



TEOM AUDIT

File No. 2007 - 160ADate: August 22, 2007Performed by: J. Scott**Station**Name: Evergreen
Facility/Zone: PASZA
Temp. _____Location: Grande Prairie
Operator: FOCUS
Barometric Press. _____**Audit Transfer Standard**Make/Model: Streamline Pro
Serial Number: CU5061Cell s/n: M061205**Sampler Set-up and current readings**Make/Model: R&P 1400a
Unit #: PM 2.5
Control unit s/n: 140AB215519705
Transducer s/n: 140AB215549705F-Main Set Pt (l/min) 3.00
F-Aux Set Pt (l/min) 13.67
Filter Load (%) 18%
K_O Factor N/A
Temp (°C) 16.6
Press (ATM) 0.934**Conversion from mm Hg or " Hg to ATM (Atmospheres)**

$$\text{ATM} = (\text{mm Hg}) \times (1.316 \times 10^{-3}) \quad \text{or} \quad \text{ATM} = (\text{"Hg}) \times (3.34207 \times 10^{-2})$$

Note: Tolerances are noted as **BOLD** in Brackets**Zero flow****Pump Off**F-Main (l/min) N/A
F-Aux (l/min) N/A**Pump On (Time to reach set points)**(45-60 Sec) N/A
(45-60 Sec) N/A**Temperature/Pressure**Measured Temp (± 1 °C) 16.7
Measured Press ($\pm 1.5\%$ ATM) 0.931 Δ °C 0.1 C
 $\Delta\%$ ATM 0.30%**Flow Audit**Indicated Main/Aux Flow (l/min) 3.00 / 13.66
Total Flow = Main + Aux (l/min) 16.66
Measured Total Flow (l/min) 16.26
Measured Main Flow (l/min) 2.93 **$\Delta\%$ from Set-point****($\pm 2\%$)** 0.0% / 0.1%
($\pm 2\%$) 0.10%
(± 1.0 l/min.) 0.40 / 2.5%
(± 0.2 l/min.) 0.07 / 2.4%**Leak Check**Main (< 0.15 l/min) N/A
Aux (< 0.15 l/min) N/A**Actual leakage = Pump On – Pump Off**N/A
N/A**K_O Factor**Measured N/A
K_O % Difference ($\pm 2.5\%$) N/A**Heads dirty. Cleaned during****audit
Re-audit**



TRS ANALYZER AUDIT

File No. 2007 - 162ADate: August 23, 2007Performed by: J. Scott**Station**Name: FalherLocation: FalherFacility/Zone: PASZAOperator: FOCUSTemp. 24.0 CBarometric Press. 709 mmHg**Monitor**Make/Model: Teco 43C Serial No: 609716238Inlet flow (sccm): 437 Full Scale Range ppm: 0.1Last cal. Date: Not Available Old C.F. Not AvailableZero/Bkg 8.7Span Coef 1.496**Calibrator**Calibration Method: GAS DILUTIONMake/Model: Sabio 4010AMU #: 1698Cylinder #: D518922Cyl. Conc PPM: 20.00

Calibrator Flow (sccm)			Calculated Conc. (ppm)	Indicated Concentration (ppm)	Cc/Ci Ratio
Air	Gas	Total			
4954	0.00	4954	0.0000	-0.0001	
4971	20.00	4991	0.0801	0.0781	1.0249
4983	9.96	4993	0.0399	0.0388	1.0256
4974	4.97	4979	0.0200	0.0180	1.1030
Average Correction Factor (CF) =					1.0512

Linear Regression Analysis: $y=mx+b$ (where x =calculated concentration, y =indicated concentration)Correlation Coeff.= 0.9998m (Slope)= 0.9816b (Intercept as % of full scale)= -0.6572**LIMITS****≥ 0.995****0.85-1.15****± 3% F.S.****Remarks:**



STATION AUDIT

File No. _____ Draft _____

Date: 22-Aug-07

Performed by: J. Scott

Station

Name: Henry Pirker

Location: Grande Prairie

Facility/Zone: PASZA

Operator: FOCUS

Temp. 24.5 C

Barometric Press. 703 mmHg

Location

Latitude N _____

Longitude W _____

Elevation _____

Status of Site Documentation _____

Manifold Material _____
Manifold Condition _____

Meteorological

	Observed	Audit Value
Wind Speed Direction	_____	_____
Station Temperature	_____	_____
Relative Humidity	<u>74</u>	<u>81</u>
Ambient Temperature	_____	_____
Solar Radiation	_____	_____
Precipitation	_____	_____

