NEIGHBORS FOR CLEAN AIR

Testimony before Portland City Council
30 March 2016
Mary Peveto, President Neighbors for Clean Air

Neighbors for Clean Air is a grassroots member organization that works to protect the health of Oregonians by reducing toxic air pollution. While many people in Portland woke up to the problem of toxic air February 3rd, this news was no surprise to our members.

Recent news coverage has focused on the time lag between when our state's Department of Environmental Quality (DEQ) first learned about the US Forest Service's moss findings in May 2015, and February 2016, when the public did. But the real delay by the agency to address toxic air pollution should be measured not in months, but in years, even decades. This is not a new problem, just a newly popular one.

There were strong activists in the 90's like Sharon Genasci fighting industrial pollution in my own NW neighborhood, which was found in DEQ's 2005 air monitoring study to have the highest consistent levels of heavy metal toxics in the city, including manganese, lead and the very deadly chromium 6. And Jeri Williams (now Jimenez), who as a founding member of the Environmental Justice Action Group, now OPAL, worked to reduce heavy diesel emissions in North Portland, estimated by EPA and DEQ to be some of the highest in the state due to the confluence of transportation and freight movement through the area. Citizens of North Portland were also found to have high rates of respiratory ailments that exceed statewide and national averages.

In 2009, six years after Oregon's air quality rules were amended to purportedly address the dangerous air toxics that the federal Clean Air Act doesn't, I stumbled on a national study showing that Chapman Elementary (the Portland Public school that all three of my children attended) ranks among the worst **two percent** in the nation for schools with exposure to toxic industrial air pollution. Since then, NCA have taken on the pollution battles that our state regulators would not, in what has become an ongoing David v. Goliath fight. Without state-level accountability, we have been left with "DIY" air emissions regulations, relying on hard-won Good Neighbor Agreements and odor regulations to make headway. Neighbors for Clean Air has been successful in winning small battles against big polluters like Esco, Vigor and Intel. We are proud of these victories because they don't come easy. Yet, they are far from enough. Because we know that the highest level of the most deadly pollution is in Portland neighborhoods with higher concentrations of poor people and people of color, yet almost exclusively these hard won citizen led victories have been achieved by neighborhoods dominated by white homeowners.

I specifically learned about Portland's elevated levels of cadmium and arsenic—along with diesel particulates and a dozen other toxics that exceeded the established health

thresholds—over five years ago as a member of the DEQ's Portland Air Toxics Solutions Advisory Committee.

The problem is not that the agency charged with oversight of our state's air quality didn't know about the pollution in our air. Along with my testimony, I submit two documents (one summary memo from 2011 entitled "North Portland Cadmium Source Investigation" and one monitoring report from 2005), which clearly show **regulators knew but failed to act to protect our health, which is one of its key missions.**

When more than 35 Portland area schools still fall in the worst 10 percent nationally for exposure to industrial pollution, and no school ranks better than the bottom 30%, and when hundreds of Multnomah County deaths each year are attributed to diesel exhaust, and when neighborhoods with higher concentrations of the poor and populations of color have air pollution that is up to three times higher than it is where the population is predominantly white, it's clear that this isn't a problem that can be fixed voluntarily polluter by polluter – it needs to be fixed at the system level.

But we have worked for with state leaders since 2013 when Rep. Mitch Greenlick introduced the first bill aimed at establishing pollution prevention requirements of all permitted industrial facilities, and more recently in 2015 when Rep. Greenlick introduced a bill to have Oregon adopt California's diesel standards. The ability to address this at the state level, where industry lobbyists have for too long held back any reasonable attempts to fix the rules they are quick to acknowledge they wrote, is limited.

It is time for you to join other local leaders at the County and Metro to develop local solutions to protect the health of Portland metro citizens from toxic air pollution. I urge all the council members to get behind Mayor Hales in his pledge to explore the establishment of local air quality management.

Thank you.

Portland Air Toxics Solutions
Air Monitoring

Gregg Lande

August 13, 2009

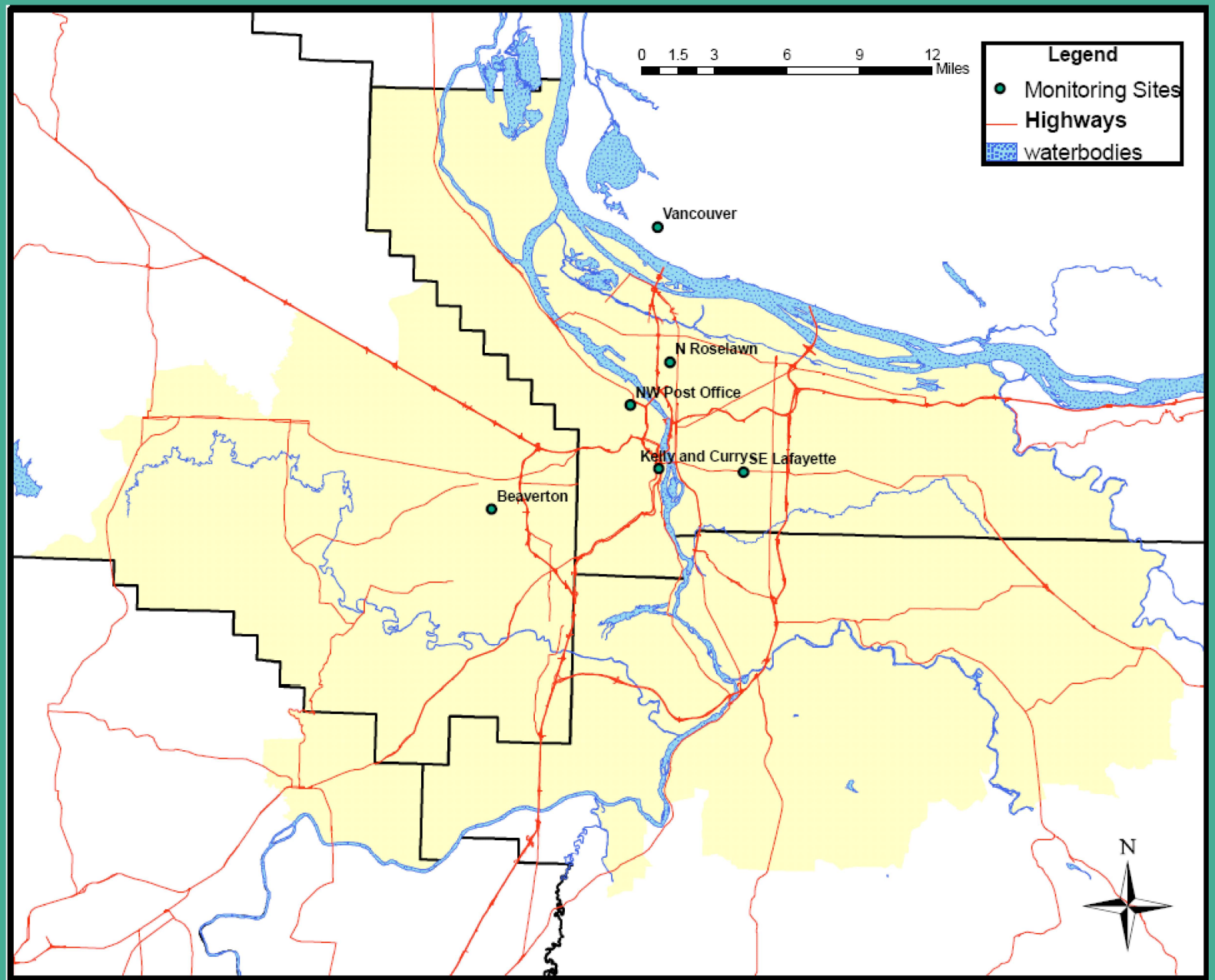
How Do We Know There is a Problem?

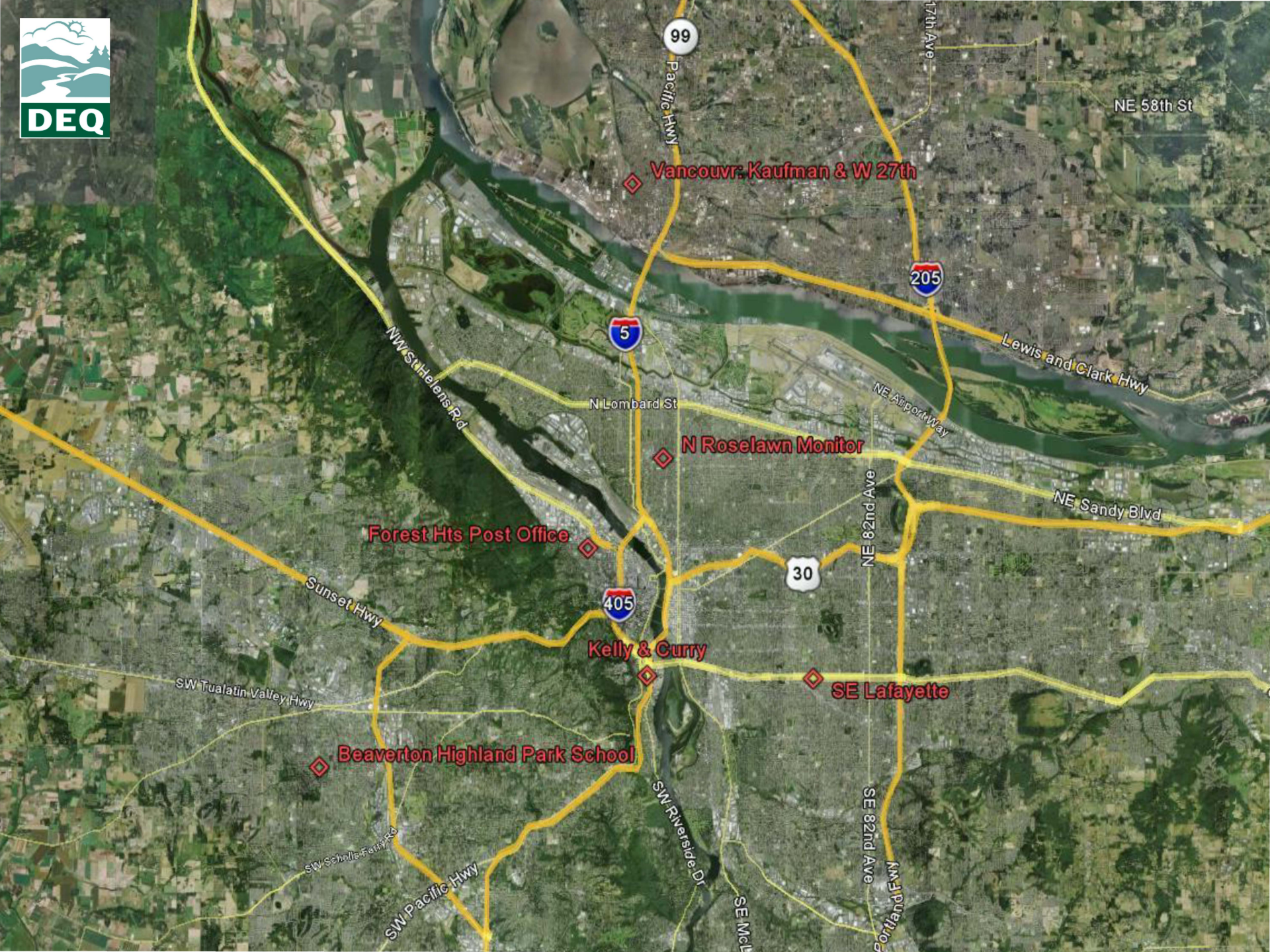
- Monitoring – measured data

- Modeling – estimates

How do we use the data we collect?

