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REV. 02/14

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SAN JUAN, PUERTO RICO

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APARTADO 364267
CORREO GENERAL
SAN JUAN, PR 00936-4267

14 de septiembre de 2015

Lic. Javier Lamboy Hernández
Director Ejecutivo
Comisión Especial Petróleo AEE
El Capitolio
San Juan, Puerto Rico

Estimado licenciado Lamboy Hernández:

Solicitud de Documentos Relacionados con la Compra y Uso de Petróleo por la Autoridad de Energía Eléctrica

Como parte de la solicitud de documentos realizada el 4 de agosto de 2015 por la Comisión Especial descrita en el asunto, sometemos el restante de la información relacionada al Laboratorio de Control de Calidad de Combustible (LCCC). La información solicitada fue inicialmente suplida parcialmente el 14 de agosto de 2015, al periodo correspondiente de 2009 hasta el presente. Por tal razón, incluimos los documentos relacionados al periodo desde el 2005 al 2009.

De requerir información adicional, puede llamarnos al 787-521-4433.

Cordialmente,

Nélida Ayala Jiménez
Directora de Asuntos Jurídicos, Interina

Anejos

"Somos un patrono con igualdad de oportunidades en el empleo y no discriminamos por razón de raza, color, sexo, edad, origen social o nacional, condición social, afiliación política, ideas políticas o religiosas; por ser víctima o ser percibida(o) como víctima de violencia doméstica, agresión sexual o acecho, sin importar estado civil, orientación sexual, identidad de género o estatus migratorio; por impedimento físico, mental o ambos, por condición de veterano(a) o por información genética."

Año 2006

FIELD SERVICE REPORT

BioAnalytical INSTRUMENTS
P.O. Box 1800, Carolina, Puerto Rico 00984-1800
Tel. (787) 762-3030 • Fax: (787) 757-1710

DATE OF SERVICE	COUNTRY	DEALER	FSR NO.	NUMBER OF PAGES
10, Junio, 05	Puerto Rico		SCH-4181	1-1

SERVICE REPRESENTATIVE	DESCRIPTION OF PARTS USED	QTY	PART NO.	LOCATION	CHARGE
Jorge A. Matías					

CUSTOMER NAME: A.E.E.

COMPLETE MAILING ADDRESS:

CITY: San Juan STATE: P.R. ZIP CODE:

ATTENTION: TITLE: TELEPHONE:

CUSTOMER ORDER NUMBER: PO IIA 00032561 CALIBRATION:

COMMENTS: NEXT DUE:

INSTRUMENT MODEL	SERIAL NO.
SLFA 1800	311006

DESCRIPTION OF PROBLEM: Calibración y mantenimiento preventivo

ACTION TAKEN: El instrumento fue inspeccionado encontrando a este en buen estado. Se le ofrecio el mantenimiento preventivo. El instrumento pasola calibración satisfactoriamente

NO CHARGE - LABOR AND TRAVEL		
SERVICE CONTRACT LABOR HRS		
WARRANTY LABOR HRS		
SALES/SERVICE POLICY LABOR HRS		
INSTALLATION LABOR HRS		
TRAVEL 1.0 HRS	NC	

CHARGED - LABOR AND TRAVEL		
LABOR 1.0 HRS AT 160	160	00
TRAVEL HRS AT		
PARTS		
EXPENSES		
TOTAL CHARGES	$ 160	00

WORK COMPLETE ☑ WORK INCOMPLETE ☐ PARTS REQUIRED ☐

CUSTOMER REPORT

[signature]
CUSTOMER ACCEPTANCE

Jorge A Mo[illegible]
10, Junio, 05
SLFA-1800
S/N 311006

Año 2007

BioAnalytical INSTRUMENTS

Calibration and Preventive Maintenance
SULFURE IN OIL ANALYZER
SLFA-1800/SLFA-1100

Customer	A.E.E.	Certificate No	063500
Instrument Model	SLFA-1800	Calibration Date	OCT-06
Serial	31105	Calibration Due Date	Abl. 07

SENSOR SIGNAL		
Step	Procedure	Pass/Failed
1	Check cover lock switch.	Pass
2	Check Temperature Sensor	Pass
3	Check Shutter close Sensor	Pass
4	Check Left panel switch. (SLFA-1800)	Pass
5	Check Cover switch.	Pass
6	Check Position sensor. (SLFA-1800)	Pass
7	Check Sample sensor.	Pass
8	Check Right panel switch.	Pass
9	Check Table up sensor. (SLFA-1800)	Pass
10	Check Table down sensor. (SLFA-1800)	Pass
11	Check Shutter open sensor.	Pass

SYSTEM STATUS			
Display system status	RANGE	Instrument Reading	Pass/Failed
Detector supply voltage fixing value (FC)	1130 to 1300	1170	Pass
Detector supply voltage (PV)	PC - 1 Hv	1170	Pass
Target voltage of X-ray tube (XH)	770 to 850	801	Pass
G1 voltage of X-ray tube	100 to 1500	831	Pass
G2 voltage of X-ray tube	900 to 1100	999	Pass
Filament voltage of X-ray tube (FX)	1140 to 1260	1208	Pass
X-ray tube current (XI)	250 to 350	289	Pass
Temperature (TM)	5 to 45	27.0	Pass
Atmospheric (AT)	613 to 1066	1011.5	Pass

Calibration Pass / Fail:	Pass		
Performed By	[signature]	Date	23/Oct/06
Customer Acceptance	[signature]	Date	10-23-06

SOP#0050-A

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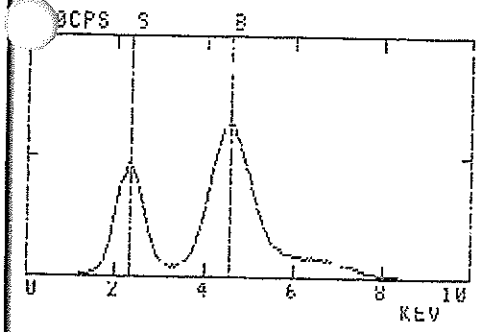
e-mail: sales@bioanalytica.com / service @bioanalytica.com
traffic@bioanalytica.com / web address: www.bioanalytica.com

**SPECTRUM

DATE:'06-10-23 16:09

MEAS TIME: 30 SEC



S INT	2323.1 CPS
B INT	4990.0 CPS
K(MEAS)	0.4655
K(CORR)	0.4673
CORR COEF	1.0038
T	27.0
P	1011.6
S	1.0651 WT%

**CHECK1

DATE:'06-10-23 16:12

S.OPEN	*
TBL.STR	*
TBL.UP	
TBL.DWN	*
SAMPLE	*
AGC.LMT	
AGC.OK	*
X-RAY	*
F.OPEN	
F.SHORT	
POS#	1
PC	1170
PV	1170
XH	801
G1	831
G2	999
FV	1208
XI	289
TM	27.0
AT	1011.5

Jorge A. Mo[illegible]

23/OCT/06

Bioanalytical

Horiba # 311005

**CALIBRATION-AUTO

DATE:'06-10-23 15:50

CAL# : 3

MEAS TIME: 100 SEC

REPEAT : 3 TIMES

NUM OF STD: 3

STD#01 POS#1

0.1200 WT%

1/ 3 K 0.1260

2/ 3 K 0.1247

3/ 3 K 0.1256

AVERAGE: K 0.1254

STD DEV: K 0.0007

STD#02 POS#2

0.5100 WT%

1/ 3 K 0.2605

2/ 3 K 0.2621

3/ 3 K 0.2606

AVERAGE: K 0.2611

STD DEV: K 0.0009

STD#03 POS#3

1.0300 WT%

1/ 3 K 0.4585

2/ 3 K 0.4599

3/ 3 K 0.4586

AVERAGE: K 0.4590

STD DEV: K 0.0008

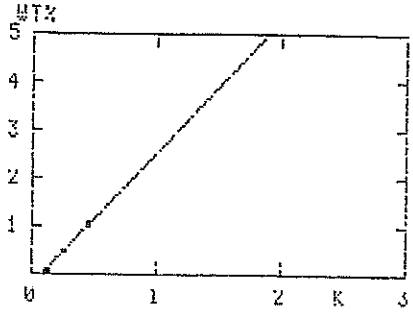
WT%=A*K^2+B*K+C

A= 0.00000
B= 2.75573
C= -0.22264

RANGE:
0.1200 - 1.0300 WT%

STD DEV 0.0105 WT%

STD#	WT%	K
01	0.1200 (0.0029)	0.1254
02	0.5100 (-0.0131)	0.2611
03	1.0300 (0.0122)	0.4590



SN 311005

FIELD SERVICE REPORT

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DATE OF SERVICE	COUNTRY	DEALER	FSR NO.	NUMBER OF PAGES
21/Feb/06	Puerto Rico		SCH-4329	1/1

SERVICE REPRESENTATIVE: J. Matos / F. Ortiz

CUSTOMER NAME: A.E.E.

