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Subject: Needmore Water LLC - Revised Special Provisions
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Kaveh,

As a follow-up to our meeting discussion on 7/29/16 the District has revised the special permit provisions in the specific areas of the Amos and Catfish monitoring wells. The revisions are provided as tracked changes. After further discussion and research, the District has decided that it is not preferable to have TWDB telemetry on the Amos Index Well, however it is acceptable for the Catfish Index Well. When it comes to the primary index well, it is necessary for the District to maintain as much control of over the equipment and data as possible. If this were to be an official TWDB telemetered well, the maintenance of equipment would be subject to the TWDB's time and budget availability. The data will also be in a raw format through the TWDB's database systems; therefore, the District would not be able to correct for data outliers or inaccuracies before the public sees the data. TWDB would also require an access agreement and a specific type of telemetry equipment that is considered to be larger and more complex. The Amos well owner has already expressed hesitancy and concerns with both those factors. Because the permit compliance terms are centered around the Amos Well serving as the primary index well, the District prefers to use a commercial vendor such as *Insitu* or other comparable vendors that we have had experience with in terms of proven reliability and quality. Again, a transducer will be acceptable for the Catfish Well and if you wish to pursue TWDB telemetry for that well the Permittee does have that option.

If you have any thoughts or questions, please let us know by Wed 8/10/16.

Regards,

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SPECIAL PROVISIONS

SECTION 1. DEFINITION OF TERMS

“Baseline Curtailment Rate (BCR)” - is a calculated annual volume based on the actual metered and reported monthly pumping volumes of the previous 12 months. The previous 12-month total is used to establish an annual volume rate referred to as the Baseline Curtailment Rate (BCR). All required temporary curtailments specified in these special provisions are applied to the BCR on a monthly basis until the drawdown in the index well recovers to the specified water level threshold. The BCR is further described in Section 4 of these provisions.

“Index Well(s)” – is a designated observation or monitoring well that is used to measure the (water level) and/or quality of water within the aquifer. For the purpose of these provisions, “Amos Index Well” and “Catfish Index Well” are designated as index wells; “Amos Index Well” is the primary index well and “Catfish Index Well” is the secondary index well. Details describing these index wells are found in Section 3 of these provisions.

“Response Action(s)” – is a mandatory measure that the Permittee must comply with and implement per the terms and conditions of this permit and its special provisions. Specific response actions are described in Section 4 of these provisions.

“Trigger” – is a designated water level that prompts a response action once the measured water level is reached. For compliance purposes, the measured water level shall be calculated as a 30-day rolling average of the minimum daily water level (measured depth to water, in feet, from land surface) measurements. Once a Trigger has been reached, the Permittee must implement the appropriate response action. Specific triggers are described in Section 4 of these provisions.

“Mitigation” – for the purpose of these provisions, this term means any proactive or reactive measures taken by a designated party to prevent, reduce, or remedy actual unreasonable impacts on an operational and adequate well that are unanticipated and unavoidable through reasonable avoidance measures.

SECTION 2. GENERAL

1. In response to the District’s review of the submitted Hydrogeological Report and the subsequent preliminary finding identifying a potential for unreasonable impacts resulting from permitted pumping (289,000,000 gal/yr) of Needmore Well D, the District requires permit-specific Response Actions to be implemented in order to avoid unreasonable impacts. These actions are identified in Section 4 of these provisions. The Permittee must comply with the Response Actions associated for with Permit Compliance Level (defined in Section 4 below).
2. These provisions designate the use of a primary index well for which Permit Compliance Levels, Triggers and mandatory Response Actions will be established and monitored for compliance. Section 3 of these provisions further describes the details of each index well. In the event that the primary index well is no longer an adequate well for compliance purposes, the permit may be amended to designate the secondary index well (Catfish Well) to serve as the primary index well.
3. As drawdown in the primary index well approaches each Permit Compliance Level, the District will coordinate an evaluation of the data to assess the actual impacts as compared to the modeled

impacts of pumping. The District will coordinate with the permittee to schedule a meeting and to review the data. This meeting will also serve to communicate details about the relevant Response Actions in place, as well as to communicate the need for the Permittee to prepare for the upcoming Response Actions that will be required if subsequent Compliance Levels are reached.

