



# Benzene Fenceline Monitoring; Lessons Learned for Ongoing Compliance August 8, 2018

Jason Robles, President



# Presentation Topics

- EPA Alternative Test Method ALT-122
- Refinery Sector Proposed Amendments  
March 2018
- Refinery “X” Pilot Study Results
  - Laboratory Comparison
  - Data Trends
  - Obstacles & Solutions

# Alternative Test Method ALT-122



- Benzene Method Calculation
- Field Duplicates and Field Blanks Required
  - **Original:** 2 Field Blanks plus 1 Field Duplicate for every 10 Field Samples
  - **Updated:** 1 Field Blank and 1 Field Duplicate for <19 Field Samples or 2 Field Duplicates for 20+
- 14 Day Sampling Period; +/- 1 day grace period



# RSR Proposed Amendments



**Signed by EPA March 19, 2018**

- As a result of 3 separate petitions filed by AFPM/API (2) & Earthjustice (1)
- Addresses several sections of the RSR – Fenceline Monitoring Specific:
  - 'Known VOC' defined in relation to additional monitors at 50m
  - Corrective Action clarification
  - Reporting Timing Requirements
  - Laboratory calculation/reporting of duplicates

# Refinery "X" Pilot Study

Pilot Sampling Period: 09/19/17 - 12/26/17

7 Sampling Periods

Located in Northeast United States

3 different laboratories for data comparison

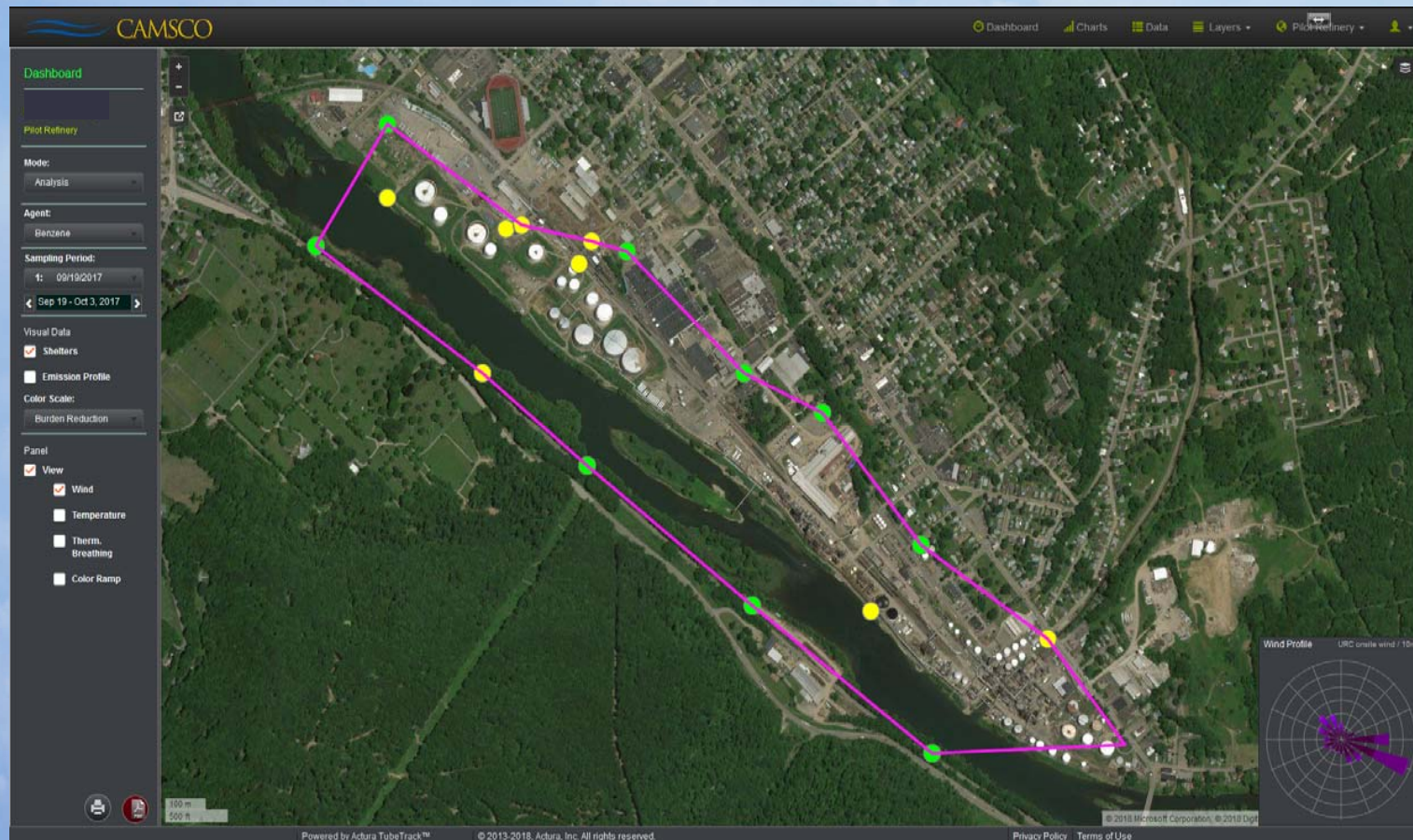
- **Lab A:** 14 Field Samples, 2 Field Blanks & 2 Duplicates
- **Lab B:** 4 Field Samples
- **Lab C:** 4 Field Samples

