

NITRE LANDS OF CALIFORNIA

A Report on the 1903 Building



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For

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Introduction

This report was requested by the U.S. Bureau of Land Management, California State Office, Sacramento, California, to:

1. Determine the record of ownership and uses of a stone building located approximately ½ mile below China Ranch in Willow Springs Canyon (also known as China Wash) near its confluence with the Amargosa River;
2. Provide copies of historical materials obtained during the research process;
3. Prepare a report of the research findings.

Speculation has existed among local residents and researchers as to the purpose of this building. It was sometimes referred to as the “1903 Building” due to this date being inscribed in the stone lintel of the building. It had also been called the “old saloon” in reference to the numerous broken beer and liquor bottles that were at one time found in the building and in the cellar behind it. Others thought that it had been used as a way station for the Tonopah & Tidewater Railroad, a paymaster’s office, or a general store. Throughout this report, it will be referred to as the “1903 Building”.

The history of the building is somewhat tied to the history of neighboring China Ranch, a historic site in its own right, now a privately owned date farm and tourist attraction. China Ranch has also been known as the Evans Ranch, Willow Ranch, and Morrison Ranch. This report will include results of limited research involving this property, particularly as it relates to the history of the area in general, and will include a section about the ranch.

Primary and secondary materials were researched in person at the following locations:

1. University of Nevada, Las Vegas, James Dickinson Library, Special Collections
Department: Las Vegas, Nevada
2. Death Valley National Park Museum: Death Valley, California
3. Shoshone Museum: Shoshone, California
4. Central Nevada Museum: Tonopah, Nevada
5. Eastern California Museum: Independence, California
6. Mojave Desert Heritage and Cultural Association: Goffs, California
7. Inyo County Clerk’s Office: Independence, California
8. Inyo County Recorder’s Office: Independence, California
9. Inyo County Assessor’s Office: Independence, California
10. San Bernardino County Surveyor’s Office: San Bernardino, California

Additionally, interviews were conducted with several persons having knowledge of the building and the area -- in person, on the telephone, and in writing.

Research was conducted from September through December, 1999 and the report was completed in January, 2000.

Acknowledgments

I would like to thank those people in various county offices who assisted me in this research. Notable among them were Emma Bills, Deputy Recorder, Inyo County Recorder's Office; Beverly Harry, Inyo County Clerk/Recorder; Tom Landshaw, Inyo County Assessor; Stan Haye, former Inyo County Deputy Assessor; and Bill Scribner, San Bernardino County Surveyor's Office. Cammy Hoersting & Jerry Core of Inyo Mono Title Company deserve special mention for sharing property information from their title plant with me.

Residents of the area who assisted me include Brian Brown, owner of China Ranch Date Farm, who provided me with information about the ranch and the 1903 Building. Jane Main, former resident at the Western Talc Mine, shared her memories of the area with me as did George Ross, a long time Tecopa resident, and Celesta Lisle Lowe, granddaughter of Shoshone, California founder R.J. "Dad" Fairbanks.

Dennis Casebier, East Mojave historian, founder of Tales of the Mojave Road Publishing Co. and Friends of the Mojave Road, founder/Executive Director of the Mojave Desert Heritage and Cultural Association, was of great assistance in providing guidance and allowing use of the invaluable resources of his research facility in Goffs, California.

Miriam Romero, co-author of the study *Amargosa Canyon-Dumont Dunes Proposed Natural Area*, spent many hours sharing her thoughts and resources with me as well as traveling with me on two trips to the site. Additionally, the cover photograph for this report was taken from her slide collection.

Elizabeth Warren, historian and co-author of several archaeological studies consulted for this report, shared her considerable knowledge with me and gave me advice and guidance based on her many years of historical research.

Richard Lingenfelter, author of the invaluable *Death Valley and the Amargosa A Land of Illusion* was kind enough to spend some time with me at his office at the University of California at San Diego.

Blair Davenport, curator of the Death Valley National Park Museum, provided research assistance and copies of photographs for inclusion in this report.

The 1903 Building - Early Years

In the 1800's, the world's major source of sodium nitrate (also known as nitre or niter), was in the Atacama Desert of Chile, hence the common name "Chile saltpeter". Sodium nitrate was used as an essential ingredient of fertilizers and was a major source of nitric acid, upon which most early military explosives depended. In modern times, processes have been developed for the fixation of atmospheric nitrogen, thereby minimizing the need for mining nitrates. However, in the 1890's it was the need to find domestic sources for nitre that led to extensive exploration in the Amargosa region of San Bernardino and Inyo Counties.

The Amargosa region was part of the Resting Springs Mining District and was the site of considerable traffic at this time. The Old Spanish Trail crossed through this area beginning in the early 1800's. The trail certainly went down the main channel of the Amargosa River, and most likely down other corridors such as Willow Creek Canyon. This canyon is shown as China Wash on current maps, but historically it has been called Willow Creek Canyon, Willow Springs Canyon, or Clarke's (Clark's) Fork. This route would have been easier than the Amargosa River south of Tecopa where many fordings of the stream would have been necessary. Waring (1915) reports that John C. Fremont visited the springs at China Ranch in 1844, when returning eastward from his explorations.

In the 1870's the Tecopa smelter was located at the head of Willow Creek Canyon. There was extensive silver-lead mining nearby at the Noonday and Gunsight mines. The townsite of Brownsville was located on Willow Creek in 1875. The mining activity almost certainly would have brought traffic down the canyon to its junction with the Amargosa Canyon, leading to points south.

Beginning in the 1890's several areas of the Amargosa region were extensively explored for nitre and these sites were considered prime prospects for nitre mining. These areas all have the similar characteristic of rounded caliche hills as found in the vicinity of the 1903 Building. The richest deposits of sodium nitrate are traditionally found in caliche mixed with gravel. The sites included Zabriskie, Resting Springs, Tule Springs, Upper Canyon, Lower Canyon, Salt Spring, Saratoga, Round Mountain, Valley, Confidence, and Owl Spring.

