



Tonight's Agenda

- 5:30 - Public Availability Session: Individual tables to dialogue with citizens
- 6:30 - Reconfigure for public meeting / break
- 7:00 - Public meeting: Introductions
- 7:05 - Opening Dialogue
- 7:10 - Syntex Facility Superfund Site Update
- 7:25 - Ethylene Oxide (EtO) in Verona
- 9:30 - Wrap up / Closing remarks

Introductions and Opening Dialogue



Syntex Facility Superfund Site Update

Brian Zurbuchen, Remedial Project Manager, EPA Region 7



Syntex Facility Superfund Site Update

- BCP and Syntex voluntarily signed an Order (June 2023)
 - Investigate source of 1,4-dioxane and extent in groundwater
 - Evaluate cleanup alternatives
- Work plans in preparation
- EPA public meeting in late 2023
- Additional Info: www.epa.gov/superfund/syntexfacility



Ethylene Oxide in Verona, Missouri

Mike Davis, Verona Community Coordinator, EPA Region 7



Ethylene Oxide in Verona

- Background on EtO
- EPA's EtO Air Monitoring Results
- EPA's EtO Regulatory Agenda
- BCP Scrubber Stack Test
- EPA Actions Taken
- BCP Actions Taken
- Additional Monitoring



Key Takeaways

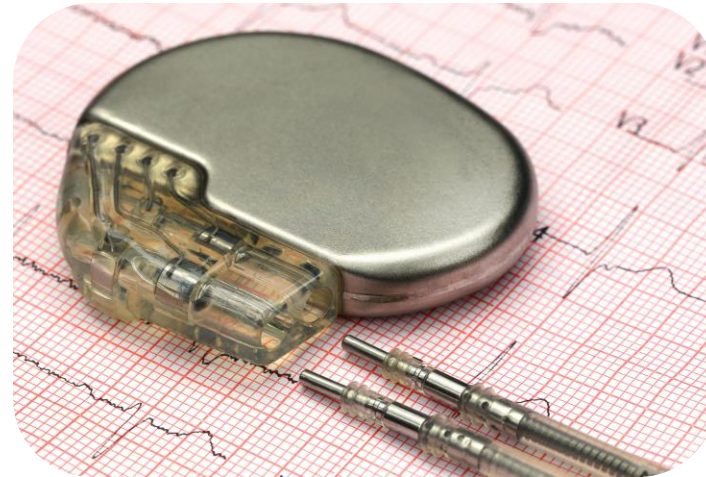
- Reducing EtO emissions is the best way to reduce risk.
- Monitoring data provide improved understanding of BCP emissions.
- Stack Test identified opportunities to reduce emissions through process changes.
- Improved railcar unloading process has been implemented.
- EPA is pursuing additional air monitoring at Verona City Wastewater Treatment Plant.
- EPA continues to work with BCP to identify and address emissions of ethylene oxide.



Background: What is Ethylene Oxide?

- **Gas**
- **Colorless**
- **Flammable**
- **Odorless**

(in concentrations we see in communities)



EtO Uses

- Makes Other Products
- Sterilizes



Over your lifetime

Breathing in EtO over many years can cause breast cancer and lymph cancer.



How is risk determined?

- EPA takes a protective approach when we consider timelines of exposure.
- We calculate long-term risk as though an individual would breathe the air containing EtO 24 hours a day, every day, for 70 years.



Where EtO comes from at the facility?

There are two types of EtO emissions from the facility:

Controlled Emissions

Fugitive Emissions



In this community, risk is being caused by both fugitive and control equipment emissions, as well as background levels.



Reducing EtO emissions is the best way to reduce risk.





