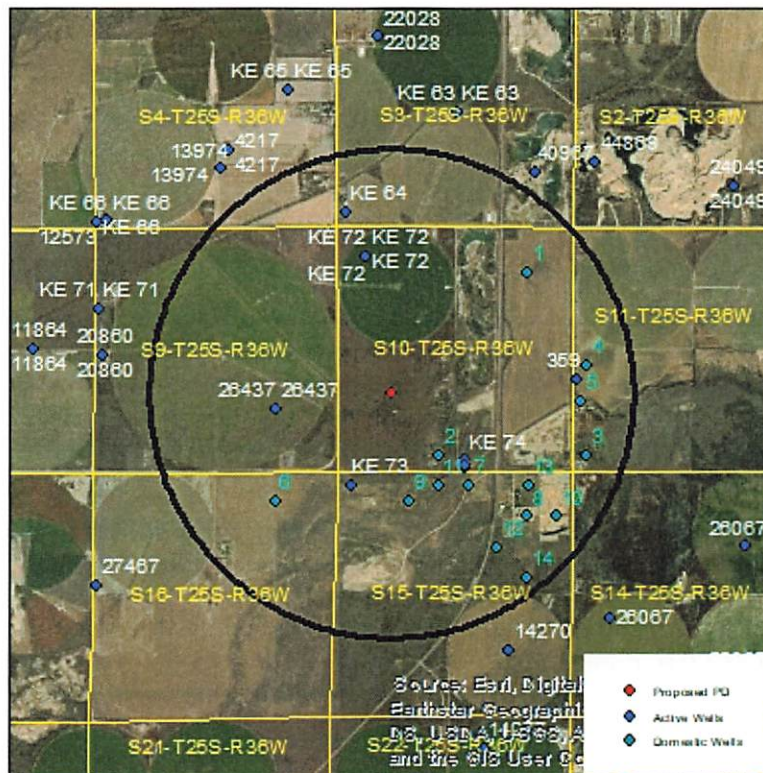


Evaluation of proposed move for Water Right No. KE 73

Proposed: Move water right no. KE 73 to a new well location, 2,182 ft to the northeast.



Wells within 1 mile: KE 64, 26437, KE 72, 359, KE 74, and 14 domestic wells, numbered on the above map.

The saturated thickness at the proposed well location is estimated to be 255 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:

$S = 0.05181$, $T = 8062 \text{ ft}^2/\text{day}$, $t_{p\text{current}} = 0 \text{ days}$, $Q_{\text{current}} = 0 \text{ gpm}$, $t_{p\text{proposed}} = 25 \text{ days}$, $Q_{\text{proposed}} = 2500 \text{ gpm}$

Theis drawdowns were calculated as follows:

KE 64:	Net drawdown = 2.9 ft
26437:	Net drawdown = 4.8 ft
KE 72:	Net drawdown = 4.1 ft
359:	Net drawdown = 2.9 ft
KE 74:	Net drawdown = 5.6 ft
Domestic 1:	Net drawdown = 3.0 ft
Domestic 2:	Net drawdown = 7.5 ft

Domestic 3:	Net drawdown = 2.7 ft
Domestic 4:	Net drawdown = 2.8 ft
Domestic 5:	Net drawdown = 2.8 ft
Domestic 6:	Net drawdown = 3.5 ft
Domestic 7:	Net drawdown = 4.7 ft
Domestic 8:	Net drawdown = 2.9 ft
Domestic 9:	Net drawdown = 5.1 ft
Domestic 10:	Net drawdown = 2.7 ft
Domestic 11:	Net drawdown = 5.4 ft
Domestic 12:	Net drawdown = 2.9 ft
Domestic 13:	Net drawdown = 3.8 ft
Domestic 14:	Net drawdown = 2.4 ft

Water right nos. 26437, KE 72, and KE 74, and the wells labeled domestic 2, 7, 9, and 11 exceed the drawdown allowance of 4.0 ft. Critical well analysis is necessary on those wells.

