FINAL ANALYTICAL TAGA REPORT
CAMP MINDEN
WEBSTER PARISH, LOUISIANA
DECEMBER 2016

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1.0 INTRODUCTION

The Environmental Protection Agency (EPA)/Environmental Response Team (ERT) issued Work Assignment (WA) Number SERAS-316, Camp Minden (Site) in Webster Parish, Louisiana (LA), to Lockheed Martin under the Scientific, Engineering, Response, and Analytical Services (SERAS) contract. As an element of this WA, SERAS personnel were to conduct target compound monitoring using the ECA Trace Atmospheric Gas Analyzer (TAGA) IIe, to assist EPA Region 6 in its investigation of products of combustion (POC) in outdoor ambient air.

The TAGA air monitoring events conducted from 28 October 2016 to 02 November 2016 were screening in nature. Air monitoring for diphenylamine (DPA) was performed in accordance with the SERAS Standard Operating Procedure (SOP) # 1711, *Trace Atmospheric Gas Analyzer (TAGA) IIe Operation*. Real-time monitoring for the target compounds was performed using a selected ion technique. The Atmospheric Pressure Chemical Ionization (APCI) source interface was used to monitor ambient air.

2.0 METHODOLOGY

2.1 Mass Spectrometer/Mass Spectrometer General Theory

The ECA TAGA IIe is based upon the Perkin-Elmer API 365 mass spectrometer/mass spectrometer (MS/MS) and is a direct air-monitoring instrument capable of detecting, in real time, trace levels of many organic compounds in ambient air. The technique of triple quadrupole MS/MS is used to differentiate and quantitate compounds.

The initial step in the MS/MS process involves simultaneous chemical ionization of the compounds present in a sample of ambient air. The ionization produces both positive and negative ions by donating or removing one or more electrons. The chemical ionization is a "soft" ionization technique, which allows ions to be formed with little or no structural fragmentation. These ions are called parent ions. The parent ions with different mass-to-charge (m/z) ratios are separated by the first quadrupole (the first MS of the MS/MS system). The quadrupole scans selected m/z ratios allowing only the parent ions with these ratios to pass through the quadrupole. Parent ions with m/z ratios different from those selected are discriminated electronically and fail to pass through the quadrupole.

The parent ions selected in the first quadrupole are accelerated through a collision cell containing uncharged nitrogen molecules in the second quadrupole. A portion of the parent ions entering the second quadrupole fragments as they collide with the nitrogen molecules. These fragment ions are called daughter ions. This process, in the second quadrupole, is called collision induced dissociation. The daughter ions are separated according to their m/z ratios by the third quadrupole (the second MS of the MS/MS system). The quadrupole scans selected m/z ratios, allowing only the daughter ions with these ratios to pass through the quadrupole. Daughter ions with m/z ratios different from those selected are discriminated electronically and fail to pass through the quadrupole. Daughter ions with the selected m/z ratios are then counted by an electron multiplier. The resulting signals are measured in ion counts per second (icps) for each parent/daughter ion pair selected. The intensity of the icps for each parent/daughter ion pair is directly proportional to the ambient air concentration of the organic compound that produced the ion pair. All of the ions discussed in this report have a single charge. The m/z ratios of all of the ions discussed are equal to the ion masses in atomic mass units (amu). Therefore, the terms parent and daughter masses are synonymous with parent and daughter ion m/z ratios.

2.2 TAGA Procedure

The TAGA was used to analyze outdoor ambient air during mobile and stationary monitoring events using the parent ion filtered in both quadrupoles. For all monitoring events, one end of a heated glass manifold was attached to the TAGA APCI source inlet, while the other was passed

through a port hole in the outer wall of the TAGA vehicle. Ambient air was continuously drawn through the heated glass manifold at a set flow rate and transported to the TAGA source during the monitoring event.

2.2.1 TAGA Mass Calibration

At the beginning of the monitoring period, headspace from a liquid mixture of acetone, methyl ethyl ketone, methyl isobutyl ketone, and diethyl malonate was introduced by placing an open vial containing these compounds into the sample air flow (SAF). The tuning parameters for the first quadrupole at 59, 101, 133, and 161 amu, and the third quadrupole at 43, 59, 114, and 161amu were optimized for sensitivity and mass assignment. The peak widths were limited between 0.55 amu and 0.85 amu. The mass assignments were set to the correct values within 0.15 amu.

2.2.2 TAGA Response Factor Measurements

The TAGA was calibrated for the target compound at the beginning and end of each monitoring day. The target analyte was prepared from a neat standard and dissolved in a hexane solvent. The certificate of analysis for the neat standard is included in Appendix A. The diluted standard solution was drawn into a 50-microliter (µL) syringe and introduced at discrete rates into the SAF via a Harvard syringe drive through a heated injection port, which was flushed with nitrogen. The calibration curve consisted of a zero point and four or five concentrations.

Five concentration levels were analyzed to create each calibration with the following exceptions: the end of day calibration performed on 28 October 2016, the beginning of day and end of day calibrations performed on 30 October 2016 and 02 November 2016, which utilized four concentration levels. The highest concentration level for these calibrations was eliminated at the direction of the work assignment manager (WAM) to improve the linear fit of the calibration curve. The lowest calibration level for the beginning of day calibration performed on 01 November 2016 was eliminated at the direction of the WAM due to an elevated background level of the analyte.

The approximate concentrations of standards introduced into the TAGA were between 1.7 and 27 parts per billion by volume (ppbv). Using the analyte's concentration, the response factor (RF), in units of ion counts per second per part per billion by volume (icps/ppbv) was calculated for the parent ion. The least-square-fit algorithm was used to calculate the slope of the calibration curve. The coefficient of correlation was checked for the parent ion's RF to ensure that it was greater than 0.90. The RF's from the parent ion's beginning of day and end of day calibrations were used to calculate the parent ion intermediate response factor (IRF), which was used to quantify the target compound in the ambient air.

2.2.3 TAGA Air Monitoring

TAGA monitoring was performed by continuously drawing air through the heated glass manifold with the SAF at approximately 1,500 milliliters per second (mL/sec). The entire sample air flow was passed through the APCI source before being exhausted outside of the vehicle.

Monitoring was performed in the parent ion-monitoring mode. As monitoring proceeded, the operator pressed letter keys (flags), alphabetically on a computer keyboard, to denote events or locations during the monitoring event. This information was also recorded on an event log sheet. The intensity of the parent ion monitored by the TAGA was recorded in a permanent file on the computer's hard drive. One set of recorded measurements of

the parent ion is called a sequence.

2.3 Global Positioning System (GPS) and Tracking

The mobile laboratory is equipped with a Trimble Pro 6T GPS that streams geographical information to a personal computer. The coordinates represent the location of the TAGA laboratory in real-time. The instrument data is synchronized with the GPS coordinates, so the monitoring data can be directly associated with the location of the TAGA laboratory as indicated by the GPS system at any time during the monitoring period. The synchronized GPS information and mobile monitoring data are recorded into a data repository (database) and uploaded to the USEPA/ERT VIPER data management system in real-time and archived to the USEPA/ERT server.

2.4 Meteorological Monitoring

United States Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic Data Center provided the meteorological data for 27 October 2016 to 03 November 2016. Data were collected at the Minden Airport in Minden, LA. The Minden Airport is located approximately 10 miles northeast of the Site. Meteorological data, such as wind speed, wind direction, and rainfall, are summarized in Table 1 for the periods during which monitoring occurred. The compiled meteorological data are presented in Appendix B. The reported data for rainfall is an average of the data recorded during the hour preceding the time recorded in the table. The reported meteorological data for wind speed and direction represent a five-minute average collected prior to the time recorded in the table. Because of the distance of the meteorological monitoring location from the study location and the short averaging period, care should be exercised in relating meteorological conditions existing at the Site.

3.0 TAGA AIR MONITORING RESULTS

The TAGA was used to monitor the outdoor ambient air. Stationary monitoring surveys were performed at locations on and off the Site. Mobile monitoring surveys were performed on and adjacent to the Site.

3.1 Mobile Monitoring Locations/Paths

Figures 1a to 16a present the monitoring locations/paths taken by the TAGA mobile laboratory as it conducted ambient air monitoring. The maps, representing the locations/monitoring paths, are marked by letters. These letters are the “flags” that the TAGA operator placed into the file. These "flags" mark events and are carried through the rest of the data presentation.

3.2 TAGA File Event Summaries

Figures 1b through 16b present the TAGA file event summaries. These are the observations made during the file acquisition by the TAGA operator, along with the times from the TAGA file and the letter "flags" used to mark the data, which are recorded by the TAGA computer.

3.3 Graphical Presentations

Figures 1c through 16c and 1d through 16d are the graphical representations of the TAGA files. For Figures 1c through 16c, a graph of the target compound concentration is presented with ppbv plotted on the vertical axis, and time into the acquisition, in minutes, on the horizontal axis. For Figures 1d through 16d, a graph of the target compound concentration is presented with micrograms per cubic meter ($\mu g/m^3$) plotted on the vertical axis, and time into the acquisition, in minutes, on the horizontal axis. The lower line is set at the detection limit (DL) for the compound. The higher line is set at the concentration equal to the quantitation limit (QL) for the target compound. When high concentrations are represented, the lower DL line may not be readily

discerned. Transient, momentary spikes above the QL line are occasionally observed. These spikes, electronic in nature, do not affect average concentrations. They may be distinguished from elevated concentrations because the spikes are only present for one sequence.

4.0 DISCUSSION OF RESULTS

TAGA monitoring was conducted between 28 October 2016 and 02 November 2016. The TAGA monitoring is screening in nature. One compound, diphenylamine, was monitored during the course of the WA. Real-time monitoring for the target compound was performed using a selected ion technique. During each mobile monitoring event, the TAGA mobile laboratory performed continuous monitoring on, or in the vicinity of, the Site. During each stationary monitoring event, the TAGA mobile laboratory performed continuous monitoring at locations on, or adjacent to, the Site.

4.1 Mobile Monitoring One – Downwind Magazine 505, 64MSMS00253

Mobile Monitoring One – Downwind Magazine 505 was performed on 28 October 2016 at 10:35:37 and is represented in Figures 1a through 1d. The average wind speed and direction at the airport for the five-minute period ending at 10:35 were 3 miles per hour (mph) from 150 degrees. There was no precipitation during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.013 ppbv (0.09 $\mu g/m^3$) was recorded at 26.876 minutes into the monitoring run. The instantaneous maximum occurred before initiation of the controlled burn and is attributed to an interference from the TAGA vehicle exhaust.

4.2 Mobile Monitoring Two – Downwind Magazine 505, 64MSMS00254

Mobile Monitoring Two – Downwind Magazine 505 was performed 28 October 2016 at 13:09:41 and is represented in Figures 2a through 2d. The average wind speed and direction at the airport for the five-minute period ending at 13:15 were 6 mph from 140 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.021 ppbv (0.15 $\mu g/m^3$) was recorded at 25.717 minutes into the monitoring run. The instantaneous maximum is attributed to an interference from the TAGA vehicle exhaust.

4.3 Mobile Monitoring Three – Perimeter of Camp Minden, 64MSMS00255

Mobile Monitoring Three – Perimeter of Camp Minden was performed on 28 October 2016 at 14:06:58 and is represented in Figures 3a through 3d. The average wind speed and direction at the airport for the five-minute period ending at 14:15 were 3 mph from 150 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.019 ppbv (0.13 $\mu g/m^3$) was recorded at 40.143 minutes into the monitoring run. The instantaneous maximum occurred during a U-turn between Flags K and L and is attributed to an interference from passing through the TAGA vehicle exhaust.

4.4 Mobile Monitoring Four – Move to Stationary Location, 64MSMS00261

Mobile Monitoring Four – Move to Stationary Location was performed on 30 October 2016 at 06:42:49 and is represented in Figures 4a through 4d. The average wind speed and direction at the airport for the five-minute period ending at 06:55 were 3 mph from 120 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.017 ppbv (0.12 $\mu g/m^3$) was recorded at 49.132 minutes into the monitoring run.

4.5 Mobile Monitoring Five – Webster Parish Fire District 7, 64MSMS00262

Mobile Monitoring Five – Webster Parish Fire District 7 was performed on 30 October 2016 at 08:06:55 and is represented in Figures 5a through 5d. There was no wind recorded at the airport for the five-minute period ending at 08:15. There was no precipitation recorded during the preceding hour. Diphenylamine was not detected above the QL during the mobile monitoring event.

4.6 Mobile Monitoring Six – Webster Parish Fire District 7, 64MSMS00263

Mobile Monitoring Six – Webster Parish Fire District 7 was performed on 30 October 2016 at 09:29:50 and is represented in Figures 6a through 6d. The average wind speed and direction at the airport for the five-minute period ending at 09:35 were 3 mph from 200 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.024 ppbv (0.17 $\mu g/m^3$) was recorded at 82.286 minutes into the monitoring run. A brush fire observed burning near the Webster Parish Fire Station was identified as a potential interference for diphenylamine.

4.7 Mobile Monitoring Seven – Truck Stop, 64MSMS00264

Mobile Monitoring Seven – Truck Stop was performed on 30 October 2016 at 10:53:26 and is represented in Figures 7a through 7d. The average wind speed and direction at the airport for the five-minute period ending at 10:55 were 6 mph from 190 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.067 ppbv (0.46 $\mu g/m^3$) was recorded at 64.716 minutes into the monitoring run.

4.8 Mobile Monitoring Eight – Perimeter of Camp Minden, 64MSMS00265

Mobile Monitoring Eight – Perimeter of Camp Minden was performed on 30 October 2016 at 12:17:51and is represented in Figures 8a through 8d. The average wind speed and direction at the airport for the five-minute period ending at 12:15 were 5 mph from 210 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.060 ppbv (0.42 $\mu g/m^3$) was recorded at 54.602 minutes into the monitoring run. The instantaneous maximum is attributed to an interference from the TAGA vehicle exhaust as it sat stationary while waiting to enter the Camp Minden freight gate.

4.9 Mobile Monitoring Nine – Webster Parish Fire District 7, 64MSMS00269

Mobile Monitoring Nine – Webster Parish Fire District 7 was performed on 01 November 2016 at 08:32:41 and is represented in Figures 9a through 9d. The average wind speed and direction at the airport for the five-minute period ending at 08:35 were 6 mph from 140 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.018 ppbv (0.12 $\mu g/m^3$) was recorded at 64.887 minutes into the monitoring run. A brush fire observed burning near the Webster Parish Fire Station was identified as a potential interference for diphenylamine.

4.10 Mobile Monitoring Ten – Webster Parish Fire District 7, 64MSMS00270

Mobile Monitoring Ten – Webster Parish Fire District 7 was performed on 01 November 2016 at 09:56:36 and is represented in Figures 10a through 10d. The average wind speed and direction at the airport for the five-minute period ending at 09:55 were 6 mph from 140 degrees. There was no precipitation recorded during the preceding hour. Diphenylamine was not detected above the QL during the mobile monitoring event.

4.11 Mobile Monitoring Eleven – Webster Parish Fire District 7, 64MSMS00271

Mobile Monitoring Eleven – Webster Parish Fire District 7 was performed on 01 November 2016 at 11:15:20 and is represented in Figures 11a through 11d. The average wind speed and direction at the airport for the five-minute period ending at 11:15 were 3 mph from 140 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.035 ppbv (0.24 $\mu g/m^3$) was recorded at 53.370 minutes into the monitoring run. A brush fire observed burning near the Webster Parish Fire Station was identified as a potential interference for diphenylamine.

4.12 Mobile Monitoring Twelve – Webster Parish Fire District 7, 64MSMS00272

Mobile Monitoring Twelve – Webster Parish Fire District 7 was performed on 01 November 2016 at 12:40:27 and is represented in Figures 12a through 12d. The average wind speed and direction at the airport for the five-minute period ending at 12:35 were 6 mph from 190 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.042 ppbv (0.29 $\mu g/m^3$) was recorded at 18.804 minutes into the monitoring run. A brush fire observed burning near the Webster Parish Fire Station was identified as a potential interference for diphenylamine.

4.13 Mobile Monitoring Thirteen – Webster Parish Fire District 7, 64MSMS00273

Mobile Monitoring Thirteen – Webster Parish Fire District 7 was performed on 01 November 2016 at 14:14:36 and is represented in Figures 13a through 13d. The average wind speed and direction at the airport for the five-minute period ending at 14:15 were 5 mph from 150 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.081 ppbv (0.56 $\mu g/m^3$) was recorded at 30.372 minutes into the monitoring run. The instantaneous maximum observed at 2.182 minutes occurred before the flagged start of the monitoring run and has been excluded. A brush fire observed burning near the Webster Parish Fire Station was identified as a potential interference for diphenylamine.

4.14 Mobile Monitoring Fourteen – Webster Parish Fire District 7, 64MSMS00278

Mobile Monitoring Fourteen – Webster Parish Fire District 7 was performed on 02 November 2016 at 13:51:42 and is represented in Figures 14a through 14d. The average wind speed and direction at the airport for the five-minute period ending at 13:55 were 5 mph from 130 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.057 ppbv (0.39 $\mu g/m^3$) was recorded at 8.592 minutes into the monitoring run. A brush fire observed burning near the Webster Parish Fire Station was identified as a potential interference for diphenylamine.

4.15 Mobile Monitoring Fifteen – Webster Parish Fire District 7, 64MSMS00279

Mobile Monitoring Fifteen – Webster Parish Fire District 7 was performed on 02 November 2016 at 14:50:35 and is represented in Figures 15a through 15d. The average wind speed and direction at the airport for the five-minute period ending at 14:55 were 7 mph from 110 degrees. There was no precipitation recorded during the preceding hour. The highest instantaneous maximum concentration of diphenylamine at 0.040 ppbv (0.28 $\mu g/m^3$) was recorded at 23.862 minutes into the monitoring run. A brush fire observed burning near the Webster Parish Fire Station was identified as a potential interference for diphenylamine.

4.16 Mobile Monitoring Sixteen – Perimeter of Camp Minden, 64MSMS00280

Mobile Monitoring Sixteen – Perimeter of Camp Minden was performed on 02 November 2016 at

15:50:09 and is represented by Figures 16a through 16d. The average wind speed and direction at the airport for the five-minute period ending at 15:55 were 5 mph from 110 degrees. There was no precipitation recorded during the preceding hour. Diphenylamine was not detected above the QL during the mobile monitoring event.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

The compound parent ion used is listed below.

Compound	Parent Ion Mass
Diphenylamine	170

Tables 2 through 5 document the RFs and IRFs generated during the calibration procedure for the parent ion. The IRFs were used to quantitate the ion concentrations.

The summaries of detection and quantitation limit data for the monitoring periods (Section 5.3 and Tables 4 and 5) document the concentration, in ppbv for Table 4 and $\mu g/m^3$ for Table 5, required for a compound's parent ion to be considered detectable and quantifiable during the specified monitoring period. The DL is defined as three times the standard deviation (SD) of the concentration for a compound's ion pair measured in an ambient air sample. The QL is defined as 10 times the SD of the concentration for the same conditions.

5.1 Intermediate Response Factor for Ion Pairs

Response factors were generated from two calibration events, as described in the procedure (Section 2.2.2.). Table 2 contains the RFs in units of icps/ppbv and Table 3 contains the RFs in units of $icps/\mu g/m^3$. The initial and final RFs were used to calculate the IRFs, which were used to calculate the reported concentration results.

The following equation was used to calculate the IRFs found in Tables 2 and 3:

$$IRF = \frac{2(RF_1 \times RF_2)}{(RF_1 + RF_2)}$$

where:

IRF = Intermediate response factor (icps/concentration)
RF_1 = The RF for parent ion measured during the first calibration event (icps/concentration)
RF_2 = The RF for the same parent ion measured during the second calibration event (icps/concentration)

The entry for the 170/170 parent ion of diphenylamine from Table 2 for files 64MSMS0251 and 64MSMS0256 acquired on 28 October 2016 is:

RF_1 = 44894 icps/ppbv
RF_2 = 76118 icps/ppbv

therefore,

$$IRF = \frac{2(44894 \text{ x } 76118)}{44894 + 76118} = \frac{6{,}834{,}482{,}984}{121{,}012} = 56477 \text{ icps / ppbv}$$

The result, 56477 icps/ppbv, is the IRF reported in Table 2 and used in Table 4.

5.2 Error Bars

The potential maximum concentration percent deviations for the target compound are presented in Tables 2 and 3 and are called "error bars" for simplicity. They represent the potential bias in the concentration due to changes in the sensitivity of the TAGA instrument. Errors bars were calculated using the following equation:

$$\text{error bar} = \frac{|RF_1 - RF_2|}{(RF_1 + RF_2)} \times 100$$

where:

error bar = Maximum concentration percent deviation
RF_1 = The RF for parent ion measured during the first calibration event (icps/concentration)
RF_2 = The RF for the same parent ion measured during the second calibration event (icps/concentration)

The entry for the 170/170 parent ion of diphenylamine from Table 2 for files 64MSMS0251 and 64MSMS0256 acquired on 28 October 2016 is:

RF_1 = 44894 icps/ppbv
RF_2 = 76118 icps/ppbv

$$\text{error bar} = \frac{|44894 - 76118|}{(44894 + 76118)} \times 100 = 25.8\%$$

The % error bar calculated for the 170/170 parent ion of diphenylamine is 25.8% for files 64MSMS0251 and 64MSMS0256 acquired on 28 October 2016.

The error bar can be applied to the samples analyzed between the two calibrations of the monitoring period.

5.3 Ion Pair Detection and Quantitation Limits

The DLs and QLs were calculated using the SD of the compound's parent ion intensity measured in an ambient air sample and its RF. The SD reflects the variability of the instrument's response to the ambient air sample.

The following equation was used to calculate the DLs found in Tables 4 and 5:

$$DL = \frac{3 \times SD}{RF \text{ or } IRF}$$

where:

DL = Detection limit for the parent ion (concentration)
SD = Standard deviation of the ion intensity measured in an ambient air sample (icps)
RF or IRF = Response factor or Intermediate response factor for the parent ion (icps/concentration)

The entry for the 170/170 parent ion of diphenylamine from Table 4, for files 64MSMS0251 and 64MSMS0256 acquired on 28 October 2016 is:

SD = 40.405
IRF = 56477 icps/ppbv

$$DL = \frac{3 \times 40.405}{56477} = 0.00214 \text{ ppbv}$$

The following equation was used to calculate the QLs found in Tables 4 and 5:

$$QL = \frac{10 \times SD}{RF \text{ or } IRF}$$

where:

QL = Quantitation limit for the parent ion (concentration)
SD = Standard deviation of the ion intensity measured in an ambient air sample (icps)
RF or IRF = Response factor or Intermediate response factor for the parent ion (icps/concentration)

The entry for the 170/170 parent ion of diphenylamine from Table 4 for files 64MSMS0251 and 64MSMS0256 acquired on 28 October 2016 is:

SD = 40.405
IRF = 56477 icps/ppbv

$$QL = \frac{10 \times 40.405}{56477} = 0.00715 \text{ ppbv}$$

5.4 Calculations for Liquid Standards Concentration

A neat solid standard of diphenylamine was purchased and used to make diluted liquid standards that were subsequently dispensed at known rates from a syringe drive into a heated vaporizer, and flushed by a flow of nitrogen in the SAF and into the APCI source.

5.4.1 Preparation of Diluted Liquid Standard

A weight balance with a sensitivity greater than one microgram was used to weigh out 0.01029 grams of neat diphenylamine solid. The diphenylamine solid was dissolved in one mL of hexane to create a primary stock standard solution with a concentration of 10,290 micrograms per milliliter (µg/mL). A working standard solution with a final concentration of 3,087 µg/mL was prepared by adding 300 µL of primary stock standard to 700 µL of hexane.

5.4.2 Calculating Standard Concentrations from Syringe Drive Rates

A syringe drive was used to inject the working standard solution into the SAF at a constant rate to produce each of the concentration levels for the calibration curve. The molecular weight of diphenylamine along with the syringe dispense rate and the SAF rate are used to calculate each concentration level.

Calculation for one concentration level from a syringe drive rate:

$$C = \frac{SR \times L \times 24.45}{SAF \times 60\ \frac{sec}{min} \times MW}$$

where:

C	= Concentration in air (ppbv)
SR	= Syringe rate (µL/min)
L	= Liquid standard concentration (µg/mL)
SAF	= Sample air flow (L/sec)
MW	= Molecular weight (g/mol)

For example, the calibration level for a syringe drive rate of 5.44 µL/min is calculated as follows:

$$C = \frac{5.44 \times 3087 \times 24.45}{1.5 \times 60\ \left(\frac{sec}{min}\right) \times 169.23} = 26.96\ \text{ppbv}$$

The syringe drive rate of 5.44 µL/min produced a standard concentration of 26.96 ppbv. Similarly, calibration standard concentrations were calculated for syringe rates of 2.72 µL/min, 1.36 µL/min, 0.68 µL/min, and 0.34 µL/min, which were used to create the calibration curve for diphenylamine.

TABLES

TABLE 1
Summary of Meteorological Conditions during Monitoring, 28 October 2016 to 02 November 2016
Camp Minden
Webster Parish, Louisiana
December 2016

File	Location	Date	Start Time	Wind Speed (mph)	Wind Direction (degrees)	Rainfall (inches)
64MSMS00253	Mobile Monitoring One	10/28/2016	10:35:37	3	150	-
64MSMS00254	Mobile Monitoring Two	10/28/2016	13:09:41	6	140	-
64MSMS00255	Mobile Monitoring Three	10/28/2016	14:06:58	3	150	-
64MSMS00261	Mobile Monitoring Four	10/30/2016	06:42:49	3	120	-
64MSMS00262	Mobile Monitoring Five	10/30/2016	08:06:55	-	-	-
64MSMS00263	Mobile Monitoring Six	10/30/2016	09:29:50	3	200	-
64MSMS00264	Mobile Monitoring Seven	10/30/2016	10:53:26	6	190	-
64MSMS00265	Mobile Monitoring Eight	10/30/2016	12:17:51	5	210	-
64MSMS00269	Mobile Monitoring Nine	11/01/2016	08:32:41	6	140	-
64MSMS00270	Mobile Monitoring Ten	11/01/2016	09:56:36	6	140	-
64MSMS00271	Mobile Monitoring Eleven	11/01/2016	11:15:20	3	140	-
64MSMS00272	Mobile Monitoring Twelve	11/01/2016	12:40:27	6	190	-
64MSMS00273	Mobile Monitoring Thirteen	11/01/2016	14:14:36	5	150	-
64MSMS00278	Mobile Monitoring Fourteen	11/02/2016	13:51:42	5	130	-
64MSMS00279	Mobile Monitoring Fifteen	11/02/2016	14:50:35	7	110	-
64MSMS00280	Mobile Monitoring Sixteen	11/02/2016	15:50:09	5	110	-

Wind direction is the direction from which the wind is blowing.
mph = Miles per hour
- = None detected

TABLE 2
Summary of Response Factors and Error Bars in ppbv for 28 October 2016 to 02 November 2016
Camp Minden
Webster Parish, Louisiana
December 2016

Calibration Files: 64MSMS00251 and 64MSMS00256 on 28 October 2016 Used for Survey Files: 64MSMS0253, 64MSMS0254, and 64MSMS0255					
Compound	PM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Diphenylamine	170/170	44894	76118	56477	25.8

Calibration Files: 64MSMS00259 and 64MSMS00266 on 30 October 2016 Used for Survey Files: 64MSMS0261, 64MSMS0262, 64MSMS0263, 64MSMS0264, and 64MSMS0265					
Compound	PM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Diphenylamine	170/170	66399	36862	47406	28.6

Calibration Files: 64MSMS00268 and 64MSMS00274 on 01 November 2016 Used for Survey Files: 64MSMS0269, 64MSMS0270, 64MSMS0271, 64MSMS0272, and 64MSMS0273					
Compound	PM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Diphenylamine	170/170	36825	53738	43703	18.7

Calibration Files: 64MSMS00275 and 64MSMS00281 on 02 November 2016 Used for Survey Files: 64MSMS0278, 64MSMS0279, and 64MSMS0280					
Compound	PM	Initial Response Factor (icps/ppbv)	Final Response Factor (icps/ppbv)	Intermediate Response Factor (icps/ppbv)	Error Bar (%)
Diphenylamine	170/170	64079	29334	40245	37.2

PM = Parent Mass
icps = ion counts per second
ppbv = parts per billion by volume
% = Percent

TABLE 3
Summary of Response Factors and Error Bars in µg/m³ for 28 October to 02 November 2016
Camp Minden
Webster Parish, Louisiana
December 2016

Calibration Files: 64MSMS00251 and 64MSMS00256 on 28 October 2016 Used for Survey Files: 64MSMS0253, 64MSMS0254, and 64MSMS0255					
Compound	PM	Initial Response Factor (icps/µg/m³)	Final Response Factor (icps/µg/m³)	Intermediate Response Factor (icps/µg/m³)	Error Bar (%)
Diphenylamine	170/170	6486.0	10997	8159.6	25.8

Calibration Files: 64MSMS00259 and 64MSMS00266 on 30 October 2016 Used for Survey Files: 64MSMS0261, 64MSMS0262, 64MSMS0263, 64MSMS0264, and 64MSMS0265					
Compound	PM/DM	Initial Response Factor (icps/µg/m³)	Final Response Factor (icps/µg/m³)	Intermediate Response Factor (icps/µg/m³)	Error Bar (%)
Diphenylamine	170/170	9593.0	5325.6	6849.0	28.6

Calibration Files: 64MSMS00268 and 64MSMS00274 on 01 November 2016 Used for Survey Files: 64MSMS0269, 64MSMS0270, 64MSMS0271, 64MSMS0272, and 64MSMS0273					
Compound	PM	Initial Response Factor (icps/µg/m³)	Final Response Factor (icps/µg/m³)	Intermediate Response Factor (icps/µg/m³)	Error Bar (%)
Diphenylamine	170/170	5320.3	7763.9	6313.9	18.7

Calibration Files: 64MSMS00275 and 64MSMS00281 on 02 November 2016 Used for Survey Files: 64MSMS0278, 64MSMS0279, and 64MSMS0280					
Compound	PM	Initial Response Factor (icps/µg/m³)	Final Response Factor (icps/µg/m³)	Intermediate Response Factor (icps/µg/m³)	Error Bar (%)
Diphenylamine	170/170	9257.9	4238.0	5814.4	37.2

PM = Parent Mass
icps = ion counts per second
µg/m³ = micrograms per cubic meter
% = Percent

TABLE 4
Summary of Detection and Quantitation Limit Data in ppbv for 28 October 2016 to 02 November 2016
Camp Minden
Webster Parish, Louisiana
December 2016

Calibration Files: 64MSMS00251 and 64MSMS00256 on 28 October 2016 Used for Survey Files: 64MSMS0253, 64MSMS0254, and 64MSMS0255					
Compound	PM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Diphenylamine	170/170	56477	40.405	0.00214	0.00715

Calibration Files: 64MSMS00259 and 64MSMS00266 on 30 October 2016 Used for Survey Files: 64MSMS0261, 64MSMS0262, 64MSMS0263, 64MSMS0264, and 64MSMS0265					
Compound	PM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Diphenylamine	170/170	47406	67.766	0.00428	0.0142

Calibration Files: 64MSMS00268 and 64MSMS00274 on 01 November 2016 Used for Survey Files: 64MSMS0269, 64MSMS0270, 64MSMS0271, 64MSMS0272, and 64MSMS0273					
Compound	PM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Diphenylamine	170/170	43703	69.895	0.00479	0.0159

Calibration Files: 64MSMS00275 and 64MSMS00281 on 02 November 2016 Used for Survey Files: 64MSMS0278, 64MSMS0279, and 64MSMS0280					
Compound	PM	Intermediate Response Factor (icps/ppbv)	Standard Deviation (icps)	Detection Limit (ppbv)	Quantitation Limit (ppbv)
Diphenylamine	170/170	40245	98.535	0.00734	0.0244

PM = Parent Mass
icps = ion counts per second
ppbv = parts per billion by volume

TABLE 5
Summary of Detection and Quantitation Limit Data in µg/m³ for 28 October 2016 to 02 November 2016
Camp Minden
Webster Parish, Louisiana
December 2016

Calibration Files: 64MSMS00251 and 64MSMS00256 on 28 October 2016 Used for Survey Files: 64MSMS0253, 64MSMS0254, and 64MSMS0255					
Compound	PM	Intermediate Response Factor (icps/µg/m^3)	Standard Deviation (icps)	Detection Limit (µg/m^3)	Quantitation Limit (µg/m^3)
Diphenylamine	170/170	8159.6	40.405	0.0148	0.0495

Calibration Files: 64MSMS00259 and 64MSMS00266 on 30 October 2016 Used for Survey Files: 64MSMS0261, 64MSMS0262, 64MSMS0263, 64MSMS0264, and 64MSMS0265					
Compound	PM	Intermediate Response Factor (icps/µg/m^3)	Standard Deviation (icps)	Detection Limit (µg/m^3)	Quantitation Limit (µg/m^3)
Diphenylamine	170/170	6849.0	67.766	0.0296	0.0989