Air Toxics Monitoring Stations (2005)




DEQ
99
Pacific Hwy
17th Ave
NE 58th St
Vancouvr: Kaufman & W 27th
205
5
NW St Helens Rd
Lewis and Clark Hwy
N Lombard St
NE Airport Way
N Roselawn Monitor
NE Sandy Blvd
NE 82nd Ave
Forest Hts Post Office
30
Sunset Hwy
405
Kelly & Curry
SE Lafayette
SW Tualatin Valley Hwy
Beaverton Highland Park School
SW Riverside Dr
SE 82nd Ave
SW Scholls Ferry Rd
SW Pacific Hwy
SE McL
Portland Hwy

Air Monitoring Methods

- PM 10 Metals – Quartz Filter – ICP/MS
- VOC – SUMMA Canister – GC/MS
- Carbonyls – DNPH Cartridge – HPLC
- SVOC – XAD/PUF Cartridge – GC/MS

19 Pollutants Studied

- Acrolein — Not measured
- Diesel PM — Not measured

- Ethylbenzene — < MDL, ABC = MDL
- Trichloroethylene — < MDL, ABC = MDL
- 1,3-Butadiene — < MDL, ABC < MDL
- p-Dichlorobenzene — < MDL, ABC < MDL
- Cr +6 — < MDL, ABC > MDL
- Perchloroethylene — < MDL, ABC > MDL

- Benzene — No annual average
- Naphthalene — No annual average
- 15 PAH — No annual average

- Arsenic
- Cadmium
- Lead
- Manganese
- Nickel
- Acetaldehyde
- Formaldehyde
- Methylene chloride

