Air Monitoring Summary Tables

The tables below summarize monitoring data collected using EPA's Viper wireless remote monitoring system. The "Number of Readings" are artificially reduced to manage large quantities of data for this report. Further discussion is provided in the notes section on page 5.

Project Name: Applegate Lane Containers

From: **10/20/23 7:01 AM** ***To:*** ***10/21/23 6:59 AM***

Station 01 - Tier I							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRAE 1	VOC	No	2269	0	0-0 ppb	0.00 ppb	9000 ppb
	CO	No	2269	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2269	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2269	2269	20.5-20.9 %	20.88 %	<19.5 or >23 %
	LEL	No	2269	0	0-0 %	0.00 %	10 %
	HCN	No	2269	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 1	PM2.5	See PM-2.5 Action Levels	1439	1439	1-62 µg/m3	7.53 µg/m3	See PM-2.5 Action Levels
SPM Flex 1	Ammonia (NH3)	No	1440	0	0-0 ppm	0.00 ppm	30 ppm
SPM Flex 2	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 02 - Tier I							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRAE 2	VOC	No	2268	2268	26-2426 ppb	833.40 ppb	9000 ppb
	CO	No	2268	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2268	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2268	2268	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2268	0	0-0 %	0.00 %	10 %
	HCN	No	2268	3	0-0.2 ppm	0.00 ppm	2 ppm
DustTrak 2	PM2.5	See PM-2.5 Action Levels	1442	1442	6-85 µg/m3	12.96 µg/m3	See PM-2.5 Action Levels
SPM Flex 3	Ammonia (NH3)	No	1439	70	0-0.16 ppm	0.00 ppm	30 ppm
SPM Flex 4	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 03 - Tier I							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRAE 3	VOC	No	2267	1670	0-401 ppb	155.20 ppb	9000 ppb
	CO	No	2267	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2267	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2267	2267	20.4-20.9 %	20.76 %	<19.5 or >23 %
	LEL	No	2267	0	0-0 %	0.00 %	10 %
	HCN	No	2267	4	0-0.1 ppm	0.00 ppm	2 ppm
DustTrak 3	PM2.5	See PM-2.5 Action Levels	1439	1439	3-53 µg/m3	9.39 µg/m3	See PM-2.5 Action Levels
SPM Flex 5	Ammonia (NH3)	No	1440	108	0-0.49 ppm	0.00 ppm	30 ppm
SPM Flex 6	Nitric Acid (HNO3)	No	1440	0	0-0 ppm	0.00 ppm	0.16 ppm

Air Monitoring Summary Tables

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Project Name: Applegate Lane Containers

From: **10/20/23 7:01 AM** ***To:*** ***10/21/23 6:59 AM***

Station 04 - Tier I							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 4	VOC	No	2267	135	0-17 ppb	0.32 ppb	9000 ppb
	CO	No	2267	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2267	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2267	2267	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2267	0	0-0 %	0.00 %	10 %
	HCN	No	2267	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 4	PM2.5	See PM-2.5 Action Levels	1440	1440	5-31 µg/m3	9.42 µg/m3	See PM-2.5 Action Levels
SPM Flex 7	Ammonia (NH3)	No	1440	154	0-0.59 ppm	0.01 ppm	30 ppm
SPM Flex 8	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 05 - Tier I							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 5	VOC	No	2269	2269	287-786 ppb	552.69 ppb	9000 ppb
	CO	No	2269	2	0-3 ppm	0.00 ppm	83 ppm
	H2S	No	2269	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2269	2269	20.5-20.9 %	20.88 %	<19.5 or >23 %
	LEL	No	2269	0	0-0 %	0.00 %	10 %
	HCN	No	2269	1	0-0.1 ppm	0.00 ppm	2 ppm
DustTrak 5	PM2.5	See PM-2.5 Action Levels	1440	1440	5-40 µg/m3	13.55 µg/m3	See PM-2.5 Action Levels
SPM Flex 9	Ammonia (NH3)	No	1439	165	0-0.52 ppm	0.01 ppm	30 ppm
SPM Flex 10	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 06 - Tier I							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 6	VOC	No	2269	2269	121-504 ppb	297.53 ppb	9000 ppb
	CO	No	2269	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2269	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2269	2269	20.1-20.3 %	20.17 %	<19.5 or >23 %
	LEL	No	2269	0	0-0 %	0.00 %	10 %
	HCN	No	2269	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 6	PM2.5	See PM-2.5 Action Levels	1439	1439	5-76 µg/m3	11.09 µg/m3	See PM-2.5 Action Levels
SPM Flex 11	Ammonia (NH3)	No	1439	299	0-0.81 ppm	0.01 ppm	30 ppm
SPM Flex 12	Nitric Acid (HNO3)	No	1440	0	0-0 ppm	0.00 ppm	0.16 ppm