Calibration Files: 64MSMS00268 and 64MSMS00274 on 01 November 2016 Used for Survey Files: 64MSMS0269, 64MSMS0270, 64MSMS0271, 64MSMS0272, and 64MSMS0273					
Compound	PM	Intermediate Response Factor (icps/µg/m^3)	Standard Deviation (icps)	Detection Limit (µg/m^3)	Quantitation Limit (µg/m^3)
Diphenylamine	170/170	6313.9	69.895	0.0332	0.110

Calibration Files: 64MSMS00275 and 64MSMS00281 on 02 November 2016 Used for Survey Files: 64MSMS0278, 64MSMS0279, and 64MSMS0280					
Compound	PM	Intermediate Response Factor (icps/µg/m^3)	Standard Deviation (icps)	Detection Limit (µg/m^3)	Quantitation Limit (µg/m^3)
Diphenylamine	170/170	5814.4	98.535	0.0508	0.169

PM = Parent Mass
icps = ion counts per second
µg/m^3 = micrograms per cubic meter

FIGURES

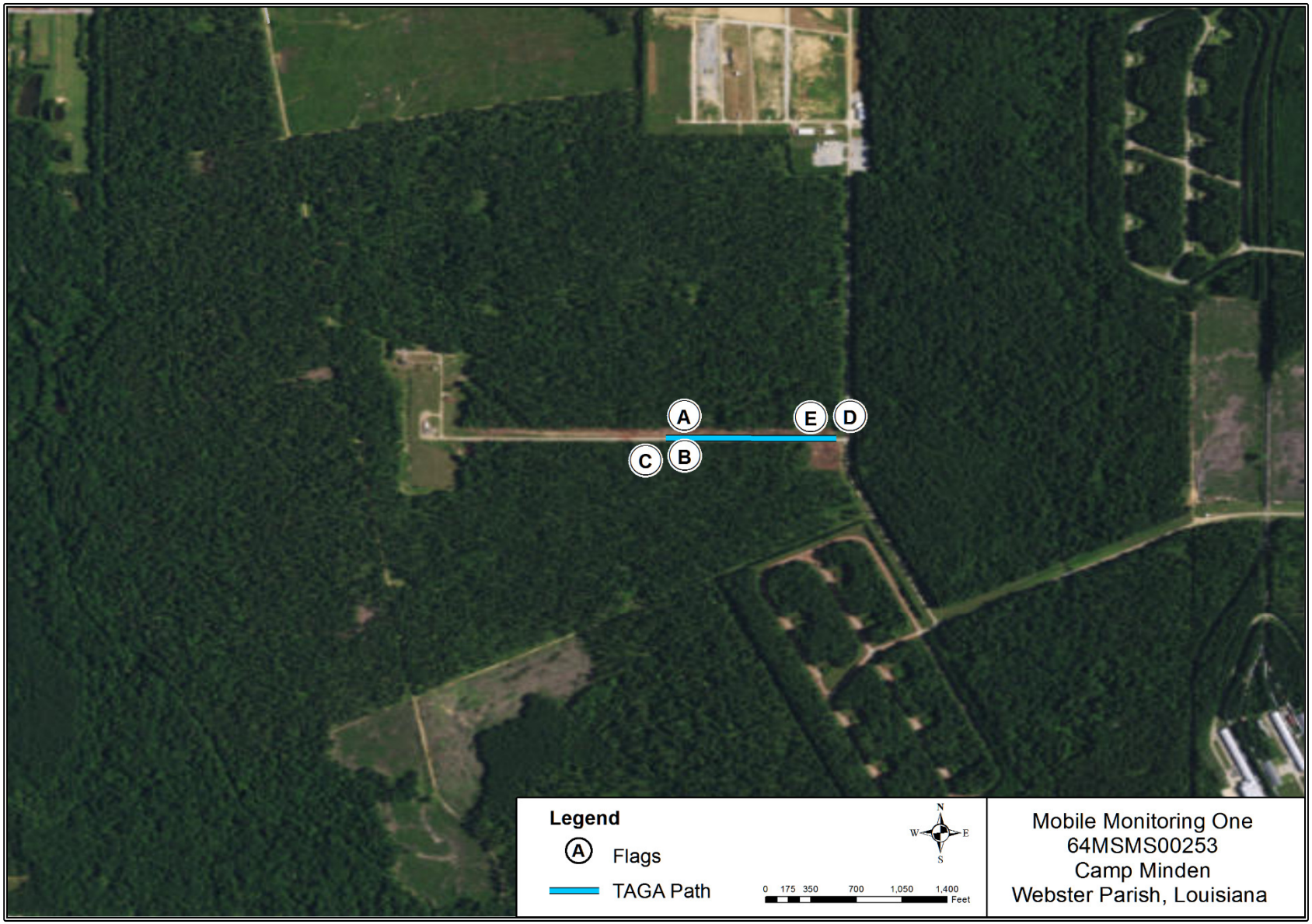

Figure 1a Mobile Monitoring One – Downwind Magazine 505, 64MSMS00253

Figure 1b

TAGA File Event Summary
File: 64MSMS00253 Acquired on 28 October 2016 at 10:35:37
Title: Mobile Monitoring One – Downwind Magazine 505

Flag	Time	Sequence	Description
A	6.2	3522	Start of background at monitoring location
B	7.5	4284	End of background at monitoring location
C	55.0	31412	Start of burn
D	116.5	66527	Move to shore power location
E	143.9	82203	End mobile monitoring

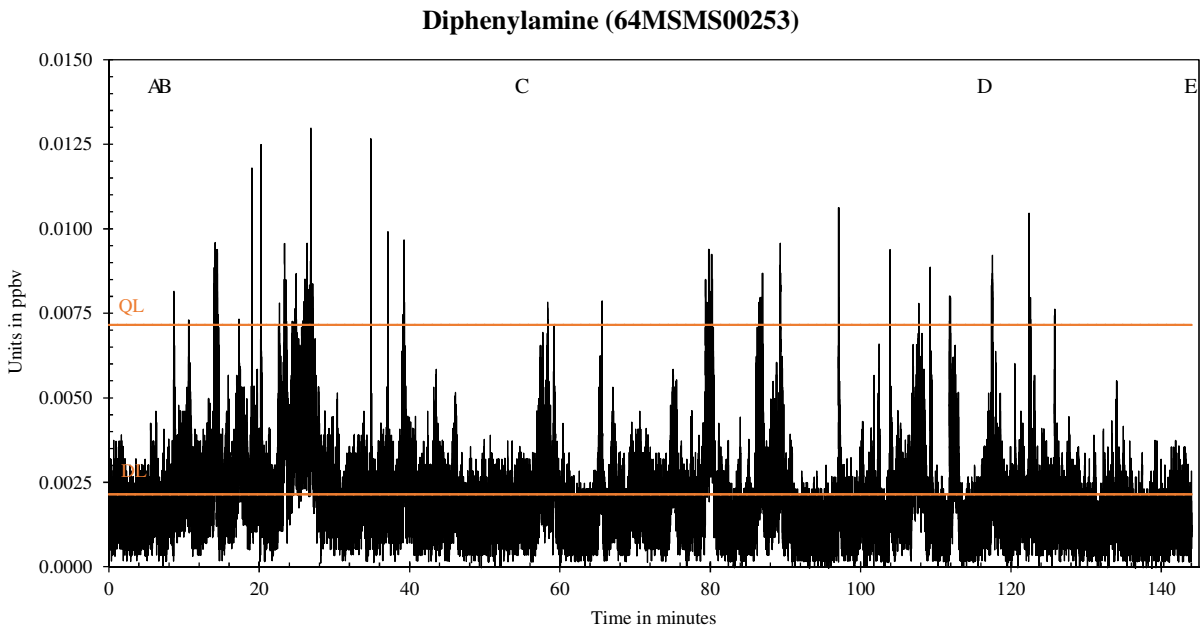

Figure 1c Mobile Monitoring One – Downwind Magazine 505 in ppbv for Diphenylamine

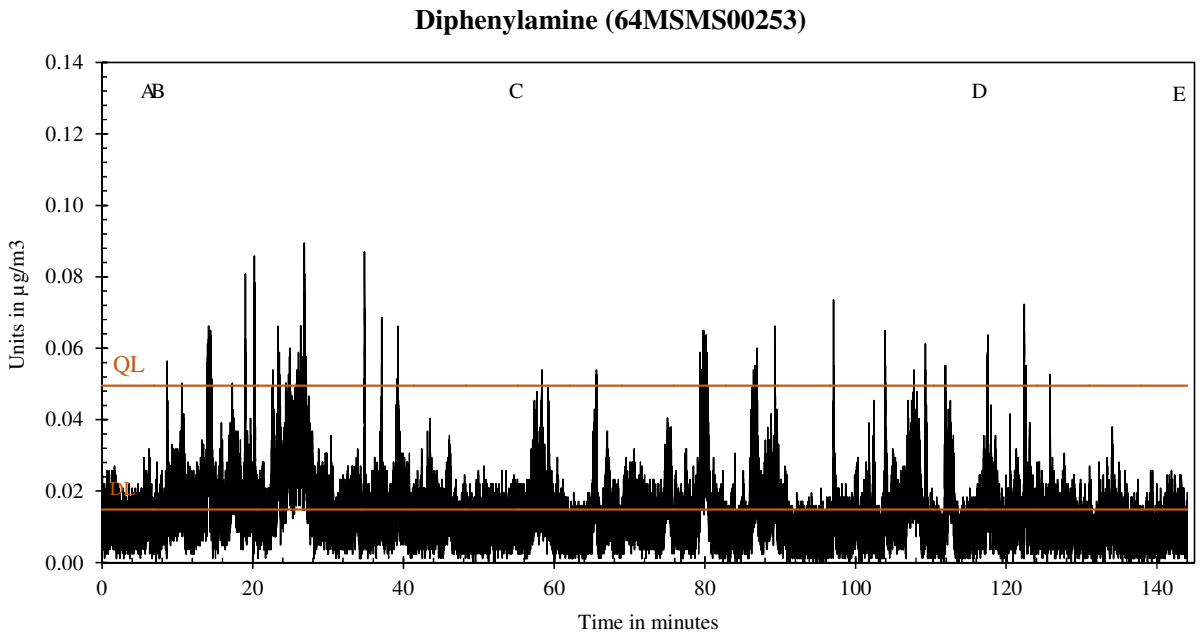

Figure 1d Mobile Monitoring One – Downwind Magazine 505 in µg/m^3 for Diphenylamine

Figure 2a Mobile Monitoring Two – Downwind Magazine 505, 64MSMS00254

Figure 2b

TAGA File Event Summary
File: 64MSMS00254 Acquired on 28 October 2016 at 13:09:41
Title: Mobile Monitoring Two – Downwind Magazine 505

Flag	Time	Sequence	Description
A	6.3	3585	Start of background at shore power location
B	7.3	4156	End of background at shore power location
C	30.0	17140	End of monitoring at shore power location

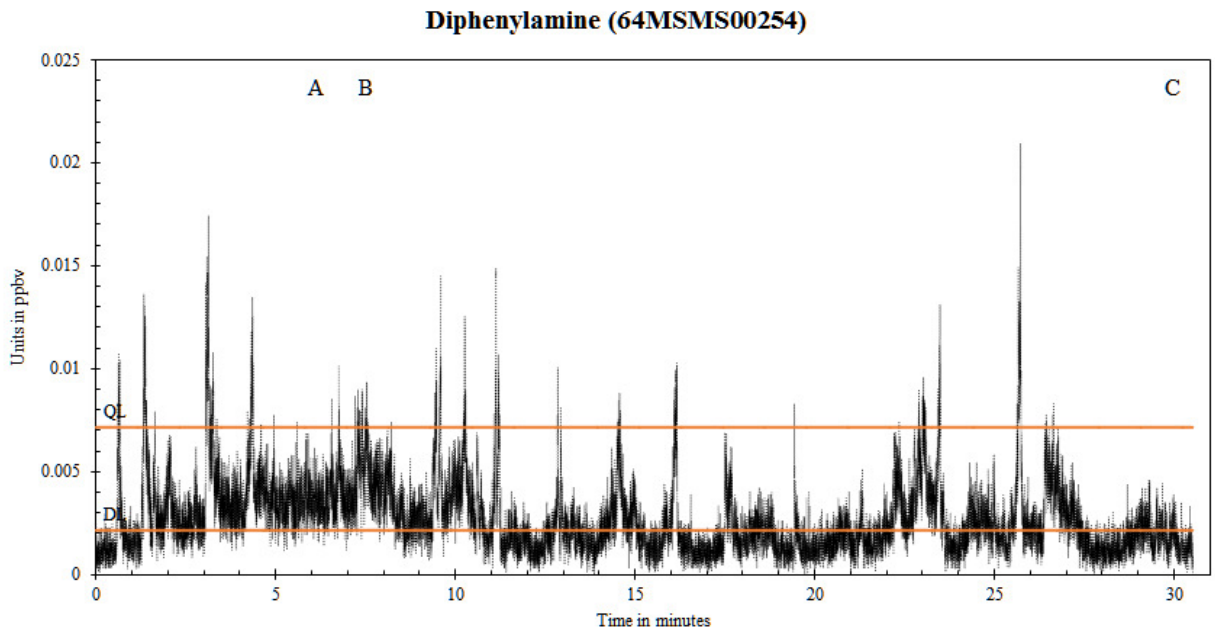

Figure 2c Mobile Monitoring Two – Downwind Magazine 505 in ppbv for Diphenylamine

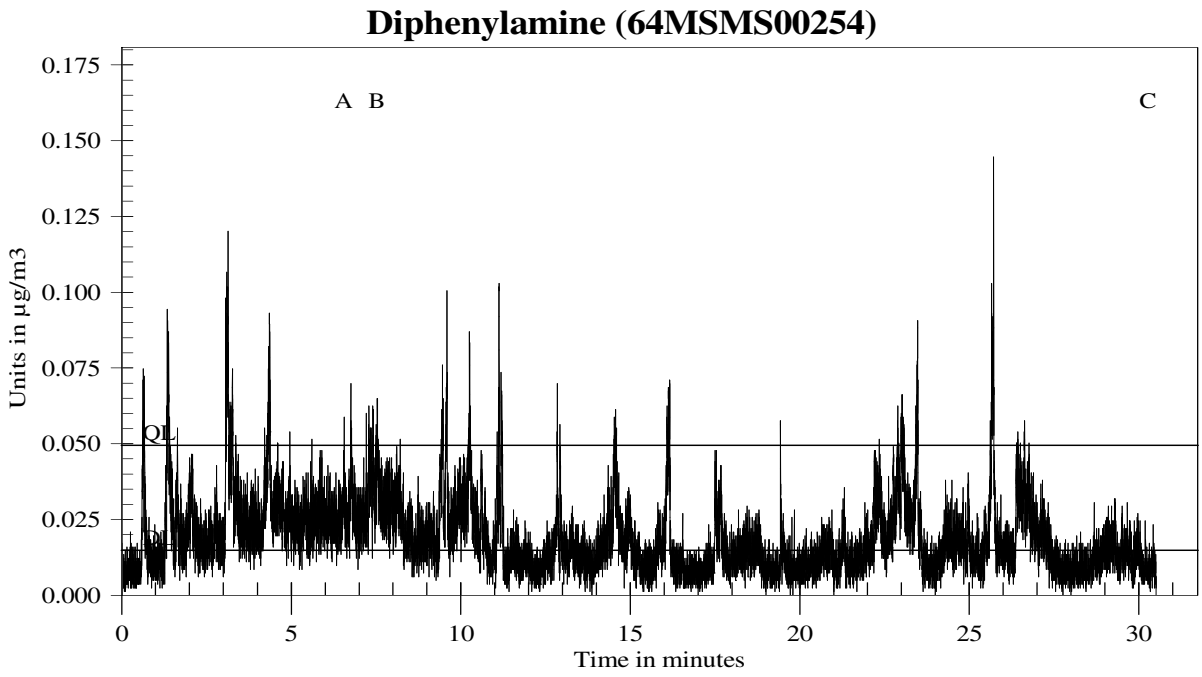

Figure 2d Mobile Monitoring Two – Downwind Magazine 505 in µg/m^3 for Diphenylamine

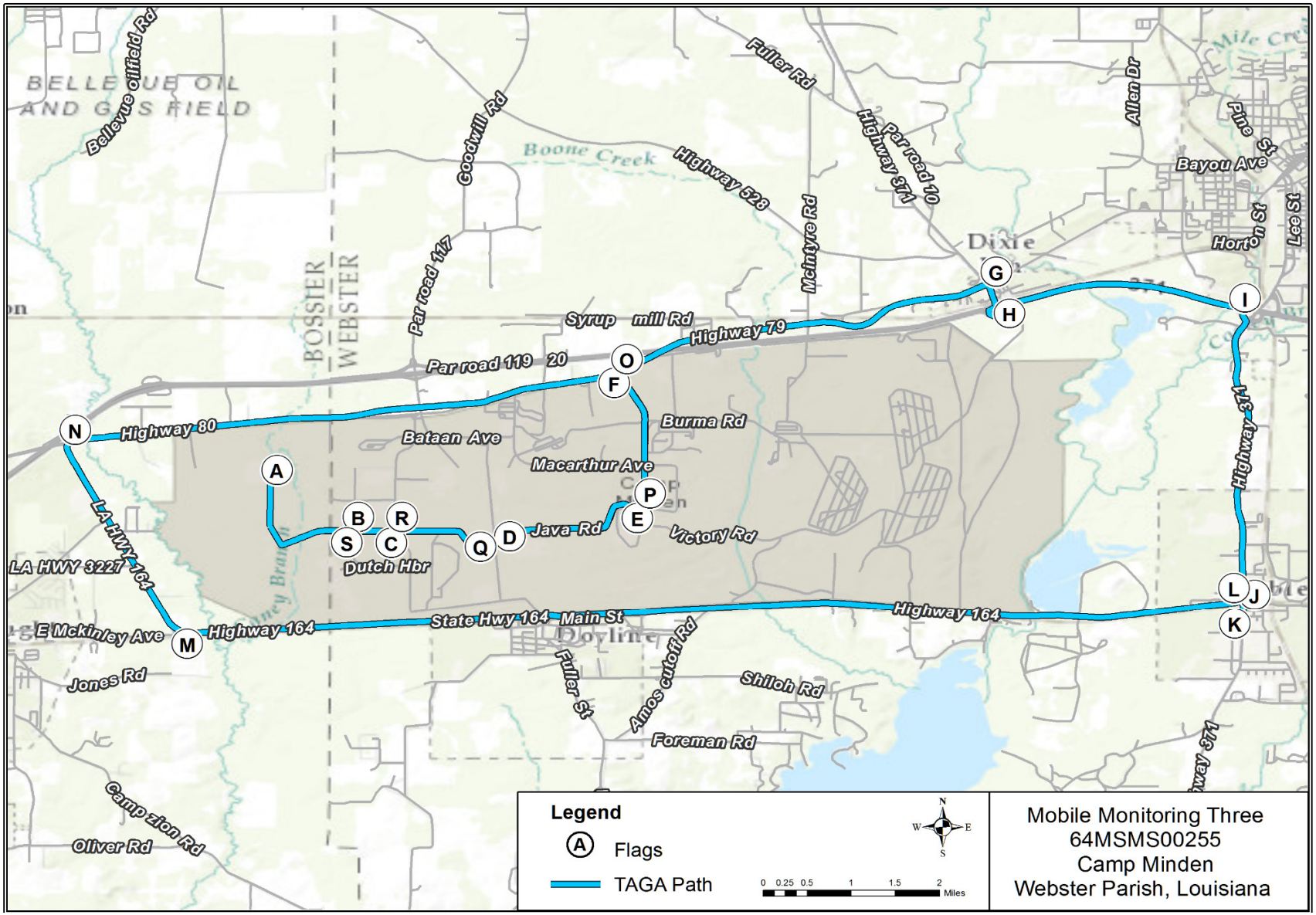

Figure 3a Mobile Monitoring Three – Perimeter of Camp Minden, 64MSMS00255

Figure 3b

TAGA File Event Summary
File: 64MSMS00255 Acquired on 28 October 2016 at 14:06:58
Title: Mobile Monitoring Three – Perimeter of Camp Minden

Flag	Time	Sequence	Description
A	1.2	664	Start of mobile monitoring at shore power location
B	5.4	3080	Intersection Java Road and 1st Street
C	6.7	3842	Intersection Java Road and 2nd Street
D	9.9	5650	Intersection Java Road and 3rd Street
E	15.7	8991	Left turn onto 4th Street
F	21.9	12504	Right turn onto Highway 80 East - Exit Camp Minden
G	27.8	15902	Right turn onto Highway 371 South
H	29.4	16807	Merge onto Interstate 20 East
I	33.2	18948	Exit onto Highway 371 South
J	38.9	22194	Intersection Highway 371 South and Highway 164
K	39.4	22508	U-turn
L	41.1	23479	Left turn onto Highway 164 West
M	57.9	33064	Continue on Highway 164 West
N	62.0	35406	Right turn onto Highway 80 East
O	69.5	39709	Right turn onto 4th Street - Enter Camp Minden
P	75.1	42878	Right turn onto Java Road
Q	80.2	45820	Intersection Java Road and 3rd Street
R	83.3	47553	Intersection Java Road and 2nd Street
S	84.6	48294	Intersection Java Road and 1st Street

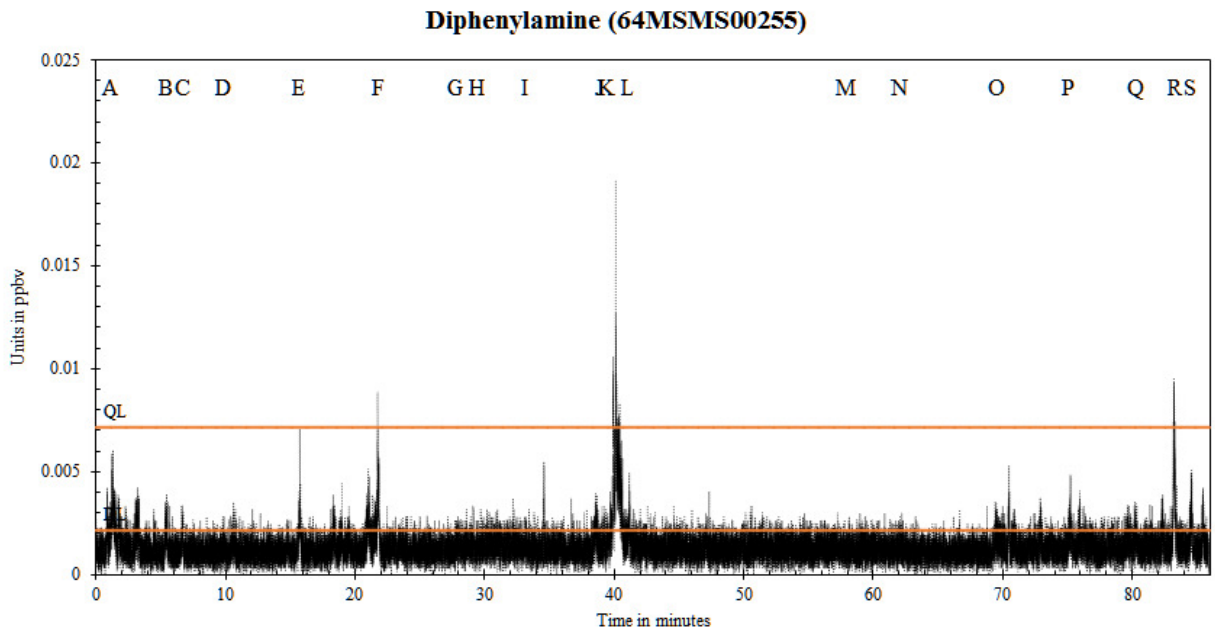

Figure 3c Mobile Monitoring Three – Perimeter of Camp Minden in ppbv for Diphenylamine

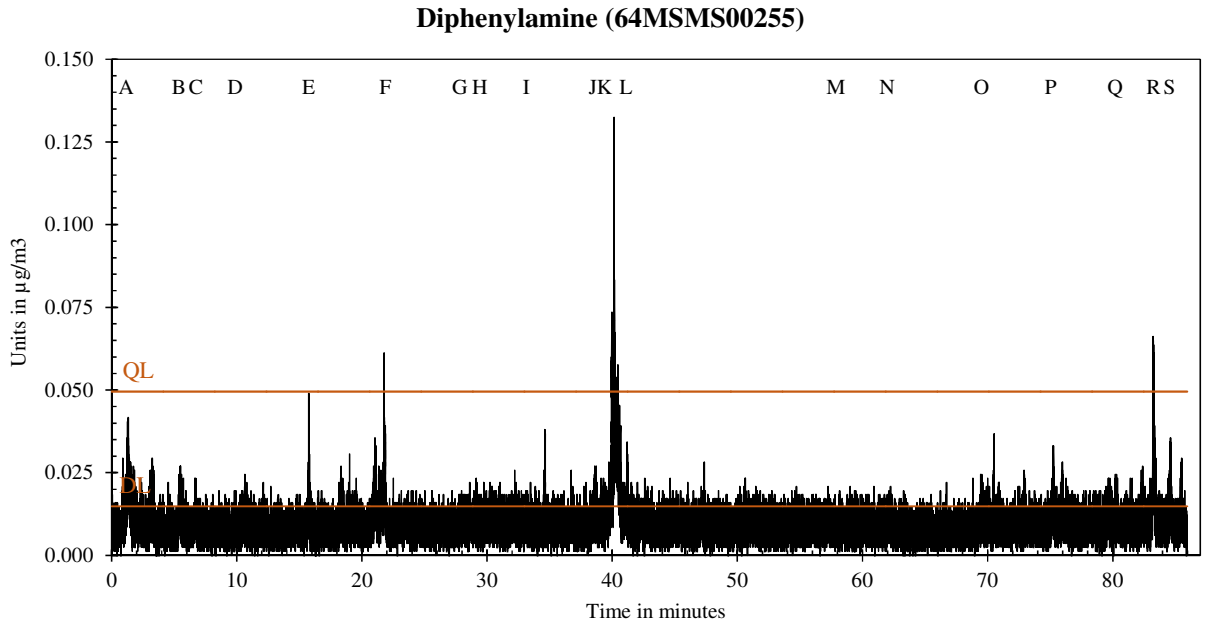

Figure 3d Mobile Monitoring Three – Perimeter of Camp Minden in µg/m^3 for Diphenylamine

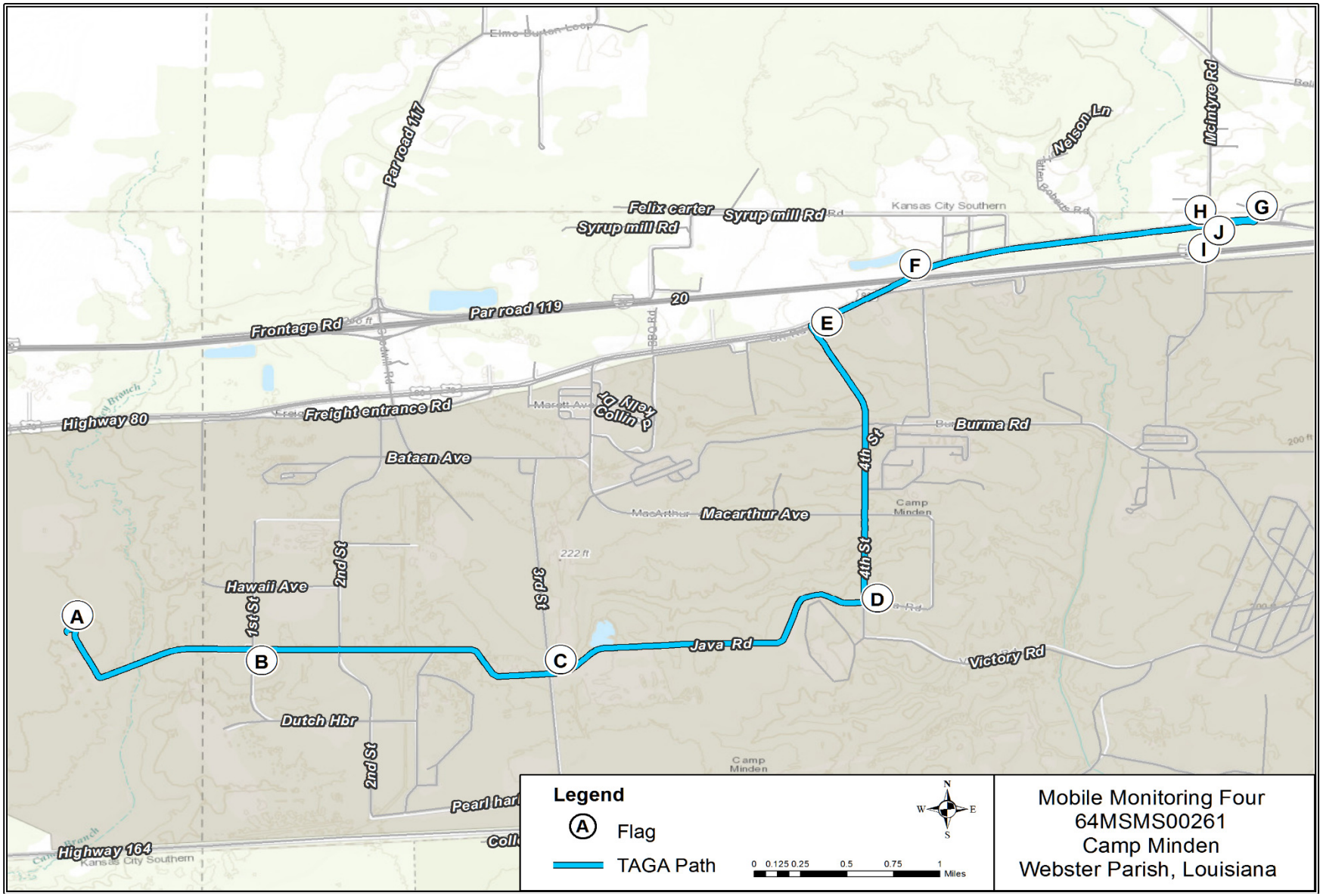

Figure 4a Mobile Monitoring Four – Move to Stationary Location, 64MSMS00261

Figure 4b

TAGA File Event Summary
File: 64MSMS00261 Acquired on 30 October 2016 at 06:42:49
Title: Mobile Monitoring Four – Move to Stationary Location

Flag	Time	Sequence	Description
A	2.7	1521	Start Mobile Monitoring
B	7.1	4032	Intersection Java Road and 1st Street
C	12.7	7259	Intersection Java Road and 3rd Street
D	19.8	11305	Right turn onto 4th Street
E	26.5	15160	Right turn onto Highway 80 East - Exit Camp Minden
F	28.0	15979	Interstate 20 Overpass
G	30.7	17549	U-turn - Highway 80 West
H	31.7	18129	Left turn into Webster Parish Fire Station
I	32.7	18701	At monitoring location - Webster Parish Fire Station
J	81.3	46411	End mobile monitoring

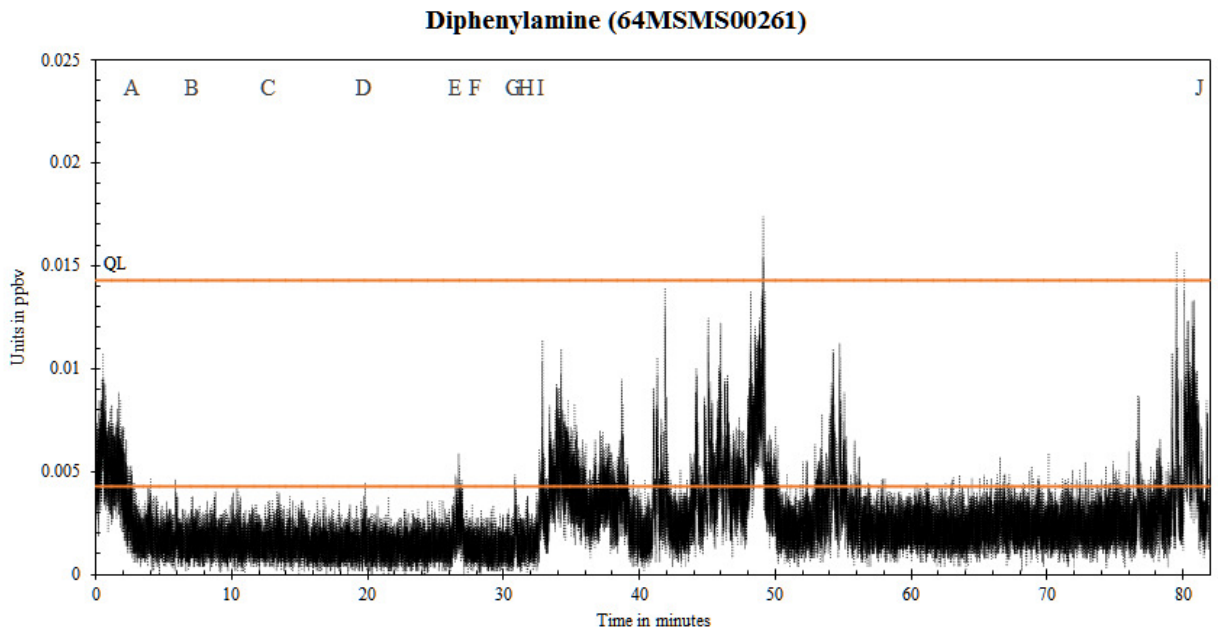

Figure 4c Mobile Monitoring Four – Move to Stationary Location in ppbv for Diphenylamine

