

Tonawanda Community Air Quality Study Update: An Evaluation of Three Years of Post-Study Air Toxics Results

Division of Air Resources

October 19, 2011

Tonawanda, NY





Air Toxics Monitoring Data Update

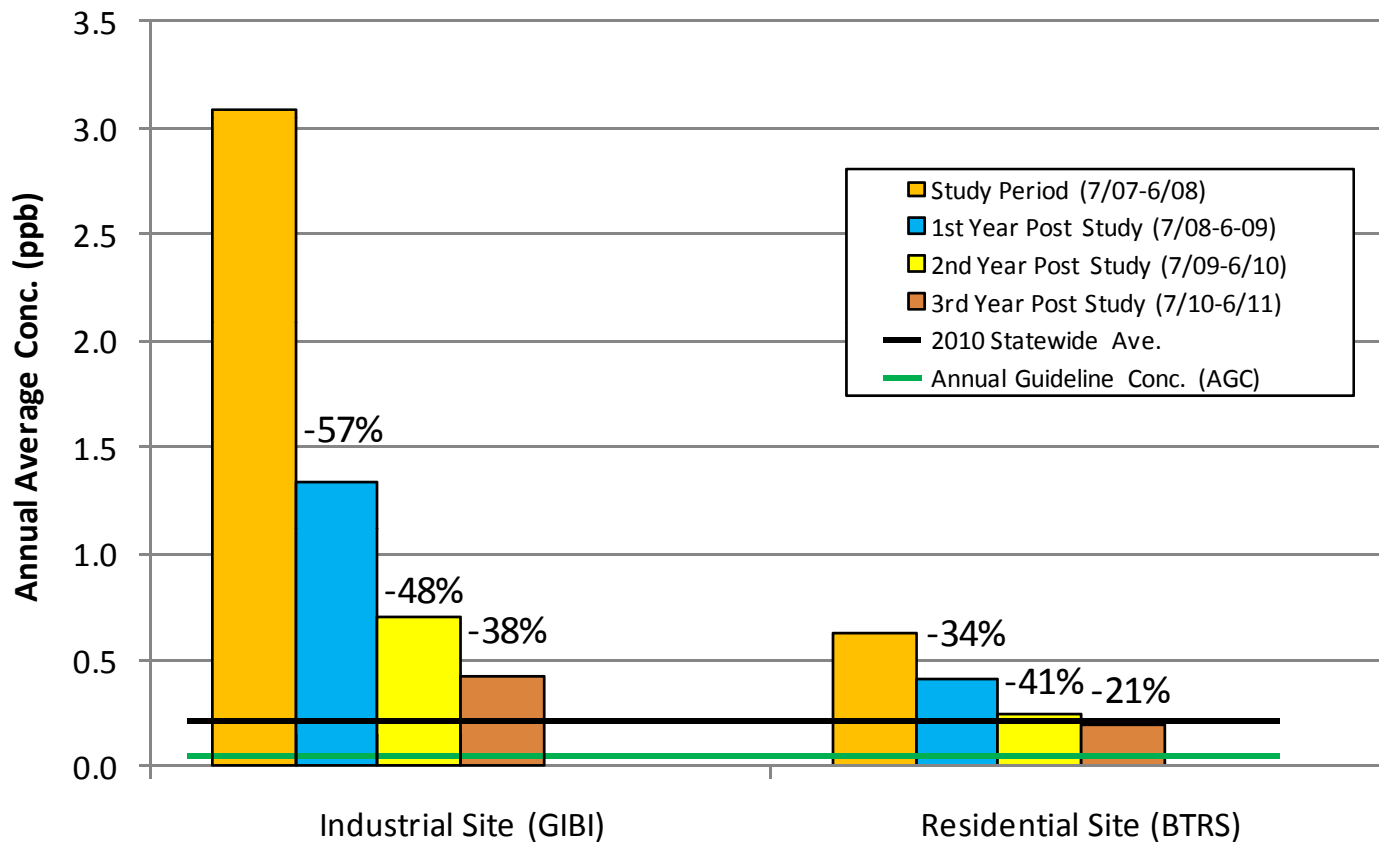
