

Name of Variable = pollution	
Mean of Working Series	94.20369
Standard Deviation	27.42528
Number of Observations	60

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	17.55	6	0.0075	0.127	-0.028	-0.041	-0.061	-0.214	-0.435
12	26.25	12	0.0099	-0.151	0.049	-0.026	-0.113	0.110	0.254

Correlation of pollution and dew	
Variance of input =	171.4178
Number of Observations	60

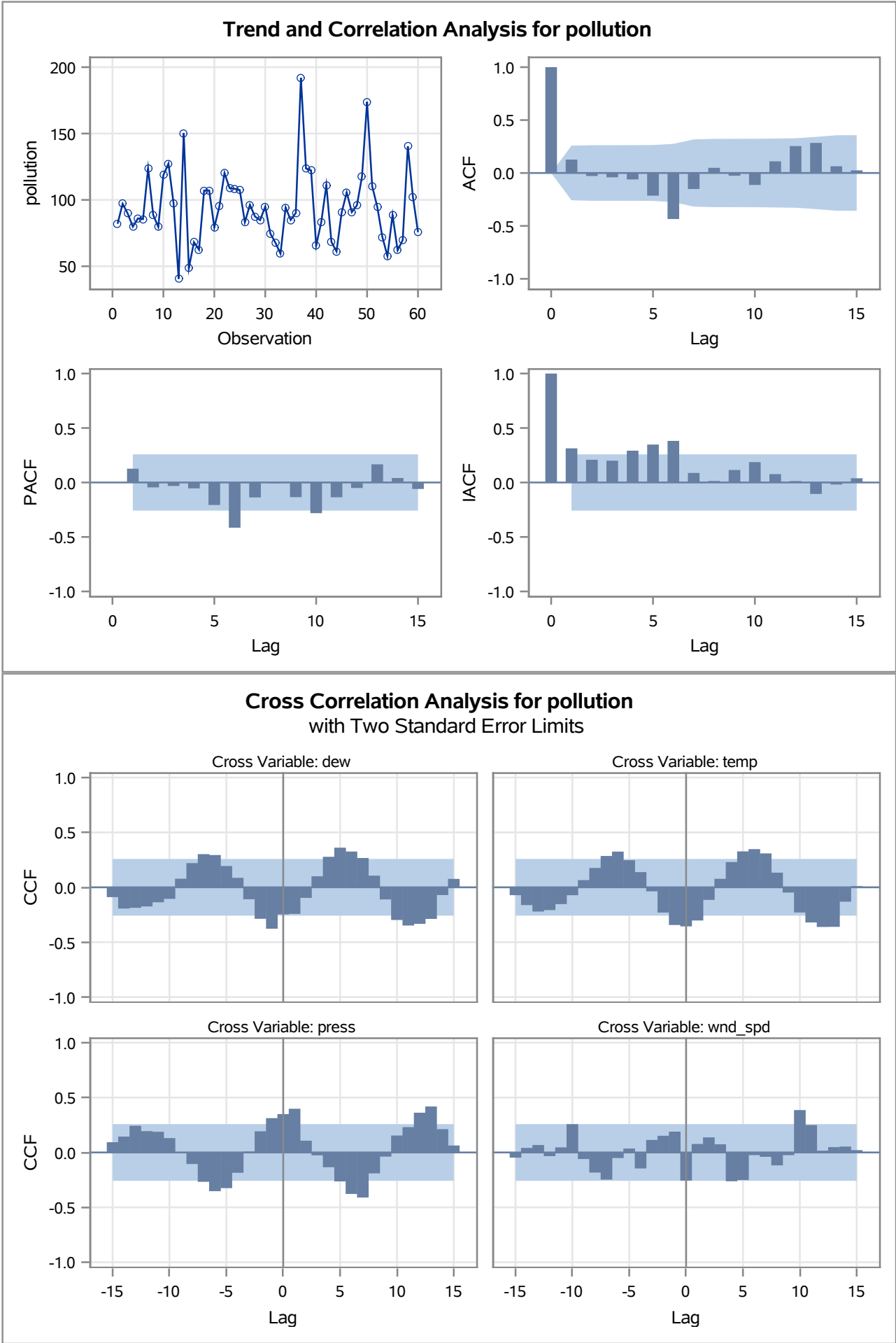
Correlation of pollution and temp	
Variance of input =	125.0286
Number of Observations	60