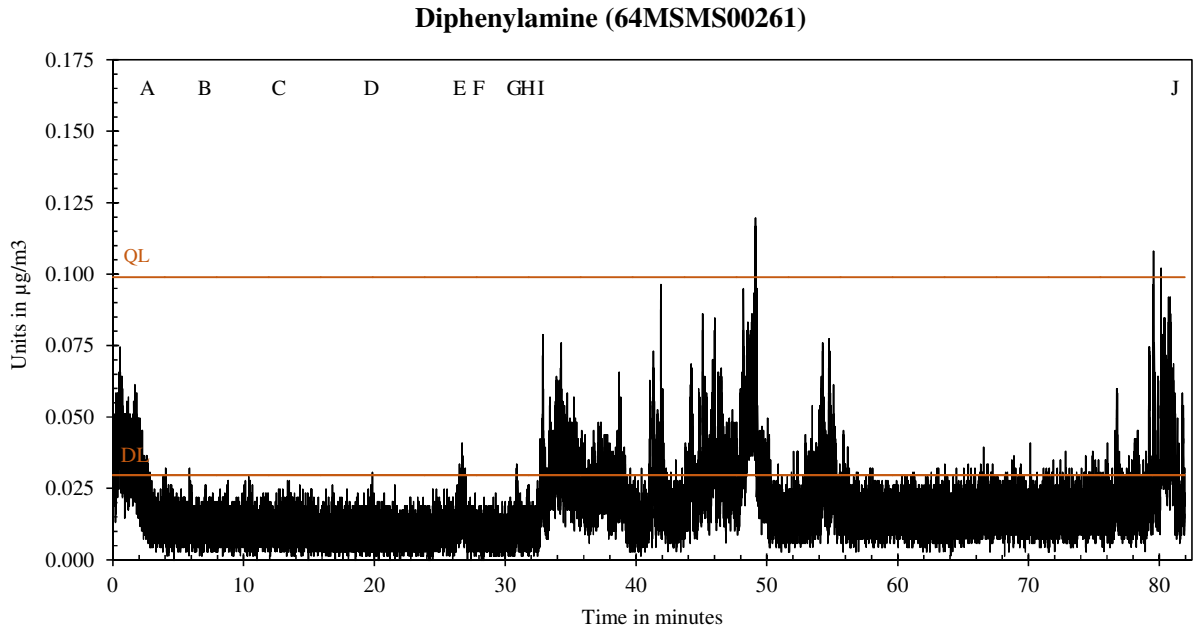

Figure 4d Mobile Monitoring Four – Move to Stationary Location in µg/m^3 for Diphenylamine

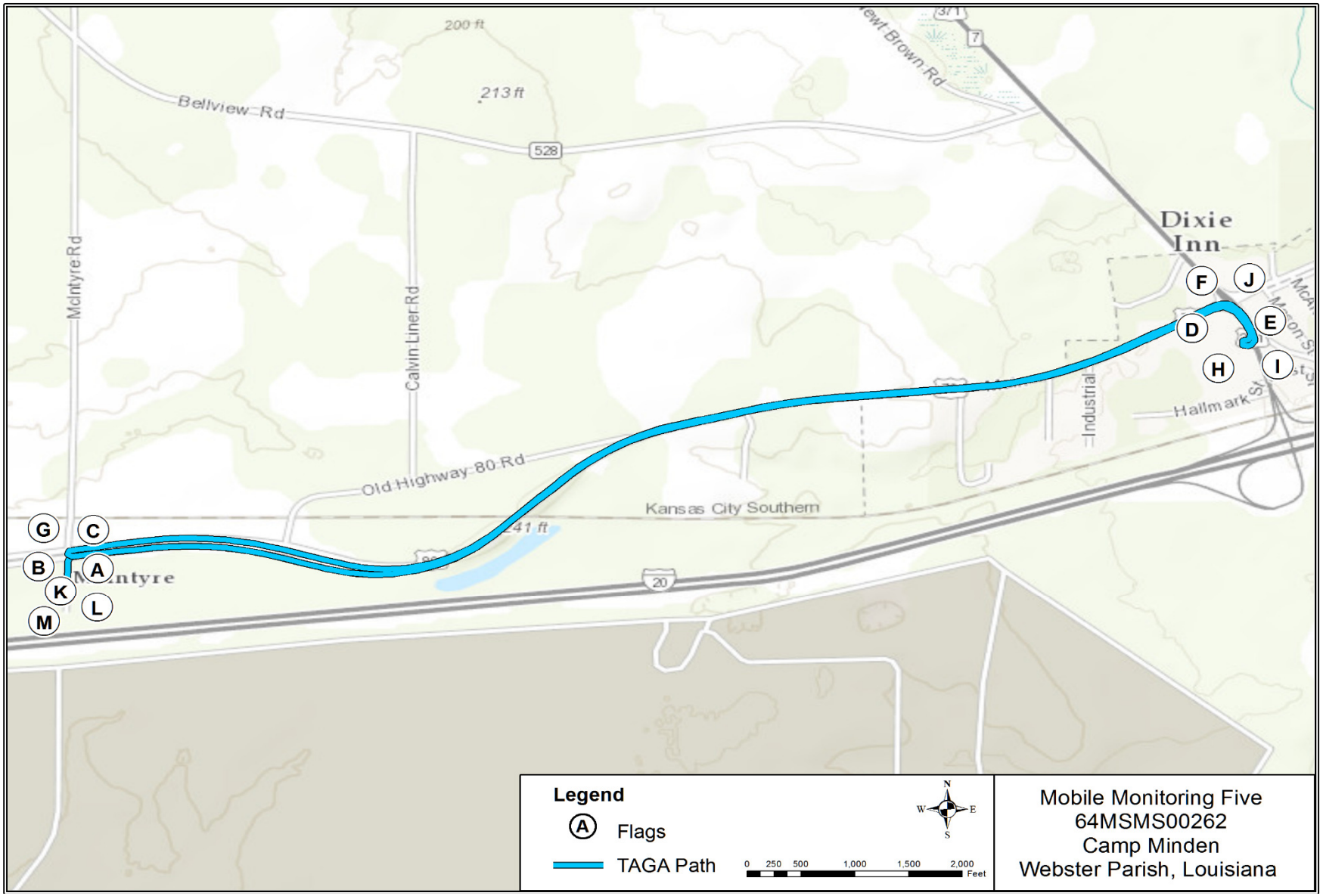

Figure 5a Mobile Monitoring Five – Webster Parish Fire District 7, 64MSMS00262

Figure 5b

TAGA File Event Summary
File: 64MSMS00262 Acquired on 30 October 2016 at 08:06:55
Title: Mobile Monitoring Five – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	1.7	977	Start mobile monitoring
B	42.1	24030	Moving from stationary location towards plume
C	43.8	25001	Right turn onto Highway 80 East
D	52.1	29779	Right turn onto Highway 371 South
E	53.0	30256	Turn around at truck stop
F	53.7	30684	Left turn onto Highway 80 West
G	60.5	34568	U-turn at fire station
H	68.3	39003	Turn around at truck stop
I	69.6	39765	Left turn onto Highway 371 North
J	70.9	40516	Left turn onto Highway 80 West
K	78.3	44705	Left turn into fire station
L	79.6	45476	Return to stationary location
M	80.0	45704	End mobile monitoring

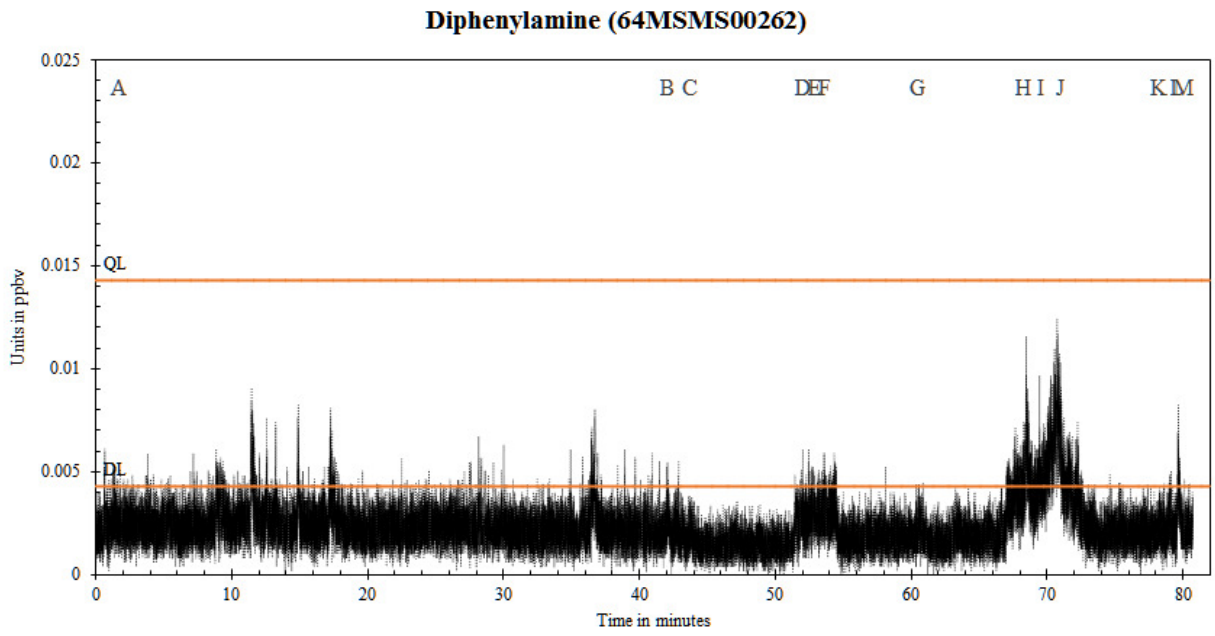

Figure 5c Mobile Monitoring Five – Webster Parish Fire District 7 in ppbv for Diphenylamine

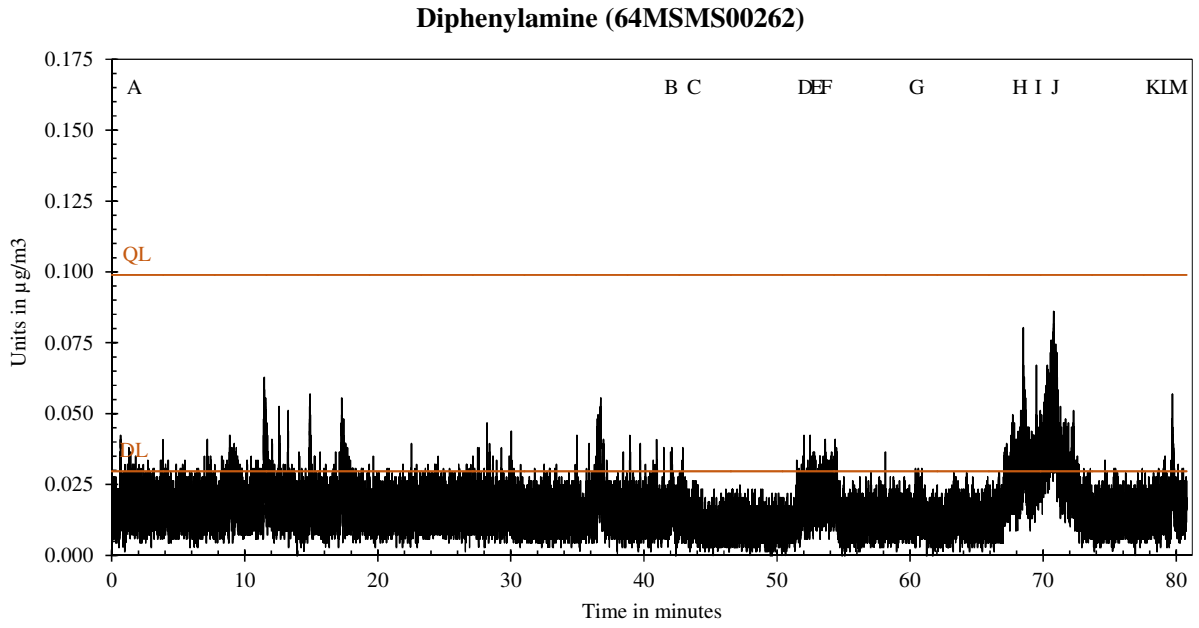

Figure 5d Mobile Monitoring Five – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

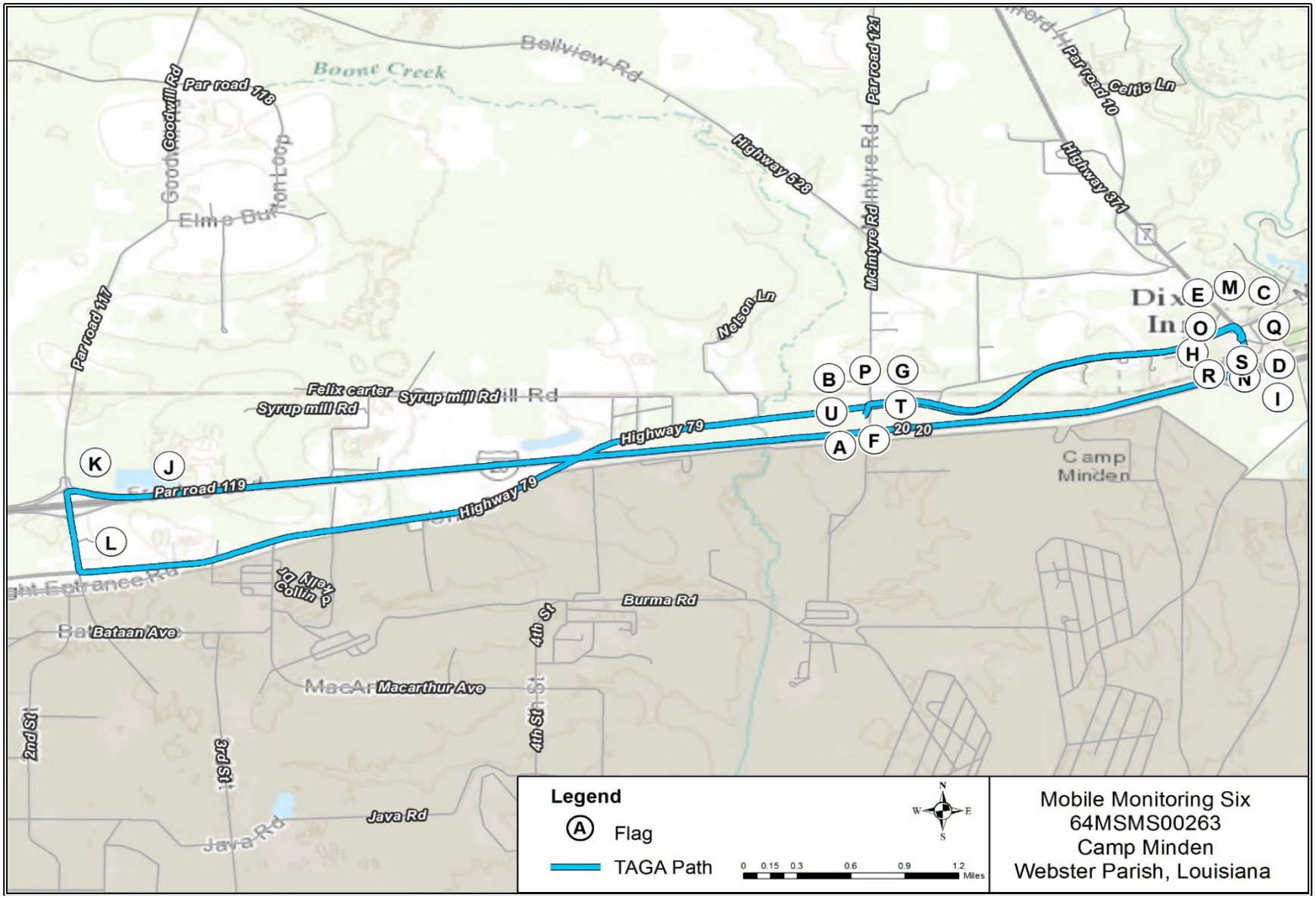

Figure 6a Mobile Monitoring Six – Webster Parish Fire District 7, 64MSMS00263

Figure 6b

TAGA File Event Summary
File: 64MSMS00263 Acquired on 30 October 2016 at 09:29:50
Title: Mobile Monitoring Six – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	1.6	891	Start mobile monitoring
B	2.7	1548	Right turn onto Highway 80 East
C	10.3	5860	Right turn onto Highway 371 South
D	11.0	6279	Turn around at truck stop
E	12.7	7232	Left turn onto Highway 80 West
F	19.9	11362	Webster Parish Fire Station
G	20.7	11838	U-turn onto Highway 80 East
H	27.9	15940	Right turn onto Highway 371 South
I	29.0	16559	Merge onto Interstate 20 West
J	35.9	20490	Exit 38 Goodwill Road
K	36.7	20947	Left turn onto Goodwill Road
L	38.1	21747	Left turn onto Highway 80 East
M	57.0	32531	Right turn onto Highway 371 South
N	57.6	32884	Turn around at truck stop
O	58.5	33418	Left turn onto Highway 80 West
P	64.8	37033	U-turn at fire station
Q	71.5	40860	Right turn onto Highway 371 South
R	72.4	41328	Turn around at truck stop
S	73.5	41983	Left turn onto Highway 80 West
T	80.4	45914	Left turn into fire station
U	81.7	46638	End mobile monitoring

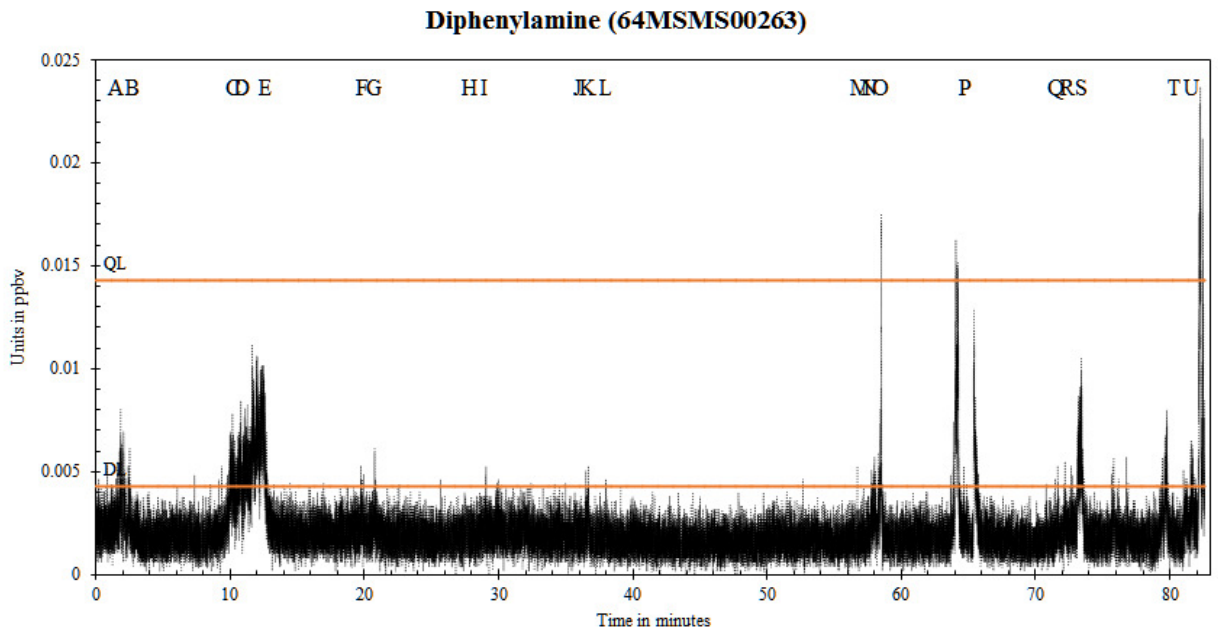

Figure 6c Mobile Monitoring Six – Webster Parish Fire District 7 in ppbv for Diphenylamine

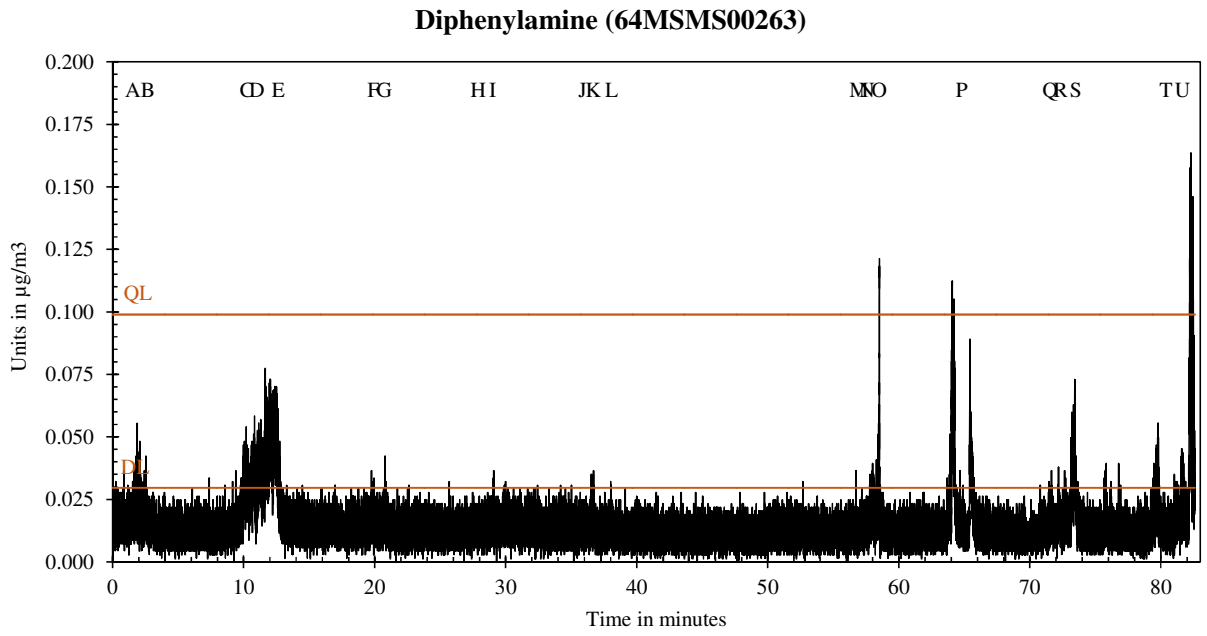

Figure 6d Mobile Monitoring Six – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

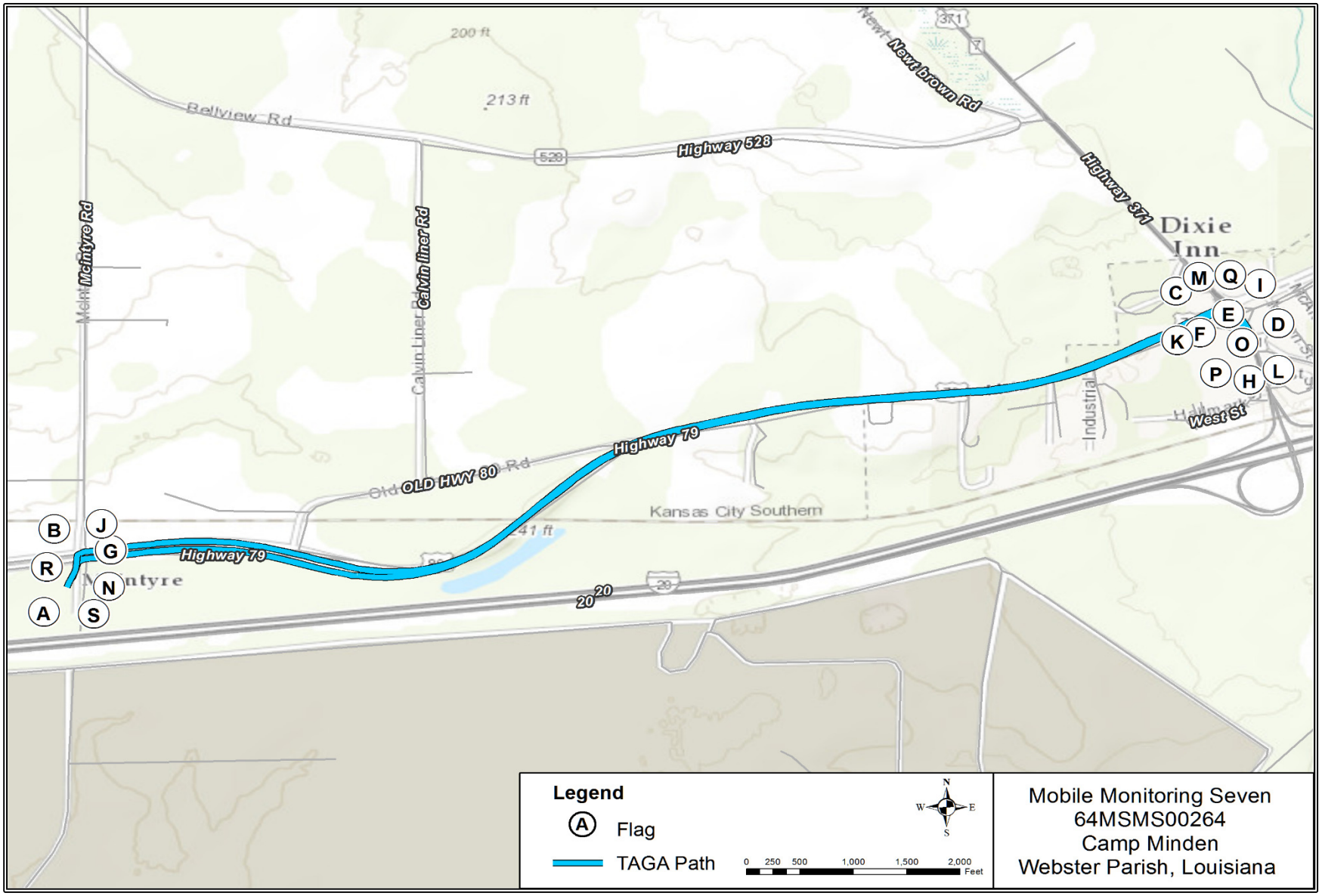

Figure 7a Mobile Monitoring Seven – Truck Stop, 64MSMS00264

Figure 7b

TAGA File Event Summary
File: 64MSMS00264 Acquired on 30 October 2016 at 10:53:26
Title: Mobile Monitoring Seven – Truck Stop

Flag	Time	Sequence	Description
A	1.6	930	Start mobile monitoring at Webster Parish Fire Station
B	2.5	1435	Right turn onto Highway 80 East
C	9.4	5356	Right turn onto Highway 371 South
D	10.2	5822	Stationary monitoring at truck stop
E	25.0	14274	Left turn onto Highway 371 North
F	26.0	14855	Left turn onto Highway 80 West
G	32.7	18683	U-turn at fire station
H	40.2	22984	Turn around at truck stop
I	41.5	23717	Left turn onto Highway 80 West
J	48.3	27610	U-turn at fire station
K	55.5	31722	Right turn onto Highway 371 South
L	56.2	32093	Turn around at truck stop
M	57.1	32636	Left turn onto Highway 80 West
N	64.2	36653	U-turn at fire station
O	71.1	40594	Right turn onto Highway 371 South
P	71.8	40994	Turn around at truck stop
Q	72.6	41460	Left turn onto Highway 80 West
R	79.3	45315	Left turn into fire station
S	80.7	46077	End of mobile monitoring

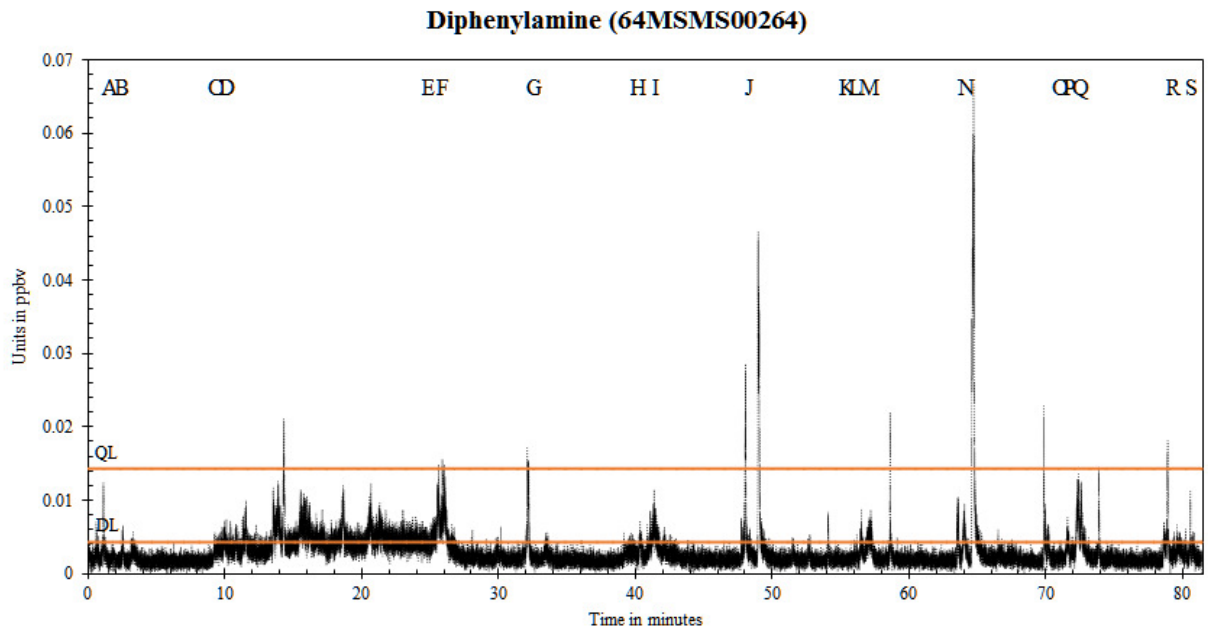

Figure 7c Mobile Monitoring Seven – Truck Stop in ppbv for Diphenylamine

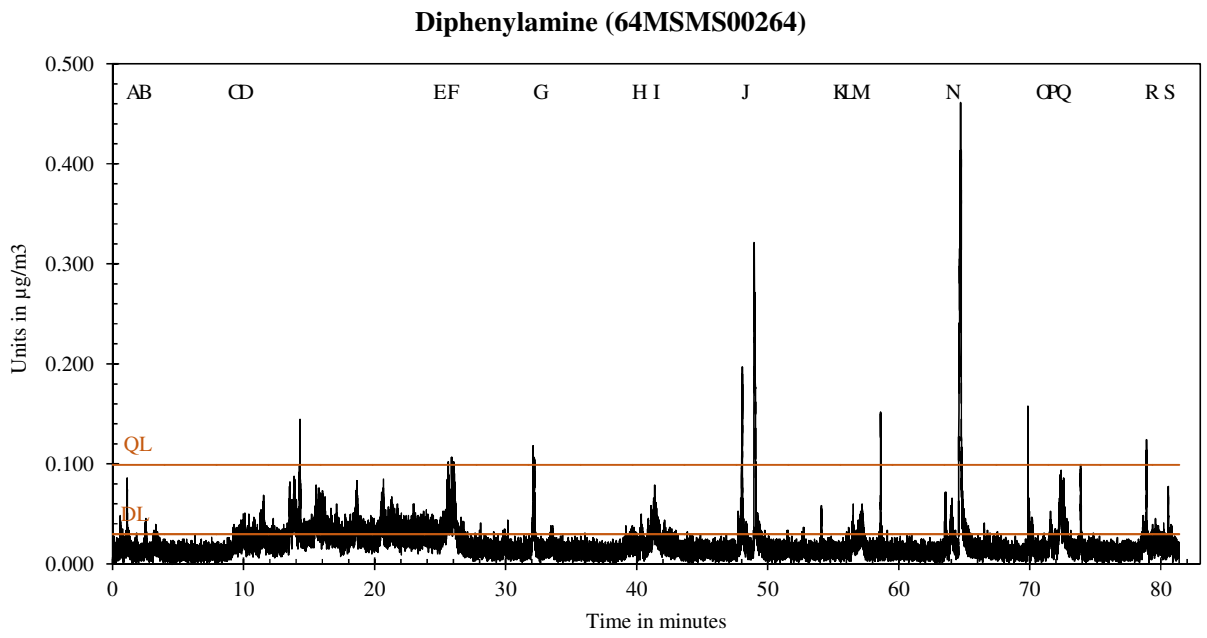

Figure 7d Mobile Monitoring Seven – Truck Stop in µg/m^3 for Diphenylamine

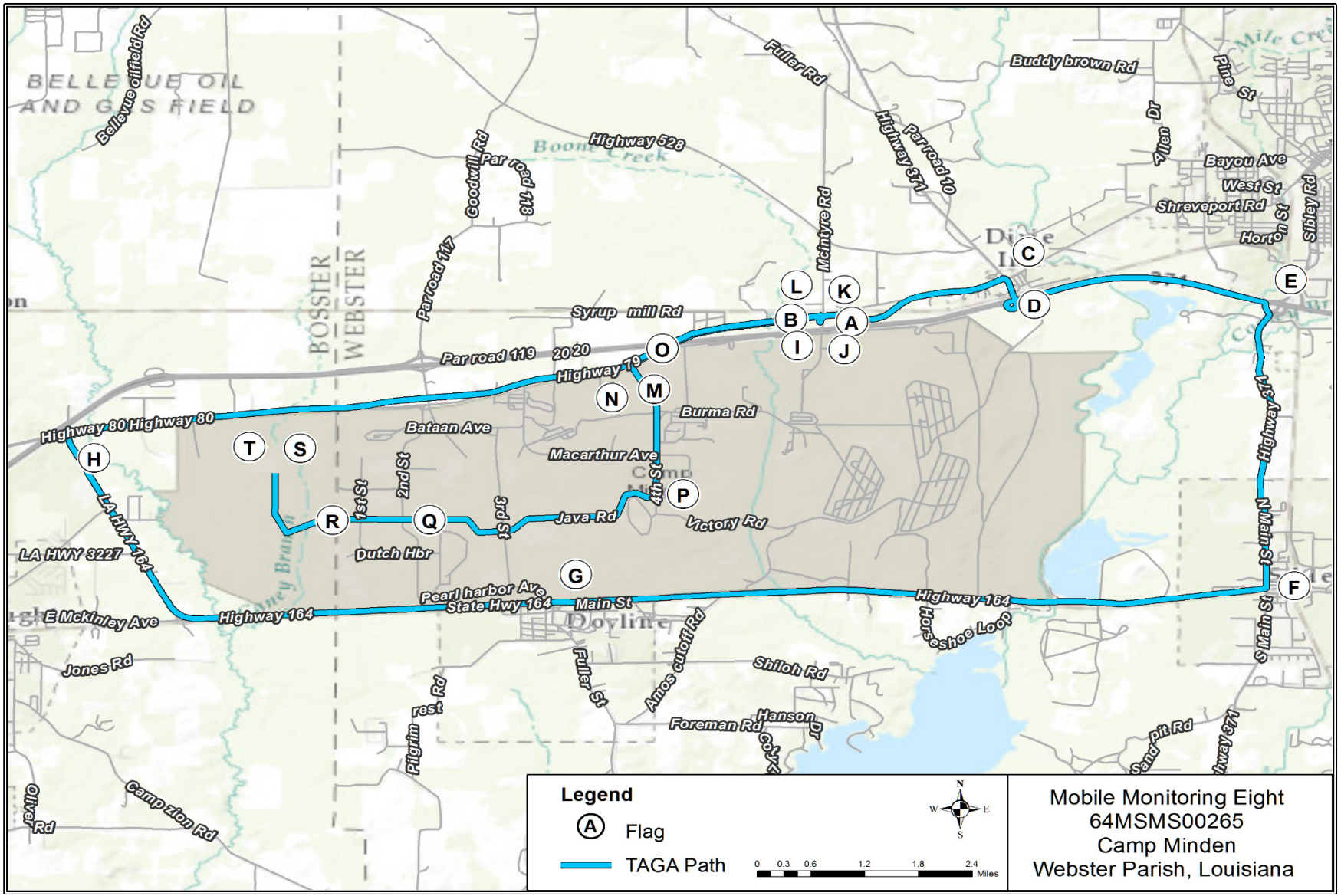

Figure 8a Mobile Monitoring Eight – Perimeter of Camp Minden, 64MSMS00265

Figure 8b

TAGA File Event Summary
File: 64MSMS00265 Acquired on 30 October 2016 at 12:17:51
Title: Mobile Mobile Monitoring Eight – Perimeter of Camp Minden

