



# O<sub>3</sub> ANALYZER AUDIT

File No. \_\_\_\_\_ Draft

Date: March 11, 2008

Performed by: A. Clark

## Station

Name: Crescent Heights

Location: Medicine Hat

Facility/Zone: Palliser

Operator: Focus

Temp: 21.5 C

Barometric Press: 694 mmHg

## Monitor

Make/Model: Teco 49i Serial No: 0713021144

Inlet flow (scm): 715 / 700 Full Scale Range ppm: 0.5

Last cal. Date: Feb 20/08 Old C.F. 0.9874

O3 BKG: 0.5

O3 COEF: 1.033

## Calibrator

Calibration Method: Gas Dilution / GPT

Make/Model: Dasibi 5008

AMU #: 1751

NO cylinder #: CAL 7879

NO concentration ppm: 51.4

Ozone Setting	Calibrator Flow (scm)			Calculated Conc. (ppm)	Indicated Conc. (ppm)	% Difference	
	Air	Gas	Total			vs Audit Gas	Limits
0.0%	4899	<del>4899</del>	4899	0.000	0.000		
0.30%	4899	<del>4899</del>	4899	0.264	0.269	1.8%	± 15%
0.20%	4899	<del>4899</del>	4899	0.157	0.161	2.4%	± 15%
0.15%	4899	<del>4899</del>	4899	0.107	0.111	3.5%	± 15%
Absolute Average Percent Difference						2.5%	

## Linear Regression Analysis:

$$y=mx+b \text{ (where } x=\text{calculated concentration, } y=\text{indicated concentration)}$$

Correlation Coeff.= 1.0000

m (Slope)= 1.0172

b (Intercept as % of full scale)= 0.2113

### LIMITS

≥ **0.995**

**0.85-1.15**

± **3% F.S.**

## Remarks:



# NO-NOx-NO2 Analyzer Audit

File No.         Draft        

Date:         March 11, 2008        

Performed by:         A. Clark        

**Station:** Name:         Crescent Heights         Location:         Medicine Hat         Operator:         Focus          
 Facility/Zone:         Palliser         Temp.         21.5C         BP:         694 mmHg        

**Monitor:** Make/Model:         API 200E         Serial No.         219          
 Inlet flow (sccm):         446 / 75         Range ppm:         0.5          
 Last cal. Date:         Feb 20/08         Old C.F.'s NO:         1.0212          
 NOx:         1.0144          
 NO2:         0.9945          
 NO Bkg         -9.0          
 NOx Bkg         -5.5          
 NO Coef         1.258          
 NOx Coef         1.260          
 NO2 Coef         N/A        

**Calibration Method:**         Gas Dilution / GPT          
**Calibrator:** Make/Model:         Dasibi 5008         AMU#         1751          
 NO cylinder #         CAL 7879         NO conc. ppm         51.4         NOx conc. ppm         51.4        

Calibrator Flows			Calc. Conc.		Indicated Concentration		% Difference vs Audit Gas	
Air	Gas	Total	NO (ppm)	NOx (ppm)	NO (ppm)	NOx (ppm)	NO	NOx
4892	0.00	4892	0.000	0.000	-0.001	-0.003	Limit ± 15%	
4860	39.42	4899	0.414	0.414	0.400	0.406	-3.0%	-1.1%
4927	20.17	4947	0.210	0.210	0.200	0.209	-4.1%	1.2%
4919	10.48	4929	0.109	0.109	0.102	0.106	-5.8%	-0.3%
Absolute Average Percent Difference							4.3%	0.1%

**Linear Regression Analysis:**

$y=mx+b$  (where x=calculated concentration, y=indicated concentration)

	NO	NOx	NO <sub>2</sub>	LIMITS
Correlation Coeff.=	<u>        1.0000        </u>	<u>        0.9999        </u>	<u>        1.0000        </u>	≥ 0.995
m (Slope)=	<u>        0.9794        </u>	<u>        0.9829        </u>	<u>        0.9932        </u>	0.85-1.15
b (Intercept as % of full scale)=	<u>        -1.0252        </u>	<u>        0.0730        </u>	<u>        0.1741        </u>	± 3% F.S.

O <sub>3</sub> Setting	Set Point	Flow Rate	Indicated Conc. (ppm)			NO Decrease	NO <sub>2</sub> Increase	% Difference vs Audit Gas	
			NO	NOx	NO <sub>2</sub>				
0.0%	<del>        </del>	4899	0.399	0.408	0.008	<del>        </del>	<del>        </del>	<del>        </del>	%Dif Limit
0.30%	<del>        </del>	4899	0.135	0.406	0.271	0.264	0.263	-0.38%	± 15%
0.20%	<del>        </del>	4899	0.242	0.408	0.165	0.157	0.157	0.00%	± 15%
0.15%	<del>        </del>	4899	0.292	0.408	0.115	0.107	0.107	0.00%	± 15%
Absolute Average Percent Difference								-0.13%	

**Converter Efficiency**

Average Converter Efficiency         99.9%        

**Remarks:**

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