

Public Health Survey

of the City of

SAINT HELENS, OREGON.

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1.

A. DESCRIPTIVE DATA

Saint Helens, Oregon, is a city of four thousand population, situated thirty miles west of Portland on the Lower Columbia River Highway. It is the county seat of Columbia County and the largest city in that county. Its industrial activities cover a wide range, from dairying to lumbering and ship building. Situated on the river, it has the added advantage of international shipping by means of ocean going steamers calling there.

1. Population.

The population in 1920 by United States Census was 2220. By 1930 this had gradually grown to 3955, and now in 1931 it is estimated at well over 4000. This is a safe estimate, since there were 88 births in 1930 and 57 in the first eight months of 1931 alone.

Of this 4000, not over 5% are foreign born. and there is not a single colored person in the city or county. The principal nationalities are Finn, Swede, Norwegian, Canadian. Almost no seasonal variation can be detected because of the fairly constant climate, which varies only from an average maximum of 58.0 degrees to an average minimum of 40.4 degrees temperature. The absence of blizzards and storms make lumbering and the other industries steady, year round occupation for the population, and prevent seasonal variations of the population. The permanence of occupation also cuts the non-resident population to less than 2%, many of these being fishermen and lumber hands.

2. Area of City

The total area of the city, including West Saint Helens, is approximately four square miles. Of this area, however, there are blocks of raw land, and a great part of the total area is rather sparsely built up. It is estimated that 35% of the total area is improved.

3. Type of Community

The community is mainly industrial in type. the residences having to do mostly with people engaged in some industry or commercial enterprise. The industries are varied, including three large lumber mills, the largest creosoting plant on the Pacific coast, a large Fir-Tex insulating material plant, a wood pulp and paper mill, ship-building plant, fruit and vegetable cannery, and many smaller plants.

A large creamery handles the output of the smaller dairy farms about the town and there are several large dairys. Considerable fishing is carried on in the Columbia River, which receives the Willamette river just above the city.

The steady employment in the industries, unhampered by seasonal climate changes allows consistent earning power and promotes economic stability and high standards of living not seen in a community of changeable population. Although there are very few really well-to-do. nearly all are steady wage earners and eighty percent own their own homes. Indigents number less than one half of one percent.

Saint Helens is the largest city in the county and also the county seat and therefore is a commercial center. It sells much of the retail merchandise used in the country and small towns like Goble, Prescott, Deer Island, Wilwark, Warren, and Scappoose. Little wholesale distribution occurs from Saint Helens because it is only thirty miles from Portland. It is served by the Spokane, Portland, and Seattle Railway and motor stage lines, river boat transportation companies, and many freight truck lines.

4. Municipal Government

Saint Helens has for its government a Mayor and Council of four. The Mayor, Mr. Ballou, also serves on the board of health with the city physician. The Council is divided into committees which control sewage, nuisances, civic improvements, garbage disposal, and other phases of government. Indirectly, through a water board, they control the city water supply. The Mayor and Council receive no reimbursement for their services.

5. Finances

The total taxable valuation for 1931 was assessed at \$1,740,065.00. The total revenue when collected will be \$30,973.16. Expenditure total is budgeted at \$30,800.00.

6. Civic Organizations.

The Saint Helens Chamber of Commerce has a membership of thirty and meets once a week. The Kiwanis club has thirty six members and meets weekly. The Woman's Club is also active. There are also many fraternal organizations, such as Masons, Eastern Star, I.O.O.F., Knights of Pythias, W.O.W., United Artisans, American Legion, Woman's Auxiliary, and Veterans of Foreign wars.

Of these, several engage in some sort of welfare work. Kiwanis has a project to help the undernourished children and those without proper opportunities for fresh air, recreation, and development. The Woman's Club carries on campaigns and do health and welfare work of all kinds, much of it having to do with sanitation as well. They also co-operate with State and County projects, such as Tuberculosis campaigns, and education on Cancer.