- Volatile Organic Compounds

- Benzene
- Acrolein
- 1,3 - Butadiene

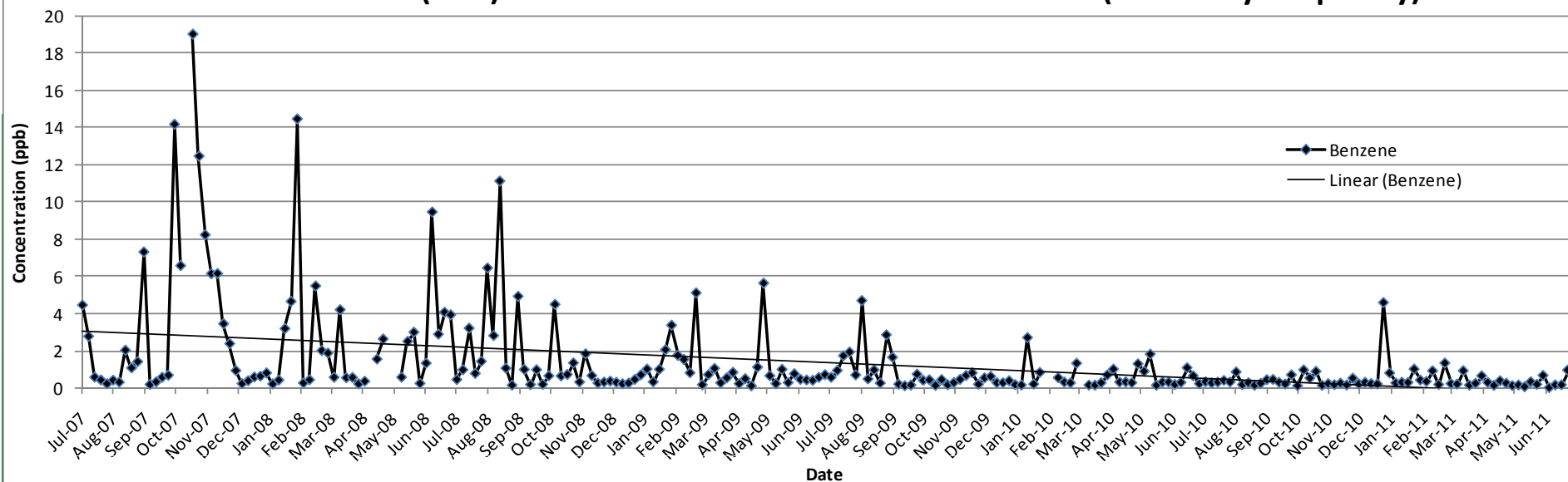
- Carbonyls

- Formaldehyde
- Acetaldehyde

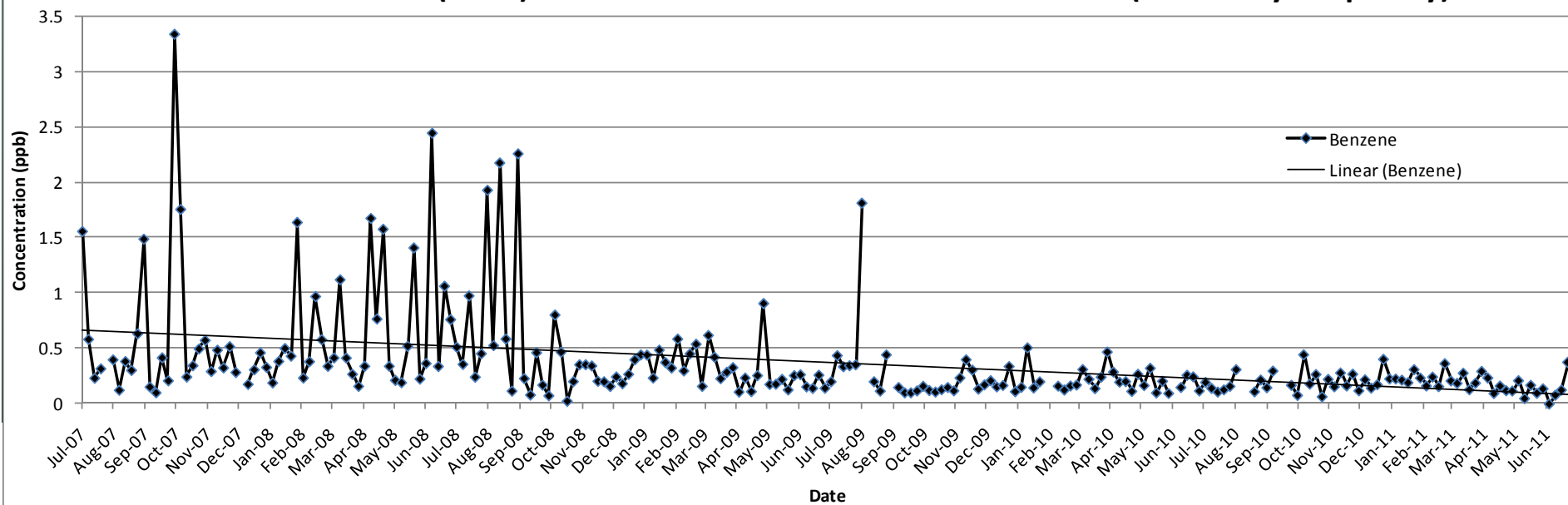
Benzene Concentration Study Year and Subsequent Years



