

Shellegram

Deer Park Manufacturing Complex

Thursday, January 2, 1975

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DEDICATED EFFORTS PRODUCE WORKABLE SOLUTION FOR EFFLUENT DISPOSAL

Disposing of effluent for the Deer Park Manufacturing Complex is no small feat. Yet, it is only one of the many problem areas in which a workable solution was found after dedicated efforts were concentrated in search of an economically viable solution.

W. D. "Bill" Loveless, manager, Utilities, noted

caustic are made as a by-product. The presence of these chemicals result in a very low or very high pH.

Although the Texas Water Quality Board has long permitted a variation of 5-10 pH, the Environmental Protection Agency (EPA) issued on July 1, 1973, a more stringent permit restricting the pH variations to 6-9.

reported during the year-long period from July 1, 1973, to June 29, 1974.

Then, on July 1, 1974, the EPA issued a "cease and desist" order.

Coincidentally, at this time, a new approach to the problem was being installed at the deionization units. This approach consisted of the addition of carbon dioxide

Utilities operator No. 1, C. O. Patterson kneels beside the intake pipe which is utilized when pumping effluent from the lower pond into the holding pond.



that one of the complex's worst offenders was the effluent consisting of the reject or waste water from power plant No. 2 combined with the surface water from the chemical operations. This effluent leaves the refinery at outfall No. 1.

The power plant No. 2 area is where we make all of our deionized water for the refinery boilers. Deionized water is very similar to distilled water as there are no minerals in it.

According to Steve C. Slaymaker, senior chemist, Refinery Laboratory, "The use of this kind of water is absolutely necessary for the operation of modern boilers to avoid the type of scale that forms in an ordinary teapot."

In order to make this deionized water, we have ion exchange units which remove minerals from the water. However, in the operation of these deionization units frequent slugs of water containing sulfuric acid or

Previously Shell had spent over \$120,000 in attempting to prevent these pH variations from exceeding the established limitations. When the present, more rigid, standards came into effect, it was found that the existing equipment wasn't capable of doing the job. Some twenty non-compliances were self-

(CO₂) to the effluent. CO₂ is the gas used to put the "fizz" in soft drinks. As a solid, it is known as "dry ice", while in the liquid form, it is found in fire extinguishers.

The CO₂ project, headed by Slaymaker, proved highly successful in forming buffering agents which permitted
(Continued on page 3)

Refinery announces new method of handling awards 25-AND-ABOVE SERVICE ANNIVERSARIES AFFECTED

A change in the method of handling all 25-and-above service anniversaries has been announced by R. G. Dillard, complex manager. The new procedure is similar to that in use at the Chemical Plant.

Beginning the first of January, all complex employees with service anniversaries of 25 years or more will be invited by their department manager to attend one of the three or four small luncheons held during each month to honor the

employee's long years of company service.

The luncheons will normally be arranged so that the employee will be working days.

After being invited to the luncheon, the employee and his department manager will visit with the complex manager in his office, where the award will be presented and the handshaking pictures will be taken. Then all of those present will attend a luncheon in the cafeteria's private dining room as guests of Shell.

TWO NEW EPOXY FACILITIES PLANNED BY SHELL CHEMICAL AT DPMC

Shell Chemical will begin construction late in 1975 on two new facilities aimed at increasing its supplies of epoxy resins.

One will be a new unit for the production of Phenol; the other for the production of Bisphenol-A. Both are chemical intermediates which will be used primarily in the production of epoxy resins. Both of the new units will be built at the Deer Park Manufacturing Complex, according to C. L. Coldren, manager, Resins Business Center.

Shell Chemical is one of the nation's principal producers of epoxy resins, which are used in a wide range of products, including coatings, electrical com-

ponents, fiber-reinforced pipes and tanks, and adhesives.

The production capacity of the new Phenol unit is 500 million pounds per year; the Bisphenol-A unit, 200 million pounds per year. Both plants should be completed by late 1977.

"The total epoxy resin market has grown rapidly during the last several years, and demand is now placing strains on available production facilities," Coldren said.

The new units will employ more than 50 people full-time when fully operational.

READ YOUR OWN METER AND CUT KILOWATTS

Consider the kilowatt. It doesn't do anything. It is merely a unit of measurement - like the cup, the inch, or, in the case of buying fabric, the yard.

