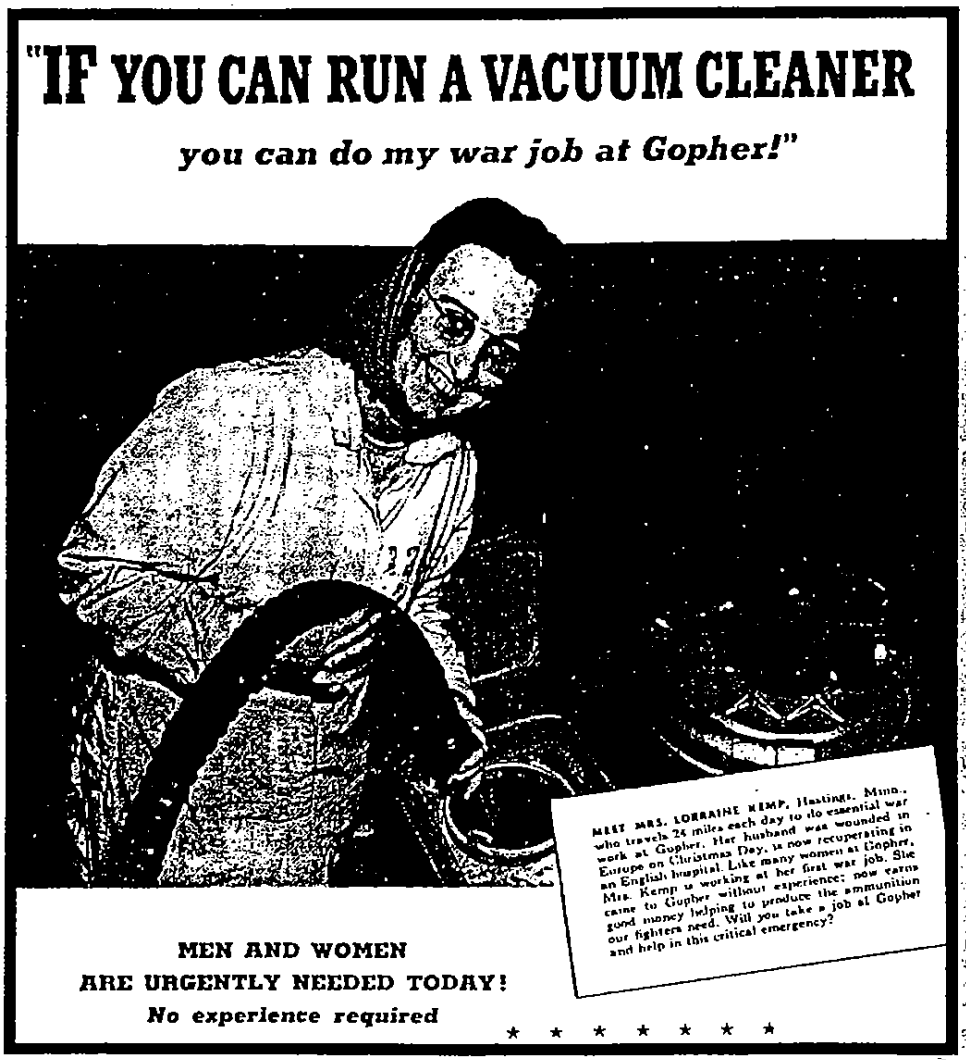
APPENDIX A

BACKGROUND INFORMATION

Published Article on GOW

Dakota COUNTY HISTORICAL SOCIETY

OVER THE YEARS



A History of the Gopher Ordance Works
Dawning of a War-Boom Community

by Gerald Mattson, Maureen Geraghty Bouchard and Russ Withrow

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OVER THE YEARS

VOLUME 41 NUMBER 1
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HISTORY OF THE GOPHER ORDNANCE WORKS

DAWNING OF A WAR-BOOM COMMUNITY

The Gopher Ordnance Works in Rosemount and Empire has long been a subject of fascination and controversy ever since the United States Government forced farmers to vacate their land on short notice in April 1942.

This issue of Over the Years chronicles the impact of the plant on individuals as well as on the community and documents the process by which the plant produced ammunition for the war effort.

Front cover: *This ad is one of several aimed at different segments of the population urging them to seek work at Gopher Ordnance. Dakota County Tribune April 13, 1945.*

Inside back cover: *The effects of Gopher were felt far and wide in Dakota County. George Warweg's trailer camp was nearly 10 miles away. Dakota County Tribune July 31, 1942.*

Back cover: *The sprawling Gopher Ordnance Plant is best seen in this aerial.*

The Herbert and Minnie Volkert home before the family farm was acquired by the U.S. Government for the Gopher Ordnance Works in 1942. Photo courtesy of Clarence Volkert.

A HISTORY OF THE GOPHER ORDNANCE WORKS

DAWNING OF A WAR-BOOM COMMUNITY

GERALD MATTSON
MAUREEN GERAGHTY BOUCHARD
RUSS WITHROW

In March 1942 rumors began circulating in the Rosemount area that the Government would be taking some land. Everyone wondered how much and whose land would be taken. Rosemount and the surrounding area were witnessing the dawning of a war-boom community. With it would come rapid physical, economic and social change; bestowing prosperity to some, but hardship to others.[1] The changes to the community were so profound that a half century later the legacy of the Gopher Ordnance Works continues through the University of Minnesota Agricultural Research Center and the ghostly remains of the old production facilities.

The rumors turned to harsh reality at a public meeting held in Farmington on March 31, 1942.[2] At that meeting government officials announced to the affected landowners that an 11,500-acre tract (almost 18 square miles) was to be taken in Rosemount and Empire Townships for a huge ordnance facility. The affected families were further stunned to learn that they had to vacate their property by mid May -- just six weeks away. It also helped to explain to the landowners the mysterious cars that had been seen cruising up and down the county roads near their farms for the past several months. Another part of the puzzle were the strangers in the cars who would be

ARMS PLANT COMING

seen drilling, digging and testing the subsoil in the fields.[3] The mystery was cleared up when it was later revealed that a War Department engineer and his crew had been quietly investigating the area for nearly a year to determine the feasibility of locating a war plant there.

The planning for World War II defense production was laid out in the mid 1930s, but not implemented until 1939. One of the critical problems was the lack of munitions plants. Almost all of these facilities had been torn down after World War I.[4]

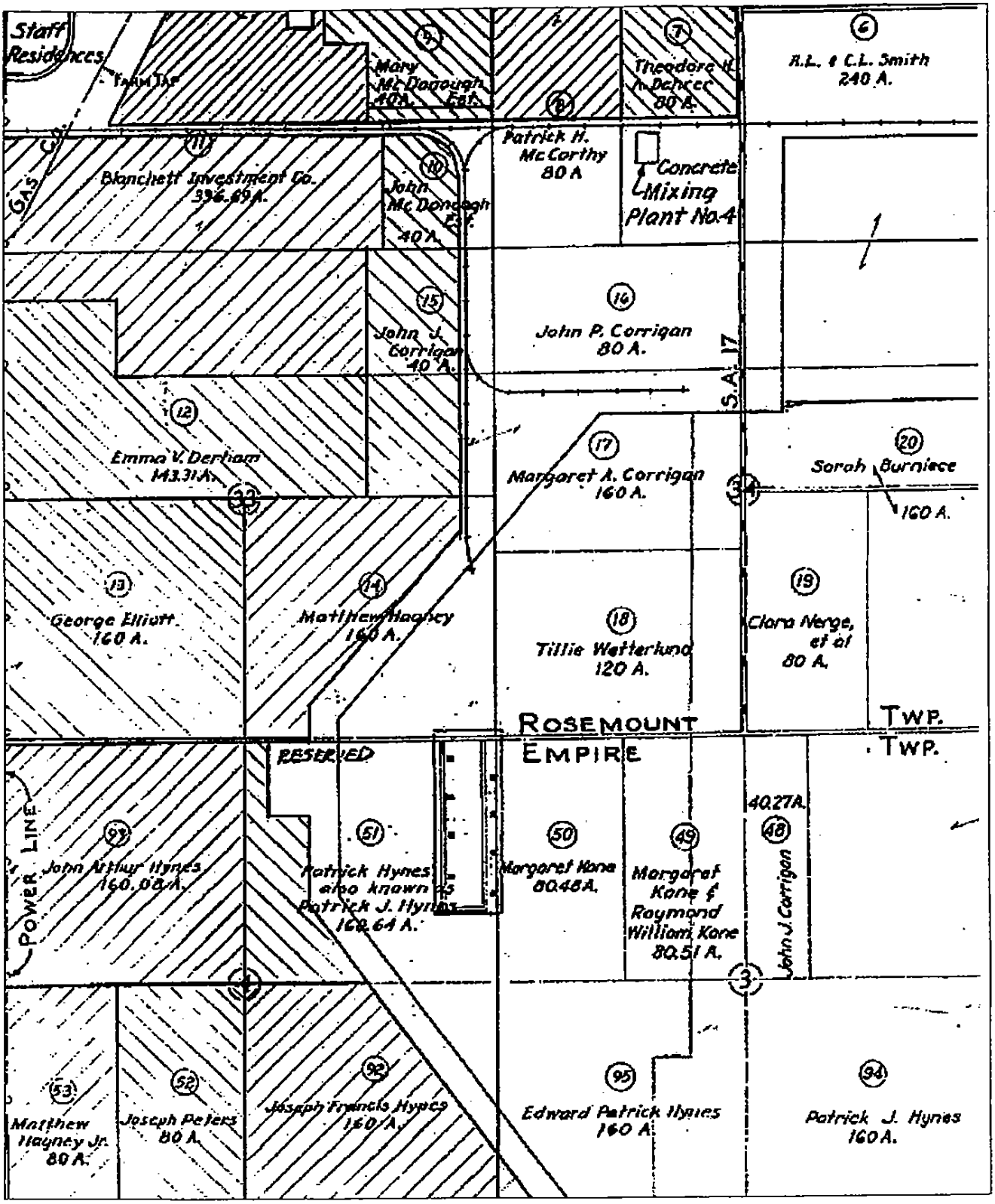
In 1940 the government began a program to construct huge Government-Owned Contractor-Operated plants which came to be known as GOCO plants. These facilities were financed and owned by the government, but constructed and operated by private contractors on a cost-plus-fixed-fee basis. When the defense contracts began to be awarded, many government, business and labor leaders in the midwest felt that the region was not getting its fair share of the new jobs and economic prosperity. Minnesota Governor Harold Stassen became a leading spokesman for the group. During August 1940, Stassen traveled to Kansas City to speak to the leaders from nine states about getting their fair share of defense spending. He told the group that the midwest should not be reduced to "a position of agricultural slavery... This is not a cry for pork. It is the voice of the Middle West asking for justice." Due in part to their lobbying efforts defense spending in Minnesota rose from $500,000 to $40 million by March 1941. State officials further were gratified in August 1941 when construction began on Minnesota's first GOCO plant, Twin Cities Ordnance, an ammunition plant located in New Brighton.[5] The following year would also see construction began on the Gopher Ordnance Works in Rosemount.

A total of 77 GOCO munitions facilities were built in 26 states, two of them in Minnesota. They consisted of nine basic kinds of facilities:[6]

- 25 load, assemble and pack (LAP) plants
- 23 propellant and explosive (P&E) works
- 11 chemical works
- 13 small arms ammunitions plants
- 2 gun tube plants
- 1 case cup plant
- 1 incendiary works
- 1 tank plant
- 1 metal components for artillery ammunition

Depending on their function, these 77 facilities were designated into 42 "plants" and 35 "works". Approximately one-half of these facilities, about 37, performed more than one function. Works made powder, explosives, chemicals and incendiaries. Plants fabricated and assembled small arms, tanks etc. The Gopher Ordnance Works [GOW] was a single-purpose P&E facility for making powder and explosives to be shipped to assembly plants, therefore designated a "works". The Twin Cities Ordnance Plant, because it was restricted to fabrication and assembly of small arms ammunition, was a "plant". There were two types of smokeless powder, single-base (nitrocellulose) and double base (nitrocellulose and nitroglycerine). Gopher Ordnance was designed to produce the single-base powder.

In 1941 officials in the War Department began looking at the area around Rosemount as a possible site for a second Minnesota GOCO facility, a gunpowder production works. This location was chosen because the land was level, or slightly rolling, which required only minor grading for building construction. Also, there were no improved highways running through the area, and there were three railroads — the Milwaukee Road, the Rock Island and the Chicago Great Western — to serve the facility. There were high voltage electric lines and a natural gas pipeline in the area. It was close to the Mississippi River where the huge quantities of water needed for production could



This plan of the Gopher Ordnance Works shows the plant's future design laid over the geography of pre-existing farms.

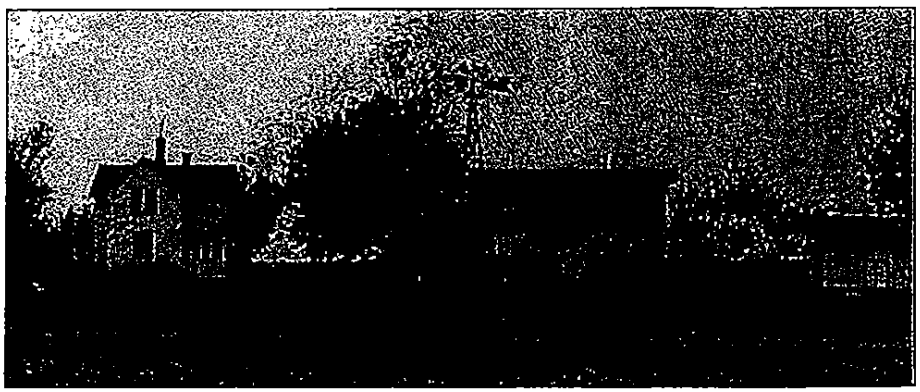
be drawn. Adding to the appeal was that one-third of the states population lived within a 30-mile radius of the site to supply the needed workers.

The E.I. duPont de Nemours Company of Wilmington, Delaware was among a number of companies already operating GOCO facilities for the U. S. Ordnance Department. In 1941 the Government requested duPont to consider building and operating two additional military explosive works, one on a site near Columbus, Nebraska, and the other near St. Paul. They were to be known respectively as the Platte Ordnance Works and the Gopher Ordnance Works. Both were to produce smokeless powder on 3 production lines, also TNT and oleum (sulfuric acid). Gopher was to have, in addition, 12 tetryl production lines. More efficient production of TNT at existing works caused changes to be made in these plans. By April of 1942 it had been decided to drop the plans for TNT production at both Platte and Gopher. The elimination of TNT production at these plants made it possible to cancel the Nebraska plant entirely by adding its proposed 3 powder lines to Gopher. The following month it was further proposed to drop the 12 tetryl lines proposed at Gopher. This plan was adopted in June of 1942. With this decision Gopher Ordnance Works would be the largest of the powder works with 6 production lines.

Before World War II, with the exception of a few urbanized areas such as South St. Paul, Hastings and West St. Paul, Dakota County was mostly an agrarian region. The central part of the county quickly lost all semblance of quietude in 1942 when thousands of people descended upon it to begin construction work on the Gopher Ordnance Works. Because of its close proximity, Rosemount was arguably the most effected town in the county. With the population in the village numbering 364 inhabitants before 1941, it witnessed an average of 155 automobiles an hour passing through town during the plant's four year lifespan.[7] County Road 42 (now known as 145th Street) had to be turned into a one way street during the morning and evening rush hours to keep traffic moving. Traffic going east in the morning and west in the afternoon.

Immediately following the public announcement of the new works on March 31, 1942, local officials in both Rosemount and Farmington began to take steps to deal with problems that would arise with the inflow of some 16,000 construction workers and their families. For housing and other purposes an application was made to have Rosemount and the surrounding area designated a defense area. The Rosemount Commercial Club pitched in by appointing a committee of seven businessmen to work with the Rosemount council to address the expected problems of housing, water supply, sanitation, traffic and readjustment.

Ham Clay, Sr., editor of the *Dakota County Tribune,* was in a group that toured the areas around the Twin Cities Ordnance Plant in New Brighton and the Badger Ordnance Works in Baraboo, Wisconsin (see Appendix 4). They hoped to learn from mistakes made there and gain insight into the problems that those communities faced. Clay warned his readers that in those areas there remained a myriad of problems including housing shortages, rising rent and consumer prices, sewer and water concerns, crowded schools and "hell-raisers." He encouraged city offi-



The feelings the Kane family were summed up in the inscription on this photograph of the Kane farm: "Broke from Prairie Sod by Grandfather Kane and my Father. Stole from us by U.S. Government in 1941 for Gopher Ordinance Powder Plant [sic]."

cials to enact ordinances to regulate trailer parks, provide recreational facilities for the workers and put on extra police officers. He also noted that land prices and rents would increase overnight.

Consequently, ordinances were passed in Rosemount that would regulate trailer camps, hire more police, limit building permits and rise license fees for liquor. In the matter of increased health and sanitation risks, the council and the County Board of Commissioners turned to the state health department and the county nurse for advice.[8]

Even before construction had started, the earliest arrivals snatched up any space available for rent, not only in Rosemount, but in Lebanon (Apple Valley), Eureka, Lakeville and as far away as Inver Grove. Many workers brought house trailers in which to live, parking them anyplace that was available to rent, usually on nearby farms. Almost every backyard and alley was crowded with trailers. The Moeller farm, on the south edge of Rosemount, had as many as 60 trailers on it. In Farmington, the village council bought seven acres of Amelia Sprute's pasture on the south edge of town to use as a trailer part. When the camp opened for business in early July in 1942 a newly erected 20 x 50 foot building for showers, laundry and lavatories was at its center and the Gustavson-Bruner D-X station was used as its headquarters. To prevent unsanitary conditions, this was the only trailer parking allowed in Farmington. Another trailer camp, located at Antlers Park on Lake Marion, featured running water, showers, toilets and a recreation room. For their relaxation, this camp's tenants were offered good fishing, boats for rent, a bathing beach and refreshments.

All over the area scores of sheds, garages and even chicken coops were converted into rental units. Virtually every home and farm had boarders living with the family. A few small farm buildings were moved to vacant lots on 146th Street in Rosemount and converted into small homes. Local merchants struggled to serve record numbers of customers while having to deal with war shortages and rationing of

Ben Moeller on Gopher

"Well, I remember there was an awful lot of confusion, and awful large influx of people. People, we here in Rosemount, couldn't handle it very well. I was operating school buses for the school district at the time. My wife and I set up a trailer court at the south edge of town, on some land that my dad owned. We had 60 trailer homes in there at one time. They kept coming and going but at one time we had a capacity of 60. Sixty families living in there, and there were more trailer homes around the area. I forget just how many the plant did employ at its peak. . . you can imagine the confusion that was here in Rosemount itself. I was on the City Council at the time. We had a lot of problems. We had to hire extra police, many people in the city took in roomers so there was available places to stay and work. The impact on the town was pretty great; it created hardships for some, and created some terrific business for other people. The restaurants and the liquor stores and so on made out pretty great. There was meat rationing at the time, sugar, it put a strain on the grocer to try to supply people living here with meat, when it was rationed."

"Do you remember the names of any people that lved in the trailer court?"

"Very few. Lunds from Benson, Minnesota, a couple from Sioux Falls, South Dakota. Ben Broche was his name. A lot of them."

"How did the plant affect your life?"

"It didn't really make any big impact on my life except I was very busy running the trailer camp. It had an impact on the school system. It really strained the school system. They had to bring in other buildings to house the children up at the school. We only had one building at that time. There wasn't time to build anything else, so they bought some country school buildings, moved them in and housed the children that way and educated them. We hauled them in. Sometimes we were making two trips with the buses."

Interview with Theresa Seliga and Kim Foster, June 28, 1976

Only days had passed before ads such as this one offering farms to displaced farmers began appearing in area newspapers. Dakota County Tribune April 10, 1942

goods, such as meat and sugar. They had a difficult time obtaining candles, cigarettes, and gum to supply their customers. "They were from all parts of the country...(and) wanted merchandise that we didn't have and it was during the war and merchandise was hard to get."[9]

On payday at the plant the line to cash paychecks was ½ block long outside the First State Bank of Rosemount. For three or four years, Rosemount was transformed from a sleepy, little farming village into a bustling town by the volume of people attracted by the high wages at the Gopher plant. Deprived of a living wage for so long by the recent Great Depression, people were now spending their new-found wealth almost as quickly as the earned it. To keep order in the community extra constables were hired and liquor licenses were limited. Those bars that existed did a land office business.

The railroad depot in Rosemount was enlarged and the depot in Coates, closed for 20 years, was reopened. Commuter train service was never established, because the railroad under consideration demanded a guarantee for every trip, which the Government refused to grant. Gas was rationed to three gallons per week for personal cars and rubber tires were in short supply because of the war. Carpooling was encouraged and several bus routes were set up to bring commuting workers from as far away as White Bear Lake and Red Wing. The bus fare from the Twin Cities and suburbs cost 25 cents each way. The Jefferson Bus Company also had routes running in all directions to points south of Rosemount. One bus made a daily commute of 67 miles to bring 39 workers from Le Center to their jobs.[10] One man who lived in Red Wing spent two hours and twenty minutes to make the drive during a snowstorm to be on time for his 4 p.m. shift.[11]

Several patrolmen were detailed to direct traffic at shift changes. An average of 3,062 cars daily caused traffic jams that lasted over an hour, even the school buses were unable to run on time. The school hours had to be changed to alleviate the problem. The bus scheduling was only one of the problems that the Rosemount School District had to deal with. School enrollment peaked at 346 pupils in a school equipped for about 280. At one point 54 students were jammed in to one classroom. Adding to the teacher's woes was the constant churn of students moving to and from the area throughout the year. Mirroring the problem in the schools, the community also had to deal with the large fluctuations in the number of workers employed at the plant at various times during its existence.