Air Monitoring Study Objectives

Mike Davis, Verona Community Coordinator, EPA Region 7

- Collect EtO concentration data near the BCP Ingredients facility and in the community using best available technologies and laboratory analysis methods
- Evaluate new monitoring methods for EtO under field conditions
- Assure data quality and validity for scientific integrity in decision-making
- Collect wind speed and wind direction data to inform modeling inputs and potential emission sources
- Communicate results transparently to the public



Air Monitoring Study Overview

- Completed a 4-month field study (Oct. 5, 2022, to Jan. 30, 2023)
- Acquired 24-hour EtO canister samples at three sites (called S1, S2, and S3)
- Conducted periodic mobile EtO measurements and canister grab samples
- Measured wind speed and direction at site S1 (Wastewater Treatment Plant) throughout the study
- Final lab data delivered in March 2023



24-hour Canister Sampling

- 24-hour canister sampling with automatic timers
- Approximate 1 in 3-day sampling interval
- EtO lab analysis with method detection limit (MDL) less than 0.05 parts per billion by volume (ppbv)
- Weekly canister changeouts (team deployed from R7 Kansas City)
- QC samples:
 - 1 duplicate sample per week, rotated between 3 sites
 - 1 trip/field blank each week
 - 1 laboratory intercomparison sample each week



24-hour Canister Locations



S1: North of BCP
Wastewater treatment plant (fenceline)
150 m to 200 m from possible EtO sources
Valid 24-hr canister sampling days = 35

S2: East of BCP
3rd & Washington St
200 m to 450 m from possible EtO sources
Valid 24-hr canister sampling days = 33

S3: Southeast of BCP
Near elementary school playground
650 m to 900 m from possible EtO sources
Valid 24-hr canister sampling days = 36

Site 1: Verona Wastewater Treatment Plant

S1

BCP

- 24-hour canister sampling
- Weather measurements
 - Wind speed / direction
 - Temperature and humidity
- Periodic stationary EtO measurements from mobile unit parked near S1



Sites S2 and S3 – Southeast of BCP (in community)

