CENTER FOR TOXICOLOGY AND ENVIRONMENTAL HEALTH, LLC

CTEH® Project #40442
West Fertilizer Plant Explosion
Summary of Air Monitoring Results
April 22, 2013 07:00

This data report discusses real-time air monitoring data collected between 4/21/2013 16:00 and 4/22/2013 04:00 in support of remediation operations conducted near the West Fertilizer Plant Explosion in West, TX.

Real-time air monitoring was conducted for VOCs, ammonia (NH_3), nitrogen dioxide (NO_2), lower explosive limit (LEL) and oxygen (O_2) using remote-telemeting RAESystems® AreaRAEs and hand-held instruments including RAESystems® MultiRAE and Gastec® colorimetric detector tubes.

Tables 1 and 2 (below) display data summaries for hand-held and AreaRAE instruments, respectively. Site maps and charts are available as attachments.

Table 1: Hand-held Real-time Air Monitoring Summary[1]
April 21, 2013 16:00 – April 22, 2013 04:00

Analyte	Instrument	Number of Readings	Number of Detections	Average of Detections	Range of Detections
Rail Right of Way					
Ammonia	MulitiRAE	1	1	2 ppm	2 ppm
NO_2	MultiRAE	2	0	NA	< 0.1 %
VOC	MultiRAE	3	0	NA	< 0.1 ppm
Work Area					
Ammonia	Gastec 3L	1	1	1 ppm	1 ppm
	MultiRAE	2	0	NA	< 1 ppm
LEL	MultiRAE	1	0	NA	< 1 %
NO_2	MultiRAE	1	0	NA	< 0.1 ppm
VOC	MultiRAE	1	0	NA	< 0.1 ppm

[1]*Please note: The data displayed here has not undergone complete QA/QC analysis and is presented in a preliminary format.*
PPM = Parts Per Million

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Table 2
Stationary AreaRAE Monitoring Stations Data Logged
4/21/2013 16:00 to 4/22/2013 04:00

Unit	Analyte	Count of Readings	Count of Detections	Average of Detections	Max Detection
AR10	LEL	148	0	NA	< 1 %
	NH3	148	147	5 ppm	23 ppm
	NO2	148	0	NA	< 0.1 ppm
	O2	148	148	21.20%	21.3 %
	VOC	148	126	0.3 ppm	1.6 ppm
AR12	LEL	521	0	NA	< 1 %
	NH3	521	0	NA	< 1 ppm
	NO2	521	0	NA	< 0.1 ppm
	O2	521	521	20.90%	20.9 %
	VOC	521	0	NA	< 0.1 ppm
AR13	LEL	2953	0	NA	< 1 %
	NH3	2953	0	NA	< 1 ppm
	NO2	2953	0	NA	< 0.1 ppm
	O2	2953	2953	20.90%	20.9 %
	VOC	2953	901	0.1 ppm	0.2 ppm
AR14	LEL	3015	0	NA	< 1 %
	NH3	3015	0	NA	< 1 ppm
	NO2	3015	0	NA	< 0.1 ppm
	O2	3015	3015	21.00%	21.3 %
	VOC	3015	0	NA	< 0.1 ppm
AR15	LEL	429	0	NA	< 1 %
	NH3	429	0	NA	0 ppm
	NO2	429	0	NA	< 0.1 ppm
	O2	429	429	20.90%	20.9 %
	VOC	429	0	NA	< 0.1 ppm
AR16	LEL	2319	0	NA	< 1 %
	NH3	2319	3	1 ppm	1 ppm
	NO2	2319	1	0.1 ppm	0.1 ppm
	O2	2319	2319	21.20%	22.1 %
	VOC	2319	704	0.3 ppm	2.6 ppm
AR17	LEL	2420	0	NA	< 1 %
	NH3	2420	56	1 ppm	1 ppm
	NO2	2420	0	NA	< 0.1 ppm
	O2	2420	2420	20.70%	20.9 %
	VOC	2420	26	0.2 ppm	0.3 ppm
AR18	LEL	2364	0	NA	< 1 %
	NH3	2364	25	1 ppm	1 ppm
	NO2	2364	0	NA	< 0.1 ppm
	O2	2364	2364	20.90%	20.9 %
	VOC	2364	0	NA	< 0.1 ppm

[1] *The data in this table may include electronic drift. Drift is defined as any interference in the electrochemical sensor's ability to accurately report the concentration of a chemical in the atmosphere. Humidity and temperature changes throughout the monitoring period are typical sources of drift. Additionally, the data has not undergone complete QAQC as of this time.*

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Appendix

Air Monitoring Zone Classifications[1]
April 22, 2013

Project: 40442
Client: OMI
City: West, TX
County: McLennan

[1] All monitoring performed outside of the Work Area boundary and the Rail Road right of way is considered Community Monitoring.