But the group most affected by the Gopher Ordnance Works were over 80 families displaced by the plant. A Federal District Court, in early April, granted the government the right of immediate possession of the land. Appraisals of the farms began in mid April and the first group of families on the north end of the site were told they had to be off their land by May 6, 1942, just two weeks later. The last group of families had to vacate their farms by June 1st. As one farmer noted, "This isn't as easy as the average person might think because we didn't have any truck of our own....we moved the cattle over to the new farm on hoof, we drove'em, just like they did in the old times. We had to time that drive so that we didn't wind up driving the cattle across the Milwaukee rail-

road tracks when the 10:10 came through Rosemount. We know that was right on schedule, that was a steam passenger train. We moved the herd of cattle, there was a couple of us on horseback, and one following with the car, others on foot, but we moved them. Everything else we moved, a lot of stuff with the hayrack, pulled it with the tractor."[12]

The Rosemount area was deluged with hordes of real-estate agents scurrying about trying to make deals. One farmer claimed 23 agents contacted him in one day alone. The area didn't have enough farms on the market to accommodate all the displaced farmers. The asking price of farms that were available increased to reflect the sudden demand, land prices climbing to $50 an acre almost overnight.

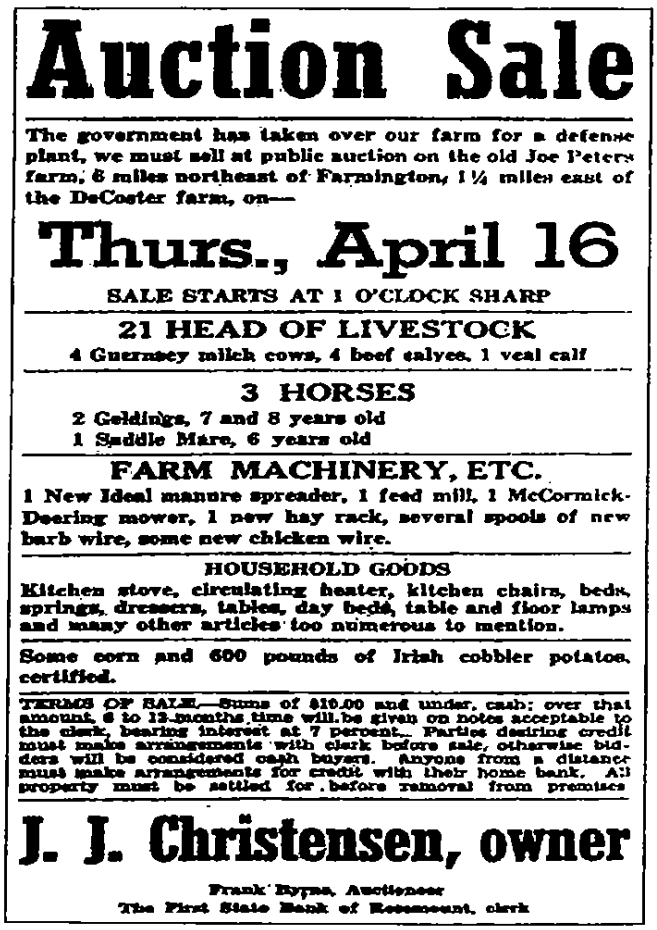
The biggest problem facing the displaced owners was that they didn't know what the final price of their property would be. Furthermore they were given no moving expenses by the government. Many of the farms lost had been in the same families for generations. In most cases adjoining or nearby farms were owned by relatives sharing labor and farm equipment. All the neighbors had formed close knit groups, available to help each other, especially at planting and harvest times. The structures of families and friendships were changed forever as they relocated, scattered all over the area.

The Jonas J. Christensen family was one of the unluckiest of all. After losing a farm to the Twin Cities Ordnance Plant in New Brighton, the family purchased a 240- acre farm in Empire in the fall of 1941. The family had just moved onto their new farm only to be notified two weeks later that they were being evicted again, this time for the Gopher Ordnance Works.

Shortly after the announcement of the need for the land at the plant site, it was learned land would also be taken along the Mississippi River at Spring Lake for the water intake facilities. Also a 400-foot wide right-of-way from the river to the plant site would be needed.

After the appraisals were finished most of the owners were upset at the low valuations assigned to their property. At a meeting on May 3, 1941 they formed an alliance to protest what they felt were unjust prices for their farms. To lead this association they elected Julius Walkow and Ralph McMenomy as co-chairmen, and William Carroll as secretary. On May 9, 1941, Congressman Joseph P. O'Hara of Minnesota's Second District, met with the farmers and pledged to help them.

O'Hara met with Colonel John J. O'Brien, chief of the Ordnance Department's real-estate branch, who admitted that the dollar gap between the two sides was greater at Rosemount than at any of the other 75 land acquisition projects he had worked on. O'Brien came to Rosemount to inspect the farms and meet with the landowners. He told them there was nothing he could do and that their only alternative was to go



Auction Sale

The government has taken over our farm for a defense plant, we must sell at public auction on the old Joe Peters farm, 6 miles northeast of Farmington, 1 ¼ miles east of the DeCoster farm, on—

Thurs., April 16

SALE STARTS AT 1 O'CLOCK SHARP

21 HEAD OF LIVESTOCK

4 Guernsey milch cows, 4 beef calves, 1 veal calf

3 HORSES

2 Geldings, 7 and 8 years old
1 Saddle Mare, 6 years old

FARM MACHINERY, ETC.

1 New Ideal manure spreader, 1 feed mill, 1 McCormick-Deering mower, 1 new hay rack, several spools of new barb wire, some new chicken wire.

HOUSEHOLD GOODS

Kitchen stove, circulating heater, kitchen chairs, beds, springs, dressers, tables, day beds, table and floor lamps and many other articles too numerous to mention.

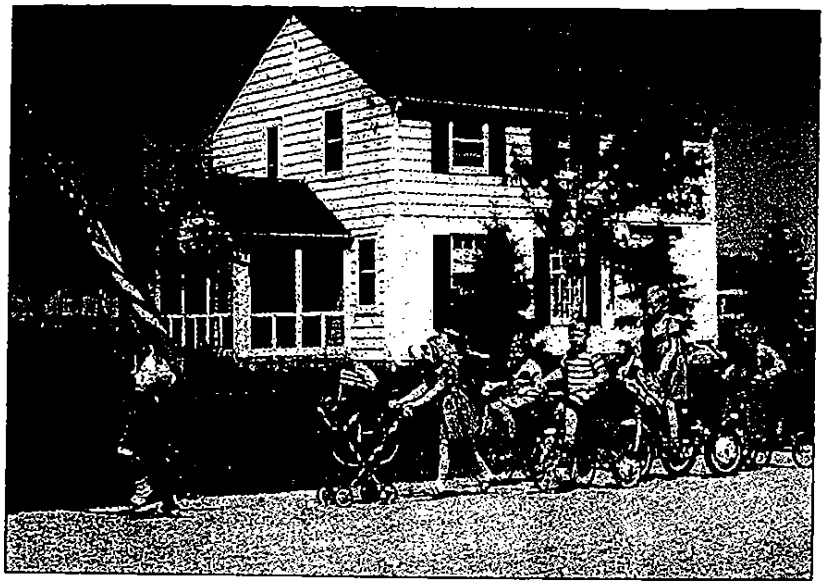
Some corn and 600 pounds of Irish cobbler potatoes, certified.

TERMS OF SALE.—Sums of $10.00 and under, cash; over that amount, 6 to 12 months time will be given on notes acceptable to the clerk, bearing interest at 7 percent. Parties desiring credit must make arrangements with clerk before sale, otherwise bidders will be considered cash buyers. Anyone from a distance must make arrangements for credit with their home bank. All property must be settled for before removal from premises

J. J. Christensen, owner

Frank Byrne, Auctioneer
The First State Bank of Rosemount, clerk

Jonas J. Christensen had moved to Rosemount from New Brighton after being displaced by the Twin Cities Ordnance Plant.
Dakota County Tribune April 10, 1942.



Mary and Fred Moynihan lived in three Gopher staff houses. In 1949 they moved into the Smith brothers house, which had been moved off the Smith farm into the Gopher project area. Later the Moynihans moved into a one-story staff house and in 1956 into this two story house. They lived here until 1962 when they built a new home in Lebanon. Photo courtesy of Mary Moynihan.

to court. A few of the landowners accepted the government's settlement, but 70 refused and the government began condemnation proceedings against them.[13] The farmers retained three attorneys, one of whom was Harold LeVander of South St. Paul, who would later become governor of Minnesota. Three years later the first group of cases went to trial on April 11, 1944. By January 1945 all but one of the 70 cases was settled. In the end both sides claimed victory, the farmers because they were awarded about $300,000.00 more than the government offered and the government because the award was far less then the farmers hoped for. But it was a hollow victory for the farmers, many of whom remained embittered over the way the government acted.[14]

Some of the farm buildings and houses located within the plant survived by being moved off the site, but a rare few are still in their original location. The Herman Wachter farmstead has survived almost intact: the house is currently used as a residence by an employee of the University of Minnesota.

The other farmhouse still in its original location is the Otto Boche house: it also is used as a residence. The only other farm building that remains standing is a structure from the William Volkert farmstead. A brick one-room schoolhouse also survived on the site for several decades, but was eventually torn down. The Smith brothers' residence was first used as a temporary first aid station and later moved to lot 11 in the staff house row and remodeled, joining 24 newly constructed staff homes. It survives today as a private residence.

At least 89 buildings, including nine houses and 11 barns, were auctioned off by the government and moved off the property. The Lambert Englert home was bought and moved to a site on Chippendale Avenue in Rosemount. Martin Volkert home was also moved to a site on Cameo Ave. but both homes have been torn down in recent years. The two-story, brick home of the Herbert Volkert family was left standing for use as a temporary office during the initial plant construction period and then simply bulldozed, a fate shared by many of the buildings.

CONSTRUCTION & OPERATION OF THE GOW

On May 13, 1942, even before all of the families had left the site, construction began on the facility and on May 27, with the erection of telegraph, telephone and teletype lines in the area, all roads within the plant property were closed to the public.[15] On June 4, 1942, the E.I. duPont de Nemours Co. of Wilmington, Delaware was formally awarded the contract to build and operate Gopher Ordnance Works. Construction was not to be of the permanent type, and facilities were to be ready for use within approximately 16 months or by November 12, 1943.

Within weeks, 33 strategically placed guard towers were erected around the site's perimeter to protect it from sabotage and trespassers. A security force of 500 was hired to patrol 10 miles of roads in cars

equipped with radios so they could communicate with nearby Fort Snelling. By the middle of June, construction was well underway, with 3,000 construction employees working in two eight-hour shifts per day. They had by this time completed the huge two-story administration building to house the offices of duPont's administrative employees. This 250-foot long building was constructed in three units connected by breezeways: between units were concrete firewalls that could be closed off in case of fire. Other work included upgrading of existing roads and the construction of new one. A total 60 miles of roadways were within the GOW site. Seventy-five miles of railroad track was laid including a large rail yard in the center of the site. At the Mississippi site four deep Ranney Wells, one capable of pumping 8,000 gallons per minute, were being constructed. [16]

Besides the actual plant's construction, considerable ancillary work was hurriedly being performed outside its boundaries. To facilitate the expected crush of vehicles coming to and from the plant, $62,000 was spent by the federal government to upgrade and pave county roads connecting the plant to Highways 218 (Highway 3), 55, and Cedar Avenue. To the south, two new bridges for county roads were built over the Vermillion River. And the span carrying Highway 52 over the Vermillion was reconstructed.[17] This upgrading included the state of Minnesota seeing its first cloverleaf intersection constructed, long before freeways were conceived, when the Highway 3 bridge over the 55/52 intersection was built in July 1942.[18]

The Gopher Ordnance Works contained 858 buildings of which the large majority were completed. Besides the administrative, production and storage building, other structures included laboratories, a ballistic range, and power plants. Maintenance facility included shops for auto and train repair, carpentry, blacksmith, sheet metal work, pipe fitting, welding, millwright and electrical work.[19] The works was to contain six production lines, designated A through F, to manufacture smokeless gunpowder and facilities to produce oleum and nitric acid. The Rosemount facility was to be the largest of all the powder plants. Each of its three rifle powder production lines stretched out over two miles in length. The three cannon powder lines, which required less processing, were to stretch over a mile each. Over 100 powder shipping houses at the southern end of the plant also covered a huge area. Many of the buildings had to be spaced far apart so a fire or explosion in one would not touch off the others.

The plant was initially scheduled to begin production by January 1943, only seven months away. Record rains during the summer of 1942 caused many problems including impassable dirt roads, and many drainage and erosion problems in the construction area. But this was not the leading cause for construction delays. The worst problem was the diversion of essential equipment to another powder works under construction in Australia. This pushed back the projected start of production until October 1943. Further delays postponed start-up until January 1, 1944. Construction employment peaked with 19,428 workers on the job during September of 1942 while trying to make up for lost time. Construction work totaling $21,589,376.00 was sub-contracted to 50 different

Continued on page 11

A view of the street running through the staff housing section of the Gopher plant.

Celebrate Christmas in a Trailer Here

Mr. and Mrs. W.W. McKinney and daughter Norma Jean of Florida (where 30 above is a cold wave) are typical of the 53 families at the city trailer camp, who will observe Christmas in cozy, snow-embanked trailers.

In order to save space in their comparatively small trailer home, the young couple and their four-year-old daughter, have set up a miniature tree with all the trimmings.

The McKinneys, like many other southern folks in the camp, in the past have celebrated Christmas in much the same fashion as Minnesota people, with one exception.

Mrs. McKinney has never seen snow before.

Daughter Norma Jean has quite a time getting used to wearing long stockings while out in snappy December weather.

However, neither the heat in summer or the icy chill of Minnesota weather seems to really bother these friendly southern people. The trailers are well insulated, keeping the heat out in summer, and keeping it warm in winter. They are usually heated by fuel oil. Mrs. McKinney says the trailers are cooler than a house in the summer time.

The family came here from the southern United States where Mr. McKinney has been employed in ordnance plants similar to the Rosemount project, where he is now working as a rigger.

They were the third trailer family to moved into the city camp, and have been here six months.

The trailer, which is 20 feet long and about six feet wide, has compact, handy household appliances. The beds are convertible into seats. The trailer homes have radios, refrigerators, folding chairs and tables, and a tiny kitchenette.

Another feature of the trailer is the fact that it can be moved quickly and easily. When journeying from place to place, they simply stop at some nice cool spot when they tired of riding. However, riding inside a moving trailer would be like "being on a ship in a storm", according to Mr. McKinney, who was once in the navy.

The best thing about living up north for the McKinneys is the fact that northern people are friendly.

And speaking of hospitality, the McKinneys wouldn't let the photographer leave without eating a delicious ham dinner that rivals Ma's home cooking.

Dakota County Tribune December 25, 1942

concerns. By November construction of the plant was approximately 50 per cent complete. By March 1, 1942 construction for project was about 90 per cent complete. Being the last of the powder plants authorized during the war, its usefulness was constantly being reevaluated by the military as the pace of the war fluctuated. In early 1943 it was determined that other ordnance facilities could keep pace with the needs of the war, so on April 22, the War Department canceled construction on powder lines D, E, F and the diphenylamine unit. These lines were to be dismantled and the equipment sent to other facilities as needed.

Construction of A, B and C lines continued until October 18, 1943 when all major construction was halted. On January 24, 1944, duPont was instructed to cease all work at Gopher, including plant protection and maintenance. The government assumed responsibility for all material and equipment at the project. Fegles Construction Company of Minneapolis was awarded a contract by the government to dismantle and salvage material from 250 partially completed buildings. They shipped out 175 railcar loads of material. On June 6 the "D" Day invasion was launched and 10 days later all dismantling of the plant was halted. On July 7 duPont agreed to undertake the work of reactivating the Gopher Works. On August 11 orders came to reactivate lines A, B and C and convert them to cannon powder production. Also needed urgently were the facilities for reworking damaged smokeless powder, which was being returned to this country for reconditioning. By the middle of September it was clear projected start up dates could not be met because of a very serious labor shortage, both in the unskilled and craft categories. On October 27 the Acid Facility finally began production of oleum and nitric acid. A majority of this production was shipped to other facilities.

On December 30 further orders were received to rebuild lines D, E and F, with powder production to begin on these lines by September 1945. By April both duPont and its subcontractors employment figures for reconstruction of the D, E and F lines totaled 5,164. This was more than 3,000 less than the estimated required number of 8,185. On April 25, 1945 Italy surrendered and Berlin was now completely surrounded. On April 28 after repeated statements by Ordnance officials that Gopher construction would not be curtailed as a result of rapidly decreasing smokeless powder requirements, orders were issued to

TRAILER NEWS

This column is open to anyone who lives in this community and lives in a trailer. Bring your news to the Tribune or leave in the news box at the city trailer office.

Trailers here are being winterized; little vestibules are being built and heavy paper is being put around the bottom of many trailers.

Miss Georgia Franz of Independence, Iowa, is visiting her sister, Mrs. Robert Fobes at the city court, this week.

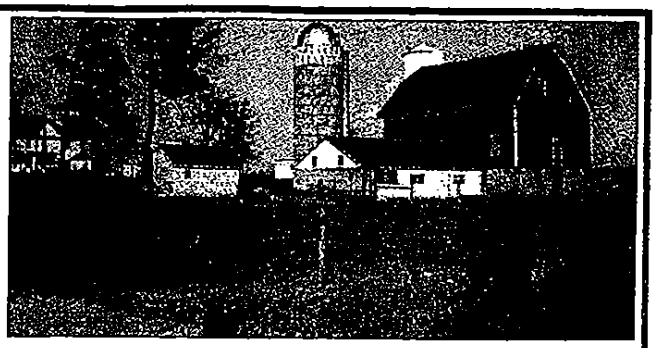
The new recreation building at the city court is nearing completion and the residents there are anxious for the use of it. They plan to have it for a day nursery, leaving their children there while they shop or sew for the Red Cross.

New families at the Kuchera park are those of Thomas Eustice and David Sherburn.

New families at the city court are those of H. E. Ackerman, Pryor, Okla.; Ralph V. Anderson, Rosemount; Chas. Delpach, St. Paul. The A. L. Becker family moved from the court this week.

The Dakota County Tribune devoted a column to residents of the numerous trailer camps such as this one published on October 9, 1942.

Harold Wachter on Gopher



The Harold Wachter farm, above, and house, lower left. Photos courtesy of Harold Wachter.

The Harold Wachter family, including his parents, Otto and Anna, were given 30 days notice in March 1942 to vacate their farms to make room for the Gopher plant. Harold's farm was 120 acres, Otto's, 80 acres. Harold was offered 79 dollars an acre. His farm consisted of a brand new windmill, well and cistern, two new silos, a freshly painted house with new shingles and a new screened porch.

Although it was difficult to leave the farm, Harold said they were told the government owned everything. "Then all of our wells had signs on them, 'Poisonous Water – Do Not Drink'."

According to Harold, since he did not argue about the price and departed without a fight he was allowed to return to the farm after the 30 day limit so that he could dismantle his brand new silos, remove gates and the well tank to take them to his new farm, the Gilman farm two miles to the west. To the best of his knowledge, everything on his old farm except the silos, which he took with him, was razed.

Interview with Maureen Geraghty Bouchard, June 30, 2001

stop work on lines D, E and F. Less than 10 per cent of the rebuilding of these lines had been completed.

The reworking of salvaged powder started on January 2, 1945. On February 9 production of new powder began on "C" line. "B" powder line began operating on March 2 and by the end of the month a peak figure of 3,102 production employees was reached. Both lines were operating at only one third capacity due to manpower shortages. Pressure was placed on the GOW to increase its production when flooding of the Ohio River caused production to be cut severely at three other ordnance works along its banks.

Due to the serious labor shortage an advertising campaign was started with the help of the Minneapolis, St. Paul and Dakota County newspapers. Several articles and full-page ads appeared urging workers to apply for employment at Gopher Ordnance Works. This campaign was necessary because, right from the start of construction on the reactivation project, there had been a definite reluctance on the part of many craftsmen and laborers to be employed on a project already associated with one sudden termination. Potential workers feared there might be another cancellation. As a result, duPont had difficulty competing with nearby industries that were hiring workers with assurances of long-term employment.

It was hoped many of the laid off construction workers would take positions on the critically short-handed production lines. But the higher paid construction workers spurned the lower pay of a production worker and simply moved on to other projects. Even with the ad campaign the facility never came close to filling the 3,000 positions needed to operate all 3 lines. Ironically, area merchants and farmers who couldn't compete with the wages offered at the plant, and therefor couldn't keep any help, complained so loudly that the plant finally stopped hiring local farm workers. Production employment topped out in May 1945 with 650 office and technical staff, 152 guards and firemen and 2,364 skilled, semi-skilled and unskilled production line workers. Of the totaled 3,166 employees, almost one third were women [931] and slightly over 1 per cent were black [16 men and 17 women].

May 7, 1945 "VE" Day brought the war in Europe to a close. Though the fighting in Europe had almost ended, the war in the Pacific was still on and the Gopher facility was far behind its production quota. That same month production at the plant reached its highest total with 6,266,040 pounds of powder produced. This powder was produced on lines B and C. The A line was functional but idle, for lack of workers. Production averaging 208,870 pounds per day was achieved working 24 hours per day, three shifts, and seven days per week. This was slightly above the design capacity of 100,000 pounds per day per line.

