

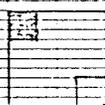
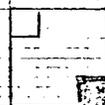
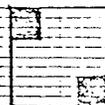
DROUGHT INDEXAS ADOPTED BYWATER SHORTAGE SUBCOMMITTEE

The method proposed is based on the parameters of average six month antecedent precipitation (which includes one point integrated over a relatively long time) and average monthly streamflow of the major streams in each county (which approximates basin-wide ground water level conditions). The method considers that when average six month antecedent precipitation is below 18 inches (approximately the one-in-four frequency of occurrence) concern for possible water supply shortage arises. When both these lower quartile frequency conditions coincide for two consecutive months, a drought warning condition would be considered to exist and four consecutive months of these conditions would constitute a drought emergency.

This rule has the advantage of always allowing a drought warning to precede a drought condition by at least two months. Therefore, declaration of a drought emergency is not made without prior notice. This method also has the advantage of avoiding situations where drought warning or emergency conditions are easily triggered and public credibility would suffer as a result of declaring "wolf" without real basis.

Similarly, the rules for exiting from a drought emergency -- once such a condition is declared -- require return to "normal" conditions (exceedence of lower quartile six month average of precipitation and average monthly streamflow) for at least one month. This would prevent the potentially confusing situation of bouncing between drought warning and drought conditions with potential erosion of public credibility.

## DEFINITION OF SYMBOLS

	<p><u>ADEQUATE SUPPLY MONTH</u></p> <p>— ONE MONTH STREAMFLOW AT OR ABOVE 25<sup>TH</sup> PERCENTILE          — PREVIOUS 6 MONTH PRECIPITATION TOTAL AT OR ABOVE 18 INCHES.</p>
	<p><u>SEMI-DEFICIENT MONTH</u></p> <p>— ONE MONTH STREAMFLOW BELOW 25<sup>TH</sup> PERCENTILE          — PREVIOUS 6 MONTH PRECIPITATION TOTAL AT OR ABOVE 18 INCHES.</p>
	<p><u>SEMI-DEFICIENT MONTH</u></p> <p>— ONE MONTH STREAMFLOW AT OR ABOVE 25<sup>TH</sup> PERCENTILE          — PREVIOUS 6 MONTH PRECIPITATION TOTAL BELOW 18 INCHES.</p>
	<p><u>DEFICIENT SUPPLY MONTH</u></p> <p>— ONE MONTH STREAMFLOW BELOW 25<sup>TH</sup> PERCENTILE          — PREVIOUS 6 MONTH PRECIPITATION TOTAL BELOW 18 INCHES.</p>
<p>W</p>	<p>— DROUGHT WARNING</p>
<p>D</p>	<p>— DROUGHT</p>

RULES FOR GETTING INTO A DROUGHT WARNING OR DROUGHT

TWO CONSECUTIVE DEFICIENT MONTHS INDUCE A DROUGHT WARNING.

FOUR CONSECUTIVE DEFICIENT MONTHS INDUCE A DROUGHT.

RULES FOR ENDING A DROUGHT WARNING OR DROUGHT

DROUGHT STATUS SHALL BE MAINTAINED FOR ONE SEMI-DEFICIENT MONTH THEN DOWNGRADED TO A WARNING ON THE SECOND, UNLESS THAT MONTH IS DEFICIENT, WHEREUPON THE DROUGHT MAINTAINED.

DROUGHT WARNING STATUS SHALL BE MAINTAINED FOR ONE SEMI-DEFICIENT MONTH THEN ENDED ON THE SECOND, UNLESS THAT MONTH IS DEFICIENT, WHEREUPON DROUGHT WARNING STATUS IS MAINTAINED. (THIS APPLIES ONLY FOR WARNINGS NOT PRECEDED BY A DROUGHT.)

DROUGHT WARNING STATUS PRECEDED BY A DROUGHT SHALL BE UPGRADED TO A DROUGHT IF THE FOLLOWING MONTH IS DEFICIENT OR ENDED IF THE FOLLOWING MONTH IS SEMI-DEFICIENT.

A DROUGHT WARNING OR DROUGHT SHALL BE ENDED BY AN ADEQUATE SUPPLY MONTH.



PROPOSED WATER SHORTAGE MANAGEMENT ACTIONS BY THE STATE OF DELAWAREI. WATER SHORTAGE WARNING CONDITION

When conditions coincide with a previously agreed upon index of water shortage warning conditions, or upon receipt of information regarding the inadequacy of any water supply source or system, the resolution of which transcends local authority and/or ability to mitigate, the DNREC shall advise the Governor that a state of water shortage warning exists. The Governor, with powers granted under the Delaware Code, Title 20, Chapter 31, Subchapter II, Section 3132, may declare that a state of water shortage warning exists.

Upon declaration of a water shortage warning by the Governor:

- a) DNREC will issue advisories at a frequency of no less than one per month for the duration of the declared state of water shortage warning. Advisories shall include, but not be limited to, a description of the hydrologic conditions pertinent to the water shortage warning, the localities and/or systems affected, and an appeal from the Governor to all affected sectors to reduce water usage where possible through voluntary water conservation measures.
- b) Public water utilities in the areas affected are required to report to DNREC at a frequency of no less than once a month, the supply and demand status of their water supply systems.
- c) Water utilities should advise and encourage their customers through their next mailing or other timely notification and/or publication in local newspaper to use practical measures to curb water usage.
- d) Water utilities in the areas affected which use ground water would be encouraged to maximize the use of alternate surface water sources (if available) even if at a higher cost, for the purpose of managing available water resources.
- e) DNREC will notify all water users in areas affected, of possible calls for cessation of non-essential water uses and/or reductions in authorized water withdrawals in the event of a water shortage emergency.

- f) DNREC will encourage water utilities to begin implementation of their individual water shortage contingency plans.
- g) DNREC will conduct a continuing program of public information encouraging water conservation and suggesting means of accomplishing such.

## II. WATER SHORTAGE EMERGENCY CONDITION

When conditions coincide with a previously agreed upon index of water shortage conditions, or upon receipt of information regarding the inadequacy of any water supply source or system, the resolution of which transcends local authority and/or ability to mitigate, the DNREC shall advise the Governor that a state of water shortage emergency exists. The Governor, with powers granted under the Delaware Code, Title 20, Chapter 31, Subchapter II, Section 3132, may declare that a drought emergency exists.