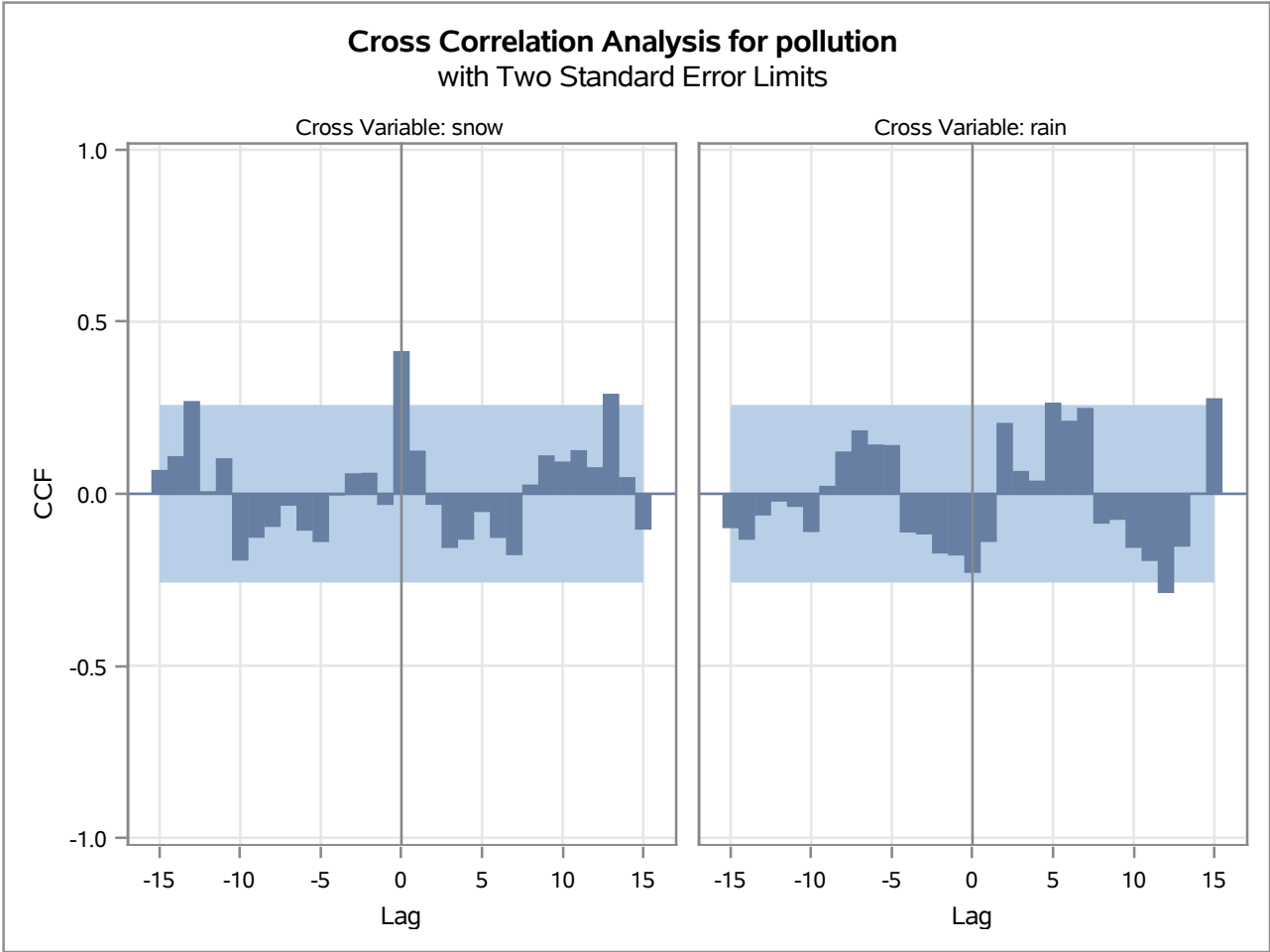
Correlation of pollution and press	
Variance of input =	77.15933
Number of Observations	60

Correlation of pollution and wnd_spd	
Variance of input =	246.3649
Number of Observations	60

Correlation of pollution and snow	
Variance of input =	14.37682
Number of Observations	60

Correlation of pollution and rain	
Variance of input =	51.65104
Number of Observations	60





Warning: The model defined by the new estimates is unstable. The iteration process has been terminated.

