

Atmospheric Analysis & Consulting, Inc.

CLIENT : Eurofins
PROJECT NAME : MO DNR – Bridgeton Landfill
AAC PROJECT NO. : 180483
REPORT DATE : 4/6/2018

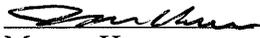
On April 5, 2018, Atmospheric Analysis & Consulting, Inc. received two (2) Six-Liter Silonite Canisters for TRS analysis by ASTM D-5504. Upon receipt, each sample was assigned a unique Laboratory ID number as follows:

| Client ID | Lab No. | Initial Pressure (mmHg) |
|-------------|---------------|-------------------------|
| D1 (181376) | 180483-107735 | 608.7 |
| U1 (181377) | 180483-107736 | 608.2 |

All of the analyses mentioned above were performed in accordance with AAC's ISO/IEC 17025:2005 and NELAP approved Quality Assurance Plan. For detailed information pertaining to specific EPA, NCASI, ASTM and SCAQMD accreditations (Methods & Analytes), please visit our website at www.aaclab.com.

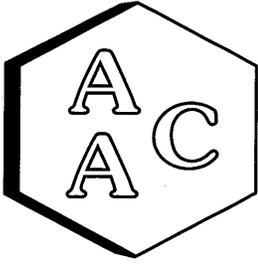
I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. No problems were encountered during receiving, preparation, and/or analysis of these samples. The Laboratory Director or his/her designee, as verified by the following signature, has authorized release of the data contained in this hardcopy report.

If you have any questions or require further explanation of data results, please contact the undersigned.


Marcus Hueppe
Laboratory Director

This report consists of 4 pages.





Atmospheric Analysis & Consulting, Inc.

LABORATORY ANALYSIS REPORT

CLIENT : Eurofins
PROJECT NO. : 180483
MATRIX : AIR
UNITS : ppmV

SAMPLING DATE : 04/03/2018
RECEIVING DATE : 04/05/2018
ANALYSIS DATE : 04/05/2018
REPORT DATE : 04/06/2018

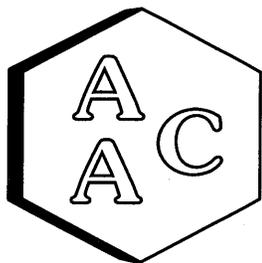
Total Reduced Sulfur Compounds Analysis by ASTM D-5504

| Client ID | D1 (181376) | U1 (181377) |
|---------------------------|---------------|---------------|
| AAC ID | 180483-107735 | 180483-107736 |
| Canister Dil. Fac. | 1.5 | 1.5 |
| Analyte | Result | Result |
| Hydrogen Sulfide | < 0.015 | < 0.015 |
| Carbonyl Sulfide | < 0.015 | < 0.015 |
| Sulfur Dioxide | < 0.015 | < 0.015 |
| Methyl Mercaptan | < 0.015 | < 0.015 |
| Ethyl Mercaptan | < 0.015 | < 0.015 |
| Dimethyl Sulfide | < 0.015 | < 0.015 |
| Carbon Disulfide | < 0.015 | < 0.015 |
| Isopropyl Mercaptan | < 0.015 | < 0.015 |
| tert-Butyl Mercaptan | < 0.015 | < 0.015 |
| n-Propyl Mercaptan | < 0.015 | < 0.015 |
| Methylethylsulfide | < 0.015 | < 0.015 |
| sec-Butyl Mercaptan | < 0.015 | < 0.015 |
| Thiophene | < 0.015 | < 0.015 |
| iso-Butyl Mercaptan | < 0.015 | < 0.015 |
| Diethyl Sulfide | < 0.015 | < 0.015 |
| n-Butyl Mercaptan | < 0.015 | < 0.015 |
| Dimethyl Disulfide | < 0.015 | < 0.015 |
| 2-Methylthiophene | < 0.015 | < 0.015 |
| 3-Methylthiophene | < 0.015 | < 0.015 |
| Tetrahydrothiophene | < 0.015 | < 0.015 |
| Bromothiophene | < 0.015 | < 0.015 |
| Thiophenol | < 0.015 | < 0.015 |
| Diethyl Disulfide | < 0.015 | < 0.015 |
| Total Unidentified Sulfur | < 0.015 | < 0.015 |
| Total Reduced Sulfurs | < 0.015 | < 0.015 |

All unidentified compound's concentrations expressed in terms of H₂S (TRS does not include COS and SO₂)
Sample Reporting Limit (SRL) is equal to Reporting Limit x Canister Dil. Fac. x Analysis Dil. Fac.


