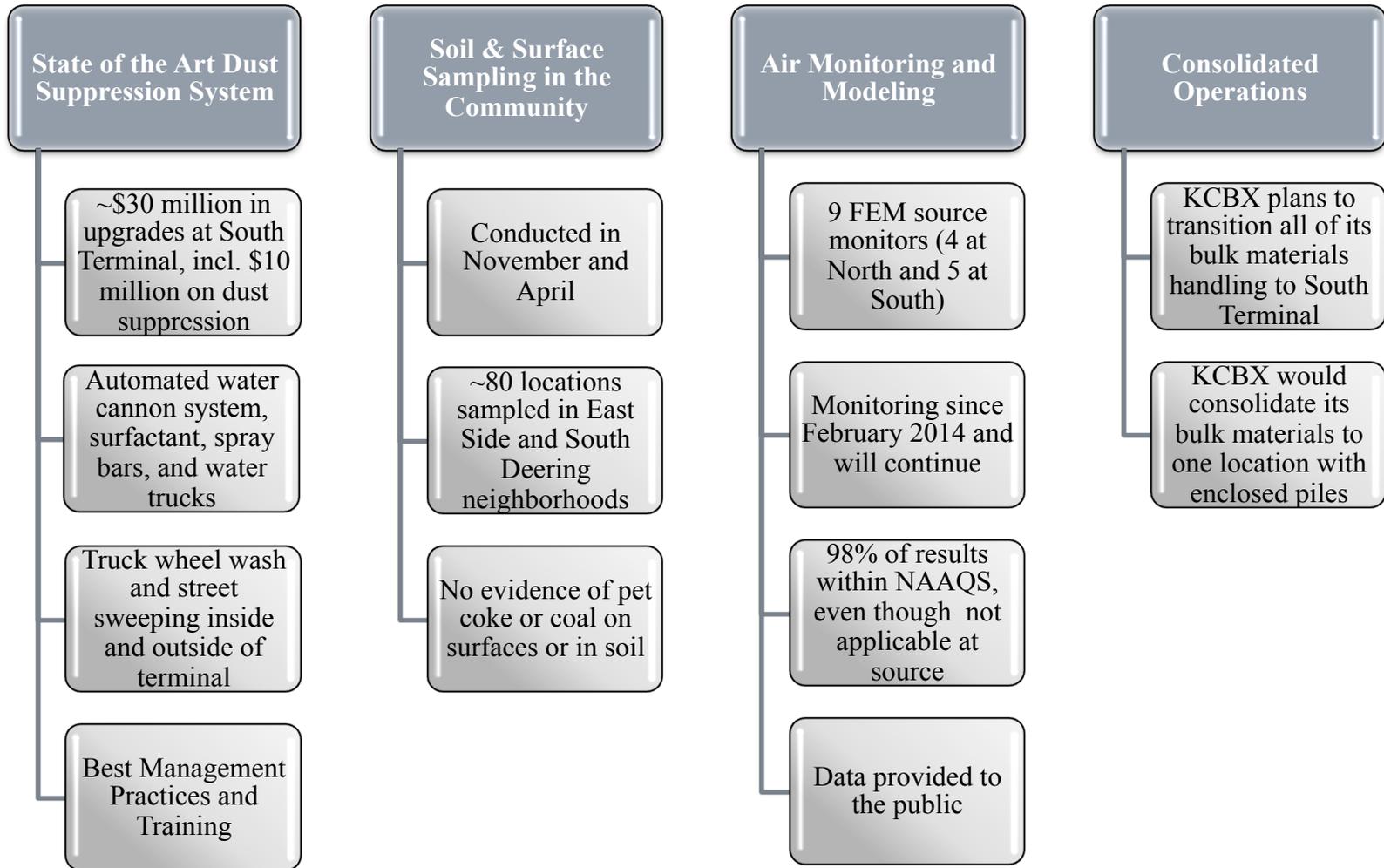


# FOUR-PRONGED COMMITMENT TO COMMUNITY



# STATE OF THE ART DUST SUPPRESSION SYSTEM

## South Terminal

- ~\$30 million investment, in addition to the purchase price, including \$10 million on dust suppression system
- 42 water cannons oscillating on 60-foot-high poles with overlapping coverage areas
- Capable of applying 1,800 gallons of water per minute to the piles
- Integrated weather monitoring system that adjusts the cannons to wind direction and speed and automatically increases the amount of water delivered during inclement weather
- Remote control

## North Terminal

- 19 water cannons
- Capable of applying 600 gallons of water per minute to the piles
- Wind meter that automatically increases the amount of water delivered during inclement weather
- Remote control