According to Spears (1892), in the 1890's the area was increasingly coming to the attention of miners as prospectors traveled between Calico and Daggett to Resting Springs. The *Mining and Scientific Press* (1890) described the "Chinese Ranch" on Clark's Fork as a good location for running a smelter plant.

The 1903 Building lies in what came to be known as the Upper Canyon Nitre Beds, which were located on both sides of the Amargosa River and Willow Creek. The beds were located mainly in Inyo County, but extended south into San Bernardino County. The Upper Canyon fields were closely associated with the Lower Canyon fields, located to the south near Sperry, in San Bernardino County. Appendix C of this report contains a list of

some of the property documents pertaining to the 1903 Building. Copies of some of the documents are also included.

Early Mining Locations

According to Noble, Mansfield et al. (1922), J. M. Forney's 1892 report, *The Niter Beds of the United States*, described the Upper Canyon and Lower Canyon Nitre Beds, concentrating on the lower fields. The report was the result of a two-month evaluation of the beds. Forney recognized that the nitrate was located in the caliche layer of the strata, rather than in the surface soil above or the bedrock clay below.

Forney was also involved in staking a mining claim to the beds. Forney, Mrs. Mary A. Forney, W.A. & Mrs. J.C. Vandercook, J.M. and Mrs. Elizabeth Merrell, Lowry[?] Silver, and A.W. Unthank recorded a mining location notice for the Upper Canyon beds in Inyo County on June 11, 1892. J. J. and Samuel Evans, probable owners of Evans Ranch [today China Ranch], were shown as witnesses. A small map, drawn in the recorder's book as part of the location notice, indicates that the land was surveyed by Unthank. This map shows the nitre beds and some physical features. There are no roads or man-made features shown on this small map. Presumably this group also filed location notices on the Lower Canyon beds near Sperry in San Bernardino County.

Unthank also prepared a large, more detailed map, dated 1892 in the legend, called Nitre Beds of California. Map A is a copy of this map. The map shows the Upper and Lower Nitre Bed claims, roads, and various physical features. More importantly, and oddly, it shows the 1903 Building labeled as "assay office" and China Ranch as the Morrison Ranch. If the 1903 Building was actually built in 1903 it could not have been shown on an 1892 map unless it was a different structure (such as a tent) at that time. Also, Morrison did not own China Ranch until 1900. This map was filed with the Inyo County Recorder; however, there is no recording information on the map with the exception of the Book and Page - Book 102, Page 76² - the second page of a similar map recorded in Book 102, Page 76¹.

This second similar map, also by Unthank, is dated 1896 in the legend and shows the Upper Nitre Beds. Map B is a copy of this map. The 1903 Building is not depicted on this map and China Ranch is shown as Evans Ranch. A recording endorsement is shown on this map, indicating that it was filed on January 3, 1896. An additional endorsement off to the side of the map indicates it was filed again on January 26, 1905. Both maps are physically stored in the Inyo County Recorder's Office mounted back to back as one item.

The depiction of features and the dating of these maps present questions as to their accuracy. One scenario that may explain the discrepancies is that the 1892 map was prepared as a comprehensive map for both the Upper and Lower beds when the location work was done in 1892. This map could have served as the basis for the drawing of the much smaller map in the recorder's book as part of the location notice. At that time, the comprehensive map probably did not depict either the building or the ranch. Later, in 1896, it became necessary to file the map, so details were added - the Evans Ranch and roads.

Then, in 1905, the map may have needed to be filed again, perhaps in prelude to the sale of the claims to Pacific Nitrate Co. The 1892 map may have been updated to show the now existing assay office and Morrison Ranch and then filed with the Inyo County Recorder. Because both maps are blueprints, it is not possible to tell if alterations were made; however, it would have been quite possible to alter the original maps and make new blueprints for filing, neglecting to update the dates originally set out in the legend of the maps.

On December 20, 1894, an Intent to Hold & Work the Upper Canyon beds was recorded by the same locators as in the 1892 location notice, with the exception that J. M. Forney and Lowry[?] Silver were shown with the notation "Estate of" preceding their names, indicating that they had died since the 1892 location.

On February 3, 1896 Sam & Mrs. Ina Evans; Egbert, Jennie, & Bessie Van Alen; Robert C. & Mrs. Robert C. Gillis; and W.T. Gillis recorded a location notice for the Upper Canyon beds. Witnesses were J. J. Evans and M. Barnes.

On May 18, 1896 Sam & Ina Evans (of Long Beach, California) deeded their interest in the Upper Canyon beds to John J. Evans (of Calico, California).

During 1899, Josiah E. Spurr (1903) conducted a geological reconnaissance of Nevada south of the 40th parallel and adjacent portions of California. His only references to the Amargosa region are taken from the notes of R.B. Rowe's survey of 1900-01. The notes describe the area about a mile below China Ranch as having exposed metamorphic rock, but make no mention of nitre. The report also describes the waterfalls on the Amargosa River.

In 1902 a report by Gilbert Bailey, *The Saline Deposits of California*, claimed that the nitre beds in the south end of Death Valley could rival the famous deposits of Chile. Bailey noted the potential for nitre development and remarked on the great advantage nitre fields in California, with proper utilization of water supplies, would have over the extremely arid fields of Chile. He also briefly described irrigation and agriculture at Willow Ranch [today China Ranch], located on Willow Creek. His report was later described as lacking in detail about the method of sampling and was criticized for raising high expectations of the value of the nitrate fields.

According to Lingenfelter (1986), the Bailey report triggered a rush of nitre hunters to the region in the fall of 1902. The U.S. Geological Survey called the rush "a little short of insanity", but several groups of speculators continued to explore and promote the claims.