COMPLETE MAILING ADDRESS:

CITY: San Juan STATE: P.R. ZIP CODE:

ATTENTION: Ruth Dones TITLE: TELEPHONE:

CUSTOMER ORDER NUMBER: 10 4000005282

CALIBRATION: Feb 06

COMMENTS:

NEXT DUE: Aug. 06

DESCRIPTION OF PARTS USED	QTY	PART NO.	LOCATION	CHARGE

INSTRUMENT MODEL	SERIAL NO.
SIFA1800	311009

DESCRIPTION OF PROBLEM: Calibración e Inspección

ACTION TAKEN: El instrumento fue inspeccionado encontrándose en buen estado. Este fue calibrado y se le ofreció adiestramiento práctico.

NO CHARGE - LABOR AND TRAVEL		
SERVICE CONTRACT LABOR	HRS	
WARRANTY LABOR	HRS	
SALES/SERVICE POLICY LABOR	HRS	
INSTALLATION LABOR	HRS	
TRAVEL	HRS	

CHARGED - LABOR AND TRAVEL		
LABOR 1.5 HRS AT 160	240	00
TRAVEL 1.0 HRS AT 160	160	00
PARTS		
EXPENSES		
TOTAL CHARGES	400	00

WORK COMPLETE ☑ WORK INCOMPLETE ☐ PARTS REQUIRED ☐

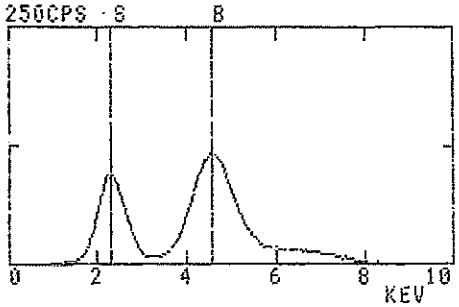
CUSTOMER REPORT

Lorraine Lopez
CUSTOMER ACCEPTANCE

**SPECTRUM

DATE:'06-02-21 14:15

MEAS TIME: 30 SEC



S INT	1843.6	CPS
B INT	3635.5	CPS
K(MEAS)	0.5071	
K(CORR)	0.5133	
CORR COEF	1.0122	
T	22.3	
P	1020.0	
S	1.0791	WT%

**CHECK1

DATE:'06-02-21 14:17

S.OPEN	*
TBL.STR	*
TBL.UP	
TBL.DWN	*
SAMPLE	
AGC.LMT	
AGC.OK	*
X-RAY	*
F.OPEN	
F.SHORT	
POS#	1
PC	1185
PV	1185
XH	799
G1	916
G2	1005
FV	1217
XI	299
TM	22.3
AT	1020.0

**CALIBRATION-AUTO

DATE:'06-02-21 14:21

CAL# : 5

MEAS TIME: 100 SEC

REPEAT : 3 TIMES

NUM OF STD: 5

STD#01 POS#1

0.1200 WT%

1/ 3 K 0.1345

2/ 3 K 0.1355

3/ 3 K 0.1361

AVERAGE: K 0.1354

STD DEV: K 0.0008

STD#02 POS#2

STD#02 POS#2

0.5100 WT%

1/ 3 K 0.2921

2/ 3 K 0.2887

3/ 3 K 0.2911

AVERAGE: K 0.2906

STD DEV: K 0.0018

STD#03 POS#3

1.0400 WT%

1/ 3 K 0.5083

2/ 3 K 0.5083

3/ 3 K 0.5093

AVERAGE: K 0.5086

STD DEV: K 0.0006

STD#04 POS#4

1.9800 WT%

1/ 3 K 0.8928

2/ 3 K 0.8963

3/ 3 K 0.8935

AVERAGE: K 0.8942

STD DEV: K 0.0018

STD#05 POS#5

4.2600 WT%

1/ 3 K 1.9541

2/ 3 K 1.9500

3/ 3 K 1.9581

AVERAGE: K 1.9541

STD DEV: K 0.0041

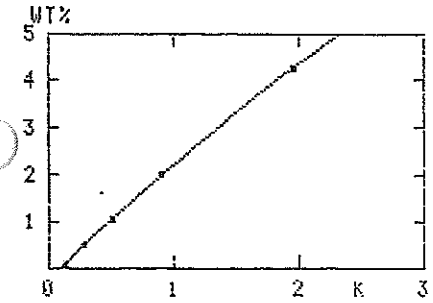
WT%=A*K^2+B*K+C

A= -0.14402
B= 2.58101
C= -0.22746

RANGE:
0.1200 - 4.2600 WT%

STD DEV 0.0080 WT%

STD#	WT%	K
01	0.1200 (-0.0006)	0.1354
02	0.5100 (0.0004)	0.2906
03	1.0400 (0.0080)	0.5086
04	1.9800 (-0.0147)	0.8942
05	4.2600 (0.0061)	1.9541

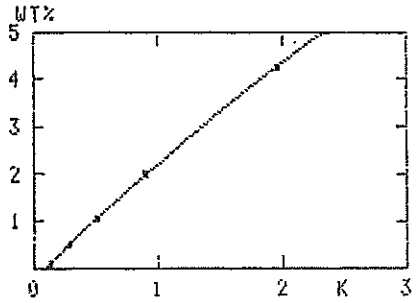


02 0.5100 0.2906
(0.0004)

03 1.0400 0.5086
(0.0080)

04 1.9800 0.8942
(-0.0147)

05 4.2600 1.9541
(0.0061)



Jorge A Mad
21/Feb/06
Bioanalytical Ins.

Horiba 311009

BioAnalytical INSTRUMENTS

Calibration and Preventive Maintenance
SULFURE IN OIL ANALYZER
SLFA-1800/SLFA-1100

Customer	AEE	Certificate No	063497
Instrument Model	SLFA-1800	Calibration Date	Dic·06
Serial	311009	Calibration Due Date	Junio·07

SENSOR SIGNAL		Pass/Failed
Step	Procedure	
1	Check cover lock switch.	Pass
2	Check Temperature Sensor	Pass
3	Check Shutter close Sensor	Pass
4	Check Left panel switch. (SLFA-1800)	Pass
5	Check Cover switch.	Pass
6	Check Position sensor. (SLFA-1800)	Pass
7	Check Sample sensor.	Pass
8	Check Right panel switch.	Pass
9	Check Table up sensor. (SLFA-1800)	Pass
10	Check Table down sensor. (SLFA-1800)	Pass
11	Check Shutter open sensor.	Pass