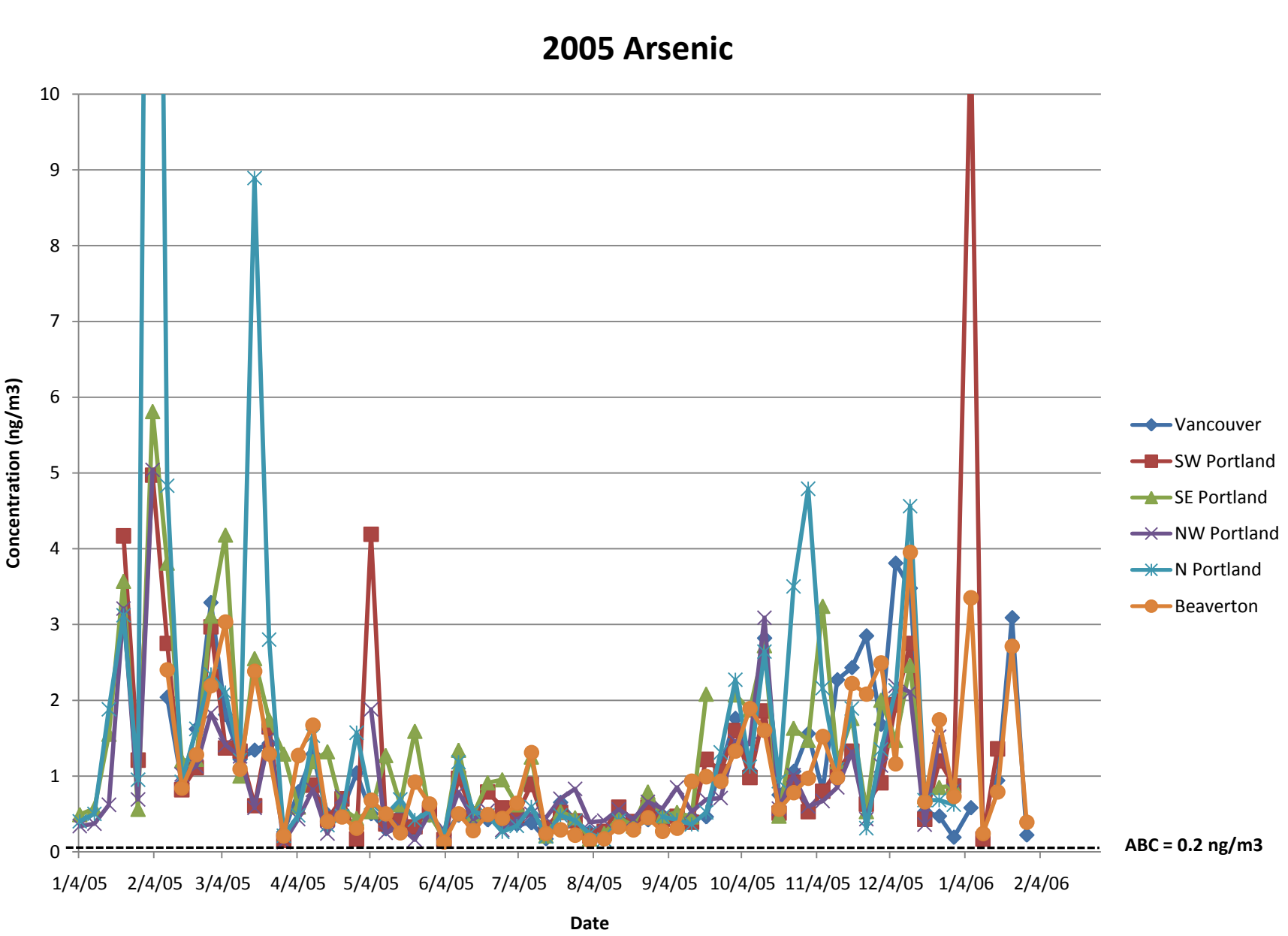
Measurement Summary

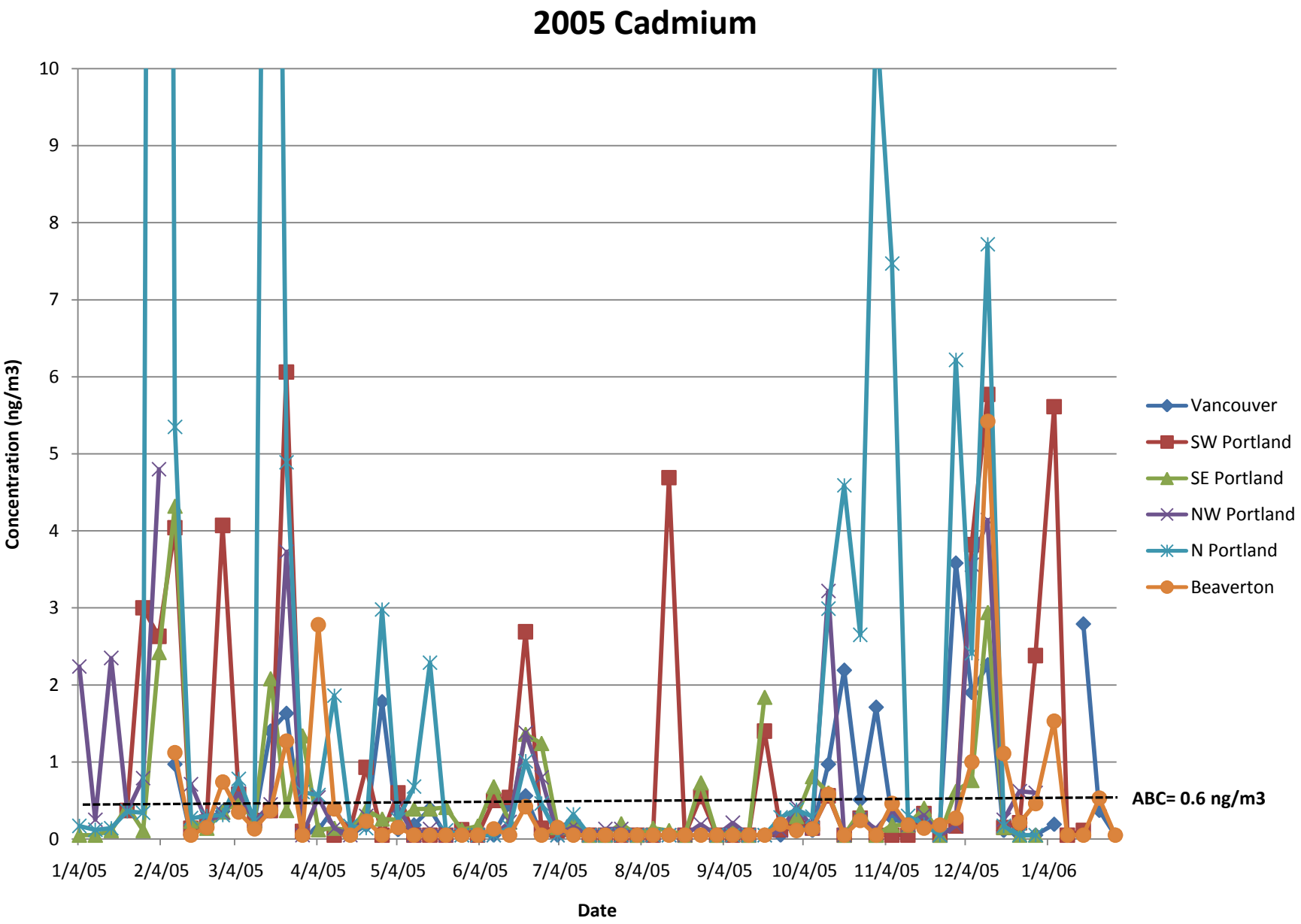
2005 Annual Averages

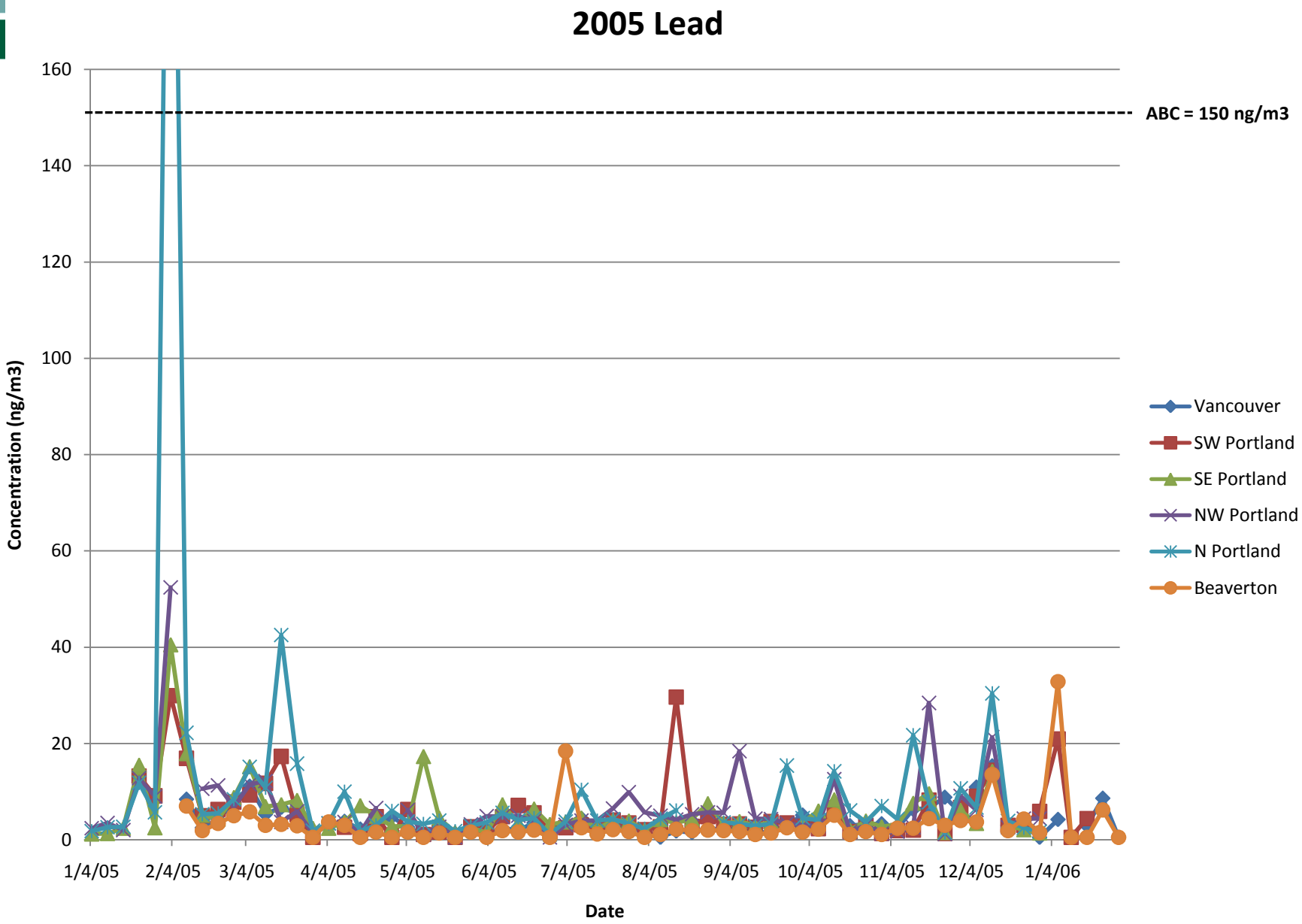
CASRN	Pollutant	ABC	Beaverton	SE Portland	NW Portland	N Portland	SW Portland	Vancouver
7440-38-2	Arsenic and compounds	0.2	1.06	1.32	0.93	1.74	1.22	1.03
7440-43-9	Cadmium and compounds	0.6	0.38	0.50	0.63	2.57	0.92	0.49
7439-92-1	Lead and compounds	150	3.18	5.72	6.60	11.7	5.79	3.82
7439-96-5	Manganese and compounds	200	3.8	6.4	41.9	15.9	19.2	8.0
7440-02-0	Nickel and compounds	2, 4, 50	< 1.0	1.75	4.24	1.76	1.78	1.09
75-07-0	Acetaldehyde	0.45	1.25	1.64	1.66	1.53	1.48	1.43
50-00-0	Formaldehyde	3	1.58	2.14	2.4	2.17	2.16	1.97
75-09-2	Methylene chloride	2.1	0.28	1.15	0.52	0.45	0.38	0.45
	metals in units of nanograms/cubic meter							
	others in units of micrograms/cubic meter							