Yet in these days of energy shortages, the kilowatt is increasingly important to the householder. Cut down on those kilowatt hours of electricity, and you automatically cut down on energy usage and the monthly utility bill as well.

One way to cut back is simple. Few families have any idea of the actual amount of electricity they use. Why not, therefore, keep a record, and strive for a reduction each month. That's easy to do if you read your own meter periodically. You don't know how to read the meter? Here's how:

Electric meters have four dials, each measuring kilowatt hours of electricity in proportionately greater units of 10. That is, the dial on the extreme right (call it dial one) measures in units of one kilowatt, up to a maximum of 10. Once it gets to 10, the dial second from the right (dial two) will register one. When dial two reaches 10, which is really 100, the next dial from the right will register at one. And so on to dial four, which measures in thousands, up to 10,000.

In the example shown above,

the proper reading is 9,484 kilowatt hours. Now you might say, looking at dials two and three, that the proper reading should be 9,594. But whenever a needle is between two numbers, the lower number should be read. The only exception to this would be when, as is the case with dial four, the needle is between nine and zero. Actually, the zero represents 10, so that the nine should be read.

One final caution: don't overlook the fact that two of the dials must be read clockwise, the other two counter-clockwise.

Once a family knows how much electricity it's using from month-to-month, it can become a challenge - almost a contest - to bring usage down.

Burning as few electric lights as possible is important, of course, but it's

RETIRED PAINTER, CONNELL, DIES

Joe A. Connell, 71, retired painter No. 1, Engineering Field, died December 21 after an extended illness.

At the time of his retirement, Connell had some 23 years of company service.

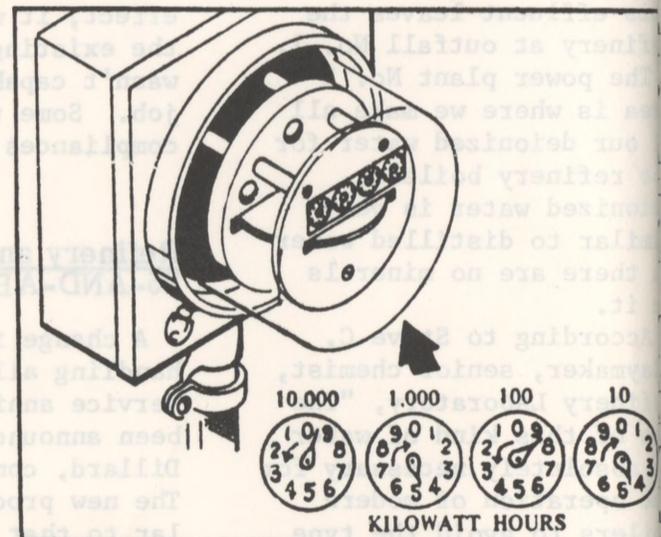


Funeral services were held at 2 pm December 23 at the Blessed Sacrament Catholic Church. Interment was in Forest Park Lawndale.

Connell was survived by his wife, Phylena, of 5142 Polk in Houston.



"The eye-bank you signed up with sent this over to you."



those heat-generating appliances that make the meter spin.

Budget the use of such appliances as water heaters, clothes dryers, electric ovens, and the like, and you're headed in the right direction - down.

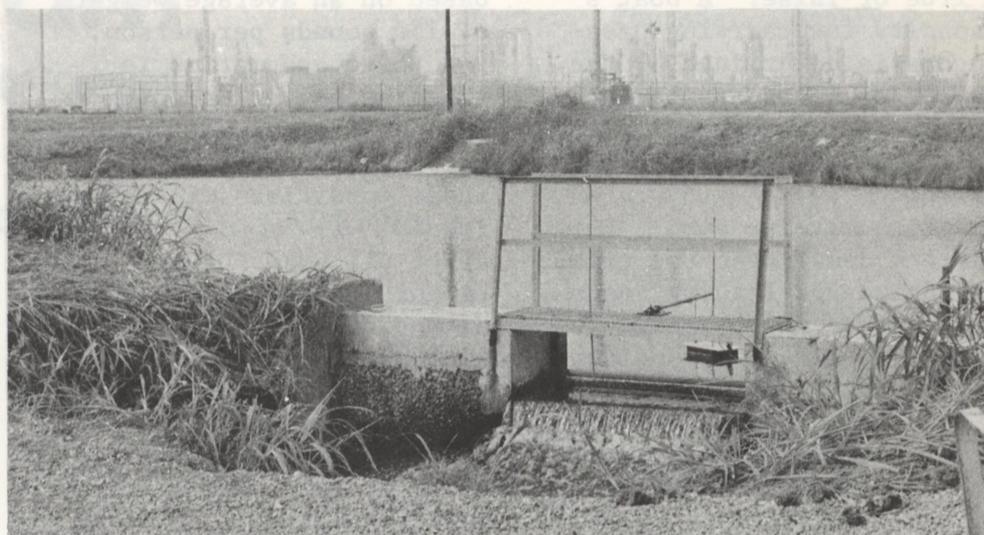
dedicated efforts produce workable solution for effluent disposal