7. License permits.

License permits issued by the city include Food Handler's Health Certificates issued by the city physician, Garbage disposal, Commercial Sales licenses, license to the Peoples Cooperative Fish market, Farmers fruit and vegetable markets, Barbers', Grocers', Hotels', and Factory licenses.

B. HEALTH DEPARTMENTS

The City Health Department is made up of the Mayor, Mr. Ballou, and the city physician, Dr. Edwin T. Ross. The mayor's services are gratis and his work more or less merely to lend authority to health measures and are much a matter of form. The bulk of the burden is carried by Dr. Ross who receives \$40.00 a month for the health work, which he carries on in addition to his practice. His duties are:

The investigation and quarantine of all cases of communicable disease,

Inspection of the city water supply,

Sewage disposal inspection,

Inspection of stores, beauty parlors and barber shops,

Examination of Food Handlers,

Recording of births and deaths.

The County Veterinarian, Dr. Rankin is a full time man who inspects the dairy herds. There are ten thousand head to be examined in Columbia County.. These are examined once a year. All Saint Helens milk is from inspected cows. Dr. Rankin receives \$2700.00 a year.

The County Nurse, Miss Bovee, is also full time, and spends a great amount of her time around Saint Helens, in school epidemic control and hygiene, health campaigns, tuberculosis examinations, and education. She receives \$1500.00 a year. There is no other form of public health nursing in Saint Helens.

C. ACTIVITIES OF NON-OFFICIAL HEALTH AGENCIES.

The Red Cross association in Saint Helens has a fund for welfare work, including health projects of various kinds, according to their program, but actually most of their time, effort, and budget are spent in providing food for poor, conducting life-saving courses and first-aid courses for children and adults. The Health Department has failed to secure much co-operation on health projects, financially or otherwise. If Health measures are carried on by them, they are independent of origin and execution.

The activities of the Kiwanis Club in helping undernourished children has been mentioned. They also conduct a summer camp in the woods where poor children who have never had an outing may go and get some real recreation for a few weeks. They also try at that time to impress them with the fundamentals and simple rules of health.

A county tuberculosis association has recently been begun, but as yet little has been done aside from cooperation with the county nurse and city health department to organize the children for the physical examination conducted annually by the state Tuberculosis Association.

E. VITAL STATISTICS

YEAR	1927	1928	1929	1930	1931 (8mo)
Scope	County	County	County	City	City
TOTAL BIRTHS	297	333	274	88	57
POPULATION	18,450	18,848	19,243	3,955	4,015
RATE per 1000	16.1	17.7	14.1	22.2	14.2 (21.3 for 12mo)
TOTAL DEATHS	135	134	150	59	29
POPULATION	18,450	18,848	19,243	3,955	4,015
RATE per 1000	7.3	7.1	7.7	14.9	7.2 (10.8 12mo)

No record was obtainable concerning 1927 from county or city books. The county totals for 1927 had been mislaid and the certificates filed alphabetically with all the previous years. So the cases had to be counted out of the alphabetical files and may vary slightly. The city records are kept by the city health officer and the years before 1930 are not available.

INFANT MORTALITY AND STILL BIRTHS

Columbia County--1928 to 1930

INFANT MORTALITY (total deaths under 1 year)	1928 16	1929 18	1930 13
Live births total	333	274	262
Rate per 1000 live births	48.2	65.7	49.5
STILL BIRTHS	4	8	6
Rate per 1000 live births	12	29.2	22.9

There was a slight question about the 1930 figure, since a few of the cases were not listed definitely as to exact time of death. Increase in 1929 is ascribed partly to better reporting, by the health officer.