SYSTEM STATUS			
Display system status	RANGE	Instrument Reading	Pass/Failed
Detector supply voltage fixing value (PC)	1130 to 1300	1189	Pass
Detector supply voltage (PV)	PC ± 10v	1189	Pass
Target voltage of X-ray tube (XH)	770 to 830	800	Pass
G1 voltage of X-ray tube	100 to 1500	705	Pass
G2 voltage of X-ray tube	900 to 1100	1001	Pass
Filament voltage of X-ray tube (FV)	1140 to 1260	1211	Pass
X-ray tube current (XI)	250 to 350	266	Pass
Temperature (TM)	5 to 45	23.3	Pass
Atmospheric (AT)	613 to 1066	1019.1	Pass

Calibration Pass / Fail:	Pass		
Performed By	[signature]	Date	19/Dic/06
Customer Acceptance		Date	12-19-06

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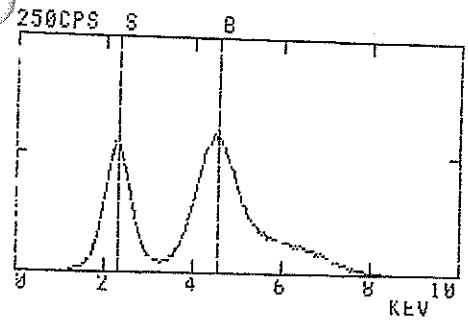
traffic@bioanalytica.com / web address: www.bioanalytica.com

**SPECTRUM

DATE: '06-12-19 11:14

MEAS TIME: 30 SEC



S INT	2622.0 CPS
B INT	4870.4 CPS
K(MEAS)	0.5384
K(CORR)	0.5442
CORR COEF	1.0109
T	23.2
P	1019.2
S	1.1346 WT%

**CHECK1

DATE: '06-12-19 11:19

S.OPEN	*
TBL.STR	*
TBL.UP	
TBL.DWN	*
SAMPLE	
AGC.LMT	
AGC.OK	*
X-RAY	*
F.OPEN	
F.SHORT	
POS#	1
PC	1189
PO	1189
XH	800
G1	705
G2	1001
FO	1211
XI	266
TM	23.3
AT	1019.1

**CALIBRATION-AUTO

DATE: '06-12-19 11:45

CAL# : 1

MEAS TIME: 100 SEC

REPEAT : 3 TIMES

NUM OF STD: 5

STD#01 POS#1

0.1100 WT%

1/ 3 K 0.1352

2/ 3 K 0.1347

3/ 3 K 0.1357

AVERAGE: K 0.1352

STD DEV: K 0.0005

STD#02 POS#2

0.5100 WT%

1/ 3 K 0.3018

2/ 3 K 0.3044

3/ 3 K 0.3038

AVERAGE: K 0.3034

STD DEV: K 0.0014

STD#03 POS#3

1.0400 WT%

1/ 3 K 0.5514

2/ 3 K 0.5538

3/ 3 K 0.5527

AVERAGE: K 0.5526

STD DEV: K 0.0012

STD#04 POS#4

1.9800 WT%

1/ 3 K 0.9713

2/ 3 K 0.9682

3/ 3 K 0.9700

AVERAGE: K 0.9698

STD DEV: K 0.0015

STD#05 POS#5

3.9400 WT%

1/ 3 K 1.6822

2/ 3 K 1.6775

3/ 3 K 1.6741

AVERAGE: K 1.6779

STD DEV: K 0.0041

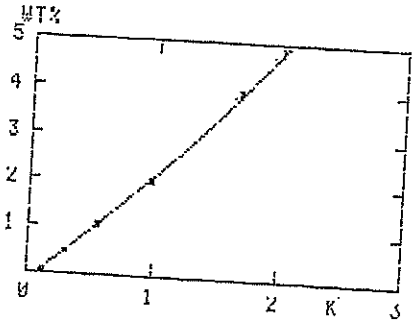
WT%=A*K^2+B*K+C

A= 0.20055
B= 2.09133
C= -0.16798

RANGE:
0.1100 - 3.9400 WT%

STD DEV 0.0373 WT%

STD#	WT%	K
01	0.1100	0.1352
	(0.0071)	
02	0.5100	0.3034
	(-0.0280)	
03	1.0400	0.5526
	(0.0034)	
04	1.9800	0.9698
	(0.0591)	
05	3.9400	1.6779
	(-0.0511)	



Jorge A Mata
Bioanalytical

Año 2008

BioAnalytical INSTRUMENTS

PREVENTIVE MAINTENANCE AND CALIBRATION CERTIFICATE FOR HORIBA SULFUR-IN-OIL ANALYZER MODEL SLFA SERIES

CUSTOMER: A.E.E. CERTIFICATE NO.: 073717

INSTRUMENT MODEL: SLFA-1800 CALIBRATION DATE: Sep. 07

SERIAL NO.: 311005 NEXT CALIBRATION: Marzo-08

I. The AGC function check with the spectrum:

The Spectrum's Sample (S) Peak and Blank (B) Peak must match the S and B Marker.

PASS OK FAIL_____

II. The Protective Membrane are changed.

YES OK NO_____

III. Checking the System Status:

DESCRIPTION	NOMINAL	ACTUAL
PC. Detector supply Voltage	1130 to 1300V	1138
PV. Detector Supply Voltage Test	PC ± 10V	1139
XH. Target Voltage of X-Ray Tube	770 to 830	802
G1. G1 Voltage of X-Ray Tube	100 to 1500	747
G2. G2 Voltage of X-Ray Tube	900 to 1100	998
FV. Filament Voltage	1140 to 1260	1207
X1. X-Ray Tube Current	250 to 350	290
TM. Temperature	5 to 45°C	26.7
AT. Atmosphere	613 to 1066	1014.

CALIBRATION: PASS ✓ FAIL____

PERFORMED BY: [signature] DATE: 11/Sep/07

SERVICE REPRESENTATIVE

CUSTOMER ACCEPTANCE: [signature] DATE: 9-11-07

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Carolina, Puerto Rico, 00983 / P.O. Box 1800 Carolina, P.R. 00984-1800

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traffic@bioanalytica.com / web address: www.bioanalytica.com

```
**CALIBRATION-AUTO
DATE:'07-09-11 15:16
CAL#        :    1
MEAS TIME:  100 SEC
REPEAT      :    1 TIMES
NUM OF STD:   5
```

```
STD#01 POS#1
      0.1100   WT%
   1/ 1   K 0.1187
```

```
STD#02 POS#2
      0.5100   WT%
   1/ 1   K 0.2558
```

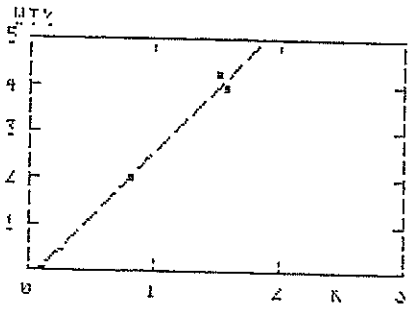
```
STD#03 POS#3
      1.9800   WT%
   1/ 1   K 0.8204
```

```
STD#04 POS#4
      3.9400   WT%
   1/ 1   K 1.5723
```

```
STD#05 POS#5
      4.2600   WT%
   1/ 1   K 1.5162
```

```
WT%=A*K^2+B*K+C
    A=   0.03392
    B=   2.70546
    C=  -0.20602
RANGE:
0.1100 - 4.2600 WT%
STD DEV 0.1563   WT%
```

```
STD#    WT%        K
 01 0.1100   0.1187
  ( 0.0056  )
 02 0.5100   0.2558
  (-0.0217  )
 03 1.9800   0.8204
  ( 0.0564  )
 04 3.9400   1.5723
  ( 0.1916  )
 05 4.2600   1.5162
  (-0.2860  )
```



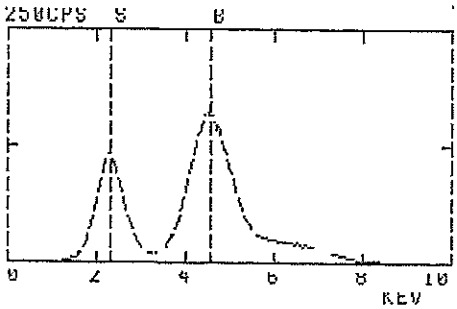
```
**CHECK1
DATE:'07-09-11 15:[illegible]
```