Flag	Time	Sequence	Description
A	1.7	967	Start mobile monitoring at Webster Parish Fire Station
B	2.4	1367	Right turn onto Highway 80 East
C	6.5	3727	Right turn onto Highway 371 South
D	8.0	4585	Merge onto Interstate 20 East
E	11.3	6479	Exit onto Highway 371 South
F	17.7	10086	Right turn onto Highway 164 West
G	27.0	15435	Doyline community on Highway 164 West
H	35.4	20195	Right turn onto Highway 80 East
I	44.9	25668	Right turn into fire station
J	47.3	27029	Stationary at Webster Parish Fire Station
K	49.4	28219	Moving from stationary location
L	49.8	28467	Left turn onto Highway 80 West
M	52.9	30218	Left turn onto 4th Street - Enter Camp Minden
N	53.6	30589	Waiting at freight gate entrance to Camp Minden
O	59.1	33740	Enter freight gate at Camp Minden
P	65.2	37214	Right turn onto Java Road
Q	73.1	41736	Intersection Java Road and 2nd Street
R	74.3	42421	Intersection Java Road and 1st Street
S	79.0	45096	At shore power location
T	79.2	45248	End mobile monitoring

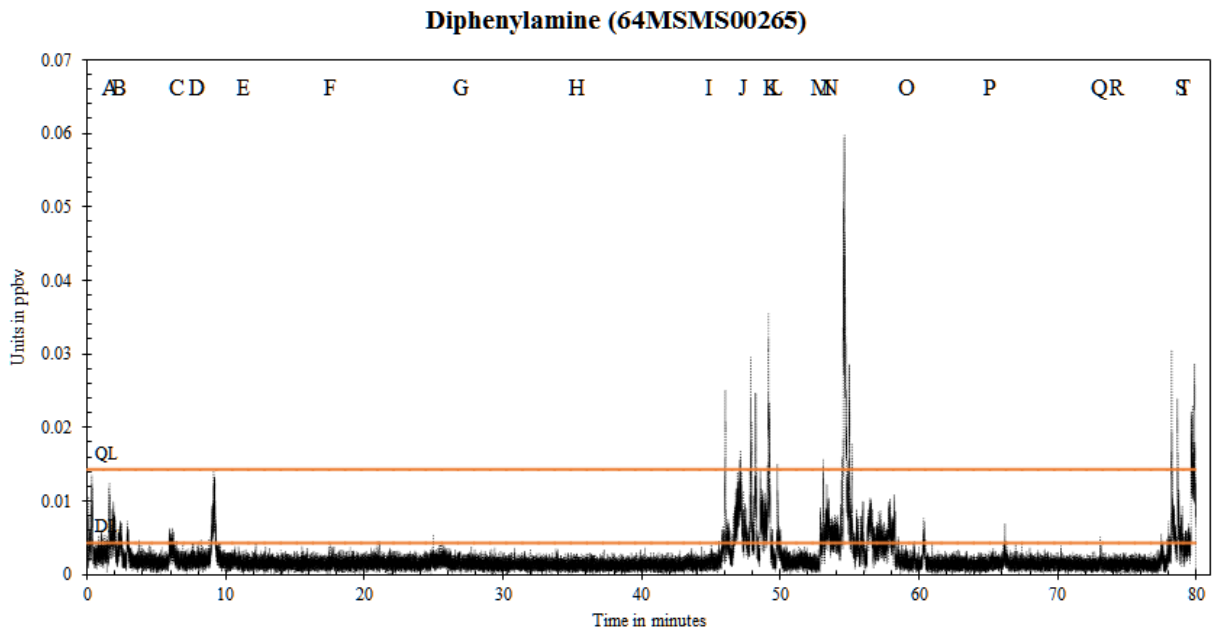

Figure 8c Mobile Monitoring Eight – Perimeter of Camp Minden in ppbv for Diphenylamine

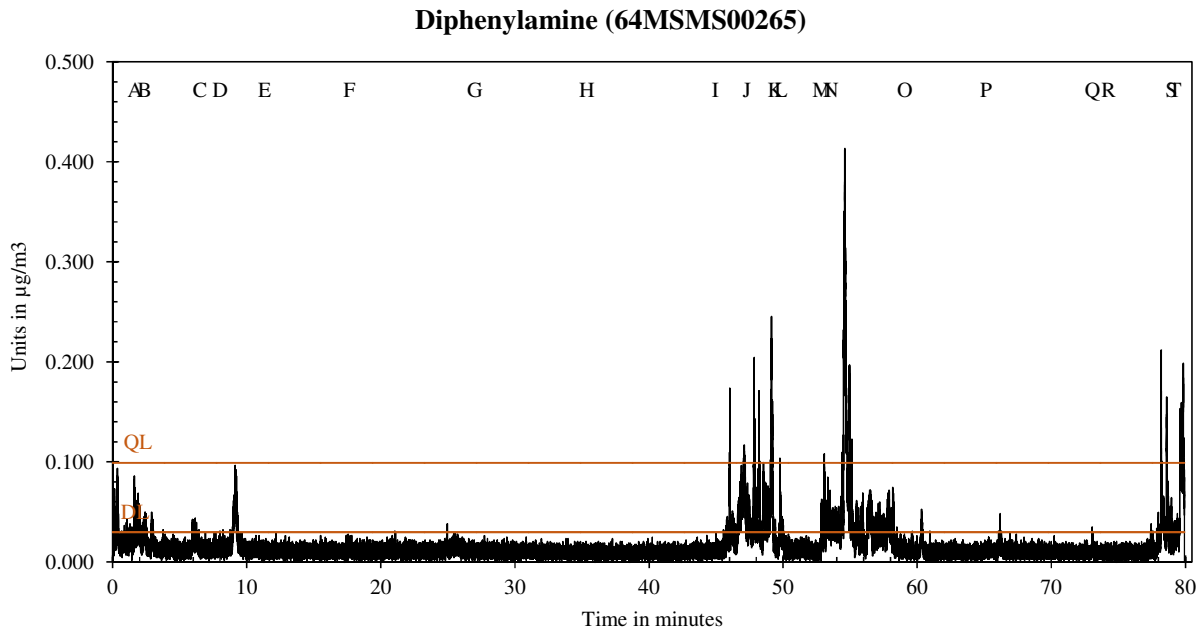

Figure 8d Mobile Monitoring Eight – Perimeter of Camp Minden in µg/m^3 for Diphenylamine

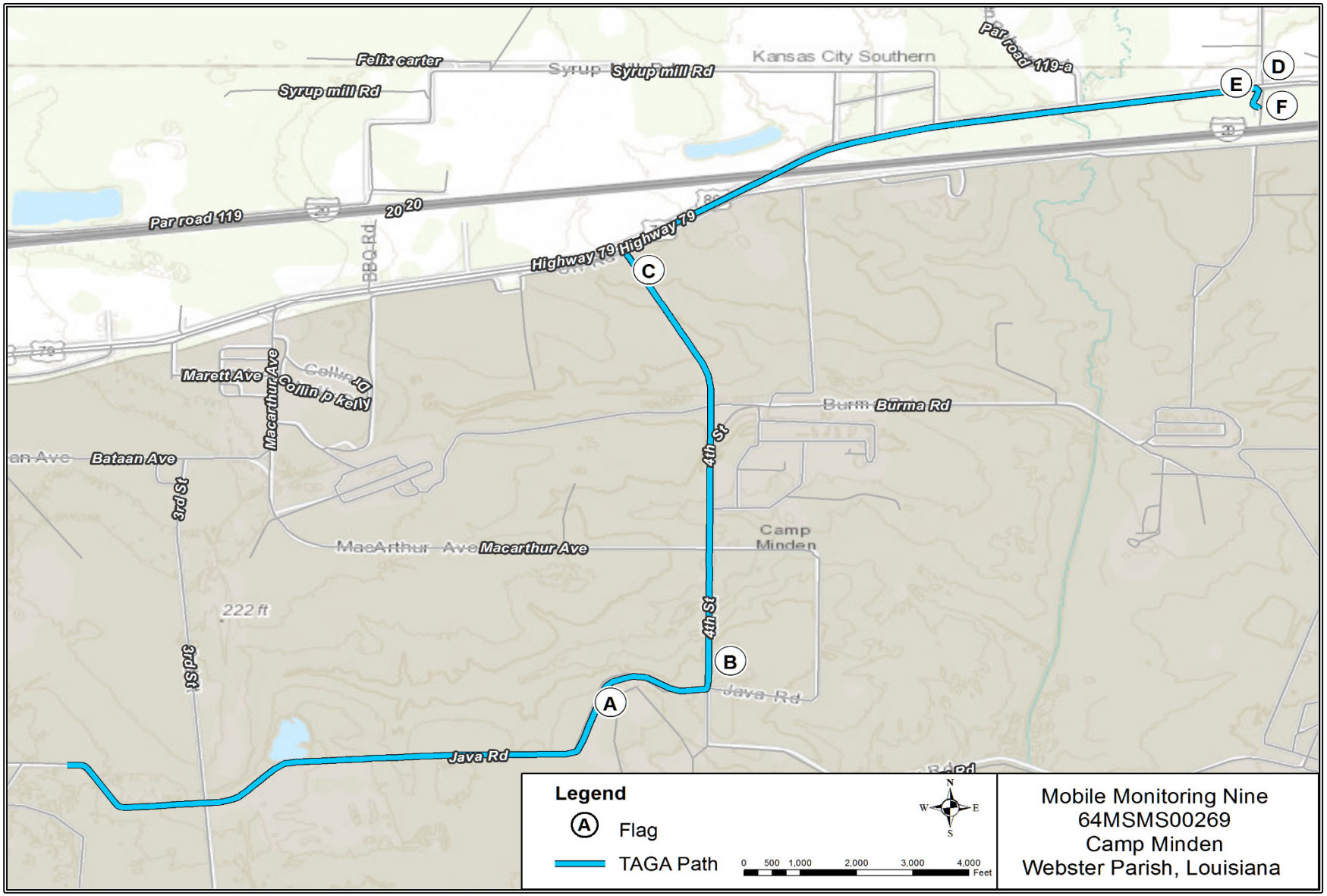

Figure 9a Mobile Monitoring Nine – Webster Parish Fire District 7, 64MSMS00269

Figure 9b

TAGA File Event Summary
File: 64MSMS00269 Acquired on 01 November 2016 at 08:32:41
Title: Mobile Monitoring Nine – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	4.5	2549	Start mobile monitoring
B	6.1	3461	Left turn onto 4th Street from Java Road
C	10.8	6193	Right turn onto Highway 80 East
D	13.9	7954	Right turn into fire station
E	14.8	8440	Stationary at Webster Parish Fire Station
F	81.0	46268	End mobile monitoring

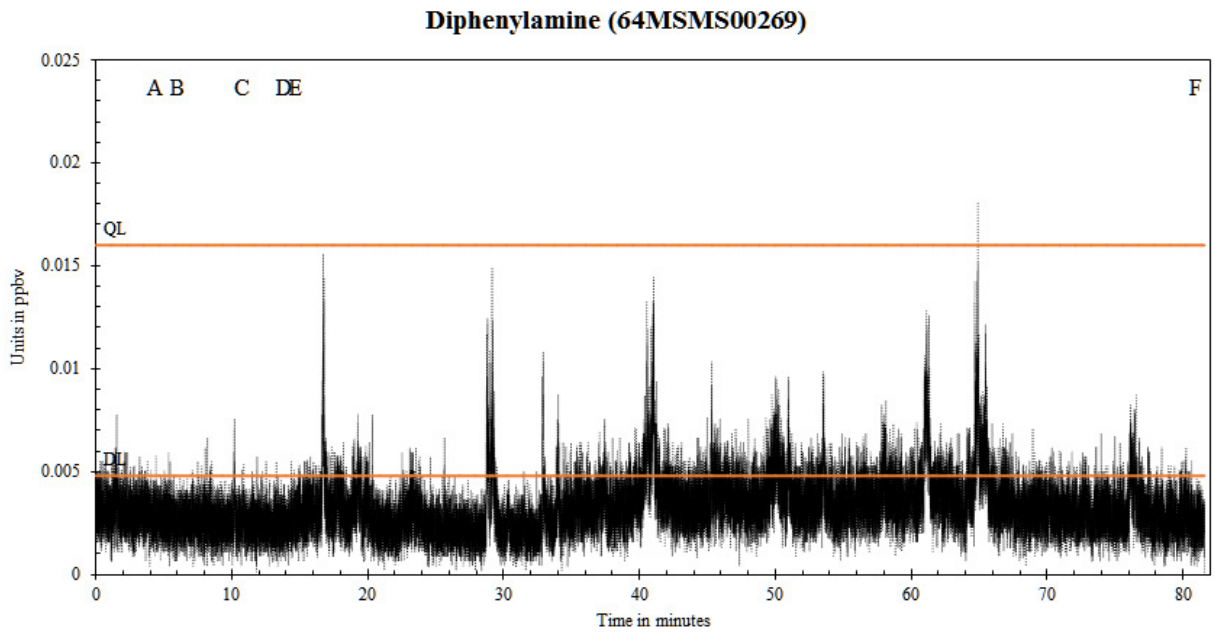

Figure 9c Mobile Monitoring Nine – Webster Parish Fire District 7 in ppbv for Diphenylamine

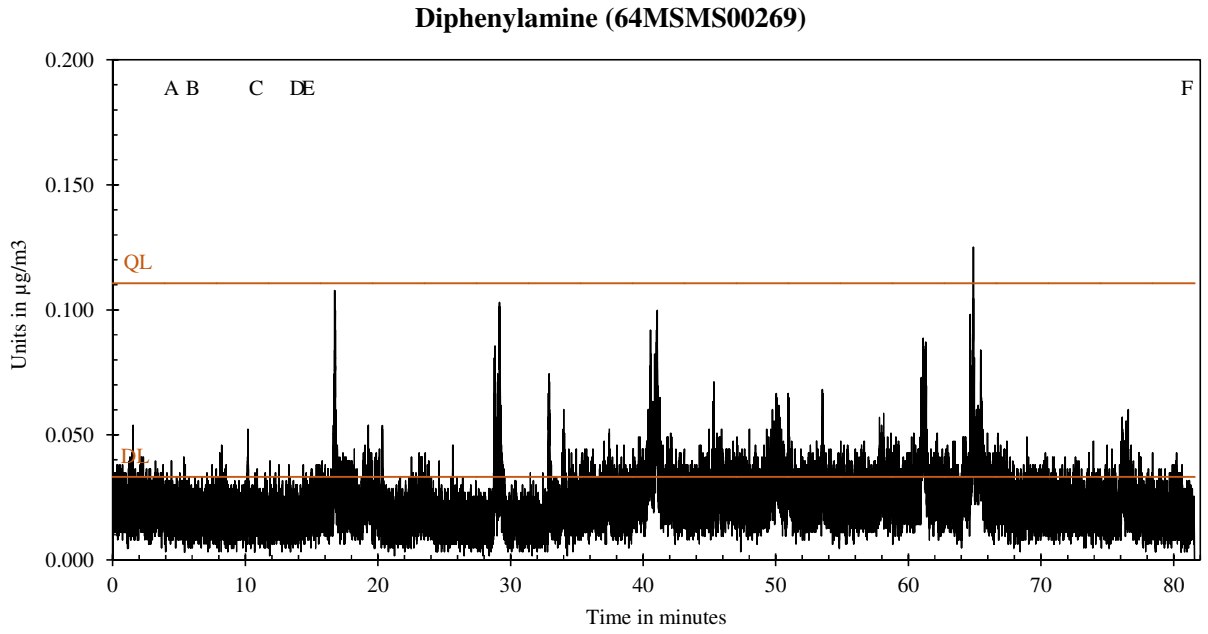

Figure 9d Mobile Monitoring Nine – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

Figure 10a Mobile Monitoring Ten – Webster Parish Fire District 7, 64MSMS00270

Figure 10b

TAGA File Event Summary
File: 64MSMS00270 Acquired on 01 November 2016 at 09:56:36
Title: Mobile Monitoring Ten – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	4.7	2671	Start monitoring at Webster Parish Fire Station
B	73.5	41983	End monitoring at Webster Parish Fire Station

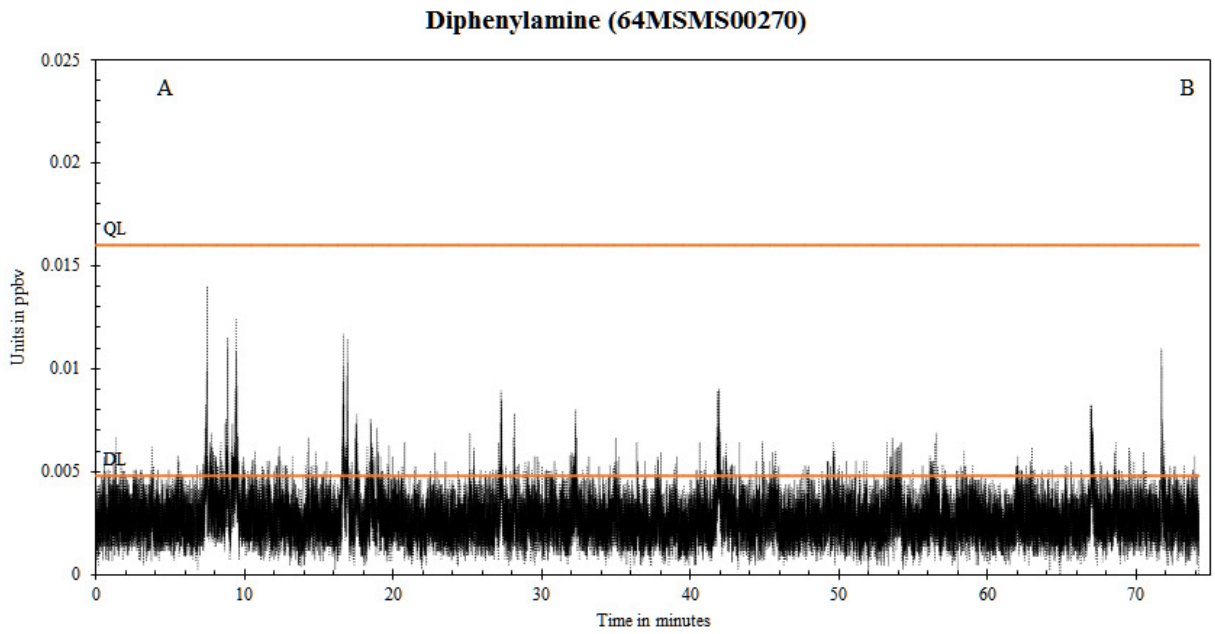

Figure 10c Mobile Monitoring Ten – Webster Parish Fire District 7 in ppbv for Diphenylamine

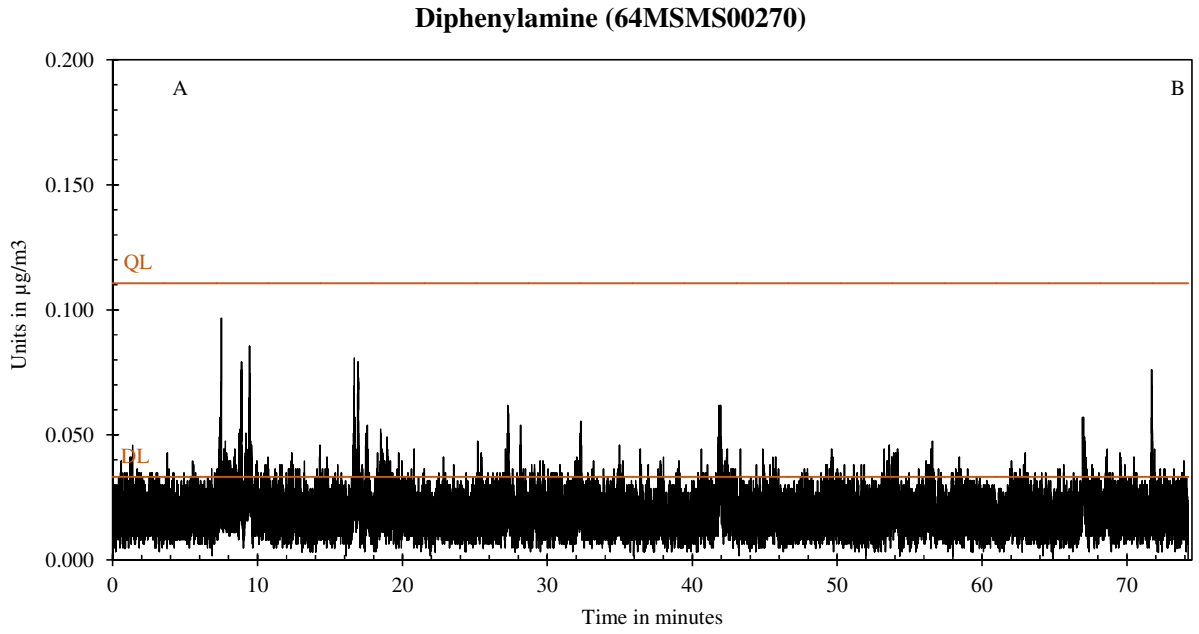

Figure 10d Mobile Monitoring Ten – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

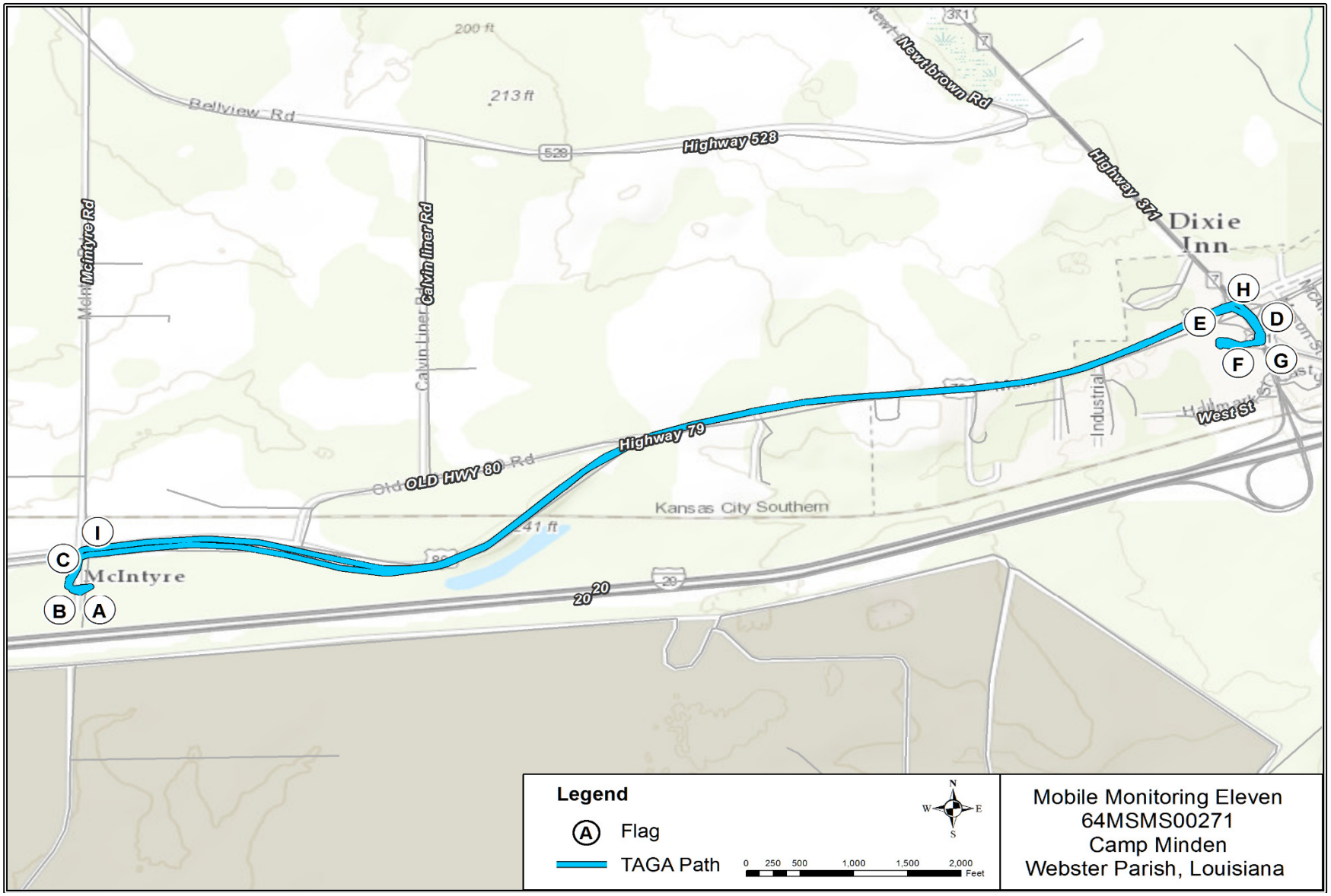

Figure 11a Mobile Monitoring Eleven – Webster Parish Fire District 7, 64MSMS00271

Figure 11b

TAGA File Event Summary
File: 64MSMS00271 Acquired on 01 November 2016 at 11:15:20
Title: Mobile Monitoring Eleven – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	3.3	1881	Start mobile monitoring at Webster Parish Fire Station
B	16.0	9145	Moving from stationary location
C	17.3	9895	Right turn onto Highway 80 East
D	20.6	11771	Right turn into truck stop on Highway 371 South
E	21.6	12351	Stationary at truck stop
F	31.7	18120	Moving from truck stop
G	32.6	18643	Left turn onto Highway 371 North
H	33.4	19091	Left turn onto Highway 80 West
I	36.6	20890	Left turn into fire station - stationary at fire station

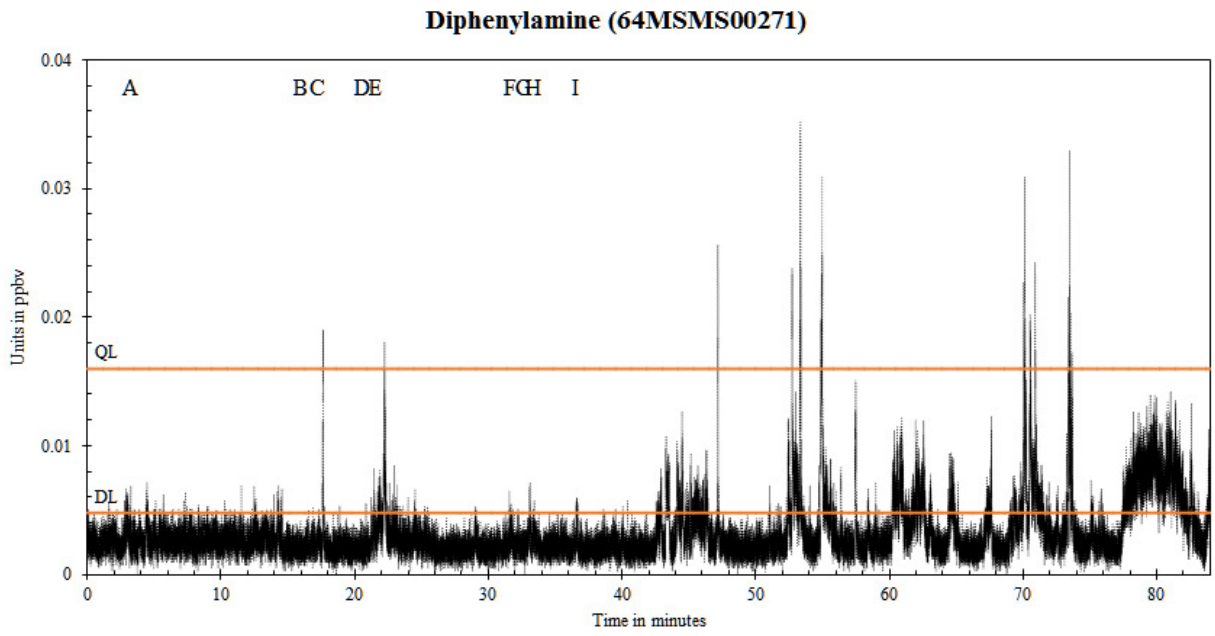

Figure 11c Mobile Monitoring Eleven – Webster Parish Fire District 7 in ppbv for Diphenylamine

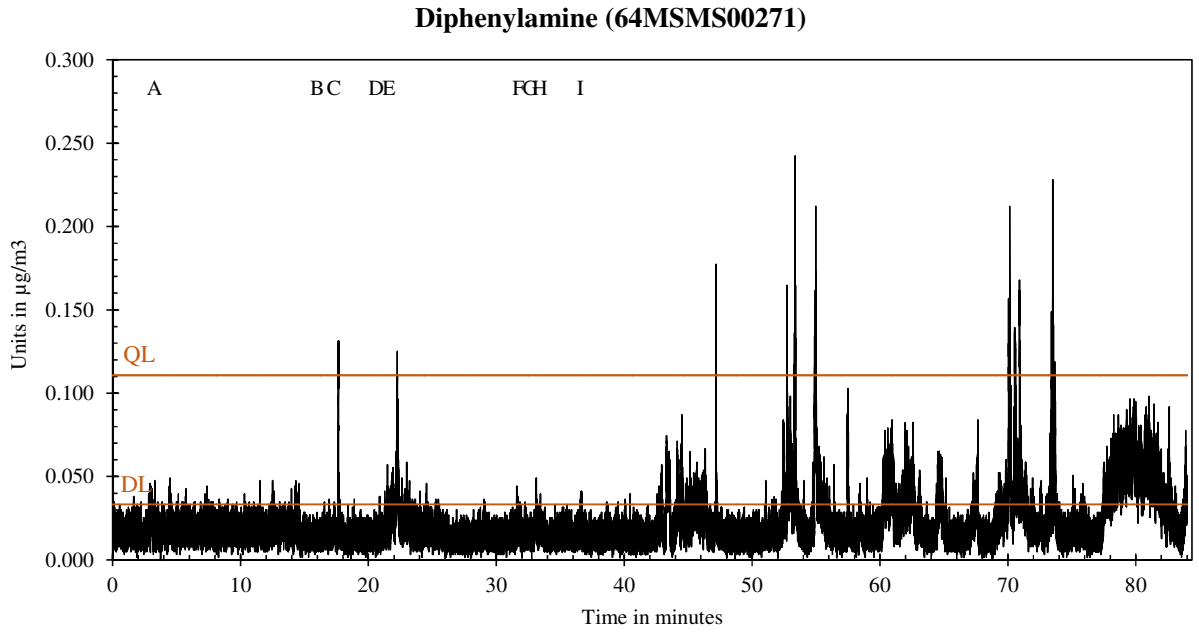

Figure 11d Mobile Monitoring Eleven – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

