Report on Air Monitoring, Area IV, Eleventh Quarter and Annual Summary 2020

Santa Susana Field Laboratory Ventura County, California

May 2021
Revision 0

Prepared for:
United States Department of Energy

Prepared by:
North Wind Portage, Inc.

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PROFESSIONAL CERTIFICATION

Report on Air Monitoring, Area IV, Eleventh Quarter and Annual Summary
Santa Susana Field Laboratory
Ventura County, California

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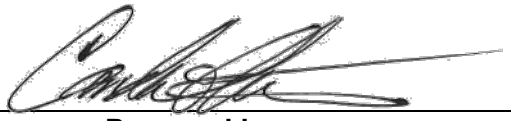
This report has been prepared by a team of qualified professionals under the supervision of the senior staff whose signatures appear below.



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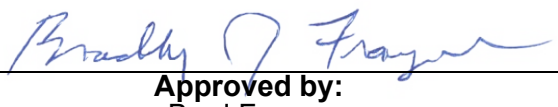

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EXECUTIVE SUMMARY

This report summarizes the United States Department of Energy (DOE) air monitoring activities conducted during the eleventh quarter (Q11) of the air monitoring period (October 1, 2020, to December 31, 2020) at Area IV within the Santa Susana Field Laboratory (SSFL), located in Ventura County, California. The report also provides an annual summary for the third year of the air monitoring period (Q8 through Q11, January 1, 2020, through December 31, 2020). The area specifically discussed within this report is the DOE portion, Area IV of SSFL, known as the Energy Technology Engineering Center (ETEC). Year one of the Baseline Air Monitoring Program consisted of Quarter 1 through Quarter 4. Year two consisted of Quarter 5 through Quarter 7. Year three consisted of Q8 through Q11. The program is continuing for a fourth year, which consists of Quarter 12 through Quarter 15.

This report has been developed by North Wind Portage, Inc., on behalf of DOE in cooperation with The Boeing Company (Boeing) and the National Aeronautics and Space Administration (NASA), as part of the Air Monitoring Program.

In accordance with the Final Baseline Air Monitoring Work Plan, Santa Susana Field Laboratory, Ventura County, California (NASA 2017), the responsible parties are monitoring for particulate matter between 2.5 and 10 microns in aerodynamic diameter (PM_{10}), volatile organic compounds (VOCs), and radionuclides at air monitoring stations DOE-1, DOE-2, DOE-3, and DOE-4 encompassing the ETEC, Area IV portion of the SSFL. Having developed the baseline levels for PM_{10}, VOCs, and radionuclides helps distinguish between levels that naturally occur or were previously present at the ETEC site and if onsite remediation activities produce elevated results. Year 3 observations show a very similar trend when compared to data collected during Year 1 and Year 2. These stable data trends indicate that site activities are not having an effect on site air conditions. High heat, wind, fires and holidays like the Fourth of July all show consistent impacts to the air report readings. Air monitoring will be continued throughout remediation activities to be able to compare results from onsite remediation activities to baseline data in the Annual Air Monitoring Reports. The following air monitoring activities conducted during quarters Q8 through Q11 2020 by DOE within Area IV are summarized in this report:

- Collected meteorological data from one location (DOE-4);
- Collected PM_{10} data from four locations (DOE-1 through DOE-4);
- Collected air samples from four locations (DOE-1 through DOE-4) for VOC laboratory analysis; and
- Collected radionuclide samples for laboratory analysis from four locations (DOE-1 through DOE-4).

Meteorological, PM_{10}, and radionuclide data all met the data completeness goal of 80% and VOC data met the completeness goal of 85% for Q11. The air monitoring is to be continued beginning January 1, 2021, with the twelfth quarter (Year 4) of air monitoring. Future data collected during remediation may be compared to these summarized conditions.

The following site activities were conducted during Q11 by DOE within Area IV:

- Groundwater level monitoring
- Asbestos abatement
- Deactivation of CLIN 8 and 9 facilities
- Demolition of CLIN 10 and 12 facilities
- Installation of new groundwater monitoring wells by CDM Smith
- Surveillance and maintenance.

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µCi	microcurie(s)
µg/m^3	microgram(s) per cubic meter
Boeing	The Boeing Company
CAAQS	California Ambient Air Quality Standards
CFR	Code of Federal Regulations
DAC	derived airborne concentration
DASC	Data Assessment Statistical Calculator
DOE	U.S. Department of Energy
DTSC	State of California Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
ETEC	Energy Technology Engineering Center
FSDF	Former Sodium Disposal Facility
GC	gas chromatography
Hg	mercury
HHRA	Human Health Risk Assessment
m	meter(s)
m/sec	meter(s) per second
mb	millibar(s)
MDC	minimum detectable concentration
mL	milliliter(s)
mph	miles per hour
MS	mass spectrometry
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NIST	National Institute of Standards and Technology
pCi	picocurie(s)
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
Q8	eighth quarter
Q9	ninth quarter
Q10	tenth quarter
Q11	eleventh quarter
QA	quality assurance
QC	quality control
RAWS	Remote Automatic Weather Stations
RPD	relative percent difference
RSL	regional screening level
SDG	sample delivery group
SSFL	Santa Susana Field Laboratory
VOC	volatile organic compound

1. INTRODUCTION

National Aeronautics and Space Administration (NASA), The Boeing Company (Boeing), and the U.S. Department of Energy (DOE), also known as the responsible parties, are performing air monitoring at the Santa Susana Field Laboratory (SSFL) site located in Ventura County, California. The SSFL is a business segment of Boeing. SSFL operates the 2,849-acre facility located atop a range of hills between the Simi and San Fernando valleys, north of Los Angeles. The westernmost 290 acres of the SSFL, known as Area IV, contains both DOE and Boeing facilities. The DOE portion is mainly contained within the 90 acres known as the Energy Technology Engineering Center (ETEC).

When opened in the late 1950s, ETEC was ideally remote from population centers to enable development of security-sensitive projects. These projects supported research for DOE and its predecessor agencies for nuclear research and energy development. Area IV includes buildings that house test apparatus for large-scale heat transfer and fluid mechanics experiments, mechanical and chemical test facilities, office buildings, and auxiliary facilities.

Air monitoring is being conducted in accordance with the *Final Baseline Air Monitoring Work Plan, Santa Susana Field Laboratory, Ventura County, California* (NASA 2017), which was submitted to the State of California Department of Toxic Substances Control (DTSC) on September 21, 2017. DTSC approved the Work Plan. Final locations of the air monitoring locations were approved by DTSC on January 30, 2018 (DTSC 2018).

The objective of the Air Monitoring Program is to evaluate project conditions and provide a basis for determining the magnitude of deviation from those baseline conditions resulting from onsite remediation activities (project) at SSFL. Responsible parties are monitoring for particulate matter between 2.5 and 10 microns in aerodynamic diameter (PM_{10}), and volatile organic compounds (VOCs), at 14 locations at SSFL. Data was collected from four perimeter samplers (DOE-1 through DOE-4) and analyzed for gross alpha and gross beta. Individual radionuclide concentrations were determined by analysis at an offsite laboratory for these same four locations. Meteorological data are also collected as a part of the Air Monitoring Program.

Figure 1 shows the air monitoring locations for the Air Monitoring Program. These locations were selected based on the areas to be remediated, with consideration of winds in the area, topographic features, and accessibility. The air monitoring sites were selected based on guidance obtained from the U.S. Environmental Protection Agency's (EPA's) *Quality Assurance Handbook for Air Pollution Measurement Systems*, Volume II, Ambient Air Monitoring Program (EPA 2017) and *Meteorological Monitoring Guidance for Regulatory Modeling Applications* (EPA 2000). Sites were evaluated per 40 Code of Federal Regulations (CFR) 58, Appendix C – Ambient Air Quality Monitoring Methodology. DOE is responsible for DOE-1, DOE-2, DOE-3, and DOE-4 of the 14 monitoring locations, represented in Figure 1. VOCs, PM_{10}, and radionuclides are monitored at the four DOE monitoring locations, and meteorological conditions are monitored at the DOE-4 location. The DOE monitoring locations DOE-1 through DOE-4 are shown in Figure 2.

This report summarizes the Q11 quarterly results and quality assurance (QA) activities performed at the DOE locations between October 1, 2020, and December 31, 2020. The report also provides an annual summary for the third year of the air monitoring period (Q8 through Q11, January 1, 2020, through December 31, 2020). The air monitoring is to be continued beginning January 1, 2021, with the twelfth quarter of monitoring.

1.1 Regional Climate and Wind Direction

The climate in the area of SSFL is characterized as "Mediterranean." The mean temperature during the winter months is approximately 50 degrees Fahrenheit (°F) and the mean temperature in the summer months is approximately 70°F. Based on climate data between 2018 and 2019 from Weather Atlas, average rainfall is on the order of 17.9 inches per year. The majority of the rainfall occurs between December and April.

The average hourly wind speed in Simi Valley varies significantly by season. The more turbulent part of the year lasts for 6 months, from November to April, with average western wind speeds of more than 7 miles per hour (mph). The calmer time of year lasts for 6 months, with northerly winds from May to October.

During the fall, winter, and spring, Santa Ana winds can blow from the north or northeast in excess of 35 mph.

2. SUMMARY

This report summarizes the air monitoring data collected during the Q11 reporting period. The report also provides an annual summary for the third year of the air monitoring period (Q8 through Q11, January 1, 2020, through December 31, 2020).

Quality objectives and data completeness were met for all meteorological, PM_{10},VOC, and radionuclide data for Q11 of the Air Monitoring Program.

Urban background data compared with air monitoring data indicate that the PM_{10} concentrations measured at stations DOE-1, DOE-2, DOE-3 and DOE-4 during Q8 through Q11 are comparable to the PM_{10} concentrations measured at stations characterizing urban background. Concentrations of VOCs characteristic of motor vehicle emissions, fossil fuel combustion, and wildfires are comparable around SSFL compared with the urban background, reflecting the site's relatively remote location from vehicle traffic. PM_{10} concentrations exceeded the California Ambient Air Quality Standard (CAAQS; 50 micrograms per cubic meter [$\mu g/m^3$]) twice at DOE-3 and one each at DOE-1, DOE-2, and DOE-4 during Q11, but the concentrations were below the National Ambient Air Quality Standard (NAAQS; 150 $\mu g/m^3$). Graphs 5-8 in Section 4.2 show the PM_{10} data for Year 3 is consistent with the baseline data from Year 1 and Year 2.

During Q11 one VOC analyte was detected above the EPA regional screening level (RSL). Ethyl acetate was detected at DOE-1. Ethyl acetate is a chemical used in glues, nail polish, and decaffeination processes. Dichlorodifluoromethane is freon-12, a common refrigerant and aerosol spray-can gas. There is no source for Ethyl on site.

During the remainder of Year 3, there were 10 additional instances of VOC analytes detected above either the EPA Residential Air RSL or the DTSC human health risk assessment (HHRA) RSL. During Q8 four VOC analytes were detected above one of the two screening levels, two at DOE-4 and one at each DOE-1 and DOE-3. During Q9 four VOC analytes were detected above one of the two screening levels, one at DOE-1 and three at DOE-2. During Q10 two VOC analytes were detected above the HHRA RSL, both at DOE-3. VOC data analyzed during Year 3 is consistent with the baseline data from Year 1 and Year 2. The distribution of the VOC data cannot be explained by the extensive site database.

During Q8 through Q11, detections for gross alpha and gross beta that exceeded the minimum detectable concentration (MDC) are all naturally occurring radionuclides. Detections are expected because the results are calculated at a 95% confidence level. No man-made radionuclides that are contaminants of concern at ETEC were detected. Gross alpha, gross beta, and radionuclide data analyzed during Year 3 is consistent with the baseline data from Year 1 and Year 2. All radiological data reported for the air filter samples are naturally occurring.

Data collected during Q8 through Q11 agree with data collected, analyzed, and reported by the State of California DTSC, Los Angeles County Emergency Response Organization, the DOE Emergency Response organization, or other Multi-Agency Task Forces. The remaining data were validated and there are no statistically significant changes in the air monitoring results. Air monitoring at Area IV of the SSFL is to be continued starting January 1, 2021, for the twelfth quarter of the Air Monitoring Program.

Site activities during Q11 included asbestos abatement and shipping activities within the non-radiological buildings. Work area air monitoring was conducted during asbestos abatement, confirming there was no airborne contamination resulting from abatement activities. Trucking activities were not conducted near the perimeter air monitoring stations. Routine activities onsite during the baseline period (Q1-Q7) also included general site maintenance, operations of the met stations, the Former Sodium Disposal Facility groundwater interim measure which started November 2017, and groundwater sampling. When comparing Q11 and the rest of the Year 3 data, to Year 1 and Year 2 baseline data, the PM10, VOC, and RAD data collected are consistent indicating building demolition activities had no impact on the site air conditions.

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3. ANALYTICAL SAMPLING EVENTS

VOCs are collected according to the EPA Toxic Compendium Method TO-15, *Determination of Volatile Organic Compounds (VOCs) Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)* (EPA 1999). Twenty-four-hour time-integrated samples are collected into Summa canisters via a flow controller and sent to an offsite laboratory for analysis. VOCs are collected every other week. There were seven VOC sampling events in this reporting period. One field duplicate sample was collected during each sampling event.

During Q11, radionuclide samples were collected at four perimeter sampling locations, DOE-1 through DOE-4. These samples were collected on glass fiber (Type A/E) filters that are changed twice a week. After a minimum 120-hour holding time to allow the decay of short-lived radon-220 and radon-222 daughter products, the samples are simultaneously counted for gross alpha and beta activity with a low-background, thin-window, gas-flow proportional-counting system continually purged with P-10 argon/methane counting gas over a preset time interval. There were 27 sampling events at each of samplers DOE-1, DOE-2, DOE-3, and DOE-4. Following analysis for gross alpha and gross beta radiation, sample filters from each of the locations were combined to form one composite sample representative of each location. The four composite samples were then analyzed for individual radionuclides at an offsite laboratory.

Year 3 (Q8 through Q11) of the air monitoring program consisted of 18 VOC sampling events with one field duplicate taken for each sampling event. There were 108 radiological sampling events for analysis of gross alpha and gross beta radiation and 16 composite samples for analysis from the four sampling stations.

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4. DATA

Sections 4.1 through 4.4 discuss Q11 air monitoring data.

4.1 Meteorological Data

General Summary

Meteorological data, also called weather data, is being collected as part of the ETEC cleanup and restoration effort. This information, particularly the wind direction and wind speed, can be used to help understand how dust and other air pollutants from the site are carried by the wind and possibly affect nearby public and residential areas. This is especially important when the E-BAM particulate monitors at the site detect higher-than-normal amounts of dust in the air. Scientific computer models can be used with this weather data and particulate monitoring data to describe the air quality for the people and communities living near the ETEC site. However, before the weather data can be used with the computer models it must first be tested for completeness and accuracy. A detailed description of the weather data collection and quality testing is provided in the following paragraphs.

Monitored meteorology parameters at the DOE-4 station included wind speed, wind direction, air temperature at 2 meters (m) and 10 m, relative humidity, precipitation, barometric pressure, and solar radiation. In addition, statistical parameters provided by the data logger included delta temperature (i.e., defined as the 10-m temperature minus the 2-m temperature), maximum wind speed (i.e., wind gust), and standard deviation of wind direction. Observations were recorded at 15-minute intervals for :00, :15, :30, and :45 minutes each hour. There were 92 days in this reporting period (Q11), which covers October 1, 2020, through December 31, 2020, with a total of 8,832 possible 15-minute observations. During year 3 (Q8 through Q11), there were a total of 35,136 possible 15-minute observations.

Data Validation and Statistics

Data validation screening was performed on the recorded meteorological observations pursuant to EPA's *Meteorological Monitoring Guidance for Regulatory Modeling Applications* (EPA 2000), Table 8-4 (Suggested Data Screening Criteria) and Table 8-3 (Suggested Quality Control Codes). Validation screening provided the basis for evaluating data completeness and for determining sensor performance and/or maintenance status. It was performed routinely throughout the reporting period following each weekly data download. Data validation quality control codes applied to the meteorological observations are defined in Table 1.

The validation screening involved comparing, on an individual parameter basis, the recorded values (i.e., observations) against the EPA screening criteria shown in Table 2. The data validation procedure involved an initial automated review to apply a first-level quality control (QC) Code of 0 (valid), 6 (failed), or 9 (missing), as defined in Table 1. Observations initially flagged with a QC Code = 6 were then manually (i.e., second-level) reviewed by a project meteorologist. The procedure is outlined below:

- Values meeting all screening criteria for the respective meteorological parameter were automatically considered "valid" (QC Code = 0).
- Values not meeting a screening criterion were automatically flagged as "failed initial QC" (QC Code = 6). These values were subjected to second-level manual meteorological review using other available observations (e.g., 2-m vs. 10-m temperature at DOE-4 or from nearby Remote Automatic Weather Stations [RAWS] meteorological station CEEC1 in the Cheeseboro Canyon, California, area located 2.6 miles south of the DOE-4 site), and meteorological judgment:

  - Values confirmed by second-level review were deemed "acceptable" (final QC Code = 3).
  - Otherwise, the values were deemed "suspect" (final QC Code = 7).
- Observations known to be "invalid" (QC Code = 8).
- Missing observations were automatically flagged as "missing" (QC Code = 9).

Values that pass validation with a final QC Code of 0 or 3 are included in the data completeness statistics and the final validated meteorological data set. Values with a final QC Code of 7, 8, or 9 are excluded from the final dataset and counted against the data completeness percentage. Quarterly data statistics for the meteorological parameters are listed in Table 2 along with year-to-date and project-to-date results. Year-to-date and project-to-date percentages are calculated as total valid observations through the completed quarters for the year divided by the total possible observations through this same period.

The project data completeness goal for meteorological data is 80% on an annual basis. Data completeness statistics for Q8 through Q11 in Year 3 of the air monitoring are presented in Table 2. In summary, the data completeness goal was achieved for all parameters for this annual reporting period.

Table 1. Data screening quality control codes for meteorological data.

Code	Meaning	Description (as used for ETEC meteorological data validation)
0	Valid	PASS – Observation is accurate within the performance limits of the instrument (i.e., value passes all data validation screening criteria)
3	Acceptable	PASS – Observation originally failed initial QC check (see Code 6), but additional review using other independent data and meteorological judgment support final validity.
6	Failed initial QC check	FAIL – Observation did not pass data validation screening criteria.
7	Suspect	FAIL – Observation failed initial data validation QC check (see Code 6) and could not be verified through additional review using other independent data.
8	Invalid	FAIL – Observation judged to be inaccurate or in error, and the cause is known.
9	Missing	FAIL – Observation was not collected.

Wind Rose

The final validated 15-minute meteorological dataset was used to develop the windrose diagram for this monitoring quarter (Figure 3). A windrose is a graphical representation of wind speed and direction distribution (or wind climatology) for the period of interest. The frequency of winds blowing from specific directions are shown as petals on the windrose, with the frequency of wind speeds depicted by color bands. Calm winds are identified as being less than 0.5 meters per second (m/sec).

During Q11, data capture for wind speed and direction at DOE-4 was 100%. The average and maximum wind speeds were 4.6 m/sec and 20.3 m/sec, respectively. The maximum recorded wind gust was 28.1 m/sec. There are two predominant wind directions: the first clustered around north and a second from the east-southeast.

During Q8 through Q11, data capture for wind speed and direction at DOE-4 was 100%. The annual average and maximum 15-minute wind speeds were 4.3 m/sec and 17.1 m/sec, respectively. The annual predominant wind direction was from the east-southeast. The maximum recorded wind gust for Year 3 was 29.2 m/sec and occurred in Q8. Figure 4 presents the annual windrose for Year 3.

Table 2. Data screening summary for monitored meteorological parameters.

Meteorological Parameter	Screening Criteria [1] (for valid sensor responses)	Data Completeness Percent (%) [2]					
		Q8	Q9	Q10	Q11	Year 3 to Date	Project to Date
Wind Speed	between 0 and 25 m/sec > 0.1 m/sec variation over 3 hours > 0.5 m/sec variation over 12 hours	100	100	100	100	100	92.06
Wind Direction	between 0 and 360 degrees > 1 degree variation over 3 hours > 10 degree variation over 12 hours	100	100	100	100	100	92.06
Standard Deviation of Wind Direction	Inherits the completeness stats of Wind Direction	100	100	100	100	100	92.06
Temperature @ 2 m	≤ local record high (monthly basis) ≥ local record low (monthly basis) > 0.5°C variation over 12 hours	100	100	100	100	100	92.06
Temperature @ 10 m	≤ local record high (monthly basis) ≥ local record low (monthly basis) > 0.5°C variation over 12 hours	100	100	100	100	100	92.06
Delta Temperature	≤ 0.1°C during daytime ≥ -0.1°C during nighttime between -3.0 and 5.0°C	100	100	100	100	100	92.06
Relative Humidity (and Dewpoint Temperature)	relative humidity 0–100% dew point T ≤ ambient T dew point T ≤ 5.0°C variation over 1 hour dew point T > 0.5°C variation over 12 hours	100	100	100	100	100	83.00
Precipitation	≤ 1 inch in 1 hour ≤ 4 inches in 24 hours ≥ 2 inches in 3 months	99.84	100	100	100	99.96	92.05
Barometric Pressure	between 871 and 982 mb (local) (i.e., between 940 and 1060 mb sea level) ≤ 6 mb variation over 3 hours	100	100	100	100	100	92.06
Solar Radiation	> 0 at night ≤ maximum possible for date and latitude	99.74	99.31	99.69	98.72	99.37	91.81

(1) Screening criteria from EPA Meteorological Monitoring Guidance (EPA 2000), Table 8-4.

(2) Data Completeness % = [Observations Passing] / [Possible Observations].

Missing or suspect observations count against data completeness statistics.

Year Two is an abbreviated data collection year spanning the period Apr 15–Dec 31, 2019 (i.e., Quarters 5, 6, and 7). This was done to synchronize future data collection years with calendar years.

The number of possible 15-minute observations in the completed reporting periods:

- Q1 = 8,736
- Q2 = 8,832
- Q3 = 8,832
- Q4 = 8,640
- Year One = 35,040
- Q5 = 8,736
- Q6 = 8,832
- Q7 = 7,488 (only 3 quarters)
- Year Two = 25,056 (abbreviated)
- Q8 = 8,736
- Q9 = 8,736
- Q10 = 8,832
- Q11 = 8,832
- Year Three = 35,136

4.2 PM_{10} Data

PM_{10} data, also defined as coarse particles between 2.5 and 10 micrometers in diameter, are measured at the ETEC site. Sources of particulate matter can be naturally occurring or caused by human activity. The air monitoring conducted at ETEC is used to determine if any suspended particles are from activities conducted onsite or if they are consistent with surrounding air quality data. Some of the naturally occurring particles can originate from high winds, forest or grass fires, burning of fossil fuels in vehicles, or stirred-up road dust.

PM_{10} data are being collected with Met One E-BAM monitors at four monitoring locations. The Met One E-BAM uses the principle of beta attenuation to provide a determination of mass concentration. Twenty-four-hour concentrations are calculated from the hourly concentrations. There were 92 days in the Q11 reporting period.

- DOE-1 had valid readings all 92 days.
- DOE-2 had valid readings all 92 days.
- DOE-3 had valid readings all 92 days.
- DOE-4 had valid readings all 92 days.

All four station units had 100% data completeness for PM_{10} for Q11, with a total data completeness of 100%, exceeding the project goal of 80% completeness for total samples collected (see Table 3). The complete tables of daily averages for both Q11 and for Year 3 are presented in Appendix A.

Table 3. PM_{10} data completeness for October 1, 2020 – December 31, 2020.

Location	Valid Readings (Days)	Possible Readings (Days)	Data Completeness (Percent)
DOE-1	92	92	100
DOE-2	92	92	100
DOE-3	92	92	100
DOE-4	92	92	100
Total Completeness			100

During the 365 days of the annual reporting period (Q8 through Q11) the PM_{10} monitoring stations (DOE-1, DOE-2, DOE-3, and DOE-4) exceeded the project goal of 80% data completeness, as shown in Table 4.

Table 4. PM_{10} data completeness for Year 3, January 1, 2020 – December 31, 2020.

Location	Valid Readings (Days)	Possible Readings (Days)	Data Completeness (Percent)
DOE-1	330	366	90.1
DOE-2	366	366	100
DOE-3	361	366	98.6
DOE-4	365	366	99.7
Total Completeness			97.1

The five highest PM_{10} results identified for the reporting period are listed in Table 5 along with the CAAQS for PM_{10}. PM_{10} concentrations were consistent with levels typically found in urban air. Of these top five results, two were recorded at DOE-3 and one each at DOE-1, DOE-2, and DOE-4. All five values were above the CAAQS, but below the NAAQS of 150 µg/m³. Wildfires and wind speeds near 30 mph occurred during this recording period and are known to increase air particulates. Three of the Top 5 readings were on 10/26/2020. On this date high winds shut down work at RMHF due to safety concerns. The remaining two readings (10/3/2020 & 10/4/2020) fell on a weekend with no activity being completed on site.

Table 5. Top five PM_{10} 24-hour average concentration days for October 1, 2020 – December 31, 2020.

Date	Location	PM_{10} Value (µg/m³)	CAAQS (µg/m³)
10/3/2020	DOE-3	**64.00000**	50
10/4/2020	DOE-3	**64.00000**	50
10/26/2020	DOE-4	**62.66600**	50
10/26/2020	DOE-2	**56.83300**	50
10/26/2020	DOE-1	**56.58300**	50

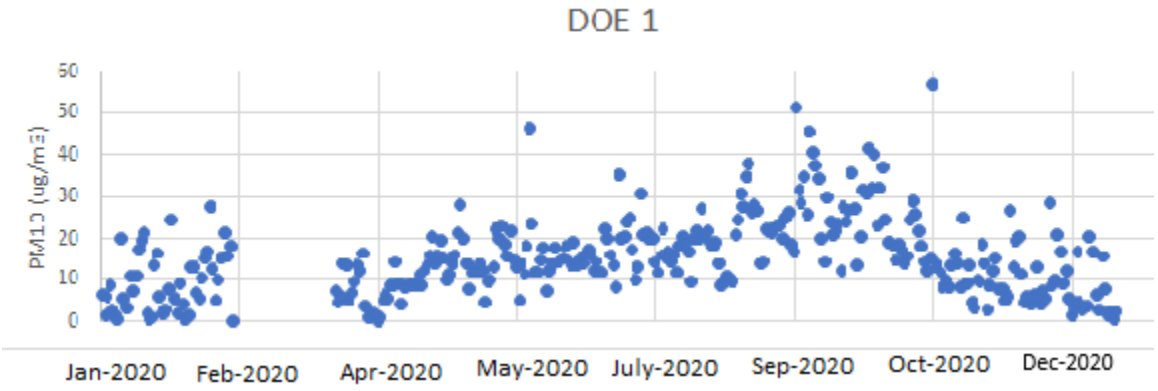
The five highest PM_{10} results identified for the reporting year are listed in Table 6. All five values were above the CAAQS, but below the NAAQS of 150 µg/m³. Wildfires, high temperatures, high winds, and the Fourth of July all occurred during this recording period and are known to increase air particulates (as shown in the tables and graphs below). CDM drilling activity at the Former Sodium Disposal Facility (FSDF) and near met station 3 occurred July 13th to July 29th. It may be possible to attribute increased particulates from drill rig exhaust and dust during those days to the coring work.

Table 6. Top five PM_{10} 24-hour average concentration days for January 1, 2020 – December 31, 2020.

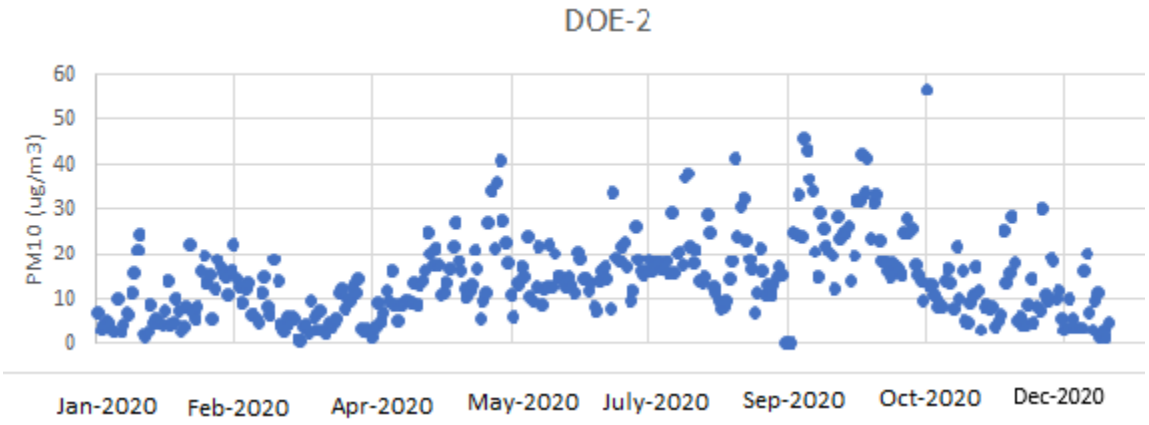
Date	Location	PM_{10} Value (µg/m³)	CAAQS (µg/m³)
7/5/2020	DOE-3	**92.29100**	50
7/31/2020	DOE-3	**77.33300**	50
9/6/2020	DOE-4	**66.25000**	50
10/3/2020	DOE-3	**64.00000**	50
10/4/2020	DOE-3	**64.00000**	50

Bold text and gray shaded – Value exceeds CAAQS.