A 1904 "Relief and Mineral Map of California" published by the California State Mining Bureau and reproduced by Preston (1988), shows nitre deposits in the Amargosa region; however, there is no value shown for 1903 production as there are for other minerals and salines.

On May 25, 1905 a Quitclaim Deed was recorded from H.L. Percy, Edward S. Cobb, J.R. Kline, A.E. & L.A. Elliott, George Hawk, H.S. McKee and R.I. Rogers to Pacific Nitrate Co. of Los Angeles, California for all nitre bed claims in the Upper and Lower Canyon.

In 1906 construction of Frances Marion “Borax” Smith’s Tonopah & Tidewater Railroad (T&T RR) began in the Amargosa Canyon. The railroad was constructed to move borax from Death Valley to Los Angeles, and to extend northward to serve the mining camps of Rhyolite, Bullfrog, Goldfield, and Tonopah. Construction through the Amargosa Canyon was very difficult, especially during the heat of the summer months. Large cuts and long fills were required, as well as three major trestles of up to 500 feet in length. Hiring and retaining laborers was extremely difficult. The stretch of the T&T RR through Amargosa Canyon was finally completed in the cooler months.

Around 1906, the old lead mining camp of Tecopa at the head of Willow Creek had resumed mining activities in anticipation of the construction of the Tonopah & Tidewater Railroad through Amargosa Canyon. A road leading from the camp down Willow Creek, which would have passed directly in front of the 1903 Building, was used to transport minerals to the T&T RR at Acme siding. Mendenhall (1909) also comments on traffic from Daggett to Resting Springs via the Willow Creek road.

On December 14, 1907 Walter R. Fales filed an Affidavit of Assessment Work for the Upper Canyon nitre beds. Fales was president of Pacific Nitrate Company.

Initial Evaluation of the Nitre Beds

In 1907 the first extensive evaluation of nitrate locations in the area of the 1903 Building was made. According to Noble and Mansfield (1922), mining engineer and Pacific Nitrate Company employee Frank Robbins prepared a report for the company on the systematic prospecting and sampling of the Upper and Lower Canyon beds. A plan for the operation of the fields was developed, showing estimated costs of production, with an estimate of 118,000 tons given for total possible production of the nitre-bearing ground. The claims are described as a group of hills composed of light colored clay strata. The surface is loose soil, referred to as the soft layer, some 6 to 10 inches thick. This soft layer contains some nitrate. Underneath is a denser layer, 4 to 6 inches thick, called the hard layer. The hard layer is the caliche, which contains the most salts and shows the largest nitrate content. Below the caliche, the original bedded clay shows only traces of nitrate.

Robbins sampled the claims by digging trenches hundreds of feet in length (several ran over 1,500 feet). Measurements of the hard and soft layers were made at frequent intervals and many samples were analyzed. A 34-acre area called Bully Hill was cited as the best ground in the entire field both in thickness and in value. Bully Hill is the highest point in the hills to the immediate west of the 1903 Building and is the site of U.S. Mineral Monument No. 131, designated by a post at its apex. This monument is approximately 1,500 feet west of the 1903 Building. Mineral monuments were used as a basis for surveying mining claims in remote areas where the rectangular survey system had not yet been adopted.

Robbins’ report recommends that out of a total field of 6,600 acres, only 1,420 acres in the Upper Canyon beds and 860 in the Lower Canyon beds be retained. The remainder is regarded as worthless for nitre production.

Chemical engineer B.A. Olshausen reported on a brief 1907 trip to the Saratoga, Valley, Confidence, and Owl Spring fields to relocate claims for American Niter Company. His analysis of samples that the company had taken four years previously yielded such high results that Noble and Mansfield (1922) concluded the samples represented only carefully selected or refined material.

World's Work Magazine (1908), in commenting on the completion of the T&T RR, noted that it would open up the immense nitre beds for production. The article notes that although the deposits were low-grade nitrates, they were the only deposits in this country and the value of the discovery had yet to be determined.

California Nitrate Development Company Exploration

A photograph album titled *Niter Lands of California* was created by A. W. Scott, Jr. of San Francisco, Calif. It consists of about 75 high quality black and white photographs of the exploration of nitrate bearing areas in Inyo and San Bernardino Counties. The dates of the photos are 1908 and 1909. The photos show the construction of crew housing at Saratoga Springs; some copper and lead ore prospecting; Sperry on the T&T RR; the Barstow train depot; the Palisades near Tecopa; various automobiles used by the field crew; and the Saratoga, Confidence and Valley nitre beds.

More importantly, the album contains over 20 photos taken in the Upper Canyon area, including fields and buildings at Morrison Ranch, the 1903 Building, and mining of gypsum and tufa building stones. These photographs seem to differentiate between "Willow Springs Ranche" and "Dave Morrison's Ranche", whereas other references indicate both names were applied to the same ranch -- the present day China Ranch.

Copies of some of these photos are included in Appendix A of this report. They will need to be examined at the site of the 1903 Building to conclusively determine which ones depict the building. Close examination may also reveal other facts about the building or China Ranch not previously known.

Lingenfelter (1986) reports that in 1910 Scott, a San Francisco grain merchant, along with others, began acquiring nitre deposits. By the spring of 1914 they had over 13 square miles of nitre ground and had formed the California Nitrate Development Company. With the outbreak of World War I, they published a prospectus, *A Story About Nitrate of Soda in Death Valley*. The company stressed the use of nitrate for fertilizer and, to a lesser extent, for explosives.

To illustrate the importance of nitrate, the prospectus begins with this statement:

NITRE
The Need of Nations
Nitre is the bread of life to the plants.
Nitre is blood to the grape, sugar to the beet, starch to the humble potato.
Nitre is as truly bread to the wheat as the wheat is bread to man.