CAUSES OF DEATH IN SAINT HELENS

	1930	1931
Injuries and accidents _____	12	4
Endocarditis _____	11	6
Pneumonia _____	6	1
Apoplexy _____	4	4
Inanition and malnutrition _____	4	0
Cerebral Hemorrhage _____	2	1
Nephritis _____	2	2
Hypertensive Cardiovascular Renal _____	2	3
Carcinoma of rectum _____	2	0
Still Birth _____	2	0
Scarlet fever _____	0	2
Suicide _____	1	0
Carcinoma of Uterus _____	1	0
Carcinoma of lip _____	1	0
Acute alcoholism _____	1	0
Acute enteritis _____	1	0
Encephalitis _____	1	0
Sarcoma of hip _____	1	0
Mitral stenosis _____	1	0
Carcinomatosis _____	1	0

Carcinoma of the Gall Bladder	1	1
Pulmonary Tuberculosis	1	0
Cardiac Decompensation	1	1
Influenza	0	1
Meningitis	0	1
Chronic myocarditis	0	1
Asphyxia Neonatorum	0	1
	<u>59</u>	<u>29</u>

F. CONTROL OF COMMUNICABLE DISEASES

Control of communicable diseases is one of the principal duties of the city health officer at Saint Helens. Suspicious cases are reported to him by the county nurse, by the doctors, and by the other doctors, and by private individuals, usually not belonging to the family of the afflicted. Investigation then goes on and quarantine is placed where justified.

The county is divided into registration districts for the reporting of vital statistics and communicable diseases. These reports go directly to the state health board and from there a copy is sent to the county board of health for its records. For this reason the county and city figures for deaths from different communicable diseases are not as accurate as they could be made, if a different system were used. The city cases given below were abstracted from the county records for the last 5yr, case by case, by the authors of this report. The deaths were compiled from the death certificates of the city for 1930 and 1931. These

certificates are not available for 1927, 1928, and 1929, although thorough search was conducted.

COMMUNICABLE DISEASES, (with the deaths therefrom for the last 2 years.)

Diseases:	<u>1927</u>	<u>1928</u>	<u>1929</u>	<u>1930</u>	<u>1931</u>	
	Cases	Cases	Cases	Cases	Deaths	Cases Deaths
Small-pox	1	12	0	1	0	0 0
Typhoid	0	2	0	0	0	0 0
Diphtheria	0	3	0	0	0	0 0
Scarlet fever	2	5	0	1	0	35 2
Tuberculosis	1	2	0	1	1	0 0
Measles	54	50	84	11	0	7 0
Whooping cough	10	3	0	7	0	14 0
Influenza	36	91	57	6	0	11 0
Chicken pox	25	27	32	26	0	18 0
Mumps	13	19	24	3	0	24 0
Erysipelas	0	4	0	1	0	5 0
Polio	0	1	0	0	0	0 0
Cerebral meningitis	0	1	0	0	0	1 1

Above figures are on the basis of the total population of Saint Helens--4000 .

In 1930 there was only one death in Saint Helens from all the communicable diseases. In 1931 there were three before August 15. During 1930 there were not many epidemics, while during 1931 there were several epidemics in the schools. The McBrides School in West Saint Helens began with over fifty cases of mumps. Then the Catholic school started with scarlet fever, which spread to both schools. Whooping

cough came also, and a mild influenza epidemic. Schools were not dismissed, since it was deemed wiser to keep the children under observation, and immediately upon finding symptoms they were quarantined at home. The County nurse helped a great deal. This made it possible to get a greater percentage of the cases, since the private families do not report communicable diseases unless it is in a neighboring family and menacing their own, and then only in the most severe diseases. The only reason given for the poor cooperation is that they did not want to be forcibly detained, although they maintained a certain degree of isolation voluntarily. One of the underlying causes is the necessity for the father to get out to work or lose his job, since most of the families are dependent upon day wages. However, by the method of keeping schools open and investigating all absentees, a fairly efficient control was maintained. The doctors reported cases somewhat better, but many never called a doctor.

	<u>1930</u>	<u>1931</u>
Cases investigated _____	72	130
Cases restrained from mingling (includes quarantined)	57	115
Cases quarantined	23	66

The following is a rough estimate of the percentage of the diseases reported. This data was obtained by a house to house canvass of ten percent of the population.