Upon declaration of a water shortage emergency by the Governor:

- a) DNREC will issue advisories at a frequency of no less than one per month for the duration of the declared state of the water shortage emergency. Advisories shall include, but not be limited to, a description of the conditions precipitating the water shortage emergency, the localities and/or systems affected, and any related orders to all affected sectors.
- b) A Governor's Executive Order banning non-essential water use by State agencies shall be issued for the areas affected.
- c) Utilities in the areas affected will report to DNREC at a frequency of no less than twice per month, the supply and demand status of their water supply systems.
- d) Water utilities in the areas affected may implement emergency pricing scheduling aimed at reducing water use in accordance with prevailing regulatory authority.
- e) DNREC will require implementation by water utilities of their individual water shortage contingency plans as appropriate.

f) DNREC may announce:

- 1) a ban on all non-essential water uses which may include but not be limited to those identified on the attached statement, and/or,
- 2) recommendations for rationing water for individual use, and/or,
- 3) reduction in the taking of water, which when from a common source of supply, will be decreased in accordance with the following priority schedule (highest priority is first):
  - a. sustaining life
  - b. maintaining health
  - c. increasing wealth
  - d. aesthetics

g) DNREC will conduct a continuing program of public information encouraging water conservation and suggesting means of accomplishing such.

## RESTRICTION OF NON-ESSENTIAL WATER USES

The following uses of water are considered to be non-essential and are to be curtailed during a period of declared water shortage emergency.

- (A) The use of fresh water for irrigation and watering of outdoor gardens, landscaped areas, trees, shrubs, and outdoor plants with these exceptions:
  - 1) Water applied by hand-held containers or hand-held hoses with manually operated flow control nozzles for irrigation of domestic vegetable and fruit gardens;
  - 2) Water by commercial nurseries at the minimum level necessary to maintain stock;
  - 3) Water at the minimum rate necessary to implement re-vegetation following earth moving, where re-vegetation is necessary to prevent soil erosion;
  - 4) Water at the minimum necessary to allow new lawns and shrubs to survive or for application of fertilizers and herbicides to existing lawns.
- (B) The use of water for washing paved surfaces such as streets, roads, sidewalks, driveways, garages, parking areas, tennis courts and patios;
- (C) The use of water for watering any portion of golf courses except for tees and greens;
- (D) The use of water for ornamental purposes including fountains, artificial water falls and reflecting pools;
- (E) The use of water for non-commercial washing or cleaning of automobiles, trucks, or other motor vehicles and trailers, except domestic washing from hand-held buckets and hand-held hoses with manual flow control nozzles where use is restricted to the minimum necessary;
- (F) The use of water from a fire hydrant for any purposes (including the use of sprinkler caps) except for fire fighting or health purposes;
- (G) The use of water for flushing sewers or hydrants except as deemed necessary in the interest of public health and safety;
- (H) The serving of water in restaurants, clubs, or eating places unless specifically requested by a customer.

Additionally, citizens should take other measures to save water where possible, including observing the following practices: repairing leaky water fixtures; flushing toilets only when necessary; minimizing splashing from swimming pools and avoiding evaporation by covering pools when not in use; installing shower flow restrictors, toilet tank dams, and faucet aerators.

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*Bloren Mercer*

This study should be completed and an alternative, or some combination of alternatives should be selected by the end of 1985. The selected alternative(s) should be implemented by 1990.

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PLANNING

**Recommendation 8**

It is recommended that the Commission evaluate the recommendation of its ground water consultants that a field demonstration be made to gather further physical information about the effects of pumping from glacial alluvium to supplement flow augmentation capacity during drought periods.\* Possible development of such new sources of supply should be considered as a standby alternative, for use in emergency after the year 2000.

**Recommendation 9**

The parties are agreed that Tocks Island should be held in reserve status for development after the year 2000 if needed for water supply. The Commission should amend its Comprehensive Plan by adding an updated description of the Tocks Island project. A proposed revised Comprehensive Plan description is made part of this report as Appendix E, page 19.

SECTION IV  
CONSERVATION

Conservation during drought periods requires extraordinary measures not justified under normal hydrologic conditions. In order to protect public health, economic activity and the environment, conservation of depletive use is of special importance in the Delaware. It is the depletive uses of both surface and ground waters that impact quantitatively upon minimum flows and the Basin's capability to maintain them.

**Recommendation 10**

Storage conditions in the New York City Delaware Basin reservoirs should be the principal consideration of the Commission in declaring a basinwide drought emergency under the Compact, and the initiation of emergency conservation measures. The operation curves shown on page four should be the basis for such a declaration by the Commission based upon storage conditions. The Commission should include within its Comprehensive Plan a statement of general policy that a drought emergency will be declared for purposes of imposing mandatory in-Basin conservation measures whenever combined storage in the three reservoirs falls into the drought zone shown on the operation curves and remains in that zone for five consecutive days. The statement of policy should also provide that termination of a drought emergency will be considered by the Commission whenever combined sotrage in the three reservoirs reaches 40 billion gallons above the drought warning level and remains above that level for 30 consecutive days, and that the drought emergency will be terminated by the Commission whenever the combined storage remains above that level for 60 consecutive days unless the Commission unanimously agrees to extend the emergency.

\*Special Ground Water Study of the Upper Delaware Basin." A draft report prepared for the Delaware River Basin Commission by R. E. Wright Associates, Inc., March 1982.

This recommendation is not intended to extend, impair, or conflict with the Commission's authority under the Compact to declare or terminate a drought or water shortage emergency in the Basin, or sub-region thereof, in other instances as conditions may require.

#### Recommendation 11

The Commission should include within its Comprehensive Plan a statement of general policy that conservation measures in the Basin designed for implementation during drought periods shall be based upon the objective of reducing overall depletive use of fresh water by 15 percent.

#### Recommendation 12

Each State should prepare drought contingency plans for phased implementation during periods of drought warning and drought. Such plans should be coordinated with action by the Commission in announcing a drought warning and in declaring a drought emergency under the Compact, and should be designed to achieve a target 15 percent reduction in depletive use at drought stage. Contingency plans should be completed no later than December 31, 1983, and should include:

- Identification of those restrictions on non-essential water uses, such as car washing, lawn watering, et cetera, that can be effectively and practically applied; and outline procedures for coordinated initiation and termination of public controls over such uses as drought conditions develop and subside.
- Contingency plans by large water users that provide for phased reduction of use as drought conditions worsen.
- Proposed or existing legal authority to establish emergency conservation programs with enforcement powers, including fines and penalties.
- Effective and timely public information services concerning the drought and the necessity for conservation by all classes of water users.

If adequate legal authority does not exist to implement contingency plans, including the foregoing features, the parties should seek such authority prior to December 31, 1985.

## SECTION V

### DEPLETIVE WATER USE BUDGET

Realization of the year-2000 salinity objective recommended in section I of this report will require that depletive use in the Basin not be allowed to increase in the absence of offsetting storage capacity sufficient to maintain minimum streamflow objectives. In the absence of additional storage facilities, new depletive use coupled with increases in existing depletive use will steadily reduce the ability of existing storage facilities to maintain streamflows needed to realize salinity control objectives. The Basin cannot continue to authorize new depletive use and at the same time defer actions to create new storage capacity.