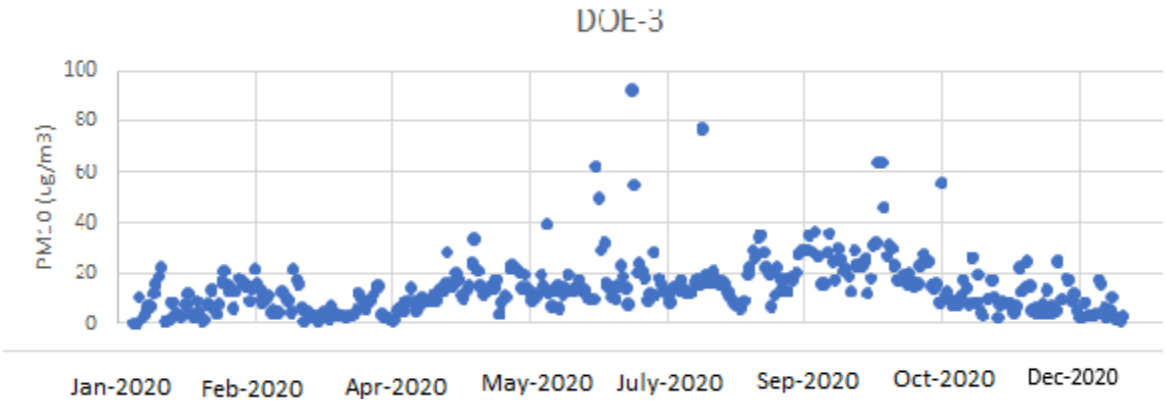
The Year 3 trend data from each monitor are shown below in Graphs 1 through 4. The Year 1 through Year 3 trend data is shown in graphs 5 through 8 for trend comparison. When reviewing graphs 5 through 8, one can determine that PM_{10} values have remained constant through baseline and site activities.



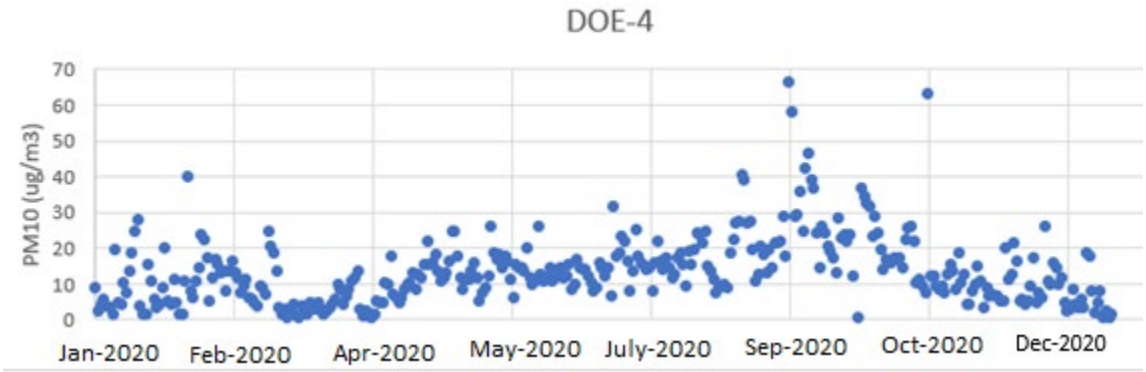
Graph 1. Year 3 trend data, Q8–Q11, for PM_{10} at monitor DOE-1.



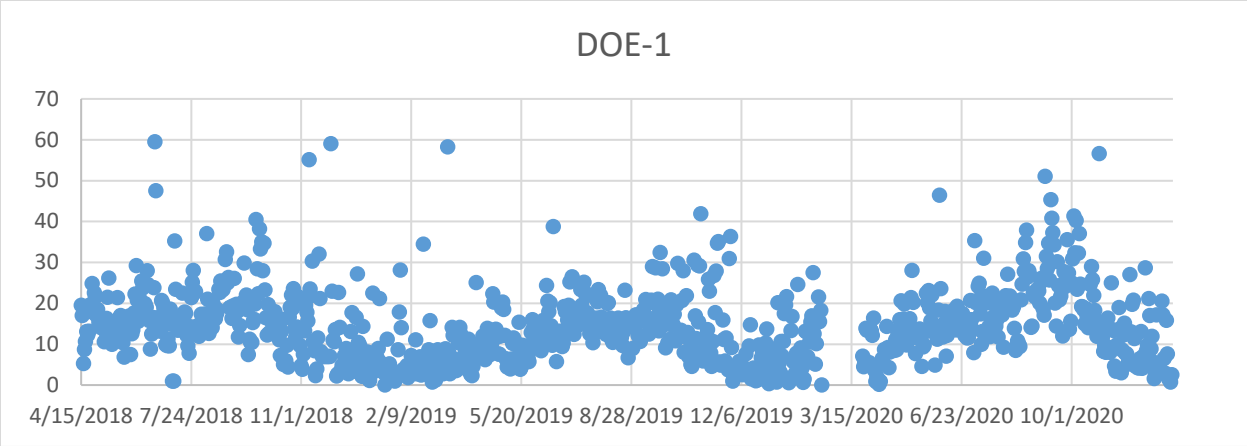
Graph 2. Year 3 trend data, Q8–Q11, for PM_{10} at monitor DOE-2.



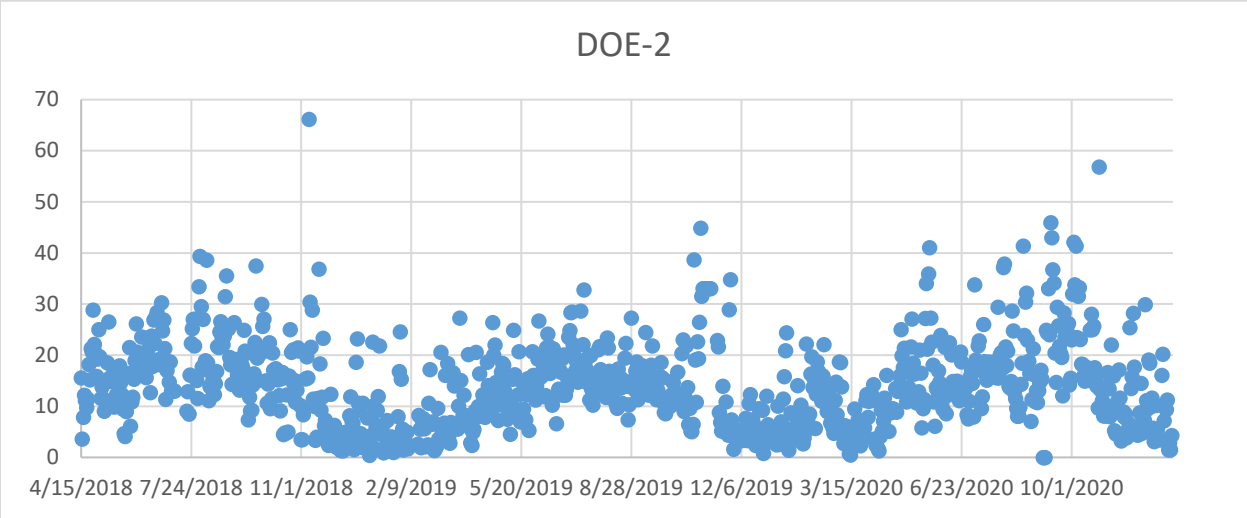
Graph 3. Year 3 trend data, Q8-Q11, for PM_{10} at monitor DOE-3.



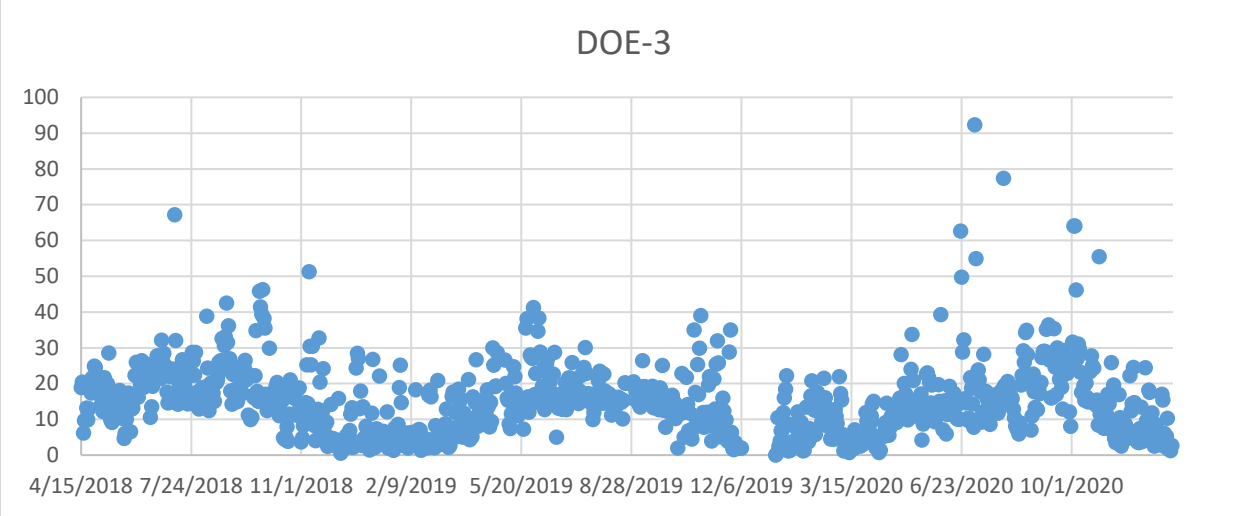
Graph 4. Year 3 trend data, Q8–Q11, for PM_{10} at monitor DOE-4.



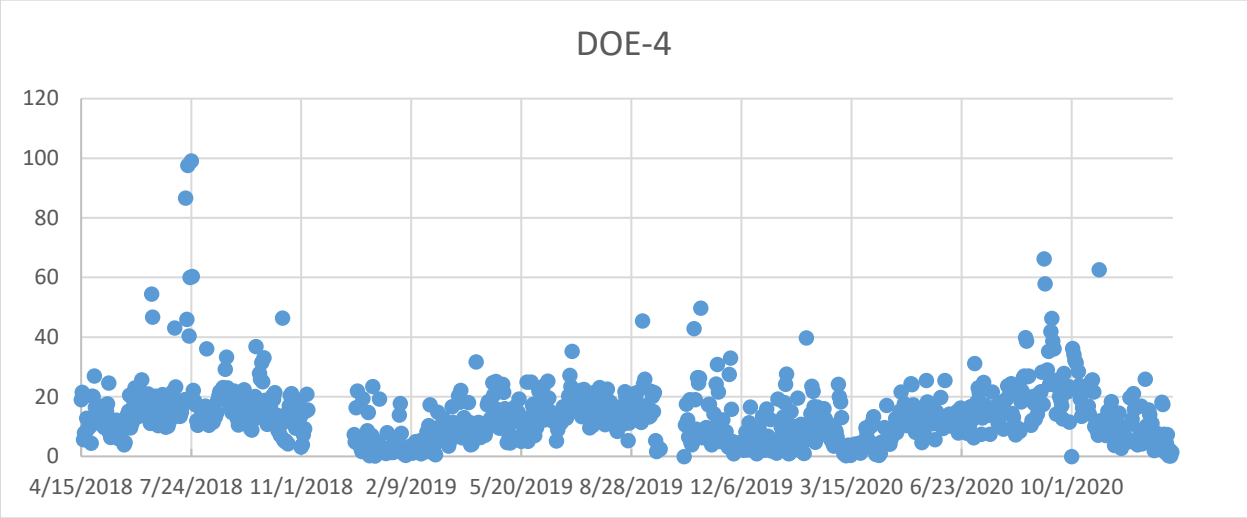
Graph 5. Years 1-3 trend data, Q1–Q11, for PM_{10} at monitor DOE-1.



Graph 6. Years 1-3 trend data, Q1–Q11, for PM_{10} at monitor DOE-2.



Graph 7. Years 1-3 trend data, Q1–Q11, for PM_{10} at monitor DOE-3.



Graph 8. Years 1-3 trend data, Q1–Q11, for PM_{10} at monitor DOE-4.

4.3 Volatile Organic Compound Data

VOCs are organic chemicals that have a high vapor pressure, which causes them to evaporate quickly and enter the surrounding air. VOCs can be both naturally occurring or man-made. The VOC data collected can help distinguish between man-made detections from onsite activities or naturally existing organic chemicals. The VOC data collected are compared against screening levels. These screening levels are risk-based concentrations derived from standardized equations combining exposure information with toxicity data.

There were seven VOC sampling events in the Q11 reporting period. Each of the four DOE locations was sampled during each sampling event. Data completeness goals for VOCs exceeded the project goal of 85% (see Table 7).

Table 7. Ambient air VOC data completeness for Q11.

Location	Valid Readings (Days)	Possible Readings (Days)	Data Completeness (Percent)
DOE-1	7	7	100
DOE-2	7	7	100
DOE-3	7	7	100
DOE-4	7	7	100
Average Total Data Completeness			100

There were 26 annual VOC sampling events. Each of the four locations was sampled during each sampling event. Data completeness goals for VOCs exceeded the project goal of 85% (Table 8).

Table 8. Ambient air VOC data completeness for Q8–Q11.

Location	Valid Readings (Days)	Possible Readings (Days)	Data Completeness (Percent)
DOE-1	26	26	100
DOE-2	26	26	100

DOE-3	26	26	100
DOE-4	26	26	100
Average Total Data Completeness			100

VOC detection results for Q11 are presented in Table B-1 (Appendix B), including comparison to the April 2019 DTSC HHRA Note 3 Screening Levels (DTSC 2019) or the May 2018 EPA Residential Air RSLs (EPA 2018). Ethyl acetate was detected at a concentration of 78 µg/m^3 at DOE-1, exceeding the EPA RSL of 73 µg/m^3 in one sample during Q11.

VOC analytical results for Q8 through Q11 are presented in Table B-2 (Appendix B). During Q8 there were four VOC analytes detected above the EPA Residential Air RSL or the DTSC HHRA. DOE-1 and DOE-3 each had one detection above the screening level and DOE-4 had two analytes detected above the screening level. During Q9 four VOC analytes were detected above the EPA Residential Air RSL or the DTSC HHRA. DOE-1 had one detection above the screening level and DOE-2 had three analytes detected above the screening level. During Q10 two analytes were detected above the screening levels, both at DOE-3.

Two man-made VOC analytes, dichlorodifluoromethane (Freon-12) and ethyl acetate, have been detected routinely at all four monitoring stations, during all quarterly sampling events, including Year 1 and Year 2 baseline monitoring, indicating that these VOCs are not caused by the building demolition activities being performed. Based on laboratory QC data (method blanks, clean canister certifications), the sampling process and laboratory process are not the sources of the two analytes. The onsite source of the analytes is currently unknown.

The site VOC chemicals of concern are TCE, PCE, and 1,1,1-TCA. TCE were observed at Station 2 and PCE at Stations 2 and 3. The myriad of soil gas and soil samples collected over the decades show no sources of VOCs at the SRE Station 2. The VOCs of concern at the FSDF Station 3 are TCE and 1,1,1-TCA, not PCE. These VOC are present in the near-surface soil/fractured bedrock materials and occasional detection is possible.

VOC data analyzed for Year 3 is consistent with VOC data analyzed for Year 1 and Year 2 baseline data.

4.4 Radionuclide Data

ETEC continuously monitors air at multiple locations for radioactive particles. This activity is performed for two reasons: (1) to determine the background airborne radioactivity concentration so that any possible releases from future work activities can be detected, and (2) to detect any possible release from existing activities. During Q11, the background airborne radioactive contamination continued at low and stable concentrations, and there was no detected release of material. Based on EPA's 3,000 soil samples, the rads of concern are Sr-90 and Cs-137. The locations with elevated concentrations of both radionuclides are near the RMHF (and beneath the RMFH asphalt) and in rocky terrain area south of the SRE complex. There has been no dust producing activity in the Sr-90 and Cs-137 impacted soil areas to contribute to any sample. The EPA's data show the majority of Area IV to be free of these rad contaminants.

There were 108 airborne radioactivity samples collected in Q11 — 27 each with DOE-1, DOE-2, DOE-3, and DOE-4. Each sample was collected on a glass-fiber filter (as discussed in Section 3) and was analyzed using a "low background" Protean radiation counter system onsite. These samples included background radioactive materials and the potential of Area IV–specific radioactive materials.

Gross alpha and gross beta data are used to evaluate whether site remediation work is potentially causing airborne radionuclide emissions. The gross alpha and beta analyses are performed at the site using a Protean alpha/beta radiation counter and a Ludlum 2929 gross alpha/beta counter.

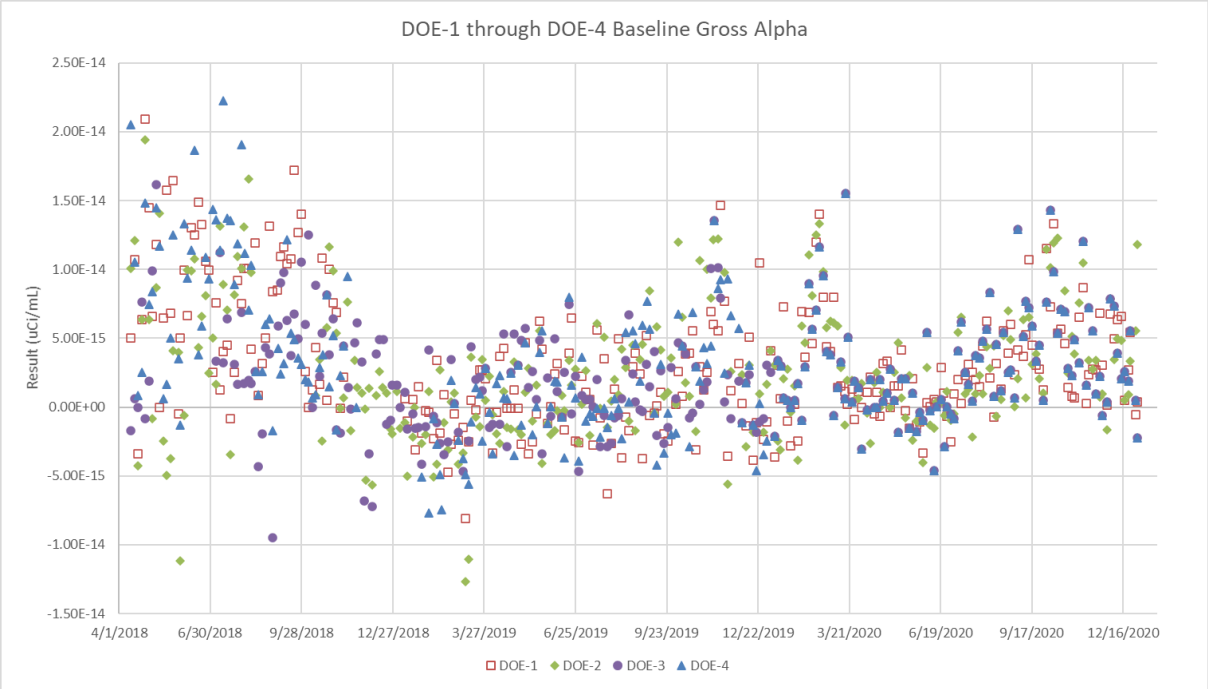
The individual filters are analyzed within approximately one week following collection. The delay in analysis is required for the naturally occurring short-lived radon daughters to decay and not affect the analysis results. The benefit of analyzing the filters at the site is to allow for an early warning of potential site remediation-caused elevated radionuclide emissions.

The air sample analysis results are tabulated and reviewed for trends. By nature, all results are above zero, some are above background, and some are above MDC, a value statistically above background. The MDC is tracked and reviewed with every analysis to determine if the instrument performance is stable. A variation may provoke a repair or a calibration.

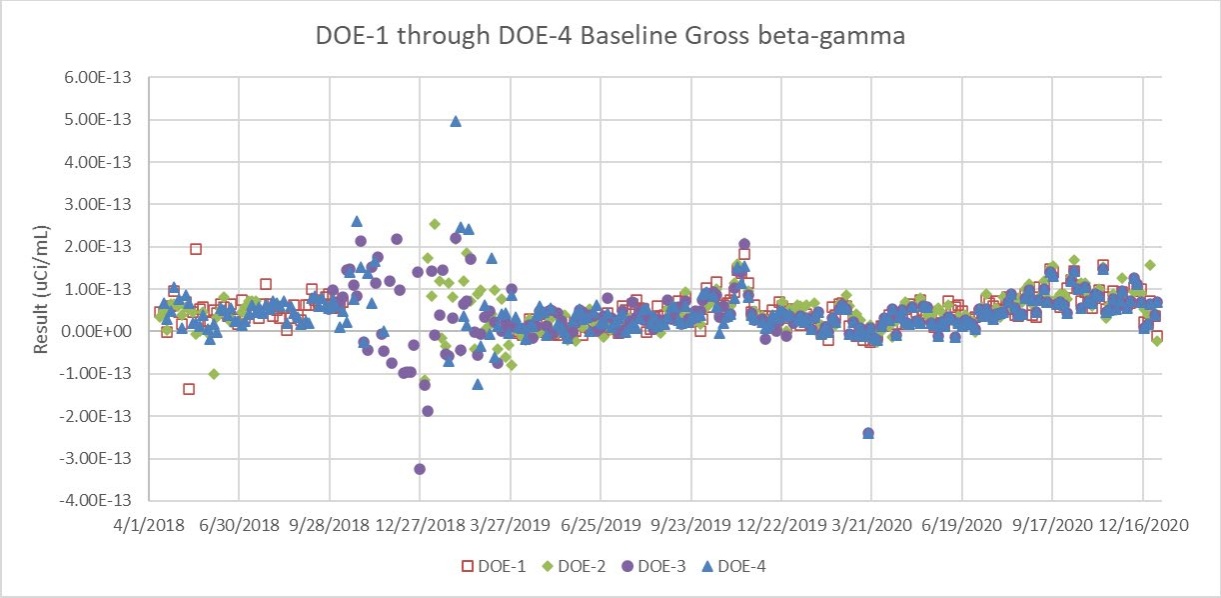
While approximately 34% of the gross alpha results and most (100 of 108) of the gross beta-gamma results are above the MDC, none of these results are significant. This is due to the fact that the "background" value is computed with a clean filter, not a filter exposed to background airborne concentrations. While a higher-than-usual proportion of the beta results were detectable, the average results remained low. The increased (though still low) results do correlate in time with the regional fires that release natural radioactive materials into the air.

For conservatism, the air sample gross counting results are reviewed considering all alpha activity is from the most restrictive expected radionuclide (Pu-239), and all beta activity is from the most restrictive expected radionuclide (Sr/Y-90). In all cases the results are less than 1% of the airborne limit for the most conservative radionuclide.

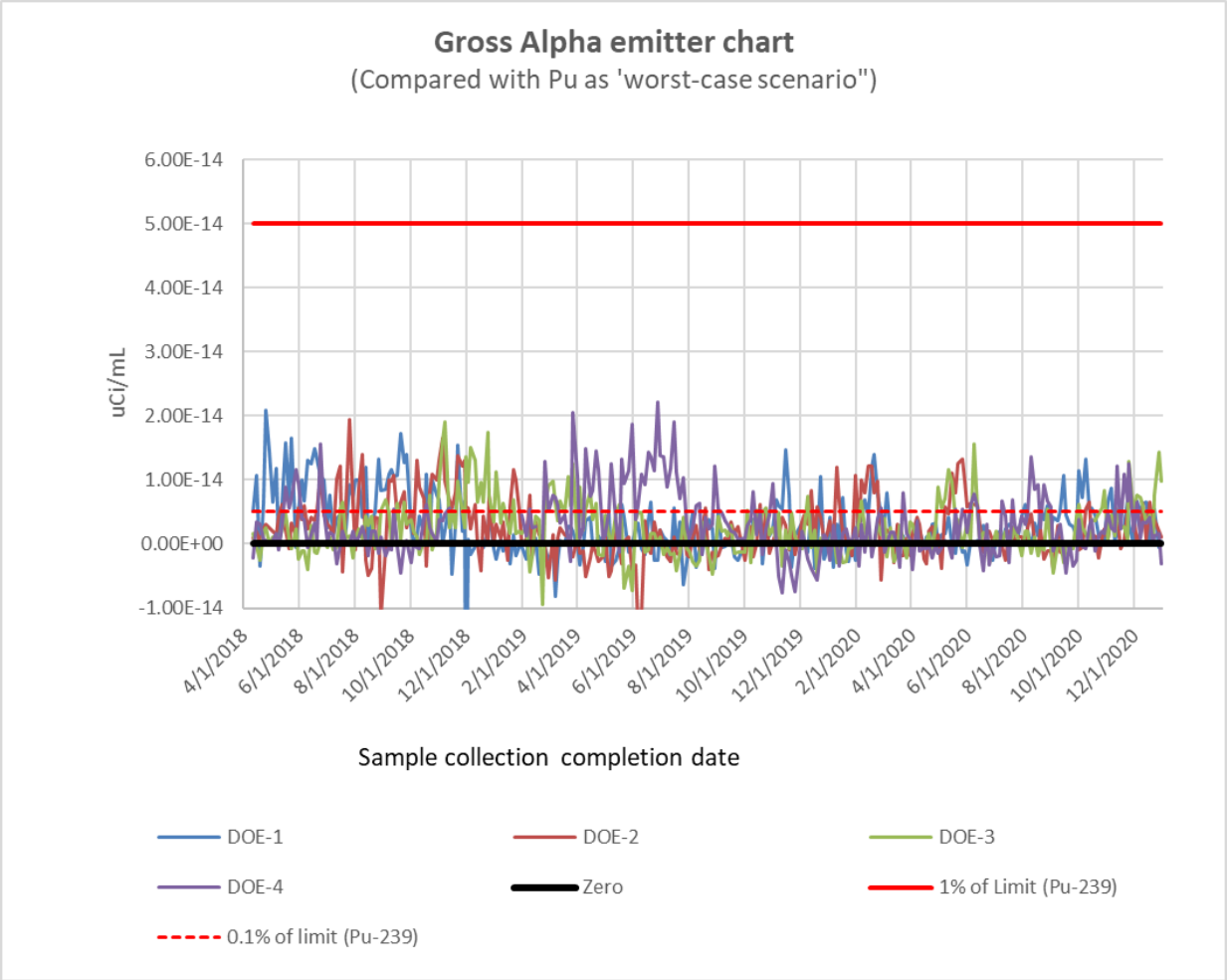
After the end of a quarter, the samples are composited and sent to a laboratory for detailed isotopic analysis. All analyses to date show a broad range of radioactive material consistent with background material and global fallout. These results vary seasonally, and do not show any contribution from ETEC activities. There is a small spike in November 2020 that is attributed to environmental factors external to SSFL. A similar spike was seen in November of 2019. Gross alpha and gross beta results along with the radionuclide analytical results for Q11 and Year 3 (Q8–Q11) can be found in Appendix C. The gross alpha and gross beta results for Year 1 through Year 3 are presented in Graph 5 and Graph 6, respectively, with multiple years included to show the natural variability. To give a full picture of the significance in background variation, Graph 7 presents the gross alpha results for Year 1 through Year 3 compared to the Pu-239 limit. Graph 7 shows how the air samples are less than 1% of the limit, hover around 0.1%, and are sometimes less than zero.



Graph 9. Gross alpha results for Year 1 through Year 3.



Graph 10. Gross beta results for Year 1 through Year 3.



Graph 11. Year 1 through Year 3 gross alpha worst-case emitter chart.

When radionuclides are collated and compared, it is clear that the primary contributors are background radioactive materials. The two most common indicators of artificial radionuclides are Cs-137 and Co-60, which have short half-lives. These radionuclides are either negative values, or below the minimum detectable concentration in all cases. For this analysis, the radioisotopic analyses from Year 3 were summed, then compared to the airborne radioactivity limits (derived airborne concentration [DAC]) (Table 9).

Table 9. Comparison of air sample results with DAC.

Radionuclide	Average (no Zero) µCi/mL	% contribution to total alpha activity	DAC alpha	%DAC (of measured nuclides)	DAC beta	% of DAC (of measured nuclides)	% contribution to beta-gamma activity
Cesium-137	0				8.00E-08	0.00E+00	0.00%
Strontium-90	3.71E-16				1.00E-08	3.71E-08	0.18%
Cobalt-60	0				3.00E-08	0.00E+00	0.00%
Potassium-40	1.55E-14				1.00E-07	1.55E-07	7.56%
Beryllium-7	1.89E-13				2.00E-08	9.46E-06	92.26%
Plutonium-238	0	0.00%	5.00E-11	0			
Polonium-210	1.35E-14	51.84%	2.00E-10	6.75E-05			
Plutonium-241	0	0.00%	2.00E-10	0			
Thorium-230	6.33E-16	2.43%	3.00E-12	2.11E-04			
Thorium-228	6.11E-16	2.34%	2.00E-11	3.05E-05			
Actinium-228	0	0.00%	6.00E-09	0			
Americium-241	4.19E-17	0.16%	5.00E-12	8.38E-06			
Plutonium-239	0	0.00%	5.00E-12	0			
Ra-228 – total	5.98E-15	22.94%	1.00E-10	5.98E-05			
Radium-226, - 228 combined	2.72E-15	10.44%	2.00E-10	1.36E-05			
Thorium-232	7.32E-16	2.81%	3.00E-12	2.44E-04			
Uranium-238	8.82E-16	3.39%	3.00E-10	2.94E-06			
Uranium-233/234	8.75E-16	3.36%	2.00E-10	4.38E-06			
Uranium-235/236	7.88E-17	0.30%	3.00E-10	2.63E-07			

Artificial Radionuclides
Natural Radionuclides

Over 92% the alpha-emitting radionuclides are background radioactive materials indicating airborne dust. Less than 8% of the alpha contribution is from artificial radionuclides (e.g., plutonium). As discussed above, it is likely that most of the airborne radioactivity is from the environment, either cosmogenic or global fallout. There is no indication of a local release, as there is no clear mixture associated with fission reactions, given the absence of Cs-137 and Sr-90. The air sample results are compared using conservative assumptions. Since the results hover near or below the detection limit of the instruments, there are no plans to investigate minor variations in background. This radionuclide data is consistent with Year 1 and Year 2 baseline data.

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5. QA/QC ACTIVITIES

The following QA/QC activities were conducted for the PM_{10}, VOC, radionuclide, and meteorological data collection and analysis.

5.1 Field QA/QC

5.1.1 PM_{10}

The 24-hour daily averages for Q11 are presented in Appendix A along with the monthly average minimum, maximum, and 95th percentile for each station location.

