

ARCHITECTURAL RECORDATION
of the
WATER TOWER AND STORAGE TANK
FORT WINGATE, NEW MEXICO



US Army Corps of Engineers
Fort Worth District
2011

ARCHITECTURAL RECORDATION
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FORT WINGATE, NEW MEXICO

Location: The water tower and storage tank are located on a ridge east of the administration area on the Fort Wingate Depot Activity in McKinley County, New Mexico, approximately 130 miles northwest of Albuquerque and 32 miles east of the New Mexico-Arizona border.

Universal Transverse Mercator Coordinates:

12 S 719458.71m E 3932274.25m N

Present Owner: United States Army.

Present Occupant: None.

Present Use: Vacant.

Significance: The Water Tower, Structure 53, and Storage Tank, Structure 46, derive significance primarily as a visual landmark at Ft Wingate in addition to providing water utility to the installation for over fifty years.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: 1941 (#46 tank) 1955 (#53 tower)
2. Architect: Chicago Bridge & Iron Company
3. Original and subsequent owners, occupants, uses: U.S. Army.
4. Builder, contractor, suppliers: Chicago Bridge & Iron Company
5. Original plans and construction: None available.
6. Alterations and additions: The tanks have had no major alterations.

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B. Historical Context:

Fort Wingate, New Mexico

Fort Wingate Depot Activity was responsible for the maintenance, demilitarization and storage of ammunition from World War II until its closure under the Base Realignment and Closure Act in 1993. It is located on 22,120 acres in McKinley County, New Mexico, approximately 130 miles northwest of Albuquerque and 32 miles east of the New Mexico-Arizona border. The Fort Wingate area was the location of early Indian trade routes and habitation sites, as evidenced by the ruins of an Indian village in the ammunition storage area near the depot's western boundary.

Beginning in the 1860s, the military posts of Forts Fauntleroy, Lyon, and Wingate were built nearby, and the 100 square mile Fort Wingate Military Reservation, which included the land occupied by the present installation, was established in 1870. The reservation was later reduced in size through transfers of land to other federal agencies, and its early fortified structures are now located outside the depot's boundaries. In 1918, the Ordnance Department assumed control of the reservation and built magazines for the storage of TNT. These structures remained in use through World War II but were demolished following the war. Late in 1940, work began on a new ammunition storage depot, and by war's end 747 of the installation's current 869 structures had been erected. Since 1945, 80 additional storage igloos and a small number of ammunition maintenance and demilitarization facilities have been constructed at Fort Wingate.

The installation, which stored, maintained, and demilitarized ammunition, is located on 22,120 acres in McKinley County, New Mexico, approximately 130 miles northwest of Albuquerque and 32 miles east of the New Mexico-Arizona border. The site's topography varies from the grassy flatlands of the Wingate Valley on the north to the mountains covered with cedar and pinon trees along the depot's southern border. Until the middle of the nineteenth century, the Fort Wingate area was the location of Indian trade routes and habitation sites, as evidenced by the ruins of an Indian village in the installation's ammunition storage area. Beginning in the 1860s, the military posts of Forts Fauntleroy, Lyon, and Wingate were built nearby, and the 100 square mile Fort Wingate Military Reservation which included the land occupied by the present installation. was established in 1870. The reservation was later reduced in size through transfers of land to other federal agencies, and its early fortified structures are now located outside the depot's boundaries. In 1918, the Ordnance Department assumed control of the military reservation, redesignated it the Wingate General Ordnance Depot, and built magazines for the storage of TNT. These structures remained in use through World War II but were demolished following the war.

Work began at Fort Wingate in 1940 on what became one of the first World War II ammunition storage depots. Between 1940 and 1945, 747 of the installation's current 869 structures were erected. These included administration, maintenance, warehouse, and housing facilities as well as 650 ammunition storage igloos. Following World War II and again after the Korean War, the depot was assigned responsibility for the maintenance, demilitarization, and long-term storage of ammunition, and subsequent major building and alteration projects were oriented to this task. The installation was redesignated Fort Wingate Army Depot when it was assigned to the Army Supply and Maintenance Command in 1962.

