Air Monitoring In Virginia

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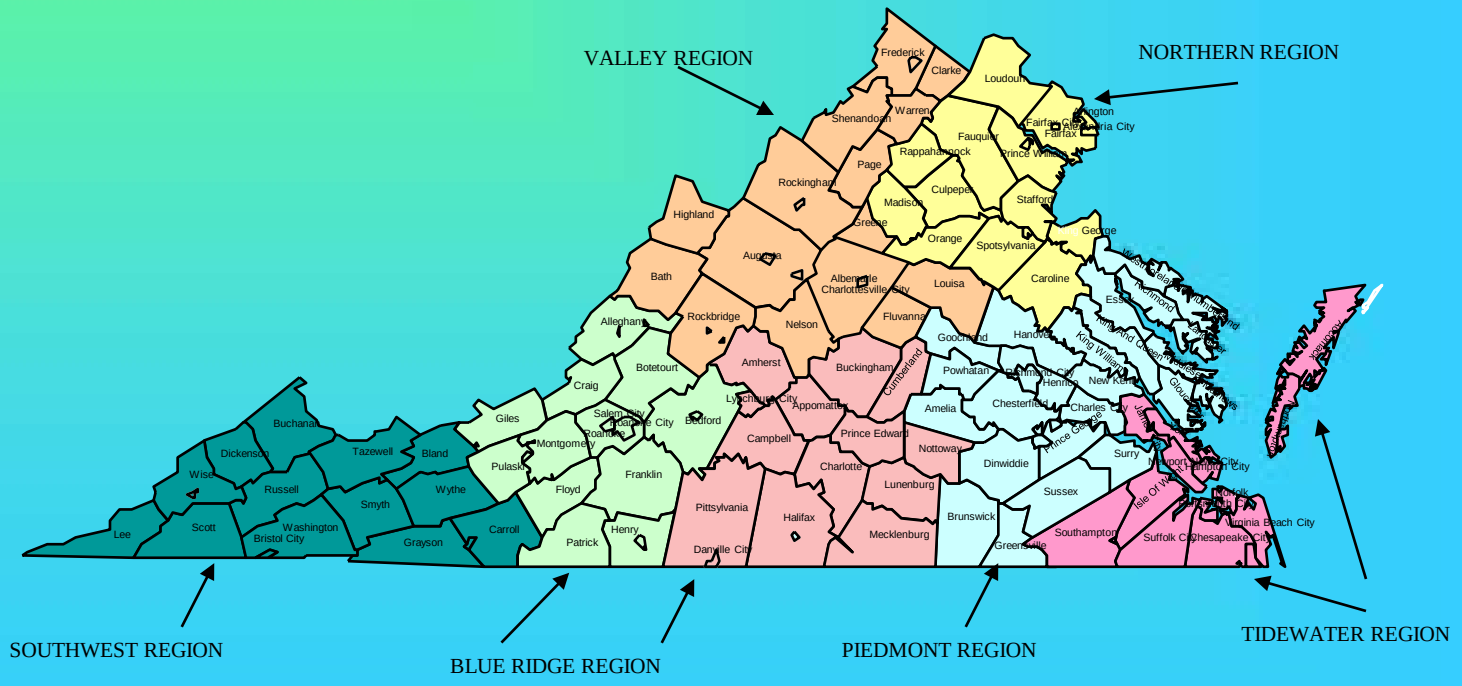

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Virginia's Air Quality Monitoring Network

- Currently Virginia's air monitoring network has 47 separate sites
- These sites contain 127 separate monitors/samplers
- The monitors analyze for all criteria pollutants, particulate matter less than 10 and 2.5 microns, toxics and photo-chemically active compounds

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- National Air Toxics Trend Site – MathScience Innovation Center
- Winchester Toxics Study
- Hopewell Toxics Study
- Roda Monitoring Study in SW Virginia

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National Air Toxics Trend Site – MathScience Innovation Center

→ EPA's National Toxics Monitoring efforts consist of 3 programs

- ☆ Community-Scale Air Toxics Ambient Monitoring Projects
  e.g. Hopewell and Winchester
- ☆ Urban Air Toxics Ambient Monitoring Program
  e.g. Northern Virginia, Richmond and Tidewater
- ☆ National Air Toxics Trends Stations
  e.g. MathScience Innovation Center, Henrico Co.

