

## North Carolina Division of Air Quality Monthly Hazardous Air Pollutant Report

|             |                            |    |            |
|-------------|----------------------------|----|------------|
| Report Date | January 5, 2016            |    |            |
| Data period | 11/1/2015                  | to | 11/30/2015 |
| Prepared by | Ambient Monitoring Section |    |            |



**Limits and restrictions: Every effort has been made to ensure these data are accurate. This report is for informational purposes.**

| 2015                 | 24-Hour Average Sample Concentration (ppbv)<br>Samples are collected 1 every 6 days |             |             |        |                   |                 |                    |                     | Year to Date      |      |                 |
|----------------------|---|-------------|-------------|--------|-------------------|-----------------|--------------------|---------------------|-------------------|------|-----------------|
|                      | Hazardous Air Pollutant   | Site Name   | County      | AQS ID | 2-Nov<br>Saturday | 8-Nov<br>Friday | 14-Nov<br>Thursday | 20-Nov<br>Wednesday | 26-Nov<br>Tuesday | High | 90th Percentile |
| <b>Acetaldehyde*</b> | AB Tech.  | Buncombe    | 37-021-0035 | NO     | NO                | NO              | NO                 | NO                  | NO                | NO   | NO              |
|                      | Garinger  | Mecklenburg | 37-119-0041 | NO     | NO                | NO              | NO                 | NO                  | NO                | NO   | NO              |
|                      | Hattie Ave.   | Forsyth     | 37-067-0022 | NO     | NO                | NO              | NO                 | NO                  | NO                | NO   | NO              |
|                      | Candor  | Montgomery  | 37-123-0001 | 0.63   | 0.52              | 0.49            | 0.48               | 0.54                | 1.27              | 0.74 |                 |
|                      | Blackstone  | Lee         | 37-105-0002 | 0.48   | 0.52              | 0.49            | 0.44               | 0.59                | 1.14              | 0.72 |                 |
|                      | Millbrook   | Wake        | 37-183-0014 | 0.44   | 0.47              | 0.94            | 0.59               | 0.61                | 1.34              | 0.97 |                 |
|                      | Battleship  | New Hanover | 37-129-0010 | NO     | NO                | NO              | NO                 | NO                  | NO                | NO   | NO              |
| <b>Benzene</b>       | AB Tech.  | Buncombe    | 37-021-0035 | 0.16   | 0.07              | 0.11            | 0.13               | 0.14                | 0.26              | 0.17 |                 |
|                      | Garinger  | Mecklenburg | 37-119-0041 | 0.12   | 0.09              | 0.42            | 0.23               | 0.26                | 0.57              | 0.26 |                 |
|                      | Hattie Ave.   | Forsyth     | 37-067-0022 | 0.17   | 0.09              | 0.13            | 0.12               | 0.16                | 0.58              | 0.26 |                 |
|                      | Candor  | Montgomery  | 37-123-0001 | 0.09   | 0.10              | 0.10            | 0.10               | 0.12                | 0.20              | 0.15 |                 |
|                      | Blackstone  | Lee         | 37-105-0002 | 0.11   | 0.08              | 0.09            | 0.08               | 0.16                | 0.21              | 0.18 |                 |
|                      | Millbrook   | Wake        | 37-183-0014 | 0.16   | 0.10              | 0.22            | 0.11               | 0.17                | 0.52              | 0.29 |                 |
|                      | Battleship  | New Hanover | 37-129-0010 | 0.08   | 0.08              | ND              | 0.08               | 0.09                | 0.19              | 0.14 |                 |
| <b>Ethylbenzene</b>  | AB Tech.  | Buncombe    | 37-021-0035 | 0.06   | ND                | ND              | 0.04               | ND                  | 0.09              | 0.07 |                 |
|                      | Garinger  | Mecklenburg | 37-119-0041 | ND     | ND                | 0.15            | 0.08               | 0.07                | 0.24              | 0.11 |                 |
|                      | Hattie Ave.   | Forsyth     | 37-067-0022 | 0.05   | ND                | ND              | ND                 | 0.03                | 0.20              | 0.08 |                 |
|                      | Candor  | Montgomery  | 37-123-0001 | ND     | ND                | ND              | ND                 | ND                  | 0.04              | 0.03 |                 |
