



14-Apr-2016

Roger Bellas  
Pennsylvania DEP Bureau of Air Quality  
12th Floor RCSOB  
400 Market Street  
Harrisburg, PA 17105

Tel: (570) 826-2511  
Fax:

Re: Sherwood Park (SHP)- 03/17/16

Work Order: **1603759**

Dear Roger,

ALS Environmental received 6 samples on 22-Mar-2016 11:29 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

**Rob Nieman**

Electronically approved by: Rob Nieman

Rob Nieman  
Project Manager

ADDRESS 4388 Glendale Milford Rd Cincinnati, Ohio 45242- | PHONE (513) 733-5336 | FAX (513) 733-5347

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Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

**Client:** Pennsylvania DEP Bureau of Air Quality  
**Project:** Sherwood Park (SHP)- 03/17/16  
**Work Order:** 1603759

**Work Order Sample Summary**

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| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>              |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 1603759-01         | SHP031716-1 Red         | Air           |                   | 3/17/2016              | 3/22/2016 11:29      | <input type="checkbox"/> |
| 1603759-02         | SHP031716-2 Blue        | Air           |                   | 3/17/2016              | 3/22/2016 11:29      | <input type="checkbox"/> |
| 1603759-03         | SHP031716-3 Green       | Air           |                   | 3/17/2016              | 3/22/2016 11:29      | <input type="checkbox"/> |
| 1603759-04         | SHP031716-4 Orange      | Air           |                   | 3/17/2016              | 3/22/2016 11:29      | <input type="checkbox"/> |
| 1603759-05         | SHP031716-5 Yellow      | Air           |                   | 3/17/2016              | 3/22/2016 11:29      | <input type="checkbox"/> |
| 1603759-06         | SHP031716-summa         | Air           |                   | 3/17/2016              | 3/22/2016 11:29      | <input type="checkbox"/> |

**Client:** Pennsylvania DEP Bureau of Air Quality  
**Project:** Sherwood Park (SHP)- 03/17/16

**Work Order:** 1603759

**Analytical Results**

**Lab ID:** 1603759-01A  
**Client Sample ID:** SHP031716-1 Red

**Collection Date:** 3/17/2016  
**Matrix:** AIR

**Analyses**

| <b>AMMONIA BY NIOSH 6015 MOD.</b> |           | Method: <b>N6015</b> | Air Volume (L): <b>95.877</b> | Analyst: <b>ALST</b> |
|-----------------------------------|-----------|----------------------|-------------------------------|----------------------|
| Date Analyzed: 3/31/2016          |           | Reporting Limit      |                               |                      |
|                                   | µg/sample | µg/sample            | ug/m3                         | ppb                  |
| Ammonia                           | ND        | 1.2                  | <13                           | <18                  |

**Lab ID:** 1603759-02A  
**Client Sample ID:** SHP031716-2 Blue

**Collection Date:** 3/17/2016  
**Matrix:** AIR

**Analyses**

| <b>ALDEHYDES BY HPLC</b> |           | Method: <b>ETO-11</b> | Air Volume (L): <b>214.65</b> | Analyst: <b>JMB</b> |
|--------------------------|-----------|-----------------------|-------------------------------|---------------------|
| Date Analyzed: 4/8/2016  |           | Reporting Limit       |                               |                     |
|                          | µg/sample | µg/sample             | ug/m3                         | ppb                 |
| Acetaldehyde             | 2.9       | 0.20                  | 13                            | 7.5                 |
| Acrolein                 | ND        | 5.0                   | <23                           | <10                 |
| Formaldehyde             | 0.28      | 0.20                  | 1.3                           | 1.0                 |

**Lab ID:** 1603759-03A  
**Client Sample ID:** SHP031716-3 Green

**Collection Date:** 3/17/2016  
**Matrix:** AIR

**Analyses**

| <b>METHANOL BY NIOSH 2000 MOD.</b> |           | Method: <b>N2000</b> | Air Volume (L): <b>7.155</b> | Analyst: <b>TSA</b> |
|------------------------------------|-----------|----------------------|------------------------------|---------------------|
| Date Analyzed: 3/24/2016           |           | Reporting Limit      |                              |                     |
|                                    | µg/sample | µg/sample            | ug/m3                        | ppb                 |
| Methanol                           | ND        | 10                   | <1,400                       | <1,100              |