Flow Verifications

Functionality of the Met One E-BAM units is verified and recorded monthly during instrument audits; however, the instruments are also checked several times a week for operability. During the monthly audits, the Met One E-BAM temperature, pressure, and flow rate are verified against a National Institute of Standards and Technology (NIST) traceable flowmeter. E-BAM units are occasionally swapped out for maintenance, and preliminary audits of the new units are performed. The audit results for the four E-BAM units for Q11 ranged from -2.40 to +0.55%. None of the results exceeded the flow rate measurement quality objective of +/- 4%.

Complete audit reports and flow verification results for Q11 are presented in Appendix D of this document. The flow rate verifications were based on 40 CFR 58, Appendix A, 3.3.1 and 4.2.2 through 4.2.3, along with the *Guideline on the Meaning and the Use of Precision and Bias Data Required by 40 CFR Part 58 Appendix A* (EPA 2007). The *Data Assessment Statistical Calculator* (DASC) tool, which is an EPA Excel-based software application, was used to perform the necessary statistical calculations based on input audit data. Sections 2 and 2.5 of this EPA guidance document (EPA 2007) provide additional information and instruction for using the DASC tool.

5.1.2 VOCs

A minimum of 20% of the VOC results are undergoing third-party data validation. During Q11, two of the seven sample delivery groups (SDGs), #P20006435 and P20006899, underwent data validation. The data validation ensures that the required analytical measurement quality objectives are met to ensure the data are of sufficient quality for their intended purpose.

Data completeness goals for VOCs exceeded the project goal of 85%.

5.1.3 Field Duplicates

Seven field duplicates were collected during this reporting period, one per sampling event. The following analytes, ethyl acetate in SDGs #P2005536, P2005875, and P2006161; toluene in SDG #P2005536; and methylene chloride in SDGs #P2005875 and P2006161, were detected in four field duplicates pairs exceeded the quality objective of +/- 15% relative percent difference (RPD). In SDG #P2005536 the analyte 2-Butanone and in SDG #P2006899 the analyte tetrachloroethene were detected at levels higher than the RL (either the sample or duplicate), and in comparison, were reported as a non-detect in the associated sample or duplicate and exceeded the quality objective of +/- 15% RPD. Fifteen sample and duplicate analyte detections were within the quality objective of +/- 15% RPD. There were no other detections associated with the samples and associated duplicates collected during this reporting period.

5.1.4 Canister Pressure

Vacuum in the canisters is measured before and after sampling with an analog pressure gauge to ensure proper function. Final canister vacuums ranged from -5 inches mercury (Hg) to -1 inches Hg during this reporting period.

5.1.5 Radiological

The detector for onsite gross alpha and beta sample analysis is calibrated annually using sources traceable to the NIST. The detector is checked in by counting alpha- and beta-emitting sources at the site when received from the vendor following calibration. This establishes an acceptable performance range for daily source checks. On each day the detector is used, performance is determined with the site source. The detector may be used if the daily check is within the acceptable performance range.

Samples analyzed at the offsite laboratory are QC-checked at the laboratory. These QC checks include blanks, laboratory replicates, matrix spikes, and matrix spike duplicates. Barium, which behaves chemically similar to radium, is used as a carrier to determine the yield of the chemical extraction. The acceptable yield per laboratory procedure is from 40 to 110%. The barium yield was greater than 110% for all radium analyses. When the yield is higher than that allowed, then the analytical results for radium-226 and radium-228 are biased low. All results were less than the laboratory MDC during Q11. In all cases, the radium-226 and radium-228 results when evaluated against the MDC were more than 1,000 times less than the airborne effluent limits listed in 10 CFR 20, Appendix B, Table 2. Thus, there is no reason to suspect that there was an airborne release of radium-226 or radium-228 that was of any significance.

A minimum of 20% of the annual radiological analytical results are undergoing third-party data validation. SDG's from Q5 (from Year 2 of baseline air monitoring), from Q11 (from Year 3 of air monitoring) as well as Q3 (from Year 1 of baseline air monitoring) underwent the annual data validation, exceeding the minimum of 20%. The data validation ensures the analytical measurement quality objectives that are required to ensure the data are of sufficient quality for their intended purpose.

5.1.6 Meteorological

During the reporting period, a weekly data validation screening and review was performed on the monitored meteorological parameters based on the EPA guidance document *Meteorological Monitoring Guidance for Regulatory Modeling Applications* (EPA 2000), Table 8-4 – Suggested Data Screening Criteria, as outlined in Section 4.1. The data validation procedure provided the basis for evaluating data completeness and for determining sensor performance and/or maintenance status.

5.1.7 Maintenance

Routine visual checks were performed on the meteorological station during weekly data downloading site visits. This included inspection of the meteorological tower sensors, E-BAM monitoring unit wind sensors, and solar-powered batteries to ensure proper functioning.

5.1.8 Corrective Action

Issues and corrective actions regarding the PM_{10} monitors and the meteorological station are noted in Sections 5.1.8.1 and Section 5.1.8.2, respectively. No issues or corrective actions were noted regarding the remaining monitoring equipment or sampling events during this reporting period.

5.1.8.1 PM_{10} Monitors

Refer to Section 4.2 for a detailed description of PM_{10} air monitoring equipment issues that occurred during Q11.

5.1.8.2 Meteorological Station

Although there were no unresolved data quality issues impacting the data completion goal during Q11, the solar radiometer continues to record values that exceed the daily screening criteria. Also, the improperly programmed data logger continues to affect the calculation of delta temperature (i.e., temperature difference between 2 m and 10 m).

Solar Radiometer – The solar radiometer continues to occasionally record observations that exceed the maximum possible for the date, latitude, and time of day (i.e., the Level 1 screening criteria from Table 2). Theses exceedances continue to occur within one hour before and after solar noon. The maximum possible values are determined from the Bird Clear Sky Radiation Model (SERI 1981) and represent theoretical maximums that can occur under the clearest sky conditions. Level 2 screening has been unable to resolve these recurring events. These observations are flagged with QC Code = 7 (i.e., suspect) and excluded from the final validated dataset. Site investigations performed during previous quarters have not identified the cause. Since this has not yet resulted in a negative impact on achieving the data completeness goal, no further corrective actions are being considered at this time. However, North Wind continues to monitor this situation with each weekly data download and review. Should the situation worsen, a sensor audit with a NIST-traceable standard and/or sensor replacement will be considered.

Delta Temperature Calculation – As stated in the Corrective Action section of the Q3 air monitoring report (North Wind, Inc. 2019), the new data logger installed on December 18, 2018, was programmed to calculate delta temperature inversely to how it had been calculated in the original data logger (i.e., prior to November 7, 2018). Consequently, the new delta temperature observations are being calculated with an opposite sign compared to the values from the original data logger.

The equations below represent the before and after delta temperature calculations:

- Prior to November 7, 2018:

  Delta Temperature = [Temperature @ 10 m] minus [Temperature @ 2 m] (Eq. 4-1)

- November 7 to December 18, 2018:

  Missing (wildfire damage to station DOE-4)

- After December 18, 2018:

  Delta Temperature = [Temperature @ 2 m] minus [Temperature @ 10 m] (Eq. 4-2)

For consistency with the initial data collection quarters, the delta temperature calculations from the new data logger are adjusted through postprocessing to conform with Equation 4-1. The adjustment is simply a multiplication factor of "-1" applied to the delta temperature values from the new data logger prior to the data validation.

Meteorological Data Sensor Maintenance – Although not a corrective action, the manufacturer's recommended maintenance frequency for meteorological sensors is presented below. Proper and timely maintenance of the meteorological sensors is critical for ensuring that the data are not only valid (based on screening criteria) but also accurate. Schedules for maintenance and calibration are listed in the sensor user manuals and are based on the service time of the sensor. Table 10 lists the maintenance schedules for the Met One sensors installed at the DOE-4 meteorological station.

Table 10. Meteorological sensor recommended maintenance frequency (Met One).

Sensor	Frequency	Maintenance
WS	6–12 Month	Inspect for proper operation (manual check of pulses per revolution, bearing condition, anemometer cup condition, and bearing replacement if warranted)
	12–24 Month	Return to Met One for complete overhaul
WD	6–12 Month	Inspect for proper operation (manual check of sensor readings through 360°)
	6–12 Month	Field calibration
	12–24 month	Replace bearings and potentiometer
T	6–12 Month	Inspect sensor for proper operation (field comparison sensor reading against a precision mercury thermometer)
RH	6–12 Month	Inspect sensor for proper operation (compare sensor reading against local weather service or field psychrometer)
	12 Month	Return sensor to Met One for calibration and replacement of O-rings and filter membrane
Rain Gauge	6 Month	Clean sensor and bucket and field verify proper operation
Pressure	12 Month	Return sensor to Met One for calibration and replacement of O-rings and filter membrane
Radiometer	Monthly	Clean sensor glass dome with clean rag/tissue

Note: Maintenance schedules are specified in the respective Met One sensor user manuals.

5.2 Laboratory QA/QC

This report covers 35 air monitoring samples for VOCs collected and analyzed according to the EPA Toxic Compendium Method TO-15, *Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)* (EPA 1999). These samples were reported under seven SDGs by the laboratory. All seven SDG analyses were performed by ALS in Simi Valley, CA. For each SDG, the laboratory ran continuing calibration verification, a method blank, and laboratory control samples, and verified surrogate recoveries for each sample.

The laboratory provided certified clean canisters for the sampling events. The certification of the canister batch is considered the equipment blank for each sampling event. The certified clean canisters are discussed by ALS in the case narrative of each SDG.

5.3 Audit Results

The PM_{10} instruments were calibrated at the manufacturer and were functioning properly upon installation. The PM_{10} instruments were audited monthly with a secondary NIST traceable flow meter. Although audits occur only monthly, the instruments were checked several times a week to ensure that they were functioning. Table 11 lists the dates for audits conducted in October through December. No flow rate comparisons exceeded the project's acceptance criterion of +/- 4, however the sample dots got darker/ black due to smoke in the area. The sample nozzles and support vanes were cleaned as needed. Complete audit reports are presented in Appendix D.

Table 11. PM_{10} audit completeness.

Location	Met One E-BAM Serial Number	Parameter	Date
DOE-1	W23310	PM_{10}	10/14/2020
DOE-2	X16067	PM_{10}	10/14/2020
DOE-3	W23313	PM_{10}	10/14/2020
DOE-4	W23314	PM_{10}	10/14/2020
DOE-1	W23310	PM_{10}	11/20/2020
DOE-2	X16067	PM_{10}	11/20/2020
DOE-3	W23313	PM_{10}	11/20/2020
DOE-4	W23314	PM_{10}	11/20/2020
DOE-1	W23310	PM_{10}	12/22/2020
DOE-2	X16067	PM_{10}	12/22/2020
DOE-3	W23313	PM_{10}	12/22/2020
DOE-4	W23314	PM_{10}	12/22/2020

6. CONCLUSION

In conclusion, when observing Year 3 data, there is a very similar pattern when comparing the data collected (PM10, VOC, gross alpha and gross beta, and RAD) to the baseline data collected during Years 1-2 (Q1-Q7). This conclusion is able to be visualized by the data shown in the graphs for Years 1-3, PM10 data & radionuclide data, shown in Section 4 of this air report. These stable trends indicate building demolition activities being performed in Year 3 have had no recordable impact on the site air conditions.

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7. REFERENCES

10 Code of Federal Regulations (CFR) 20, Appendix B, "Annual Limits on Intake (ALIs) and Derived Air Concentrations (DACs) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sewerage," Table 2.

40 CFR 58, Appendix C –Ambient Air Quality Monitoring Methodology.

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Figure 1

SSFL Air Monitoring Locations

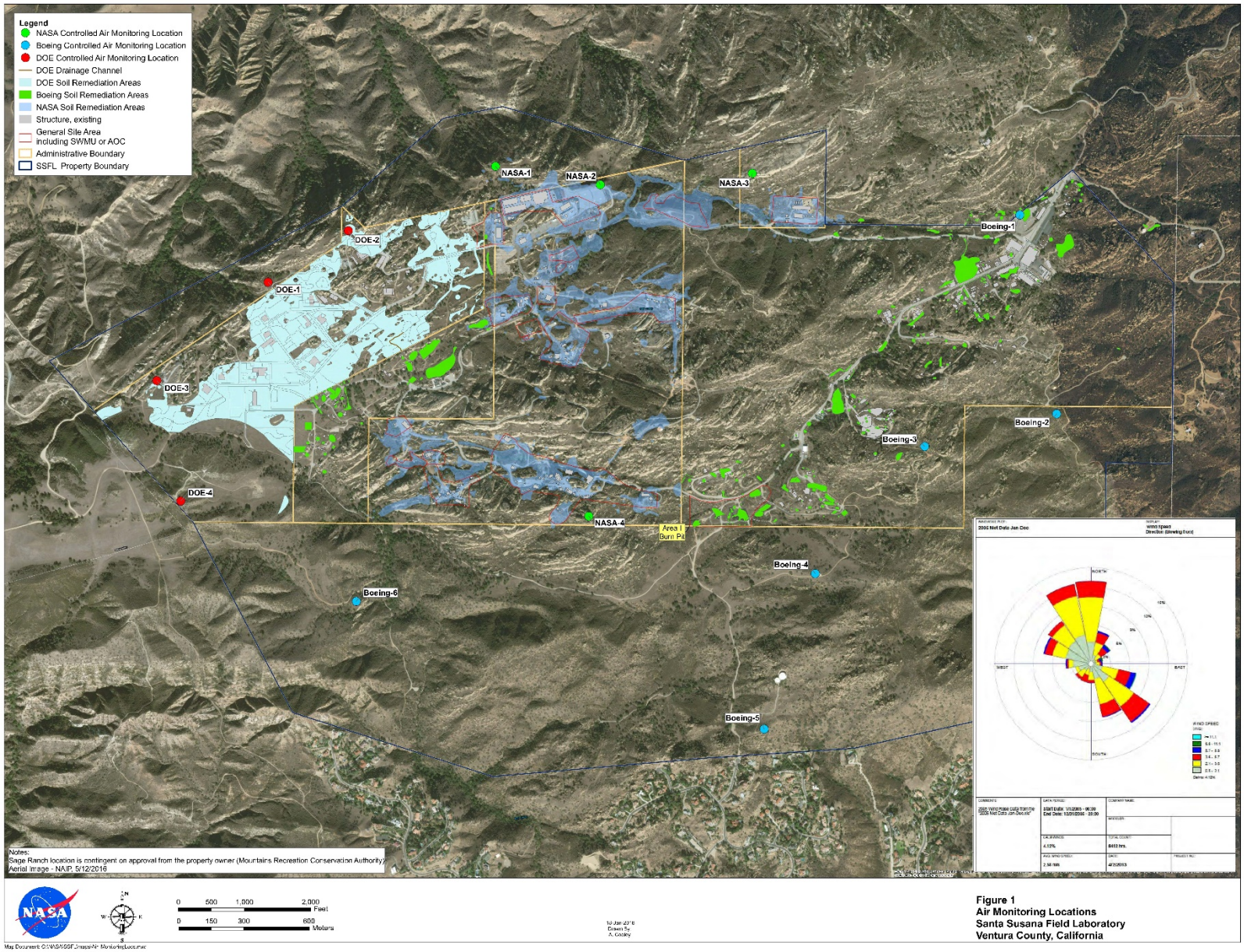


Figure 1
Air Monitoring Locations
Santa Susana Field Laboratory
Ventura County, California

Figure 2

DOE Air Monitoring Locations

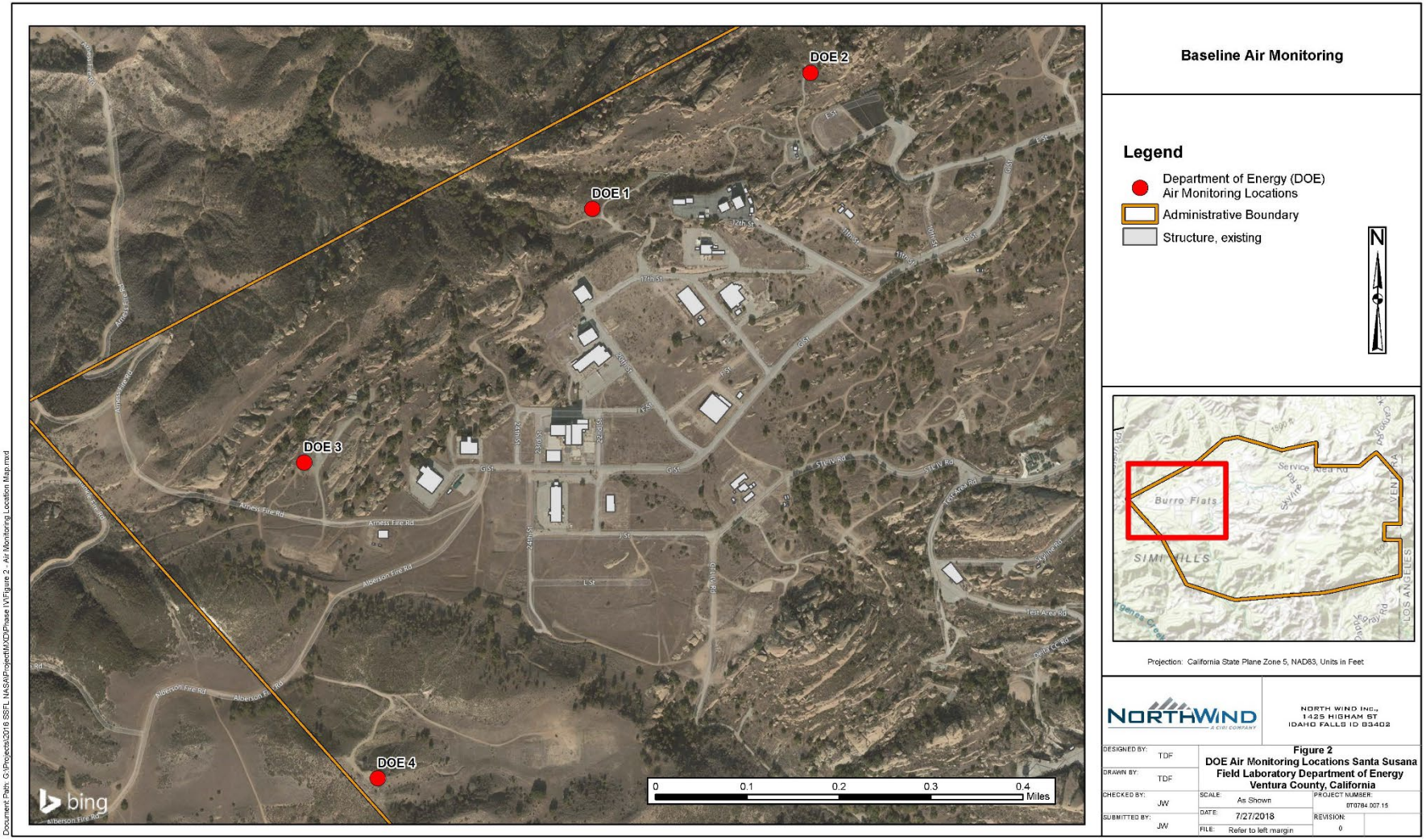

DOE 1
DOE 2
DOE 3
DOE 4
Baseline Air Monitoring
Legend
Department of Energy (DOE) Air Monitoring Locations
Administrative Boundary
Structure, existing
N
Burro Flats
SIMI HILLS
LOS ANGELES
Projection: California State Plane Zone 5, NAD83, Units in Feet
NORTHWIND
NORTH WIND INC.,
1425 HIGHAM ST
IDAHO FALLS ID 83402
Figure 2
DOE Air Monitoring Locations Santa Susana Field Laboratory Department of Energy Ventura County, California
DESIGNED BY: TDF
DRAWN BY: TDF
CHECKED BY: JW
SUBMITTED BY: JW
SCALE: As Shown
DATE: 7/27/2018
FILE: Refer to left margin
PROJECT NUMBER: 010784.007.15
REVISION: 0
0 0.1 0.2 0.3 0.4 Miles
bing

Figure 3 – DOE Quarterly Wind Rose

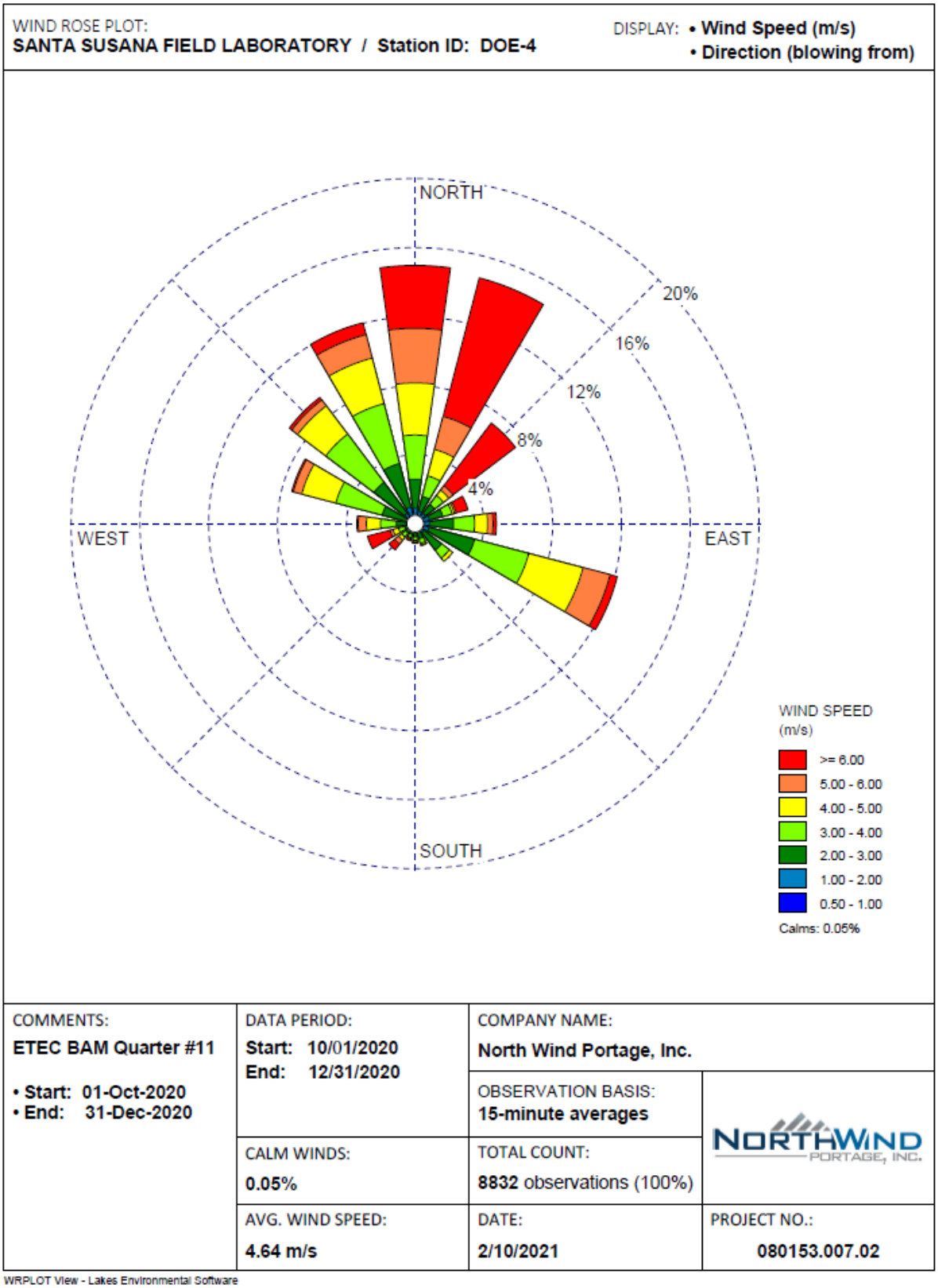
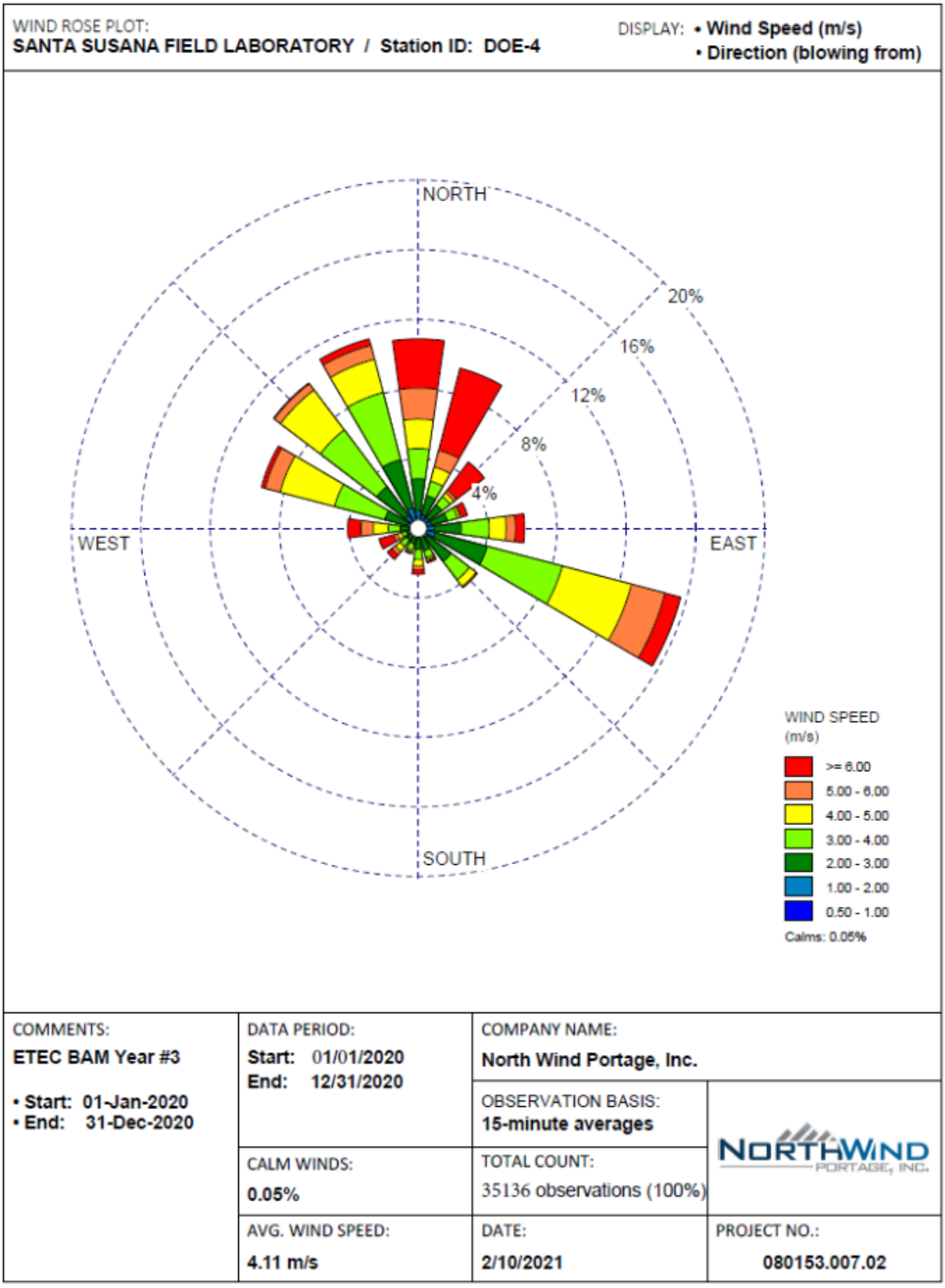


Figure 4 – DOE Annual Wind Rose



APPENDIX A

PM_{10} Daily Averages and Monthly Statistics

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PM_{10} Daily Averages, Q11

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m^3) (CAAQS 50 µg/m^3)	PM_{10} (µg/m^3) (CAAQS 50 µg/m^3)	PM_{10} (µg/m^3) (CAAQS 50 µg/m^3)	PM_{10} (µg/m^3) (CAAQS 50 µg/m^3)
10/01/20	25	23	27	36.5125
10/02/20	30.875	31.958	31.583	36.275
10/03/20	41.333	42.083	64	34.154
10/04/20	32.333	33.75	64	32.271
10/05/20	40.291	41.333	46.125	31.3667
10/06/20	23.458	23.458	26.875	22.909
10/07/20	32.291	31.5	31.041	28.458
10/08/20	37.083	33.208	29.708	23.833
10/09/20	24.708	23.083	23.166	19.25
10/10/20	19.208	18.25	17.5	13.5
10/11/20	19.125	18.166	17.791	16.333
10/12/20	18.458	15.916	19.375	15.833
10/13/20	15	14.958	15.304	15.375
10/14/20	18.625	17.666	20.125	16.833
10/15/20	16.916	16.833	16.125	16.5
10/16/20	14.041	16.583	14.875	16.875
10/17/20	15.5	15.083	15.5	14.291
10/18/20	24.625	24.958	23.375	22.125
10/19/20	29	28.041	27.708	25.333
10/20/20	25.75	25	24.916	25.708
10/21/20	21.916	25.708	24.333	21.625
10/22/20	18.25	17.583	14.666	10
10/23/20	14.166	15.416	13.958	11
10/24/20	11.916	13.958	15.375	8.833
10/25/20	15.458	9.666	8.375	7.166
10/26/20	56.583	56.833	55.416	62.666
10/27/20	12.833	13.291	11.416	11.958
10/28/20	13.458	13.208	13	11.833
10/29/20	11.75	11.083	9.458	8.833
10/30/20	8.25	8.125	7.5	8
10/31/20	9.833	9.333	9.041	9.083
11/01/20	8.041	8.083	7.583	7
11/02/20	13.541	13.916	11.166	12.458
11/03/20	16.375	16.625	16.958	15.208
11/04/20	14.041	13.458	14.291	13.041
11/05/20	8	8	7.25	8.25
11/06/20	25	22	25.833	18.375