Reporting diseases.

Houses canvassed _____	97	Total Houses _____	955
Population represented _____	400	Total Population _____	4000
Communicable diseases, Cases _____		Total cases of Commun. Dis. _____	
1930 _____	8	(as calculated) 1930 _____	80
1931 _____	14	1931 _____	140

Total cases reported

1930 _____ 57

1931 _____ 115

Many of the number reported not have been, had it not been picked up by the school health workers. Private families do not report well, as has been previously noted. Some gave the impression that they thought it unwarranted interference with their personal liberty. But many seemed favorable.

G. VENEREAL DISEASE CONTROL

Venereal diseases are far more poorly reported than the other communicable diseases. Not a single case was reported in 1930, although Dr. Ross feels certain that many cases are being treated by at least two of the nine doctors in town. No laws are available to enforce reporting, although Dr. Ross claims he has repeatedly tried to get such laws passed.

Cases of Venereal diseases .

Date	1927	1928	1929	1930	1931
Scope	County	County	County	Cityty	City
Cases of Syphilis reported	1	2	1	0	1
Cases of Gonorrhoea reported	5	13	2	0	9

There are no dispensaries in Saint Helens to treat the cases. Many go to Portland to be treated at the Clinic at The University of Oregon Medical School, but most are treated by local doctors, usually without being reported. One reason given for this failure of the doctors to report is the fact that these doctors are also engaged by the mills to give medical aid to employees and they find it pays to avoid all possible friction with the employees, who prefer that the case be treated secretly.

Venereal quacks are entirely absent from Saint Helens as far as could be determined, since it is not a large city. But a great deal of drug-store prescribing is done, with its usual poor results.

Non-medical practitioners attempt cures of these and other diseases with doubtful results. There are two chiropractors and one osteopath. The former specialize in spinal and nervous diseases, but will attempt to cure any disease, by spinal adjustments and ultra-violet. The osteopath confines his activities somewhat more closely to his field.

I. CONTROL OF MILK SUPPLIES

There are no laws in Saint Helens to govern milk supplies. State laws require milk to be below a certain bacterial count in order to continue sale from that source. This law, although not a city law is administered by the city health officer by sending samples of the milk from the various sources to the state laboratory at least twice yearly. So far he has had very satisfactory results and has therefore conducted no prosecutions. Four small sources were forbidden to sell until the bacterial count could pass the state requirement. Good co-operation was met in all cases.

The sources of milk supply for Saint Helens include many small dairy farms near the city. The milk is handled by the Saint Helens Co-operative Creamery, which also ships to Portland. The number of small farmers contributing to the creamery varies, but is usually about thirty. A few small farms sell bottled milk in the city directly to customers. At present there are three. The small dairies are not as well kept as the huge commercial dairies, but are inspected occasionally by the city physician and are passable. Those not supplying the city are inspected only by the county veterinarian. The ones we saw had wooden floors and were more like an ordinary barn than a dairy, but the milk rooms were usually screened and looked fairly clean. Most of them took no especial precaution to clean the udders before milking aside from brushing them off with the hands.

There are four large commercial dairies near Saint Helens, most of the output of which go to Portland. One has an ice cream factory in West Saint Helens. These observe the utmost care, such as washing all udders, steaming all utensils, screening milk rooms, washing concrete floors, and isolating sick cows voluntarily, but all milking is done by hand.

This is a typical large dairy plant. It is the one having the ice-cream plant in West Saint Helens. The milk room is seen in the fore-ground, with steam room directly inside the door.



The large dairies are inspected once a year, by the county veterinarian. All herds in Columbia County are examined also for Tuberculosis and Contagious Abortion. Tuberculin tests are given once a year to 10,000 head. This number is made up of Jerseys, Guernseys, Holsteins, and Ayrshires, and is in great part registered stock. The Contagious Abortion problem is receiving as much attention at present as the tuberculosis. Every attempt is being made to stimulate reporting sick cattle. The County Cow-testing Association is quite active in securing co-operation and has for members many of the dairy owners. Suspicious cases are isolated, observed, and destroyed if definitely infected. The Chatskanie area is now entirely free of Contagious Abortion, and other areas are rapidly becoming so.

