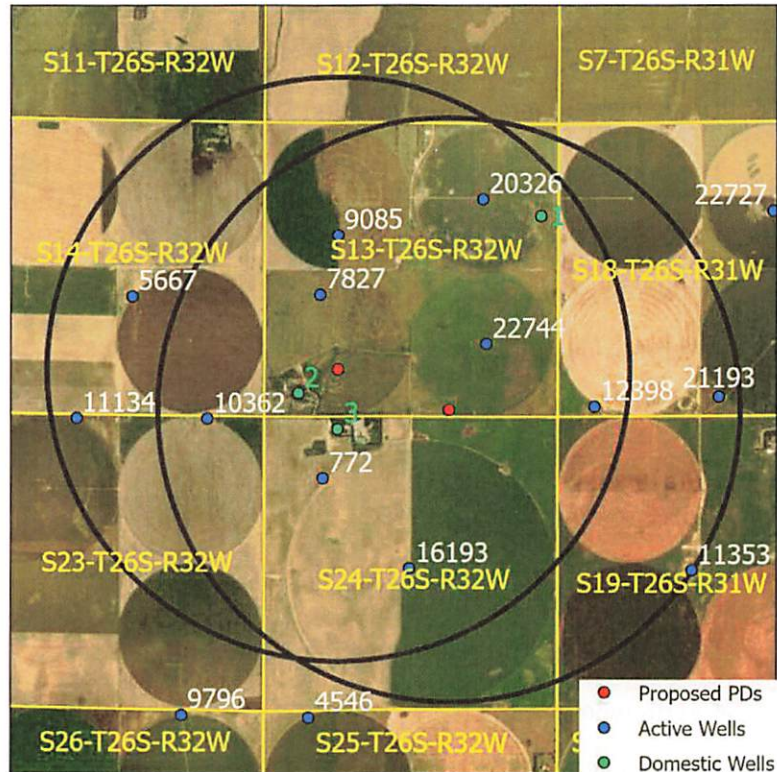


## Evaluation of proposed move for Water Right Nos. 9085 and 22744

Proposed: Move Water Right No. 9085 to a new well location, 2,429 ft to the south. Move Water Right No. 22744 to a new well location, 1,368 ft to the southwest.



Wells within 1 mile: 5667, 7827, 20326, 12398, 21193, 11134, 10362, 772, 16193, 11353, and three domestic wells, numbered on the above map.

The saturated thickness at the proposed well location is estimated to be 229 ft, based upon the GMD3 model. For saturated thickness greater than 200 ft, the drawdown allowance is 4.0 ft.

**50 year Theis Analysis:** The following values were used to run the analysis:

$$S = 0.086, T = 17,757 \text{ ft}^2/\text{day}$$

$$9085: t_{p_{\text{current}}} = 131 \text{ days}, Q_{\text{current}} = 250 \text{ gpm}, t_{p_{\text{proposed}}} = 67 \text{ days}, Q_{\text{proposed}} = 920 \text{ gpm}$$

$$22744: t_{p_{\text{current}}} = 47 \text{ days}, Q_{\text{current}} = 372 \text{ gpm}, t_{p_{\text{proposed}}} = 70 \text{ days}, Q_{\text{proposed}} = 835 \text{ gpm}$$

Theis drawdowns were calculated as follows:

$$\begin{aligned} 5667: & \quad \text{Drawdown from current location} = 0.90 \text{ ft} \\ & \quad \text{Drawdown from proposed location} = 2.32 \text{ ft} \\ & \quad \text{Net drawdown} = 1.4 \text{ ft} \end{aligned}$$

7827: Drawdown from current location = 1.50 ft  
Drawdown from proposed location = 4.41 ft  
Net drawdown = **2.9 ft**

20326: Drawdown from current location = 1.17 ft  
Drawdown from proposed location = 2.75 ft  
Net drawdown = **1.6 ft**

12398: Drawdown from current location = 0.95 ft  
Drawdown from proposed location = 2.98 ft  
Net drawdown = **2.0 ft**