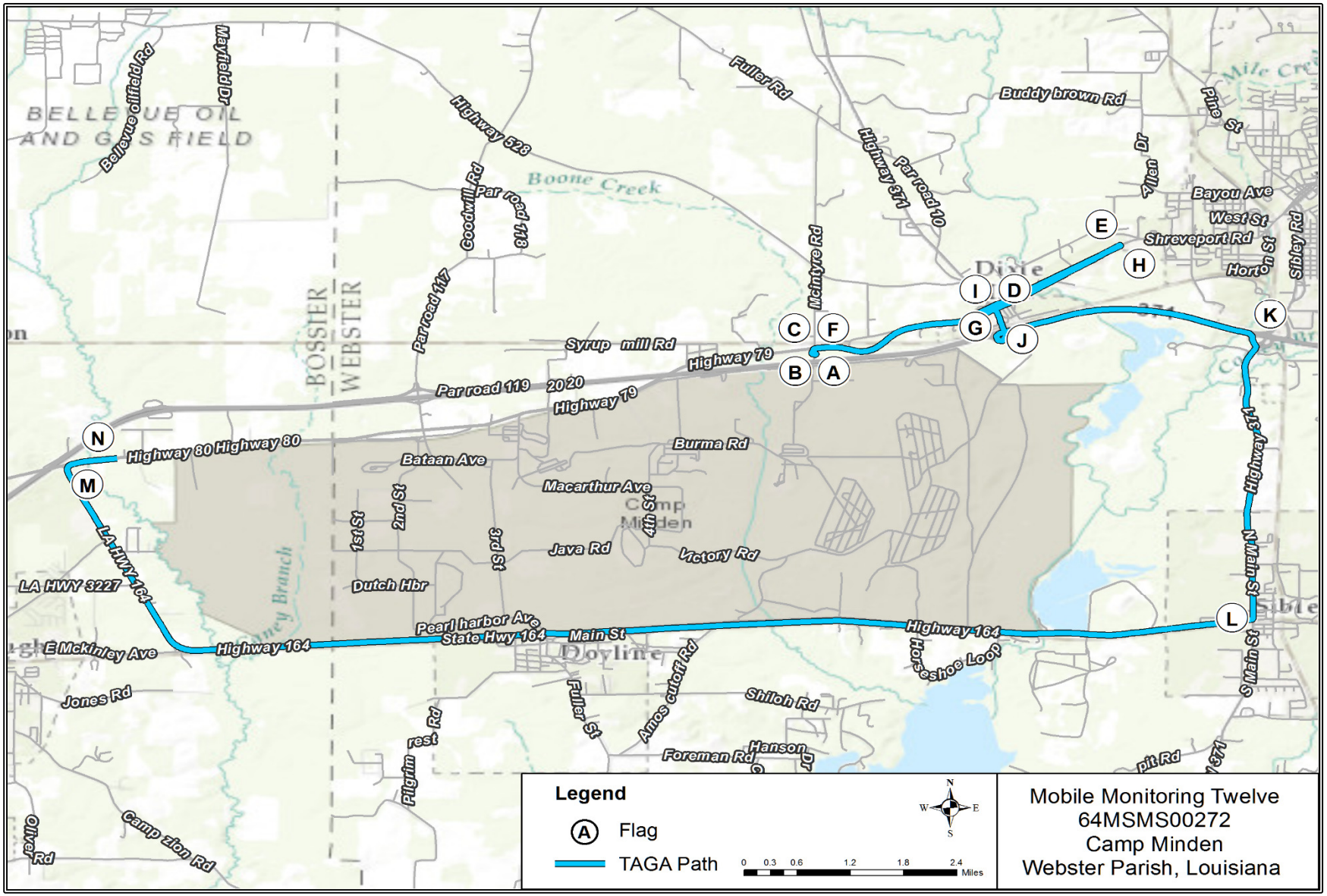

Figure 12a Mobile Monitoring Twelve – Webster Parish Fire District 7, 64MSMS00272

Figure 12b

TAGA File Event Summary
File: 64MSMS00272 Acquired on 01 November 2016 at 12:40:27
Title: Mobile Monitoring Twelve – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	2.8	1624	Start mobile monitoring - stationary at fire station
B	24.2	13846	Moving from stationary location
C	25.9	14779	Right turn onto Highway 80 East
D	29.4	16816	Intersection Highway 80 and Highway 371
E	33.2	18940	U-turn at Webster Boat Sales
F	42.0	23993	U-turn at fire station
G	45.5	26011	Intersection Highway 80 and Highway 371
H	48.5	27678	U-turn at Webster Boat Sales
I	53.7	30656	Left turn onto Highway 371 South
J	54.9	31351	Merge onto Interstate 20 East
K	58.1	33169	Exit onto Highway 371 South
L	63.9	36510	Right turn onto Highway 164 West
M	82.3	47009	Right turn onto Highway 80 East
N	83.8	47876	End mobile monitoring

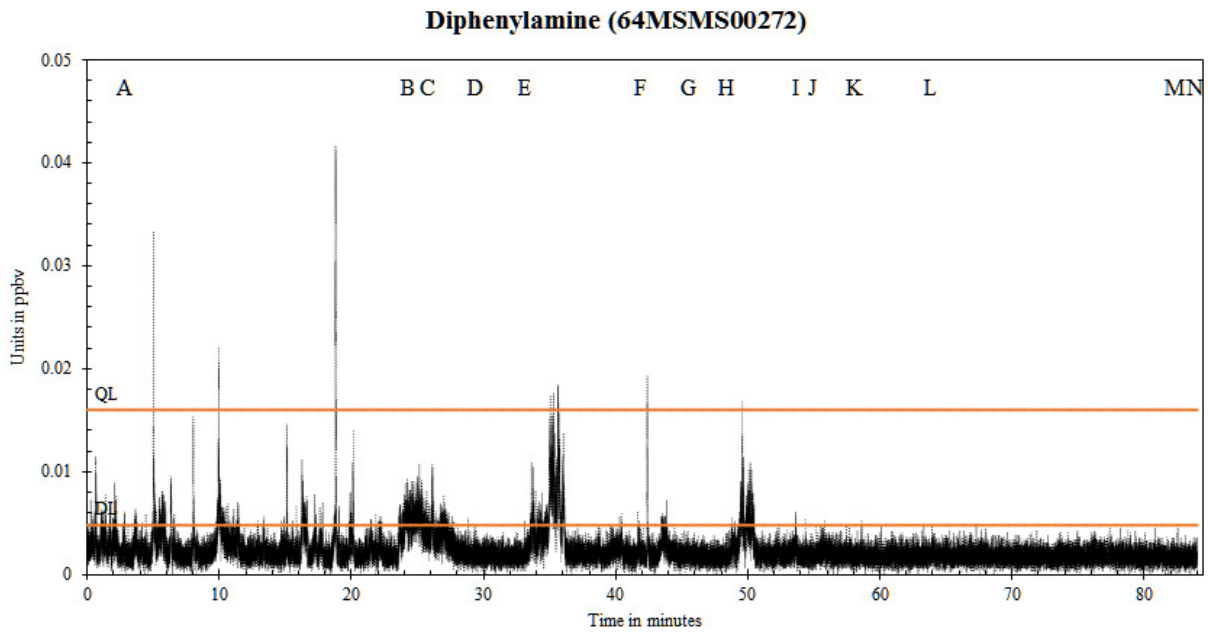

Figure 12c Mobile Monitoring Twelve – Webster Parish Fire District 7 in ppbv for Diphenylamine

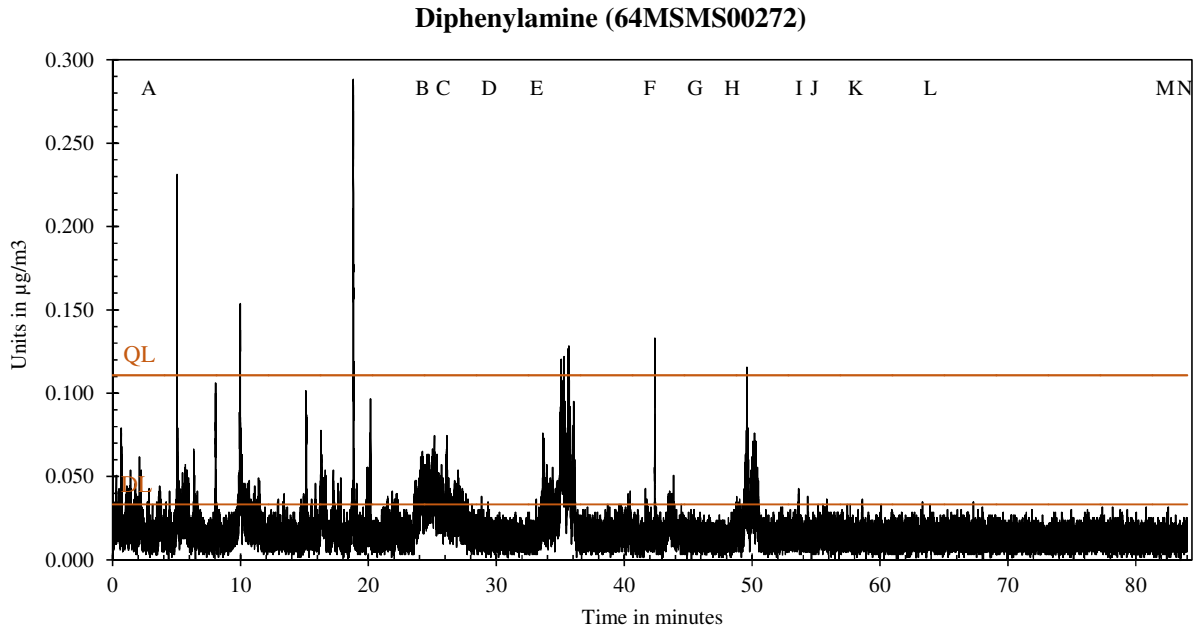

Figure 12d Mobile Monitoring Twelve – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

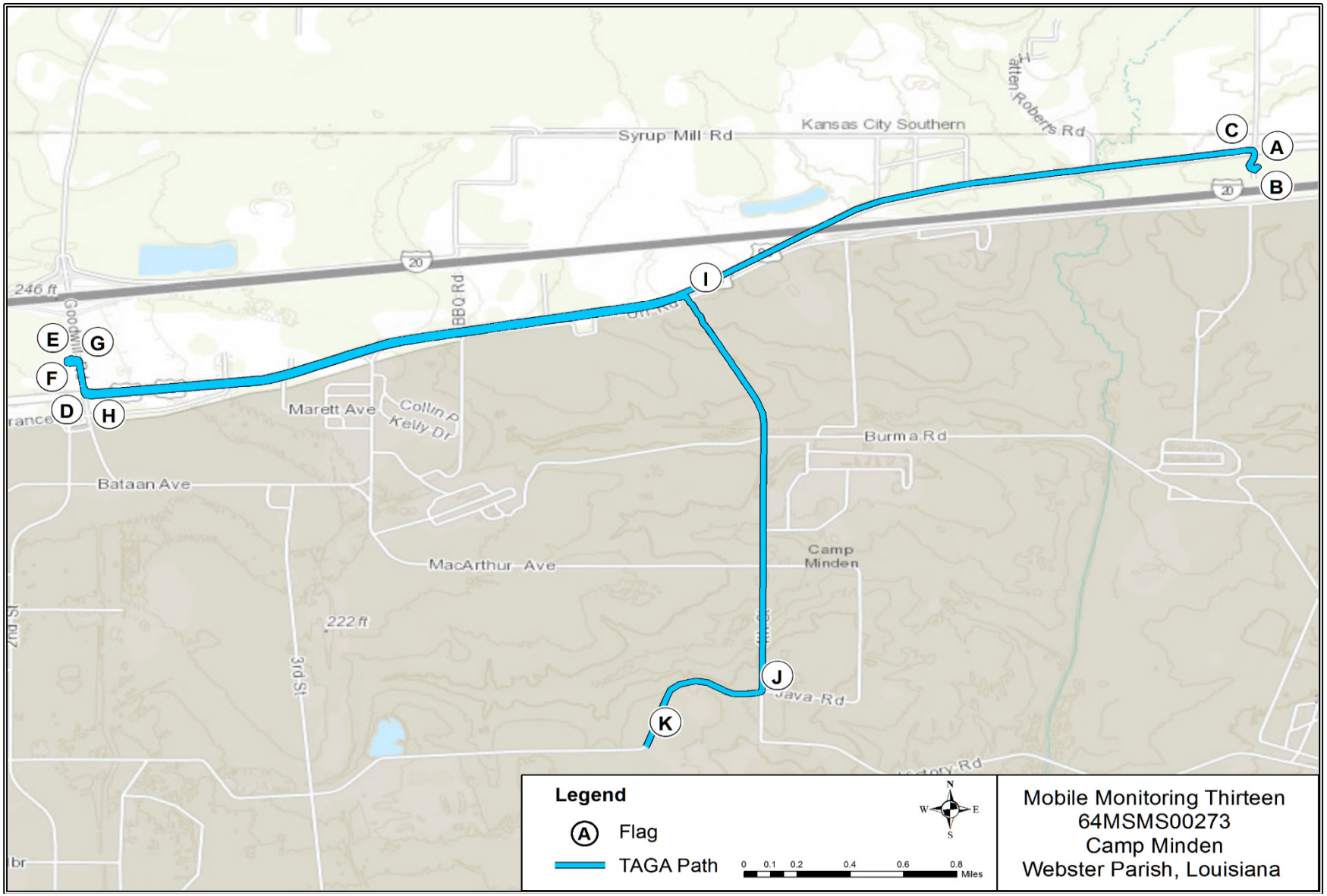

Figure 13a Mobile Monitoring Thirteen – Webster Parish Fire District 7, 64MSMS00273

Figure 13b

TAGA File Event Summary
File: 64MSMS00273 Acquired on 01 November 2016 at 14:14:36
Title: Mobile Monitoring Thirteen – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	3.0	1719	Start mobile monitoring - stationary at fire station
B	45.7	26110	Moving from stationary location
C	47.6	27201	Left turn onto Highway 80 West
D	52.7	30094	Right turn onto Goodwill Road
E	53.7	30665	Stationary - refueling at truck stop
F	66.6	38052	Moving from stationary location
G	67.1	38338	Right turn onto Goodwill Road
H	68.3	39004	Left turn onto Highway 80 East
I	71.0	40546	Right turn onto 4th Street - Enter Camp Minden
J	76.6	43755	Right turn onto Java Road
K	85.0	48568	End of mobile monitoring on Java Road

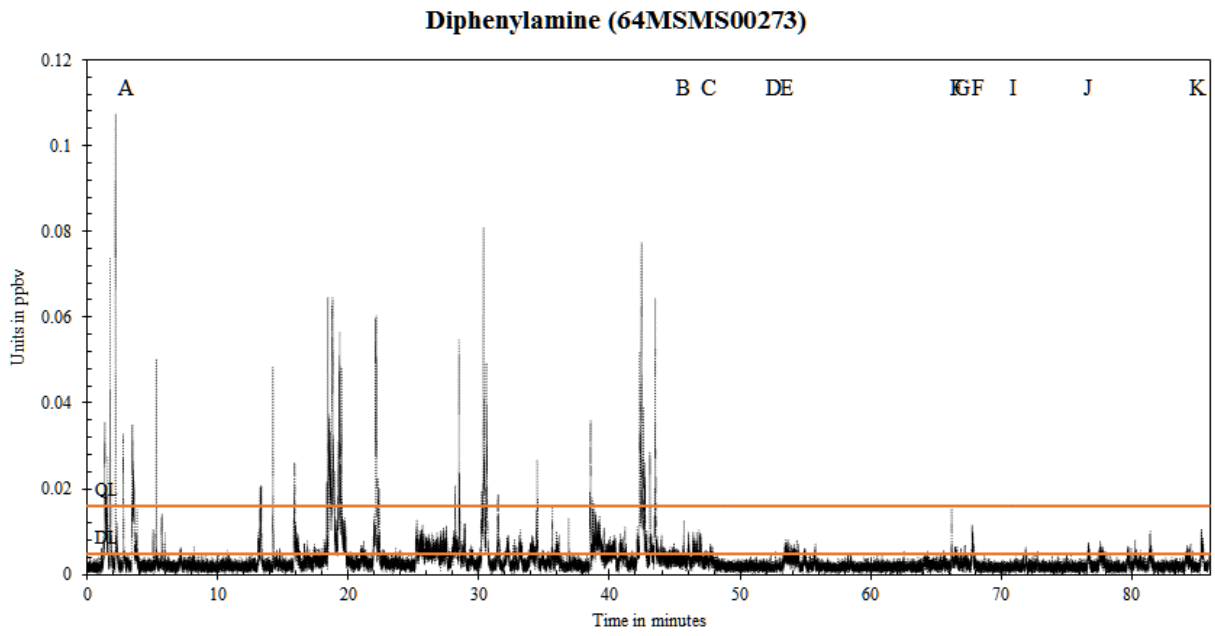

Figure 13c Mobile Monitoring Thirteen – Webster Parish Fire District 7 in ppbv for Diphenylamine

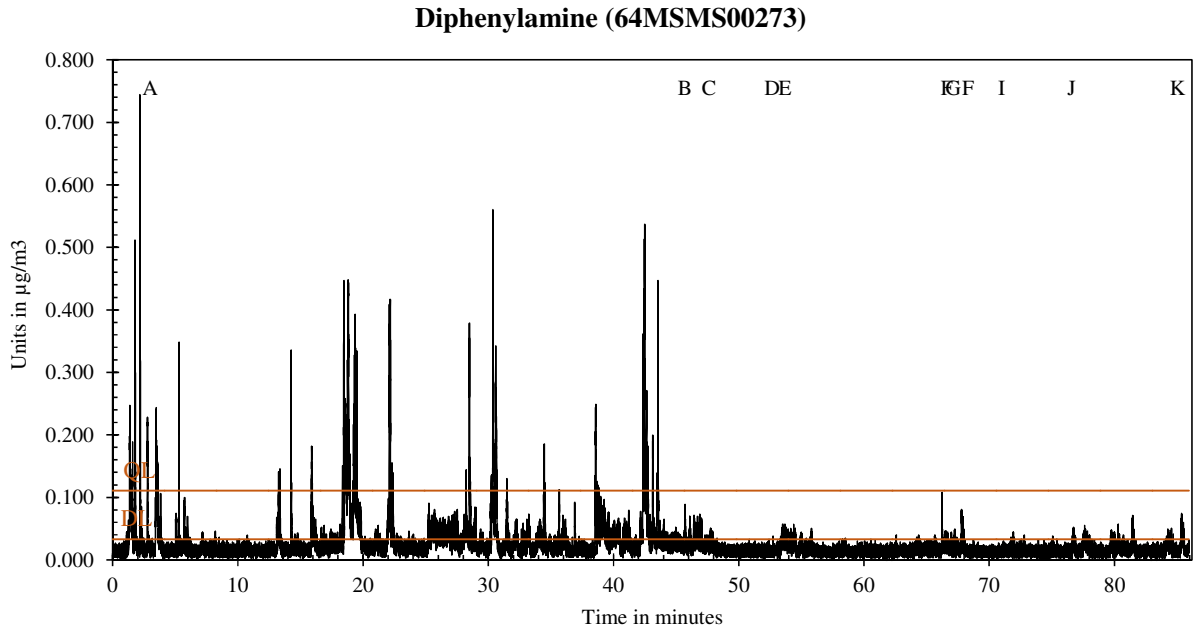

Figure 13d Mobile Monitoring Thirteen – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

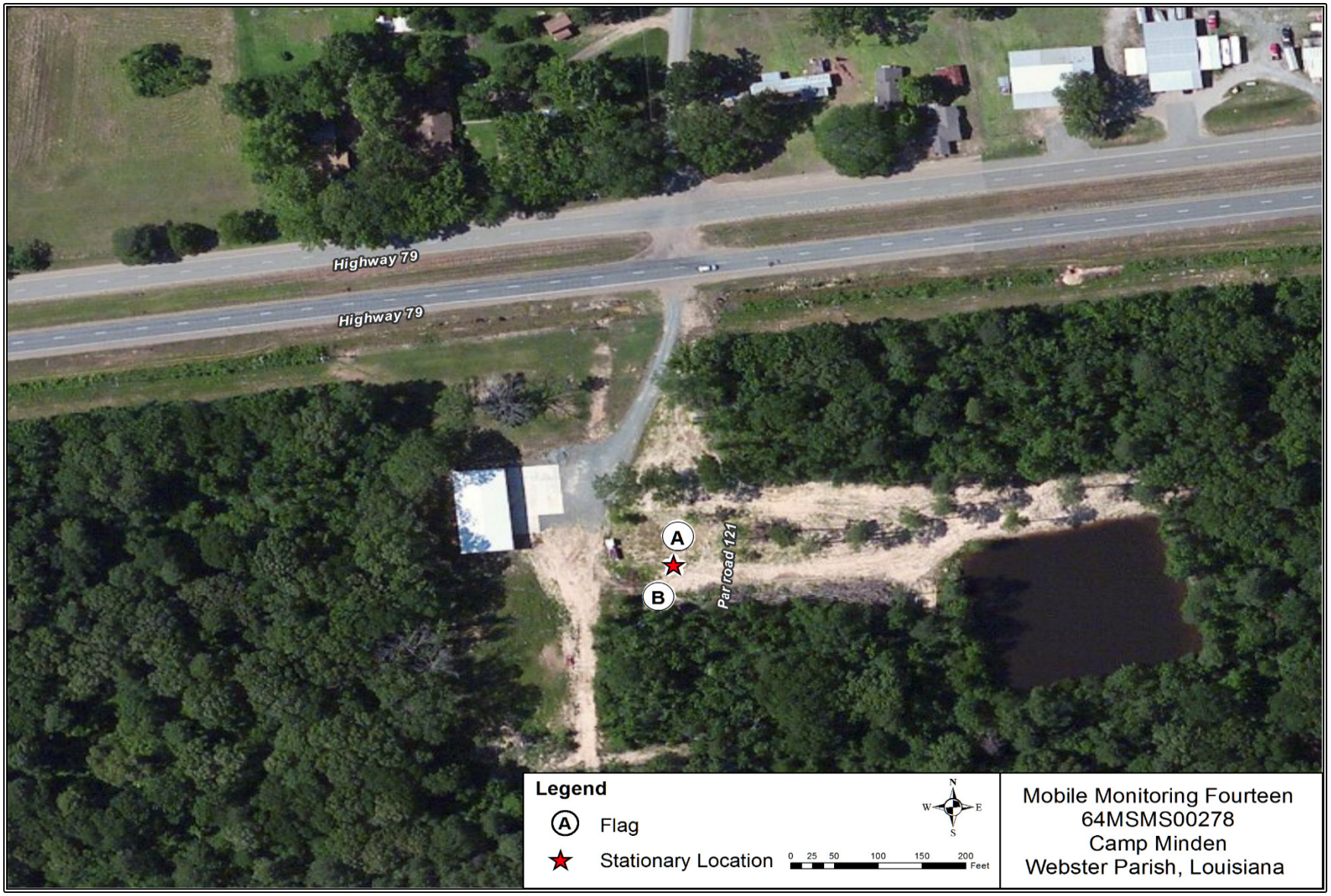

Figure 14a Mobile Monitoring Fourteen – Webster Parish Fire District 7, 64MSMS00278

Figure 14b

TAGA File Event Summary
File: 64MSMS00278 Acquired on 02 November 2016 at 13:51:42
Title: Mobile Monitoring Fourteen – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	1.2	682	Start monitoring - stationary at fire station
B	54.8	31270	End monitoring

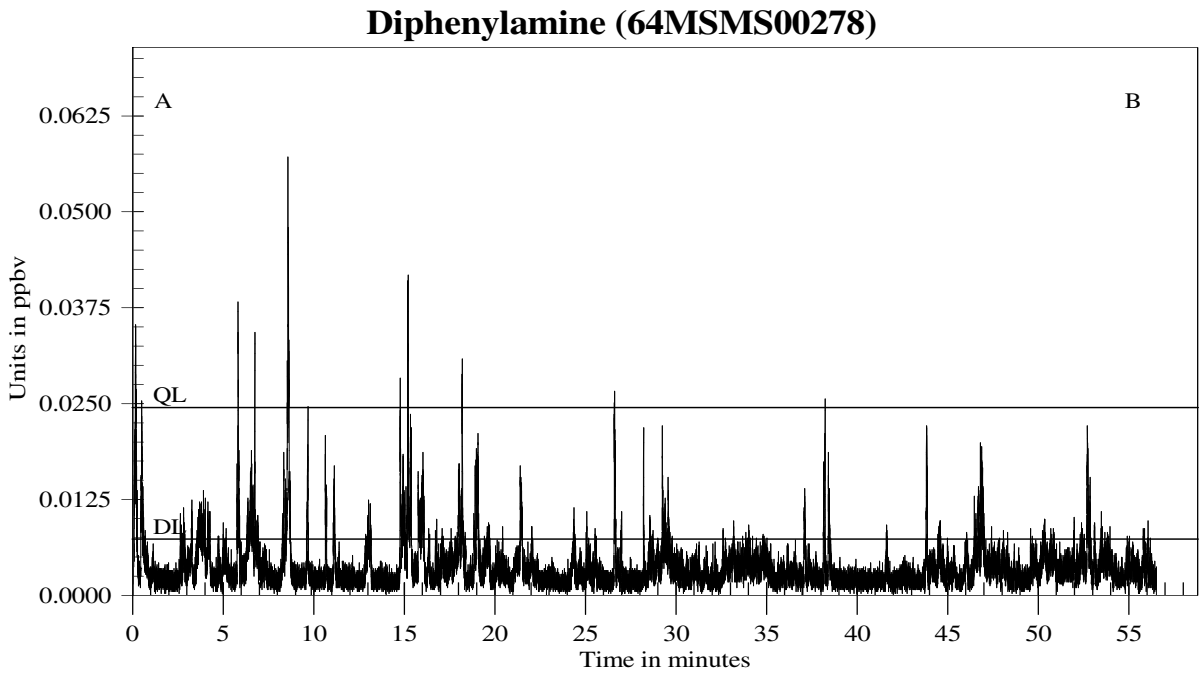

Figure 14c Mobile Monitoring Fourteen – Webster Parish Fire District 7 in ppbv for Diphenylamine

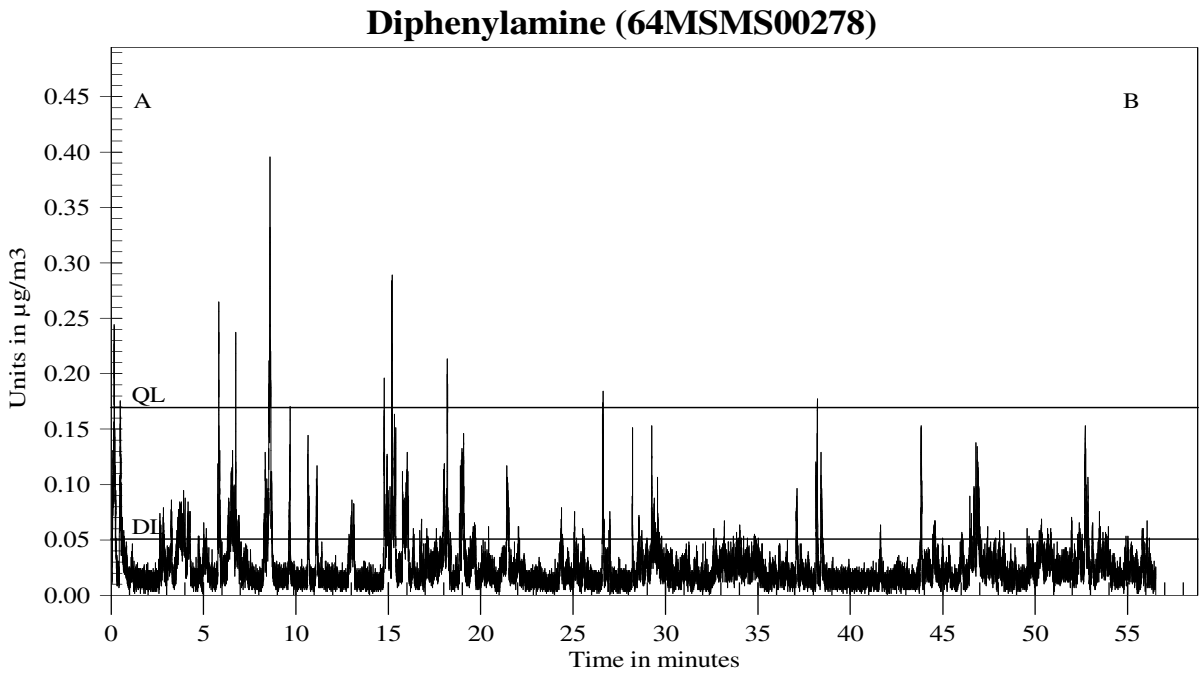

Figure 14d Mobile Monitoring Fourteen – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

Figure 15a Mobile Monitoring Fifteen – Webster Parish Fire District 7, 64MSMS00279

Figure 15b

TAGA File Event Summary
File: 64MSMS00279 Acquired on 02 November 2016 at 14:50:35
Title: Mobile Monitoring Fifteen – Webster Parish Fire District 7

Flag	Time	Sequence	Description
A	2.6	1501	Start monitoring - stationary at fire station
B	56.5	32274	End monitoring

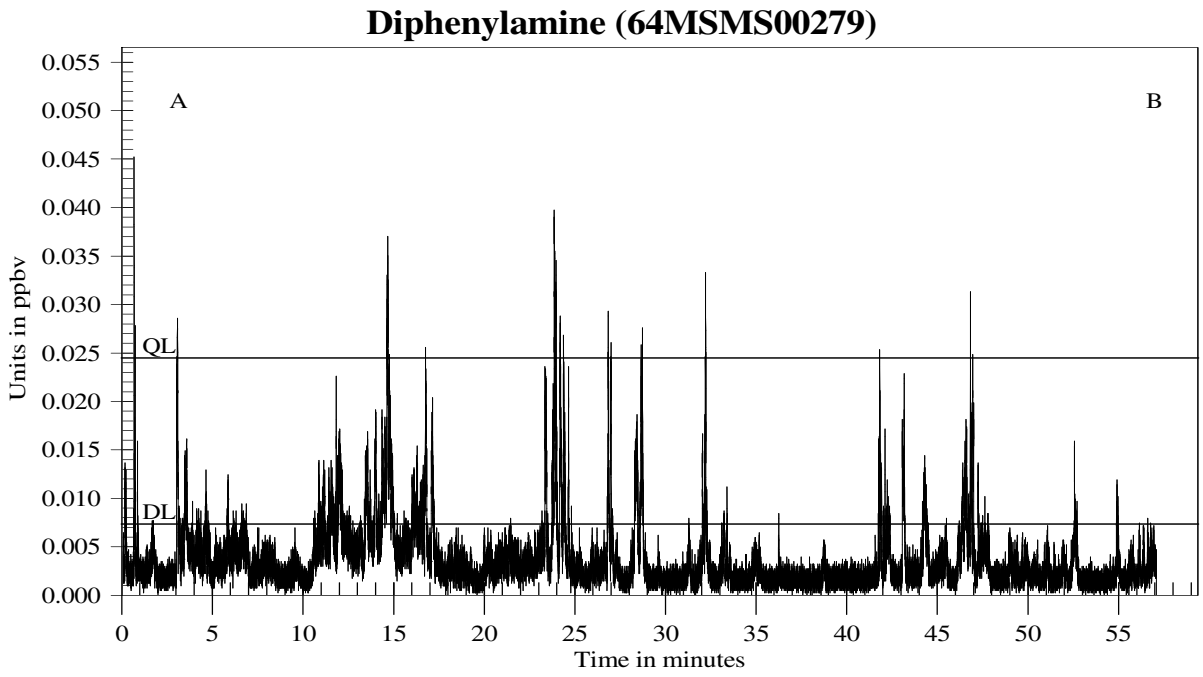

Figure 15c Mobile Monitoring Fifteen – Webster Parish Fire District 7 in ppbv for Diphenylamine

