伊予三島 - オキシダント予測の分析

Model Parameters:
Prefecture code: 38
Station code: 38209050
Station name: 伊予三島
Target item: Ox(ppm)
Number of data points in the train set: 13687
Number of data points in the test set: 5867
Forecast horizon (hours): 24
Number of used features: 141

Features:
 Ox(ppm), NO(ppm), NO2(ppm), U, V
 Ox(ppm)_lag1, Ox(ppm)_lag2, Ox(ppm)_lag3, Ox(ppm)_lag4, Ox(ppm)_lag5
 Ox(ppm)_lag6, Ox(ppm)_lag7, Ox(ppm)_lag8, Ox(ppm)_lag9, Ox(ppm)_lag10
 Ox(ppm)_lag11, Ox(ppm)_lag12, Ox(ppm)_lag13, Ox(ppm)_lag14, Ox(ppm)_lag15
 Ox(ppm)_lag16, Ox(ppm)_lag17, Ox(ppm)_lag18, Ox(ppm)_lag19, Ox(ppm)_lag20
 Ox(ppm)_lag21, Ox(ppm)_lag22, Ox(ppm)_lag23, NO(ppm)_lag1, NO(ppm)_lag2
 NO(ppm)_lag3, NO(ppm)_lag4, NO(ppm)_lag5, NO(ppm)_lag6, NO(ppm)_lag7
 NO(ppm)_lag8, NO(ppm)_lag9, NO(ppm)_lag10, NO(ppm)_lag11, NO(ppm)_lag12
 NO(ppm)_lag13, NO(ppm)_lag14, NO(ppm)_lag15, NO(ppm)_lag16, NO(ppm)_lag17
 NO(ppm)_lag18, NO(ppm)_lag19, NO(ppm)_lag20, NO(ppm)_lag21, NO(ppm)_lag22
 NO(ppm)_lag23, NO2(ppm)_lag1, NO2(ppm)_lag2, NO2(ppm)_lag3, NO2(ppm)_lag4
 NO2(ppm)_lag5, NO2(ppm)_lag6, NO2(ppm)_lag7, NO2(ppm)_lag8, NO2(ppm)_lag9
