

Water Wells For Africa

WATERWELL ANALYSIS PROJECT - ADAM MARIANACCI



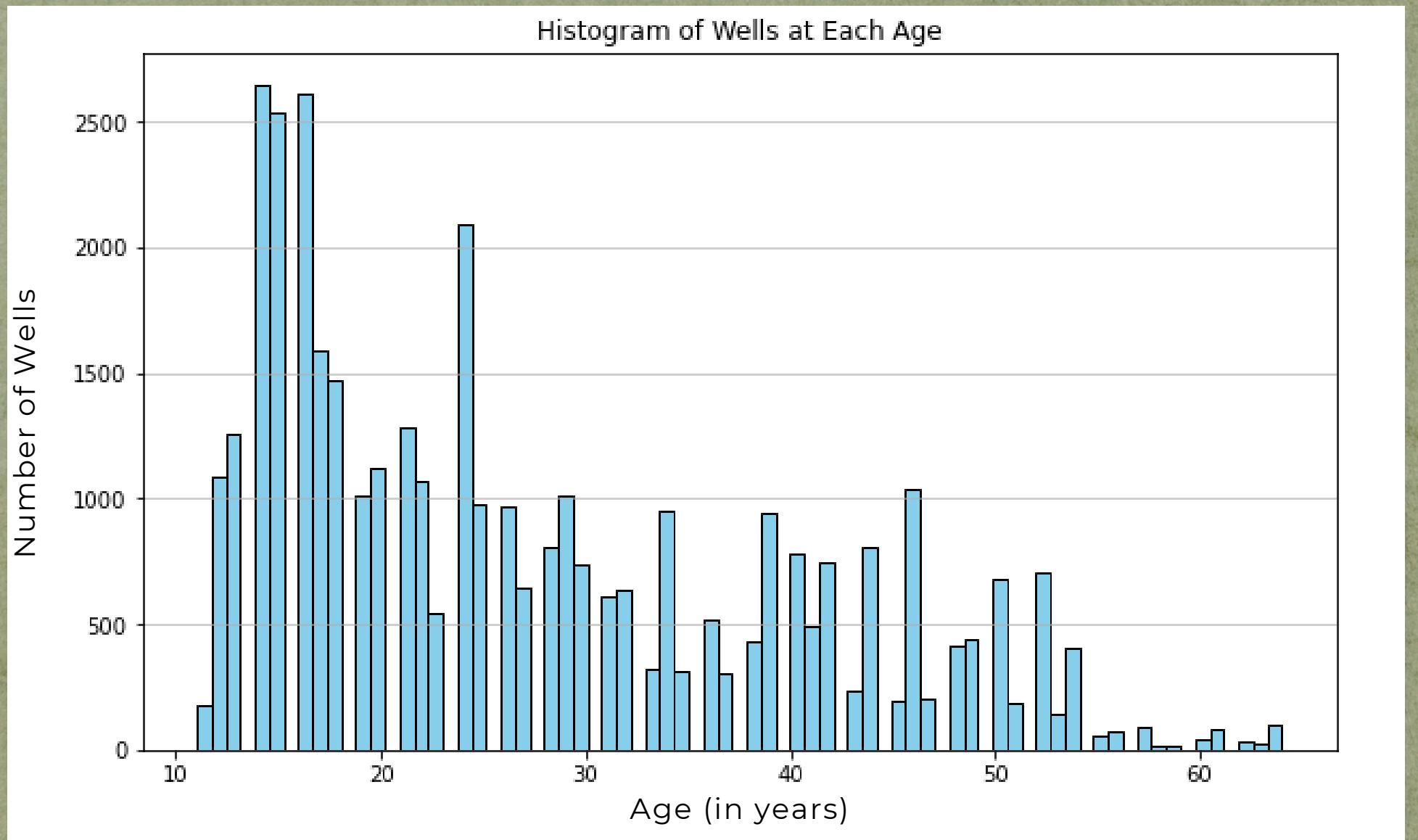
Project Goal

To help the WWFA (Water Wells For Africa) organization identify wells that are in need of repair in Tanzania.



Data

The data used in this analysis comes from the Tanzania Ministry of Water dataset.



