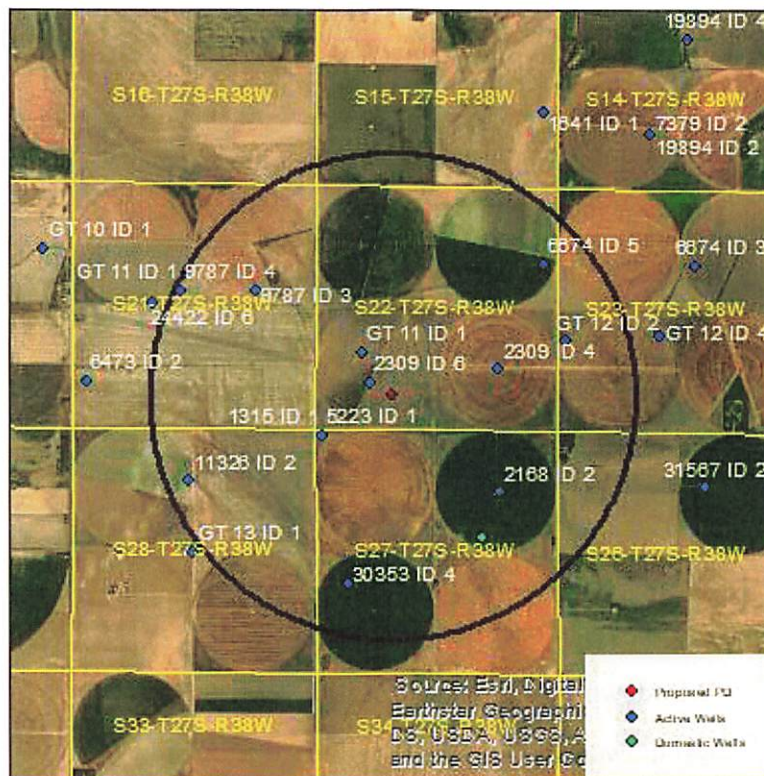


## Evaluation of proposed move for Water Right No. 2309 ID6

Proposed: Move water right no. 2309 ID6 to a new well location, 593 ft to the southeast.



Wells within 1 mile: 2309 ID4, GT 11 & 9787, 9787, GT 11, 6674, GT 12, 11326, 1315 & 5223, 30353, 2168, and a domestic well in section 27-27-38.

The saturated thickness at the proposed well location is estimated to be 66 ft, based upon the GMD3 model. For saturated thickness between than 50 ft and 75 ft, the drawdown allowance is 1.5 ft.

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

$S = 0.1468$ ,  $T = 2514 \text{ ft}^2/\text{day}$ ,  $tp_{\text{current}} = 120 \text{ days}$ ,  $Q_{\text{current}} = 205 \text{ gpm}$ ,  $tp_{\text{proposed}} = 199 \text{ days}$ ,  
 $Q_{\text{proposed}} = 1200 \text{ gpm}$

These drawdowns were calculated as follows:

2309 ID4:	Drawdown from current location = 1.98 ft
	Drawdown from proposed location = 20.75 ft
	Net drawdown = <b>18.8 ft</b>
GT 11 & 9787:	Drawdown from current location = 1.48 ft
	Drawdown from proposed location = 13.24 ft
	Net drawdown = <b>11.8 ft</b>

9787: Drawdown from current location = 1.85 ft  
Drawdown from proposed location = 16.03 ft  
Net drawdown = **14.2 ft**

GT 11: Drawdown from current location = 4.78 ft  
Drawdown from proposed location = 29.74 ft  
Net drawdown = **25.0 ft**

6674: Drawdown from current location = 1.48 ft  
Drawdown from proposed location = 14.69 ft  
Net drawdown = **13.2 ft**

GT 12: Drawdown from current location = 1.52 ft  
Drawdown from proposed location = 15.54 ft  
Net drawdown = **14.0 ft**

11326: Drawdown from current location = 1.50 ft  
Drawdown from proposed location = 13.89 ft  
Net drawdown = **12.4 ft**