Critical Well Evaluation:

26437:

Water Column = 245 ft

DP = 4.8 ft (Net drawdown from the proposal indicated above)

DE = 3.3 ft (Water level decline from 2023 through 2048 based upon GMD3 model)

DD = 0 ft (Land is in CRP)

DT = 8.1 ft

Economic Drawdown Constraint (EDC) = $0.4 * 245 \text{ ft} = 98.0 \text{ ft}$

Physical Drawdown Constraint (PDC) = $245 \text{ ft} - 60 \text{ ft} = 185.0 \text{ ft}$

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

KE 72:

Water Column = 255 ft

DP = 4.1 ft (Net drawdown from the proposal indicated above)

DE = 8.5 ft (Water level decline from 2023 through 2048 based upon GMD3 model)

DD = 19.8 ft (S = 0.05181, T = 8062 ft²/day, Q = 416 gpm, tp = 120 days, efficiency = 70%)

DT = 32.4 ft

Economic Drawdown Constraint (EDC) = 0.4 * 255 ft = 102.0 ft

Physical Drawdown Constraint (PDC) = 255 ft – 60 ft = 195.0 ft

Total drawdown of 32.4 ft is less than the EDC and PDC, so this well is **not critical**.

KE 74:

Water Column = 255 ft

DP = 5.6 ft (Net drawdown from the proposal indicated above)

DE = 8.5 ft (Water level decline from 2023 through 2048 based upon GMD3 model)

DD = 0 ft (Land is in CRP)

DT = 14.1 ft

Economic Drawdown Constraint (EDC) = 0.4 * 255 ft = 102.0 ft

Physical Drawdown Constraint (PDC) = 255 ft – 60 ft = 195.0 ft

Total drawdown of 14.1 ft is less than the EDC and PDC, so this well is **not critical**.

Domestic 2:

Water Column = 255 ft

DP = 7.5 ft (Net drawdown from the proposal indicated above)

DE = 8.5 ft (Water level decline from 2023 through 2048 based upon GMD3 model)

DT = 16.0 ft

Economic Drawdown Constraint (EDC) = 0.4 * 255 ft = 102.0 ft

Physical Drawdown Constraint (PDC) = 255 ft – 20 ft = 235.0 ft

Total drawdown of 16.0 ft is less than the EDC and PDC, so this well is **not critical**.

Domestic 7:

Water Column = 240 ft

DP = 4.7 ft (Net drawdown from the proposal indicated above)

DE = 14.7 ft (Water level decline from 2023 through 2048 based upon GMD3 model)

DT = 19.4 ft

Economic Drawdown Constraint (EDC) = $0.4 * 240 \text{ ft} = 96.0 \text{ ft}$

Physical Drawdown Constraint (PDC) = $240 \text{ ft} - 20 \text{ ft} = 220.0 \text{ ft}$

Total drawdown of 19.4 ft is less than the EDC and PDC, so this well is **not critical**.

Domestic 9:

Water Column = 240 ft

DP = 5.1 ft (Net drawdown from the proposal indicated above)

DE = 14.7 ft (Water level decline from 2023 through 2048 based upon GMD3 model)

DT = 19.8 ft

Economic Drawdown Constraint (EDC) = $0.4 * 240 \text{ ft} = 96.0 \text{ ft}$

Physical Drawdown Constraint (PDC) = $240 \text{ ft} - 20 \text{ ft} = 220.0 \text{ ft}$

Total drawdown of 19.8 ft is less than the EDC and PDC, so this well is **not critical**.

Domestic 11:

Water Column = 240 ft

DP = 5.4 ft (Net drawdown from the proposal indicated above)

DE = 14.7 ft (Water level decline from 2023 through 2048 based upon GMD3 model)