## Recommendation 13

The Commission should develop a regulatory program to limit future depletive water use in such a way as to balance existing, new, or expanded depletive use with the availability of storage capacity required to meet salinity objectives. The principal features of such a program should be:

- The control area in which the regulatory program would operate would be that area of the basin downstream of the Montague gage and upstream of the Chesapeake and Delaware Canal.
- Water available for allocation to new or expanded depletive uses within the control area would be limited to that which is in excess of the flows needed to maintain the applicable salinity control objective during drought periods.
- Applications for new or expanded depletive water uses within the control area that would be in excess of the amount available for allocation would not be approved by the permitting agencies of the States or by the Commission unless new storage capacity is brought on line or existing uses are proportionately reduced by conservation or abandonment, or unless such new or expanded uses are offset by water imported from outside the Basin.
- Water available for allocation to new or expanded depletive uses would be allocated either among the States in proportion to the percentage of the control area within each State, or to the common pool for use without regard to political boundaries.
- If the Commission's regulatory program follows the State-by-State option, water available for allocation to a State would be increased (1) to reflect new storage capacity constructed and financed by that State, its agencies or subdivisions, or (2) to reflect that portion of new storage capacity constructed or financed by the Commission in accordance with agreements among the parties for each project.
- If the Commission's regulatory program follows the "common pool" option, allocations to the pool would be increased as new storage units are constructed and water becomes available for new or expanded uses in accordance with existing State and Commission permitting programs.

A depletive water use budget should be adopted and implemented by the Commission no later than 1985.

## SECTION VI

### CONSERVATION RELEASES NEW YORK CITY RESERVOIRS

Table 3 shows the program of augmented conservation releases from the New York City Delaware Basin reservoirs that has been in effect since 1977 on an experimental basis. The purpose of the releases is to protect and enhance the recreational use of waters affected by such releases.

TABLE 3

<u>Reservoir and Operative Dates</u>	<u>Basic Conservation Release</u>	<u>Augmented Conservation Release</u>
Neversink		
4 / 1 - 4 / 7	5 cfs	45 cfs
4 / 8 - 10 / 31	15	45
11 / 1 - 3 / 31	5	25
Pepacton		
4 / 1 - 4 / 7	6	70
4 / 8 - 10 / 31	19	70
11 / 1 - 3 / 31	6	50
Cannonsville		
4 / 1 - 4 / 15	8	45
4 / 16 - 6 / 14	23	45
6 / 15 - 8 / 15	23	325
8 / 16 - 10 / 31	23	45
11 / 1 - 11 / 30	23	33
12 / 1 - 3 / 31	8	33

#### Recommendation 14

The Commission should amend docket D-77-20, as necessary to authorize on a permanent basis the augmented conservation release schedules at the three reservoirs, as shown in Table 3. The revised docket, a draft of which is attached as Appendix F, page 21, should reflect the following conditions:

- An additional quantity of water up to 6000 cfs-days should be provided for the relief of thermal stress on aquatic life in the river downstream of the reservoirs and on the mainstem of the Delaware River, designed to prevent to the extent practicable, any water temperature higher than 75°F or daily average water temperature higher than 72°F in the designated downstream areas as determined from measurements at Callicoon, Harvard, Woodbourne, and Hale Eddy gaging sites during the period May 1 to October 31, inclusive. Releases for this purpose should be at the direction of the New York State Department of Environmental Conservation. In order to conserve available water in storage, no thermal stress releases should be made when the reservoirs are in drought warning or drought condition.
- Whenever combined water storage conditions in the three reservoirs decline to drought warning or drought levels, as shown on the operation curves (page four), the augmented conservation releases should be reduced to the basic rate in effect prior to 1977 for each reservoir, except that larger volumes of water would be released during those periods when the River Master is directing releases to meet the Montague flow objectives. This reduction would be for the purpose of conserving available water in the reservoirs.
- Conservation releases should be returned to normal augmented levels when combined storage in the three reservoirs reaches 25 billion gallons above the drought warning level, as shown on the operation curves (page four), and remains at or above that level for 15 consecutive days.

- Increases in the augmented conservation release levels should be made only in accordance with the allowances provided for in the Stipulation of Discontinuance in The City of New York vs The State of New York Department of Environmental Conservation, Index No. 5840-80, and should be subject to approval by the Commission.

## SECTION VII

### ENFORCEMENT

This agreement is considered by the parties to be a whole. Each recommendation of this agreement is considered material to the entire agreement, and failure to implement or adhere to any recommendation may be considered a material breach.

## I. INTRODUCTION

In 1981, in response to drought conditions experienced during the past year, and in anticipation of the possibility of the recurrence of drought in the future, the State of Delaware initiated development of legislation and formal policy for drought management. A Drought Advisory Committee, charged with the duty of reviewing imminent and existing water shortage problems and making "recommendations to the Governor for such extraordinary actions as may be appropriate during a period of declared water emergency" (Executive Order #95, 1/30/81), was established by Executive Order. The Committee drafted new legislation articulating the Governor's authority in the event of a water shortage; this legislation was amended to the Delaware Code in July of 1982.

Executive Order #97 (2/20/81) established a Comprehensive Water Resources Management Committee; this committee in turn established a Water Conservation Subcommittee, responsible for developing recommendations for state water conservation policy. The Subcommittee's report was released in July of 1983.

Consequent to these actions, there is in place a legislative and policy framework for the phased management of drought. During the past two years (1985 - 1986), hydrologic conditions have been deficient such that the implementation of drought management procedures became necessary. As a result, a need for comprehensive documentation of operational procedures incident to drought management has arisen. This document, the "Drought Response Notebook," is intended to address that need.

### **DROUGHT RESPONSE: AN OVERVIEW**

This section provides an overview of the process by which drought management is effectuated. More detailed information regarding specific details of the process appears within the appendices. Official policy for drought response is detailed in the report of the Water Conservation Subcommittee of the Comprehensive Water Resources Management Committee (Appendix A).

As a matter of course, DNREC Water Supply Branch staff monitors hydrologic conditions within the State. This entails a monthly update of the Drought Index (Appendix B) for each of the three counties, as well as consideration of conditions within the Delaware River Basin (Appendix N). In the event that hydrologic conditions are deficient in comparison to "normal" conditions (as determined by the Drought Index), DNREC will initiate responsive action. If, for example, two or more consecutive semi-deficient months were to occur, there would be reason for concern such that notification of upper level staff of the potential for drought would be appropriate. Should the situation continue to worsen - e.g., if one or more fully deficient months were to occur - DNREC may recommend to the Governor that the Drought Advisory Committee be convened and/or that a Drought

Warning be issued (see Appendix O for examples of memos to the Governor; Appendix C for information regarding the Drought Advisory Committee; Appendix D on Delaware Code pertaining to the Governor's powers). DNREC staff drafts the Executive Order declaring the Warning (Appendix E).