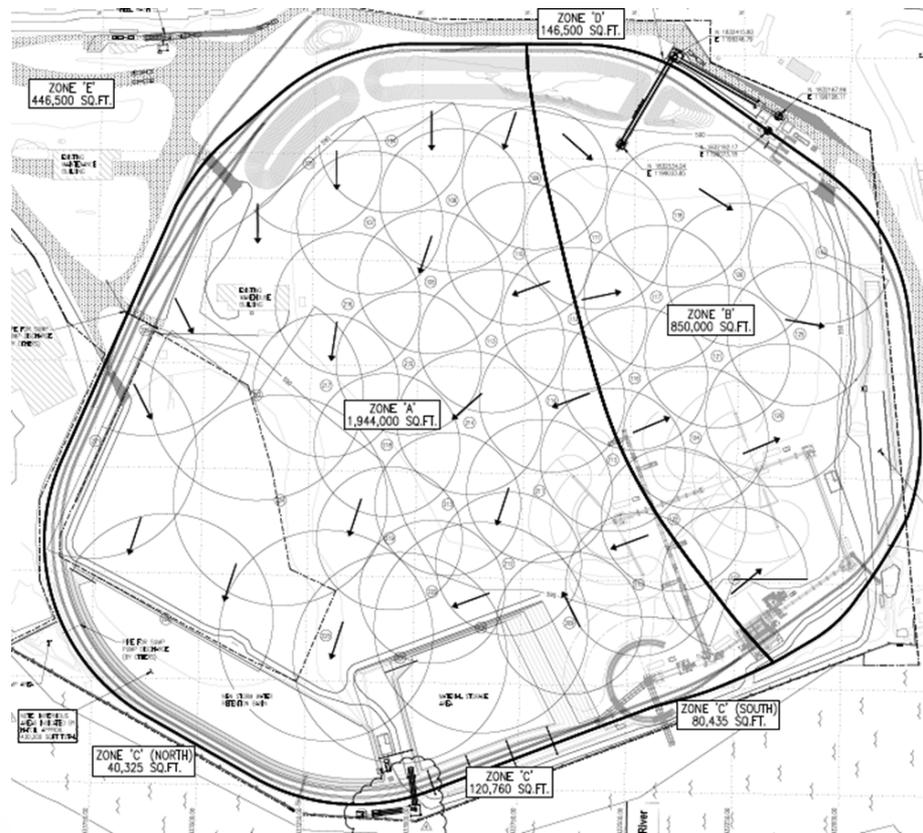


# STATE OF THE ART DUST SUPPRESSION SYSTEM

**Both North and South Terminals extensively supplement dust suppression systems as follows:**

- Water trucks with capability to supplement cannon sprays and conveyor and transfer point spray bars
- KCBX proactively monitors weather forecasts and takes appropriate actions
- KCBX shapes and compacts piles to manage potential wind erosion
- KCBX applies commercial surfactants to piles to decrease potential for emissions
- Water spray bars are mounted at fixed conveyor points
- Truck wheel washes are in place to remove loose debris from trucks/tires
- KCBX routinely sweeps the terminals and surrounding streets
- If KCBX employees determine during operations that they cannot effectively manage potential dust, they suspend operations
- Employees, contractors, and truck drivers trained on dust suppression techniques