 NO2(ppm)_lag10, NO2(ppm)_lag11, NO2(ppm)_lag12, NO2(ppm)_lag13, NO2(ppm)_lag14
 NO2(ppm)_lag15, NO2(ppm)_lag16, NO2(ppm)_lag17, NO2(ppm)_lag18, NO2(ppm)_lag19
 NO2(ppm)_lag20, NO2(ppm)_lag21, NO2(ppm)_lag22, NO2(ppm)_lag23, U_lag1
 U_lag2, U_lag3, U_lag4, U_lag5, U_lag6
 U_lag7, U_lag8, U_lag9, U_lag10, U_lag11
 U_lag12, U_lag13, U_lag14, U_lag15, U_lag16
 U_lag17, U_lag18, U_lag19, U_lag20, U_lag21
 U_lag22, U_lag23, V_lag1, V_lag2, V_lag3
 V_lag4, V_lag5, V_lag6, V_lag7, V_lag8
 V_lag9, V_lag10, V_lag11, V_lag12, V_lag13
 V_lag14, V_lag15, V_lag16, V_lag17, V_lag18
 V_lag19, V_lag20, V_lag21, V_lag22, V_lag23
 Ox(ppm)_roll_mean_3, Ox(ppm)_roll_std_6, NO(ppm)_roll_mean_3, NO(ppm)_roll_std_6, NO2(ppm)_roll_mean_3
 NO2(ppm)_roll_std_6, U_roll_mean_3, U_roll_std_6, V_roll_mean_3, V_roll_std_6
 Ox(ppm)_diff_1, Ox(ppm)_diff_2, Ox(ppm)_diff_3, NO(ppm)_diff_3, NO2(ppm)_diff_3
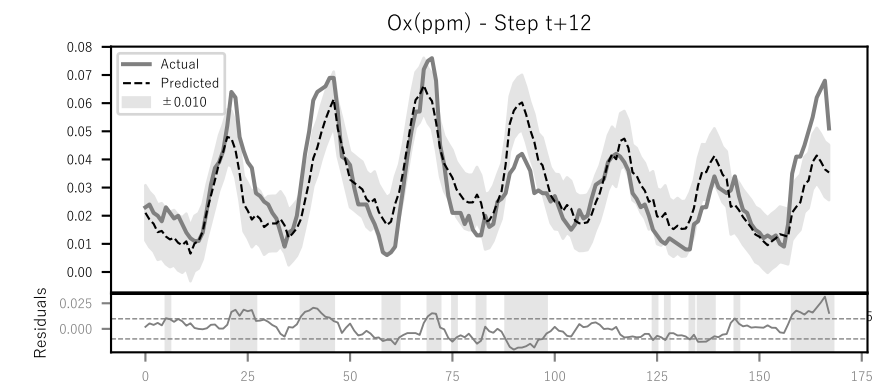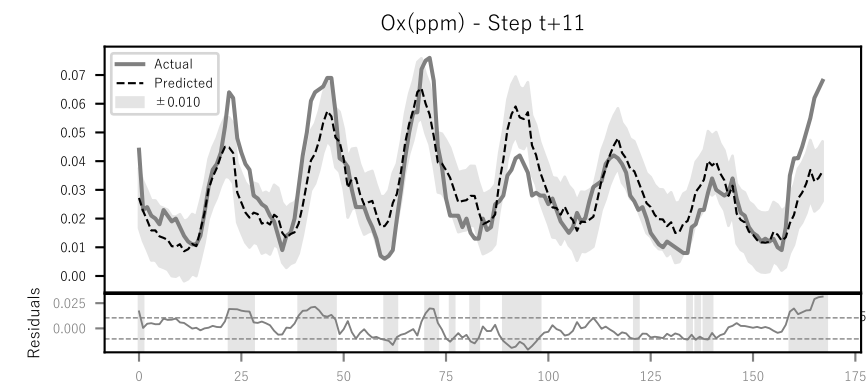 U_diff_3, V_diff_3, hour_sin, hour_cos, dayofweek
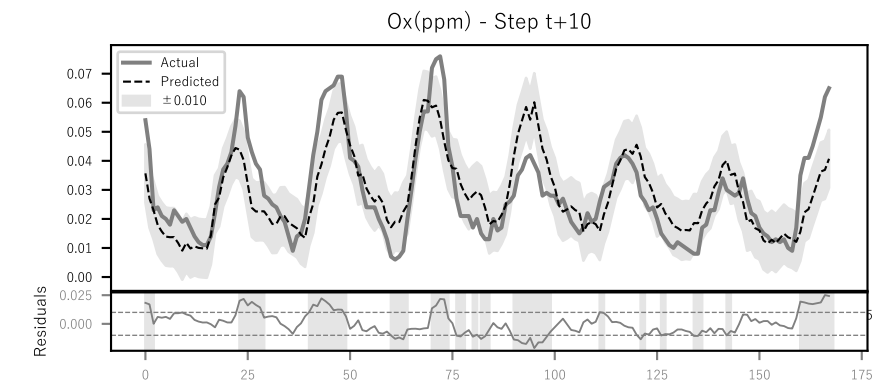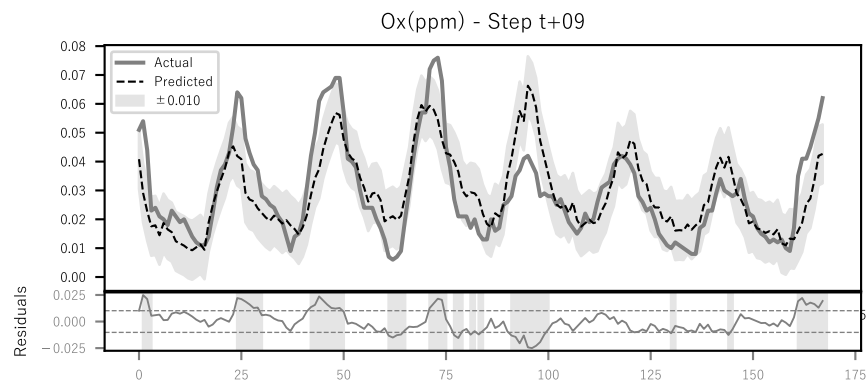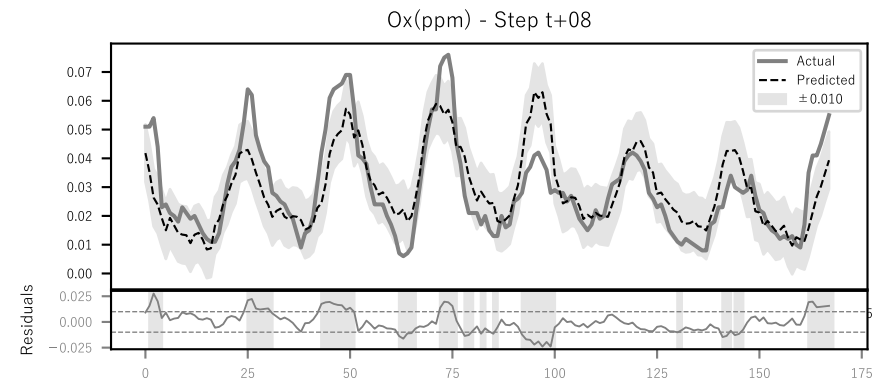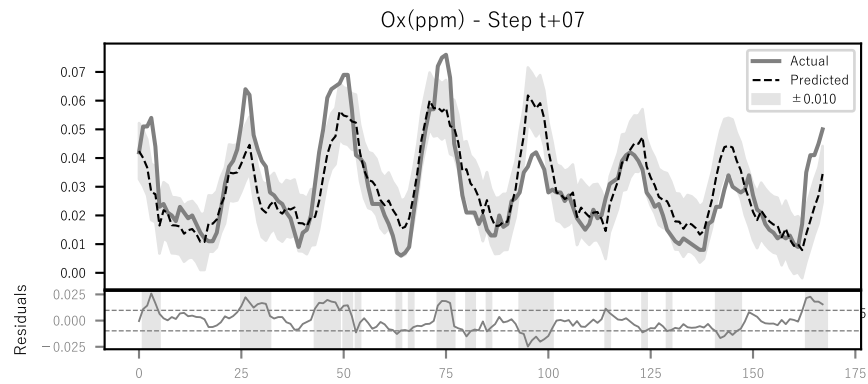 is_weekend

