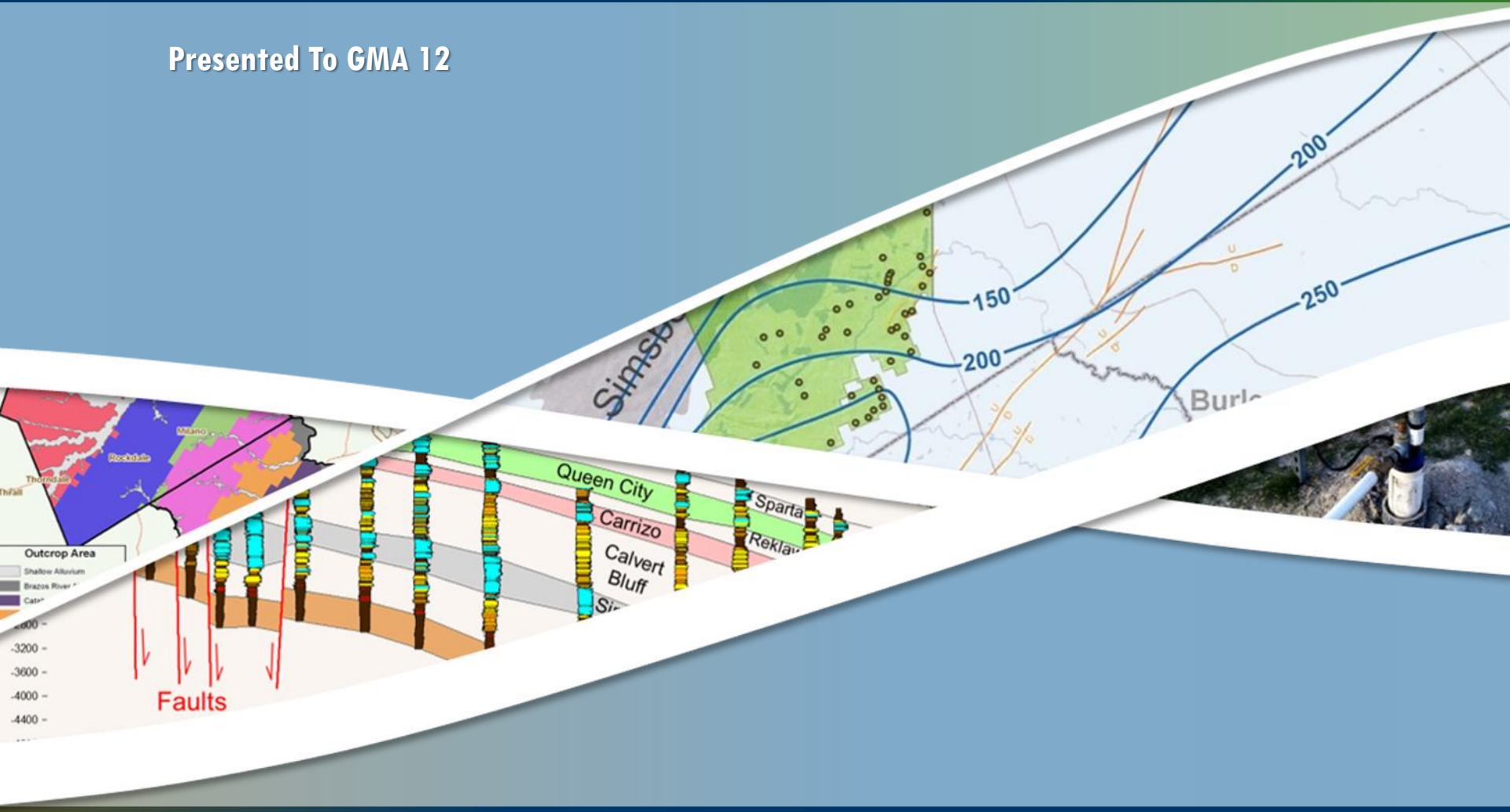
Overview of POSGCD Rules Related to Regulating Pumping Impacts and the Rule of Capture

Presented To GMA 12



October 6, 2021

Outline

- General Permit Conditions
  - Exempted and permitted wells
  - General terms
- Regulating Permit Production
  - Maximum Production
  - Well Spacing
  - Permit Adjustments
- Management Approach
  - Management Zones
  - DFCs rationale & compliance

General Permit Conditions

- Exempt wells are incapable of producing more than 17.4 gpm
- Permitted wells require notification of all property owners within 0.5 miles
- Operating permits describe pumping rate, production amount, location, and usage
- Operating permits not to exceed 40 years with a review every 5 years
- Transport permits have 30-year terms
- Historic use permits good for life of the well

Well Spacing (abridged)

Carrizo-Wilcox Aquifer

Aquifer	Minimum Spacing Per GPM of Production Capacity	
	From Any Well	From Property Line
Simsboro	1 ft	0.5 ft
Carrizo Calvert Bluff Hooper	2 ft	1 ft