DT = 20.1 ft

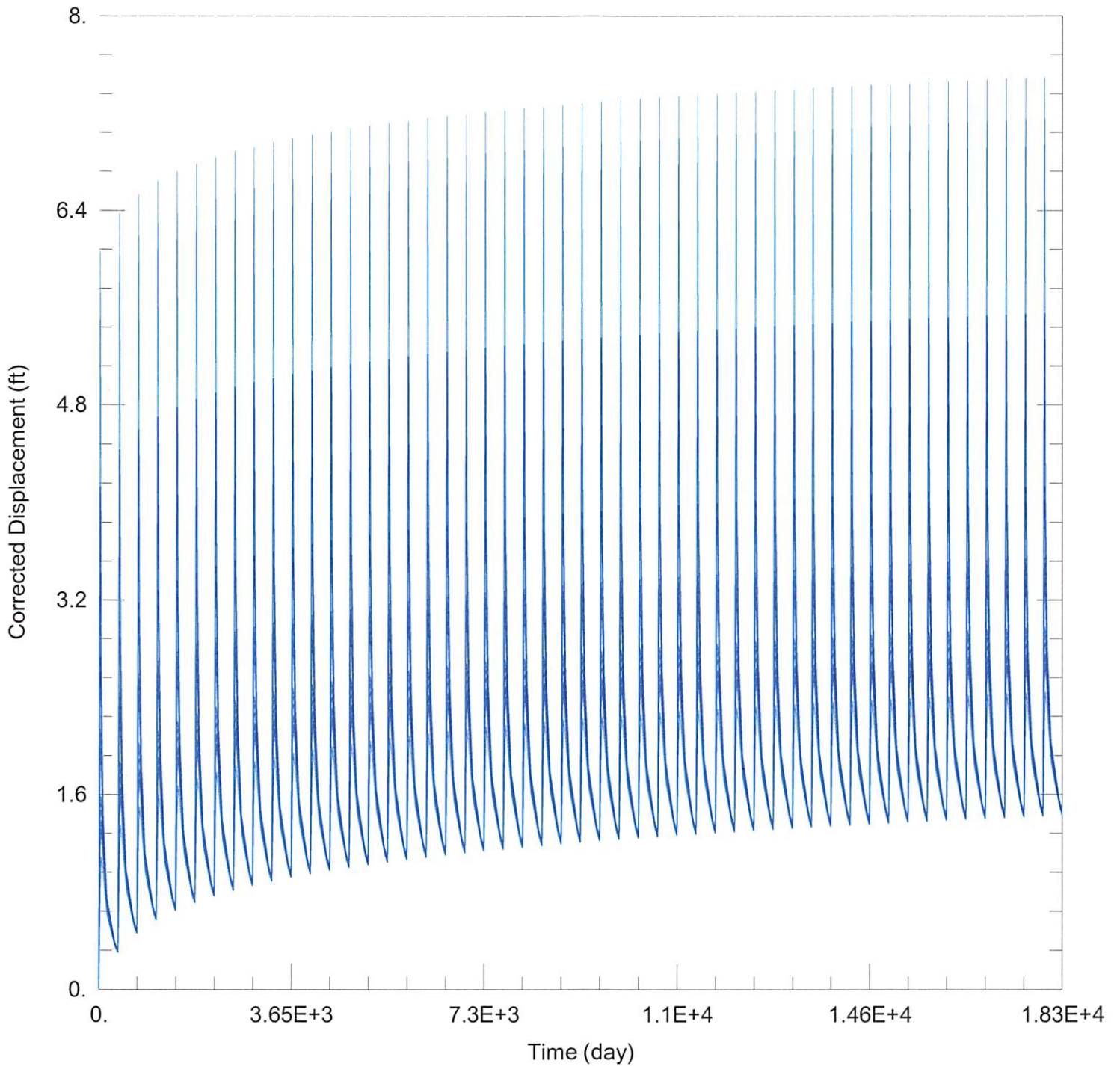
Economic Drawdown Constraint (EDC) = $0.4 * 240 \text{ ft} = 96.0 \text{ ft}$

Physical Drawdown Constraint (PDC) = $240 \text{ ft} - 20 \text{ ft} = 220.0 \text{ ft}$

Total drawdown of 20.1 ft is less than the EDC and PDC, so this well is **not critical**.

Conclusion:

The proposed move is in an area where the aquifer is projected to decline slowly. If the proposed well operates at its fully authorized rate and quantity, it is likely to produce noticeable effects on neighboring wells, but due to overall low water use in the area and the low rate of aquifer decline, these wells were not flagged as critical. Concerned neighbors should contact GMD3 at (620) 275-7147 or the Division of Water Resources at (620) 276-2901.



WELL TEST ANALYSIS

Data Set: C:\Users\trevora\Documents\2023_moves\KE_73\KE 73 Proposed.aqt

Date: 02/07/23

Time: 16:54:13

PROJECT INFORMATION

Company: GMD 3

Project: KE 73

Location: Kearny County

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (ft)	Y (ft)
KE 73	-133841	370266

Well Name	X (ft)	Y (ft)
□	-133841	370266