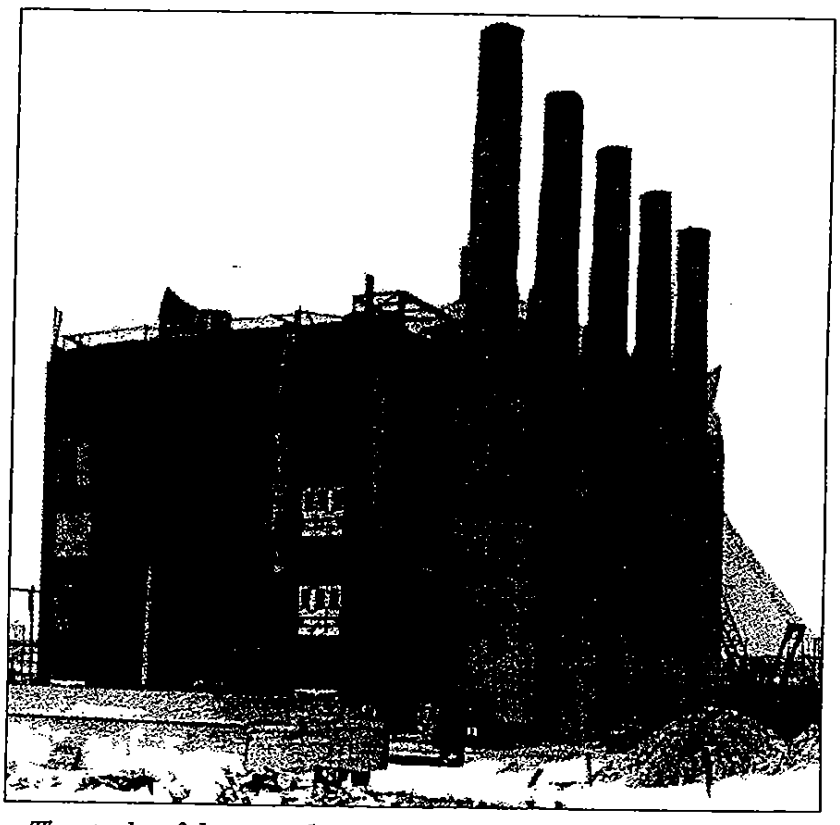
When Japan surrendered, August 14, 1945, the facility was officially ordered to cease production. The last of the powder from the production line was packed and made ready for shipment during October. This was about nine months after production had begun.

When the plant was shut down about 4,000,000 pounds of spoiled gunpowder remained to be reworked. Lt. Col. R. E. Russell, Commanding Officer, Gopher Ordnance Works, explained that "The relotting operation now being performed at the plant consists of removing powder from shells reclaimed from battlefronts or even sunken ships, testing its explosive qualities and reclaiming that which is satisfactory. Lots of 50,000 to 100,000 pounds are handled in this manner to insure uniform results." Once the war ended, it was determined that it was not worth the high cost of salvage and the remaining stockpile was ordered destroyed.[20] For two weeks, in the month of June 1946, long narrow rows of the powder were spread out on the ground and touched off. As the bright flashes raced along the ground they sent up huge clouds of smoke. The glow and smoke could be seen for miles.[21]

Even though "A" line was never in regular production, it ran for a short time for acceptance testing. All the wood in the processing section of lines A, B and C had to be torn out and burned because it was contaminated with gunpowder dust and a spark or any friction would ignite it. Area residents grumbled about all the good powder and lumber the government was burning, not realizing the truth of why it was being done.

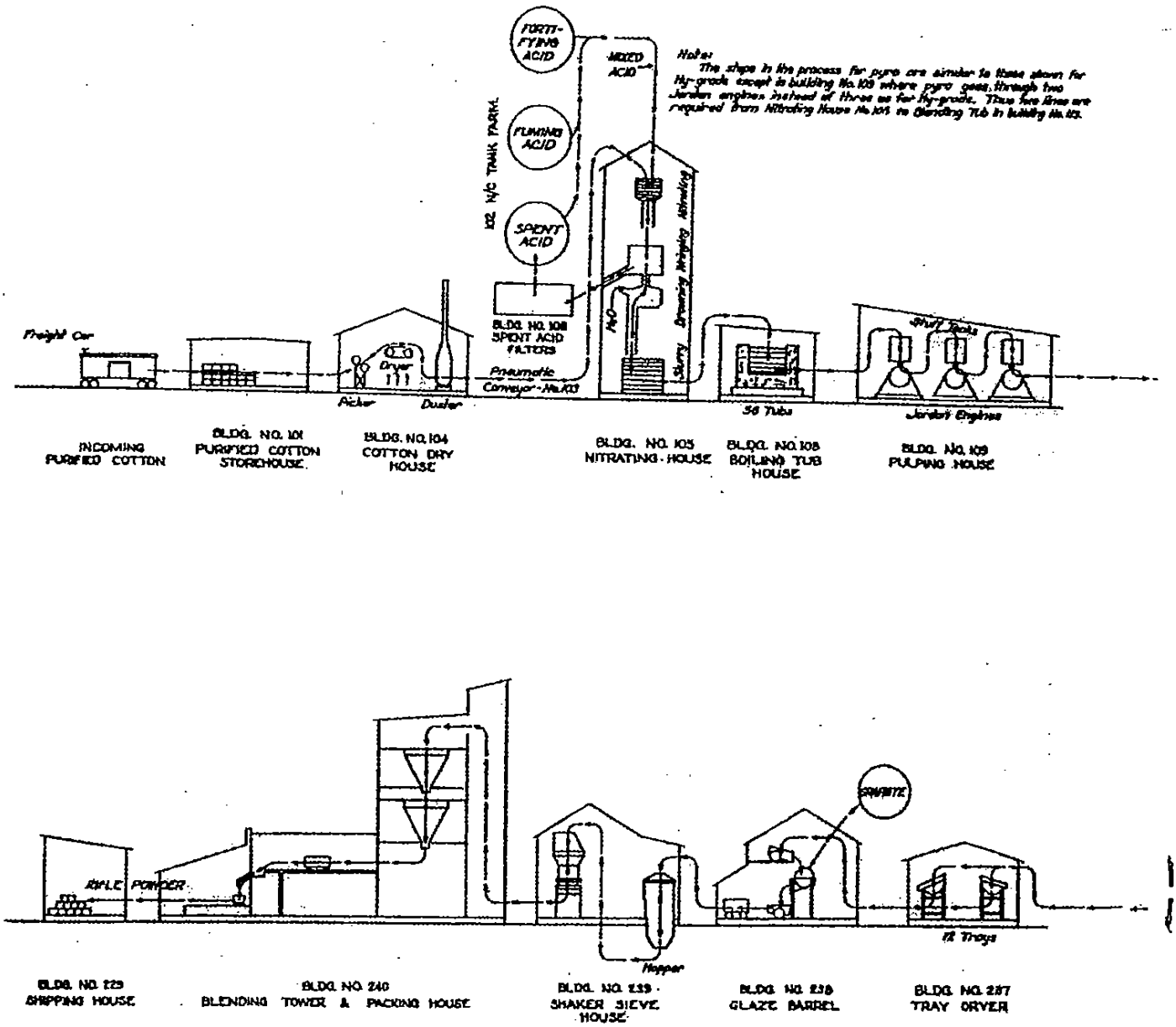
The plant was declared surplus and whatever equipment could be used at other government installations were shipped out. Most of the wood used in buildings on D, E and F lines had been torn out previously and the lumber shipped out by rail.

About 3,500 acres in the southwestern corner of the site, which had never been developed, was offered for sale. Original owners had first rights to buy back their land. Jonas J. Christensen who had lost his second farm to the GOW was one of a few who repurchased their property. Some sense of normalcy returned to Rosemount when the plant closed in 1945, and the transients disappeared almost as fast as they had come.

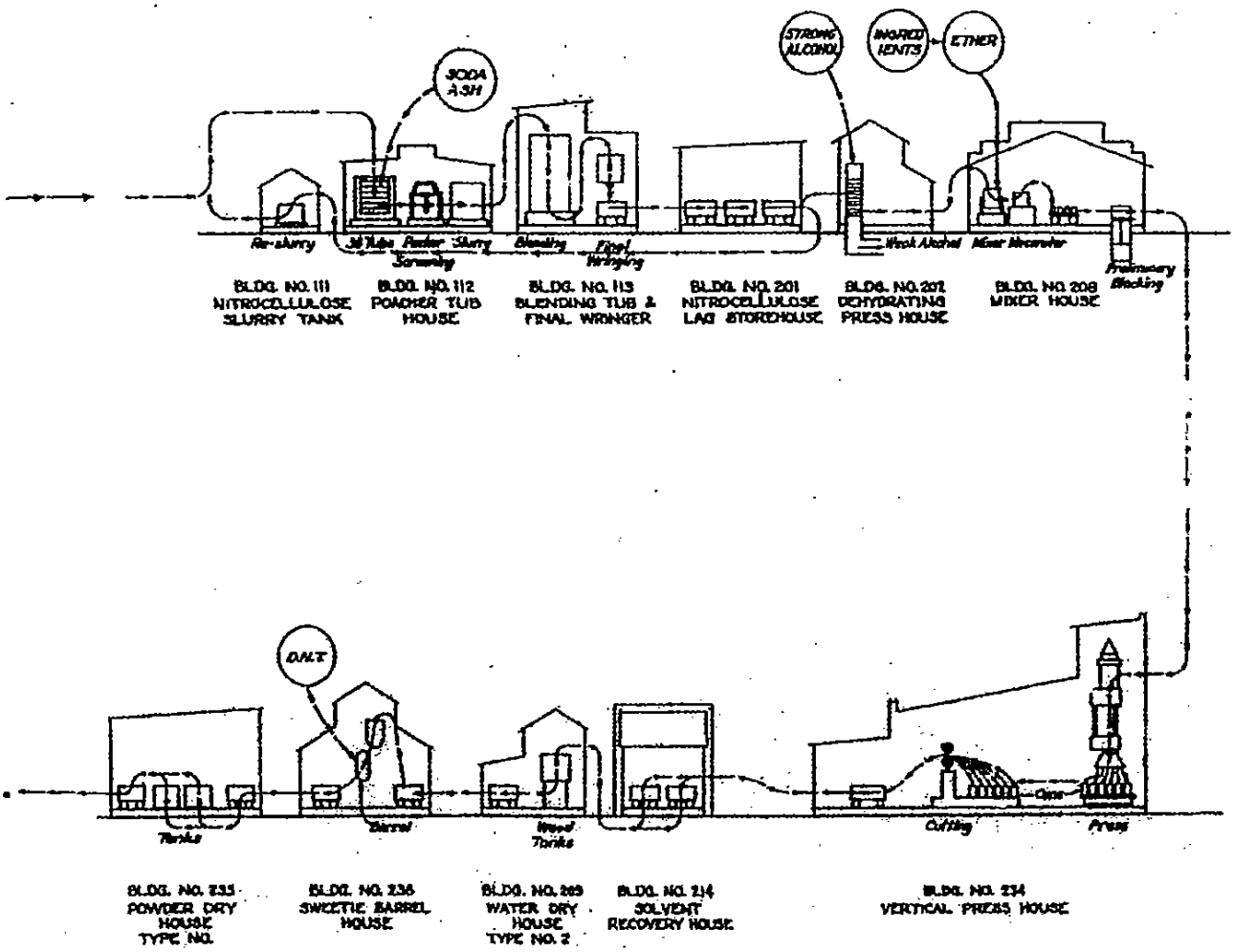


The stacks of the powerhouse are the most recognizable remnants of the Gopher Ordnance Works.

Process for Producing the Smokeless



ɔwder at the Gopher Ordnance Works



SAFETY AT THE GOW

Safety was a prime consideration during construction and production process. In September 1942, five months into construction more than 3,000,000 man-hours were completed without a lost-time accident. Smoking was not allowed anywhere on the property. Security guards confiscated all matches and lighters at the gate, and anyone caught smoking or even carrying matches, would be penalized a day's pay. Workers were required to wear flameproof coveralls, long rubber gloves and shatterproof spectacles on the job. Stringent precautions were enacted on the volatile production lines where even a minor accident could turn into a devastating catastrophe.

A 24-hour-a-day safety department was set up to give lectures and show films on safety, post signs around the plant and conduct inspections to ensure that all regulations were strictly followed. Each new employee, as part of his/her extensive training before being allowed on the line, were given handbook-which he/she must have in possession continuously which prescribed a set procedure for even mundane things as moving a ladder or lifting a package. The floors were constantly swept and washed of any combustible particles, machinery was kept as spotless as cooking utensils, and each tool had a definite place. The plants first medical facility was located in the Smith brothers farm house. Within a short time two identical medical service buildings were built. Each had an operating room and small wards for both men and women patients.

GUN POWDER PRODUCTION PROCESS AT THE GOW

The flow chart from the Gopher Ordnance Works shows the steps involved in the production of smokeless powder. The 100 series buildings were used in the nitrating process. They were followed by the 200 series buildings, which made up the powder processing section of the gunpowder production line.

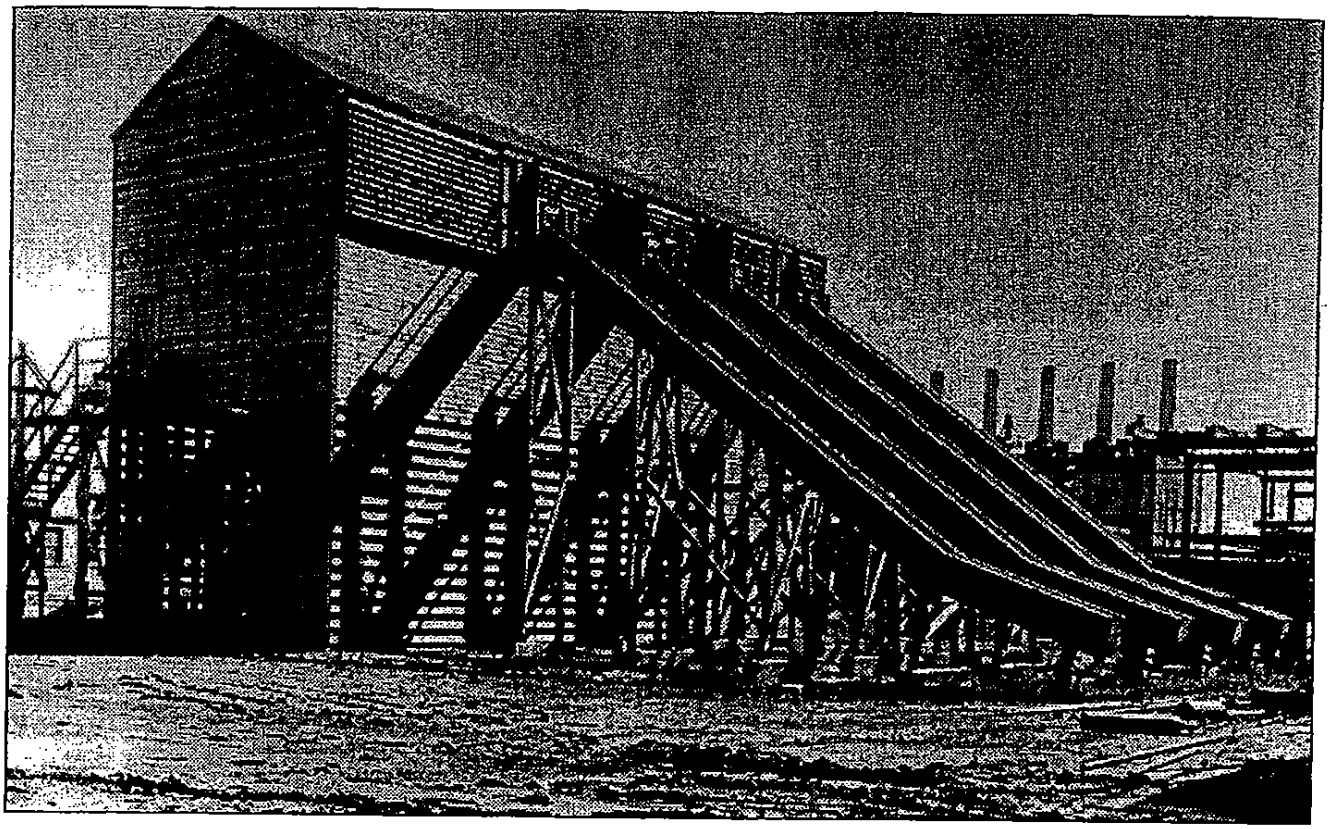
The first buildings in the line were the Purified Cotton Storehouses [building 101]. Boxcars containing rolls of cotton or wood pulp were unloaded and the material stored here until needed. The three storehouses from A, B and C lines were the only buildings from the production lines that were not dismantled when the plant closed.

The Cotton and Wood Dry Houses [building 104] contained large ovens, which dried the cotton or wood fiber until it contained less than 1 per cent moisture. The Army required its gunpowder to be made from wood cellulose while the Navy insisted on cotton cellulose. Each branch claimed their product to be superior.

The Nitrating Houses [building 105] were four-story brick buildings where the dried cellulose was mixed with a blend of acids. Next a large amount of water was added to the nitrocellulose as the material was very unstable and explosive in a dry state, but relatively safe if wet. All that remains of these structures are their foundations.

Each line had its own nitrocellulose tank farm [structures 102] which contained and processed acids used in the Nitrating Houses. The concrete tank supports are the most visible parts that remain today. The nitrocellulose slurry was piped to the Boiling Tub Houses [building 108] to remove impurities that would make the powder unstable. Several acid boils interspersed with fresh water rinses were required. Processing took 60 to 90 hours depending on the type of material being treated. Each Tub House contained 58 large wooden boiling tubs and used huge amounts of boiling water. The ceramic and concrete pipes from the boiling tubs are some of the most unusual ruins. Interestingly, surviving ceramic pipes from these boiling houses are stamped with "Red Wing" from Red Wing Pottery Company.

The next step took place in the Pulping House [building 109] where the slurry was passed through Jordan Shredders of the same type used in paper mills. This process cut the material to the desired fineness for processing in the powder line. The slurry was then passed to the Poacher Tub House [building 112] where it was again given a series of alkaline and neutral boils and rinses to remove more free acids. This step helped purify the nitrocellulose to insure a long shelf life for the powder. A screening step also removed oversize fibers.



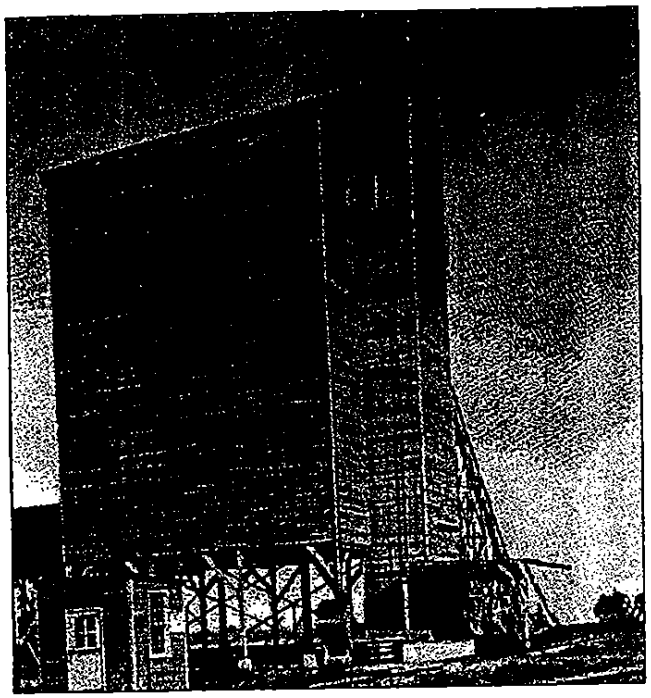
The ether mix house at Gopher had emergency slides for workers to escape by in the event of disaster.

In the Blend and Final Wring House [building 113] different batches of nitrocellulose were blended together in large tubs to get specific nitrogen and solubility characteristics and then spun in centrifugal wringers to remove most of the water. Each Blend House had four tubs, 24 feet in diameter and 19 feet high, with a 13-foot agitator in each tank. After being spun in the wringer the nitrocellulose contained 25 - 33 per cent moisture. At this point the nitrating part of the process was finished and the powder process would begin.

The first step in the powder process is to remove the remaining water moisture by dehydrating it with a rinse of strong alcohol and then pressing it into a block to remove the alcohol. This was done in the Dehydrating Press House [building 202]. Framing for this building and in many others in the production line were done on the outside. This was done to prevent powder dust from accumulating in the many corners and ledges which would exist with inside framing construction and increase the fire and explosion danger.

Escape slides were installed on all hazardous production buildings more than one-story tall for quick escape in case of fire. The doors at the top of the slides had no doorknobs and were held shut with springs so you could exit on the run.

In the Mixer House [building 208] the block of nitrocellulose was mixed with solvents and the gelatin like mixture was again pressed into a cylindrical block. The Mixer House in line B is one of the largest ruins still standing. The cylindrical blocks were moved to the Vertical Press Houses [building 234] where they were taken by elevator to the second floor. Here they were placed in a large vertical press and extruded through dies that formed the blocks into long strands of powder that went through holes in the floor and into waiting tubs on the first floor. Rifle powder had one hole through the center the strand while cannon powder had seven small holes. The



The Gopher blending tower as it appeared in 1943.

output from this operation looked like long strands of spaghetti. The strands were then moved to cutting machines where it was cut into specified uniform grain lengths. The A - B - C lines were originally designed to produce rifle powder but were converted to cannon powder production in 1944. All the powder produced at the GOW was cannon powder.

In the Solvent Recovery Houses [building 214] hot inert gases were passed through the powder to drive off residual gasses. The ruins from these building are more commonly referred to today as the "T" walls, because of their shape. Ninety of these ruins exist. Forty-nine of them served A, B and C lines. Standing in three long rows, they make an impressive sight.

