Item #4 – Status of DFC’s for each of the Aquifers

John Seifert will give an annual update on the status of the Desired Future Condition of each aquifer compared to the average artesian head change for that aquifer. Slide presentation follows in this folder.
Aquifer Desired Future Conditions Update

Presented to
BVGCD Board of Directors
By
LBG-Guyton Associates

September 10, 2015
Desired Future Conditions

- Established for Sparta, Queen City, Carrizo, Calvert Bluff, Simsboro, Hooper, Yegua and Jackson aquifers
- For first GMA 12 planning cycle - Submitted to TWDB August 2010
- For first GMA 12 planning cycle - Approved by TWDB Summer 2012
- Used average artesian head decline over aquifers area as matrix for quantifying DFC
Desired Future Conditions (cont'd)

- Well static water-level data utilized to help monitor aquifer response to pumping
- DFCs established based on estimates of pumping in the District and the interference drawdown effects of total pumping inside GMA 12
## DFC Goals

<table>
<thead>
<tr>
<th>Aquifer</th>
<th>MAG Pumping Within BVGCD by 2060</th>
<th>MAG Pumping Outside BVGCD by 2060</th>
<th>BVGCD-DFC, ft</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sparta</td>
<td>9,000</td>
<td>13,700</td>
<td>15</td>
<td>2000 - Dec. 2059</td>
</tr>
<tr>
<td>Queen City</td>
<td>1,100</td>
<td>2,200</td>
<td>12</td>
<td>2000 - Dec. 2059</td>
</tr>
<tr>
<td>Carrizo</td>
<td>5,496</td>
<td>30,000</td>
<td>47</td>
<td>2000 - Dec. 2059</td>
</tr>
<tr>
<td>Calvert Bluff</td>
<td>1,755</td>
<td>8,800</td>
<td>106</td>
<td>2000 - Dec. 2059</td>
</tr>
<tr>
<td>Simsboro</td>
<td>96,185</td>
<td>87,000</td>
<td>270</td>
<td>2000 - Dec. 2059</td>
</tr>
<tr>
<td>Hooper</td>
<td>316</td>
<td>7,600</td>
<td>170</td>
<td>2000 - Dec. 2059</td>
</tr>
<tr>
<td>Yegua</td>
<td>6,100</td>
<td>18,800</td>
<td>70</td>
<td>2010 - 2060</td>
</tr>
<tr>
<td>Jackson</td>
<td></td>
<td></td>
<td>110</td>
<td>2010 - 2060</td>
</tr>
</tbody>
</table>

* MAG = Modeled Available Groundwater
<table>
<thead>
<tr>
<th>Aquifer</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sparta</td>
<td>Limited measured artesian head decline</td>
</tr>
<tr>
<td>Queen City</td>
<td>Review DFC goal and monitoring network being expanded</td>
</tr>
<tr>
<td>Carrizo</td>
<td>Monitoring network being expanded</td>
</tr>
<tr>
<td>Calvert Bluff</td>
<td>Monitoring network being expanded</td>
</tr>
<tr>
<td>Simsboro</td>
<td>Limited measured artesian head decline</td>
</tr>
<tr>
<td>Hooper</td>
<td>Artesian head decline in area of pumping and not District wide</td>
</tr>
<tr>
<td>Yegua</td>
<td>Limited amount of artesian head decline</td>
</tr>
<tr>
<td>Jackson</td>
<td>Aquifer in very south part of District with limited number of wells.</td>
</tr>
</tbody>
</table>
Sparta Aquifer

DFC by 2060 Average Artesian Head Decline 15 feet

Approximate updip limit of Sparta aquifer outcrop

59-14-101 State Well Number
2.2 Artesian Head Difference
Between 1999 and 2015, ft

BVGCD Sparta Observation Well

0 3.75 7.5 15 Miles N
Queen City Aquifer

DFC by 2060 Average Artesian Head Decline 12 feet

Approximate updip limit of Queen City aquifer outcrop

⊕ 59-05-101 State Well Number
1.5 Artesian Head Difference Between 1999 and 2015, ft

● BVGCD Queen City Observation Well

0 3.75 7.5 10 Miles
Carrizo Aquifer

DFC by 2060 Average Artesian Head Decline 47 feet

Approximate updip limit of Carrizo aquifer outcrop

59-21-416 State Well Number
32 Artesian Head Difference
Between 1999 and 2015, ft

BVGCD Carrizo Observation Well

0 3.75 7.5 15 Miles

North
Simsboro Aquifer

Average Artesian Head Decline = 29 feet

DFC by 2060 Average Artesian Head Decline 270 feet
Hooper Formation

Average Artesian Head Decline = 12 feet

DFC by 2060 Average Artesian Head Decline 170 feet

Approximate updip limit of Hooper Formation outcrop

# 39-51-911 State Well Number
8 Artesian Head Difference Between 1999 and 2015, ft

* BVGCD Hooper Observation Well
Yegua-Jackson Aquifer

Average Artesian Head Decline = 20 feet

DFC by 2060 Average
Artesian Head Decline 70 feet (Yegua)

DFC by 2060 Average
Artesian Head Decline 110 feet (Jackson)

Approximate updip limit of
Yegua aquifer outcrop

Approximate updip limit of
Jackson Group outcrop

59-30-207 State Well Number
31 Artesian Head Difference
Between 1999 and 2015, ft

BVGCD Yegua-Jackson Observation Well
Questions??

Thank you!