S.OPEN	*
TBL.STK	*
TBL.UP	
TBL.DWN	*
SAMPLE	
AGC.LMT	*
AGC.UK	*
X-RAY	*
F.OPEN	
F.SHUKT	
POS#	1
PC	1138
PV	1139
XH	802
G1	747
G2	998
FV	1207
XI	290
TM	26.7
AI	1014.0

**SPECTRUM

DATE: '87-09-11 15:29

MEAS TIME: 30 SEC



S INT	2286.0 CPS
B INT	5029.6 CPS
K(MEAS)	0.4545
K(CURR)	0.4567
CURR COEF	1.0048
T	26.7
P	1013.8
S	1.0366 WT%

BioAnalytical INSTRUMENTS

PREVENTIVE MAINTENANCE AND CALIBRATION CERTIFICATE FOR HORIBA SULFUR-IN-OIL ANALYZER MODEL SLFA SERIES

CUSTOMER: A.E.E.

CERTIFICATE NO.: 073718

INSTRUMENT MODEL: SLFA-1800

CALIBRATION DATE: Sep. 07

SERIAL NO.: 311009

NEXT CALIBRATION: March. 08

I. The AGC function check with the spectrum:

The Spectrum's Sample (S) Peak and Blank (B) Peak must match the S and B Marker.

PASS OK FAIL_____

II. The Protective Membrane are changed.

YES OK NO_____

III. Checking the System Status:

DESCRIPTION	NOMINAL	ACTUAL
PC. Detector supply Voltage	1130 to 1300V	1189
PV. Detector Supply Voltage Test	PC ± 10V	1189
XH. Target Voltage of X-Ray Tube	770 to 830	800
G1. G1 Voltage of X-Ray Tube	100 to 1500	726
G2. G2 Voltage of X-Ray Tube	900 to 1100	1001
FV. Filament Voltage	1140 to 1260	1211
X1. X-Ray Tube Current	250 to 350	266
TM. Temperature	5 to 45°C	24.7
AT. Atmosphere	613 to 1066	1019.7

CALIBRATION: PASS OK FAIL____

PERFORMED BY: [signature] SERVICE REPRESENTATIVE

DATE: 13/SEP/07

CUSTOMER ACCEPTANCE: [signature]

DATE: 13/SEPT/2007

Tel. (787) 762-3030 Fax (787) 757-1710
Avenida Fidalgo Díaz, Valle Arriba Shopping Center #104
Carolina, Puerto Rico, 00983 / P.O. Box 1800 Carolina, P.R. 00984-1800

e-mail: sales@bioanalytica.com / service @bioanalytica.com
traffic@bioanalytica.com / web address: www.bioanalytica.com

```
**CHECK1
 DATE:'07-09-13 10:38
   ----------------
   S.OPEN        *
   TBL.STR       *
   TBL.OP
   TBL.DWN       *
   SAMPLE
   AGC.LMT
   AGC.OK
   X-RAY         *
   E.OPEN
   E.SHORT
   POS#            1
   PC           1189
   PV           1189
   XH            800
   G1            726
   G2           1001
   FV           1211
   XI            265
   TM           24.7
   AT           1019.7
```

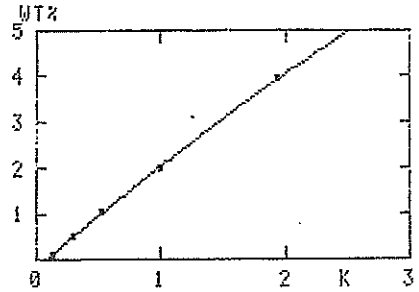
```
**CALIBRATION-AUTO
 DATE:'07-09-13 10:43
 CAL#       :    1
 MEAS TIME:  100 SEC
 REPEAT     :    1 TIMES
 NUM OF STD:   5
  ----------------
 STD#01 POS#1
       0.1100  WT%
    1/ 1   K 0.1351
  ----------------
 STD#02 POS#2
       0.5100  WT%
    1/ 1   K 0.3049
  ----------------
 STD#03 POS#3
       1.0400  WT%
    1/ 1   K 0.5324
  ----------------
 STD#04 POS#4
       1.9800  WT%
    1/ 1   K 0.9944
  ----------------
 STD#05 POS#5
       3.9400  WT%
    1/ 1   K 1.9286
  ----------------
  WT%=A*K^2+B*K+C
      A= -0.11650
      B=  2.36002
      C= -0.20398
  RANGE:
  0.1100 - 3.9400 WT%
  STD DEV 0.0260  WT%
  ----------------
  STD#    WT%       K
   01 0.1100  0.1351
    ( 0.0027 )
```

02 0.5100 0.3049
(-0.0052)

03 1.0400 0.5324
(-0.0205)

04 1.9800 0.9944
(0.0476)

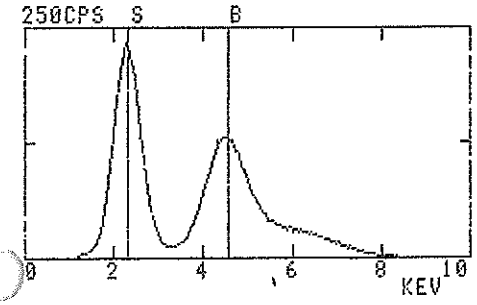
05 3.9400 1.9286
(-0.0258)



**SPECTRUM

DATE:'07-09-13 10:55

MEAS TIME: 30 SEC



S INT 4382.9 CPS
B INT 4432.1 CPS

K(MEAS) 0.9889
K(CORR) 0.9978
CORR COEF 1.0090
T 25.5
P 1019.4

S 2.0349 WT%

Joyce H. Meeks
13/Sep/07
Bioanalytical

BioAnalytical INSTRUMENTS

PREVENTIVE MAINTENANCE AND CALIBRATION CERTIFICATE FOR HORIBA SULFUR-IN-OIL ANALYZER MODEL SLFA SERIES

CUSTOMER: A.E.E.

CERTIFICATE NO.: 073644

INSTRUMENT MODEL: SLFA-1800

CALIBRATION DATE: Abril 08

SERIAL NO.: 311005

NEXT CALIBRATION: OCT 08

I. The AGC function check with the spectrum:

The Spectrum's Sample (S) Peak and Blank (B) Peak must match the S and B Marker.

PASS ✓ FAIL N/A

II. The Protective Membrane are changed.

YES ✓ NO N/A

III. Checking the System Status:

DESCRIPTION	NOMINAL	ACTUAL
PC. Detector supply Voltage	1130 to 1300V	1196
PV. Detector Supply Voltage Test	PC ± 10V	1196
XH. Target Voltage of X-Ray Tube	770 to 830	800
G1. G1 Voltage of X-Ray Tube	100 to 1500	548
G2. G2 Voltage of X-Ray Tube	900 to 1100	1001
FV. Filament Voltage	1140 to 1260	1211
X1. X-Ray Tube Current	250 to 350	266
TM. Temperature	5 to 45°C	25.3
AT. Atmosphere	613 to 1066	1023.5

CALIBRATION: PASS ✓ FAIL N/A

PERFORMED BY: Jorge A Mejías DATE: 4/Abril/08

SERVICE REPRESENTATIVE

CUSTOMER ACCEPTANCE: L. Lu DATE: L. Lu 4-4-08

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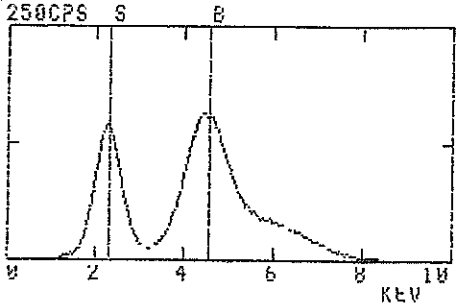
traffic@bioanalytica.com / web address: www.bioanalytica.com

