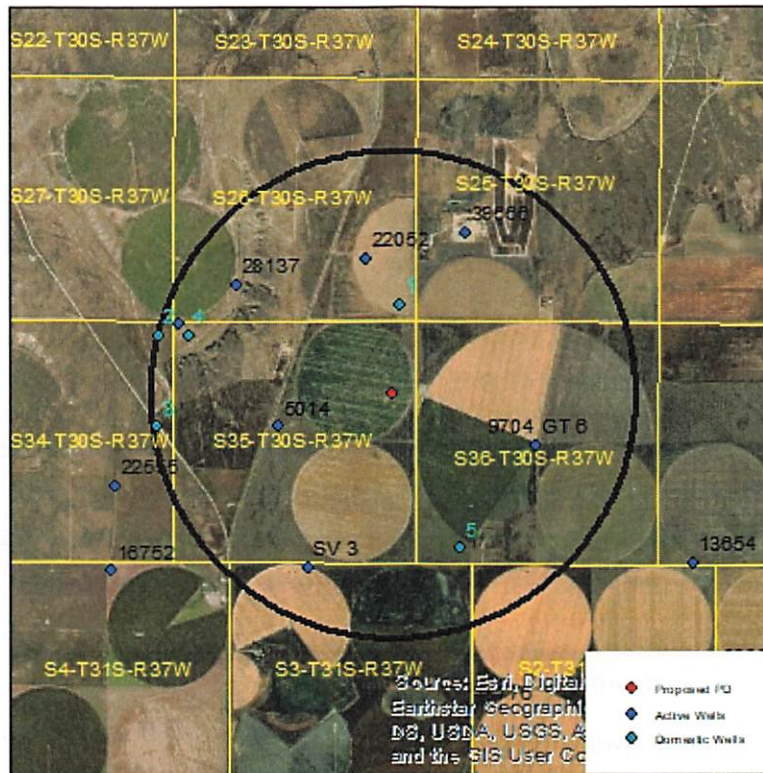


Evaluation of proposed move for Water Right No. 5014

Proposed: Move water right no. 5014 to a new well location, 2573 ft to the northeast.



Wells within 1 mile: 28137, 22052, 39666, 26016, GT 6 & 9704, SV 3, and five domestic wells, numbered on the above map.

The saturated thickness at the proposed well location is estimated to be 152 ft, based upon the GMD3 model. For saturated thickness between 150 ft and 200 ft, the drawdown allowance is 3.5 ft.

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

$S = 0.1342$, $T = 11,433.1 \text{ ft}^2/\text{day}$, $t_{p\text{current}} = 302 \text{ days}$, $Q_{\text{current}} = 179 \text{ gpm}$, $t_{p\text{proposed}} = 172 \text{ days}$, $Q_{\text{proposed}} = 910 \text{ gpm}$

Theis drawdowns were calculated as follows:

- 28137:
 - Drawdown from current location = 1.21 ft
 - Drawdown from proposed location = 3.46 ft
 - Net drawdown = **2.3 ft**
- 22052:
 - Drawdown from current location = 1.10 ft
 - Drawdown from proposed location = 4.12 ft
 - Net drawdown = **3.1 ft**

39666: Drawdown from current location = 0.94 ft
Drawdown from proposed location = 3.62 ft
Net drawdown = **2.7 ft**

26016: Drawdown from current location = 1.22 ft
Drawdown from proposed location = 3.14 ft
Net drawdown = **1.9 ft**

GT 6 & 9704: Drawdown from current location = 0.96 ft
Drawdown from proposed location = 3.91 ft
Net drawdown = **3.0 ft**

SV 3: Drawdown from current location = 1.23 ft
Drawdown from proposed location = 3.45 ft
Net drawdown = **2.2 ft**

Domestic 1: Drawdown from current location = 1.14 ft
Drawdown from proposed location = 5.11 ft
Net drawdown = **4.0 ft**

Domestic 2: Drawdown from current location = 1.20 ft
Drawdown from proposed location = 3.02 ft
Net drawdown = **1.8 ft**

Domestic 3: Drawdown from current location = 1.30 ft
Drawdown from proposed location = 3.05 ft
Net drawdown = **1.7 ft**

Domestic 4: Drawdown from current location = 1.28 ft
Drawdown from proposed location = 3.25 ft
Net drawdown = **2.0 ft**

Domestic 5: Drawdown from current location = 1.03 ft
Drawdown from proposed location = 3.71 ft
Net drawdown = **2.7 ft**

Net drawdown exceeds the drawdown allowance of 3.5 ft for the domestic well marked #1 on the map. Critical well analysis is necessary for that well.

