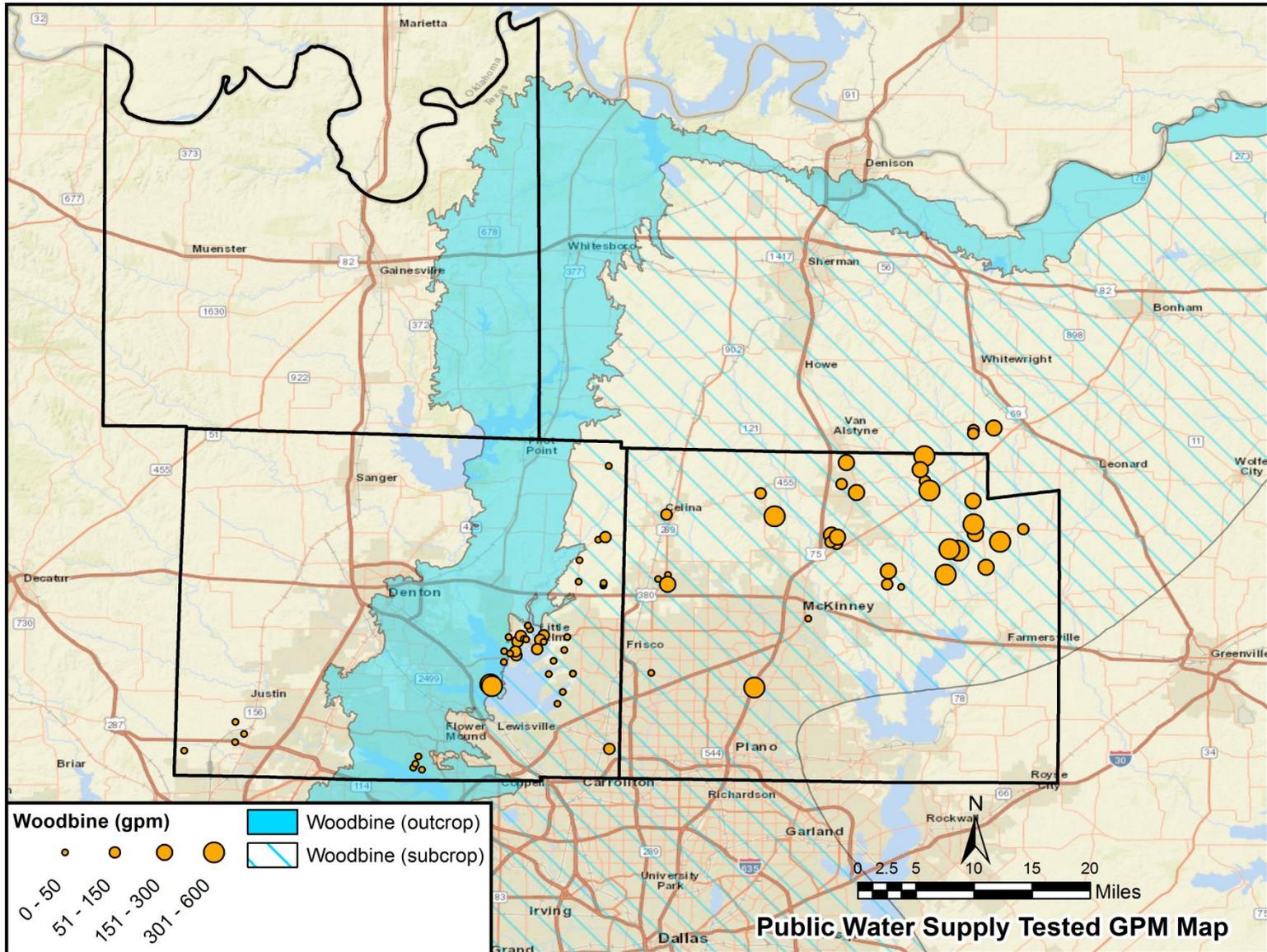


North Texas GCD

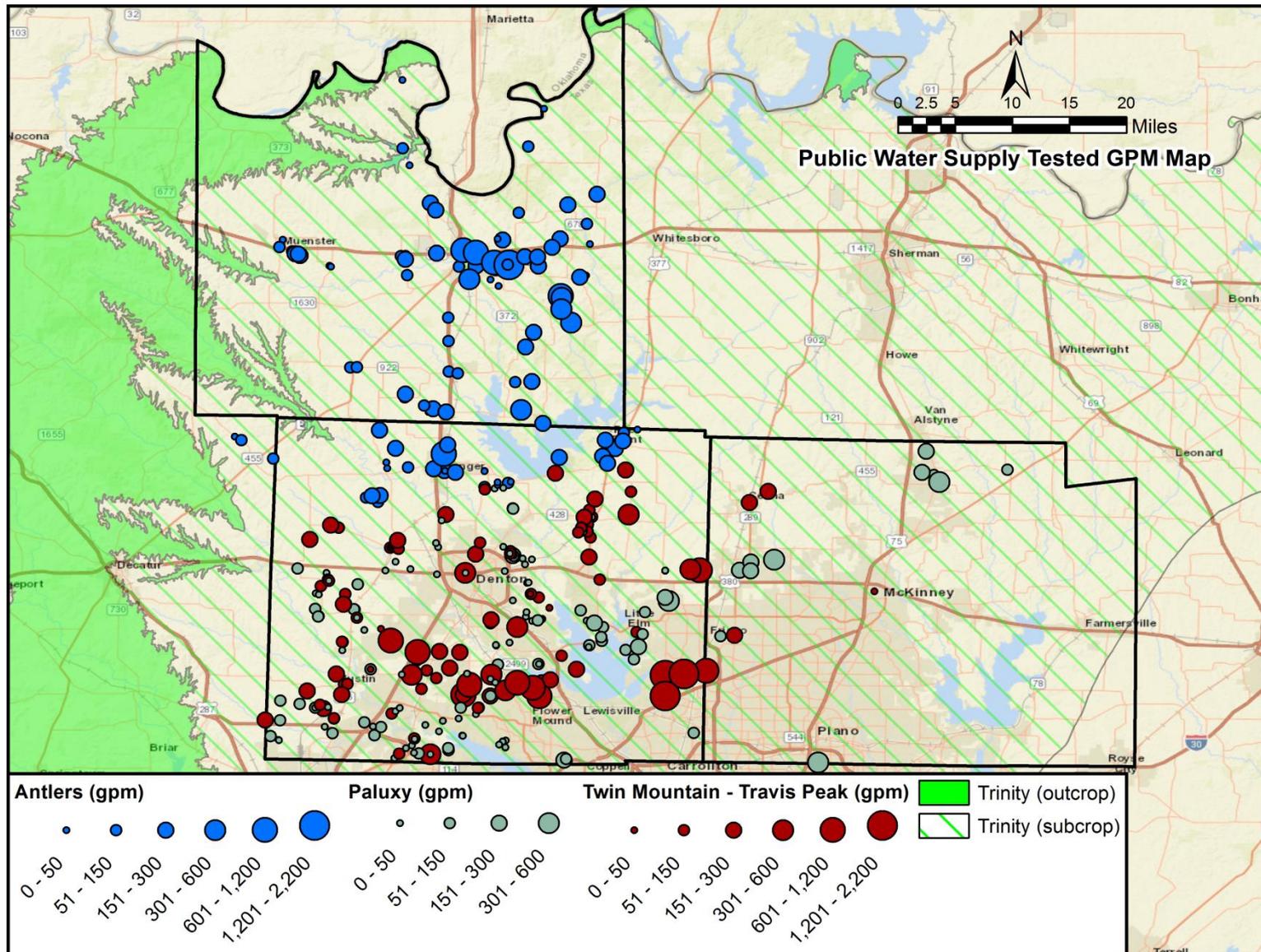
Discussion of General Well Spacing Rules