# STATE OF THE ART DUST SUPPRESSION SYSTEM SYSTEM – SOUTH CANNON SYSTEM COVERAGE

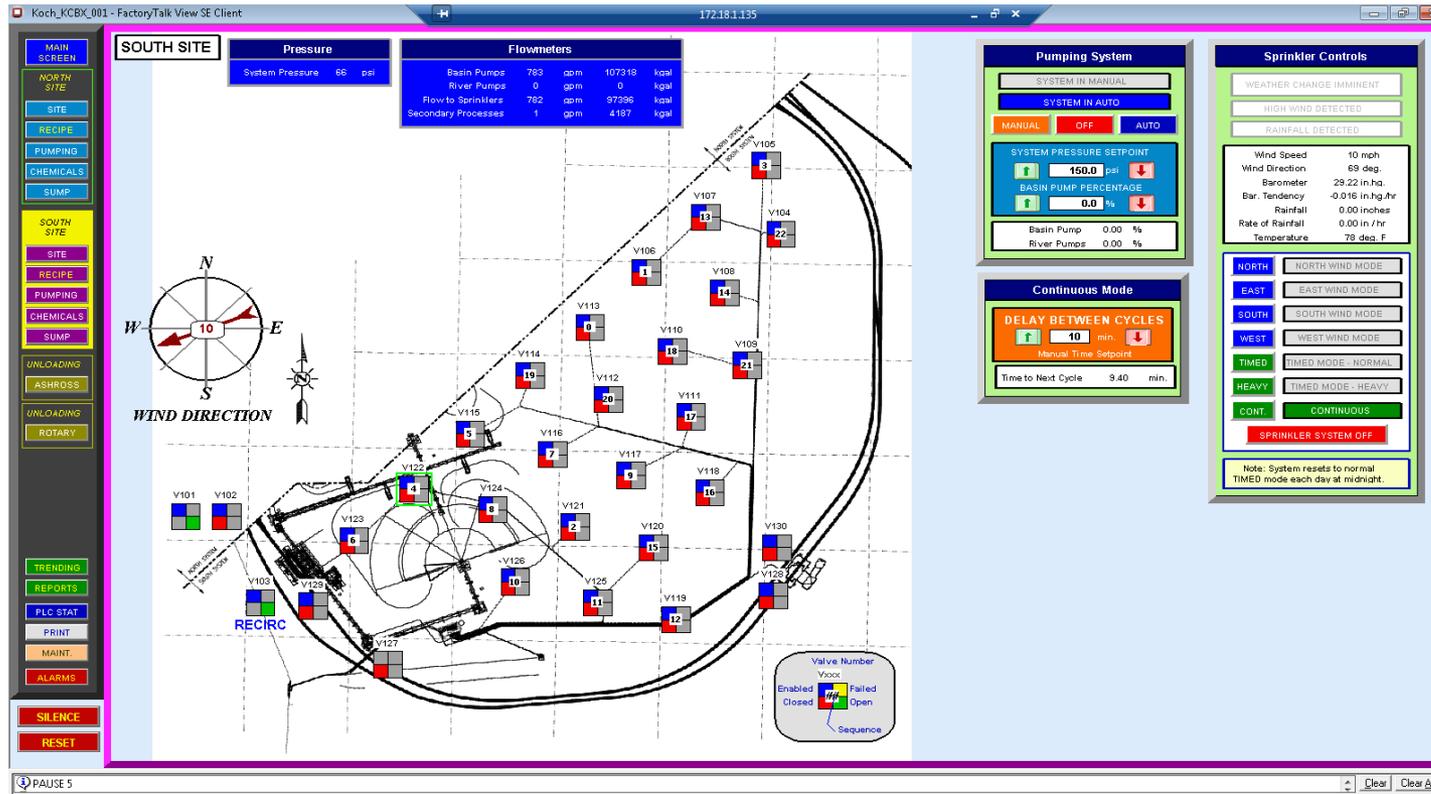


# STATE OF THE ART DUST SUPPRESSION SYSTEM – WHEEL WASH

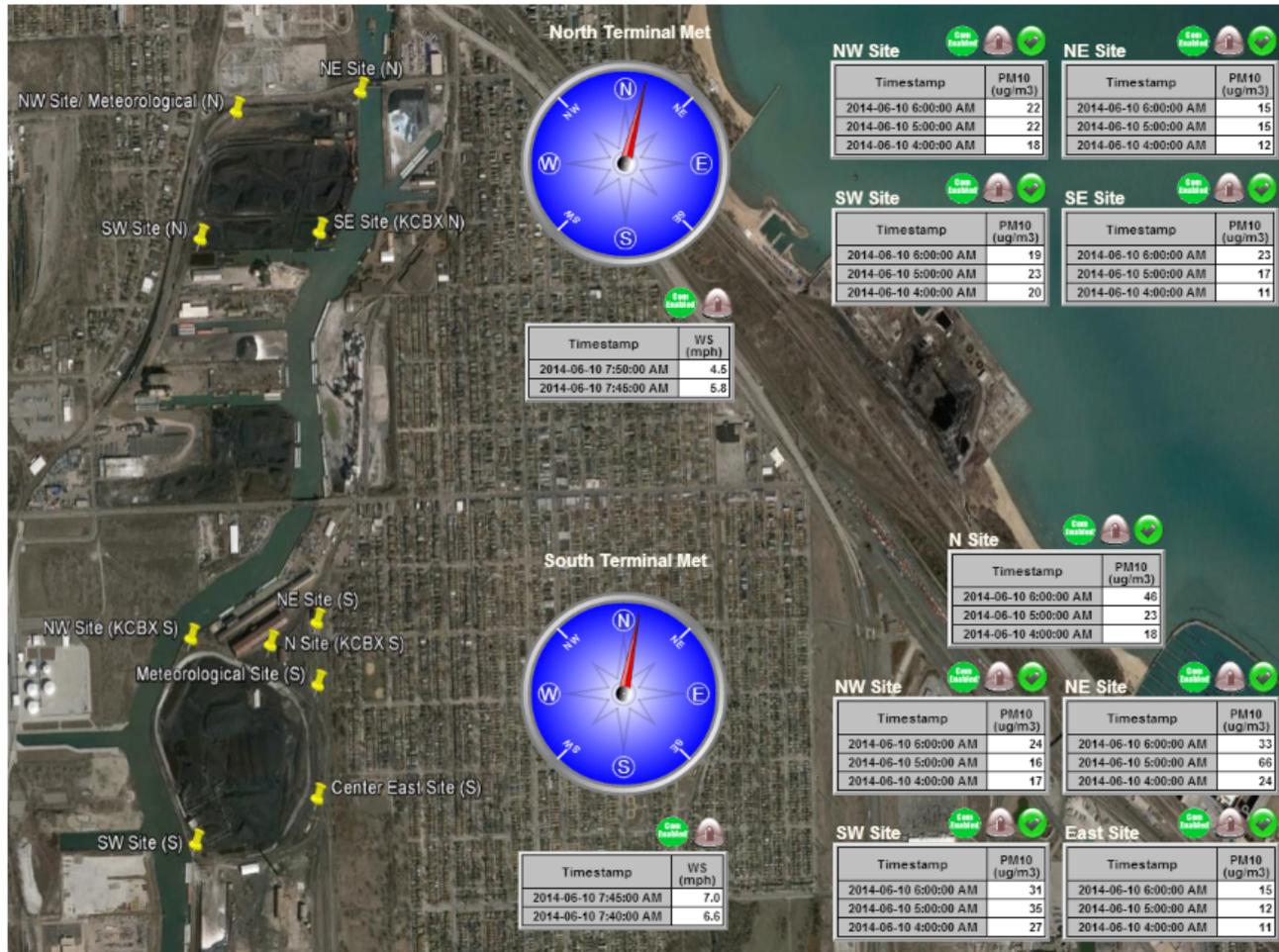


KCBX TERMINALS COMPANY

# STATE OF THE ART DUST SUPPRESSION SYSTEM – SOUTH TERMINAL CANNON CONTROL SYSTEM

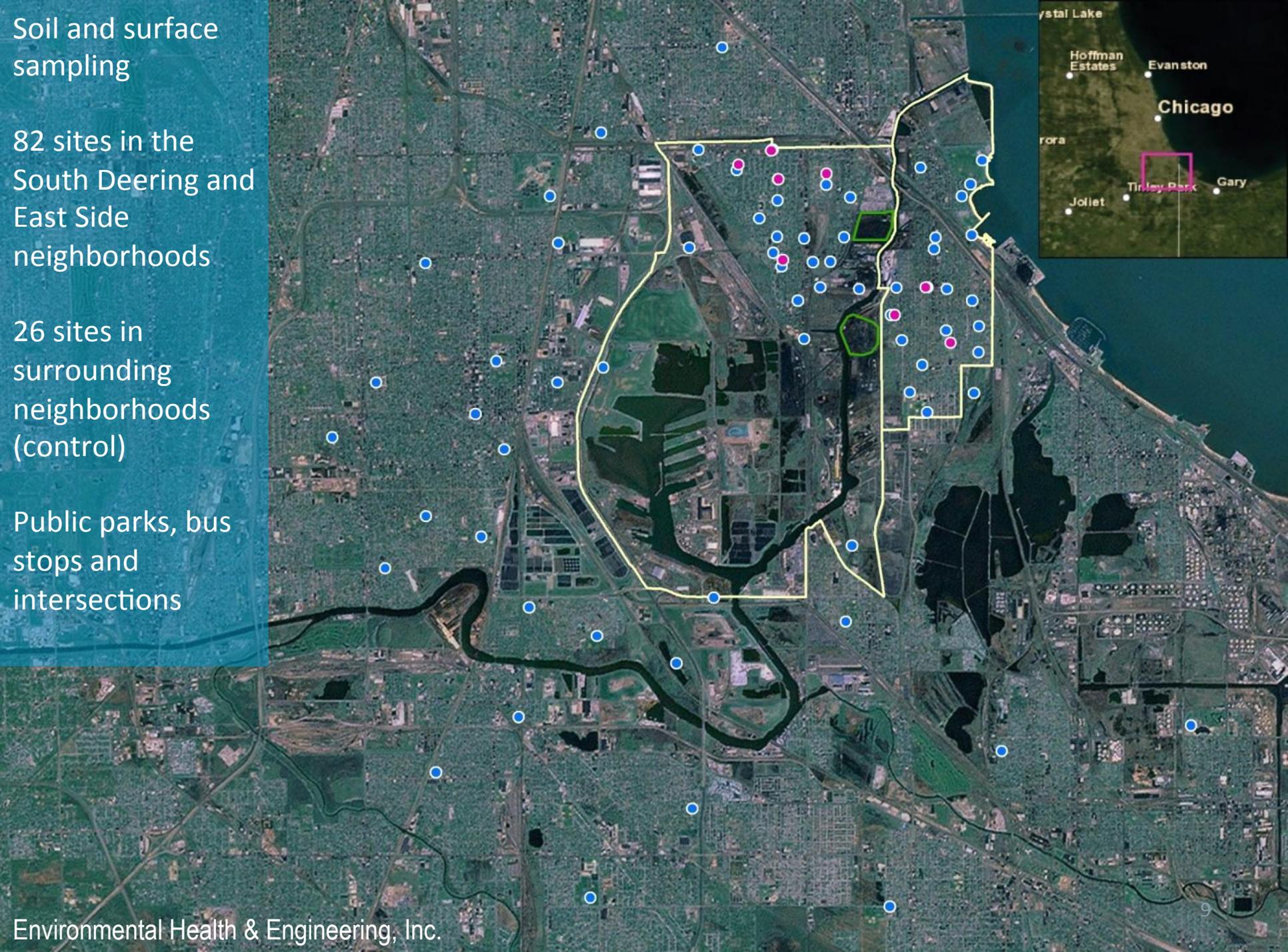


# STATE OF THE ART DUST SUPPRESSION SYSTEM – REAL TIME MONITORING



# SOIL & SURFACE SAMPLING

- Environmental Health & Engineering, Inc. (“EH&E”) investigated surfaces and soil in the East Side and South Deering neighborhoods in November 2013 and April 2014
- EH&E tested the soil and surface samples for chemical indicators of pet coke and coal, including certain metal and polynuclear aromatic hydrocarbon ratios associated with pet coke and coal
- Samples were collected and tested in accordance with ASTM and EPA methods
- **Result: No evidence of pet coke or coal on surfaces or in soil in the East Side and South Deering neighborhoods; the composition of soil in these areas is consistent with control neighborhoods in the City of Chicago**

