



**KEY**

PROTECTED FIRE ZONE: Shown in Green and Blue  
 Note.—For description of fire protection, etc., see other side.  
 Elevations range from 0 to 15 feet above mean sea level.  
 Water mains 8 inches and larger in diameter  
 Water mains 6 inches in diameter  
 Water mains 4 inches in diameter  
 Fire hydrants shown thus  
 Gate valves shown thus

Fire house shown thus  
 Fire apparatus designated by symbols thus:  
 (V) Pumping engine and hose car  
 (H) Hose car  
 (C) Chemical tank or tanks on above  
 (L) Ladders on above  
 (B) Booster tank or tanks on above

Schedule Rating Office of New Jersey  
 ENGINEERING DEPARTMENT  
 NEWARK, N. J.  
**Lower Penns Neck Township**  
 Including Du Pont City, Deep Water  
 Village, and Pennsville  
 Salem County, New Jersey  
 DECEMBER 15, 1944

December 15, 1944.

## LOWER PENNS NECK TOWNSHIP, SALEM COUNTY, NEW JERSEY.

### Including Deep Water Village and Pennsville.

Population—Census of 1940—5,113.

**IN GENERAL:** Located along the Delaware River adjoining the northwesterly limits of Salem. It is essentially an industrial community with residential areas along the Delaware River and outlying sections devoted to agriculture. The principal industry is the E. I. du Pont de Nemours & Company Chambers Plant which affords employment for residents of Lower Penns Neck Township and other nearby communities. The Du Pont Company owns a congested group of about 100 frame dwellings and a school and church at Deep Water Village. There is also a small business district and an amusement park at Pennsville and numerous summer bungalows along the water front. Area of mapped portion of township about 8.3 square miles. Elevations range from 0 to 15 feet. Main thoroughfares are concrete or macadam in good condition. Some secondary streets are dirt in fair to poor condition. There are no features which should adversely affect the response or operations of the fire department.

**WATER SUPPLY:** Water for domestic and fire protection purposes is furnished to most of the built-up area by a township owned system supplied with water purchased from the Du Pont Company supply works at Deep Water Village. The Du Pont Company owned properties at Deep Water Village are supplied with water for domestic and fire protection purposes from the domestic system supplying the Chambers Works at Deep Water Point west of the Village. **Lower Penns Neck Township System:** This system is owned and operated by the township and is in charge of an annually appointed superintendent who resides at Penns Grove. No office is maintained and records consist primarily of construction plans. There are no arrangements whereby a responsible employee responds to alarms of fire and there are no definite provisions for emergency repairs. **Supply Works:** The supply works are owned by the E. I. du Pont de Nemours & Company and consist of a Ranney Collector located in Upper Penns Neck Township east of Penns Avenue opposite Pine Street, as shown on map. Collector equipment consists of two 1,500-g.p.m. and one 1,000-g.p.m. high lift pumps which supply water to the Chambers Works of the Du Pont Company, and one 300-g.p.m. Worthington high lift pump driven by a 25-h.p. electric motor which supplies water to Lower Penns Neck Township discharging through an 8-inch main to the distribution system through an iron removal and treatment plant owned and operated by the township with an elevated tank providing storage and acting as an equalizer. These pumps are of weatherproof type and are set in the open over the collector. An emergency connection is provided whereby the delivery from one of the 1,000-g.p.m. pumps can be diverted to the township system. The Ranney Collector is 13 feet in diameter and 61 1/2 feet deep with a rated capacity of 1,600 g.p.m. The pump supplying the township is equipped for automatic operation, but was being manually started at time of inspection. **Distribution System:** In one service consisting of a 12-inch artery supplying incomplete 6-inch gridiron and 6-inch dead ends. See map. **Elevated Tank:** Located near Jenkins Avenue between Broadway and River Drive as shown on map. It is steel, 26 feet in diameter by 29 feet high with a hemispherical bottom on a 100-foot steel tower; capacity 150,000 gallons. Elevation of base 10 feet. Elevation of overflow 139 feet. **Consumption:** Due to the short period of operation of the system, reliable consumption figures are not available. At time of inspection there were approximately 500 services, none of which is metered. The average daily consumption is estimated to be 160,000 gallons and the maximum daily during 1944 was 223,000 gallons. **Pipe:** All cast iron, tar coated, bell and spigot joint, laid with 3 1/2-foot to 6-foot cover. No trouble reported from frozen mains or electrolysis. Total

length on this system, 83,200 feet; 10.3% 12-inch, 7.7% 10-inch, 11.5% 8-inch, and 70.5% 6-inch. **Gate Valves:** There are 78 on this system of R. D. Wood make set with valve boxes at or near grade. Direction of operation is uniform. No regular inspection practice. **Hydrants:** There are 116 on this system of R. D. Wood make of standard type with two 2 1/2-inch and one 4 1/2-inch outlets and 6-inch ungated branches, except that a few older hydrants have only two 2 1/2-inch outlets and 4-inch branches. All hydrant outlet threads are National Standard. Hydrant inspection and maintenance practice is not well established and those operated at time of inspection were in only fair condition and needed servicing. **Pressures:** A recording pressure gauge installed in the water treatment plant at about elevation 15 showed 58 pounds at time of inspection with pump operating. Readings taken at 3 well distributed hydrants showed pressures of 54 and 55 pounds. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured on September 1st, 1944 by means of Pitot tube. Location of hydrant, discharge in gallons per minute, pressure before flow and pressure during flow were as follows:

Broadway and Chester Ave. (Deep Water Village), 730—55—49.