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m^3) (CAAQS 50 µg/m^3)	PM_{10} (µg/m^3) (CAAQS 50 µg/m^3)	PM_{10} (µg/m^3) (CAAQS 50 µg/m^3)	PM_{10} (µg/m^3) (CAAQS 50 µg/m^3)
11/07/20	9.208	9.833	8.333	9.833
11/08/20	13.333	15.916	19.541	12.375
11/09/20	4.666	5.208	4.666	3.75
11/10/20	3.416	4.583	3.458	3.833
11/11/20	9.791	9.333	9.583	7.666
11/12/20	9.666	11.083	9.666	9.25
11/13/20	18.958	17.125	16.875	14.5
11/14/20	13.791	11.625	10.416	10.333
11/15/20	3	3.25	2.5	2.75
11/16/20	8.583	8.5	7.875	8.5
11/17/20	12.25	8.916	8.75	6.041
11/18/20	15.125	7.833	8.458	6.708
11/19/20	7.75	8.458	8.541	6
11/20/20	7.625	3.827	7.541	6.125
11/21/20	5.083	5.25	4.625	4.958
11/22/20	6	6.625	6.666	5
11/23/20	27	25.375	22.208	19.708
11/24/20	13	13.5	12.375	10.916
11/25/20	19.791	15.75	14.375	12.458
11/26/20	20.75	28.208	24.458	21.125
11/27/20	11.375	17.666	14.625	15.833
11/28/20	4.625	5.041	4.958	4.708
11/29/20	5.75	5.958	5.708	5.458
11/30/20	4.291	4.333	3.666	3.958
12/01/20	4.166	4.5	3.5	4.583
12/02/20	6.458	8.75	7.416	8.833
12/03/20	13.125	14.5	13.375	16.916
12/04/20	4.083	4.708	3.75	4.25
12/05/20	7.083	8.291	7.125	7.041
12/06/20	5.5	7.333	5.666	5.583
12/07/20	28.708	29.875	24.416	25.875
12/08/20	8.5	11.083	9.666	10.208
12/09/20	9.791	9.458	9.5	9.291
12/10/20	21.125	19.083	18.125	15.625
12/11/20	17.041	18.416	17.5	14.041
12/12/20	8.875	9.916	9.208	9.416
12/13/20	11.916	11.625	11.833	11.083
12/14/20	5.625	5.708	5.166	4.25

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
12/15/20	1.625	3.083	2.5	1.958
12/16/20	3.041	3.458	2.666	2.708
12/17/20	17.208	10.166	8.5	7.875
12/18/20	4.791	5.5	3.375	3.75
12/19/20	2.833	3.416	2.833	3
12/20/20	3.208	3.708	3	5.5
12/21/20	3.666	3.541	3.5	2.75
12/22/20	20.541	16.083	16.958	18.208
12/23/20	17.166	20.208	15.375	17.458
12/24/20	6.5	7.166	6.041	7.458
12/25/20	2.958	3.25	2.291	1.416
12/26/20	15.833	9.375	5.291	4.416
12/27/20	7.625	11.25	10.25	7.375
12/28/20	1.541	1.5	1.666	0.291
12/29/20	2.333	2.916	2.583	2.166
12/30/20	0.708	1.458	1.25	0.208
12/31/20	2.565	4.304	2.652	1.434

PM_{10} Daily Averages, Q8 through Q11

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
01/01/20	6.307	7.076		8.615
01/02/20	1.45800	3.12500		1.91600
01/03/20	5.79100	4.16600		3.79100
01/04/20	8.50000	5.25000		5.37500
01/05/20	2.79100	4.66600		3.54100
01/06/20	1.33300	3.12500		2.83300
01/07/20	0.70800	2.45800	0.38400	1.08300
01/08/20	20.16600	10.04100	10.50000	19.25000
01/09/20	5.29100	2.54100	2.37500	4.41600
01/10/20	3.16600	4.37500	3.95800	4.00000
01/11/20	10.66600	7.00000	6.83300	9.91600
01/12/20	7.12500	6.45800	6.75000	7.29100
01/13/20	10.70800	11.41600	11.87500	13.25000

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
01/14/20	17.45800	15.79100	16.00000	18.04100
01/15/20	19.62500	20.87500	18.45800	24.16600
01/16/20	21.66600	24.41600	22.20800	27.62500
01/17/20	1.70800	2.20800	1.20800	3.25000
01/18/20	0.58300	1.41600	1.12500	0.87500
01/19/20	1.20800	2.70800	1.29100	1.25000
01/20/20	13.33300	8.75000	8.54100	15.04100
01/21/20	16.75000	4.70800	3.54100	10.20800
01/22/20	5.75000	5.58300	3.83300	5.33300
01/23/20	2.04100	4.70800	2.41600	2.83300
01/24/20	2.91600	4.37500	2.87500	3.95800
01/25/20	7.75000	7.62500	7.50000	8.70800
01/26/20	24.62500	14.041	12.04100	19.54100
01/27/20	5.58300	4.333	3.91600	4.70800
01/28/20	1.87500	4.958	2.25000	3.79100
01/29/20	9.08300	10.208	9.16600	10.75000
01/30/20	4.08300	7.583	4.45800	4.25000
01/31/20	0.62500	2.66600	1.16600	1.20800
02/01/20	1.45800	3.83300	1.33300	1.04100
02/02/20	13.16600	8.29100	7.58300	10.45800
02/03/20	13.00000	22.20800	13.37500	39.75000
02/04/20	6.91600	7.50000	6.41600	7.58300
02/05/20	5.66600	5.66600	3.79100	5.95800
02/06/20	10.50000	8.50000	7.45800	10.20800
02/07/20	15.45800	16.29100	16.54100	14.29100
02/08/20	16.95800	19.66600	20.75000	23.58300
02/09/20	27.50000	13.66600	14.58300	21.79100
02/10/20	12.58300	15.41600	12.58300	16.66600
02/11/20	5.08300	5.66600	5.75000	4.75000
02/12/20	10.12500	12.37500	12.41600	11.42100
02/13/20	15.37500	18.66600	17.62500	16.54100
02/14/20	21.54100	16.83300	16.79100	15.20800
02/15/20	15.50000	15.50000	15.62500	12.91600
02/16/20	18.29100	14.91600	14.70800	13.33300
02/17/20		10.95800	9.25000	7.66600

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
02/18/20		15.91600	14.54100	13.16600
02/19/20		22.04100	21.50000	16.00000
02/20/20		14.25000	16.00000	12.62500
02/21/20		12.83300	13.29100	11.41600
02/22/20		8.95800	8.16600	7.12500
02/23/20		12.25000	9.54100	9.08300
02/24/20		13.41600	11.45800	10.70800
02/25/20		6.70800	4.45800	5.79100
02/26/20		6.54100	5.00000	5.37500
02/27/20		5.79100	4.58300	4.33300
02/28/20		4.70800	4.50000	3.50000
02/29/20		11.16600	12.79100	8.91600
03/01/20		14.75000	10.79100	8.33300
03/02/20		8.33300	8.87500	6.45800
03/03/20		6.37500	4.54100	24.25000
03/04/20		18.66600	21.87500	20.00000
03/05/20		18.58300	17.12500	18.29100
03/06/20		13.83300	15.41600	13.08300
03/07/20		4.33300	5.75000	2.83300
03/08/20		2.75000	1.16600	0.91600
03/09/20		6.25000	4.87500	2.45800
03/10/20		4.75000	2.50000	0.25000
03/11/20		6.04100	3.45800	2.37500
03/12/20		5.87500	3.41600	3.79100
03/13/20		0.75000	0.75000	0.83300
03/14/20		0.45800	3.25000	0.37500
03/15/20		4.04100	4.25000	3.54100
03/16/20		4.33300	3.29100	2.16600
03/17/20		2.33300	1.75000	1.25000
03/18/20		9.45800	7.08300	4.12500
03/19/20		6.04100	3.08300	3.70800
03/20/20		3.08300	3.91600	2.45800
03/21/20		7.33300	3.41600	4.33300
03/22/20		2.95800	2.75000	2.29100
03/23/20		2.29100	2.45800	1.12500

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
03/24/20		4.70800	3.08300	2.08300
03/25/20	7.07100	3.62500	2.95800	3.04100
03/26/20	4.50000	4.75000	3.45800	3.79100
03/27/20	5.91600	5.79100	5.66600	5.50000
03/28/20	13.87500	11.12500	11.91600	9.58300
03/29/20	13.37500	12.33300	9.50000	8.25000
03/30/20	5.08300	7.83300	5.83300	3.83300
03/31/20	5.50000	11.00000	7.37500	5.187
04/01/20	13.636	12.181	9.181	10.09
04/02/20	13.25	12.5	10.875	10.291
04/03/20	12.166	11.166	14.291	11.5
04/04/20	16.416	14.25	15	13.333
04/05/20	3.625	3.583	4.041	2.375
04/06/20	0.916	2.416	2.083	0.75
04/07/20	2.041	3.416	2.625	2.25
04/08/20	1.25	1.708	1.833	0.75
04/09/20	0.166	1.291	0.75	0.375
04/10/20	0.875	4.125	1.375	1
04/11/20	5.083	9.25	5.25	4.791
04/12/20	6.416	5.125	5.708	4.166
04/13/20	5.333	7.125	5.166	4.458
04/14/20	8.75	11.625	8.75	9.75
04/15/20	8.416	9.791	9.125	9.416
04/16/20	14.375	16.041	14.5	17.125
04/17/20	9.166	8.75	8.666	6.625
04/18/20	4.291	5.125	5.541	5.708
04/19/20	8.083	8.666	7.625	4.125
04/20/20	8.625	8.833	10.833	5.958
04/21/20	8.458	9.541	8.833	7.833
04/22/20	9.083	9.5	9.083	9.25
04/23/20	8.458	9.208	8.916	10.083
04/24/20	11.083	13.5	11.416	12.708
04/25/20	8.625	8.833	9.125	8.041
04/26/20	12.583	12.958	13.375	12.208
04/27/20	13.458	13.875	12.541	11.375

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
04/28/20	15.958	15.916	15.958	15.166
04/29/20	20.583	25.041	28.041	21.666
04/30/20	14.125	19.875	15.916	14.875
05/01/20	16.166	17.583	14.791	15.333
05/02/20	19.833	21.375	20.041	17.666
05/03/20	15.041	17.583	17.083	13.041
05/04/20	9.791	10.833	11.5	10.333
05/05/20	11.125	11.291	9.875	11.083
05/06/20	14.125	13.708	13.458	12.875
05/07/20	16.208	16.583	15.25	15.791
05/08/20	21.375	21.625	23.958	24.458
05/09/20	28.041	27.083	33.708	24.083
05/10/20	20.208	18.458	20.791	17.333
05/11/20	13.708	16.291	15.125	11.5
05/12/20	7.708	12.416	10.916	8.125
05/13/20	11.5	10.666	12.333	10.833
05/14/20	12.208	11.708	14.541	10.625
05/15/20	11.875	12.875	14.25	13.333
05/16/20	13.75	21	14.041	15.708
05/17/20	12.041	16.5	17.083	11.166
05/18/20	4.541	5.791	4.208	4.708
05/19/20	9.333	9.541	8.625	6.958
05/20/20	9.708	11.333	10.958	8.291
05/21/20	13.041	27.208	10.208	11.541
05/22/20	22.5	34	22.666	25.458
05/23/20	20.208	21.208	22.958	18.25
05/24/20	23.083	35.916	21.75	16.416
05/25/20	18.875	41.041	20.333	17.791
05/26/20	15.708	27.25	14.541	14.208
05/27/20	22.041	22.583	19.541	17.25
05/28/20	14.875	18.083	14.416	16
05/29/20	12.916	10.875	12.416	11
05/30/20	4.875	6.125	9.333	5.666
05/31/20	13.916	13.708	10.75	15.041
06/01/20	11.208	13.166	12	14

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
06/02/20	18.375	16.958	19.666	14.166
06/03/20	46.416	14.625	15	13.375
06/04/20	23.625	23.875	39.291	19.833
06/05/20	11.833	10.625	11.708	11.166
06/06/20	11.75	9.416	7.083	9.416
06/07/20	14.958	12.541	13.166	10.291
06/08/20	18	21.583	15.208	25.458
06/09/20	7.041	8.541	5.875	12.083
06/10/20	12.125	12.125	11.333	10.583
06/11/20	13.958	12.541	14	11.458
06/12/20	17.791	22.416	19.25	14.208
06/13/20	14.291	12.5	12.375	10.291
06/14/20	14.708	20.083	13.666	11.333
06/15/20	15.208	14.875	14.333	13.541
06/16/20	18.333	14.791	17.291	13.875
06/17/20	14.666	13.958	13.791	11.125
06/18/20	13.458	12.625	13.708	11.833
06/19/20	19.25	14.958	10.125	15.083
06/20/20	13.666	13.083	10	7.875
06/21/20	14.791	11.125	10	9.583
06/22/20	14	20.625	62.583	16.208
06/23/20	16.333	18.708	49.708	14
06/24/20	17.5	14.541	28.791	13.791
06/25/20	16.333	14.291	32.208	13.5
06/26/20	12.166	11.75	15.708	11.666
06/27/20	14.375	13.666	14.541	9.875
06/28/20	11.5	8.375	10.208	7.791
06/29/20	11.583	7.541	9.666	8.333
06/30/20	12.615	11	10.307	10
07/01/20	20.714	15.928	21.642	16.642
07/02/20	16	17.208	18.666	11.916
07/03/20	13.583	14.5	14.291	13.875
07/04/20	7.916	7.916	7.791	6.291
07/05/20	35.291	33.75	92.291	31.166
07/06/20	20.125	19.041	54.916	17.375

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
07/07/20	20.708	18.5	20.291	18.291
07/08/20	24.166	21.791	23.75	23
07/09/20	24.958	22.833	21	21.458
07/10/20	17.416	17.041	17.791	16
07/11/20	9.958	9.541	9.208	7.5
07/12/20	13.083	11.875	11.958	12.958
07/13/20	31	26.041	28.125	24.833
07/14/20	20.916	18.75	11.041	17.291
07/15/20	21.625	16.25	17.833	15.625
07/16/20	20.25	15.125	15.791	14.75
07/17/20	20.125	16.166	13.416	13.791
07/18/20	14.333	18.666	11.458	14.25
07/19/20	11.875	16.25	8.583	7.5
07/20/20	16.25	16.416	13.916	15.583
07/21/20	22.5	18.208	14.25	21.666
07/22/20	15.125	16.375	13.75	16.041
07/23/20	16.958	16.916	16.791	13.833
07/24/20	14.416	18.291	13.083	16.833
07/25/20	15.916	15.541	12.125	13.916
07/26/20	11.791	29.416	11.75	11.166
07/27/20	18.291	15.541	12.958	12.291
07/28/20	20.708	19.958	16.375	16.875
07/29/20	19.041	20.5	17.958	18.125
07/30/20	17.208	17.375	15.5	14.958
07/31/20	9.25	37.166	77.333	9.125
08/01/20	20.125	37.875	19.416	18.583
08/02/20	21.833	21.625	16.25	15.166
08/03/20	20.291	18	16.625	19.333
08/04/20	27.083	20.791	20.541	23.708
08/05/20	21	13.958	17.458	23.333
08/06/20	21.791	13.625	15.375	21
08/07/20	19.125	14.875	16.375	24.416
08/08/20	18.333	28.666	15.75	14.458
08/09/20	19.083	24.75	12.791	13.166
08/10/20	13.875	12.75	10.416	10.625

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
08/11/20	8.458	11.5	8.125	7.208
08/12/20	9.416	9.583	7.541	8.333
08/13/20	10.833	8.041	7	9.041
08/14/20	10	8.125	5.875	9.333
08/15/20	9.416	9.791	9.041	8.458
08/16/20	20.875	14.333	19.583	18.333
08/17/20	24.708	18.416	22.25	22
08/18/20	30.833	41.375	29.166	26.5
08/19/20	27.833	23.916	25.916	27.041
08/20/20	34.833	30.416	34.25	39.875
08/21/20	37.875	32.125	34.916	38.708
08/22/20	26.375	22.958	28.083	26.791
08/23/20	27.958	18.833	22	27
08/24/20	26.916	16.458	19.666	19
08/25/20	14.125	7.041	7	10.5
08/26/20	14.458	11.333	10.875	12.125
08/27/20	22.541	21.25	22.666	20.166
08/28/20	22.083	16.208	17.666	17.75
08/29/20	21.541	10.916	13.291	12.541
08/30/20	22.541	13.083	18.208	19.125
08/31/20	23.416	10.75	12.708	14.25
09/01/20	23.041	13.083	18.791	20.833
09/02/20	20.083	14.75	17.208	21.166
09/03/20	25.208	17.041	20.291	21.708
09/04/20	26.166	15.291	27.291	28.25
09/05/20	18.666	0	29	17.416
09/06/20	17.125	0	29	66.25
09/07/20	51.041	0	29	57.916
09/08/20	31.5	24.857	35.125	28.416
09/09/20	28.541	24.416	28.375	29.083
09/10/20	34.708	33	36.416	35.291
09/11/20	25.708	24.041	26.583	24.208
09/12/20	45.375	45.916	16	41.875
09/13/20	40.791	42.958	16	46.291
09/14/20	37.25	36.708	28	38.708

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
09/15/20	34.291	34.083	35.333	36.166
09/16/20	20.083	20.458	24.625	23.875
09/17/20	14.458	14.666	16.916	14.208
09/18/20	30.125	29.375	29.916	25.583
09/19/20	24.291	25.75	25.5	24.041
09/20/20	20.875	21.75	21.166	20.083
09/21/20	21.75	20.333	21.333	18.791
09/22/20	23.541	19.583	18.958	17
09/23/20	12	12.083	12.916	12.625
09/24/20	27.708	28.25	29.25	27.833
09/25/20	24.083	23.541	23.125	22.583
09/26/20	26.625	25	22.875	23.5
09/27/20	35.583	24.666	22.833	21.583
09/28/20	27.458	26.208	25.041	23.5
09/29/20	13.625	14.166	12.041	11.583
09/30/20	15.6	15.5	8	---
10/01/20	25	23	27	36.5125
10/02/20	30.875	31.958	31.583	36.275
10/03/20	41.333	42.083	64	34.154
10/04/20	32.333	33.75	64	32.271
10/05/20	40.291	41.333	46.125	31.3667
10/06/20	23.458	23.458	26.875	22.909
10/07/20	32.291	31.5	31.041	28.458
10/08/20	37.083	33.208	29.708	23.833
10/09/20	24.708	23.083	23.166	19.25
10/10/20	19.208	18.25	17.5	13.5
10/11/20	19.125	18.166	17.791	16.333
10/12/20	18.458	15.916	19.375	15.833
10/13/20	15	14.958	15.304	15.375
10/14/20	18.625	17.666	20.125	16.833
10/15/20	16.916	16.833	16.125	16.5
10/16/20	14.041	16.583	14.875	16.875
10/17/20	15.5	15.083	15.5	14.291
10/18/20	24.625	24.958	23.375	22.125
10/19/20	29	28.041	27.708	25.333

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
10/20/20	25.75	25	24.916	25.708
10/21/20	21.916	25.708	24.333	21.625
10/22/20	18.25	17.583	14.666	10
10/23/20	14.166	15.416	13.958	11
10/24/20	11.916	13.958	15.375	8.833
10/25/20	15.458	9.666	8.375	7.166
10/26/20	56.583	56.833	55.416	62.666
10/27/20	12.833	13.291	11.416	11.958
10/28/20	13.458	13.208	13	11.833
10/29/20	11.75	11.083	9.458	8.833
10/30/20	8.25	8.125	7.5	8
10/31/20	9.833	9.333	9.041	9.083
11/01/20	8.041	8.083	7.583	7
11/02/20	13.541	13.916	11.166	12.458
11/03/20	16.375	16.625	16.958	15.208
11/04/20	14.041	13.458	14.291	13.041
11/05/20	8	8	7.25	8.25
11/06/20	25	22	25.833	18.375
11/07/20	9.208	9.833	8.333	9.833
11/08/20	13.333	15.916	19.541	12.375
11/09/20	4.666	5.208	4.666	3.75
11/10/20	3.416	4.583	3.458	3.833
11/11/20	9.791	9.333	9.583	7.666
11/12/20	9.666	11.083	9.666	9.25
11/13/20	18.958	17.125	16.875	14.5
11/14/20	13.791	11.625	10.416	10.333
11/15/20	3	3.25	2.5	2.75
11/16/20	8.583	8.5	7.875	8.5
11/17/20	12.25	8.916	8.75	6.041
11/18/20	15.125	7.833	8.458	6.708
11/19/20	7.75	8.458	8.541	6
11/20/20	7.625	3.827	7.541	6.125
11/21/20	5.083	5.25	4.625	4.958
11/22/20	6	6.625	6.666	5
11/23/20	27	25.375	22.208	19.708

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)	PM_{10} (µg/m³) (CAAQS 50 µg/m³)
11/24/20	13	13.5	12.375	10.916
11/25/20	19.791	15.75	14.375	12.458
11/26/20	20.75	28.208	24.458	21.125
11/27/20	11.375	17.666	14.625	15.833
11/28/20	4.625	5.041	4.958	4.708
11/29/20	5.75	5.958	5.708	5.458
11/30/20	4.291	4.333	3.666	3.958
12/01/20	4.166	4.5	3.5	4.583
12/02/20	6.458	8.75	7.416	8.833
12/03/20	13.125	14.5	13.375	16.916
12/04/20	4.083	4.708	3.75	4.25
12/05/20	7.083	8.291	7.125	7.041
12/06/20	5.5	7.333	5.666	5.583
12/07/20	28.708	29.875	24.416	25.875
12/08/20	8.5	11.083	9.666	10.208
12/09/20	9.791	9.458	9.5	9.291
12/10/20	21.125	19.083	18.125	15.625
12/11/20	17.041	18.416	17.5	14.041
12/12/20	8.875	9.916	9.208	9.416
12/13/20	11.916	11.625	11.833	11.083
12/14/20	5.625	5.708	5.166	4.25
12/15/20	1.625	3.083	2.5	1.958
12/16/20	3.041	3.458	2.666	2.708
12/17/20	17.208	10.166	8.5	7.875
12/18/20	4.791	5.5	3.375	3.75
12/19/20	2.833	3.416	2.833	3
12/20/20	3.208	3.708	3	5.5
12/21/20	3.666	3.541	3.5	2.75
12/22/20	20.541	16.083	16.958	18.208
12/23/20	17.166	20.208	15.375	17.458
12/24/20	6.5	7.166	6.041	7.458
12/25/20	2.958	3.25	2.291	1.416
12/26/20	15.833	9.375	5.291	4.416
12/27/20	7.625	11.25	10.25	7.375
12/28/20	1.541	1.5	1.666	0.291

Site ID	DOE-1	DOE-2	DOE-3	DOE-4
Sample Date	**PM_{10} (µg/m³) (CAAQS 50 µg/m³)**	**PM_{10} (µg/m³) (CAAQS 50 µg/m³)**	**PM_{10} (µg/m³) (CAAQS 50 µg/m³)**	**PM_{10} (µg/m³) (CAAQS 50 µg/m³)**
12/29/20	2.333	2.916	2.583	2.166
12/30/20	0.708	1.458	1.25	0.208
12/31/20	2.565	4.304	2.652	1.434

Note: Gray-shaded boxes indicate a filter sensor pressure failure.

PM_{10} Monthly Statistics, Q11

Location ID	October 2020			November 2020			December 2020		
	PM_{10}			PM_{10}			PM_{10}		
	High	Low	95th PCTL	High	Low	95th PCTL	High	Low	95th PCTL
DOE-1	56.58300	8.25000	40.81200	27.00000	3.00000	23.08750	28.70800	0.70800	20.83300
DOE-2	56.83300	8.12500	41.70800	28.20800	3.25000	23.85625	29.87500	1.45800	19.64550
DOE-3	64.00000	7.50000	59.70800	25.83300	2.50000	23.44550	24.41600	1.25000	17.81250
DOE-4	62.66600	7.16600	27.77050	21.12500	2.75000	19.10815	25.87500	0.20800	17.83300

PCTL = percentile

PM_{10} Monthly Statistics, Q8 through Q11

Quarter 8									
Location ID	January 2020			February 2020			March 2020		
	PM_{10}			PM_{10}			PM_{10}		
	High	Low	95th PCTL	High	Low	95th PCTL	High	Low	95th PCTL
DOE-1	24.6250	0.58300	20.91600	27.50000	0.00000	22.73280	13.87500	4.50000	13.72500
DOE-2	24.4160	1.41600	18.33300	22.20800	3.83300	21.09100	18.66600	0.45800	16.66650
DOE-3	22.2080	0.00000	17.84350	21.50000	1.33300	19.50000	21.87500	0.75000	16.27050
DOE-4	27.6250	0.87500	21.85350	39.75000	1.04100	22.86620	24.25000	0.25000	19.14550
Quarter 9									
Location ID	April 2020			May 2020			June 2020		
	PM_{10}			PM_{10}			PM_{10}		
	High	Low	95th PCTL	High	Low	95th PCTL	High	Low	95th PCTL
DOE-1	20.58300	0.16600	16.20990	28.04100	4.54100	22.79150	46.41600	7.04100	21.65625
DOE-2	25.04100	1.29100	18.14970	41.04100	5.79100	34.95800	23.87500	7.54100	22.04115
DOE-3	28.04100	0.75000	15.93910	33.70800	4.20800	23.45800	62.58300	5.87500	45.02035
DOE-4	21.66600	0.37500	16.24345	25.45800	4.70800	24.27050	25.45800	7.79100	18.20175

Quarter 10									
Location ID	**July 2020**			**August 2020**			**September 2020**		
	PM_{10}			**PM_{10}**			**PM_{10}**		
	High	**Low**	**95th PCTL**	**High**	**Low**	**95th PCTL**	**High**	**Low**	**95th PCTL**
DOE-1	35.29100	7.91600	28.28110	37.87500	8.45800	32.83300	51.04100	12.00000	43.08300
DOE-2	33.75000	7.91600	27.89725	41.37500	7.04100	37.52050	45.91600	0.00000	39.83300
DOE-3	92.29100	7.79100	42.86005	77.33300	5.87500	34.58300	36.41600	8.00000	35.22900
DOE-4	31.16600	6.29100	24.00815	39.87500	7.20800	32.87450	66.25000	11.58300	52.68475
Quarter 11									
Location ID	**October 2020**			**November 2020**			**December 2020**		
	PM_{10}			**PM_{10}**			**PM_{10}**		
	High	**Low**	**95th PCTL**	**High**	**Low**	**95th PCTL**	**High**	**Low**	**95th PCTL**
DOE-1	56.58300	8.25000	40.81200	27.00000	3.00000	23.08750	28.70800	0.70800	20.83300
DOE-2	56.83300	8.12500	41.70800	28.20800	3.25000	23.85625	29.87500	1.45800	19.64550
DOE-3	64.00000	7.50000	59.70800	25.83300	2.50000	23.44550	24.41600	1.25000	17.81250
DOE-4	62.66600	7.16600	27.77050	21.12500	2.75000	19.10815	25.87500	0.20800	17.83300

APPENDIX B

Analytical Results for Ambient Air VOCs

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Table B-1. Ambient air VOC detection results compared to RSLs.

Location ID	Sample Date	Analyte	Result (µg/m^3)	Screening Level Value (µg/m^3)	Screening Level Source
DOE-1	10/01/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-1	10/01/2020	Ethyl acetate	**78**	73	US EPA RSL
DOE-1	10/01/2020	Toluene	1.3	310	DTSC HHRA NOTE 3
DOE-1	10/01/2020	Trichlorofluoromethane	1.0	1300	DTSC HHRA NOTE 3
DOE-1	10/16/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	10/16/2020	Ethyl acetate	62	73	US EPA RSL
DOE-1	10/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	10/16/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-2	10/16/2020	Ethyl acetate	25	73	US EPA RSL
DOE-2	10/16/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	10/16/2020	2-butanone	31	5200	US EPA RSL
DOE-3	10/16/2020	2-hexanone	2.9	31	US EPA RSL
DOE-3	10/16/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	10/16/2020	Ethyl acetate	21	73	US EPA RSL
DOE-3	10/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	10/16/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-4	10/16/2020	Ethyl acetate	20	73	US EPA RSL
DOE-4	10/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	10/30/2020	2-butanone	2.0	5200	US EPA RSL
DOE-1	10/30/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-1	10/30/2020	Ethyl acetate	6.6	73	US EPA RSL
DOE-1	10/30/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-2	10/30/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-2	10/30/2020	Ethyl acetate	4.1	73	US EPA RSL
DOE-2	10/30/2020	Methylene chloride	1.0	1	DTSC HHRA NOTE 3
DOE-2	10/30/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	10/30/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-3	10/30/2020	Ethyl acetate	6.2	73	US EPA RSL
DOE-3	10/30/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-4	10/30/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-4	10/30/2020	Ethyl acetate	5.6	73	US EPA RSL
DOE-4	10/30/2020	Trichlorofluoromethane	1.0	1300	DTSC HHRA NOTE 3
DOE-1	11/12/2020	2-butanone	3.1 L;J	5200	US EPA RSL
DOE-1	11/12/2020	Dichlorodifluoromethane	2.6	100	US EPA RSL
DOE-1	11/12/2020	Ethyl acetate	2.1 L;J	73	US EPA RSL
DOE-1	11/12/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-2	11/12/2020	2-butanone	2.2 L;J	5200	US EPA RSL

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	Screening Level Source
DOE-2	11/12/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-2	11/12/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-3	11/12/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-3	11/12/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-4	11/12/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-4	11/12/2020	Ethyl acetate	3.4 L;J	73	US EPA RSL
DOE-4	11/12/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-1	11/25/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-2	11/25/2020	Dichlorodifluoromethane	2.36	100	US EPA RSL
DOE-2	11/25/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-2	11/25/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	11/25/2020	Trichlorofluoromethane	1.24	1300	DTSC HHRA NOTE 3
DOE-3	11/25/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	11/25/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	11/25/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-4	11/25/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	12/08/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	12/08/2020	Tetrachloroethene	7.9	0.46	DTSC HHRA NOTE 3
DOE-1	12/08/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	12/08/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-2	12/08/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-3	12/08/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-3	12/08/2020	Ethyl acetate	1.8 L;J	73	US EPA RSL
DOE-3	12/08/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	12/08/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-4	12/08/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	12/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	12/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	12/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-2	12/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-3	12/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	12/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	12/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-4	12/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3

Note: Bold text and gray-shaded boxes indicate detection above reporting limit, and also exceeds the EPA or DTSC Screening Level.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

Table B-2. Year 3 Ambient air VOC detection results compared to RSLs.