4. When the water level in the primary index well reaches a designated Trigger, the District will notify the Permittee via certified mail within ten business days (“Mailed Notification Letter”). This notification will include a revised pumping chart that reflects the BCR and the mandatory temporary curtailments applied to that volume. Upon receipt of the notification and the revised pumping chart, the Permittee must comply with the curtailed monthly pumping allocation to begin on the first day of the month following notification.
5. The Permittee may submit an amendment application to request revisions or modifications to the permit volume or the permit special provisions. The Board will consider such requests as major amendments and will be processed in accordance with District Rule 3-1.4 B(1) and Rule 3-1.4 C(2) related to notification, Board action, and public hearings.
6. If the District determines through its own coordinated evaluation and investigation that production from the permitted well is causing actual unreasonable impacts (as defined in District Rules) to either the index wells or any other operational well that is adequately equipped, maintained, and completed, then the District may require temporary cessation of pumping until the Board approves a staff-initiated amendment to partially reduce the full permit volume to a rate that will reasonably avoid recurrence of unreasonable impacts.
7. In lieu of permit reductions required by provision No. 6, the District may consider Mitigation measures pursuant to District rules related to Mitigation to remedy the unreasonable impacts. Such Mitigation measures shall be reserved only after all reasonable preemptive avoidance measures have been exhausted, and shall serve as a contingency for the occurrence of unreasonable impacts that were unanticipated and unavoidable through reasonable measures.
8. If the District determines that new pumping centers or large-scale groundwater production within the area of influence are significantly affecting drawdown relative to the permit Compliance Levels, then the District may consider revision of these permit provisions and permit Compliance Levels. Any permit revisions must be approved by the Board through a permit amendment.
9. Data collected from the index wells that have been determined by the District to be inaccurate shall not be used to determine compliance with these permit provisions.

SECTION 3. INDEX WELLS

The District has designated a primary index well (Amos Well) and secondary index well (Catfish Well) for the purpose of monitoring aquifer conditions in the Middle Trinity Aquifer. These provisions further define the Permit Compliance Levels, Response Actions, and Triggers specific to the primary index well. The secondary index well will be monitored to establish correlated data with the primary index well. In the event that the primary index well is no longer an adequate or accessible well for compliance purposes, the permit may be amended to designate the Catfish Well to serve as the primary index well. The District is responsible for compiling, collecting, and archiving data from the monitor wells. Table 1 describes the two index wells.

The Amos Index Well is part of the Hays Trinity Groundwater Conservation District (HTGCD) well monitoring network. It is a domestic well that is operational and in use as an exempt well. The well is completed as a Middle Trinity well located in Hays County approximately two miles from the permitted Well D. An agreement has been secured between the District and the well owner of the Amos Index well granting access and authority to utilize the well as a monitoring and index well. The Catfish Index Well is located in the HTGCD on Permittee's property referred to as Needmore Ranch. The well is operational and in use as an exempt livestock well. The well is completed to produce from the Middle Trinity Aquifer and is located in Hays County approximately one mile from the permitted Well D.

Table 1. List of index wells for the Needmore Well D production permit.

Index Well	Well Name & Well Number	Coordinates	Physical Address	Well Owner Contact
Primary Index Well	Amos Well	29.961399, -98.064977	600 Mission Trail Wimberley, TX 78676	Stephen & Sharon Amos
Secondary Index Well	Catfish Well	29.970093, -98.052253	Needmore Ranch	Needmore Water LLC