|                      | Blackstone  | Lee         | 37-105-0002 | ND     | ND                | ND              | ND                 | ND                  | 0.06              | 0.03 |                 |
|                      | Millbrook   | Wake        | 37-183-0014 | 0.05   | ND                | 0.07            | ND                 | 0.04                | 0.32              | 0.08 |                 |
|                      | Battleship  | New Hanover | 37-129-0010 | ND     | ND                | ND              | ND                 | ND                  | 0.06              | 0.05 |                 |
| <b>Formaldehyde*</b> | AB Tech.  | Buncombe    | 37-021-0035 | NO     | NO                | NO              | NO                 | NO                  | NO                | NO   |                 |
|                      | Garinger  | Mecklenburg | 37-119-0041 | NO     | NO                | NO              | NO                 | NO                  | NO                | NO   |                 |
|                      | Hattie Ave.   | Forsyth     | 37-067-0022 | NO     | NO                | NO              | NO                 | NO                  | NO                | NO   |                 |
|                      | Candor  | Montgomery  | 37-123-0001 | 0.72   | 1.31              | 1.57            | 1.37               | 1.57                | 5.42              | 3.45 |                 |
|                      | Blackstone  | Lee         | 37-105-0002 | 0.53   | 1.42              | 1.50            | 1.27               | 1.60                | 7.84              | 3.65 |                 |
|                      | Millbrook   | Wake        | 37-183-0014 | 0.64   | 1.40              | 1.97            | 1.75               | 1.73                | 8.03              | 4.18 |                 |
|                      | Battleship  | New Hanover | 37-129-0010 | NO     | NO                | NO              | NO                 | NO                  | NO                | NO   |                 |
| <b>n-Hexane</b>      | AB Tech.  | Buncombe    | 37-021-0035 | 0.12   | ND                | 0.04            | 0.10               | 0.09                | 0.27              | 0.14 |                 |
|                      | Garinger  | Mecklenburg | 37-119-0041 | ND     | ND                | 0.34            | 0.19               | 0.17                | 0.58              | 0.21 |                 |
|                      | Hattie Ave.   | Forsyth     | 37-067-0022 | 0.12   | ND                | 0.09            | 0.09               | 0.09                | 0.50              | 0.18 |                 |
|                      | Candor  | Montgomery  | 37-123-0001 | ND     | ND                | ND              | ND                 | ND                  | 0.08              | 0.06 |                 |
|                      | Blackstone  | Lee         | 37-105-0002 | ND     | ND                | ND              | ND                 | ND                  | 0.13              | 0.07 |                 |
|                      | Millbrook   | Wake        | 37-183-0014 | 0.09   | 0.06              | 0.15            | 0.12               | 0.05                | 0.79              | 0.30 |                 |
|                      | Battleship  | New Hanover | 37-129-0010 | ND     | ND                | ND              | ND                 | 0.10                | 0.31              | 0.11 |                 |
| <b>Styrene</b>       | AB Tech.  | Buncombe    | 37-021-0035 | 0.05   | ND                | ND              | ND                 | ND                  | 0.13              | 0.09 |                 |
|                      | Garinger  | Mecklenburg | 37-119-0041 | ND     | ND                | 0.07            | 0.05               | ND                  | 0.14              | 0.09 |                 |
|                      | Hattie Ave.   | Forsyth     | 37-067-0022 | ND     | ND                | ND              | ND                 | ND                  | 0.11              | 0.08 |                 |
|                      | Candor  | Montgomery  | 37-123-0001 | ND     | ND                | ND              | ND                 | ND                  | 0.10              | 0.07 |                 |
|                      | Blackstone  | Lee         | 37-105-0002 | 0.08   | ND                | ND              | ND                 | ND                  | 0.18              | 0.10 |                 |
|                      | Millbrook   | Wake        | 37-183-0014 | 0.06   | ND                | ND              | ND                 | ND                  | 0.13              | 0.07 |                 |
|                      | Battleship  | New Hanover | 37-129-0010 | 0.08   | ND                | ND              | ND                 | ND                  | 0.13              | 0.10 |                 |

