

LEAD INDUSTRIES ASSOCIATION

420 BROADWAY AVENUE

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RETAILER LEAD PRODUCTS DIVISION

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1. DESCRIPTION

Located in the heart of a heavily industrialized and populated area, the Research Laboratories of E. I. Parick & Co., Inc., have been able to eliminate a serious problem of corrosive waste disposal by installing a complete sewage solvent trap and neutralizer constructed entirely of stainless steel. This is a unique installation designed by the user which has served successfully since its installation about a year ago.

2. LOCATION

Research Laboratories, E. I. Parick & Co., Jersey City, New Jersey.

3. PROCESS

The waste materials from the laboratory consist largely of water which may be acid in reaction or may be carrying small amounts of immiscible solvents. Since this waste product is corrosive and must enter the city sewage system action must be taken at the source to neutralize the acids and remove the immiscible materials. Most sewage systems typified by that in this location cannot tolerate corrosives because of possible damage to sewer construction as well as the detrimental effect of these chemicals on normal sewage disposal operations. Immiscible solvents do not attack the sewage disposal system but would tend to hinder its operation. In any event, this company, like many others throughout the country, realized its responsibility to the community by eliminating at the source many hazards which might arise due to indiscriminate disposal of hazardous waste products.

4. OPERATION DETAILS

Referring to the attached drawing, the laboratory waste line enters the large 16-in. diameter trap from the right. Light immiscible solvents rise to the surface and are distilled out continuously by means of a 1/2-in. lead steam coil located at this level and exhausting into the chamber. The solvent distillate is piped to the floor above where it is collected for separate disposal. Heavy immiscible solvents fall to the bottom and are removed at intervals by opening the valve at the base of the conical section. The effluent waste passes into the smaller 8-in. diameter trap at the left, near the bottom, rises through

a bed of limestone which neutralizes acidic material and then passes into the sewer line near the top. The bottom of this unit line is designed so as to maintain a liquid level in the large trap just above the steam coil for effective flashing of light solvents.

5. CONSTRUCTION DETAILS

Construction details of the entire unit are best shown in the accompanying drawing.

Antimonial lead (6 percent) is used throughout because of its greater strength characteristics over that of soft chemical lead. The shells of both traps consist of 6-lb. antimonial lead while the top of the large trap and the top and bottom of the small trap consist of 12-lb. antimonial lead. The steam coil is 1/2-in. antimonial lead pipe (6 percent) with a wall thickness of 1/4 in. The lead work in this installation was done by the C. G. Kelley Company.

6. PERFORMANCE

This unique trap was installed primarily to protect the city sewage lines and has performed this function successfully; in a year's operation it has been necessary to clean and recharge only once. No evidence of corrosion of the lead has been observable.

7. CONCLUSION

Sewage contamination and water pollution are terms many industrial plant operators are beginning to regard with growing alarm. The Federal Water Pollution Control Act of 1948 gives concrete evidence of nationwide concern over this problem by offering financial and technical assistance to the states in carrying out their stream pollution control programs.

The important industrial states in turn have taken up the precedent and strengthened enforcement of their own stream pollution and other industrial waste disposal statutes. This means that industrial plants normally producing acid or corrosive wastes can no longer dispose of their waste products by dumping them into the nearest river or pouring them down the drain.

S. B. Perick & Company has solved its waste disposal problem by utilizing lead equipment. Many other larger companies requiring larger disposal installations also utilize lead equipment for rendering their waste products harmless. But this problem has only recently become urgent, thus many industries are still faced with finding a solution to their waste disposal problems. Lead equipment should contribute much toward the development of a proper solution where corrosive wastes must be handled.

