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Health and sanitation of Wakefield, Nebraska

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HEALTH AND SANITATION OF
WAKEFIELD, NEBRASKA

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Submitted in Partial Fulfillment for the Degree of
Doctor of Medicine

College of Medicine, University of Nebraska

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Omaha, Nebraska

TABLE OF CONTENTS

I.	Introduction	ii
II.	Medical Care Facilities	1
	(a) Personnel	1
	(b) Hospital	1
	(c) Care Home for the Aged	4
III.	Control of Communicable Diseases	9
	(a) Venereal Disease	9
	(b) Tuberculosis	10
	(c) Other Infectious Diseases	10
IV.	School Health Program	11
	(a) Teachers	11
	(b) Students	11
	(c) School Questionnaire	12
	(d) Other Personnel	14
V.	Public Eating Establishments	15
VI.	Local Milk Supply	17
VII.	Division of Sanitation	20
	(a) Water Supply	20
	(b) Chemical Analysis of Water, Table I	22
	(c) Sewage Disposal	23
	(d) Garbage Disposal	23
	(e) Methods of Rat Control	25
VIII.	Public Recreation	26
	(a) Swimming Pool	26
	(b) Public Park	27
IX.	Summary	29
X.	Conclusion	32
XI.	Acknowledgements	33
XII.	Bibliography	34

INTRODUCTION

The practice of good medicine does not begin with the healing of the ill, but in preventing the healthy from becoming ill. In rural areas and smaller towns this responsibility often must be assumed by the local physician. His knowledge of health is called upon in establishing rules and regulations and in making other decisions regarding the health and health standards of his community. This is quite appropriate as he is usually the most qualified person available to make the necessary decisions.

Many a young physician finishing his formal training and entering practice in a small community does not realize what lies ahead of him in various facets and required decisions which he may feel are only distantly related to medicine. However, they may seem only distantly related to medicine but in reality are vital to the maintenance of good health standards and a healthy community. Nothing could be more closely related to the practice of good medicine than the maintenance of community health standards and the understanding thereof.

It is with this thought in mind that the following analysis and review was made. It is based on the health and sanitation of a typical Nebraska town of approximately 1,100 population, located in the northeastern part of Nebraska.

MEDICAL CARE FACILITIES

In the medical area there are two licensed dentists and one full time practicing physician. Another practicing physician from a neighboring town treats some of the area populace and, consequently, uses the hospital for those patients requiring hospitalization.

The local physician is a general practitioner possessing great skill. He does all of the minor surgical procedures. The more major surgical cases are done by a board certified surgeon from Sioux City, Iowa. Except in the cases of extremely complicated surgery, such as neurosurgery, all operations are conducted in the local hospital. There are five registered anesthetists within a forty mile radius, one of whom attends each surgical procedure.

The hospital is a twenty-three bed, nonprofit, community hospital of one story structure. There are two beds to each room with an approximate floor space of 60 square feet per bed with the exception of two rooms which are maintained as private rooms. Each room has an individual heating and air conditioning control provided through central heating and air conditioning. Draw curtains are present between the beds with a nightstand provided for each bed. There is one chest-of-drawers in each room for the patients' use. The two private rooms have a private bathroom. The remaining patients use two bathrooms located off the hallway. All rooms

are equipped with individual buzzers connected to the nurses' station and a room light in the hallway outside each door.

The nursery has six bassinets and one incubator. It is provided with separate air conditioning and heat controls. A small workroom and formula preparation area is located adjacent to the nursery and is maintained separately from the rest of the hospital food preparation and linen handling facilities. The nursery is separated from the hallway by a large plateglass window through which the babies may be viewed.

There is a separate drug room, a utensil wash room and a final food preparatory area located respectively off the main hallway.

Food is prepared in the kitchen located in the basement and brought to the main floor by dumb-waiter.

The patients' rooms are all located off one main hallway on the main floor and comprise three fifths of the hospital building. The remaining main floor consists of an emergency treatment area, operating room, delivery room, labor room, a surgical preparatory room for the sterilization of instruments and materials and a dressing room for the doctors and nurses.

The operating equipment is all modern, in good working order and adequate for any general surgery technique. The floor was recently tested by the State and was found to be in good condition

with good conduction. A report by the State stated this was a reflection of the excellent care and maintenance which was carried on at the hospital.

The basement contains a large storage area, the heating and air conditioning units, hospital laboratory, kitchen, an eating area for the hospital personnel, two equipped extra rooms, meeting room for the hospital board, a sewing and linen preparatory room and a laundry room.

There are four full time registered nurses and two part time registered nurses on duty at the hospital, working in three, eight hour shifts. There is one nurse's aide on duty with each registered nurse per shift. A minimum of one nurse and one aide is on duty at one time. During surgical procedures, two additional nurses scrub in, thus avoiding any decrease in the floor staff during surgery. The hospital administrator is also a registered laboratory technician and does all hospital and major outpatient laboratory work.

A review of the State of Nebraska hospital inspection report of the Wakefield Community Hospital revealed only minor faults present. These are as follows:

1. A clothes chute opening which deposits soiled linen directly in the open in the laundry room.

2. No mechanical dishwasher in the kitchen.
3. Baby formulas are prepared in the same work-room as other patient food is handled.
4. A certified registered nurse anesthetist has to drive forty miles to be available for a surgical procedure.