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NATTS Site in Henrico County

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Community-Scale Air Toxics Ambient Monitoring Projects

- Winchester Air Toxics Study

  http://www.deq.virginia.gov/export/sites/default/airmon/documents/

- The sampling activities from air toxics monitoring conducted from January 2005 to June 2006. The study included PM10, Metals, VOC's, Carbonyls and Hexavalent Chrome.
- The analyses indicated that the pollutants in the air samples collected at the three Winchester sites were not significantly different from other monitored locations in Virginia
- A follow up health assessment is to be conducted by the Lord Fairfax District of the Health Department

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Community-Scale Air Toxics Ambient Monitoring Projects - Winchester

→ Stakeholder Process – Standard approach to build support for air toxics projects and to get public input on study implementation

City of Winchester:	Mr. Steve Bauserman
Frederick County:	Ms. Barbara Van Osten
Department of Health / Lord Fairfax District:	Dr. Diane Helentjaris Mr. Kelly Vanoviv
VADEQ:	Ron Phillips (Valley Regional Office) David A. Taylor (Valley Regional Office) Barry Brandon (Valley Regional Office) James Dinh (Air Quality Monitoring) Brian King (Air Quality Monitoring) Baxter J. Gilley (Air Quality Monitoring)

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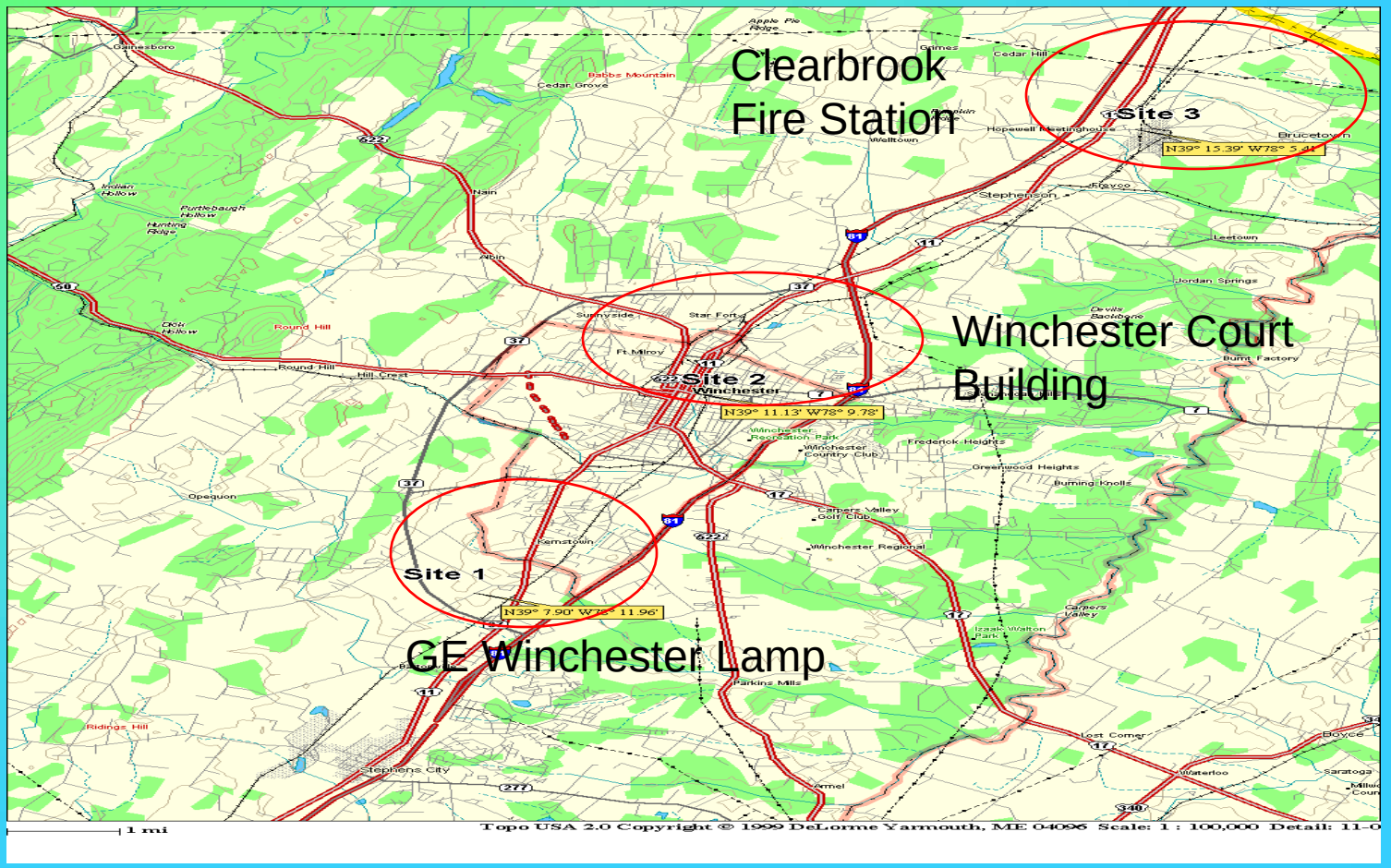
Community-Scale Air Toxics Ambient Monitoring Projects - Winchester