At the Water Dry Houses [building 269] the powder was Hydro-Jetted in a water dry tank to harden the powder and remove moisture. If rifle powder was being produced it was then moved by rail to the Sweetie Barrel House [building 236] where it was mixed with D.N.T. in a mixer. The amount of D.N.T used affected the burn rate of the powder which partially dictates the caliber of the ammunition. These mixers were the same type used by candy manufactures, hence the name Sweetie Barrel. This step was not needed in cannon powder production. There were two Sweetie Barrels in each of the nine Sweetie Barrel Houses. These barrels were mounted on concrete pedestals that are easily recognizable in the ruins.

The powder was next sent to the Powder Dry House [building 235] and the Tray Dryer [building 237] where the last of the moisture was removed using hot air. At the Glaze Barrel House [building 238] graphite was added to the powder to reduce static charge and improve its settling properties so it would pack tighter. The Shaker and Sieve House [building 239] removed excess graphite and any odd sized powder particles. The powder was then temporarily stored while samples of each batch were analyzed by the ballistics laboratory.

After samples were analyzed, various amounts of powder from different batches were mixed for consistent chemical and physical properties in the Blending Towers [building 240]. It was then moved to the packing facilities via a long covered wheeling walk to the Packing House [also building 240] and put into airtight containers. The escape chutes for these huge buildings were stacked one above the other. There were nine of these structures in the works.

The powder was then stored in one of 96 completed Shipping Houses [building 229]. The powder was then shipped by rail or trucked to the Twin Cities Ordnance Plant, popularly called the New Brighton Arms Plant, or to other plants to be packed into shell casings.

To supply the millions of gallons of hot water needed for production and to heat the buildings, two huge powerhouses were built. Only one was ever completely finished and operational. The larger powerhouse contained five stacks and boilers. The uncompleted powerhouse was smaller, designed with only four stacks and boilers. The stacks from these structures still dominate the skyline around the area. With a close look you can still see the rusted re-bar sticking up from the single unfinished stack. The power plants were coal fired and had large conveyor systems for moving the coal. Most of the structure of the operational powerhouse was torn down in the

1970s. Water for the powerhouse, plant production lines and fire protection, came from two identical reservoirs and pump houses. Each reservoir was divided into two sections, one for raw river water and the other for well water. Each section held over 3,000,000 gallons of water. The second reservoir was never completed. Steam from the powerhouse was pumped to the various buildings using above ground pipes. The first winter, plumbers were busy dealing with frozen pipes at the Gopher Plant, because the design was copied from plans used for earlier Ordnance Works built in the south.

Water to fill the reservoirs came from two sources. Raw water was taken directly from the Mississippi River at Spring Lake via a Pump House and filled one half of the reservoir. Additionally, four large Ranney Wells built along the shore of the Mississippi drew filtered water from the water table beneath the river bed. The water was pumped through a pair of 42-inch pipelines over two miles to the powerhouse reservoirs. So much water was pumped by the Ranney Wells that residential wells nearby went dry and the government had to truck in water to area families for a time.

Two Acid Neutralization plants treated waste water from the plant's production lines before it was discharged into the Vermillion River. The river was straightened and dredged all the way from Empire to Hastings to handle the increased flow. The river was also fenced to keep livestock from drinking the water in case contaminated water got out of the plant. A silo is all that remains from the Acid Neutralization Plants, which used lime to treat the wastewater.

CHEMICAL PRODUCTION AT THE GOW

Besides producing the chemicals needed for powder production within GOW oleum [sulfuric acid] and nitric acid were also produced at the facility and shipped to other facilities. Production of these chemicals began in November of 1944 and continued until the facility was shut down in August of 1945. This production area was in the northeast corner of the facility in the 300 series buildings. Currently this area is used for heavy equipment operator training.

REMAINING GOW BUILDINGS

While the production buildings lay in ruins and scores of other buildings have disappeared over the past half-century, many original buildings remain in use yet today. Among them is the Maintenance Supervisor's Office Building, now used as the University of Minnesota's main administration building and three Field Canteens, which sold coffee and food to plant workers. Several of these buildings were located throughout the plant.

Other surviving buildings include a pair of

Anna Wachter on Gopher

"Is your house still standing today?"

"When my brother-in-law was looking for a place, he had a place but the house was so poor and he wanted a house. He could get our old house. My brother-in-law wanted a house and he asked my husband if he couldn't buy ours.... So we sold it and we had to tell Mr. LeVander, he was our lawyer, good lawyer, what we done with it.... Otto told him he sold it for exactly $500. He says why you could have gotten a whole lot more for it than that. Then Otto says it is better to give than to receive. You should have seen him look."

Otto and Anna Wachter moved to a farm on the west end of Rosemount where the Rosemount Baptist Church and School are now located.

Interview with Nancy Pilgrim and Helen Davis, June 23, 1976


Anna & Otto Wachter

Change Houses that contained lockers, showers and bathroom facilities for plant workers. There were originally 23 Change Houses in the plant. Each production line employee was required to take a shower before leaving the plant to remove any powder dust or chemicals on their bodies that could easily be ignited.

The plant's Locomotive House, where two full sized and 18 smaller industrial switch engines were maintained, is used by a trucking company for truck repair. A cabinetmaker shop now occupies the former Laundry Building where thousands of plant uniforms were washed daily. Plant rules required a clean uniform to be worn each day. One of the University's current housing units has been converted from a firehouse. It is the only remaining firehouse from the original three built around the plant. The University still has one of the original fire trucks that were used at the plant: its Gopher Ordnance Works markings are faded but still legible. The plant's large old LP tank, the famous "8" ball, is still used despite losing its colorful paint job. Many other original buildings also exist and have likewise found new uses.

To ease the housing shortage the plant provided 25 staff houses known as "Gopher Village" for use by key plant managers. Ten two-story houses and 15 bungalows, each complete with a garage, were built in the extreme northwest corner of the property. All were new construction except for one bungalow, which was moved to the site from the Smith property and remodeled. All 25 are now private residences. Meanwhile, the Federal Housing Administration, upon recommendation form the War Production Board, approved 350 new homes to be constructed in the St. Paul-Minneapolis area for war workers. Privately financed and limited to a sale price of $6,000 or $50 a month rent. They were scattered about the metro area for various war plants, but the majority was earmarked for the workers at GOW. Under this program, 56 new homes were built in West St. Paul just east of Robert Street on land homesteaded by the Hurley family in the 1850s.[22]

The total land taken for the Gopher Ordnance Works was 12,120.37 acres. This includes the water intake facilities at the Mississippi River. Altogether 858 buildings were completed or partially finished before the plant closed. The total cost to build and operate the facility came to a little less the $124 million dollars.

On August 1, 1947 the Gopher Ordnance Works was transferred to the University of Minnesota for use as a research facility in conjunction with its St. Paul campus, and another portion has been rented out to local farmers. Federal law stated war surplus property could be transferred to public educational institutions for research or educational purposes. They received 8,000 acres and 162 usable buildings.

Appendix 1

Production in Pounds by Months at Gopher Ordnance Works

	Smokeless Powder	Nitric Acid	Oleum
		1944	
Nov.		1,240,781	8,691,243
Dec.		1,457,570	12,905,747
Total		2,698,351	21,596,990
		1945	
Jan.		2,599,650	12,768,373
Feb.	773,584	3,338,559	8,578,697
Mar.	3,944,240	8,394,763	8,396,629
Apr.	5,449,942	8,716,104	8,841,194
May	6,977,569	10,307,404	7,835,825
June	6,098,370	7,040,790	10,039,310
July	4,304,396	4,538,182	2,656,236
Aug.	1,655,070	3,382,608	
Total	29,203,171	48,318,060	59,116,264
Grand Total	**29,203,171**	**51,016,411**	**80,713,254**

Note: An unknown amount of reclaimed powder was also produced beginning in January 1945.

Appendix 2

Important Dates in the history of Gopher Ordnance Works

1942

March 7	Negotiations begun for two works - Gopher and Platte
May 4	Construction started on Gopher
May 22	Tetryl facilities eliminated
June 4	Formal contract issued
June 22	Proposed Platte plant withdrawn from consideration
Nov 6	Stop work order - aniline facilities

1943

March 22	Operations start-up postponed
April 10	Stop work order - D - E - F lines
April 12	Aniline facilities canceled
April 22	Notice of elimination of D - E - F lines and DPA facility
May 11	A - B - C lines to be constructed to standby condition only
Oct. 18	Closeout meeting at Plant site. All work stopped
Dec. 21	Notice that Gopher had been declared excess
Dec. 27	Elimination and salvage of D - E - F 1 ines and DPA facility begins: standby for A - B - C lines and oleum

1944

Jan. 24	du Pont returns control of Gopher to U. S. Government
June 20	Reactivation of A - B - C lines with conversion to cannon powder produc tion and Oleum requested.
July 7	du Pont resumes control of Gopher
August 11	Reactivation of A - B - C lines and oleum facility. Salvaged powder is to be accepted for reworking
Sept. 11	Construction resumes
Oct. 27	Oleum unit stated production
Dec. 27	Completion and operation of D - E - F lines requested.
Dec. 30	Reactivation of D - E - F lines ordered

1945

Jan. 2	Reworking of salvaged powder begins
Feb. 9	First powder line "C" began produc tion
March 2	Second powder line "B" began produc tion
April 2	Third powder line "A" ready for pro duction but not enough workers to began operation
April 27	Stop work order for construction of D - E - F lines
May 11	Stop work order for "A" line
June 16	Termination of work on D - E - F lines and "A" line to standby condition.
Aug 14	Contract termination notice effective Aug 11

Appendix 3

Gopher Ordnance Landowners

Tract	Owner	Acres	Sect.	Town
1	Mary Hustin, et. al.	56	25	Rosemount
2	Charles H. Perdue	106	25	Rosemount
3	Charley & Josephine Johnson	160	26	Rosemount
4	Emil L. Boche	120	26	Rosemount
5	Thomas L. Corrigan	80	26	Rosemount
6	R.L. & C.L. Smith	240	27	Rosemount
7	Theodore H.A. Dehrer	80	27	Rosemount

Tract	Owner	Acres	Sect	Town
8	Patrick H. McCarthy	80	27	Rosemount
9	Mary McDonough	40	28	Rosemount
10	John McDonough	40	28	Rosemount
11	Blanchett Investment Co.	336.69	28/33	Rosemount
12	Emma V. Derham	143.31	33	Rosemount
13	George Elliott	160	33	Rosemount
14	Matthew Hagney	160	33	Rosemount
15	John J. Corrigan	40	33	Rosemount
16	John P. Corrigan	80	34	Rosemount
17	Margaret A. Corrigan	160	34	Rosemount
18	Tillie Wetterlund	120	34	Rosemount
19	Clara Nerge, et. al.	80	34	Rosemount
20	Sarah Berniece	160	34	Rosemount
22	Harold, John & Anna Wachter	120	35	Rosemount
23	Herman Wachter	160	35	Rosemount
24	Herbert Volkert	239.75	35/36	Rosemount
25	William Volkert	120	35	Rosemount
26	Otto Boche	80	35	Rosemount
27	Otto Wachter	79.75	36	Rosemount
28	School Dist 88	.5	36	Rosemount
30	Lambert Englert	120	36	Rosemount
31	Maria Schaare, et.al.	18.5	36	Rosemount
32	John H. Klegin	1.5	36	Rosemount
33	Henry Franzmeier	46.5	36	Rosemount
34	Frank Callahan	5	36	Rosemount
37	Martin Volkert	111.39	36	Rosemount
			1	Empire
38	Frank Callahan	80	1	Empire
39	Karl Volkert	120	1	Empire
40	Patrick J. Hynes	160.64	1	Empire
41	Max. Wachter	240.77	1	Empire
43	Emmett Carroll	161.08	2	Empire
44	Gustav & Bessie Franz	319	2	Empire
45	School Dist 61	1	2	Empire
46	William Carroll	282.01	2/3	Empire
48	John J. Corrigan	40.27	3	Empire
49	Margaret & Raymond Wm. Kane	80.51	3	Empire
50	Margaret Kane	80.48	3	Empire
51	Patrick Hynes	160.64	4	Empire
52	Joseph Peters	80	4	Empire
53	Matthew Hagney Jr.	80	4	Empire

Tract	Owner	Acres	Sect	Town
54	S. Amelia Sprute	160	9	Empire
55	Thomas J. Casey	80	9	Empire
56	Jonas J. Christensen	240	9	Empire
57	Julius F. Wolkow	320	9/10	Empire
58	Charles Mamer	160	10	Empire
59	Farmington Farms	320	10	Empire
60	Margaret Cahill	160	11	Empire
61	Thomas F. Underwood	315	11/14	Empire
62	Maurice J. Murphy	320	11/14	Empire
63	William L. Carroll	160	11	Empire
64	Henry J. Ohman	160	12	Empire
65	Theodore B. Volkert	120	12	Empire
66	Mary A. Murnane	80	12	Empire
67	Jonathan A. Elston	160	12	Empire
69	Catherine Pilcher	80	12	Empire
70	Joseph Pilcher	160	12/13	Empire
71	1st Nat. Bank of Hastings	80	13	Empire
72	Emily Schroeder	187	13	Empire
73	1st Nat. Bank of Hastings	80	13	Empire
74	J.M. Brochman	40	13	Empire
75	Henry C. Peine	240	13/14	Empire
76	William H. Stahnke	40	13	Empire
77	Karl Alich	40	14	Empire
78	Matthew M. Zechmeister	120	14	Empire
79	Ester Manes	325	14	Empire
80	Robert O. Quetto	120	15	Empire
81	Otto & Marie Jorgensen	40	15	Empire
82	Patrick J. Hynes	110	15	Empire
83	Matthew Hagney	160	15	Empire
84	Emil Komorausk	120	16	Empire
85	Farmington Farms	240	16	Empire
86	Thomas J. Feeley	160	16	Empire
88	Patrick H. Casey & Thomas J. Casey	40	16	Empire
89	Martin C. Campion	90	15/16	Empire
90	Ann McMenomy	40	16	Empire
92	Joseph Francis Hynes	160	4	Empire
93	John Arthur Hynes	160.08	4	Empire
94	Patrick J. Hynes	160	3	Empire
95	Edward Patrick Hynes	160	3	Empire
***	Willis Burwell	68	17?	Rosemount

Spring Lake along the Mississippi for water intake area.

Appendix 4

How Baraboo is Meeting the War Emergency

The *Tribune* editors spent the week-end at Baraboo, Wis., where a powder plant is being constructed on 10,000 acres of land, said to be similar to the munitions plant headed for the Rosemount-Farmington community. As the Wisconsin project is about two months ahead of this one we tried to find out what this county must expect in the way of influx of officials and workers, and what is being done there to meet the extraordinary emergency.

This newspaper could be filled a dozen times with the many wild rumors flitting throughout that community, particularly with regard to the powder plant, but very few outside the top-ranking officers know what they are talking about because no official information is released. Like a rolling snowball, rumors grow daily until folks don't know what to believe. And government officials can't stop the rumors because, as they say, it's like trying to stop a nine-headed dragon — you may chop off one head but nine other heads will spring up in its place.

Dakota county could do well to heed this advice of one man who has been through three similar government projects: "You can't believe anything you hear and only half of what you see."

So with that motto in mind we tried to dig up a few facts, thanks to the courteous staff of the Baraboo Daily News-Republic and some heads of various governmental units and others.

Like our experience in Dakota county, the gigantic project was dropped suddenly into the laps of the peace-loving tourist city of Baraboo (population 6400) and of the nearby village of Merrimack (population 234) which wanted to remain "a place where at night the howl of a dog could be heard across town," instead of developing into the promised boom town.

And, same as in Dakota county, the government selected the "garden spot of the state" with its rich level land, an old river bed bordered by bluffs. "If they wanted to take over some land why didn't they take the sparsely-settled waste land," was the oft-repeated question asked by farmers — and we heard the same uttered here the past two weeks. But the government apparently has good reasons, which still is a military secret.

Farmers on the Baraboo project sent protests to Washington, and the Sauk county board passed a resolution protesting to the taking of the rich land. Then some farmers up in Adams county invited the government to locate there, and about the same time the Japs struck Pearl Harbor. The county board reversed their decision and the farmers withdrew their fire. The project, after being reportedly removed or abandoned several times, finally remained near Baraboo.

There followed the usual arguments over land appraisals; some farmers were satisfied with the offers and some were not, the latter taking their cases to court and they're still pending. (The figures on government appraisals were not made public.)

Buildings on the project were sold by sealed bids to the highest bidders, some building selling at what is described as "ridiculously low prices," and others at high prices. We were told one fairly good farm house was sold for $300 and the moving cost was $276. Some cement stave silos brought as high as $250 each. One man wanted a house the worst way, so he made certain of getting one by bidding on three — and he got the house the worst way because he was the high bidder on all three houses. On the other hand one farmer bid on 30 buildings and got none. Some buyers bought buildings, tore them down and stored the lumber for future use. Several houses were moved off intact. The government kept 70 or more building to be used on the project until construction has been completed; then they will be sold.

When we drove around the project Friday, the territory looked as though a tornado had made a clean sweep, leaving only store and cement foundations of buildings and tall concrete silos. The project is encircled by a seven-foot wire fence topped with three strands of barb wire. At intervals in little shacks are stationed guards who don't talk.

At the front side of the project a substantial farm house remains as a first aid station, and nearby hun-

dreds of men are engaged in erecting a wide, one-story wooden frame building.

These workmen live in Baraboo, Merrimack, other nearby towns, and at Madison, the state capitol, 30 miles away. Two trains daily carry the men to and from Madison, where, it is thought the bulk of the men will live.

Baraboo, headquarters for army and construction offices, has grown about 1800 since the project started — and it's only the beginning. Many workmen live in trailers assembled in special parking lots where sewer, toilet, bathing and laundry facilities are provided. Some project officials rent entire houses and in one instance the owner moved out leaving the furniture at a rental of $100 a month, an extreme case. In some cases landlords refuse to raise rent, claiming that the steady renters who helped build the city are entitled to a break because they will remain in the city long after the plant has ceased to exist. Renters who are forced to move generally double up with other families in another house or they buy property; in the latter case the situation is still unremedied. In many cases houses are remodeled into two or more apartments; others are building new homes. Taxpayers are hoping the town will not over-build, they desire to avoid becoming a ghost-town after the war.

Besides enacting a strict trailer law, the city council members have studied the housing situation which probably will become acute next summer when the construction peak comes. Believing the housing problem is a "government baby", the city fathers have asked Uncle Sam for $120,000 to erect units but the government tells the city not to cross any bridges until they come, so now the city is marking time in that respect.

The 1800 population growth has caused an increase of only 34 in the public schools, but the school heads foresee a serious problem next fall. Some sore of improvised barracks for classes, etc., probably will be worked out then, with the possible aid of the government.

Place of business are enjoying a nice increase in business. While some of the merchants frown on the idea of the project workers crowding out their regular tourist trade next summer, they admit that if it wasn't for the present government project things would be pretty dull as they are now in certain citied which they cite.

It was also pointed out that when towns raise the cost of living, taking advantage of the high wages offered at defense plants, there is a constant danger of losing the business of old and reliable customers who are apt to do their trading in other town, where there's plenty of parking space and lower prices.

There need of more recreational centers for defense workers. Towns located near defense plants, they said, should do their best to see that men and women get clean and wholesome entertainment so necessary and vital in our winning of the war.

"Keep calm and watch our for racketeers who'll be flocking to your community" is Baraboo's advice to other localities where defense plants are going up.

Dakota County Tribune April 17, 1942

Appendix 5

Trailer ordinance for the village of Rosemount

ORDINANCE NO. 26

AN ORDINANCE FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF PUBLIC AUTOMOBILE AND TRAILER CAMPS WITHIN THE VILLAGE OF ROSEMOUNT, REQUIRING PERMITS FOR THE CONSTRUCTION AND MAINTENANCE THEREOF, AND PROVIDING PENALTIES FOR THE VIOLATION OF SAID ORDINANCE.

Be it ordained by the Village Council of Rosemount as follows:

SECTION 1. For the purpose of this regulation the following terms shall be construed to have the meaning given:

(a) "Camp car" or "trailer" shall mean any motor vehicle, trailer, or semi-trailer as defined by Chapter

464, Session Laws of 1937, which is designed , or can be used for living or sleeping purposes. This definition shall apply whether or not the running gear and or wheels of such camp car or trailer shall have been removed.

(b) the term "Public automobile camp" or "Trailer camp" shall mean any area or plot of ground arranged for the accommodation of one or more camp cars or trailers which are used for living or sleeping purposes, whether or not a fee is charged for the privilege of parking therein.

(c) "Unit" or "Trailer lot" shall mean the area or section of ground in a public automobile or trailer camp designated for used by a single camp car or trailer.

(d) "Person shall include a person, persons, firm corporation or cooperative .

SECTION II. No person shall establish a public automobile camp or trailer camp within the Village of Rosemount without first obtaining a permit from the Village Council. The application for a permit shall be made in writing to the Village Council and shall state the location and legal description of the proposed site and the number of trailer lots or unites to be provided; which application shall be accompanied by an annual license fee as follows: $5.00 for any public automobile camp or trailer camp containing an area sufficient to accommodate not more than ten units , with an additional fee of 50 cents for each unit over ten. Such application shall be acted upon within fifteen days by the Village Council, during which time a report shall be made thereon as to the suitability of the location, whether the site is well drained and free of swamp areas and whether it can ba supplied with city ware or can be connected with a sewer or whether the applicant will have to provide his own water supply and construct a treatment plant for the disposal of sewage.

When such application shall have been approved as to the site by the Village Council the applicant shall thereupon file plans showing the proposed camp development, the buildings that are to be erected, plans for sewage disposal, location of well, if required, the location of any existing buildings and whether the camp is to be operated in connection with some existing buildings, filling station, etc. The plans shall show the streets and all utilities, such as catch basins, fire hydrants, electric light poles and the curb returns at the entrance way to the camp. Copies of these plans are to be submitted to the Village Council for the use of the Village of Rosemount and the Minnesota State Board of Health.