The prospectus reports that the fields of the United States had begun to show weakness due nitrogen deficiency. With imported nitre from the Chilean nitrate beds, the fields were given new life. However, this dependence on Chile for the supply of nitre led to the search for a domestic source. The prospectus points out that California nitrate would be much less expensive than Chilean nitre due to decreased shipping costs and improved extraction and processing methods. It would also serve to decrease the country's dependence on a foreign source.

The prospectus also mentions nitre's importance in the manufacture of gunpowder for which all nations were dependent on supplies from Chile. A copy of the prospectus is included in Appendix B.

Pacific Nitrate Company Patent

Pacific Nitrate Company of Los Angeles, California, incorporated on February 1, 1905, applied for patents to the Upper Canyon and Lower Canyon Nitrate Beds. The Upper Canyon application was dated February 28, 1909 and included Nitre Beds 1, 2, 3, 4, 7, 9, 11, 12, 13, 15, and 16 in Inyo County and Beds 2 and 4 in San Bernardino County. Nitre Bed 15 in the Upper Canyon is the site of the 1903 Building.

On March 16, 1909 Walter R. Fales of Pacific Nitrate Company recorded a Proof of Labor on the Upper Beds in Inyo County and, presumably, on the beds in San Bernardino County. Pacific Nitrate's application describes the geologic formations, noting the bedding of the clay hills with a soft layer under which is found the nitrate bearing caliche layer. It also describes the geographical features and notes that the Amargosa River and Clark's Forke (or Clarke's Fork) pass through the claims, varying from two feet to ten feet wide and from a few inches to several feet deep under ordinary circumstances. It was noted that during rainy seasons they carry an immense amount of water.

The application describes the Tonopah & Tidewater Railroad paralleling the Amargosa River on the east side of the claim as well as a wagon road across the claims on the east side of the Amargosa River and on the west side of Clarke's Fork. A stone house (no doubt the 1903 Building) on Nitre Bed 15 is described as a 15 ft. x 20 ft. structure with the southwest corner bearing north 312 ft. from monument corner # 1. It describes an 8 ft. x 18 ft. addition on the south side of the building and a 10 ft. x 20 ft. addition on the west side. The application states that the house was owned and erected by the claimant (Pacific Nitrate Co.) and also notes that water for living purposes and a suitable permanent camp could only be obtained on Clarke's Fork in Nitre Bed 15.

A ditch was constructed from Clarke's Fork southwesterly across Nitre Bed 15, past the stone house and onto Nitre Bed 4. An affidavit signed by Walter R. Fales, President of Pacific Nitrate Co., attests to the fact that the ditch was constructed to convey water from the creek to Nitrate Beds 2 and 4 for the purpose of operating a plant for the extraction of the nitre.

The application also details surface improvements and discovery work for each claim. This work consisted mainly of trenching on the claims and labor in maintaining trails and

wagon roads, in addition to the stone house. The U.S. Surveyor General's Office informed the company that while more than enough work had been done in the aggregate, there was an insufficiency upon certain claims. For acceptance of a survey, it must be clearly shown that the work is unquestionably for the benefit of the claim for which it was intended. Therefore, the buildings erected for the housing of employees and the construction of the ditch were questioned. Frank Robbins, who prepared the 1907 report for the company, worked with U.S. Deputy Mineral Surveyor John Covert to clarify the purpose of the ditch and the value of the work. Robbins signed an affidavit describing this situation on August 10, 1912, citing his discussions with Covert. It was agreed to distribute the cost of the ditch as improvements to beds 2, 4, and 15; no mention was made of the building's cost as being included in the value of the improvements.

These features -- the railroad, the Amargosa River, Clark's Fork, the wagon road, the ditch and the stone house -- are clearly depicted on Mineral Survey Plat No. 4732 surveyed by John F. Covert, U.S. Deputy Mineral Surveyor. The plat, dated January 1, 1905, notes that improvements consisting of 39 trenches (\$4,925) and one ditch (\$1,783) were made to the claims. Map C is a copy of the mineral survey plat.

A Patent Deed (Patent No. 297641, Independence 0596) was executed on October 22, 1912 from the United States of America to Pacific Nitrate Co. for most of the Nitrate Beds described in the original application, including Nitrate Bed 15, the location of the 1903 Building. This deed was recorded with the Inyo County recorder almost five years later on January 27, 1917.

Pacific Nitrate Co. also applied for and received a patent on the Lower Canyon fields (Patent No. 297642; Independence 0597) in San Bernardino County.

According to Noble, Mansfield et al. (1922), in 1912 E. E. Free reported the results of a brief reconnaissance in the Upper and Lower Canyon fields. The Upper Canyon field includes the area surrounding the 1903 Building, while the Lower Canyon field was to the south near Sperry.

In summarizing Free's work, Noble and Mansfield described the sampling process used. Free took 16 samples of the loose surface soil layer and three samples from a depth of four to ten inches, which he described as the underlying bedrock. The sample taken from the greatest depth contained the highest percentage of sodium nitrate and came from the caliche layer rather than clay strata of the bedrock. Free recommended against further exploitation of nitrates in the area unless exploration could reveal large quantities of bedrock with a nitrate content as high as the richest sample.

Noble and Mansfield also relate that in January, 1914 the United States Geological Survey followed up on Free's report by shallow drilling in Bully Hill, where Free had obtained his richest sample. Bully Hill is located directly west of the 1903 Building. Three holes were drilled, with results that lacked economic significance. The small amounts of nitrate that were obtained may have even been inflated by a small amount of nitrate-bearing dust falling into the lower part of the uncased drill holes, thereby increasing the amount of nitrate in the samples.

Also in 1914 mining engineer John A. Chestnut prepared a report on the Saratoga, Owl Spring, Confidence, Valley, and Round Mountain fields for the California Nitrate Development Company. His exploration was conducted mainly in the surface and caliche layers. Some chemical determinations were made, but his report lacked detail.