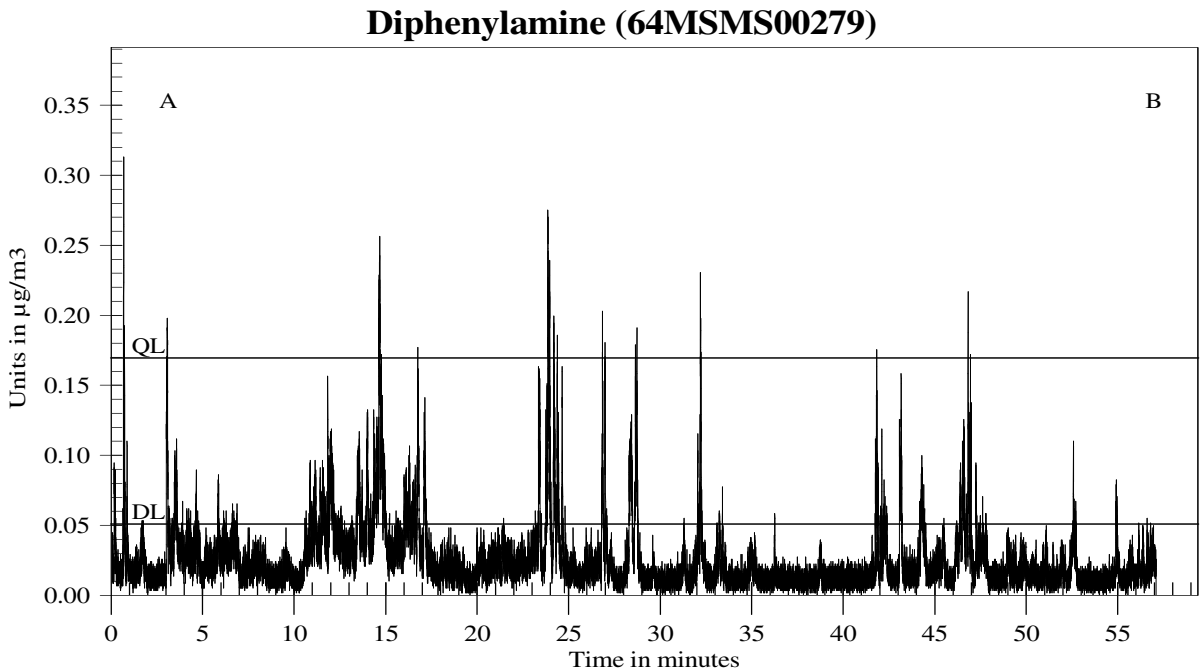

Figure 15d Mobile Monitoring Fifteen – Webster Parish Fire District 7 in µg/m^3 for Diphenylamine

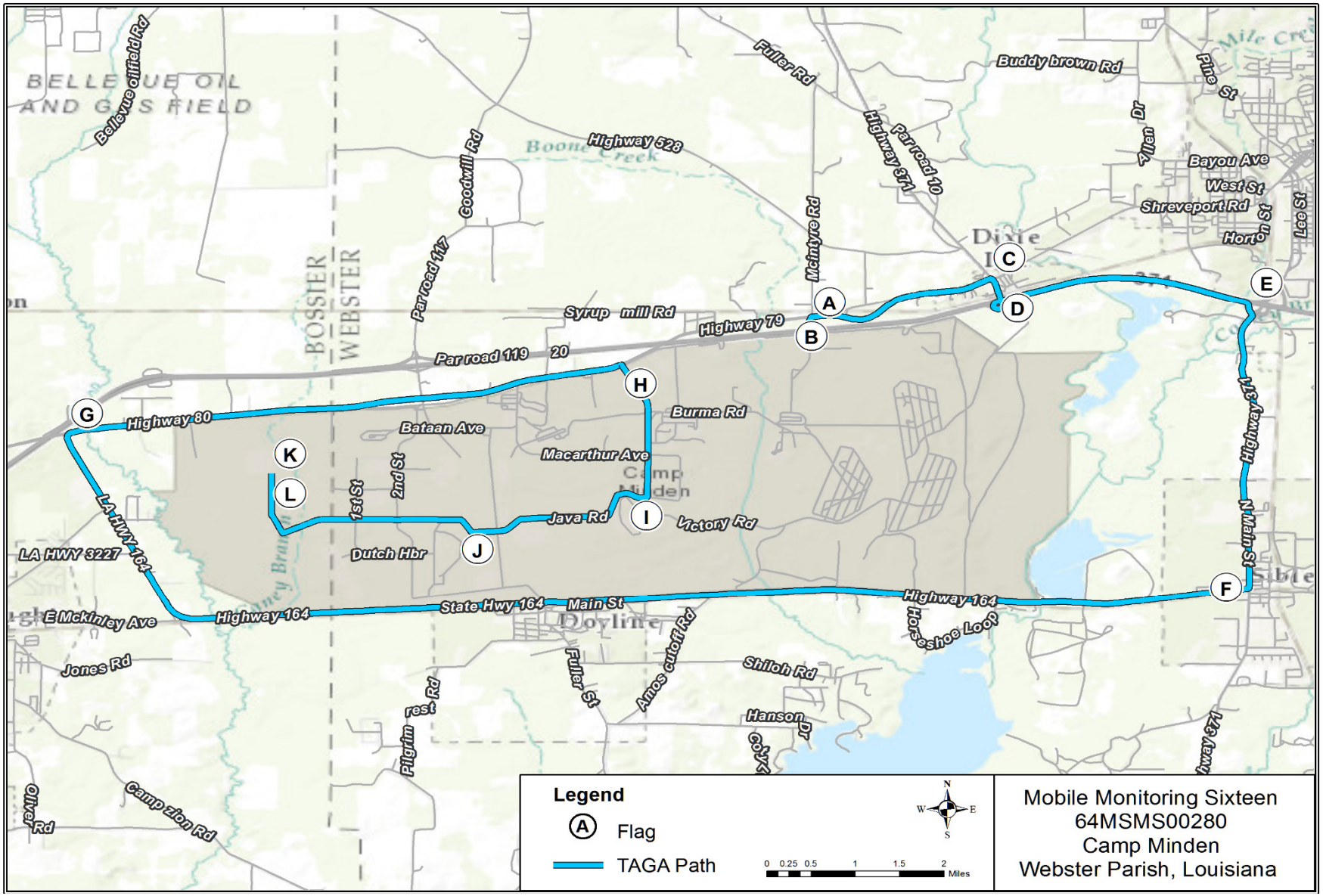

Figure 16a Mobile Monitoring Sixteen – Perimeter of Camp Minden, 64MSMS00280

Figure 16b

TAGA File Event Summary
File: 64MSMS00280 Acquired on 02 November 2016 at 15:50:09
Title: Mobile Monitoring Sixteen – Perimeter of Camp Minden

Flag	Time	Sequence	Description
A	1.7	948	Start mobile monitoring at Webster Parish Fire Station
B	6.1	3509	Right turn onto Highway 80 East
C	9.4	5356	Right turn onto Highway 371 South
D	10.3	5879	Merge onto Interstate 20 East
E	13.3	7602	Exit onto Highway 371South
F	19.3	11030	Right turn onto Highway 164 West
G	35.7	20395	Right turn onto Highway 80 East
H	42.1	24069	Right turn onto 4th Street - Enter Camp Minden
I	47.1	26916	Right turn onto Java Road
J	51.1	29209	Intersection Java Road and 3rd Street
K	57.8	32998	At shore power location
L	58.5	33426	End mobile monitoring

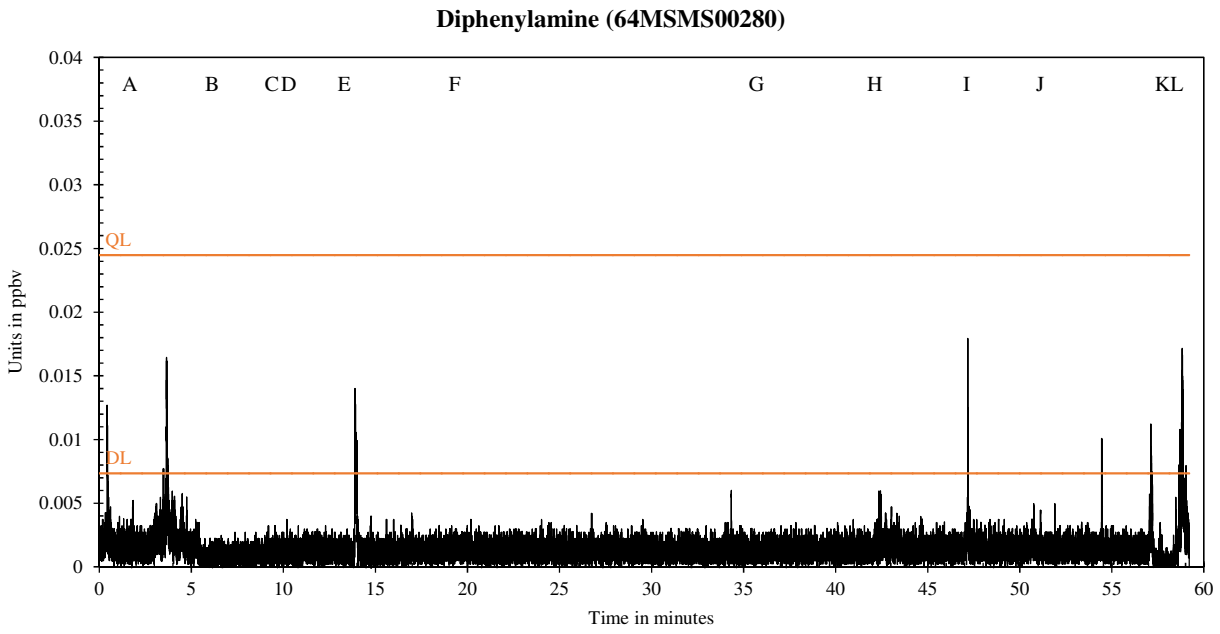

Figure 16c Mobile Monitoring Sixteen – Perimeter of Camp Minden in ppbv for Diphenylamine

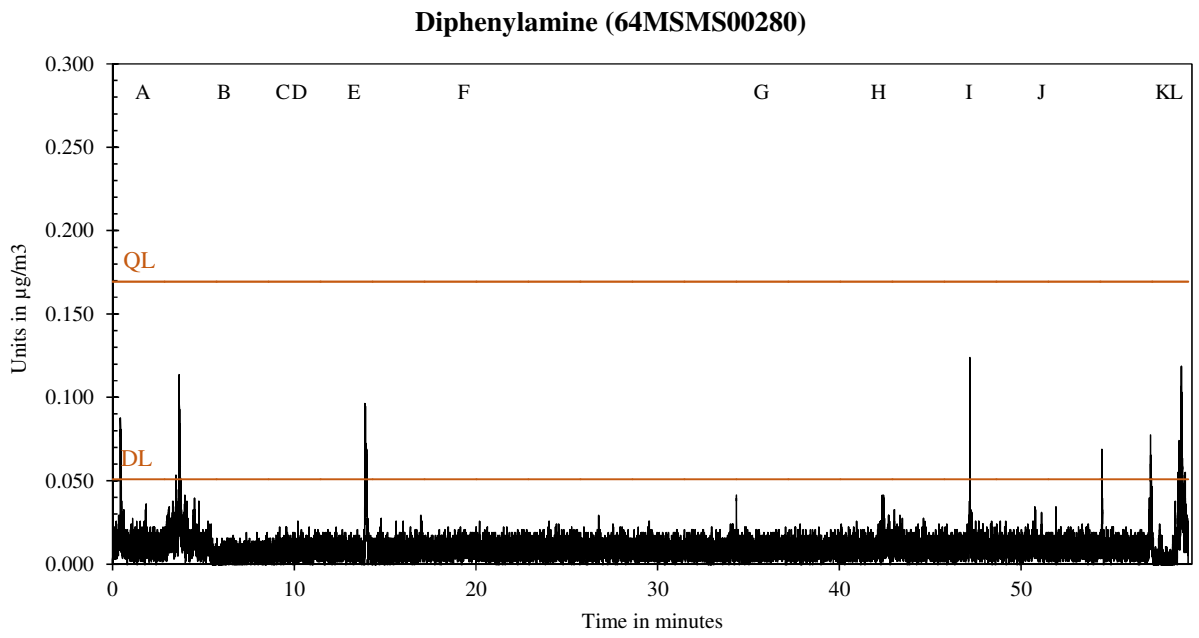

Figure 16d Mobile Monitoring Sixteen – Perimeter of Camp Minden in µg/m^3 for Diphenylamine

APPENDIX A

Certificates of Analysis

Camp Minden

Final Analytical TAGA Report

December 2016

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660 Tower Lane • P.O. Box 595 • West Chester, PA 19381-0595
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729
info@chemservice.com • www.chemservice.com

CERTIFICATE OF ANALYSIS

Diphenylamine

CATALOG NUMBER	N-11801-25CMG
LOT NUMBER	5401600
DATE CERTIFIED	04/24/15
EXPIRATION DATE	04/30/22
CAS NUMBER	122-39-4
MOLECULAR FORMULA	C12H11N
MOLECULAR WEIGHT	169.24
STORAGE	Store in a cool dry place
HANDLING	See Safety Data Sheet
INTENDED USE	For laboratory use only.
ISO GUIDE 34 CERTIFIED	[ ]

Analytical Test	Value
% PURITY (HPLC)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

Mary Beth O'Donnell

Mary Beth O'Donnell
USM/TC

COA Form
Revision 3 (3/2015)

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APPENDIX B

Compiled Meteorological Data

Camp Minden

Final Analytical TAGA Report

December 2016

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Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/27/2016	15	63	57	81	0		29.88	
10/272016	35	63	57	81	0		29.88	
10/272016	55	63	57	81	0		29.88	
10/272016	115	62	57	84	0		29.88	
10/272016	135	60	56	87	0		29.88	
10/272016	155	60	57	90	0		29.88	
10/272016	215	60	56	87	0		29.88	
10/272016	235	59	56	90	0		29.88	
10/272016	255	58	56	93	0		29.88	
10/272016	315	58	56	93	0		29.88	
10/272016	335	58	56	93	0		29.88	
10/272016	355	58	55	90	0		29.88	
10/272016	415	57	55	93	0		29.89	
10/272016	435	57	55	93	0		29.89	
10/272016	455	57	55	93	0		29.9	
10/272016	515	58	55	90	0		29.9	
10/272016	535	57	55	93	0		29.9	
10/272016	555	57	55	93	0		29.9	
10/272016	615	57	55	93	0		29.91	
10/272016	635	57	55	93	0		29.91	
10/272016	655	57	55	93	0		29.92	
10/272016	715	58	56	93	0		29.93	
10/272016	735	60	57	90	0		29.94	
10/272016	755	64	59	84	0		29.95	
10/272016	815	67	59	76	0		29.96	
10/272016	835	69	60	73	0		29.97	
10/272016	855	71	60	68	0		29.97	
10/272016	915	72	60	66	0		29.97	
10/272016	935	74	60	62	3	300	29.98	
10/272016	955	75	60	60	3	340	29.98	
10/272016	1015	76	60	58	3	300	29.98	
10/272016	1035	77	61	58	0		29.97	
10/272016	1055	78	61	56	0		29.97	
10/272016	1115	79	61	54	0		29.97	
10/272016	1135	80	58	47	0		29.96	
10/272016	1155	80	59	49	0		29.95	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/272016	1215	82	57	43	5	30	29.94	
10/272016	1235	82	58	44	0		29.92	
10/272016	1255	82	58	44	0		29.92	
10/272016	1315	83	59	44	5	120	29.91	
10/272016	1335	83	59	44	5	130	29.9	
10/272016	1355	83	59	44	6	190	29.9	
10/272016	1415	83	59	44	5	130	29.9	
10/272016	1435	83	58	43	3	100	29.89	
10/272016	1455	83	58	43	6	120	29.89	
10/272016	1515	83	58	43	5	140	29.89	
10/272016	1535	82	58	44	3	170	29.89	
10/272016	1555	82	59	46	5	130	29.89	
10/272016	1615	82	59	46	5	150	29.88	
10/272016	1635	80	60	51	0		29.88	
10/272016	1655	79	60	52	0		29.88	
10/272016	1715	76	61	60	0		29.88	
10/272016	1735	74	63	69	0		29.88	
10/272016	1755	71	62	73	0		29.89	
10/272016	1815	69	62	79	0		29.89	
10/272016	1835	68	63	84	0		29.9	
10/272016	1855	67	63	87	0		29.9	
10/272016	1915	66	62	87	0		29.9	
10/272016	1935	66	63	90	0		29.9	
10/272016	1955	65	62	90	0		29.9	
10/272016	2015	64	62	93	0		29.9	
10/272016	2035	64	62	93	0		29.9	
10/272016	2055	64	61	90	0		29.91	
10/272016	2115	63	61	93	0		29.91	
10/272016	2135	63	60	90	0		29.91	
10/272016	2155	62	60	93	0		29.91	
10/272016	2215	62	60	93	0		29.91	
10/272016	2235	61	59	93	0		29.91	
10/272016	2255	61	59	93	0		29.91	
10/272016	2315	61	59	93	0		29.91	
10/272016	2335	60	58	93	0		29.91	
10/272016	2355	60	58	93	0		29.91	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/28/2016	15	60	58	93	0		29.91	
10/28/2016	35	60	58	93	0		29.9	
10/28/2016	55	60	58	93	0		29.91	
10/28/2016	115	59	57	93	3	110	29.91	
10/28/2016	135	60	58	93	0		29.9	
10/28/2016	155	59	57	93	0		29.9	
10/28/2016	215	59	57	93	0		29.9	
10/28/2016	235	59	57	93	0		29.89	
10/28/2016	255	59	57	93	0		29.9	
10/28/2016	315	58	56	93	0		29.9	
10/28/2016	335	58	56	93	0		29.9	
10/28/2016	355	58	56	93	0		29.91	
10/28/2016	415	58	56	93	0		29.91	
10/28/2016	435	57	55	93	0		29.92	
10/28/2016	455	58	56	93	0		29.92	
10/28/2016	515	57	55	93	0		29.92	
10/28/2016	535	57	56	96	0		29.92	
10/28/2016	555	57	55	93	0		29.92	
10/28/2016	615	57	55	93	0		29.92	
10/28/2016	635	57	55	93	0		29.92	
10/28/2016	655	58	56	93	3	80	29.92	
10/28/2016	715	59	57	93	0		29.94	
10/28/2016	735	62	59	90	0		29.95	
10/28/2016	755	67	60	78	0		29.95	
10/28/2016	815	69	60	73	0		29.96	
10/28/2016	835	71	61	71	0		29.96	
10/28/2016	855	73	61	66	0		29.96	
10/28/2016	915	76	62	62	0		29.96	
10/28/2016	935	77	63	62	0		29.96	
10/28/2016	955	79	62	56	3	110	29.96	
10/28/2016	1015	80	63	56	3	190	29.96	
10/28/2016	1035	81	62	53	3	150	29.96	
10/28/2016	1055	81	62	53	0		29.95	
10/28/2016	1115	83	62	49	6	180	29.94	
10/28/2016	1135	83	62	49	6	150	29.94	
10/28/2016	1155	84	62	48	6	160	29.93	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/28/2016	1215	84	60	44	7	180	29.92	
10/28/2016	1235	81	60	49	5	200	29.91	
10/28/2016	1255	84	61	46	3	150	29.89	
10/28/2016	1315	84	60	44	6	140	29.88	
10/28/2016	1335	85	59	41	3	160	29.87	
10/28/2016	1355	85	60	43	3	200	29.87	
10/28/2016	1415	84	60	44	3	150	29.86	
10/28/2016	1435	85	60	43	3	90	29.85	
10/28/2016	1455	85	60	43	3	160	29.85	
10/28/2016	1515	84	59	43	0		29.85	
10/28/2016	1535	84	59	43	3	230	29.84	
10/28/2016	1555	84	59	43	3	240	29.84	
10/28/2016	1615	83	59	44	0		29.85	
10/28/2016	1635	82	61	49	0		29.85	
10/28/2016	1655	80	62	54	0		29.85	
10/28/2016	1715	76	64	67	0		29.85	
10/28/2016	1740	73	65	76	0		29.85	
10/28/2016	1755	72	64	76	0		29.85	
10/28/2016	1815	71	65	81	0		29.86	
10/28/2016	1835	69	65	87	0		29.87	
10/28/2016	1855	69	65	87	0		29.87	
10/28/2016	1915	68	64	87	0		29.87	
10/28/2016	1935	68	64	87	0		29.87	
10/28/2016	1955	67	64	90	0		29.87	
10/28/2016	2015	67	63	87	0		29.87	
10/28/2016	2035	66	63	90	0		29.87	
10/28/2016	2055	65	63	93	0		29.87	
10/28/2016	2115	65	63	93	0		29.88	
10/28/2016	2135	65	62	90	0		29.88	
10/28/2016	2155	65	62	90	0		29.88	
10/28/2016	2215	65	62	90	0		29.88	
10/28/2016	2235	64	62	93	0		29.87	
10/28/2016	2255	62	60	93	0		29.87	
10/28/2016	2315	63	61	93	0		29.87	
10/28/2016	2335	63	60	90	0		29.87	
10/28/2016	2355	63	61	93	0		29.87	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/292016	15	62	60	93	0		29.87	
10/292016	35	62	60	93	0		29.87	
10/292016	55	61	59	93	0		29.88	
10/292016	115	62	60	93	0		29.87	
10/292016	135	61	58	90	0		29.87	
10/292016	155	60	58	93	0		29.87	
10/292016	215	61	59	93	0		29.87	
10/292016	235	59	57	93	0		29.87	
10/292016	255	60	58	93	0		29.87	
10/292016	315	60	58	93	0		29.87	
10/292016	335	59	57	93	0		29.87	
10/292016	355	58	57	97	0		29.87	
10/292016	415	58	56	93	0		29.87	
10/292016	435	58	56	93	0		29.88	
10/292016	455	58	56	93	0		29.88	
10/292016	515	58	56	93	0		29.88	
10/292016	535	58	56	93	0		29.89	
10/292016	555	58	56	93	0		29.89	
10/292016	615	57	56	96	0		29.89	
10/292016	635	57	56	96	0		29.9	
10/292016	655	57	55	93	0		29.9	
10/292016	715	58	57	97	0		29.9	
10/292016	735	61	59	93	3	110	29.91	
10/292016	755	64	60	87	0		29.92	
10/292016	815	67	61	81	3	130	29.92	
10/292016	835	69	63	81	0		29.92	
10/292016	855	71	64	79	0		29.92	
10/292016	915	73	65	76	3	170	29.92	
10/292016	935	75	65	71	6	190	29.92	
10/292016	955	76	65	69	3	160	29.92	
10/292016	1015	77	65	67	5	180	29.92	
10/292016	1035	78	65	64	3	160	29.92	
10/292016	1055	79	65	62	5	150	29.91	
10/292016	1115	81	62	53	7	180	29.9	
10/292016	1135	82	63	53	6	160	29.89	
10/292016	1155	82	60	47	7	180	29.88	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/292016	1215	82	57	43	10	140	29.87	
10/292016	1235	83	54	37	8	180	29.86	
10/292016	1255	83	54	37	6	170	29.85	
10/292016	1315	84	53	34	5	160	29.84	
10/292016	1335	84	53	34	5	160	29.83	
10/292016	1355	84	52	33	3	150	29.83	
10/292016	1415	85	54	35	6	180	29.82	
10/292016	1435	84	52	33	5	170	29.81	
10/292016	1455	84	52	33	6	140	29.81	
10/292016	1515	85	53	33	5	150	29.81	
10/292016	1535	84	53	34	5	140	29.81	
10/292016	1555	84	53	34	3	150	29.81	
10/292016	1615	83	53	36	0		29.8	
10/292016	1635	82	54	38	3	130	29.8	
10/292016	1655	80	55	42	0		29.8	
10/292016	1715	77	58	52	0		29.8	
10/292016	1735	72	59	64	0		29.8	
10/292016	1755	70	59	68	0		29.81	
10/292016	1815	68	60	76	0		29.81	
10/292016	1835	66	60	81	0		29.82	
10/292016	1855	66	60	81	0		29.83	
10/292016	1915	65	60	84	0		29.83	
10/292016	1935	65	60	84	0		29.83	
10/292016	1955	64	59	84	3	120	29.82	
10/292016	2015	64	59	84	0		29.83	
10/292016	2035	65	59	81	0		29.83	
10/292016	2055	66	58	76	0		29.83	
10/292016	2115	64	58	81	0		29.83	
10/292016	2135	66	58	76	0		29.83	
10/292016	2155	66	57	73	0		29.84	
10/292016	2215	67	57	70	0		29.84	
10/292016	2235	64	57	78	3	130	29.83	
10/292016	2255	64	57	78	3	140	29.83	
10/292016	2315	66	56	70	0		29.83	
10/292016	2335	66	56	70	3	140	29.83	
10/292016	2355	65	56	73	3	150	29.83	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/302016	15	64	56	75	0		29.84	
10/302016	35	63	57	81	0		29.84	
10/302016	55	61	56	84	3	140	29.84	
10/302016	115	60	56	87	0		29.84	
10/302016	135	61	57	87	0		29.85	
10/302016	155	60	56	87	3	120	29.84	
10/302016	215	59	56	90	0		29.84	
10/302016	235	60	57	90	0		29.84	
10/302016	255	59	56	90	0		29.84	
10/302016	315	59	56	90	0		29.84	
10/302016	335	58	56	93	0		29.84	
10/302016	355	58	56	93	5	360	29.85	
10/302016	415	58	56	93	3	110	29.85	
10/302016	435	58	55	90	0		29.86	
10/302016	455	58	56	93	0		29.86	
10/302016	515	59	57	93	0		29.86	
10/302016	535	59	57	93	5	120	29.86	
10/302016	555	59	57	93	0		29.87	
10/302016	615	59	57	93	0		29.87	
10/302016	635	58	56	93	0		29.87	
10/302016	655	58	56	93	3	120	29.88	
10/302016	715	59	57	93	0		29.88	
10/302016	735	62	60	93	0		29.89	
10/302016	755	65	60	84	0		29.9	
10/302016	815	68	61	78	0		29.9	
10/302016	835	70	62	76	3	190	29.91	
10/302016	855	71	62	73	3	210	29.92	
10/302016	915	73	62	69	5	210	29.91	
10/302016	935	75	62	64	3	200	29.91	
10/302016	955	77	63	62	6	220	29.91	
10/302016	1015	79	62	56	5	220	29.91	
10/302016	1035	80	63	56	3	170	29.9	
10/302016	1055	80	62	54	6	190	29.9	
10/302016	1115	82	62	51	0	0	29.89	
10/302016	1135	83	59	44	7	220	29.89	
10/302016	1155	83	59	44	5	160	29.87	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/302016	1215	84	60	44	5	210	29.87	
10/302016	1235	84	60	44	5	190	29.85	
10/302016	1255	84	61	46	6	220	29.85	
10/302016	1315	84	59	43	3	260	29.84	
10/302016	1335	85	60	43	0		29.83	
10/302016	1355	85	60	43	0		29.82	
10/302016	1415	85	60	43	5	180	29.82	
10/302016	1435	85	60	43	6	190	29.82	
10/302016	1455	85	61	45	3	180	29.81	
10/302016	1515	85	60	43	5	160	29.81	
10/302016	1535	85	60	43	3	180	29.8	
10/302016	1555	84	61	M	5	170	M	
10/302016	1615	84	61	M	3	170	M	
10/302016	1635	83	61	M	0		M	
10/302016	1655	81	62	M	0		M	
10/302016	1715	77	64	M	0		M	
10/302016	1735	74	64	M	0		M	
10/302016	1755	72	64	M	0		M	
10/302016	1815	71	64	79	0		29.81	
10/302016	1835	70	64	81	0		29.82	
10/302016	1855	69	64	84	0		29.82	
10/302016	1915	68	64	87	0		29.82	
10/302016	1935	67	64	90	0		29.82	
10/302016	1955	66	63	90	0		29.82	
10/302016	2015	65	62	90	0		29.82	
10/302016	2035	65	63	93	0		29.82	
10/302016	2055	64	62	93	0		29.82	
10/302016	2115	64	62	93	0		29.82	
10/302016	2135	64	61	90	0		29.82	
10/302016	2155	63	61	93	0		29.82	
10/302016	2215	63	60	90	0		29.82	
10/302016	2235	62	60	93	0		29.82	
10/302016	2255	63	60	90	0		29.82	
10/302016	2315	62	60	93	0		29.82	
10/302016	2335	62	60	93	0		29.82	
10/302016	2355	61	58	90	0		29.82	

Wind direction is the direction from which the wind is blowing.

LST	=	Local standard time	MPH	=	Miles per hour
F	=	Fahrenheit	in. Hg	=	inches of mercury
%	=	Percent	M	=	Missing data

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/31/2016	15	60	58	93	0		29.81	
10/31/2016	35	60	58	93	0		29.81	
10/31/2016	55	60	58	93	0		29.8	
10/31/2016	115	59	57	93	3	110	29.81	
10/31/2016	135	60	58	93	0		29.8	
10/31/2016	155	60	58	93	3	110	29.8	
10/31/2016	215	59	58	97	0		29.8	
10/31/2016	235	59	57	93	0		29.8	
10/31/2016	255	58	56	93	0		29.8	
10/31/2016	315	58	57	97	0		29.79	
10/31/2016	335	58	56	93	0		29.79	
10/31/2016	355	57	56	96	0		29.79	
10/31/2016	415	57	56	96	0		29.79	
10/31/2016	435	57	55	93	0		29.79	
10/31/2016	455	57	55	93	0		29.79	
10/31/2016	515	56	55	96	3	130	29.79	
10/31/2016	535	56	54	93	0		29.79	
10/31/2016	555	56	54	93	0		29.79	
10/31/2016	615	55	54	96	0		29.79	
10/31/2016	635	56	54	93	0		29.79	
10/31/2016	655	56	55	96	0		29.8	
10/31/2016	715	56	55	96	0		29.81	
10/31/2016	735	59	57	93	0		29.81	
10/31/2016	755	62	59	90	0		29.82	
10/31/2016	815	65	58	78	0		29.82	
10/31/2016	835	68	59	73	0		29.83	
10/31/2016	855	70	58	66	0		29.84	
10/31/2016	915	73	58	59	0		29.83	
10/31/2016	935	74	60	62	0		29.84	
10/31/2016	955	76	60	58	3	210	29.84	
10/31/2016	1015	77	61	58	0		29.84	
10/31/2016	1035	79	61	54	5	240	29.84	
10/31/2016	1055	80	60	51	6	220	29.83	
10/31/2016	1115	82	59	46	6	230	29.82	
10/31/2016	1135	83	59	44	3	220	29.82	
10/31/2016	1155	83	60	46	3	170	29.8	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
10/31/2016	1215	84	57	40	7	180	29.79	
10/31/2016	1240	84	58	41	6	210	29.78	
10/31/2016	1255	86	57	37	6	180	29.77	
10/31/2016	1315	85	58	40	7	180	29.76	
10/31/2016	1335	85	58	40	8	170	29.75	
10/31/2016	1355	86	58	39	3	160	29.74	
10/31/2016	1415	86	57	37	5	200	29.73	
10/31/2016	1435	86	56	36	5	180	29.72	
10/31/2016	1455	86	56	36	5	160	29.72	
10/31/2016	1515	86	55	M	0		M	
10/31/2016	1535	86	56	M	3	170	M	
10/31/2016	1555	85	55	M	5	170	M	
10/31/2016	1615	84	56	M	3	160	M	
10/31/2016	1635	83	56	M	0		M	
10/31/2016	1655	80	60	M	0		M	
10/31/2016	1715	76	62	M	0		M	
10/31/2016	1735	73	62	M	0		M	
10/31/2016	1755	71	62	M	0		M	
10/31/2016	1815	69	62	M	0		M	
10/31/2016	1835	68	63	M	0		M	
10/31/2016	1855	68	62	M	0		M	
10/31/2016	1915	67	61	M	5	120	M	
10/31/2016	1935	67	61	M	3	120	M	
10/31/2016	1955	69	60	M	3	150	M	
10/31/2016	2015	70	59	M	0		M	
10/31/2016	2035	70	58	M	0		M	
10/31/2016	2055	69	58	M	3	140	M	
10/31/2016	2115	69	58	M	3	140	M	
10/31/2016	2135	68	57	M	0		M	
10/31/2016	2155	68	57	M	3	150	M	
10/31/2016	2215	68	57	M	0		M	
10/31/2016	2235	66	57	M	0		M	
10/31/2016	2255	66	57	M	0		M	
10/31/2016	2315	66	57	M	3	140	M	
10/31/2016	2335	65	56	M	3	140	M	
10/31/2016	2355	65	56	73	0	0	29.73	

Wind direction is the direction from which the wind is blowing.