Broadway and Main St. (Pennsville), 1,025—54—45.

S. Broadway N of Mahoney Rd, 375—54—10.

**Du Pont Deep Water Village System:** This system owned by the Du Pont Company is in charge of the Power Division of the Engineering and Power Department of the company. System is maintained by plant organization with a staff which is largely capable. Office in Chambers Plant Engineering Department about 1 1/2 miles from the village. **Supply Works:** The supply for the village and for domestic consumption at the plant is normally supplied from one 16-inch well 361 feet deep yielding about 400-g.p.m. and equipped with a Layne 300-g.p.m. deep well turbine driven by a 60-h.p. electric motor. One standby well which is 14-inch, 360 feet deep, equipped with a 160-g.p.m. Layne deep well turbine driven by a 75-h.p. electric motor. One reserve well is 5-inch, 345 feet deep, yielding about 100-g.p.m. by air lift, discharging to a basin whence a 200-g.p.m. Worthington high lift pump driven by a 20-h.p. electric motor discharges to the system. Pumps discharge to the domestic system and to the village through a 6-inch supply line with an elevated tank at the village kept full and shut off from system. **Village Distribution System:** Consists of 4-inch and 6-inch dead end mains supplied through a one-mile 6-inch supply line from the Chambers Plant. See map. **Elevated Tank:** Located on Lincoln Street near Monroe Street as shown on map. It is steel, mounted on an 80-foot steel tower with a capacity of 50,000 gallons. Elevation of base 13 feet. Elevation of overflow about 110 feet. **Consumption:** No reliable information as to the consumption in the village proper but normal average daily demand on the wells is approximately 300,000 gallons. **Pipe:** All cast iron, tar coated, bell and spigot joint, laid with about a 3 1/2-foot cover. No trouble reported from frozen mains or electrolysis. Total length, exclusive of 6-inch mains from the Chambers Works, 3,300 feet; 73% 6-inch and 27% 4-inch. **Gate Valves:** There are 4 on the village system of Wood make set with iron boxes at grade. Direction of operation is uniform. There is no routine inspection practice. **Hydrants:** There are 12 on the village system of Wood make of standard type with two 2 1/2-inch outlets and 4-inch ungated branches. Hose outlet threads are 8 threads per inch and 2 7/8 inches outside diameter. Hydrants are inspected at least twice annually and were in good condition at time of inspection. **Pressures:** Normal pressure on the system is about 30 pounds. One reading taken with the tank

## LOWER PENNS NECK TOWNSHIP, SALEM COUNTY, NEW JERSEY.

### Including Deep Water Village and Pennsville.

#### Continued.

in service showed 43 pounds. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured on January 19th, 1933 by means of Pitot tube. Location of hydrant, discharge in gallons per minute, pressure before flow and pressure during flow were as follows:

Jefferson St. N. of Fillmore Ave., 270—43—33.