LBG-Guyton Associates
August 16, 2017

Tested PWS Well Capacities – Woodbine



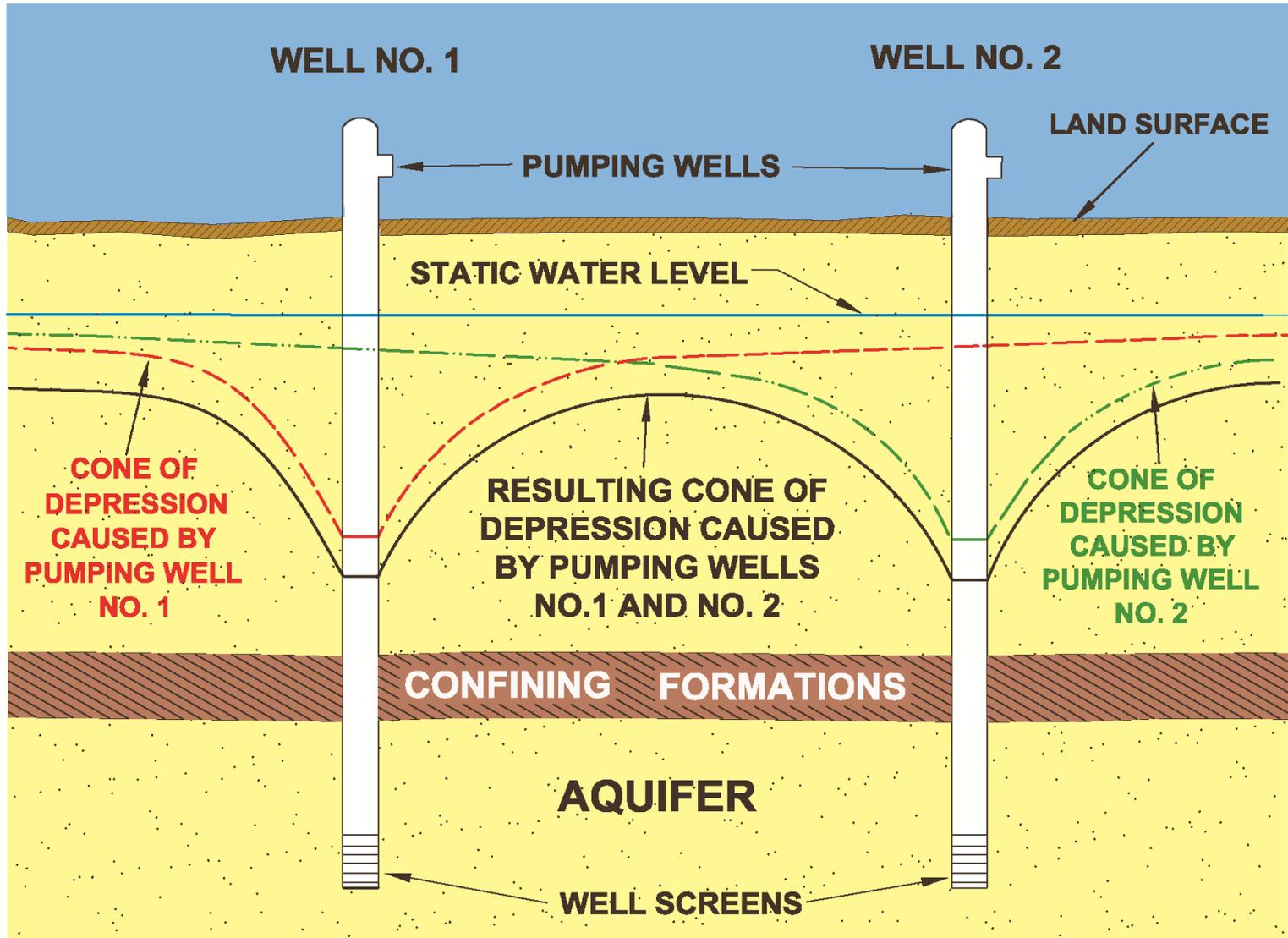
Tested PWS Well Capacities – Antlers, Paluxy, and Twin Mountains/Travis Peak



Public Supply Well Capacities in North Texas GCD

COUNTY/Aquifer	Number of Wells	Max Capacity (gpm)	Average Capacity (gpm)
COLLIN			
Paluxy	12	420	212
Twin Mountains - Travis Peak	4	1000	443
Woodbine	36	500	221
COOKE			
Antlers	78	1214	193
DENTON			
Antlers	41	638	130
Paluxy	144	325	55
Twin Mountains - Travis Peak	102	2200	258
Woodbine	42	385	58

Well Interference - Superposition

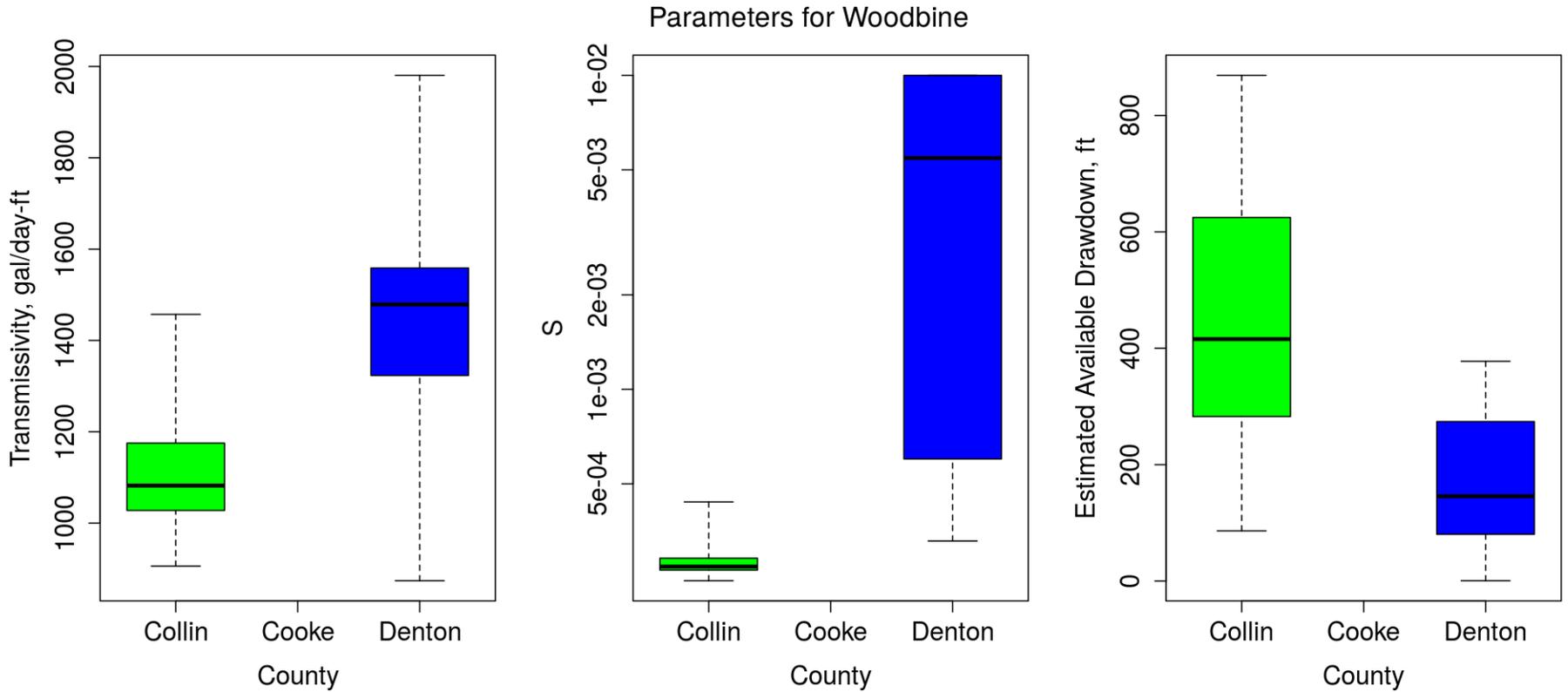


Potential Rule

(draft - for illustration only)

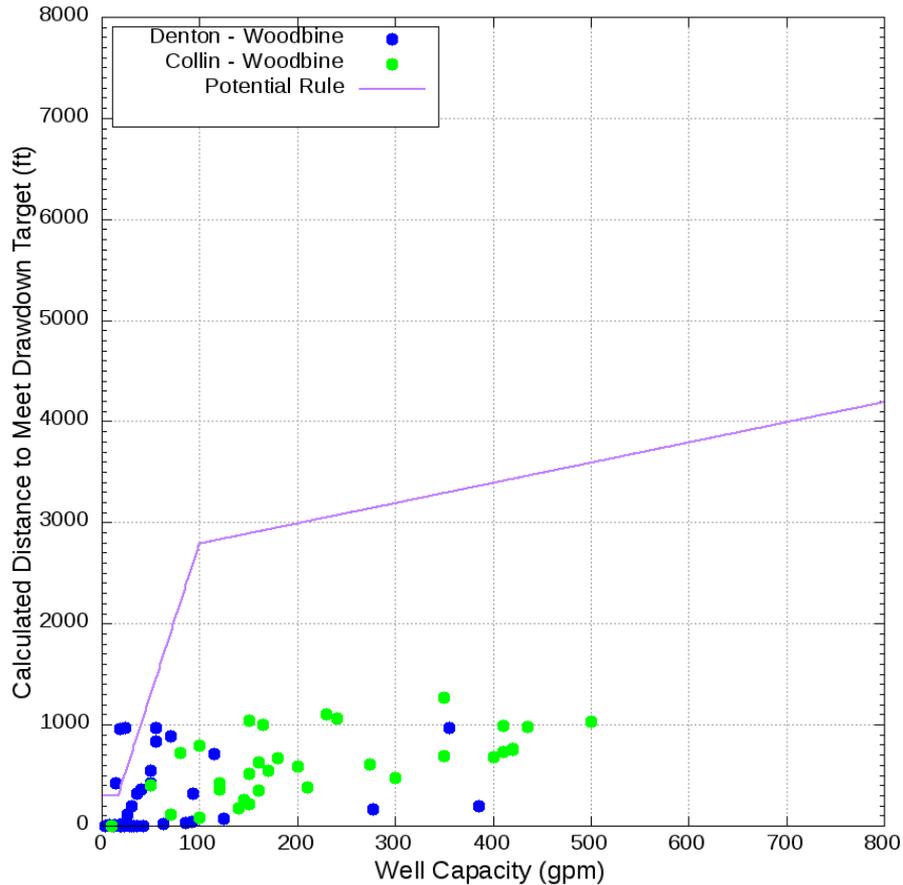
- Woodbine, Paluxy, and Antlers
 - 300 feet up to 17 gpm
 - 30x (in feet) per gpm (18 – 100 gpm)
 - 2x (in feet) per additional gpm, over 100 gpm