Air Monitoring Summary Tables

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Project Name: Applegate Lane Containers

From: **10/20/23 7:01 AM** ***To:*** ***10/21/23 6:59 AM***

Station 07 - Tier I							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 7	VOC	No	2270	2270	441-990 ppb	689.97 ppb	9000 ppb
	CO	No	2270	3	0-21 ppm	0.03 ppm	83 ppm
	H2S	No	2270	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2270	2270	19.9-20.2 %	20.01 %	<19.5 or >23 %
	LEL	No	2270	0	0-0 %	0.00 %	10 %
	HCN	No	2270	3	0-0.7 ppm	0.00 ppm	2 ppm
DustTrak 7	PM2.5	See PM-2.5 Action Levels	1439	1439	3-73 µg/m3	9.89 µg/m3	See PM-2.5 Action Levels
SPM Flex 13	Ammonia (NH3)	No	1439	186	0-0.41 ppm	0.01 ppm	30 ppm
SPM Flex 14	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 08 - Crush Box (On Site)							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 8	VOC	No	2267	1565	0-910 ppb	38.34 ppb	9000 ppb
	CO	No	2267	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2267	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2267	2267	20.5-20.6 %	20.52 %	<19.5 or >23 %
	LEL	No	2267	0	0-0 %	0.00 %	10 %
	HCN	No	2267	0	0-0 ppm	0.00 ppm	2 ppm

Station 10 - Tier II							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 10	VOC	No	2269	670	0-119 ppb	19.27 ppb	9000 ppb
	CO	No	2269	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2269	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2269	2269	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2269	0	0-0 %	0.00 %	10 %
	HCN	No	2269	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 10	PM2.5	See PM-2.5 Action Levels	1439	1439	2-52 µg/m3	7.96 µg/m3	See PM-2.5 Action Levels
SPM Flex 19	Ammonia (NH3)	No	1439	141	0-0.46 ppm	0.01 ppm	30 ppm
SPM Flex 20	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Air Monitoring Summary Tables

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Project Name: **Applegate Lane Containers**

From: **10/20/23 7:01 AM** ***To:*** ***10/21/23 6:59 AM***

Station 11 - Tier II							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 11	VOC	No	2269	2269	376-1320 ppb	786.41 ppb	9000 ppb
	CO	No	2269	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2269	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2269	2269	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2269	0	0-0 %	0.00 %	10 %
	HCN	No	2269	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 11	PM2.5	See PM-2.5 Action Levels	1439	1437	0-44 µg/m3	6.89 µg/m3	See PM-2.5 Action Levels
SPM Flex 21	Ammonia (NH3)	No	1440	111	0-0.74 ppm	0.00 ppm	30 ppm
SPM Flex 22	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 12 - Tier II							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 12	VOC	No	2266	2266	177-553 ppb	412.31 ppb	9000 ppb
	CO	No	2266	1	0-7 ppm	0.00 ppm	83 ppm
	H2S	No	2266	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2266	2266	20.3-21.2 %	20.58 %	<19.5 or >23 %
	LEL	No	2266	0	0-0 %	0.00 %	10 %
	HCN	No	2266	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 12	PM2.5	See PM-2.5 Action Levels	1439	1439	3-20 µg/m3	13.31 µg/m3	See PM-2.5 Action Levels
SPM Flex 23	Ammonia (NH3)	No	1439	84	0-0.08 ppm	0.00 ppm	30 ppm
SPM Flex 24	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