Declaration of a Drought Warning prompts a number of actions:

- The Executive Order declaring the Warning normally includes a list of voluntary water conservation measures (Appendix F). Should conditions continue to worsen, these measures (and possibly others) may be made mandatory. In anticipation of this possibility, and in accordance with DE Code, a public hearing is held on the proposed mandatory restrictions. (Appendix G).

- The Governor's Drought Advisory Committee continues to meet at least once a month. Both DNREC and the Delaware Geological Survey report to the Committee on current hydrologic conditions.

- DNREC issues hydrologic reports (Appendix H) at least once a month for the duration of the declared Warning.

- Major public water suppliers in the affected area are required to report their monthly usage to DNREC (Appendix I). In addition, personal contact with suppliers may be stepped up in order to keep abreast of any water supply problems.

- Public awareness of the situation, with emphasis on promotion of water conservation, is effected through increased contact with the media, in the form of weekly press releases, radio and TV interviews, etc. (Appendix J).

Should the situation continue to worsen hydrologically (e.g., the Drought Index continues to indicate deficient water supply, or the possibility that suppliers will be unable to meet demands become of real concern, or there is pressure from the DRBC to impose mandatory restrictions) the Drought Advisory Committee may deem it necessary to impose the mandatory restrictions given public hearing. This requires issuance of an Executive Order, again drafted for the Governor by DNREC staff (Appendix E). In this event, it is necessary to contact law enforcement officials in the affected area and inform them of the restrictions and recommended penalties (see Appendix K for mailings and contacts). Water suppliers in the affected area are also notified of the restrictions. Publicity continues to be a high priority. Inevitably, there will be requests from various sectors of the community for variances (Appendix L), which are dealt with by DNREC staff. There are also usually numerous callers with questions about restrictions. The imposition of mandatory restrictions generally constitutes the second phase of drought management, though it is possible that declaration of a Drought Emergency may constitute the second phase.

Historically, the imposition of mandatory water use restrictions has been the most extreme drought response taken by the State. In all droughts experienced since 1981, hydrologic conditions eventually improved and mandatory restrictions were lifted, followed by the eventual rescission of the Drought Warning (see Appendix E for examples of Executive Orders). Delaware Code empowers the Governor to declare a Drought Emergency in the event that conditions continue to worsen; this would only be expected to occur in the face of a severe shortage of water, resulting from prolonged drought or from some disaster. Declaration of an emergency entails continued issuance of advisories by DNREC and meetings of the Drought Advisory Committee, stepped up reporting of usage by utilities, possible implementation of emergency pricing of water, implementation of the utilities' water shortage contingency plans (Appendix I) and a continued program of public information. In addition, stricter conservation measures, possibly including rationing, may be deemed necessary; the law requires that prior to imposition of such measures, a public hearing (see DE Code, Appendix D) must be held on proposed measures. A hearing officer appointed by the Governor presides and makes a written report of the hearing.

**APPENDIX B. THE DROUGHT INDEX**

Delaware's drought index was developed by the Water Shortage Subcommittee of the Comprehensive Water Resources Management Committee, and is described in the report of that committee (Appendix A). A somewhat more detailed explanation is included here.

The index is designed to establish a "trigger" for implementation of drought management procedures. At the end of every month, the index is evaluated separately for each of Delaware's three counties. The six-month antecedent precipitation and the current average monthly streamflow for each county are compared against historical twenty-fifth percentile values (i.e., those values which are exceeded seventy-five percent of the time in a particular month). In the case of precipitation, if the six-month antecedent value (i.e., the sum of the current month and the five preceding months precipitation) does not exceed eighteen inches within a given county, then the county is considered deficient in precipitation for that county. In the case of streamflow, if the mean monthly streamflow for a given county is less than the historical twenty-fifth percentile value for that month, then the month is considered deficient in streamflow for that county. Above these values, supply is considered to be adequate. A month in which one value is deficient is termed "semi-deficient", and a month in which both values are deficient is termed "deficient". Precipitation and streamflow are measured, respectively, in New Castle County at the Greater Wilmington Airport and on the Brandywine Creek at Wilmington, in Kent County at the Department of Transportation in Dover and on the St. Jones River at Dover, and in Sussex County at the University of Delaware Research and Education Center in Georgetown and on the Nanticoke River near Bridgeville.

The index values are logged on the drought index form, an example of which follows this text, along with a definition of the symbols used. The index is used to determine drought warning and drought conditions within the individual counties. (Hydrologic warning and drought conditions should be distinguished from officially declared drought warning and drought emergency; being in either condition hydrologically does not necessitate declaring the condition, but is used as an indication of whether official declaration should be made. The rules for getting into and out of drought warning and drought, as listed in the report of the Water Shortage Subcommittee, are as follows:

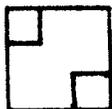
- Two consecutive deficient months induce a drought warning.
- Four consecutive deficient months induce a drought.

- Drought status is maintained for one semi-deficient month, then downgraded to a warning on the second, unless that month is deficient, in which case the drought is maintained.
- Drought warning status is maintained maintained for one semi-deficient month and ended on the second, unless that month is deficient, in which case warning is maintained. (This applies only to warnings not preceded by drought.)
- Drought warning status preceded by a drought is upgraded to a drought if the following month is deficient or ended if the following month is semi-deficient.
- A drought warning or drought is ended by an adequate month.

These rules are designed such that a drought warning always precedes a drought (emergency) by at least two months, allowing for phased drought management. They are also set up as to avoid a hasty declaration of an emergency.

## DEFINITION OF SYMBOLS

### ADEQUATE SUPPLY MONTH



- One month streamflow at or above 25th percentile
- Previous 6 month precipitation total at or above 18 inches

### SEMI-DEFICIENT MONTH



- One month streamflow below 25th percentile
- Previous 6 month precipitation total at or above 18 inches

### SEMI-DEFICIENT MONTH



- One month streamflow at or above 25th percentile
- Previous 6 month precipitation total below 18 inches

### DEFICIENT SUPPLY MONTH



- One month streamflow below 25th percentile
- Previous 6 month precipitation total below 18 inches

**W** - DROUGHT WARNING

**D** - DROUGHT

## APPENDIX C. GOVERNOR'S DROUGHT ADVISORY COMMITTEE

The Governor's Drought Advisory Committee was established in 1981 by Executive Order of then-governor Pierre S. duPont. The committee duty is to "review imminent and existing water shortage problems and provide recommendations to the Governor for such extraordinary actions as may be appropriate during a period of declared water emergency" (Executive Order No. 95, January 30, 1981). It is composed of those persons holding the following posts:

Governor's Chief of Staff, Chairman  
Secretary, Department of Natural Resources and  
Environmental Control  
Director, Delaware Geological Survey  
Chairman, Public Service Commission  
Secretary, Department of Public Safety  
Secretary, Department of Agriculture  
Secretary, Department of Health and Social Services  
State Fire Marshall

A list of the current holders of these positions appears within this Appendix.