Warning: Estimates may not have converged.

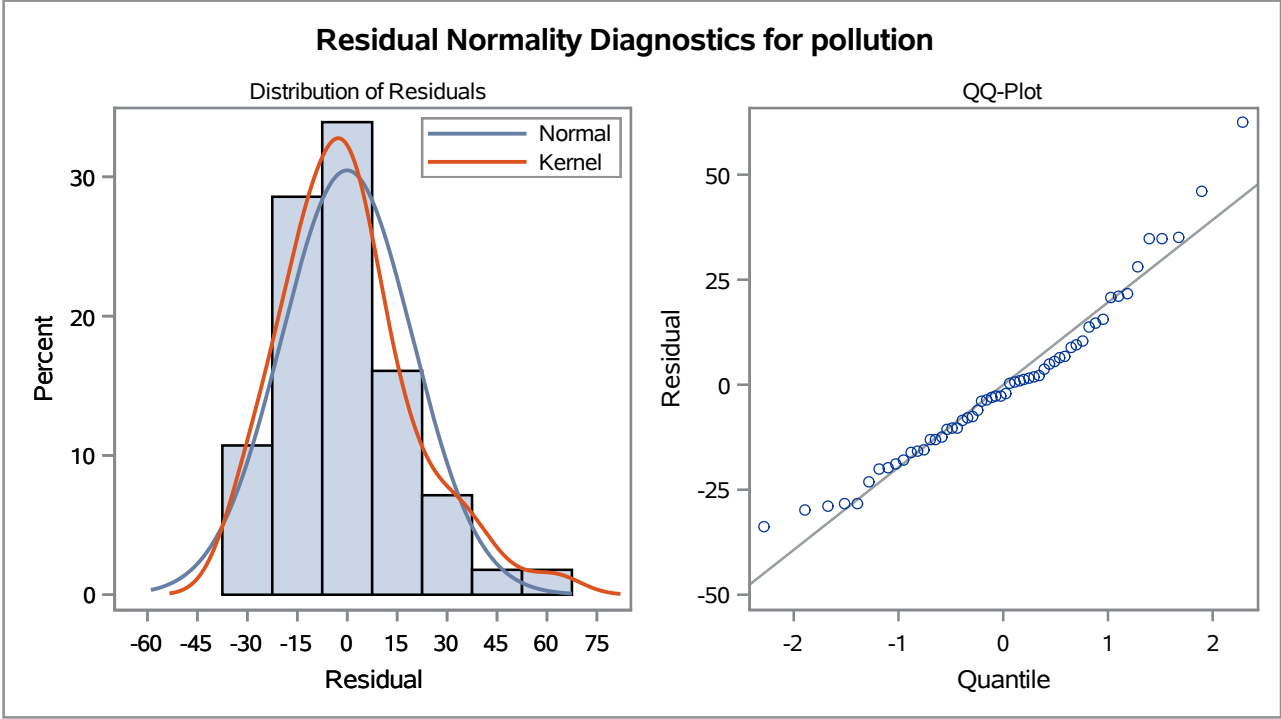
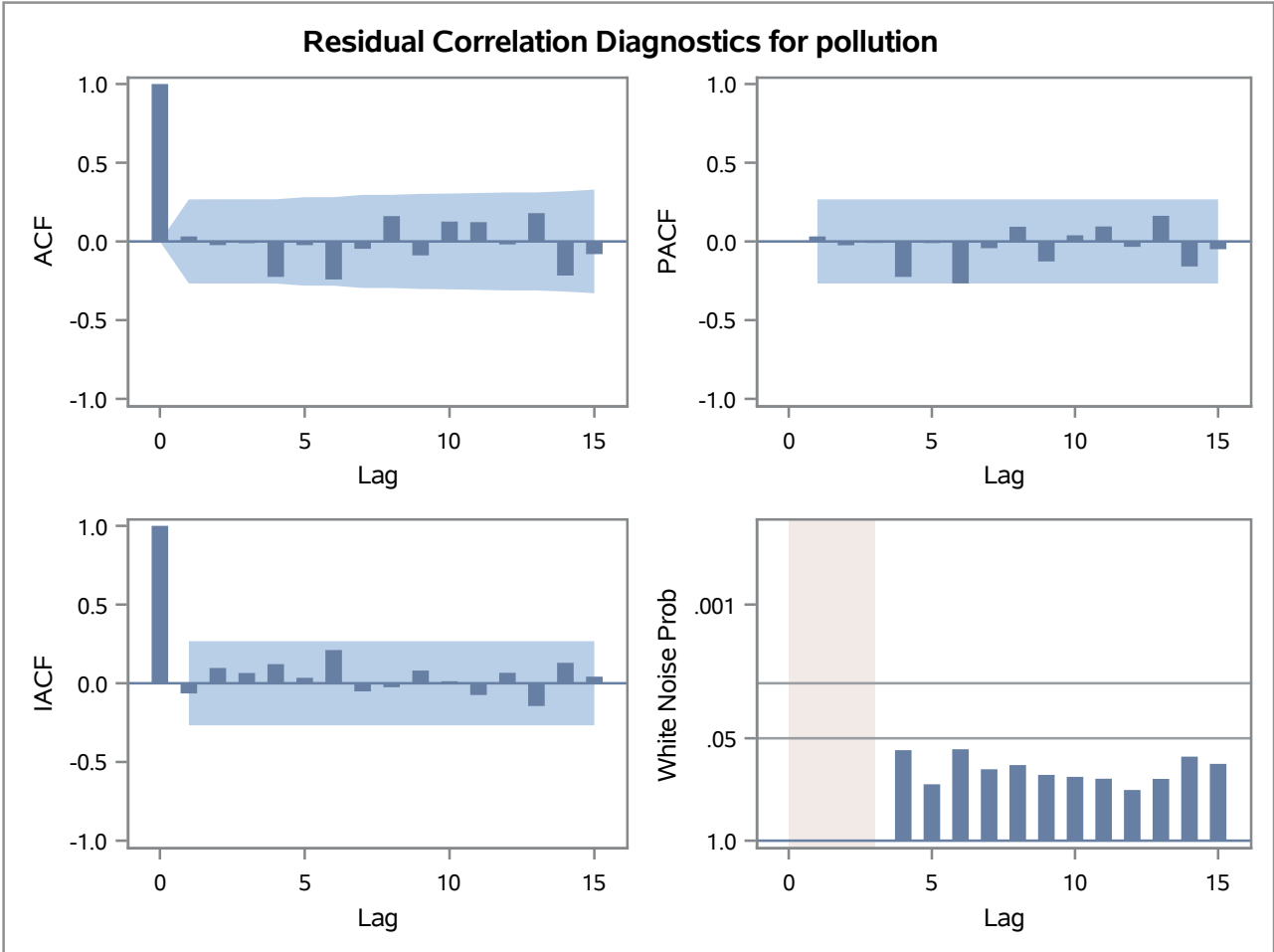
ARIMA Estimation Optimization Summary	
Estimation Method	Maximum Likelihood
Parameters Estimated	8
Termination Criteria	Maximum Relative Change in Estimates
Iteration Stopping Value	0.001
Criteria Value	5.057318
Maximum Absolute Value of Gradient	3783.879
R-Square Change from Last Iteration	0.19337
Objective Function	Log Gaussian Likelihood
Objective Function Value	-246.489
Marquardt's Lambda Coefficient	0.1
Numerical Derivative Perturbation Delta	0.001
Iterations	6
Warning Message	Estimates may not have converged.