Noble and Mansfield also mention a brief 1916 report made by J.R. Ferrell to the California Nitrate Development Company. The report related to a small sampling he had done at the Owl Spring field. The surface samples showed poor yields. He also recommended deep drilling to determine if the bedrock clays contained large beds of nitrate.

U.S. Geological Survey Exploration of the Nitre Beds

In 1918 the most extensive exploration and analysis was made of nitre beds in the Amargosa Region when the U.S. Geological Survey began to explore the area. World War I was taking place and nitrate was essential for production of explosives. The investigation was considered urgent so that the federal government could obtain “a true understanding of the nature of nitrate deposits” to avoid placing “undue reliance on unfounded assertions concerning the existence of important deposits of nitrate”.

The USGS report, *Nitrate Deposits in the Amargosa Region, Southeastern California*, by L.F. Noble, G.R. Mansfield and others was published in 1922. The exploration team thoroughly investigated the fields of Zabriskie, Upper Canyon, Lower Canyon, Confidence, and Saratoga Hills area of the Saratoga field. The less promising Resting Springs, Tule Springs, Salt Springs, Round Mountain, Valley, and Owl Spring fields were reviewed by general inspection during scouting trips. The Salt Basin and Cave Spring Wash areas of the Saratoga field and the extreme northwest end of the Confidence field were not explored.

The Upper and Lower Canyon fields belong to what Mansfield, who conducted the primary exploration of these fields, calls the Middle Amargosa Region. He describes the tilted light-colored clays that form the nitre hills of the Upper Canyon field. He also describes Willow Creek as an affluent of the Amargosa River and notes that the lower mile of Willow Creek is supplied by a spring at the Morrison Ranch [today China Ranch] and has a fairly continuous but small flow of fresh water.

Mansfield’s investigation of the Upper Canyon began with a geologist and one assistant on January 15, 1918. After two weeks of mapping and testing, three geologists and a mining engineer joined them, along with ten other men, most of them experienced miners. Intensive prospecting continued until April 3, 1918. During this time a field party of the General Land Office sectionized the township in which the Upper Canyon fields are located, making it possible to tie the mapped areas to the survey.

Mansfield decided to prospect Bully Hill (directly west of the 1903 Building) first, as it had been reported to contain the richest supply of nitrate. On the map of the Bully Hill district in his report, the 1903 Building is shown as an assay laboratory. The site of their camp, near Acme Siding, is also depicted.

Mansfield describes the beds as being covered by a sterile clay averaging nine inches in thickness. The caliche layer, averaging five inches in thickness, lies below this soil and contains most of the sodium nitrate.

The method used to determine the nitrate content of the soil began with a field test called the brown-ring reaction test. For this test each geologist carried a portable chemical outfit. Mansfield's party dug a long trench entirely across Bully Hill, deep enough to penetrate several feet into the bedrock.

When it was determined that the nitrate was confined to the caliche layer, sampling continued in two long lines of pits in the most promising areas (based on the field tests), dug deep enough to penetrate the caliche.

In the test pits, material from each layer is taken out, saved on canvas, weighed, and crushed. It is then run through a small hand mill, reducing the sample to about one pound of material. This was the final sample and it was sacked and sent to the chemical laboratory of USGS for analysis. In the most promising fields the trenches were excavated and three samples prepared from each -- two were sent to commercial chemists and the third sent to USGS and the Bureau of Chemistry in the U.S. Department of Agriculture.

This testing procedure would seem to negate the need for an assay laboratory on site unless the building was used for other analyses and/or specimen preparation. Therefore, the description of the building as such on Noble and Mansfield's maps may relate to its previous use during the time of nitre exploration rather than use by his crew.

Mansfield also describes the development of funnel holes and underground drainage channels, noting that the strata was perforated to unknown depths and honeycombed by the channels. He finds that most of the nitrate had been leached away near the sinkholes and speculates that a considerable amount of nitrate had been carried away by the underground drainage.

The results obtained by Mansfield's party in the Bully Hill area indicated a much lower percentage of nitrates than those obtained by Frank Robbins in 1907.

Mansfield also extensively explored the area about one mile west of Bully Hill and the report includes a map of that area, showing funnel holes and areas that were sampled. In all 400 pits were dug, measured, and sampled by a crew of one geologist, one engineer, and five miners. The topography of this area is more rugged than that of Bully Hill; the steep slopes, sharp ravines, and sinkholes tended to reduce the extent of workable nitrate ground. The analysis of the caliche proved to be poorer than Bully Hill. A vein of white salts whose tests and reaction to the brown-ring test indicated a high proportion of nitrate was found in the bedrock at one point. This occurrence may suggest an explanation for the very high percentage of nitrate reported by previous explorers.

The conclusion reached for this area was that it contained about one-third more nitrate bearing ground than Bully Hill, but the quality of the caliche was inferior and the total refined product would be less.

Mansfield's party then moved on to the eastern area, about one mile east of Bully Hill. The report notes the Tonopah & Tidewater Railroad spur on the west side of the area and a broad wash that gives easy access to the area. Interestingly, the map of this area clearly shows the buildings of China Ranch, the location of the party's camp, and other natural and man-made features, but omits the 1903 Building. An engineer and five miners conducted tests and dug two lines of pits. The results of the tests were so unfavorable that the work was discontinued.

Mansfield's party also sampled the northwestern area, about 1.5 miles northwest of Bully Hill. Preliminary tests were made with the brown-ring reaction test; however, just as the crew was preparing to dig and sample, an order was received from USGS headquarters to stop intensive work on the Amargosa region. One final day was spent in the area. The results were that the area was distinctly poorer in both quality and quantity of nitrate deposits than Bully Hill. The party then returned to the eastern area and obtained samples for analysis. The conclusion for the eastern area was that it contained a considerable area of nitre-bearing clays, but the caliche was poor and unevenly distributed. None of the nitrate was regarded as recoverable.