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In 1971, it was placed in reserve status under the command of Pueblo Army Depot and renamed Fort Wingate Depot Activity. Four years later, the installation was placed under the command of Tooele Army Depot.

Pre WWII Land Use

Fort Wingate has a lengthy history beginning with Indian occupation. The Wingate Valley, protected by mountain slopes and red rock mesas, was long favored by Indians as a trade route and habitation site. The ruins of an Indian village, consisting of stone pueblos, kivas, and associated features, are located in the ammunition storage area near the depot's western border.

The valley's use by the military began in August 1860, when a garrison post was established at Bear Springs near the headwaters of the Rio Puerco. Originally named Fort Fauntleroy and renamed Fort Lyon in 1861, the post was abandoned in late 1862 when its troops were moved to Fort Wingate near San Rafael to prevent the advance of Confederate troops up the Rio Grande into Colorado. Fort Wingate was abandoned in 1868 and moved to the old Fort Lyon site at Bear Springs. Two years later, the 100 square mile Fort Wingate Military Reservation, which included the new Fort Wingate, was established by the Army. The post remained in active use until 1911, and in 1914-1915 it was once again garrisoned to guard 4,000 Mexican troops and their families fleeing from the Mexican Revolution. Fort Wingate was deactivated in 1916, and its late nineteenth and early twentieth century stone and adobe structures were transferred to the Bureau of Indian Affairs in 1925.

In 1918, the Army Ordnance Department assumed control of Fort Wingate Military Reservation and redesignated it the Wingate General Ordnance Depot. By 1921, an underground magazine and 163 wood frame above-ground magazines (the latter were World War I portable barracks) had been built for the storage of TNT. The wood frame magazines were renovated and placed on concrete foundations beginning in 1936, but were demolished along with the underground magazine following World War II. Only their scattered foundations remain. The depot's stock of TNT was sold to the British Purchasing Commission in 1940 and shipped to Britain and France. Later in the year, plans were made to build a new storage depot on the site.

World War II Construction

Increased Congressional appropriations for defense after the fall of France in 1940 led to the expansion of ammunition storage facilities across the United States. Initial plans called for placing depots in the four corners of the country to support forces repelling attacks from any direction. In November 1940, the War Department announced that the Fort Wingate Ordnance Depot was to be the site of the country's southwestern depot. The site met the Ordnance Department's criteria for storage installations: it was situated far enough from the coast to be reasonably safe from attack, and yet close enough to the Pacific Coast to facilitate the shipment of supplies; a major transcontinental highway (U.S. Highway 66) and the Atchison, Topeka and Santa Fe Railroad bordered the depot on the north; the area was sparsely settled, decreasing the chance of damage in the event of an ammunition explosion; and the dry climate was ideal for the storage of explosives. Moreover, the federal government already owned the site, thus avoiding the delay and expense of purchasing land.

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Work on the depot commenced in November when the design contract was awarded to T. H. Buell & Company and Prouty Brothers Engineering Company of Denver. While the two firms conducted engineering surveys, rail lines and roads were extended to provide access to the site. Following completion of the surveys in January, construction contracts were awarded to Sharp & Fellows Contracting Company of Los Angeles; Armstrong & Armstrong of Roswell, New Mexico; R. Allison Company of Albuquerque; and A. Smith Construction Company, Inc. of Houston. Construction began in February and was largely completed by the end of the year. A Navajo "house blessing," recognizing the work of the tribal members who had formed a large segment of the depot's construction force, was part of the dedication ceremonies held on December 5, 1941. The depot was laid out in two major areas: administration and ammunition storage.