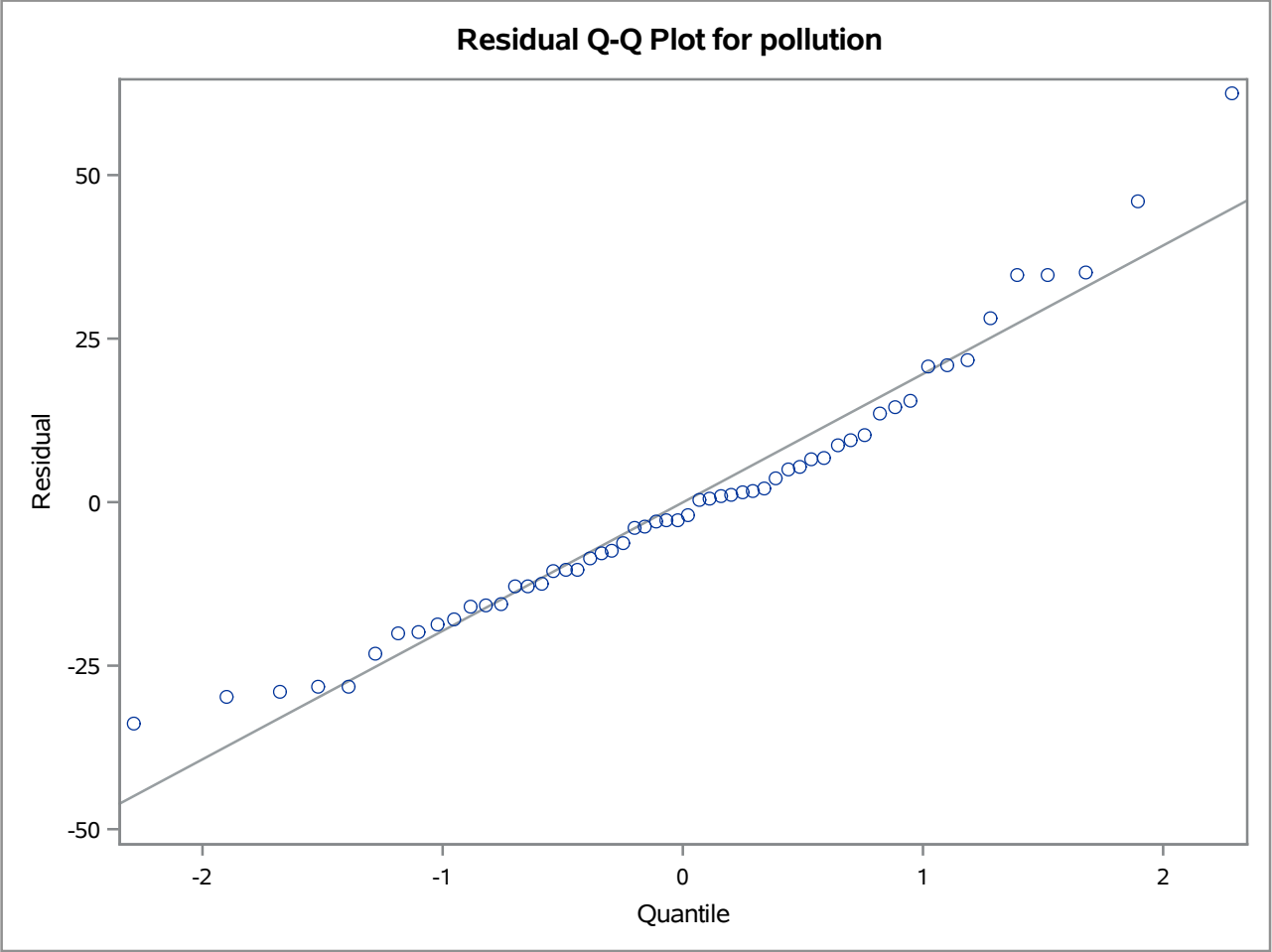
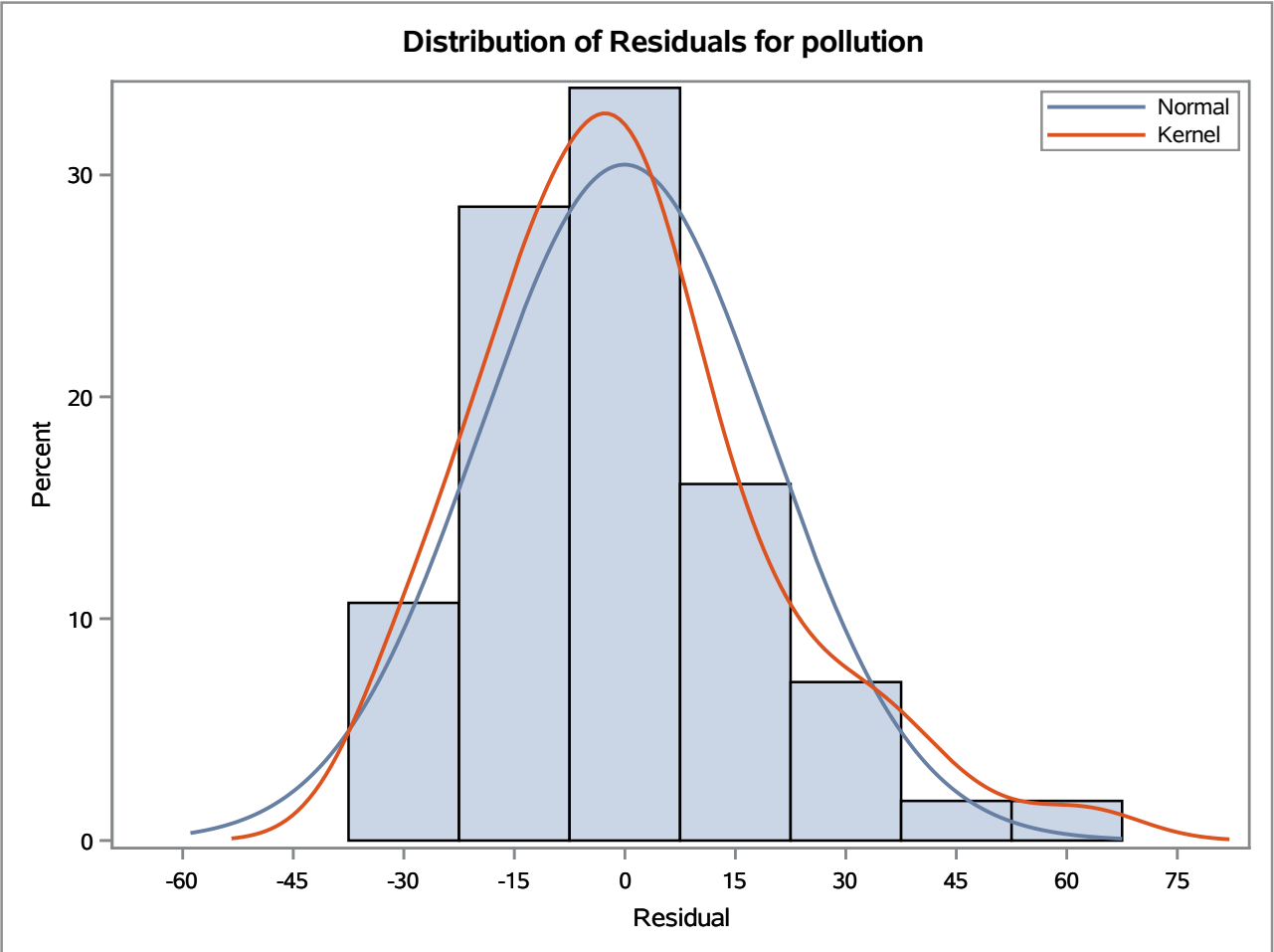
Maximum Likelihood Estimation							
Parameter	Estimate	Standard Error	t Value	Approx Pr > t	Lag	Variable	Shift
MU	-1634.2	472.24034	-3.46	0.0005	0	pollution	0
MA1,1	-0.99994	9.46397	-0.11	0.9159	1	pollution	0
AR1,1	-0.80862	0.21913	-3.69	0.0002	1	pollution	0
AR1,2	0.05739	0.16422	0.35	0.7267	2	pollution	0
NUM1	1.72036	0.46803	3.68	0.0002	0	press	1
NUM2	-1.01694	0.24925	-4.08	<.0001	0	wnd_spd	0
NUM3	1.70938	1.02742	1.66	0.0962	0	snow	0
NUM4	0.45209	0.42574	1.06	0.2883	0	rain	4