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Project Name: **Applegate Lane Containers**

From: **10/20/23 7:01 AM** ***To:*** ***10/21/23 6:59 AM***

Station 13 - Tier II							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 13	VOC	No	2269	2269	99-659 ppb	492.83 ppb	9000 ppb
	CO	No	2269	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2269	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2269	2269	20.2-20.3 %	20.22 %	<19.5 or >23 %
	LEL	No	2269	0	0-0 %	0.00 %	10 %
	HCN	No	2269	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 13	PM2.5	See PM-2.5 Action Levels	1439	1439	2-20 µg/m3	7.98 µg/m3	See PM-2.5 Action Levels
SPM Flex 25	Ammonia (NH3)	No	1439	105	0-0.38 ppm	0.00 ppm	30 ppm
SPM Flex 26	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 14 - Tier II							
Instrument	**Analyte**	**Action Level Exceedance?**	**Number of Readings**	**Number of Detections**	**Concentration Range**	**Period Average**	**Action Level**
AreaRae 14	VOC	No	2267	0	0-0 ppb	0.00 ppb	9000 ppb
	CO	No	2267	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2267	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2267	2267	20.5-21.1 %	20.88 %	<19.5 or >23 %
	LEL	No	2267	0	0-0 %	0.00 %	10 %
	HCN	No	2267	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 14	PM2.5	See PM-2.5 Action Levels	1439	1439	3-24 µg/m3	11.02 µg/m3	See PM-2.5 Action Levels
SPM Flex 27	Ammonia (NH3)	No	1439	50	0-0.23 ppm	0.00 ppm	30 ppm
SPM Flex 28	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Air Monitoring Summary Tables

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Project Name: **Applegate Lane Containers**

From: **10/20/23 7:01 AM** ***To:*** ***10/21/23 6:59 AM***

Notes:

Air monitoring instruments around the site are continuously operating 24-hours per day and transmitting to a central location. When elevated readings are detected, response personnel at the Site are automatically notified so that confirmation and appropriate actions can take place. Each day, these instruments collect 44 million records and 5GB of data. To generate this summary report, the number of records have been artificially reduced by using one reading per minute from each instrument - this does not affect the period average has no significant effect on the concentration range. No data is lost and elevated concentrations of any analyte being measured at the Site would be sufficiently represented within the data shown here.