Administration Area

As one of the first World War II ammunition supply depots, Fort Wingate fell under the Ordnance Department's program "A". Program "A" construction was characterized by the use of permanent masonry materials for key buildings since these materials were not in short supply before the spring of 1942. At Fort Wingate, brick was used for all structures initially erected in the administration area. The headquarters building (Building 1) is a two-story, flat-roofed structure of tan brick laid in common bond accented by dark brown brick header and soldier courses that form continuous horizontal bands around the building. Tan brick with dark brown brick trim was used in the construction of all the buildings erected in the area in 1941, including a pair of two-story family duplexes (Buildings 3 and 4), a two-story fire station and dispensary that was converted to officers' quarters in 1943 (Building 2), a one-story motor fuel station (Building 6), a one-story paint storage warehouse (Building 7), a one-story paint shop (Building 8), and a one-story gate guard house (Building 18). Larger structures, including a regimental garage (Building 5), a machine and carpenter shop (Building 9), a locomotive shop (Building 11), and two inert materials warehouses (Buildings 12 and 13), are one story high with stepped gables, steel sash, and overhead doors.

Almost all facilities erected in the administration area in 1942 and 1943 were temporary, wood-frame "theater of operations" or modified mobilization type structures of standardized design. An inert materials warehouse (Building 14), a garage (Building 15), a bachelor officers' quarters (Building 16), and a stable for horses used by the depot's patrol guards (Building 17) were constructed in 1942, and the following year a second bachelor officers' quarters (Building 27), a dispensary (Building 44), single family quarters (Building 28), a cafeteria (Building 41), a change house (Building 30), a field office (Building 31), and a field dunnage shop (Building 33) were added. All are one- or two-story, gable-roofed, wood-frame structures clad with asbestos cement shingles or corrugated metal.

Three permanent structures were added in the administration area in 1943. In that year, the depot's fire station was moved into a new brick building (Building 34). Consistent with earlier permanent construction in the administration area, tan brick with dark brown brick trim was used for this one-story, gable-roofed structure. A small brick heating plant (Building 36) and a one-story, hollow clay tile ammunition, clipping, belting, and linking building (Building 29) were also erected in 1943.

Ammunition Storage Area

Work began on 650 standard ammunition storage igloos in May 1941 and was completed in September, four months ahead of schedule. The igloos, 60- or 80-foot, reinforced concrete, barrel vaulted structures with single steel doors, were laid in parallel rows with a maximum of 100 per block, although the hilly terrain at Fort Wingate necessitated some variation from standard Ordnance plans. Concurrently, 32 reinforced concrete shelters were constructed throughout the storage area to provide personnel shelter in the event of an explosion. Twelve standard above-ground ammunition magazines (Buildings 301-312) were built at the north end of the storage area in 1941 and 1942. They are constructed of clay tile walls on reinforced concrete foundations and have corrugated asbestos roofs supported by either steel or wood trusses. Five sliding metal doors line concrete platforms on the side of the buildings serviced by rail lines. Due to deterioration of the clay tile, seven of the magazines (Buildings 306-312) have been covered with metal siding.

To facilitate the movement of ammunition, 14 loading docks (Buildings 106-109, 211-214, and 410-415) were erected along the rail lines in the storage area in 1941. They are reinforced concrete platforms set on concrete piers and have small reinforced concrete, flat-roofed tool houses at one end. Seven small brick dunnage buildings (Buildings 110, 113, 215, 216, 320, 402, and 403) were built near the loading docks in 1942.