Metrics per Forecast Step:
Ox(ppm)_t+01 - R²: 0.9218, MAE: 0.0030, RMSE: 0.0041
Ox(ppm)_t+02 - R²: 0.8352, MAE: 0.0044, RMSE: 0.0060
Ox(ppm)_t+03 - R²: 0.7645, MAE: 0.0054, RMSE: 0.0072
Ox(ppm)_t+04 - R²: 0.7027, MAE: 0.0061, RMSE: 0.0081
Ox(ppm)_t+05 - R²: 0.6521, MAE: 0.0067, RMSE: 0.0087
Ox(ppm)_t+06 - R²: 0.6145, MAE: 0.0070, RMSE: 0.0092
Ox(ppm)_t+07 - R²: 0.5845, MAE: 0.0073, RMSE: 0.0096
Ox(ppm)_t+08 - R²: 0.5592, MAE: 0.0076, RMSE: 0.0098
Ox(ppm)_t+09 - R²: 0.5400, MAE: 0.0078, RMSE: 0.0101
Ox(ppm)_t+10 - R²: 0.5138, MAE: 0.0081, RMSE: 0.0103
Ox(ppm)_t+11 - R²: 0.4926, MAE: 0.0082, RMSE: 0.0106
Ox(ppm)_t+12 - R²: 0.4779, MAE: 0.0083, RMSE: 0.0107
Ox(ppm)_t+13 - R²: 0.4758, MAE: 0.0083, RMSE: 0.0107
