CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 71-40

WASTE DISCHARGE REQUIREMENTS
FOR
THE DOW CHEMICAL COMPANY'S PLANT
AT PITTSBURG, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, finds that:

1. This Regional Board prescribed requirements for these three waste discharges by the Dow Chemical Company, called the discharger below, in Resolution No. 299 on January 15, 1959, and in Resolution No. 68-7 on March 21, 1968:

   a. Waste "A" is seasonally excess by-product hydrochloric acid, diluted to a concentration of about two per cent. It is discharged via a nine-port diffuser called Outfall "A" at a rate not more than its design capacity of 0.87 mgd. The discharge point is in New York Slough about 300 feet offshore from the discharger's wharf and 35 feet deep.

   b. Waste "B" is sewage from a total payroll of 470, mixed with industrial wastes from manufacturing organic and inorganic chemicals, and includes storm runoff from the discharger's manufacturing area. It is discharged at an average rate of 25 mgd from facilities with a design flow of 40 mgd via Outfall "B", a 48-inch pipe, at a point in New York Slough about 100 feet offshore from the discharger's settling pond and about 25 feet deep.

   c. Waste "C" is industrial waste only from manufacturing fungicides. It is discharged into and confined in Land Disposal Site "L-C", which consists of two solar evaporation ponds located about 400 feet east of the discharger's developed plant site and about 150 feet north of the Santa Fe Railway tracks.

2. The discharger submitted a report of waste discharge dated March 29, 1971 describing the above discharges and these eleven others:

   a. Waste "D" is industrial waste only from manufacturing synthetic latexes. It is discharged into and confined in Land Disposal Site "L-D", a dewatering bed having a capacity of 1000 cubic yards and located within the discharger's plant block number 540.

   b. Waste "E" is industrial waste only consisting of trash, paper waste, rubble, and mud. It is deposited in and confined in Land Disposal Site "L-E", which has a capacity of 150,000 cubic yards and is located about 100 feet east of Land Disposal Site "L-C".

c. Waste "F" is industrial waste only from clarifying brine. Waste "F" is confined to Land Disposal Site "L-F", which has a capacity of 9000 cubic yards and is located west of the discharger's plant near his Gate Number 102.

d. Waste "G" is industrial waste only from water treatment. It is deposited in Land Disposal Site "L-G", which has a capacity of 20,000 cubic yards and is located immediately east of the discharger's plant "J" Street, near his Gate Number 701.

e. Waste "H" is industrial waste only from water treatment, and is the clarified overflow from Waste "G". Waste "H" is discharged at a design flow rate of 0.6 mgd via Outfall "H" into Kirker Creek above its surface and about 750 feet from its mouth.

f. Waste "I" is industrial waste only from the closed Pioneer Rubber Company plant site, and consists of runoff from areas used for warehousing hardware and canned food. It is discharged via two or more pipes, collectively called Outfall "I", into New York Slough above its surface and about 700 feet west of Outfall "B".

g. Waste "J" is runoff from the site of a closed storage terminal for petroleum products. This drainage enters New York Slough above its surface at the north end of the discharger's plant "J" Street via surface drains collectively called Outfall "J".

h. Waste "K" is industrial waste only and consists of runoff from undeveloped land east of the discharger's plant. This site is used to store masonry materials, clean metal scrap, and graphite. Waste "K" is discharged into Kirker Creek above its surface at a point about 2200 feet from its mouth via surface drains collectively called Outfall "K".

i. Waste "L" is sewage only from septic tanks located in the discharger's plant blocks numbers 260, 360 and 740, and in the former Pioneer Rubber Company plant site west of the discharger's plant. These wastes are discharged into subsurface percolation fields.

j. Waste "M" is industrial waste only consisting of accidentally spilled process matter. Retention basins have been provided to confine spills at each potential spill site.

3. The Board adopted a Bay Water Quality Control Plan on March 26, 1970, and a Land Disposal Policy on September 25, 1969.

4. The beneficial uses of the waters of New York Slough and contiguous water bodies are:

   a. Seasonal source of domestic water supply at Antioch and at Mallard Slough

   b. Industrial cooling and process water supply year-round.

c. Swimming, water-skiing, wading, pleasure boating, marinas, fishing and hunting.

d. Fish, shellfish, and wildlife propagation and sustenance, and waterfowl and migratory birds habitat and resting.

e. Navigation channels and port facilities.

f. Esthetic enjoyment.

5. Land within 1000 feet of the discharge points is used for agriculture, industry, public roadways and transportation.

6. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for these discharges.