21193: Drawdown from current location = 0.75 ft  
Drawdown from proposed location = 2.00 ft  
Net drawdown = **1.2 ft**

11134: Drawdown from current location = 0.75 ft  
Drawdown from proposed location = 2.03 ft  
Net drawdown = **1.3 ft**

10362: Drawdown from current location = 0.90 ft  
Drawdown from proposed location = 3.13 ft  
Net drawdown = **2.2 ft**

772: Drawdown from current location = 0.92 ft  
Drawdown from proposed location = 4.11 ft  
Net drawdown = **3.2 ft**

16193: Drawdown from current location = 0.80 ft  
Drawdown from proposed location = 3.09 ft  
Net drawdown = **2.3 ft**

11353: Drawdown from current location = 0.65 ft  
Drawdown from proposed location = 1.91 ft  
Net drawdown = **1.3 ft**

Domestic 1: Drawdown from current location = 1.06 ft  
Drawdown from proposed location = 2.60 ft  
Net drawdown = **1.5 ft**

Domestic 2: Drawdown from current location = 1.08 ft  
Drawdown from proposed location = 5.36 ft  
Net drawdown = **4.3 ft**

Domestic 3: Drawdown from current location = 1.05 ft  
Drawdown from proposed location = 5.36 ft  
Net drawdown = **4.3 ft**

Net drawdown exceeds the drawdown allowance for the domestic wells numbered 2 and 3. Critical well analysis was performed for those wells.

**Critical Well Evaluation:**

**Domestic 2:**

Water Column = 240.7 ft

DP = 4.3 ft (Net drawdown from the proposal indicated above)

DE = 56.2 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 60.5 ft

Economic Drawdown Constraint (EDC) =  $0.4 * 240.7 \text{ ft} = 96.3 \text{ ft}$

Physical Drawdown Constraint (PDC) =  $240.7 \text{ ft} - 20 \text{ ft} = 220.7 \text{ ft}$

Total drawdown of 60.5 ft is less than the EDC and the PDC, so this well is **not critical**.

**Domestic 3:**

Water Column = 217.0 ft

DP = 4.3 ft (Net drawdown from the proposal indicated above)