The depot's ammunition storage facilities were expanded with the construction of 303 open storage pads, most of which are located in the open spaces between igloos. The pads are flat dirt areas surrounded by earth barricades. An opening facing the road provides access to the interior. An ammunition workshop area was established at the north end of the storage area in the early years of the war. Tan brick with dark brown trim was used in the construction of a single-story, hip-roofed surveillance laboratory (Building 537) in 1941. Added the following year were two identical bundle ammunition facilities with hollow clay tile buildings and open concrete platforms (Buildings 503 and 522), a brick ammunition packing, shipping, and receiving building with reinforced concrete blast walls and a gable roof (Building 542), a small brick heating plant (Building 541), and a reinforced concrete barricade (Building 543). An inspector's workshop with hollow clay tile walls (Building 536) and a heating plant constructed of brick (Building 535) were built south of the earlier workshops in 1943. Four lunch rooms (Buildings 103, 217, 316, and 539) were erected in the storage area in 1944 and 1945. These single-story structures with massive wood lintels above their doors and windows are built of random sandstone ashlar, a material abundant in the area. Each has projecting wooden roof beams or vigas typical of architecture in the southwestern United States. This nonstandard construction which reflects local materials and craftsmanship forms an interesting mix with the standard Army construction used elsewhere on the depot.

Post War Construction

Following the war, the depot was charged with maintaining, demilitarizing, and providing for long-term storage of ammunition. Subsequent major building and alteration projects were oriented to this task. In 1947, a disassembly plant, consisting of a reinforced concrete remote control shelter (Building 518), a hollow clay tile motor generator building (Building 519), a reinforced concrete disassembly platform and barricade (Building 520), a timber revetted barricade (Building 521), and an earthen barricade (Building 547), were built southeast of the

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World War II ammunition workshops. At war's end, the bundle ammunition buildings (Buildings 503 and 522) were converted into ammunition renovation facilities. During 1948, a heating plant (Building 501), a clean and paint building (Building 515), an ammunition receiving building (Building 516), a vacuum producer building (Building 510), a deboosting barricade (Building 514), and three service magazines (Buildings 511, 512, and 513) were built in the workshop area surrounding these converted facilities; all are hollow clay tile structures. In 1955, a 132' high, 250M Gallon water storage tank was constructed for the installation.

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PART II. ARCHITECTURAL INFORMATION

A. General statement:

1. Architectural character: The 132 foot water tower, #53, is a visual landmark for locating the Depot from Interstate 40. The tower is painted in a distinctive red and white check pattern. The water tank, #46, is painted silver. Both are stark industrial engineering structures that stand out in the arid desert landscape.
2. Condition of fabric: The water tower is in a deteriorated condition showing severe rusting in areas. Due to its current condition, it remains unused and is scheduled for demolition.

B. Description of Exterior:

1. Overall dimensions: Water Tower 132 feet high, 49 foot diameter. Water tank 59 foot diameter, 22 feet high.
2. Foundation: Concrete slab on grade foundations with concrete footings.
3. Walls: Iron and plated steel.

D. Site:



Figure 1. Fort Wingate, New Mexico.