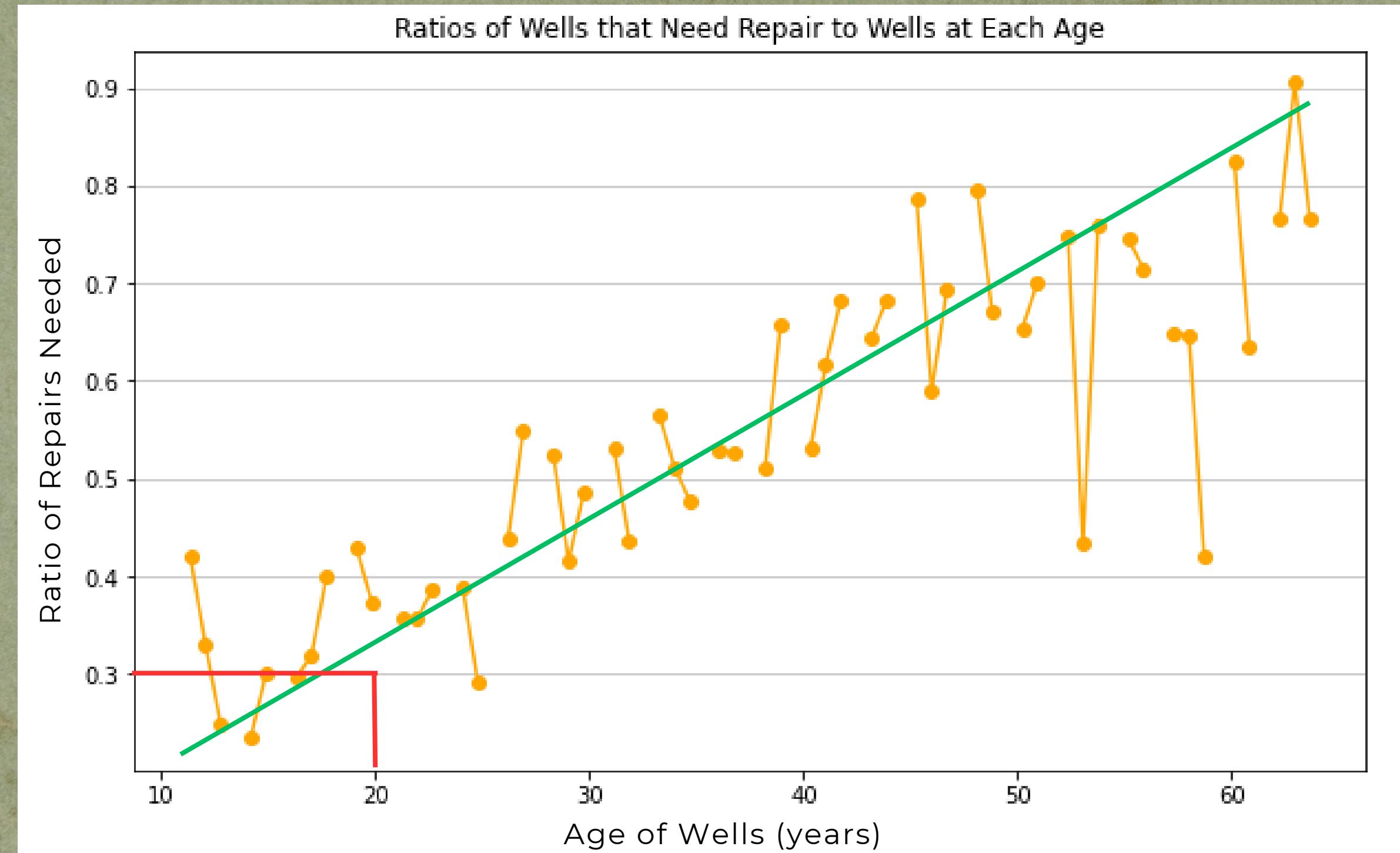
IMPORTANT FEATURES IN WELLS NEEDING REPAIR

- Altitude
- Age