When the plans have been approved by these departments the Village Council may thereupon grant his permit. A separate building permit will be required for each separate structure, the same as for all other structures in the Village.

SECTION III. It shall be unlawful for any person to establish or maintain in the Village of Rosemoun an automobile camp or trailer camp on any location for use of transients by the day, week, month or season unless a permit therefore has been granted by the Village Council.

SECTION IV. The health and sanitary condition shall conform with the requirements and the laws, rules and regulations of the Minnesota State Board of Health.

SECTION V. Suitable electric lights shall be placed in and about the camp so as to effectively light all entrances, driveways and passages, outlets for making connections with trailers and autos shall be properly constructed so as to prevent the possibility of pedestrians and moving vehicles coming in contact therewith.

SECTION VI. Nothing herein shall prohibit the parking on property on which a residence has been erected of any camp car or trailer as herein defined when same is owned by the owner or person in control of said property; or where same is owned by a person visiting said owner or person in control of said property provided that said camp car or trailer is not otherwise parked or placed in violation of the regulations and laws of this Village and state and provided further that the occupants of said camp car or trailer shall, when the same is so parked, not avail themselves of the toilet facilities therein.

SECTION VII. The space allotted to each camping unit shall not be less than twenty-five feet in width and shall contain not less than nine hundred

square feet. Driveways between rows of camping units shall be not less than twenty-five feet wide.

SECTION VIII. Any person who shall violate any provisions of this ordinance shall be punished by a fine of not more than one hundred dollars ($100.00), or by imprisonment of not more than ninety days for such offenses.

SECTION IX. This ordinance shall be in force from and after its passage.

Passed by the council this 14th day of April 1942.

Approved: E.J. MCDONALD, President of Council.

Attest: JOHN J. MCLAFFERTY, Recorder.

Dakota County Tribune April 17, 1942

Appendix 6

Rooms Available to War Workers Listed

Victory Aid Chairman Mrs. R.G. Shirley Completes List of Farmington Rooms That May Be Rented

The local Victory Aids, headed by Mrs. R.G. Shirley, have completed their survey of rooms that can be rented to war workers who wish to live in Farmington.

Mrs. R.F. Nelson, who has charge of Dakota county, was busy getting things organized this week for a rural county canvass to help find living quarters for the project workers.

We understand Rosemount and Lakeville are compiling a similar list which we will publish when available.

The Farmington list:

Mrs. T. McGuire – 1 room, 2 beds, 1 room 1 bed, both double, available about Juen 1; room for 4 immediately.

Mrs. Klatt – 1 room, probably June 1st.

Mrs. C.A. Qvale – 4 rooms with double beds; men only wanted.

Mrs. Carl Larson – 3 housekeeping rooms, not modern.

Mrs. Vince Schroeder – 1 room, single bed.

Mrs. Mike Deegan – 3 rooms, accommodate 6.

Mrs. Peter Huberty, Lakeville, 2 rooms, double; 1 room, daybed; 1 room, ¾ bed; modern.

Mrs. Peter Goettle – Board and room for 2 men, 1 double bed. Will not consider less than two. No women.

Mrs. Mandell – 1 room.

Mrs. Joe Sauser – 3 rooms: 1 double bed, 1 single bed, 1 ¾-bed.

Mrs. Grabenstein – 1 room, modern, after June 1st, 2 people.

Dr. Dodge – 1 room.

Fred Ayotte – 1 room.

Elmer Martin – 1 room, after June 1st.

Mary Pilcher, above pool hall, prefer married couple or girls. Can be used for housekeeping.

Shady Inn – 3 cabins and trailer space.

Mrs. Clarence Weisbrich – 1 room 2 beds, 1 extra room, if needed.

Mrs. A.J. Emond – 1 room, girl only.

Mrs. Robinson – 2 rooms.

Mrs. G.R. Day – 2 rooms.

Mrs. Irving Cook – 1 room, girl only.

Mrs. Frank Pflaum – 1 room, women only.

Mrs. M. Boyd – 1 room, double bed.

Mrs. Wallace Grant – 2 rooms, double beds.

Mrs. Forest Birdsall –1 room.

Laura Hoffman – 1 room, possibly.

Mrs. Glen Grove – 1 room.

Mrs. Chas. Betzold – 1 room.

Ben Erickson – 1 room.

Mrs. Ackerman – 2 rooms, double beds.

Mrs. Kaisersatt – 1 room now, 2 other rooms later.

Mrs. J. Quam – 1 room, double bed.

Mrs. Gran – Filling station, 2 women, later.

C.G. Chase – 2 rooms, not modern.

Green Gable Auto Court – 10 persons. Hot showers available.

Mrs. Russell Larson – Modern rooms, 4 persons.

Hugh Molitor – 2 rooms, each double bed.

Ray Nahlovsky – 1 room, 2 double beds.

Jim Deegan – 1 room, 2 double beds; 1 room, 1 double bed.

The Green Gable Tourist Camp on Third Street in Farmington was one of many places open to Gopher Ordnance workers in need of rental homes.

Abe Kraft – 2 rooms, each double bed.

Milton Hoffman – 1 room, double bed.

Roy Strand – 1 room, double bed, men only.

Mrs. Etta Richardson – 1 room, double bed, men only.

John McAndrew – 1 large room, 2 double beds, 4 men, men only.

Hunter Wagner – 2 miles out. Will take 6 men.

If anyone has a room or rooms not listed above, kindly notify Mrs. R.G. Shirley and they will be printed later.

Mrs. Shirley also asks persons who have rented rooms on the above list to notify her, so that the information may be kept up-to-date.

Rooms Available in Rural Areas
(Incomplete)

Two apartments over the grocery store in Empire. John Weigle, owner, Tel. Farmington 2F120.

A vacant farm house of six rooms about 1 ½ miles north of Hampton on Highway 52. Lewis Becker, owner, Hampton.

Two rooms – will be willing to serve breakfast and pack a lunch. Located about 1 ½ miles south of southern project border on Capitol Highway. Mrs. Earl A. Cook, Tel. Farmington 5F3, Empire.

Two rooms – board if desired. Located about 2 ½ miles south of the southern project border on Highway 52. Two miles north of Hampton. Mrs. A.D. Kauffman, Tel. Farmington 5F32.

Two rooms but no board. Located about 2 miles south of southern end of project, on Highway 52. Mrs. John Niebur, Tel. Farmington 5F111.

An apartment on the east edge of the Defense area about 1 ½ miles south of East Rosemount, on Highway 52. Francis McKinley.

Rooms for four in all-modern house, can get breakfasts and washing. Mrs. J.O. McClintock, Farmington. Tel. 256.

Three rooms, five miles south, one mile east of Farmington. Electricity, running water, could have board, washing. Chas. Bellis, Rt. 1, Farmington, Castle Rock township.

Mrs. Ed. Franzmeier, Rosemount township, north of East Rosemount station, 2 rooms, electricity, running water.

Mrs. Adolph Schneider, Rt. 2, Farmington, 2 rooms, electricity, water.

Four-room apartment, 2 ½ miles south of project, separate entrance, electricity, not otherwise modern. Mrs. E.B. Deary, Rt. 1, Farmington.

One double room, electric lights, not otherwise modern, 2 miles south of project. Mrs. Garfield Swanson, Rt. 1, Farmington.

One room, all-modern house, 1 ½ miles south of project. Mrs. John Hill, Rt. 1 Farmington.

Two rooms, bath on third floor in all-modern home. Mrs. R.F. Nelson, Rt. 2, Farmington, phone 157.

Double room, electricity, not otherwise modern, on highway mile west, ½ miles south of project. Washing can be arranged for. Mrs. Roy Holt.

Mrs. A.E. Boyer, Lakeville, phone 10-F-111, 2 ½ miles north of Lakeville on Lyndale Avenue. Electricity, not otherwise modern, suitable for light housekeeping, and furnish meals or washing.

Peter Morstad, Castle Rock, will take boarders, roomers or both.

Rooms for six, 1 ½ miles west of Rosemount, Mrs. C.G. Kohls, Rosemount phone.

Upstairs rooms, Rosemount area, Mrs. John Geiger.

Four rooms, 2 ½ miles north of project on Highway 52, Mrs. William Maltby.

Mrs. Harold Godfrey, Farmington, trailer house.

NININGER TOWNSHIP

Mrs. John Carlson, four cottages (lake) partly furnished. Also 3 sleeping rooms.

Mrs. M.A. Chamberlain, 2 bedrooms with double beds.

Mrs. L. Kieffer, 3 rooms.

Jack Brown, one cottage on lake.

Mrs. Mike Knoll, 1 room for two.

Mrs. W.L. Teare, 1 room.

Mrs. Alfonse Rotty, 1 room.

Dakota County Tribune May 29, 1942.

Endnotes

1 Patricia L. Dooley, "Gopher Ordnance Works, Condemnation, Construction and Community Response," *Minnesota History,* Vol. 49, p. 215.

2 Dooley, "Gopher Ordnance Works", p. 215.

3 *Hastings Gazette,* April 3, 1942; Transcript of interview of Emmett Carroll, June 22, 1976 on file at Dakota County Historical Society, p. 1.

4 Dooley, "Gopher Ordnance Works", p. 216.

5 Dooley, "Gopher Ordnance Works", p. 217.

6 State Archaeologist Survey, p. 10.

7 "Over The Years", Vol. 28, No. 2.

8 *Minneapolis Tribune,* April 10, 1942, p. 6, & April 17, 1942 p. 6.

9 Interview, July 12, 1976 Hubert J. Geraghty, on tape at Dakota County Historical Society.

10 *St. Paul Sunday Pioneer Press,* March 18, 1945.

11 *Minneapolis Morning Tribune,* April 5, 1945.

12 Carroll interview.

13 *Minneapolis Tribune,* May 15 and 22, 1942, both p. 1.

14 Dooley, "Gopher Ordnance Works", p. 224.

15 Dooley, "Gopher Ordnance Works", p. 224: State Archaeologist Survey, p. 11.

16 Dooley, "Gopher Ordnance Works", p. 225; *Dakota County Tribune,* June 19, 1942; *Dakota County Tribune,* May 18, 1976.

17 *Dakota County Tribune,* August 14, 1942.

18 Dakota County Historical Society, "Six Months Ago and 630 Months Ago", *Society Happenings,* December 1994, p. 4.

19 Dooley, "Gopher Ordnance Works", p. 224.

20 *St. Paul Pioneer Press,* January 10, 1945.

21 *Dakota County Tribune,* June 7, 1946.

22 *St. Paul Pioneer Press,* March 29, 1945.

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ON LAKE MARION

NOW OPEN FOR

TRAILER CAMP

SHADE TREES GALORE

It's always cool here inside and outside

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- LARGE CLUB AND RECREATION ROOM
- HOT AND COLD SHOWERS
- EXTRA GOOD WINTER ACCOMMODATIONS
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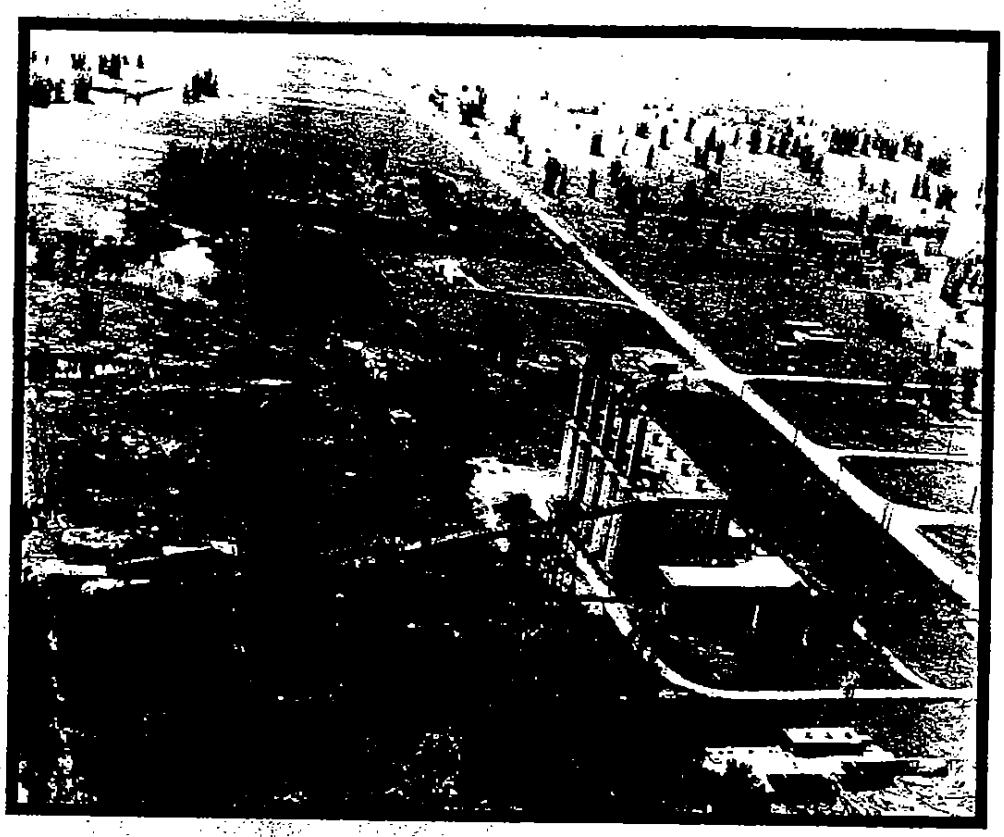

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Declaration of Surplus Personal Property to Disposal Agency - GOW
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Form [illegible]
(10-9-45)

UNITED STATES OF AMERICA
SURPLUS PROPERTY BOARD

DECLARATION OF SURPLUS PERSONAL PROPERTY TO DISPOSAL AGENCY

(In the continental United States, its Territories and possessions)

Budget Bureau No. 16-R061.2.
Approval expires May 1, 1946.

IMPORTANT—Instructions for completing this form appear on reverse side.

1. TO: Name and address of disposal agency
War Assets Administration — Metropolitan Life Building, Minneapolis, Minnesota

2. FROM: Name and address of reporting agency
Ordnance Department, Rosemount, Minnesota — Gopher Ordnance Works

3. CUSTODIAN: Name and address
Commanding Officer, Gopher Ordnance Works

4. LOCATION OF PROPERTY
Gopher Ordnance Works, Rosemount, Minnesota

PAGE	OF	PAGES
7. STANDARD COMMODITY CLASSIFICATION GROUP CODE: See attached photostats	8. DATE OF REPORT: 15 MAY 1946	
9. REPORTING AGENCY NO.: 21-017-B- 26	10. TOTAL COST—THIS REPORT: $72,867.86	

DO NOT FILL IN

Disposal agency No.	3245090
Department and Bureau	
State	
District	
City	
Site	
Transaction code	

5. PROCEEDS—If proceeds are "reimbursable," give symbol and title of appropriation or Government corporation

6. AUTHORIZED BY
B. W. Robinson
Asst. Ordnance Department
(Name and title of authorized reporting official (please type))
By B. W. Robinson
(Signature of authorized official)

ITEM NO. (a)	DESCRIPTION (b)	STANDARD COMMODITY CLASSIFICATION (c)	CONDITION (d)	UNIT (e)	NUMBER OF UNITS (f)	UNIT COST (g)	TOTAL COST (h)
1.	Industrial Equipment located in building No. 207 A, Gopher Ordnance Works, as itemized and described in the photostat attachments hereto. (See photostats of record cards attached numbered 4054 THRU 4092, INCLUSIVE						$72,867.86

Reviewed by Real Property Disposal
[signature]
Date 6-2-47

CLASS "B" PROPERTY RECORD (HISTORICAL)

REMARKS: Gow 217½
This is part of Ether Manufacturing and Alcohol Rectifying unit. See Master Card

COST ✓

DESCRIPTION:

TYPE: W Mercury col., in inches & 10th's

MODEL: A-275M

SIZE: Range 12"

CAPACITY:

MANUFACTURER: Meriam Co.

DISPOSITION

REFERENCE	DATE	LOCATION
Form 290---Ser. #55	11-27-45	207-A

ITEM	MFG. SERIAL NO.	"B" TAG NO.	
Gauge, Mercury Column, Meriam Co.	12785	19307	202[illegible]

UMP000454

Environmental Assessment Report of the WWTP
Nike Batteries MSP-70, MSP-90
DERP-FUDS
July 2000
(Provided by MPCA)

U.S. Army Corps of Engineers
Omaha District

ENVIRONMENTAL ASSESSMENT REPORT OF THE WWTP

NIKE BATTERIES MSP-70, MSP-90
DERP-FUDS
Site Numbers E05MN007000/E05MN022500

July 2000

U.S. Army Corps of Engineers
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TABLE OF CONTENTS

LIST OF ACRONYMS

CQAB	Chemical Quality Assurance Branch
DERP	Defense Environmental Restoration Program
EPA	Environmental Protection Agency
FUDS	Formerly Used Defense Sites
GSA	Government Services Administration
HA/IFC	Housing, Administration and Integrated Fire Control Area
IFC	Integrated Fire Control Area
Inc	Incorporated
Kg	Kilogram
L	Liter
LCS	Laboratory Control Sample
LIMS	Laboratory Information Management System
MCL	Maximum Contaminant Level
mg	Milligram
mg/Kg	Milligram per kilogram (part per million)
mg/L	Milligram per liter (part per million)
MPCA	Minnesota Pollution Control Agency
MSP	Minneapolis Saint Paul
MS/MSD	Matrix Spike / Matrix spike Duplicate
ROE	Right of Entry
SSHP	Site Safety and Health Plan
SRV	Soil Reference Value
SW-846	Solid Waste-846
US	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
WWTP	Waste Water Treatment Plant

SECTION 1.0 - INTRODUCTION

The U. S. Army Corps of Engineers (USACE), Omaha District, performed a Site Assessment at NIKE Battery Minneapolis Saint Paul (MSP)-70 near Saint Bonifacius and NIKE Battery MSP-90 near Bethel, Minnesota. The field effort took place 18-19 May 2000. The purpose of this site assessment is to perform an inspection of the wastewater treatment systems (WWTPs) at the NIKE Batteries. Environmental samples were collected and analyzed to determine the presence or absence of mercury contamination.

SECTION 2.0 - SITE DESCRIPTION

The WWTPs utilized at NIKE MSP missile facilities consisted of an Imhoff tank, a trickling filter, a clarifier, a sludge drying bed, and treated water receiver (a nearby sewage lagoon or stream). The Imhoff is a twenty-foot deep conical concrete basin in which waste water influent was collected. Its purpose is to allow sludge to settle from the water. The sludge would flow by gravity to the sludge drying beds. The effluent wastewater from the Imhoff tank would flow to the trickling filter, which used bacterial degradation to treat the water. The filter is a ten-foot deep circular basin filled with granite rocks, that drains from the bottom that could be opened and closed by a valve at the bottom of the effluent access. Wastewater from the Imhoff was trickled over the rocks by an apparatus in the center of the filter that turns on a bearing lubricated with mercury metal. Treated sewage from the trickling filter would enter the clarifier, which acted as a secondary settling tank. Effluent from the trickling filter was further treated at the clarifier, where it could be discharged to the water receiver, diluted with groundwater from a well at the WWTP, and/or pumped back to the Imhoff tank if additional treatment was necessary. The pipes beneath the sludge drying beds took the liquid which drained through the sand to the clarifier for treatment. The treated effluent was piped to the outlet (lagoon).

2.1. MSP-70

The Former NIKE MSP-70 Housing, Administration and Integrated Fire Control Area (HA/IFC) is located near St. Bonifacius, Minnesota, approximately 2.5 miles north of the town at the intersection of County Highway 92 and Nike Road. See Appendix A, Figure 1. Technical Ordnance, Inc. owns the former HA/IFC area and associated WWTP and maintains the facilities. A chain link fence encloses all Technical Ordnance, Inc. and lessee building and restricts public access. The WWTP is located a few hundred meters behind, and downhill from the fenced area, through a gate at the back of the facility and down a dirt road through a wooded area.

Wooded terrain and cropland surround the WWTP, which is enclosed by barbed wire fences and a locked gate. Technical Ordnance, Inc. has partially demolished the facilities.

- The clay influent pipe has a trench cut across it to prevent rainwater influent into the WWTP.
- One-half of the Imhoff tank is filled with concrete debris. The clean-out pipe is missing. The tank is approximately three-fourths filled with water.
- The aboveground structure around the tricking filter (including the bearing) is absent, but the concrete basin and bearing pedestal and granite rock filter is in place. The trickling filter effluent access is filled-in.
- The aboveground clarifier building is absent and the clarifier is covered with a large piece of concrete debris.

- The transformers and fencing are absent.
- The sludge drying bed is filled with soil.

The ground water well is present. Effluent from the WWTP was piped a few meters toward an approximately 1-acre man-made sewage lagoon, which is surround by thick woods and a barbed-wire fence. See Appendix B, Photographs.

2.2. MSP-90

The former NIKE MSP-90 HA/IFC is located approximately 5 miles northwest of Bethel, Minnesota near the intersection of County Highway 8 and County Highway 10. See Appendix A, Figure 2. The Sheriffs Youth Programs of Minnesota owns the former IFC and operates it as the Isanti Youth Ranch, an open campus short-term residence facility for participants in an intervention/consequence program. The WWTP is located several hundred meters east, across County Highway 10. A barbed wire fence and locked gate enclose the WWTP, and it is surrounded by woodlands and crop land. Both the IFC and WWTP are in excellent condition. The Sheriff's Youth Program maintains the WWTP.