Remarks:

Re-audit



TRS ANALYZER AUDIT

File No. _____ Draft _____

Date: 22-Aug-07Performed by: J. Scott**Station**Name: Henry PirkerLocation: Grande PrairieFacility/Zone: PASZAOperator: FOCUSTemp. 24.5 CBarometric Press. 703 mmHg**Monitor**Make/Model: Teco 45C Serial No: 630718528Inlet flow (sccm): 461 Full Scale Range ppm: 0.1Last cal. Date: August 2, 2007 Old C.F. 0.989Zero/Bkg 16.9Span Coef 0.871**Calibrator**Calibration Method: GAS DILUTIONMake/Model: R&R MFC 201Cylinder #: D518922AMU #: 1698Cyl. Conc PPM: 20

Calibrator Flow (sccm)			Calculated Conc. (ppm)	Indicated Concentration (ppm)	Cc/Ci Ratio
Air	Gas	Total			
4977	0.00	4977	0.0000	0.0010	
4977	20.48	4997	0.0820	0.0836	0.9924
4989	13.07	5002	0.0523	0.0577	0.9217
4993	8.62	5002	0.0345	0.0374	0.9469
Average Correction Factor (CF) =					0.9537

Linear Regression Analysis: $y=mx+b$ (where x =calculated concentration, y =indicated concentration)Correlation Coeff.= 0.9985m (Slope)= 1.0156b (Intercept as % of full scale)= 2.0932**LIMITS****≥ 0.995****0.85-1.15****± 3% F.S.****Remarks:**Re-audit



NO-NOx-NO2 Analyzer Audit

File No. DraftDate: August 22, 2007Performed by: J. Scott

Station: Name: Henry Pirker Location: Grande Prairie Operator: FOCUS
 Facility/Zone: PASZA Temp. 24.5 C BP: 703 mmHg

Monitor: Make/Model: Teco 42C Serial No. 508011073
 Inlet flow (sccm): 789 Range ppm: 1.0
 Last cal. Date: August 1, 2007 Old C.F.'s NO: 0.9696
 NOx: 0.9728
 NO2: 0.9885
 NO Bkg 7.8
 NOx Bkg 8.2
 NO Coef 0.678
 NOx Coef 1.000
 NO2 Coef 1.000

Calibration Method: Gas Dilution / GPT
Calibrator: Make/Model: Sabio 4010 AMU# 1666
 NO cylinder # CAL7788 NO conc. ppm 51.6 NOx conc. ppm 51.6

Calibrator Flows			Calc. Conc.		Indicated Concentration			
Air	Gas	Total	NO (ppm)	NOx (ppm)	NO (ppm)	NOx (ppm)	NO Cc/Ci	NOx Cc/Ci
5027	0.00	5027	0.0000	0.0000	0.0001	0.0001	 	
5060	39.70	5100	0.4017	0.4017	0.3902	0.3964	1.0297	1.0136
5095	20.18	5115	0.2036	0.2036	0.1967	0.200	1.0355	1.0194
5085.99	10.01	5096	0.1014	0.1014	0.0979	0.100	1.0364	1.0156
Average Correction Factors (CF) =							1.0338	1.0162

Linear Regression Analysis:

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

	NO	NOx	NO₂	LIMITS
Correlation Coeff.=	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	≥ 0.995
m (Slope)=	<u>0.9714</u>	<u>0.9864</u>	<u>0.9976</u>	0.85-1.15
b (Intercept as % of full scale)=	<u>-0.0373</u>	<u>-0.0207</u>	<u>-0.0056</u>	± 3% F.S.