Same sampling media for each laboratory

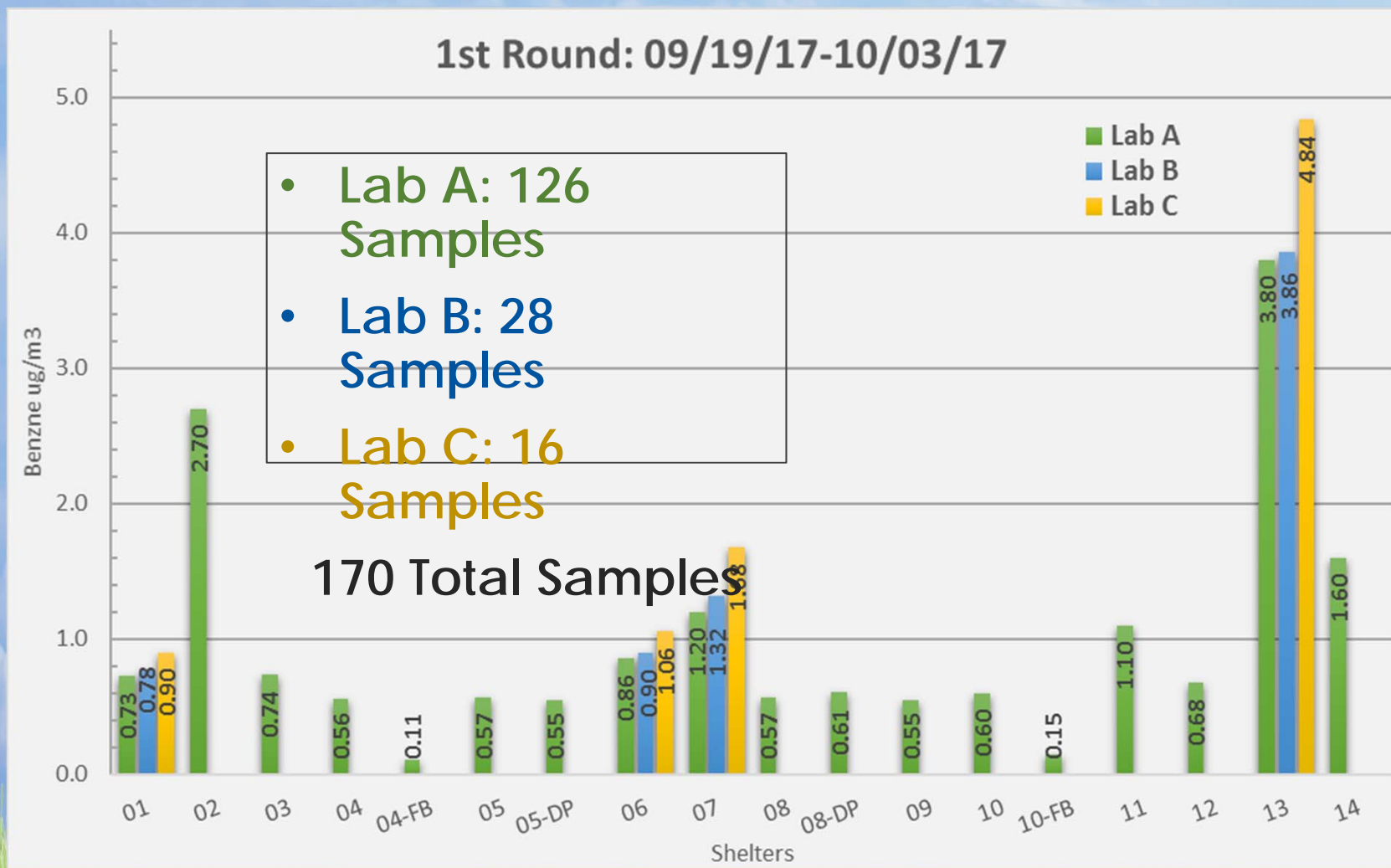




# Pilot Study: Refinery "X"



# Pilot Study: Lab Data