After the drought of 1981, the committee did not meet until May of 1985. At that time, DNREC staff recommended to Governor Castle that, in light of deficient hydrologic conditions, a Warning should be declared. Executive Order no. 5, dated May 9, 1985, declared the Warning and called for the committee to reconvene. The committee met through January of 1986, during which time mandatory restrictions were imposed (under pressure from the Delaware River Basin Commission), lifted, and the Warning rescinded. The Committee reconvened in July of 1986, at which time it recommended that a Warning again be declared. Since then, the committee has met on a monthly basis.

Sample agendas of Drought Advisory Committee meetings appear within this Appendix. Meetings are usually well attended by DNREC Water Resources Division staff members, who report to the Committee the current status of hydrologic conditions and the drought index. The Delaware Geological Survey also presents a report on hydrologic conditions, a sample of which appears in Appendix M. Aside from these regular reports, the business of the committee will vary depending upon present circumstances.

**CURRENT MEMBERS OF THE GOVERNOR'S DROUGHT ADVISORY COMMITTEE**

Governor's Chief of Staff, Chairman:

Michael Ratchford  
Governor's Office  
Legislative Hall, Dover, DE 19903  
739-4101

Secretary, Dept. of Natural Resources & Environmental Control:

Edwin H. Clark  
89 Kings Highway, P.O. Box 1401  
Dover, DE 19903  
739-4403

Director, Delaware Geological Survey:

Dr. Robert R. Jordan  
Delaware Geological Survey  
University of Delaware  
Newark, DE 19716  
451-2833

Chairman, Public Service Commission:

Ms. Nancy M. Norling  
2409 Willard Street  
Wilmington, DE 19806  
739-4247  
652-5377 (H)

cc: Robert J. Kennedy  
1560 S. DuPont Highway  
P.O.Box 457  
Dover, DE 19901  
739-4247

Secretary, Department of Public Safety:

Patrick W. Murray  
Highway Administration Building  
Route 13  
Dover, DE 19901  
739-4321

Secretary, Department of Agriculture:

William B. Chandler, Jr.  
2320 S. DuPont Highway  
Drawer D  
Dover, DE 19901  
739-4811

Secretary, Department of Health & Social Services:

Thomas P. Eichler  
Delaware State Hospital  
1901 N. DuPont Highway  
New Castle, DE 19702  
471-6705

State Fire Marshal:

Daniel Kiley  
Office of the State Fire Marshall  
R.D. 2, Box 166A  
Dover, DE 19901  
739-4393

(15) Interrupting loads on a rotating basis during certain prescribed hours;

(16) Implementing a progressive reduction in the use of energy by manufacturing and commercial customers on an as-required basis down to minimum levels required for basic plant and employee security;

(17) Requiring residential customers to curtail their use down to normal life support requirements;

(18) Establishing and implementing programs, controls, standards, priorities and quotas for the allocation, conservation and consumption of available energy reserves;

(19) Establishing and implementing regional programs and agreements for the purposes of coordinating the energy resource program and actions of this State with those of the federal government and other states and localities;

(20) Imposing an excess power and energy surcharge on any amounts by which a customer's energy consumption exceeds the level fixed by curtailment directives;

(21) Directing that utility service be disconnected to customers who fail to comply with curtailment directives. (61 Del. Laws, c. 525, § 5.)

**§ 3132. Declaration of drought warning by Governor.**

(a) The Governor may declare a drought warning prior to declaring a state of emergency due to a drought pursuant to § 3133 of this title. The purpose of a drought warning is to avoid or mitigate the adverse impact of a drought that may cause a state of emergency to be declared. Upon the declaration of a drought warning by the Governor, the Governor may issue orders, rules and regulations, which may provide for:

(1) Voluntary requests for water conservation by public or private users of water in the State.

(2) Other measures, including mandatory ones, which may be necessary to conserve water, in accordance with the severity of the conditions causing the declaration of the drought warning.

(b) Any order, rule, regulation and measure issued or provided for by the Governor pursuant to the authority granted in subsection (a) of this section shall be enforceable according to §§ 3115 and 3128 of this title.

(c) For purposes of this section "drought warning" shall mean a condition whereby hydrologic information indicates the approach of a drought in the State, or in parts thereof, that may cause the declaration of a state of emergency pursuant to §§ 3125 and 3133 of this title.

(d) Before any mandatory measure shall be enforceable, or be made part of any order, rule or regulation that is issued by the Governor pursuant to this section, the Governor shall hold a public hearing on the issue of said mandatory measure. Notice of the hearing shall be published at least 20 days before the hearing in no less than 2 Delaware newspapers of general circulation. A hearing officer, who shall be appointed by the Governor, shall preside over the hearing, and shall make a written report and recommendation about the evidence presented at the hearing to the Governor. (63 Del. Laws, c. 340, § 1.)

**§ 3133. Declaration of state of emergency due to drought; emergency powers of Governor.**

(a) "State of emergency" means an emergency proclaimed as such by the Governor pursuant to § 3125 of this title.

(b) As used in § 3125 of this title, "disaster" or "emergency" shall include a severe continuing drought resulting from stress of weather or a temporary condition of failure or inadequacy of the supply of water resulting from any convulsion of nature, malice, acts of war or civil commotion, or other generally unforeseeable events natural or unnatural.

(c) It is hereby found, determined and declared by the General Assembly that an emergency may exist whenever a severe continuing drought or any condition referred to in subsection (b) of this section results in a lack of water resources, thereby threatening the availability of essential services and jeopardizing the peace, health, safety and welfare of the people of the State. The General Assembly further finds that boundaries of municipalities and other political subdivisions within the State do not conform to the geographic boundaries of the sources of water in the State. In addition, the General Assembly finds that problems caused by a severe continuing drought or any condition referred to in subsection (b) of this section may exceed local ability to curtail or resolve such problems. The General Assembly finds that whenever such a drought emergency exists, it shall be necessary to provide information regarding water resources, and to provide an orderly procedure to assure equitable curtailment, adjustment, allocation or regulation in the public or private use of water resources located in the State. Therefore the General Assembly declares that curtailment of water usage by public or private water users during the existence of an emergency caused by a severe continuing drought or any other condition referred to in subsection (b) of this section may require the exercise of executive authority by the Governor of the State.

(d) After the Governor has determined that a disaster or emergency such as described in subsection (b) of this section exists, the Governor may proclaim a state of emergency pursuant to § 3125 of this title, and in connection therewith issue orders, rules and regulations, which may provide for:

(1) Enactment of plans for water allocation during a drought by public or private water users.