The above deficits seem trivial when considering the hospital procedures and techniques. All linen from infectious cases is bundled and handled separately. Most of the patients are not carriers of infectious diseases. The hospital is currently planning the installation of a mechanical dishwasher. The babies' formulas are handled with utmost strictness with regard to personal sanitary care. There is no history of any infection arising from this in this small hospital. With reference to the distance driven by the certified registered nurse anesthetist, it could probably be done in less time in that section of the country than one could drive across the City of Omaha, inclusive of stormy weather.

There is one proprietary rest home for the aged in Wakefield. It is named the "Shady Rest Lodge" with a bed capacity of twenty six. This rest home consists of one main building situated on ground level and three trailer homes, two of which are attached by enclosed brick and steel hallways.

There are no steps to the entrance of the main building or to two of the trailer homes. The main building is of brick construction with a steel roof. The floor is a concrete slab with tile covering. The walls are constructed of fire resistant material. Each room, including the trailer homes, is equipped with a fire alarm located strategically along the hallways. The entire main building is heated and air conditioned by a central unit. The trailer homes have individual heating and cooling systems.

The rooms are approximately ten feet by twelve feet in size with one to two beds per room, depending upon the patient's wishes and the rate paid. Each patient has an individual locker and chest-of-drawers. The rooms are quite attractive and spacious.

The home is immaculately clean and neat as are all the patients. Each patient is encouraged to actively engage in a hobby. Some have acquired quite profitable hobbies. One gentleman makes afghans, as a hobby, which he sells for \$20.00 each. He now has back orders for more than twenty of these afghans.

There are twenty six patients in the home. One half of the patients are women and one half are men. Two patients are bedfast. Separate bathrooms are provided for the men and women.

The patients are not allowed to do any cooking or smoking in the main building or trailer homes. Smoking is permitted in the TV room

which is actually an enlarged hallway entrance accommodating approximately fifteen persons at one time.

There is a public address system connected to the trailer homes which is in service twenty four hours a day.

A daily record is maintained on each patient as to the number of bowel movements and type, the drugs, and prescription number. A weight record is kept on each patient with weight gain or loss charted each month. Upon any evidence of weight loss, the patient is immediately checked as to eating habits and a physical performed by the local physician. All patients are encouraged to maintain their ideal weight.

Any patient with a specific problem, ie. diabetes, is checked daily and a record maintained of all findings. The check is performed either by the owner and operator of the rest home or the head nurse on duty.

All drugs are stored in a locked cabinet in labeled bottles with a separate record as to the drug number, patient's name and size of the prescription. All old drugs are destroyed.

All patients appeared content and cheerful. There is a level back yard composed of approximately one fourth block in size. The operator of the rest home encourages outdoor activity but finds it difficult to persuade the patients to do any exercising. If possible

The patients are encouraged to go home with their families for the holidays but some are reluctant to go as they fear someone may move in and take their room while they are gone.

The rates range from \$110.00 to \$175.00 per month depending upon the care required and whether a private room is desired. Fourteen of the patients eat in a centrally located dining hall. Twelve receive tray service.

The State of Nebraska's report on the home is very favorable and is as follows:

1. The home is rated as above average.
2. One half of the total patients are on welfare.
A statewide average of sixty percent of rest home patients receive welfare assistance.
3. Four of the patients are from Wakefield, the other twenty two are from surrounding areas of a radius of two hundred miles.
4. The records include admission care, physical, medication and daily care forms.
5. The menus are all written with a balanced diet being achieved.

Three of the staff members have been employed eleven years. The other nine have been employed for a lesser period of time. All employees are required, by the operator, to have a yearly physical.

Help with an infectious disease is not allowed to work. There are six nurse's aides employed but no registered nurses. Also employed are two cooks and two dishwashers, one kitchen aide and one cleaning lady. There is a minimum of two persons on duty at one time, this being during the night hours when only two nurse's aides are on duty.

In over all review, the entire home was well lighted and cheerful. It is built in an 'L' shape and has four well marked fire exits, all without steps, on the ground level. The patients all appear very happy and content and feel free to do as they like, yet abide by the house rules with great respect for each other and the employees. There is a friendly atmosphere between the patients and the operator of the home as well as the employees.

CONTROL OF COMMUNICABLE DISEASES

The State of Nebraska divides its communicable disease control work into areas and in the more rural portions of the state, there is no record maintained of the specific town involved in venereal disease.

In the Wakefield area there was one case of gonorrhea reported in 1958, one case of syphilis in 1959 and 1960 respectively, two cases of syphilis and one case of gonorrhea in 1961 and one case of syphilis in 1963.

The practicing physician in Wakefield does not have any record of the reported gonorrhea. He has record of only the one case of syphilis reported in 1959, 1960, 1961 and 1963. This one case is a previously adequately treated, latent syphilis in a young married woman. The serology remains positive and appears each time the lady is checked for serology during prenatal care. A titer has not been done on her blood. She is treated with 2.4 million units of penicillin each time she becomes pregnant. The children have all been normal and healthy with no congenital defects.