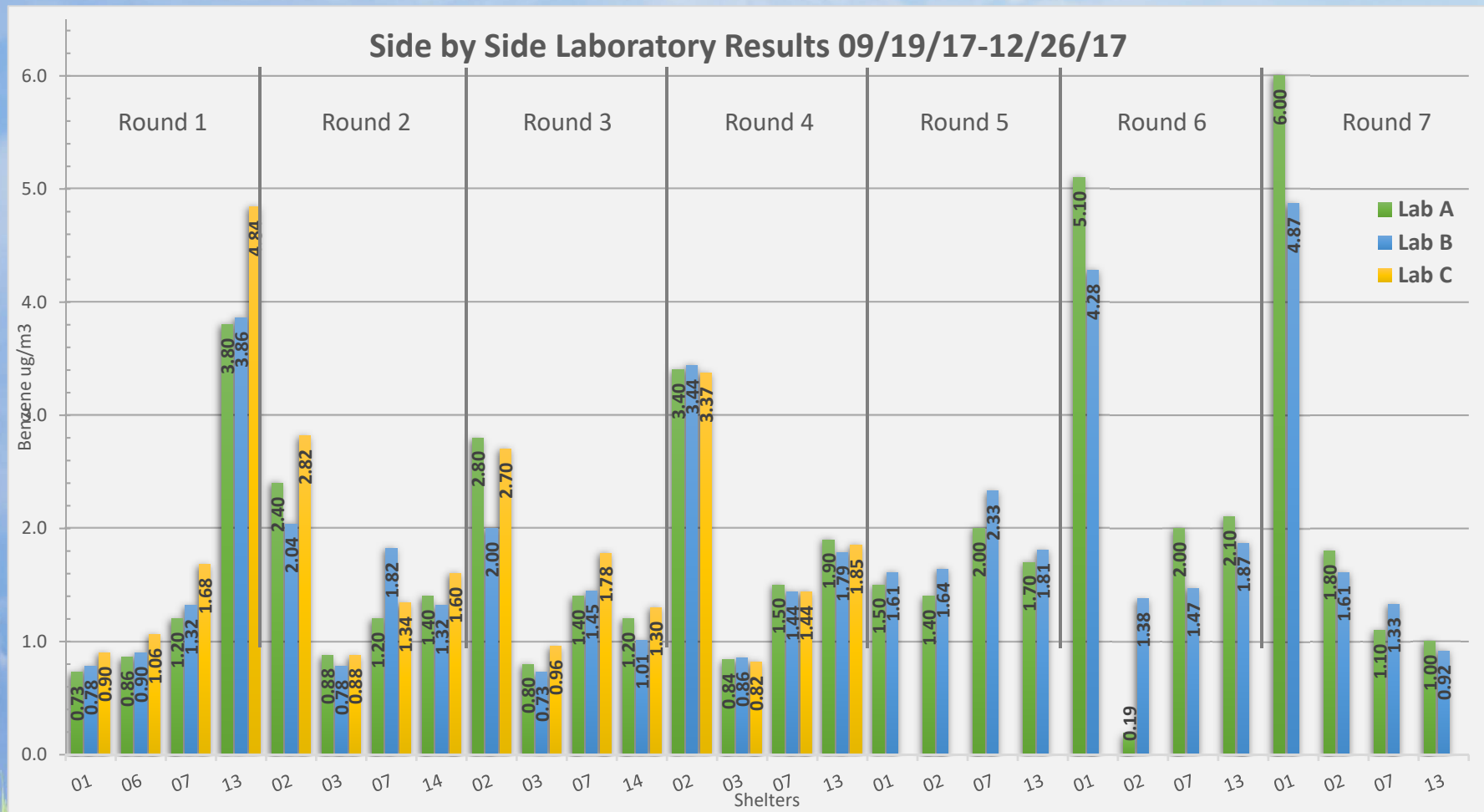


# Pilot Study: Lab Comparison

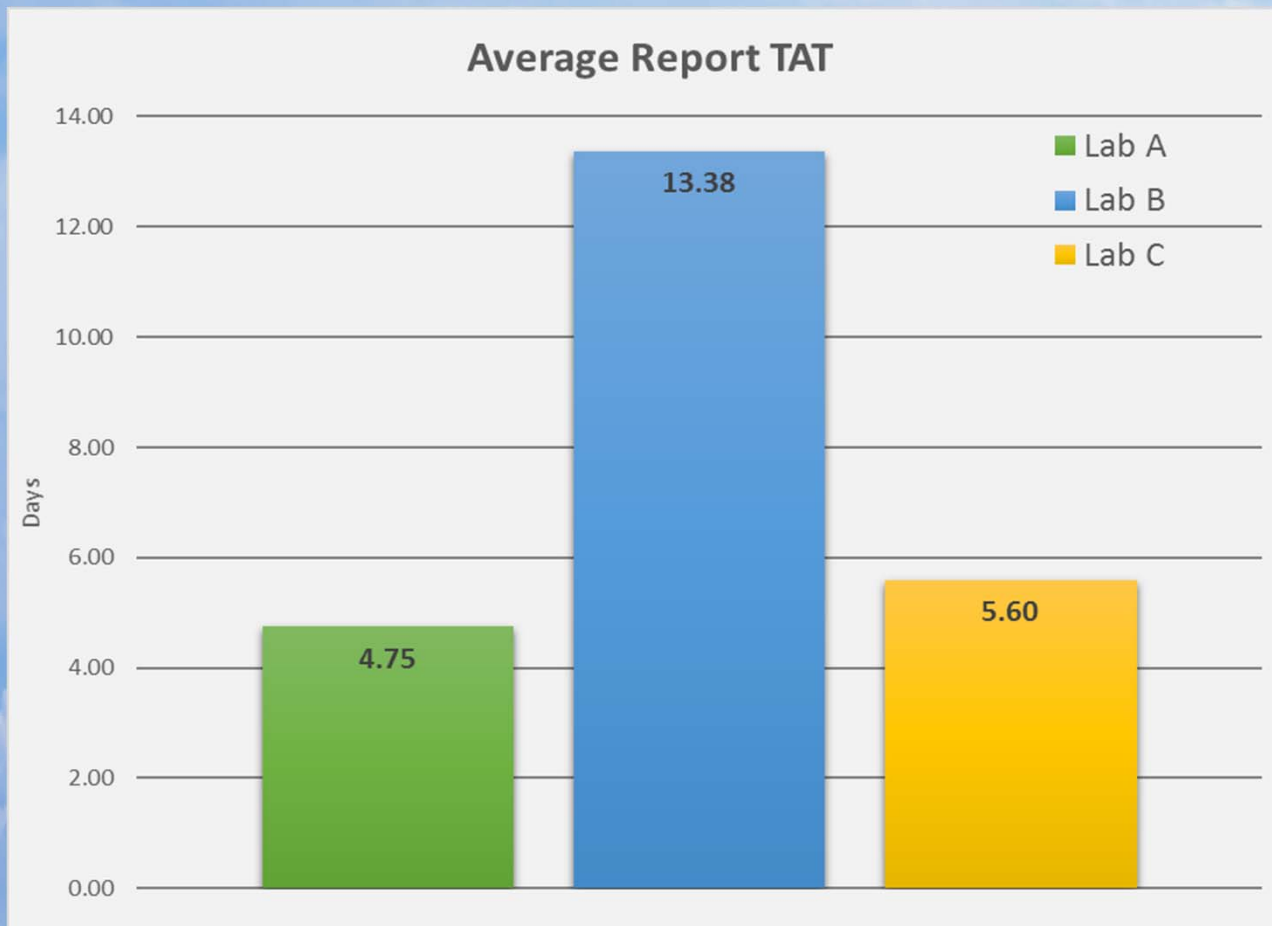
- Refiner analyzed results using Tukey-Kramer Method
  - All labs performed within acceptable level of one another
- Lab C closed after 4 sample periods
- Average report TAT varied