- All structures are intact. Doors are padlocked.
- The Imhoff tank was approximately four-fifths filled with water.
- The clarifier tank is covered by a wood platform and wire mesh to prevent accidental fall in. The clarifier contains debris submerged in water.

Effluent from the WWTP was piped a considerable distance to a nearby streambed that is not visible from the WWTP due to terrain. The groundwater well is present. See Appendix B, Photographs.

3. OPERATIONAL HISTORY

3.1. Operational History

The former NIKE Batteries MSP-70 and MSP-90 sites of the Minneapolis/Saint Paul Defense Area are located near Saint Bonifacius, Minnesota and Bethel, Minnesota, respectively. The sites were positioned to protect the Minneapolis / Saint Paul metropolitan defense area from aerial attack. The MSP NIKE sites were controlled by the U. S. Army from approximately 1958 to 1972 when the facilities were excessed. The focus of this investigation is the wastewater treatment systems that are associated with the Housing/Administration area. These systems consist of an imhoff tank, trickling filter, final settling tank, sludge drying beds, chlorination system and a sewage lagoon. A USACE Saint Paul District Representative reported to the Minnesota Pollution Control Agency (MPCA) on September 3, 1998 that a release of mercury from the trickling filter rotor bearing at MSP-90 had occurred. During the September 3, 1998 visit, the USACE Saint Paul District Representative stated that he had collected the mercury in a small vial and showed MPCA staff photographs that he had taken documenting the mercury release. The photographs showed elemental mercury on the concrete base below the bearing and on filter media. USACE- Omaha was contacted to perform further investigation.

3.1.1. MSP-70

This site consisted of three operational areas: 1) Housing/Administration and Integrated Fire Control site, 2) launch area, and 3) line-of-site and safety easements. The H/A and IFC portion of the site was used for administration, storage, shipping, control, production, machine shop, test laboratory, barracks, and a mess hall. On July 9, 1973, the Government Services Administration (GSA) conveyed the site to the City of Minnetrista, Minnesota. The former H/A and IFC are presently owned by Technical Ordnance, Inc. The launch area portion of the site is located 2 miles northwest of the H/A and IFC in Carver County, Minnesota. The launch area is presently owned by the City of Excelsior, Minnesota acting as a trustee for the Western Area Fire Training Association. This site was not visited. This area is outside the scope of this investigation.

In 1990 the FUDS program approved and USACE executed a project for the removal and disposal of three underground storage tanks, two above ground storage tanks, and nine electrical transformers located at the former NIKE Battery MSP-70.

The current owner, Technical Ordnance, Inc informed the sampling team that they had removed the structures over the clarifier and trickling filter, including the bearing, after the company connected its facilities to the local municipal wastewater works in approximately 1990. The WWTP influent pipe was cut at the same time, digging a large trench through it so that rainwater runoff was directed away from the WWTP. Some debris was placed in the Imhoff tank, and the trickling filter effluent access and sludge

drying bed was filled in to prevent accidental fall in or exposure to mercury metal. A small container of mercury metal was collected from the bottom of the trickling filter effluent access after removal activities. This indicates that the mercury bearing leaked.

3.1.2. MSP-90

The Launch and Housing/Administration/ Integrated Fire Control sites were acquired in 1958 by the U.S. Army to protect the Minneapolis / Saint Paul metropolitan area from attack. The site is located in Isanti county near Bethel, Minnesota. The Army constructed and exclusively used the facility between 1958 and 1972. Major structures constructed at these sites included missile assembly, generator, warhead, radar control, administrative, barrack, gymnasium, and mess hall. MSP-90 MIKE Battery was declared excess to the General Services Administration on 17 October 1972. The facility was transferred to the Department of Health, Education and Welfare who conveyed it to the Minnesota Sheriffs Boys Ranch on October 17, 1973.

An initial Site inspection was performed in 1986. A confirmation study was performed in 1988-1989. The purpose of the confirmation study was to determine the presence or absence of contamination, primarily at the launch site. In April 1991, further inspection of the launch facility occurred. The current owner removed eight of the nine underground storage tanks at the launch facility. The remaining 550 gallon tank is being used by the current owner. The launch facility is outside the scope of this work effort.

The WWTP is not being used by the current owner. The buildings are maintained and in good condition. The roof was blown off the trickling filter building during a wind storm. The maintenance personnel were repairing the tin siding on the trickling filter during the sampling event.

4. FIELD INVESTIGATION

4.1. Site Survey

The Omaha District USACE sampling team performed a walkover site survey on May 18 and 19 to record the condition of the facility, especially the trickling filter bearing, to collect historical information from the site owner and previous environmental investigators, and to select sampling locations. At MSP-70, Technical Ordnance, Inc. facility maintenance personnel escorted the team, showing the members where the WWTP was located and unlocking gates. Representatives from MPCA and Saint Paul District USACE accompanied the site tour. See Appendix C, Saint Paul District Trip Report. At MSP-90, Isanti Youth Ranch personnel had unlocked the gate and were planning to repair storm damage to the trickling filter structure. Isanti Youth Ranch personnel and MPCA personnel visited the site during sampling activities.

4.1.1. MSP-70

The outer portions of the Imhoff tank had been filled with concrete riprap, the east side was filled above the water level, the west side concrete fill was below the water level. On the west side there appeared to be sludge, but upon sampling, it was determined that the sludge was just a scum layer of algae. The access to the bottom of the Imhoff tank was not accessible for sampling of the sludge. Two water samples were taken from the Imhoff tank.

The trickling filter had been dismantled, the walls and roof had been removed, the rotary distributor mechanism had been removed and the discharge valve vault has been filled with dirt. The trickling filter had been dismantled approximately ten years ago and about 4 ounces of mercury was collected in the downstream valve vault. Samples could not be taken from the trickling filter.

The clarifier tank has been filled with dirt. Recycle from the clarifier was set to the Imhoff tank. Samples could not be taken from the clarifier.

The sludge drying beds has been filled with approximately 1-2 feet of dirt. The sludge from the Imhoff tank was sent to the drying beds. Three soil samples were obtained from the drying bed.

The lagoon appears to be intact. The lagoon was filled with water. Drawings indicate that the discharge inlet is located 30 feet from the east lagoon wall. The discharge pipe could not be located. Two sludge samples were taken from the lagoon, one from the east wall of the lagoon and the second from the bottom of the lagoon approximately 30 feet from the east lagoon wall.

The site lacked electric power to operate the ground water pump. No samples were taken from the ground water well.

The MPCA representative indicated that it was desirable to obtain a ground water sample of verify the lack of contamination for closure. At this time, we were not able to obtain a groundwater sample due to the lack of a power supply for the groundwater pump.

4.1.2. MSP-90

NIKE MSP Site 90 is located at the County Sheriff's youth facility. The WWTP is located approximately 1/2 mile east of the youth facilities. The WWTP is in very good condition the facilities were well maintained but are not being used.

The Imhoff tank is in good condition. Water samples were taken from the north side of the Imhoff tank. Attempts to gather a sludge sample from the Imhoff tank using a bailer connected to an extension rod failed. Tank sludge samples could not be collected due to the lack of sludge in the tank. Two water samples were taken from the Imhoff tank.

The trickling filter was in good condition. The walls were intact but the roof had been removed, the rotary distributor mechanism is intact and the discharge valve vault had a little water at the bottom. A water sample was collected from the downstream valve vault. The valve was in the open position there was some water dripping from the filter unit into the valve vault. A sample was taken from the trickling filter unit.

The clarifier tank was intact and filled with water. During the original use wastewater was recycled from the clarifier back to the Imhoff tank. Two water samples were taken from the clarifier. Sludge samples from the clarifier could not be taken since no sludges were found with the bailer assembly.

The sludge drying beds has been filled with approximately 6 inches of soil. The sludge from the Imhoff tank was sent to the drying beds. Three soil samples were obtained from each drying bed. A total of six soil samples were taken from the drying beds.

The treatment system discharged to a creek located east of the treatment facility. The outfall was located on the adjacent land owners property. Samples were not taken since a right of entry was not available.

The site lacked electric power on the site to operate the ground water pump. No samples were taken from the well.

4.2. Investigative Activities

Chemical Analysis

All samples were collected, preserved, and shipped in accordance with USEPA protocols. The samples were analyzed by the USACE Waterways Experiment Station, Chemistry Quality Assurance Branch (CQAB) Laboratory, Omaha, Nebraska. The samples were analyzed for mercury by USEPA Test Methods for Evaluating Solid Waste (SW-846), method 3050B/7471A. See Appendix D, Analytical Data Package.

4.2.1. MSP-70

Field Sampling

The following samples were collected and shipped to CQAB laboratory in Omaha, Nebraska.

Sample Location	Sample Identification	Sample Media	Sample Time / Date	Chemical Parameter
MSP-70 Imhoff Tank	MSP70-01-SW	Water	1445 18May00	Mercury
	MSP70-02-SW	Water	1450 18May00	Mercury
MSP-70 Drying Beds	MSP70-01-SS	Soil	1555 18May00	Mercury
	MSP70-02-SS	Soil	1558 18May00	Mercury
	MSP70-03-SS	Soil	1600 18May00	Mercury
MSP-70 Sewage Lagoon	MSP70-01-SD	Soil	1620 18May00	Mercury
	MSP70-02-SD	Soil	1625 18May00	Mercury

Water samples were collected using a pond dipper. Several attempts were made to collect sludge samples from the Imhoff tank, but the tank was filled with concrete rubble. An attempt was made to collect a sediment sample inside of the Imhoff building; but was unsuccessful due to the tank baffles. The Trickling Filter has been dismantled and was filled with dirt. No samples were collected. The Clarifier was filled with dirt. No samples were collected. The drying bed area samples were collected two to three feet below grade in native material because the current landowner had placed fill material over the drying beds. See Appendix A, Figure 3.

4.2.2. MSP-90

Field Sampling

The following samples were collected and shipped to CQAB Laboratory in Omaha, Nebraska.

Sample Location	Sample Identification	Sample Media	Sample Time / Date	Chemical Parameter
MSP-90 Imhoff	MSP90-01-SW	Water	0930 19May00	Mercury
	MSP90-02-SW	Water	0935 19May00	Mercury
MSP-90 Clarifier Tank	MSP90-03-SW	Water	0940 19May00	Mercury
	MSP90-04-SW	Water	0945 19May00	Mercury
Trickling Filter Discharge	MSP90-05-SW	Water	1045 19May00	Mercury
MSP-90 Drying Beds and Outfall Area	MSP90-01-SS	Soil	1105 19May00	Mercury
	MSP90-02-SS	Soil	1110 19May00	Mercury
	MSP90-03-SS	Soil	1115 19May00	Mercury
	MSP90-04-SS	Soil	1120 19May00	Mercury
	MSP90-05-SS	Soil	1125 19May00	Mercury
	MSP90-06-SS	Soil	1130 19May00	Mercury

Water samples were collected using a pond dipper. Several attempts were made to collect sludge samples with a bailer. These attempts were unsuccessful due to the tank baffles. The Clarifier discharged to a creek east of the site. Samples were not collected because a Right of Entry to this property had not been obtained. See Appendix A, Figure 4.

4.2.3. Safety Summary

All field activities were performed in accordance with "DERP/FUDS NIKE Batteries MSP-70 and MSP-90 Environmental Assessment of the WWTP Site-Specific Safety and Health Plan" (SSHP) (USACE, May 2000). No violations of the provisions in the SSHP occurred. Members of the sampling team and site visitors sustained no accidents or injuries.

4.3. DATA EVALUATION

The analytical data for this project and the associated quality control samples were reviewed by the USACE Project Chemist to assure that the data was of good quality and of sufficient quantity to meet the project objectives. The evaluation included the review of eleven soil/sediment samples and seven water samples and associated quality control samples. All of these samples were analyzed by the U. S. Environmental Protection Agency Test Methods for Evaluation of Solid Waste (SW-846) 1986, Update IIIA, Method 7470 or 7471 for mercury.

4.3.1. Data Quality and Usability

Sample Preservation and Handling

During sample receiving and laboratory handling there were no nonconformances / variations noted.

Blank Results

Method blanks were analyzed for each analysis batch. The method blanks were free of contamination.

Analytical Accuracy Assessment

Matrix Spike / Matrix Spike Duplicate (MS/MSD) and Laboratory Control Samples (LCS) were used to assess analytical accuracy. MS/MSD recoveries were within acceptable limits with no resulting data qualification. LCS recoveries were within acceptable limits. These results indicate that acceptable analytical accuracy was achieved.

Analytical Precision

Duplicate analysis (such as MS/MSDs) were used to measure precision by reviewing the relative percent difference. The relative percent differences reported for the MS/MSD samples were evaluated and found to demonstrate acceptable analytical precision. All relative percent differences were within acceptable limits.

Sample Quantitation and Reporting Limits

There were high concentrations of mercury in several samples. The high concentration made it necessary for the laboratory to perform a sample dilution in order to bring the target compound within the calibration range. In all cases, the second set of data is reported.

Conclusions and Observations

The data review process as presented in this report concludes that the data is of acceptable quality. There were no other findings in this review that would prevent the data from being considered usable for the intended purpose of this sampling event.

4.3.2. Comparison to Standards

The results of the soil and sediment sample analysis were compared to the MPCA Tier 1 Residential Soil Reference Value (SRV) for inorganic mercury: 0.7 mg/kg. Surface water sample results were compared to Safe Drinking Water Act Maximum Contaminant Level (MCL) for inorganic mercury: 2 mg/L.

Table 1 MSP-70 Surface Water

Sample Location	Sample Identification	(mg/L)	MCL
Imhoff Tank	MSP70-01-SW	0.10	2 mg/L
Imhoff Tank	MSP70-02-SW	0.026 J	2 mg/L

J-estimated value

The surface water samples from the Imhoff tank are below the MCL standard.

Table 2 MSP-70 Surface Soil

Sample Location	Sample Identification	(mg/kg)	MPCA Residential SRV
Drying Bed	MSP70-01-SS	0.0362	0.7 mg/kg
Drying Bed	MSP70-02-SS	0.178	0.7 mg/kg
Drying Bed	MSP70-03-SS	0.0314	0.7 mg/kg

The drying bed samples are below the MPCA Tier 1 Residential SRV standard.

Table 3 MSP-70 Sediment

Sample Location	Sample Identification	(mg/kg)	MPCA Residential SRV
Sewage Lagoon	MSP70-01-SD	0.148	0.7 mg/kg
Sewage Lagoon	MSP70-02-SD	**0.691**	0.7 mg/kg

At MSP-70 the outfall area is the sewage lagoon. Sample MSP70-02-SD is within analytical variation of failing the MPCA Residential SRV.

Table 4 MSP-90 Surface Water

Sample Location	Sample Identification	(mg/L)	MCL
Imhoff Tank	MSP90-01-SW	0.015 J	2 mg/L
Imhoff Tank	MSP90-02-SW	0.015 J	2 mg/L
Clarifier Tank	MSP90-03-SW	**3.68**	2 mg/L
Clarifier Tank	MSP90-04-SW	**62.7**	2 mg/L
Trickling Filter Discharge to Clarifier Tank	MSP90-05-SW	**369**	2 mg/L

J-estimated value

The surface water samples from the Imhoff tank are below the MCL standard. The surface water samples from the Clarifier and the Clarifier Discharge exceeds the MCL standard.

Table 5 MSP-90 Surface Soil

Sample Location	Sample Identification	(mg/kg)	MPCA Residential SRV
Drying Bed 2	MSP90-01-SS	0.408	0.7 mg/kg
Drying Bed 2	MSP90-02-SS	0.499	0.7 mg/kg
Drying Bed 2	MSP90-03-SS	0.553	0.7 mg/kg
Drying Bed 1	MSP90-04-SS	**1.43**	0.7 mg/kg
Drying Bed 1	MSP90-05-SS	0.290	0.7 mg/kg
Drying Bed 1	MSP90-06-SS	0.163	0.7 mg/kg

Only one sample from Drying Bed 1 exceeded the MPCA Residential SRV; MSP90-04-SS. All samples from Drying Bed 2 were below the standard. At MSP-90, the outfall area was outside the Right of Entry boundary. A right of entry will have to be obtained from the farmer in order to access the outfall area.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

Mercury contamination was found at both sites during the sampling event. The operational history indicates that mercury bearings were present at both locations. Both sites likely have similar contamination. The sampling team was not able to collect the same samples at both locations due to alterations made at MSP-70 by the current landowner.

5.1.1. MSP-70

The surface water samples from the Imhoff tank are below the MCL standard. The drying bed samples are below the MPCA Tier 1 Residential SRV standard. At MSP-70 the outfall area is the sewage lagoon. One sample collected from the sewage lagoon is within analytical variation of failing the MPCA Residential SRV. Several attempts were made to collect sludge samples from the Imhoff tank, but the tank was filled with concrete rubble. An attempt was made to collect a sediment sample inside of the Imhoff building; but was unsuccessful due to the tank baffles. The Trickling Filter has been dismantled and was filled with dirt. No samples were collected. The Clarifier was filled with dirt. No samples were collected. The drying bed area samples were collected two to three feet below grade in native material because the current landowner had placed fill material over the drying beds.

5.1.2. MSP-90

The surface water samples from the Imhoff tank are below the MCL standard. Several attempts were made to collect sludge samples with a bailer. These attempts were unsuccessful due to the tank baffles. The surface water samples from the Clarifier and the Clarifier Discharge exceeds the MCL standard. Only one sample from Drying Bed 1 exceeded the MPCA Residential SRV; MSP90-04-SS. All samples from Drying Bed 2 were below the standard. The Clarifier discharged to a creek east of the site. Samples were not collected because a Right of Entry to this property had not been obtained.

5.2. Recommendations

Further sampling is warranted to characterize the extent of the contamination at both sites. Further characterization is needed in the drying beds to define extent. There is a potential that remediation may be warranted at both sites. MPCA Residential SRV and MCLs have been exceeded for mercury. MPCA will review this report and determine if further action or remediation is warranted.

5.2.1. MSP-70

This site is being remediated by the current landowner under MPCA's direction. The remediation activities include vacuuming up the mercury on the concrete pedestal and surrounding rock in the bed of the trickling filter. The alterations made by the current landowner limit exposure to the contamination and accessibility for analytical sampling. Further action should address the same areas where contamination was found at MSP-90.

5.2.2. MSP-90

Further sampling is warranted to characterize the extent of the contamination. Further characterization is needed in the drying beds to define extent. A Right of Entry should be obtained for the outfall creek to determine the presence or absence of contamination. Further action is warranted at the Trickling Filter, the Clarifier, and Drying Bed 1.

SECTION 6.0 REFERENCES

Minnesota Pollution Control Agency, Site Response Section, *Screening Evaluation Guidelines.*

Rani Engineering, Inc. *Phase II Environmental Assessment*, United States Bureau of Mines and Facilities, January 17, 1997.

United States Army Corps of Engineers, Omaha District. *Environmental Assessment of the WWTP NIKE Batteries MSP-70, MSP-90, Project Work Plan and Site Safety and Health Plan*, 7 March 2000.

United States Environmental Protection Agency, 1996. *Test Methods for Evaluating Solid Waste, Update III.*

United States Environmental Protection Agency, Office of Water, *Drinking Water Regulations and Health Advisories*, October 1996.

Personal correspondence to Bob Dworkin from Mark Rys, *Update on Mercury Release and Cleanup at MSP 70*, June 6, 2000.