Industrial Site (GIBI) Individual 24-hr Canister Measurements (1-in-6 day frequency)



Residential Site (BTRS) Individual 24-hr Canister Measurements (1-in-6 day frequency)



Benzene Sources in Tonawanda

- Point Sources
 - Indeck Yerkes Energy Services
 - Goodyear Dunlop Tires
 - NOCO Energy Corp.
 - NRG Huntley Electric Generating
 - Sunoco Tonawanda Terminal
 - Tonawanda Coke Corp.
- Area Sources
 - Gasoline stations, truck terminals
 - Commercial and Industrial Boilers
- Mobile Sources
 - Car and truck exhaust/evaporative

**Benzene - Tons per year
Tonawanda Community Area**

**Small Stationary
Sources
1.1 TPY**

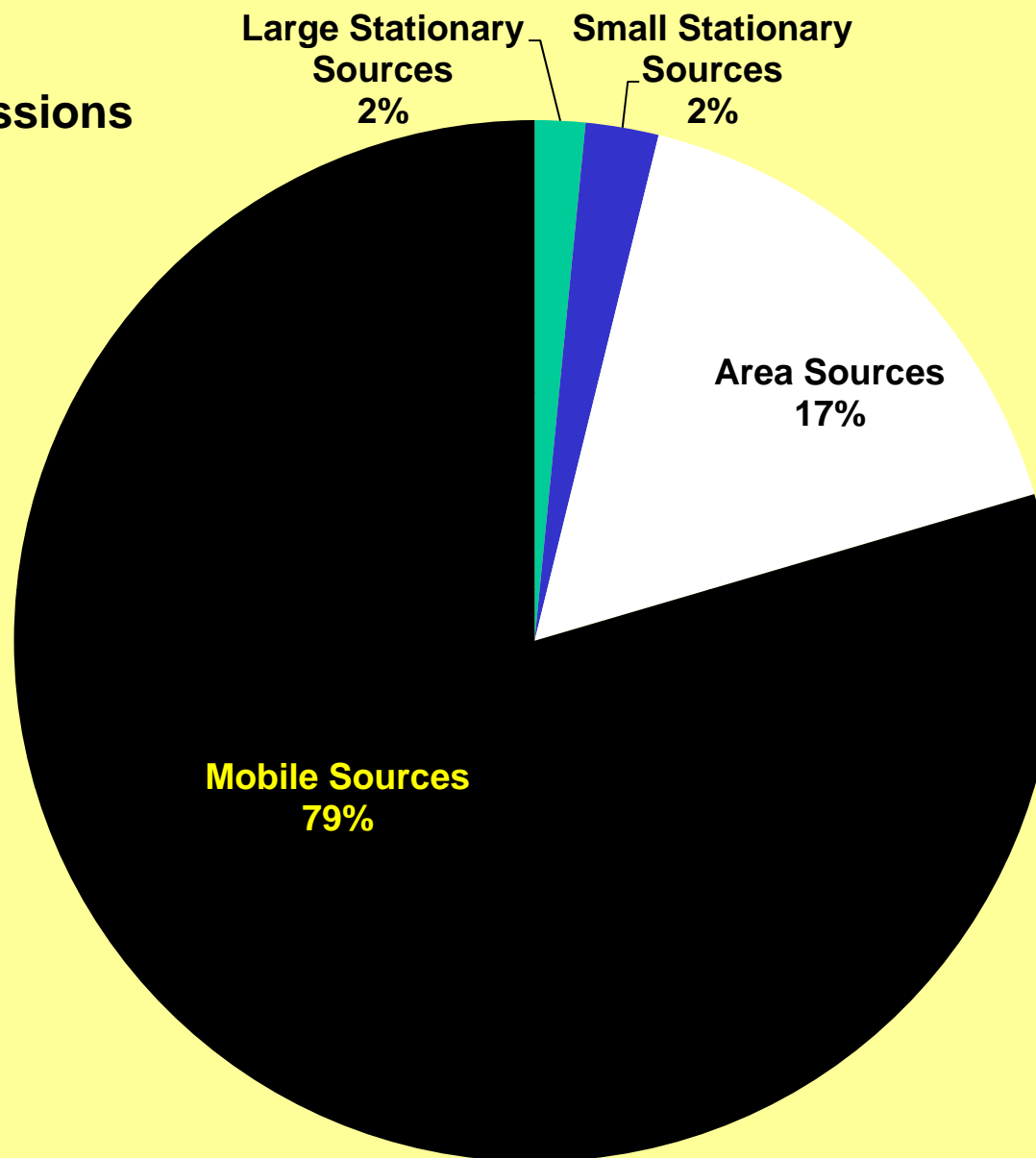
**Area Sources
3.8 TPY**

**Mobile Sources
6.3 TPY**

**Large Stationary
Sources
23.8 TPY**

Mobile emissions calculated from air pollution model, Moblie6
Major Includes Title V permitted point sources
Minor Includes State Facility and Registered point sources
Area Includes landfills, sewage treatment plants and gas stations