Woodbine – Summary of Parameters

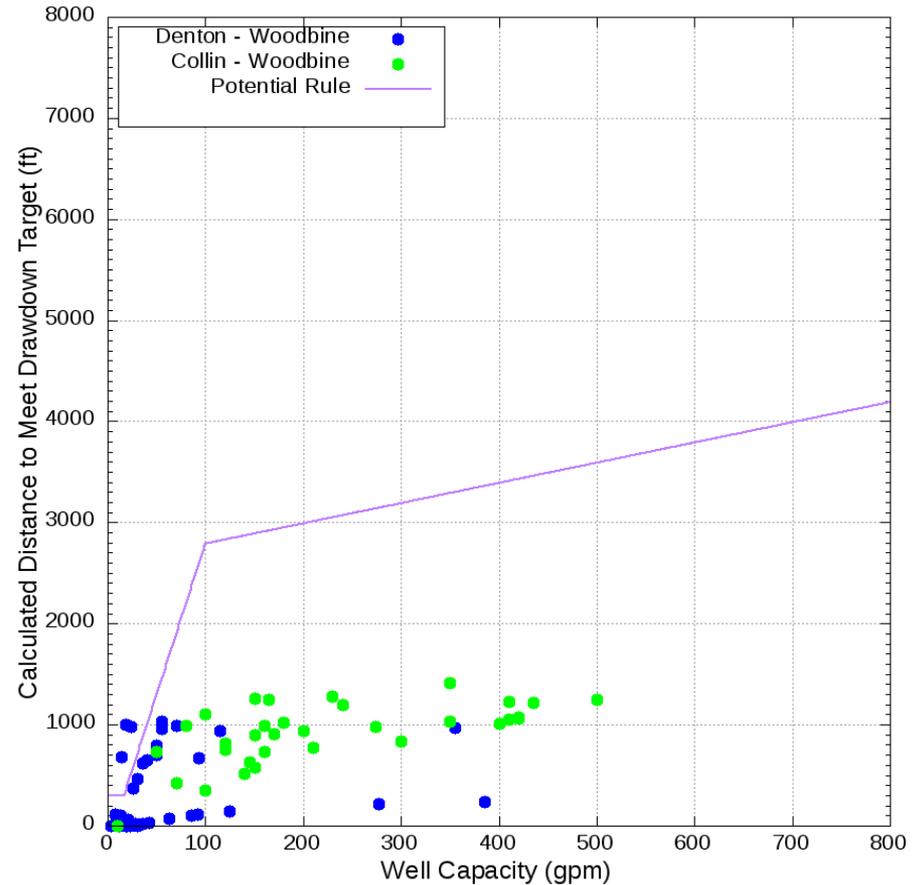


Woodbine – 2 Days Pumping, 10% and 5% Allowable Drawdown

Woodbine Calculated Spacing: 2 days and 10% Drawdown of Available Head

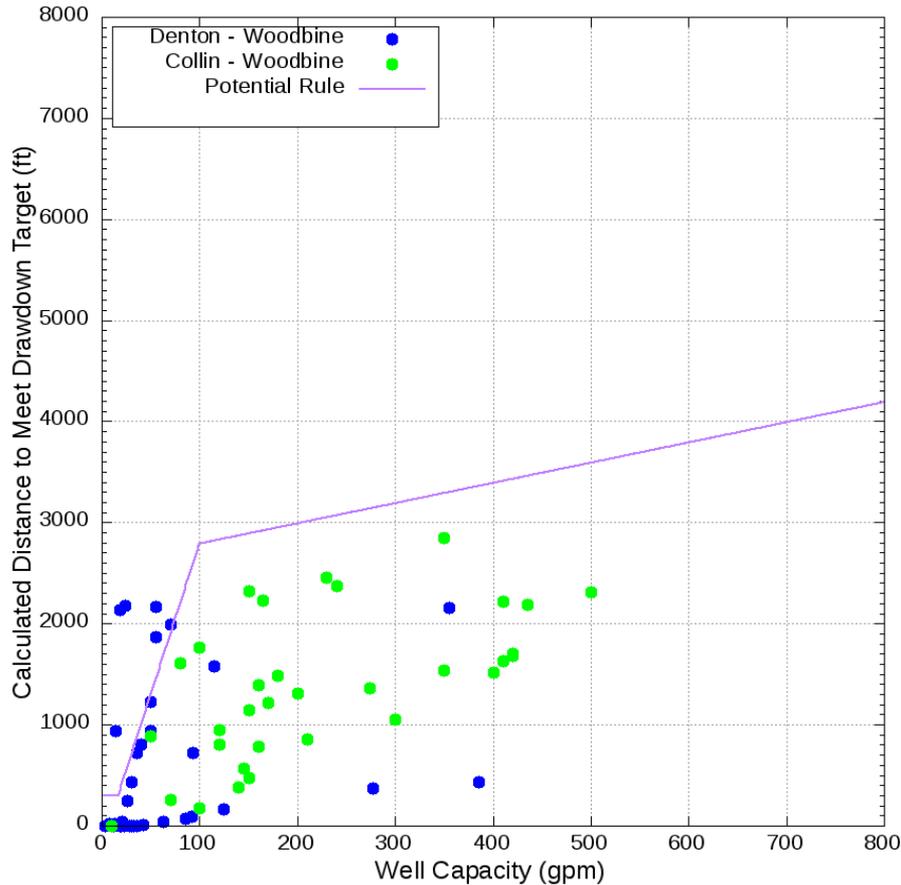


Woodbine Calculated Spacing: 2 days and 5% Drawdown of Available Head

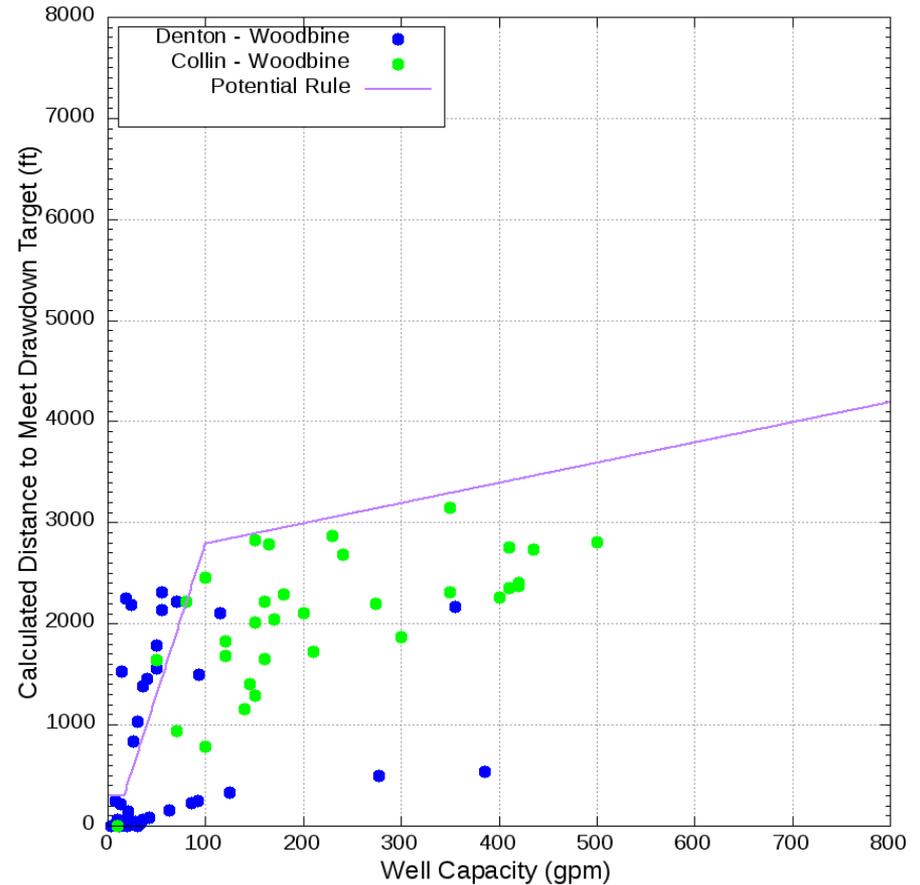


Woodbine – 10 Days Pumping, 10% and 5% Allowable Drawdown

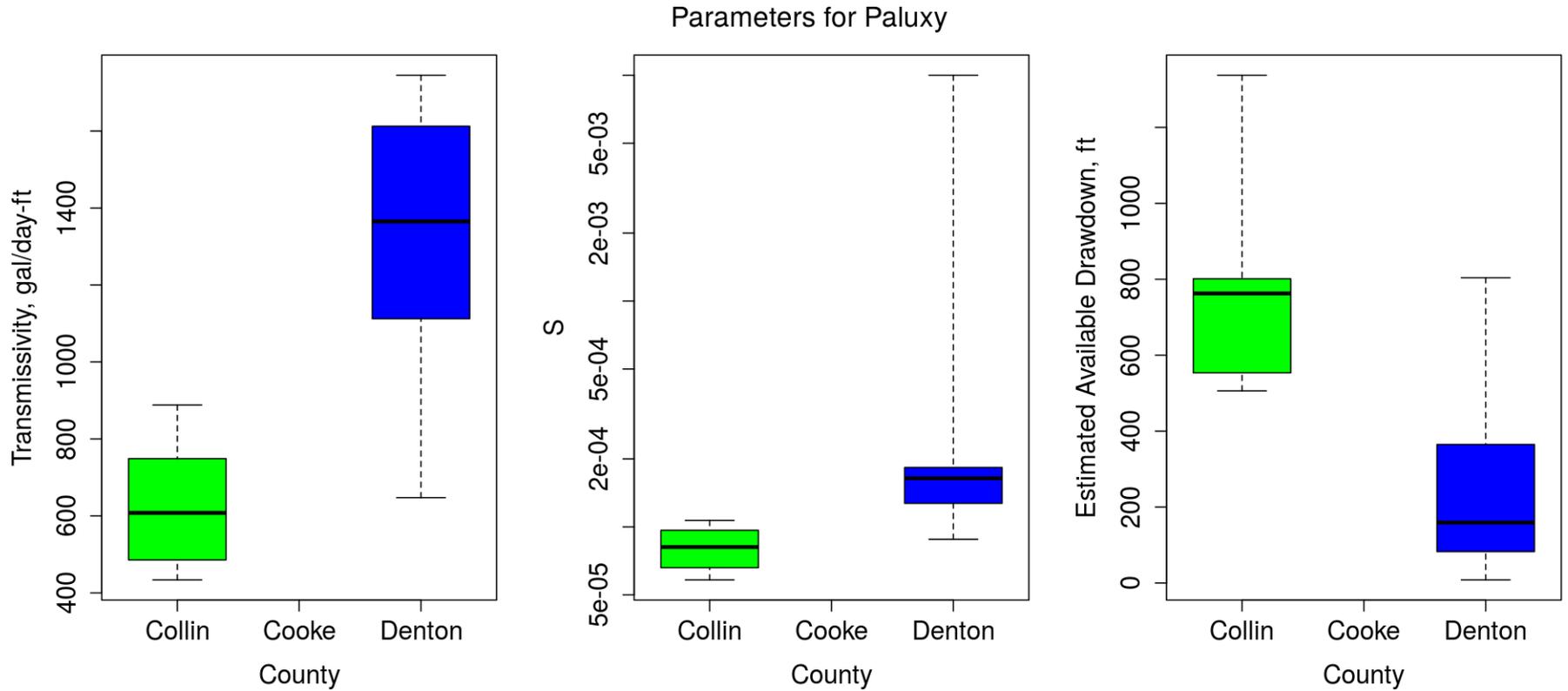
Woodbine Calculated Spacing: 10 days and 10% Drawdown of Available Head