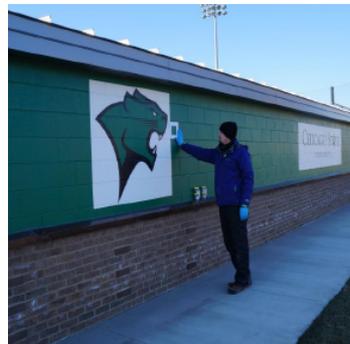
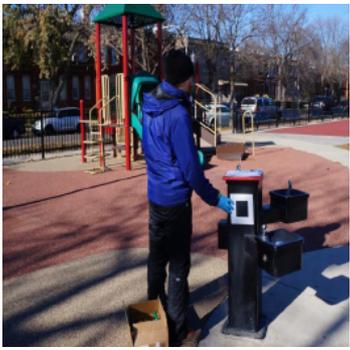


Soil and surface  
sampling

82 sites in the  
South Deering and  
East Side  
neighborhoods

26 sites in  
surrounding  
neighborhoods  
(control)

Public parks, bus  
stops and  
intersections



# AIR MONITORING & MODELING

- KCBX installed a combined nine PM10 source monitors at its two terminals
- Began measuring on February 18, 2014
- Review of data, using EPA approved AERMOD [Atmospheric Dispersion Modeling System] modeling based on that data, by Sonoma Technology, Inc. shows offsite PM10 levels that meet levels designed to protect human health
- NAAQS of 150  $\mu\text{g}/\text{m}^3$  is for ambient air in neighborhood and does not apply to areas inside KCBX Facility
  - EVEN though standard does not apply, 98% of the 24-hour air monitoring results at the Facility were well within the PM10 NAAQS standard
  - Modeling results confirm that NO levels would have exceeded PM10 NAAQS standards for ambient air in any of the local neighborhoods