Critical Well Evaluation:

Domestic 1:

Water Column = 161 ft

DP = 4.0 ft (Net drawdown from the proposal indicated above)

DE = 35.0 ft (Water level decline from 2022 through 2047 based upon GMD3 model)

DT = 39.0 ft

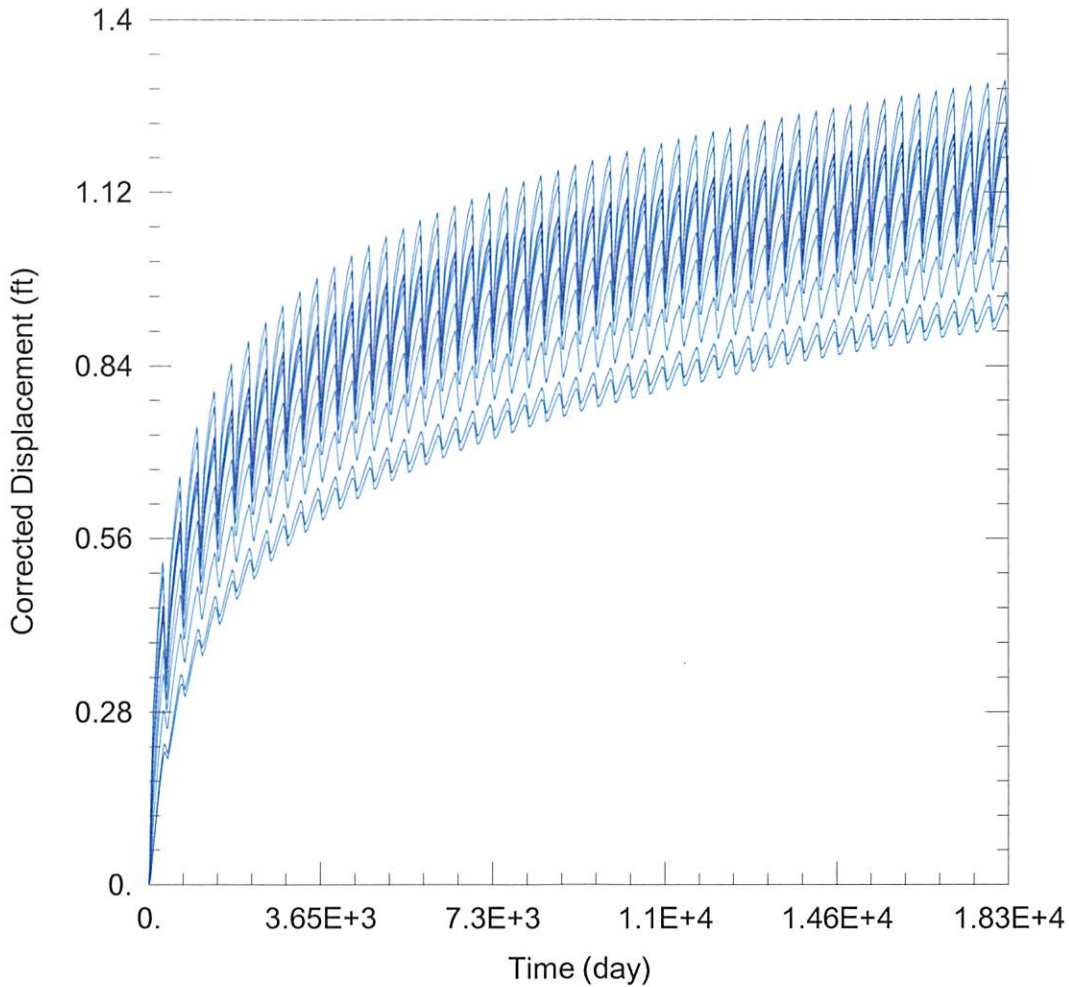
Economic Drawdown Constraint (EDC) = $0.4 * 161 \text{ ft} = 64.4 \text{ ft}$

Physical Drawdown Constraint (PDC) = $161 \text{ ft} - 20 \text{ ft} = 141 \text{ ft}$

Total drawdown of 39.0 ft is less than the EDC and PDC, so this well is **not critical**.

Conclusion:

The proposed move is in an area with a water table in decline, but the proposed well location is of sufficient distance to neighboring wells to limit well-to-well interference. If the proposed well were to operate at its fully authorized rate and quantity, effects on a nearby domestic well would exceed 3.5 ft, but modeled data indicates that there should be sufficient aquifer for this well to remain operational for more than 25 years. GMD3 staff recommends approval of the application.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\5014\5014 Current.aqt

