# Hays Trinity Groundwater Conservation District: Drought Contingency Plan

The Hays Trinity Groundwater Conservation District (HTGCD) is charged by Chapter 36 of the Water Code to "*...provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater…".* 36.0015(b)[1]

In order to prepare and act during drought, the HTGCD has developed the following Drought Contingency Plan and promulgated that plan into *Rule 13 Drought Management*, and *Rule 15.2 Drought Curtailment (in the Jacobs Well Groundwater Management Zone).*

Rule 13 (below) designates specific indicators, triggers, and curtailment measures that gauge drought severity and timely curtailment responses, and Rule 15.2 (below) is specifically for Jacobs Well Groundwater Management Zone specific rules.

HTGCD uses Pedernales and Blanco River streamflow as District-wide drought indicators, as well as the Palmer Drought Severity Index. Because these rivers are recharge features of our aquifers, correlate with the monitor well network, have a long history of record, and are visible to the general public, they serve well as drought indicators.

Aquifer recharge occurs relatively slowly, and streamflow indicates the current and future health of the Trinity Aquifer in the District and therefore determines what stage of drought we must observe. Once the District's dedicated monitor wells have a longer period of record to correlate with historic drought triggers, the District could begin incorporating their levels into the drought trigger matrix.

Data shows healthy streamflow in the Pedernales River is above 59 cubic feet per second (cfs), and 41 cfs in the Blanco River. The District recommends conservative use of water when streamflow is healthy. When streamflow drops below a drought trigger -- shown in the table below as "10% - Conservation", "20% - Alarm," "30% - Critical," and "40% - Emergency" -- a daily counter begins. If the counter for either drought indicator reaches 30 days, the General Manager or District Board will declare the appropriate drought stage, and the permit-curtailment percentages are in effect on the date stated. In addition to updating the website, all permit holders will be notified of the stage and effective date. Curtailments are mandatory for non-exempt users and strongly encouraged for exempt users.

In order to give aquifers a chance to recharge, both drought indicators must flow 60 consecutive days above the current drought trigger. When streamflow increases above a drought trigger and the PDSI reaches the next less severe drought severity level, or indicates no drought for the entirety of a period of 60 days, the General Manager will declare the lesser drought stage or no drought. Streamflow is measured by the United States Geological Survey (USGS) gauges at the Blanco River in Wimberley and the Pedernales River in Johnson City.

[1] Chapter 36 Water Code

**Drought Management Specific to the Jacob's Well Groundwater Management Zone**

In order to protect groundwater supplies in the 39 square-mile Jacobs's Well GMZ, District Rule 15 designates curtailment triggers based on Jacob's Well spring flow. When flows from Jacob's Well average 6-cfs or less during any 10-day period, The District Board declares appropriate drought stage. Springflow is measured by the United States Geological Survey (USGS) gauge at Cypress Creek in Wimberley. General Drought Rules apply to the GMZ if and when springflow triggers are not met. District-wide Jacob's Well GMZ drought trigger specifics may be found below in Rule 15.2.

# RULE 13. DROUGHT MANAGEMENT

## Section 13.1 Drought Conditions & Provisions

**(13.1.1)** The District shall designate the various drought conditions and implement the applicable provisions of this rule upon determination that such implementation may be necessary for the conservation, preservation, protection and recharge of the groundwater within the District boundaries. The District shall post drought declarations on the District's website.

**(13.1.2)** District-wide drought declarations apply throughout the District, including in the Jacob's Well Groundwater Management Zone. If drought restrictions are triggered for the JWGMZ, those drought restrictions supersede District-wide restrictions.

## Section 13.2 Drought Triggers

**(13.2.1)** The District's drought triggers are based upon the discharge flow rates provided by the USGS for the Pedernales River at Johnson City (USGS 08153500) and Blanco River at Wimberley (USGS 08171000). The District also references the Palmer Drought Severity Index as a possible drought trigger, in accordance with Subsection 13.3.1.

**(13.2.2)** The General Manager shall report the current stage of the Palmer Drought Severity Index at every Board meeting, and the Board may take action to implement the next drought stage based on the drought triggers in Section 13.3.

**(13.2.3)** The General Manager may declare a drought and any drought stage level changes at the time that the criteria for the drought or drought stage level change occurs. The declaration shall provide the date that the drought stage commences or ends. The Board may also declare a drought or any drought stage level change at a Board meeting following the time that the criteria for the drought or drought stage level change occurs. Once a drought or drought stage level change has occurred, all permit holders shall be notified of the current drought status and its effective date.

**(13.2.4)** Except as otherwise provided for permit holders within the Jacob's Well Groundwater Management Zone, permit holders are required to reduce groundwater production from the groundwater withdrawal amount indicated on their individual drought production cutback chart in accordance with the applicable percent of curtailment for the month.