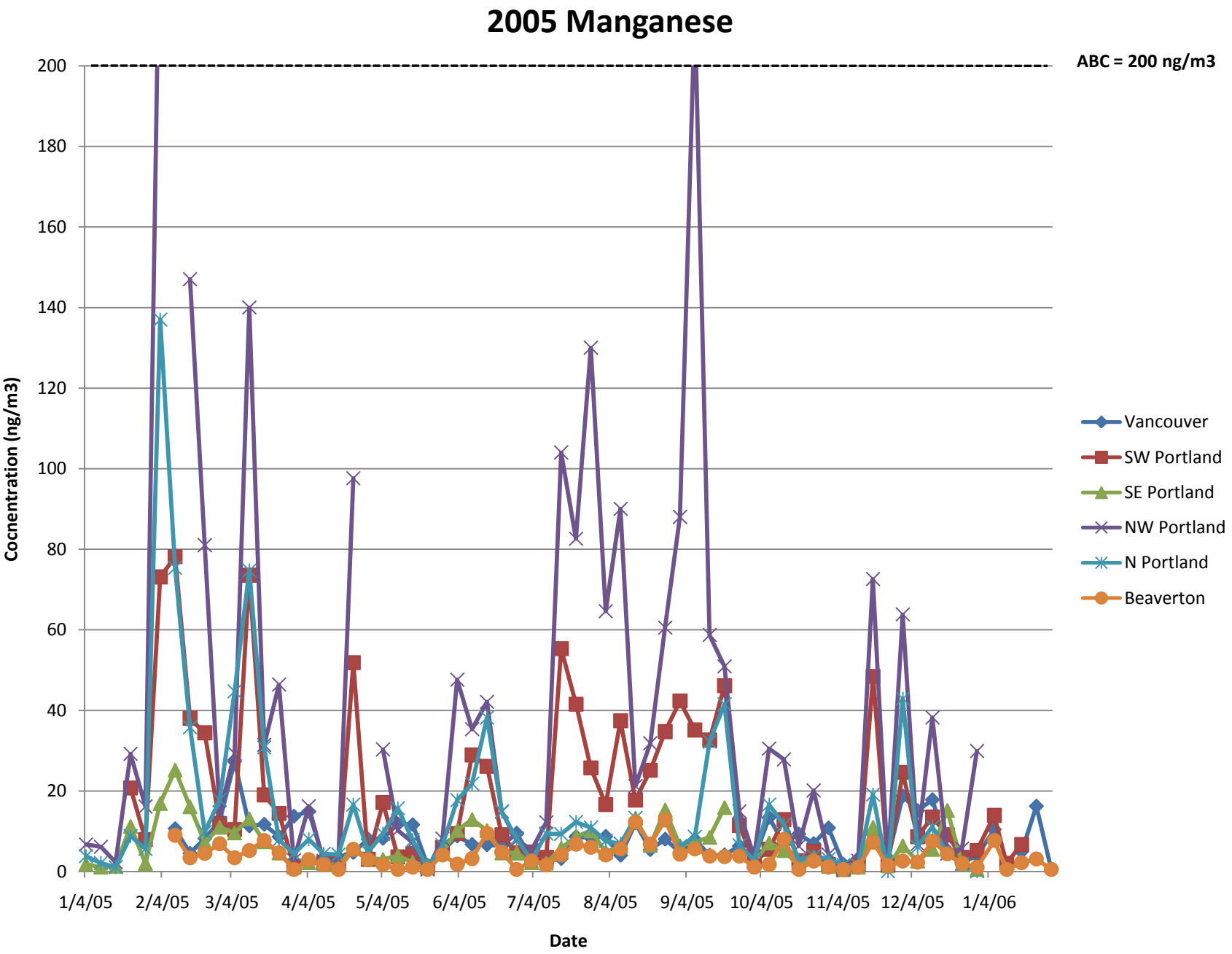
Monitoring Data

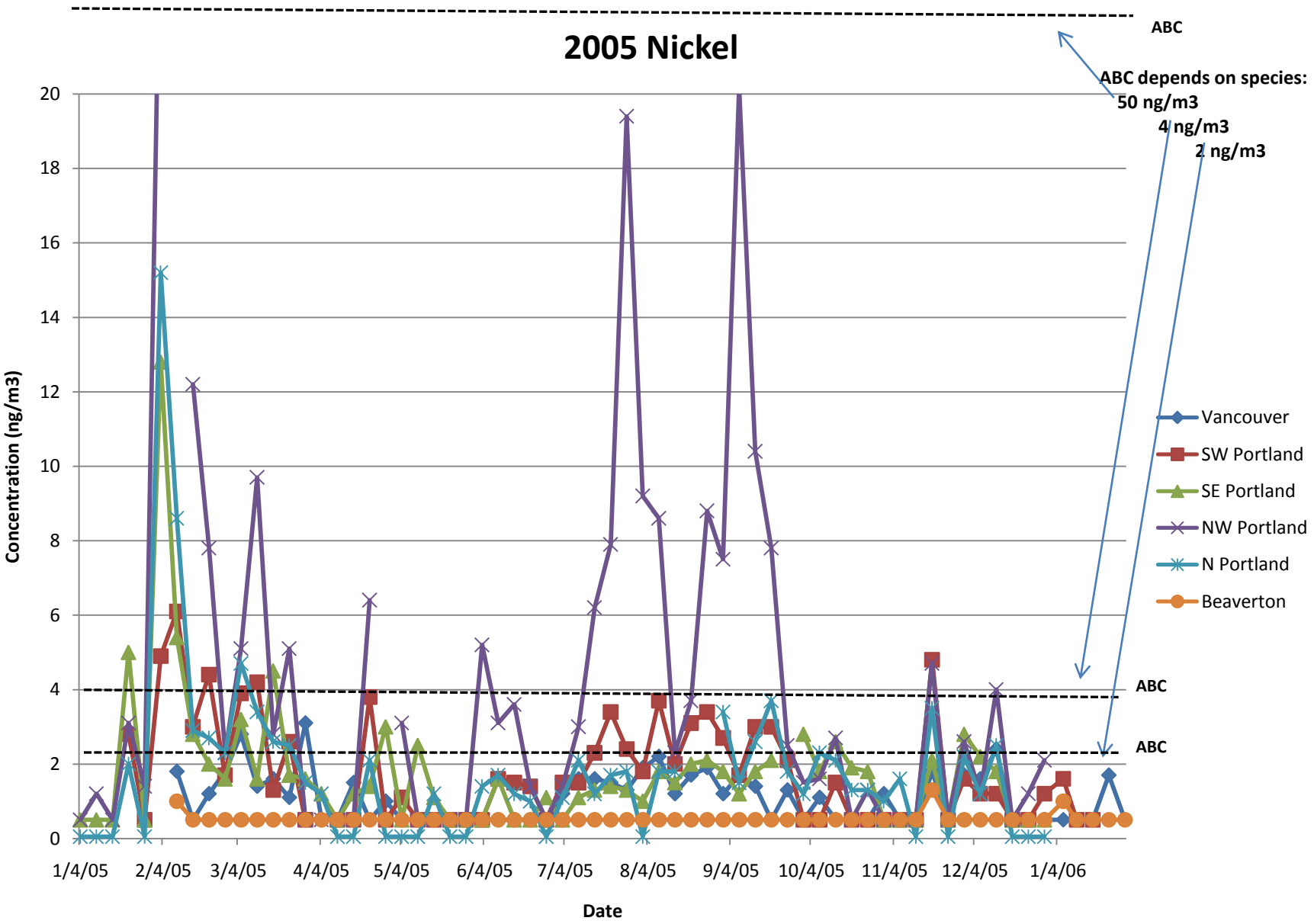
Metals


2005 Arsenic
Concentration (ng/m3)
10
9
8
7
6
5
4
3
2
1
0
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
6/4/05
7/4/05
8/4/05
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06
2/4/06
Date
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton
ABC = 0.2 ng/m3


2005 Cadmium
Concentration (ng/m3)
10
9
8
7
6
5
4
3
2
1
0
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
6/4/05
7/4/05
8/4/05
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06
Date
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton
ABC= 0.6 ng/m3


2005 Lead
Concentration (ng/m3)
160
140
120
100
80
60
40
20
0
ABC = 150 ng/m3
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
6/4/05
7/4/05
8/4/05
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06
Date
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton


2005 Manganese
ABC = 200 ng/m3
Cocnentration (ng/m3)
200
180
160
140
120
100
80
60
40
20
0
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
6/4/05
7/4/05
8/4/05
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06
Date
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton


2005 Nickel
ABC
ABC depends on species:
50 ng/m3
4 ng/m3
2 ng/m3
ABC
ABC
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton
Concentration (ng/m3)
Date
0
2
4
6
8
10
12
14
16
18
20
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
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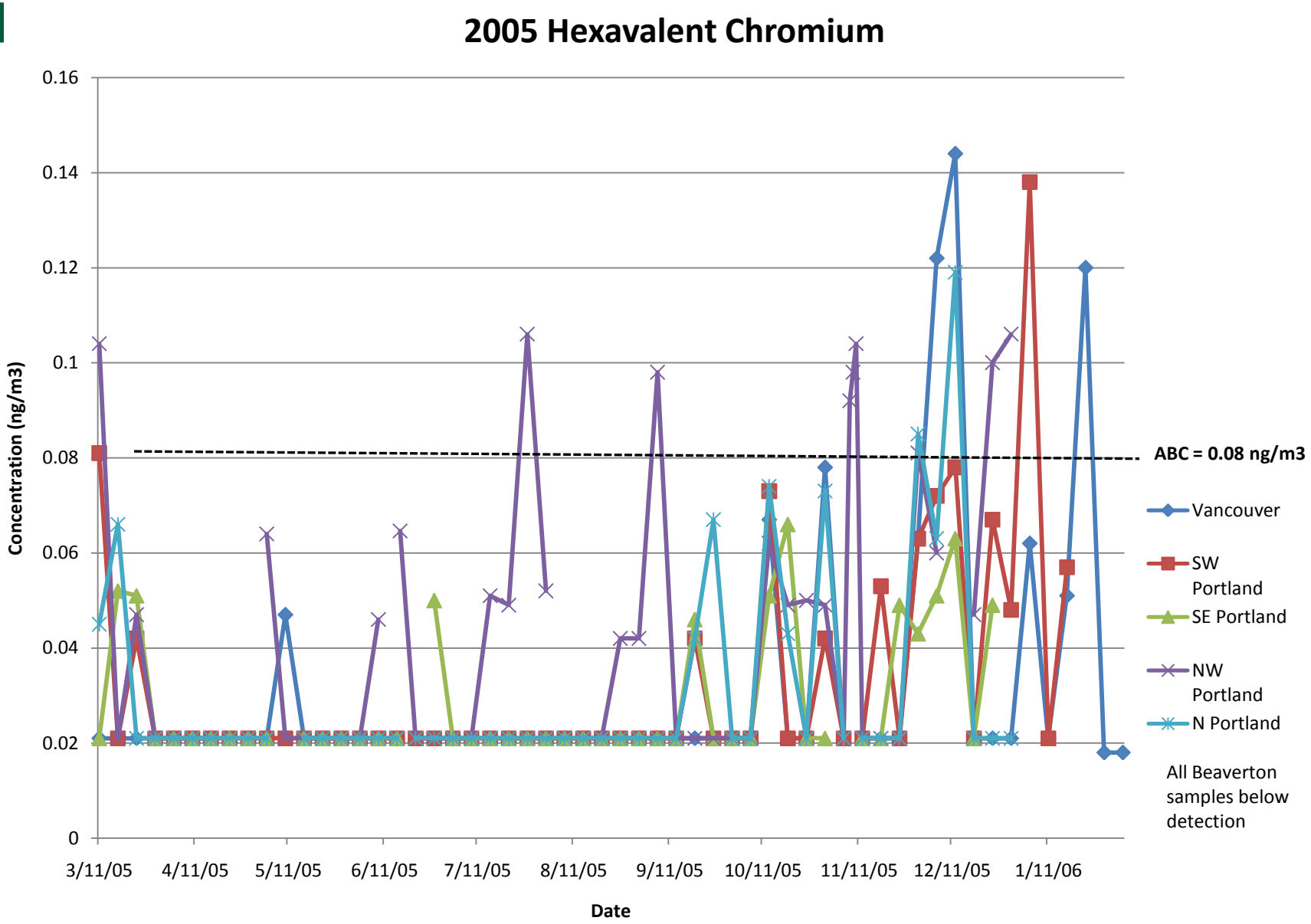
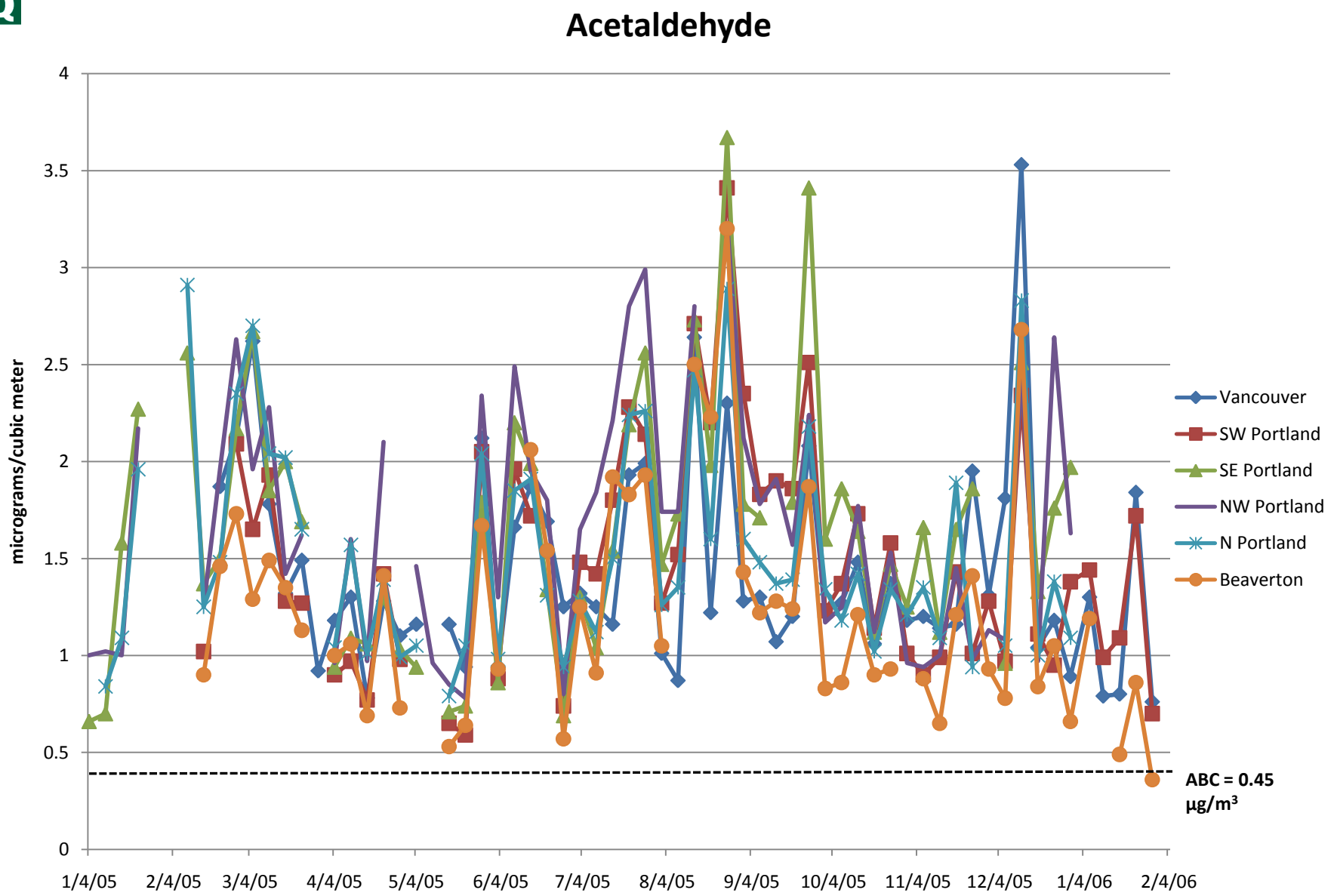
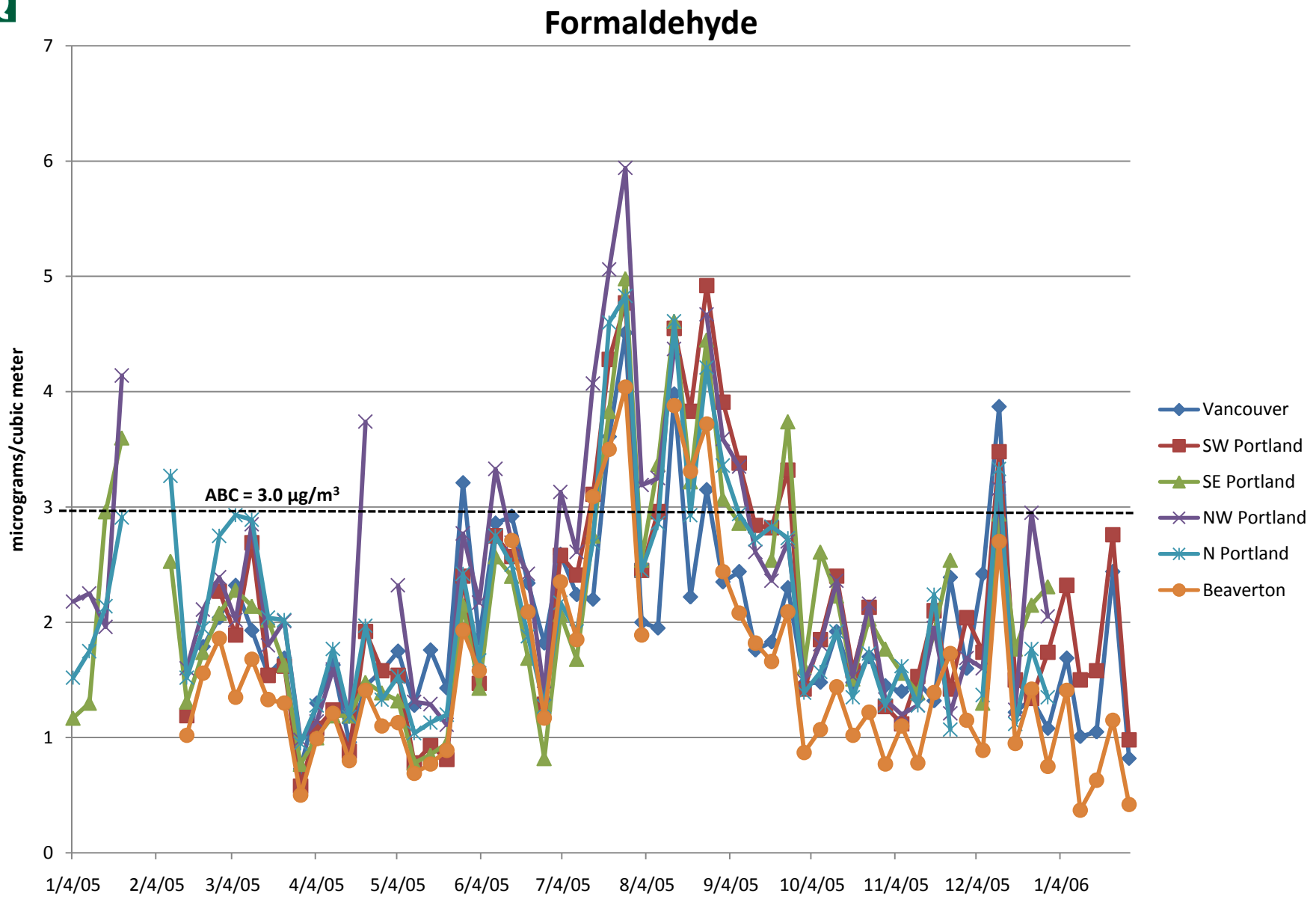
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06