During the summer of 1963 a premarital examination revealed a positive Wassermann. Repeat serology test was again positive. The person was then treated with 2.4 million units of penicillin. There was no evidence of syphilis clinically present nor could the

person give any history of possible contact with syphilis. Assuming an average of one case of venereal disease per year for the last four years gives a local incidence of 12.5. This compares to a statewide incidence of 32.1 and to a national incidence of 41.2 of venereal disease.

The state has no reported cases of tuberculosis in Wakefield or the immediate area on record. The local doctor knows of no past or present cases of known tuberculosis. From visiting with the local citizens of Wakefield, an estimated seventy five percent, and possibly more, were determined to have had chest x-rays taken during the visit by the mobile x-ray unit during 1963.

Food poisoning and the common communicable diseases seem to be of no consequence. There was no evidence of serious outbreaks in the past.

SCHOOL HEALTH PROGRAM

There is one public school in Wakefield. This is a combined grade and high school with the school buildings all located in the same block. The buildings are of brick construction. Although the buildings are old, they are in good repair.

The teachers are required to pass health examinations every three years at time of renewal of their certificate. This is a general physical examination with stress placed on the presence of evidence of infectious disease. A chest x-ray is required at that time. However, a certificate indicating a chest x-ray performed by the state mobile x-ray unit is acceptable if no pathology was noted. The teachers were asked if they had chest x-rays taken more often than three years to which they all replied they tried to make it a policy to have one taken every year and if they failed, they would have one taken the following year. Consequently, they all have chest x-rays taken on an average of every two years which is much better than the general population to which the children are exposed.

PPD tests are not required of the teachers. See the photostatic copy of questionnaire completed by local school superintendent page twelve.

Pre-school physicals and dental check-ups are not required of the students. However, every year the local physician and dentist visit the school and examine each student for general physical con-

SCHOOL QUESTIONNAIRE

Are Pre-School Physicals Required? Yes No

Are Pre-School Dental Checks (Not Required)? Yes No

Is Follow-Up Of Dental Injuries Required? Yes No

Are Pre-School Immunizations Required? Yes No

Do You Have A Gymnasium Program? Yes No

Available To What Grades 4-10

Number Of Hours Per Week 20-3

Do You Have A Health Education Program? Yes No

Available To What Grades K-6

Titles Of Books Used And Their Authors _____

Is Health And Cleanliness Inspection Carried Out For
 Kindergarten? Yes No
 Lower Grades? Yes No
 Check-Up Consists Of _____

Is Safety Education Taught? Yes No
 Is Driver Safety Taught? Yes No
 Do You Have School Crossing Patrols? Yes No
 Number Of Fire Drills Carried Out During Year 9
 For What Grades all K-12

Are All Teachers And Students Adequately Instructed As To Alternate Exits
 In Event Of Fire In The Area Of Their Normal Exit?
 Yes No

Do You Have A Lunch Program? Yes No
 Hot Or Cold? Hot
 Guidance And/Or Supervision Of Lunch Program By Whom? Teachers
 Mechanical Dishwasher Yes No
 Who Deals With The Preparation Of Food?
 Student Employees Yes No
 Adult Employees Yes No
 Are Said Employees Required To Pass Health Examination?
 Yes No

What Is The Source Of Supply For The Following Foods?
 Milk Local Other _____

Perishable Foods kept in locker
 How Often Is The Supply Of Perishable Foods Replenished? as necessary
 Are Leftover Foods Used Or Disposed Of? both
 If Used, In What Manner? _____

Are Teachers Required To Pass Health Examinations? when returning a District
about every 2 years
 Yes No
 How Often? every 2 years
 Are Teachers Required To Have
 Chest X-Rays Yes No
 Tuberculin PPD Tests Yes No

Supt. Robert Covens - Wakefield, Nebraska

SCHOOL QUESTIONNAIRE

*They are given
to
teachers
required*

Are Pre-School Physical Examinations? Yes No
 Are Pre-School Dental Checks-By a Dentist? Yes No
 Is Follow-Up Of Dental Examinations Required? Yes No
 Are Pre-School Immunizations Required? Yes No
 Do You Have A Gymnasium Program? Yes No
 Available To What Grades 4-10
 Number Of Hours Per Week 20-3
 Do You Have A Health Education Program? Yes No
 Available To What Grades K-6
 Titles Of Books Used And Their Authors _____

Is Health And Cleanliness Inspection Carried Out For
 Kindergarten? Yes No
 Lower Grades? Yes No
 Check-Up Consists Of _____

Is Safety Education Taught? Yes _____ No _____
 Is Driver Safety Taught? Yes No _____
 Do You Have School Crossing Patrols? Yes _____ No
 Number Of Fire Drills Carried Out During Year 9
 For What Grades all K-12
 Are All Teachers And Students Adequately Instructed As To Alternate Exits
 In Event Of Fire In The Area Of Their Normal Exit?
 Yes No _____

Do You Have A Lunch Program? Yes No _____
 Hot Or Cold? Hot
 Guidance And/Or Supervision Of Lunch Program By Whom Teachers
 Mechanical Dishwasher Yes _____ No
 Who Deals With The Preparation Of Food?
 Student Employees Yes No _____
 Adult Employees Yes No _____
 Are Said Employees Required To Pass Health Examination?
 Yes No _____

What Is The Source Of Supply For The Following Foods?
 Milk Local Other _____

Perishable Foods Kept in lockers

How Often Is The Supply Of Perishable Foods Replenished? As necessary
 Are Leftover Foods Used Or Disposed Of? Both
 If Used, In What Manner? _____

Are Teachers Required To Pass Health Examinations? When receiving a student about every 3 years
 Yes No _____
 How Often? every 3 years

Are Teachers Required To Have
 Chest X-Rays Yes No _____
 Tuberculin PPD Tests Yes _____ No

Supt. Paul Covens - Wakefield, Nebraska

dition, evidence of infectious disease, dental caries and completeness of immunizations. A follow-up on dental defects is required by the school. The local physician is insistant enough on proper immunization that no student is allowed to go without proper immunization.

