpeter Siphon.....	12	U.S. District Court.....	6
Sangre de Cristo Mountains.....	1	U.S. Geological Survey.....	17
Santa Fe Trail.....	3	Vermejo Canal.....	9
sediment control.....	7	Vermejo Conservancy District..	7, 10, 12
Soil Conservation Service.....	13	Vermejo Creek.....	17
South Canadian River.....	2, 3, 10	Vermejo Ditch Company.....	5
Stubblefield Dike.....	11	Vermejo River.....	1, 3, 5, 8, 9, 15
Sumner Project.....	1	weed control program.....	12
Treaty of Guadalupe-Hidalgo.....	3	wildlife conservation.....	6, 7