S2



SW Corner 3rd and Washington

- 24-hour canister sampling
- Periodic visits by mobile unit

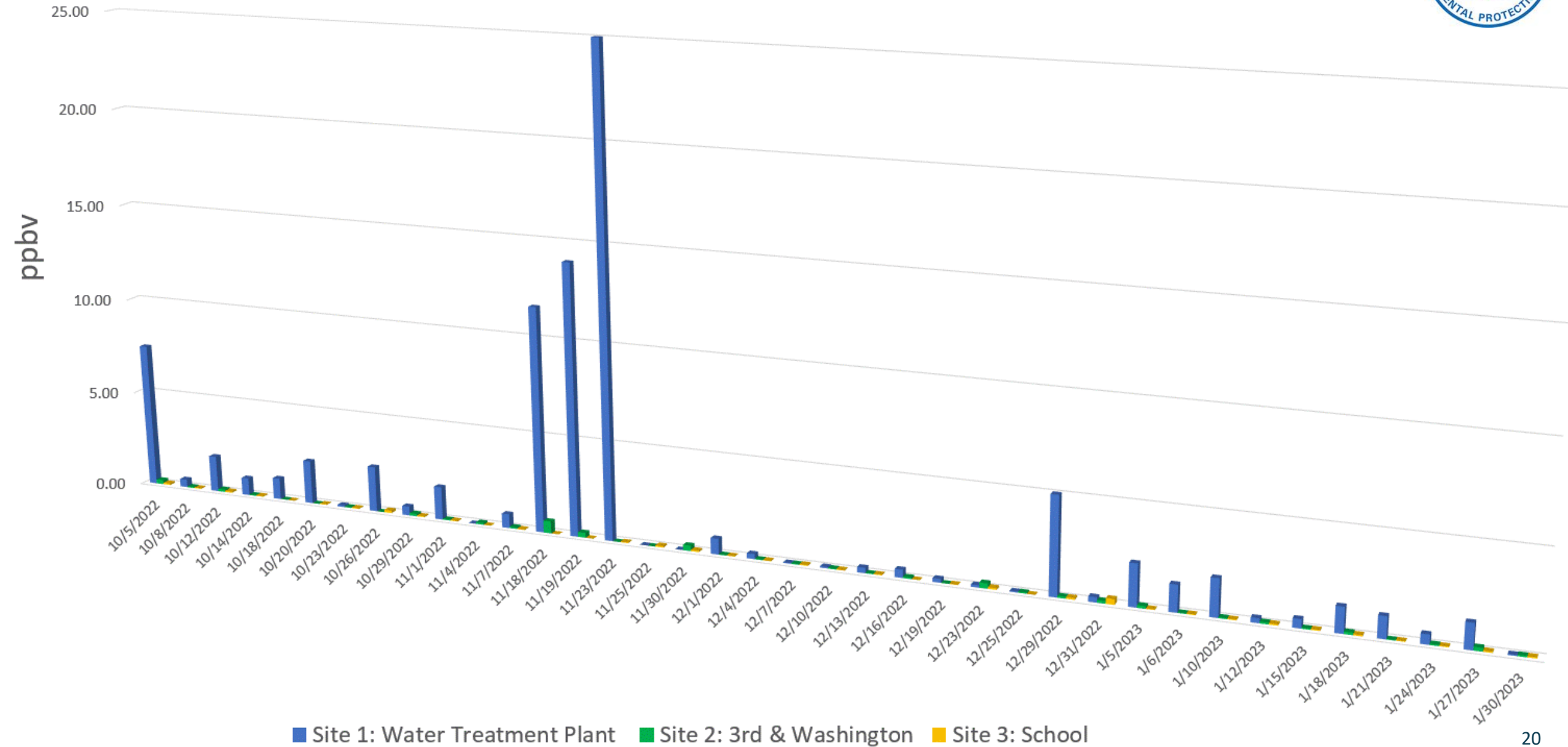
S3