Location ID	Sample Date	Analyte	Result (µg/m^3)	Screening Level Value (µg/m^3)	SL Source
DOE-1	01/07/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	01/07/2020	Ethyl acetate	43	73	US EPA RSL
DOE-1	01/07/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-2	01/07/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-2	01/07/2020	Ethyl acetate	37	73	US EPA RSL
DOE-2	01/07/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-3	01/07/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-3	01/07/2020	Ethyl acetate	25	73	US EPA RSL
DOE-3	01/07/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-4	01/07/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-4	01/07/2020	Ethyl acetate	27	73	US EPA RSL
DOE-4	01/07/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	01/21/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-1	01/21/2020	Ethyl acetate	3.6	73	US EPA RSL
DOE-1	01/21/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-2	01/21/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-2	01/21/2020	Ethyl acetate	5.7	73	US EPA RSL
DOE-2	01/21/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	01/21/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-3	01/21/2020	Ethyl acetate	19	73	US EPA RSL
DOE-3	01/21/2020	Tetrahydrofuran	0.98	2100	US EPA RSL
DOE-3	01/21/2020	Toluene	0.83	310	DTSC HHRA NOTE 3
DOE-3	01/21/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-4	01/21/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-4	01/21/2020	Ethyl acetate	3.3	73	US EPA RSL
DOE-4	01/21/2020	Toluene	0.75	310	DTSC HHRA NOTE 3
DOE-4	01/21/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-1	02/05/2020	Dichlorodifluoromethane	3.0	100	US EPA RSL
DOE-1	02/05/2020	Ethyl acetate	8.3	73	US EPA RSL
DOE-1	02/05/2020	Hexane, n-	2.7	730	US EPA RSL
DOE-1	02/05/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-2	02/05/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-2	02/05/2020	Ethyl acetate	7.2	73	US EPA RSL
DOE-2	02/05/2020	Hexane, n-	2.1	730	US EPA RSL
DOE-2	02/05/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-3	02/05/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-3	02/05/2020	Ethyl acetate	8.6	73	US EPA RSL
DOE-3	02/05/2020	Hexane, n-	1.8	730	US EPA RSL
DOE-3	02/05/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-4	02/05/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-4	02/05/2020	Ethyl acetate	8.5	73	US EPA RSL
DOE-4	02/05/2020	Hexane, n-	1.7	730	US EPA RSL
DOE-4	02/05/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	02/20/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-1	02/20/2020	Ethyl acetate	43	73	US EPA RSL
DOE-1	02/20/2020	Toluene	0.98	310	DTSC HHRA NOTE 3
DOE-1	02/20/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-2	02/20/2020	Benzene	0.78	0.097	DTSC HHRA NOTE 3
DOE-2	02/20/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-2	02/20/2020	Ethyl acetate	29	73	US EPA RSL
DOE-2	02/20/2020	Toluene	0.99	310	DTSC HHRA NOTE 3
DOE-2	02/20/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	02/20/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-3	02/20/2020	Ethyl acetate	19	73	US EPA RSL
DOE-3	02/20/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-4	02/20/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-4	02/20/2020	Ethyl acetate	29 ;J	73	US EPA RSL
DOE-4	02/20/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-1	03/06/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-1	03/06/2020	Ethyl acetate	**170**	73	US EPA RSL
DOE-1	03/06/2020	Toluene	2.5	310	DTSC HHRA NOTE 3
DOE-1	03/06/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-2	03/06/2020	2-butanone	1.9	5200	US EPA RSL
DOE-2	03/06/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-2	03/06/2020	Ethyl acetate	15	73	US EPA RSL
DOE-2	03/06/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-3	03/06/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-3	03/06/2020	Ethyl acetate	39	73	US EPA RSL
DOE-3	03/06/2020	Toluene	1.0	310	DTSC HHRA NOTE 3
DOE-3	03/06/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-4	03/06/2020	Benzene	**0.96**	0.097	DTSC HHRA NOTE 3
DOE-4	03/06/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-4	03/06/2020	Ethyl acetate	**260**	73	US EPA RSL
DOE-4	03/06/2020	Toluene	3.7	310	DTSC HHRA NOTE 3
DOE-4	03/06/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	03/20/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-1	03/20/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-2	03/20/2020	Dichlorodifluoromethane	2.6	100	US EPA RSL
DOE-2	03/20/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-3	03/20/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	03/20/2020	Ethyl acetate	8.2	73	US EPA RSL
DOE-3	03/20/2020	Isopropanol	7.8	210	US EPA RSL
DOE-3	03/20/2020	Methylene chloride	**1.2**	1	DTSC HHRA NOTE 3
DOE-3	03/20/2020	Tetrahydrofuran	1.6	2100	US EPA RSL
DOE-3	03/20/2020	Toluene	0.86	310	DTSC HHRA NOTE 3
DOE-3	03/20/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-4	03/20/2020	Dichlorodifluoromethane	2.6	100	US EPA RSL
DOE-4	03/20/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-1	04/02/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-1	04/02/2020	Ethyl acetate	2.4	73	US EPA RSL
DOE-1	04/02/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-2	04/02/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL

Location ID	Sample Date	Analyte	Result (µg/m^3)	Screening Level Value (µg/m^3)	SL Source
DOE-2	04/02/2020	Ethyl acetate	4.3	73	US EPA RSL
DOE-2	04/02/2020	Tetrachloroethene	**1.4**	0.46	DTSC HHRA NOTE 3
DOE-2	04/02/2020	Trichloroethene	**0.89**	0.48	US EPA RSL
DOE-2	04/02/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-3	04/02/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-3	04/02/2020	Ethyl acetate	9.3	73	US EPA RSL
DOE-3	04/02/2020	Isopropanol	190	210	US EPA RSL
DOE-3	04/02/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-4	04/02/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-4	04/02/2020	Ethyl acetate	2.9	73	US EPA RSL
DOE-4	04/02/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	04/15/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-1	04/15/2020	Ethyl acetate	17	73	US EPA RSL
DOE-1	04/15/2020	Isopropanol	4.4	210	US EPA RSL
DOE-1	04/15/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-2	04/15/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-2	04/15/2020	Ethyl acetate	3.8	73	US EPA RSL
DOE-2	04/15/2020	Isopropanol	6.1	210	US EPA RSL
DOE-2	04/15/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-3	04/15/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-3	04/15/2020	Ethyl acetate	4.7	73	US EPA RSL
DOE-3	04/15/2020	Isopropanol	4.4	210	US EPA RSL
DOE-3	04/15/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-4	04/15/2020	Dichlorodifluoromethane	2.8	100	US EPA RSL
DOE-4	04/15/2020	Ethyl acetate	5.8	73	US EPA RSL
DOE-4	04/15/2020	Isopropanol	3.3	210	US EPA RSL
DOE-4	04/15/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-1	04/28/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-1	04/28/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	04/28/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-2	04/28/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	04/28/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-3	04/28/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	04/28/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-4	04/28/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	05/12/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-1	05/12/2020	Ethyl acetate	2.0	73	US EPA RSL
DOE-1	05/12/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-2	05/12/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-2	05/12/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-3	05/12/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-3	05/12/2020	Ethyl acetate	2.5	73	US EPA RSL
DOE-3	05/12/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-4	05/12/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-4	05/12/2020	Ethyl acetate	1.9	73	US EPA RSL
DOE-4	05/12/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-1	05/27/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-1	05/27/2020	Ethyl acetate	**90**	73	US EPA RSL
DOE-1	05/27/2020	Toluene	2.2	310	DTSC HHRA NOTE 3
DOE-1	05/27/2020	Trichlorofluoromethane	2	1300	DTSC HHRA NOTE 3
DOE-2	05/27/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-2	05/27/2020	Ethyl acetate	**85**	73	US EPA RSL
DOE-2	05/27/2020	Toluene	1.3	310	DTSC HHRA NOTE 3
DOE-2	05/27/2020	Trichlorofluoromethane	1.9	1300	DTSC HHRA NOTE 3
DOE-3	05/27/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-3	05/27/2020	Ethyl acetate	28 ;J	73	US EPA RSL
DOE-3	05/27/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	05/27/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-4	05/27/2020	Ethyl acetate	27	73	US EPA RSL
DOE-4	05/27/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	06/11/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-1	06/11/2020	Ethyl acetate	17	73	US EPA RSL
DOE-1	06/11/2020	Tetrahydrofuran	15	2100	US EPA RSL

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-1	06/11/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-2	06/11/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-2	06/11/2020	Ethyl acetate	16	73	US EPA RSL
DOE-2	06/11/2020	Tetrahydrofuran	3.6	2100	US EPA RSL
DOE-2	06/11/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	06/11/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-3	06/11/2020	Ethyl acetate	5.7	73	US EPA RSL
DOE-3	06/11/2020	Tetrahydrofuran	1.3	2100	US EPA RSL
DOE-3	06/11/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-4	06/11/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-4	06/11/2020	Ethyl acetate	13	73	US EPA RSL
DOE-4	06/11/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-1	06/26/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	06/26/2020	Ethyl acetate	34	73	US EPA RSL
DOE-1	06/26/2020	Isopropanol	5.3	210	US EPA RSL
DOE-1	06/26/2020	Toluene	1.2	310	DTSC HHRA NOTE 3
DOE-1	06/26/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	06/26/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-2	06/26/2020	Ethyl acetate	4.2	73	US EPA RSL
DOE-2	06/26/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-3	06/26/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	06/26/2020	Ethyl acetate	5.1	73	US EPA RSL
DOE-3	06/26/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	06/26/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-4	06/26/2020	Ethyl acetate	4.6	73	US EPA RSL
DOE-4	06/26/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	07/10/2020	Dichlorodifluoromethane	2	100	US EPA RSL
DOE-1	07/10/2020	Ethyl acetate	52	73	US EPA RSL
DOE-1	07/10/2020	Toluene	1	310	DTSC HHRA NOTE 3
DOE-1	07/10/2020	Trichlorofluoromethane	1	1300	DTSC HHRA NOTE 3
DOE-2	07/10/2020	Dichlorodifluoromethane	2	100	US EPA RSL
DOE-2	07/10/2020	Ethyl acetate	12	73	US EPA RSL

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-2	07/10/2020	Trichlorofluoromethane	1	1300	DTSC HHRA NOTE 3
DOE-3	07/10/2020	Dichlorodifluoromethane	1.9	100	US EPA RSL
DOE-3	07/10/2020	Ethyl acetate	11	73	US EPA RSL
DOE-3	07/10/2020	Trichlorofluoromethane	1	1300	DTSC HHRA NOTE 3
DOE-4	07/10/2020	Dichlorodifluoromethane	2	100	US EPA RSL
DOE-4	07/10/2020	Ethyl acetate	11	73	US EPA RSL
DOE-4	07/10/2020	Trichlorofluoromethane	1	1300	DTSC HHRA NOTE 3
DOE-1	07/23/2020	Dichlorodifluoromethane	2.6	100	US EPA RSL
DOE-1	07/23/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-2	07/23/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-2	07/23/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-3	07/23/2020	Benzene	**0.91**	0.097	DTSC HHRA NOTE 3
DOE-3	07/23/2020	Dichlorodifluoromethane	2.6	100	US EPA RSL
DOE-3	07/23/2020	Ethyl acetate	1.6	73	US EPA RSL
DOE-3	07/23/2020	Trichlorofluoromethane	1.5	1300	DTSC HHRA NOTE 3
DOE-4	07/23/2020	2-butanone	2.3	5200	US EPA RSL
DOE-4	07/23/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-4	07/23/2020	Ethyl acetate	7.2	73	US EPA RSL
DOE-4	07/23/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	08/05/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-1	08/05/2020	Ethyl acetate	37	73	US EPA RSL
DOE-1	08/05/2020	Toluene	1.4	310	DTSC HHRA NOTE 3
DOE-1	08/05/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-2	08/05/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-2	08/05/2020	Ethyl acetate	31	73	US EPA RSL
DOE-2	08/05/2020	Toluene	1.2	310	DTSC HHRA NOTE 3
DOE-2	08/05/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-3	08/05/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-3	08/05/2020	Ethyl acetate	28	73	US EPA RSL
DOE-3	08/05/2020	Toluene	1.1	310	DTSC HHRA NOTE 3

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-3	08/05/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-4	08/05/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-4	08/05/2020	Ethyl acetate	19	73	US EPA RSL
DOE-4	08/05/2020	Toluene	1.1	310	DTSC HHRA NOTE 3
DOE-4	08/05/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	08/18/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-1	08/18/2020	Ethyl acetate	2.2	73	US EPA RSL
DOE-1	08/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	08/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-2	08/18/2020	Ethyl acetate	2.9	73	US EPA RSL
DOE-2	08/18/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-3	08/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	08/18/2020	Ethyl acetate	7.2	73	US EPA RSL
DOE-3	08/18/2020	N-octane	1.6	100	US EPA RSL
DOE-3	08/18/2020	Tetrachloroethene	**4.8**	0.46	DTSC HHRA NOTE 3
DOE-3	08/18/2020	Toluene	1.1	310	DTSC HHRA NOTE 3
DOE-3	08/18/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-4	08/18/2020	2-butanone	1.8	5200	US EPA RSL
DOE-4	08/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-4	08/18/2020	Ethyl acetate	17	73	US EPA RSL
DOE-4	08/18/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	09/01/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-1	09/01/2020	Ethyl acetate	31	73	US EPA RSL
DOE-1	09/01/2020	Toluene	0.84	310	DTSC HHRA NOTE 3
DOE-1	09/01/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	09/01/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-2	09/01/2020	Ethyl acetate	42	73	US EPA RSL
DOE-2	09/01/2020	Toluene	1	310	DTSC HHRA NOTE 3
DOE-2	09/01/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	09/01/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-3	09/01/2020	Ethyl acetate	28	73	US EPA RSL
DOE-3	09/01/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-4	09/01/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-4	09/01/2020	Ethyl acetate	36	73	US EPA RSL
DOE-4	09/01/2020	Toluene	0.9	310	DTSC HHRA NOTE 3
DOE-4	09/01/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	09/16/2020	2-butanone	1.8	5200	US EPA RSL
DOE-1	09/16/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	09/16/2020	Isopropanol	3.7	210	US EPA RSL
DOE-1	09/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	09/16/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-2	09/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-3	09/16/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	09/16/2020	Ethyl acetate	2 L;J+	73	US EPA RSL
DOE-3	09/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	09/16/2020	2-butanone	2.1	5200	US EPA RSL
DOE-4	09/16/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-4	09/16/2020	Ethyl acetate	16 L;J+	73	US EPA RSL
DOE-4	09/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	10/1/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-1	10/1/2020	Ethyl acetate	**78**	73	US EPA RSL
DOE-1	10/1/2020	Toluene	1.3	310	DTSC HHRA NOTE 3
DOE-1	10/1/2020	Trichlorofluoromethane	1	1300	DTSC HHRA NOTE 3
DOE-1	10/16/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	10/16/2020	Ethyl acetate	62	73	US EPA RSL
DOE-1	10/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	10/16/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-2	10/16/2020	Ethyl acetate	25	73	US EPA RSL
DOE-2	10/16/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	10/16/2020	2-butanone	31	5200	US EPA RSL
DOE-3	10/16/2020	2-hexanone	2.9	31	US EPA RSL
DOE-3	10/16/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	10/16/2020	Ethyl acetate	21	73	US EPA RSL

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-3	10/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	10/16/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-4	10/16/2020	Ethyl acetate	20	73	US EPA RSL
DOE-4	10/16/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	10/30/2020	2-butanone	2	5200	US EPA RSL
DOE-1	10/30/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-1	10/30/2020	Ethyl acetate	6.6	73	US EPA RSL
DOE-1	10/30/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-2	10/30/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-2	10/30/2020	Ethyl acetate	4.1	73	US EPA RSL
DOE-2	10/30/2020	Methylene chloride	1	1	DTSC HHRA NOTE 3
DOE-2	10/30/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-3	10/30/2020	Dichlorodifluoromethane	2.2	100	US EPA RSL
DOE-3	10/30/2020	Ethyl acetate	6.2	73	US EPA RSL
DOE-3	10/30/2020	Trichlorofluoromethane	1.1	1300	DTSC HHRA NOTE 3
DOE-4	10/30/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-4	10/30/2020	Ethyl acetate	5.6	73	US EPA RSL
DOE-4	10/30/2020	Trichlorofluoromethane	1	1300	DTSC HHRA NOTE 3
DOE-1	11/12/2020	2-butanone	3.1 L;J	5200	US EPA RSL
DOE-1	11/12/2020	Dichlorodifluoromethane	2.6	100	US EPA RSL
DOE-1	11/12/2020	Ethyl acetate	2.1 L;J	73	US EPA RSL
DOE-1	11/12/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-2	11/12/2020	2-butanone	2.2 L;J	5200	US EPA RSL
DOE-2	11/12/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-2	11/12/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-3	11/12/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-3	11/12/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-4	11/12/2020	Dichlorodifluoromethane	2.7	100	US EPA RSL
DOE-4	11/12/2020	Ethyl acetate	3.4 L;J	73	US EPA RSL
DOE-4	11/12/2020	Trichlorofluoromethane	1.4	1300	DTSC HHRA NOTE 3
DOE-1	11/25/2020	Dichlorodifluoromethane	2.1	100	US EPA RSL
DOE-2	11/25/2020	Dichlorodifluoromethane	2.36	100	US EPA RSL
DOE-2	11/25/2020	Dichlorodifluoromethane	2.3	100	US EPA RSL
DOE-2	11/25/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3

Location ID	Sample Date	Analyte	Result ($\mu g/m^3$)	Screening Level Value ($\mu g/m^3$)	SL Source
DOE-2	11/25/2020	Trichlorofluoromethane	1.24	1300	DTSC HHRA NOTE 3
DOE-3	11/25/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	11/25/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	11/25/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-4	11/25/2020	Trichlorofluoromethane	1.3	1300	DTSC HHRA NOTE 3
DOE-1	12/8/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	12/8/2020	Tetrachloroethene	7.9	0.46	DTSC HHRA NOTE 3
DOE-1	12/8/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	12/8/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-2	12/8/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-3	12/8/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-3	12/8/2020	Ethyl acetate	1.8 L;J	73	US EPA RSL
DOE-3	12/8/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	12/8/2020	Dichlorodifluoromethane	2.5	100	US EPA RSL
DOE-4	12/8/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-1	12/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-1	12/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-2	12/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-2	12/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-3	12/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-3	12/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3
DOE-4	12/18/2020	Dichlorodifluoromethane	2.4	100	US EPA RSL
DOE-4	12/18/2020	Trichlorofluoromethane	1.2	1300	DTSC HHRA NOTE 3

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity. The associated numerical value may be biased high.
L = Laboratory control sample recovery outside the specified limits, results may be biased high.

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APPENDIX C

Radiological Results

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NOTE: Results for previous quarters have been updated using the correct sample volumes.

Table C-1. Gross alpha and gross beta air sample results for air samplers, Q11

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Sample Location – DOE-1						
Q11	DOE-1	10/1/2020	1.15E-14	6.89E-15	1.02E-13	2.79E-14
Q11	DOE-1	10/5/2020	7.26E-15	5.13E-15	1.21E-13	2.08E-14
Q11	DOE-1	10/8/2020	1.33E-14	6.93E-15	1.42E-13	2.81E-14
Q11	DOE-1	10/12/2020	5.39E-15	5.07E-15	1.09E-13	2.05E-14
Q11	DOE-1	10/15/2020	5.67E-15	7.00E-15	7.11E-14	2.84E-14
Q11	DOE-1	10/19/2020	4.62E-15	5.07E-15	9.30E-14	2.06E-14
Q11	DOE-1	10/22/2020	1.39E-15	6.89E-15	8.00E-14	2.79E-14
Q11	DOE-1	10/26/2020	7.74E-16	5.10E-15	5.59E-14	2.07E-14
Q11	DOE-1	10/29/2020	6.97E-16	6.89E-15	7.79E-14	2.79E-14
Q11	DOE-1	11/2/2020	6.54E-15	5.12E-15	9.80E-14	2.04E-14
Q11	DOE-1	11/6/2020	8.70E-15	5.19E-15	1.57E-13	2.07E-14
Q11	DOE-1	11/9/2020	2.71E-16	6.83E-15	5.19E-14	2.73E-14
Q11	DOE-1	11/12/2020	2.37E-15	7.02E-15	8.10E-14	2.80E-14
Q11	DOE-1	11/16/2020	2.78E-15	5.20E-15	9.64E-14	2.07E-14
Q11	DOE-1	11/19/2020	2.68E-15	6.94E-15	7.13E-14	2.77E-14
Q11	DOE-1	11/23/2020	6.82E-15	5.14E-15	7.09E-14	2.05E-14
Q11	DOE-1	11/25/2020	3.04E-15	1.06E-14	9.26E-14	4.22E-14
Q11	DOE-1	11/30/2020	1.63E-16	4.11E-15	6.49E-14	1.64E-14
Q11	DOE-1	12/3/2020	6.77E-15	5.12E-15	6.61E-14	2.15E-14
Q11	DOE-1	12/7/2020	4.99E-15	5.14E-15	1.05E-13	2.16E-14
Q11	DOE-1	12/10/2020	6.36E-15	6.90E-15	9.59E-14	2.90E-14
Q11	DOE-1	12/14/2020	6.57E-15	4.97E-15	1.01E-13	2.09E-14
Q11	DOE-1	12/17/2020	4.83E-16	6.89E-15	2.11E-14	2.90E-14
Q11	DOE-1	12/21/2020	2.68E-15	5.15E-15	2.02E-14	2.16E-14
Q11	DOE-1	12/23/2020	5.42E-15	1.04E-14	7.19E-14	4.38E-14
Q11	DOE-1	12/28/2020	-5.28E-16	4.06E-15	3.60E-14	1.71E-14
Q11	DOE-1	12/30/2020	3.69E-16	1.84E-14	-1.08E-14	7.74E-14
Sample Location – DOE-2						
Q11	DOE-2	10/1/2020	1.15E-14	6.87E-15	7.63E-14	2.78E-14
Q11	DOE-2	10/5/2020	1.01E-14	5.14E-15	1.29E-13	2.08E-14
Q11	DOE-2	10/8/2020	1.19E-14	6.92E-15	1.69E-13	2.81E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q11	DOE-2	10/12/2020	1.23E-14	5.06E-15	1.06E-13	2.05E-14
Q11	DOE-2	10/15/2020	7.08E-15	7.00E-15	1.15E-13	2.84E-14
Q11	DOE-2	10/19/2020	8.46E-15	5.07E-15	1.14E-13	2.05E-14
Q11	DOE-2	10/22/2020	2.44E-15	6.90E-15	8.92E-14	2.80E-14
Q11	DOE-2	10/26/2020	5.16E-15	5.10E-15	6.10E-14	2.07E-14
Q11	DOE-2	10/29/2020	3.83E-15	6.89E-15	9.21E-14	2.79E-14
Q11	DOE-2	11/2/2020	7.55E-15	5.11E-15	1.00E-13	2.04E-14
Q11	DOE-2	11/6/2020	1.05E-14	5.20E-15	1.52E-13	2.07E-14
Q11	DOE-2	11/9/2020	1.62E-15	6.82E-15	3.09E-14	2.72E-14
Q11	DOE-2	11/12/2020	3.41E-15	7.03E-15	6.23E-14	2.80E-14
Q11	DOE-2	11/16/2020	2.75E-15	5.14E-15	8.85E-14	2.05E-14
Q11	DOE-2	11/19/2020	3.40E-15	7.00E-15	5.00E-14	2.79E-14
Q11	DOE-2	11/23/2020	7.12E-16	5.13E-15	8.15E-14	2.05E-14
Q11	DOE-2	11/25/2020	9.43E-16	1.06E-14	1.26E-13	4.22E-14
Q11	DOE-2	11/30/2020	-1.67E-15	4.11E-15	6.82E-14	1.64E-14
Q11	DOE-2	12/3/2020	7.86E-15	6.71E-15	6.80E-14	2.82E-14
Q11	DOE-2	12/7/2020	3.45E-15	5.15E-15	9.35E-14	2.17E-14
Q11	DOE-2	12/10/2020	4.97E-15	6.90E-15	1.11E-13	2.90E-14
Q11	DOE-2	12/14/2020	4.82E-15	4.97E-15	9.15E-14	2.09E-14
Q11	DOE-2	12/17/2020	4.83E-16	6.89E-15	5.18E-14	2.90E-14
Q11	DOE-2	12/21/2020	8.76E-16	5.15E-15	3.77E-14	2.16E-14
Q11	DOE-2	12/23/2020	3.33E-15	1.04E-14	1.56E-13	4.37E-14
Q11	DOE-2	12/28/2020	5.57E-15	4.06E-15	4.26E-14	1.71E-14
Q11	DOE-2	12/30/2020	1.18E-14	2.07E-14	-2.28E-14	8.71E-14
Sample Location – DOE-3						
Q11	DOE-3	10/1/2020	7.64E-15	6.86E-15	4.33E-14	2.78E-14
Q11	DOE-3	10/5/2020	1.43E-14	5.14E-15	1.19E-13	2.08E-14
Q11	DOE-3	10/8/2020	9.82E-15	6.93E-15	1.43E-13	2.81E-14
Q11	DOE-3	10/12/2020	5.37E-15	5.06E-15	1.00E-13	2.05E-14
Q11	DOE-3	10/15/2020	7.10E-15	7.01E-15	5.46E-14	2.84E-14
Q11	DOE-3	10/19/2020	6.92E-15	5.06E-15	1.06E-13	2.05E-14
Q11	DOE-3	10/22/2020	2.80E-15	6.91E-15	7.08E-14	2.80E-14
Q11	DOE-3	10/26/2020	2.32E-15	5.09E-15	6.79E-14	2.06E-14
Q11	DOE-3	10/29/2020	4.88E-15	6.89E-15	8.80E-14	2.79E-14
Q11	DOE-3	11/2/2020	3.24E-15	5.11E-15	8.29E-14	2.04E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q11	DOE-3	11/6/2020	1.21E-14	5.21E-15	1.47E-13	2.08E-14
Q11	DOE-3	11/9/2020	1.62E-15	6.81E-15	4.49E-14	2.72E-14
Q11	DOE-3	11/12/2020	7.25E-15	7.04E-15	5.14E-14	2.81E-14
Q11	DOE-3	11/16/2020	5.55E-15	5.14E-15	7.74E-14	2.05E-14
Q11	DOE-3	11/19/2020	9.70E-16	7.00E-15	5.39E-14	2.79E-14
Q11	DOE-3	11/23/2020	2.24E-15	5.13E-15	7.26E-14	2.05E-14
Q11	DOE-3	11/25/2020	-6.31E-16	1.06E-14	9.62E-14	4.23E-14
Q11	DOE-3	11/30/2020	3.66E-16	4.10E-15	5.47E-14	1.64E-14
Q11	DOE-3	12/3/2020	7.88E-15	6.73E-15	7.27E-14	2.83E-14
Q11	DOE-3	12/7/2020	7.33E-15	5.16E-15	1.25E-13	2.17E-14
Q11	DOE-3	12/10/2020	3.94E-15	6.90E-15	1.12E-13	2.90E-14
Q11	DOE-3	12/14/2020	2.09E-15	4.96E-15	6.84E-14	2.09E-14
Q11	DOE-3	12/17/2020	2.56E-15	6.90E-15	7.64E-15	2.90E-14
Q11	DOE-3	12/21/2020	1.90E-15	5.14E-15	1.78E-14	2.16E-14
Q11	DOE-3	12/23/2020	5.52E-15	1.06E-14	6.56E-14	4.46E-14
Q11	DOE-3	12/28/2020	5.01E-16	4.17E-15	3.76E-14	1.76E-14
Q11	DOE-3	12/30/2020	-2.24E-15	1.72E-14	6.86E-14	7.25E-14
Sample Location – DOE-4						
Q11	DOE-4	10/1/2020	6.92E-16	6.84E-15	7.15E-14	2.77E-14
Q11	DOE-4	10/5/2020	1.41E-14	5.15E-15	1.34E-13	2.09E-14
Q11	DOE-4	10/8/2020	9.81E-15	6.93E-15	1.41E-13	2.81E-14
Q11	DOE-4	10/12/2020	5.89E-15	5.06E-15	9.20E-14	2.05E-14
Q11	DOE-4	10/15/2020	3.90E-15	7.01E-15	7.16E-14	2.84E-14
Q11	DOE-4	10/19/2020	6.15E-15	5.06E-15	1.01E-13	2.05E-14
Q11	DOE-4	10/22/2020	1.05E-15	6.91E-15	9.45E-14	2.80E-14
Q11	DOE-4	10/26/2020	0.00E+00	5.09E-15	5.68E-14	2.06E-14
Q11	DOE-4	10/29/2020	2.79E-15	6.89E-15	8.70E-14	2.79E-14
Q11	DOE-4	11/2/2020	2.23E-15	5.11E-15	9.24E-14	2.04E-14
Q11	DOE-4	11/6/2020	1.24E-15	5.21E-15	5.38E-14	2.08E-14
Q11	DOE-4	11/9/2020	2.97E-15	6.81E-15	8.10E-14	2.72E-14
Q11	DOE-4	11/12/2020	7.60E-15	7.03E-15	5.99E-14	2.81E-14
Q11	DOE-4	11/16/2020	2.75E-15	5.14E-15	9.66E-14	2.05E-14
Q11	DOE-4	11/19/2020	3.39E-15	6.99E-15	8.77E-14	2.79E-14
Q11	DOE-4	11/23/2020	-5.59E-16	5.13E-15	4.16E-14	2.05E-14
Q11	DOE-4	11/25/2020	6.73E-15	1.06E-14	3.16E-13	4.23E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q11	DOE-4	11/30/2020	5.85E-15	4.10E-15	1.10E-13	1.64E-14
Q11	DOE-4	12/3/2020	-2.02E-16	6.72E-15	6.85E-14	2.83E-14
Q11	DOE-4	12/7/2020	5.02E-15	5.16E-15	9.48E-14	2.17E-14
Q11	DOE-4	12/10/2020	1.17E-15	6.90E-15	8.70E-14	2.90E-14
Q11	DOE-4	12/14/2020	3.82E-15	4.96E-15	7.29E-14	2.09E-14
Q11	DOE-4	12/17/2020	-2.07E-16	6.91E-15	4.03E-14	2.90E-14
Q11	DOE-4	12/21/2020	-1.54E-16	5.14E-15	4.03E-14	2.16E-14
Q11	DOE-4	12/23/2020	-1.36E-15	1.04E-14	7.09E-14	4.38E-14
Q11	DOE-4	12/28/2020	1.91E-15	4.05E-15	3.01E-14	1.70E-14
Q11	DOE-4	12/30/2020	-3.15E-15	1.75E-14	3.82E-14	7.36E-14

Note: Results less than the MDC are noted in the table as negative numbers.