**ND = not detected in sample**  
**NS = no valid sample / data**  
**NO = site not operating**  
**\* Acetaldehyde and Formaldehyde are not monitored at all sites**  
**Blackstone site began operating in November 2013**

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|             |                            |    |            |
|-------------|----------------------------|----|------------|
| Report Date | January 5, 2016            |    |            |
| Data period | 11/1/2015                  | to | 11/30/2015 |
| Prepared by | Ambient Monitoring Section |    |            |



Limits and restrictions: Every effort has been made to ensure these data are accurate. This report is for informational purposes.

| 2015                    | 24-Hour Average Sample Concentration (ppbv) |             |             |          |        |          |           |         | Year to Date |                 |
|-------------------------|---|-------------|-------------|----------|--------|----------|-----------|---------|--------------|-----------------|
|                         | Samples are collected 1 every 6 days        |             |             |          |        |          |           |         | High         | 90th Percentile |
| Hazardous Air Pollutant | Site Name                                   | County      | AQS ID      | 2-Nov    | 8-Nov  | 14-Nov   | 20-Nov    | 26-Nov  |              |                 |
|                         |   |             |             | Saturday | Friday | Thursday | Wednesday | Tuesday |              |                 |
| Toluene                 | AB Tech.                                    | Buncombe    | 37-021-0035 | 0.65     | 0.15   | 0.08     | 0.18      | 0.68    | 1.57         | 1.05            |
|                         | Garinger                                    | Mecklenburg | 37-119-0041 | 0.23     | 0.12   | 0.75     | 0.64      | 0.69    | 1.37         | 0.73            |
|                         | Hattie Ave.                                 | Forsyth     | 37-067-0022 | 0.30     | 0.11   | 0.16     | 0.09      | 0.21    | 1.31         | 0.51            |
|                         | Candor                                      | Montgomery  | 37-123-0001 | 0.26     | 0.15   | 0.07     | 0.11      | 0.16    | 0.26         | 0.19            |
|                         | Blackstone                                  | Lee         | 37-105-0002 | 0.15     | 0.09   | 0.06     | 0.09      | 0.28    | 0.31         | 0.25            |
|                         | Millbrook                                   | Wake        | 37-183-0014 | 0.27     | 0.16   | 0.40     | 0.19      | 0.22    | 1.47         | 0.59            |
|                         | Battleship                                  | New Hanover | 37-129-0010 | 0.26     | 0.09   | ND       | 0.22      | 0.18    | 1.06         | 0.29            |
| 1,2,4-Trimethylbenzene  | AB Tech.                                    | Buncombe    | 37-021-0035 | 0.10     | 0.06   | ND       | 0.06      | 0.05    | 0.17         | 0.09            |
|                         | Garinger                                    | Mecklenburg | 37-119-0041 | 0.08     | 0.10   | 0.24     | 0.11      | 0.19    | 0.37         | 0.24            |
|                         | Hattie Ave.                                 | Forsyth     | 37-067-0022 | 0.13     | 0.05   | 0.06     | 0.10      | 0.09    | 0.27         | 0.13            |