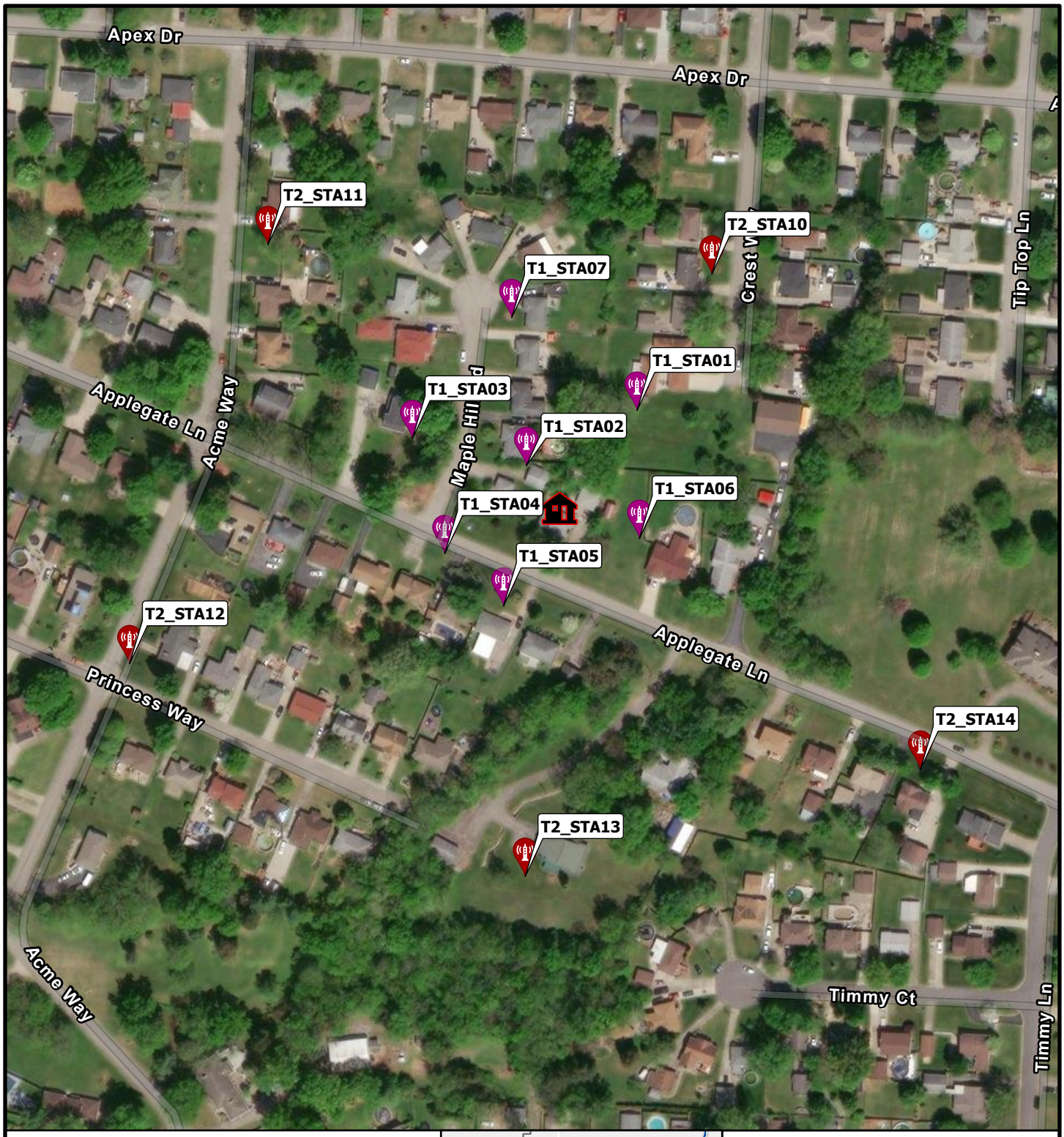
Ammonia Detections: Multiple instruments show low levels of Ammonia detections below 1.0 ppm. This is below the action level of 30 ppm based on the most protective Acute Exposure Guideline Levels for a 1-hour average exposure. EPA has provided this data to the Agency of Toxic Substances and Disease Registry (ASTDR) for review and an assessment of these data have been provided in the Air Monitoring Data Summary Report for Oct 17 at 0700 to Oct 18 at 0700.

DustTrak13 at Station 13 on Oct 18: This instrument returned negative values for particulate matter between 6:44 pm and 6:50pm on Oct 18. These were inaccurate values due to an instrument fault. A field calibration was conducted on the instrument and the data were flagged.

AreaRAE at Station 04 on Oct 17: The HCN sensor reported 0.1 and 0.2 ppm throughout the day but there was no clear rise and fall or indication of a detection of gas. The Air Monitoring Group confirmed that the sensor was possibly seeing a low level cross-interference. The sensor was recalibrated on 10/21.

