# Appendix A – Theresa Street NPDES Permit

# STATE OF NEBRASKA

ROBERT KERREY • GOVERNOR • DENNIS GRAMS • DIRECTOR

Bruce Pam
Steve Sy
Lyle
Scott

April 9, 1986

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DIRECTOR
PUBLIC WORKS/
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WQD-P/C

RETURN RECEIPT REQUESTED

Mr. Richard Erixson
Director of Public Works
Lincoln Theresa Street WWTP
555 South Tenth Street
Lincoln, NE 68508

NPDES Number NE 0036820
Location: Lincoln, Nebraska
Receiving Waters: Salt Creek

Dear Mr. Erixson:

Pursuant to the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et. seq.), the Nebraska Environmental Protection Act (Secs. 81-1504(11), (Reissue, 1981) and the State of Nebraska Department of Environmental Control, Rules and Regulations Pertaining to the Issuance of Permits Under the National Pollutant Discharge Elimination System, we have reissued and are enclosing your National Pollutant Discharge Elimination System (NPDES) Authorization to Discharge.

Your NPDES Authorization to Discharge includes general and special conditions which must be followed to remain in compliance with the requirements of the above-mentioned statutes and Rules and Regulations. Monitoring reports prescribed in the special conditions are required on a periodic basis. Questions and requests for additional monitoring reports should be directed to Department of Environmental Control, Permits and Compliance Section, (402) 471-2186.

Issuance of an NPDES Authorization to Discharge by the Department of Environmental Control does not relieve you of other duties and responsibilities under the Nebraska Environmental Protection Act or as amended, or any Rules and Regulations promulgated pursuant thereto.

Your continued cooperation in helping to improve and maintain the quality of Nebraska's waters is much appreciated.

Sincerely,

Dennis Grams

Dennis Grams, P.E.

JR/at

Enclosure

Permit Number NE 0036820

DEPARTMENT OF ENVIRONMENTAL CONTROL
AUTHORIZATION TO DISCHARGE UNDER THE STATE OF NEBRASKA
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et. seq.), the Nebraska Environmental Protection Act [Neb. Rev. Stat. Secs. 81-1504(15)(25), 81-1505(3)(4)(5)(6) and (7), 81-1510(2), (Reissue 1981)], and the Rules and Regulations promulgated pursuant thereto,

Lincoln Theresa Street WWTP
Lincoln, Nebraska

is authorized to discharge from a facility located at

NE¼NW¼, Section 13, Township 10N, Range 6E, Lancaster County

to receiving waters named

Salt Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on April 9, 1986.

This permit and the authorization to discharge shall expire at midnight, April 8, 1989.

Signed this 9th day of April, 1986.

Director

PART I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning April 9, 1986 and lasting through April 8, 1989 the permittee is authorized to discharge from all outfalls.

The discharge limitations are based on a flow of 30 million gallons per day (mgd).

Such discharges shall be limited and monitored by the permittee as specified below:

| | DISCHARGE LIMITATIONS | | | | MONITORING REQUIREMENTS | |
|---|---|---|---|---|---|---|
| | Concentration in Mg/l | | Kg/Day (Lbs/Day) | | Measurement | Sample |
| EFFLUENT CHARACTERISTIC | 30 Day Average | 7 Day Maximum | 30 Day Average | 7 Day Maximum | Frequency | Type |
| Biochemical Oxygen Demand (5-day) | 30 | 45 | 3404.7(7506.0) | 5107.0(11259.9) | Daily | 24-Hr Composite |
| Suspended Solids | 30 | 45 | 3404.7(7506.0) | 5107.0(11259.9) | Daily | 24-Hr Composite |
| Flow - MGD | -- | -- | -- | -- | Continuous | Metered |
| Cadmium, Total | 0.004 | 0.004 | 0.45(1.0) | 0.45(1.0) | Daily | 24-Hr Composite |
| Oil and Grease | 10 | 20 | 1134.9(2502.0) | 2269.8(5004.0) | Weekly | Grab |
| Cyanide, Total | -- | -- | -- | -- | Daily | Grab |
| *Fecal Coliform Colonies/100 ml | 200 | 400 | -- | -- | Daily | Grab |

*Required April 1 through September 30 of each year.