**SPECTRUM
DATE:'08-04-04 09:32
MEAS TIME: 30 SEC



S INT 2835.6 CPS
B INT 5507.2 CPS

K(MEAS) 0.5149
K(CORR) 0.5199
CORR COEF 1.0098
T 25.1
P 1023.3

S 1.0064 WT%

**CALIBRATION-AUTO
DATE:'08-04-04 09:41
CAL# : 1
MEAS TIME: 100 SEC
REPEAT : 3 TIMES
NUM OF STD: 6

STD#01 POS#1
0.1100 WT%
1/ 3 K 0.1375
2/ 3 K 0.1384
3/ 3 K 0.1384
AVERAGE: K 0.1381
STD DEV: K 0.0005

STD#02 POS#2
0.5100 WT%
1/ 3 K 0.2846
2/ 3 K 0.2830
3/ 3 K 0.2832
AVERAGE: K 0.2836
STD DEV: K 0.0008

STD#03 POS#3
1.0400 WT%
1/ 3 K 0.5208
2/ 3 K 0.5192
3/ 3 K 0.5174
AVERAGE: K 0.5191
STD DEV: K 0.0017

STD#04 POS#4

1.9800 WT%

1/ 3 K 0.9514

2/ 3 K 0.9514

3/ 3 K 0.9486

AVERAGE: K 0.9505

STD DEV: K 0.0016

STD#05 POS#5

3.9400 WT%

1/ 3 K 1.6989

2/ 3 K 1.7027

3/ 3 K 1.7031

AVERAGE: K 1.7016

STD DEV: K 0.0023

STD#06 POS#6

4.2600 WT%

1/ 3 K 1.8185

2/ 3 K 1.8193

3/ 3 K 1.8154

AVERAGE: K 1.8178

STD DEV: K 0.0021

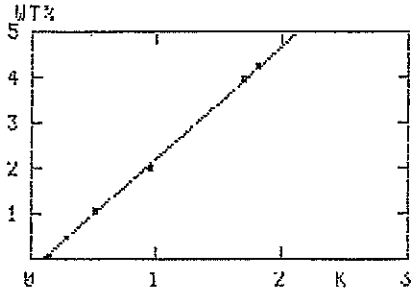
WT%=A*K^2+B*K+C

A= 0.03339
B= 2.36783
C= -0.20579

RANGE:
0.1100 - 4.2600 WT%

STD DEV 0.0483 WT%

STD#	WT%	K
01	0.1100 (0.0118)	0.1381
02	0.5100 (-0.0416)	0.2836
03	1.0400 (-0.0077)	0.5191
04	1.9800 (0.0950)	0.9505
05	3.9400 (-0.0200)	1.7016
06	4.2600 (-0.0512)	1.8178



---

*CHECK1

DATE: 08-04-04 10:15

DATE:'08-04-04 10:15

S.OPEN	*
TBL.STR	*
TBL.UP	
TBL.DWN	*
SAMPLE	*
AGC.LMT	
AGC.OK	*
X-RAY	*
F.OPEN	
F.SHORT	
POS#	2
PC	1196
PO	1196
XH	800
G1	548
G2	1001
FO	1211
XI	266
TM	25.3
AT	1023.5

SLFA-1800
S/N 311005
Jerry A. Meek

BioAnalytical INSTRUMENTS

PREVENTIVE MAINTENANCE AND CALIBRATION CERTIFICATE FOR HORIBA SULFUR-IN-OIL ANALYZER MODEL SLFA SERIES

CUSTOMER: A.E.E. CERTIFICATE NO.: 073645

INSTRUMENT MODEL: SLFA-1800 CALIBRATION DATE: Abril 08

SERIAL NO.: 311006 NEXT CALIBRATION: OCT-08

I. The AGC function check with the spectrum:

The Spectrum's Sample (S) Peak and Blank (B) Peak must match the S and B Marker.

PASS ✓ FAIL N/A

II. The Protective Membrane are changed.

YES ✓ NO N/A

III. Checking the System Status:

DESCRIPTION	NOMINAL	ACTUAL
PC. Detector supply Voltage	1130 to 1300V	1161
PV. Detector Supply Voltage Test	PC ± 10V	1161
XH. Target Voltage of X-Ray Tube	770 to 830	798
G1. G1 Voltage of X-Ray Tube	100 to 1500	1223
G2. G2 Voltage of X-Ray Tube	900 to 1100	991
FV. Filament Voltage	1140 to 1260	1200
X1. X-Ray Tube Current	250 to 350	289
TM. Temperature	5 to 45°C	25.5
AT. Atmosphere	613 to 1066	1020.3

CALIBRATION: PASS ✓ FAIL N/A

PERFORMED BY: [signature] DATE: 4/Abril/08

SERVICE REPRESENTATIVE

CUSTOMER ACCEPTANCE: [signature] DATE: abril-4-08

Tel. (787) 762-3030 Fax (787) 757-1710
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Carolina, Puerto Rico, 00983 / P.O. Box 1800 Carolina, P.R. 00984-1800

e-mail: biosales@bioanalytica.com / service@bioanalytica.com
traffic@bioanalytica.com / web address: www.bioanalytica.com

```
**CALIBRA[illegible]
DATE:'08-04-04 13:00
CAL#        :    1
MEAS TIME:  100 SEC
REPEAT      :    3 TIMES
NUM OF STD:   6
-----------------------
STD#01 PO8#1
      0.1100   WT%
   1/ 3   K 0.1347
   2/ 3   K 0.1353
   3/ 3   K 0.1351
AVERAGE:   K 0.1350
STD DEV:   K 0.0002
-----------------------
STD#02 PO8#2
      0.5100   WT%
   1/ 3   K 0.3058
   2/ 3   K 0.3045
   3/ 3   K 0.3056
AVERAGE:      0.3053
STD DEV:        0007
-----------------------
STD#03 P[illegible]
      1.0400   WT%
   1/ 3   K 0.5580
   2/ 3   K 0.5619
   3/ 3   K 0.5614
AVERAGE:   K 0.5604
STD DEV:   K 0.0021
-----------------------
STD#04 PO844
      1.9800   WT%
   1/ 3   K 1.0267
   2/ 3   K 1.0318
   3/ 3   K 1.0364
AVERAGE:   K 1.0317
STD DEV:   K 0.0[illegible]
-----------------------
STD#05 PO8#5
      3.9400   WT%
   1/ 3   K 1.8161
   2/ 3   K 1.8229
   3/ 3   K 1.8195
AVERAGE:   K 1.8195
STD DEV:   K 0.0031
-----------------------
STD#06 PO8#6
      4.2600   WT%
   1/ 3      1.93[illegible]
   2/ 3   K 1.9733
   3/ 3   K 1.9829
```

AVERAGE < 1.9791
STD DEV < 0.8051

2+3××+C

SAMPLE
0.1100 - 4.2600 WT%
STD DEV 0.0462
STD#   WT%

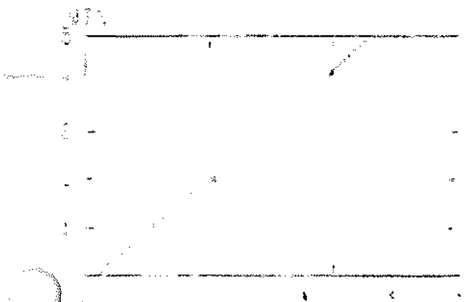
01 2.0087) 0.1359

03) 0.5564

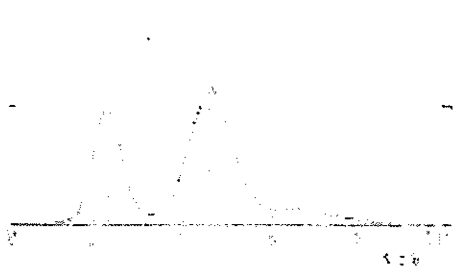
04 2.0879) 1.0317

05 -0.0627) 1.8195

06 4.2600 -0.0050) 1.9791



READ TIME: 30 SEC



3673.0 325

0.5613

1020.5

.0459 WT%

SLFA1800
S/N 311006

BioAnalytical INSTRUMENTS

PREVENTIVE MAINTENANCE AND CALIBRATION CERTIFICATE FOR HORIBA SULFUR-IN-OIL ANALYZER MODEL SLFA SERIES

CUSTOMER: A.E.E. CERTIFICATE NO.: 084089

INSTRUMENT MODEL: SLFA-1800 CALIBRATION DATE: Nov.08

SERIAL NO.: 311006 NEXT CALIBRATION: May.09

I. The AGC function check with the spectrum:

The Spectrum's Sample (S) Peak and Blank (B) Peak must match the S and B Marker.