Sparta, Queen City, Yegua-Jackson

Production Capacity (gpm)		Minimum Spacing Per GPM of Production Capacity	
More than	Equal to or less than	From any Well	From Property Line
NA	50	2 feet	1 foot
50	100	3 feet	1.5 feet
100	150	4 feet	2 feet
150	200	5 feet	2.5 feet
200	NA	7 feet	3 feet

Permit Production & Adjustments

- Production
  - Maximum withdrawal allowed presently is 2-acre feet, per contiguous acre controlled, per year.
  - For wells permitted with aggregate withdrawal, the total authorized withdrawal will be assigned to the wells in aggregate

- Adjustments
  - To accomplish the DFCs or PDLs, POSGCD will consider reducing the production and or permitted production
  - The process that guides the adjustments are discussed in Section 16 of POSGCD rules

Section 16.4 of POSGCD Rules

RULE 16.4. ACTIONS BASED ON MONITORING RESULTS. Monitoring and threshold levels will be used to initiate appropriate responses designed to help achieve the DFCs and PDLs, conserve and preserve groundwater availability and protect groundwater users. Three threshold levels are adopted to help guide these actions. Each threshold level provides for an increased level of response based on the change in production or water levels associated with a Management Zone. The threshold levels are: Level 1; Level 2; and Level 3. [Amended June 12, 2012] [Amended November 5, 2019]

1. Threshold Level 1. Threshold Level 1 will be reached, and additional studies will be undertaken to evaluate the nature and extent of curtailment in groundwater production that may be required to achieve the District's management objectives inclusive of achieving DFCs and PDLs. The studies will, at a minimum, suggest possible schedules for reducing groundwater production in the affected management zone(s). The Threshold Level 1 actions will be conducted at such time as: [Amended June 12, 2012] [Amended May 3, 2017] [Amended July 2, 2019]

    a. Total estimated annual production is greater than 60% of the Modeled Available Groundwater (MAG) value listed in Section 8 of the Management Plan;

    b. An average groundwater drawdown, calculated from monitored water levels for an aquifer, is greater than 50% of the average groundwater drawdown provided in Section 7 of the Management Plan as a DFC or PDL; [Amended November 5, 2019]

    c. The average groundwater drawdown, calculated from monitored water levels, for a Shallow Management Zone is greater than 50% of the threshold value, for average drawdown in that Shallow Management Zone, listed in Section 7 of the Management Plan; or

    d. Projected average water level drawdowns, calculated with a District approved methodology, indicate that a DFC or PDL listed in Section 7 of the Management Plan will be exceeded within 15 years.

Section 16.4 of POSGCD Rules (con't)

2. Threshold Level 2. Threshold Level 2 will be reached, and a review of the Management Plan, rules and regulations will be initiated, and pending the results of Threshold Level 1 studies, the District will notify well owners of possible plans for curtailing groundwater production. The Threshold Level 2 actions will be conducted at such time as: [Amended June 12, 2012] [Amended May 3, 2017] [Amended July 2, 2019]

    a. Total estimated annual production is greater than 70% of the Modeled Available Groundwater (MAG) value listed in Section 8 of the Management Plan; [Amended July 2, 2019]

    b. Average groundwater drawdown, calculated from monitored water levels, for an aquifer is greater than 60% of the average groundwater drawdown listed in Section 7 of the Management Plan as the DFC for that aquifer; or

    c. The average groundwater drawdown, calculated from monitored water levels, for a Shallow Management Zone, is greater than 60% of the threshold value for average drawdown listed in Section 7 of the Management Plan for that Shallow Management Zone;

3. Threshold Level 3. Threshold Level 3 will be reached, and the Board will consider and adopt amendments to the Management Plan, rules and regulations at such time as the average groundwater drawdown, calculated from monitored water levels, for an aquifer is greater than 75% of an average groundwater drawdown listed in Section 7 of the Management Plan as a DFC for that aquifer or PDL for the shallow portion of that aquifer. The District anticipates that one of the adopted amendments will include one or more strategies for the District's curtailment of groundwater production in the affected management zone(s) or adjacent zones causing the undesired effect. [Amended June 12, 2012] [Amended May 3, 2017] [Amended July 2, 2019] [Amended May 12, 2020]

Section 16.4 of POSGCD Rules (con't)

4. The threshold levels will be administered and applied separately to each Management Zone. As part of the evaluations and determinations, the District will consider the pumping-induced impacts to groundwater resources that occur between or among management zones. The evaluation will determine if pumping or production in one management zone is contributing to adverse impacts to groundwater conditions in another management zone. [Amended June 12, 2012] [Amended May 3, 2017]