The pH shall be maintained between the range of 6.0 - 9.0 Standard Units. The value(s) shall be determined from a grab sample taken daily.

Sample taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): where the flow exits the treatment facility.

PART I.

B. INFLUENT AND SLUDGE MONITORING REQUIREMENTS

During the period beginning April 9, 1986 and lasting through April 8, 1989, the permittee shall monitor the plant influent and the plant waste sludge as specified below:

| MONITORING CHARACTERISTIC | SAMPLING FREQUENCY | INFLUENT SAMPLE TYPE | SLUDGE SAMPLE TYPE |
|---|---|---|---|
| Cyanide, Total | Daily | Grab | Grab |
| Oil and Grease | Quarterly | Grab | -- |
| Cadmium, Total | Quarterly | 24-Hr. Composite | Grab |
| Chromium, Total | Quarterly | 24-Hr. Composite | Grab |
| Copper | Quarterly | 24-Hr. Composite | Grab |
| Lead | Quarterly | 24-Hr. Composite | Grab |
| Nickel | Quarterly | 24-Hr. Composite | Grab |
| Nitrogen, Total | Quarterly | 24-Hr. Composite | Grab |
| Zinc | Quarterly | 24-Hr. Composite | Grab |
| Biochemical Oxygen Demand (5-Day) | Annually | 24-Hr. Composite | -- |
| Suspended Solids | Annually | 24-Hr. Composite | -- |
| pH - Standard Units | Annually | Grab | Grab |

The sample shall be collected for analysis prior to discharge or disposal.

A. OTHER REQUIREMENTS

1. By December 31, 1986, submit a laboratory analysis on all of the significant contributing industrial discharges as identified in the Memorandum of Agreement (MOA) to the POTW. The analysis shall be designed to detect those pollutants as identified for that particular industrial category either through the survey or existing literature. The analysis shall include metals and exclude total toxic organics.

2. By December 31, 1987, submit a laboratory analysis on all of the significant contributing industrial discharges to the POTW. The analysis shall be designed to detect those pollutants as identified for that particular industrial category either through the survey, through existing literature or the previous year's analysis results. The analysis shall include both metal and total toxic organics.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts.

4. Sludge shall be disposed of or utilized in a manner approved by the Department of Environmental Control.

5. The 30 day average percent removal shall not be less than 85% as defined in Title 121, Chapter 3, Subsection 001.06.

# STANDARD CONDITIONS FOR NEBRASKA DEPARTMENT OF ENVIRONMENTAL CONTROL WATER AND WASTE MANAGEMENT PERMITS

## SECTION A. MONITORING AND RECORDS

### 1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water or substance. Monitoring points shall not be changed without notification to and the approval of the Director.

### 2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to insure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ± 10% from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration and operation of acceptable flow measurement devices can be obtained from the the following references:

1) "Water Measurement Manual", U. S. Dept. of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U. S. Government Printing Office, Washington, D.C. 20402. Order by Catalog No. I27.19/2:W29/2, Stock No. S/N 24003-0027.)

2) "Flow Measurement in Open Channels and Closed Conduits", U. S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Service (NTIS), Springfield, VA, 22151. Order by NTIS No. PB-273 535/5ST.

3) "NPDES Compliance Sampling Manual", U. S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-51, 1977, 140 pp. (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, Denver, CO, 80225.

### 3. Reporting of Monitoring Results

Reporting Period: Calendar Quarter

Monitoring results obtained during the Reporting Period shall be summarized and reported on a Nebraska Department of Environmental Control Discharge Monitoring Report Form postmarked no later than the 28th day of the month following the completed reporting period.