**Section 13.3 Drought Stages**

**(13.3.1)** District drought management consists of four drought stages. When streamflow drops below a drought trigger (shown in the table below), or the PDSI reaches the indicated level, a daily counter begins. If the counter for either of the drought indicators reaches 30 days, the General Manager may declare the applicable drought stage. When streamflow increases above a drought trigger and the PDSI reaches the next less severe drought severity level, or indicates no drought for the entirety of a period of 60 days, the General Manager will declare the lesser drought stage or no drought.

| Percent Curtailment | Drought Stage | PDSI level or Pedernales River flow rate | PDSI level or Blanco River flow rate |
|---|---|---|---|
| 10% | Conservation | PDSI = -1.5 to -1.9; or at or below 59 cfs | PDSI = -1.5 to -1.9; or at or below 41 cfs |
| 20% | Alarm | PDSI = -2 to -2.9; or at or below 31.6 cfs | PDSI = -2 to -2.9; or at or below 28.5 cfs |
| 30% | Critical | PDSI = -3 to -4.9; or at or below 10.2 cfs | PDSI = -3 to -4.9; or at or below 14.5 cfs |
| 40% | Emergency | PDSI = -5 or less; or at or below 2.23 cfs | PDSI = -5 or less; or at or below 9.28 cfs |

**(13.3.2)** The curtailment percentages represent reductions from the annual authorized withdrawal amount. The curtailment percentage for each of the four drought stages:

A. Stage 1: Conservation 10%
B. Stage 2: Alarm 20%
C. Stage 3: Critical 30%
D. Stage 4: Emergency 40%

**(13.3.3)** The following additional restrictions apply during each indicated stage:

A. During Stage 2 (Alarm), Stage 3 (Critical), or Stage 4 (Emergency) conditions, groundwater withdrawn for a non-exempt use may not be used to fill or refill ponds.

B. During Stage 3 (Critical) or Stage 4 (Emergency) conditions, the District will not accept any application for a new operating permit or any amendment to increase production under an existing operating permit. The Board may grant a variance to this rule if an existing condition in the District imminently threatening the health, safety, or welfare of the public will be significantly lessened by a proposed new well.

C. During Stage 3 (Critical) or Stage 4 (Emergency) conditions, no new well may be constructed other than wells drilled to replace existing permitted wells or wells for exempt

uses. The Board may grant a variance to this rule if an existing condition in the District imminently threatening the health, safety, or welfare of the public will be significantly lessened by a proposed new well.

**Section 13.4 Reporting Requirements during Drought**

All permittees holding operating permits shall submit monthly production reports to the District during declared droughts within 10 business days after the end of the month being reported.

**(13.4.1)** Operating permit holders shall file with the District an acceptable user drought contingency plan and water conservation plan, which shall be kept current so as to remain consistent with the District's:

A. management plan;

B. drought contingency plan, including but not limited to drought stage target pumpage volume;

C. water conservation plan; and

D. rules.

**(13.4.2)** Permit holders who are found to be in non-compliance with District drought management rules, the user drought contingency plan, the water conservation plan or the drought production cutback chart, may be subject to penalties.

**END OF RULE 13**

**RULE 15. JACOB'S WELL GROUNDWATER MANAGEMENT ZONE**

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**Section 15.2 Drought Curtailments**

**(15.2.1)** Drought curtailments are mandatory for non-exempt use wells within the JWGMZ, which must comply with any applicable drought curtailments required under Rule 13 and with drought curtailments required under this rule. If a drought has been declared for the JWGMZ in accordance with the requirements of Rule 13 and this rule, the District will post the drought curtailment percentage applicable for that month on the District's website. The amount of groundwater authorized to be withdrawn during that month may not exceed the baseline permitted groundwater withdrawal amount, as adjusted by the applicable drought curtailment amount based on the number of days during the month that any drought stage is in effect. Monthly baseline production amounts may be averaged only during contiguous months of a specific drought stage.

**(15.2.2)** Monthly Baseline Production Amount. Each Tier 2 or Tier 3 non-exempt use well permit shall include a monthly baseline production amount based on the average actual amount of groundwater produced and put to a beneficial use for each calendar month from January 2017 through December 2019. The monthly baseline production amount only applies during a curtailment period. A permittee may amend the monthly baseline production amount by filing a monthly baseline production amount adjustment request with the District. The monthly baseline production amount may be adjusted if the Board determines any of the following:

E. The total groundwater demand has increased through the addition of new water utility service connections;

F. The total groundwater demand has increased through expansion or growth; or

G. The permittee implemented water conservation measures that resulted in 10% or greater demand reduction. The monthly baseline production amount may be adjusted to reflect actual sustained demand reduction achieved.

**(15.2.3)** Monthly Baseline Production Amount for Permits Issued After 2016. Notwithstanding the monthly baseline production amount established pursuant to Section 15.2.2, for permits issued after December 31, 2016, the monthly baseline production amount is the amount of groundwater production as authorized in the permit. After three calendar years of production, the District shall review the actual amount of groundwater produced and put to a beneficial use and consider modifying the monthly baseline production amount.

**(15.2.4)** The General Manager will declare the applicable drought curtailment percentages within the JWGMZ based on a 10-day running average of the flow rates measured at the USGS flow meter at Jacob's Well as follows:

D. Groundwater production may not exceed the monthly baseline production amount adjusted by the following reduction percentages:

- 6 CFS or less.....10 Percent
- 5 CFS or less.....20 Percent
- 3 CFS or less.....30 Percent

E. During a drought stage, groundwater withdrawn for a non-exempt use may not be used to fill or refill ponds.

**(15.2.5)** Each permittee shall prepare a drought curtailment implementation plan detailing how the required production curtailments will be achieved. Drought curtailment implementation plans must be submitted to the District as part of applications for operating permits with the District.

**END OF RULE 15**