Analyte	Definition	Action Level Reference
VOC	Volatile Organic Compounds	AEGL-1 8hr for Benzene
CO	Carbon Monoxide	AEGL-2 1hr
H2S	Hydrogen Sulfide	AEGL-1 1hr
O2	Oxygen	29 CFR 1910.146, Confined Spaces
LEL	Lower Explosive Limit	29 CFR 1910.146, Confined Spaces
NH3	Ammonia	AEGL-1 1hr
HNO3	Nitric Acid	AEGL-1, 1hr
SO2	Sulfur Dioxide	AEGL-1 1hr
Cl2	Chlorine	AEGL-1 1hr
HCN	Hydrogen Cyanide	AEGL-1 1hr
NO	Nitric Oxide	PAC-1 (compare Cl2 and H2S PAC-1 to AEGL-1)
PM 2.5	Particulate Matter 2.5	See PM-2.5 Action Levels Sheet

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline Levels for Airborne Chemicals
C/m	Counts (ionization events) per minue
mg/m3	milligrams per cubic meter
min	Minute
PAC	Protective Action Criteria
PEL	Permissible exposure limit
ppb	Parts per billion
ppm	Parts per million
PM	Particulate Matter
SOG	Standard Operating Guidelines
SPM	Single Point Monitor
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold Limit Value
µg/m3	Micrograms per cubic meter
µrem/h	Microrem per hour



Legend

- 6213 Applegate Lane
- Tier I
- Tier II

N
W E
S

0 100 200
Feet

United States
Environmental Protection Agency
Region 4

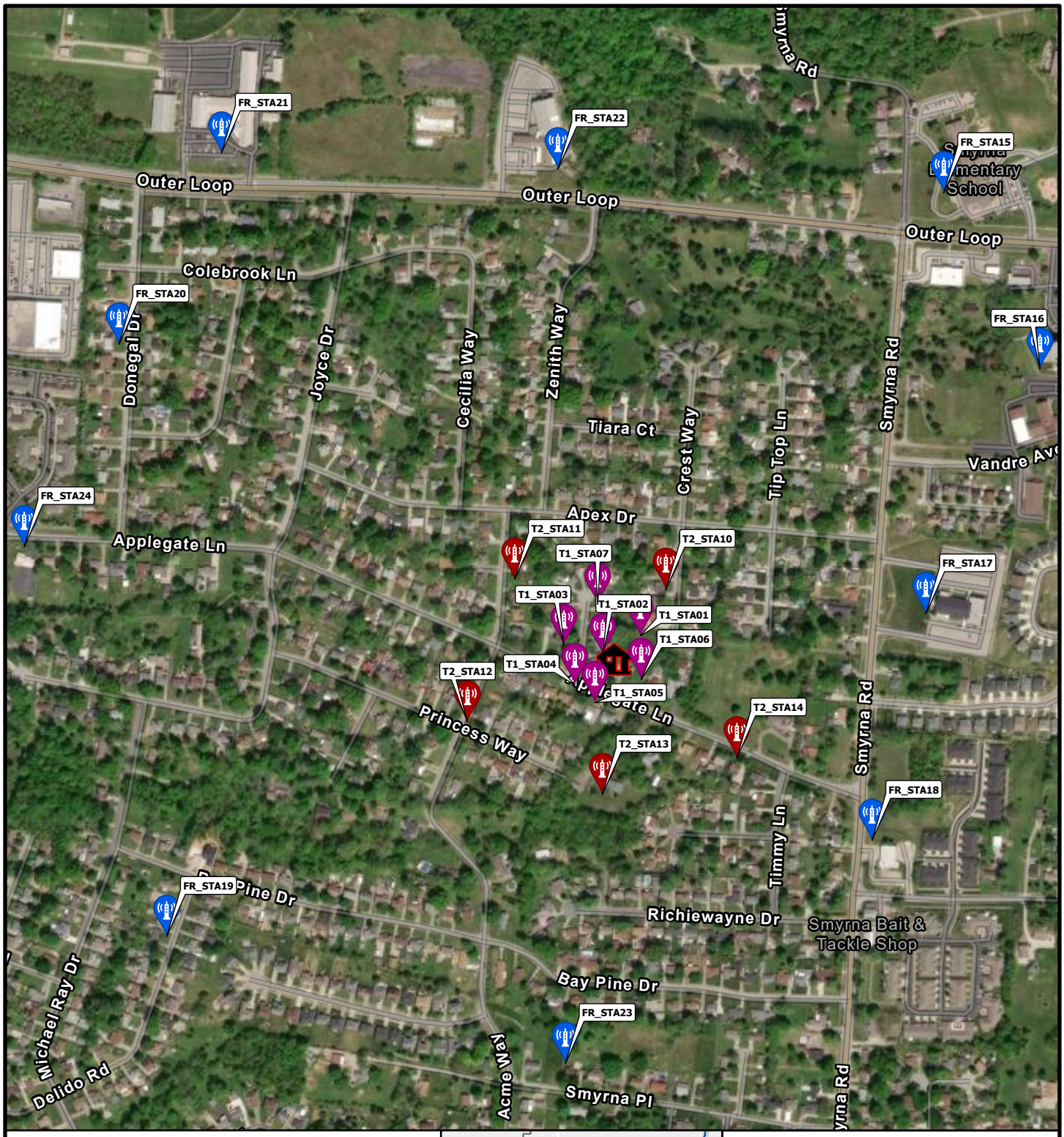
Applegate Lane Container Site
Air Monitoring Station Locations

