Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

Golder Associates

June 22, 1998

Mr. Cleve Holladay
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: City of Lakeland- 501G Combustion Turbine Project
Air Permit Application and Prevention of Significant Deterioration (PSD) Analysis

Dear Mr. Holladay:

As we discussed on Friday, June 19, 1998, the maximum sulfur dioxide (SO_2) emissions of 38.4 tons per year (TPY) proposed for this project will be below the PSD significant emission rate of 40 TPY. The potential increases in pollutant emissions due to this project are presented in Table 3-3 of the application. The maximum SO_2 concentrations for the project, shown in Table 6-4 of the application, are predicted to be well below the PSD significant impact levels. These concentrations were the highest concentrations predicted for the combustion turbine firing either natural gas or distillate fuel oil using 5 years of meteorological data. Because the maximum SO_2 concentrations for the project were below the significant impact levels by more than a factor of 10, even if the project's emissions were to increase slightly, the maximum concentrations would be expected to be well below the significant impact levels.

Please call me or Mr. Ken Kosky at (352) 336-5600 if you have any questions or comments on this analysis.

Sincerely yours,

Robert C. McCann, Jr.
Manager, Air Resources

RCM/arz

cc: K.F. Kosky, Golder
F. Shelton, City of Lakeland
File (2)

9737594A/2

FACSIMILE TRANSMISSION

GOLDER ASSOCIATES, INC.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500

TELEPHONE NO. (352) 336-5600
FAX NO. (352) 336-6603

Date: 22 JUNE 1998 JOB No.: 973 7594

FAX No.: (850) 922-6979

TO: AL LINERO / TERRSA HERON

FR: KEN KOSKY

RE: CITY OF LAKELAND - CO calculation

Hard Copy to Follow: ☐ Yes ☒ No

Total Number of Pages (including this cover page): 2

MESSAGE:

AL / TERSA:

ATTACHED IS THE CO calculation correcting the value to 15% O_2. NOTE that because the O_2 - actual dry is lower than 15%, the allowed actual is higher. The adjusted are a little higher than my calc's I gave over the phone since I was rounding OFF ON FRIDAY FOR speed. CALL If you have questions.

Regards

Ken

City Of Lakeland McIntosh Unit 5
CO Correction to 15% O_2

Equation: $C_{corrected\ to\ 15\%\ oxygen} = C_{actual}\ 5.9/(20.9-\%O_{2\ actual\text{-}dry})$ Equation 20-4 EPA Method 20

Natural Gas Firing:

CO	25	ppmvd	Table A-2 adjusted from 50 ppm (i.e., one-half)
	105.5	lb/hr	NOx at 50 ppmvd = 211 lb/hr (vendor); 59° F turbine inlet
O_2	11.23	% volume	Table A-1
Moisture	12.44	% volume	Table A-1
O_2	12.83	% vol.-dry	% vol.-dry = % vol. x 1/(1 - % moisture/100);
CO	25	ppmvd @ 15% O_2	
	34.21	ppmvd	25 ppmvd*(20.9-% $O_{2\ actual\ dry}$)/5.9; Equation 20-4
	144.38	lb/hr	ppmvd/ppmvd @ 15% O x lb/hr @ 25 ppmvd

Fuel Oil Firing:

CO	90	ppmvd	Table A-10; 59° F turbine inlet
	386	lb/hr	Table A-10; 59° F turbine inlet; vendor
O_2	11.14	% volume	Table A-9
Moisture	12.05	% volume	Table A-9
O_2	12.67	% vol.-dry	% vol.-dry = % vol. x 1/(1 - % moisture/100);
CO	90	ppmvd @ 15% O_2	
	125.60	ppmvd	25 ppmvd*(20.9-% $O_{2\ actual\ dry}$)/5.9; Equation 20-4
	538.68	lb/hr	ppmvd/ppmvd @ 15% O x lb/hr @ 25 ppmvd