# Pilot Study: Lab Comparison



# Pilot Study: Lab Comparison



**Lab A:**

18 Samples per  
round

**Lab B:**

4 Samples per  
round

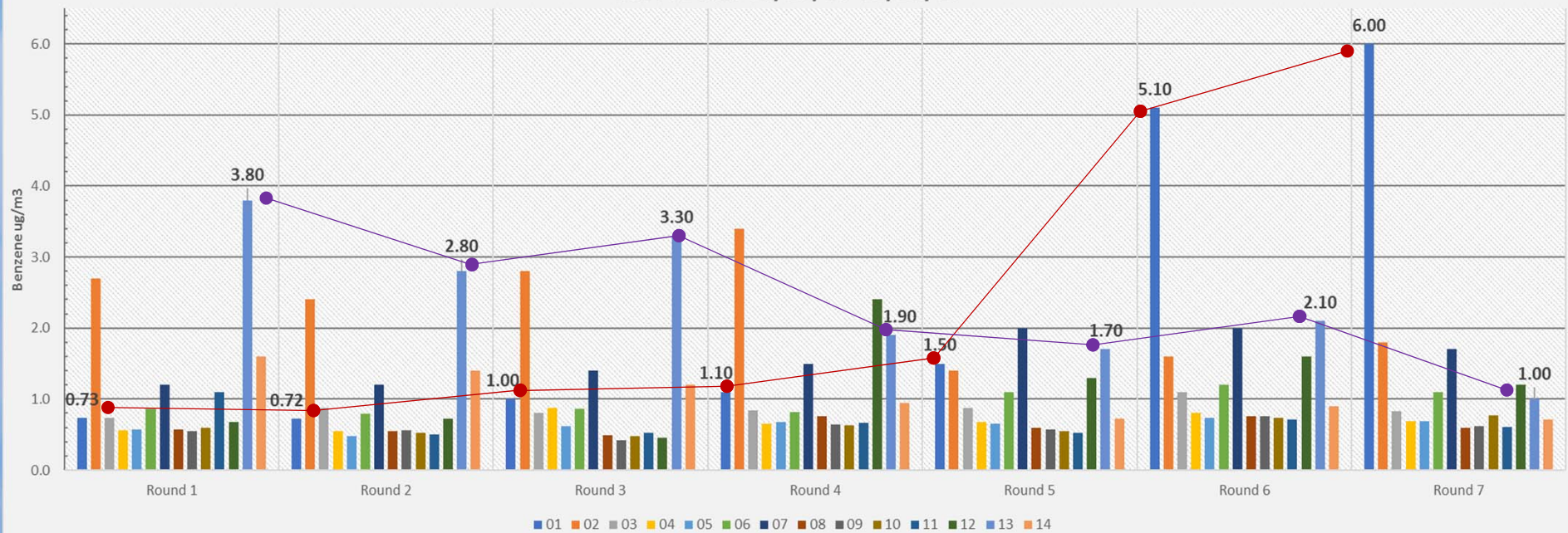