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Community-Scale Air Toxics Ambient Monitoring Projects - Winchester

→ Conclusions

PM-10 emissions in Winchester, with the exception of the Clearbrook site, were in line with other locations in Virginia

Manganese (Mn) and Lead (Pb) were the greatest contributors towards the total metal composition in the PM-10 samples

There were only 9 to 13 frequently detected VOC at the three sampling sites in Winchester. The measured, average concentrations of the detected VOC, were comparable to those sampled at Richmond, Norfolk, VA Beach and Franconia.

Average concentration of Winchester Chrome VI is at the low side of the National average atmospheric concentration of 0.001 µg/m3

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Community-Scale Air Toxics Ambient Monitoring Projects

- Hopewell Air Toxics Study – final report not currently available on the webpage. Waiting for the QAQC report to be completed.
- The sampling activities from toxics monitoring conducted from December 2006 to September 2008. The study included PM10, Metals, VOC's, Carbonyls, Hex Chrome and Carbon Black.
- The analyses indicated that the pollutants concentrations in the air samples collected from this study were not appreciably different from sample concentrations collected from other ambient air toxics monitoring sites in Virginia.
- A follow up Risk assessment is being conducted by the DEQ Office of Risk Analysis

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Community-Scale Air Toxics Ambient Monitoring Projects - Hopewell

→ Stakeholder Process

Christina J. Luman-Bailey	Hopewell City Council
Brenda S. Pelham,	Vice Mayor City Council
Ray Watson,	Hopewell Public Schools
Phillip E. Elliott,	Public Works Department
Dr. Curtis R. Holsopple	Citizen
Chuck Bogatie	Hopewell Community & Industry Panel
Mr. Joe S. Furr, Jr.	Smurfit-Stone Container Corp.
L. Evans Drake	Honeywell – Hopewell Plant
Dr. Leonard Smock	VCU – Rice Center
David Debiasi	American Lung Association
Dr. Michael O. Royster	Crater Health District