APPENDIX A FIGURES

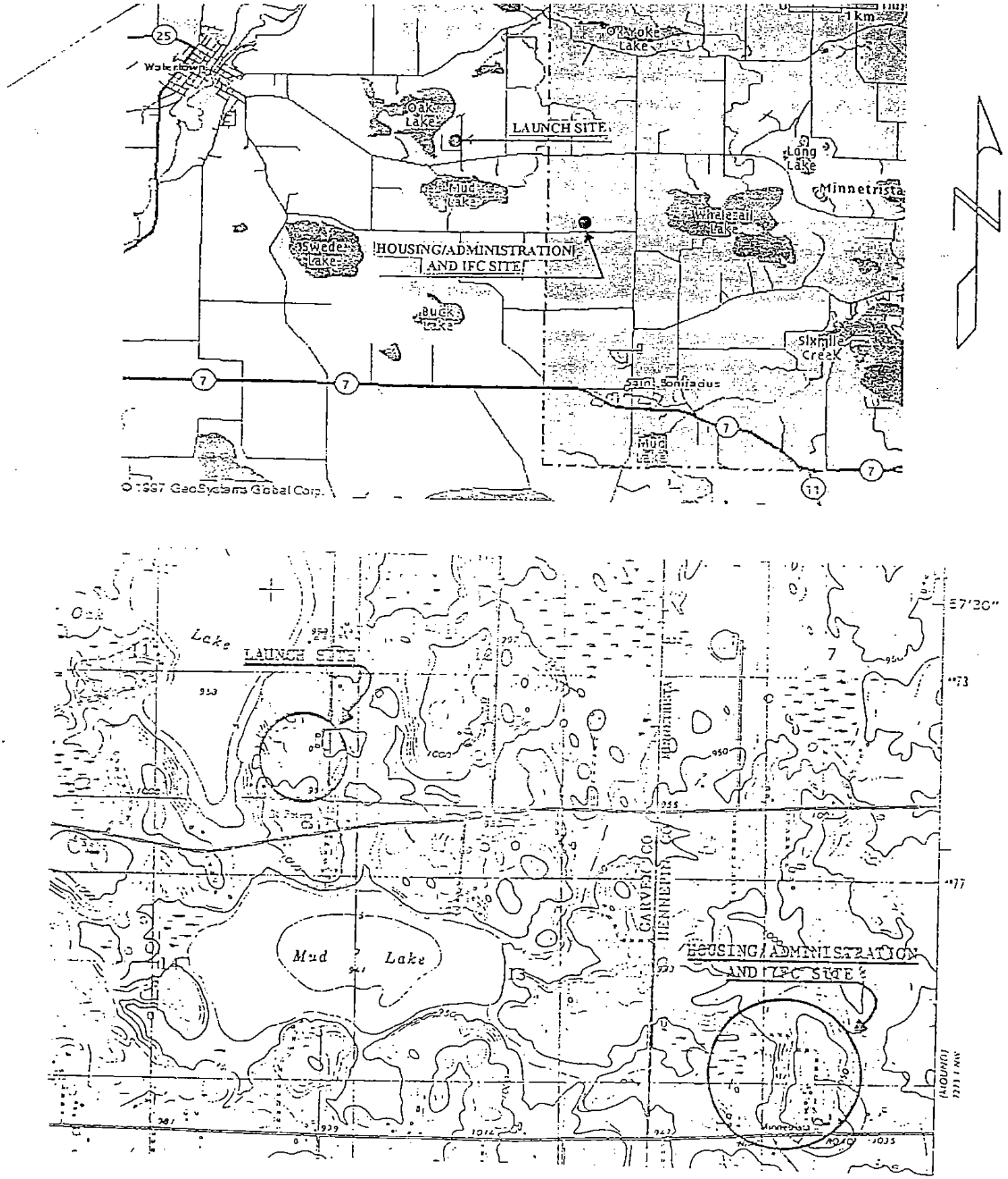


FIGURE 1 MSP-70 MAP
Area Location Diagram
Saint Bonifacius, Minnesota

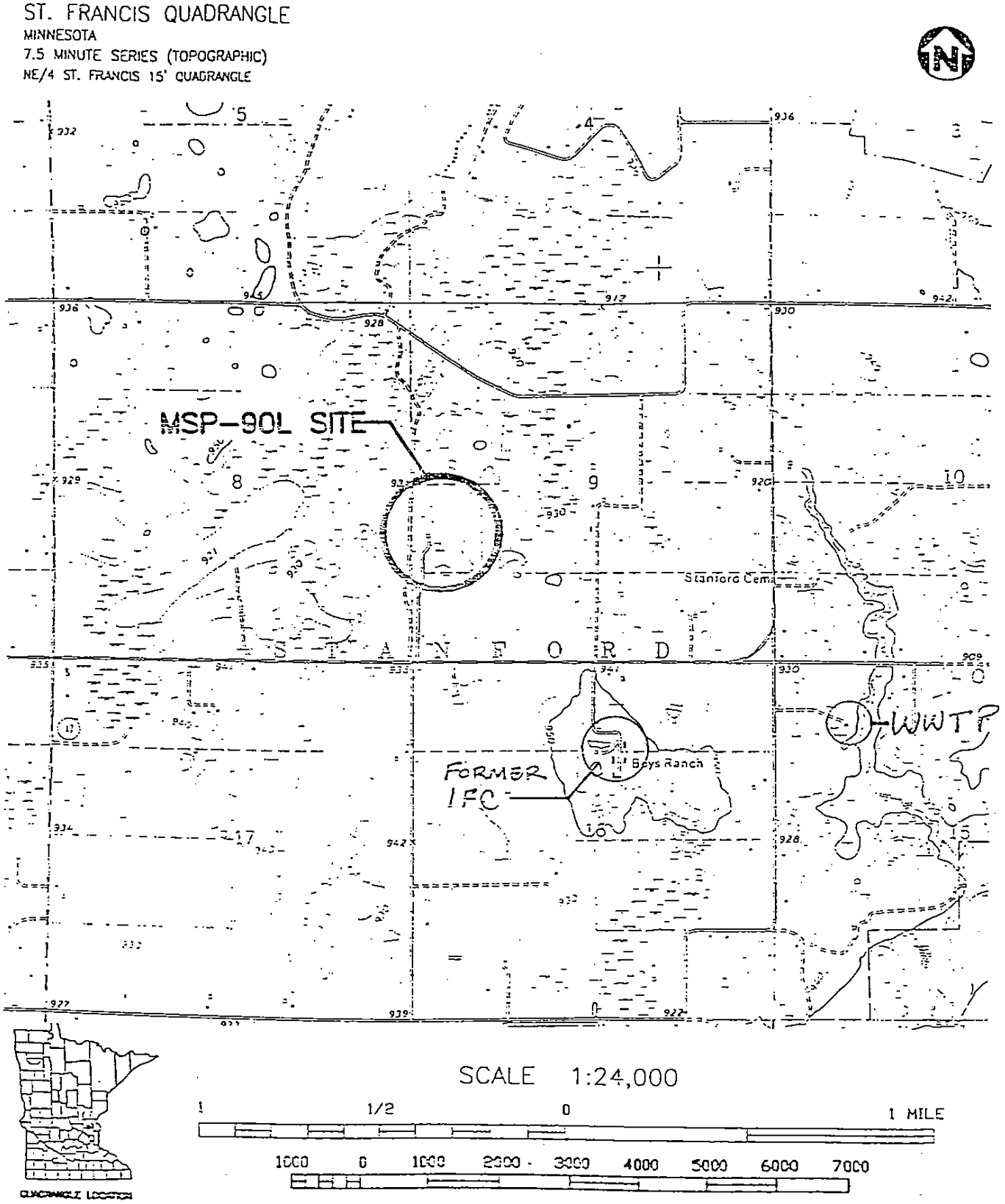
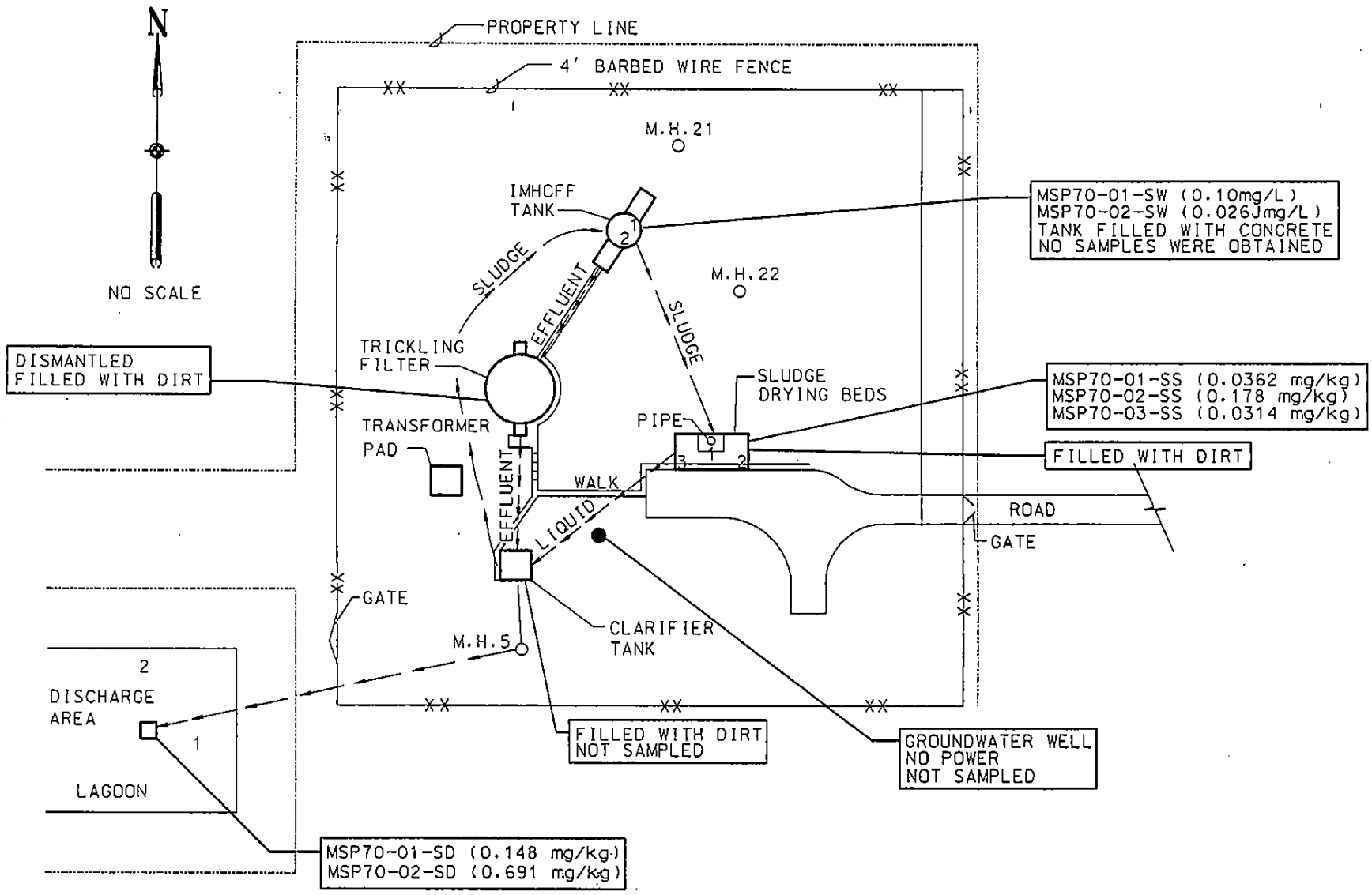


FIGURE 2 MSP-90 MAP
Area Location Diagram
Bethel, Minnesota

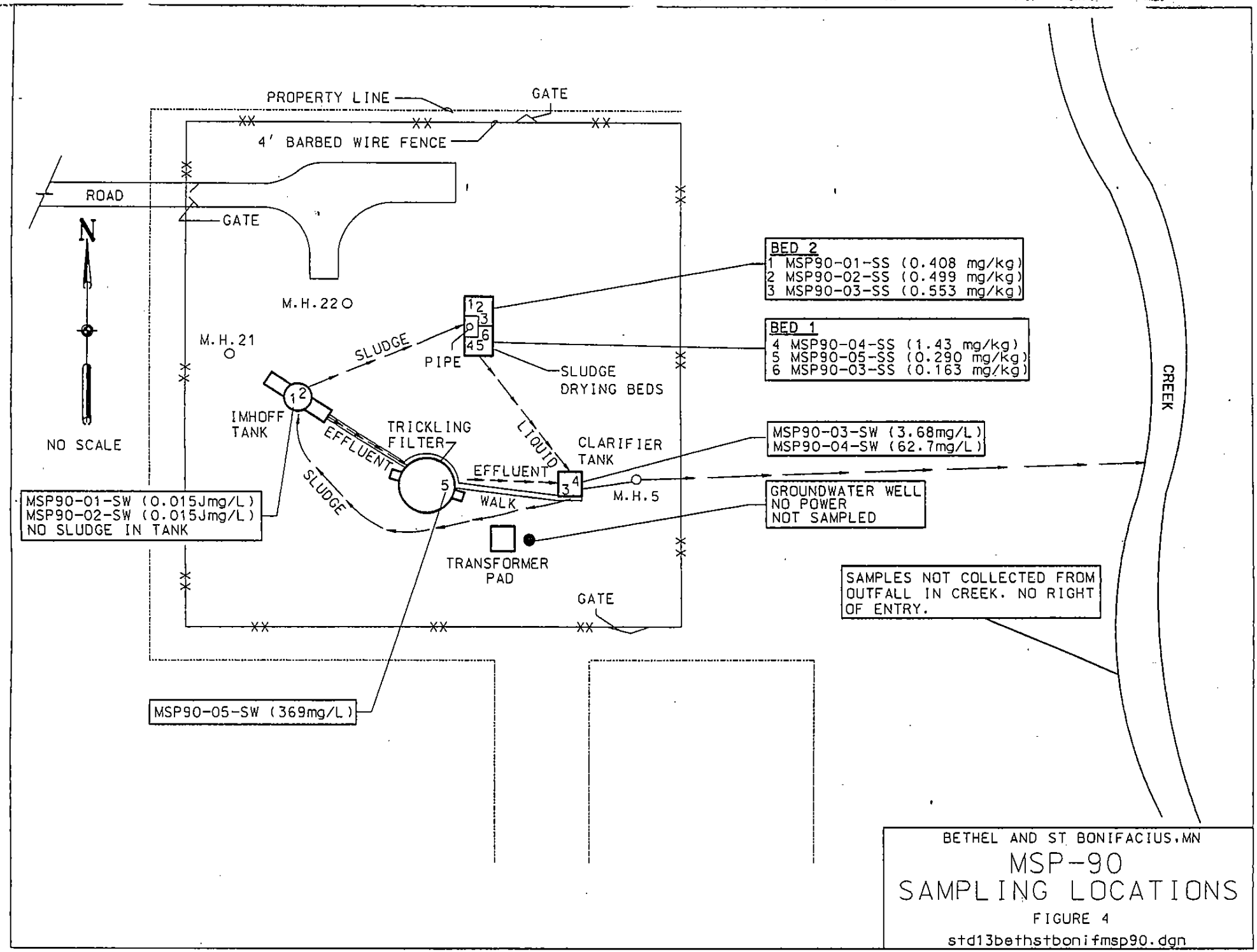


BETHEL AND ST BONIFACIUS, MN

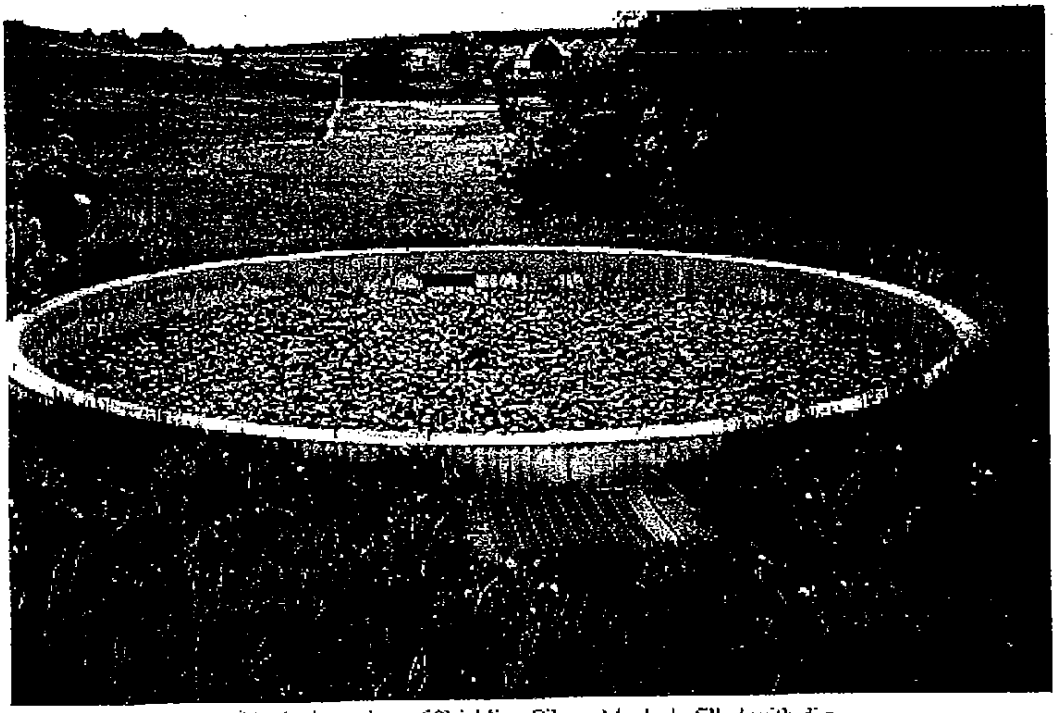
MSP-70 SAMPLING LOCATIONS

FIGURE 3

std13bethstbonifmsp70.dgn


PROPERTY LINE
GATE
4' BARBED WIRE FENCE
ROAD
GATE
N
NO SCALE
M.H.22
M.H.21
SLUDGE
PIPE
SLUDGE DRYING BEDS
BED 2
1 MSP90-01-SS (0.408 mg/kg)
2 MSP90-02-SS (0.499 mg/kg)
3 MSP90-03-SS (0.553 mg/kg)
BED 1
4 MSP90-04-SS (1.43 mg/kg)
5 MSP90-05-SS (0.290 mg/kg)
6 MSP90-03-SS (0.163 mg/kg)
IMHOFF TANK
EFFLUENT
TRICKLING FILTER
LIQUID
CLARIFIER TANK
MSP90-03-SW (3.68mg/L)
MSP90-04-SW (62.7mg/L)
EFFLUENT
SLUDGE
WALK
M.H.5
MSP90-01-SW (0.015Jmg/L)
MSP90-02-SW (0.015Jmg/L)
NO SLUDGE IN TANK
GROUNDWATER WELL
NO POWER
NOT SAMPLED
TRANSFORMER PAD
GATE
SAMPLES NOT COLLECTED FROM OUTFALL IN CREEK. NO RIGHT OF ENTRY.
MSP90-05-SW (369mg/L)
CREEK
BETHEL AND ST BONIFACIUS, MN
MSP-90
SAMPLING LOCATIONS
FIGURE 4
std13bethstbonifmsp90.dgn

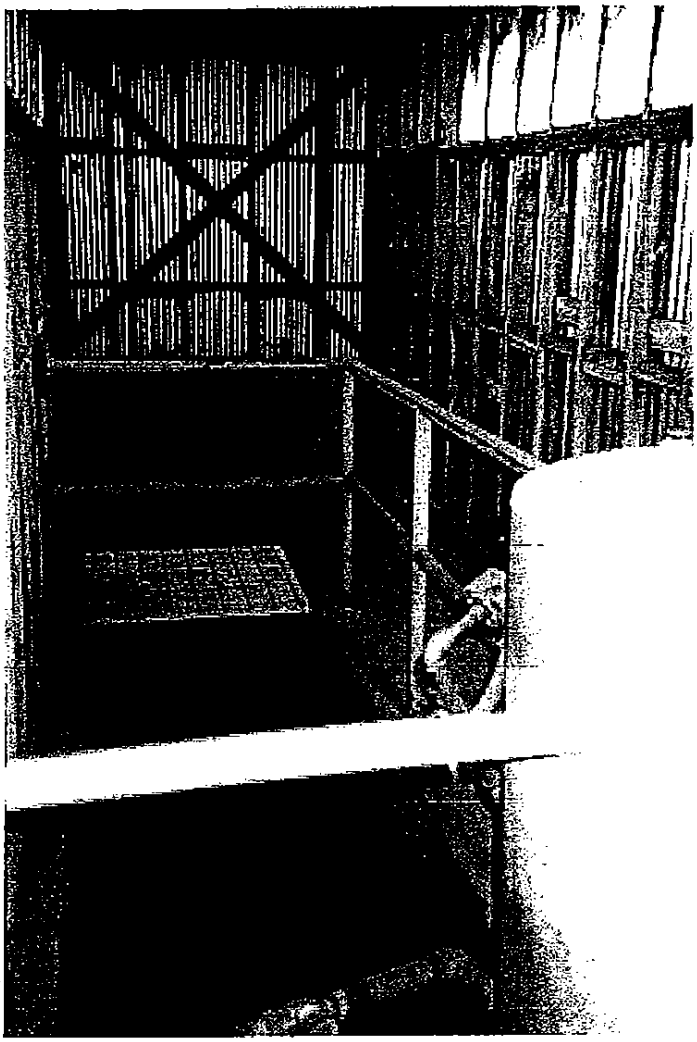
APPENDIX B PHOTOGRAPHS



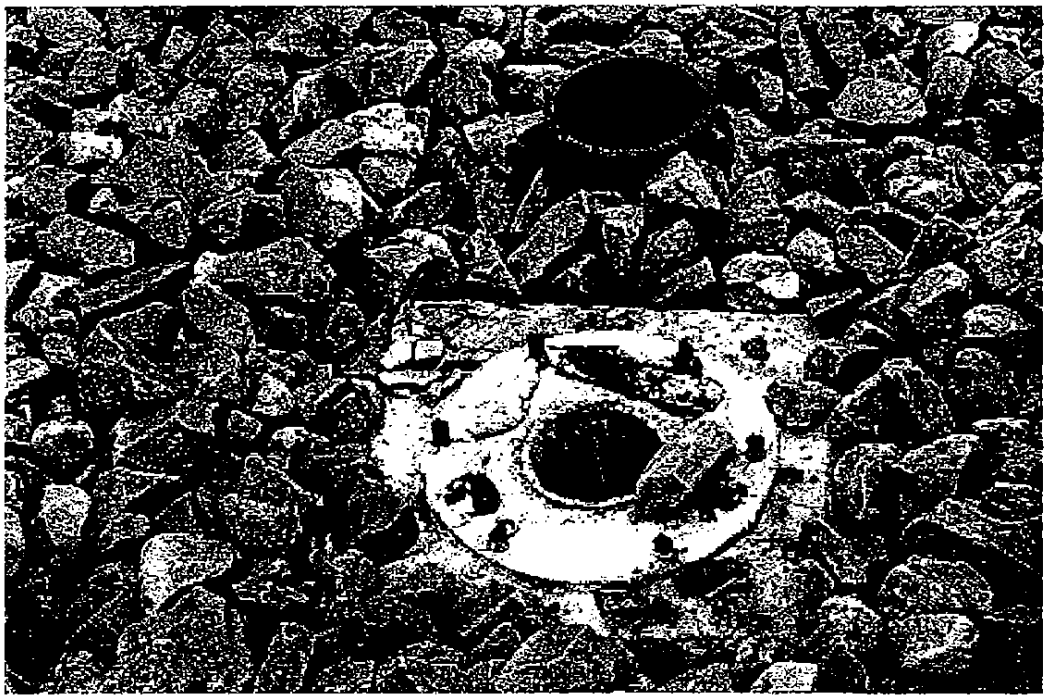
MSP-70, Overview of Trickling Filter. Manhole filled with dirt.

MSP-70, East side of Imhoff tank. Sludge pipe clogged with deceased animal.