1315 & 5223: Drawdown from current location = 2.93 ft  
Drawdown from proposed location = 24.27 ft  
Net drawdown = **21.3 ft**

30353: Drawdown from current location = 1.51 ft  
Drawdown from proposed location = 15.00 ft  
Net drawdown = **13.5 ft**

2168: Drawdown from current location = 1.68 ft  
Drawdown from proposed location = 17.83 ft  
Net drawdown = **16.2 ft**

Domestic 27-27-38: Drawdown from current location = 1.56 ft  
Drawdown from proposed location = 16.33 ft  
Net drawdown = **14.8 ft**

Net drawdown exceeds the drawdown allowance for all wells within a mile of the proposed move. Critical well analysis was performed for those wells.

**Critical Well Evaluation:**

**2309 ID4:**

Water Column = 66 ft

DP = 18.8 ft (Net drawdown from the proposal indicated above)

DE = 10.3 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 66.1 ft (S = 0.1468, T = 2514 ft<sup>2</sup>/day, Q = 495 gpm, tp = 120 days, efficiency = 70%)

DT = 95.2 ft

Total drawdown exceeds the remaining water column, so this well is **critical**.

**GT 11 & 9787:**

Water Column = 61 ft

DP = 11.8 ft (Net drawdown from the proposal indicated above)

DE = 13.2 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 0 ft (No water use in last 10 years)

DT = 25.0 ft

Economic Drawdown Constraint (EDC) = 0.4 \* 61 ft = 24.4 ft

Physical Drawdown Constraint (PDC) = 61 ft – 60 ft = 1.0 ft

Total drawdown of 25.0 ft exceeds the EDC and the PDC, so this well is **critical**.

**9787:**

Water Column = 61 ft

DP = 14.2 ft (Net drawdown from the proposal indicated above)

DE = 13.2 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 0 ft (No water use in last 10 years)

DT = 27.4 ft

Economic Drawdown Constraint (EDC) = 0.4 \* 61 ft = 24.4 ft

Physical Drawdown Constraint (PDC) = 61 ft – 60 ft = 1.0 ft

Total drawdown of 27.4 ft exceeds the EDC and the PDC, so this well is **critical**.

**GT 11:**

Water Column = 66 ft

DP = 14.0 ft (Net drawdown from the proposal indicated above)

DE = 10.3 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 0 ft (No water use in the last 10 years)

DT = 24.3 ft

Economic Drawdown Constraint (EDC) =  $0.4 * 66 \text{ ft} = 24.4 \text{ ft}$

Physical Drawdown Constraint (PDC) =  $66 \text{ ft} - 60 \text{ ft} = 6.0 \text{ ft}$

Total drawdown of 24.3 ft is greater than the PDC, so this well is **critical**.

**6674:**

Water Column = 66 ft

DP = 13.2 ft (Net drawdown from the proposal indicated above)

DE = 10.3 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 0 ft (No water use in the last 10 years)

DT = 23.5 ft

Economic Drawdown Constraint (EDC) =  $0.4 * 66 \text{ ft} = 26.4 \text{ ft}$

Physical Drawdown Constraint (PDC) =  $66 \text{ ft} - 60 \text{ ft} = 6.0 \text{ ft}$

Total drawdown of 23.5 ft is greater than the PDC, so this well is **critical**.

**GT 12:**

Water Column = 69 ft

DP = 14.0 ft (Net drawdown from the proposal indicated above)

DE = 7.8 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 56.6 ft ( $S = 0.1468$ ,  $T = 2514 \text{ ft}^2/\text{day}$ ,  $Q = 407 \text{ gpm}$ ,  $t_p = 226 \text{ days}$ , efficiency = 70%)

DT = 78.4 ft

Total drawdown exceeds the water column, so this well is **critical**.