**Lab ID:** 1603759-04A  
**Client Sample ID:** SHP031716-4 Orange

**Collection Date:** 3/17/2016  
**Matrix:** AIR

**Analyses**

| <b>METHYLAMINE BY OSHA 40</b> |           | Method: <b>O40</b> | Air Volume (L): <b>21.465</b> | Analyst: <b>MHW</b> |
|-------------------------------|-----------|--------------------|-------------------------------|---------------------|
| Date Analyzed: 3/31/2016      |           | Reporting Limit    |                               |                     |
|                               | µg/sample | µg/sample          | ug/m3                         | ppb                 |
| Methylamine                   | ND        | 3.0                | <140                          | <110                |

**Note:**

**Client:** Pennsylvania DEP Bureau of Air Quality  
**Project:** Sherwood Park (SHP)- 03/17/16**Work Order:** 1603759**Analytical Results****Lab ID:** 1603759-05A  
**Client Sample ID:** SHP031716-5 Yellow**Collection Date:** 3/17/2016  
**Matrix:** AIR**Analyses**

| <b>AMINE(S) BY OSHA PV2060 MOD.</b> | Method: <b>O2060</b> |                              | Air Volume (L): <b>21.465</b> | Analyst: <b>MHW</b> |
|-------------------------------------|----------------------|------------------------------|-------------------------------|---------------------|
| Date Analyzed: 4/6/2016             | µg/sample            | Reporting Limit<br>µg/sample | ug/m3                         | ppb                 |
| Triethylamine                       | ND                   | 10                           | <470                          | <110                |

**Note:**

**Client:** Pennsylvania DEP Bureau of Air Quality  
**Work Order:** 1603759  
**Project:** Sherwood Park (SHP)- 03/17/16

**QC BATCH REPORT**

Batch ID: **34724** Instrument ID: **GC1** Method: **N2000**

|             |                                    |     |         |                         |      |                                 |               |              |           |      |
|-------------|------------------------------------|-----|---------|-------------------------|------|---------------------------------|---------------|--------------|-----------|------|
| <b>MBLK</b> | Sample ID: <b>MBLK-34724-34724</b> |     |         | Units: <b>µg/sample</b> |      | Analysis Date: <b>3/24/2016</b> |               |              |           |      |
| Client ID:  | Run ID: <b>GC1_160324A</b>         |     |         | SeqNo: <b>1248014</b>   |      | Prep Date: <b>3/24/2016</b>     |               | DF: <b>1</b> |           |      |
| Analyte     | Result                             | PQL | SPK Val | SPK Ref Value           | %REC | Control Limit                   | RPD Ref Value | %RPD         | RPD Limit | Qual |

Methanol ND 10

|            |                                   |     |         |                         |      |                                 |               |              |           |      |
|------------|-----------------------------------|-----|---------|-------------------------|------|---------------------------------|---------------|--------------|-----------|------|
| <b>LCS</b> | Sample ID: <b>LCS-34724-34724</b> |     |         | Units: <b>µg/sample</b> |      | Analysis Date: <b>3/24/2016</b> |               |              |           |      |
| Client ID: | Run ID: <b>GC1_160324A</b>        |     |         | SeqNo: <b>1248015</b>   |      | Prep Date: <b>3/24/2016</b>     |               | DF: <b>1</b> |           |      |
| Analyte    | Result                            | PQL | SPK Val | SPK Ref Value           | %REC | Control Limit                   | RPD Ref Value | %RPD         | RPD Limit | Qual |

Methanol 65.68 10 79.1 0 83 64.1-145 0

|             |                                    |     |         |                         |      |                                 |               |              |           |      |
|-------------|------------------------------------|-----|---------|-------------------------|------|---------------------------------|---------------|--------------|-----------|------|
| <b>LCSD</b> | Sample ID: <b>LCSD-34724-34724</b> |     |         | Units: <b>µg/sample</b> |      | Analysis Date: <b>3/24/2016</b> |               |              |           |      |
| Client ID:  | Run ID: <b>GC1_160324A</b>         |     |         | SeqNo: <b>1248035</b>   |      | Prep Date: <b>3/24/2016</b>     |               | DF: <b>1</b> |           |      |
| Analyte     | Result                             | PQL | SPK Val | SPK Ref Value           | %REC | Control Limit                   | RPD Ref Value | %RPD         | RPD Limit | Qual |