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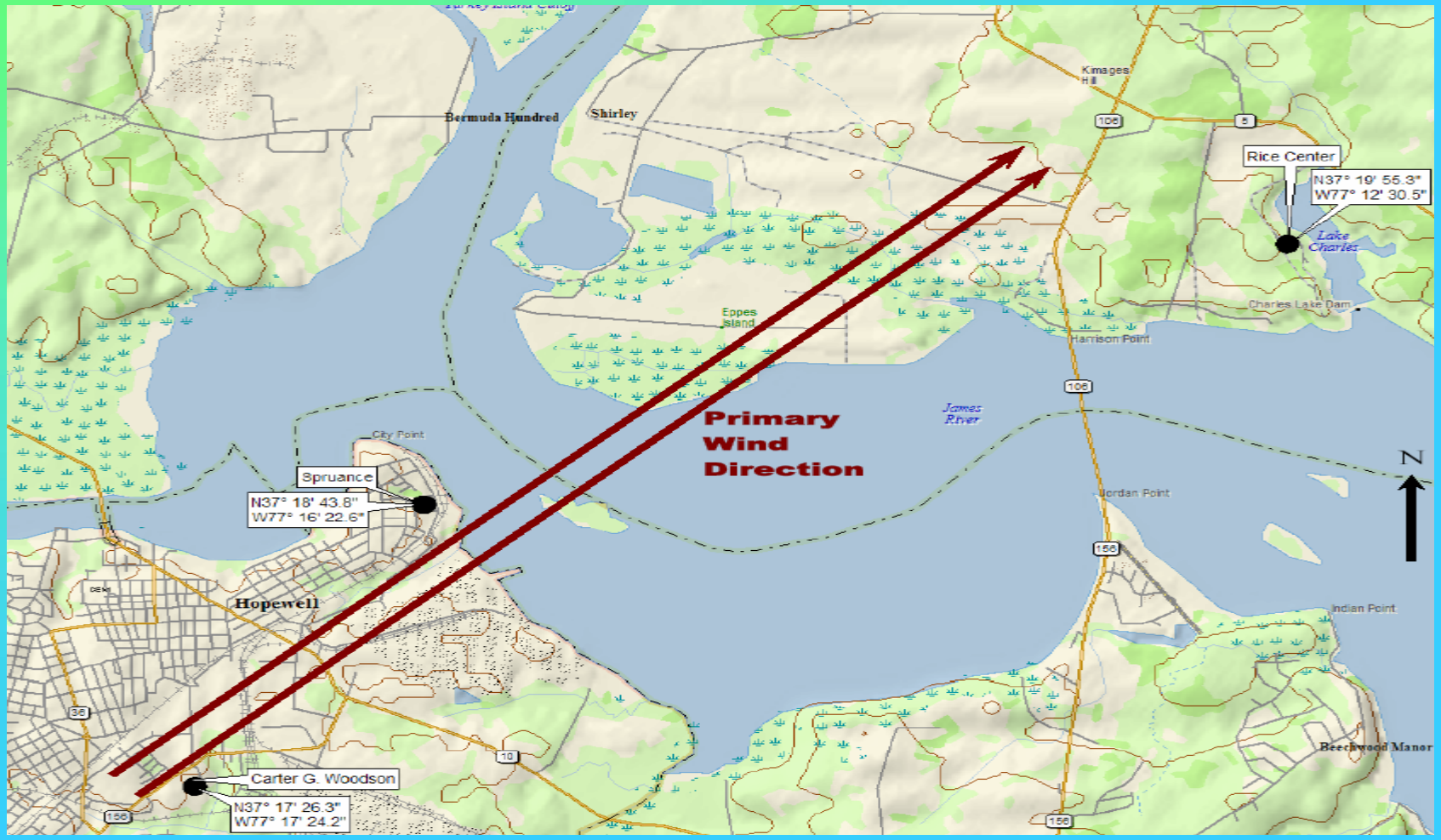
Community-Scale Air Toxics Ambient Monitoring Projects - Hopewell



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Community-Scale Air Toxics Ambient Monitoring Projects - Winchester

→ Conclusions

PM-10 emissions in Hopewell were in line with other locations in Virginia.

Chromium (Cr), Manganese (Mn), and Lead (Pb) were the greatest contributors for metal composition in the PM-10 samples

Two compounds under the worst case calculations required additional evaluation; Acrolein and Formaldehyde. Formaldehyde results indicated that measured concentrations were above the state's Significant Ambient Air Concentration. Acrolein results were close to the SAAC so additional monitoring was performed.

Average concentration of Hopewell Chrome VI is the below the National average atmospheric concentration of 0.001 µg/m3

Black Carbon concentration was not an issue in Hopewell.