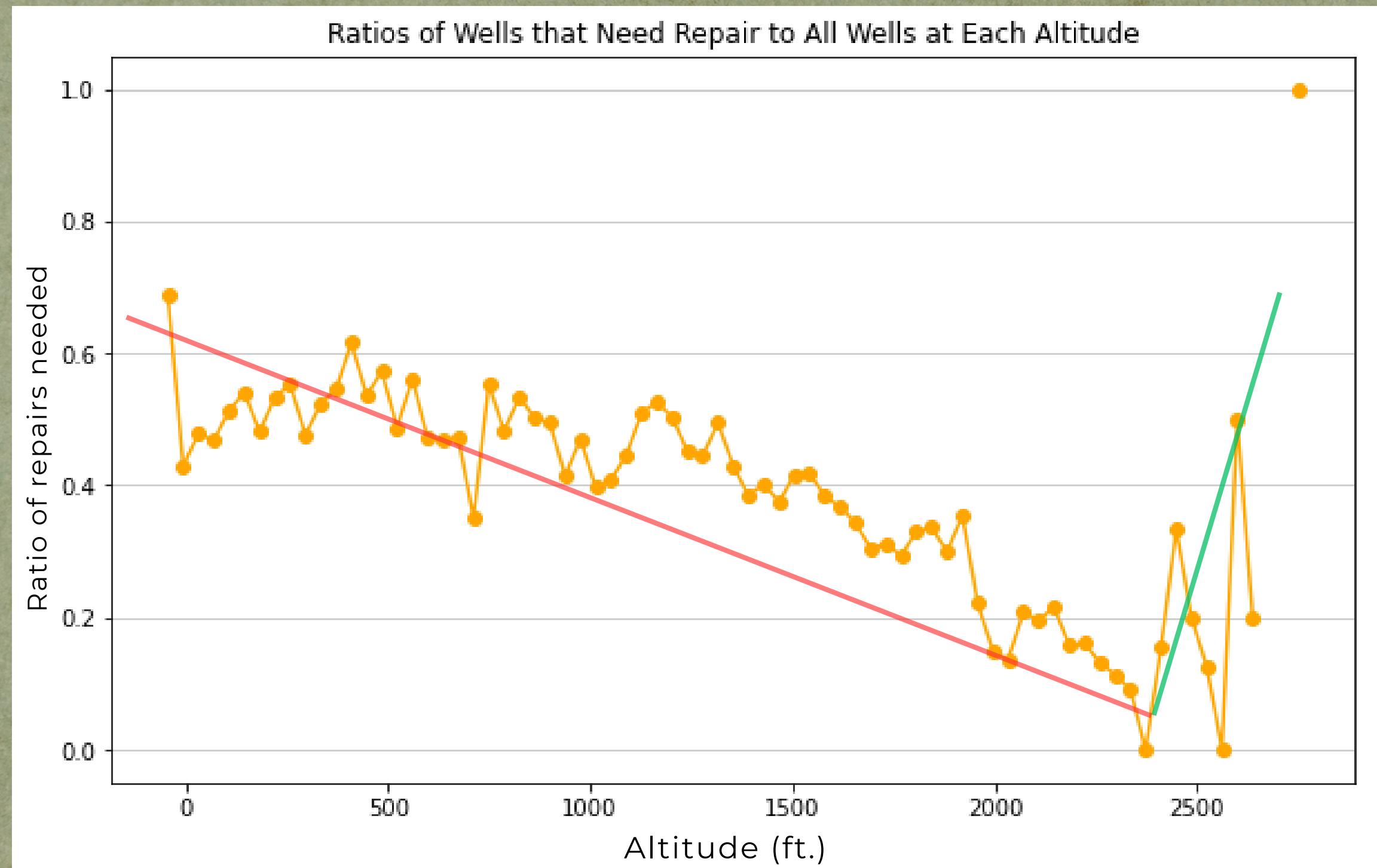
Results

Lifespan of a Well : 20 years



Results cont.