# AIR MONITORING & MODELING

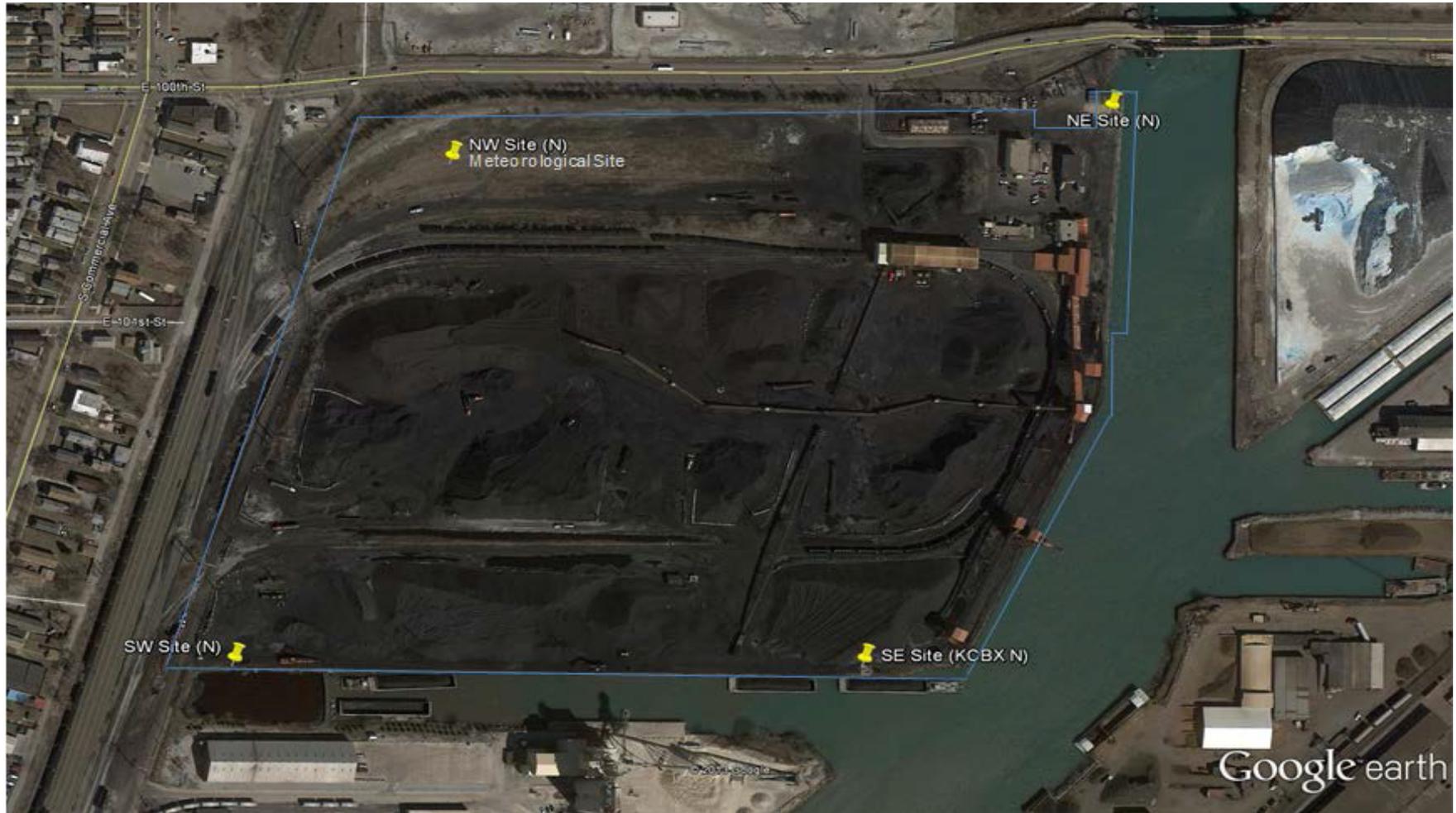


# AIR MONITORING & MODELING – MONITORING SITES AT SOUTH TERMINAL



KCBX TERMINALS COMPANY

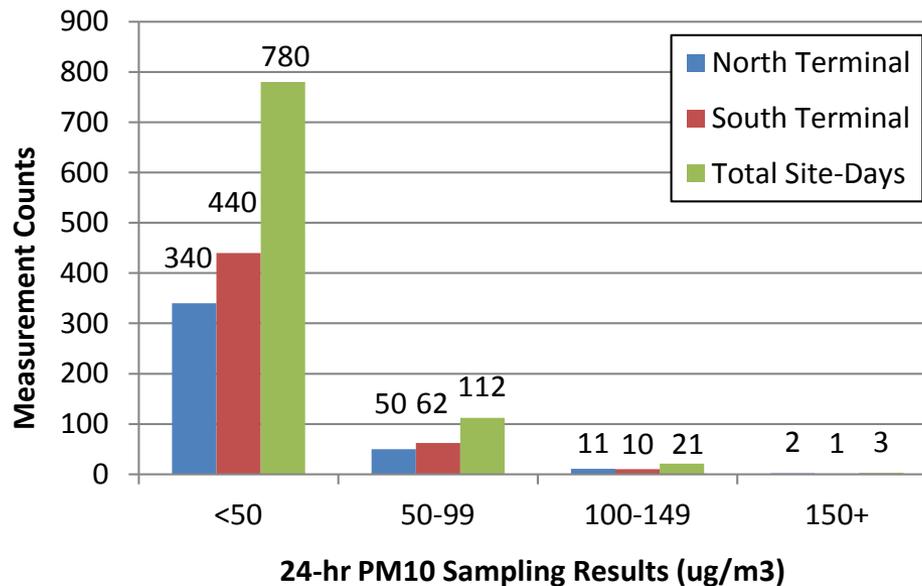
# AIR MONITORING & MODELING – MONITORING SITES AT NORTH TERMINAL



KCBX TERMINALS COMPANY

# AIR MONITORING & MODELING – 24 HR PM10 DATA

- North Terminal: 5 to 156  $\mu\text{g}/\text{m}^3$
- South Terminal: 5 to 156  $\mu\text{g}/\text{m}^3$
- 85% of daily concentrations < 50  $\mu\text{g}/\text{m}^3$
- 97% of daily concentrations < 100  $\mu\text{g}/\text{m}^3$



# CONSOLIDATED OPERATIONS

KCBX's plans call for transitioning all of its bulk materials handling to the South Terminal.

All bulk material would be consolidated to one location, utilizing enclosed product piles with state-of-the-art environmental controls.