Reports due: January 28; April 28; July 28; October 28

Signed copies of these Reports shall be submitted to the Nebraska Department of Environmental Control at the following address:

Nebraska Department of Environmental Control
P. O. Box 94877, Statehouse Station
301 Centennial Mall South
Lincoln, NE 68509

### 4. Test Procedures

Test procedures for the analysis of pollutants shall conform to Nebraska Department of Environmental Control Rules and Regulations for Test Procedures for the Analysis of Pollutants Under the National Pollutant Discharge Elimination System. If those Rules and Regulations do not specify test procedures for any pollutant required to be monitored by this permit and until such Rules and Regulations are promulgated, sampling and analytical methods used to meet the monitoring requirements specified in this permit shall, unless otherwise specified by the Director conform to the latest edition of the following references:

Standard Methods for the Examination of Water and Wastewaters, 15th Edition, 1980, American Public Health Association, New York, NY, 10019.

A.S.T.M. Standards, Part 31, Water, 1975, American Society for Testing and Materials, Philadelphia, Pennsylvania, 19103.

Methods for Chemical Analysis of Water and Wastes, March, 1979, Environmental Protection Agency Water Quality Office, Analytical Quality Control Laboratory, NERC, Cincinnati, OH, 45268.

### 5. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using approved test procedures or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated.

### 6. Averaging of Measurements

Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

### Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

### 8. Record Contents

Records of monitoring information shall include:

a) The date, exact place, time and methods of sampling or measurements;
b) Who performed the sampling or measurements;
c) The date(s) analyses were performed;
d) Who performed the analyses;
e) The analytical techniques or methods used; and
f) The results of such analyses.

## SECTION B. OPERATION AND MAINTENANCE

### 1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

### 2. Duty to Halt or Reduce Activity

Upon reduction, loss or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

### 3. Bypassing

Any diversion from or bypass of the treatment facilities is prohibited unless:

(a) It is unavoidable to prevent loss of live, personal injury or severe property damage.

(b) No feasible alternative exists, i.e. retention of untreated wastes.

(c) The permittee submits notice to the Director within 24 hours of becoming aware of the bypass, or if the bypass is anticipated the Director is notified ten (10) days prior to the bypass.

(d) The bypass is conducted under conditions determined to be necessary by the Director to minimize any adverse effects.

If the bypass is needed for regular preventative maintenance for which backup equipment should be provided, the bypass will not be allowed. When a bypass occurs, the burden is on the permittee to demonstrate compliance with items (a) through (d) above.

### 4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of at a site and in a manner approved by the Nebraska Department of Environmental Control.

## SECTION C. REPORTING REQUIREMENTS

### 1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increase, or process modifications which will result in new, different, or increased discharges or pollutants must be reported by the permittee in 180 days prior to the expansion, increases, or modifications, by submission of a new permit application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

### 2. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum or weekly average effluent limitation specified in this permit, the permittee shall report to the Department of Environmental Control on a Noncompliance Report Form, within seven (7) days of becoming aware of such conditions, and in the case of any discharge subject to any applicable toxic pollutant effluent standards under Section 307(a) of the Federal Act or other discharges which constitute a threat to human health, welfare, or the environment, shall report to the Department of Environmental Control on a Noncompliance Report Form within 24 hours from the time the permittee becomes aware of the circumstances.

The permittee shall provide:

(a) A description of the discharge and cause of noncompliance; and

(b) The period of noncompliance, including exact dates and times; or if not corrected, the anticipated time the noncompliance is expected to continue, and steps taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

3. Twenty-Four Hour Reporting

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

The following shall be included as information which must be reported within 24 hours:

a) Any unanticipated bypass which exceeds any effluent limitation in the permit.

b) Any upset which exceeds any effluent limitation in the permit.

c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit.

4. Other Noncompliance

The permittee shall report all instances of noncompliance to the Department within seven (7) days on a Nebraska Department of Environmental Control Noncompliance Report Form.

5. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) One hundred micrograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application;

(4) The level established in Part I of the permit by the Director.

b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

SECTION D. MANAGEMENT REQUIREMENTS

1. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

2. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance.

3. Signatory Requirements

All applications, reports or information submitted to the Director shall be signed and certified.

a) All permit applications shall be signed as follows:

(1) For a corporation: by a principal executive officer of at least the level of vice-president;

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal or other public agency: by either a principal executive officer or ranking elected official.

b) All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above.

