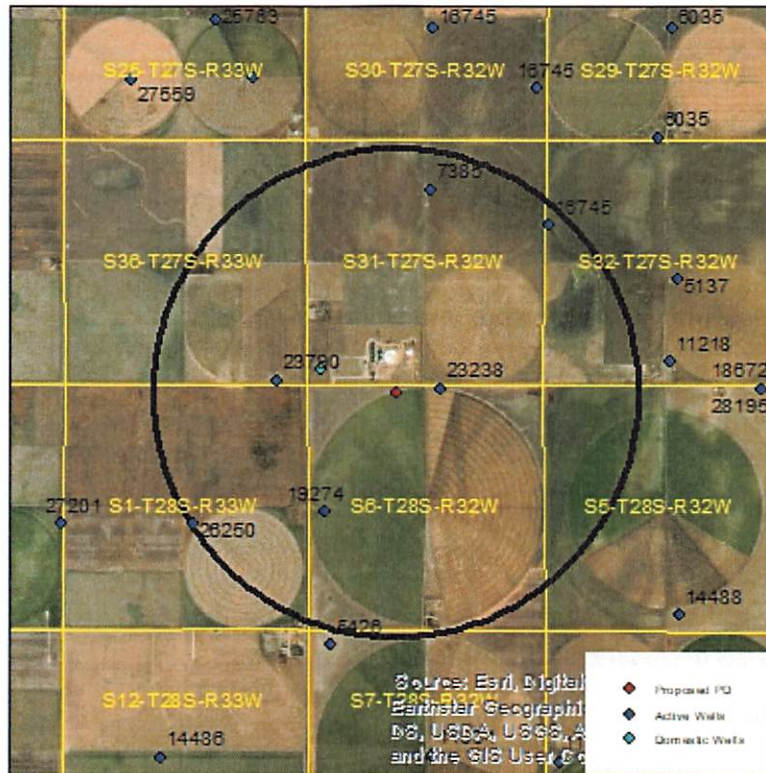


Evaluation of proposed move for Water Right No 23238

Proposed: Move water right no. 23238 a distance of 967 ft to the west.



Wells within 1 mile: 19274, 26250, 23790, 7385, 16745, and a domestic well in section 31-27-32.

The saturated thickness at the proposed well location is estimated to be 252 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:

$S = 0.0594$, $T = 13,539 \text{ ft}^2/\text{day}$, $tp_{\text{current}} = 240 \text{ days}$ (based upon average use and observed rate),
 $Q_{\text{current}} = 280 \text{ gpm}$ (based upon 2017 field inspection), $tp_{\text{proposed}} = 88 \text{ days}$, $Q_{\text{proposed}} = 1,570 \text{ gpm}$

Theis drawdowns were calculated as follows:

19274: Drawdown from current location = 1.56 ft
Drawdown from proposed location = 4.86 ft
Net drawdown = **3.3 ft**

26250: Drawdown from current location = 1.25 ft
Drawdown from proposed location = 3.33 ft
Net drawdown = **2.1 ft**

23790: Drawdown from current location = 1.58 ft
Drawdown from proposed location = 5.34 ft
Net drawdown = **3.8 ft**

7385: Drawdown from current location = 1.46 ft
Drawdown from proposed location = 3.72 ft
Net drawdown = **2.3 ft**

16745: Drawdown from current location = 1.47 ft
Drawdown from proposed location = 3.48 ft
Net drawdown = **2.0 ft**

Domestic 31-27-32: Drawdown from current location = 1.77 ft
Drawdown from proposed location = 6.81 ft
Net drawdown = **5.0 ft**