Ox(ppm)_t+14 - R²: 0.4643, MAE: 0.0084, RMSE: 0.0109
Ox(ppm)_t+15 - R²: 0.4544, MAE: 0.0086, RMSE: 0.0110
Ox(ppm)_t+16 - R²: 0.4433, MAE: 0.0087, RMSE: 0.0111
Ox(ppm)_t+17 - R²: 0.4306, MAE: 0.0088, RMSE: 0.0112
Ox(ppm)_t+18 - R²: 0.4262, MAE: 0.0088, RMSE: 0.0113
Ox(ppm)_t+19 - R²: 0.4211, MAE: 0.0089, RMSE: 0.0113
Ox(ppm)_t+20 - R²: 0.4186, MAE: 0.0089, RMSE: 0.0113
Ox(ppm)_t+21 - R²: 0.4059, MAE: 0.0090, RMSE: 0.0115
Ox(ppm)_t+22 - R²: 0.3965, MAE: 0.0091, RMSE: 0.0116
Ox(ppm)_t+23 - R²: 0.3920, MAE: 0.0091, RMSE: 0.0116
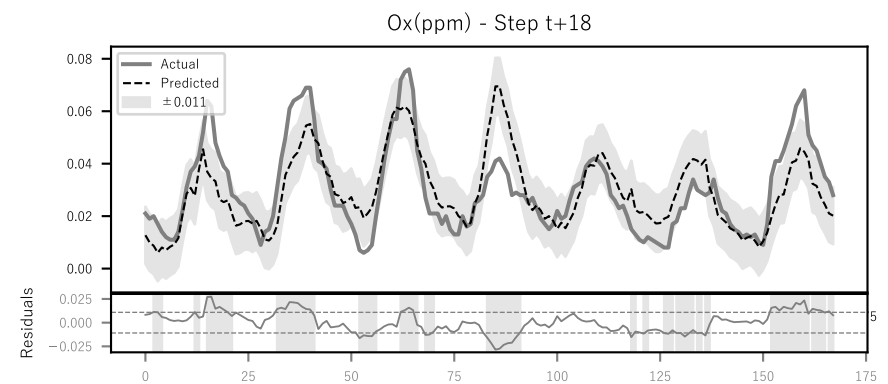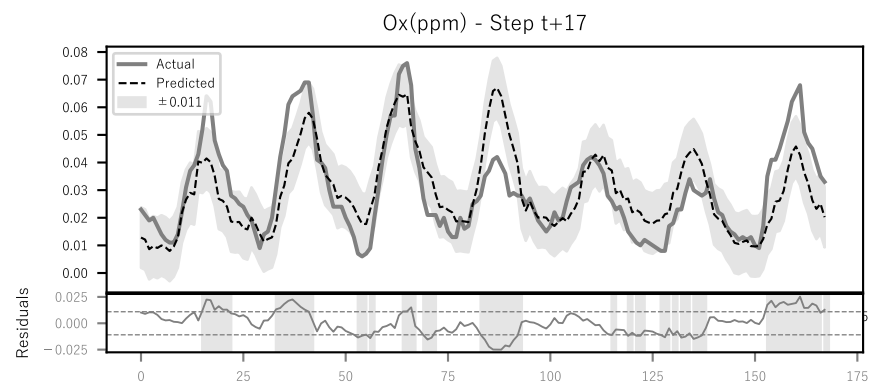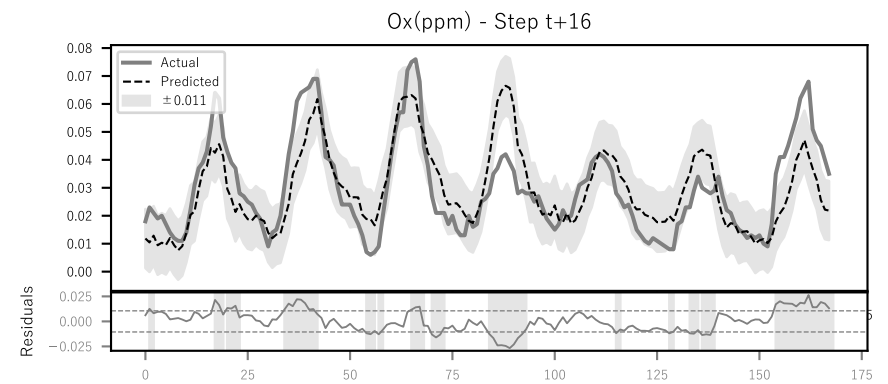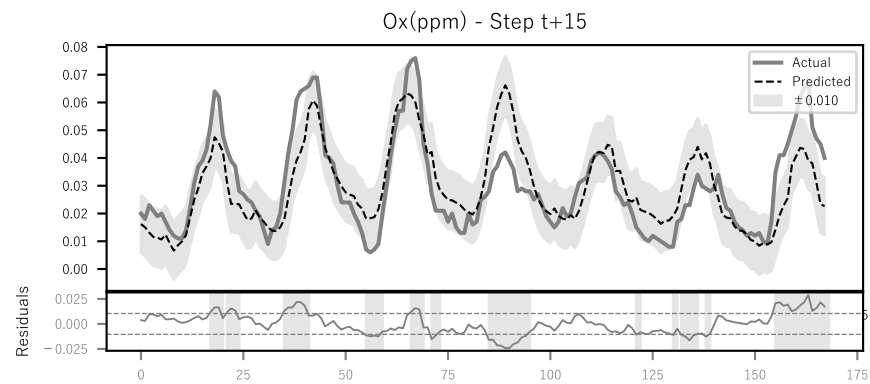Ox(ppm)_t+24 - R²: 0.3900, MAE: 0.0092, RMSE: 0.0116