Benzene 2005 Erie County Emissions

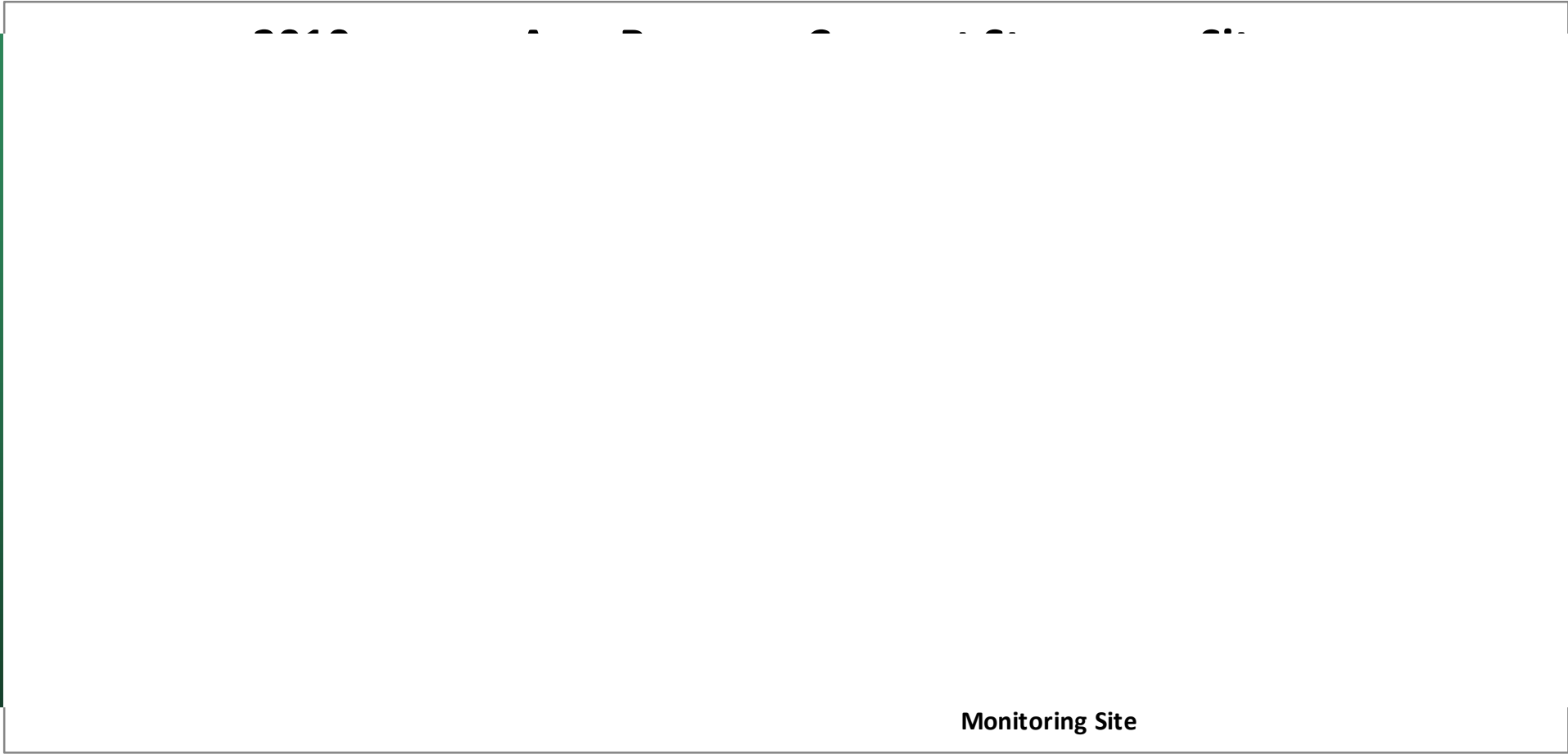


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