**11326:**

Water Column = 77 ft

DP = 12.4 ft (Net drawdown from the proposal indicated above)

DE = 13.4 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 60.6 ft (S = 0.1468, T = 2514 ft<sup>2</sup>/day, Q = 450 gpm, tp = 136 days, efficiency = 70%)

DT = 86.4 ft

Total drawdown exceeds the water column, so this well is critical.

**1315 & 5223:**

Water Column = 77 ft

DP = 21.3 ft (Net drawdown from the proposal indicated above)

DE = 13.4 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 19.0 ft (S = 0.1468, T = 2514 ft<sup>2</sup>/day, Q = 140 gpm, tp = 156 days, efficiency = 70%)

DT = 53.7 ft

Economic Drawdown Constraint (EDC) = 0.4 \* 77 ft = 30.8 ft

Physical Drawdown Constraint (PDC) = 77 ft – 60 ft = 17.0 ft

Total drawdown of 53.7 ft is greater than the EDC and the PDC, so this well is critical.

**30353:**

Water Column = 76 ft

DP = 13.5 ft (Net drawdown from the proposal indicated above)

DE = 11.3 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 38.2 ft (S = 0.1468, T = 2514 ft<sup>2</sup>/day, Q = 280 gpm, tp = 164 days, efficiency = 70%)

DT = 63.0 ft

Economic Drawdown Constraint (EDC) = 0.4 \* 76 ft = 30.4 ft

Physical Drawdown Constraint (PDC) = 76 ft – 60 ft = 16.0 ft

Total drawdown of 63.0 ft is greater than the EDC and the PDC, so this well is critical.

**2168:**

Water Column = 76.0 ft

DP = 16.2 ft (Net drawdown from the proposal indicated above)

DE = 11.3 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DD = 66.1 ft ( $S = 0.1468$ ,  $T = 2514 \text{ ft}^2/\text{day}$ ,  $Q = 474 \text{ gpm}$ ,  $tp = 238 \text{ days}$ , efficiency = 70%)

DT = 93.6 ft

Economic Drawdown Constraint (EDC) =  $0.4 * 76 \text{ ft} = 30.4 \text{ ft}$

Physical Drawdown Constraint (PDC) =  $76 \text{ ft} - 60 \text{ ft} = 16.0 \text{ ft}$

Total drawdown of 93.6 ft exceeds the water column, so this well is **critical**.

**Domestic 27-27-38:**

Water Column = 76.0 ft

DP = 14.8 ft (Net drawdown from the proposal indicated above)

DE = 11.3 ft (Water level decline from 2024 through 2049 based upon GMD3 model)