Constant Estimate	-2861.89
Variance Estimate	442.0139
Std Error Estimate	21.02413
AIC	508.978
SBC	525.1808
Number of Residuals	56

Correlations of Parameter Estimates								
Variable Parameter	pollution MU	pollution MA1,1	pollution AR1,1	pollution AR1,2	press NUM1	wnd_spd NUM2	snow NUM3	rain NUM4
pollution MU	1.000	0.109	0.064	0.069	-1.000	0.456	0.557	-0.060
pollution MA1,1	0.109	1.000	0.738	-0.339	-0.108	-0.014	0.251	-0.083
pollution AR1,1	0.064	0.738	1.000	0.163	-0.062	-0.093	0.173	-0.031
pollution AR1,2	0.069	-0.339	0.163	1.000	-0.069	0.136	0.012	-0.260
press NUM1	-1.000	-0.108	-0.062	-0.069	1.000	-0.464	-0.560	0.061
wnd_spd NUM2	0.456	-0.014	-0.093	0.136	-0.464	1.000	0.345	-0.523
snow NUM3	0.557	0.251	0.173	0.012	-0.560	0.345	1.000	-0.046
rain NUM4	-0.060	-0.083	-0.031	-0.260	0.061	-0.523	-0.046	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	7.09	3	0.0692	0.032	-0.023	-0.011	-0.225	-0.023	-0.242
12	11.76	9	0.2271	-0.047	0.161	-0.088	0.126	0.123	-0.019
18	21.15	15	0.1321	0.180	-0.217	-0.080	0.015	-0.125	0.132
24	28.88	21	0.1169	-0.048	-0.031	0.028	-0.257	0.094	-0.047