LST	=	Local standard time	MPH	=	Miles per hour
F	=	Fahrenheit	in. Hg	=	inches of mercury
%	=	Percent	M	=	Missing data

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
11/01/2016	15	63	56	78	3	150	29.73	
11/01/2016	35	64	57	78	0		29.74	
11/01/2016	55	63	57	81	3	150	29.74	
11/01/2016	115	62	57	84	3	150	29.74	
11/01/2016	135	63	57	81	3	150	29.74	
11/01/2016	155	62	57	84	0		29.74	
11/01/2016	215	61	56	84	0		29.74	
11/01/2016	235	59	56	90	3	120	29.74	
11/01/2016	255	59	56	M	3	110	M	
11/01/2016	315	58	55	M	3	120	M	
11/01/2016	335	58	55	M	3	130	M	
11/01/2016	355	57	55	M	3	130	M	
11/01/2016	415	58	55	M	5	120	M	
11/01/2016	435	59	56	M	5	130	M	
11/01/2016	455	60	56	87	5	110	29.75	
11/01/2016	515	60	56	87	5	130	29.75	
11/01/2016	535	60	56	87	3	120	29.76	
11/01/2016	555	59	57	93	3	130	29.76	
11/01/2016	615	60	57	90	5	120	29.76	
11/01/2016	635	60	57	90	3	130	29.77	
11/01/2016	655	61	58	90	5	120	29.78	
11/01/2016	715	62	60	93	5	140	29.79	
11/01/2016	735	63	61	93	6	140	29.79	
11/01/2016	755	64	62	93	5	150	29.79	
11/01/2016	815	64	63	97	3	150	29.8	
11/01/2016	835	65	64	97	6	140	29.8	
11/01/2016	855	65	63	93	5	140	29.81	
11/01/2016	915	66	64	93	5	140	29.82	
11/01/2016	935	67	65	93	3	140	29.82	
11/01/2016	955	69	65	87	6	140	29.82	
11/01/2016	1015	70	65	84	5	160	29.83	
11/01/2016	1035	71	66	84	5	140	29.82	
11/01/2016	1055	73	66	79	3	140	29.82	
11/01/2016	1115	74	67	79	3	140	29.82	
11/01/2016	1135	75	67	76	0		29.81	
11/01/2016	1155	78	67	69	6	140	29.79	

Wind direction is the direction from which the wind is blowing.

LST	=	Local standard time	MPH	=	Miles per hour
F	=	Fahrenheit	in. Hg	=	inches of mercury
%	=	Percent	M	=	Missing data

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
11/01/2016	1215	79	67	67	9	170	29.78	
11/01/2016	1235	81	67	63	6	190	29.77	
11/01/2016	1255	80	67	65	3	170	29.76	
11/01/2016	1315	80	67	65	6	170	29.75	
11/01/2016	1335	82	67	61	6	150	29.74	
11/01/2016	1355	80	66	62	5	140	29.74	
11/01/2016	1415	82	66	58	5	150	29.74	
11/01/2016	1435	83	66	57	6	160	29.74	
11/01/2016	1455	83	66	57	6	180	29.74	
11/01/2016	1515	82	65	56	9	150	29.74	
11/01/2016	1535	82	64	55	6	150	29.74	
11/01/2016	1555	82	64	55	6	150	29.73	
11/01/2016	1615	80	63	56	6	130	29.73	
11/01/2016	1635	79	64	60	3	140	29.73	
11/01/2016	1655	77	64	64	3	120	29.73	
11/01/2016	1715	76	64	67	3	120	29.73	
11/01/2016	1735	74	65	74	0		29.73	
11/01/2016	1755	73	64	74	0		29.74	
11/01/2016	1815	73	65	76	0		29.75	
11/01/2016	1835	72	65	79	0		29.75	
11/01/2016	1855	71	65	81	0		29.75	
11/01/2016	1915	72	64	76	3	120	29.76	
11/01/2016	1935	73	64	74	5	120	29.75	
11/01/2016	1955	74	64	71	6	130	29.75	
11/01/2016	2015	74	64	71	5	130	29.76	
11/01/2016	2035	74	63	69	5	140	29.77	
11/01/2016	2055	73	63	71	6	140	29.78	
11/01/2016	2115	72	63	73	5	140	29.79	
11/01/2016	2135	72	63	73	3	120	29.79	
11/01/2016	2155	71	63	76	3	130	29.8	
11/01/2016	2215	70	62	76	3	130	29.8	
11/01/2016	2235	69	62	79	6	130	29.8	
11/01/2016	2255	71	62	73	5	140	29.8	
11/01/2016	2315	71	62	73	5	140	29.81	
11/01/2016	2335	71	62	73	6	140	29.8	
11/01/2016	2355	70	62	76	6	140	29.81	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
11/02/2016	15	69	62	79	3	140	29.81	
11/02/2016	35	69	62	79	3	130	29.81	
11/02/2016	55	68	62	81	5	130	29.81	
11/02/2016	115	68	62	81	0		29.81	
11/02/2016	135	68	62	81	3	120	29.81	
11/02/2016	155	67	62	84	3	130	29.82	
11/02/2016	215	67	62	84	3	130	29.81	
11/02/2016	235	68	62	81	5	130	29.81	
11/02/2016	255	68	62	81	3	130	29.81	
11/02/2016	315	69	63	81	3	140	29.81	
11/02/2016	335	69	63	81	5	130	29.81	
11/02/2016	355	68	63	84	5	140	29.82	
11/02/2016	415	68	64	87	3	130	29.82	
11/02/2016	435	68	64	87	3	120	29.82	
11/02/2016	455	68	64	87	0		29.83	
11/02/2016	515	67	64	90	3	130	29.83	
11/02/2016	535	67	64	90	0		29.83	
11/02/2016	555	67	64	90	0		29.84	
11/02/2016	615	67	64	90	3	110	29.84	
11/02/2016	635	67	64	90	0		29.85	
11/02/2016	655	67	64	90	0		29.85	
11/02/2016	715	68	64	87	5	110	29.86	
11/02/2016	735	68	65	90	5	120	29.87	
11/02/2016	755	69	65	87	6	120	29.88	
11/02/2016	815	70	65	84	6	120	29.88	
11/02/2016	835	71	66	84	6	120	29.89	
11/02/2016	855	71	65	81	8	130	29.9	
11/02/2016	915	72	66	82	6	140	29.9	
11/02/2016	935	73	66	79	5	130	29.9	
11/02/2016	955	76	66	71	9	120	29.9	
11/02/2016	1015	76	66	71	7	140	29.9	
11/02/2016	1035	76	66	71	8	130	29.9	
11/02/2016	1055	75	66	74	8	120	29.9	
11/02/2016	1115	76	67	74	8	140	29.89	
11/02/2016	1135	78	67	69	3	130	29.89	
11/02/2016	1155	80	68	67	3	140	29.87	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
11/02/2016	1215	82	65	56	8	150	29.87	
11/02/2016	1235	82	65	56	5	160	29.86	
11/02/2016	1255	83	66	57	7	120	29.85	
11/02/2016	1315	84	66	55	5	160	29.85	
11/02/2016	1335	83	65	55	6	150	29.84	
11/02/2016	1355	84	66	55	5	130	29.84	
11/02/2016	1415	83	66	57	7	130	29.84	
11/02/2016	1435	84	66	55	8	110	29.84	
11/02/2016	1455	83	66	57	7	110	29.84	
11/02/2016	1515	82	66	58	5	90	29.85	
11/02/2016	1535	84	65	53	5	100	29.85	
11/02/2016	1555	83	65	55	5	110	29.85	
11/02/2016	1615	83	65	55	5	100	29.85	
11/02/2016	1635	82	66	58	0		29.85	
11/02/2016	1655	81	65	58	0		29.85	
11/02/2016	1715	78	66	67	0		29.85	
11/02/2016	1735	76	66	71	3	90	29.85	
11/02/2016	1755	74	66	76	0		29.85	
11/02/2016	1815	74	65	74	0		29.85	
11/02/2016	1835	74	65	74	0		29.86	
11/02/2016	1855	73	65	76	0		29.86	
11/02/2016	1915	73	65	76	0		29.86	
11/02/2016	1935	73	65	76	0		29.87	
11/02/2016	1955	72	65	79	0		29.87	
11/02/2016	2015	72	65	79	0		29.87	
11/02/2016	2035	72	65	79	3	100	29.88	
11/02/2016	2055	72	65	79	3	100	29.88	
11/02/2016	2115	71	64	79	3	100	29.88	
11/02/2016	2135	71	64	79	0		29.88	
11/02/2016	2155	71	64	79	0		29.88	
11/02/2016	2215	70	64	81	3	130	29.88	
11/02/2016	2235	70	64	81	0		29.88	
11/02/2016	2255	70	64	81	0		29.89	
11/02/2016	2315	69	64	84	0		29.89	
11/02/2016	2335	68	64	87	0		29.88	
11/02/2016	2355	69	64	84	0		29.88	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
11/03/2016	15	69	65	87	0		29.89	
11/03/2016	35	67	64	90	0		29.9	
11/03/2016	55	67	64	90	0		29.9	
11/03/2016	115	66	64	93	0		29.89	
11/03/2016	135	65	63	93	0		29.89	
11/03/2016	155	65	63	93	3	140	29.89	
11/03/2016	215	67	64	90	0		29.89	
11/03/2016	235	66	64	93	0		29.89	
11/03/2016	255	65	63	93	0		29.89	
11/03/2016	315	65	63	93	0		29.89	
11/03/2016	335	65	63	93	0		29.9	
11/03/2016	355	65	63	93	0		29.9	
11/03/2016	415	64	62	93	0		29.9	
11/03/2016	435	64	63	97	0		29.9	
11/03/2016	455	64	63	97	0		29.9	
11/03/2016	515	64	62	93	0		29.91	
11/03/2016	535	65	63	93	0		29.91	
11/03/2016	555	64	62	93	0		29.91	
11/03/2016	615	65	63	93	0		29.92	
11/03/2016	635	65	63	93	0		29.92	
11/03/2016	655	65	64	97	0		29.92	
11/03/2016	715	66	64	93	0		29.93	
11/03/2016	735	67	65	93	0		29.94	
11/03/2016	755	68	66	93	3	120	29.94	
11/03/2016	815	69	66	90	0		29.95	
11/03/2016	835	71	67	87	0		29.95	
11/03/2016	855	74	68	82	3	160	29.95	
11/03/2016	915	76	67	74	6	180	29.95	
11/03/2016	935	77	67	71	6	180	29.95	
11/03/2016	955	79	67	67	5	190	29.95	
11/03/2016	1015	81	67	63	3	180	29.95	
11/03/2016	1035	81	67	63	5	200	29.95	
11/03/2016	1055	81	67	63	3	190	29.94	
11/03/2016	1115	82	65	56	3	180	29.94	
11/03/2016	1135	83	66	57	3	170	29.93	
11/03/2016	1155	83	65	55	5	170	29.93	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

Local Climatological Data-Hourly Observations Table
Minden Airport, Minden, LA
Elevation: 279 ft. above sea level
Latitude: 32.646
Longitude: -93.298
27 October through 03 November 2016

Date	Time (LST)	Dry Bulb Temperature (F)	Dew point Temperature (F)	Relative Humidity %	Wind Speed (MPH)	Wind Direction	Station Pressure (in. Hg)	Precipitation Total (inches)
11/03/2016	1215	84	65	53	5	170	29.92	
11/03/2016	1235	83	64	53	0		29.91	
11/03/2016	1255	84	62	48	0		29.9	
11/03/2016	1315	85	64	49	5	160	29.89	
11/03/2016	1335	83	63	51	0		29.89	
11/03/2016	1355	83	63	51	3	160	29.88	
11/03/2016	1415	85	64	49	0		29.88	
11/03/2016	1435	84	63	49	0		29.88	
11/03/2016	1455	82	63	53	0		29.87	
11/03/2016	1515	81	65	58	0		29.87	
11/03/2016	1535	79	66	65	0		29.87	
11/03/2016	1555	79	67	67	0		29.87	
11/03/2016	1615	78	67	69	0		29.88	
11/03/2016	1635	78	69	74	0		29.87	
11/03/2016	1655	77	69	76	0		29.88	
11/03/2016	1715	76	69	79	0		29.88	
11/03/2016	1735	75	69	82	0		29.88	
11/03/2016	1755	74	69	84	0		29.89	
11/03/2016	1815	74	69	84	0		29.89	
11/03/2016	1835	73	69	87	0		29.89	
11/03/2016	1855	73	69	87	0		29.89	
11/03/2016	1915	73	68	84	0		29.89	
11/03/2016	1935	73	68	84	0		29.9	
11/03/2016	1955	72	68	87	0		29.9	
11/03/2016	2015	72	68	87	3	240	29.9	
11/03/2016	2035	72	68	87	0		29.9	
11/03/2016	2055	72	68	87	0		29.9	
11/03/2016	2115	72	68	87	0		29.9	
11/03/2016	2135	72	68	87	0		29.9	
11/03/2016	2155	72	68	87	0		29.91	
11/03/2016	2215	72	68	87	0		29.9	
11/03/2016	2235	72	68	87	0		29.91	
11/03/2016	2255	71	68	90	0		29.91	
11/03/2016	2315	71	68	90	5	330	29.91	
11/03/2016	2335	72	69	90	3	360	29.91	
11/03/2016	2355	72	68	87	0		29.91	

Wind direction is the direction from which the wind is blowing.

LST = Local standard time
F = Fahrenheit
% = Percent
MPH = Miles per hour
in. Hg = inches of mercury

APPENDIX C

Calibration Data

Camp Minden

Final Analytical TAGA Report

December 2016

TAGA FLOW CALIBRATION LOG

Work Assignment: 316 Date: 10/26/16

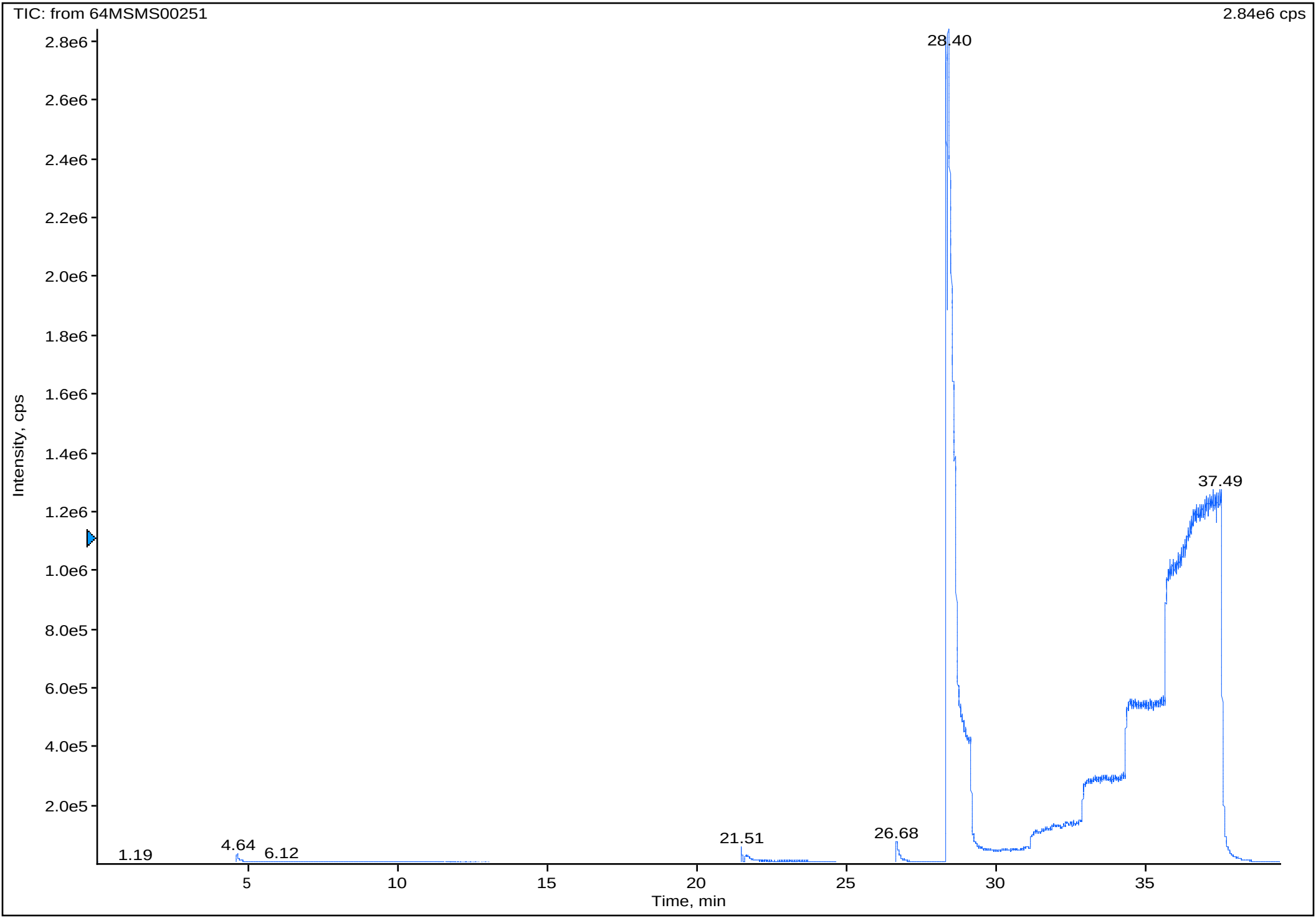
Time	Reference Flow Meter	Sample Air Flow (SAF)		MKS Channel 3 Span 3500	
		Reference Meter Reading	MKS Meter Reading	Difference (Reference-MKS)	% Error $\frac{Difference}{Reference} x\ 100$
0801		191 SCFM	1500 ml/sec		
Dwyer Rotameter	Certificate of Calibration # 16DWY15-0145			Calibration Date: 4/29/16	
Time	Reference Flow Meter	Channel 1 Standard Gas Flow Calibration		MKS Channel 1 Span _____	
		Reference Meter Reading	MKS Meter Reading	Difference (Reference-MKS)	% Error $\frac{Difference}{Reference} x\ 100$
Gilibrator Flow Cell	S/N #			Calibration Date:	
Time	Reference Flow Meter	Channel 2 Standard Gas Flow Calibration		MKS Channel 2 Span _____	
		Reference Meter Reading	MKS Meter Reading	Difference (Reference-MKS)	% Error $\frac{Difference}{Reference} x\ 100$
Gilibrator Flow Cell	S/N #			Calibration Date:	

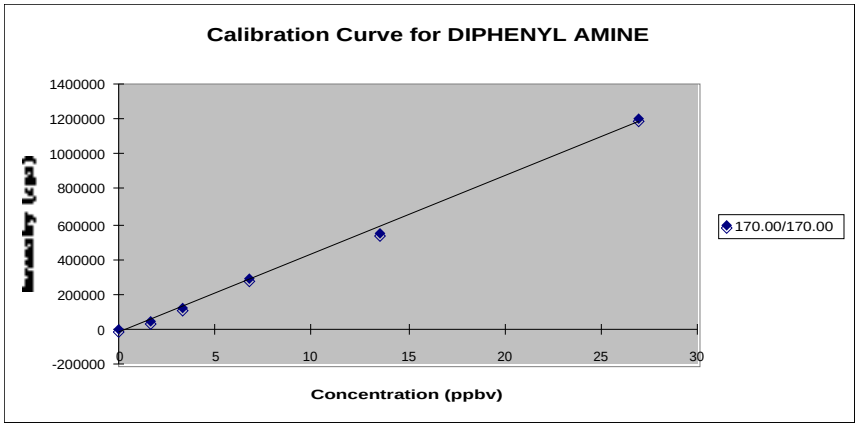
Notes: Calibrated Syringe Drive SD1; 40ml of volume in approx 8:06

10/28/16.8.47.42

Period 1, Expt. 1; Dwell: 100.0 ms; Pause: 5.0 ms

Acq. Time: Fri, Oct 28, 2016 at 8:47:41; Exp. Comment: Cal. Gas Bottle Number 2





Filename:	64MSMS00251 et al.
Compound na	DIPHENYLAMINE
Conc. units:	ppbv
Width (min):	0.5
User name:	BPK
Comment:	
Date:	Friday, October 28, 2016 9:29:27
Num. ions:	1
Num. concs.	6

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Ctr Pt.(min):	2.00	30.30	32.04	33.60	35.03	37.00

Ion 1

Q1 Mass:	170
Q3 Mass:	170
Slope:	44879.582
Intercept:	-23193.9375
Correlation:	0.99870537

Concentratior	170.00/170.00
0	152.15035
1.68	4.55E+04
3.37	1.25E+05
6.74	2.87E+05
13.48	5.41E+05
26.96	1.21E+06

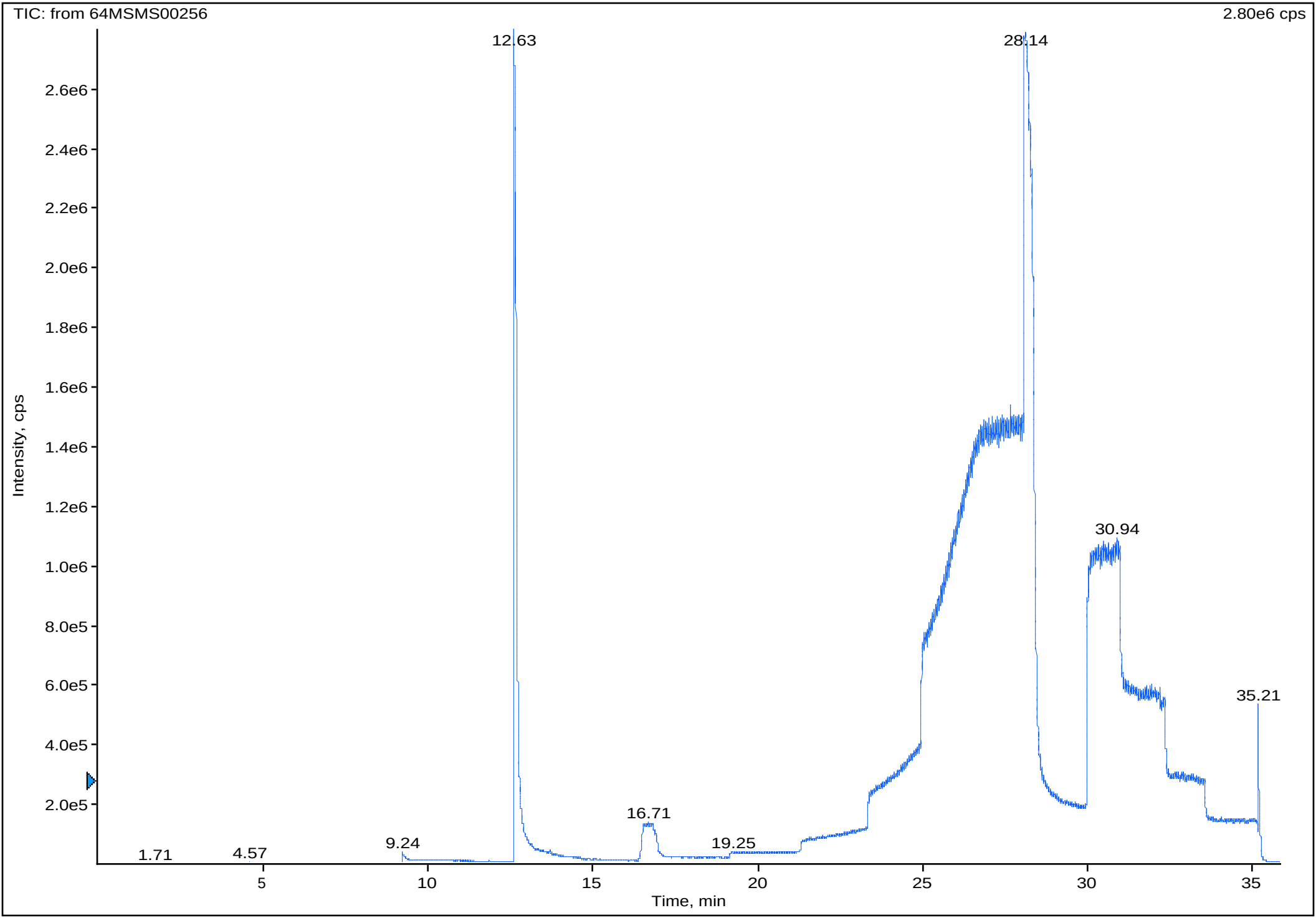
Report	File Name	64MSMS00251 et al.		
	Sample Name	APCI BOD Calibration - Diphenylamine 20161028		
	Date	Friday, October 28, 2016 9:30:29		
	Time Range	1.50 to	2.50 min	
	Conc Units:	ppbv		
	Num Ions	1.00		

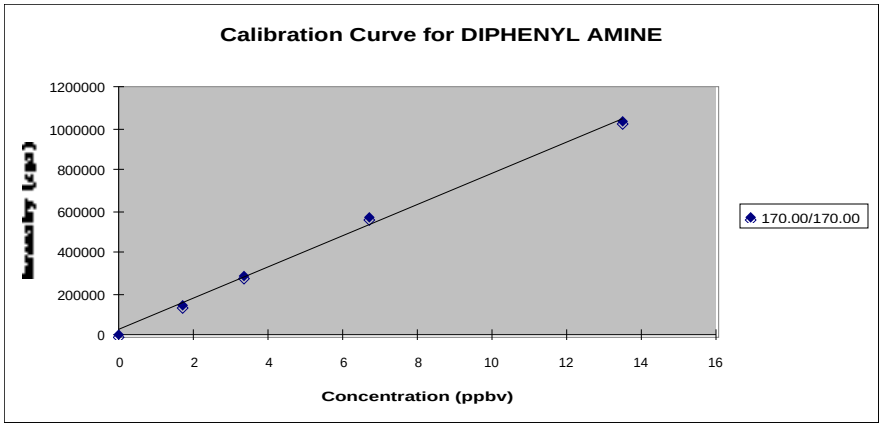
Name	DIPHENYL AMINE
Q1 Mass	170.00
Q3 Mass	170.00
Slope	44879.58
Intercept	-23193.94
Intensity	152.15
Int SD	40.37
Concentration	0.52
Conc SD	0.00
Compound Con	0.52
Compound SD	0.00
Det. Limit	0.00
Compound DL	0.003

10/28/16.16.28.34

Period 1, Expt. 1; Dwell: 100.0 ms; Pause: 5.0 ms

Acq. Time: Fri, Oct 28, 2016 at 16:28:33; Exp. Comment: Cal. Gas Bottle Number 2





Filename:	64MSMS00256 et al.
Compound na	DIPHENYLAMINE
Conc. units:	ppbv
Width (min):	0.5
User name:	BPK
Comment:	
Date:	Friday, October 28, 2016 17:08:19
Num. ions:	1
Num. concs.	5

	Level 1	Level 2	Level 3	Level 4	Level 5
Ctr Pt.(min):	7.00	34.41	33.04	31.72	30.55

Ion 1

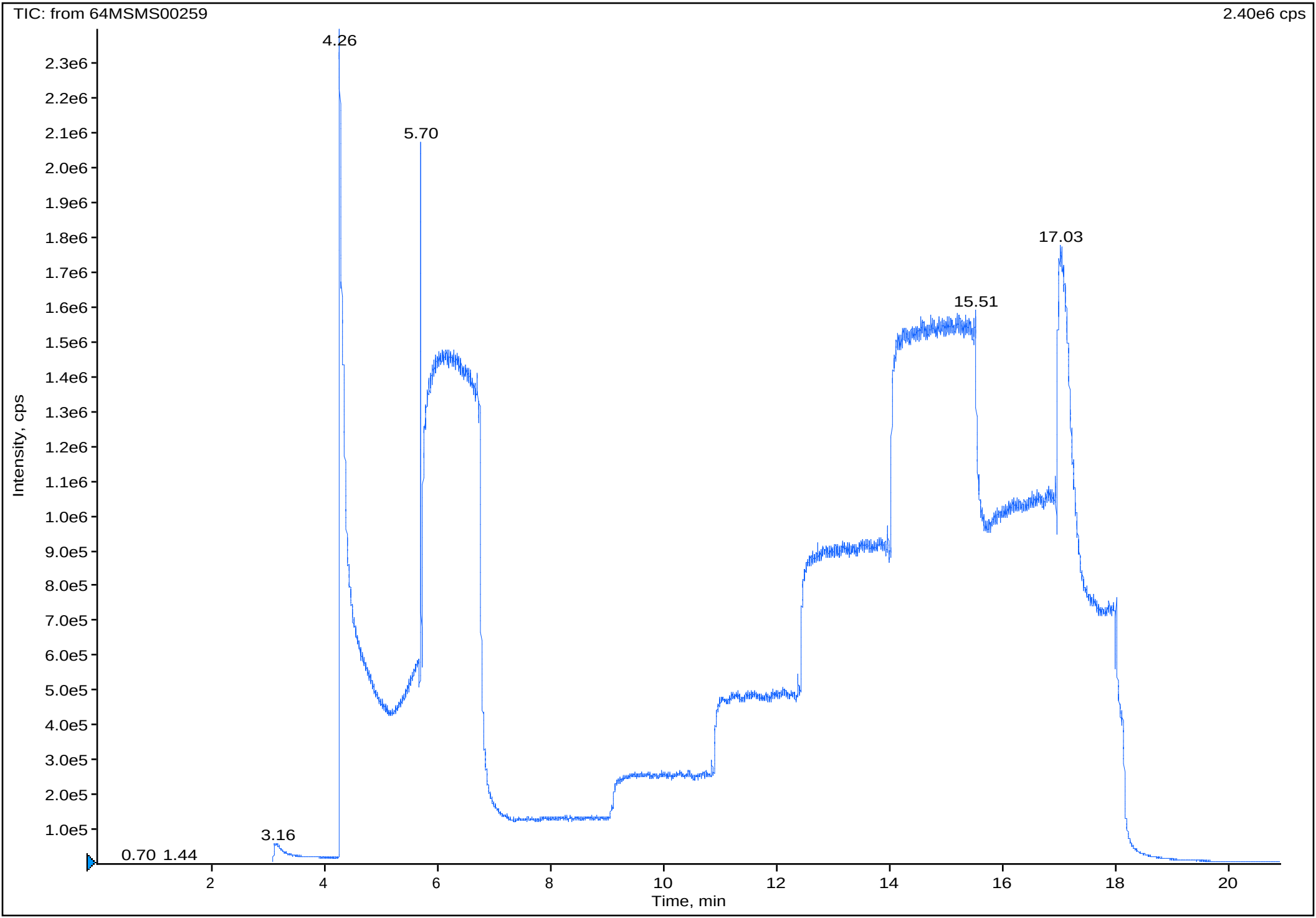
Q1 Mass:	170
Q3 Mass:	170
Slope:	76095.93769
Intercept:	21269.83531
Correlation:	0.998142684

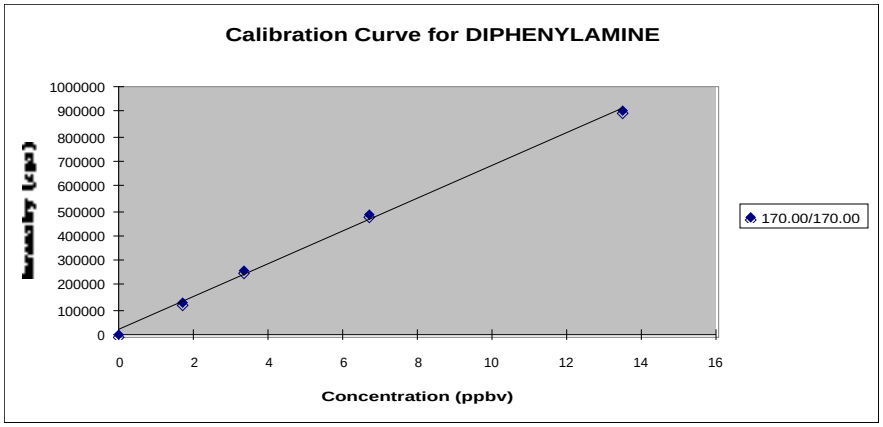
Concentration	170.00/170.00
0	246.3636364
1.68	1.43E+05
3.37	2.87E+05
6.74	5.72E+05
13.48	1.03E+06

Report	File Name	64MSMS00256 et al.		
	Sample Name	APCI EOD Calibration - Diphenylamine 20161028		
	Date	Friday, October 28, 2016 17:10:05		
	Time Range	6.50 to	7.50 min	
	Conc Units:	ppbv		
	Num Ions	1.00		

Name	DIPHENYL AMINE
Q1 Mass	170.00
Q3 Mass	170.00
Slope	76095.94
Intercept	21269.84
Intensity	246.42
Int SD	49.27
Concentration	-0.28
Conc SD	0.00
Compound Con	-0.28
Compound SD	0.00
Det. Limit	0.00
Compound DL	0.002

10/30/16.5.15.54
Period 1, Expt. 1; Dwell: 100.0 ms; Pause: 5.0 ms
Acq. Time: Sun, Oct 30, 2016 at 5:15:52; Exp. Comment: Cal. Gas Bottle Number 2





Filename:	64MSMS00259 et al.
Compound na	DIPHENYLAMINE
Conc. units:	ppbv
Width (min):	0.5
User name:	BPK
Comment:	
Date:	Sunday, October 30, 2016 5:39:02
Num. ions:	1
Num. concs.	5

	Level 1	Level 2	Level 3	Level 4	Level 5
Ctr Pt.(min):	1.50	8.20	10.09	11.67	13.23

