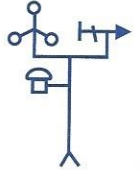




TECHNICAL ENVIRONMENTAL SERVICES, LLC



Mr. Jamie Foster
Department of Environmental Protection
Division of Solid Waste Services
16010 Frederick Road
Rockville, MD 20855

October 16, 2021

Dear Jamie,

Enclosed is your semi-annual calibration report for the meteorological calibration performed on October 14, 2021 at the East Gude Drive Landfill site. All instrumentation was compared against NIST certified test equipment and found to be functioning correctly. The wind speed test did produce higher than expected results which will be investigated.

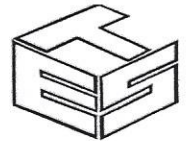
Please let me know if you have any questions about the calibration.

Best regards,

Mark Abrams
President - TES



TECHNICAL ENVIRONMENTAL SERVICES, INC.
 P.O. BOX 3253
 GAITHERSBURG, MD 20885



MIDAS SYSTEM CALIBRATION RESULTS

FOR: MONTGOMERY COUNTY, MD (EAST GUDE DR)

LOCATION: ROCKVILLE, MD

LAT: 39°6.47'N/LONG: 77°8.42'W

MAGNETIC VARIATION: 4.0°W(-)

SITE ELEVATION: 400 FT MSL

TOWER HEIGHT: 3 M (10 ft)

DATE OF CALIBRATION: October 14, 2021

SYSTEM ID: 170630-001

SYSTEM TYPE: MIDAS/CLIMATRONICS/WM283

EQUIPMENT: CLIMATRONICS CORP:

| | |
|--------|----------------------|
| 101283 | WIND SPEED |
| 101283 | WIND DIRECTION |
| HMP 60 | TEMPERATURE |
| HMP 60 | RELATIVE HUMIDITY |
| TE-525 | PRECIPITATION |
| CR-300 | DATA LOGGER; SN 5100 |

PROCEDURES USED: TECHNICAL ENVIRONMENTAL SERVICES 508 (series)

TEST EQUIPMENT USED FOR CALIBRATION:

| <u>TYPE</u> | <u>MODEL</u> | <u>SER NO.</u> |
|--------------------|--------------|----------------|
| Compass, digital | 2074 | 1000057 |
| Digital voltmeter | 2030E | 50811075 |
| Torque Disc | 18310 | None |
| Thermometer, LIG | FP-10 | 3N8751 |
| Hygro-Therm (RH/T) | 445580 | 1129813 |
| Anemometer Drive | 18801 | CA 01550 |
| Ambient Weather | WM-4 | 480-346-3380 |

SYSTEM EQUIVALENTS

THIS IS DIGITAL DATA COLLECTION SYSTEM; THERE ARE NO VOLTAGE EQUIVALENTS

Signature of technician performing tests: *[Signature]*
 Reviewed by: *[Signature]*

Date: 10/14/2021
 Date: 10/14/2021

POWER SUPPLY AND MISC TESTS

PROCEDURE: 508.10

Page 1 of 8

BATTERY TESTS:

- 1. UNLOADED VOLTAGE: NA
- 2. CHARGER VOLTAGE: 13.75
- 3. VOLTAGE AT DATA LOGGER: 13.75 (Should be 12.8>)

4. REMARKS: All instruments tested correctly
except the wind speed registered a little
high during the drive motor test. This will be
investigated.

5. FINDINGS TO BE ADDRESSED BY OWNER: None

DATE OF ALL TESTS: 10/14/21

DATA SHEET - WIND DIRECTION

PROCEDURE: 508.2

Page 3 of 8

9.0 RECORD OF CALIBRATION

9.1 Serial Numbers:

SENSOR: 154832

9.2 Torque Values Measured:

AS FOUND

AFTER BEARING/SENSOR REPLACEMENT

6.0 (gm-cm)

NA (gm-cm)

Bearings replaced: Yes No

[Note: 11 gm-cm = 1.0 mph; 25 gm-cm = 2 mph]