**Lab C:**

4 Samples round



# Pilot Study: Data Trends

Lab A Data: 09/19/17-12/26/17



# Pilot Study: Data Trends



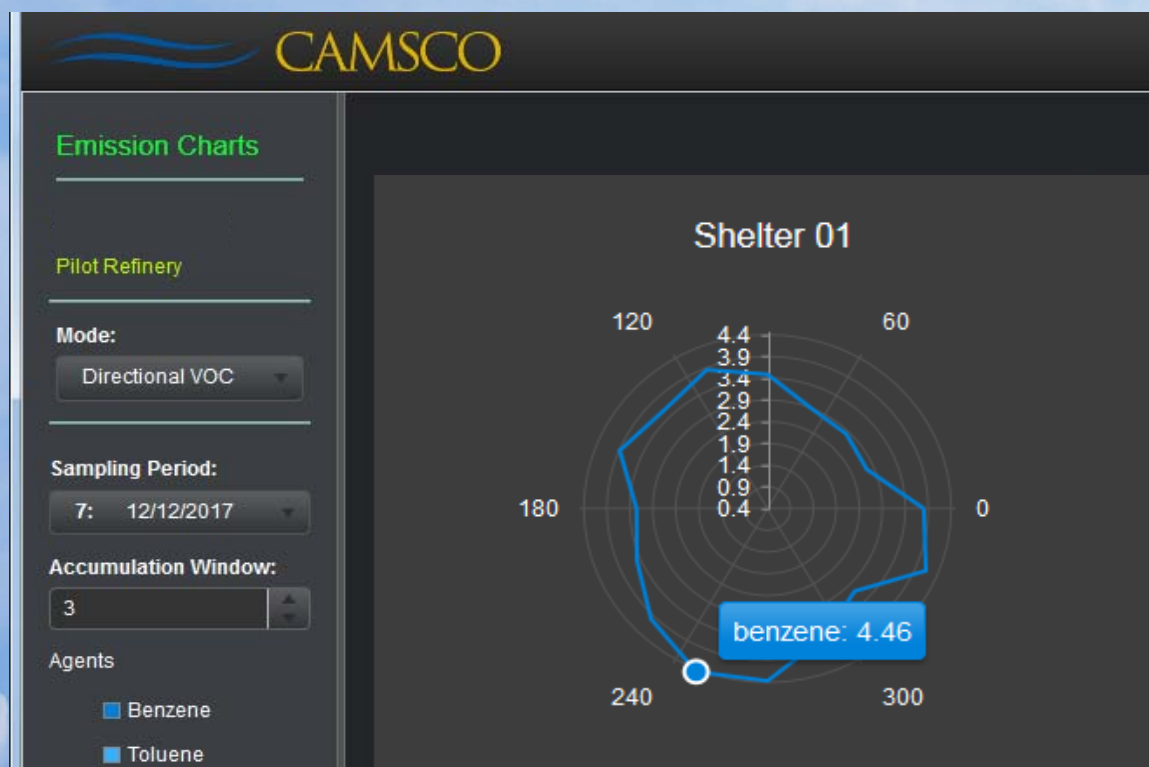
## Shelter 01 Data:

Round 5: 1.50 ug/m<sup>3</sup>

Round 6: 5.10 ug/m<sup>3</sup>

Round 7: 6.00 ug/m<sup>3</sup>

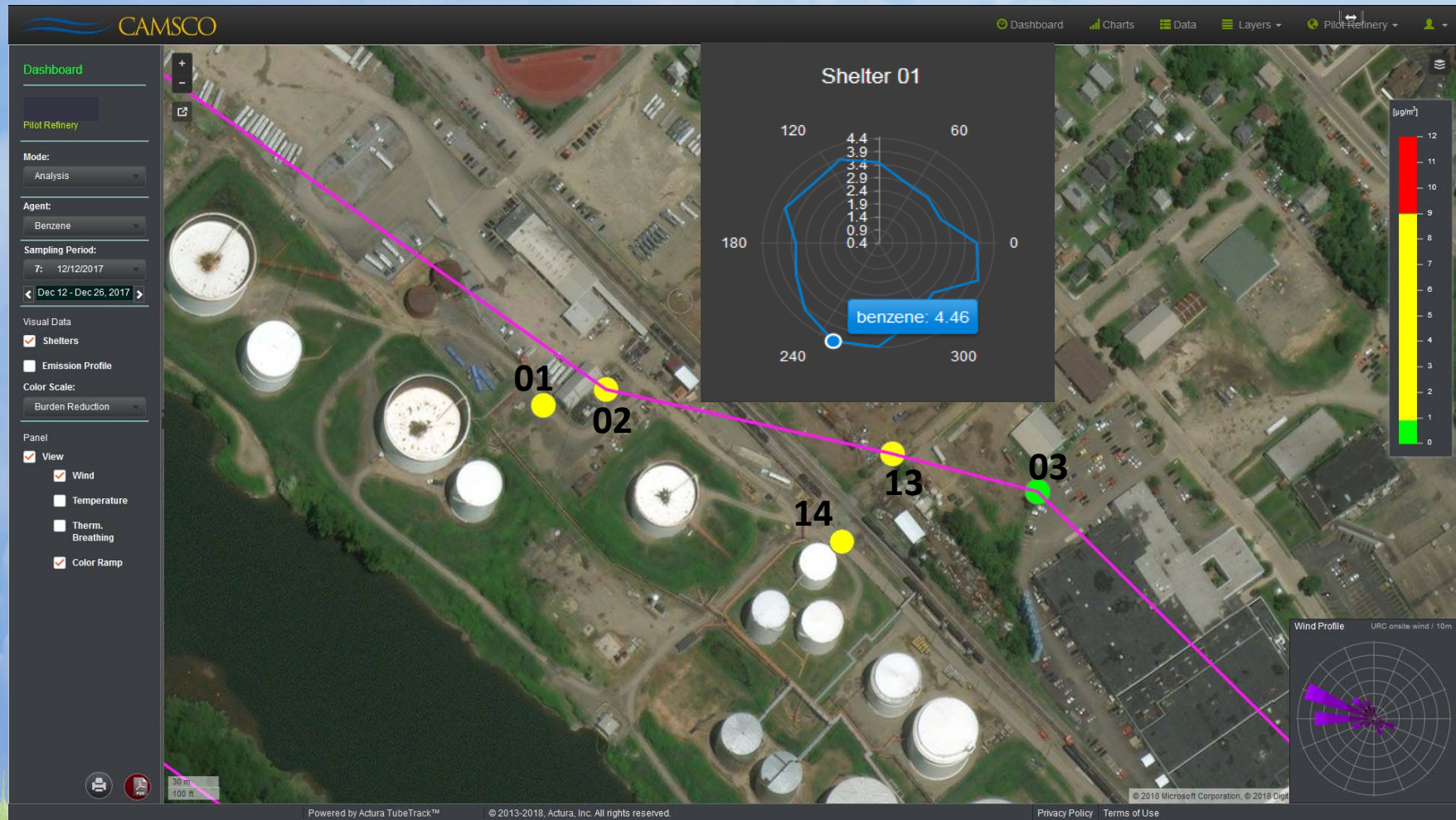
Possible cause  
of Shelter 01  
Benzene Level  
Increase?