Methanol 74.37 10 79.1 0 94 64.1-145 65.68 12.4 20

The following samples were analyzed in this batch: 1603759-03A

Client: Pennsylvania DEP Bureau of Air Quality

# QC BATCH REPORT

Work Order: 1603759

Project: Sherwood Park (SHP)- 03/17/16

Batch ID: **35009**

Instrument ID: **GC5**

Method: **O2060**

|               |                                    |     |         |                         |      |               |                                |      |              |      |
|---------------|------------------------------------|-----|---------|-------------------------|------|---------------|--------------------------------|------|--------------|------|
| <b>MBLK</b>   | Sample ID: <b>MBLK-35009-35009</b> |     |         | Units: <b>µg/sample</b> |      |               | Analysis Date: <b>4/6/2016</b> |      |              |      |
| Client ID:    | Run ID: <b>GC5_160406A</b>         |     |         | SeqNo: <b>1255747</b>   |      |               | Prep Date: <b>4/4/2016</b>     |      | DF: <b>1</b> |      |
| Analyte       | Result                             | PQL | SPK Val | SPK Ref Value           | %REC | Control Limit | RPD Ref Value                  | %RPD | RPD Limit    | Qual |
| Triethylamine | ND                                 | 10  |         |                         |      |               |                                |      |              |      |

|               |                                   |     |         |                         |      |               |                                |      |              |      |
|---------------|-----------------------------------|-----|---------|-------------------------|------|---------------|--------------------------------|------|--------------|------|
| <b>LCS</b>    | Sample ID: <b>LCS-35009-35009</b> |     |         | Units: <b>µg/sample</b> |      |               | Analysis Date: <b>4/6/2016</b> |      |              |      |
| Client ID:    | Run ID: <b>GC5_160406A</b>        |     |         | SeqNo: <b>1255748</b>   |      |               | Prep Date: <b>4/4/2016</b>     |      | DF: <b>1</b> |      |
| Analyte       | Result                            | PQL | SPK Val | SPK Ref Value           | %REC | Control Limit | RPD Ref Value                  | %RPD | RPD Limit    | Qual |
| Triethylamine | 68.77                             | 10  | 90.75   | 0                       | 75.8 | 70-130        | 0                              |      |              |      |

|               |                                    |     |         |                         |      |               |                                |      |              |      |
|---------------|------------------------------------|-----|---------|-------------------------|------|---------------|--------------------------------|------|--------------|------|
| <b>LCSD</b>   | Sample ID: <b>LCSD-35009-35009</b> |     |         | Units: <b>µg/sample</b> |      |               | Analysis Date: <b>4/6/2016</b> |      |              |      |
| Client ID:    | Run ID: <b>GC5_160406A</b>         |     |         | SeqNo: <b>1255759</b>   |      |               | Prep Date: <b>4/4/2016</b>     |      | DF: <b>1</b> |      |
| Analyte       | Result                             | PQL | SPK Val | SPK Ref Value           | %REC | Control Limit | RPD Ref Value                  | %RPD | RPD Limit    | Qual |
| Triethylamine | 65.75                              | 10  | 90.75   | 0                       | 72.5 | 70-130        | 68.77                          | 4.49 | 20           |      |

The following samples were analyzed in this batch:

1603759-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Pennsylvania DEP Bureau of Air Quality

# QC BATCH REPORT

Work Order: 1603759

Project: Sherwood Park (SHP)- 03/17/16

Batch ID: 35024

Instrument ID: HPLC2

Method: ETO-11

| MBLK         |        | Sample ID: MBLK-35024-35024 |         |               | Units: µg/sample |               | Analysis Date: 4/8/2016 |      |           |      |
|--------------|--------|-----------------------------|---------|---------------|------------------|---------------|-------------------------|------|-----------|------|
| Client ID:   |        | Run ID: HPLC2_160408B       |         |               | SeqNo: 1259257   |               | Prep Date: 4/6/2016     |      | DF: 1     |      |
| Analyte      | Result | PQL                         | SPK Val | SPK Ref Value | %REC             | Control Limit | RPD Ref Value           | %RPD | RPD Limit | Qual |
| Acetaldehyde | ND     | 0.20                        |         |               |                  |               |                         |      |           |      |
| Formaldehyde | ND     | 0.20                        |         |               |                  |               |                         |      |           |      |