O ₃ Setting	Set Point	Flow Rate	Indicated Conc. (ppm)			NO Decrease	NO ₂ Increase	CF
			NO	NOx	NO ₂			
0.00 V	 	5100	0.3885	0.3955	0.0074	 	 	
0.57 V	 	5100	0.0589	0.3948	0.3361	0.3296	0.3287	1.0027
0.30 V	 	5100	0.1569	0.3951	0.2385	0.2316	0.2311	1.0022
	 	5100	0.3033	0.3953	0.0923	0.0852	0.0849	1.0035
Average Correction Factor (CF) =								1.0028

Converter Efficiency

Average Converter Efficiency 99.72%Remarks: Re-audit



STATION AUDIT

File No. 2007 - 158A / 159A

Date: 22-Aug-07

Performed by: J. Scott

Station

Name: Henry Pirker

Location: Grande Prairie

Facility/Zone: PASZA

Operator: FOCUS

Temp. 24.5 C

Barometric Press. 703 mmHg

Location

Latitude N N/A

Longitude W N/A

Elevation N/A

Status of Site Documentation N/A

Manifold Material N/A
Manifold Condition N/A

Meteorological

	Observed	Audit Value
Wind Speed Direction	<u>N/A</u>	<u>N/A</u>
Station Temperature	<u>N/A</u>	<u>N/A</u>
Relative Humidity	<u>74</u>	<u>81</u>
Ambient Temperature	<u>N/A</u>	<u>N/A</u>
Solar Radiation	<u>N/A</u>	<u>N/A</u>
Precipitation	<u>N/A</u>	<u>N/A</u>

Remarks:

Re-audit



TRS ANALYZER AUDIT

File No. 2007 - 158ADate: August 22, 2007Performed by: J. Scott**Station**Name: Henry PirkerLocation: Grande PrairieFacility/Zone: PASZAOperator: FOCUSTemp. 24.5 CBarometric Press. 703 mmHg**Monitor**Make/Model: Teco 45C Serial No: 630718528Inlet flow (sccm): 461 Full Scale Range ppm: 0.1Last cal. Date: August 2, 2007 Old C.F. 0.989Zero/Bkg 16.9Span Coef 0.871**Calibrator**Calibration Method: GAS DILUTIONMake/Model: R&R MFC 201Cylinder #: D518922AMU #: 1698Cyl. Conc PPM: 20.00

Calibrator Flow (sccm)			Calculated Conc. (ppm)	Indicated Concentration (ppm)	Cc/Ci Ratio
Air	Gas	Total			
4977	0.00	4977	0.0000	0.0010	
4977	20.48	4997	0.0820	0.0836	0.9924
4989	13.07	5002	0.0523	0.0577	0.9217
4993	8.62	5002	0.0345	0.0374	0.9469
Average Correction Factor (CF) =					0.9537

Linear Regression Analysis: $y=mx+b$ (where x =calculated concentration, y =indicated concentration)Correlation Coeff.= 0.9985m (Slope)= 1.0156b (Intercept as % of full scale)= 2.0932**LIMITS****≥ 0.995****0.85-1.15****± 3% F.S.****Remarks:**

Re-audit



NO-NOx-NO2 Analyzer Audit

File No. 2007 - 159A

Date: August 22, 2007

Performed by: J. Scott

Station: Name: Henry Pirker Location: Grande Prairie Operator: FOCUS
 Facility/Zone: PASZA Temp. 24.5 C BP: 703 mmHg

Monitor: Make/Model: Teco 42C Serial No. 508011073
 Inlet flow (sccm): 789 Range ppm: 1.0
 Last cal. Date: August 1, 2007 Old C.F.'s NO: 0.9696
 NOx: 0.9728
 NO2: 0.9885
 NO Bkg 7.8
 NOx Bkg 8.2
 NO Coef 0.678
 NOx Coef 1.000
 NO2 Coef 1.000

Calibration Method: Gas Dilution / GPT
Calibrator: Make/Model: Sabio 4010 AMU# 1666
 NO cylinder # CAL7788 NO conc. ppm 51.6 NOx conc. ppm 51.6

Calibrator Flows			Calc. Conc.		Indicated Concentration			
Air	Gas	Total	NO (ppm)	NOx (ppm)	NO (ppm)	NOx (ppm)	NO Cc/Ci	NOx Cc/Ci
5027	0.00	5027	0.0000	0.0000	0.0001	0.0001	1.0297	1.0136
5060	39.70	5100	0.4017	0.4017	0.3902	0.3964	1.0297	1.0136
5095	20.18	5115	0.2036	0.2036	0.1967	0.200	1.0355	1.0194
5085.99	10.01	5096	0.1014	0.1014	0.0979	0.100	1.0364	1.0156
Average Correction Factors (CF) =							1.0338	1.0162

Linear Regression Analysis:

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

	NO	NOx	NO ₂	LIMITS
Correlation Coeff.=	<u>1.0000</u>	<u>1.0000</u>	<u>1.0000</u>	≥ 0.995
m (Slope)=	<u>0.9714</u>	<u>0.9864</u>	<u>0.9976</u>	0.85-1.15
b (Intercept as % of full scale)=	<u>-0.0373</u>	<u>-0.0207</u>	<u>-0.0056</u>	± 3% F.S.