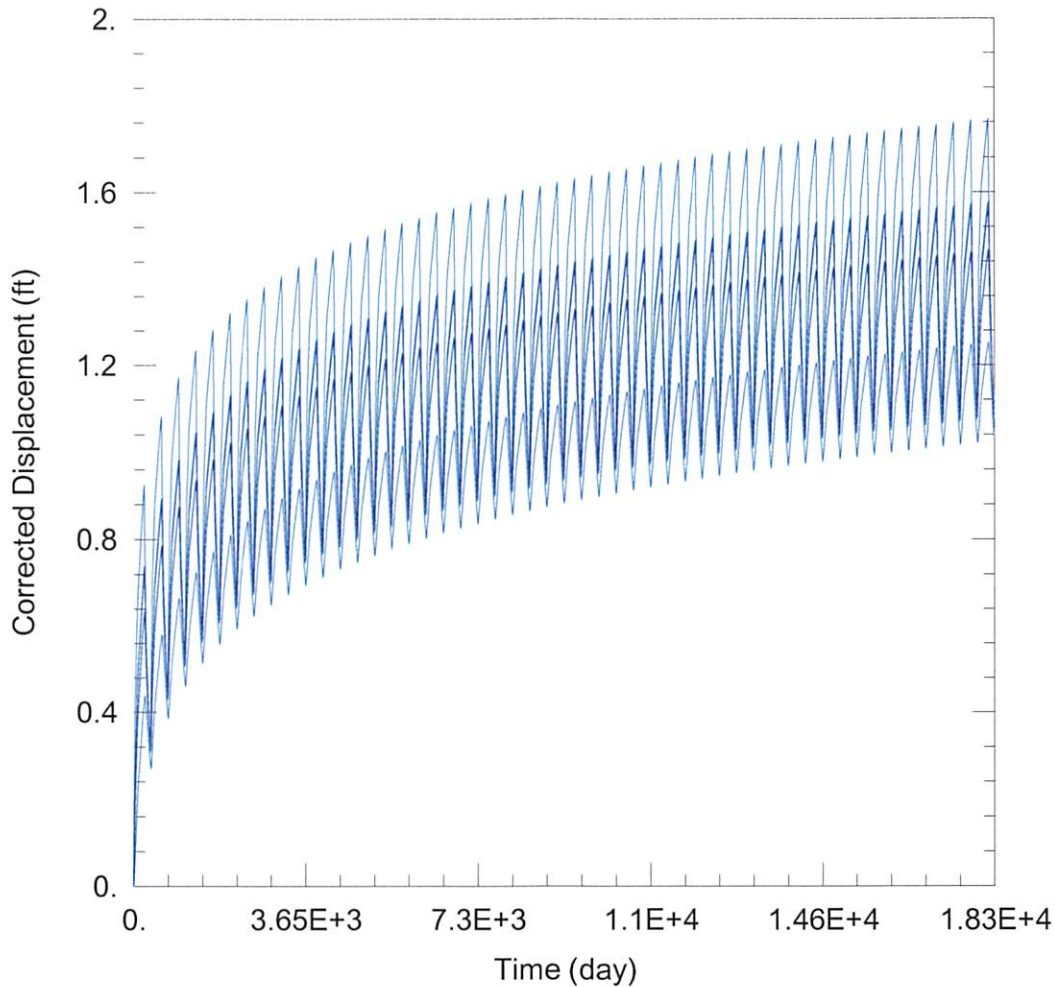
Net drawdown exceeds the drawdown allowance of 4.0 ft for the domestic well in section 31-27-32. Critical well evaluation is necessary for that well, and is as follows:

Critical Well Evaluation:

Domestic 31-27-32: Water Column = 172 ft (based on driller's log)
Drawdown due to proposal = 5.0 ft
Drawdown due to existing conditions = 58.2 ft
Total drawdown = 63.2 ft
Economic Drawdown Constraint (EDC) = $0.4 * 172 \text{ ft} = 68.8 \text{ ft}$
Physical Drawdown Constraint (PDC) = $172 \text{ ft} - 20 \text{ ft} = 152 \text{ ft}$
Total Drawdown does not exceed the EDC or PDC, so this well is **not critical**.

Conclusion:

Based upon information from the GMD3 model, this proposal will cause minimal effects on most neighboring wells. Drawdown effects exceed 4 ft on the domestic well in section 31-27-32, but analysis does not show this well to be critical, meaning that it has sufficient water for the next 25 years and is unlikely to become impaired due to this proposal. GMD3 staff recommends approval of the proposal.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2020_moves\23238\23238 Current.aqt

Date: 07/09/20

Time: 16:52:05

PROJECT INFORMATION

Company: GMD 3

Project: 23238

Location: Haskell County

Test Well: 23238

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
23238	-17775	281911

Observation Wells

Well Name	X (ft)	Y (ft)
□	-17775	281911
□ 19274	-20278	279241
□ 26250	-23158	278988
□ 23790	-21330	282086
□ 7385	-18002	286208
□ 16745	-15417	285453
□ Domestic 31-27-32	-20353	282329