# KCBX'S INITIAL REACTIONS TO EPA'S NOV

- As demonstrated, KCBX is committed to applying the best science and engineering to understand whether its operations impact the community.
- KCBX has hired world renowned scientists, who provide expert advice to the EPA and the Department of Justice as well as other regulators, and they have rendered the following opinions:
  - The majority of contribution to the higher readings measured by the source monitors is from sources other than KCBX, and
  - Samples collected in the community do not provide any evidence of the presence of pet coke or coal
- EPA's NOV does not contradict these opinions
  - EPA's own data confirms that the vanadium and nickel that it identified as occurring in the soil is at background levels consistent with the levels found in the greater Chicago area



# KCBX'S INITIAL REACTIONS TO EPA'S NOV

- EPA's NOV does not contradict these opinions
  - EPA claims to have samples showing vanadium and nickel at a ratio greater than 1, and acknowledges that the signature for pet coke is much higher, but **fails to disclose to the public that its samples don't in fact show that signature.**
  - **A number of co-located samples are non-detect for the presence of vanadium and nickel.**
- EPA alleges that KCBX's source monitors exceeded NAAQS on two dates
  - **Results were from a limited number of downwind monitors. Comparison to the upwind monitors reveals majority of contribution came from off-site sources.**
  - **NAAQS does not apply at the source.**

# KCBX'S INITIAL REACTIONS TO EPA'S NOV

- Soil throughout the City of Chicago can contain vanadium and nickel at a ratio of between 1.2 and 2.5
- The presence of both vanadium and nickel at a higher ratio of approximately 4 can indicate the presence of pet coke
- EPA alleges that results from its preliminary surface sampling show the presence of both vanadium and nickel
  - Only one sample collected in the vicinity of the North Terminal had detectable levels of both V and Ni with a ratio of 1.0, which is consistent with background levels found throughout the Chicago area and does not represent a signature for pet coke
  - Four samples collected in the vicinity of the South Terminal had detectable levels of both V and Ni, with ratios of 0.7, 1.1, 1.4 and 1.7; these values are consistent with background levels of those compounds in the Chicago area, and as with KCBX North, none of those samples show a signature for pet coke
- No pattern exists in the results that would show the KCBX terminals were a source of the levels of V and Ni found in the EPA samples

# KCBX'S INITIAL REACTIONS TO EPA'S NOV

Results of Wipe Sampling Conducted by USEPA Region 5 on April 17, 2014 (in mg/wipe)				
Sample ID	V (mg/wipe)	Ni (mg/wipe)	V:Ni	Est. Distance to Closest Site (in m)
1A	0.00043	ND*	--	600
2A	0.00075	0.00077*	1.0	600
3A	ND	ND*	--	420
4A	ND	ND	--	70
5A	0.00236	0.00140	1.7	70
6A**	ND	ND	--	Not available
7A	ND	ND	--	70
8A	ND	ND	--	200
9A**	ND	ND	--	Not available
10A	0.00084	0.00061*	1.4	240
11A	0.00104	0.00093*	1.1	240
12A	0.00038	ND*	--	140
13A	0.00078	0.00116	0.7	380
14A**	ND	ND	--	Not available

V	vanadium
Ni	nickel
V:Ni	vanadium to nickel ratio
mg/wipe	milligrams per wipe

\* Indicates the reported value may be biased low. The actual value is expected to be greater than the reported value. Reporting limit for vanadium was 0.00025 mg/wipe and for nickel 0.0003 mg/wipe.

\*\* Results for these samples were provided in the lab report, but these samples were not included in EPA reports.



# SUMMARY OF KCBX COMMITMENT TO THE COMMUNITY

KCBX operates a state-of-the art dust suppression system that is working to protect the community.

KCBX has engaged world renowned scientists to investigate impact, if any, on the community. Those scientists have found that the air, soil, and surfaces in the community show no evidence of coal or pet coke.

KCBX's plans call for consolidating its bulk material handling operations into one location with enclosed piles with state-of-the art environmental controls.

The EPA's NOV does not contradict these findings or KCBX's demonstrated commitment, and KCBX looks forward to working with the EPA and the City to reconcile the data.

# KCBX'S COMPLIANCE WITH THE RULES

- Certification of Operation
- Implemented a program to address potential emissions of fugitive dust
- Implemented a program to address potential vehicle leaking on roads
  - Conducts required roadway cleaning
- Implemented a program to address any spilled material
  - Submits required enclosure reports
  - Developed and submitted a Fugitive Dust Plan

- Implemented a program to conduct testing of visual emissions and opacity
- Operates 9 FEM real-time PM10 Source Monitors
  - Conducts required wind monitoring
  - Maintains all material transfer points as required
- Conducts barge and vessel loading in compliance with its Dust Plan
  - Requires covered truck trailers
  - Developed and submitted an enclosure plan

**KCBX is committed to compliance and has devoted significant resources to comply with the Rules**

- Addresses trucks as required, including enforcing a speed limit of no higher than 8 MPH, trucks travel on paved roads, cleaning outgoing material transfer trucks, mandatory use of a wheel wash and rumble strips
- Stages outdoor product piles in compliance with the Zoning Ordinance
- Stages outdoor product piles at least 50 feet from waterways
- Maintains runoff management controls

- Implemented a program to suspend disturbance of piles during High Wind Conditions, except where alternate measures are implemented
- Operates a dust suppression system to apply water and chemical stabilizers
  - Keeps required records
- Has placed 30 foot markers on posts or other visible measurement markers



# KCBX'S PETITION FOR VARIANCE

- KCBX is already in compliance with the majority of the 0 and 90 day requirements of the Rules.
- Seeks 6 limited variances:
  1. Variance from covering 8 of its 55 conveyors;
  2. Deadline by which KCBX has to cover its conveyors;
  3. Allowance to maintain product piles at 45 feet;
  4. Allowance to not operate the dust suppression system at temperatures below 25 degrees Fahrenheit if certain conditions are met;
  5. Operations during dust suppression system maintenance or other inoperable circumstances; and
  6. Exemption from the requirement to prevent pooling of water.

# REQUEST FOR VARIANCE RE CONVEYORS

- KCBX seeks two variances relating to conveyors:
  1. Allowance to not cover 8 of its 55 conveyors;
    - KCBX would not use these 8 conveyors after its transition to one location with enclosed piles.
  2. An extension of the deadline in Section 6.0(3) to allow KCBX to have until March 31, 2015 to cover 26 conveyors.