|                         | Candor                                      | Montgomery  | 37-123-0001 | 0.15     | 0.14   | 0.07     | 0.10      | 0.11    | 0.15         | 0.10            |
|                         | Blackstone                                  | Lee         | 37-105-0002 | ND       | ND     | ND       | ND        | ND      | 0.11         | 0.08            |
|                         | Millbrook                                   | Wake        | 37-183-0014 | 0.07     | 0.08   | 0.15     | 0.11      | 0.15    | 0.35         | 0.14            |
|                         | Battleship                                  | New Hanover | 37-129-0010 | 0.09     | ND     | ND       | ND        | 0.06    | 0.22         | 0.14            |
| m/p-Xylene              | AB Tech.                                    | Buncombe    | 37-021-0035 | 0.17     | 0.02   | 0.04     | 0.10      | 0.07    | 0.30         | 0.20            |
|                         | Garinger                                    | Mecklenburg | 37-119-0041 | 0.11     | 0.04   | 0.53     | 0.25      | 0.21    | 0.83         | 0.39            |
|                         | Hattie Ave.                                 | Forsyth     | 37-067-0022 | 0.15     | 0.03   | 0.08     | 0.08      | 0.08    | 0.66         | 0.23            |
|                         | Candor                                      | Montgomery  | 37-123-0001 | ND       | ND     | ND       | ND        | ND      | 0.10         | 0.05            |
|                         | Blackstone                                  | Lee         | 37-105-0002 | 0.07     | ND     | 0.03     | 0.03      | 0.05    | 0.15         | 0.08            |
|                         | Millbrook                                   | Wake        | 37-183-0014 | 0.12     | 0.03   | 0.23     | 0.08      | 0.09    | 1.10         | 0.32            |
|                         | Battleship                                  | New Hanover | 37-129-0010 | 0.08     | ND     | ND       | 0.05      | 0.03    | 0.22         | 0.13            |
| o-Xylene                | AB Tech.                                    | Buncombe    | 37-021-0035 | 0.07     | ND     | 0.03     | 0.05      | 0.04    | 0.16         | 0.09            |
|                         | Garinger                                    | Mecklenburg | 37-119-0041 | 0.05     | ND     | 0.20     | 0.10      | 0.09    | 0.30         | 0.14            |
|                         | Hattie Ave.                                 | Forsyth     | 37-067-0022 | 0.06     | ND     | 0.04     | 0.04      | 0.04    | 0.24         | 0.09            |
|                         | Candor                                      | Montgomery  | 37-123-0001 | ND       | ND     | ND       | ND        | ND      | 0.05         | 0.01            |
|                         | Blackstone                                  | Lee         | 37-105-0002 | ND       | ND     | ND       | ND        | 0.03    | 0.07         | 0.04            |
|                         | Millbrook                                   | Wake        | 37-183-0014 | 0.06     | ND     | 0.09     | 0.04      | 0.05    | 0.46         | 0.10            |
|                         | Battleship                                  | New Hanover | 37-129-0010 | 0.04     | ND     | ND       | 0.04      | ND      | 0.09         | 0.07            |