Water Tower and Storage Tank, Fort Wingate, New Mexico

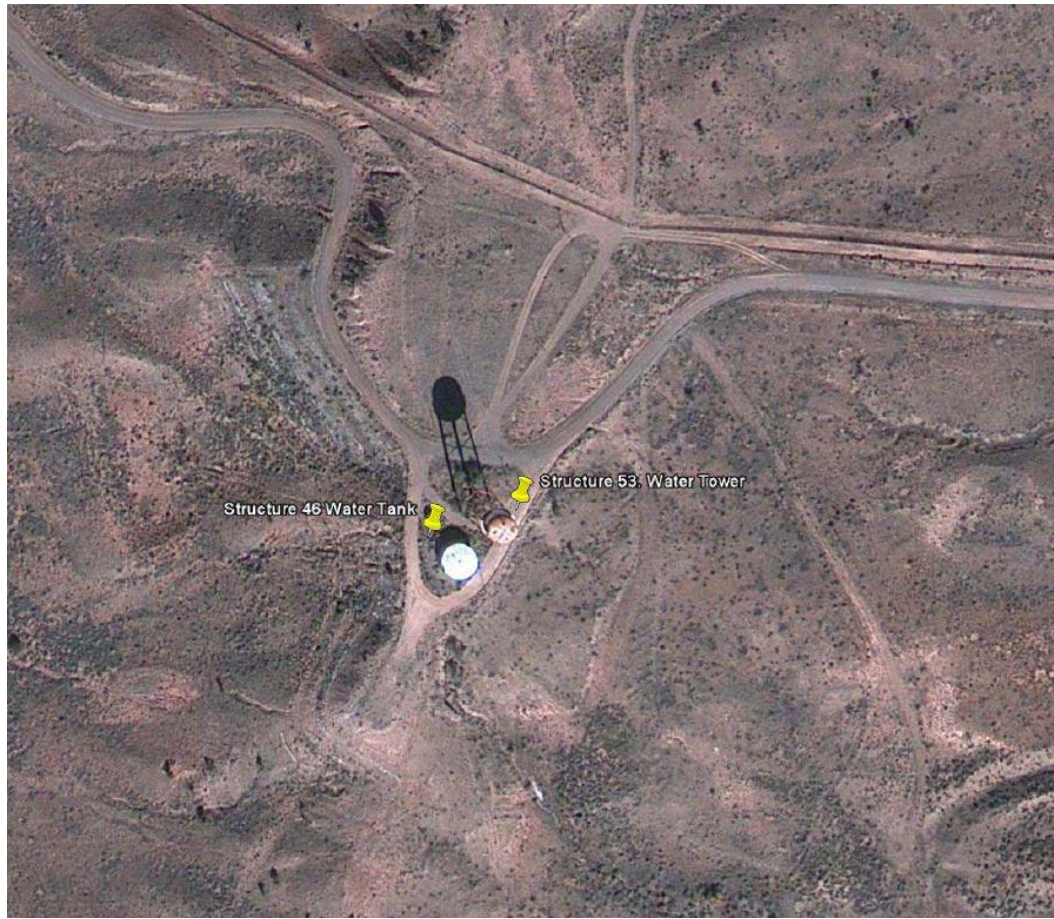


Figure 2. Water Tower (53) and Water Tank (46).

PART III. SOURCES OF INFORMATION

Bibliography:

Fort Wingate Ordnance Depot, Gallup, New Mexico Facilities Data. May 1961.

Historic Properties Report. Fort Wingate Depot Activity, New Mexico. Building Technology Incorporated, Silver Spring Maryland. 1984.

New Mexico Historic Inventory Forms. 1994.

PART IV. PROJECT INFORMATION

Photography and written documentation by Joseph Scott Murphey, Historical Architect, US Army Corps of Engineers, Fort Worth District.

Photography performed in August 2011

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JOSEPH MURPHEY, PHOTOGRAPHER. AUGUST 2011

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Photograph # 1
Fort Wingate Water Tower Distant View West 2011



Photograph #2
Fort Wingate Water Tower Looking East 2011



Photograph # 3
Fort Hingate Water Tower Looking West 2011



Photograph # 4
Fort Wingate Water Tower Looking South 2011



Photograph #5

Fort Wingate Water Tower looking West 2011



Photograph #6

Fort Wingate Water Tower looking North east 2011

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Figure 1. Entrance to Fort Wingate Depot Activity Looking South.



Figure 2. Water Tower Distant View from I-40 Looking Southwest.



Figure 3. Water Tower Distant View from Admin Area Bridge Looking Southeast.



Figure 4. Water Tower Distant View From Admin Area Looking South.



Figure 5. Water Tower Distant View from Admin Area Looking East.



Figure 6. Water Tower Distant View from Magazine Area Looking West.



Figure 7. Water Tower and Storage Tank Looking West.



Figure 8. Water Tower and Storage Tank from Admin Area Looking West.



Figure 9. Water Tower and Storage Tank Looking West.



Figure 10. Water Tower. Detail.