A gymnastic and physical exercise program is carried out at the school. This is available to grades four through ten with each student participating two to three hours each week.

A health teaching program is provided for kindergarten through the sixth grade.

Each morning the teachers conduct a cleanliness inspection of the students in grades kindergarten through the eighth. This consists of inspection of the fingernails, hands, teeth, ears, hair care and hygiene.

Driver safety is taught in the school with driver education conducted by practical experience in the upper grades.

Due to the size of the town it is not felt by the school officials that school crossing patrols are required. There is no history of any auto-school child accidents. School crossing signs are present on the busier streets.

Nine fire drills are conducted each year, thus giving an average of one every month of the school term. The teachers and students

are instructed as to alternative exits in the event of fire in the area of normal exit.

The school provides a hot lunch program for the teachers and students who prefer to eat lunch at school. The teachers supervise the lunch program. The food is prepared and served by students and hired adult employees. The above hired employees are required to pass a yearly general physical with emphasis again placed on evidence of infectious disease. No PPD or chest x-ray is required of these employees.

A mechanical dishwasher is not available for the washing of trays and other dishes.

The source of milk for the hot lunch program is from the local dairy in Wakefield. Perishable foods are replenished as needed and are stored in a frozen food locker at the school. Leftover foods are utilized as possible in the preparation of the meals.

PUBLIC EATING ESTABLISHMENTS

There is one eating establishment in Wakefield, licensed by the Department of Agriculture and inspected annually. This is a small restaurant located on main street. There are two tables, three booths and eleven stools at the counter. The restaurant has a brick front but is of old frame structure. The building is rectangular in shape with the rear portion serving as wash area, food storage and kitchen. There is a wash basin located adjacent to the kitchen for customers desiring to wash before eating. The dishes are washed by hand in a small area which is connected to the kitchen.

The waitresses move in and out of the kitchen area to the customer service area when obtaining food. There were no observed measures taken by any of the employees between the handling of dirty dishes and silverware and the obtaining of clean silverware and plates of food. The clean dishes and silverware are stored in a rack in the open at the end of the lunch counter. All customers eating at the tables must pass these clean utensils to be seated. The customers seated at that end of the counter eat very near the clean dishes. The clean silverware is placed directly on the hurriedly wiped tables when serving a customer.

Perishable foods are stored in a freezer. Leftover foods are disposed and not reused. The pastries are kept in the open directly across from the lunch counter within six feet of all customers seated

at the counter. There are two glass cupboards for the display of pastries, however, these do not accommodate more than six pies each. The doors of these cupboards were never observed as being closed.

The food is excellent, however, and well prepared. The dishes and silverware appear clean. No cracked dishes were observed.

The personnel working in the restaurant is not required to pass any type of physical examination either by the operator or by any known local ordinance. Nebraska has no state law which requires health examinations of persons working in restaurants.

LOCAL MILK SUPPLY

Approximately seventy five percent of the milk consumed in the Wakefield area is produced, processed and bottled by the locally owned and operated Burman's Dairy.

The dairy farms per se are located outside the city limits. The milk is contracted from two principal farms with the major supply of milk being produced by one herd at the present time.

The dairy herds are tested annually for brucellosis and tuberculosis. No actual records were revealed, however, the owner of the processing plant denied any history of these diseases ever existing in the herds.

The sanitation and operating procedures of the dairy farms and the processing plant are inspected three times a year at unequal and unscheduled intervals. This inspection is conducted by the State Department of Agriculture. At this time, milk samples are taken at various handling points. The samples are then sent to the State Laboratory for analysis as to purity and bacteria counts.

With all due respect to the efforts of the Department of Agriculture, this appears to be a rather lax control over the production and handling of such a potentially disease contaminable food as milk. However, the desire and sincerity of the owner and operator of Burman's Dairy accommodates for this laxity. He is very conscientious with regard to the sanitation and handling procedures of the

milk. His records show that the bacteria count on the raw milk is consistently 3,000 or less per milliliter of sample tested. The samples are taken from the dairy, bulk trucks and various other points of handling. The maximum permissible count under the existing law is 200,000 per milliliter on raw milk with 10,000 per milliliter or less being required for the production of certified milk.

Cows receiving medication, such as penicillin, are withdrawn and replaced by healthy animals.