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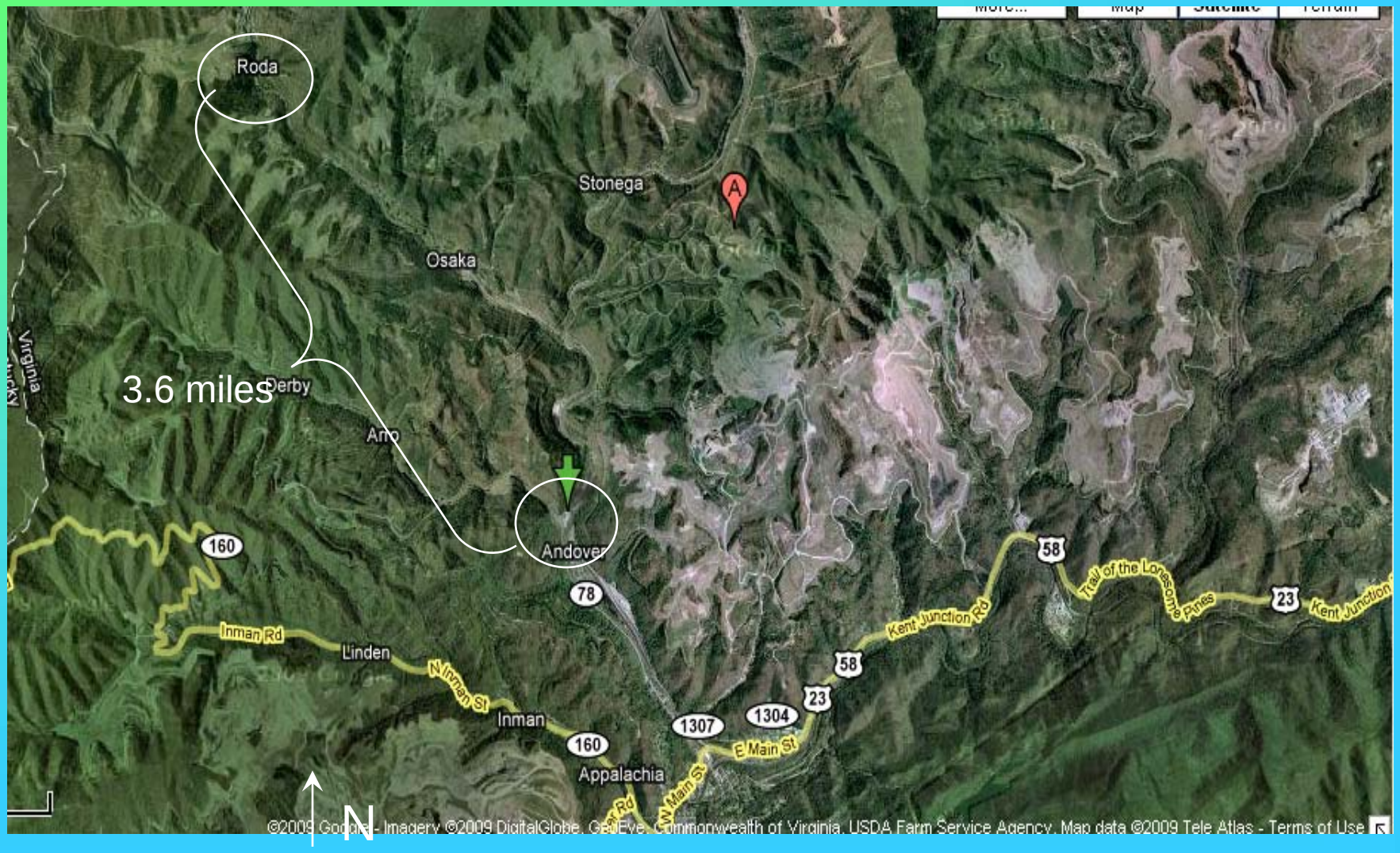
Roda Monitoring Study

The State Air Pollution Control Board directed the Office of Air Quality Monitoring at the April 24, 2009 Board Meeting to perform the following:

Gather monitoring data in the Roda area and develop a plan for regional response for other communities where there is a need.

As a result of this directive, the Office of Air Quality Monitoring performed a study in the Roda area from May 27 2009 through August 18 2009. The samplers were placed to try and replicate the information provided by Dr. Viney Aneja's study and to determine if there was a NAAQS compliance issue in the Roda area. Samples during this study were taken on a one in three day schedule.