Comparison between actual and predicted values
with ± Standard Deviation Bands
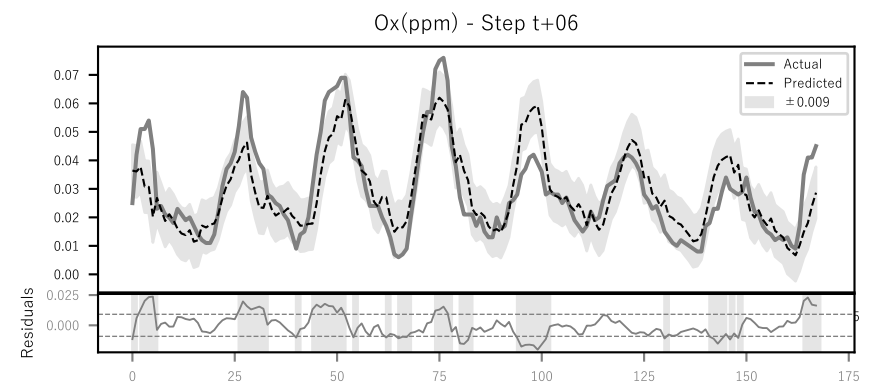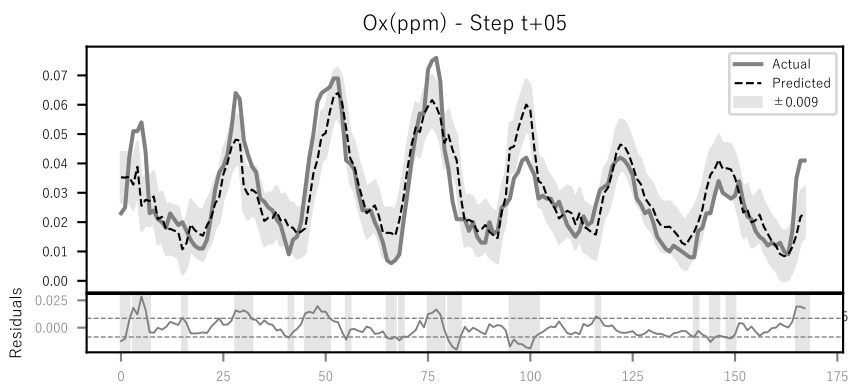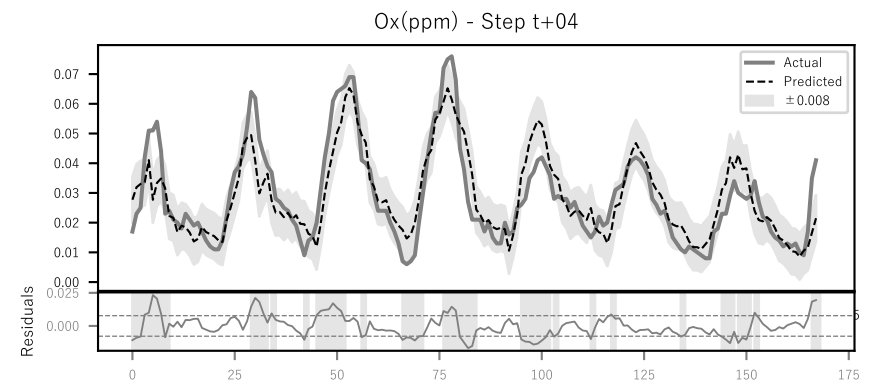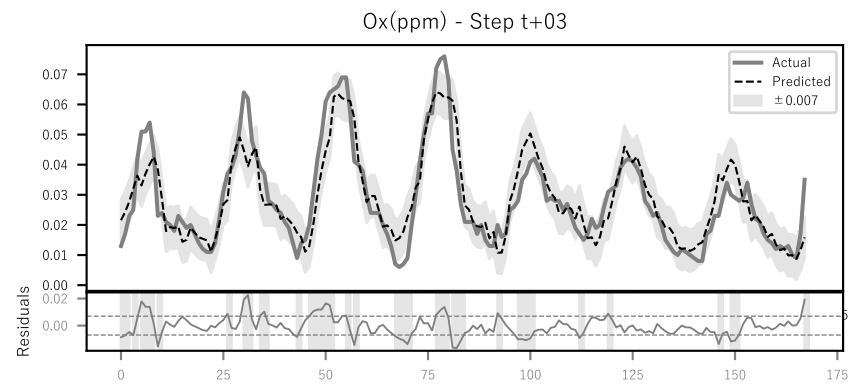