City:	County:	State:
Louisville	Jefferson	Kentucky

TETRA TECH

Date: 10/10/2023
Analyst: MORGAN.TORRES

File: C:\Users\morgan.torres\OneDrive - Tetra Tech, Inc\START_V\Applegate Lane Containers\Applegate Lane Containers\Applegate Lane Containers.aprx



Legend

- 6213 Applegate Lane
- Tier I
- Tier II
- Contingency

N
W E
S

0 250 500
Feet

United States
Environmental Protection Agency
Region 4

Applegate Lane Container Site Air Monitoring Station Locations

City: Louisville
County: Jefferson
State: Kentucky

TETRA TECH

Date: 10/10/2023
Analyst: MORGAN.TORRES

File: C:\Users\morgan.torres\OneDrive - Tetra Tech, Inc\START_V\Applegate Lane Containers\Applegate Lane Containers\Applegate Lane Containers.aprx

PM2.5 (Particulate Matter ≤ 2.5 microns) Community Action Threshold Levels For Unified Command Use				
1-Hour Average (µg/m3)	**24-Hour Average (µg/m3)**	**Level of Health Concern**	**Meaning**	**Action**
0.0 - 40.0	0.0-12.0	**Good**	Air Quality is considered satisfactory, and air pollution poses little or no risk.	Implement communication plan.
40.1 - 80.0	12.1 - 35.4	**Moderate**	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually senstive to air pollution.	Issue public announcement about health effects. Stay out of areas with visible smoke.
80.1 - 175.0	35.5 - 55.4	**Unhealthy for Sensitive Groups**	Members of sensitive groups may experience health effects. The general public is not likely to be affected.	Recommend evacuation or shelter-in-place for sensitive populations.
175.1 - 300.0	55.5 - 150.4	**Unhealthy**	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.	Consider closing schools and cancelling outdoor events. Recommend shelter-in-place for affected neighborhoods.
300.1 - 500.0	150.5 - 250.4	**Very Unhealthy**	Health warnings of emergency conditions. The entire population is more likely to be affected.	Consider closing schools and cancel all outdoor events. Recommend shelter-in-place and/or evacuation for affected neighborhoods.
> 500.0	> 250.5	**Hazardous**	Health alert: everyone may experience more serious health effects.	Recommend closing schools & cancel outdoor events. Recommend closing workplaces and evacuating affected neighborhoods.

See The National Ambient Air Quality Standards for Particle Pollution REVISED AIR QUALITY STANDARDS FOR PARTICLE POLLUTION AND UPDATES TO THE AIR QUALITY INDEX (AQI) (https://www.epa.gov/sites/default/files/2016-04/documents/2012_aqi_factsheet.pdf)