the existing standard control instrumentation to control the pH in most instances to meet the EPA limitations.

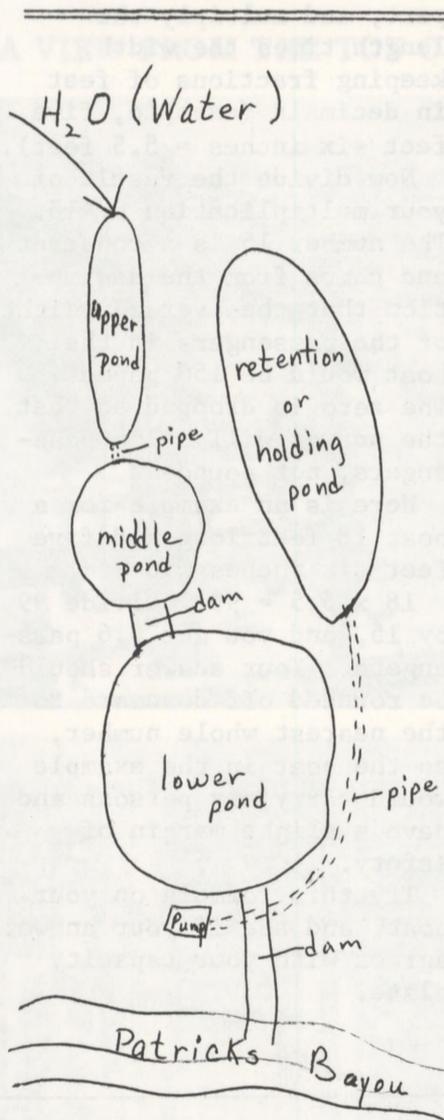
CO₂ costs \$30 per ton, and we are using it at the rate of three to four tons per day. That's \$90 to \$120 every day of the year. Year after year.

Another measure taken during this same period was to dig a retaining or holding pond and install a diesel-driven pump at outfall No. 1. This is a location where the effluent is permitted to enter Patricks Bayou.

The purpose of this pump and the holding pond is to have a place to recycle and blend or retain effluent when it approaches the 6-9 pH limitation. Retained effluent can later be safely re-entered into the upper pond with additional pH correction and then continue the cycle through the middle pond, the lower pond and then into Patricks Bayou. The holding pond has a six-hour capacity - even though the normal amount of time necessary to correct the pH is one to two hours.



Pictured above are the dams from the middle into the lower pond and from the lower pond into Patricks Bayou. The water you see in the picture is the lower pond.



The map shows the relative proportions of the various ponds, the dams and pipes connecting them to each other and the pump used to prevent off-spec effluent from reaching Patricks Bayou.

Prior to the installation of the CO₂ injection facilities and the holding pond with its diesel-driven pump at outfall No. 1, Shell had twenty non-compliances due to pH variations. After their installation, the non-compliances were reduced to one within the last six months.

Gordon J. Reno, staff engineer - Environmental, discussed this particular non-compliance. The date was November 21, 1974, and it was at outfall No. 1.

The pH had dropped to just below 7 and the operator started the diesel-driven pump to divert the effluent into the holding pond. The flow into Patricks Bayou was reduced from the normal 1,000 gal/min to 300 gal/min. The pH continued to drop nearer to the limitation of 6, so the flow to Patricks Bayou was completely cut off - going from 300 gal/min to zero gal/min in 20 minutes. In those 20 minutes, the pH dropped below 6 to 5.8, but due to the reduced flow through the use of the diesel-driven pump, we were able to prevent the greater amount of effluent from entering Patricks Bayou.