O ₃ Setting	Set Point	Flow Rate	Indicated Conc. (ppm)			NO Decrease	NO ₂ Increase	CF
			NO	NOx	NO ₂			
0.00 V	5100	5100	0.3885	0.3955	0.0074	0.3296	0.3287	1.0027
0.57 V	5100	5100	0.0589	0.3948	0.3361	0.3296	0.3287	1.0027
0.30 V	5100	5100	0.1569	0.3951	0.2385	0.2316	0.2311	1.0022
0.20 V	5100	5100	0.3033	0.3953	0.0923	0.0852	0.0849	1.0035
Average Correction Factor (CF) =								1.0028

Converter Efficiency

Average Converter Efficiency 99.72%

Remarks: Re-audit



TRS ANALYZER AUDIT

File No. 2007 - 161ADate: August 23, 2007Performed by: J. Scott**Station**Name: Smoky HeightsLocation: Smoky HeightsFacility/Zone: PASZAOperator: FOCUSTemp. 23.0 CBarometric Press. 704 mmHg**Monitor**Make/Model: Teco 43C Serial No: 436610004Inlet flow (sccm): 761 Full Scale Range ppm: 0.1Last cal. Date: August 7, 2007 Old C.F. 1.0324Zero/Bkg 11.5Span Coef 1.006**Calibrator**Calibration Method: GAS DILUTIONMake/Model: R&R MFC 201Cylinder #: D518922AMU #: 1698Cyl. Conc PPM: 20.00

Calibrator Flow (sccm)			Calculated Conc. (ppm)	Indicated Concentration (ppm)	Cc/Ci Ratio
Air	Gas	Total			
4998	0.00	4998	0.0000	0.0003	
4949	19.98	4969	0.0804	0.0749	1.0780
4986	9.98	4996	0.0400	0.0374	1.0769
4980	4.94	4985	0.0198	0.0181	1.1135
Average Correction Factor (CF) =					1.0895

Linear Regression Analysis: $y=mx+b$ (where x =calculated concentration, y =indicated concentration)Correlation Coeff.= 1.0000m (Slope)= 0.9302b (Intercept as % of full scale)= 0.0732**LIMITS****≥ 0.995****0.85-1.15****± 3% F.S.****Remarks:**

Re-audit



H₂S ANALYZER AUDIT

File No. 2007 - 157ADate: August 21, 2007Performed by: Jolene Scott**Station**Name: ValeyviewLocation: South SturgeonFacility/Zone: PASZAOperator: FOCUSTemp. 23.0 CBarometric Press. 700 mmHg**Monitor**Make/Model: Teco 43i Serial No: 701120010Inlet flow (sccm): 428 Full Scale Range ppm: 0.1Last cal. Date: August 15, 2007 Old C.F. 1.0057Zero/Bkg 4.8Span Coef 1.055**Calibrator**Calibration Method: GAS DILUTIONMake/Model: R&R MFC 201Cylinder #: D518922AMU #: 1698Cyl. Conc PPM: 20.00

Calibrator Flow (sccm)			Calculated Conc. (ppm)	Indicated Concentration (ppm)	Cc/Ci Ratio
Air	Gas	Total			
5004	0.00	5004	0.0000	0.0003	
4992	15.38	5007	0.0614	0.0604	1.0222
5002	13.26	5015	0.0529	0.0525	1.0131
4986	8.64	4995	0.0346	0.0349	0.9998
Average Correction Factor (CF) =					1.0117

Linear Regression Analysis: $y=mx+b$ (where x =calculated concentration, y =indicated concentration)Correlation Coeff.= 0.9999m (Slope)= 0.9807b (Intercept as % of full scale)= 0.5169**LIMITS****≥ 0.995****0.85-1.15****± 3% F.S.****Remarks:**

Re-audit