The processing plant is located at the edge of the city. Approximately three hundred gallons of milk are processed per day. The milk is transported from the dairy in bulk trucks. It passes from the trucks to a clarifier which is a complicated machine that removes foreign odor, taste and sedimentation. The milk is then placed at a temperature of 40° F. and passes to the pasteurizer where it is kept at 170° F. for twenty two seconds, under vacuum and then rapidly cooled to 40° F. If weed taste is present, it is removed by a new vacuum-type pasteurizer attachment which raises the temperature of the milk to 180° F.

The milk then passes through multiple pumps and cooling vats and on to the bottling machine where it is bottled and sealed. The milk is never contaminated by human touch or exposed to open air during the entire process.

The milk processing machinery is cleaned by a commercial caustic solution which flows through the entire maze of machinery and piping

for a period of thirty minutes following use of the plant.

The pipes and machines are then exposed to open air over night. In the morning, prior to use, a commercial acidic chemical is again flushed through the pipes for five minutes. This is followed by a water flush at a temperature of 180° F.

The milk is distributed in glass bottles. These are cleaned with a caustic solution and flushed five times with water at a temperature of 180° F.

The entire plant is spotless and radiates the care and pride taken in producing fresh, clean, Grade A milk for the local people.

DIVISION OF SANITATION

The city water is supplied by three drilled wells. The wells are approximately seventy five feet deep. One of the wells was drilled in the late summer of 1963 to replace an existing well which is no longer used. Discontinuance of this well was required due to Diesel fuel contamination from a pipeline passing near by which developed a leak.

The production of the two older wells is three hundred twenty five gallons and one hundred ten gallons per minute respectively. The potential production of the new well is not known at this time but is expected to be the equivalent to the combination of the two old wells.

The present wells are all located in an open field, away from any possible source of contamination. The new well was drilled one thousand feet from the area contaminated by the Diesel fuel.

The water from the wells passes through sand and gravel filters. The production of two of the filters is boosted to two hundred gallons per minute by two smaller booster pumps. There are two other sand and gravel filters which are held in reserve for increased water demand. The water to these two filters is handled by one large booster pump which has a potential equal to the two smaller boosters. Thus, the water output can be doubled by using the one large booster and two filters held in reserve.

From the filters the water passes to an enclosed tank where air

is passed through the water to remove iron and manganese which, if present in water, will give it a very bad taste.

State tests of the water at the wells and after it has been filtered and aerated reveal a reduction of iron from two and five tenths to zero and of manganese from fifty three hundredths to zero. This is good evidence of the efficiency of the filtering and aeration treatment.

From the aeration tank the water passes to a twenty thousand gallon enclosed settling basin. As used, it is then boosted to an eighty thousand gallon capacity elevated supply tank to produce pressure in the water lines. Water supply in the city lines is maintained at thirty five pounds or greater.

There is no chlorine or fluoride added to the water. The State Laboratory reports state no E. coli or other bacteria is noted in any water samples. These samples are taken each month at various points throughout the city. A different area of town is selected each month with preference given to areas where pressure is most difficult to maintain.

The fluoride content of the water is twenty two hundredths parts per million. This is considerably under the desirable one parts per million. See Table I on page twenty two which is a copy of the State of Nebraska Laboratory chemical analysis of the water of Wakefield, Nebraska.

TABLE I
WAKEFIELD, NEBRASKA
CHEMICAL ANALYSIS OF WATER

Date	Location	pH	Total Solids	Soap Hardness	Turbidity	Iron	Manganese	Magnesium	Fluoride	Arsenic	Chloride	Sulphate	Sediment	Total Alkalinity	Nitrate Nitrogen	Potassium	Sodium	Calcium
7-17-58	No. Well Tr. Plant	7.3	564	400	100	2.5	.53	21	0.2	.00	27.5	79.6	Lead	210	10	20	29	109
7-17-58	Finished Water Filter Plant	7.9	506	372	5	0	0	17	0.2	.00	21	57	Sand	202	10	19	29	101
1-14-59	Filtered Water		382		00.2	0.0	.25	24	.22		24	72	0	335	10	10	10	112
1-14-59	Well #2		336		253.2	0.2	.25	25	.22		26	68	Fe	312	10	10	20	91
1-14-59	Well #1		328		272.6	0.2	.25	26	.25		22	72	Fe	290	10	11	26	90
6-21-61	North Filter	7.2			.05	.05									10			
6-21-61	South Filter	7.2			.05	.05									10			
7-24-61	Well #1	7.4	444	296		.12	.22	23	.45		13	65		284	10	11	36	80
7-24-61	Well #2	7.2	378	308		.40	.22	20			28	32		286	10	11	37	90
7-24-61	Well #2	7.3	362	272		.79	.50	26	.35		20	40		252	10	10	26	65
8-15-61	Well	7.0	386	356		.77	.50	21	.43		9	48		444	0.5	6	107	22

At present, the sewage is dumped raw into Logan Creek about three fourths mile from the city. This creek is a slow, sluggish, dirty stream which winds its way across the countryside. It does not carry any large amount of water but continues to flow throughout the year.

A secondary sewage treatment plant is scheduled for construction in 1965 and 1966 to handle the raw sewage problem. Upon its completion, Logan Creek will be relatively free of pollution. The Nebraska State Health Department reports there is no other town which dumps raw sewage into Logan Creek.

There is no routine garbage disposal method employed by Wakefield. Each citizen is responsible for his own garbage disposal. This usually consists of hauling the garbage to the dump when deemed necessary.