The conclusion of the report for nitrate deposits in the entire Amargosa Region was that the caliche in general was of poor quality, with a low percentage of sodium nitrate and was very unevenly distributed. The most promising areas were the Upper Canyon and Lower Canyon fields; however, the quantity in the region was small in comparison to the country's needs and, given the cost of production, the region could not be regarded as of commercial importance.

On February 27, 1920 Pacific Nitrate Co. deeded the Upper Canyon fields to Citizens Trust & Savings Bank of Los Angeles. The search for valuable deposits of nitrates in the Amargosa region had come to an end.

The 1903 Building - Later Years

The owner of record of the parcel containing the 1903 Building from 1920 until 1986 was Citizens Trust & Savings Bank.

At neighboring China Ranch A. R. and M. A. Modine held ownership of the ranch from 1923 until 1929. In an unpublished manuscript written in 1987, Zella Vonola Modine McPartland describes the period that she and her husband Alex Modine and his father Dan lived at China Ranch. Additionally, Dan Modine homesteaded the area now called Modine Meadows in the Amargosa Canyon.

McPartland, who was the daughter of Shoshone, California founder R.J. "Dad" Fairbanks, relates that her brother, Vern Fairbanks, worked at the talc mine about fifteen miles east of the ranch [Western Talc Mine at the head of Willow Creek Canyon]. She describes how the trucks would come down the canyon to Acme Siding where the talc was loaded into train cars. Her brother Vern suggested that his six workers be put up at the ranch rather than living in shacks at the mine. So, in the winter of 1923, the Modines used the 1903 Building as a bunkhouse for the workers and McPartland prepared meals for them at the ranch. She describes a cellar that had been dug in the hill behind the tufa rock house for a storeroom when it had been used for a saloon and general store. She indicates that it was always cool, but that they had never cleaned it out and it was full of junk of all descriptions. It is not possible to determine whether her belief that the building had been used as a saloon and general store is based on first hand information from the Modines and other people at the ranch who had actual knowledge of that fact, or if, when she wrote her manuscript years later, she had absorbed local anecdotal information to that effect.

In 1927, according to Myrick (1963), the spur to the gypsum mines north of China Ranch was removed and the rails and ties taken to Carrara, Nevada. Deke Lowe (1988) also recalls the tracks being removed around this same time.

From 1928 to 1936 Jane Main (1999) lived at Western Talc Mine as a young girl. She recalls going down Willow Spring Canyon to the Acme Siding every Friday to pick up fresh vegetables dropped off by the T&T RR. She also recalls that the mine had one GMC truck that would haul the talc down to Acme. She remembered that the truck had metal wheels with no rubber tires. The truck would deposit the talc into a chute at the siding, a board would be lifted up, and the talc would fall into the boxcar. It would take several trips with the truck to fill the boxcar. She had no recollection of the 1903 Building, however.

Lyneis, Weide, and Warren (1980) cite a conversation with Deke Lowe in which he states his belief that the 1903 Building was constructed for miners working talc deposits across from Acme Siding in the main Amargosa channel. He remembers the building being occupied in the early 1950's.

Oertle (1966) describes his journey down "China Canyon". He describes an old gypsum-block building with the date 1903 stamped over the archway. He relates that he later

learned Chinese coolies had lived there just after the turn of the century working the mines. He also describes the rounded hills showing “strange ridge markings which resembled deep burro tracks”. The article includes a picture of the 1903 Building, as well as one of the T&T RR trestles over Willow Creek.

Gothold et al. (1971) describes pre-historic archaeological sites in the China Ranch area. The 1903 Building is also described and it is noted that an Indian trail comes to China Creek [probably the same as Willow Creek or Clarke’s Fork] “back of this house”. The 1903 Building is described as being built during gypsum mining days and was reported to be either a saloon or a station house for the T&T RR branch line into China Creek basin [Acme Spur]; however, the spur was not constructed until 1915. It is noted that many bottles and quantities of broken glass tended to support the saloon theory. The archaeological party worked closely with Ben and Maurine Robinson, owners of China Ranch, in locating and surveying sites.

During the 1970’s the Amargosa Canyon area became increasingly used by off-road vehicles (ORV). Sully, Romero, and Smith (1972) were instrumental in obtaining protection for the resources of the canyon. Following their report, the canyon was officially protected from ORV traffic, although illegal traffic continued to cause some damage. The building, now vacant, was described in their report. Romero has a collection of slides, including the 1903 Building, taken during the time of their study.

Lyneis, Weide, and Warren (1980) also sought protection for the canyon. Their report compares the site of the building to the description provided by Gothold et al. (1971). They observe that ORV usage had reached such heights that the Indian trails behind the building had become jeep and motorcycle ruts. Their report describes the building in detail, as well as the ditch that extends from behind the building to about ¼ mile up the canyon and speculates that this ditch may have supplied water to the building. They speculate that the building was used as a relay station or saloon. Photographs of the building taken by Warren would have been filed with the report in the Desert Planning Unit of the U.S. Bureau of Land Management, Riverside, California.

Another source of photographs of the building is Dennis Casebier of Goffs, California, who took photographs in 1980.

Stan Haye (1999) was deputy Inyo County Assessor for this part of Inyo County from approximately 1973 until 1993. He has no recollection of the building and assessment records do not mention a building, which would seem to confirm that the building was not being used during that time. Map D is the current assessor’s map of northern Amargosa Canyon.

During the years of Citizens Trust & Savings Bank ownership of the parcel containing the 1903 Building, the bank went through a series of mergers and name changes. Eventually the bank was acquired by Wells Fargo which, on December 22, 1986, sold the land to the Nature Conservancy. On January 20, 1998 the Nature Conservancy deeded the property to the U. S. Bureau of Land Management.

