Horse Creek Public Hearing
February 15, 2017, 2:00 PM

• Introduction
• Brief History
• 2013 Order
• Results
  – Precipitation
  – Groundwater Diversions
  – Surface Water Diversions
  – Reservoir Stage
  – Horse Creek Streamflow
• Questions
• Public Comments / Presentations
Horse Creek History

• 1965-1982 – Multiple disputes exist including both complaints of well interference with surface water rights and well to well interference complaints.

• 2009 – A petition to the State Engineer from water users under Hawk Springs Reservoir requested “all the wells in this area be regulated in priority to allow Hawk Springs Reservoir to fill.” (2/18/09 letter to SEO.)

• 2011 – Hinckley Consulting and AMEC publish *Horse Creek Groundwater / Surface Water Connection Investigation, Goshen and Laramie Counties, Wyoming*. The study confirmed that surface waters of Horse Creek and the locally-exploited aquifer are so interconnected as to constitute, in fact, “one source of supply.” The report was reviewed at a public meeting in LaGrange, WY, on November 1, 2011.

• 2012 and 2013 – Meetings were held between representatives of ground and surface water users in hopes of developing a voluntary operation agreement wherein their needs for water could be met through mutual cooperation.

• April 12, 2013 – The State Engineer held a hearing to determine if groundwater and surface water resources were adequate for the needs of all appropriators.
Horse Creek History

• May 20, 2013 – Representatives from Horse Creek Conservation District (HCCD) and groundwater users met with the State Engineer and representatives of the Wyoming Department of Agriculture’s Agriculture and Natural Resource Mediation Board. This meeting and attempt at mediation did not result in an agreement.

• June 18, 2013 – A call for regulation was received from HCCD. Hydrographer Gibson honored the call and regulated surface water diversions with inadequate headgates and measuring devices. Hydrographer Gibson also regulated junior irrigation wells in the LaGrange Area.

• June 28, 2013 – Hydrographer Gibson’s actions were appealed to Superintendent Pugsley. Superintendent Pugsley overturned Hydrographer Gibson’s decision.

• July 15, 2013 – The State Engineer received an appeal of Superintendent Pugsley’s decision.

• July 19, 2013 – The State Engineer issued the Horse Creek Basin Order. The Order applies to the LaGrange Aquifer and surface water diversions from Horse Creek at and below the Brown and LaGrange diversion.
2013 Horse Creek Order

- Closed the area to further permitting of large-capacity wells and required the adjudication of unadjudicated large-capacity wells.
- Limited groundwater well irrigation to 12-inches per acre per year commencing in 2014, and extending for a 3-year period (not to exceed a 36-inch water column).
- Allowed for a carry over of 6 acre-inches per acre between 3-year periods.
- Required groundwater wells to have flow meters and to report production annually.
- Limited surface water diversions to the amount of water which could be applied to the authorized beneficial use(s).
- Exempted groundwater wells from regulation in correlation with surface water rights.
2013 Horse Creek Order

- Required control and flow measuring devices for Horse Creek No. 1, Brown and LaGrange, Lowe Cattle No. 1, Lowe Cattle No. 2, Spy, and Wye Cross ditches.
- Authorized the Superintendent to order the installation of other devices as necessary.
- Directed the Superintendent to investigate a streamgage location along Horse Creek near the Brown and LaGrange headgate.
2013 Horse Creek Order Results

• Precipitation
• Groundwater Production
• Groundwater Hydrographs
• Stream Flow
• Diversions
• Reservoir Storage
Annual Precipitation in Horse Creek Area

- Yoder
- LaGrange SE (4.5 miles ESE of LaGrange)
- Philips (17 miles West of LaGrange)
Annual Groundwater Allocation and Production
Horse Creek Order

<table>
<thead>
<tr>
<th>Year</th>
<th>Acre-Foot Allocation</th>
<th>Acre-Foot Produced</th>
<th>Average Precipitation from Philips and Yoder</th>
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<tbody>
<tr>
<td>2014</td>
<td>7,000</td>
<td>3,200</td>
<td>2014</td>
</tr>
<tr>
<td>2015</td>
<td>7,000</td>
<td>2,800</td>
<td>2015</td>
</tr>
<tr>
<td>2016</td>
<td>7,000</td>
<td>3,700</td>
<td>2016</td>
</tr>
</tbody>
</table>
State Engineer's Office
Groundwater Monitoring Well Locations

Description
- ★ Removed from Network
- ✗ No Access
- ⚫ Good Standing Current
- Horse Creek

0 0.5 1 2 Miles
WYard Well Hydrograph

Date


Water Level (Feet Below Ground Surface)
WYard Well Hydrograph

Water Level (Feet Below Ground Surface) vs. Date


Graph showing water level changes over time.
Stream Gage at Goshen – Laramie County Line
Horse Creek at the Goshen/Laramie County Line

- Daily Mean Discharge (CFS) - Water Year 2014

Instantaneous Peak Flow
March 7th, 2014 – 171.5 CFS
Horse Creek at the Goshen/Laramie County Line

Daily Mean Discharge (CFS) - Water Year 2015

Instantaneous Peak Flow
May 26th, 2015 – 183.8 CFS
Horse Creek at the Goshen/Laramie County Line