The local dump is located approximately two and one half miles east of the city. It is situated on top of a range of hills and is a large excavated open pit, approximately one hundred yards wide by one hundred fifty yards long and forty feet deep. There are no markers or designated areas for dumping. The area is covered by weeds. The people dump the garbage in any area of the excavation that appears handiest.

At the time of inspection, there was no indication of attempted

filling or covering of the garbage and other disposed material. Also, no evidence of rat bait boxes for rat control was noted in the weed infested dump.

No rats were seen in the daytime, but local residents report rats are present at night.

It would be a simple method to kill the rats in the dump and convert to a bank method control. See page twenty five for recommended methods for use in the control of rats in city dumps. Either could be used by Wakefield, however, due to existing conditions, the bank method would be better.

Harold Gunderson, Iowa State College rat specialist, has found that when rats are occasionally seen at night, the population is from one hundred to five hundred. When seen every night, the population is from five hundred to one thousand. If large numbers are seen, the population is one thousand to five thousand. Rats, unlike most other animals, have no redeeming quality.

Plans for the control of rats and construction of bait boxes may be obtained from the Division of Sanitation, State Department of Health, Lincoln 9, Nebraska.

Department of Health
Bureau of Health Education

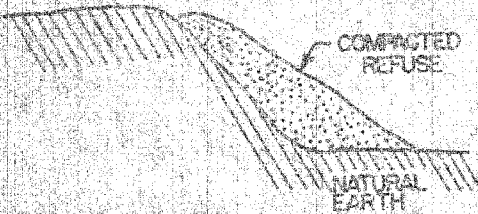
BANK METHOD

TRENCH METHOD

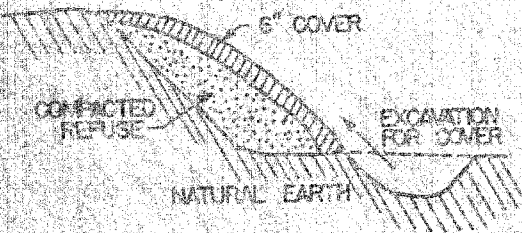
CLEANING UP AN EXISTING DUMP
FIG. 1 BANK METHOD (ORIGINAL CONDITIONS)



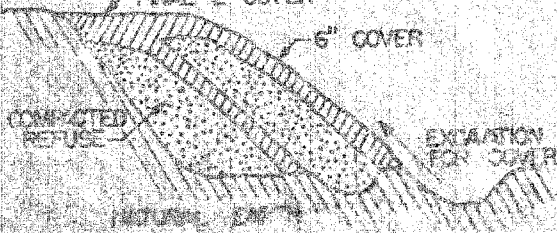
CLEANING UP AN EXISTING DUMP
FIG. 2 BANK METHOD (READY FOR COVER)



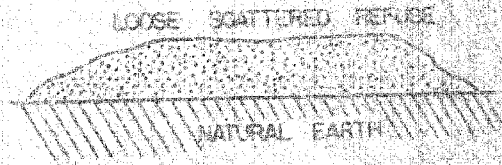
CLEANING UP AN EXISTING DUMP
FIG. 3 BANK METHOD (COVER OPERATIONS)



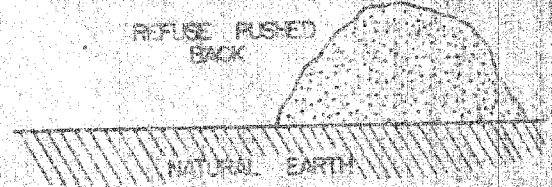
CLEANING UP AN EXISTING DUMP
FIG. 4 BANK METHOD (SUBSEQUENT CELL)



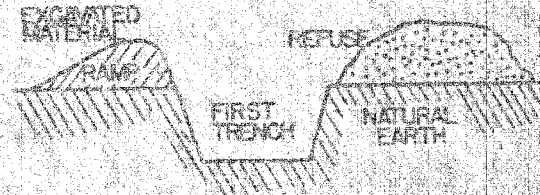
CLEANING UP AN EXISTING DUMP
FIG. 5 TRENCH METHOD (NATURAL CONDITIONS)



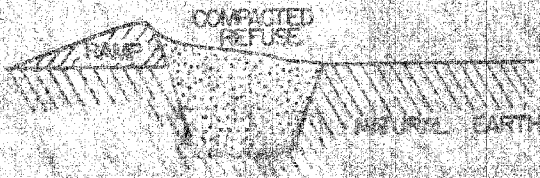
CLEANING UP AN EXISTING DUMP
FIG. 6 TRENCH METHOD (STOCKPILING)



CLEANING UP AN EXISTING DUMP
FIG. 7 TRENCH METHOD (PREPARATION OF TRENCH)



CLEANING UP AN EXISTING DUMP
FIG. 8 TRENCH METHOD (DISPOSAL IN TRENCH)