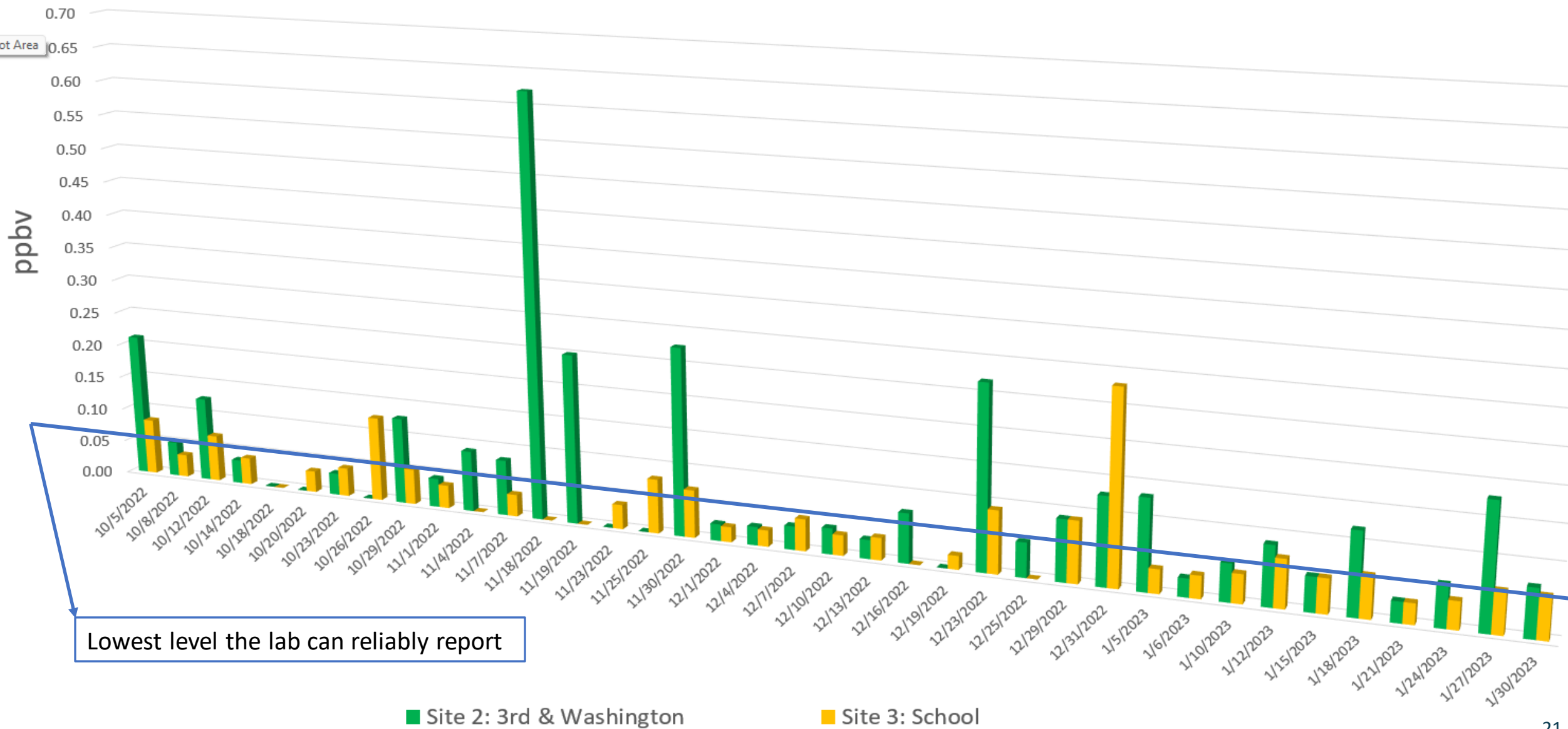
School District
Property



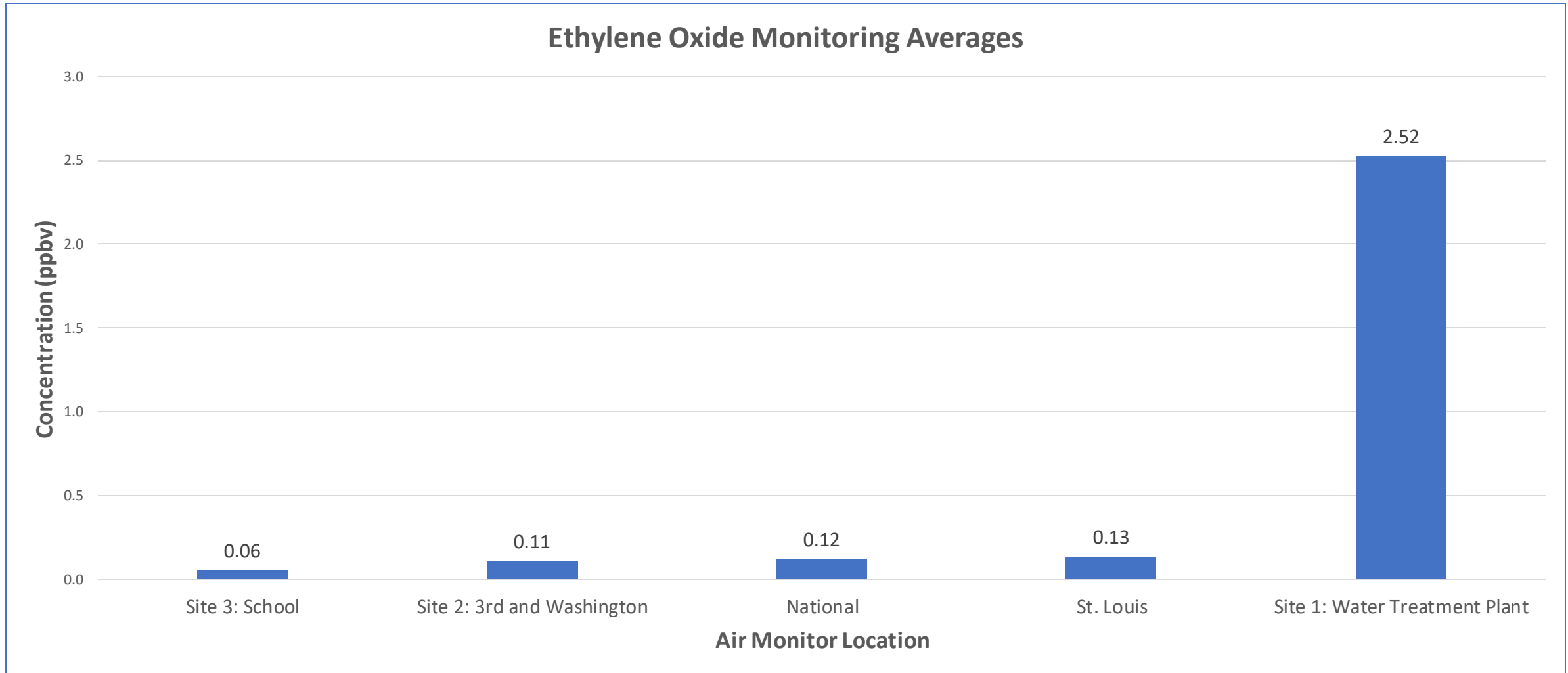
24-hour Average EtO Concentrations (ppbv)