Woodbine Calculated Spacing: 10 days and 5% Drawdown of Available Head

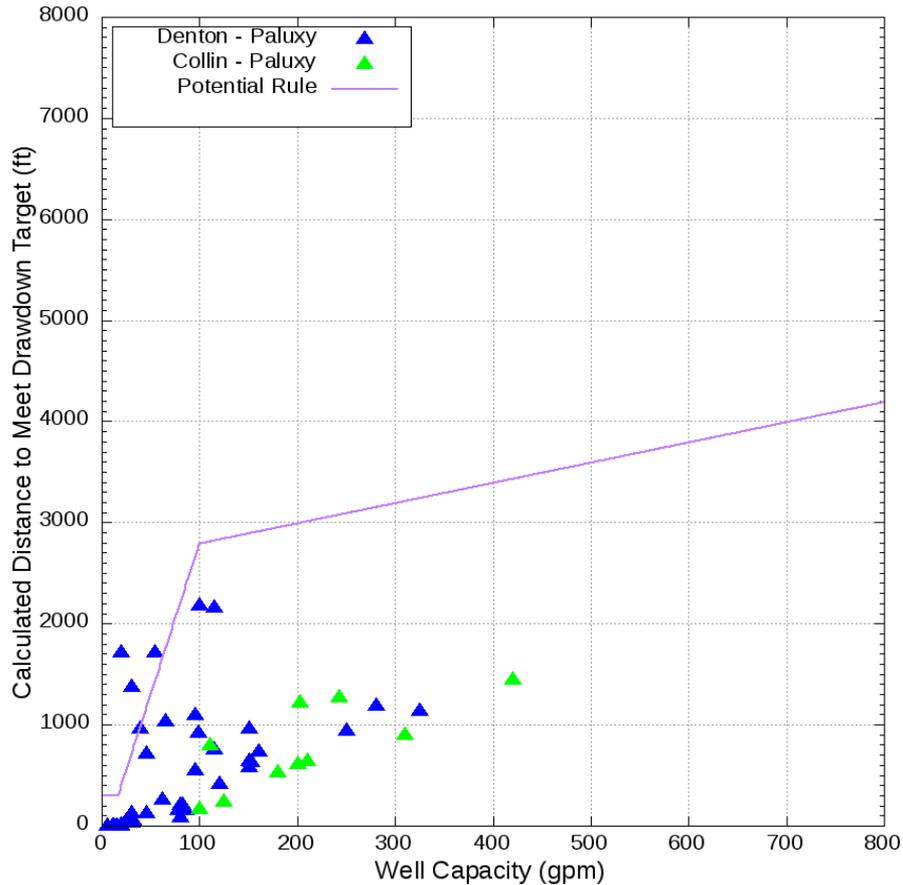


Paluxy – Summary of Parameters

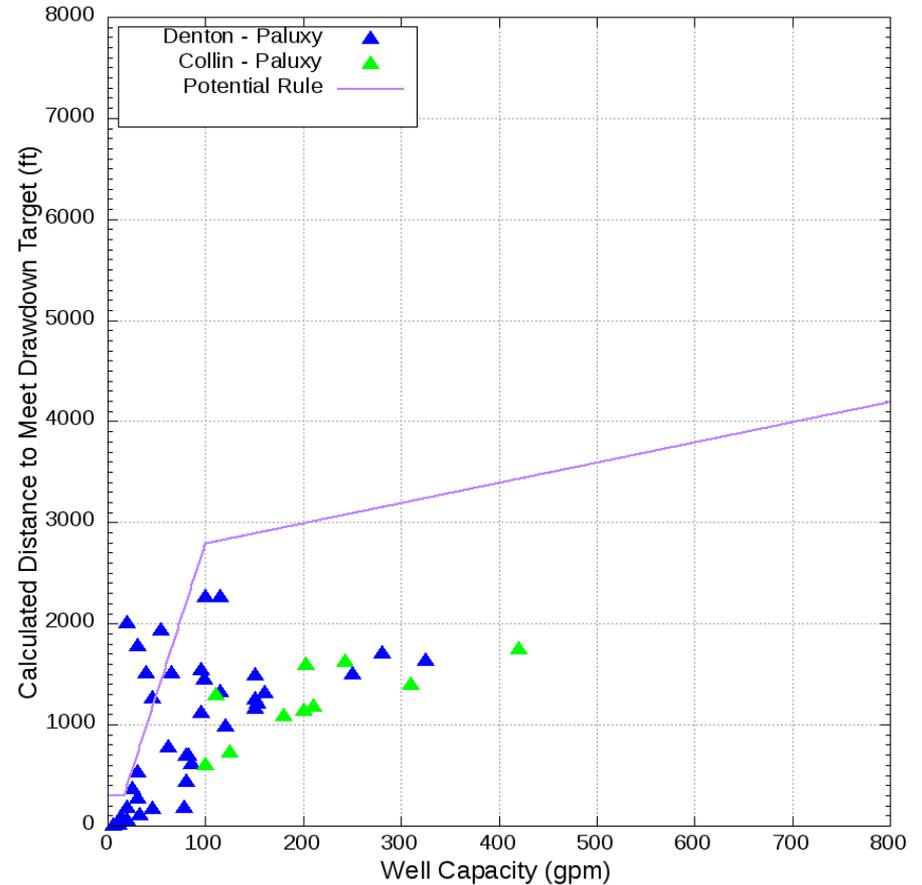


Paluxy – 2 Days Pumping, 10% and 5% Allowable Drawdown

Paluxy Calculated Spacing: 2 days and 10% Drawdown of Available Head

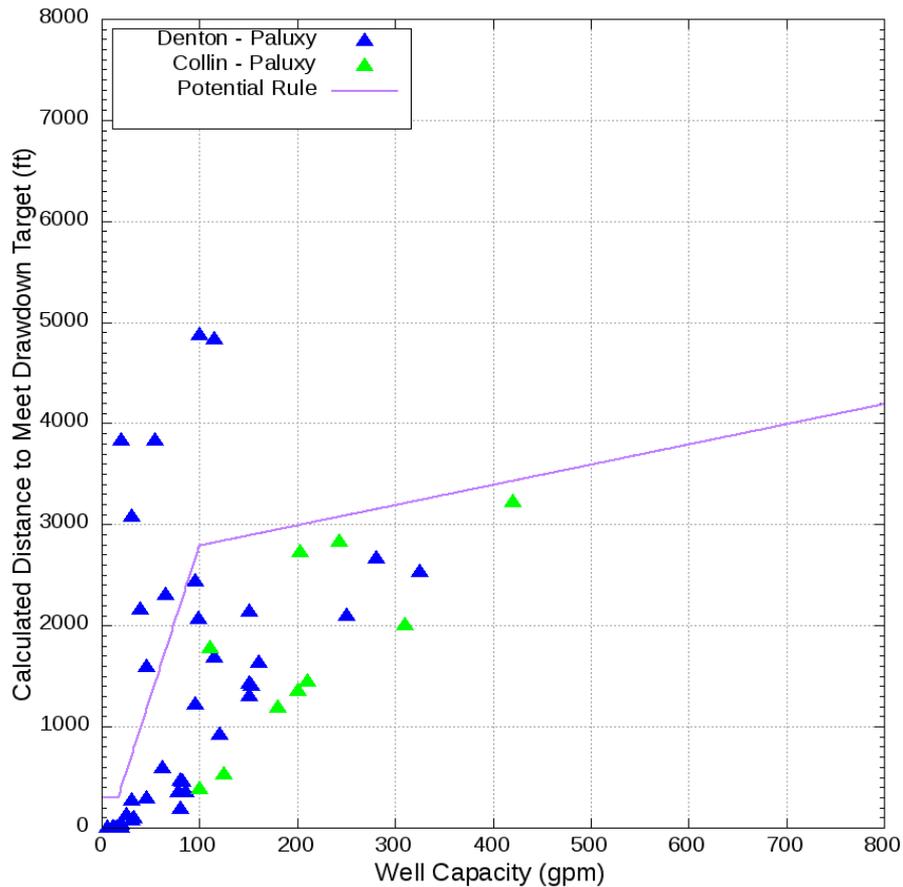