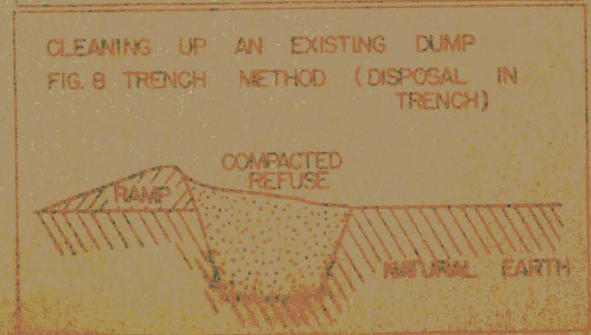
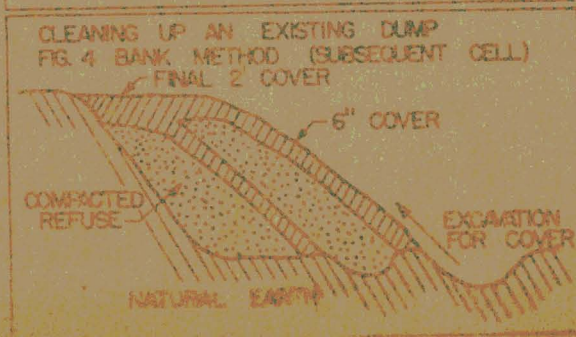
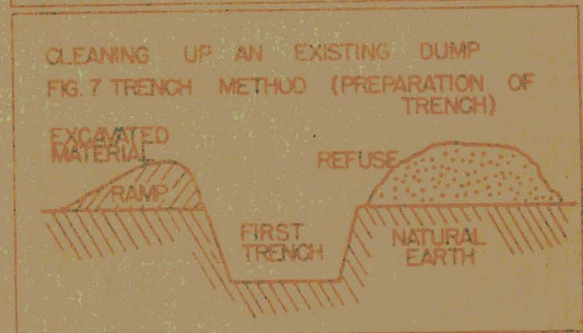
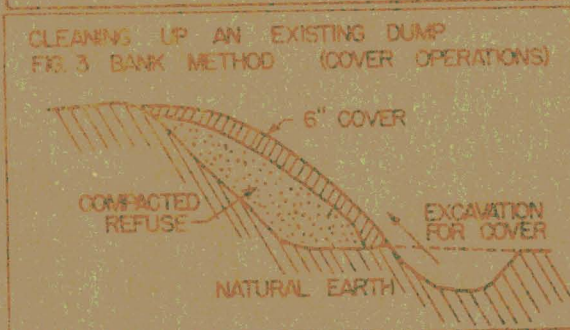
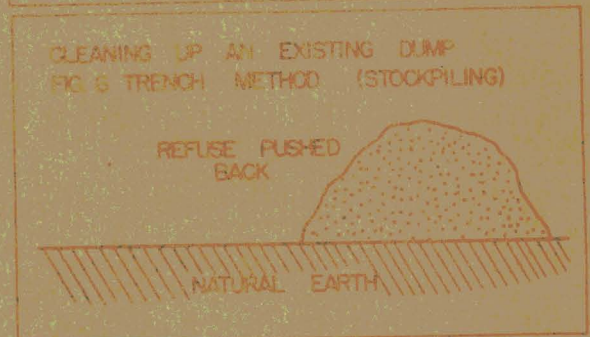
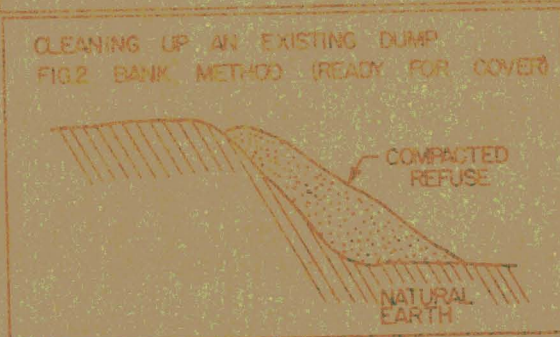
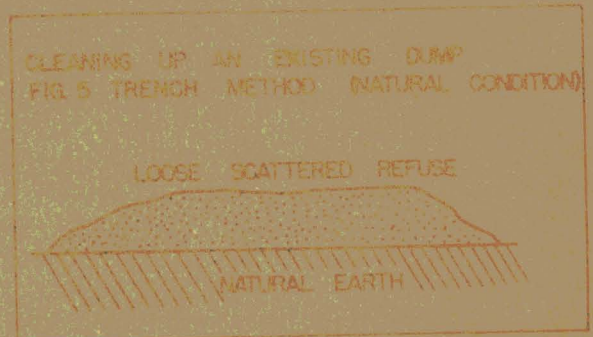
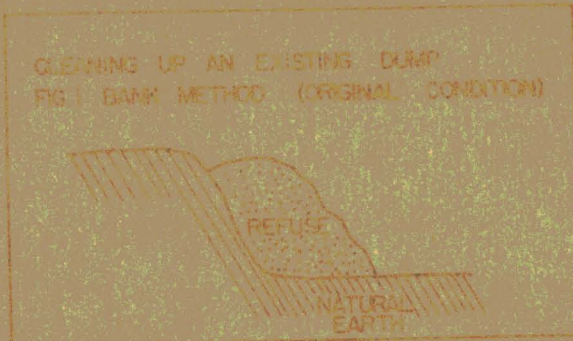


LEAK CONTROL IN CITY DUMPS

STATE OF NEBRASKA
 Department of Health
 Division of Health Education

BANK METHOD

TRENCH METHOD



RAT CONTROL IN CITY DUMPS

PUBLIC RECREATION

Public recreation areas associated with health and sanitation consist of one park in which a community swimming pool is located.