Figure 11. Water Tower. Footing Detail.



Figure 12. Water Tower. Bracing Detail.



Figure 13. Water Tower. Ladder Detail.



Figure 14. Water Tower. Bracing Detail.



Figure 15. Water Tower. Railing Detail.



Figure 16. Water Tower. View from Bottom.



Figure 17. Water Tower. Plate Detail.



Figure 18. Storage Tank Looking West.



Figure 19. Storage Tank Looking South.

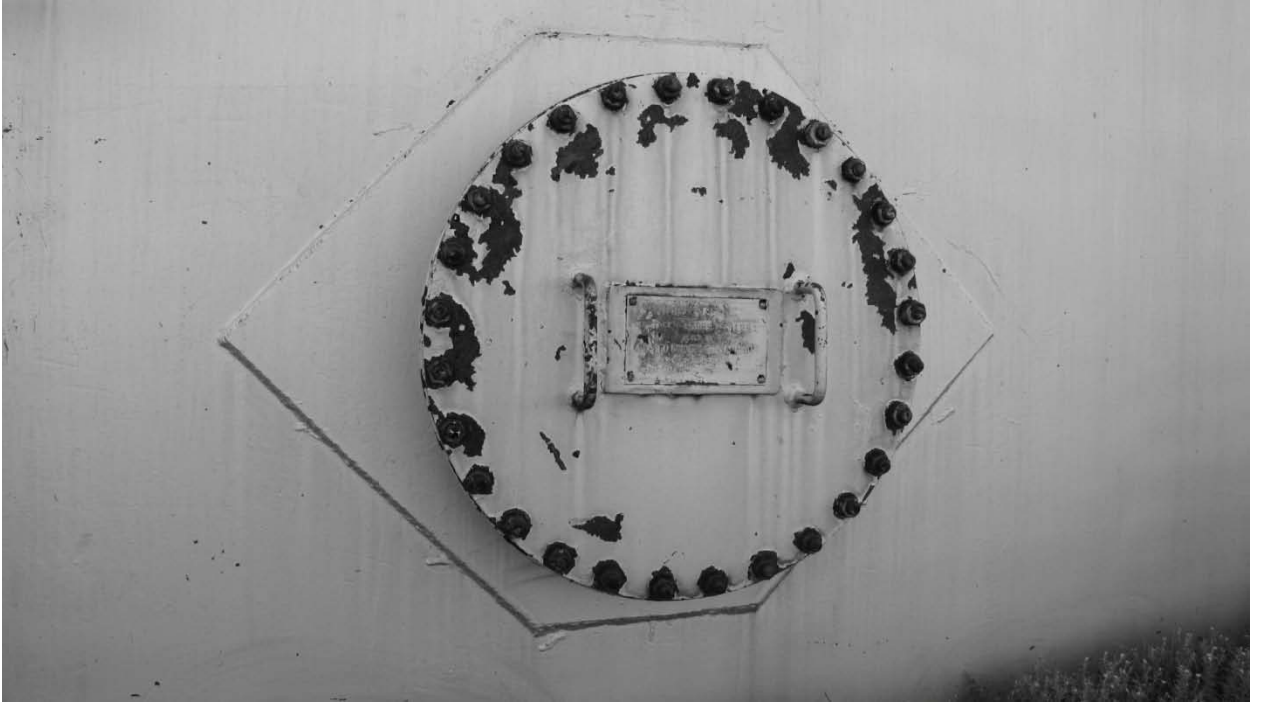


Figure 20. Storage Tank Access Hatch.



Figure 21. Storage Tank. Plate Detail.



Figure 22. Storage Tank. Float Detail.



Figure 23. Storage Tank Looking Southwest.



Figure 24. Water Tower and Storage Tank Looking North.



Figure 25. Water Tower and Storage Tank. Detail.



Figure26. Water Tower and Storage Tank Looking Northwest Toward Administration Area and I-40.