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 \* Acetaldehyde and Formaldehyde are not monitored at all sites  
 Blackstone site began operating in November 2013

## 24-hour Average Values (Most Recent 3 Years), ppbv

| Hazardous Air Pollutant | Site Name   | County      | RYTD Valid Sample Days*** | 24-hr Average Concentrations 90 <sup>th</sup> Percentile |      |      |      | Normalized 3 yr. Mean 90 <sup>th</sup> Percentiles** |
|-------------------------|-------------|-------------|---------------------------|--|------|------|------|--|
|                         |             |             |                           | RYTD 2015  | 2014 | 2013 | 2012 |  |
| Acetaldehyde *          | AB Tech.    | Buncombe    | NO                        | NO   | NO   | NO   | NO   |  |
|                         | Garinger    | Mecklenburg | NO                        | NO   | NO   | NO   | NO   |  |
|                         | Hattie Ave. | Forsyth     | NO                        | NO   | NO   | NO   | NO   |  |
|                         | Candor      | Montgomery  | 59                        | 0.73   | 0.68 | 0.54 | NO   |  |
|                         | Blackstone  | Lee         | 59                        | 0.72   | 0.74 | 0.64 | NO   |  |
|                         | Millbrook   | Wake        | 59                        | 0.98   | 1.01 | 0.80 | NO   |  |
|                         | Battleship  | New Hanover | NO                        | NO   | NO   | NO   | NO   |  |
| Benzene                 | AB Tech.    | Buncombe    | 56                        | 0.17   | 0.26 | 0.25 | 0.29 |  |
|                         | Garinger    | Mecklenburg | 58                        | 0.30   | 0.31 | 0.35 | 0.43 |  |
|                         | Hattie Ave. | Forsyth     | 59                        | 0.26   | 0.31 | 0.33 | 0.34 |  |
|                         | Candor      | Montgomery  | 59                        | 0.16   | 0.21 | 0.19 | 0.16 |  |
|                         | Blackstone  | Lee         | 59                        | 0.18   | 0.22 | 0.14 | NO   |  |
|                         | Millbrook   | Wake        | 58                        | 0.29   | 0.27 | 0.36 | 0.43 |  |
|                         | Battleship  | New Hanover | 58                        | 0.14   | 0.23 | 0.19 | 0.22 |  |
| Ethylbenzene            | AB Tech.    | Buncombe    | 53                        | 0.07   | 0.02 | 0.11 | 0.12 |  |
|                         | Garinger    | Mecklenburg | 56                        | 0.11   | 0.08 | 0.16 | 0.12 |  |
|                         | Hattie Ave. | Forsyth     | 56                        | 0.07   | 0.05 | 0.20 | 0.13 |  |
|                         | Candor      | Montgomery  | 54                        | 0.02   | 0.00 | 0.06 | 0.04 |  |
|                         | Blackstone  | Lee         | 54                        | 0.03   | 0.00 | 0.00 | NO   |  |
|                         | Millbrook   | Wake        | 56                        | 0.08   | 0.05 | 0.15 | 0.19 |  |
|                         | Battleship  | New Hanover | 54                        | 0.05   | 0.01 | 0.09 | 0.08 |  |
| Formaldehyde*           | AB Tech.    | Buncombe    | NO                        | NO   | NO   | NO   | NO   |  |
|                         | Garinger    | Mecklenburg | NO                        | NO   | NO   | NO   | NO   |  |
|                         | Hattie Ave. | Forsyth     | NO                        | NO   | NO   | NO   | NO   |  |
|                         | Candor      | Montgomery  | 61                        | 3.45   | 2.85 | 2.36 | NO   |  |
|                         | Blackstone  | Lee         | 61                        | 3.60   | 2.99 | 1.40 | NO   |  |
|                         | Millbrook   | Wake        | 61                        | 4.13   | 3.59 | 2.99 | NO   |  |
|                         | Battleship  | New Hanover | NO                        | NO   | NO   | NO   | NO   |  |
| n-Hexane                | AB Tech.    | Buncombe    | 55                        | 0.15   | 0.13 | 0.15 | 0.14 |  |
|                         | Garinger    | Mecklenburg | 56                        | 0.23   | 0.23 | 0.26 | 0.28 |  |
|                         | Hattie Ave. | Forsyth     | 58                        | 0.20   | 0.20 | 0.30 | 0.25 |  |
|                         | Candor      | Montgomery  | 54                        | 0.07   | 0.07 | 0.06 | 0.06 |  |
|                         | Blackstone  | Lee         | 54                        | 0.07   | 0.08 | 0.06 | NO   |  |
|                         | Millbrook   | Wake        | 58                        | 0.35   | 0.23 | 0.36 | 0.42 |  |
|                         | Battleship  | New Hanover | 55                        | 0.11   | 0.10 | 0.15 | 0.26 |  |
| Styrene                 | AB Tech.    | Buncombe    | 52                        | 0.09   | 0.00 | 0.13 | 0.12 |  |
|                         | Garinger    | Mecklenburg | 55                        | 0.09   | 0.00 | 0.14 | 0.11 |  |
|                         | Hattie Ave. | Forsyth     | 54                        | 0.07   | 0.00 | 0.12 | 0.10 |  |
|                         | Candor      | Montgomery  | 54                        | 0.06   | 0.00 | 0.11 | 0.09 |  |
|                         | Blackstone  | Lee         | 55                        | 0.09   | 0.00 | 0.00 | NO   |  |
|                         | Millbrook   | Wake        | 54                        | 0.06   | 0.00 | 0.13 | 0.11 |  |
|                         | Battleship  | New Hanover | 55                        | 0.09   | 0.00 | 0.12 | 0.09 |  |