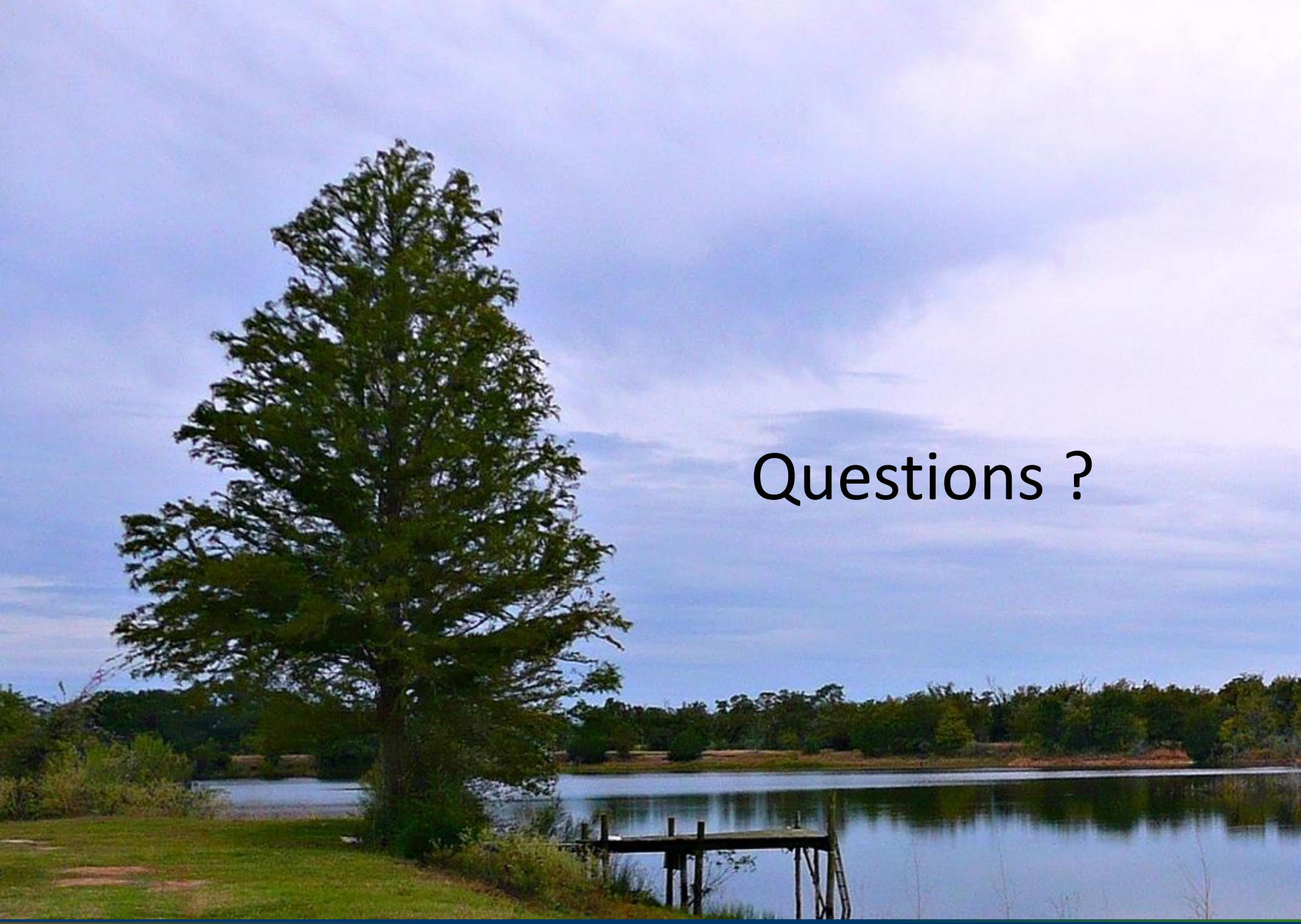
   a. If Threshold Level 1 is exceeded, the District will perform studies to provide information on aquifer properties, aquifer recharge, aquifer and surface water interactions, and aquifer pumping. To the extent possible, the studies shall distinguish between the causes and effects of pumping occurring within the District and outside of the District. The results may be used to improve the models, tools, and

   b. If Threshold Level 2 is exceeded, the District will re-evaluate the Management Plan and rules regarding management zones, recharge estimates, the collection and analysis of monitoring data, and proposed changes to DFCs for consideration in the joint planning process. As part of the re-evaluation, the District will hold one or more public meetings and provide a minimum of 90 calendar days for the public to provide written comments in addition to the meeting(s). [Amended May 12, 2020]

   c. If Threshold Level 3 is exceeded, the District will conduct a public hearing to discuss the status of the aquifers and develop a Level 3 Response Action Work Plan focused on achieving the District's goals and objectives, including DFCs and PDLs. The work plan will be completed within 6 months after the first public hearing and will be made available to the public through the District's web site. [Amended November 5, 2019]

Management Approach

- Divide District into 6 management zones based on aquifer boundaries, properties and characteristics
- Set DFCs to achieve a balance between production and conservation with considerations to water level decline in management zones and in aquifer and in existing wells
- Reduction of permit allocation/production in a management zone based on drawdown/water levels as expressed as a percent of DFCs
- Condition of operation permit, is that permittees agree to follow District rules
- Evaluate DFC compliance based on analysis of water levels measured from District Monitoring Well Program.
- Work within TWC statutes to develop DFCs and management strategies beneficial to all stakeholders.


Questions ?