DT = 26.1 ft

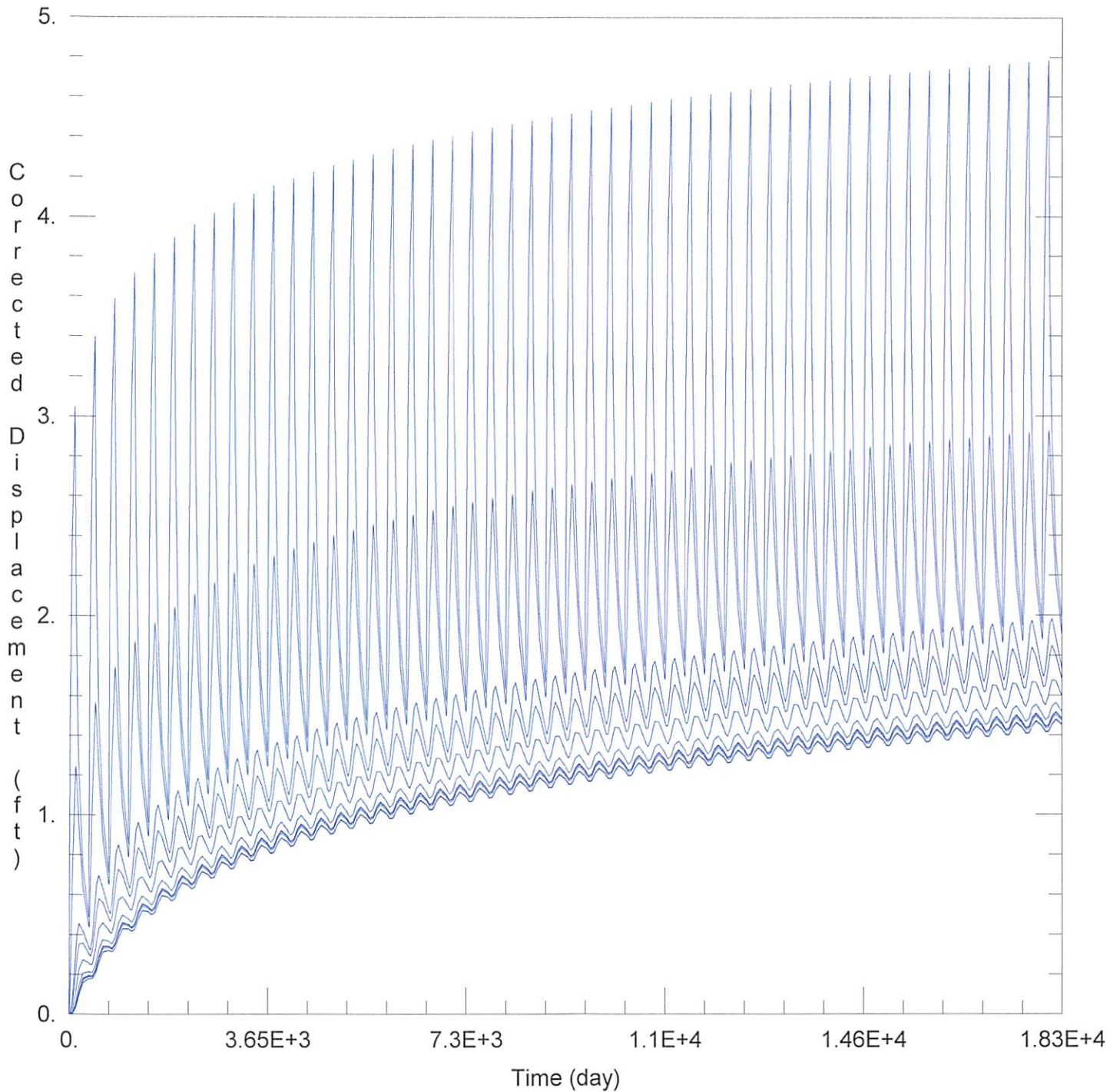
Economic Drawdown Constraint (EDC) =  $0.4 * 72 \text{ ft} = 28.3 \text{ ft}$

Physical Drawdown Constraint (PDC) =  $72 \text{ ft} - 20 \text{ ft} = 52.0 \text{ ft}$

Total drawdown of 43.0 ft is greater than the EDC, so this well is **critical**.