The swimming pool is of concrete and masonry structure located outdoors. It is enclosed on three sides by a high fence and on the fourth side by fence, the bath house and dressing rooms. The entire structure is of recent construction, however, there are several points which do not meet the rules and regulations of swimming pools as outlined by the Department of Health, State of Nebraska.

There is a small warm water supply which quickly becomes exhausted leaving very cold water for the showers. This results in many persons not taking a warm shower with soap, in the nude, prior to entering the pool. Lavatories in the dressing areas are much in need of cleaning. Persons not using the pool are allowed to enter the dressing areas and use the bathroom facilities. This brings in much dirt which quickly becomes mud in the shower and dressing stalls.

The pool does not have any depth markings on the sides which are visible to a swimmer. The markings are on the walkways and are difficult to read unless standing near by.

A dirt and gravel road passes along two sides of the pool. This is traveled quite frequently and the dust from said road settles over the water in the pool. This road should either be closed or hard surfaced.

The quality of the water meets with State requirements. The State requires that the water shall be sufficiently clear to permit a submerged bather to be seen in ordinary daylight in all parts of the pool. The water is to be free from scum and dirt. It has normal color and odor with a faint odor of chlorine. A residual chlorine of four tenths parts per million is present.

There are two life guards on duty at all times. The guards all hold current life saving certificates. One guard watches the deep end of the pool and one the shallow end. A floating line divides the deep and shallow ends at approximately the five and one half feet mark.

A drinking fountain is located on the pool side of the bath house.

The remainder of the park covers a city block excluding the adjoining ball field. The park is well kept, neat and shady. Swings and playground equipment are abundant and in good repair. Fresh water is supplied at several points. Open barrels are available for burnable trash. Closed garbage cans are available for other non-burnable refuse.

The public toilets are in a block structure located at the edge of the park. The outside of the building is deceiving as the inside shows the usual work of vandalism and neglect. The only light inside is provided by very small ventilator type windows located along

the roof edge. The rest of the light switches and lights are either broken or don't work.

The entire inside is damp and the floors are wet and dirty.

SUMMARY

A study of the health and sanitation of a rural Nebraska town of approximately one thousand one hundred population was conducted. This study included all areas which are of major health significance to the majority of the population.

The medical care facilities include one local general practitioner and a twenty three bed hospital. The hospital is well staffed and of recent construction. The operating rooms, laboratory and other facilities are modern and kept in excellent condition. The nearest certified anesthetist resides forty miles away.

Most of the surgical procedures of the community are done at the local hospital, either by the local physician or by a board certified surgeon from Sioux City, Iowa.

The town has one home for the aged. This has a capacity of twenty six patients. The home is very clean and fire proof. It is located entirely at ground level. The patients appear very contented and are well cared for.

There are no known tuberculosis patients in the town or surrounding area. There is very little venereal disease. An average of one case of syphilis has been reported each year. However, this has been a latent case and the positive serology appears on record each time the lady becomes pregnant.

The one and only public school is of old structure but is in good

repair. Pre-school physicals and check-ups are not required of the students. The only check-up is conducted by the local physician after school has started. This is done on a mass production basis in the school.

There is evidence of a lack of coordinated teaching of health and hygiene to the students.

A hot lunch program is carried on at the school. The food is prepared by students and hired adults. The food handlers are not required to have chest x-rays or PPD tests.

The only eating establishment is of old structure. It is small, overcrowded, serves good food but carries on many practices which are not of the greatest sanitary ethics.

A local dairy produces much of the milk used by the area populace. This dairy is locally owned and operated. It produces Grade A milk with much care taken in the handling and sanitation of the milk. The bacteria count in the raw milk is 3,000 per milliliter and, therefore, is quite less than that required for the production of Grade A milk.

The city pumps its own water from drilled wells. The water is filtered and aerated and then pumped to a standpipe for pressure.

Sewage disposal is quite antique. Sewage is delivered raw to a slow flowing nearby creek.

Garbage disposal is on a private individual basis. The city dump

is located two and one half miles from town with no attempt made with regard to rat control or sanitary measures.

There is a very nice park and swimming pool located in the town. The swimming pool is well constructed but lacks proper facilities for complete safety for the swimmers. The dressing areas are deficient in sanitation and related measures.

CONCLUSION

In review of the study made on the health and sanitation of Wakefield, Nebraska, there is revealed what might be considered an optimum of efficiency and care at one end of the scale and a minimum at the other.

Medical care and facilities receive the populace's most conscientious attention. There is considerable care devoted and adequate facilities provided for the caring of the ill.

The greatest deficits were found in the areas to which the general public was exposed. These areas include the local restaurant, swimming pool, park, sewage and garbage disposal. These have all been discussed, the deficits have been pointed out and suggestions made for improvement.

The town is very conscientious with regard to its health and sanitation. Even with the above mentioned deficits, it would probably rank high among the smaller towns in Nebraska for practice of overall sanitation and cleanliness. Plans are presently made for a secondary sewage treatment plant to be constructed in 1965 and 1966.

ACKNOWLEDGEMENTS

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