Table C-2. Gross alpha and gross beta air sample results for air samplers, Q8–Q11.

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Sample Location – DOE-1						
Q8	DOE-1	1/3/2020	4.09E-15	5.10E-15	5.31E-14	2.09E-14
Q8	DOE-1	1/7/2020	-3.64E-15	5.11E-15	4.16E-14	2.10E-14
Q8	DOE-1	1/10/2020	3.06E-15	6.82E-15	1.61E-14	2.80E-14
Q8	DOE-1	1/13/2020	6.39E-16	6.73E-15	2.88E-14	2.76E-14
Q8	DOE-1	1/16/2020	7.28E-15	6.90E-15	4.14E-14	2.83E-14
Q8	DOE-1	1/20/2020	-1.04E-15	4.99E-15	1.58E-14	2.05E-14
Q8	DOE-1	1/23/2020	-2.79E-15	6.81E-15	3.46E-14	2.80E-14
Q8	DOE-1	1/27/2020	2.28E-16	5.12E-15	7.22E-15	2.10E-14
Q8	DOE-1	1/30/2020	-2.47E-15	6.86E-15	-3.80E-15	2.82E-14
Q8	DOE-1	2/3/2020	6.91E-15	4.95E-15	9.91E-15	2.23E-14
Q8	DOE-1	2/6/2020	3.63E-15	6.59E-15	-1.96E-14	2.98E-14
Q8	DOE-1	2/10/2020	6.87E-15	4.91E-15	5.80E-14	2.22E-14
Q8	DOE-1	2/13/2020	4.63E-15	6.53E-15	3.87E-14	2.95E-14
Q8	DOE-1	2/17/2020	1.20E-14	4.88E-15	6.56E-14	2.20E-14
Q8	DOE-1	2/20/2020	1.40E-14	6.56E-15	6.77E-14	2.96E-14
Q8	DOE-1	2/24/2020	7.98E-15	4.96E-15	6.06E-14	2.24E-14
Q8	DOE-1	2/27/2020	4.38E-15	6.67E-15	1.20E-14	3.02E-14
Q8	DOE-1	3/2/2020	4.04E-15	4.66E-15	3.50E-14	2.10E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q8	DOE-1	3/5/2020	7.98E-15	7.04E-15	-1.05E-14	3.18E-14
Q8	DOE-1	3/9/2020	1.42E-15	4.98E-15	-3.17E-16	2.25E-14
Q8	DOE-1	3/12/2020	1.53E-15	6.58E-15	-2.03E-14	2.97E-14
Q8	DOE-1	3/16/2020	1.15E-15	4.94E-15	-8.95E-15	2.23E-14
Q8	DOE-1	3/19/2020	1.77E-16	8.34E-15	-2.48E-14	3.77E-14
Q8	DOE-1	3/23/2020	1.31E-15	5.64E-15	-1.95E-14	2.55E-14
Q8	DOE-1	3/26/2020	-8.98E-16	6.53E-15	-8.02E-15	2.95E-14
Q8	DOE-1	3/30/2020	1.15E-15	4.93E-15	1.22E-14	2.23E-14
Q9	DOE-1	4/2/2020	0.00E+00	7.02E-15	1.23E-14	2.71E-14
Q9	DOE-1	4/7/2020	1.05E-15	4.38E-15	3.99E-14	1.69E-14
Q9	DOE-1	4/10/2020	2.19E-15	9.10E-15	2.66E-14	3.51E-14
Q9	DOE-1	4/14/2020	-5.10E-16	5.31E-15	1.83E-14	2.05E-14
Q9	DOE-1	4/17/2020	1.08E-15	7.48E-15	3.35E-14	2.89E-14
Q9	DOE-1	4/20/2020	-6.73E-16	7.00E-15	1.80E-14	2.70E-14
Q9	DOE-1	4/23/2020	3.16E-15	7.31E-15	5.34E-14	2.82E-14
Q9	DOE-1	4/27/2020	3.34E-15	5.34E-15	6.40E-14	2.06E-14
Q9	DOE-1	4/30/2020	0.00E+00	7.20E-15	3.68E-14	2.78E-14
Q9	DOE-1	5/4/2020	1.52E-15	5.29E-15	4.48E-14	2.04E-14
Q9	DOE-1	5/8/2020	1.56E-15	5.42E-15	7.42E-14	2.09E-14
Q9	DOE-1	5/11/2020	4.13E-15	7.16E-15	5.03E-14	2.76E-14
Q9	DOE-1	5/15/2020	-2.59E-16	5.38E-15	2.04E-14	2.08E-14
Q9	DOE-1	5/19/2020	-1.54E-15	5.33E-15	3.51E-14	2.06E-14
Q9	DOE-1	5/22/2020	2.07E-15	7.18E-15	1.08E-14	2.77E-14
Q9	DOE-1	5/26/2020	-1.28E-15	5.31E-15	3.05E-14	2.05E-14
Q9	DOE-1	5/29/2020	-1.04E-15	7.24E-15	2.04E-14	2.79E-14
Q9	DOE-1	6/1/2020	-3.33E-15	7.14E-15	1.23E-14	2.73E-14
Q9	DOE-1	6/5/2020	2.99E-16	5.43E-15	7.23E-14	2.08E-14
Q9	DOE-1	6/8/2020	5.45E-17	7.18E-15	5.07E-14	2.75E-14
Q9	DOE-1	6/12/2020	5.59E-16	5.45E-15	5.66E-14	2.09E-14
Q9	DOE-1	6/15/2020	3.93E-16	7.14E-15	6.35E-14	2.73E-14
Q9	DOE-1	6/19/2020	2.86E-15	5.41E-15	4.84E-14	2.07E-14
Q9	DOE-1	6/22/2020	1.04E-15	6.92E-15	2.65E-14	2.65E-14
Q9	DOE-1	6/25/2020	-6.65E-16	7.62E-15	1.67E-14	2.92E-14
Q9	DOE-1	6/29/2020	-2.51E-15	5.38E-15	2.89E-14	2.06E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q10	DOE-1	7/2/2020	9.42E-16	6.74E-15	3.42E-14	2.80E-14
Q10	DOE-1	7/6/2020	2.01E-15	5.01E-15	4.25E-14	2.08E-14
Q10	DOE-1	7/9/2020	2.38E-16	6.69E-15	5.12E-14	2.78E-14
Q10	DOE-1	7/13/2020	2.27E-15	5.02E-15	7.40E-14	2.09E-14
Q10	DOE-1	7/16/2020	3.08E-15	6.81E-15	6.78E-14	2.83E-14
Q10	DOE-1	7/20/2020	2.53E-15	5.00E-15	5.98E-14	2.08E-14
Q10	DOE-1	7/23/2020	1.99E-15	6.73E-15	7.23E-14	2.80E-14
Q10	DOE-1	7/27/2020	1.49E-15	5.03E-15	5.28E-14	2.10E-14
Q10	DOE-1	7/30/2020	4.43E-15	6.70E-15	5.16E-14	2.79E-14
Q10	DOE-1	8/3/2020	6.25E-15	4.91E-15	8.22E-14	2.07E-14
Q10	DOE-1	8/6/2020	2.14E-15	6.59E-15	5.32E-14	2.78E-14
Q10	DOE-1	8/10/2020	-7.31E-16	4.89E-15	3.97E-14	2.06E-14
Q10	DOE-1	8/13/2020	3.19E-15	6.60E-15	3.63E-14	2.79E-14
Q10	DOE-1	8/17/2020	1.33E-15	4.89E-15	5.63E-14	2.07E-14
Q10	DOE-1	8/20/2020	5.55E-15	6.52E-15	8.76E-14	2.76E-14
Q10	DOE-1	8/24/2020	3.90E-15	4.89E-15	8.95E-14	2.07E-14
Q10	DOE-1	8/27/2020	5.98E-15	6.61E-15	3.85E-14	2.79E-14
Q10	DOE-1	8/31/2020	2.35E-15	4.87E-15	3.30E-14	2.06E-14
Q10	DOE-1	9/3/2020	4.15E-15	7.02E-15	1.06E-13	2.71E-14
Q10	DOE-1	9/8/2020	3.70E-15	4.16E-15	1.04E-13	1.61E-14
Q10	DOE-1	9/11/2020	5.23E-15	7.07E-15	6.88E-14	2.73E-14
Q10	DOE-1	9/14/2020	1.07E-14	6.95E-15	1.48E-13	2.69E-14
Q10	DOE-1	9/17/2020	4.51E-15	7.04E-15	1.40E-13	2.72E-14
Q10	DOE-1	9/21/2020	3.07E-15	5.18E-15	6.54E-14	2.00E-14
Q10	DOE-1	9/24/2020	2.76E-15	7.03E-15	5.87E-14	2.72E-14
Q10	DOE-1	9/28/2020	1.27E-15	5.19E-15	7.93E-14	2.01E-14
Q11	DOE-1	10/1/2020	1.15E-14	6.89E-15	1.02E-13	2.79E-14
Q11	DOE-1	10/5/2020	7.26E-15	5.13E-15	1.21E-13	2.08E-14
Q11	DOE-1	10/8/2020	1.33E-14	6.93E-15	1.42E-13	2.81E-14
Q11	DOE-1	10/12/2020	5.39E-15	5.07E-15	1.09E-13	2.05E-14
Q11	DOE-1	10/15/2020	5.67E-15	7.00E-15	7.11E-14	2.84E-14
Q11	DOE-1	10/19/2020	4.62E-15	5.07E-15	9.30E-14	2.06E-14
Q11	DOE-1	10/22/2020	1.39E-15	6.89E-15	8.00E-14	2.79E-14
Q11	DOE-1	10/26/2020	7.74E-16	5.10E-15	5.59E-14	2.07E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q11	DOE-1	10/29/2020	6.97E-16	6.89E-15	7.79E-14	2.79E-14
Q11	DOE-1	11/2/2020	6.54E-15	5.12E-15	9.80E-14	2.04E-14
Q11	DOE-1	11/6/2020	8.70E-15	5.19E-15	1.57E-13	2.07E-14
Q11	DOE-1	11/9/2020	2.71E-16	6.83E-15	5.19E-14	2.73E-14
Q11	DOE-1	11/12/2020	2.37E-15	7.02E-15	8.10E-14	2.80E-14
Q11	DOE-1	11/16/2020	2.78E-15	5.20E-15	9.64E-14	2.07E-14
Q11	DOE-1	11/19/2020	2.68E-15	6.94E-15	7.13E-14	2.77E-14
Q11	DOE-1	11/23/2020	6.82E-15	5.14E-15	7.09E-14	2.05E-14
Q11	DOE-1	11/25/2020	3.04E-15	1.06E-14	9.26E-14	4.22E-14
Q11	DOE-1	11/30/2020	1.63E-16	4.11E-15	6.49E-14	1.64E-14
Q11	DOE-1	12/3/2020	6.77E-15	5.12E-15	6.61E-14	2.15E-14
Q11	DOE-1	12/7/2020	4.99E-15	5.14E-15	1.05E-13	2.16E-14
Q11	DOE-1	12/10/2020	6.36E-15	6.90E-15	9.59E-14	2.90E-14
Q11	DOE-1	12/14/2020	6.57E-15	4.97E-15	1.01E-13	2.09E-14
Q11	DOE-1	12/17/2020	4.83E-16	6.89E-15	2.11E-14	2.90E-14
Q11	DOE-1	12/21/2020	2.68E-15	5.15E-15	2.02E-14	2.16E-14
Q11	DOE-1	12/23/2020	5.42E-15	1.04E-14	7.19E-14	4.38E-14
Q11	DOE-1	12/28/2020	-5.28E-16	4.06E-15	3.60E-14	1.71E-14
Q11	DOE-1	12/30/2020	3.69E-16	1.84E-14	-1.08E-14	7.74E-14
Sample Location – DOE-2						
Q8	DOE-2	1/3/2020	4.09E-15	5.10E-15	4.87E-14	2.09E-14
Q8	DOE-2	1/7/2020	3.06E-15	5.10E-15	6.27E-14	2.10E-14
Q8	DOE-2	1/10/2020	-2.45E-15	6.81E-15	6.07E-14	2.80E-14
Q8	DOE-2	1/13/2020	-3.09E-15	6.72E-15	5.65E-14	2.76E-14
Q8	DOE-2	1/16/2020	2.05E-15	6.91E-15	6.33E-14	2.84E-14
Q8	DOE-2	1/20/2020	2.74E-15	4.99E-15	3.34E-14	2.05E-14
Q8	DOE-2	1/23/2020	-3.84E-16	6.80E-15	6.67E-14	2.79E-14
Q8	DOE-2	1/27/2020	1.52E-15	5.13E-15	-3.36E-15	2.11E-14
Q8	DOE-2	1/30/2020	-3.85E-15	6.86E-15	1.42E-14	2.82E-14
Q8	DOE-2	2/3/2020	5.87E-15	4.95E-15	6.50E-15	2.24E-14
Q8	DOE-2	2/6/2020	4.67E-15	6.58E-15	-1.12E-15	2.97E-14
Q8	DOE-2	2/10/2020	1.10E-14	4.92E-15	3.43E-14	2.22E-14
Q8	DOE-2	2/13/2020	8.08E-15	6.52E-15	1.51E-14	2.95E-14
Q8	DOE-2	2/17/2020	1.25E-14	4.88E-15	6.58E-14	2.20E-14
Q8	DOE-2	2/20/2020	1.33E-14	6.56E-15	5.84E-14	2.97E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q8	DOE-2	2/24/2020	9.82E-15	4.96E-15	8.53E-14	2.24E-14
Q8	DOE-2	2/27/2020	5.79E-15	6.67E-15	5.93E-14	3.01E-14
Q8	DOE-2	3/2/2020	6.27E-15	4.66E-15	3.43E-14	2.11E-14
Q8	DOE-2	3/5/2020	6.11E-15	7.03E-15	4.09E-14	3.18E-14
Q8	DOE-2	3/9/2020	5.90E-15	4.98E-15	2.63E-14	2.25E-14
Q8	DOE-2	3/12/2020	2.87E-15	7.34E-15	1.09E-15	3.32E-14
Q8	DOE-2	3/16/2020	-1.30E-15	6.83E-15	8.25E-15	3.09E-14
Q8	DOE-2	3/19/2020	1.94E-15	8.34E-15	1.45E-14	3.77E-14
Q8	DOE-2	3/23/2020	1.93E-15	4.92E-15	4.38E-15	2.22E-14
Q8	DOE-2	3/26/2020	4.84E-16	6.53E-15	-2.57E-14	2.95E-14
Q8	DOE-2	3/30/2020	6.27E-16	4.93E-15	-5.23E-17	2.23E-14
Q9	DOE-2	4/2/2020	1.69E-15	7.02E-15	1.91E-14	2.71E-14
Q9	DOE-2	4/7/2020	-4.21E-16	4.38E-15	1.28E-14	1.69E-14
Q9	DOE-2	4/10/2020	-2.63E-15	9.10E-15	-1.21E-14	3.51E-14
Q9	DOE-2	4/14/2020	1.79E-15	5.31E-15	2.38E-14	2.05E-14
Q9	DOE-2	4/17/2020	2.52E-15	7.48E-15	4.19E-14	2.89E-14
Q9	DOE-2	4/20/2020	0.00E+00	7.00E-15	5.46E-14	2.70E-14
Q9	DOE-2	4/23/2020	1.05E-15	7.31E-15	6.98E-14	2.82E-14
Q9	DOE-2	4/27/2020	1.03E-15	5.34E-15	5.91E-14	2.06E-14
Q9	DOE-2	4/30/2020	0.00E+00	7.19E-15	5.88E-14	2.77E-14
Q9	DOE-2	5/4/2020	2.54E-15	5.29E-15	6.06E-14	2.04E-14
Q9	DOE-2	5/8/2020	4.69E-15	5.42E-15	7.80E-14	2.09E-14
Q9	DOE-2	5/11/2020	6.89E-16	7.16E-15	6.39E-14	2.76E-14
Q9	DOE-2	5/15/2020	-7.76E-16	5.38E-15	3.83E-14	2.08E-14
Q9	DOE-2	5/19/2020	2.31E-15	5.33E-15	3.56E-14	2.06E-14
Q9	DOE-2	5/22/2020	-2.42E-15	7.18E-15	4.86E-14	2.77E-14
Q9	DOE-2	5/26/2020	-1.02E-15	5.31E-15	5.62E-14	2.05E-14
Q9	DOE-2	5/29/2020	-1.04E-15	7.24E-15	4.58E-14	2.79E-14
Q9	DOE-2	6/1/2020	-4.01E-15	7.15E-15	2.91E-14	2.73E-14
Q9	DOE-2	6/5/2020	2.88E-15	5.43E-15	6.19E-14	2.08E-14
Q9	DOE-2	6/8/2020	-1.31E-15	7.18E-15	2.68E-14	2.75E-14
Q9	DOE-2	6/12/2020	-1.51E-15	5.46E-15	2.09E-14	2.09E-14
Q9	DOE-2	6/15/2020	3.93E-16	7.14E-15	3.66E-14	2.73E-14
Q9	DOE-2	6/19/2020	2.98E-16	5.41E-15	2.26E-14	2.07E-14
Q9	DOE-2	6/22/2020	-6.10E-16	6.98E-15	3.79E-14	2.67E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q9	DOE-2	6/25/2020	1.14E-15	7.61E-15	2.30E-14	2.91E-14
Q9	DOE-2	6/29/2020	-9.81E-16	5.38E-15	2.56E-14	2.06E-14
Q10	DOE-2	7/2/2020	-4.64E-16	6.73E-15	-9.06E-16	2.80E-14
Q10	DOE-2	7/6/2020	5.41E-15	5.01E-15	4.81E-14	2.09E-14
Q10	DOE-2	7/9/2020	6.53E-15	6.69E-15	5.86E-14	2.79E-14
Q10	DOE-2	7/13/2020	9.63E-16	5.02E-15	8.74E-14	2.09E-14
Q10	DOE-2	7/16/2020	1.31E-15	6.81E-15	3.24E-14	2.83E-14
Q10	DOE-2	7/20/2020	-2.17E-15	5.00E-15	4.43E-14	2.08E-14
Q10	DOE-2	7/23/2020	9.39E-16	6.71E-15	5.42E-14	2.79E-14
Q10	DOE-2	7/27/2020	2.28E-15	5.04E-15	3.46E-14	2.10E-14
Q10	DOE-2	7/30/2020	9.38E-16	6.70E-15	8.12E-14	2.79E-14
Q10	DOE-2	8/3/2020	4.41E-15	4.88E-15	8.13E-14	2.06E-14
Q10	DOE-2	8/6/2020	2.83E-15	6.59E-15	5.78E-14	2.79E-14
Q10	DOE-2	8/10/2020	4.42E-15	4.88E-15	6.90E-14	2.06E-14
Q10	DOE-2	8/13/2020	-6.40E-16	6.60E-15	7.84E-14	2.79E-14
Q10	DOE-2	8/17/2020	5.57E-16	4.89E-15	7.02E-14	2.07E-14
Q10	DOE-2	8/20/2020	5.21E-15	6.52E-15	1.01E-13	2.76E-14
Q10	DOE-2	8/24/2020	6.99E-15	4.89E-15	1.11E-13	2.06E-14
Q10	DOE-2	8/27/2020	4.93E-15	6.61E-15	6.40E-14	2.79E-14
Q10	DOE-2	8/31/2020	4.10E-17	4.86E-15	4.84E-14	2.06E-14
Q10	DOE-2	9/3/2020	2.06E-15	7.02E-15	8.16E-14	2.71E-14
Q10	DOE-2	9/8/2020	6.38E-15	4.16E-15	1.18E-13	1.61E-14
Q10	DOE-2	9/11/2020	6.74E-16	7.07E-15	7.86E-14	2.73E-14
Q10	DOE-2	9/14/2020	6.52E-15	6.94E-15	1.49E-13	2.68E-14
Q10	DOE-2	9/17/2020	3.12E-15	7.04E-15	1.54E-13	2.72E-14
Q10	DOE-2	9/21/2020	3.84E-15	5.18E-15	7.82E-14	2.00E-14
Q10	DOE-2	9/24/2020	2.07E-15	7.03E-15	8.87E-14	2.72E-14
Q10	DOE-2	9/28/2020	1.01E-15	5.18E-15	8.95E-14	2.00E-14
Q11	DOE-2	10/1/2020	1.15E-14	6.87E-15	7.63E-14	2.78E-14
Q11	DOE-2	10/5/2020	1.01E-14	5.14E-15	1.29E-13	2.08E-14
Q11	DOE-2	10/8/2020	1.19E-14	6.92E-15	1.69E-13	2.81E-14
Q11	DOE-2	10/12/2020	1.23E-14	5.06E-15	1.06E-13	2.05E-14
Q11	DOE-2	10/15/2020	7.08E-15	7.00E-15	1.15E-13	2.84E-14
Q11	DOE-2	10/19/2020	8.46E-15	5.07E-15	1.14E-13	2.05E-14
Q11	DOE-2	10/22/2020	2.44E-15	6.90E-15	8.92E-14	2.80E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q11	DOE-2	10/26/2020	5.16E-15	5.10E-15	6.10E-14	2.07E-14
Q11	DOE-2	10/29/2020	3.83E-15	6.89E-15	9.21E-14	2.79E-14
Q11	DOE-2	11/2/2020	7.55E-15	5.11E-15	1.00E-13	2.04E-14
Q11	DOE-2	11/6/2020	1.05E-14	5.20E-15	1.52E-13	2.07E-14
Q11	DOE-2	11/9/2020	1.62E-15	6.82E-15	3.09E-14	2.72E-14
Q11	DOE-2	11/12/2020	3.41E-15	7.03E-15	6.23E-14	2.80E-14
Q11	DOE-2	11/16/2020	2.75E-15	5.14E-15	8.85E-14	2.05E-14
Q11	DOE-2	11/19/2020	3.40E-15	7.00E-15	5.00E-14	2.79E-14
Q11	DOE-2	11/23/2020	7.12E-16	5.13E-15	8.15E-14	2.05E-14
Q11	DOE-2	11/25/2020	9.43E-16	1.06E-14	1.26E-13	4.22E-14
Q11	DOE-2	11/30/2020	-1.67E-15	4.11E-15	6.82E-14	1.64E-14
Q11	DOE-2	12/3/2020	7.86E-15	6.71E-15	6.80E-14	2.82E-14
Q11	DOE-2	12/7/2020	3.45E-15	5.15E-15	9.35E-14	2.17E-14
Q11	DOE-2	12/10/2020	4.97E-15	6.90E-15	1.11E-13	2.90E-14
Q11	DOE-2	12/14/2020	4.82E-15	4.97E-15	9.15E-14	2.09E-14
Q11	DOE-2	12/17/2020	4.83E-16	6.89E-15	5.18E-14	2.90E-14
Q11	DOE-2	12/21/2020	8.76E-16	5.15E-15	3.77E-14	2.16E-14
Q11	DOE-2	12/23/2020	3.33E-15	1.04E-14	1.56E-13	4.37E-14
Q11	DOE-2	12/28/2020	5.57E-15	4.06E-15	4.26E-14	1.71E-14
Q11	DOE-2	12/30/2020	1.18E-14	2.07E-14	-2.28E-14	8.71E-14
Sample Location – DOE-3						
Q8	DOE-3	1/3/2020	2.54E-15	5.09E-15	2.08E-14	2.09E-14
Q8	DOE-3	1/7/2020	-2.09E-15	5.11E-15	2.62E-14	2.10E-14
Q8	DOE-3	1/10/2020	3.40E-15	6.81E-15	3.60E-14	2.80E-14
Q8	DOE-3	1/13/2020	3.01E-15	6.71E-15	2.30E-14	2.76E-14
Q8	DOE-3	1/16/2020	6.57E-16	6.92E-15	3.14E-14	2.84E-14
Q8	DOE-3	1/20/2020	4.72E-16	4.98E-15	5.01E-15	2.04E-14
Q8	DOE-3	1/23/2020	-4.11E-17	6.79E-15	3.35E-14	2.79E-14
Q8	DOE-3	1/27/2020	4.87E-16	5.13E-15	4.57E-14	2.11E-14
Q8	DOE-3	1/30/2020	1.69E-15	6.87E-15	-6.91E-15	2.82E-14
Q8	DOE-3	2/3/2020	-9.44E-16	4.96E-15	9.66E-15	2.24E-14
Q8	DOE-3	2/6/2020	2.93E-15	6.58E-15	-2.51E-15	2.97E-14
Q8	DOE-3	2/10/2020	8.95E-15	4.92E-15	3.20E-14	2.22E-14
Q8	DOE-3	2/13/2020	5.67E-15	6.53E-15	2.14E-14	2.95E-14
Q8	DOE-3	2/17/2020	7.07E-15	4.87E-15	5.37E-14	2.20E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q8	DOE-3	2/20/2020	1.16E-14	6.57E-15	6.15E-14	2.97E-14
Q8	DOE-3	2/24/2020	9.56E-15	4.96E-15	5.38E-14	2.24E-14
Q8	DOE-3	2/27/2020	4.03E-15	6.67E-15	-5.37E-15	3.01E-14
Q8	DOE-3	3/2/2020	3.80E-15	4.66E-15	2.17E-14	2.11E-14
Q8	DOE-3	3/5/2020	-5.95E-16	7.03E-15	-7.52E-15	3.17E-14
Q8	DOE-3	3/9/2020	1.42E-15	4.98E-15	8.13E-15	2.25E-14
Q8	DOE-3	3/12/2020	3.27E-15	6.58E-15	-1.12E-14	2.97E-14
Q8	DOE-3	3/16/2020	6.28E-16	4.94E-15	-1.13E-14	2.23E-14
Q8	DOE-3	3/17/2020	1.55E-14	5.43E-14	-2.40E-13	2.45E-13
Q8	DOE-3	3/19/2020	5.07E-15	1.02E-14	6.91E-15	4.60E-14
Q8	DOE-3	3/23/2020	3.67E-16	4.95E-15	-1.66E-14	2.24E-14
Q8	DOE-3	3/26/2020	1.87E-15	6.55E-15	-1.95E-14	2.96E-14
Q8	DOE-3	3/30/2020	1.41E-15	4.94E-15	1.22E-14	2.23E-14
Q9	DOE-3	4/2/2020	-3.04E-15	7.02E-15	3.25E-14	2.71E-14
Q9	DOE-3	4/7/2020	-2.11E-16	4.38E-15	2.77E-14	1.69E-14
Q9	DOE-3	4/10/2020	2.01E-15	6.96E-15	5.29E-14	2.69E-14
Q9	DOE-3	4/14/2020	0.00E+00	5.31E-15	-8.60E-15	2.05E-14
Q9	DOE-3	4/17/2020	0.00E+00	7.48E-15	3.35E-14	2.89E-14
Q9	DOE-3	4/20/2020	2.02E-15	6.99E-15	4.94E-14	2.70E-14
Q9	DOE-3	4/23/2020	4.36E-16	9.07E-15	2.34E-14	3.50E-14
Q9	DOE-3	4/27/2020	1.03E-15	5.34E-15	1.71E-14	2.06E-14
Q9	DOE-3	4/30/2020	2.76E-15	7.19E-15	5.67E-14	2.77E-14
Q9	DOE-3	5/4/2020	5.08E-16	5.28E-15	2.44E-14	2.04E-14
Q9	DOE-3	5/8/2020	-1.83E-15	5.43E-15	2.01E-14	2.09E-14
Q9	DOE-3	5/11/2020	2.07E-15	7.16E-15	5.93E-14	2.76E-14
Q9	DOE-3	5/15/2020	2.07E-15	5.38E-15	5.72E-14	2.08E-14
Q9	DOE-3	5/19/2020	-1.54E-15	5.33E-15	1.89E-14	2.06E-14
Q9	DOE-3	5/22/2020	1.04E-15	7.18E-15	1.50E-14	2.77E-14
Q9	DOE-3	5/26/2020	-1.79E-15	5.31E-15	-1.09E-14	2.05E-14
Q9	DOE-3	5/29/2020	-3.48E-16	7.23E-15	2.22E-14	2.79E-14
Q9	DOE-3	6/1/2020	-9.63E-16	7.15E-15	1.36E-14	2.74E-14
Q9	DOE-3	6/5/2020	5.45E-15	5.43E-15	3.44E-14	2.08E-14
Q9	DOE-3	6/8/2020	-2.86E-16	7.17E-15	2.96E-14	2.74E-14
Q9	DOE-3	6/12/2020	-4.62E-15	5.46E-15	-1.43E-14	2.09E-14
Q9	DOE-3	6/15/2020	5.42E-17	7.14E-15	1.98E-14	2.73E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q9	DOE-3	6/19/2020	5.55E-16	5.41E-15	1.22E-14	2.07E-14
Q9	DOE-3	6/22/2020	-2.89E-15	6.89E-15	2.74E-14	2.64E-14
Q9	DOE-3	6/25/2020	5.79E-17	7.63E-15	2.26E-14	2.92E-14
Q9	DOE-3	6/29/2020	-4.69E-16	5.38E-15	1.86E-14	2.06E-14
Q10	DOE-3	7/2/2020	-8.16E-16	6.74E-15	6.18E-15	2.80E-14
Q10	DOE-3	7/6/2020	4.10E-15	5.01E-15	5.25E-14	2.08E-14
Q10	DOE-3	7/9/2020	6.19E-15	6.71E-15	3.72E-14	2.79E-14
Q10	DOE-3	7/13/2020	2.53E-15	5.00E-15	5.30E-14	2.08E-14
Q10	DOE-3	7/16/2020	1.67E-15	6.83E-15	4.01E-14	2.84E-14
Q10	DOE-3	7/20/2020	4.37E-16	4.99E-15	2.82E-14	2.08E-14
Q10	DOE-3	7/23/2020	3.75E-15	6.73E-15	4.16E-14	2.80E-14
Q10	DOE-3	7/27/2020	3.59E-15	5.03E-15	4.38E-14	2.09E-14
Q10	DOE-3	7/30/2020	4.80E-15	6.72E-15	4.50E-14	2.80E-14
Q10	DOE-3	8/3/2020	5.64E-15	4.83E-15	6.87E-14	2.07E-14
Q10	DOE-3	8/6/2020	8.33E-15	6.55E-15	8.73E-14	2.80E-14
Q10	DOE-3	8/10/2020	8.05E-16	4.83E-15	5.53E-14	2.07E-14
Q10	DOE-3	8/13/2020	4.55E-15	6.56E-15	3.94E-14	2.81E-14
Q10	DOE-3	8/17/2020	1.21E-15	5.23E-15	4.16E-14	2.08E-14
Q10	DOE-3	8/20/2020	5.42E-15	7.00E-15	7.90E-14	2.79E-14
Q10	DOE-3	8/24/2020	2.50E-15	5.23E-15	9.73E-14	2.08E-14
Q10	DOE-3	8/27/2020	2.69E-15	7.09E-15	7.34E-14	2.82E-14
Q10	DOE-3	8/31/2020	6.89E-16	5.20E-15	4.63E-14	2.07E-14
Q10	DOE-3	9/3/2020	1.29E-14	7.04E-15	7.51E-14	2.72E-14
Q10	DOE-3	9/8/2020	5.14E-15	4.15E-15	9.93E-14	1.61E-14
Q10	DOE-3	9/11/2020	7.71E-15	7.08E-15	7.03E-14	2.74E-14
Q10	DOE-3	9/14/2020	7.20E-15	6.94E-15	1.41E-13	2.68E-14
Q10	DOE-3	9/17/2020	5.92E-15	7.05E-15	1.30E-13	2.73E-14
Q10	DOE-3	9/21/2020	3.32E-15	5.18E-15	6.47E-14	2.00E-14
Q10	DOE-3	9/24/2020	4.52E-15	7.05E-15	6.97E-14	2.73E-14
Q10	DOE-3	9/28/2020	4.88E-16	5.12E-15	6.26E-14	2.00E-14
Q11	DOE-3	10/1/2020	7.64E-15	6.86E-15	4.33E-14	2.78E-14
Q11	DOE-3	10/5/2020	1.43E-14	5.14E-15	1.19E-13	2.08E-14
Q11	DOE-3	10/8/2020	9.82E-15	6.93E-15	1.43E-13	2.81E-14
Q11	DOE-3	10/12/2020	5.37E-15	5.06E-15	1.00E-13	2.05E-14
Q11	DOE-3	10/15/2020	7.10E-15	7.01E-15	5.46E-14	2.84E-14
Q11	DOE-3	10/19/2020	6.92E-15	5.06E-15	1.06E-13	2.05E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q11	DOE-3	10/22/2020	2.80E-15	6.91E-15	7.08E-14	2.80E-14
Q11	DOE-3	10/26/2020	2.32E-15	5.09E-15	6.79E-14	2.06E-14
Q11	DOE-3	10/29/2020	4.88E-15	6.89E-15	8.80E-14	2.79E-14
Q11	DOE-3	11/2/2020	3.24E-15	5.11E-15	8.29E-14	2.04E-14
Q11	DOE-3	11/6/2020	1.21E-14	5.21E-15	1.47E-13	2.08E-14
Q11	DOE-3	11/9/2020	1.62E-15	6.81E-15	4.49E-14	2.72E-14
Q11	DOE-3	11/12/2020	7.25E-15	7.04E-15	5.14E-14	2.81E-14
Q11	DOE-3	11/16/2020	5.55E-15	5.14E-15	7.74E-14	2.05E-14
Q11	DOE-3	11/19/2020	9.70E-16	7.00E-15	5.39E-14	2.79E-14
Q11	DOE-3	11/23/2020	2.24E-15	5.13E-15	7.26E-14	2.05E-14
Q11	DOE-3	11/25/2020	-6.31E-16	1.06E-14	9.62E-14	4.23E-14
Q11	DOE-3	11/30/2020	3.66E-16	4.10E-15	5.47E-14	1.64E-14
Q11	DOE-3	12/3/2020	7.88E-15	6.73E-15	7.27E-14	2.83E-14
Q11	DOE-3	12/7/2020	7.33E-15	5.16E-15	1.25E-13	2.17E-14
Q11	DOE-3	12/10/2020	3.94E-15	6.90E-15	1.12E-13	2.90E-14
Q11	DOE-3	12/14/2020	2.09E-15	4.96E-15	6.84E-14	2.09E-14
Q11	DOE-3	12/17/2020	2.56E-15	6.90E-15	7.64E-15	2.90E-14
Q11	DOE-3	12/21/2020	1.90E-15	5.14E-15	1.78E-14	2.16E-14
Q11	DOE-3	12/23/2020	5.52E-15	1.06E-14	6.56E-14	4.46E-14
Q11	DOE-3	12/28/2020	5.01E-16	4.17E-15	3.76E-14	1.76E-14
Q11	DOE-3	12/30/2020	-2.24E-15	1.72E-14	6.86E-14	7.25E-14
Sample Location – DOE-4						
Q8	DOE-4	1/3/2020	3.83E-15	5.10E-15	2.80E-14	2.09E-14
Q8	DOE-4	1/7/2020	-2.89E-16	5.11E-15	1.21E-14	2.10E-14
Q8	DOE-4	1/10/2020	-7.29E-16	6.81E-15	8.22E-15	2.80E-14
Q8	DOE-4	1/13/2020	2.67E-15	6.71E-15	2.87E-14	2.76E-14
Q8	DOE-4	1/16/2020	3.80E-15	6.93E-15	3.77E-14	2.84E-14
Q8	DOE-4	1/20/2020	-1.03E-15	4.97E-15	1.63E-14	2.04E-14
Q8	DOE-4	1/23/2020	1.33E-15	6.80E-15	3.25E-14	2.79E-14
Q8	DOE-4	1/27/2020	2.04E-15	5.13E-15	2.01E-14	2.11E-14
Q8	DOE-4	1/30/2020	1.69E-15	6.87E-15	9.69E-15	2.82E-14
Q8	DOE-4	2/3/2020	4.83E-15	4.96E-15	-2.42E-15	2.24E-14
Q8	DOE-4	2/6/2020	2.58E-15	6.58E-15	5.86E-15	2.97E-14
Q8	DOE-4	2/10/2020	1.92E-15	4.91E-15	5.67E-14	2.22E-14
Q8	DOE-4	2/13/2020	1.22E-14	6.52E-15	4.11E-14	2.95E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q8	DOE-4	2/17/2020	2.43E-15	4.88E-15	6.15E-15	2.20E-14
Q8	DOE-4	2/20/2020	1.09E-14	6.57E-15	8.80E-14	2.97E-14
Q8	DOE-4	2/24/2020	6.66E-15	4.96E-15	4.67E-14	2.24E-14
Q8	DOE-4	2/27/2020	1.25E-14	6.67E-15	1.06E-13	3.02E-14
Q8	DOE-4	3/2/2020	2.07E-15	4.67E-15	1.33E-14	2.11E-14
Q8	DOE-4	3/5/2020	6.47E-15	7.02E-15	2.45E-14	3.17E-14
Q8	DOE-4	3/9/2020	8.97E-16	4.98E-15	-1.56E-14	2.25E-14
Q8	DOE-4	3/12/2020	3.37E-15	6.78E-15	-1.77E-14	3.06E-14
Q8	DOE-4	3/16/2020	3.24E-15	4.94E-15	1.07E-14	2.23E-14
Q8	DOE-4	3/19/2020	4.24E-15	6.45E-15	-1.72E-14	2.92E-14
Q8	DOE-4	3/23/2020	-1.57E-16	4.95E-15	3.35E-15	2.23E-14
Q8	DOE-4	3/26/2020	1.18E-15	6.56E-15	-1.82E-14	2.96E-14
Q8	DOE-4	3/30/2020	1.67E-15	4.94E-15	2.12E-14	2.23E-14
Q9	DOE-4	4/2/2020	-3.04E-15	7.02E-15	3.28E-14	2.71E-14
Q9	DOE-4	4/7/2020	1.27E-15	4.39E-15	8.52E-15	1.69E-14
Q9	DOE-4	4/10/2020	3.33E-16	6.93E-15	1.95E-14	2.67E-14
Q9	DOE-4	4/14/2020	0.00E+00	5.33E-15	5.51E-14	2.06E-14
Q9	DOE-4	4/17/2020	2.52E-15	7.48E-15	1.67E-14	2.89E-14
Q9	DOE-4	4/20/2020	1.34E-15	6.99E-15	3.92E-14	2.70E-14
Q9	DOE-4	4/23/2020	-1.41E-15	7.32E-15	2.60E-14	2.82E-14
Q9	DOE-4	4/27/2020	5.14E-16	5.34E-15	4.32E-14	2.06E-14
Q9	DOE-4	4/30/2020	3.11E-15	7.19E-15	3.85E-14	2.77E-14
Q9	DOE-4	5/4/2020	2.28E-15	5.27E-15	2.10E-14	2.03E-14
Q9	DOE-4	5/8/2020	1.57E-15	5.44E-15	4.22E-14	2.10E-14
Q9	DOE-4	5/11/2020	3.44E-15	7.16E-15	7.40E-14	2.76E-14
Q9	DOE-4	5/15/2020	1.29E-15	5.39E-15	5.14E-14	2.08E-14
Q9	DOE-4	5/19/2020	3.08E-15	5.33E-15	2.08E-14	2.06E-14
Q9	DOE-4	5/22/2020	-3.45E-16	7.18E-15	3.81E-14	2.77E-14
Q9	DOE-4	5/26/2020	-2.55E-16	5.31E-15	3.05E-14	2.05E-14
Q9	DOE-4	5/29/2020	0.00E+00	7.21E-15	4.60E-14	2.78E-14
Q9	DOE-4	6/1/2020	3.94E-16	7.17E-15	5.74E-15	2.74E-14
Q9	DOE-4	6/5/2020	1.85E-15	5.43E-15	3.78E-14	2.08E-14
Q9	DOE-4	6/8/2020	7.35E-16	7.17E-15	6.78E-15	2.74E-14
Q9	DOE-4	6/12/2020	1.85E-15	5.46E-15	4.17E-14	2.09E-14
Q9	DOE-4	6/15/2020	-2.85E-16	7.14E-15	5.63E-14	2.73E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q9	DOE-4	6/19/2020	2.35E-15	5.41E-15	5.49E-14	2.07E-14
Q9	DOE-4	6/22/2020	-9.27E-16	6.88E-15	6.15E-14	2.63E-14
Q9	DOE-4	6/25/2020	2.95E-15	7.63E-15	6.12E-14	2.92E-14
Q9	DOE-4	6/29/2020	-2.00E-15	5.38E-15	4.81E-14	2.06E-14
Q10	DOE-4	7/2/2020	-8.16E-16	6.74E-15	6.18E-15	2.80E-14
Q10	DOE-4	7/6/2020	4.10E-15	5.01E-15	5.25E-14	2.08E-14
Q10	DOE-4	7/9/2020	6.19E-15	6.71E-15	3.72E-14	2.79E-14
Q10	DOE-4	7/13/2020	2.53E-15	5.00E-15	5.30E-14	2.08E-14
Q10	DOE-4	7/16/2020	1.67E-15	6.83E-15	4.01E-14	2.84E-14
Q10	DOE-4	7/20/2020	4.37E-16	4.99E-15	2.82E-14	2.08E-14
Q10	DOE-4	7/23/2020	3.75E-15	6.73E-15	4.16E-14	2.80E-14
Q10	DOE-4	7/27/2020	3.59E-15	5.03E-15	4.38E-14	2.09E-14
Q10	DOE-4	7/30/2020	4.80E-15	6.72E-15	4.50E-14	2.80E-14
Q10	DOE-4	8/3/2020	5.64E-15	4.83E-15	6.87E-14	2.07E-14
Q10	DOE-4	8/6/2020	8.33E-15	6.55E-15	8.73E-14	2.80E-14
Q10	DOE-4	8/10/2020	8.05E-16	4.83E-15	5.53E-14	2.07E-14
Q10	DOE-4	8/13/2020	4.55E-15	6.56E-15	3.94E-14	2.81E-14
Q10	DOE-4	8/17/2020	1.21E-15	5.23E-15	4.16E-14	2.08E-14
Q10	DOE-4	8/20/2020	5.42E-15	7.00E-15	7.90E-14	2.79E-14
Q10	DOE-4	8/24/2020	2.50E-15	5.23E-15	9.73E-14	2.08E-14
Q10	DOE-4	8/27/2020	2.69E-15	7.09E-15	7.34E-14	2.82E-14
Q10	DOE-4	8/31/2020	6.89E-16	5.20E-15	4.63E-14	2.07E-14
Q10	DOE-4	9/3/2020	1.29E-14	7.04E-15	7.51E-14	2.72E-14
Q10	DOE-4	9/8/2020	5.14E-15	4.15E-15	9.93E-14	1.61E-14
Q10	DOE-4	9/11/2020	7.71E-15	7.08E-15	7.03E-14	2.74E-14
Q10	DOE-4	9/14/2020	7.20E-15	6.94E-15	1.41E-13	2.68E-14
Q10	DOE-4	9/17/2020	5.92E-15	7.05E-15	1.30E-13	2.73E-14
Q10	DOE-4	9/21/2020	3.32E-15	5.18E-15	6.47E-14	2.00E-14
Q10	DOE-4	9/24/2020	4.52E-15	7.05E-15	6.97E-14	2.73E-14
Q10	DOE-4	9/28/2020	4.88E-16	5.12E-15	6.26E-14	2.00E-14
Q11	DOE-4	10/1/2020	6.92E-16	6.84E-15	7.15E-14	2.77E-14
Q11	DOE-4	10/5/2020	1.41E-14	5.15E-15	1.34E-13	2.09E-14
Q11	DOE-4	10/8/2020	9.81E-15	6.93E-15	1.41E-13	2.81E-14
Q11	DOE-4	10/12/2020	5.89E-15	5.06E-15	9.20E-14	2.05E-14
Q11	DOE-4	10/15/2020	3.90E-15	7.01E-15	7.16E-14	2.84E-14
Q11	DOE-4	10/19/2020	6.15E-15	5.06E-15	1.01E-13	2.05E-14