Pasteurization is not very extensive in Columbia County, since so much milk is sold raw for family use. Only 200,000 gallons are

pasteurized, out of 1,000,000 gallons sold annually. No recording thermometers are used but the temperature is kept at 142 degrees Fahrenheit for twenty to thirty minutes. There is no law in the county against repasteurizing, but health authorities are convinced that it is never done, due to the adequacy of supply without it.

Samples of the milk from each of the sources supplying Saint Helens are sent to the State Laboratories every six months or oftener. Bacterial count is usually well below maximum, and that of the large dairies is even lower.

J. CONTROL OF FOODSTUFFS

All food handlers in Saint Helens must have with them a card signed by Dr. Edwin T. Ross, city physician, certifying them to be free of syphilis, typhoid, tuberculosis, and other communicable diseases. These cards are good for only six months and must then be re-issued, after an examination .

The food handling establishments are also inspected every six months for sanitary conditions, such as access of rats and flies to food, disposal of sewage, and refuse, general cleanliness and conduct of kitchens and habits of food handlers. The examination is rather perfunctory in actuality, according to the store owners, but because of fairly good co-operation the stores and restaurants are in good condition. No penalty has been imposed for over a year, and then the offender, an outstandingly unsanitary lunch counter near the saw-mill, was ordered closed.

RECORD OF INSPECTIONS

	<u>Total No.</u>	<u>Remarks on sanitation</u>
Hotels _____	4	Good. Food well handled
Eating places _____	5	All but one good. One near mill has flies.
Soda fountains _____	9	Very good
Fruit stands _____	3	Flies are plentiful. Fruit handled by many.
Bakeries _____	2	Very clean and well screened.
Groceries _____	13	Only fair. Some food exposed in three.
Meat Markets _____	6	Meat is gov't inspected in all but one. That one is locally inspected. All clean.
Slaughter Houses _____	0	" " buys farm meat.
Cigar stores _____	5	Poor. One has public drinking glass.

K. CONTROL OF BARBER SHOPS; BATH HOUSES; BEAUTY PARLORS

<u>INSPECTION:</u>	<u>No.</u>	<u>Sanitation.</u>
Beauty parlors _____	3	Good.
Barber shops _____	7	Good
Bath houses _____	6	All are in barber shops. Four are good, clean. Two are poor.

There are no plunges, or commercial bath houses in Saint Helens.

The only commercial establishments supplying bathing facilities, aside from hotels are the barber shops, six of which have rooms where customers pay 25¢ for a bath. These are used mainly by farmers and mill hands.

No provision is made for epidermiphyton infection or other disease except moderate daily cleansing of the tubs. The floor remains damp much of the time in the afternoon and evening and could easily spread

epidermiphytosis. Soap and water or even water alone is used to mop the floor when deemed necessary. Two shops use Lysol in tub and mop water.

All barber shops comply with the state board of inspection and have licenses to show. Beauty parlors are also liable to inspection by the state.

L. PUBLIC TOILET FACILITIES

RECORD OF INSPECTION

	<u>No.</u>	<u>Sanitation</u>
Garages _____	12	poor to very bad.
Service stations _____	8	Good to ewcellent
Comfort Stations _____	4	Good
Toilets in Industrial plants _____	14	From good to bad.

The garages, with three exceptions had very dirty, greasy toilet and wash bowls, and a littered, wet greasy floor. No attempt was made to keep them clean. They really did not intend them for public use. Three were fairly well kept.

Service stations were much better. Standard and Shell Oil Companies were the cleanest of all, but the independent stations were fairly clean.

The two comfort stations in the court house were moderately clean.