A Closer Look at Sites 2 and 3



Comparing the Results



24-Hour Canister Sample Results Summary



24-Hour EtO Concentrations in parts per billion by volume (ppbv)

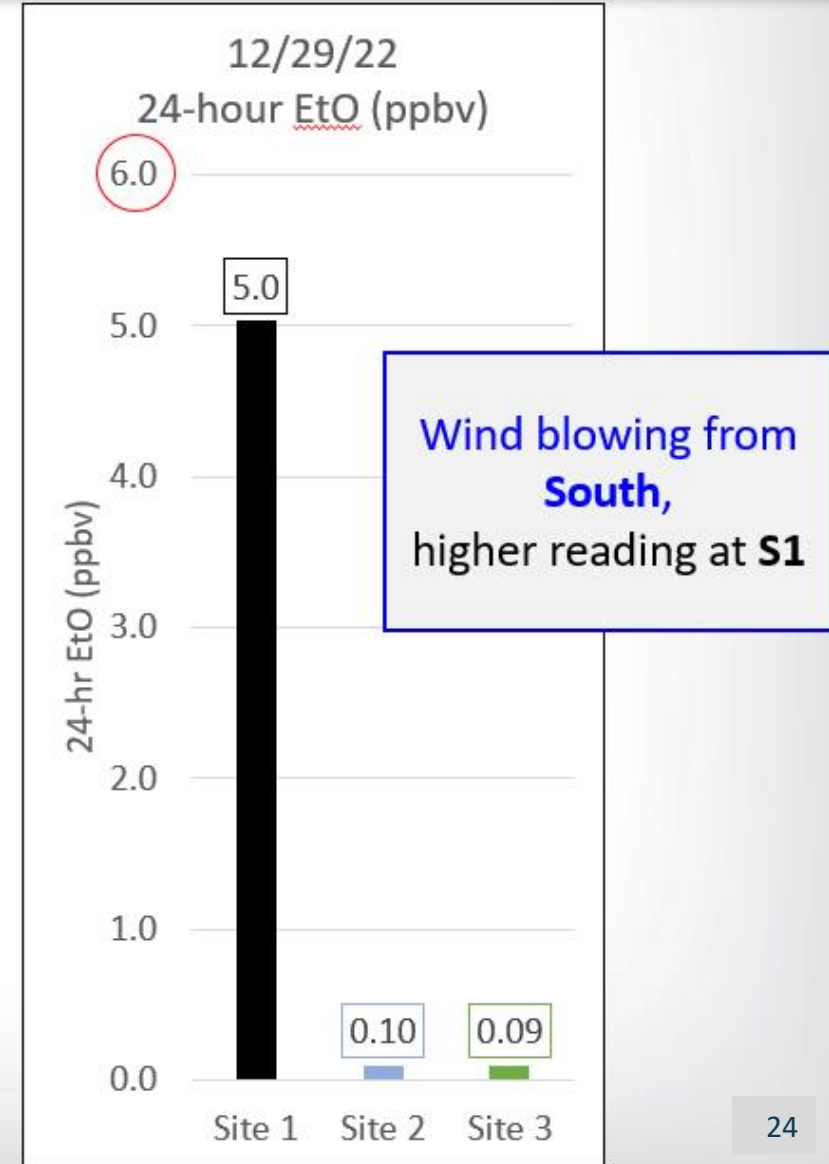
	Site 1			Site 2			Site 3		
	S	C	I	S	C	I	S	C	I
10/5/2022	7.47	7.10	11.0	0.21			0.08		
10/8/2022	0.41			0.05			0.03*		
10/12/2022	1.87			0.13	0.13	0.16	0.07		
10/14/2022	0.90			0.04*			0.04*		
10/18/2022	1.10			-			-	-	0.13
10/20/2022	2.24			-			0.03*		
10/23/2022	0.09	0.08	0.10	0.03*			0.04*		
10/26/2022	2.35			-			0.13		
10/29/2022	0.46	0.54	0.57	0.13			0.05		
11/1/2022	1.71			0.04*			0.03*		
11/4/2022	-			-	0.09	0.12	ND		
11/7/2022	0.72			0.08			0.03*	-	-
11/10/2022	-			-			-		
11/13/2022	-			-			-		
11/18/2022	11.6			0.62			-		
11/19/2022	-	-	14.0	0.25			-		
11/23/2022	-	25.5	28.0	-			0.04*		
11/25/2022	-			-			0.08		
11/30/2022	-			0.28	0.35	0.40	0.07		