Directional VOC Accumulation  
Cycle 7



# Pilot Study: Data Trends



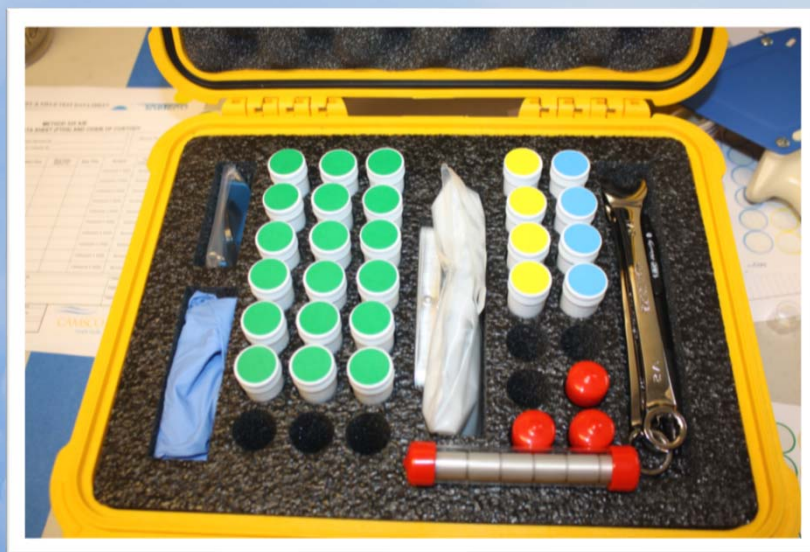


# Pilot Study: Obstacles & Solutions



Obstacle: Staying organized while using 3  
labs

Solution: Color coding





# Pilot Study: Obstacles & Solutions



## Obstacle: Error-free Field Test Data Sheet

Tube Serial Number	Shelter Number	SA - Field Sample DP - Duplicate FB - Field Blank	Start Date (MM/DD/YR)	Start Time	Stop Date (MM/DD/YR)	Stop Time	Sorbent	Target Compound
<del>1099260</del>	<del>07</del>	<del>SA DP FB</del>	<del>10/03/17</del>	<del>10:06</del>			Carbopack X 40/60	Benzene
1067987	03	SA DP FB	10/03/17	10:24	10/12/17	14:41	Carbopack X 40/60	Benzene
1067914	04	SA DP FB	10/31/17	10:29		14:12	Carbopack X 40/60	Benzene
1099084	05	SA DP FB	10/31/17	10:35		14:08	Carbopack X 40/60	Benzene
1099054	05	SA DP FB	10/31/17	10:36		14:08	Carbopack X 40/60	Benzene
1099045	14	SA DP FB	10/31/17	10:54		14:19	Carbopack X 40/60	Benzene
1099004	02	SA DP FB	10/31/17	11:01		14:25	Carbopack X 40/60	Benzene
1099094	01	SA DP FB	10/31/17	11:11		14:31	Carbopack X 40/60	Benzene
1099073	06	SA DP FB	10/31/17	11:24		14:31	Carbopack X 40/60	Benzene
		SA DP FB					Carbopack X 40/60	Benzene

**Met Data**

Average Temperature: \_\_\_\_\_

Units: °F °C

Average Barometric Pressure: \_\_\_\_\_

Units: hPa, inHg, mmHg, mb

**Special Notes/Instructions:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

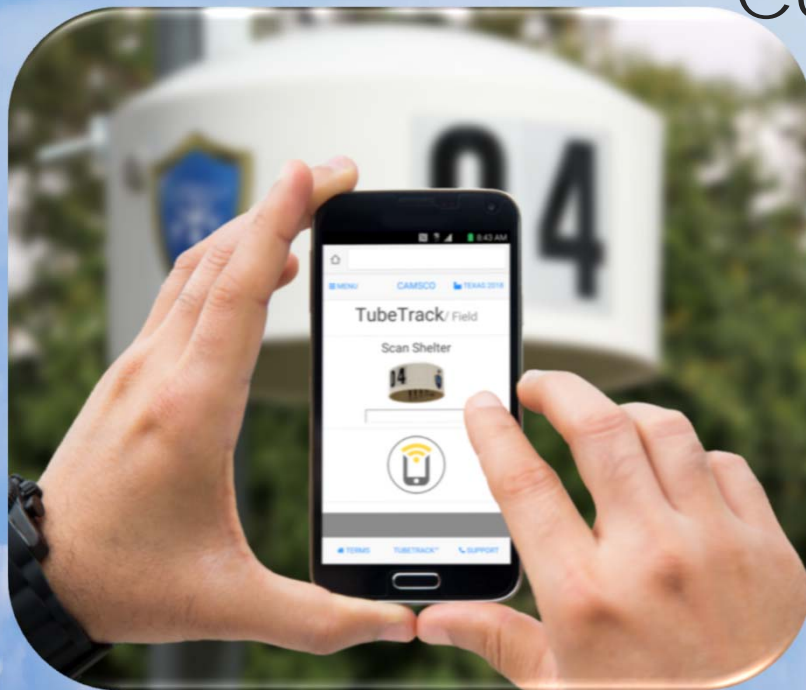
\_\_\_\_\_

\_\_\_\_\_

# Pilot Study: Obstacles & Solutions



## Solution: Mobile Field Deployment & Collection



- Met Data, Time & Date Stamp collected automatically
- Information transmitted to Laboratory via 'the cloud'
- Laboratory downloads all Field Test Data Sheet information

Limited handwriting and data entry greatly reduces time spent and errors



# Questions ?



6732 Mayard Road  
Houston, Texas 77041  
Phone +1 (713) 983-0800  
Fax +1 (713) 983-7200  
jroble@camsco.com  
**[www.325Monitoring.com](http://www.325Monitoring.com)**