Those in the Railway station were more disorderly and slightly odorous.

In the sawmills toilets were dirty, and odorous. Some were mere sheds over the river. The Fir-Tex plant had clean toilets, while those in the creosoting plant were dirty, but probably aseptic due to the

concentration of creosote in the air. Urinals were encrusted. The cannery toilets were moderately well cleaned, as were those in the paper mill.

M. CONTROL OF WATER SUPPLIES

The water system of Saint Helens is owned by the city and operated by the city water board and one full time superintendent. The water board donate their services.

The present water shed has been used for over thirty years, or ever since water has been piped in. Before that it was carried in from the same source in barrels. The city purchased 250 acres of this watershed some 20 years ago and began to chlorinate the water at its source in 1915, fifteen years ago. For several years the source was several small two to six foot collecting walls in various creeks. Eight years ago the present large settling basin and reservoir were installed, supplied mainly by a new dam on Milton creek. The settling basin has a capacity of one million gallons and the reservoir three million, making a total reserve of four million.

In 1930 a new automatic chlorinator was installed at the reservoir.

The supply is more than adequate for present use, and two small dams are not used except in the driest part of the summer. One of these is inclined to become contaminated occasionally and give a high bacterial count, altho no pathogenic bacteria have ever been found, so it is avoided except in emergency, although the chlorinator takes care of what contamination there is. This contamination is due to the presence of stock on the water shed of these small creeks, in two locations the city was unable to buy. The contamination is more a possibility than an actuality. There has not been a typhoid ep-

idemic for many years, and only two cases in the last five years.

Those were in 1928.

Treatment of the water includes triple screening at its source on the creeks, settling tank, chlorination, and aeration, at the reservoir.

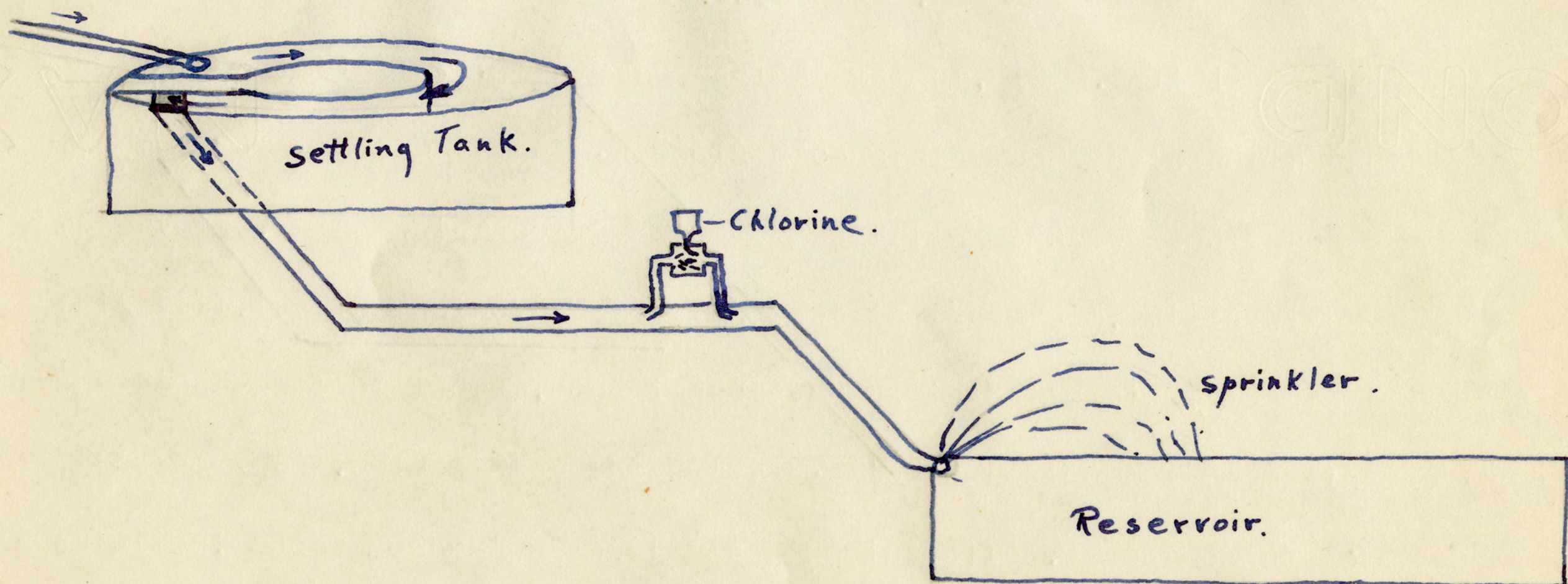
The screens are of graduated mesh, the first being one half inch, the second one fourth, and the third three thirty-seconds inch mesh. There is also a fine mesh screen at the settling tank outlet. The settling tank is a horseshoe shaped affair, so arranged that all of the water has an equal time for settling. This handles approximately the twenty four hour needs of the city, so that the sediment from the water has twenty four hours to settle, before it is chlorinated and passed on to the reservoir. The settling tank is cleaned out annually. Not a great amount of sediment is obtained.