Date: 02/28/22

Time: 16:14:06

PROJECT INFORMATION

Company: GMD 3

Project: 5014

Location: Grant County

WELL DATA

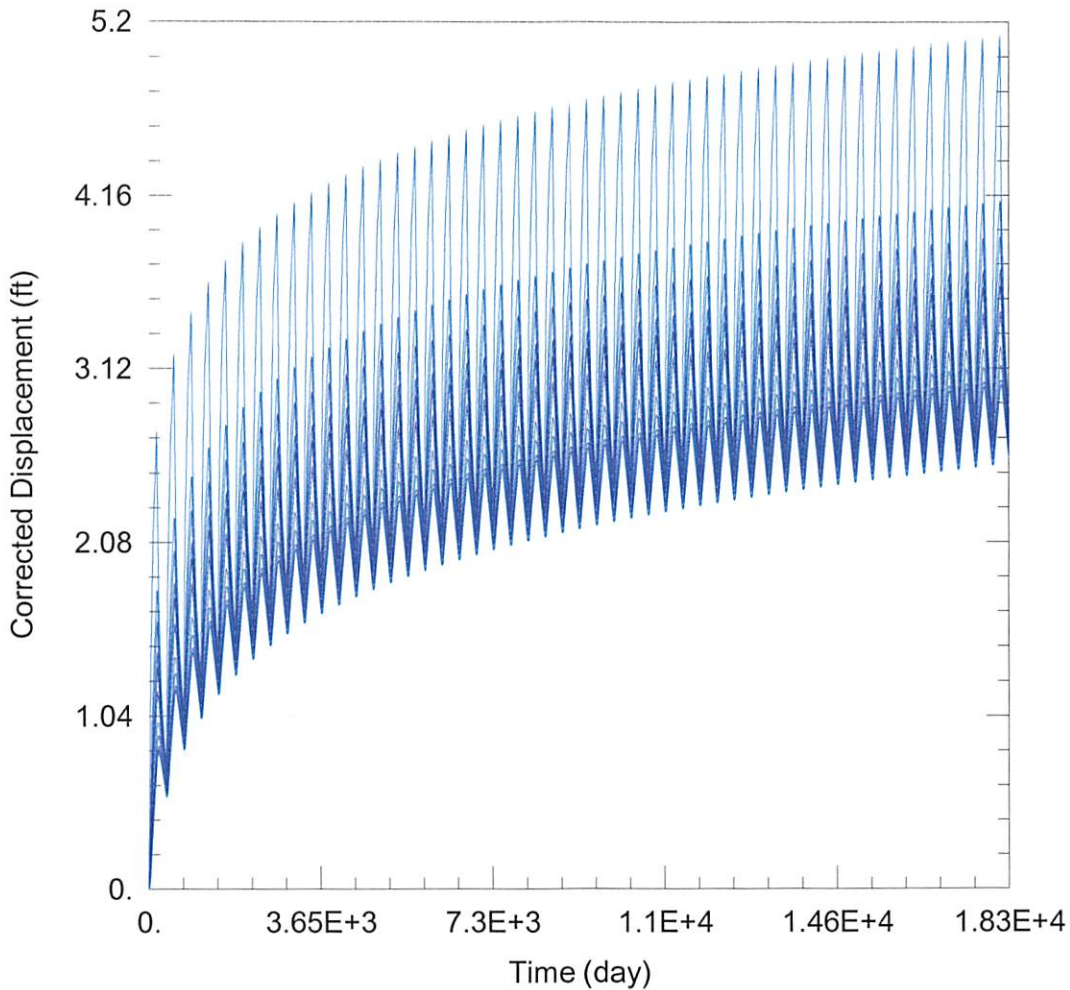
Pumping Wells

Well Name	X (ft)	Y (ft)
5014	-155844	190235

Observation Wells

Well Name	X (ft)	Y (ft)
□	-155844	190235
□ 28137	-156785	193310
□ 22052	-153935	193859
□ 39666	-151782	194440
□ 26016	-158039	192480
□ GT 6 & 9704	-150256	189836
□ SV 3	-155222	187188
□ Domestic 1	-153208	192856
□ Domestic 2	-158485	192213
□ Domestic 3	-158491	190241
□ Domestic 4	-157826	192210
□ Domestic 5	-151895	187589

SOLUTION



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2022_moves\5014\5014 Proposed.aqt

Date: 02/28/22

Time: 16:13:59

PROJECT INFORMATION

Company: GMD 3

Project: 5014

Location: Grant County

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
5014	-153370	190941

Observation Wells

Well Name	X (ft)	Y (ft)
□	-153370	190941
□ 28137	-156785	193310
□ 22052	-153935	193859
□ 39666	-151782	194440
□ 26016	-158039	192480
□ GT 6 & 9704	-150256	189836
□ SV 3	-155222	187188
□ Domestic 1	-153208	192856
□ Domestic 2	-158485	192213
□ Domestic 3	-158491	190241
□ Domestic 4	-157826	192210
□ Domestic 5	-151895	187589

SOLUTION