SOLUTION

Aquifer Model: Unconfined

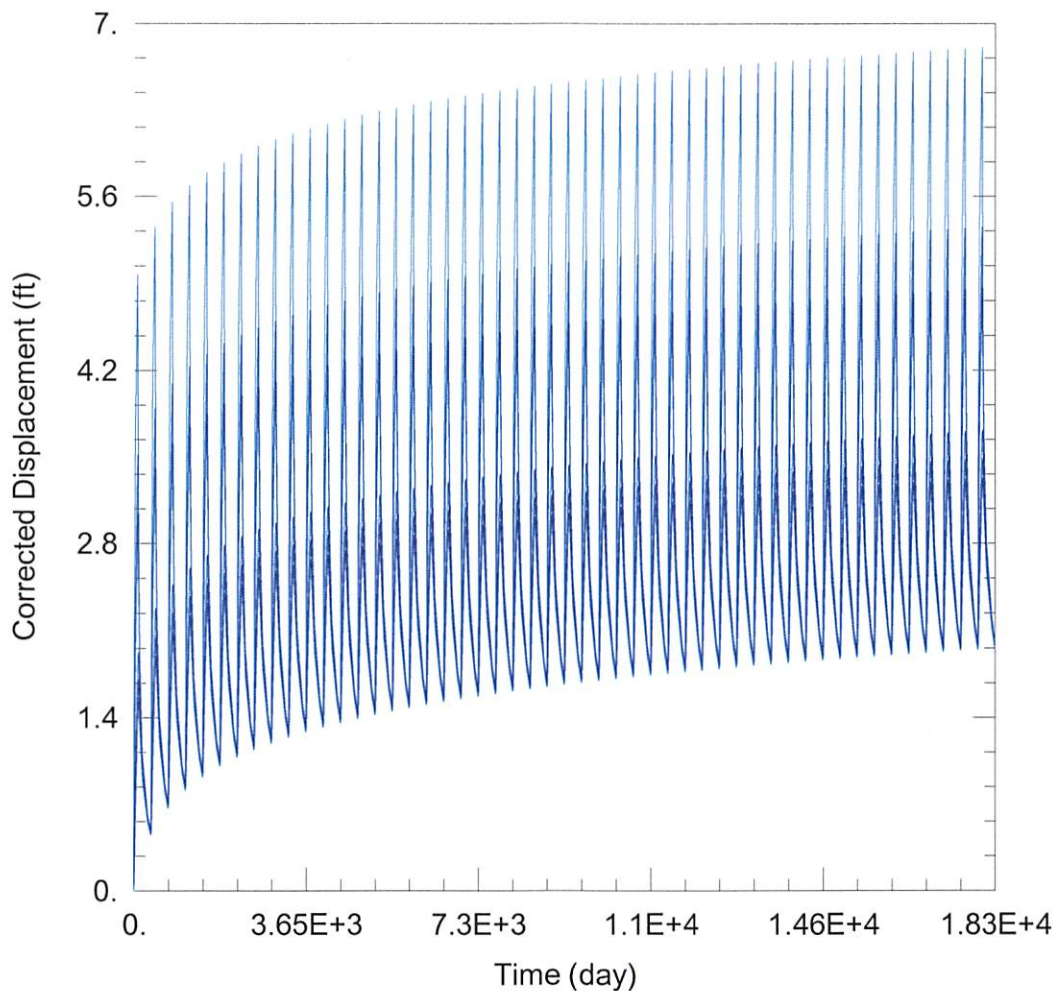
Solution Method: Theis

T = 1.354E+4 ft²/day

S = 0.0594

Kz/Kr = 1.

b = 252. ft



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2020_moves\23238\23238 Proposed.aqt

Date: 07/09/20

Time: 16:51:57

PROJECT INFORMATION

Company: GMD 3

Project: 23238

Location: Haskell County

Test Well: 23238

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
23238	-18740	281839

Well Name	X (ft)	Y (ft)
□	-18740	281839
□ <u>19274</u>	-20278	279241
□ <u>26250</u>	-23158	278988
□ <u>23790</u>	-21330	282086
□ <u>7385</u>	-18002	286208
□ <u>16745</u>	-15417	285453
□ <u>Domestic 31-27-32</u>	-20353	282329

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

T = 1.354E+4 ft²/day

S = 0.0594

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b = 252. ft