# REQUEST FOR VARIANCE RE CONVEYORS

KCBX NORTH TERMINAL				
Type of Conveyor	Number of Conveyors	Number Currently Covered	Number to be Covered	Number for which KCBX Seeks a Variance to Not Cover
Fixed Conveyors	13	5	0	8
Portable Conveyors	11	0	11	0
Stacking Conveyors	1	1	0	0

KCBX SOUTH TERMINAL				
Type of Conveyor	Number of Conveyors	Number Currently Covered	Number to be Covered	Number for which KCBX Seeks a Variance to Not Cover
Fixed Conveyors	16	12	4	0
Portable Conveyors	10	0	10	0
Stacking Conveyors	4	3	1	0



# REQUEST FOR VARIANCE RE PILE HEIGHTS

KCBX requires 45 feet to manage individual pile volumes in accordance with customer obligations and to effectively manage the transfer of product between transportation modes.

KCBX can effectively suppress dust up to 60 feet

KCBX proposes a compromise of 45 feet

Rules limit pile heights to 30 feet



# REQUEST FOR VARIANCE RE PILE HEIGHTS

KCBX has analyzed the Fugitive Dust Study done for the City of Chicago dated March 2014

KCBX disagrees with assumptions made in that study – they are not representative of actual operations and emissions at bulk material handling facilities, including the KCBX Facility

- Study assumes no dust control measures when in fact KCBX North and South have state-of-the-art dust suppression systems
- Study assumes significantly lower moisture contents than the actual moisture content of products present at KCBX, which leads to a significant over-estimate of emissions from KCBX

# REQUEST FOR VARIANCE RE PILE HEIGHTS

- Study predicts hourly fence line concentrations of 5,297  $\mu\text{g}/\text{m}^3$  from KCBX alone, but...
- in reality, out of more than 21,000 hourly source monitor PM10 concentration readings at KCBX to date:
  - the difference between an upwind monitor and a downwind monitor has exceeded 300  $\mu\text{g}/\text{m}^3$  less than 0.2% of the time
  - the highest hourly reading has been 983  $\mu\text{g}/\text{m}^3$  which was at an upwind monitor detecting PM10 from an off-site source, not from KCBX

These and other assumptions cause the study to significantly over-estimate impacts from KCBX

Perhaps most importantly, the study concludes that the majority of emissions are from sources other than piles

# REQUEST FOR VARIANCE RE OPERATION OF DUST SUPPRESSANT SYSTEM BELOW 25 DEGREES

- Rules require KCBX to use certain dust suppression techniques when the temperature is below 32 degrees Fahrenheit
- KCBX seeks a limited variance only to the extent the Facility transloads product when the temperature is below 25 degrees Fahrenheit, the Facility is not able to immediately apply water or chemical stabilizers to the product, and the following conditions are met:
  1. The Product meets the definition of “Moist”; and
  2. KCBX applies water or chemical stabilizer to the Product at the Facility as soon as possible and practical once temperatures rise above 25 degrees Fahrenheit.

# REQUEST FOR VARIANCE RE OPERATIONS DURING DUST SUPPRESSION SYSTEM MAINTENANCE

- Rules require KCBX to suspend disturbance of Bulk Material piles that would be controlled by the inoperable portion of the dust suppressant system until such time as that portion of the system becomes operable again
- KCBX seeks a variance from Section 5.0(5)(c) to allow it to continue affected activities when part of its Facility's dust suppression system is undergoing maintenance or otherwise becomes inoperable, so long as KCBX complies with the following conditions:
  1. KCBX uses a different method to apply dust suppressant in place of the part that is undergoing maintenance or is otherwise inoperable, or weather conditions and/or Product moisture mean additional dust suppressant is not necessary; and
  2. KCBX monitors the activity at issue and responds to visible dust emissions, including shutting down the activity if necessary.

# REQUEST FOR VARIANCE RE RUNOFF MANAGEMENT, GRADING

- Rules require KCBX to grade the site in such a way to prevent pooling of water
- It is impossible for KCBX to completely prevent all pooling of water
  - The pad is not paved and movement of bulk materials creates depressions and ruts in the pad that may temporarily collect water
- The pooling of water helps to prevent dust, which is the intent of the Rules

# FUGITIVE DUST PLAN

- Rules require KCBX to have a Reportable Action Level (“RAL”)
- KCBX utilizes a two level approach:
  1. **On an hourly basis**, if any one monitor at a given Terminal is **greater than 300  $\mu\text{g}/\text{m}^3$** , KCBX will investigate and take actions at that Terminal as outlined in KCBX’s submitted plan. KCBX records each occurrence but will not report to the city.
  2. **On a 24-hour average basis**, if the difference between any two monitors at a given terminal is **greater than 300  $\mu\text{g}/\text{m}^3$** , KCBX will report to the city and take action as identified in its submitted plan.

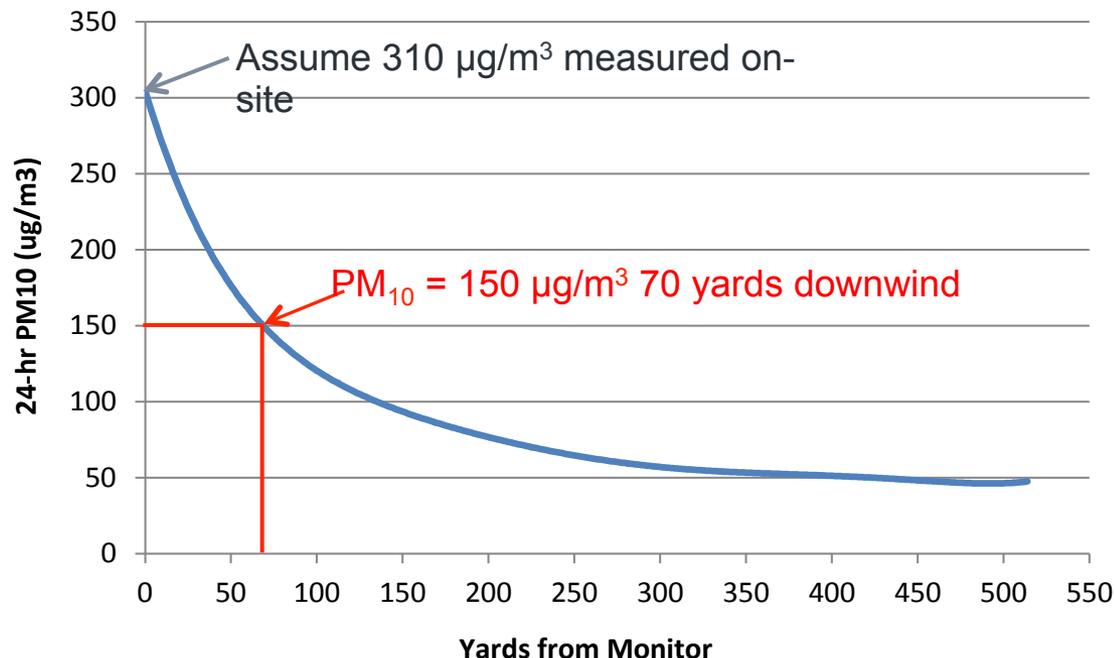
Monitor Results	Actions	Report as RAL?
1. Hourly reading <300 $\mu\text{g}/\text{m}^3$	No action required	No
2. Hourly reading >300 $\mu\text{g}/\text{m}^3$	Investigate and Mitigate	No
3. 24-Hour Difference >300 $\mu\text{g}/\text{m}^3$	RAL event	Yes