Repairs significantly increase over 2400ft

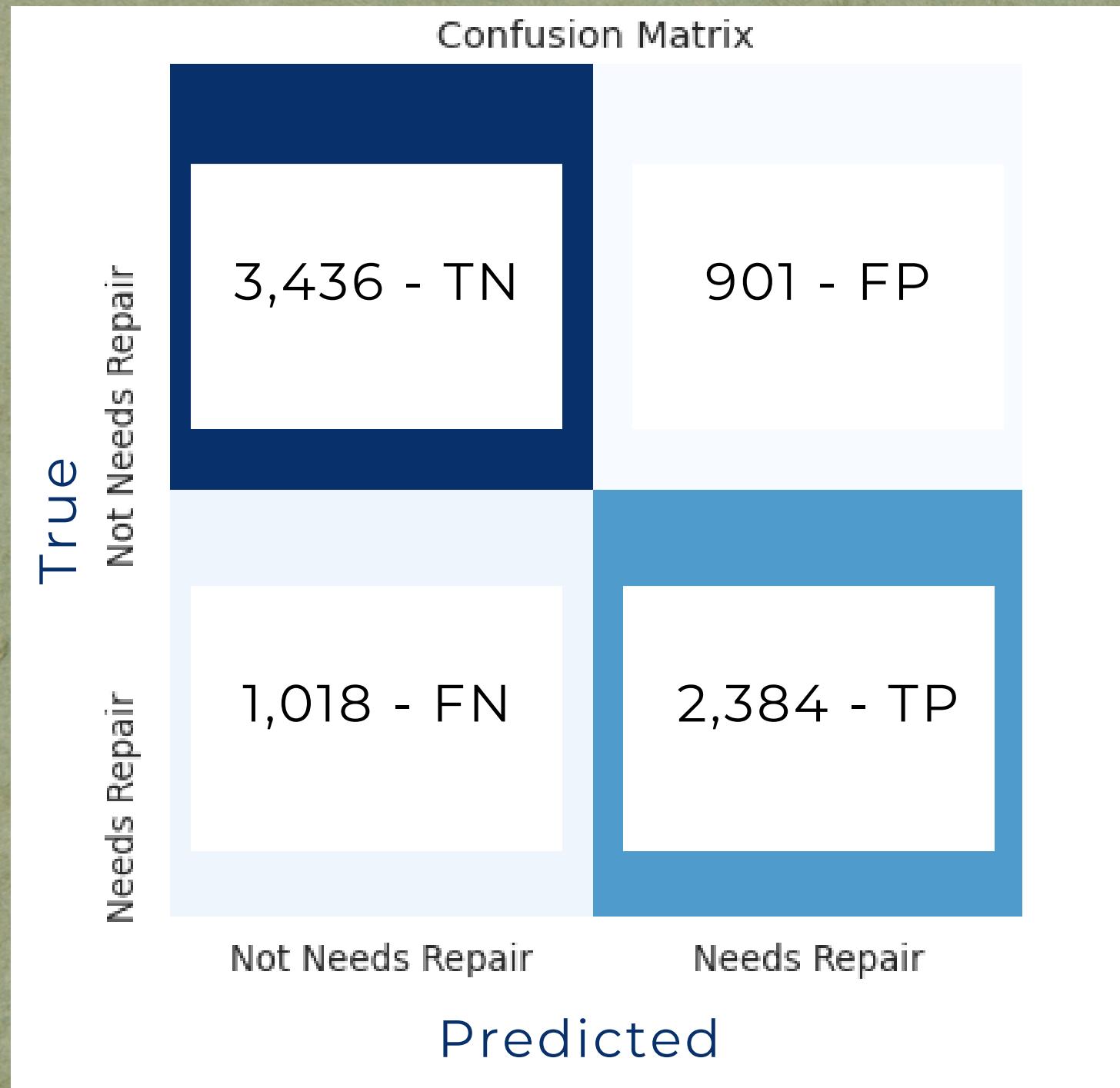


Model Evaluation

- 78% accuracy score
- 76% score on Recall
- Recall - The amount of actual positives that were predicted correctly.



Confusion Matrix



-Sample Size - 7,739
-The model is predicting a well
that needs repair as NOT needing
repair 13% of the time.

CONCLUSION AND RECOMMENDATIONS...



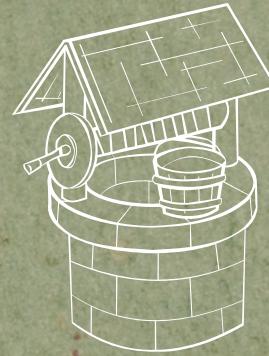
SET A THRESHOLD

Set a threshold for wells at 20 years of age to be replaced.



REPAIRS AND ALTITUDE

Over 2400 feet, ratio of repairs increase.



OBTAIN MORE DATA

- 10x more Data with more feature importance to the target

Limitations

- Too many missing values
- Features showed to lack importance in models
- Not enough data



Next Steps...

Obtain more data

- Population
- Geographic
- Maintenance



Thank you

Questions?



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