**Conclusion:**

The proposed move is in a depleted aquifer area with about 60-80 ft of remaining saturated thickness. The proposed well will be drilled well below this depth, but the driller's log does not show much good aquifer material. The analysis shows that net well-to-well effects created by this proposal are likely to be large, but it should be noted that the actual rate and quantity pumped from the well location will likely be far less than the proposed rate of 1200 gpm and quantity of 1057.6 AF. No well within a mile of the proposed well site has been observed pumping more than 500 gpm in recent years, and several neighboring wells are no longer operating due to insufficient water. 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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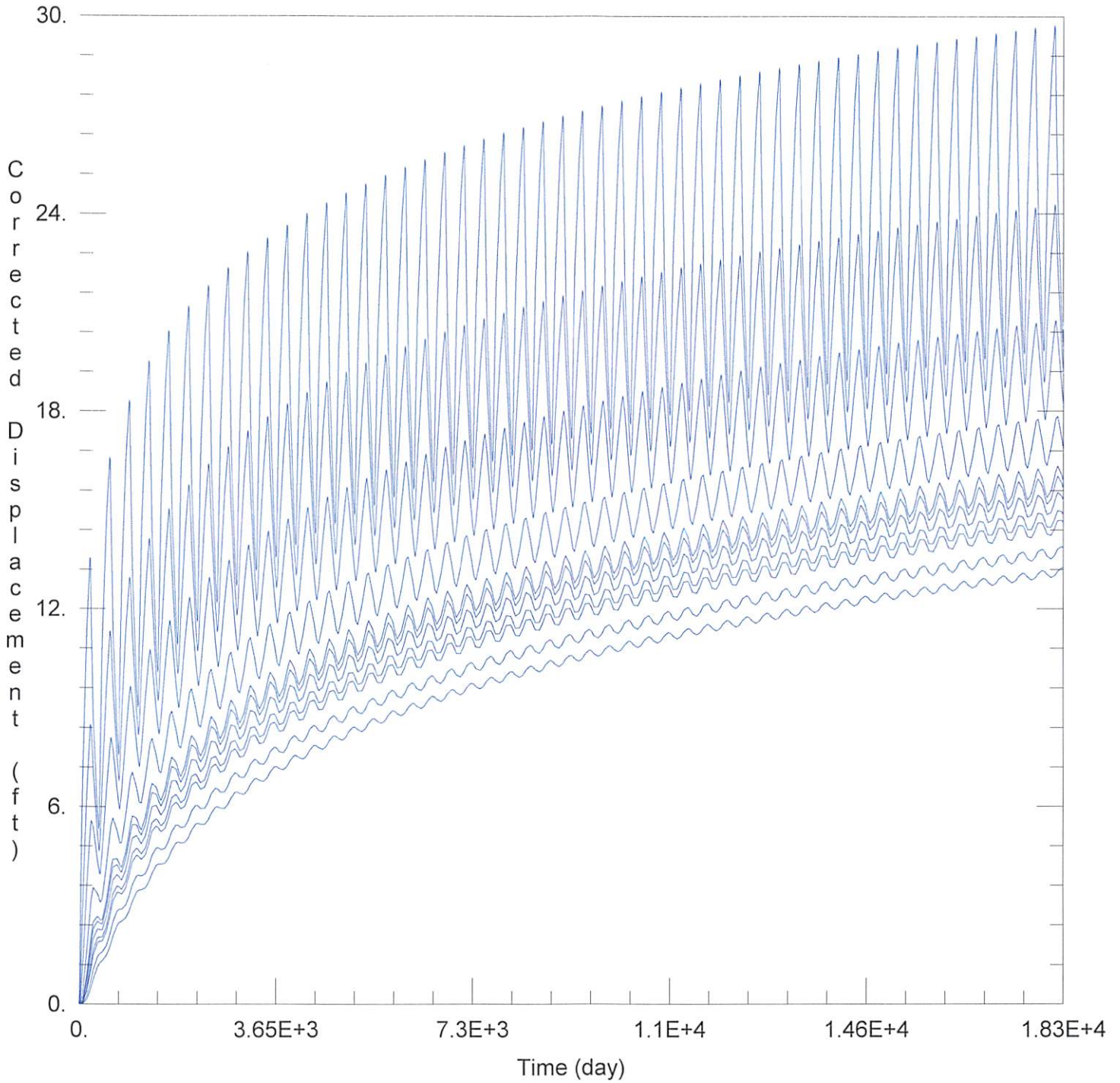
PROJECT INFORMATION

Company: GMD 3  
 Project: 2309  
 Location: Grant County

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
2309 ID6	-193567	294215	□	-193567	294215
			□ <u>2309 ID4</u>	<u>-190758</u>	<u>294187</u>





WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2024\_moves\2309\2309 Proposed.aqt  
 Date: 03/05/24 Time: 16:06:43

PROJECT INFORMATION

Company: GMD 3  
 Project: 2309  
 Location: Grant County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
2309 ID6	-193052	293920

Observation Wells

Well Name	X (ft)	Y (ft)
□ 2309 ID4	-193052	293920
□ 2309 ID1	-190758	294487