PASS ✓ FAIL N/A

II. The Protective Membrane are changed.

YES ✓ NO N/A

III. Checking the System Status:

DESCRIPTION	NOMINAL	ACTUAL
PC. Detector supply Voltage	1130 to 1300V	1163
PV. Detector Supply Voltage Test	PC ± 10V	1163
XH. Target Voltage of X-Ray Tube	770 to 830	799
G1. G1 Voltage of X-Ray Tube	100 to 1500	1183
G2. G2 Voltage of X-Ray Tube	900 to 1100	991
FV. Filament Voltage	1140 to 1260	1200
X1. X-Ray Tube Current	250 to 350	290
TM. Temperature	5 to 45°C	23.6
AT. Atmosphere	613 to 1066	1013.7

CALIBRATION: PASS ✓ FAIL N/A

PERFORMED BY: [signature] SERVICE REPRESENTATIVE DATE: 13/NOV/04 08 L Lebi

CUSTOMER ACCEPTANCE: [signature] DATE: 13/NOV/04 08 L Lebi

Tel. (787) 762-3030 Fax (787) 757-1710
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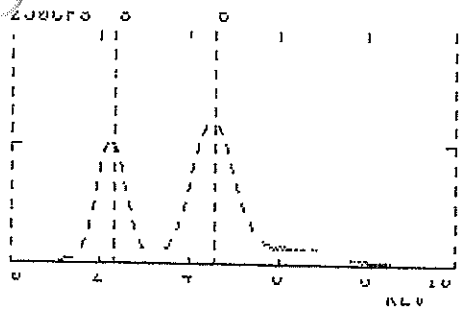
Carolina, Puerto Rico, 00983 / P.O. Box 1800 Carolina, P.R. 00984-1800

e-mail: biosales@bioanalytica.com / service@bioanalytica.com
traffic@bioanalytica.com / web address: www.bioanalytica.com

**SPECTRUM

DATE: 05-11-13 11:21

MEAS TIME: 30 SEC



S INT 2733.3 CPS
B INT 4637.1 CPS

K/MEAS/ 0.3626
K/CURR/ 0.3674
CURR COEF 1.0062
I 23.7
F 1013.6

S 1.0263 WT%

**CHECK1

DATE: 05-11-13 11:26

S.OPEN	*
TDL.STR	*
TDL.UP	
TDL.DWN	*
SAMPLE	*
HGC.LMT	
HGC.UK	*
A-RAY	*
F.OPEN	
F.SHORT	
FUS#	1
FB	1163
FV	1163
AM	733
G1	1164
G2	731
FV	1200
A1	230
TM	23.6
HT	1013.7

**CALIBRATION-AUTO

DATE: 05-11-13 11:27

CAL# : 3

MEAS TIME: 100 SEC

REPEAT : 3 TIMES

NUM OF STD: 3

STD#01 FUS#1

0.1200 WT%

1/ 3 K 0.1363

2/ 3 K 0.1372

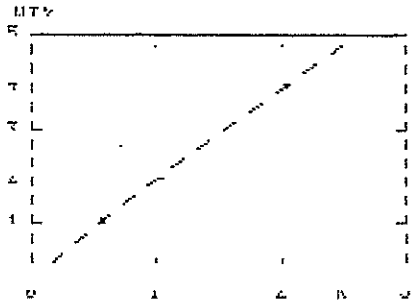
3/ 3 K 0.1369

AVERAGE: K 0.1366

STD DEV: K 0.0003

```
STD#02 FUS#2
      0.3100   WT%
    1/ 3   R 0.3100
    2/ 3   R 0.3107
    3/ 3   R 0.3100
HVERAGE=   R 0.3100
STD DEV=   R 0.0003
  ------------------
STD#03 FUS#3
      1.0400   WT%
    1/ 3   R 0.3073
    2/ 3   R 0.3074
    3/ 3   R 0.3713
HVERAGE=   R 0.3073
STD DEV=   R 0.0020
  ------------------
STD#04 FUS#4
      1.7000   WT%
    1/ 3   R 1.0337
    2/ 3   R 1.0330
    3/ 3   R 1.0400
HVERAGE=   R 1.0363
STD DEV=   R 0.0032
  ------------------
STD#05 FUS#5
      3.7400   WT%
    1/ 3   R 2.0274
    2/ 3   R 2.0277
    3/ 3   R 2.0420
HVERAGE=   R 2.0330
STD DEV=   R 0.0072
  ------------------
 WT%-H*R ZTD*RTU
     H- -0.0777
     D-  2.10307
     U- -0.1737
 RANGE=
 0.1200 - 3.7400 WT%
 STD DEV 0.0075  WT%
 ------------------
 STD#    WT%        R
  01 0.1200   0.1300
   \ 0.0017 /
  02 0.3100   0.3100
   \-0.0004 /
```

STD#	WT%	N
01	0.1200	0.1300
	(0.0017)	
02	0.3100	0.3100
	(-0.0004)	
03	1.0400	0.3070
	(-0.0022)	
04	1.7000	1.0300
	(0.0173)	
05	3.7400	2.0330
	(-0.0104)	



Joyce A. Most
13/NOV/08

BioAnalytical INSTRUMENTS

PREVENTIVE MAINTENANCE AND CALIBRATION CERTIFICATE FOR HORIBA SULFUR-IN-OIL ANALYZER MODEL SLFA SERIES

CUSTOMER: A.E.E.

CERTIFICATE NO.: 084081

INSTRUMENT MODEL: SLFA1800

CALIBRATION DATE: 10-31-08

SERIAL NO.: 311005 311005 311009

NEXT CALIBRATION: 04-09

I. The AGC function check with the spectrum:

The Spectrum's Sample (S) Peak and Blank (B) Peak must match the S and B Marker.