DE = 57.6 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 61.9 ft

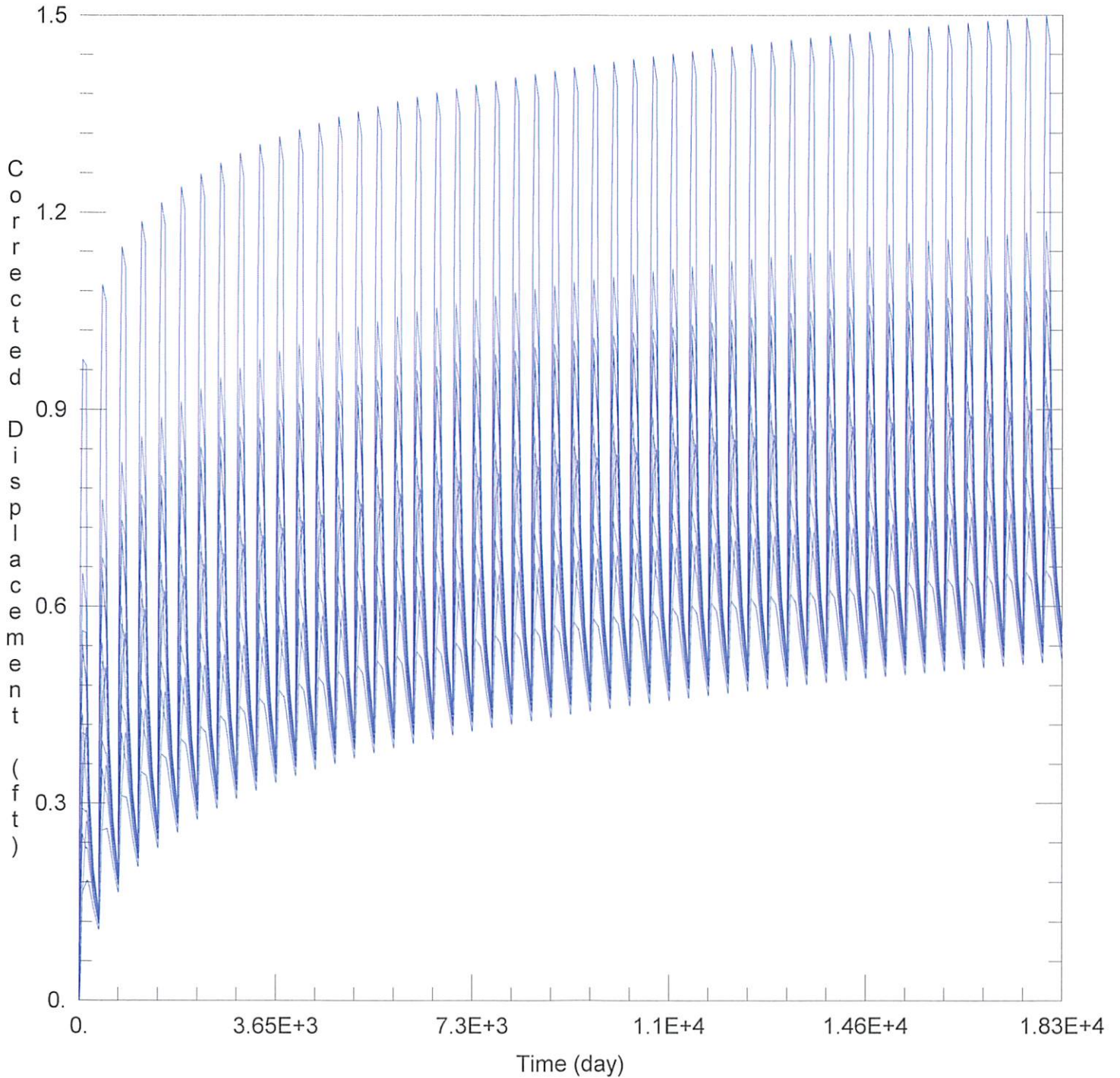
Economic Drawdown Constraint (EDC) =  $0.4 * 217.0 \text{ ft} = 86.8 \text{ ft}$

Physical Drawdown Constraint (PDC) =  $217.0 \text{ ft} - 20 \text{ ft} = 197.0 \text{ ft}$

Total drawdown of 61.9 ft is less than the EDC and the PDC, so this well is **not critical**.

**Conclusion:**

The proposed move is in an aquifer area with more than 200 ft of remaining saturated thickness and solid aquifer characteristics. The analysis shows that net well-to-well effects created by this proposal are likely to be noticeable on the nearby domestic wells just to the south of the proposed well locations. These wells were not flagged as critical because the GMD3 model projects that the usable portion of the aquifer will not decline at a rate exceeding 40% over the next 25 years. It should be noted that the domestic wells for these households are not listed in the Water Well Completion Records Database and they were centered over the houses using aerial photography. Actual effects will be greater or smaller depending on the direction and distance of the well locations from their respective buildings. Concerned neighbors should contact GMD3 at (620) 275-7147 or the Division of Water Resources at (620) 276-2901.