**Notes:**

ND = not detected in sample

NS = no valid sample / data

NO = site not operating

RYTD = rolling-year-to-date

\* Acetaldehyde and Formaldehyde are not monitored at all sites

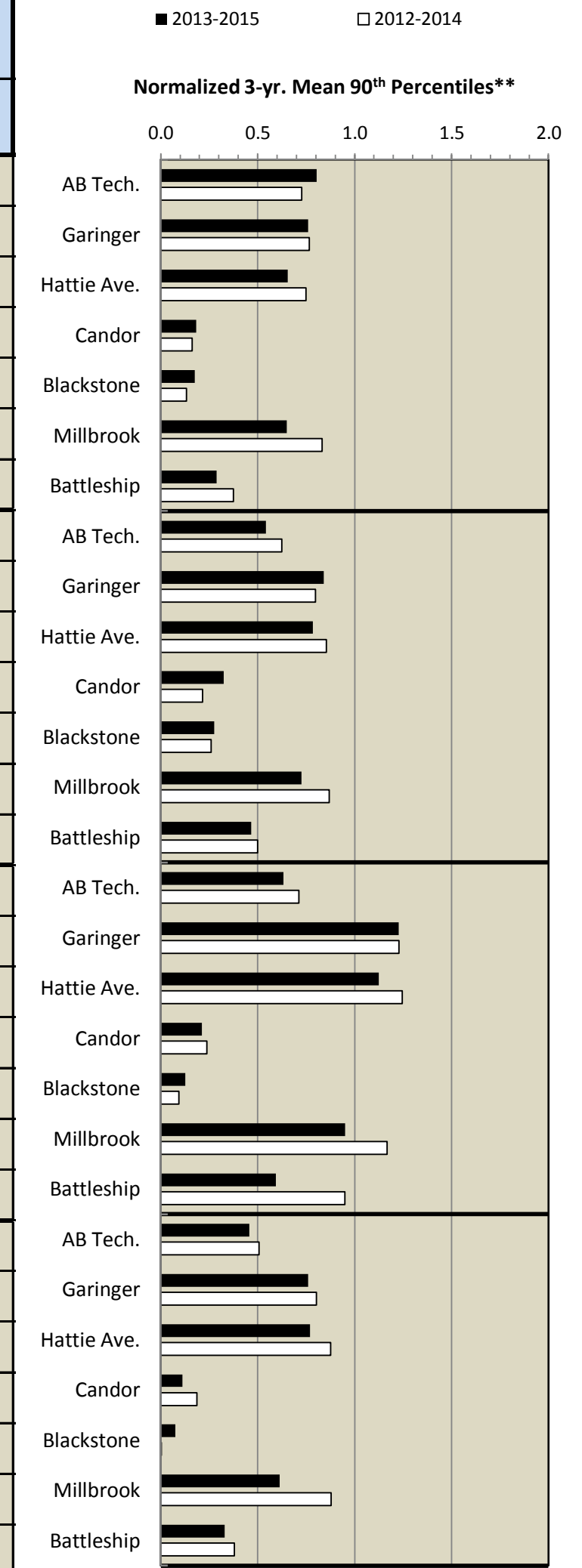
\*\*\*The maximum possible number of valid sample days = 61.

Blackstone site began operating in November 2013

\*\*The white bar shows the 90<sup>th</sup> percentile value for each pollutant at each site as averaged from the previous 3 years of data and normalized to show how it compares to a 90<sup>th</sup> percentile statewide historical value (1.0 on the graph). Similarly, the black bar shows the normalized 90<sup>th</sup> percentile for the latest 3 years, including a rolling 1 year value (RYTD) for the current year's value.