PASS X FAIL N/A

II. The Protective Membrane are changed.

YES X NO N/A

III. Checking the System Status:

DESCRIPTION	NOMINAL	ACTUAL
PC. Detector supply Voltage	1130 to 1300V	1192
PV. Detector Supply Voltage Test	PC ± 10V	1191
XH. Target Voltage of X-Ray Tube	770 to 830	799
G1. G1 Voltage of X-Ray Tube	100 to 1500	540
G2. G2 Voltage of X-Ray Tube	900 to 1100	1000
FV. Filament Voltage	1140 to 1260	1211
X1. X-Ray Tube Current	250 to 350	266
TM. Temperature	5 to 45°C	22.3
AT. Atmosphere	613 to 1066	1017.0

CALIBRATION: PASS X FAIL N/A

PERFORMED BY: [signature] DATE: 10-31-08

SERVICE REPRESENTATIVE

CUSTOMER ACCEPTANCE: [signature] DATE: 10/31/08

Tel. (787) 762-3030 Fax (787) 757-1710
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Carolina, Puerto Rico, 00983 / P.O. Box 1800 Carolina, P.R. 00984-1800

e-mail: biosales@bioanalytica.com / service@bioanalytica.com
traffic@bioanalytica.com / web address: www.bioanalytica.com

```
--------------------------------
**CALIBRATION-AUTO
 DATE:'08-10-31 14:26
 CAL#      :    5
 MEAS TIME: 100 SEC
 REPEAT    :    3 TIMES
 NUM OF STD:   5
 ----------------------
 STD#01 POS#1
      0.5100  WT%
    1/ 3  K 0.3065
    2/ 3  K 0.3065
    3/ 3  K 0.3061
 AVERAGE:  K 0.3064
 STD DEV:  K 0.0002
 ----------------------
 STD#02 POS#2
      0.1200  WT%
    1/ 3  K 0.1386
    2/ 3  K 0.1384
    3/ 3  K 0.1385
 AVERAGE:  K 0.1385
 STD DEV:  K 0.0001
 ----------------------
 STD#03 POS#3
      1.0400  WT%
    1/ 3  K 0.4524
    2/ 3  K 0.4538
    3/ 3  K 0.4550
 AVERAGE:  K 0.4537
 STD DEV:  K 0.0013
 ----------------------
 STD#04 POS#4
      1.9800  WT%
    1/ 3  K 0.9765
    2/ 3  K 0.9811
    3/ 3  K 0.9778
 AVERAGE:  K 0.9785
 STD DEV:  K 0.0024
 ----------------------
 STD#05 POS#5
      3.9400  WT%
    1/ 3  K 1.9154
    2/ 3  K 1.9151
    3/ 3  K 1.9104
 AVERAGE:  K 1.9136
 STD DEV:  K 0.0028
 ----------------------
 WT%=A*K^2+B*K+C
    A= -0.26065
    B=  2.65204
    C= -0.24136
 RANGE:
 0.1200 - 3.9400 WT%
 STD DEV 0.0870  WT%
 ----------------------
 STD#    WT%        K
```

Bromulofed Cashelbiz 10-31-08

3/ 3 K 0.9778

AVERAGE: K 0.9785

STD DEV: K 0.0024

STD#05 POS#5

3.9400 WT%

1/ 3 K 1.9154

2/ 3 K 1.9151

3/ 3 K 1.9104

AVERAGE: K 1.9136

STD DEV: K 0.0028

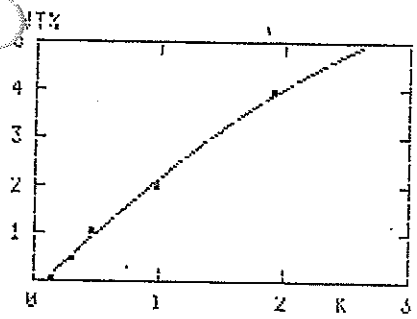
WT%=A*K^2+B*K+C

A= -0.26065
B= 2.65204
C= -0.24136

RANGE:
0.1200 - 3.9400 WT%

STD DEV 0.0870 WT%

STD#	WT%	K
01	0.5100	0.3064
	(0.0368)	
02	0.1200	0.1385
	(0.0009)	
03	1.0400	0.4537
	(-0.1318)	
04	1.9800	0.9785
	(0.1241)	
05	3.9400	1.9136
	(-0.0609)	

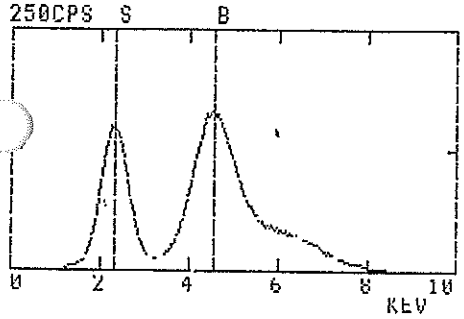


**CHECK1
DATE:'08-10-31 13:33

S.OPEN	
TBL.STR	*
TBL.UP	
TBL.DWN	*
SAMPLE	
AGC.LMT	
AGC.OK	*
X-RAY	*
F.OPEN	
F.SHORT	
POS#	1
PC	1192
PV	1191
XH	799
G1	540
G2	1000
FV	1211
XI	266
TM	22.3
AT	1017.0

Calibration
Bromalytical
[illegible]
10-31-08.

**SPECTRUM
DATE:'08-10-31 13:42
MEAS TIME: 30 SEC



S INT.	2967.8 CPS
B INT	5641.6 CPS
K(MEAS)	0.5261
K(CORR)	0.5317
CORR COEF	1.0107
T	22.5
P	1016.8
S	1.0378 WT%

BioAnalytical INSTRUMENTS

PREVENTIVE MAINTENANCE AND CALIBRATION CERTIFICATE FOR HORIBA SULFUR-IN-OIL ANALYZER MODEL SLFA SERIES

CUSTOMER: A.E.E. CERTIFICATE NO.: N/A

INSTRUMENT MODEL: SLFA1800 CALIBRATION DATE: N/A

SERIAL NO.: ~~311005~~ 311009 NEXT CALIBRATION: N/A

J.A. 14/Nov/09

I. The AGC function check with the spectrum:

The Spectrum's Sample (S) Peak and Blank (B) Peak must match the S and B Marker.

PASS ✓ FAIL N/A

II. The Protective Membrane are changed.

YES ✓ NO N/A

III. Checking the System Status:

DESCRIPTION	NOMINAL	ACTUAL
PC. Detector supply Voltage	1130 to 1300V	1198
PV. Detector Supply Voltage Test	PC ± 10V	1198
XH. Target Voltage of X-Ray Tube	770 to 830	800
G1. G1 Voltage of X-Ray Tube	100 to 1500	537
G2. G2 Voltage of X-Ray Tube	900 to 1100	1001
FV. Filament Voltage	1140 to 1260	1211
X1. X-Ray Tube Current	250 to 350	266
TM. Temperature	5 to 45°C	24.3
AT. Atmosphere	613 to 1066	1015.6

CALIBRATION: PASS ✓ FAIL N/A

PERFORMED BY: Jaime A. Mora DATE: 12/NOV/08

SERVICE REPRESENTATIVE

CUSTOMER ACCEPTANCE: DATE: 13/NOV/08

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traffic@bioanalytica.com / web address: www.bioanalytica.com

```
**CALIBRATION-AUTO
 DATE: '08-11-12 12:13
 CAL#      :   5
 MEAS TIME: 100 SEC
 REPEAT    :   3 TIMES
 NUM OF STD:  5
 ----------------
 STD#01 POS#1
      0.1200  WT%
    1/ 3  K 0.1368
    2/ 3  K 0.1370
    3/ 3  K 0.1367
 AVERAGE:  K 0.1368
 STD DEV:  K 0.0002
 ----------------
 STD#02 POS#2
      0.5100  WT%
    1/ 3  K 0.2686
    2/ 3  K 0.2692
    3/ 3  K 0.2692
 AVERAGE:  K 0.2690
 STD DEV:  K 0.0003
 ----------------
 STD#03 POS#3
      1.0400  WT%
    1/ 3  K 0.4573
    2/ 3  K 0.4545
    3/ 3  K 0.4560
 AVERAGE:  K 0.4559
 STD DEV:  K 0.0014
 ----------------
 STD#04 POS#4
      1.9800  WT%
    1/ 3  K 0.8176
    2/ 3  K 0.8199
    3/ 3  K 0.8187
 AVERAGE:  K 0.8187
 STD DEV:  K 0.0012
 ----------------
 STD#05 POS#5
      3.9400  WT%
```