| LCS          |        | Sample ID: LCS-35024-35024 |         |               | Units: µg/sample |               | Analysis Date: 4/8/2016 |      |           |      |
|--------------|--------|----------------------------|---------|---------------|------------------|---------------|-------------------------|------|-----------|------|
| Client ID:   |        | Run ID: HPLC2_160408B      |         |               | SeqNo: 1259258   |               | Prep Date: 4/6/2016     |      | DF: 1     |      |
| Analyte      | Result | PQL                        | SPK Val | SPK Ref Value | %REC             | Control Limit | RPD Ref Value           | %RPD | RPD Limit | Qual |
| Acetaldehyde | 1.714  | 0.20                       | 2       | 0             | 85.7             | 70-130        | 0                       |      |           |      |
| Formaldehyde | 2.218  | 0.20                       | 2       | 0             | 111              | 70-130        | 0                       |      |           |      |

| LCSD         |        | Sample ID: LCSD-35024-35024 |         |               | Units: µg/sample |               | Analysis Date: 4/8/2016 |      |           |      |
|--------------|--------|-----------------------------|---------|---------------|------------------|---------------|-------------------------|------|-----------|------|
| Client ID:   |        | Run ID: HPLC2_160408B       |         |               | SeqNo: 1259273   |               | Prep Date: 4/6/2016     |      | DF: 1     |      |
| Analyte      | Result | PQL                         | SPK Val | SPK Ref Value | %REC             | Control Limit | RPD Ref Value           | %RPD | RPD Limit | Qual |
| Acetaldehyde | 1.666  | 0.20                        | 2       | 0             | 83.3             | 70-130        | 1.714                   | 2.8  | 20        |      |
| Formaldehyde | 2.19   | 0.20                        | 2       | 0             | 110              | 70-130        | 2.218                   | 1.25 | 20        |      |

The following samples were analyzed in this batch:

1603759-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.





**Client:** Pennsylvania DEP Bureau of Air Quality  
**Work Order:** 1603759  
**Project:** Sherwood Park (SHP)- 03/17/16

## QC BATCH REPORT

Batch ID: **R127504**      Instrument ID: **SUB**      Method: **N6015**

| <b>MBLK</b> |        | Sample ID: <b>MB-R127504-R127504</b> |         |               | Units: <b>µg/sample</b> |               | Analysis Date: <b>3/31/2016</b> |      |              |      |
|-------------|--------|--------------------------------------|---------|---------------|-------------------------|---------------|---------------------------------|------|--------------|------|
| Client ID:  |        | Run ID: <b>SUB_160331B</b>           |         |               | SeqNo: <b>1252634</b>   |               | Prep Date:                      |      | DF: <b>1</b> |      |
| Analyte     | Result | PQL                                  | SPK Val | SPK Ref Value | %REC                    | Control Limit | RPD Ref Value                   | %RPD | RPD Limit    | Qual |
| Ammonia     | ND     | 1.2                                  |         |               |                         |               |                                 |      |              |      |

| <b>LCS</b> |        | Sample ID: <b>LCS-R127504-R127504</b> |         |               | Units: <b>µg/sample</b> |               | Analysis Date: <b>3/31/2016</b> |      |              |      |
|------------|--------|---------------------------------------|---------|---------------|-------------------------|---------------|---------------------------------|------|--------------|------|
| Client ID: |        | Run ID: <b>SUB_160331B</b>            |         |               | SeqNo: <b>1252635</b>   |               | Prep Date:                      |      | DF: <b>1</b> |      |
| Analyte    | Result | PQL                                   | SPK Val | SPK Ref Value | %REC                    | Control Limit | RPD Ref Value                   | %RPD | RPD Limit    | Qual |
| Ammonia    | 21.7   | 1.2                                   | 24.3    | 0             | 89.3                    | 74.3-115.2    | 0                               |      |              |      |