Amos Index Well Provisions

1. Within 90 days of the effective date of the permit, the District, in coordination with the Permittee and well owner, shall be responsible for purchasing and ensuring the proper installation of monitoring equipment necessary to collect and transmit water level data to a website accessible to the Permittee and the District for the purpose of evaluating compliance with the Section 4 of these Special Provisions. The District in coordination with the Permittee will select a commercial equipment vendor and web hosting service provider for the telemetry equipment to be installed at the Amos Well. The Permittee shall be solely responsible for reimbursement of any and all expenses incurred by the District for such monitoring equipment and installation. Such expenses shall be reimbursed in full by the Permittee to the District within 30 days of the District providing notice of those expenses.
- ~~1. Within 90 days of the effective date of the permit, the Permittee IDistrictshall in coordination with the District, purchase at its own expense, telemetry equipment capable of transmitting water level data to a website.~~
2. The District shall be responsible for operating, maintaining, repairing, and replacing all monitoring equipment such as pressure transducers, related telemetry equipment, and cell/web hosting fees. All materials and equipment shall be new, free from defects, and fit for the intended purpose. Any expenses incurred by the District for the above described work shall be reimbursed in full by the Permittee to the District.
3. The well owner is solely responsible for normal wear and tear, well maintenance, pump servicing or other repairs resulting from the well owner's normal use of the well.

4. The District may consider cost sharing or incurring cost associated with repairs or replacement of any part of the index well that is reasonably necessary or convenient for the continuous and adequate performance of the well for monitoring purposes.

Catfish Index Well Provisions

1. Within 90 days of the effective date of the permit, Permittee shall convey a binding access agreement acceptable to the District for Catfish Index Well that allows the District access for equipment maintenance and repair, and data collection, if warranted.
2. Within 90 days of the effective date of the permit, Permittee shall install, at its own expense, a one-inch conductor pipe to enable the measurement of water level in the Catfish Index Well. In addition, a pressure transducer ~~and associated telemetry unit~~ capable of ~~transmitting~~ storing water level data ~~to a website~~ will be installed and data downloaded and provided to the District quarterly. Alternatively, Permittee may assume the expense for the installation of telemetry equipment hosted by the TWDB (assuming TWDB is interested and available). If telemetry equipment is installed and hosted by the TWDB, p~~P~~rior to the telemetry installation, manually collected monthly water level data shall be provided to the District by the fifth of each month along with the required meter reading.
- 2.3. The Permittee bears all responsibility and expenses associated with installation, routine maintenance, replacement, repair, or inspection of the pressure transducers ~~and or any~~ related telemetry equipment and cell/web hosting fees not covered by the TWDB. All associated work shall be completed by a contractor or contractors selected by Permittee and approved by the District. All materials and equipment shall be new, free from defects, and fit for the intended purpose.
- 3.4. The Permittee shall provide notice to the District at least five days in advance of any installation, routine maintenance, replacement or repair of equipment; and shall maintain and submit, upon request by the District, copies of any or all calibration or repair logs. This notice requirement is for both the pumping well and the Catfish Index Well.
- 4.5. The Permittee shall be responsible for repairing and replacing any part of the Catfish Index Well. If repairs or replacement of any part of the index well are reasonably necessary or convenient for the continuous and adequate performance of the well, the District shall provide notice and the Permittee shall make repairs and replacements as soon as practicable.

SECTION 4. PERMIT COMPLIANCE ACTIONS

The following Permit Compliance Levels, Response Actions, and Triggers apply to the Amos Index Well as the designated primary index well.

Permit Compliance Level 1 – Evaluation

Trigger 1 - A 30-day rolling average water level equal to or greater than **525 ft** below land surface (bls)

Response Action – When drawdown in the Amos Index Well reaches a sustained average water level that is equal to or greater than **525 ft** bls, the District will conduct an evaluation of the data to assess the actual impacts of pumping. The evaluation will utilize best available science and methods to consider factors and data including, but not limited to:

- a. Manual confirmation of water level data;
- b. Calibration and drift of pressure transducer;
- c. Actual pumping rate and associated drawdown;
- d. Drought conditions;
- e. New local interference from pumping both inside and outside of District;
- f. Water level trends in monitor wells; and,
- g. Revised aquifer parameters (e.g. transmissivity, storativity).

Permit Compliance Level 2 – Avoidance Measures

Trigger 2 - A 30-day rolling average water level equal to or greater than **550 ft bls**.