County Boundary Issues

Local anecdotes and some publications pertaining to this region mention confusion over the boundary line between Inyo County and San Bernardino County to the south. The 1903 Building is about 300 feet north of the present day county line.

As early as 1878, according to Lingenfelter (1986), the Inyo and San Bernardino County Supervisors ordered a joint survey of their common boundary to determine who would collect taxes for the mining camp of Tecopa. Records in the San Bernardino County Surveyor's Office confirm that the 1878 survey monumented the boundary line in its present day location.

However, confusion must have persisted as to the location because an account in the *Barstow Printer* of April 12, 1912 describes a dispute in which the San Bernardino County Assessor claims that Tecopa and Resting Springs are in San Bernardino County. Dave Morrison of China Ranch is reported as paying taxes in Inyo County. The article also discusses the need for a wagon bridge to be built about a mile south of the ranch where the T&T Railroad crosses the Amargosa River because the canyon is almost impassable. The article reports that government surveys put the proposed bridge in San Bernardino County and it indicates that the dispute is five or six miles in the boundary.

To complicate the boundary line issue further, California Statutes were amended in 1919 and the northern line of San Bernardino County was moved .8 miles north -- just far enough to put both China Ranch and the 1903 Building in San Bernardino County. Evidently the southern line of Inyo County was not changed, creating a conflict as to which line was the correct one and causing further confusion among the local populace.

In 1957 the statutes were again amended to place the boundary back in its monumented 1878 location. A historical note in *West's Annotated California Codes* (1988) explains the 1957 amendment as follows:

“The Legislature declares that in enacting this measure it intends to clarify the statutory description of the northern boundary of San Bernardino County, which is also the southern boundary of Inyo County, by reference to the common boundary line between the counties which was surveyed and marked by monument during the year 1878. The common boundary line referred to herein has continuously been so described as to Inyo County and was so described as to San Bernardino County until the amendment thereto made by Chapter 470 of the Statutes of 1919.”

This statutory change eliminated any doubt as to the fact that both China Ranch and the 1903 Building are in Inyo County and the present day county boundary is the same as the one monumented by the 1878 survey.

The boundary line confusion could have impacted the use of the 1903 Building in another way. According to Brown (1999), his family has referred to the building as the “old

saloon”, primarily because of the large number of beer and liquor bottles that were found in the building and the nearby cellar. No evidence exists that these bottles were ever examined for dates and they may have been trash from very recent times. However, a fact that would lend some credence to the saloon theory is that, in 1910, Inyo County voted to become a dry county, while neighboring San Bernardino County remained wet. There is a possibility that the 1903 Building was used as a saloon, or for bootleggers, during this time due to the ongoing uncertainty over the boundary line between the two counties.

China Ranch

Although not within the scope of this report, the history of China Ranch is tied closely to the history of the 1903 Building. Situated along Willow Springs Creek (also known as Clarke's Fork), the relative abundance of water found here made it a natural site for a desert oasis. China Ranch has also been known as the Evans Ranch, Willow Ranch, and Morrison Ranch.

The first references to the ranch refer to it as Evans Ranch. Unthank's map (1896) shows the ranch with this name. However, more research would be needed to document the time period of Evans' ownership of the ranch.

Local legend has held that a Chinaman, Ah Foo, who raised vegetables and fruits, farmed the ranch around 1900. Some accounts relate that Foo transported his produce as far away as Bishop for sale. Foo was supposedly run off at gunpoint by Dave Morrison, who took over the ranch, and Foo was never heard from again.

According to L. Burr Belden in Warren, Knack, and Warren (1980), Ah Foo was a Tibetan who raised vegetables at the ranch in the mid 1880's, and later planted fig trees. Belden relates that Ah Foo returned to Tibet to visit relatives and was not able to return despite assistance by residents of Tecopa and Pahrump.

Lingenfelter (1999) recollects that in researching his book, it seemed to him that Ah Foo was Tibetan and had come from Calico, California where he had a business. Further research would be needed to substantiate these items.

Caruthers (1951) relates the story of a Chinaman who originally developed the ranch and was run off by a white man with a gun. However, the name Caruthers uses for the man is Quon Sing. According to Caruthers, Quon Sing had at one time been a cook at Harmony Borax Works. He left the borax works to work for Osborn [presumably Jonas B. Osborne], a wealthy mining man near Tecopa. After many years of service to Osborn, the ranch was given to Quon Sing as a reward for his service.

Inyo County Recorder records indicate Ah Foo deeded the ranch ("that certain ranch or home place known as the Willow Ranch situated on Clarks fork in Inyo County State of California and about six miles Southerly from Resting Springs") to R[oland] D[avis] Morrison and M[ichael] Walsh on April 16, 1900 for one thousand dollars in gold coin. The deed was signed with Ah Foo's mark (X) and his signature was notarized in San Bernardino County. According to the Recorder's notation, the required Internal Revenue stamps were affixed and cancelled with the initials "A.F."

This deed would seem to indicate that there was no dispute between Foo and Morrison and that Foo freely sold the ranch. However, an argument could always be made that the deed was a forgery. The notary public could have been paid to notarize the mark or given false information as to the identity of the individual who made the mark. However, there is no proof that this was the case.

The name Ah Foo was found in earlier Inyo County records. Ah Foo had been named in a lawsuit filed in Inyo Superior Court on June 1, 1895. The suit, filed by merchant Friederike Rhine, alleged that Ah Foo, Ah Joe, Bak Sang, Charley Ling, Ah Man, Ah Sam, See Tong, Ah Nim (aka Ah Yeun) and Kwong Kew (aka Wong Cow) received merchandise in the amount of \$887.30 for which Rhine was not paid. The lawsuit does not give details as to the location of the delivered merchandise, however. The judge found that Ah Foo, Ah Man, Ah Sam, See Tong, and Wong Cow did not buy the goods and were not indebted to Rhine for same. Judgment was entered against the remaining defendants for the value of the merchandise.