Relative Location of Samplers



PM10 Samplers and Locations

2-F Willis Site

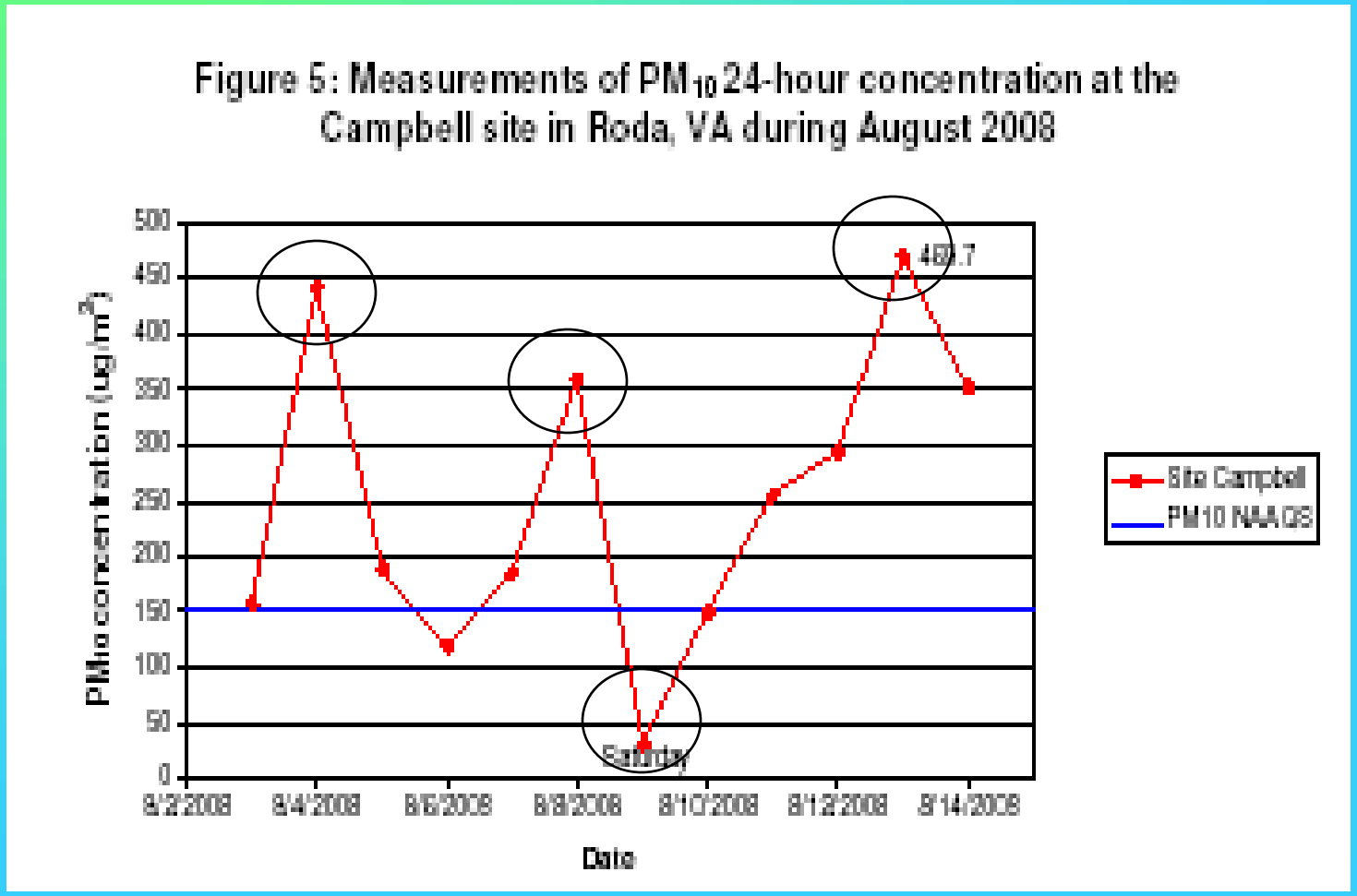
Does not meet siting criteria

2-H Sampson Site