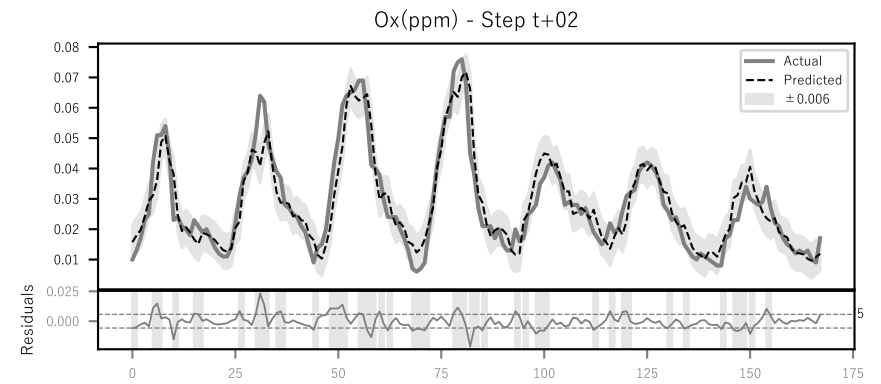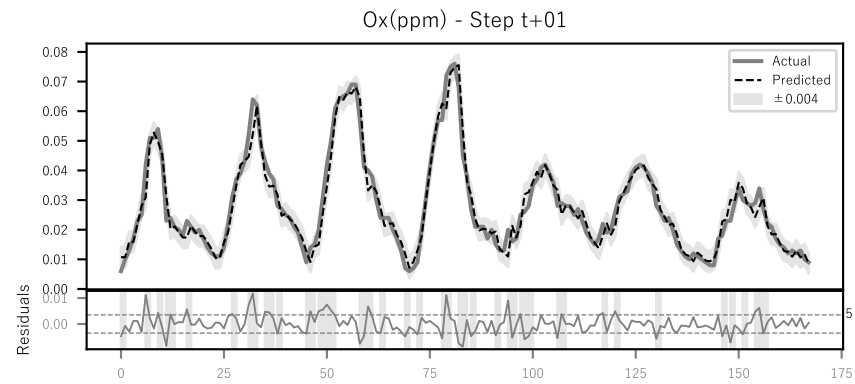
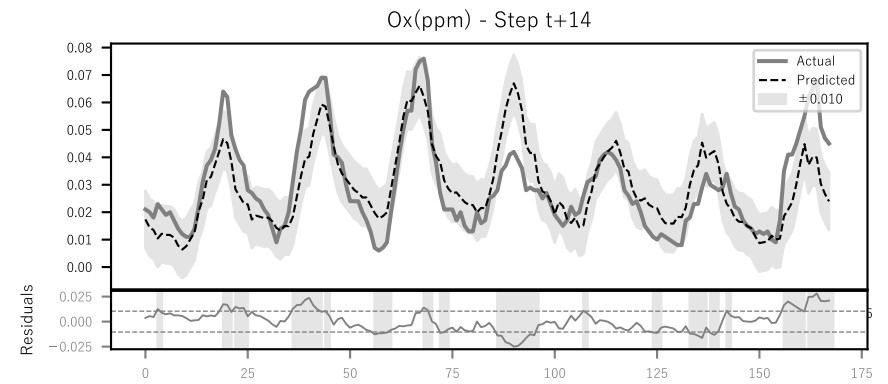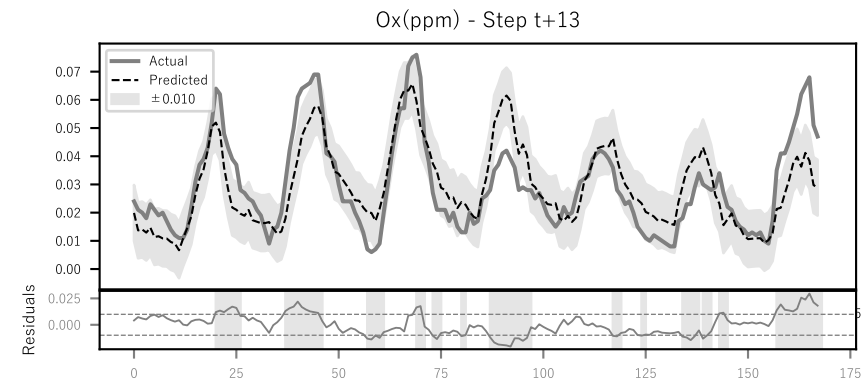Comparison between actual and predicted values
with ± Standard Deviation Bands