Response Action A - Establish a Baseline Curtailment Rate (BCR)

When drawdown in the Amos Index Well reaches a sustained average water level that is equal to or greater than **550 ft bls**, the District will establish a BCR. The BCR is a calculated annual volume based on the actual monthly pumping volumes of the previous 12 months. The previous 12-month total is used to establish an annual volume rate referred to as the BCR. All mandatory temporary curtailments specified in these special provisions are applied to the BCR on a monthly basis.

Response Action B – When drawdown in the Amos Index Well reaches a water level that is equal to or greater than **550 ft bls**, the Permittee shall comply with a mandatory temporary monthly curtailment of **20%** off the BCR. When the drawdown in the Amos Index Well recovers to a 30-day rolling average water level that is less than 550 ft bls, the mandatory monthly curtailment of 20% shall be completely relaxed. Upon that recovery, authorization for the full permit volume will be restored provided that drought-triggered curtailments do not apply.

Permit Compliance Level 3 – Maximum Drawdown Allowable

Trigger 3 - A 30-day rolling average water level equal to or greater than **575 ft bls**

Response Action – When drawdown in the Amos Index Well reaches a sustained average water level that is equal to or greater than **575 ft bls**, the Permittee shall comply with a temporary monthly curtailment of **40%** off the BCR. When the drawdown in the Amos Index Well recovers to a 30-day rolling average water level that is greater than 550 ft bls and less than 575 ft bls, the mandatory temporary monthly curtailment of 40% shall be relaxed to 20%.

Permit Compliance Level 4 – Unreasonable Impacts to Existing Wells

Trigger 4 - A 30-day rolling average water level equal to or greater than **580 ft bls**

Response Action – Continued drawdown of water levels that are equal to or greater than **580 ft bls** will be considered by the District as evidence of unreasonable impacts to the Amos Well. When drawdown in the Amos Index Well reaches a sustained average water level that is equal to or greater than **580 ft bls**, **the Permittee shall comply with a temporary cessation of pumping**. When the drawdown in the Amos Index Well recovers to a 30-day rolling average water level that is greater than 575 ft bls and less than 580 ft bls the mandatory temporary cessation of pumping shall be relaxed to temporary monthly curtailment of 40%.

If the District determines through its own coordinated evaluation and investigation that production from the permitted well is causing actual unreasonable impacts to either the index wells or any other operational well that is adequately equipped, maintained, or completed, then the District may, after

notice and opportunity for hearing, require temporary cessation of pumping until a staff-initiated amendment has been approved by the Board to partially reduce the full permit volume to a rate the will reasonably avoid recurrence of unreasonable impacts.

SECTION 5. DROUGHT CHART & BCR PUMPING CHART

When drawdown in the primary index well reaches the Compliance Level 2 Trigger (**550 ft** bls), the District will establish a BCR reflected as an annual volume. The Permittee will be issued a revised pumping chart that reflects an annual volume referred to as the BCR. Once the Compliance Level 2 Trigger is reached, this revised pumping chart shall replace all other previous pumping charts or drought target charts in place. Upon receipt of the Mailed Notification Letter and the pumping chart, the Permittee must comply with the curtailed monthly pumping allocation to begin on the first day of the month following notification.

As the drawdown in the primary index well recovers to a water level less than **550 ft** bls, the Permittee will no longer be required to comply with the revised pumping chart and may return to following the initially issued drought curtailment chart.

If at any point during the term of the permit, the water level reaches the Compliance Level 2 Trigger (550 ft bls) again after having previously recovered to less than **550 ft** bls, the District will recalculate a new BCR and the Permittee will be issued a new revised pumping chart that reflects an annual volume based on a new BCR. For each occurrence of receding water levels reaching the Compliance Level 2 Trigger, a revised pumping chart reflecting a revised BCR shall replace all other previous pumping charts or drought target charts in place. Upon receipt of the Mailed Notification Letter and the pumping chart, the Permittee must comply with the curtailed monthly pumping allocation to begin on the first day of the month following notification.