1/ 3 K 1.5796
2/ 3 K 1.5805
3/ 3 K 1.5772
AVERAGE: K 1.5791
STD DEV: K 0.0017

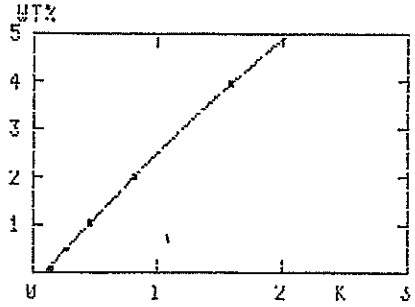
WT%=A*K^2+B*K+C

A= -0.18413
B= 2.94957
C= -0.27733

RANGE:
0.1200 - 3.9400 WT%

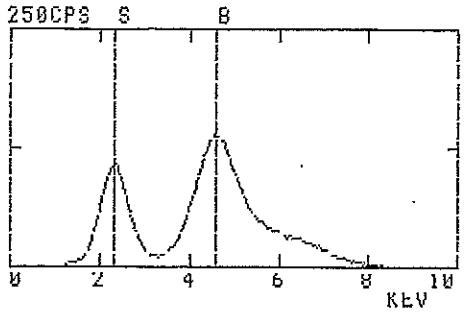
STD DEV 0.0184 WT%

STD#	WT%	K
01	0.1200	0.1368
	(0.0027)	
02	0.5100	0.2690
	(-0.0072)	
03	1.0400	0.4559
	(-0.0109)	
04	1.9800	0.8187
	(0.0341)	
05	3.9400	1.5791
	(-0.0188)	



12/NOV/08

**SPECTRUM
DATE:'08-11-12 10:20
MEAS TIME: 30 SEC



S INT 2175.9 CPS
B INT 4764.2 CPS

K(MEAS) 0.4567
K(CORR) 0.4605
CORR COEF 1.0083
T 24.4
P 1015.7

S 1.0868 WT%

12/NOV/08

**CHECK1
DATE:'08-11-12 10:34

S.OPEN	*
TBL.STR	*
TBL.UP	
TBL.DWN	*
SAMPLE	
AGC.LMT	
AGC.OK	*
X-RAY	*
F.OPEN	
F.SHORT	
POS#	1
PC	1198
PV	1198
XH	800
G1	537
G2	1001
FV	1211
XI	266
TM	24.3
AT	1015.6

Año 2009

BioAnalytical INSTRUMENTS

Calibration and Preventive Maintenance
SULFURE IN OIL ANALYZER
SLFA-1800/SLFA-1100

Customer	A.E.E.	Certificate No	094276
Instrument Model	SLFA-1800	Calibration Date	Junio 09
Serial	311006	Calibration Due Date	Dic. 09

SENSOR SIGNAL		Pass/Failed
Step	Procedure	
1	Check cover lock switch.	Pass
2	Check Temperature Sensor	Pass
3	Check Shutter close Sensor	Pass
4	Check Left panel switch. (SLFA-1800)	Pass
5	Check Cover switch.	Pass
6	Check Position sensor. (SLFA-1800)	Pass
7	Check Sample sensor.	Pass
8	Check Right panel switch.	Pass
9	Check Table up sensor. (SLFA-1800)	Pass
10	Check Table down sensor. (SLFA-1800)	Pass
11	Check Shutter open sensor.	Pass

SYSTEM STATUS			
Display system status	RANGE	Instrument Reading	Pass/Failed
Detector supply voltage fixing value (PC)	1130 to 1300	1167	Pass
Detector supply voltage (PV)	PC ± 10v	1167	Pass
Target voltage of X-ray tube (XH)	770 to 830	799	Pass
G1 voltage of X-ray tube	100 to 1500	1075	Pass
G2 voltage of X-ray tube	900 to 1100	991	Pass
Filament voltage of X-ray tube (FV)	1140 to 1260	1200	Pass
X-ray tube current (XI)	250 to 350	290	Pass
Temperature (TM)	5 to 45	23.7	Pass
Atmospheric (AT)	613 to 1066	1016.3	Pass

Calibration Pass / Fail:	Pass		
Performed By	[signature]	Date	9/Junio/09
Customer Acceptance	[signature]	Date	Junio-09-09

SOP#0050-A

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**CHECK

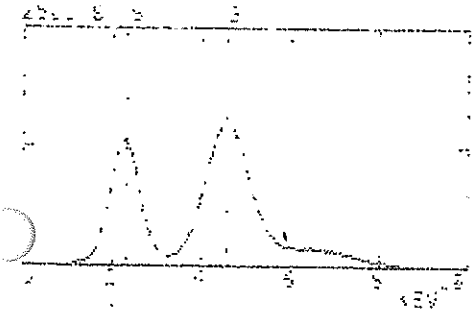
DATE: 89-06-09 10:20

[illegible]

**SPECTRUM

DATE: 89-06-09 11:07

MEAS TIME: 30 SEC



S INT 4788.5 CPS

B INT 4887.4 CPS

[illegible] 0.0693

[illegible] 0.0148

[illegible] 4.3290

[illegible] 1216.2

[illegible] 1.0481 WT%

**CALIBRATION

DATE: [illegible]

CALC [illegible] 0

MEAS TIME: 300 SEC

REPEAT [illegible] 3 TIMES

NUM OF STDS: 4

STD#01 POS#1

0.1122 WT%

[illegible] 0.1[illegible]

[illegible] 0.1[illegible]

[illegible] 0.1[illegible]

AVERAGE: K 0.1353

STD DEV: K 0.0005

RESIDUALS X 1.0417

STD DEV: X 2.0022

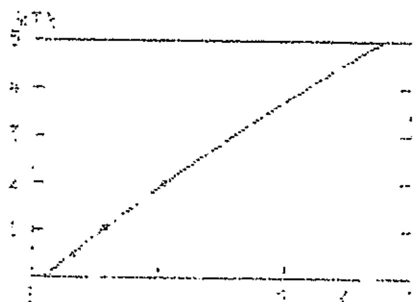
WT%=A*X^2+B*X+C

A= -0.12855
B= 2.11528
C= -0.12754

RANGE:
0.1100 - 1.9600 WT%

STD DEV 2.0009 WT%

STD#	WT%	X
01	0.1100 (-0.0002)	0.1353
02	0.5000 (0.0009)	0.3166
03	1.0400 (-0.0014)	0.5725
04	1.9600 (0.0006)	[illegible].0417



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Calibration and Preventive Maintenance
SULFURE IN OIL ANALYZER
SLFA-1800/SLFA-1100

Customer	AEE	Certificate No	094277
Instrument Model	SLFA-1800	Calibration Date	Junio 09
Serial	311009	Calibration Due Date	Dic. 09

SENSOR SIGNAL		Pass/Failed
Step	Procedure	
1	Check cover lock switch.	Pass
2	Check Temperature Sensor	Pass
3	Check Shutter close Sensor	Pass
4	Check Left panel switch. (SLFA-1800)	Pass
5	Check Cover switch.	Pass
6	Check Position sensor. (SLFA-1800)	Pass
7	Check Sample sensor.	Pass
8	Check Right panel switch.	Pass
9	Check Table up sensor. (SLFA-1800)	Pass
10	Check Table down sensor. (SLFA-1800)	Pass
11	Check Shutter open sensor.	Pass

SYSTEM STATUS			
Display system status	RANGE	Instrument Reading	Pass/Failed
Detector supply voltage fixing value (FC)	1130 to 1300	1199	Pass
Detector supply voltage (FV)	PC ± 10v	1199	Pass
Target voltage of X-ray tube (XH)	770 to 830	800	Pass
G1 voltage of X-ray tube	100 to 1500	512	Pass
G2 voltage of X-ray tube	900 to 1100	1001	Pass
Filament voltage of X-ray tube (FV)	1140 to 1260	1211	Pass
X-ray tube current (XI)	250 to 350	266	Pass
Temperature (TM)	5 to 45	24.4	Pass
Atmospheric (AT)	613 to 1066	1018.2	Pass

Calibration Pass / Fail:	Pass		
Performed By	[signature]	Date	9/Junio/09
Customer Acceptance	[signature]	Date	Junio-09-09

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