Model for variable pollution	
Estimated Intercept	-1634.21

Autoregressive Factors	
Factor 1:	$1 + 0.80862 B^{**}(1) - 0.05739 B^{**}(2)$

Moving Average Factors	
Factor 1:	$1 + 0.99994 B^{**}(1)$

Input Number 1	
Input Variable	press
Shift	1
Overall Regression Factor	1.720361

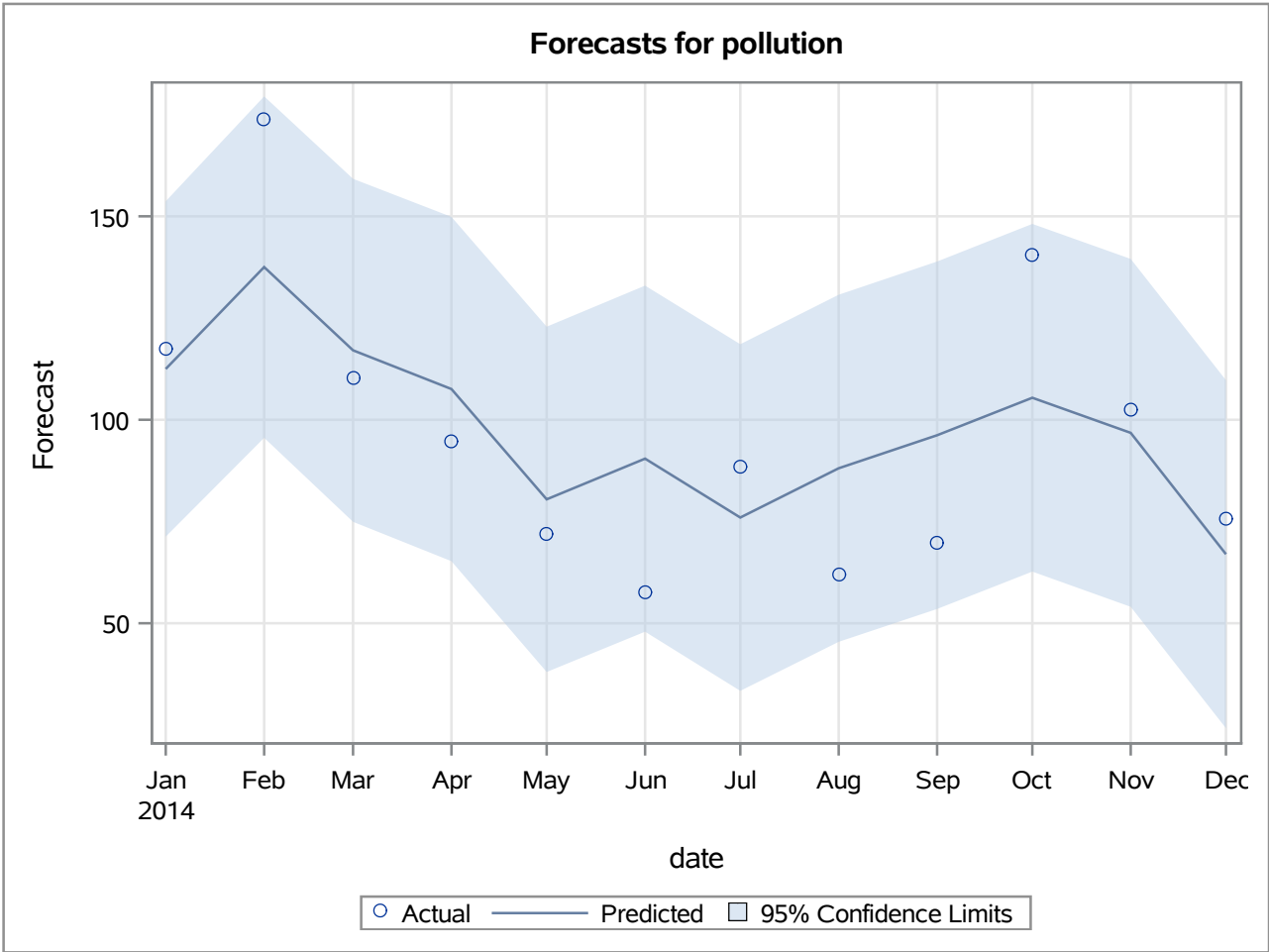
Input Number 2	
Input Variable	wnd_spd
Overall Regression Factor	-1.01694

Input Number 3	
Input Variable	snow
Overall Regression Factor	1.709381

Input Number 4	
Input Variable	rain
Shift	4
Overall Regression Factor	0.452086

Forecasts for variable pollution						
Obs	Forecast	Std Error	95% Confidence Limits		Actual	Residual
49	112.4920	21.0241	71.2855	153.6985	117.4422	4.9502
50	137.5231	21.4054	95.5692	179.4770	173.8378	36.3147
51	117.0723	21.5030	74.9272	159.2174	110.3374	-6.7349
52	107.5501	21.5855	65.2434	149.8569	94.8361	-12.7140
53	80.4478	21.6478	38.0188	122.8767	72.0605	-8.3873
54	90.4460	21.6954	47.9238	132.9682	57.6875	-32.7585
55	75.9759	21.7317	33.3826	118.5692	88.6142	12.6383
56	88.0827	21.7594	45.4351	130.7303	62.0121	-26.0706
57	96.2009	21.7805	53.5119	138.8899	69.8056	-26.3954
58	105.4133	21.7967	62.6926	148.1339	140.3669	34.9537

Forecasts for variable pollution						
Obs	Forecast	Std Error	95% Confidence Limits		Actual	Residual
59	96.7815	21.8090	54.0367	139.5263	102.3486	5.5671
60	66.9670	21.8184	24.2037	109.7303	75.6882	8.7212



Outlier Detection Summary	
Maximum number searched	2
Number found	2
Significance used	0.05

Outlier Details				
Obs	Type	Estimate	Chi-Square	Approx Prob>ChiSq
37	Additive	53.63423	9.99	0.0016
50	Additive	41.14172	7.91	0.0049