<><> Time Stamp <><>

29/06/2022 - 12:25:32

<><> Data Summary <><>

Bore ID: GW036872.1.1
Bore Coordinates: (-30.923963, 153.044423)
Silo Grid Point Coordinates: (-30.9, 153.05)

<><> Code Checks <><>

GWL Date Chronological Order Check: No Error
SILO Date Chronoligical Order Check: No Error

<><> Model Functionality <><>

Input Variables (Daily):
    SWL (m)
    Rainfall (mm)
    Maximum Temperature (°C)
    Minimum Temperature (°C)
    Vapour Pressure (hPa)
    Vapour Pressure Deficit (hPa)
    Evaporation - Class A Pan (mm)
    Evaporation - Synthetic Estimate (mm)
    Evaporation - Combination (Synthetic Estimate pre-1970, Class A Pan 1970 Onwards) (mm)
    Evaportation - Morton's Shallow Lake Evaporation (mm)
    Solar Radiation - Total Incoming Downward Shortwave Radiation on a Horizontal Surface (MJ/m^2)
    Relative Humidity at Time of Maximum Temperature (%)
    Relative Humidity at Time of Minimum Temperature (%)
    Evapotranspiration - FAO56 Short Crop (mm)
    Evapotranspiration - ASCE Tall Crop (mm)
    Evapotranspiration - Morton's Areal Actual Evapotranspiration (mm)
    Evapotranspiration - Morton's Potential Evapotranspiration
    Evapotranspiration - Wet-Environment Areal Evapotranspiration Over Land (mm)
    Mean Sea Level Pressure (hPa)
Input Time Lags: Current day + 29 proceeding days
Output: SWL (m) in 1 days time
Data Range: 02/04/2010 - 01/09/2021

<><> Hyperparameters <><>

Number of Epochs: 1000
Learning Rate: 0.001
Number of Features in Hidden State: 2
Number of Staked LSTM Layers: 1
Number of Output Classes: 1
Percentage of Data for Training: 80.0%

<><> Model Results <><>

Run Time: 111.02209186553955s

```
Network Structure:
      (lstm): LSTM(19, 2, batch_first=True)
      (fc_1): Linear(in_features=2, out_features=128, bias=True)
      (fc): Linear(in_features=128, out_features=1, bias=True)
      (relu): ReLU()
Final Training Loss: 0.0003109858080279082
Training Set RMSE: 0.02749518797794164
Testing Set RMSE: 0.08583105928908191
Epoch: 0, Loss: 0.42512
Epoch: 100, Loss: 0.01682
Epoch: 200, Loss: 0.00888
Epoch: 300, Loss: 0.00383
Epoch: 400, Loss: 0.00194
Epoch: 500, Loss: 0.00101
Epoch: 600, Loss: 0.00065
Epoch: 700, Loss: 0.00049
Epoch: 800, Loss: 0.00040
Epoch: 900, Loss: 0.00035
```