The Chlorinator was purchased last summer, 1930. It is a large modern, automatic machine housed in a concrete house between the reservoirs. The water coming from the settling tank passes through this building in a pipe. A small amount is taken out, mixed with chlorine gas from a drum, and injected back into the pipe, to mix with the water. In winter the water has to be heated before making up the solution, and so a heating coil has been installed. Four pounds of Chlorine gas per twenty four hours is used, which means four pounds per million gallons of water.

From the chlorine plant all the water is led to the reservoir and sprayed into the air over it from orifices three sixteenths of an inch in diameter. No fish are allowed in the reservoir and no vegetable life. Fish have come in while small and have grown into large fish, but are taken out as soon as possible. The large reservoir is cleaned every two years, and very little sediment obtained.

No coagulation is used, and no filtering aside from the screening mentioned.

The following is a diagram and snapshot of the settling tank, with the chlorinator house and the reservoir below.



Water is sent to the state laboratory every month and has been very satisfactory for the last eight years. This year there was no Bacillus Coli found at all and the general count was extremely low.

The saw mills, paper mills, and Fir Tex and creosoting plants use Saint Helens city water for drinking and toilets, but river water for industrial uses. This is obtained by their own pumps. Cannery and creamery use city water entirely.

Hotels use the city entirely, as do all residents. The city is

built upon a rock, so that no wells are driven at all. Nor are any springs available within the city limits, or piped in. This leaves the water supply well controlled, and protected.

N. CONTROL OF EXCRETA DISPOSAL

Saint Helens is located immediately on the bank of the Columbia river where it receives the Willamette, so that for a long time the business section has emptied its sewage directly into the river by many small individual or co-operative sewers. Many private homes have also emptied into the river or into creeks tributary to it. Because of the rock upon which the city is built, very few cesspools or out houses have been excavated. Some houses had septic tanks emptying into creeks, but some emptied directly. Then it was ruled that all must use septic tanks if emptying into the creeks. Nineteen years ago a sewer system was installed. This took care of all that portion of town away from the river bank at that time. Last year a new intercepting sewer was installed to meet the demands of West Saint Helens and other newer divisions. The business section furthest from the river uses the sewer, but those near the river, including the court house and saw mills still empty directly into the river. 93% of the city is accessible to the sewer and 92% are already connected to it. Sixty five outside flush toilets are connected. Seventy five houses are left with no sewer available as yet. Some near the river may never connect.

The system is controlled by a controlling body made up of City Council members, who give their services without reimbursement. No treatment of any kind is given the sewage before dumping it into the river.