2005 Hexavalent Chromium
Concentration (ng/m3)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
3/11/05
4/11/05
5/11/05
6/11/05
7/11/05
8/11/05
9/11/05
10/11/05
11/11/05
12/11/05
1/11/06
Date
ABC = 0.08 ng/m3
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
All Beaverton samples below detection

Monitoring Data

Carbonyls

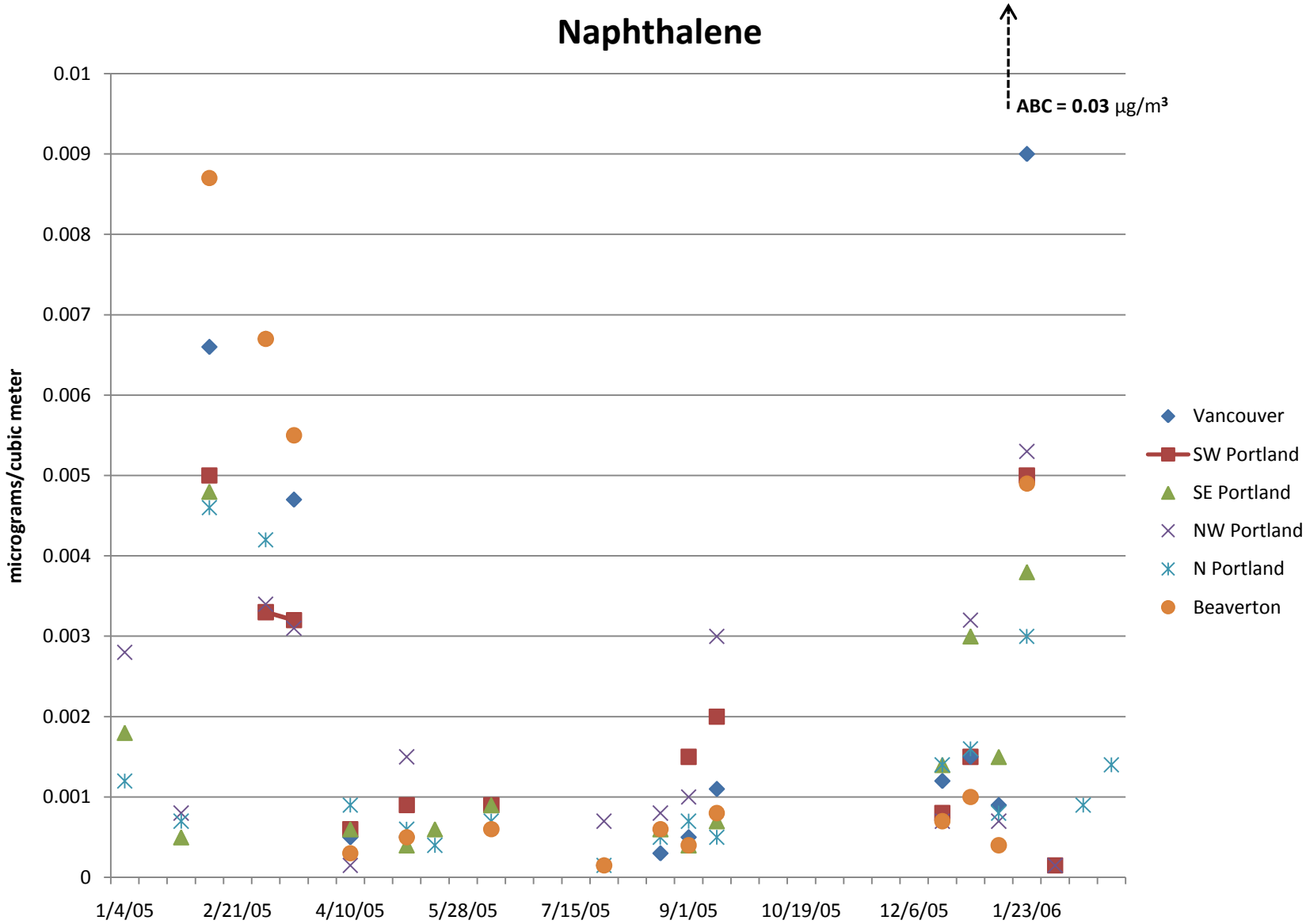

Acetaldehyde
micrograms/cubic meter
4
3.5
3
2.5
2
1.5
1
0.5
0
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
6/4/05
7/4/05
8/4/05
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06
2/4/06
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton
ABC = 0.45
µg/m3