(2) Bans on water use by public or private water users for specified purposes.

(3) Water rationing program by public or private water users.

(4) Reduction in the withdrawal of water by public or private users.

(5) Other voluntary or mandatory measures, which may be necessary to conserve water, in accordance with the severity of the conditions causing the declaration of a state of emergency because of a drought.

(e) Any order, rule, regulation and measure issued or provided for by the Governor pursuant to the authority granted in subsection (d) of this section shall be enforceable according to §§ 3115 and 3128 of this title.

(f) In determining the existence of a severe continuing drought, or a condition of failure or inadequacy of the supply of water, the Governor shall con-

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sider the water resources and requirements of states having contiguous borders with the State.

(g) Before any mandatory measure shall be enforceable, or be made part of any order, rule or regulation that is issued by the Governor pursuant to this section, the Governor shall hold a public hearing on the issue of said mandatory measure. Notice of the hearing shall be published at least 7 days before the hearing in no less than 2 Delaware newspapers of general circulation. A hearing officer, who shall be appointed by the Governor, shall preside over the hearing, and shall make a written report and recommendation about the evidence presented at the hearing to the Governor. (63 Del. Laws, c. 340, § 2.)

REGULATIONS GOVERNING  
THE  
ALLOCATION OF WATER

Delaware Department of Natural Resources  
and Environmental Control

ADOPTED: October 2, 1986

EFFECTIVE: March 1, 1987

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## Section 1. General Provisions

### 1.01 Statement of Policy and Authority

The availability of adequate water supplies is paramount to the health, safety and economic welfare of the people of the State of Delaware and its environment. As provided in statute (7 Del. Code, Section 6001), the State, in the exercise of its sovereign power, acting through the Department of Natural Resources and Environmental Control should "control the development and use of the land and water...resources of the state so as to effectuate full utilization, conservation, and protection of the water resources of the State ... to make the maximum contribution to the public benefit". These water resources include water occurring in any water course, lake, aquifer, or any other water body in the State.

The responsibility for management and regulation of these assets rests in the State as trustee of its water resources for the public benefit. The State acts through the Department of Natural Resources and Environmental Control. The Department has the power to adopt, enforce, amend or repeal pursuant to established administrative procedures, rules and regulations to control, conserve and manage the waters of the State and the use of those waters in the public interest.

According to statute the Secretary (of the Department) shall approve the allocation and use of waters in the State on the basis of equitable apportionment (7 Del. Code, Section 6010(F)). These regulations provide for the allocation and re-allocation of the waters of the state in such a manner as to provide an adequate quantity and quality of water for the needs of the people of Delaware in the present and future.

The state's position as trustee of water resources was recognized in the Administrative Principles of the 1969 Regulations Governing the Use of Water Resources adopted pursuant to the 1966 Water and Air Resources Act, which stated in section 2.016 "The rights of the public are considered to be usufructuary

upon approval by the Department", meaning the public may make use of the water resources upon approval by the Department. Permits are required for "any activity which may cause or contribute to the withdrawal of ground water or surface waters or both" (7 Del. Code, Section 6003(a)).

#### 1.02 Scope

Water allocation permits are required for all water withdrawals greater than 50,000 gallons in any 24 hour period. (Water withdrawals of 50,000 gallons or less in 24 hours are granted with the permits to construct the water facilities with which the withdrawals are made). The water allocation permit allows the permittee to withdraw water subject to the terms and conditions specified. These regulations prescribe the procedures for obtaining water allocation permits.

#### 1.03 Applicability

- A. These regulations apply to all water users presently holding a water allocation permit or withdrawing or claiming to have authority to withdraw more than 50,000 gallons of water in any 24 hour period from one or more sources combined and to all persons who in the future wish to withdraw more than 50,000 gallons of water in any 24 hour period from one or more sources except in cases of emergency withdrawal.
- B. Compliance with these regulations does not exempt those who make water withdrawals within the Delaware River Basin from the requirements of the Delaware River Basin Commission (DRBC). All water withdrawals having a substantial effect on the water resources of the basin -- i.e., averaging more than 100,000 gallons per day over any 30-day period--must have DRBC approval. Application for DRBC approval will be forwarded through the

Department and in accordance with the provisions specified in DRBC/Department administrative agreements.

1.04 Schedule for Applying for Water Allocation Permits

- A. A person holding a valid water allocation permit and desiring a renewal must apply for a new permit at least 90 days prior to the expiration date of the permit.
- B. A person holding a valid water allocation permit with no expiration date must apply for a permit within 180 days of the effective date of these regulations.
- C. Any person presently withdrawing or claiming the right to withdraw more than 50,000 gallons of water in any 24 hour period who does not hold a valid water allocation permit shall apply for a permit within 90 days of the effective date of these regulations.
- D. Any other person who intends to withdraw more than 50,000 gallons of water in any 24 hour period must receive a permit prior to withdrawal.
- E. Upon receipt of an application as set forth in 1.04 (a) through (c) above, the applicant will be granted temporary authority to continue use of the water facilities until the application is acted upon by the Department, and
- F. The Department may, if a need for an emergency withdrawal is substantiated to the satisfaction of the Department, grant interim approval for water withdrawal upon submission of a complete application. Such interim authority will be affective until an allocation permit is issued or for a maximum period of 180 days, whichever comes first.

### 1.05 Construction

These regulations shall be liberally construed to implement the terms of the Delaware Environmental Protection Act (7 Delaware Code, Chapter 60).

### 1.06 Program Information

Unless otherwise stated, any questions concerning the requirements of these regulations shall be directed to the Water Resources Section of the Division of Environmental Control, 89 Kings Highway, P. O. Box 1401, Dover, DE 19903.

### 1.07 Enforcement

- A. Any person presently withdrawing or claiming the right to withdraw more than 50,000 gallons of water during any 24 hour period who does not apply for a water allocation permit pursuant to the provisions of sections 1.04 and 6 shall forfeit his claim and privilege to withdraw water.
- B. Any person who fails to comply with these regulations, the Act, or conditions specified in water allocation permits shall be subject to the penalty provisions set forth in the Act.

### Section 2. Definitions

- The Act - The Delaware Environmental Protection Act (7 Del. C., Chapter 60).
- Allocation - The amount of water per unit of time which the Department will permit an applicant to withdraw for use.
- Applicant - Any person applying for a water allocation permit.
- Aquifer - Any water bearing formation or unit that has sufficient transmissive properties to enable water to flow into a well.
- Beneficial Use - Any use of water which is necessary to the applicant, non-wasteful, reasonably non-damaging to other users, and in the best interest of the public.
- Conjunctive Use - A practice whereby two or more independent sources of water are used in combination, or alternatively, for meeting one or more objectives, e.g., improved reliability of supply, long-term cost effectiveness, and environmental protection
- Department - The Delaware Department of Natural Resources and Environmental Control.