Paluxy Calculated Spacing: 2 days and 5% Drawdown of Available Head

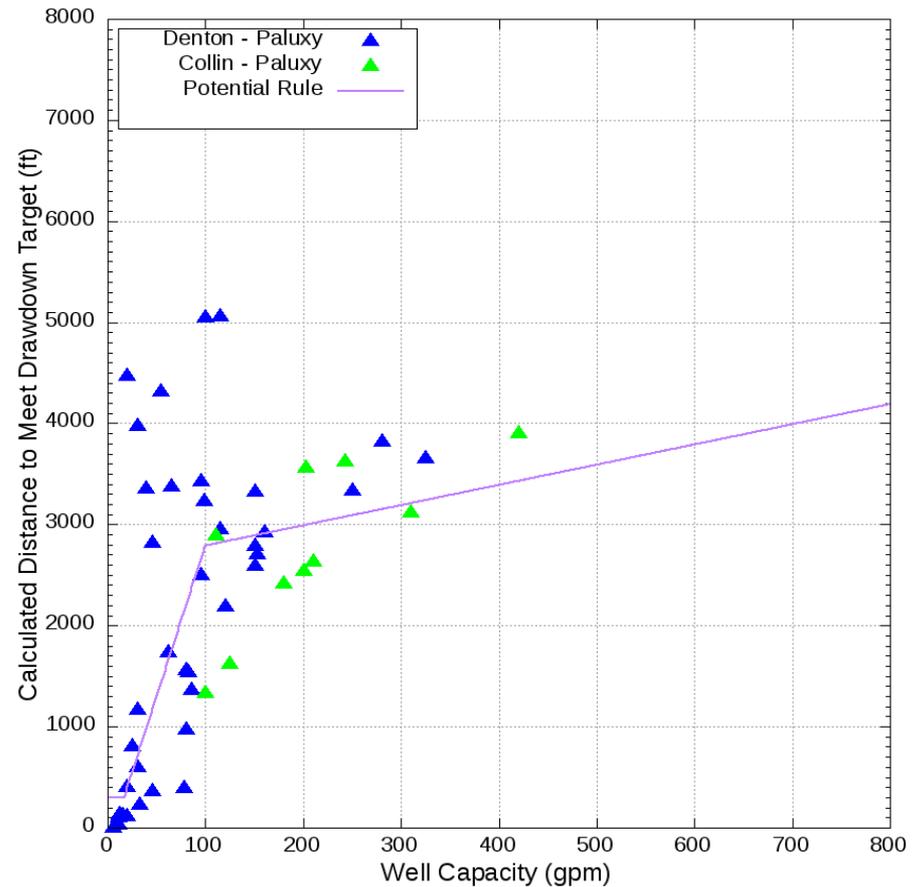


Paluxy – 10 Days Pumping, 10% and 5% Allowable Drawdown

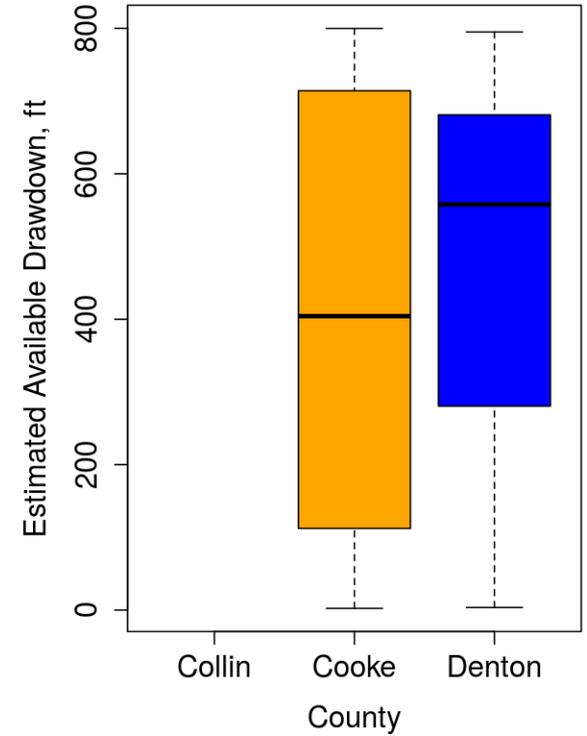
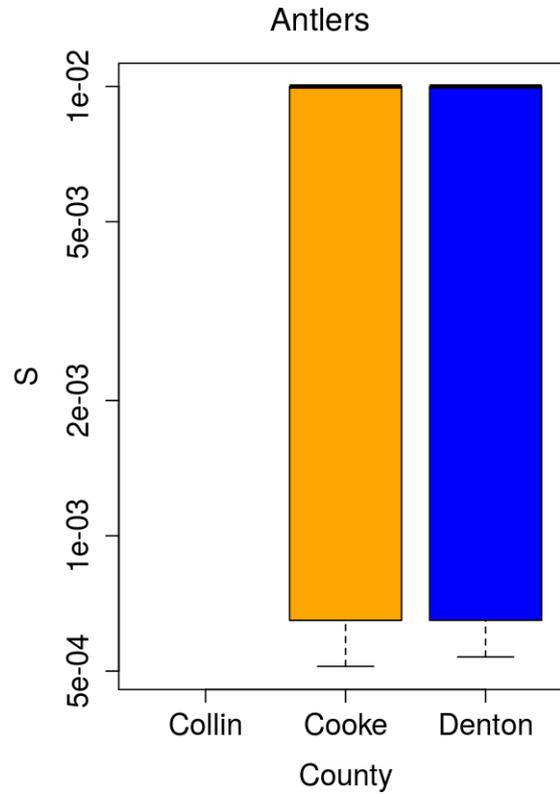
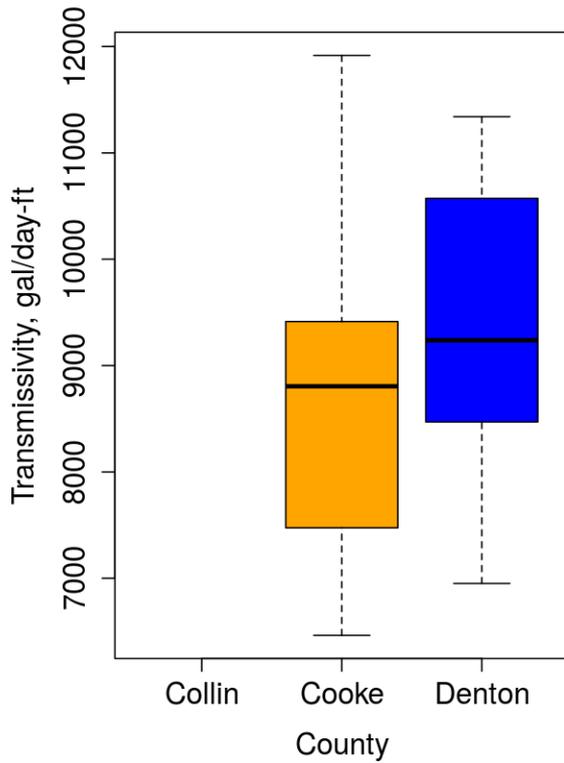
Paluxy Calculated Spacing: 10 days and 10% Drawdown of Available Head