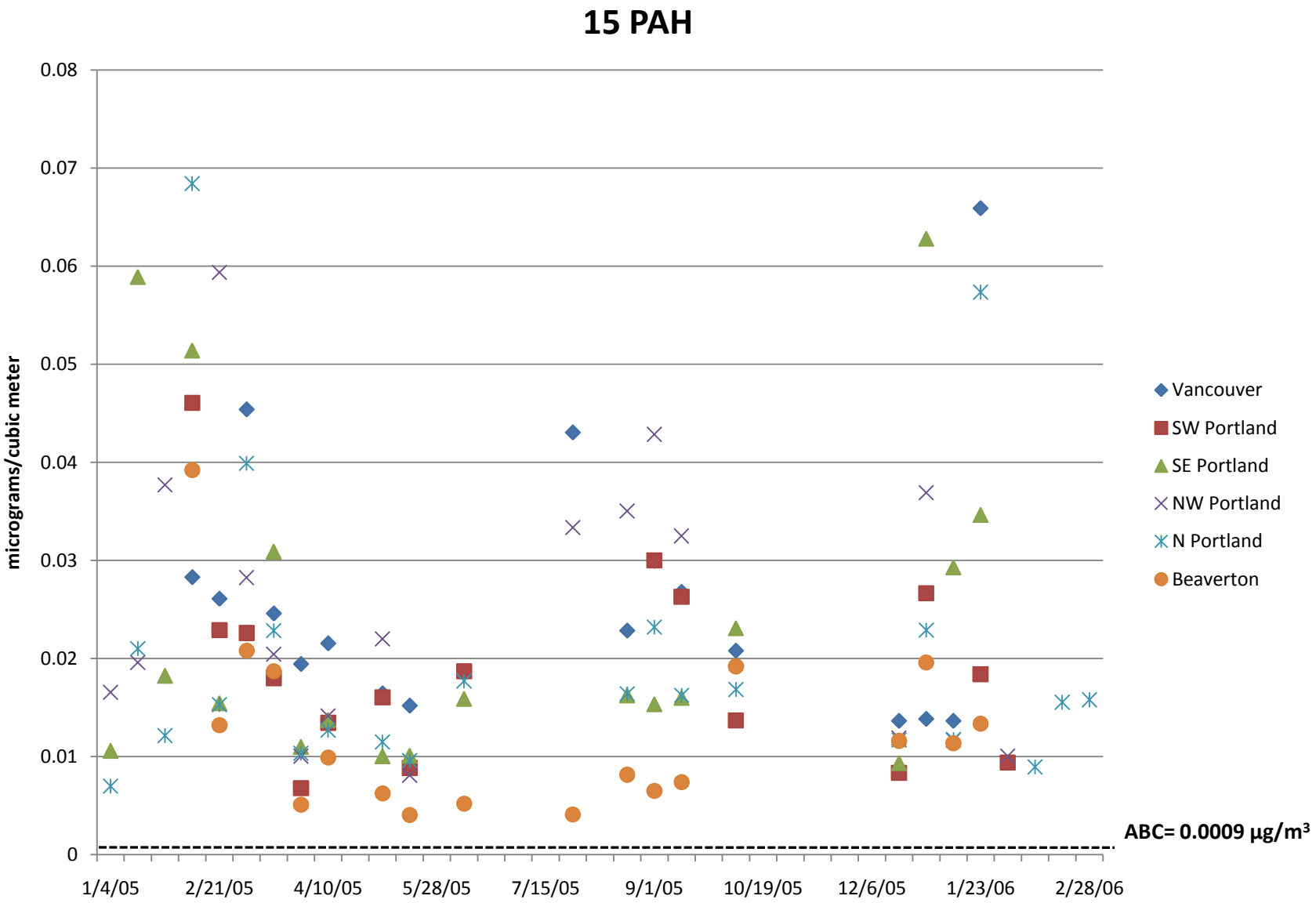

Formaldehyde
micrograms/cubic meter
7
6
5
4
3
2
1
0
ABC = 3.0 µg/m³
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
6/4/05
7/4/05
8/4/05
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton

Monitoring Data

SVOCs

(Semi-Volatile Organic Compounds)

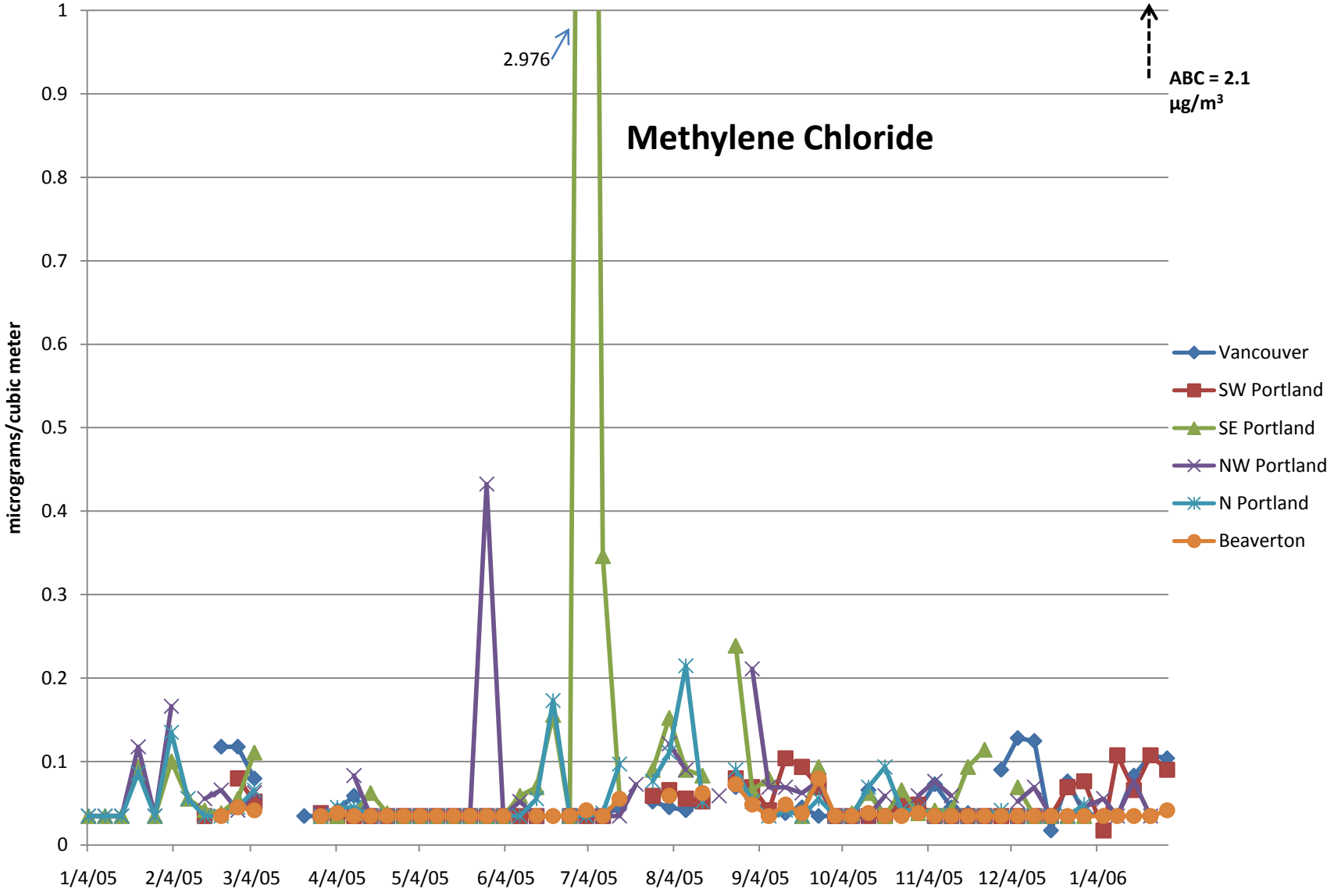

Naphthalene
ABC = 0.03 µg/m³
micrograms/cubic meter
0.01
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
1/4/05
2/21/05
4/10/05
5/28/05
7/15/05
9/1/05
10/19/05
12/6/05
1/23/06
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton

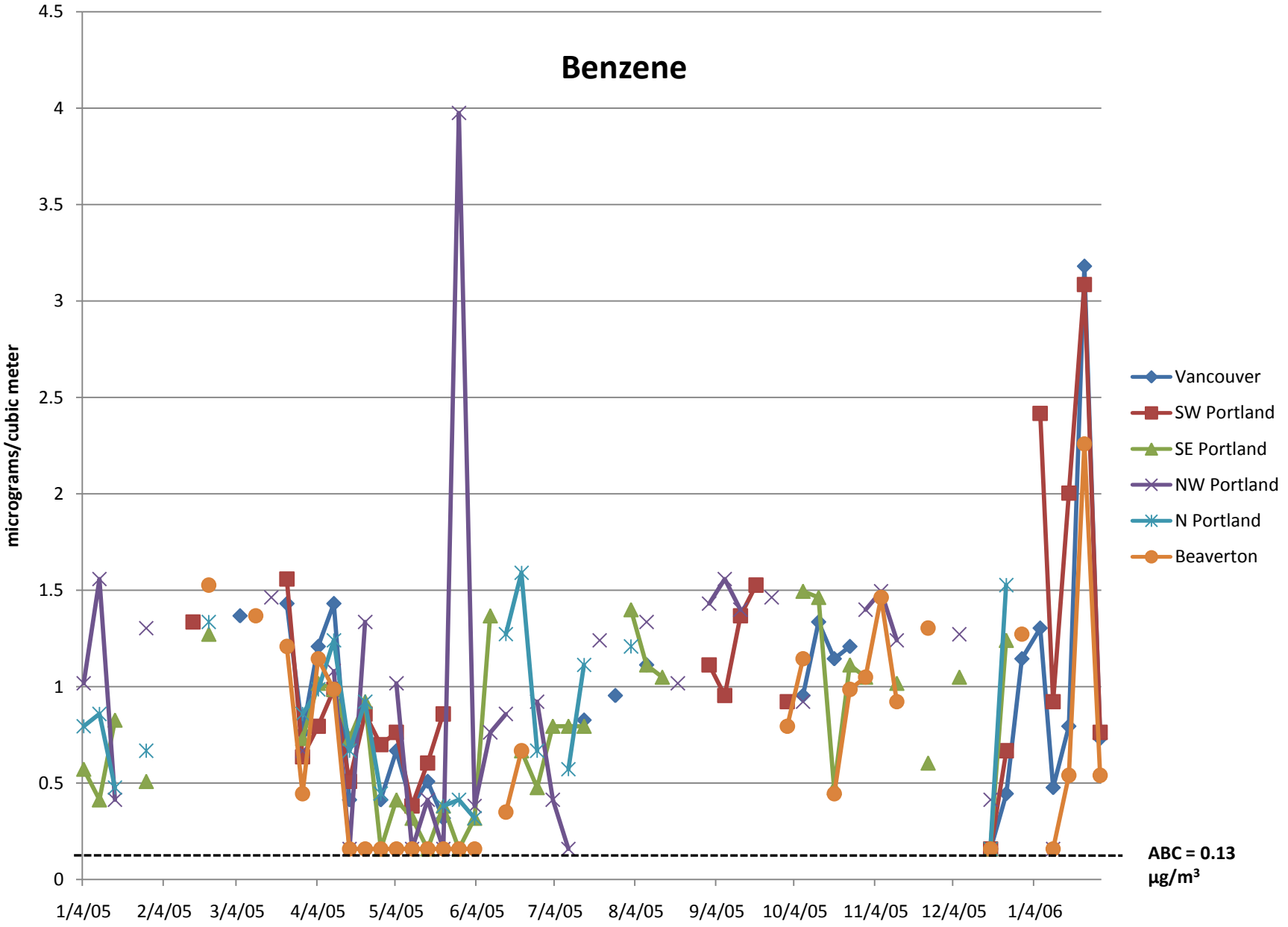

15 PAH
micrograms/cubic meter
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
1/4/05
2/21/05
4/10/05
5/28/05
7/15/05
9/1/05
10/19/05
12/6/05
1/23/06
2/28/06
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton
ABC= 0.0009 µg/m³