7. The Board in a public meeting heard and considered all comments pertaining to these discharges.

IT IS HEREBY ORDERED, the discharger shall comply with the following:

A. Waste Discharge Requirements

1. The treatment or disposal of waste shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The discharge of Wastes "A", "B", and "H" shall not cause:

a. Floating, suspended, or deposited macroscopic particulate matter or foam, in waters of the State at any place.

b. Bottom deposits or aquatic growths at any place.

c. Alteration of turbidity or apparent color beyond present natural background levels in waters of the State at any place.

d. Any zone exceeding 25 per cent of the cross-sectional area of New York Slough in which the water temperature is more than one degree Fahrenheit above the ambient receiving water temperature, as a result of either this discharge alone or in combination with others.

e. A surface temperature rise exceeding the ambient temperature of the receiving waters by more than four degrees Fahrenheit at any time or place.

f. Visible, floating, suspended or deposited oil or other products of petroleum origin in waters of the State at any place.

g. Waters of the State to exceed the following limits of quality at any point within one foot of the water surface:

| | |
|---|---|
| pH | 7.0 minimum<br>8.5 maximum |
| Dissolved Oxygen | 5.0 mg/l minimum<br><br>When natural factors cause lesser concentrations then this discharge shall not cause further reduction in the concentration of dissolved oxygen. |
| Dissolved Sulfide | 0.1 mg/l maximum |
| Other substances | Any one or more substances in concentrations that impair any of the protected beneficial water uses or make aquatic life or wildlife unfit or unpalatable for consumption. |

h. Cause the waters of the State at any point east of the western end of Chipps Island and within 2000 feet of any diversion being used for a domestic water supply to exceed the following limits of quality:

| | |
|---|---|
| Carbon chloroform extract | 0.2 mg/l maximum |
| Chromium, hexavalent | 0.02 mg/l maximum |
| Phenols | 0.001 mg/l maximum. |

3. The discharge of Waste "B" shall not cause:

a. Waters of the State to exceed the following limits of quality at any place within one foot of the water surface:

| | |
|---|---|
| Coliform Organisms | 240 MPN/100 ml, median of five consecutive samples, maximum<br><br>10,000 MPN/100 ml, maximum any single sample, when verified by a repeat sample taken within 48 hours<br><br>Whenever either of these bacterial values is exceeded in the receiving water for any reason they shall both be met instead in the waste at some point where the entire sewage component is present |

Analyses to be determined by the multiple-tube fermentation method using at least two portions per decimal dilution.

4. Waste "A" as discharged via Outfall "A" shall meet these quality limits at all times:

   a. In any grab sample or instantaneous observation:

| | |
|---|---|
| pH | 6.5 minimum<br>8.5 maximum |
| Settleable Matter | |
| The arithmetic average of any six or more samples collected on any day | 0.5 ml/l/hr. maximum |
| 80% of all individual samples collected during maximum daily flow over any 30-day period | 0.4 ml/l/hr. maximum |
| Any sample | 1.0 ml/l/hr. maximum |
| Temperature in degrees Fahrenheit: | |
| Above the ambient receiving water temperature | $20^{o}$F maximum |

   b. In any representative composite sample:

| | |
|---|---|
| Toxicity: the concentration of the waste itself in the receiving waters at any point within one foot of their surface | 10% of the 96-hour $TL_m$ concentration of the waste as discharged, maximum |

   Toxicity of the waste stream in terms of minimum $TL_m$ or per cent survival will be prescribed in addition to the above as soon as practicable.

   c. The mean daily discharge of Waste "A" for any seven consecutive days shall not exceed 0.37 mgd.

5. Waste "B" as discharged via Outfall "B" shall meet these quality limits at all times:

a. In any grab sample or instantaneous observation:

| | |
|---|---|
| pH | 6.5 minimum<br>8.5 maximum |
| Settleable Matter, in excess of that in the plant water supply drawn from New York Slough | |
| The arithmetic average of any six or more samples collected on any day | 0.5 ml/l/hr. maximum |
| 80% of all individual samples collected during maximum daily flow over any 30-day period | 0.4 ml/l/hr. maximum |
| Any sample | 1.0 ml/l/hr. maximum |
| Temperature in degrees Fahrenheit: | |
| Above the ambient receiving water temperature | $20^{o}$F maximum |
| As measured | $86^{o}$F maximum |
| Grease | 15 mg/l maximum |

b. In any representative composite sample:

| | |
|---|---|
| Toxicity: the concentration of the waste itself in the receiving waters at any point within one foot of their surface | 10% of the 96-hour $TL_m$ concentration of the waste as discharged, maximum |

Toxicity of the waste stream in terms of minimum $TL_m$ or per cent survival will be prescribed in addition to the above as soon as practicable.

| | |
|---|---|
| Lead contributed by the discharger | 0.05 mg/l maximum |
| Mercury | 0.005 mg/l maximum |
| Nutrients | to be prescribed at the earliest practicable date |

c. The mean daily discharge of Waste "B" for any seven consecutive days shall not exceed 40 mgd.

6. Waste "H" as discharged via Outfall "H" shall meet these quality limits at all times:

a. In any grab sample or instantaneous observation:

| | |
|---|---|
| pH | 7.0 minimum<br>8.5 maximum |
| Settleable Matter | |
| The arithmetic average of any six or more samples collected on any day | 0.5 ml/l/hr. maximum |
| 80% of all individual samples collected during maximum daily flow over any 30-day period | 0.4 ml/l/hr. maximum |
| Any sample | 1.0 ml/l/hr. maximum |
| Temperature | |
| Above the ambient receiving water temperature | $20^{o}$F maximum |
| Grease | 15 mg/l maximum |

b. In any representative set of samples:

Toxicity: survival of test fishes in 96-hour bioassays of the waste as discharged

| | |
|---|---|
| Any determination | 70% minimum |
| Average of any three or more consecutive determinations made during any 21 or more days | 90% minimum |

c. In any representative, 24-hour composite sample:

| | |
|---|---|
| Grease | 15 mg/l maximum |
| Nutrients | to be prescribed at the earliest practicable date |

d. The mean daily discharge of Waste "H" for any seven consecutive days shall not exceed 0.6 mgd.