Projection System: *UTM Zone 14* **Coordinate System:** *WGS84* **Print Date:** *4/22/2013*

AreaRAE Monitoring Station Locations
4/21/2013 16:00 to 4/22/2013 04:00

Project: 40442
Client: OMI
City: West, TX
County: McLennan

Projection System: *UTM Zone 14* **Coordinate System:** *WGS84* **Print Date:** *4/22/2013*

Mobile AreaRAE 10 NH3 Concentrations Logged During Worker Site Entry 4/21/2013 00:00 to 4/21/2013 23:59

Project: 40442
Client: OMI
City: West, TX
County: McLennan

Projection System: *UTM Zone 14* **Coordinate System:** *WGS84* **Print Date:** *4/22/2013*

Mobile AreaRAE 10 VOC Concentrations Logged During Worker Site Entry 4/21/2013 00:00 to 4/21/2013 23:59

Project: 40442
Client: OMI
City: West, TX
County: McLennan

Projection System: *UTM Zone 14* **Coordinate System:** *WGS84* **Print Date:** *4/22/2013*

Manually Logged Ammonia Real-Time Readings 4/21/2013 16:00 to 4/22/2013 04:00

Project: 40442
Client: OMI
City: West, TX
County: McLennan

Projection System: *UTM Zone 14* Coordinate System: *WGS84* Print Date: *4/22/2013*

Manually Logged
Real-Time Readings
4/21/2013 16:00 to 4/22/2013 04:00

Project: 40442
Client: OMI
City: West, TX
County: McLennan

Projection System: *UTM Zone 14* Coordinate System: *WGS84*

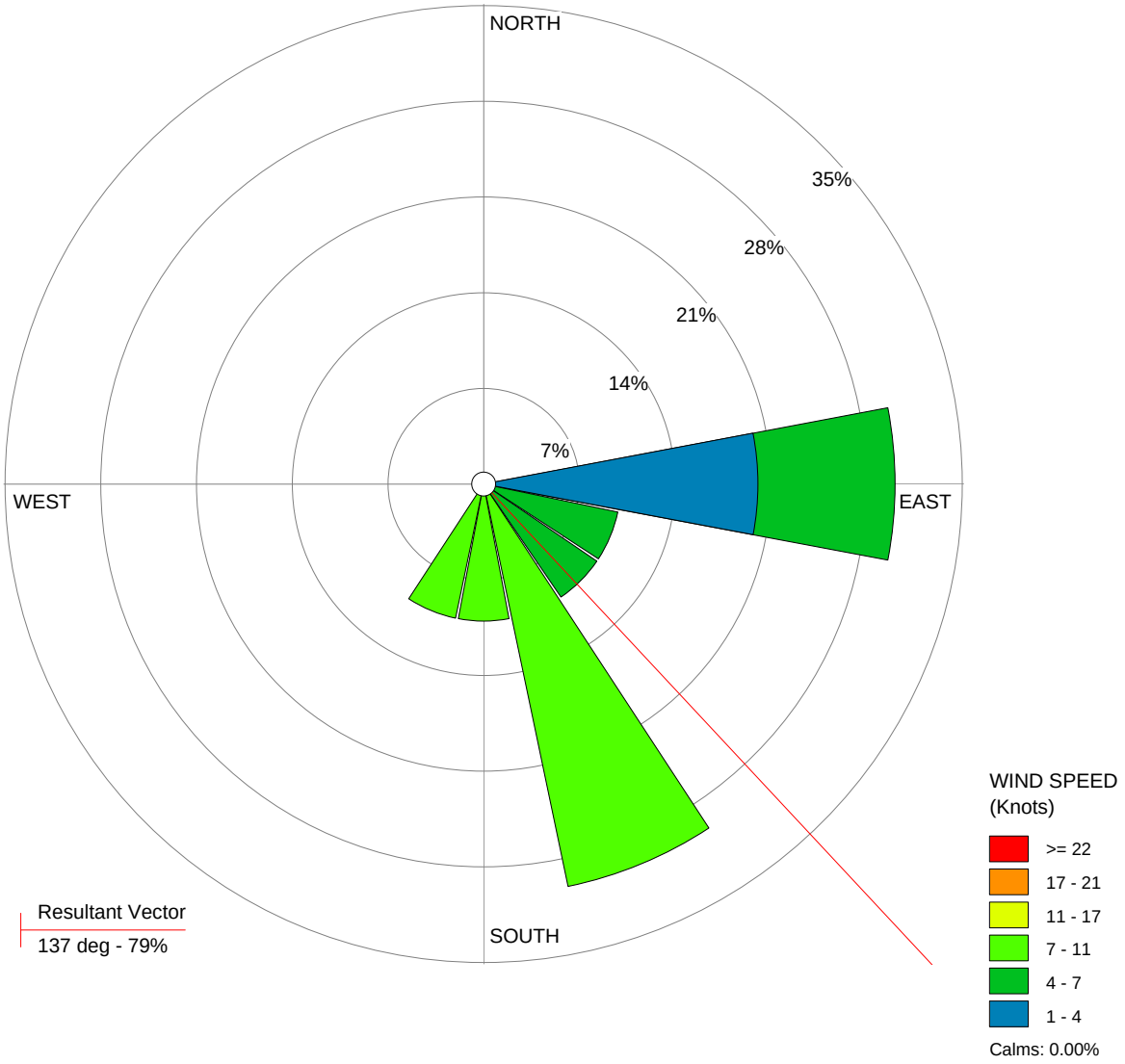
Print Date: *4/22/2013*

WIND ROSE PLOT:

Wind Speed and Direction 4/21/2013 16:00 to 4/22/2013 04:00
West, Tx

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:

Met Station: KACT Waco, Tx

COMPANY NAME:

CTEH

MODELER:

Jason Callahan

CALM WINDS:

0.00%

AVG. WIND SPEED:

6.70 Knots

PROJECT NO.:

40442 - OMI

WRPLOT View - Lakes Environmental Software