Meets siting criteria

2-G Campbell Site
Does not meet siting criteria

Graph Extracted from Dr. Aneja's Study

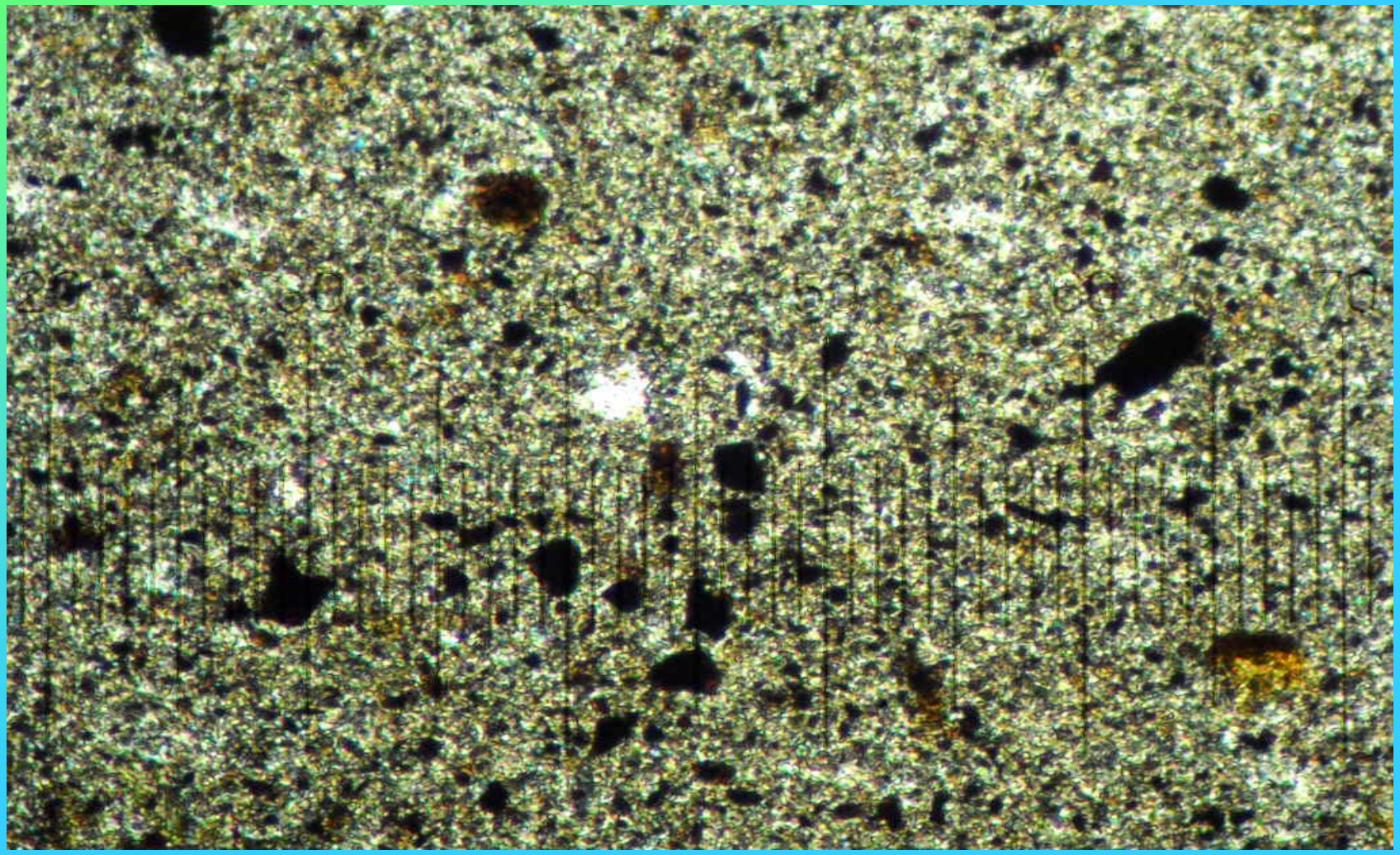


CONCLUSIONS cont.