Quarter	Air Station ID	Sample Collection Date	Gross Alpha (µCi/mL)	Gross Alpha MDC (µCi/mL)	Gross Beta (µCi/mL)	Gross Beta MDC (µCi/mL)
Q11	DOE-4	10/22/2020	1.05E-15	6.91E-15	9.45E-14	2.80E-14
Q11	DOE-4	10/26/2020	0.00E+00	5.09E-15	5.68E-14	2.06E-14
Q11	DOE-4	10/29/2020	2.79E-15	6.89E-15	8.70E-14	2.79E-14
Q11	DOE-4	11/2/2020	2.23E-15	5.11E-15	9.24E-14	2.04E-14
Q11	DOE-4	11/6/2020	1.24E-15	5.21E-15	5.38E-14	2.08E-14
Q11	DOE-4	11/9/2020	2.97E-15	6.81E-15	8.10E-14	2.72E-14
Q11	DOE-4	11/12/2020	7.60E-15	7.03E-15	5.99E-14	2.81E-14
Q11	DOE-4	11/16/2020	2.75E-15	5.14E-15	9.66E-14	2.05E-14
Q11	DOE-4	11/19/2020	3.39E-15	6.99E-15	8.77E-14	2.79E-14
Q11	DOE-4	11/23/2020	-5.59E-16	5.13E-15	4.16E-14	2.05E-14
Q11	DOE-4	11/25/2020	6.73E-15	1.06E-14	3.16E-13	4.23E-14
Q11	DOE-4	11/30/2020	5.85E-15	4.10E-15	1.10E-13	1.64E-14
Q11	DOE-4	12/3/2020	-2.02E-16	6.72E-15	6.85E-14	2.83E-14
Q11	DOE-4	12/7/2020	5.02E-15	5.16E-15	9.48E-14	2.17E-14
Q11	DOE-4	12/10/2020	1.17E-15	6.90E-15	8.70E-14	2.90E-14
Q11	DOE-4	12/14/2020	3.82E-15	4.96E-15	7.29E-14	2.09E-14
Q11	DOE-4	12/17/2020	-2.07E-16	6.91E-15	4.03E-14	2.90E-14
Q11	DOE-4	12/21/2020	-1.54E-16	5.14E-15	4.03E-14	2.16E-14
Q11	DOE-4	12/23/2020	-1.36E-15	1.04E-14	7.09E-14	4.38E-14
Q11	DOE-4	12/28/2020	1.91E-15	4.05E-15	3.01E-14	1.70E-14
Q11	DOE-4	12/30/2020	-3.15E-15	1.75E-14	3.82E-14	7.36E-14

Note: Results less than the MDC are noted in the table as negative numbers.

Table C-3. Individual radionuclide analysis for composite filter samples, Q11.

Radionuclide	Result (pCi/sample)	MDC (pCi/sample)	Data Qualifier[1]	Airborne Concentration (µCi/mL)
DOE-1 Q11		**Air volume/sample (mL)=**		**9.76E+08**
Cesium-137	-1.09	5.17	U;U	-1.12E-15
Strontium-90	0.403	2.83	U;U	4.13E-16
Cobalt-60	-0.345	7.47	U;U	-3.53E-16
Potassium-40	14.7	73.7	U;U	1.51E-14
Beryllium-7	155	63.2		1.59E-13
Plutonium-238	0.00286	0.289	U;U	2.93E-18
Polonium-210	18.9	0.335		1.94E-14
Plutonium-241	-3.76	14.6	U;UJ	-3.85E-15
Thorium-230	0.817	0.693		8.37E-16
Thorium-228	0.627	0.669	U;U	6.42E-16
Actinium-228	-3.23	28.2	U;U	-3.31E-15
Americium-241	-0.00556	0.111	U;U	-5.70E-18
Plutonium-239	-0.0558	0.387	U;U	-5.72E-17
Ra-228 - total	3.74	2.43		3.83E-15
Radium-226, -228 combined	3.88	0.715	;UJ	3.98E-15
Thorium-232	0.812	0.424	;UJ	8.32E-16
Uranium-238	0.924	0.156	;UJ	9.47E-16
Uranium-233/234	0.802	0.192	;UJ	8.22E-16
Uranium-235/236	0.110	0.140	U;U	1.13E-16
DOE-2 Q11		**Air volume/sample (mL)=**		**9.76E+08**
Cesium-137	-2.40	6.71	U;U	-2.46E-15
Strontium-90	-0.541	2.90	U;U	-5.54E-16
Cobalt-60	0.995	8.19	U;U	1.02E-15
Potassium-40	0.000	54.7	UI;UJ	0.00E+00
Beryllium-7	157	67.0		1.61E-13
Plutonium-238	-0.0113	0.246	U;U	-1.16E-17
Polonium-210	9.87	0.278		1.01E-14
Plutonium-241	0.0590	14.2	U;UJ	6.05E-17
Thorium-230	0.454	0.628	U;U	4.65E-16
Thorium-228	0.779	0.562		7.98E-16
Actinium-228	-10.1	29.6	U;U	-1.03E-14
Americium-241	0.0457	0.166	U;U	4.68E-17
Plutonium-239	0.0657	0.220	U;U	6.73E-17
Ra-228 - total	8.08	3.25		8.28E-15
Radium-226, -228 combined	2.39	1.23	;J	2.45E-15
Thorium-232	0.889	0.446	;UJ	9.11E-16
Uranium-238	0.763	0.143	;UJ	7.82E-16
Uranium-233/234	0.644	0.169	;J	6.60E-16
Uranium-235/236	0.0639	0.0959	U;U	6.55E-17

Radionuclide	Result (pCi/sample)	MDC (pCi/sample)	Data Qualifier[1]	Airborne Concentration (µCi/mL)
DOE-3 Q11		**Air volume/sample (mL)=**		**9.78E+08**
Cesium-137	1.44	8.31	U;U	1.47E-15
Strontium-90	1.42	2.79	U;U	1.45E-15
Cobalt-60	-0.109	10.1	U;U	-1.11E-16
Potassium-40	0.000	73.0	UI;UJ	0.00E+00
Beryllium-7	196	70.9		2.00E-13
Plutonium-238	-0.0190	0.219	U;U	-1.94E-17
Polonium-210	13.1	0.235		1.34E-14
Plutonium-241	-2.22	20.5	U;UJ	-2.27E-15
Thorium-230	0.641	0.808	U;U	6.55E-16
Thorium-228	0.203	0.800	U;U	2.08E-16
Actinium-228	-16.3	23.5	U;U	-1.67E-14
Americium-241	0.0749	0.0955	U;U	7.66E-17
Plutonium-239	-0.0570	0.293	U;U	-5.83E-17
Ra-228 - total	5.59	3.42		5.72E-15
Radium-226, -228 combined	2.22	0.970	;J	2.27E-15
Thorium-232	0.355	0.483	U;U	3.63E-16
Uranium-238	0.790	0.120	;UJ	8.08E-16
Uranium-233/234	0.932	0.217	;UJ	9.53E-16
Uranium-235/236	0.0545	0.176	U;U	5.57E-17
DOE-4 Q11		**Air volume/sample (mL)=**		**9.84E+08**
Cesium-137	-3.58	6.55	U;U	-3.64E-15
Strontium-90	0.201	2.93	U;U	2.04E-16
Cobalt-60	-3.44	8.35	U;U	-3.50E-15
Potassium-40	16.4	84.7	U;U	1.67E-14
Beryllium-7	248	69.2		2.52E-13
Plutonium-238	-0.0442	0.258	U;U	-4.49E-17
Polonium-210	12.2	0.227		1.24E-14
Plutonium-241	0.567	17.7	U;UJ	5.76E-16
Thorium-230	0.621	0.867	U;U	6.31E-16
Thorium-228	0.832	1.11	U;U	8.46E-16
Actinium-228	7.74	18.5	U;U	7.87E-15
Americium-241	0.0517	0.0775	U;U	5.25E-17
Plutonium-239	0.0206	0.272	U;U	2.09E-17
Ra-228 - total	6.45	3.29		6.55E-15
Radium-226, -228 combined	2.40	1.12	;J	2.44E-15
Thorium-232	0.871	0.549	;UJ	8.85E-16
Uranium-238	1.05	0.164	;UJ	1.07E-15
Uranium-233/234	1.12	0.217	;UJ	1.14E-15
Uranium-235/236	0.0870	0.0870	;U	8.84E-17

[1] Qualifier column contains laboratory flags ; validation qualifiers.

Table C-4. Individual radionuclide analysis for composite filter samples, Q8 through Q11.

Radionuclide	Q8 Result (µCi/mL)	Data Qualifier	Q9 Result (µCi/mL)	Data Qualifier	Q10 Result (µCi/mL)	Data Qualifier	Q11 Result (µCi/mL)	Data Qualifier
Sample Location DOE-1								
Cesium-137	1.68E-16	U;U	1.42E-15	U	-5.57E-16	U	-1.12E-15	U;U
Strontium-90	-1.10E-15	U;U	-1.83E-17	U	7.46E-16	U	4.13E-16	U;U
Cobalt-60	-5.29E-16	U;U	-8.64E-16	U	2.44E-15	U	-3.53E-16	U;U
Potassium-40	1.15E-13		6.31E-14	U	1.23E-13		1.51E-14	U;U
Beryllium-7	0.00E+00	UI;U	1.79E-13		2.66E-13		1.59E-13	
Plutonium-238	-3.72E-17	U;U	-3.73E-17	U	3.23E-16	U	2.93E-18	U;U
Polonium-210	1.02E-14		3.78E-15		1.54E-14		1.94E-14	
Plutonium-241	3.88E-15	U;U	-5.90E-16	U	-3.25E-15	U	-3.85E-15	U;UJ
Thorium-230	2.33E-15	;UJ	5.45E-16		6.64E-16	U	8.37E-16	
Thorium-228	1.92E-16	U;U	5.60E-16		1.78E-16	U	6.42E-16	U;U
Actinium-228	-1.81E-14	U;U	2.77E-15	U	-8.66E-15	U	-3.31E-15	U;U
Americium-241	9.55E-17	U;UJ	-6.68E-17	U	5.06E-17	U	-5.70E-18	U;U
Plutonium-239	-1.48E-16	U;UJ	8.69E-17	U	3.98E-16	U	-5.72E-17	U;U
Ra-228 – total	-1.82E-16	U;U	3.52E-16	U	5.66E-16	U	3.83E-15	
Radium-226, -228 combined	9.23E-16	U;U	4.64E-15		7.98E-16		3.98E-15	;UJ
Thorium-232	-7.77E-17	U;U	5.76E-16		-2.44E-18	U	8.32E-16	;UJ
Uranium-238	9.65E-16	;UJ	1.16E-15		1.16E-15		9.47E-16	;UJ
Uranium-233/234	7.86E-16	;UJ	7.17E-16		2.98E-16		8.22E-16	;UJ
Uranium-235/236	1.20E-16	U;U	1.66E-16	U	0.00E+00	U	1.13E-16	U;U
Sample Location DOE-2								
Cesium-137	2.26E-15	U;U	4.37E-16	U	1.34E-15	U	-2.46E-15	U;U
Strontium-90	1.98E-16	U;U	5.65E-16	U	4.51E-16	U	-5.54E-16	U;U
Cobalt-60	2.85E-15	U;U	-4.35E-15	U	2.41E-15	U	1.02E-15	U;U
Potassium-40	0.00E+00	UI;U	7.69E-14	U	2.27E-14	U	0.00E+00	UI;UJ
Beryllium-7	1.34E-13		1.33E-13		1.19E-13		1.61E-13	
Plutonium-238	7.34E-18	U;U	-2.30E-17	U	8.86E-17	U	-1.16E-17	U;U
Polonium-210	1.16E-14		4.32E-15		1.29E-14		1.01E-14	
Plutonium-241	6.33E-15	U;U	-3.82E-16	U	2.95E-15	U	6.05E-17	U;UJ
Thorium-230	1.02E-15	;UJ	9.48E-16		1.26E-15		4.65E-16	U;U
Thorium-228	8.02E-16		5.86E-16		4.00E-16	U	7.98E-16	
Actinium-228	9.65E-15	U;U	3.88E-14	U	1.08E-15	U	-1.03E-14	U;U
Americium-241	3.02E-18	U;U	-2.61E-17	U	4.46E-17	U	4.68E-17	U;U
Plutonium-239	-1.15E-17	U;UJ	-2.88E-17	U	1.92E-16	U	6.73E-17	U;U

Radionuclide	Q8 Result (µCi/mL)	Data Qualifier	Q9 Result (µCi/mL)	Data Qualifier	Q10 Result (µCi/mL)	Data Qualifier	Q11 Result (µCi/mL)	Data Qualifier
Ra-228 - total	2.21E-15		6.91E-16	U	-2.93E-15	U	8.28E-15	
Radium-226, -228 combined	3.45E-15	U;U	3.09E-15	U	1.08E-15		2.45E-15	;J
Thorium-232	4.60E-16	;UJ	9.82E-16		5.07E-16		9.11E-16	;UJ
Uranium-238	6.65E-16	;UJ	9.64E-16		7.48E-16		7.82E-16	;UJ
Uranium-233/234	8.12E-16	;UJ	1.06E-15		7.78E-16		6.60E-16	;J
Uranium-235/236	9.98E-17	U;U	0.00E+00	U	-1.06E-17	U	6.55E-17	U;U
Sample Location DOE-3								
Cesium-137	1.28E-15	U;U	2.91E-15	U	2.80E-15	U	1.47E-15	U;U
Strontium-90	-1.35E-16	U;U	-8.28E-16	U	4.65E-16	U	1.45E-15	U;U
Cobalt-60	1.20E-17	U;U	1.32E-15	U	-2.51E-16	U	-1.11E-16	U;U
Potassium-40	7.91E-14	U;U	1.36E-14	U	2.09E-13		0.00E+00	UI;UJ
Beryllium-7	1.43E-13		2.04E-13		1.77E-13		2.00E-13	
Plutonium-238	7.19E-17	U;U	-6.32E-18	U	1.22E-16	U	-1.94E-17	U;U
Polonium-210	1.21E-14		3.82E-15		1.24E-14		1.34E-14	
Plutonium-241	2.12E-15	U;U	-2.36E-15	U	-3.66E-15	U	-2.27E-15	U;UJ
Thorium-230	6.76E-16	;UJ	9.70E-16		8.55E-16	U	6.55E-16	U;U
Thorium-228	2.67E-16	U;U	6.96E-16	U	6.40E-16	U	2.08E-16	U;U
Actinium-228	6.74E-15	U;U	3.22E-15	U	7.04E-15	U	-1.67E-14	U;U
Americium-241	5.77E-17	U;U	6.33E-17	U	-3.30E-17	U	7.66E-17	U;U
Plutonium-239	-8.45E-17	U;UJ	4.00E-17	U	9.62E-17	U	-5.83E-17	U;U
Ra-228 - total	8.09E-16	U;U	1.87E-15	U	1.46E-15	U	5.72E-15	
Radium-226, -228 combined	3.57E-15	;UJ	3.07E-15	U	1.11E-15		2.27E-15	;J
Thorium-232	6.47E-16	;UJ	6.49E-16		6.97E-16	U	3.63E-16	U;U
Uranium-238	6.06E-16	;UJ	3.54E-16		7.57E-16		8.08E-16	;UJ
Uranium-233/234	4.18E-16	U;U	9.25E-16		6.20E-16		9.53E-16	;UJ
Uranium-235/236	-8.50E-18	U;U	2.26E-17	U	1.97E-17	U	5.57E-17	U;U
Sample Location DOE-4								
Cesium-137	3.27E-15	U;U	-8.37E-16	U	1.93E-15	U	-3.64E-15	U;U
Strontium-90	-1.97E-16	U;U	2.33E-15	U	-1.10E-15	U	2.04E-16	U;U
Cobalt-60	-1.87E-15	U;U	1.26E-15	U	-3.22E-16	U	-3.50E-15	U;U
Potassium-40	0.00E+00	UI;U	1.05E-13	U	0.00E+00	UI	1.67E-14	U;U
Beryllium-7	0.00E+00	UI;U	1.52E-13		2.64E-13		2.52E-13	
Plutonium-238	9.31E-18	U;U	-8.55E-18	U	-1.36E-16	U	-4.49E-17	U;U
Polonium-210	1.06E-14		5.95E-15		1.12E-14		1.24E-14	

Radionuclide	Q8 Result (µCi/mL)	Data Qualifier	Q9 Result (µCi/mL)	Data Qualifier	Q10 Result (µCi/mL)	Data Qualifier	Q11 Result (µCi/mL)	Data Qualifier
Plutonium-241	3.58E-15	U;U	-4.26E-15	U	5.46E-15	U	5.76E-16	U;UJ
Thorium-230	7.25E-16	;UJ	1.33E-15		1.64E-15		6.31E-16	U;U
Thorium-228	2.25E-16	U;U	4.10E-16	U	8.13E-16		8.46E-16	U;U
Actinium-228	-1.82E-14	U;U	6.92E-15	U	1.39E-14	U	7.87E-15	U;U
Americium-241	2.96E-17	U;U	5.54E-16	U	5.18E-17	U	5.25E-17	U;U
Plutonium-239	5.27E-17	U;UJ	-4.27E-17	U	-4.63E-18	U	2.09E-17	U;U
Ra-228 - total	1.79E-15	U;U	1.15E-15	U	7.39E-15	U	6.55E-15	
Radium-226, -228 combined	2.72E-15	U;U	2.99E-15	U	1.22E-15		2.44E-15	;J
Thorium-232	6.70E-16	;UJ	6.57E-16	U	9.07E-16		8.85E-16	;UJ
Uranium-238	7.60E-16	;UJ	1.12E-15		8.82E-16		1.07E-15	;UJ
Uranium-233/234	5.26E-16	;J	8.33E-16		9.94E-16		1.14E-15	;UJ
Uranium-235/236	5.01E-17	U;U	4.16E-17	U	2.44E-17	U	8.84E-17	;U

[1] Qualifier column contains laboratory flags ; validation qualifiers.