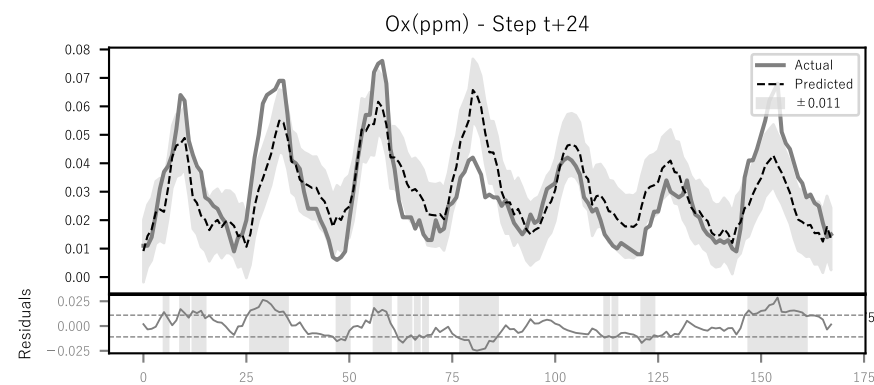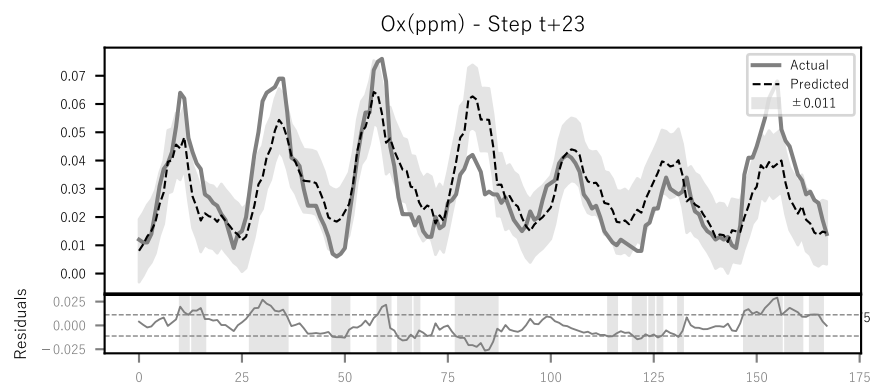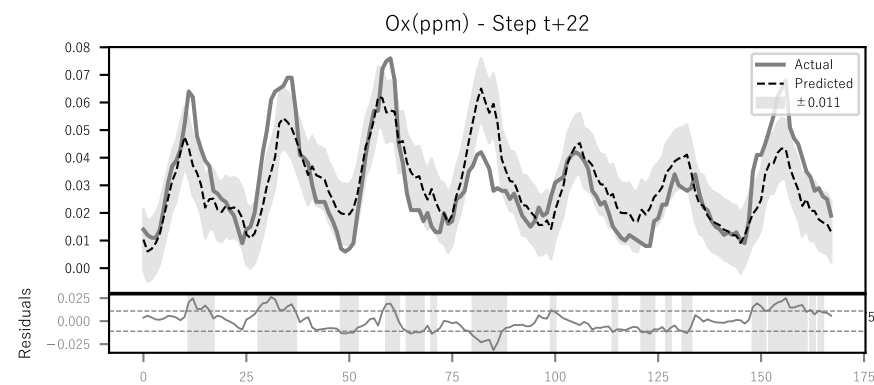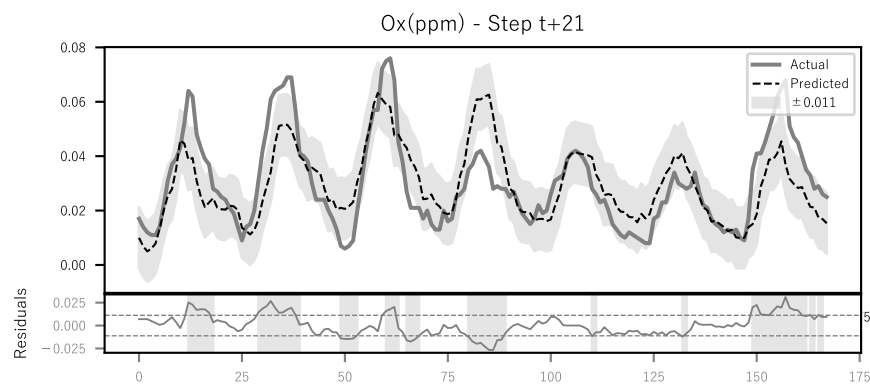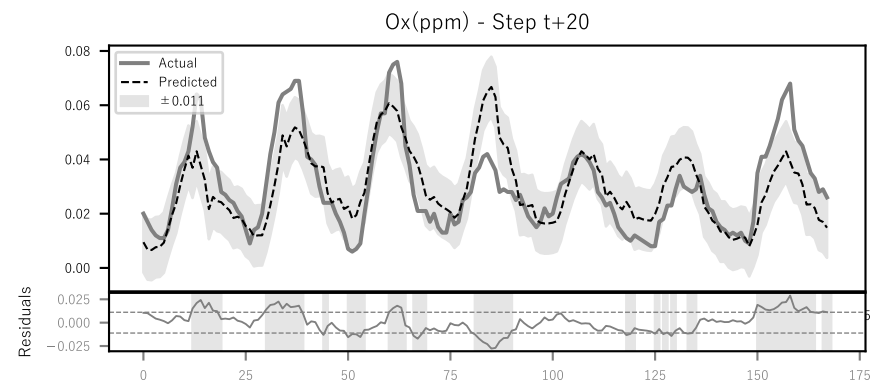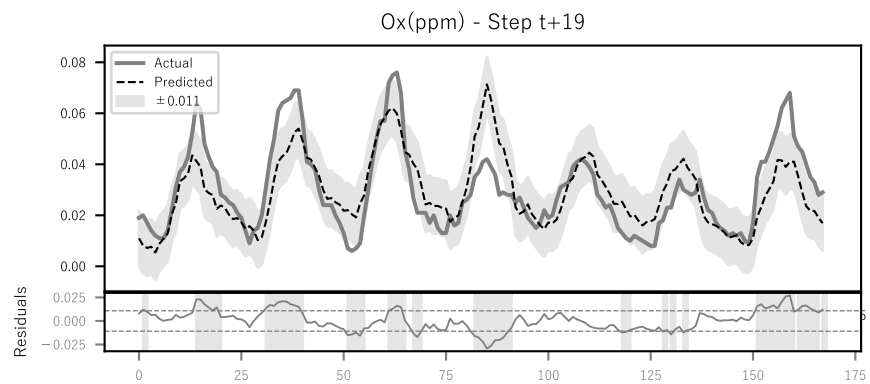# Comparison between actual and predicted values
with ± Standard Deviation Bands

Ox(ppm) - Step t+13

Ox(ppm) - Step t+14

Ox(ppm) - Step t+15

Ox(ppm) - Step t+16

Ox(ppm) - Step t+17

Ox(ppm) - Step t+18

Comparison between actual and predicted values
with ± Standard Deviation Bands

MAE, RMSE, and R² for each Forecast Step

Normalized Feature Importance (per feature)

Normalized Feature Importance (per step)