- Dewatering - Withdrawal of water on a temporary basis from wells or excavations in order to facilitate construction or extraction of earth materials.
- Emergency Withdrawal - A withdrawal of ground or surface waters for emergency situations involving fire protection, human lives or human health.
- Equitable Apportionment - The allocation of water resources based on the needs of the applicant and other users, and the availability and reasonable beneficial use of the water resources.
- Ground water - Any water naturally found under the surface of the earth.
- Industrial Water Use - Use of water resources for processing, washing, packaging, or manufacturing of a product.
- Irrigation Water Use - Use of water resources for the watering of lands or crops other than household yards and gardens.
- Person - An individual, firm, association, organization, partnership, business trust, corporation, company, contractor, supplier, installer, user or owner, or any federal, state, or local government agency or public district or any officer or employee thereof.
- Public Supply Water Use - Use of water resources for the supply of water to more than two (2) families, the public in general or for food preparation in a restaurant.
- Safe sustainable yield - The amount of water that may be withdrawn from a ground or surface water source without producing any significant adverse affects, including those listed in sections 3.03 and 3.04.
- Secretary - The Secretary of the Department of Natural Resources and Environmental Control or his duly authorized designee.
- Surface Water- Water Course- Any water occurring generally on the surface of the earth. Any lake, river, creek, cut or other body of water or channel with established bed or banks.
- Water table - The elevation at which water is encountered below ground surface in an unconfined aquifer.
- Water utility- any person engaged in the operation of a public water supply system.

### Section 3. Criteria for Permit Approval

#### 3.01 Scope

The water resources of the state shall be managed for the greatest long-term benefit to the people of Delaware. In general, sources of water supply will be developed on a safe sustainable yield basis and according to the doctrine of equitable apportionment. However, temporary over-drafting of ground

water and use of non-renewable ground water for beneficial purposes may be approved subject to the development of long-term plans to preserve and extend the non-renewable resources. This section outlines the criteria used in setting water withdrawal limits.

### 3.02 Regionalization Policies

The following policies regarding regionalization of water supplies will be followed by the Department in assessing new or renewal allocation permit applications.

- A. Existing Systems: Use of established regional water collection and distribution systems by new water users will be encouraged whenever appropriate.
- B. Interconnections: Construction of interconnections between established public water systems, whether publicly, or privately owned, is in the public interest and will be encouraged.
- C. Small Water Supply Systems: Proliferation of small water supply systems of insufficient size to maintain an efficient, safe and adequate level of service will be discouraged.
- D. Franchise Areas: Proliferation of small franchise areas so situated or designed as to preclude the establishment or extension of regional water collection and distribution systems will be discouraged.
- E. New Water Service Facilities: Wherever practicable new water service facilities shall be planned to provide water supply on a regional basis, eventually becoming part of an established regional distribution system. Any new or expanded portion of a housing development with 25 or more total planned units will ordinarily be required to provide a public water supply system.

### 3.03 Surface Water Withdrawal Limits

Withdrawals from surface waters shall be limited to those rates which:

- A. do not interfere with other permitted withdrawals unless compensation for such injury is provided satisfactory to the Department;
- B. allow dilution and flushing of waste discharges and maintain adopted water quality standards;
- C. protect valuable fish and wildlife;
- D. maintain adequate flow over spillways of downstream impoundments;
- E. prevent intrusion of saline waters where such intrusion threatens ground or surface water supplies; and
- F. provide other ecological, recreational, aesthetic, and private benefits which are dependent upon surface water flows.

### 3.04 Ground Water Withdrawal Limits

Withdrawals from ground waters shall be limited to those rates which will not cause:

- A. long-term progressive lowering of water levels, except in compliance with management water levels established by the Department;
- B. significant interference with the withdrawals of other permit holders unless compensation for such injury is provided satisfactory to the Department;
- C. violation of water quality criteria for existing or potential water supplies;
- D. significant permanent damage to aquifer storage and recharge capacity; or
- E. substantial impact on the flow of perennial streams below those rates specified for surface waters in the preceding section.

### 3.05 Consistency with Water Plans and Policies

Any permitted withdrawal of water must be consistent with any applicable regional water supply plan, the Comprehensive Statewide Water Supply Plan and with applicable regional and state water management policies. In particular evaluation of conjunctive water use where possible and the location, amount, and quality of return flows and their impact on water resources and availability must be considered in the review of any water allocation permit applications.

### Section 4. Permit Application Procedures

#### 4.01 Scope

This section prescribes the application and processing procedures to be followed by applicants and the Department for original, renewal and modification of water allocation permits.

#### 4.02 General Application Procedures

- A. Applications for water allocation permits shall be made on forms provided by the Department.
- B. Information required on the application form shall include, but not be limited to, supply source(s), type of water use, withdrawal point locations, maximum daily, maximum monthly, and annual rates of withdrawal, conservation measures, estimated depletive use, water shortage contingency plans, and manner and location of wastewater disposal.
- C. Applications for allocation permits for irrigation supplies shall be accompanied by a map (U. S. Geological Survey 7 1/2 minute Quadrangle Series, 1:24000 scale) showing withdrawal point locations, the area(s) to be served by each withdrawal point, and the total number of acres served by each withdrawal point.
- D. No new facility requiring a water allocation permit may be operated until the allocation permit has been issued by the Department.

- E. Upon receipt of a completed application, it shall be reviewed by the Department for completeness and consistency with local, State and Regional Water Resources Plan, Land Use Plans, and zoning requirements. If the application is insufficient, incomplete, or prepared improperly, the applicant shall be notified within fifteen (15) working days as to what steps must be taken to make the application complete.
- F. Once an application is deemed complete, the application shall be processed as provided in 7 Del. C., Section 6004.
- G. If no hearing is scheduled, the applicant will be notified of the Department's decision. Any denial of an application shall state reasons for denial. Any public hearing shall be conducted as set forth in 7 Del. C., Section 6006 and decisions will be made in accordance with the administrative procedures contained therein.
- H. Any appeal of a decision by the Department must be made in accordance with the provisions of 7 Del. C., Section 6008.

#### 4.03 Water Conservation Requirements

All applicants for water allocation permits are required to submit in writing and demonstrate the existence of and commitment to a water conservation program, suitable to their particular use, as a condition of their application.

- A. Establishment of a program of periodic monitoring and evaluation of water usage.
- B. Establishment of a systematic leak detection and control program which, through routine maintenance and discovery of leaks, is responsive to high unaccounted for water usage rates.
- C. Use of the best practical methods and devices to conserve water.
- D. A plan to alert employees and customers of the need to conserve water and reduce wasteful usage.