WELL TEST ANALYSIS

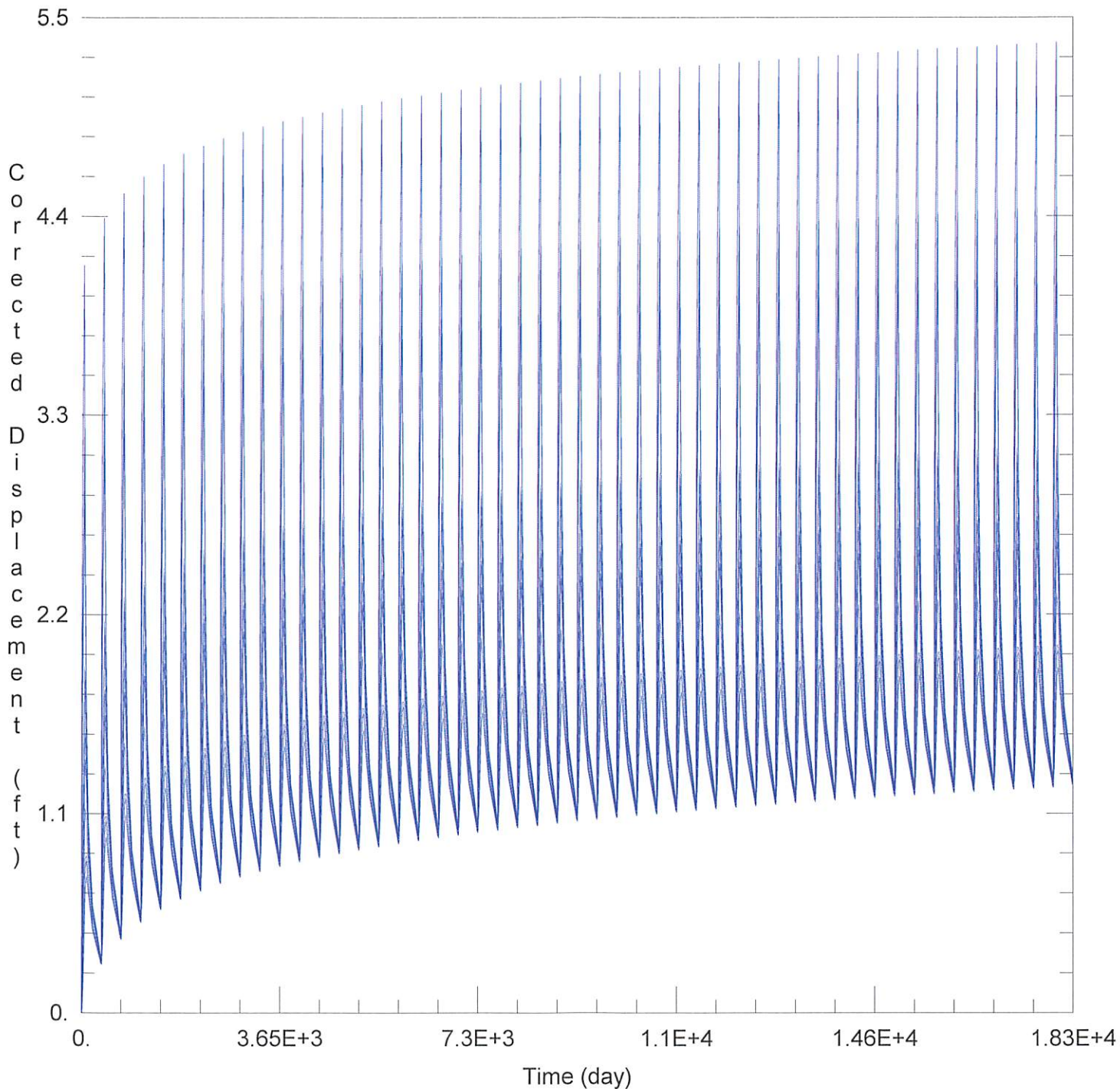
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 Date: 10/16/24 Time: 14:50:00

PROJECT INFORMATION

Company: GMD 3  
 Project: 9085 and 22744  
 Location: Finney County

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
<u>9085</u>	<u>7041</u>	<u>332916</u>	□	<u>7041</u>	<u>332916</u>
<u>22744</u>	<u>0723</u>	<u>330017</u>	□	<u>0723</u>	<u>330017</u>



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2024\_moves\9085\_22744\9085\_22744 Proposed.aqt

Date: 10/16/24

Time: 14:49:52

PROJECT INFORMATION

Company: GMD 3

Project: 9085 and 22744

Location: Finney County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
<u>9085</u>	<u>7044</u>	<u>330487</u>
<u>22744</u>	<u>9052</u>	<u>329755</u>

Observation Wells

Well Name	X (ft)	Y (ft)
<u>□</u>	<u>7044</u>	<u>330487</u>
<u>□</u>	<u>9052</u>	<u>329755</u>