## 24-hour Average Values (Most Recent 3 Years), ppbv

| Hazardous Air Pollutant | Site Name   | County      | RYTD Valid Sample Days*** | 24-hr Average Concentrations 90th Percentile |      |      |      |
|-------------------------|-------------|-------------|---------------------------|--|------|------|------|
|                         |             |             |                           | RYTD 2015                                    | 2014 | 2013 | 2012 |
| Toluene                 | AB Tech.    | Buncombe    | 56                        | 0.95   | 0.52 | 0.71 | 0.74 |
|                         | Garinger    | Mecklenburg | 58                        | 0.74   | 0.57 | 0.75 | 0.76 |
|                         | Hattie Ave. | Forsyth     | 59                        | 0.53   | 0.37 | 0.87 | 0.79 |
|                         | Candor      | Montgomery  | 59                        | 0.19   | 0.13 | 0.19 | 0.13 |
|                         | Blackstone  | Lee         | 59                        | 0.24   | 0.13 | 0.11 | NO   |
|                         | Millbrook   | Wake        | 58                        | 0.59   | 0.42 | 0.75 | 1.09 |
|                         | Battleship  | New Hanover | 58                        | 0.30   | 0.19 | 0.29 | 0.54 |
| 1,2,4-Trimethylbenzene  | AB Tech.    | Buncombe    | 55                        | 0.09   | 0.05 | 0.26 | 0.15 |
|                         | Garinger    | Mecklenburg | 58                        | 0.24   | 0.08 | 0.31 | 0.21 |
|                         | Hattie Ave. | Forsyth     | 59                        | 0.13   | 0.05 | 0.40 | 0.18 |
|                         | Candor      | Montgomery  | 59                        | 0.09   | 0.15 | 0.00 | 0.01 |
|                         | Blackstone  | Lee         | 54                        | 0.07   | 0.06 | ND   | NO   |
|                         | Millbrook   | Wake        | 57                        | 0.14   | 0.09 | 0.31 | 0.25 |
|                         | Battleship  | New Hanover | 56                        | 0.13   | 0.05 | 0.16 | 0.16 |
| m/p-Xylene              | AB Tech.    | Buncombe    | 56                        | 0.20   | 0.15 | 0.47 | 0.30 |
|                         | Garinger    | Mecklenburg | 58                        | 0.39   | 0.31 | 0.88 | 0.39 |
|                         | Hattie Ave. | Forsyth     | 59                        | 0.24   | 0.20 | 1.01 | 0.39 |
|                         | Candor      | Montgomery  | 54                        | 0.05   | 0.04 | 0.18 | 0.08 |
|                         | Blackstone  | Lee         | 58                        | 0.08   | 0.05 | 0.03 | NO   |
|                         | Millbrook   | Wake        | 58                        | 0.29   | 0.19 | 0.76 | 0.57 |
|                         | Battleship  | New Hanover | 57                        | 0.14   | 0.13 | 0.50 | 0.60 |
| o-Xylene                | AB Tech.    | Buncombe    | 55                        | 0.09   | 0.03 | 0.13 | 0.11 |
|                         | Garinger    | Mecklenburg | 57                        | 0.13   | 0.08 | 0.19 | 0.15 |
|                         | Hattie Ave. | Forsyth     | 58                        | 0.09   | 0.05 | 0.27 | 0.15 |
|                         | Candor      | Montgomery  | 54                        | 0.00   | 0.00 | 0.06 | 0.04 |
|                         | Blackstone  | Lee         | 55                        | 0.04   | 0.00 | 0.00 | NO   |
|                         | Millbrook   | Wake        | 57                        | 0.09   | 0.05 | 0.19 | 0.24 |
|                         | Battleship  | New Hanover | 56                        | 0.07   | 0.02 | 0.10 | 0.09 |



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ND = not detected in sample  
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 \* Acetaldehyde and Formaldehyde are not monitored at all sites  
 \*\*\*The maximum possible number of valid sample days = 61.  
 Blackstone site began operating in November 2013

\*\*The white bar shows the 90th percentile value for each pollutant at each site as averaged from the previous 3 years of data and normalized to show how it compares to a 90th percentile statewide historical value (1.0 on the graph). Similarly, the black bar shows the normalized 90th percentile for the latest 3 years, including a rolling 1 year value (RYTD) for the current year's value.