- E. Evaluation of the potential to use water of less than potable quality including the use of treated wastewater, where possible.
- F. The establishment of pricing schedules which reflect the actual cost of water service is required of utilities regulated by the Public Service Commission and is encouraged for non-regulated utilities.

## Section 5. Water Allocation Permits

### 5.01 Permit Duration

Permits will be issued for a thirty year duration except in cases of hydrologic complexity or uncertainty or where water quality or quantity considerations may require more frequent review. All permits will be subject to review at intervals of 5 years. Review of water withdrawal permits will be coordinated with periodic analyses of water withdrawals and hydrologic conditions on an aquifer or drainage basin-wide basis where possible.

### 5.02 Permit Renewal

Water allocation permits are renewable upon expiration. Permits will be renewed with the same conditions and withdrawal limitations as long as the use remains reasonable and beneficial and providing the withdrawal has not exceeded the safe sustainable yield. In cases where continued development of the resource creates competition between users and exceedence of the safe sustainable yield, priority in renewed permit issuance shall be with the permittee who was first in time. All types of water uses deemed reasonable and beneficial are considered equal for the purposes of allocation. Retention of unused portions of allocations must be justified to the satisfaction of the Department in order to be renewed.

### 5.03 Permit Modification

- A. Applications for modification of existing or renewal water allocation permits will be approved where the modification repre-

- E. Each allocation permit will stipulate that representatives of the Department, the Delaware Geological Survey and the United States Geological Survey are allowed to enter the permittee's facilities or property to inspect and monitor water withdrawal.
- F. Each allocation permit shall stipulate that the permittee is specifically subject to the requirements of 7 Del. C., Section 6031 which stipulates obligations of water allocation permit holders whose use causes impairment of other existing water withdrawals.
- G. Each allocation permit shall require that reasonable efforts be made to minimize unnecessary use and/or waste of water in accordance with the conservation plan submitted with the permit application.
- H. Each allocation permit shall state that violations of any conditions within the permits are subject to penalties provided in 7 Del. C., Chapter 60.
- I. Each allocation permit may also include, if appropriate, a listing of other agencies or entities that may require additional approvals such as, but not limited to, the Delaware River Basin Commission, the Division of Public Health, and the Public Service Commission.
- J. In addition to the permit contents listed above, the Department may require the performance of aquifer tests, installation of monitoring wells, water quality sampling, or other conditions deemed appropriate.

#### 5.06 Allocation Permits for Irrigation

- A. Allocation permits for irrigation are subject to the same permit application procedures and conditions as any other water allocation permit with the following exceptions:

sents continued beneficial use and complies with all requirements applicable to new applications.

- B. The Department reserves the right to modify the terms and conditions of any permit at any time when substantial water quality or quantity considerations require a permit review and modification to avoid or mitigate significant adverse impacts on human health, aquifers, or the environment. Except in an emergency, a public hearing shall precede a modification.

#### 5.04 Transfers of Water Allocation Permits

- A. The Department will authorize transfer of an existing water allocation permit between users upon written application and notification to the Department providing that there will be no change in terms of the permit.
- B. If a proposed permit transfer entails any increase in the rates of withdrawal authorized in the permit, the amount of increased withdrawal will be subject to the same requirements as a new permit.

#### 5.05 Water Allocation Permit Contents

- A. Each permit shall have a fixed effective and expiration date.
- B. Each permit shall specify maximum allowable withdrawal rates expressed in daily, monthly and yearly terms.
- C. Permits shall require that the applicant meter water withdrawals to demonstrate compliance with the permit conditions and to file water use reports with the Department at least annually on forms provided by the Department.
- D. Allocation permits will require that all wells be equipped with a mechanism for recording water levels under both pumping and nonpumping conditions.

1. Water level measurements from supply sources in the water table (unconfined) aquifer need not be recorded or reported to the Department, except on specific request by the Department.
2. Water allocation needs will be based on best estimates of anticipated crop needs recognizing natural variability in climate and precipitation.
3. Permits for irrigation will specify that alternative means of measuring water use such as time lapse recorders may be used to gauge water withdrawals. Water meters, though recommended, will not be required for determining irrigation water usage.

#### Section 6. Water Transfer Permits

Prior to the initiation of construction of facilities for any transfer of water from one allocation permit holder to another, both parties must have the written approval of the Department in the form of a water transfer permit. Application for such permits must be made on forms provided by the Department and include a map showing the location of the interconnection and a copy of the agreement between parties for the transfer permits to determine consistency with approved water supply development plans and water withdrawal limit criteria.

#### Section 7. Severability

If any part of these regulations is adjudged to be unconstitutional or invalid by a court of competent jurisdiction, the remainder of these regulations shall not be affected thereby.

#### Section 8. Rights of Appeal

In accordance with 7 Del. C., Sections 6008 and 6009, any person whose interest is substantially affected by any action of the Department regarding an allocation permit has the right of appeal to the Environmental Appeals Board, a

seven member board appointed by the Governor. If any person is aggrieved by any decision of the Environmental Appeals Board, they have the further right to appeal the decision to the Superior Court.



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SPONSOR: Sen. Knox

DELAWARE STATE SENATE  
135TH GENERAL ASSEMBLY

SENATE BILL NO. 193

AN ACT TO AMEND CHAPTER 31, TITLE 20 OF THE DELAWARE CODE RELATING TO PENALTIES FOR VIOLATION OF WATER USE RESTRICTIONS EMPLACED PURSUANT TO DECLARED DROUGHT WARNING AND/OR DROUGHT EMERGENCY CONDITIONS.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF DELAWARE (Two-thirds of all members elected to each House thereof concurring therein):

1 Section 1. Amend Chapter 31, Title 20, §3132(b) by striking the subsection  
2 in its entirety and replacing it with:

3 "(b) Whoever violates any order, rule, regulation or measure issued  
4 or provided for by the Governor pursuant to this section shall be punished by  
5 a fine of not less than \$50 nor more than \$500 for each violation. Each day  
6 of violation shall be considered a separate violation. The courts of the  
7 justices of the peace shall have jurisdiction of offenses under this section."

8 Section 2. Amend Chapter 31, Title 20, §3133(e) by striking the subsection  
9 in its entirety and replacing it with:

10 "(e) Whoever violates any order, rule, regulation or measure issued  
11 or provided for by the Governor pursuant to this section shall be punished by  
12 a fine of not less than \$50 nor more than \$500 for each violation. Each day  
13 of violation shall be considered a separate violation. The courts of the  
14 justices of the peace shall have jurisdiction of offenses under this section."

Synopsis

This Bill provides for penalties for violation of water use restrictions emplaced by the Governor pursuant to declared drought warnings and emergencies. Existing statutes provide for no enforcement capabilities.

AUTHOR: Sen. Knox