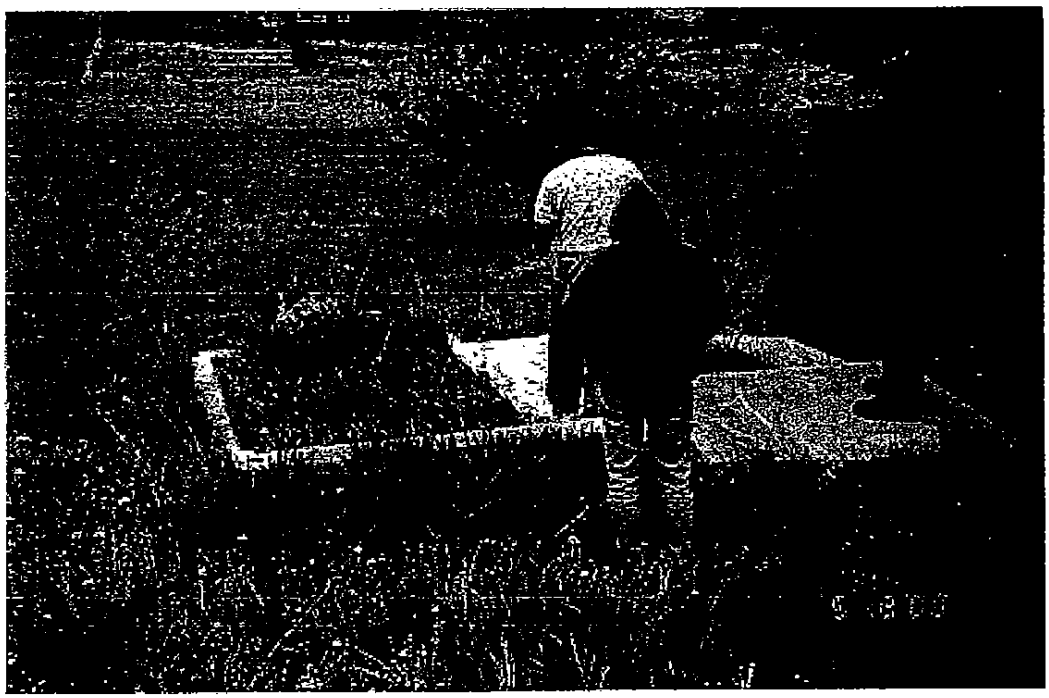
MSP-70. Diversion ditch cut through inlet pipe to divert stormwater from Imhoff tank.



MSP-70. Inside Imhoff building. Tank in foreground from Clarifier.

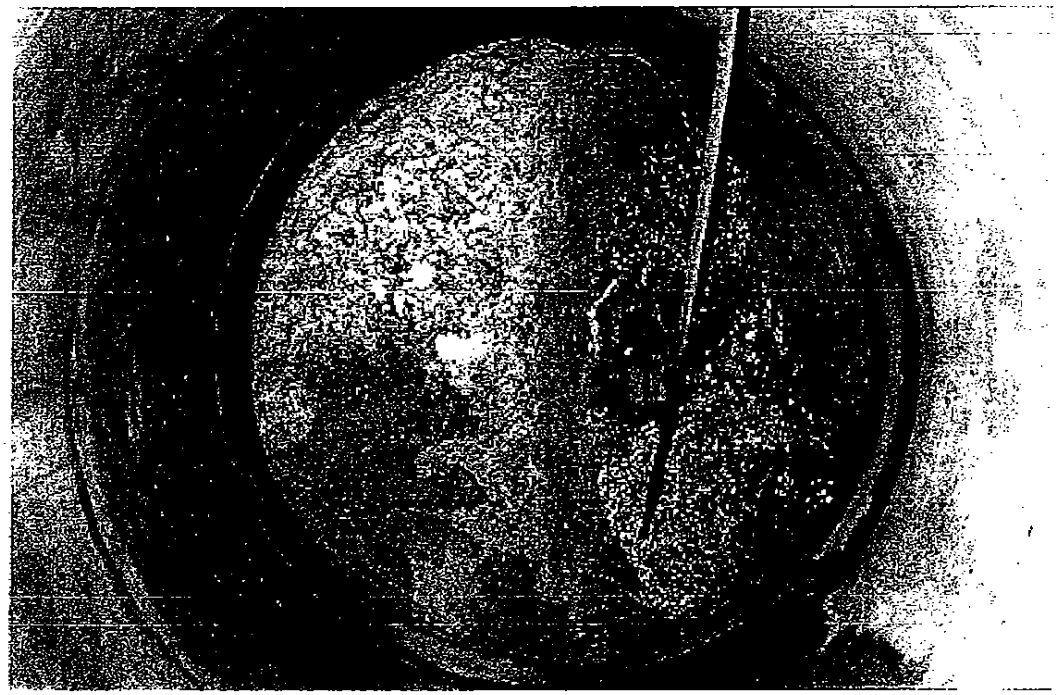


MSP-70, Trickling filter pedestal - mercury bearing absent.



MSP-70, Dirt filled clarifier.

MSP-70 well.

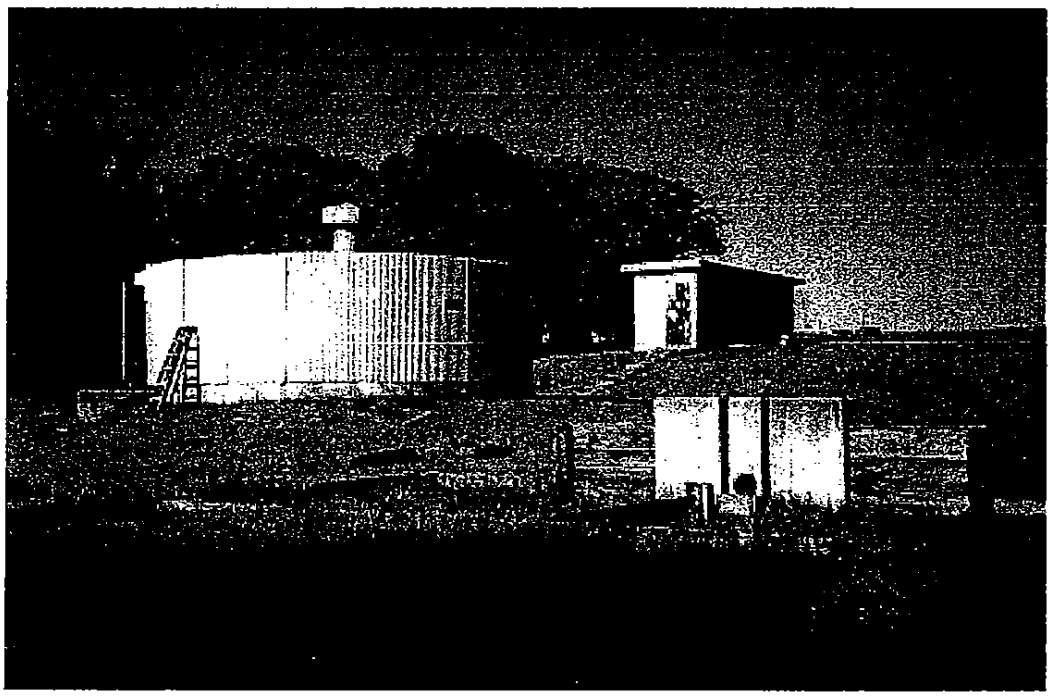


MSP-70. Inside manhole access from clarifier to pond. Note garter snake and crayfish.

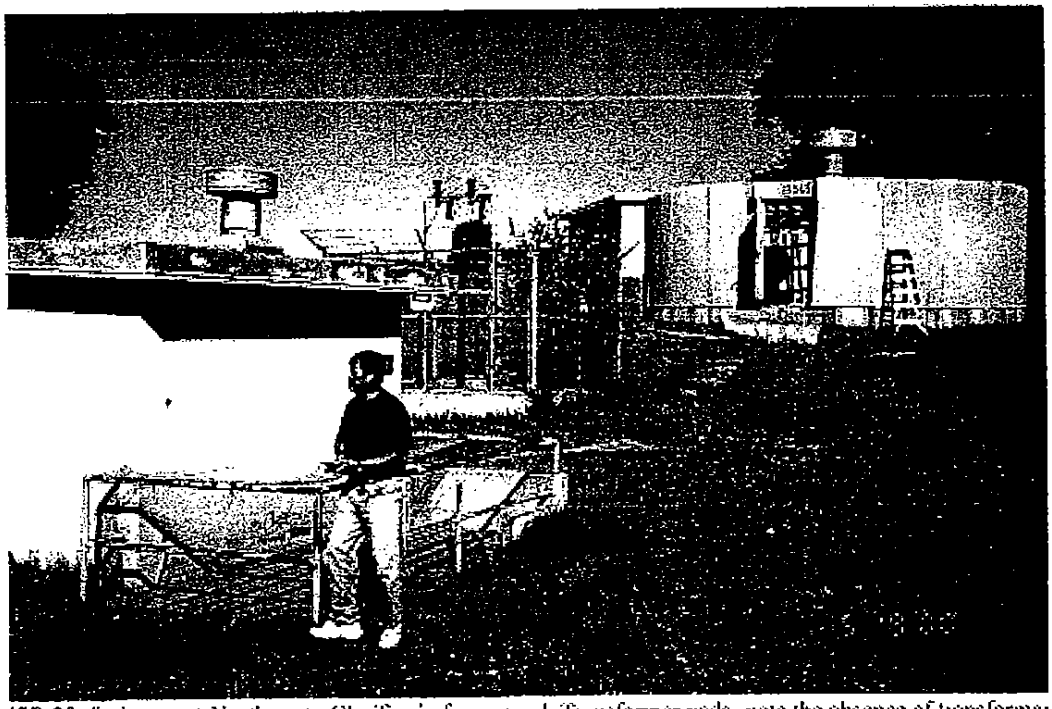
MSP-70, view to the north. Clarifier in foreground. Imhoff building in background.

MSP-70, Water sampling at Imhoff tank.

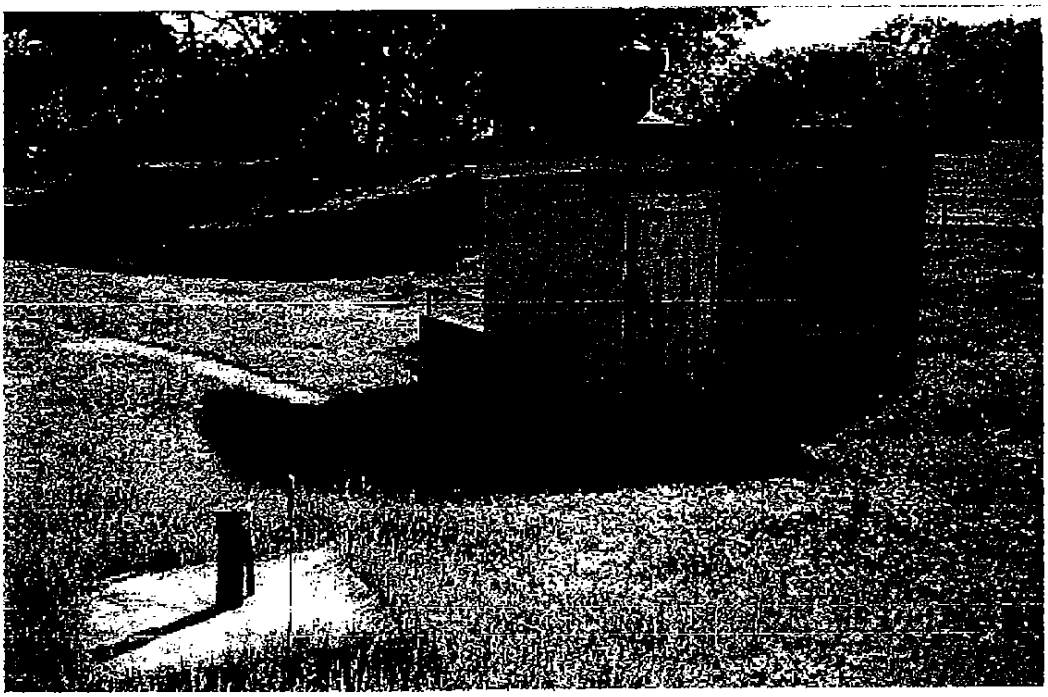
MSP-70, Sediment sampling at drainage pipe discharge. Thirty feet west of east side of pond.



MSP-90, Overview of the site, facing west-southwest. Sludge drying bed, trickling filter in mid-ground. Imhoff building in background.



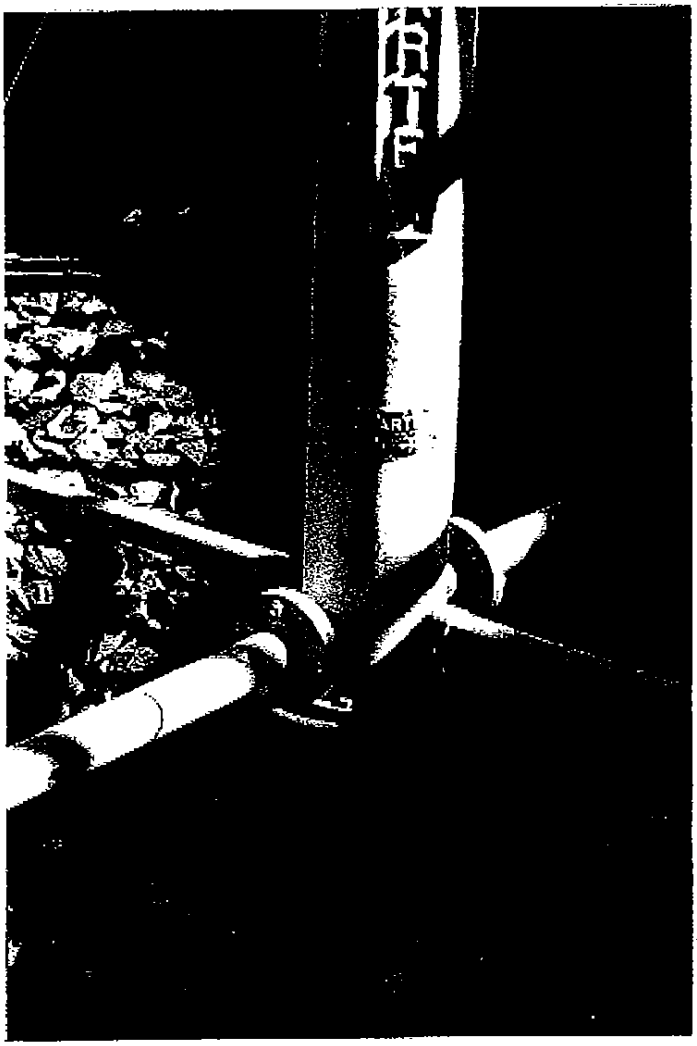
MSP-90, facing west-Northwest. Clarifier in foreground. Transformer pads -note the absence of transformers. Trickling filter in background.



MSP-90, facing east-southeast. Water well in foreground. Clarifier in background.

MSP-90, water sampling from the Imhoff tank clean-out pipe.

MSP-90, Trickling filter assembly attached to pedestal.



MSP-90, Mercury bearing. Label reads: Manufactured by CARTER, Ralph B. Carter Company. Serial No. 885525. Hackensack, New Jersey.

Memo of inspection:

DERP SITE NIKE MSP-70 HA/IFC & Launch properties (Technical Ordnance Inc.)

Date 18 May 2000

Attendees: Teresa Reinig, Don Chong, Marc Anderson NWO;
Bob Dempsey MVP
Mark Rys, Paul Estuenza MPCA
Bob Winters TEK ORD Maintenance

Weather- Overcast and Windy temp: 44

1. Summary of inspection: I met Mr. Winters at the Former NIKE MSP-70 site at 12:30 p.m. - The inspection crew from Omaha had been down at the site with Mr. Winters and had gone into town (St. Bonifacious) to meet MPCA reps at designated area. According to Mr. Winters, they would return shortly and would go directly to the WWTP (Waste Water Treatment Plant). Team returned from town at 1:15.

2. The WWTP is located off the main Housing, Administration and Integrated Fire Control Area (HA/IFC) and is accessed through a back gate to the property. It is roughly located ¼ mile NW of the HA/IFC in a natural valley. The HA/IFC is located on the highest topography in the area. Surrounding area is primarily farmland. Corn was planted in fields to the north and west. The site is only accessible from dirt road on Tek Ord property, but it is visible from county road located ½ to the west.

3. The WWTP is laid out identically to the site at MSP-20, with a few minor variations. The major features of the facility were found , but site management had demolished most of the above-ground features of the trickling filter and clarifier structures.

4. In my discussions with Mr. Winter he indicated that TEK ORD had continued to use the sewage system for a few years after the U.S. Army had vacated the site. He also noted that they had placed fill in the western side of the Imhoff tank and clarifier structures. They had also removed the top of the trickling filter and the spreader arms several years ago to prevent vandalism and entrapment in the structures. I will detail condition of each structure below:

5. Inspection notes of the site are as follows -

6. The inflow pipe had been exposed approximately 75' north of the Imhoff tank and the clay tile pipe had been broken open. A ditch has been dug by the current owner of the property to surface drain any storm or groundwater interception in the pipe to the settling pond. The ditch is approximately 6-8 feet in depth and winds around the site to the west then south along the western boundary of the property. Site mgmt. took this measure to keep Infiltration out of the treatment system. (This was also a problem at MSP-40. Despite no active use of the system, the clay tile pipe can pick up 1-2 gpm of groundwater that continued to circulate through the system until it was demolished. Very leaky?)

7. The manhole directly north of the Imhoff was filled with dirt and was not inspected.

8. The Imhoff tank was in fair condition. The door lock had been recently broken according to Mr. Winters but there was no significant vandalism in the structure. The water pressure tank from the clarifier structure had been relocated into the Imhoff tank. The siding and timber framing is intact. There was no inflow coming into the tank. (U/S pipe disconnected). The tank was noted to be 3/4 filled with sludge starting approximately 6' from the top of the structure. Sludge looked to be

consolidated and fairly dry. A dead raccoon was lodged in the sludge pipe. It may have been trapped in the basin.

a. The tank is approximately 16 in diameter and is 16.5 deep before a 1.5 foot sloping bottom is encountered (from As-built plans)

b. Site management has filled in the west side of the tank with concrete debris. (Possibly clarifier building concrete).

c. The sludge pipe on the east side of the tank is broken off and missing.

9. The Trickling Filter structure was located about 50' south of the Imhoff. The walls and roof of the structure have been removed by site management. Inspection of the granite chips and center pedestal revealed liquid mercury (hg) beads spread into most of the fine cracks and concrete voids on top of the center pivot pedestal. Mr. Winters initially didn't remember the mercury issue and then recalled collecting a vial of mercury out of the D/S outlet pipe of the filter that leads to the clarifier. That pipe has since been filled with dirt. Mr. Winter couldn't remember what happened to the bearing after it was removed or how it was demolished. DERP personnel need to collect affidavits from staff if MPCA
Wants COE to complete demolition and cleanup of these structures. From this initial visit, we might be considered a PRP but Technical Ordnance might be responsible for cost of further cleanup. I recall that Mr. Hoffman initially requested that all the fuel tanks be removed from the HA/IFC area as he indicated that they had not used any of them. When asked to certify non-usage of the tanks, he then admitted to using them for a number of years. The form we used is in the project file for MSP-70

10. The Clarifier structure has been demolished above grade line and ½ filled with dirt. The two settling tanks on the east side were filled but the pump side of the structure had not been filled. The pump was still in the base. Two concrete slabs had been relocated over the top of the structure to keep local kids out of the pump area. As stated previously, the pressure tank was moved from the structure and was being stored in the Imhoff tank. There is some severe erosion taking place on the south side of the structure exposing the bottom of the clarifier settling tanks. The downstream manhole was inspected and the pipe from the claifier was noted entering from the north and exiting to the west toward the settling pond.

11. The settling pond was heavily timbered around the edges and is in poor condition. This inspection was held during a dry period and most area ponds are nearly dry and lakes are 1' - 2' off normal levels. A significant amount of brush and timber was noted to be floating in the basin.

12. The sludge drying bed area was inspected and found to be covered over with fill. Pipe leading from the Imhoff tank was located however, but it
was dry. Mr. Winters believed fill was placed in the area a few years ago to keep it from collecting water.

13. The re-circulating manhole was noted to the east of the Imhoff tank.

14. The electrical transformer pad was intact, but the transformer has been removed by others. Mr. Winters was unsure as to the fate of the pot.

15. An electrical manhole is located approximately 40' NW of the clarifier.

16. A well point is located approximately 50' SE of the clarifier. If the well is similar to that in the HA/IFC area it will be approx. 200' deep.

17. General site inspection of the WWTP concluded at 1415. Sampling operations were initiated

by Omaha Staff.

Launch Area- General note

18. I departed the WWTP at 1420 and proceeded to the Launch area with MPCA staff for a windshield inspection. There did not appear to be any activity within the fence and the gate was locked. A Settling pond located near the road, south of the Launch entry road was inspected and found to be nearly dry. A discharge pipe was noted at the NW corner of the pond. It was noted that the pipe extends to the near center of the pond before discharging. We inspected a small wooded area between the pond and the Launch site and noted an aeration device, skid mounted, had been installed in the grove of trees. It is best described as a 2' deep metal skid, approximately 12-15' long with two aeration pumps on the eastern end. It appears that the Fire Training Association had installed this aeration device into the NIKE site storm drainage system to treat the potential release of fire fighting chemicals into the pond. The equipment was in disrepair. From the type of equipment and electrical connections used, this feature did not appear to be old enough to be associated with the NIKE site. The skid was filled with algae.

19. Inspection activities concluded at 1515 hours. Automobile travel to the District office took 1 hour in each direction.

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NIKE MSP-70
Site Layout WWTP