Paluxy Calculated Spacing: 10 days and 5% Drawdown of Available Head

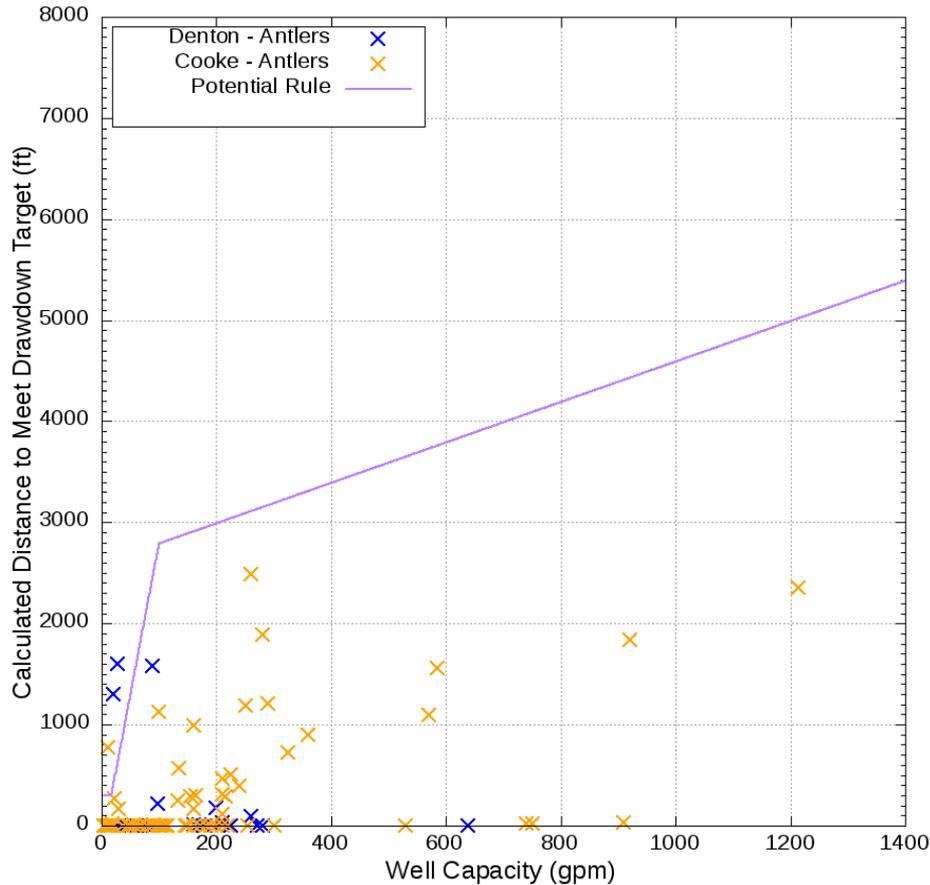


Antlers – Summary of Parameters

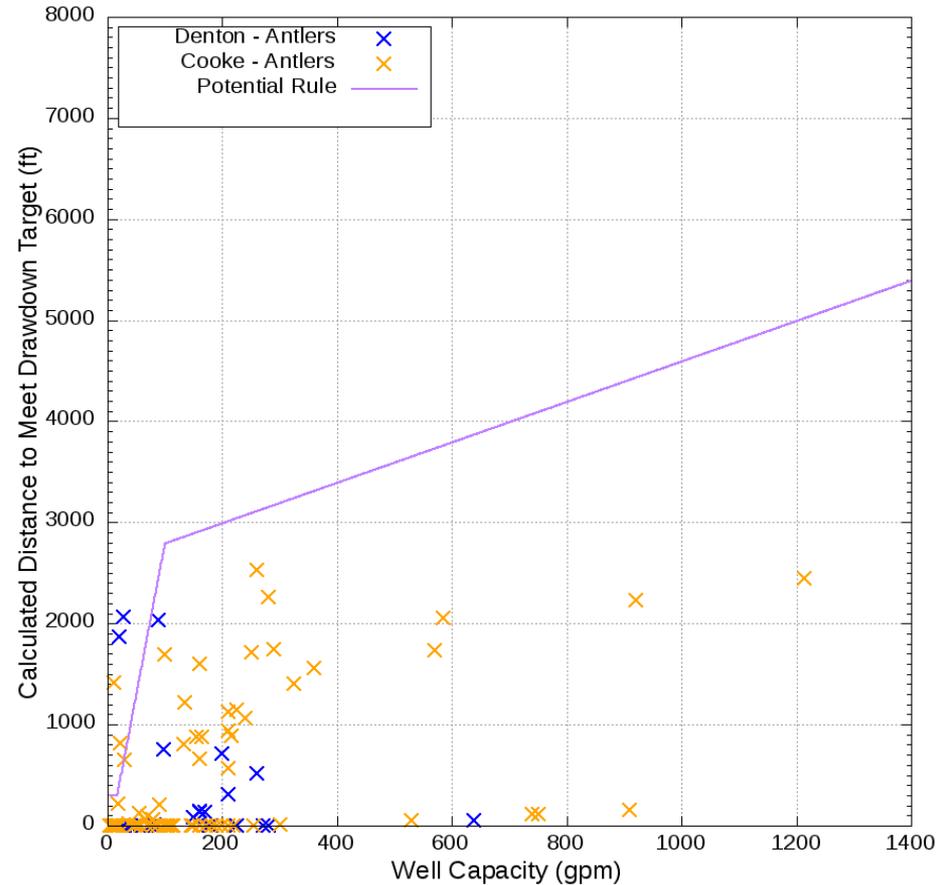


Antlers – 2 Days Pumping, 10% and 5% Allowable Drawdown

Antlers Calc. Spacing: 2 days and 10% Drawdown of Avail. Head

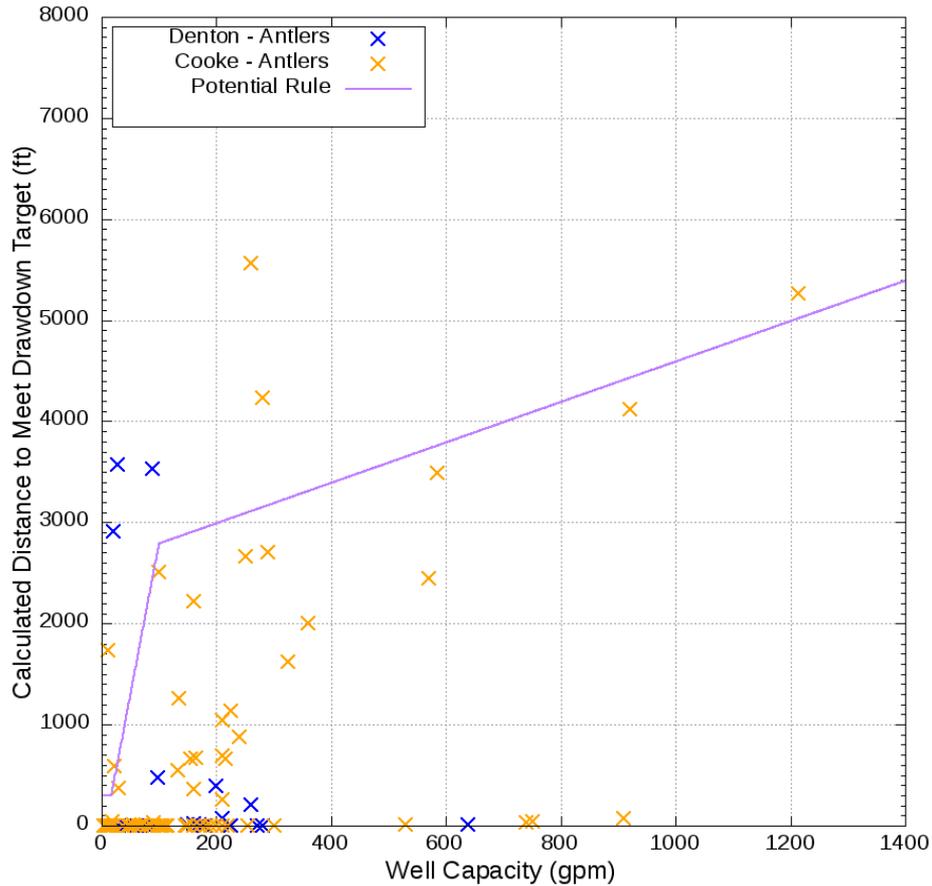


Antlers Calc. Spacing: 2 days and 5% Drawdown of Avail. Head