The large system empties into the Columbia river at the water's

edge downstream from the business section but not below all the residences. In high water it is out 20 to 50 feet, but at present it empties barely into the water, and the odor is strong. Numerous house boats are anchored immediately off the outlet. Little current flows near the shore and the waste is not taken away very rapidly. The popular bathing beach used by the people is only one half mile below the outlet. The city water supply is out of any danger of contamination by sewage.

The following illustration shows the location of the outlet of the sewer:



Private methods of excreta disposal include thirty cesspools, fifteen septic tanks, fifteen vaults, and a few surface or can privies. Private outfall sewerw aside from the courthouse and a few business houses along the river number four. The city physician's residence empties its sewage on the land thirty feet above high water in the river.

Legal provisions in ~~the~~ existence prevent dumping excreta into the creeks tributary to the river, a procedure used before the present sewer system was in operation. Otherwise little supervision is exerted, unless a nuisance is complained of.

O. GENERAL SANITATION

General inspection of the city is left to the city council. Sometimes the city physician is asked to do some special piece of work along this line. The mayor does most of what is done.

Nuisances are covered by one blanket clause, leaving abatement of nuisances to the city council. Complaints are few and are often handled by the mayor alone on standing permission by the council. No record is kept of the number of inspections or complaints, but it is gathered that no inspections are made unless complaints are made.

Plumbing is not inspected unless a question of sewage or city water is involved. In the former case it is handled by the council, and in the latter by the superintendent of water works.

Garbage disposal is authorized by the council, and a permit issued to a private citizen who collects and hauls away garbage weekly from dwellings and every day from the business section. He owns two large trucks and is paid by the people whose garbage is hauled. He burns it in a large incinerator outside of town. Those who do not pay him burn their own garbage. Dumping it in creeks is prohibited by the council. Dead animals are also incinerated by the garbage man. Stable manure is not a problem in Saint Helens, since no horses are kept in the city limits.

Streets in the business section are swept every night by a man hired by the city. He also washes them down with a fire hose every ten days, when it is not raining enough. The streets are fairly clean. No large accumulations of manure or rubbish are seen. No cleaning is done outside the business section.

P. INDUSTRIAL CONDITIONS

Lumber, manufacturing, and fishing are the dominant industries inside Saint Helens, and dairying is the principle industry in the country about.

Lighting is rather poor inside the sawmill but better in the Fir-tex plant. The paper mill is also rather poorly lighted. The sawmill is well supplied with air but is inclined to be windy and wet at times in the winter. The paper mill is fairly well ventilated but there is considerable acid in the air in one place where men work. The creosote plant is in need of further ventilation, even though it is rather open. Many of the seventy five men working there have trouble with the skin on their faces peeling repeatedly.

The water used for drinking by the industries is the city water. Sewage is all disposed of by private outfall sewers running to the waters edge in the river.

Medical service is provided the employees of the larger plants. Dr. L. G. Ross, County physician, has the contract, with the lumber mills. Dr. Wade handles Fir-tex, and Dr. Everett the paper mill. The cannery has no doctor but is under compensation.

None of the industries are especially detrimental to the health of the employees, unless the constant irritation to skin and mucous membranes by creosote may be so classed. No cases of poisoning by absorption are on record. There is no way of learning if there is decreased resistance to infection, or an increased tendency to epithelioma formation due to the irritation.

The employees here are as well taken care of as they are in the average industry of this nature. The work is largely out-door or open work and problems are few.

Recommendations

There are several minor points that could be improved upon but the major needs may be set forth briefly.

1. Vital statistics for the city and that registration should be kept in a more permanent file and a total made up for city alone each year and kept permanently.
2. Some means of stimulating better co-operation and reporting of communicable diseases should be searched for.
3. Reporting of venereal diseases should be required by law and enforced.
4. Closer supervision of public baths and toilets.
5. Sewers should be led further from shore, at least into the current. House boats should not be allowed to anchor at the outlet.
6. Private sewers should not empty on land.
7. Further attempt should be made to free the watershed of nuisance.

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As a whole, however, the town is in fairly good shape and well equipped, for its size, although the organization is rather weak.