	Site 1			Site 2			Site 3		
	S	C	I	S	C	I	S	C	I
12/1/2022	0.81			0.03*			0.02*		
12/4/2022	0.26			0.03*			0.02*	0.03*	0.07
12/7/2022	0.04*			0.03*			0.05*		
12/10/2022	0.07			0.04*			0.03*		
12/13/2022	0.27	0.06	0.20	0.03*			0.03*		
12/16/2022	0.41	0.45	0.54	0.07			ND		
12/19/2022	0.19			ND			0.02*		
12/23/2022	0.12			0.27	0.25	0.25	0.09		
12/25/2022	0.05*			0.05			ND		
12/29/2022	5.03			0.10			0.09	invalid	0.15
12/31/2022	0.26			0.13			0.28		
1/5/2023	2.16			0.13			0.04*		
1/6/2023	1.37	1.35	1.40	0.03*			0.03*		
1/10/2023	1.92	1.89		0.06			0.04*		
1/12/2023	0.24			0.09			0.07		
1/15/2023	0.45			0.05	0.04	0.05	0.05		
1/18/2023	1.32			0.12			0.06		
1/21/2023	1.12			0.03*			0.03*	0.04*	0.04
1/24/2023	0.49			0.06			0.04		
1/27/2023	1.32	1.34	1.70	0.18			0.06		
1/30/2023	0.05			0.07			0.07		

Qualifier	Explanation
-	Sample invalidated in field
*	EtO detected but result is less than Method Detection Level
ND	EtO not detected in sample
invalid	Sample result invalidated, outlier

Sample ID	Explanation	Laboratory
S	Primary Sample	Eastern Research Group, NC
C	'Collocated' Duplicate Sample	Eastern Research Group, NC
I	External Laboratory Comparison Sample	EPA Region 4, GA

12/29/2022 - 24-Hour Wind and EtO (ppbv)