Ion 1

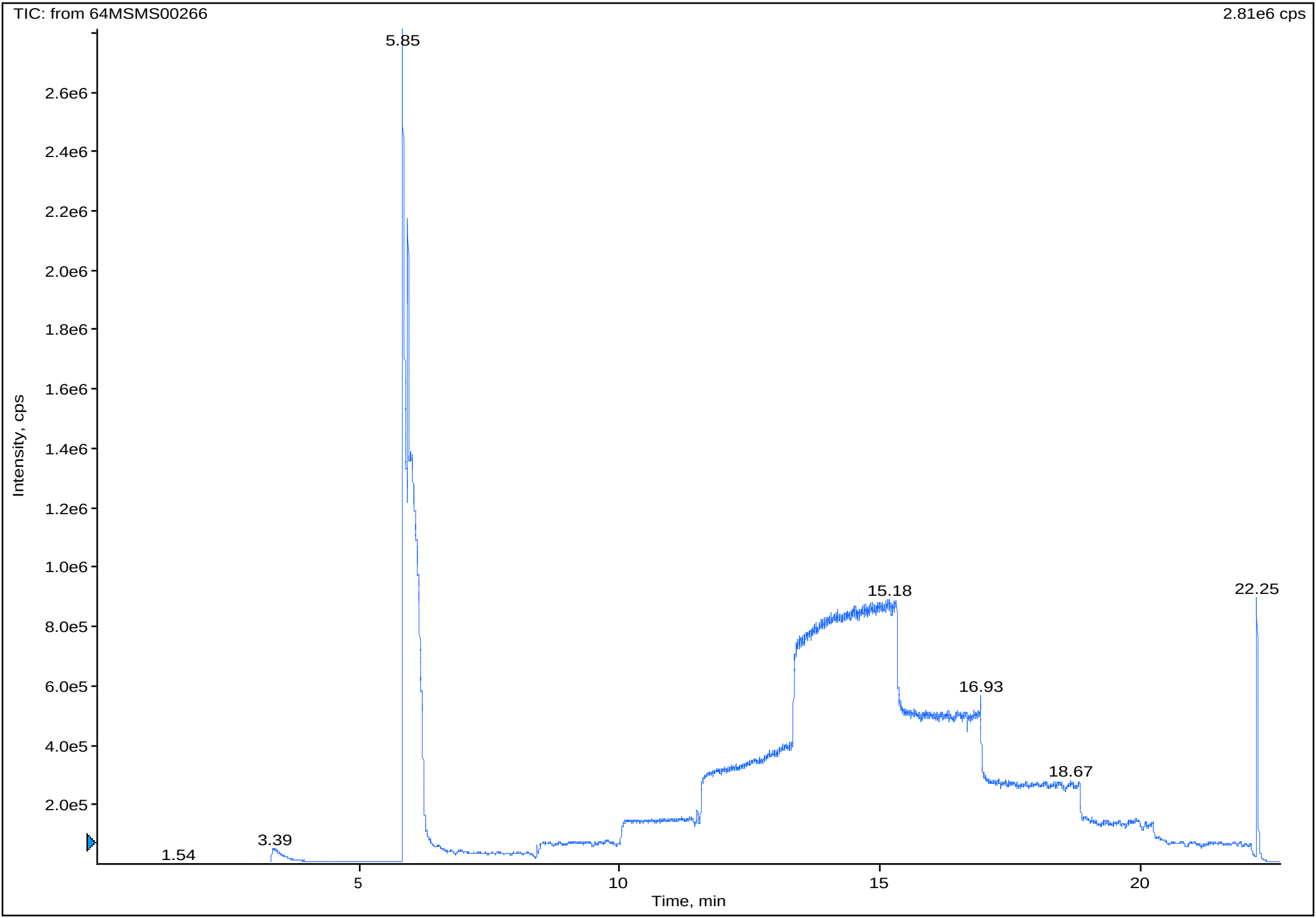
Q1 Mass:	170
Q3 Mass:	170
Slope:	66394.43335
Intercept:	17315.9604
Correlation:	0.999187269

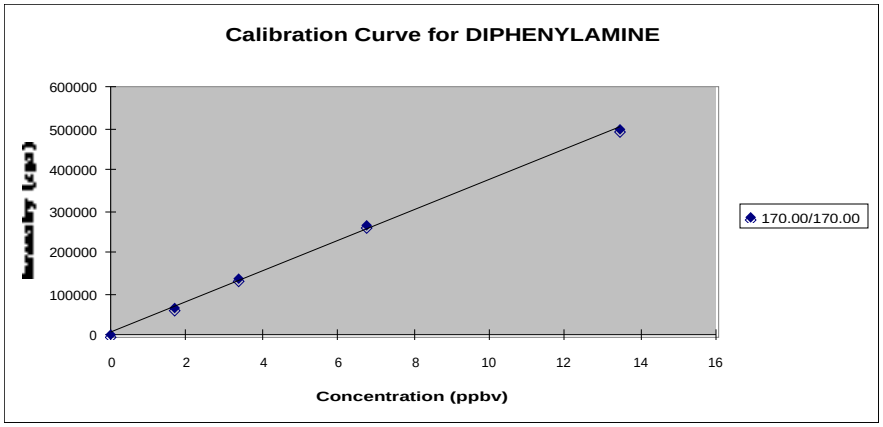
Concentration	170.00/170.00
0	352.4475524
1.68	1.29E+05
3.37	2.53E+05
6.74	4.81E+05
13.48	9.01E+05

Report	File Name	64MSMS00259 et al.		
	Sample Name	APCI BOD Calibration - Diphenylamine 20161030		
	Date	Sunday, October 30, 2016 5:40:18		
	Time Range	1.00 to	2.00 min	
	Conc Units:	ppbv		
	Num Ions	1.00		

Name	DIPHENYLAMINE
Q1 Mass	170.00
Q3 Mass	170.00
Slope	66394.43
Intercept	17315.96
Intensity	352.45
Int SD	67.76
Concentration	-0.26
Conc SD	0.00
Compound Con	-0.26
Compound SD	0.00
Det. Limit	0.00
Compound DL	0.003

10/30/16.14.35.18
Period 1, Expt. 1; Dwell: 100.0 ms; Pause: 5.0 ms
Acq. Time: Sun, Oct 30, 2016 at 14:35:16; Exp. Comment: Cal. Gas Bottle Number 2





Filename:	64MSMS00266 et al.
Compound na	DIPHENYLAMINE
Conc. units:	ppbv
Width (min):	0.5
User name:	BPK
Comment:	
Date:	Sunday, October 30, 2016 15:01:51
Num. ions:	1
Num. concs.	5

	Level 1	Level 2	Level 3	Level 4	Level 5
Ctr Pt.(min):	1.50	21.25	19.58	17.90	16.10

Ion 1

Q1 Mass:	170
Q3 Mass:	170
Slope:	36857.93738
Intercept:	6333.097753
Correlation:	0.999415422

Concentration	170.00/170.00
0	613.1468531
1.68	6.58E+04
3.37	1.35E+05
6.74	2.64E+05
13.48	4.98E+05

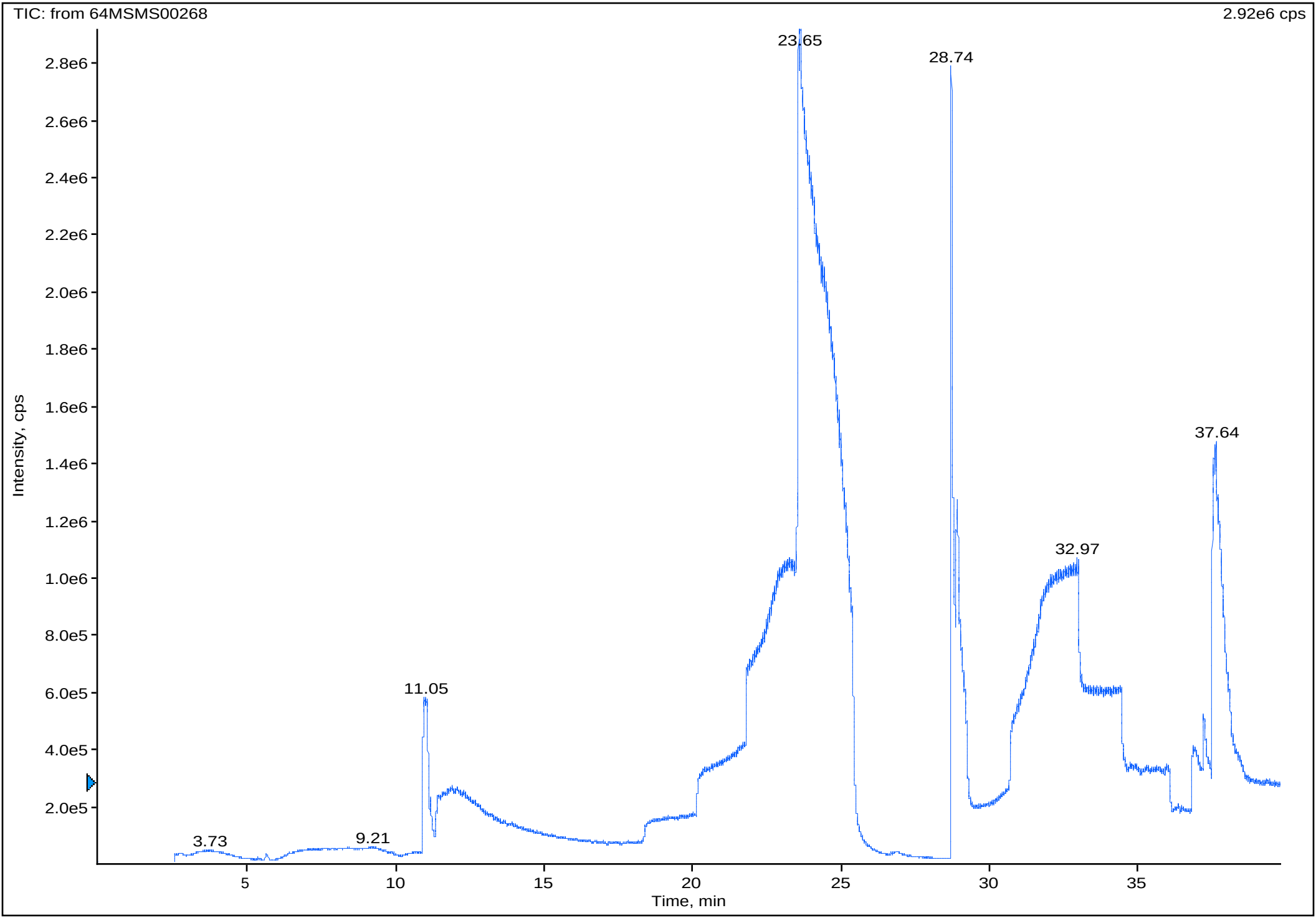
Report	File Name	64MSMS00266 et al.		
	Sample Name	APCI EOD Calibration - Diphenylamine 20161030		
	Date	Sunday, October 30, 2016 15:02:52		
	Time Range	1.00 to	2.00	min
	Conc Units:	ppbv		
	Num Ions	1.00		

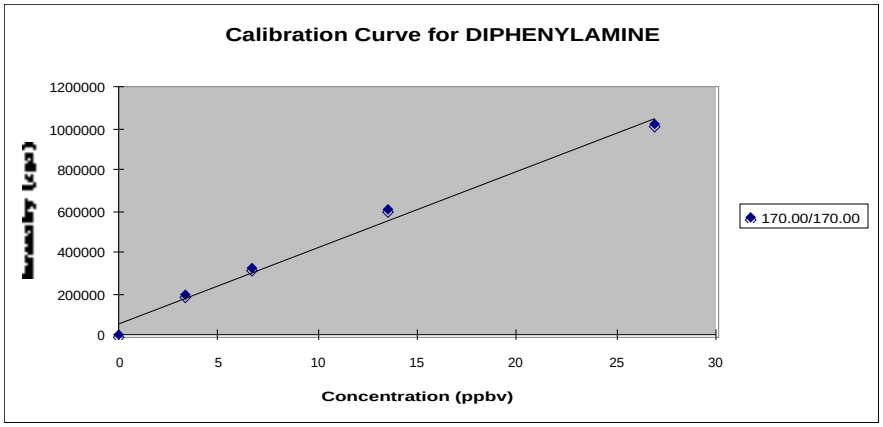
Name	DIPHENYLAMINE
Q1 Mass	170.00
Q3 Mass	170.00
Slope	36857.94
Intercept	6333.10
Intensity	613.39
Int SD	88.39
Concentration	-0.16
Conc SD	0.00
Compound Co	-0.16
Compound SD	0.00
Det. Limit	0.01
Compound DL	0.007

11/1/16.7.32.38

Period 1, Expt. 1; Dwell: 100.0 ms; Pause: 5.0 ms

Acq. Time: Tue, Nov 1, 2016 at 7:32:37; Exp. Comment: Cal. Gas Bottle Number 2





Filename:	64MSMS00268 et al.
Compound na	DIPHENYLAMINE
Conc. units:	ppbv
Width (min):	0.25
User name:	BPK
Comment:	
Date:	Tuesday, November 1, 2016 8:14:46
Num. ions:	1
Num. concs.	5

	Level 1	Level 2	Level 3	Level 4	Level 5
Ctr Pt.(min):	1.50	36.49	35.37	33.83	32.64

Ion 1

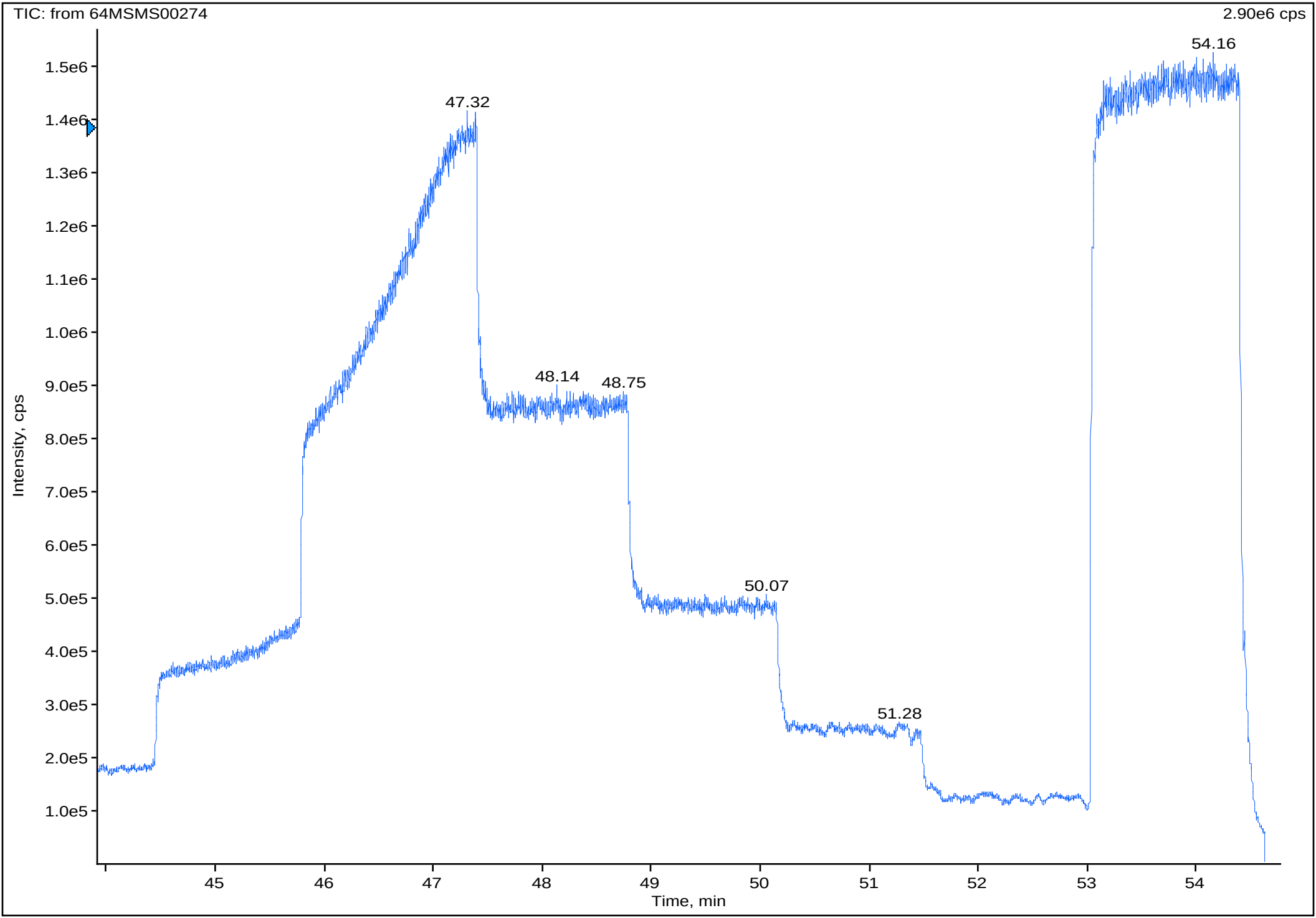
Q1 Mass:	170
Q3 Mass:	170
Slope:	36966.40909
Intercept:	53491.24932
Correlation:	0.994280598

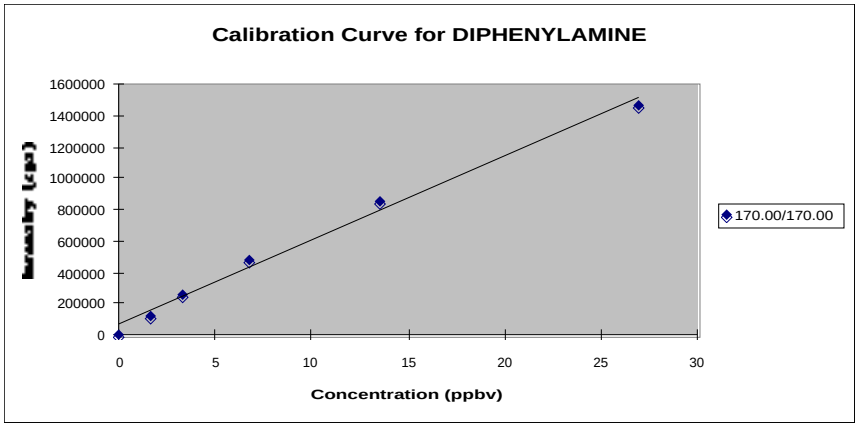
Concentration	170.00/170.00
0	470.2797203
3.37	1.90E+05
6.74	3.26E+05
13.48	6.03E+05
26.96	1.02E+06

Report	File Name	64MSMS00268 et al.		
	Sample Name	APCI BOD Calibration - Diphenylamine 20161101		
	Date	Tuesday, November 1, 2016 8:15:37		
	Time Range	1.00 to	2.00 min	
	Conc Units:	ppbv		
	Num Ions	1.00		

Name	DIPHENYLAMINE
Q1 Mass	170.00
Q3 Mass	170.00
Slope	36966.41
Intercept	53491.25
Intensity	463.78
Int SD	69.55
Concentration	-1.43
Conc SD	0.00
Compound Con	-1.43
Compound SD	0.00
Det. Limit	0.01
Compound DL	0.006

11/1/16.16.23.56
Period 1, Expt. 1; Dwell: 100.0 ms; Pause: 5.0 ms
Acq. Time: Tue, Nov 1, 2016 at 16:23:55; Exp. Comment: Cal. Gas Bottle Number 2





Filename:	64MSMS00274 et al.
Compound na	DIPHENYLAMINE
Conc. units:	ppbv
Width (min):	0.25
User name:	BPK
Comment:	
Date:	Tuesday, November 1, 2016 17:19:44
Num. ions:	1
Num. concs.	6

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Ctr Pt.(min):	30.00	52.28	50.79	49.47	48.07	53.75

Ion 1

Q1 Mass:	170
Q3 Mass:	170
Slope:	53893.7927
Intercept:	60848.0685
Correlation:	0.99484212

Concentratior	170.00/170.00
0	398.041958
1.68	1.22E+05
3.37	2.52E+05
6.74	4.84E+05
13.48	8.57E+05
26.96	1.46E+06

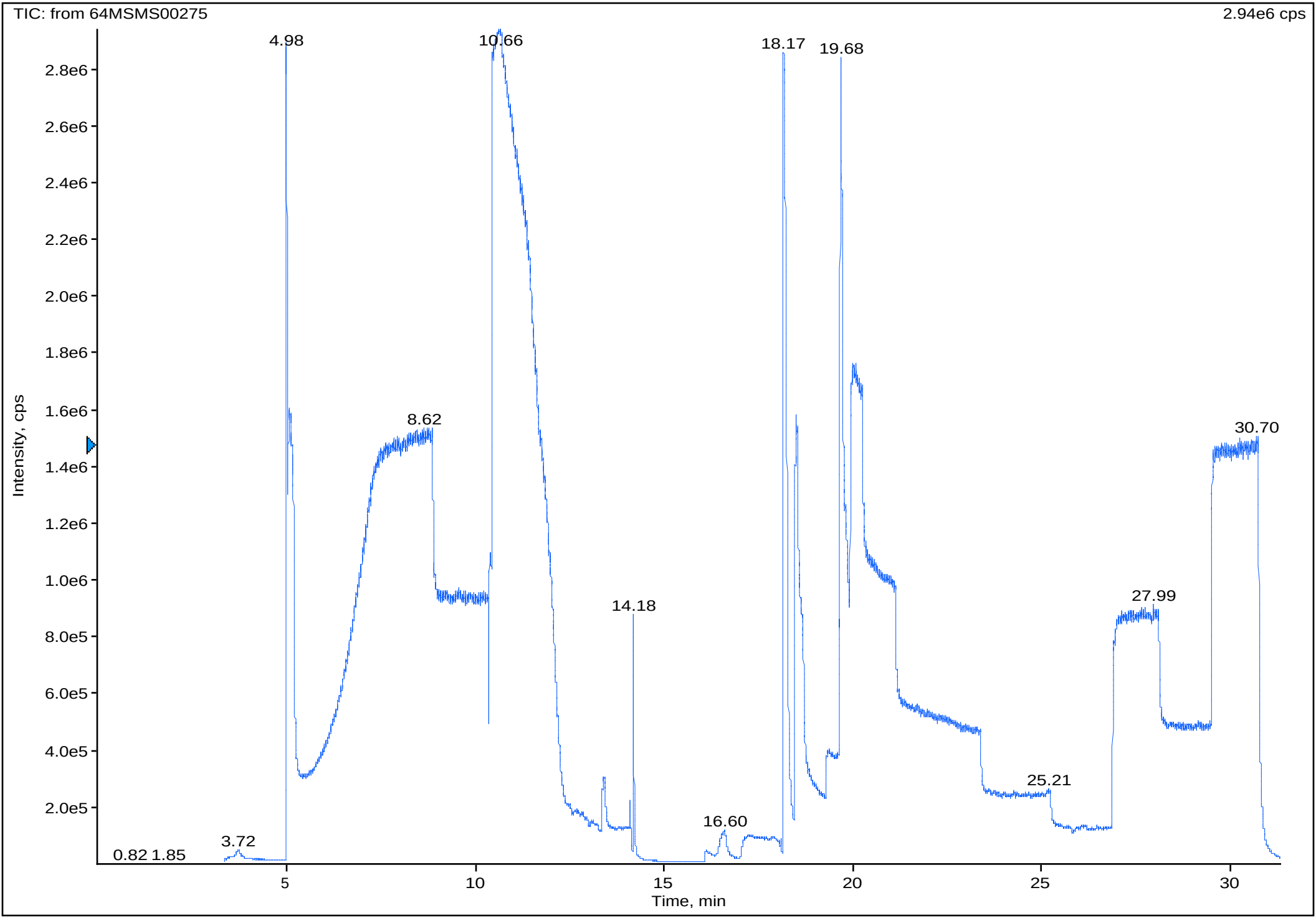
Report	File Name	64MSMS00274 et al.		
	Sample Name	APCI EOD Calibraton - Diphenylamine 20161101		
	Date	Tuesday, November 1, 2016 17:21:34		
	Time Range	1.00 to	2.00 min	
	Conc Units:	ppbv		
	Num Ions	1.00		

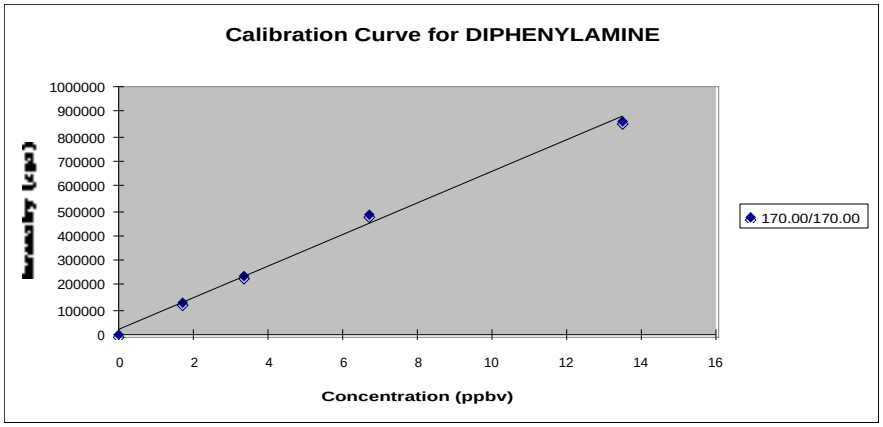
Name	DIPHENYLAMINE
Q1 Mass	170.00
Q3 Mass	170.00
Slope	53893.79
Intercept	60848.07
Intensity	659.41
Int SD	163.93
Concentration	-1.12
Conc SD	0.00
Compound Con	-1.12
Compound SD	0.00
Det. Limit	0.01
Compound DL	0.009

11/2/16.8.08.48

Period 1, Expt. 1; Dwell: 100.0 ms; Pause: 5.0 ms

Acq. Time: Wed, Nov 2, 2016 at 8:08:47; Exp. Comment: Cal. Gas Bottle Number 2





Filename:	64MSMS00275 et al.
Compound na	DIPHENYLAMINE
Conc. units:	ppbv
Width (min):	0.5
User name:	BPK
Comment:	
Date:	Wednesday, November 2, 2016 8:45:16
Num. ions:	1
Num. concs.	5

	Level 1	Level 2	Level 3	Level 4	Level 5
Ctr Pt.(min):	1.50	26.07	24.34	28.78	27.43

Ion 1

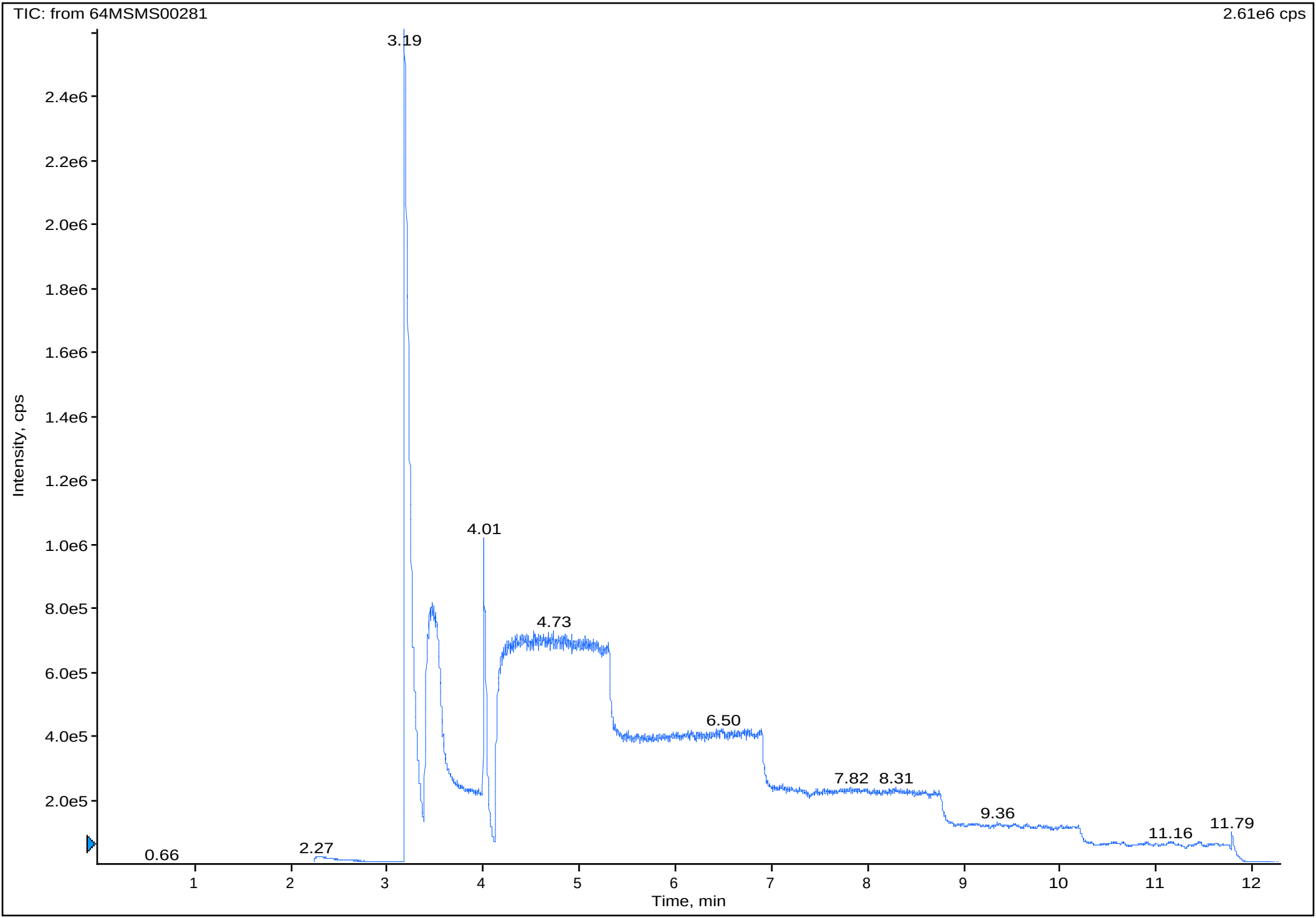
Q1 Mass:	170
Q3 Mass:	170
Slope:	64042.23182
Intercept:	19249.30162
Correlation:	0.99807549

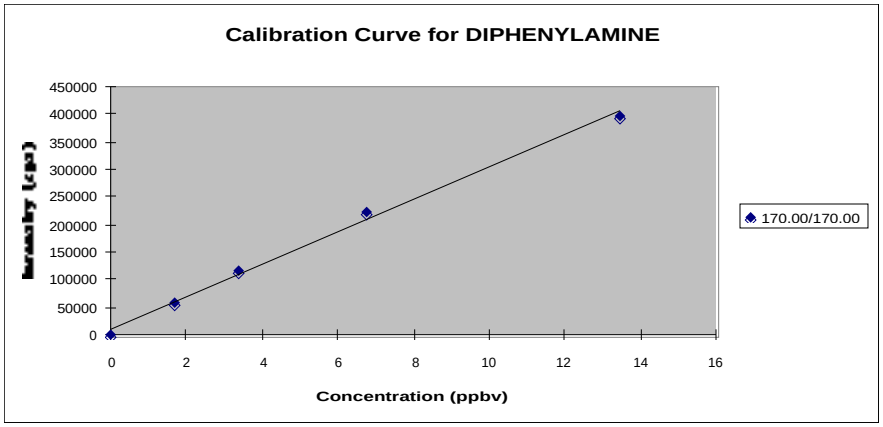
Concentration	170.00/170.00
0	824.6153846
1.68	1.24E+05
3.37	2.40E+05
6.74	4.84E+05
13.48	8.65E+05

Report	File Name	64MSMS00275 et al.		
	Sample Name	APCI BOD Calibration - Diphenylamine 20161102		
	Date	Wednesday, November 2, 2016 8:46:07		
	Time Range	1.00 to	2.00 min	
	Conc Units:	ppbv		
	Num Ions	1.00		

Name	DIPHENYLAMINE
Q1 Mass	170.00
Q3 Mass	170.00
Slope	64042.23
Intercept	19249.30
Intensity	824.83
Int SD	98.52
Concentration	-0.29
Conc SD	0.00
Compound Con	-0.29
Compound SD	0.00
Det. Limit	0.00
Compound DL	0.005

11/2/16.17.15.39
Period 1, Expt. 1; Dwell: 100.0 ms; Pause: 5.0 ms
Acq. Time: Wed, Nov 2, 2016 at 17:15:38; Exp. Comment: Cal. Gas Bottle Number 2





Filename:	64MSMS00281 et al.
Compound na	DIPHENYLAMINE
Conc. units:	ppbv
Width (min):	0.5
User name:	BPK
Comment:	
Date:	Wednesday, November 2, 2016 17:29:55
Num. ions:	1
Num. concs.	5

	Level 1	Level 2	Level 3	Level 4	Level 5
Ctr Pt.(min):	1.50	11.08	9.56	7.87	6.10

Ion 1

Q1 Mass:	170
Q3 Mass:	170
Slope:	29328.19094
Intercept:	11083.98101
Correlation:	0.997696354

Concentration	170.00/170.00
0	590.506993
1.68	5.88E+04
3.37	1.16E+05
6.74	2.24E+05
13.48	3.98E+05

Report	File Name	64MSMS00281 et al.		
	Sample Name	APCI EOD Calibration - Diphenylamine 20161102		
	Date	Wednesday, November 2, 2016 17:30:46		
	Time Range	1.00 to	2.00 min	
	Conc Units:	ppbv		
	Num Ions	1.00		

Name	DIPHENYLAMINE
Q1 Mass	170.00
Q3 Mass	170.00
Slope	29328.19
Intercept	11083.98
Intensity	590.51
Int SD	82.03
Concentration	-0.36
Conc SD	0.00
Compound Con	-0.36
Compound SD	0.00
Det. Limit	0.01
Compound DL	0.008