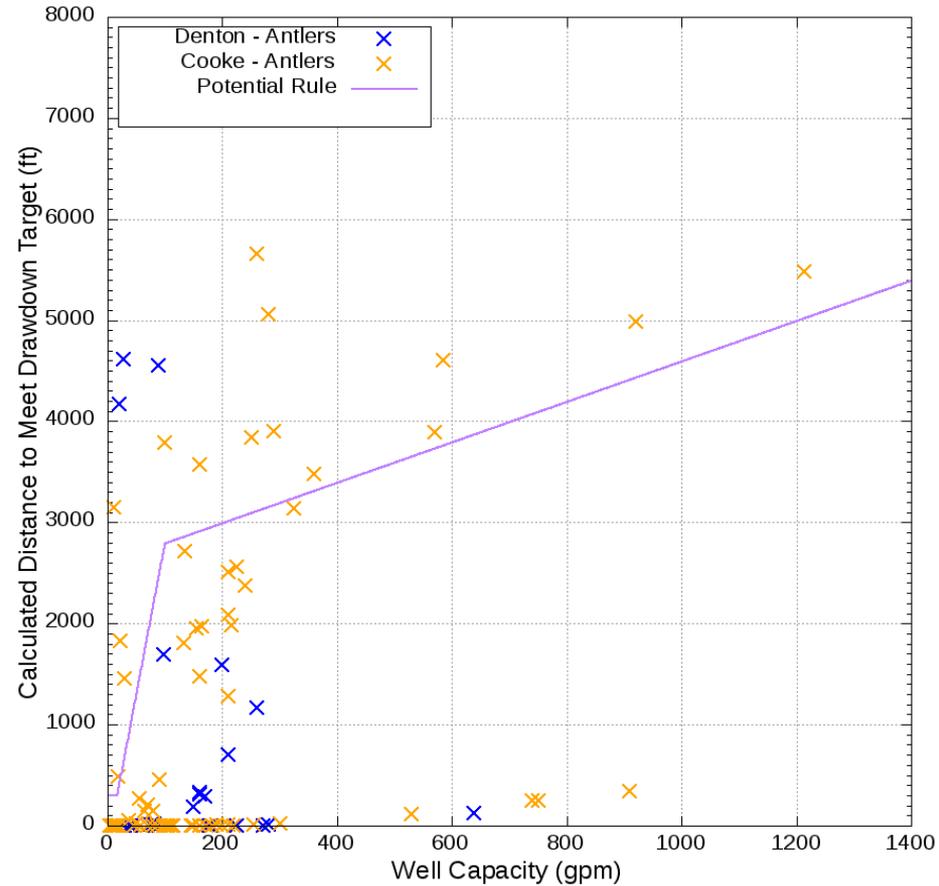


Antlers – 10 Days Pumping, 10% and 5% Allowable Drawdown

Antlers Calc. Spacing: 10 days and 10% Drawdown of Avail. Head



Antlers Calc. Spacing: 10 days and 5% Drawdown of Avail. Head



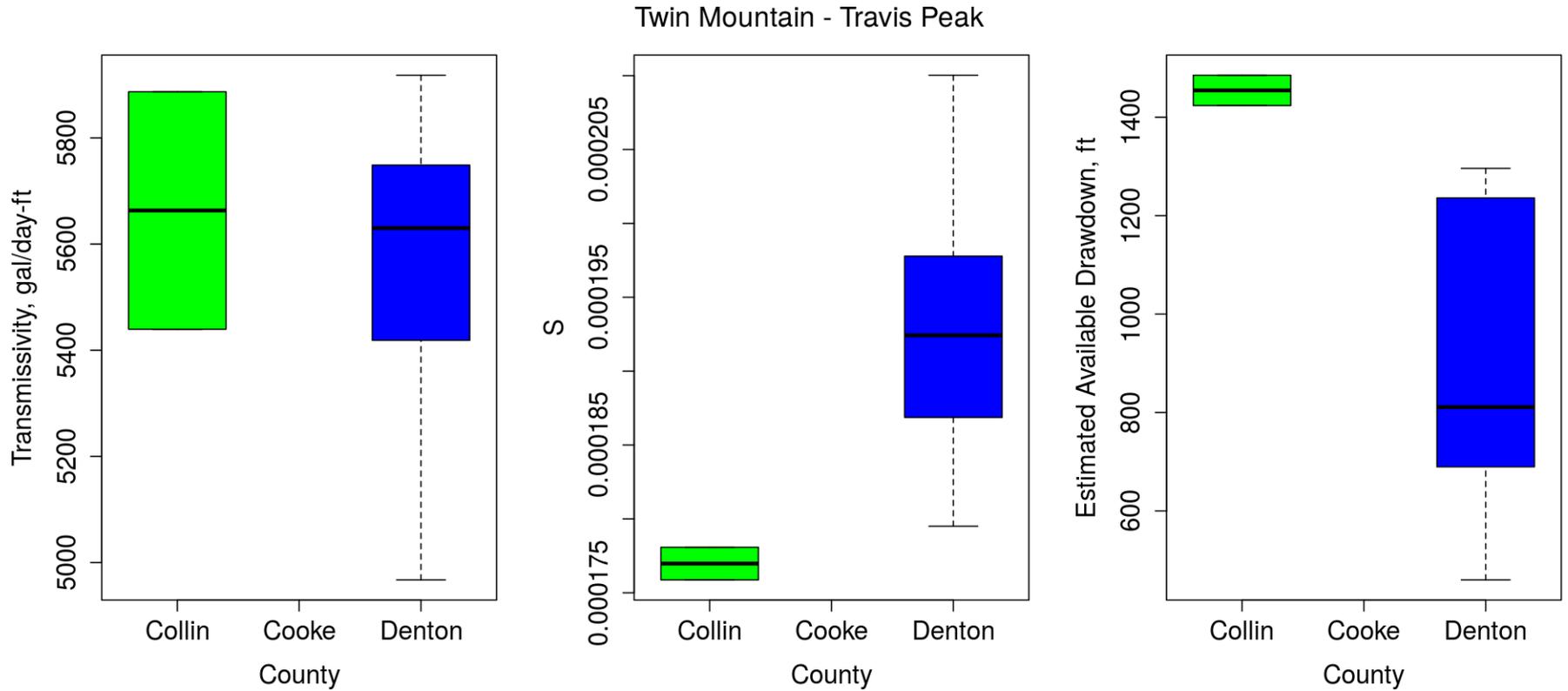
Potential Rule

(draft - for illustration only)

➤ Twin Mountains/Travis Peak

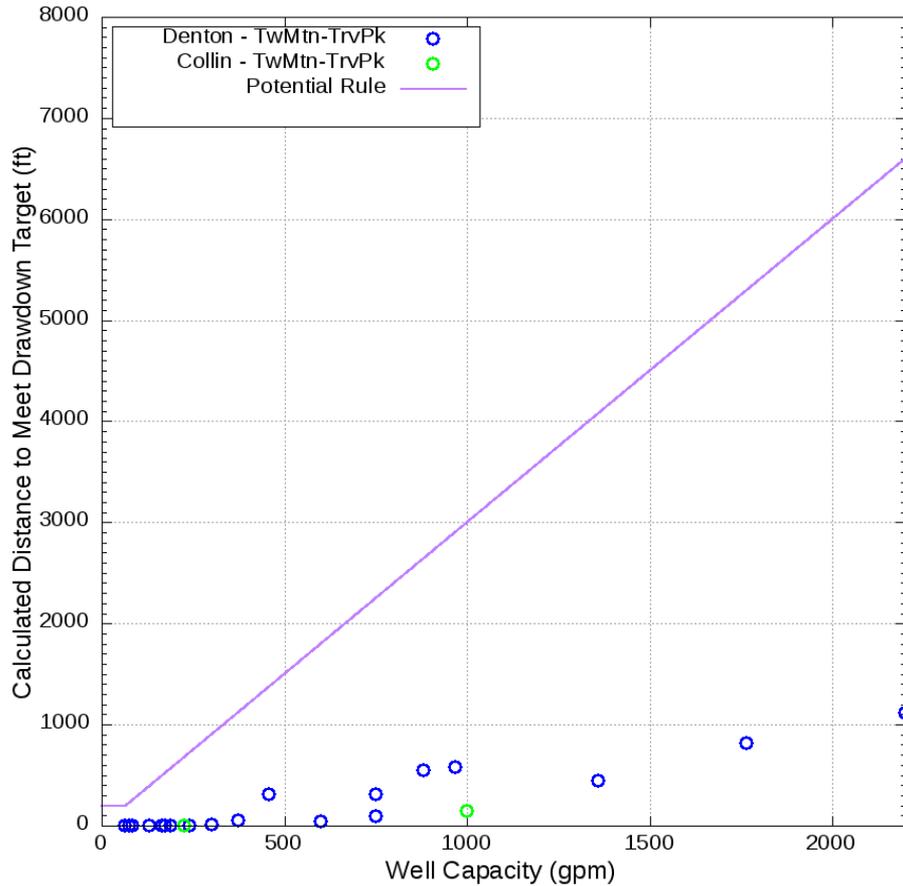
- Minimum 200 feet
- 3x (in feet) per gpm