| <b>LCSD</b> |        | Sample ID: <b>LCSD-R127504</b> |         |               | Units: <b>µg/sample</b> |               | Analysis Date: <b>3/31/2016</b> |       |              |      |
|-------------|--------|--------------------------------|---------|---------------|-------------------------|---------------|---------------------------------|-------|--------------|------|
| Client ID:  |        | Run ID: <b>SUB_160331B</b>     |         |               | SeqNo: <b>1252643</b>   |               | Prep Date:                      |       | DF: <b>1</b> |      |
| Analyte     | Result | PQL                            | SPK Val | SPK Ref Value | %REC                    | Control Limit | RPD Ref Value                   | %RPD  | RPD Limit    | Qual |
| Ammonia     | 21.6   | 1.2                            | 24.3    | 0             | 88.9                    | 74.3-115.2    | 21.7                            | 0.462 | 20           |      |

**The following samples were analyzed in this batch:**      1603759-01A

**Client:** Pennsylvania DEP Bureau of Air Quality  
**Project:** Sherwood Park (SHP)- 03/17/16  
**WorkOrder:** 1603759

**QUALIFIERS,  
ACRONYMS, UNITS**

| <u>Qualifier</u> | <u>Description</u>  |
|------------------|---|
| *                | Value exceeds Regulatory Limit  |
| a                | Not accredited  |
| B                | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                | Value above quantitation range  |
| H                | Analyzed outside of Holding Time  |
| J                | Analyte detected below quantitation limit                                 |
| n                | Not offered for accreditation   |
| ND               | Not Detected at the Reporting Limit                                       |
| O                | Sample amount is > 4 times amount spiked                                  |
| P                | Dual Column results percent difference > 40%                              |
| R                | RPD above laboratory control limit  |
| S                | Spike Recovery outside laboratory control limits                          |
| U                | Analyzed but not detected above the MDL                                   |

| <u>Acronym</u> | <u>Description</u>                  |
|----------------|-------------------------------------|
| DUP            | Method Duplicate                    |
| E              | EPA Method                          |
| LCS            | Laboratory Control Sample           |
| LCSD           | Laboratory Control Sample Duplicate |
| MBLK           | Method Blank                        |
| MDL            | Method Detection Limit              |
| MQL            | Method Quantitation Limit           |
| MS             | Matrix Spike                        |
| MSD            | Matrix Spike Duplicate              |
| PDS            | Post Digestion Spike                |
| PQL            | Practical Quantitation Limit        |
| SDL            | Sample Detection Limit              |
| SW             | SW-846 Method                       |

| <u>Units Reported</u> | <u>Description</u> |
|-----------------------|--------------------|
| µg/sample             |                    |
| ppbv                  |                    |
| ppm                   |                    |

Sample Receipt Checklist

Client Name: PADEP-HARRISBURG

Date/Time Received: 22-Mar-16 11:29

Work Order: 1603759

Received by: RDN

Checklist completed by: Stephanie Harrington 22-Mar-16
eSignature Date

Reviewed by: Rob Nieman 23-Mar-16
eSignature Date

Matrices:

Carrier name: FedEx

- Shipping container/cooler in good condition? Yes [checked] No [ ] Not Present [ ]
Custody seals intact on shipping container/cooler? Yes [ ] No [ ] Not Present [checked]
Custody seals intact on sample bottles? Yes [checked] No [ ] Not Present [ ]
Chain of custody present? Yes [checked] No [ ]
Chain of custody signed when relinquished and received? Yes [checked] No [ ]
Chain of custody agrees with sample labels? Yes [checked] No [ ]
Samples in proper container/bottle? Yes [checked] No [ ]
Sample containers intact? Yes [checked] No [ ]
Sufficient sample volume for indicated test? Yes [checked] No [ ]
All samples received within holding time? Yes [checked] No [ ]
Container/Temp Blank temperature in compliance? Yes [checked] No [ ]

Temperature(s)/Thermometer(s): 16.0

Cooler(s)/Kit(s):

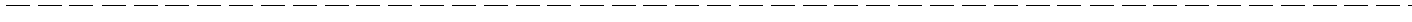
Water - VOA vials have zero headspace? Yes [ ] No [ ] No VOA vials submitted [checked]

Water - pH acceptable upon receipt? Yes [ ] No [ ] N/A [checked]

pH adjusted? Yes [ ] No [ ] N/A [checked]

pH adjusted by:

Login Notes:



Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

[Empty text box for comments]

CorrectiveAction:

[Empty text box for corrective action]