# FUGITIVE DUST PLAN – BASIS FOR RAL

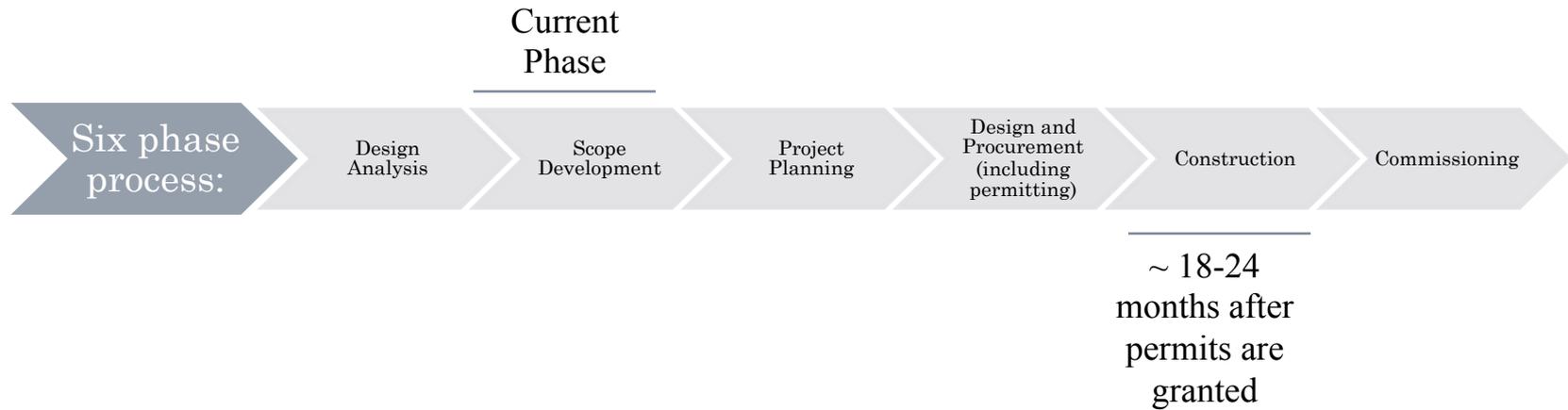
- EPA has established NAAQS to protect public health; these standards apply to locations to which the general public has access
- The daily (24 hour average) PM<sub>10</sub> NAAQS Standard = 150 µg/m<sup>3</sup>
- PM<sub>10</sub> concentrations associated with ground-based sources such as those at the KCBX product piles are known to decrease exponentially with distance from the source
- Experts at STI conducted air quality modeling with the EPA-required AERMOD dispersion model to evaluate the local air quality impacts of emissions from the KCBX Terminals
- PM<sub>10</sub> concentrations decrease by roughly 50% within the first 70 yards (the approximate distance of the nearest residence to the KCBX fence line)

# FUGITIVE DUST PLAN – BASIS FOR RAL

- A 24-hour on-site measurement of  $310 \mu\text{g}/\text{m}^3$  would be required to produce a value of  $150 \mu\text{g}/\text{m}^3$  at the nearest residence



# KCBX ENCLOSURE PLAN



**For more information  
please visit:**

**[http://  
aboutpetcoke.com/](http://aboutpetcoke.com/)**

# David L. MacIntosh, Sc.D., C.I.H., Chief Science Officer

Completed projects for the US EPA, U.S. Consumer Product Safety Commission, and the U.S. Department of Transportation

Technical advisor to numerous state and local government organizations, and the World Health Organization

Technical director of EH&E's investigations of "Chinese Drywall" for the Federal Interagency Task Force on Problem Drywall

Adjunct Associate Professor at the Harvard School of Public Health

20 years experience as an active member of the environmental health profession

Author of numerous publications in the area of exposure assessment, risk analysis, and environmental management



ENVIRONMENTAL HEALTH  
& ENGINEERING, INC.

# Lyle Chinkin, President



Sonoma Technology, Inc.  
*Air Quality Research and Innovative Solutions*

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President of Sonoma Technology, Inc.

- Specializes in air quality and meteorological research and services
- STI operates the database for EPA's AIRNow Program

Regularly oversees projects for federal, state, and local government agencies; universities; public and private research consortiums; and corporations

- U.S. EPA-invited peer reviewer of the EPA particulate matter National Ambient Air Quality Standards (NAAQS) Criteria Document
- Expert panel member for the review of the Valdez Air Health Study
- Expert witness for the United States Department of Justice (“DOJ”) in environmental enforcement actions

Appointed to the National Research Council of the National Academy of Sciences’ Committee on Changes in New Source Review Programs for Stationary Sources of Air Pollution

**Air Quality Research and Innovative Solutions**