(2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) Certification. Any person signing a document under this section shall make the following certification:

"I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete and accurate."

SECTION E. GENERAL CONDITIONS

1. Information Available

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by the Federal Act, permit applications, permits and effluent data shall not be considered confidential.

2. Duty to Comply

The permittee must comply will all conditions of this permit. Failure to comply with the requirements these regulations may be grounds for administrative action, or enforcement proceedings including injective relief by the county attorney or Attorney General.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

4. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

a) Violation of any terms or conditions of this permit;

b) Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

5. Toxic Pollutants

If a toxic effluent standard or prohibition is established and adopted by the Council under Sections 301(b) (2) (C), 301(b) (2) (D), 304(b) (2) and 307 (a) (2) of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitations upon such pollutant in the permit, the Director shall revise or modify the permit in accordance with the toxic effluent standard or prohibition and so notify the permittee.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Federal Act.

7. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

8. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

9. Other Rules and Regulations Liability

The issuance of this permit in no way relieves the obligation of the permittee to comply with any and all other Department Rules and Regulations.

10. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit;

d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

e) Inspect any production, manufacturing, fabricating or storage area where pollutants, regulated under the permit, could originate.

DEFINITIONS

Anticipated Bypass--when the permittee knows in advance of the need for a bypass.

Daily Average--Discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

Daily Maximum--Discharge means the total discharge by weight during any calendar day.

Maximum Concentration--The maximum concentration is the concentration in any single grab sample.

Grab Sample--An individual sample collected in less than 15 minutes.

Composite Sample--A combination of individual samples obtained at regular intervals over a time period. Either the volume of each individual sample is proportional to flow rate during sample period (flow composite) or constant volume samples are collected at equal time intervals during composite period (time composite).

Cooling Water--Uncontaminated: Water used for cooling purposes only which has no direct contact with any raw material, intermediate, or final product and which does not contain a level of contaminants detectably higher than that of the intake water. Contaminated: Water used for cooling purposes only which may become contaminated either through the use of water treatment chemicals used for corrosion inhibitors or biocides, or by direct contact with process materials and/or wastewater.

Monthly Average--Other than for fecal coliform bacteria, is the arithmetic mean of the values for effluent samples collected in a period of 30 consecutive days. The monthly average for fecal coliform bacteria is the geometric mean of the value of the effluent samples collected in a period of 30 consecutive days.

Weekly Average--Other than for fecal coliform bacteria, is the arithmetic mean of the values for effluent samples collected in a period of seven consecutive days. The weekly average for fecal coliform bacteria is the geometric mean of the values for effluent samples collected in a period of seven consecutive days.

Bi-Weekly--Once every other week.

Bi-Monthly--Once every other month.

Compatible Pollutants--Are biochemical oxygen demand, suspended solids, pH and fecal coliform bacteria, plus additional pollutants identified in the NPDES permit if the publicly owned treatment works was designed to treat such pollutants, and in fact does remove such pollutants to a substantial degree, e.g., nitrogen and phosphorus.

Incompatible Pollutant--Is any pollutant which is not a compatible pollutant as defined above.

Major Contributing Industry--Is a wastewater source that:

(a) has a flow of 50,000 gallons or more per average workday;

(b) has a flow greater than five percent of the flow carried by the municipal system receiving the waste;

(c) has in its waste a toxic pollutant in toxic amounts; or

(d) has significant impact, either singly or in combination with other contributing industries on the treatment works or the quality of its effluent.

Severe Property Damage--Means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable. Severe property damage does not mean economic loss caused by delays in production.

Toxic Pollutant--Means those pollutants, or combinations of pollutants, including disease-causing agents, which, after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Director, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunction (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

Upset--Means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee, excluding such factors as operational error, improperly designed or inadequate treatment facilities, or improper operation and maintenance or lack thereof.

Bypass--Means the intentional diversion of wastes from any portion of a treatment facility.

Waters of the State--Means all waters within the jurisdiction of this state including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.