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APPENDIX D

PM_{10} Monthly Audit Reports and Flow Verification Results

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NORTHWIND PORTAGE, INC.

One-Point Flow Rate Bias Estimate

Site ID: DOE-1	E-BAM Serial #: W23310	Pollutant type: PM10	Bias (%)

Quarter	Date	Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	Percentile	d^2	$\|d\|$	$\|d\|^2$
11	10/14/2020	14.00	14.02	-0.143		0.020	0.143	0.020
		16.70	16.63	0.421	25th	0.177	0.421	0.177
		17.50	17.41	0.517	0.143	0.267	0.517	0.267
11	11/20/2020	14.00	13.99	0.071		0.005	0.071	0.005
		16.70	16.56	0.845	75th	0.715	0.845	0.715
		17.50	17.38	0.690	0.517	0.477	0.690	0.477
11	12/22/2020	14.00	13.98	0.143		0.020	0.143	0.020
		16.70	16.66	0.240		0.058	0.240	0.058
		17.50	17.43	0.402		0.161	0.402	0.161

n	$\sum\|d\|$	"AB" (Eqn 4)
9	3.473	0.386
n-1	$\sum\|d\|^2$	"AS" (Eqn 5)
8	1.901	0.265

Bias (%) (Eqn 3)	Both Signs Positive
0.55	TRUE
Signed Bias (%)	Both Signs Negative
+0.55	FALSE

Note: No issues encountered with this E-BAM unit during this quarter.

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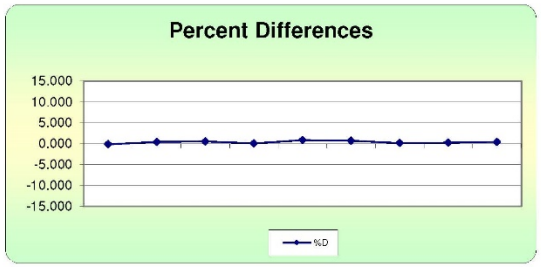


Reference: U.S. EPA, Ambient Monitoring Technology Information Center (AMTIC)
Quality Indicator Assessment Reports
Data Assessment Statisical Calculator - Software to calculate precision and bias statistics (MS Excel) - 11/3/2017 (dasc_11_3_17.xls)
https://www3.epa.gov/ttn/amtic/qareport.html

NORTHWIND PORTAGE, INC.

One-Point Flow Rate Bias Estimate

Site ID: DOE-2	E-BAM Serial #: X16067	Pollutant type: PM10	Bias (%)

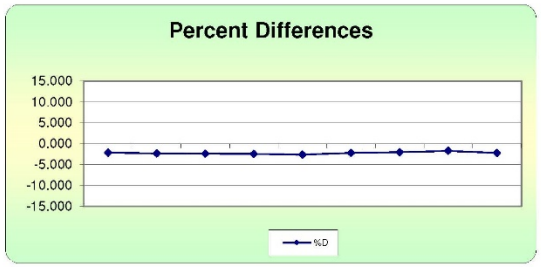
Quarter	Date	Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	Percentile	d^2	$\|d\|$	$\|d\|^2$
11	10/14/2020	14.00	14.31	-2.166		4.693	2.166	4.693
		16.70	17.10	-2.339	25th	5.472	2.339	5.472
		17.50	17.93	-2.398	-2.398	5.751	2.398	5.751
11	11/20/2020	14.00	14.35	-2.439		5.949	2.439	5.949
		16.70	17.15	-2.624	75th	6.885	2.624	6.885
		17.50	17.90	-2.235	-2.166	4.994	2.235	4.994
11	12/22/2020	14.00	14.29	-2.029		4.118	2.029	4.118
		16.70	16.99	-1.707		2.913	1.707	2.913
		17.50	17.90	-2.235		4.994	2.235	4.994

n	$\sum\|d\|$	"AB" (Eqn 4)
9	20.172	2.241
n-1	$\sum\|d\|^2$	"AS" (Eqn 5)
8	45.769	0.264

Bias (%) (Eqn 3)	Both Signs Positive
2.4	FALSE
Signed Bias (%)	Both Signs Negative
-2.4	TRUE

Note: Pump Test Quality Category listed on Audit Form as Marginal to Good during this quarter.

Return to Main Menu | Print Worksheet



Reference: U.S. EPA, Ambient Monitoring Technology Information Center (AMTIC)
Quality Indicator Assessment Reports
Data Assessment Statisical Calculator - Software to calculate precision and bias statistics (MS Excel) - 11/3/2017 (dasc_11_3_17.xls)
https://www3.epa.gov/ttn/amtic/qareport.html

NORTHWIND PORTAGE, INC.

One-Point Flow Rate Bias Estimate

Site ID: DOE-3	E-BAM Serial #: W23313	Pollutant type: PM10	Bias (%)

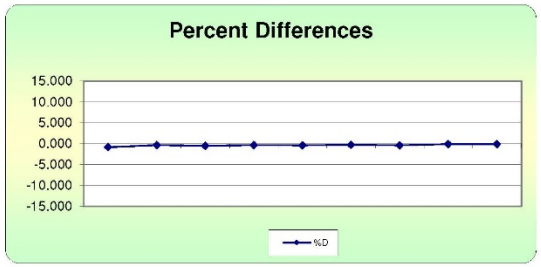
Quarter	Date	Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	Percentile	d^2	$\|d\|$	$\|d\|^2$
11	10/14/2020	14.00	14.12	-0.850		0.722	0.850	0.722
		16.70	16.76	-0.358	25th	0.128	0.358	0.128
		17.50	17.59	-0.512	-0.427	0.262	0.512	0.262
11	11/20/2020	14.00	14.05	-0.356		0.127	0.356	0.127
		16.70	16.77	-0.417	75th	0.174	0.417	0.174
		17.50	17.55	-0.285	-0.285	0.081	0.285	0.081
11	12/22/2020	14.00	14.06	-0.427		0.182	0.427	0.182
		16.70	16.72	-0.120		0.014	0.120	0.014
		17.50	17.52	-0.114		0.013	0.114	0.013

n	$\sum\|d\|$	"AB" (Eqn 4)
9	3.438	0.382
n-1	$\sum\|d\|^2$	"AS" (Eqn 5)
8	1.704	0.221

Bias (%) (Eqn 3)	Both Signs Positive
0.52	FALSE
Signed Bias (%)	Both Signs Negative
-0.52	TRUE

Note: No issues encountered with this E-BAM unit during this quarter.

Return to Main Menu | Print Worksheet



Reference: U.S. EPA, Ambient Monitoring Technology Information Center (AMTIC)
Quality Indicator Assessment Reports
Data Assessment Statisical Calculator - Software to calculate precision and bias statistics (MS Excel) - 11/3/2017 (dasc_11_3_17.xls)
https://www3.epa.gov/ttn/amtic/qareport.html

NORTHWIND PORTAGE, INC.

One-Point Flow Rate Bias Estimate

Site ID: DOE-4	E-BAM Serial #: W23314	Pollutant type: PM10	Bias (%)

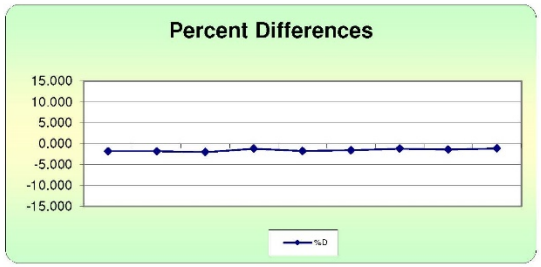
Quarter	Date	Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	Percentile	d^2	$\|d\|$	$\|d\|^2$
11	10/14/2020	14.00	14.26	-1.823		3.324	1.823	3.324
		16.70	17.01	-1.822	25th	3.321	1.822	3.321
		17.50	17.86	-2.016	-1.822	4.063	2.016	4.063
11	11/20/2020	14.00	14.17	-1.200		1.439	1.200	1.439
		16.70	17.00	-1.765	75th	3.114	1.765	3.114
		17.50	17.78	-1.575	-1.200	2.480	1.575	2.480
11	12/22/2020	14.00	14.17	-1.200		1.439	1.200	1.439
		16.70	16.94	-1.417		2.007	1.417	2.007
		17.50	17.70	-1.130		1.277	1.130	1.277

n	$\sum\|d\|$	"AB" (Eqn 4)
9	13.947	1.550
n-1	$\sum\|d\|^2$	"AS" (Eqn 5)
8	22.465	0.326

Bias (%) (Eqn 3)	Both Signs Positive
1.75	FALSE
Signed Bias (%)	Both Signs Negative
-1.75	TRUE

Note: No issues encountered with this E-BAM unit during this quarter.

Return to Main Menu | Print Worksheet



Reference: U.S. EPA, Ambient Monitoring Technology Information Center (AMTIC)
Quality Indicator Assessment Reports
Data Assessment Statisical Calculator - Software to calculate precision and bias statistics (MS Excel) - 11/3/2017 (dasc_11_3_17.xls)
https://www3.epa.gov/ttn/amtic/qareport.html

NORTHWIND INC.

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-1 Serial # W23310

Audit Date: 10/14/2020 Audited By : TS Williford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.5 as left: 0.5

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	26.1 °C	26.3 °C	as left:	26.1 °C	26.3 °C
Barometric Pressure:	as found:	713.0 mmHg	713.5 mmHg	as left:	713.0 mmHg	713.5 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	16.63 lpm	as left:	16.7 lpm	16.63 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.02 lpm	as left:	14.0 lpm	14.02 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.41 lpm	as left:	17.5 lpm	17.41 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test

Expected Span Mass (mg/cm2) : 0.915

Measured Span Mass (mg/cm2) : 0.922

Difference (mg/cm2) : 0.007

% Difference / Pass or Fail: 0.76% P

Pump Test

Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
14.0	398.0	Good

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	0742	0742	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	1	1	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5 v
Tape Advance	24 hrs	24 hr	RH Setpoint	45%	45%	Std Cond Temp	25 C	25C
Realtime Avg	60 mins	60 mins	Delta T Setpoint	15 C	15°C	DAC	8.0 v	8.0v
Machine Type	PM-10	PM-10	RH Control	On	On	RH Connect	No	No
Analog FS	1.0 v	1.0 v	Flow Setpoint	16.7	16.7	Pump Protect	Off	off

Last 6 Errors in E-BAM Error Log

Error	Date	Time	Error	Date	Time
1 No New Messages	10/14/20	0838	4		
2			5		
3			6		

Audit Notes:

NORTHWIND INC.

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-2 Serial # X16067

Audit Date: 10/14/2020 Audited By: TS Williford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.4 as left: 0.4

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	33.3 °C	30.1 °C	as left:	33.3 °C	30.1 °C
Barometric Pressure:	as found:	712.0 mmHg	711.0 mmHg	as left:	712.0 mmHg	711.0 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	17.1 lpm	as left:	16.7 lpm	17.1 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.31 lpm	as left:	14.0 lpm	14.31 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.93 lpm	as left:	17.5 lpm	17.93 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test		Pump Test		
Expected Span Mass (mg/cm2) :	0.914	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) :	0.910			
Difference (mg/cm2) :	0.004			
% Difference / (Pass) or Fail:	0.44%	14.0	407.3	Marginal

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	0834	0834	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	2	2	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5v
Tape Advance	24 hrs	24	RH Setpoint	45%	45%	Std Cond Temp	25 C	25c
Realtime Avg	60 mins	60	Delta T Setpoint	15 C	15 C	DAC	8.0 v	8.0v
Machine Type	PM-10	PM-10	RH Control	On	On	RH Connect	No	NO
Analog FS	1.0 v	1.0v	Flow Setpoint	16.7	16.7	Pump Protect	Off	OFF

Last 6 Errors in E-BAM Error Log

Error	Date	Time	Error	Date	Time
1 No New Messages	10/14/20	0936	4		
2			5		
3			6		

Audit Notes:

NORTHWIND INC.

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-3 Serial # W23313

Audit Date: 10/14/2020 Audited By : TS Williford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.4 as left: 0.4

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	35.4 °C	34.1 °C	as left:	35.4 °C	34.1 °C
Barometric Pressure:	as found:	712.4 mmHg	713.0 mmHg	as left:	712.4 mmHg	713.0 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	16.76 lpm	as left:	16.7 lpm	16.76 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.12 lpm	as left:	14.0 lpm	14.12 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.59 lpm	as left:	17.5 lpm	17.59 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test		Pump Test		
Expected Span Mass (mg/cm2) :	0.885	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) :	0.882			
Difference (mg/cm2) :	0.003			
% Difference / (Pass) or Fail:	0.33%	14.0	394.1	Good/Marginal

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	10:15	10:15	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	3	3	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5v
Tape Advance	24 hrs	24 hr	RH Setpoint	45%	45%	Std Cond Temp	25 C	25°C
Realtime Avg	60 mins	60 min	Delta T Setpoint	15 C	15°C	DAC	8.0 v	8.0v
Machine Type	PM-10	PM-10	RH Control	On	on	RH Connect	No	NO
Analog FS	1.0 v	1.0v	Flow Setpoint	16.7	16.7	Pump Protect	Off	Off

Last 6 Errors in E-BAM Error Log

Error	Date	Time	Error	Date	Time
1 No New Messages	10/14/20	1123	4		
2			5		
3			6		

Audit Notes:

NORTHWIND INC.

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-4 Serial # W23314

Audit Date: 10/14/2020 Audited By : TS Willford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.3 as left: 0.3

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	36.8 °C	35.9 °C	as left:	36.8 °C	35.9 °C
Barometric Pressure:	as found:	706.3 mmHg	705.5 mmHg	as left:	706.3 mmHg	705.5 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	17.01 lpm	as left:	16.7 lpm	17.01 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.26 lpm	as left:	14.0 lpm	14.26 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.86 lpm	as left:	17.5 lpm	17.86 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test	Pump Test		
Expected Span Mass (mg/cm2) : 0.919	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) : 0.921			
Difference (mg/cm2) ~~0.22%~~ 0.002			
% Difference (Pass) or Fail: 0.22%	14.5	424.4	Marginal

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	1206	1206	Analog Mode	Hourly	Hourly	Flow Type	Actual	ACT
Location	4	4	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5V
Tape Advance	24 hrs	24hr	RH Setpoint	45%	45%	Std Cond Temp	25 C	25°C
Realtime Avg	60 mins	60min	Delta T Setpoint	15 C	15C°	DAC	8.0 v	8.0V
Machine Type	PM-10	PM-10	RH Control	On	On	RH Connect	No	NO
Analog FS	1.0 v	1.0V	Flow Setpoint	16.7	16.7	Pump Protect	Off	off

Last 6 Errors in E-BAM Error Log

	Error	Date	Time		Error	Date	Time
1	No New Messages	10/14/20	1310	4			
2				5			
3				6			

Audit Notes:

NORTHWIND INC

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-1 Serial # W23310

Audit Date: 11/20/20 Audited By : TSW

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.6 as left: 0.6

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	21.8 °C	21.0 °C	as left:	21.8 °C	21.0 °C
Barometric Pressure:	as found:	715.5 mmHg	715.5 mmHg	as left:	715.5 mmHg	715.5 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	16.56 lpm	as left:	16.7 lpm	16.56 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	13.99 lpm	as left:	14.0 lpm	13.99 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.38 lpm	as left:	17.5 lpm	17.38 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test	Pump Test		
Expected Span Mass (mg/cm2) : 0.915	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) : 0.897			
Difference (mg/cm2) : 0.018			
% Difference / (Pass) or Fail: 2.0%	14.7	421.4	moderate

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	1004	1004	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	1	1	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5v
Tape Advance	24 hrs	24	RH Setpoint	45%	45%	Std Cond Temp	25 C	25C
Realtime Avg	60 mins	60	Delta T Setpoint	15 C	15C°	DAC	8.0 v	8.0v
Machine Type	PM-10	PM-10	RH Control	On	on	RH Connect	No	NO
Analog FS	1.0 v	1.0 v	Flow Setpoint	16.7	16.7	Pump Protect	Off	off

Last 6 Errors in E-BAM Error Log

Error	Date	Time	Error	Date	Time
1 No New Messages	11/20/20	1010	4		
2			5		
3			6		

Audit Notes:

NORTHWIND

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-2 Serial # X16067

Audit Date: 11/20/2020 Audited By: TS W. Ilford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.4 as left: 0.4

		E-BAM		Ref. Std.			E-BAM		Ref. Std.	
Ambient Temperature:	as found:	26.3	°C	24.7	°C	as left:	26.3	°C	24.7	°C
Barometric Pressure:	as found:	714.8	mmHg	714.0	mmHg	as left:	714.8	mmHg	714.0	mmHg
16.7 lpm Flow Rate	as found:	16.7	lpm	17.15	lpm	as left:	16.7	lpm	17.15	lpm
14.0 lpm Flow Rate	as found:	14.0	lpm	14.35	lpm	as left:	14.0	lpm	14.35	lpm
17.5 lpm Flow Rate	as found:	17.5	lpm	17.90	lpm	as left:	17.5	lpm	17.90	lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test		Pump Test		
Expected Span Mass (mg/cm2) :	0.914	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) :	0.909			
Difference (mg/cm2) :	~~0.55%~~ 0.005			
% Difference / Pass or Fail:	0.55%	14.9	426.8	Marginal

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	1120	1120	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	2	2	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5V
Tape Advance	24 hrs	24hr	RH Setpoint	45%	45%	Std Cond Temp	25 C	25C
Realtime Avg	60 mins	60 min	Delta T Setpoint	15 C	15C	DAC	8.0 v	8.0V
Machine Type	PM-10	PM-10	RH Control	On	On	RH Connect	No	NO
Analog FS	1.0 v	1.0V	Flow Setpoint	16.7	16.7	Pump Protect	Off	off

Last 6 Errors in E-BAM Error Log

Error	Date	Time	Error	Date	Time
1 No New Messages	11/20/20	1131	4		
2			5		
3			6		

Audit Notes:

NORTHWIND INC.

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-3 Serial # W23313

Audit Date: 11/20/20 Audited By : TSwilliford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.5 as left: 0.5

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	25.3 °C	24.2 °C	as left:	25.3 °C	24.2 °C
Barometric Pressure:	as found:	713.5 mmHg	714.0 mmHg	as left:	713.5 mmHg	714.0 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	16.77 lpm	as left:	16.7 lpm	16.77 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.05 lpm	as left:	14.0 lpm	14.05 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.55 lpm	as left:	17.5 lpm	17.55 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test		Pump Test		
Expected Span Mass (mg/cm2) :	0.885	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) :	0.894			
Difference (mg/cm2) :	0.009			
% Difference / Pass or Fail:	1.0%	14.1	403.5	Good/Marginal

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	1216	1216	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	3	3	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5V
Tape Advance	24 hrs	24	RH Setpoint	45%	45%	Std Cond Temp	25 C	25 C
Realtime Avg	60 mins	60	Delta T Setpoint	15 C	15C	DAC	8.0 v	8.0V
Machine Type	PM-10	PM-10	RH Control	On	ON	RH Connect	No	NO
Analog FS	1.0 v	1.0V	Flow Setpoint	16.7	16.7	Pump Protect	Off	OFF

Last 6 Errors in E-BAM Error Log

	Error	Date	Time		Error	Date	Time
1	No New messages	11/20/20	1222	4			
2				5			
3				6			

Audit Notes:

NORTHWIND INC.

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-4 Serial # W23314

Audit Date: 11/20/2020 Audited By: T.S. Williford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.4 as left: 0.4

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	25.2 °C	24.3 °C	as left:	25.2 °C	24.3 °C
Barometric Pressure:	as found:	707.7 mmHg	705.5 mmHg	as left:	707.7 mmHg	705.5 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	17.00 lpm	as left:	16.7 lpm	17.00 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.17 lpm	as left:	14.0 lpm	14.17 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.78 lpm	as left:	17.5 lpm	17.78 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test		Pump Test		
Expected Span Mass (mg/cm2):	0.919	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2):	0.916			
Difference (mg/cm2):	0.003			
% Difference / (Pass) or Fail:	0.33%	14.8	405.1	Good

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	1258	1258	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	4	4	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5V
Tape Advance	24 hrs	24 hrs	RH Setpoint	45%	45%	Std Cond Temp	25 C	25C
Realtime Avg	60 mins	60 min	Delta T Setpoint	15 C	15 C°	DAC	8.0 v	8.0V
Machine Type	PM-10	PM-10	RH Control	On	On	RH Connect	No	NO
Analog FS	1.0 v	1.0V	Flow Setpoint	16.7	16.7	Pump Protect	Off	off

Last 6 Errors in E-BAM Error Log

Error	Date	Time	Error	Date	Time
1 No New Messages	11/20/20	1309	4		
2			5		
3			6		

Audit Notes:

NORTHWIND INC

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-1 Serial # W23310

Audit Date: 12/22/2020 Audited By: TS Williford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.6 as left: 0.6

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	11.8 °C	12.5 °C	as left:	11.8 °C	12.5 °C
Barometric Pressure:	as found:	713.5 mmHg	713.0 mmHg	as left:	713.5 mmHg	713.0 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	16.66 lpm	as left:	16.7 lpm	16.66 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	13.98 lpm	as left:	14.0 lpm	13.98 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.43 lpm	as left:	17.5 lpm	17.43 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test	Pump Test		
Expected Span Mass (mg/cm2) : 0.915	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) : 0.910			
Difference (mg/cm2) : 0.005			
% Difference / (Pass) or Fail: 0.55%	14.5	417.9	Marginal

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	0750	0750	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	01	01	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5v
Tape Advance	24 hrs	24hrs	RH Setpoint	45%	45%	Std Cond Temp	25 C	25C
Realtime Avg	60 mins	60min	Delta T Setpoint	15 C	15C	DAC	8.0 v	8.0v
Machine Type	PM-10	PM-10	RH Control	On	ON	RH Connect	No	No
Analog FS	1.0 v	1.0v	Flow Setpoint	16.7	16.7	Pump Protect	Off	off

Last 6 Errors in E-BAM Error Log

	Error	Date	Time		Error	Date	Time
1	No New messages	12/22/20	0756	4			
2				5			
3				6			

Audit Notes:

NORTHWIND

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-2 Serial # X16067

Audit Date: 12/22/2020 Audited By: T.S.W.Ilford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.4 as left: 0.4

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	18.6 °C	17.5 °C	as left:	18.6 °C	17.5 °C
Barometric Pressure:	as found:	712.8 mmHg	710.5 mmHg	as left:	712.8 mmHg	710.5 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	16.99 lpm	as left:	16.7 lpm	16.99 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.29 lpm	as left:	14.0 lpm	14.29 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.90 lpm	as left:	17.5 lpm	17.90 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test		Pump Test		
Expected Span Mass (mg/cm2) :	0.914	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) :	0.925			
Difference (mg/cm2) :	0.011			
% Difference / (Pass) or Fail:	~~1.2~~ 1.2%	14.9	360.2	Good

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	0903	0903	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	2	2	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5
Tape Advance	24 hrs	24hrs	RH Setpoint	45%	45%	Std Cond Temp	25 C	25C
Realtime Avg	60 mins	60min	Delta T Setpoint	15 C	15C	DAC	8.0 v	8.0
Machine Type	PM-10	PM-10	RH Control	On	ON	RH Connect	No	NO
Analog FS	1.0 v	1.0V	Flow Setpoint	16.7	16.7	Pump Protect	Off	Off

Last 6 Errors in E-BAM Error Log

	Error	Date	Time		Error	Date	Time
1	No new messages	12/22/20	0935	4			
2				5			
3				6			

Audit Notes:

NORTHWIND

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-3 Serial # W23313

Audit Date: 12/22/2020 Audited By: TS Williford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.6 as left: 0.6

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	18.6 °C	17.6 °C	as left:	18.6 °C	17.6 °C
Barometric Pressure:	as found:	713.0 mmHg	713.0 mmHg	as left:	713.0 mmHg	713.0 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	16.72 lpm	as left:	16.7 lpm	16.72 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.06 lpm	as left:	14.0 lpm	14.06 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.52 lpm	as left:	17.5 lpm	17.52 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test	Pump Test		
Expected Span Mass (mg/cm2) : 0.885	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) : 0.892			
Difference (mg/cm2) : 0.007			
% Difference / Pass or Fail: 0.79%	14.8	318.4	Good

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	10034	1003	Analog Mode	Hourly	Hourly	Flow Type	Actual	Act
Location	3	3	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5v
Tape Advance	24 hrs	24hrs	RH Setpoint	45%	45%	Std Cond Temp	25 C	25C
Realtime Avg	60 mins	60min	Delta T Setpoint	15 C	15C	DAC	8.0 v	8.0v
Machine Type	PM-10	PM-10	RH Control	On	On	RH Connect	No	NO
Analog FS	1.0 v	1.0v	Flow Setpoint	16.7	16.7	Pump Protect	Off	off

Last 6 Errors in E-BAM Error Log

	Error	Date	Time		Error	Date	Time
1	No new messages	12/22/20	10:11	4			
2				5			
3				6			

Audit Notes:

NORTHWIND

Baseline Air Monitoring Program - DOE

E-BAM Monthly Audit and Maintenance

Station # DOE-4 Serial # W23314

Audit Date: 12/22/2020 Audited By: TS Williford

Flow Audit

Flow Audit Device Model: BGI Delta Cal DC-1A Serial No: 158047 Calibration Date: 2/5/2020

Leak Check Value: as found: 0.5 as left: 0.5

		E-BAM	Ref. Std.		E-BAM	Ref. Std.
Ambient Temperature:	as found:	19.1 °C	18.60 °C	as left:	19.1 °C	18.60 °C
Barometric Pressure:	as found:	707.3 mmHg	705.0 mmHg	as left:	707.3 mmHg	705.0 mmHg
16.7 lpm Flow Rate	as found:	16.7 lpm	16.94 lpm	as left:	16.7 lpm	16.94 lpm
14.0 lpm Flow Rate	as found:	14.0 lpm	14.17 lpm	as left:	14.0 lpm	14.17 lpm
17.5 lpm Flow Rate	as found:	17.5 lpm	17.70 lpm	as left:	17.5 lpm	17.70 lpm

Mechanical Audits (Y = Yes N = No)

Sample nozzle clean:	as found	Y	as left	Y
Tape support vane clean:	as found	Y	as left	Y
Tape spool covers tight:	as found	Y	as left	Y
PM10 particle trap clean:	as found	Y	as left	Y
PM10 drip jar empty:	as found	Y	as left	Y
PM10 bug screen clear:	as found	Y	as left	Y

Manual Span Membrane Test	Pump Test		
Expected Span Mass (mg/cm2) : 0.919	Flow Rate 14.0 - 15.0 (lpm)	Vacuum Value (Hg)	Quality Category Good / Marginal / Poor
Measured Span Mass (mg/cm2) : 0.921			
Difference (mg/cm2) : 0.002			
% Difference / Pass or Fail: 0.22%	14.3	408.3	Marginal

Setup and Calibration Values

Parameter	Expected	Found	Parameter	Expected	Found	Parameter	Expected	Found
Clock	1056	1056	Analog Mode	Hourly	hourly	Flow Type	Actual	Act
Location	4	4	Baud Rate	9600	9600	Restart Voltage	12.5 v	12.5v
Tape Advance	24 hrs	24hr	RH Setpoint	45%	45%	Std Cond Temp	25 C	25C
Realtime Avg	60 mins	60min	Delta T Setpoint	15 C	15C	DAC	8.0 v	8.0v
Machine Type	PM-10	PM-10	RH Control	On	On	RH Connect	No	No
Analog FS	1.0 v	1.0V	Flow Setpoint	16.7	16.7	Pump Protect	Off	off

Last 6 Errors in E-BAM Error Log

	Error	Date	Time		Error	Date	Time
1	NO New messages	12/22/20	1103	4			
2				5			
3				6			

Audit Notes:

APPENDIX E

VOC Analytical Data Packages, Q8 through Q11

Appendix E is available via separate attachment.

APPENDIX F

Radiological Analytical Data Packages, Q8 through Q11

Appendix F is available via separate attachment.