Everyone involved feels that the two additional efforts to control the effluent's pH were worthwhile. After all, we did reduce our pH non-compliances from twenty in one year to one within six months.

THERMOPLASTIC UNIT BEGINS PRODUCTION

Shell Chemical's new multi-million-pound thermoplastic rubber unit at Marietta, Ohio, is now in operation.

The unit will produce a new styrene block copolymer, Kraton G^(R), which has great potential in the automotive industry.

The new product's light weight, flexibility and strength should prove valuable in the auto industry's efforts to build safer cars with reduced weight and consequent better gasoline mileage. Kraton G could reduce fabrication costs, since it performs like a rubber, but has the ready processibility of plastic.

The new product has been in the market development stage for more than two years. Potential automotive uses include lightweight

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OVERLOADING PRESENTS BOATING DANGER

True or false? A boat's capacity for carrying passengers is determined by the number of seats available for those passengers.

The answer is an emphatic false.

Unfortunately, some boaters don't even use this criterion for loading boats and cram as many persons aboard as will fit shoulder to shoulder.

Normally, the way you can determine the maximum number of persons which your boat should carry is by looking at the capacity plate.

This plate is usually mounted in the boat by the manufacturer near the operator's position. It tells the recommended size engine for the boat, the maximum number of persons who should be allowed to ride in the boat and the maximum weight for persons, motor and gear.

The skipper should keep in mind that the capacity plate is based on several assumptions, and it is up to the skipper's common sense to make adjustments if these assumptions are incorrect.

For example, the maximum number of people for the boat is made on the assumption that the operator will use the recommended size motor. Also, the capacity plate recommendations are

thermoplastic unit

bumpers, sight shields and flexible front ends, as well as steering wheels, crash-pads and arm rests.

Other potential markets for the new rubber are expected to come from the adhesives, sealants, sporting goods and medical fields.

The new Kraton G production facility is one of a series of additions to the Marietta plant which will increase Shell's participation in the thermoplastic rubber field. Construction of the unit began in early 1973. Commercial production began in October of this year.

based on an average weight of 150 pounds per person.

A third assumption is that the boater is going out under ideal weather and water conditions and that these conditions will stay ideal.

Not all boats have a capacity plate, but a small amount of simple arithmetic will provide you with a reasonable guide for the number of persons the boat can carry safely. Bear in mind, however, the arithmetic is based on the same assumptions as the capacity plate.

The first thing to determine is the overall length of your boat. Next, find the width at the widest part, and multiply the length times the width, keeping fractions of feet in decimals (example, five feet six inches = 5.5 feet).

Now divide the result of your multiplication by 15. The number 15 is a constant and comes from the assumption that the average weight of the passengers in the boat would be 150 pounds. The zero is dropped so that the answer will be in passengers, not pounds.

Here is an example for a boat 18 feet long and five feet six inches wide.

$18 \times 5.5 = 99$. Divide 99 by 15, and you get 6.6 passengers. Your answer should be rounded off downward to the nearest whole number, so the boat in the example would carry six persons and have a slight margin of safety.

Try this formula on your boat, and see if your answer agrees with your capacity plate.

CLASSIFIEDS

FOR SALE

30" electric range. \$20.
67-piece Avon car collection \$275.
479-2357

1970 Williams Craft, 17', self-contained, travel trailer, air, heat, like new. \$1,275.
472-4203

1974 Yamaha MX-250, never raced, perfect condition. \$950. Boots, shirt, tools and trailer. \$50.
472-4203

Deep freeze calves, 500# on foot at 40¢/lb. Will deliver to locker plant for purchaser. Slaughter date is January 15.
1-372-3545

1969 Chevy pickup, 3-speed transmission. \$40. 1962 Falcon pickup, 3-speed transmission. \$30.
389-2370

Gray plastic raincoat in the clockhouse at the refinery on December 30.

PROVIDENT FUND NEWS

The following is the Equities Fund valuation:

December 20, 1974 - \$1.902



"Car pooling really's caught on here."

SHELLEGRAM

Published by Shell Oil Company for its Deer Park Manufacturing Complex employees at Deer Park, Texas.

Mrs. Dotti West - Editor

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