**FIRE DEPARTMENT:** A volunteer organization of two companies operating independently under partial control of the township which owns quarters, apparatus, and equipment and makes an annual appropriation for the support of the department. In addition the Du Pont Chambers Plant Fire Department west of Deep Water Village provides protection to the company owned property including the dwellings at Deep Water Village. **Lower Penns Neck Township Fire Department:** Total active membership quota 80, evenly divided between the two companies, of whom a minimum of 7 members in Company No. 1 and 8 in Company No. 2 are available at all times. Each company operates under a chief and 2 assistant chiefs who are elected annually by the companies without confirmation by the township. **Pennsville Fire Company No. 1:** Located in Pennsville Center on Broadway near Main Street as shown on map. Building is a 2-story brick structure with composition roof, concrete apparatus floor, oil heat, electric lights, and siren. **Equipment:** One 1939 Hale 500-g.p.m. triple combination pumping engine carrying one 200-gallon booster tank, 150 feet of booster hose, 1,100 feet of 2½-inch hose, 500 feet of 1½-inch hose, one roof ladder, one 36-foot extension ladder, and some minor equipment. One 1930 Buick ambulance. **Deep Water Company No. 2:** Located at Deep Water Village on Broadway near Chester Avenue as shown on map. Building is a 1-story stuccoed frame structure with composition covered wood roof, concrete apparatus floor, oil fired steam heat, electric lights, telephone and siren. **Equipment:** One 1939 Pirsch 500-g.p.m. quadruple combination pumping engine and 40-foot city service ladder truck carrying 1,000 feet of 2½-inch hose, 300 feet of 1½-inch hose, one 200-gallon booster tank, 200 feet of ¾-inch hose, two 12-foot, one 26-foot, one 30-foot, and one 40-foot extension ladder, and some minor equipment. **Du Pont Chambers Works Fire Department:** A paid company organization with 31 full paid firemen including a chief, assistant chief and 4 foremen of whom 8 to 11 are on duty on each 8-hour shift. Chief officers alternate duty, with the chief service during the day time. **Company:** Located at the westerly end of the Du Pont Chambers Plant about 1½ miles away from the village center. Building is a 2-story brick structure with asbestos shingled wood roof, concrete apparatus floor, steam heat, electric lights, sleeping quarters, hose dryer, fire alarm headquarters equipment, including a 10-inch gong and telephone. **Equipment:** One 1931 American La France hose and chemical car carrying one 40-gallon chemical tank, 250 feet of chemical hose, 1,100 feet of 2½-inch hose, 2 short ladders and fairly complete minor equipment. **Hose:** All 2½-inch hose is C.R.L. with National Standard screw couplings except that the Du Pont Company hose and hydrants are 2½ inches outside diameter with 8 threads per inch. Hose in the Du Pont Company department is shifted monthly and other hose is repacked monthly when not otherwise used. Drying provisions consist only of a mechanical dryer at the Chambers Works fire headquarters. In addition to the hose carried on the apparatus at the Chambers Works department there is about 4,000 feet in reserve coiled in racks in headquarters and plant hydrants are each equipped with 150 feet of hose. Reserve hose in township companies is limited to 250 feet at Company No. 2. All hose in township companies is tested at 150 to 200 pounds at least twice annually and the Chambers

Works hose is tested at 200 pounds. Only a small quantity of the total hose is more than 5 years old. **Operations:** The township companies are governed by municipal ordinance and company by-laws. The plant supervisor exercises general supervision and the chief has charge of the Chambers Works Company. Township chiefs have control of their respective apparatus at all times and of men at fires and drills. Motors are started twice weekly except that the Chambers Works Company motor is started daily. Three volunteer members are appointed as drivers in each township company. **Drills and Training:** Township companies drill monthly under the direction of the respective chief officers. Drills consist of hose laying, pump operation and some ladder work. The Chambers Works Company does not drill periodically, but paid men are fairly familiar with the use of equipment. **Fire Methods:** Booster and chemical streams are used on incipient fires supported by hydrant or engine streams with shut-off nozzles. At least 2 gas masks are carried on each piece of apparatus, but salvage covers, heavy stream appliances and flood lighting equipment are not provided, except that there is a deluge set at the Chambers Works Department. **Response to Alarms:** The township companies respond to all township alarms and aid may be secured from the surrounding volunteer departments at Penns Grove and Salem. The Chambers Works Department responds to alarms of fire in their properties in Deep Water Village and provides assistance in adjoining areas. **Building Inspection:** No routine inspection by the township department; the Chambers Works fire chief makes annual inspections of all company properties and exercises continuous supervision. **Records and Reports:** Township company records consist primarily of fire reports including nature of alarms, attendance and equipment used, together with a general report in the secretary's minutes. The Chambers Works fire chief keeps complete records of alarms, losses, and equipment used at fires on company property and reports annually to the main office in Wilmington. **Fire Alarms:** Township alarms are telephoned through the Penns Grove Exchange to homes or places of business, or directly to fire station where there is usually a janitor in attendance at Company No. 2 and a police officer at Company No. 1 in Pennsville. The Du Pont Chambers Works fire alarm system extends to their properties in the Deep Water Village at which location there are 2 fire alarm boxes. These boxes are on one circuit operating the gong and punch register in the fire station and other gongs distributed throughout the plant. Boxes are of Gamewell non-interfering, non-succession type mounted on lighted poles. Circuits are No. 12 hard drawn weatherproof copper wire carried overhead with other lines. Current is supplied by storage batteries located with headquarters equipment at fire headquarters. Charging is by motor generator set. System is maintained by the plant electrical department and box tests are conducted weekly.

**POLICE DEPARTMENT:** The township police force consists of 4 officers with radio equipped car operating in conjunction with the Penns Grove department.

**BUILDING LAWS:** No township regulations. Fire resistive roofs are required on Du Pont owned buildings.

**EXPLOSIVES AND FLAMMABLES:** No township regulations, but Du Pont Company plant regulations are good and are well enforced on their property. State laws adequately cover the storage and shipment of explosives and flammables and the construction of motion picture booths. They also restrict the discharge of fireworks to responsible bonded parties.