Monitoring Data

VOCs

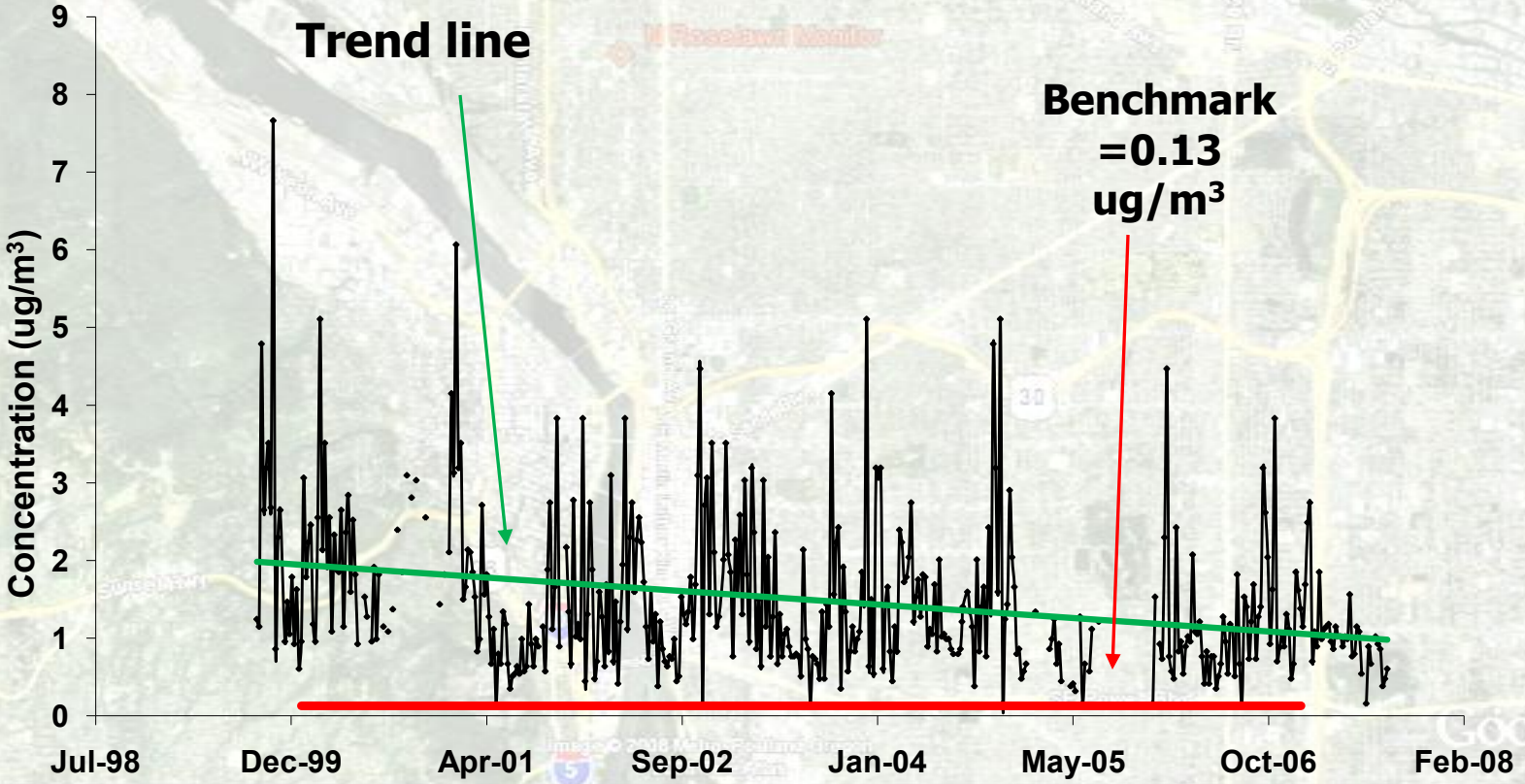
(Volatile Organic Compounds)


Methylene Chloride
2.976
ABC = 2.1 µg/m³
micrograms/cubic meter
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
6/4/05
7/4/05
8/4/05
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton


Benzene
micrograms/cubic meter
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1/4/05
2/4/05
3/4/05
4/4/05
5/4/05
6/4/05
7/4/05
8/4/05
9/4/05
10/4/05
11/4/05
12/4/05
1/4/06
Vancouver
SW Portland
SE Portland
NW Portland
N Portland
Beaverton
ABC = 0.13
µg/m³