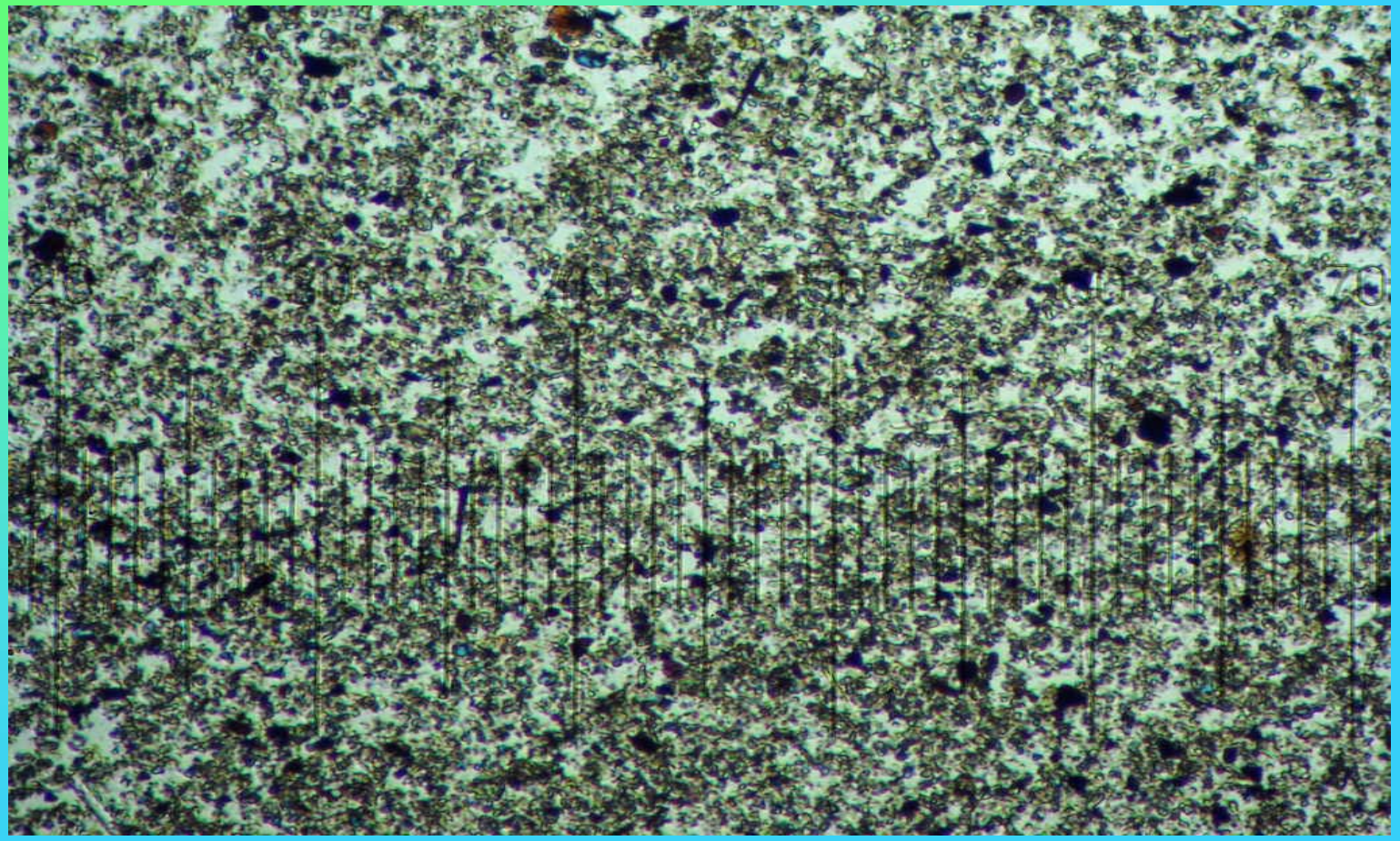
The overall results of AQM's study are as follows:

	2F Willis	**2G Campbell**	**2H Sampson**
# samples	27	28	26
Minimum	17.0	16.0	15.0
Maximum	92.0	160.0	33.0
Mean	47.7	69.7	22.9
Median	42.0	67.5	21.5
Std. Dev.	22.7	43.6	4.9

Campbell Site August 13, 2008



AQM Results July 9, 2009 samples



July 9, 2009 Campbell Site (139 µg/m3)

QUESTIONS?