7. Waste "C" and all internal surface drainage of its disposal site shall be confined within Land Disposal Site "L-C" at all times, and

   a. Land Disposal Site "L-C" shall have facilities adequate to divert surface runoff from adjacent areas, to protect the boundaries of the site from erosion, to prevent conditions that would cause drainage or seepage from the site, and to protect the site from flooding by tidal or storm water. Adequate protection is defined as protection from at least a 100-year storm and from the highest tidal stage that may occur.

   b. No component of Waste "C" shall be on or below the ground surface outside of Land Disposal Site "L-C".

   c. The disposal of Waste "C" and the operation of Land Disposal Site "L-C" shall be in conformance with all provisions of this Board's Resolution No. 69-42 pertaining to Class I disposal sites.

8. Wastes "D", "E", "F", and "G" shall be confined to their respective Land Disposal Sites "L-D", "L-E", "L-F", and "L-G" at all times, shall not be placed in any position where they can be carried from the disposal sites into waters of the State, and

   a. These Disposal Sites shall have facilities adequate to divert surface runoff from adjacent areas, to protect the boundaries of the site from erosion, to prevent conditions that would cause drainage or seepage from the site, and to protect the site from flooding by tidal or storm water. Adequate protection is defined as protection from at least a 100-year storm and from the highest tidal stage that may occur.

   b. Disposal Site "L-E" shall be dewatered before the wastes are placed in it.

   c. Internal drainage of these Disposal Sites shall be confined within them, or discharged as part of other wastes for which requirements are prescribed in this Order.

   d. Discharging any material acceptable only at Class I disposal sites into these Disposal Sites is prohibited.

   e. The disposal of these Wastes and the operation of their Land Disposal Sites shall be in conformance with all provisions of this Board's Resolution No. 69-42 pertaining to Class II disposal sites.

9. Waste "I" shall not contain any substance originating from the materials warehoused, loaded, or unloaded in the area from which Waste "I" originates.

10. Waste "K" shall not contain any substance originating from the materials stored, loaded, or unloaded in the area from which Waste "K" originates.

11. Wastes defined as Waste "L" shall be confined to their respective subsurface disposal sites at all times.

12. Waste "M" shall be confined within retention basins until removed for recovery or suitable treatment and disposal.

13. This Regional Board prohibits the discharge of any spill or its treated residue, except as part of another waste for which requirements are prescribed in this Order, or have been prescribed in another action by a regional board.

B. Discharge Prohibition

If after June 1, 1976, Wastes "A", "B", "H", "I", or "K" contain toxic or biostimulatory substances, that waste(s) shall be prohibited.

C. Provisions

1. Pursuant to Section 13263(c) of the California Water Code, this Regional Board adopts the following time schedule for compliance with the above requirements:

a. Thermal requirements

| COMPLIANCE STEP | COMPLETION DATE | STATUS REPORT DUE |
|---|---|---|
| Study into effect of thermal properties of discharge, pursuant to specifications that are to be separately developed | | December 31, 1972 |
| Comply with thermal requirements | January 31, 1976 | February 15, 1976 |

b. All other requirements

| COMPLIANCE STEP | COMPLETION DATE | STATUS REPORT DUE |
|---|---|---|
| Complete preliminary plans and specifications | July 5, 1971 | July 20, 1971 |
| Obtain authorization and funding | July 26, 1971 | |
| Award contract for flow control facilities | August 1[illegible], 1971 | September 1, 1971 |
| Complete flow control facilities | September 29, 1971 | |
| Complete pH control facilities | January 29, 1972 | February 14, 1972 |
| Comply with requirements other than thermal | February 26, 1972 | March 13, 1972 |

2. If the discharger decides to perform a study of the environmental impact of discharging un-neutralized Waste "A", the study shall be performed pursuant to specifications approved by the Executive Officer. Complete specifications for the study shall be filed at the Regional Board's office at least 120 days prior to the date for starting the study.

3. This Order includes items numbered 1, 6 and 7 of the attached "Reporting Requirements" dated August 28, 1970. Item number 6 thereof specifically includes, but is not limited to any proposed change in use of the areas from which Wastes "I", "J", and "K" originates. The discharger is also required to file a report concerning the several septic tanks at the Regional Board office by June 30, 1971. It shall include data on the volume of each septic tank, its design and connected population, and a map showing the location of its subsurface leaching field.

4. This Order includes items numbered 1, 2, 3, 4, 5 and 6 of the attached "Notifications" dated January 6, 1970.

5. This Regional Board's Resolutions Nos. 299 and 68-7 are rescinded.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 24, 1971.

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Executive Officer