Mobile Unit Sampling

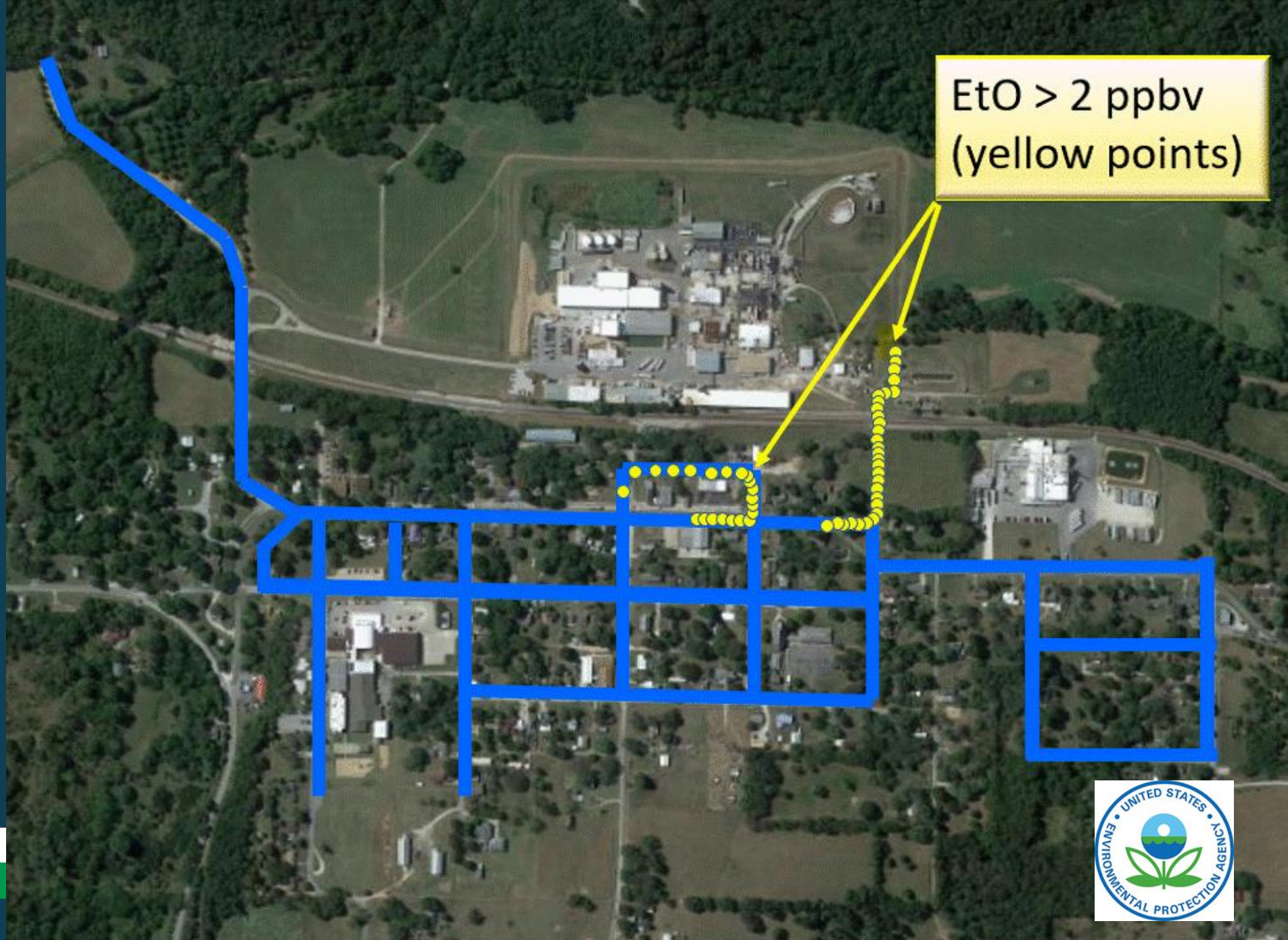


- EtO real-time concentration measurements
 - EtO MDL of ~2 ppbv
 - Time-synchronized location and wind data
- Performed weekly during 24-hour canister changeouts
- Mobile surveys of EtO levels in Verona
- Stationary measurements tried to capture potential maximum concentrations



Mobile Measurement Surveys

- EtO real-time concentration measurements > 2 ppbv are consistent with 24-hour data.



What does it mean?

- Collecting monitoring data has improved our understanding of BCP emissions.
- Monitoring data supports our previous air modeling, which predicts potential for elevated risk near the facility.
- EPA is working with BCP to reduce emissions.
- We will continue to engage with and inform the community.



EPA's National Ethylene Oxide Regulatory Agenda

Mike Davis, Verona Community Coordinator, EPA Region 7

- Three Proposed Rules
 - Commercial Sterilizers
 - Facilities that use ethylene oxide as a pesticide
 - Facilities classified as Synthetic Organic Chemical Manufacturing and the Polymers and Resins Industry
- Not applicable to BCP Ingredients
- www.epa.gov/hazardous-air-pollutants-ethylene-oxide/actions-protect-workers-and-communities-ethylene-oxide-eto



Ethylene Oxide in Verona, Missouri

- BCP Scrubber Stack Test
- EPA Actions Taken
- BCP Actions Taken

Dave Hensley, Chemical Accident Prevention Section Chief, EPA Region 7



BCP Scrubber Stack Test

- Scrubber stack test was indicative of reduced efficiency during increased concentrations of EtO at high flow rates to the control unit.
- Data collected included short periods of elevated emissions.
 - These were short concentration spikes on the order of minutes.
- Since the stack test, BCP has revised its process for railcar unloading and is minimizing the frequency of multiple processes venting to the scrubber at the same time.