9.3 If new sensor is required record new serial number here:

SENSOR: NA

9.4 Linearity test of direction sensor; "as found" or "new", (circle one):

| Expected | Degrees (At Computer) |
|----------|--------------------------|
| 360 deg | <u>360</u> |
| 090 deg | <u>88</u> |
| 180 deg | <u>179</u> |
| 270 deg | <u>271</u> |

ALLOWABLE TOLERANCE IS $\pm 5^\circ$

DATA SHEET - WIND DIRECTION ALIGNMENT

PROCEDURE: 508.2.4

Page 4 of 8

9.0 RECORD OF CALIBRATION

9.1 Serial Numbers: 154832

9.2 Reference orientation point: North or South (true) by compass.

Magnetic variation: 4.0°W (-); 4°Mag = 360°True/184° = 180°True

9.3 "As Found" alignment before any adjustments; ALLOWABLE TOLERANCE IS

360°

9.4 "After Adjustment" alignment (see note):

NA

Note: If any repairs to a sensor are accomplished or if a replacement sensor is installed indicate action(s) here and perform tests on the new or refurbished sensor and complete a second test of alignment and linearity.

DATA SHEET - TEMPERATURE

PROCEDURE: 508.3

Page 5 of 8

9.0 RECORD OF TEMPERATURE VERIFICATION TESTS

9.1 Serial Numbers:

SENSOR: R3157018

9.1 Ambient test of system:

Ambient = 73.8 °F; system read: 73.2 °F

(Allowable tolerance is $\pm 0.9^{\circ}\text{F}$)

NOTES OR REMARKS AND ANY ADDITIONAL TESTS; RECORD RESULTS HERE:

DATA SHEET - RELATIVE HUMIDITY

PROCEDURE: 508.4

Page 6 of 8

9.0 RECORD OF HUMIDITY COMPARISON TESTS

9.1 Serial Numbers:

SENSOR: R3151018

9.2 Ambient humidity calculation at: 12/5 (Time)

Relative Humidity from co-located transfer standard 59.7 %

System relative humidity from computer display/keypad: 63.5 %

Allowable tolerance is $\pm 5\%$ between the derived value and the computer value for RH at temperatures above 32°F.

Note: If any repairs are made or the humidity sensor is replaced indicate action(s) here and perform tests on new or repaired equipment on a second datasheet.

Tested to 92%

DATA SHEET - PRECIPITATION

PROCEDURE: 508.12

Page 8 of 8

9.0 RECORD OF PRECIPITATION GAUGE TESTS

9.1 Serial Numbers:

GAUGE: 72000-217

9.2 Measured amount of water deposited in the catch opening: 5.2 ml

Left

Right

5.2

5.2

ALLOWABLE TOLERANCE $\pm 10\%$ OF OBSERVED OR $\pm 0.5\text{MM}$

Test Equipment Certification Record Technical Environmental Services, LLC

14-Apr-21

Page 1 of 1

| Instrument | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
|--------------------|---------------------|----------------|------------|--------------|-----------|
| Anemometer Drive | R.M. Young Co. | 18801 | CA 01550 | 6/15/2021 | 6/15/2022 |
| Digital Compass | Autohelm | 2074 | 810753 | Fixed Device | NA |
| Digital Multimeter | Wavetek | 2030E | 50811075 | 1/16/2020 | 1/16/2022 |
| Psychrometer | Belfort Instruments | 566-2 (T3 & 4) | 85-608 | 1/15/2020 | 1/15/2022 |
| Torque Disc | R.M. Young Co. | 18310 | None | Fixed Device | NA |
| Torque Gauge | R.M. Young Co. | 18331 | None | Fixed Device | NA |
| Barometer | Baltic | 2215 | None | Fixed Device | NA |
| Hygro-Therm Device | Extech Instruments | 445580 | 1129813 | 9/14/2021 | 9/14/2022 |
| Ambient Weather | Ambient Weather | WM-4 | NA | 4/23/2019 | 4/23/2021 |
| Global Radiometer | Solar Light Co. | PMA1140 | 6475 | 2/24/2021 | 2/23/2023 |