Twin Mountains/Travis Peak – Summary of Parameters

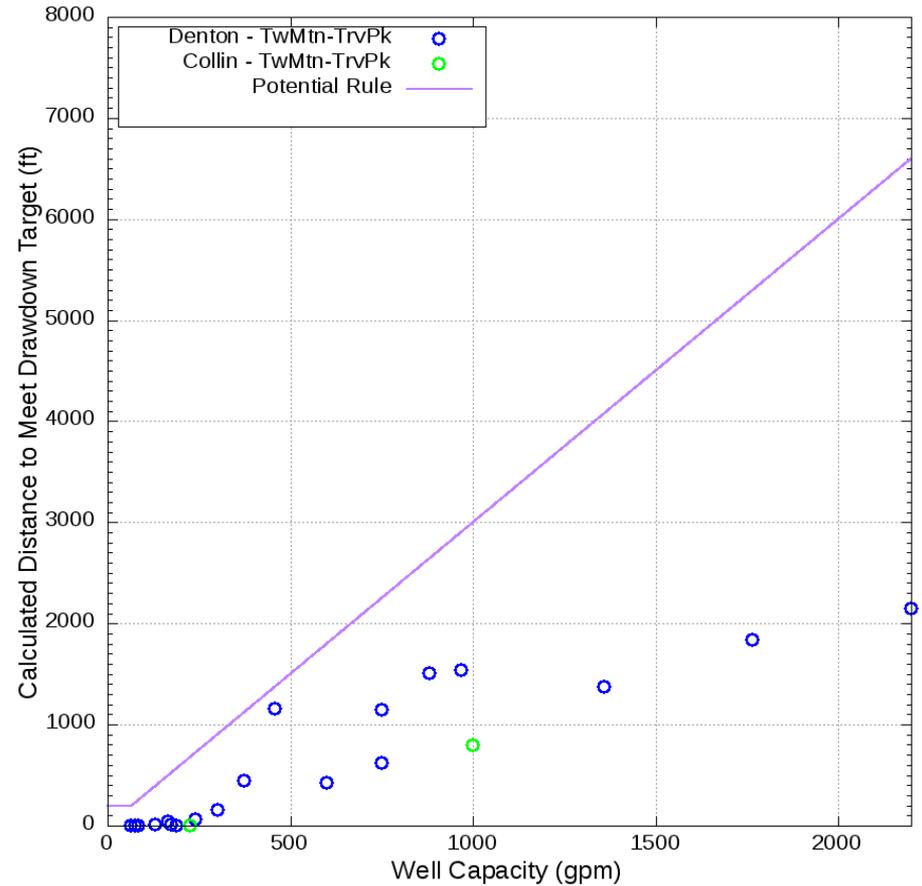


Twin Mountains-Travis Peak – 2 Days Pumping, 10% and 5% Allowable Drawdown

TwMtn-TrvPk Calc. Spacing: 2 days and 10% Drawdown of Avail. Head

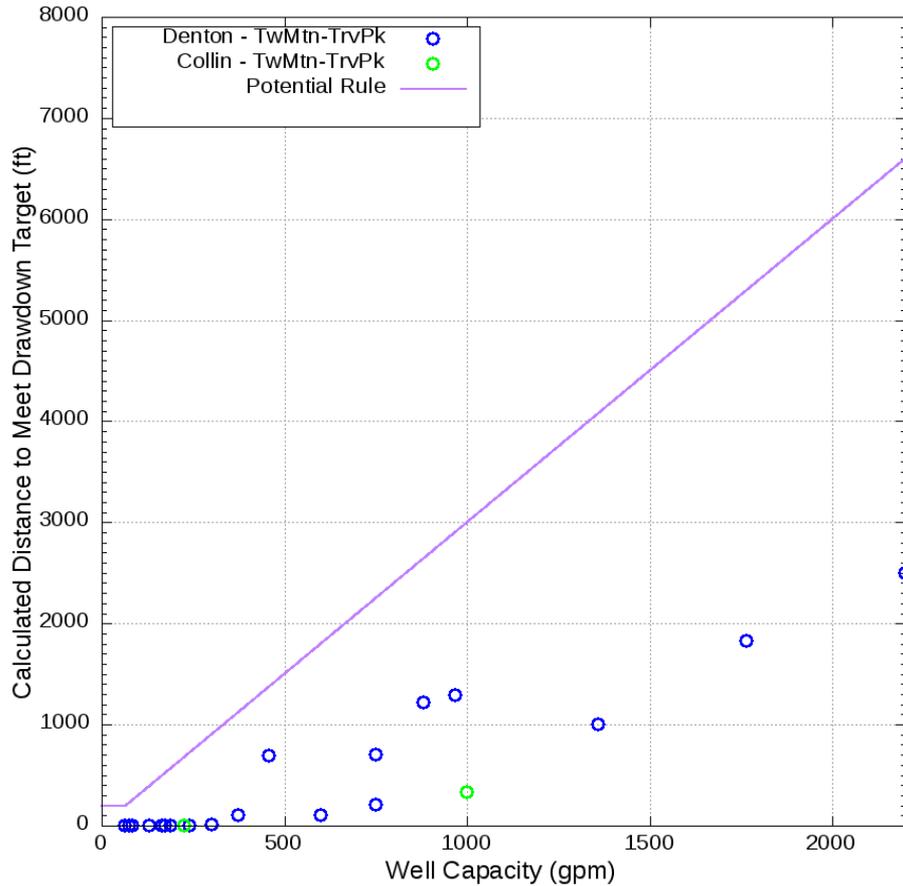


TwMtn-TrvPk Calc. Spacing: 2 days and 5% Drawdown of Avail. Head

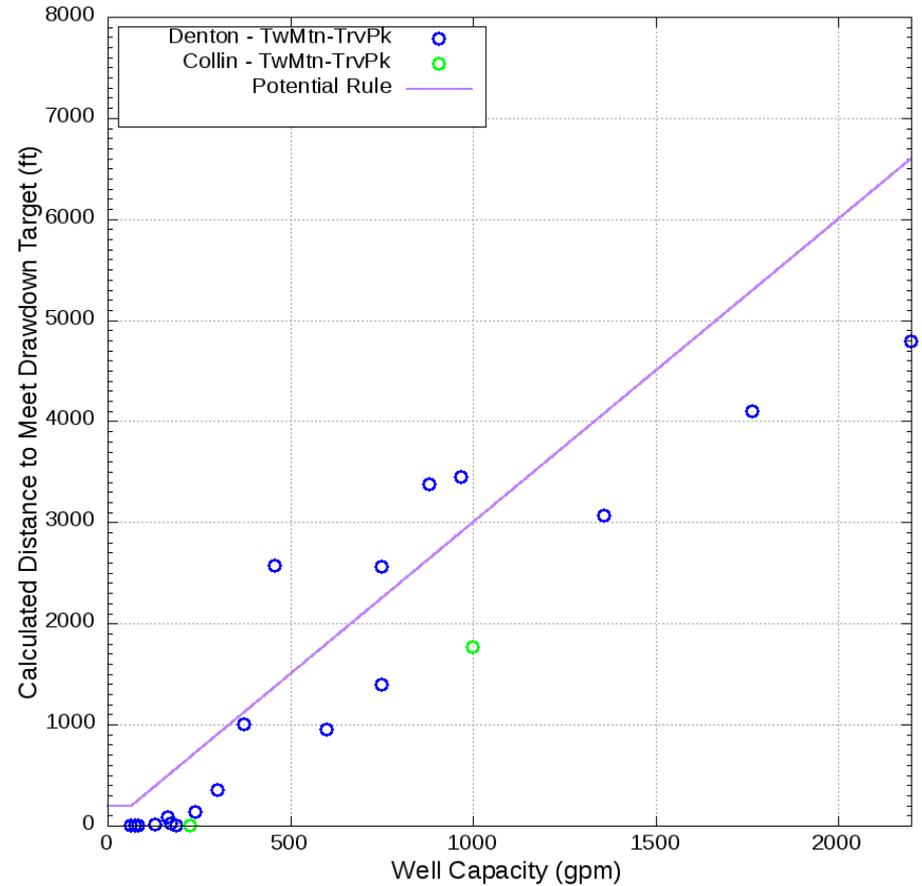


Twin Mountains-Travis Peak – 10 Days Pumping, 10% and 5% Allowable Drawdown

TwMtn-TrvPk Calc. Spacing: 10 days and 10% Drawdown of Avail. Head



TwMtn-TrvPk Calc. Spacing: 10 days and 5% Drawdown of Avail. Head



Issues for Consideration

- Complexity versus Simplicity
- Different rules for **Outcrop and Downtip**
- Different rules for different **Aquifers**
- Different rules for different **Counties**
- Stacked aquifer issues
- Over or under protective
- Implementation (district tools for permitted wells, etc.)
- Approach to Variances