According to Chung (1999), the word “Ah” in Chinese is essentially meaningless and may not be the actual name for a person. It is a term with no meaning, such as the “oh” in “Oh, how are you today?” Further research would be needed to explore the possibility that “Ah Foo” was a name used by non-Asians and perhaps Quon Sing was the Chinese name for the same person.

On December 18, 1905 Roland Davis Morrison mortgaged an interest in the ranch to his co-owner, Michael Walsh for \$2,500. On April 5, 1911, Emma Walsh, widow of Michael Walsh, deeded the Walsh share of the property to Morrison and released the mortgage. The 160 acre ranch is referred to as “Willow ranch, situated on Clark’s Fork of Amargosa River ... and about six miles southerly from Resting Springs” in this document. On August 23, 1912 Morrison sold “Willow Ranch” also known as “China Ranch on Clark’s fork of Amargosa River”, along with water rights in and to the waters of Clark’s fork to Charles L. MacDonald [sic].

McDonald applied for a patent to the ranch and a Patent Deed was recorded on February 23, 1923 to Charles L. McDonald. On that same day, McDonald deeded the ranch to A.R. and M.A. Modine. Additional information about the Modine period of ownership can be found in “The 1903 Building – Later Years” section of this report.

The Modines owned the ranch until July 25, 1929 when they deeded it to Sidney Brock. On January 9, 1935 Certain-teed Corporation received a Trustee’s Deed to the ranch as a result of foreclosure. Six months later, on June 25, 1936, Certain-teed sold the property to William Greer. Title passed from William Greer to Clyde Harrell on December 10, 1938. In Caruthers (1951), mention is made of “Big Bill” Greer having a life estate in the ranch until his recent death. A life estate is an interest in real property when an individual has use of the property for the remainder of his/her life, but not outright ownership. It is possible that Greer retained a life estate interest in the ranch when he deeded it to Harrell, but further research would be needed to confirm this. Harrell then sold the ranch to W.L. Petersen on May 15, 1952.

On December 1, 1955 Petersen sold the ranch to a widow, Maurine Contreras. On January 5, 1965, Contreras and Ben Robinson, who she had evidently married, sold it to George Watsi and Anna Nickels. Watsi and Nickels then deeded it back to Ben and Maurine Robinson on January 30, 1967. It was the Robinsons who participated in the

archaeological survey work performed by Gothold et al. in 1971. The Robinsons took an active interest in locating and preserving the Native American artifacts of the area.

On October 13, 1970 the Robinsons sold the property to Charles Brown [Jr.] and Berniece Brown Sorrells. On January 17, 1984 Charles Brown deeded his one-half interest in the ranch to Brian and Bonnie Brown. Upon the death of Berniece Sorrells, her one-half interest went to her children, Susan Sorrells Mativo and Charles Sorrells on July 10, 1985. Charles then deeded his interest to Susan on September 13, 1985.

Over the next 15 years, the Browns improved the property and built a spacious home. They developed a date farm that sells its produce and other items at a gift shop on the ranch property. Dates are also sold by mail order. The ranch has become a tourist site, attracting both individuals and groups to tour the date farm, visit the gift shop and snack bar, and view the surrounding area on foot or bicycle. One of the trails leads from the gift shop south to the 1903 Building, and on to the Amargosa Canyon trail.

This summary of the history of China Ranch has only scratched the surface of the rich history of this general area. More intensive research would need to be done to flesh out the complete story of China Ranch. Appendix D contains a list of some property documents with citations of recording information. Copies of selected documents are also included in this appendix.

Acme Siding

Although not within the scope of this report, Acme Spur and Acme Siding are located very close to the 1903 Building and deserve mention for this reason.

Garrett (1996) relates that in 1915 Acme Cement & Plaster Co. began to ship gypsum and clay from Gypsy Queen Mine (located to the north of China Ranch) to their plant in Los Angeles. A T&T RR spur had been built that would have passed directly in front of the 1903 Building, then through China Ranch to the end of the spur where the gypsum and clay would be loaded.

According to Garrett (1996) and Myrick (1963), at that time the present day Acme siding of the T&T RR in San Bernardino County was called Morrison Siding. The name Acme was given to the site at the top of the 1.3 mile spur that T&T RR built to the northeast. In 1918, a cave-in that killed two people (described as sons of the owner by Myrick) brought about the closure of the mine. The Acme siding was abandoned and the Acme name was then given to what had originally been called the Morrison siding.

Myrick (1963) describes how in 1915 a T&T RR crew took a train up the Acme branch for switching. On the return trip down, the brakes failed and passengers who were waiting at the bottom of the siding witnessed the locomotive and several cars leaving the rails and overturning. Myrick's account also includes photographs of the overturned train. Deke Lowe (1988) describes the spur as being frequently used, with cars going up into "Gyp Canyon" and being gone for about an hour.

List of Maps

[Note: No actual maps are included in this particular copy of the report]

- A** A.W. Unthank Map – 1892 legend date
- B** A.W. Unthank Map – 1896 legend date
- C** Mineral Survey No. 4732 - Upper Canyon Nitrate Beds
- D** Inyo County Assessor's Map - current parcels & owners in northern Amargosa Canyon area

List of Appendices

[Note: No actual appendices are included in this particular copy of the report]

- A** Photographs - *Niter Lands of California*
- B** Prospectus - *A Story About Nitrate of Soda in Death Valley, California*
- C** List of property documents for 1903 Building (some copies included)
- D** List of property documents for China Ranch (some copies included)

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