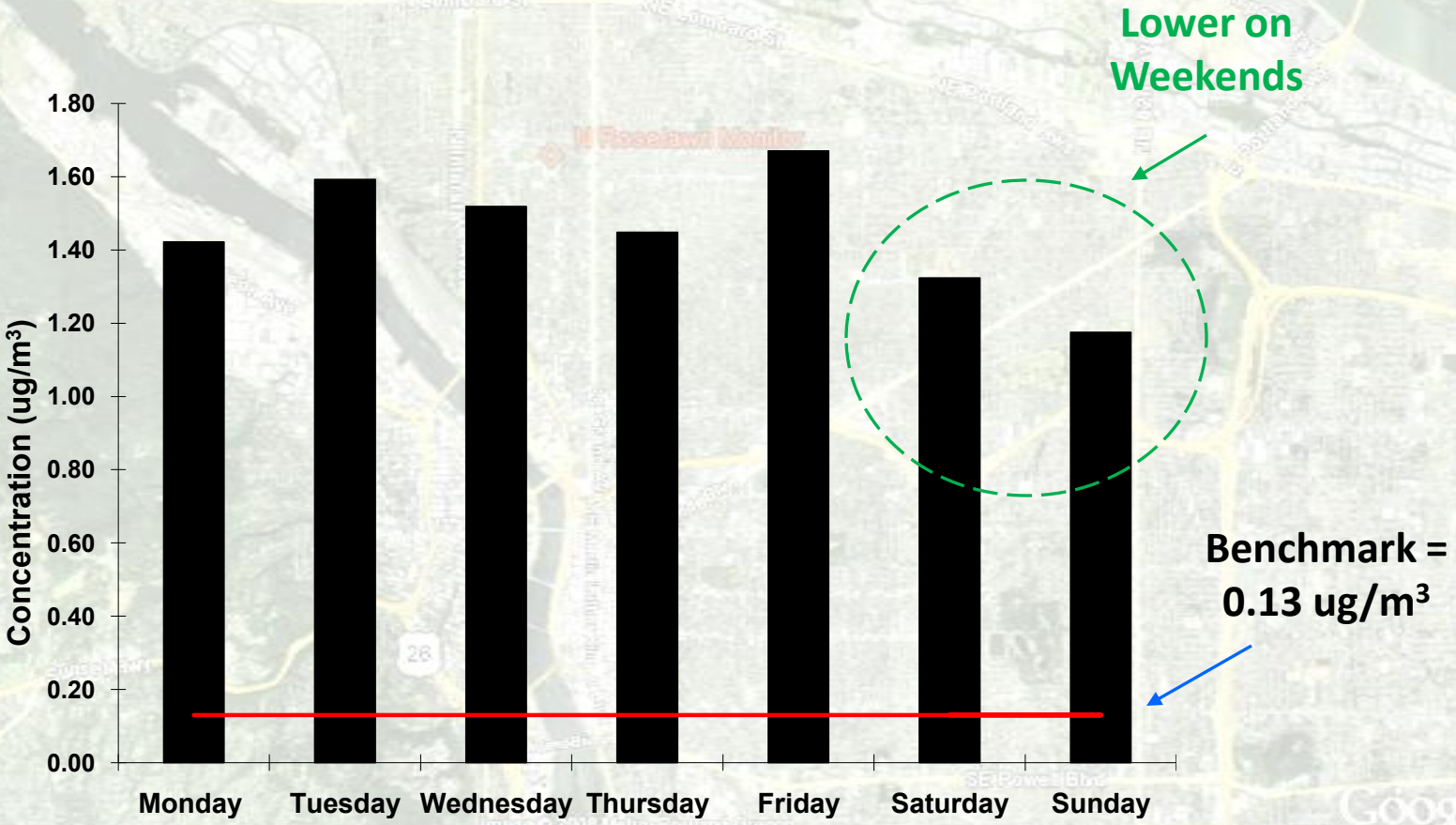
Benzene at N. Roselawn site

Benzene Measurements Over Time



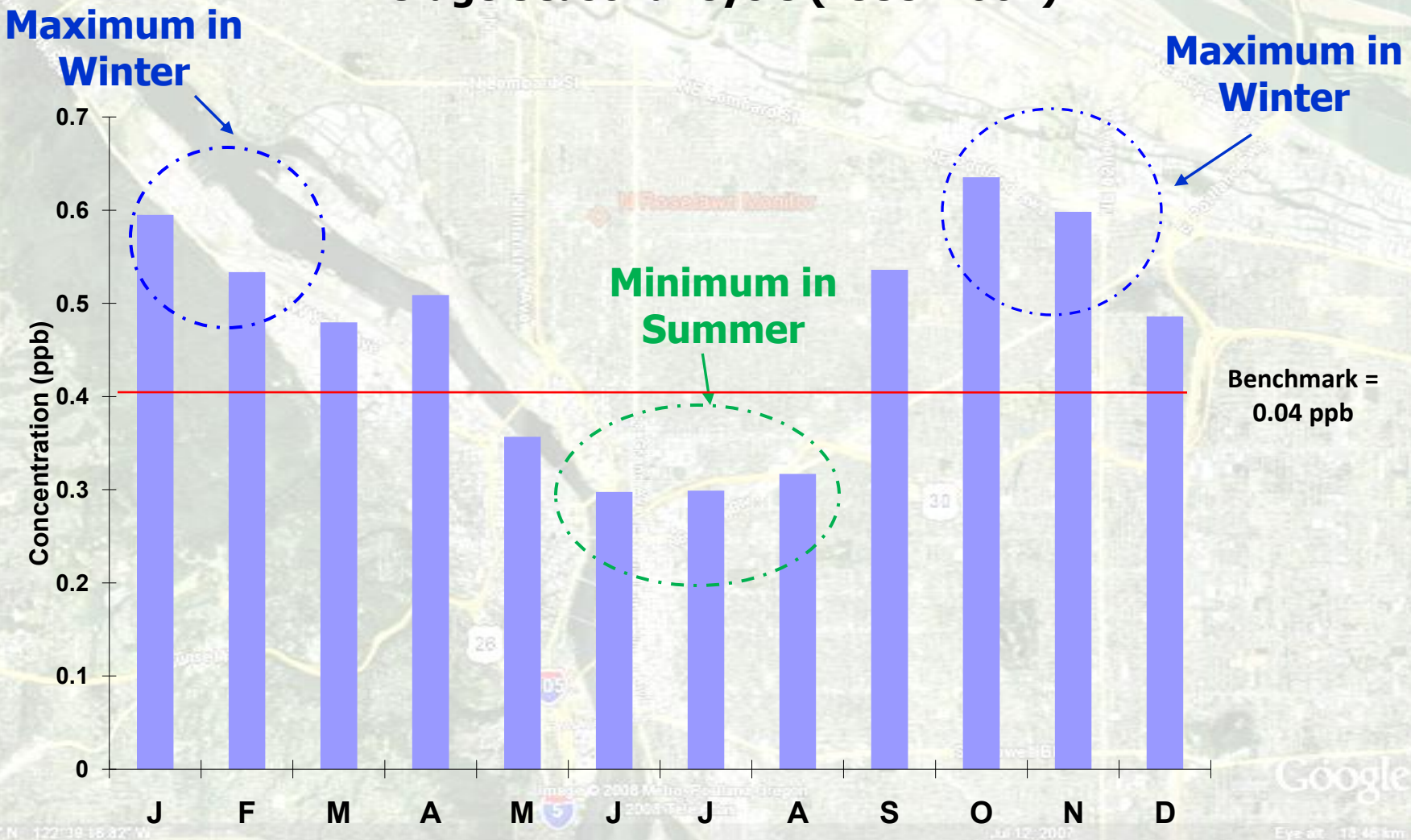
Benzene at N. Roselawn site

Day of Week Dependence (1999-2007)



Benzene at N. Roselawn site

Average Seasonal Cycle (1999-2007)



19 Pollutants Studied

- **Acrolein** Not measured
- **Diesel PM** Not measured

- **Ethylbenzene** < MDL, ABC = MDL
- **Trichloroethylene** < MDL, ABC = MDL
- **1,3-Butadiene** < MDL, ABC < MDL
- **p-Dichlorobenzene** < MDL, ABC < MDL
- **Cr +6** < MDL, ABC > MDL
- **Perchloroethylene** < MDL, ABC > MDL

- **Benzene** No annual average
- **Naphthalene** No annual average
- **15 PAH** No annual average

- **Arsenic**
- **Cadmium**
- **Lead**
- **Manganese**
- **Nickel**
- **Acetaldehyde**
- **Formaldehyde**
- **Methylene chloride**

State of Oregon
Department of
Environmental
Quality

Memo

To: Portland Air Toxics Solutions Advisory Committee

From: Gregg Lande

CC: Sarah Armitage, Aida Biberic, Monica Russell, Patricia Huback

Date: 22 November, 2010

Re: North Portland Cadmium Source Investigation

As a follow-up to the modeling and monitoring comparison discussion of last meeting, this memo summarizes the history of DEQ's investigation into ambient air cadmium measurements in North Portland.

Oregon's Air Toxics Program

The Environmental Quality Commission adopted initial rules for Oregon's risk-based community approach to air toxics in 2003. In mid 2006, the Commission adopted ambient benchmark concentrations, including a level for cadmium. The benchmarks allowed DEQ to evaluate monitoring data by comparing it to levels representing very low risk or clean air goals.

Ambient Air Monitoring

City-wide air toxics monitoring began with the 1999 - 2000 five site network. Cadmium was not one of the metals measured at that time.

The 2005 six site network was the first time we could see and compare ambient concentrations of cadmium in various parts of the Portland – Vancouver airshed. Data for 2005 was finalized and ready for use in late 2006. Cadmium average and maximum concentrations were higher at the North Roselawn site than elsewhere in the city, but other pollutants showed variations across the city as well. It was notable that the annual average concentration of cadmium at this site was well above the Oregon Ambient Benchmark Concentration, while at other sites the concentration was very close to the Benchmark value.

EPA's School Air Toxics monitoring was done in September and October of 2009 and results were posted within a few weeks. These additional cadmium concentration measurements at Tubman school in North Portland were similar in magnitude to those we had seen previously at North Roselawn, confirming the higher concentrations in this part of the city. (We weren't able to compare the Tubman values to Roselawn until the DEQ lab finished the Roselawn analysis sometime later.)

EPA's monitoring project included Daily Screening Levels that allowed comparison of pollutant concentrations in each 24 hour sample to a health benchmark concentration. Three of the ten daily Tubman cadmium concentrations approached the screening level, although none were above it. Importantly, the wide variation in concentrations seemed more indicative of a nearby small source, as opposed to a more distant large source or an area-wide emissions source. This remains speculative but we know that an area-wide source, such as home heating, would likely result in similar concentrations on successive days regardless of wind direction. A distant single source would likely show smaller variation in concentrations because of plume spread.

Air Dispersion Modeling Estimates

Preparation for the Portland Air Toxics Solutions project began in the summer of 2009 and included modeling of cadmium concentrations across the airshed for the 2005 base year. The results predicted locally high concentrations in an area of NW Portland and in North Portland near the Columbia River but nothing of note near the North Roselawn or Tubman school sites. The previous Portland air toxics monitoring study, the Portland Air Toxics Assessment, completed in summer 2006 did not include cadmium because EPA's National-scale Air Toxics Assessments for 1999 and 2002 did not identify cadmium as a pollutant of concern.

DEQ Investigative actions to-date

At this point the combination of the monitoring information, which suggested at least one local point source, with the model results, which showed no local point source, raised questions about the emissions inventory that was the basis for the model predictions. DEQ staff reviewed the permitted source emissions inventory, and EPA's Toxic Release Inventory, but still found nothing that looked significant in close proximity to the Tubman or Roselawn sites.

In December 2009, four staff members spent a day canvassing the neighborhood near Tubman in an attempt to find the source. DEQ staff visited a small art glass manufacturer and requested production information that allowed staff to compare days when they were melting glasses containing cadmium with the higher measured concentration days. There was no clear correlation. No other likely sources were found that day.

Since then the investigation has taken several paths:

- Air permit writers/inspectors requested additional information and verification of emissions at several permitted sources in North Portland. None of the permitted sources appear to release cadmium in large enough amounts to be responsible.
- DEQ's Water Quality program and the City of Portland searched their files to identify facilities that discharge cadmium to water, either directly or through the sewer system. None were found.
- DEQ's Hazardous Waste and Clean-up programs provided information about cadmium in waste and at clean-up sites. Soil samples and stormwater outfalls associated with the Portland Harbor clean-up have shown cadmium indicating its release from past practices. There are no active clean-ups that are releasing cadmium to the air.
- Air Staff used back trajectory analysis, using meteorological data in conjunction with the concentrations measured at the two North Portland sites. Data for these analyses are limited and wind directions on the sampling days are variable. The results indicate that the source could be to the NW of both sites, although in some cases it appears to be to the South. Much better time resolution, correlating concentration with wind direction, would be helpful.
- Air Staff correlated the metals measurements at both the North Portland sites to look for a source "fingerprint". Cadmium has some correlation to Arsenic, Lead, and Nickel, with little correlation to other metals, although this is very limited data.
- Air Staff re-reviewed EPA's *Locating and Estimating Sources of Cadmium* document which suggests that small commercial operations making plastic products or printing may release cadmium. Purchasing a Business Directory, or searching other business databases, has been suggested to identify possible sources that use these process, but no decision has been made.

Future Actions

DEQ is planning further canvassing of the nearby commercial areas. In addition, EPA has recently decided to conduct follow-up monitoring at the Tubman site using a newly developed real-time multi-metal ambient monitoring system which is coupled with meteorological monitoring. This system is capable of providing hourly concentration readings for over 10 metals and associated wind speed and direction measurements. DEQ will coordinate with EPA on the set-up and operation of the system and with the subsequent data analysis. DEQ expects this to yield much better information about the location of the sources responsible for the elevated cadmium concentrations in North Portland. EPA plans to conduct this monitoring for about a month in the spring of 2011.

Parsons, Susan

From: Mary <mary@whatsinourair.org>
Sent: Wednesday, February 24, 2016 8:44 AM
To: Parsons, Susan
Subject: City Council public comment testimony 3/30

Sue,

Could I please sign up for a public testimony slot on the 3/30 city council agenda?

I will be speaking regarding the latest Portland Air Toxics Crisis.

Kind regards,
Mary

Mary Peveto
Neighbors for Clean Air
503-705-0481
Twitter: pdxair
Facebook:facebook.com/neighborsforcleanair
www.whatsinourair.org

Request of Mary Peveto to address Council regarding the latest Portland air toxics crisis (Communication)

MAR 30 2016

PLACED ON FILE

Filed MAR 22 2016

MARY HULL CABALLERO
Auditor of the City of Portland

By _____ Deputy

COMMISSIONERS VOTED AS FOLLOWS:		
	YEAS	NAYS
1. Fritz		
2. Fish		
3. Saltzman		
4. Novick		
Hales		