Daily Mean Discharge (CFS) - Water Year 2016

Instantaneous Peak Flow @ 1445 Hrs.
May 10th, 2016 – 516.6 CFS
Horse Creek at the Goshen/Laramie County Line

Daily Mean Discharge (CFS) - Water Year 2017

Instantaneous Peak Flow
December 17th, 2016 – 167.8 CFS
Brown and LaGrange Diversion Record and Appropriation Amount

Cubic Feet per Second

Date

Diversion
Appropriation

9/1/13 3/2/14 9/1/14 3/2/15 9/1/15 3/2/16 8/31/16 3/2/17

111.28
Lowe Cattle #1
Spy Diversion Record and Appropriation Amount

Diversion (Cubic Feet per Second)

Date

Spy Diversion Record and Appropriation Amount

Diversion

Appropriation

09/01/13  03/02/14  09/01/14  03/02/15  09/01/15  03/02/16  08/31/16  03/02/17

Diversion

Appropriation

0  1  2  3  4  5  6  7  8  9 10 11 12 13 14

7.20

12

10

8

6

4

2

0

09/01/13  03/02/14  09/01/14  03/02/15  09/01/15  03/02/16  08/31/16  03/02/17

Date
Hawk Springs Inlet
Hawk Springs Inlet
Hawk Springs Inlet

2-9-2017
Peak Capacity – 16,747 AF

April 8th, 2014

Adjudicated Capacity – 16,735 AF

Carry-over – 1,539 AF

End of Water Year – 8,160 AF
Peak Capacity – 18,390 AF  
May 29th, 2015

Adjudicated Capacity – 16,735 AF

Carry-over – 8,160 AF

End of Water Year – 11,104 AF
Hawk Springs Reservoir
Total Storage (AF) - Water Year 2016

- Peak Capacity – 17,442 AF
  May 8th, 2016
- Adjudicated Capacity – 16,735.0 AF
- Carry-over – 11,104 AF
- End of Water Year – 8,450 AF
Hawk Springs Reservoir

Peak Capacity – 16,855 AF
January, 17th, 2017

Adjudicated Capacity – 16,735 AF

Carry-over – 8,450 AF
## Surface Water Diversion Totals within the LaGrange Aquifer 2014-2016

<table>
<thead>
<tr>
<th>Ditch</th>
<th>Source</th>
<th>WY 2014 (AF)</th>
<th>WY 2015 (AF)</th>
<th>WY 2016 (AF)</th>
<th>Ditch Total (AF)</th>
<th>Max (AF)</th>
<th>Min (AF)</th>
<th>Mean (AF)</th>
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<tbody>
<tr>
<td>Brown &amp; LaGrange</td>
<td>Horse Creek</td>
<td>7,283.2</td>
<td>5,523.0</td>
<td>8,370.0</td>
<td>21,176.2</td>
<td>8,370.0</td>
<td>5,523.0</td>
<td>7,058.7</td>
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<td>Horse Creek #1</td>
<td>Horse Creek</td>
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<td>4,530.0</td>
<td>2,942.1</td>
<td>13,069.3</td>
<td>5,597.2</td>
<td>2,942.1</td>
<td>4,356.4</td>
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<td>Lowe Cattle #1</td>
<td>Horse Creek</td>
<td>722.6</td>
<td>1,210.0</td>
<td>1,038.0</td>
<td>2,970.6</td>
<td>1,210.0</td>
<td>722.6</td>
<td>990.2</td>
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<td>Wye Cross #2</td>
<td>Horse Creek</td>
<td>530.2</td>
<td>336.0</td>
<td>419.0</td>
<td>1,285.2</td>
<td>530.2</td>
<td>336.0</td>
<td>428.4</td>
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<td>Spy</td>
<td>Horse Creek</td>
<td>2,610.6</td>
<td>1,703.0</td>
<td>1,495.0</td>
<td>5,808.6</td>
<td>2,610.6</td>
<td>1,495.0</td>
<td>1,936.2</td>
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<tr>
<td>Hawk Springs Res. Supply</td>
<td>Horse Creek</td>
<td>18,432.0</td>
<td>13,936.0</td>
<td>9,418.0</td>
<td>41,786.0</td>
<td>18,432.0</td>
<td>9,418.0</td>
<td>13,928.7</td>
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<table>
<thead>
<tr>
<th></th>
<th>Total for 3 Year Order</th>
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<tr>
<td></td>
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<td>86,095.9</td>
<td>36,750.0</td>
<td>20,436.7</td>
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<table>
<thead>
<tr>
<th>LaGrange Aquifer Diversion Total</th>
<th>WY 2014 (AF)</th>
<th>WY 2015 (AF)</th>
<th>WY 2016 (AF)</th>
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<tbody>
<tr>
<td>Total</td>
<td>35,175.8</td>
<td>27,238.0</td>
<td>23,682.1</td>
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<tr>
<td>Max</td>
<td>18,432.0</td>
<td>13,936.0</td>
<td>9,418.0</td>
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<tr>
<td>Min</td>
<td>530.2</td>
<td>336.0</td>
<td>419.0</td>
</tr>
<tr>
<td>Mean</td>
<td>5,862.6</td>
<td>4,539.7</td>
<td>3,947.0</td>
</tr>
</tbody>
</table>

Horse Creek

32,903.5  48,300.0  61,737.0
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• Questions
• Public Comments / Presentations