Marcus Hueppe
Laboratory Director





Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report ASTM D-5504

Date Analyzed: 4/5/2018
 Analyst: ZB
 Units: ppbV

Instrument ID: SCD#10
 Calb. Date: 1/10/2018

Opening Calibration Verification Standard

510.75 ppbV H₂S (SS1041)

| H ₂ S | Resp. (area) | Result | % Rec * | % RPD **** |
|------------------|--------------|--------|---------|------------|
| Initial | 3009 | 533 | 104.4 | 1.7 |
| Duplicate | 2892 | 513 | 100.4 | 2.2 |
| Triplicate | 2971 | 527 | 103.1 | 0.5 |

511.75 ppbV MeSH (SS1041)

| MeSH | Resp. (area) | Result | % Rec * | % RPD **** |
|------------|--------------|--------|---------|------------|
| Initial | 2949 | 510 | 99.7 | 0.1 |
| Duplicate | 2972 | 514 | 100.5 | 0.9 |
| Triplicate | 2918 | 505 | 98.7 | 1.0 |

522.75 ppbV DMS (SS1041)

| DMS | Resp. (area) | Result | % Rec * | % RPD **** |
|------------|--------------|--------|---------|------------|
| Initial | 3342 | 521 | 99.7 | 0.5 |
| Duplicate | 3333 | 520 | 99.4 | 0.2 |
| Triplicate | 3302 | 515 | 98.5 | 0.7 |

Method Blank

| Analyte | Result |
|------------------|--------|
| H ₂ S | <PQL |
| MeSH | <PQL |
| DMS | <PQL |

Duplicate Analysis

Sample ID 180452-107667

| Analyte | Sample Result | Duplicate Result | Mean | % RPD *** |
|------------------|---------------|------------------|------|-----------|
| H ₂ S | <PQL | <PQL | 0.0 | 0.0 |
| MeSH | <PQL | <PQL | 0.0 | 0.0 |
| DMS | 27.6 | 26.4 | 27.0 | 4.7 |

Matrix Spike & Duplicate

Sample ID 180452-107667 x2

| Analyte | Sample Conc. | Spike Added | MS Result | MSD Result | MS % Rec ** | MSD % Rec ** | % RPD *** |
|------------------|--------------|-------------|-----------|------------|-------------|--------------|-----------|
| H ₂ S | <PQL | 255.4 | 255.4 | 258.4 | 100.0 | 101.2 | 1.2 |
| MeSH | <PQL | 255.9 | 256.0 | 251.9 | 100.0 | 98.4 | 1.6 |
| DMS | 13.5 | 261.4 | 255.6 | 249.7 | 93.0 | 90.8 | 2.3 |

Closing Calibration Verification Standard

| Analyte | Std. Conc. | Result | % Rec ** |
|------------------|------------|--------|----------|
| H ₂ S | 510.8 | 503.0 | 98.5 |
| MeSH | 511.8 | 487.9 | 95.3 |
| DMS | 522.8 | 487.1 | 93.2 |

* Must be 95-105%, ** Must be 90-110%, *** Must be < 10%, **** Must be < 5% RPD from Mean result.

H₂S: PQL = 10.0 ppbV, MDL = 1.09 ppbV

MeSH: PQL = 10.0 ppbV, MDL = 1.13 ppbV

DMS: PQL = 10.0 ppbV, MDL = 1.39 ppbV


 Marcu's Hueppe
 Laboratory Director