EPA Actions

EPA continues to work with BCP to identify and mitigate controlled and fugitive emissions of EtO.

- EPA requested BCP's revised standard operating procedure for the railcar unloading process.
- EPA issued an information request to BCP to gain an understanding of BCP processes and operational compliance.
 - BCP has complied with the order and EPA continues to review and evaluate the information submitted by BCP.
- EPA inspected the facility on June 22-23, 2023, focusing on BCP's Leak Detection and Repair Program.
- On July 11, 2023, EPA issued an order to BCP to initiate continuous monitoring of stack emissions for a 30-day period.
- Enforcement action for violations discovered during the 2022 Clean Air Act 112(r) Inspection.



Additional Stack Test Monitoring

- On July 11, 2023, EPA issued an order to BCP to conduct continuous monitoring of the stack.
 - 30-day monitoring period
 - Scrubber outlet only
- To evaluate the effect of process changes at the facility



BCP Actions

BCP continues to identify and mitigate controlled and fugitive emissions of EtO.

Completed Projects:

- Revised the railcar unloading process.
- Installed dry disconnects on the railcar unloading system.
- Minimized the overlap of processes venting EtO to the scrubber.
- Modified the venting of a process building to the scrubber.
- Hired a consultant to review and make recommendations for further improving the efficiency of the EtO scrubber.

Possible Projects:

- Automating the EtO railcar unloading process.
- Implement consultant recommendations for further improving the efficiency of the EtO scrubber, which could include additional scrubber(s).
- Continue to evaluate and reduce the number of unnecessary connections to further minimize potential fugitive emissions.

Ethylene Oxide in Verona, Missouri

- Additional Monitoring

Mike Davis, Verona Community Coordinator, EPA Region 7



Additional Air Monitoring: Site 1

- EPA is actively seeking additional community monitoring near Site 1 at the Verona Wastewater Treatment Plant to:
 - Continue to inform the public
 - Understand how process changes to reduce emissions at BCP affect EtO air concentrations
- Our goal is to get this monitoring going as soon as possible.
- We plan on partnering with our experts in the EPA Office of Research and Development.



Key Takeaways

- Reducing EtO emissions is the best way to reduce risk.
- Monitoring data provide improved understanding of BCP emissions.
- Stack Test identified opportunities to reduce emissions through process changes.
- Improved railcar unloading process has been implemented.
- EPA is pursuing additional air monitoring at Verona City Wastewater Treatment Plant.
- EPA continues to work with BCP to identify and address emissions of ethylene oxide.



Information for your community



The screenshot shows the EPA website interface. At the top left is the EPA logo with the text "United States Environmental Protection Agency". To the right is a search bar labeled "Search EPA.gov". Below the logo are navigation links: "Environmental Topics", "Laws & Regulations", "Report a Violation", and "About EPA". The main content area is titled "EPA in Missouri" with a "CONTACT US" link. Below this is the heading "BCP Ingredients Inc. Facility in Verona, Missouri". Underneath is a section for "Latest Actions" with a paragraph: "EPA sent an Information Request letter to BCP Ingredients Inc. on March 27, 2023. An extension request was agreed upon. The schedule is provided in the following table. (See link to letter under Related Documents below.)". A table follows with two columns: "Request Number(s)" and "Date of Response".

Request Number(s)	Date of Response
12, 13, 15, 16 (personal monitor and Drager data), 17, 18 and 19	April 10, 2023
14 (stack test data) and 16 (ambient monitor data)	April 17, 2023
20 and 21	April 21, 2023
1, 4, 5, 6, 7, 8, 9, 10 and 11	April 26, 2023
2 and 3	May 15, 2023

EPA Webpage

- www.epa.gov/mo/bcp-ingredients-inc-facility-verona-missouri
- Single location for EPA information
- State program management
- OSHA and worker safety
- EPA Actions
 - Ethylene Oxide
 - Risk Management Program Inspection
 - Syntex Facility Superfund Site



Questions/ Discussion



Thank you for attending

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