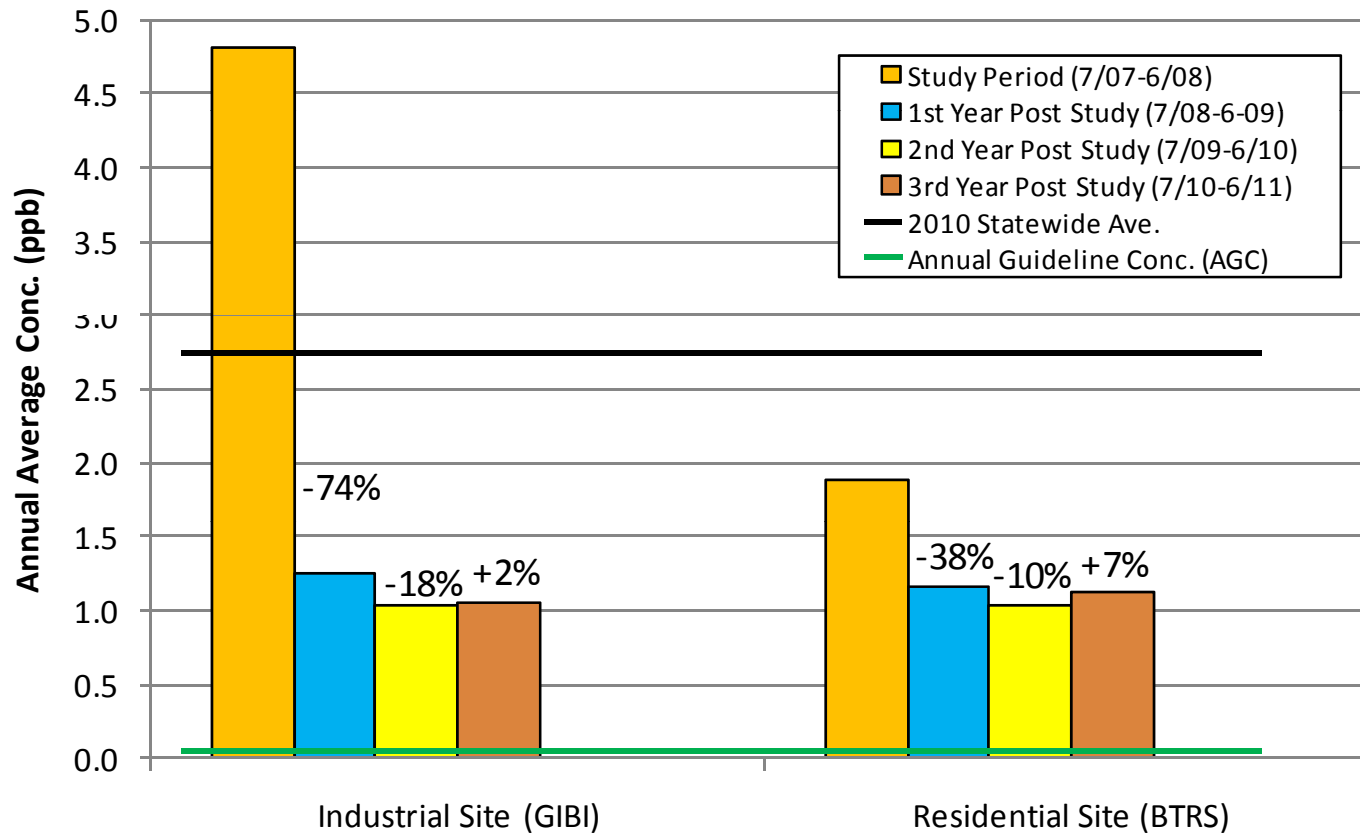
Major includes Title V permitted point sources

Minor includes State Facility and Registered point sources

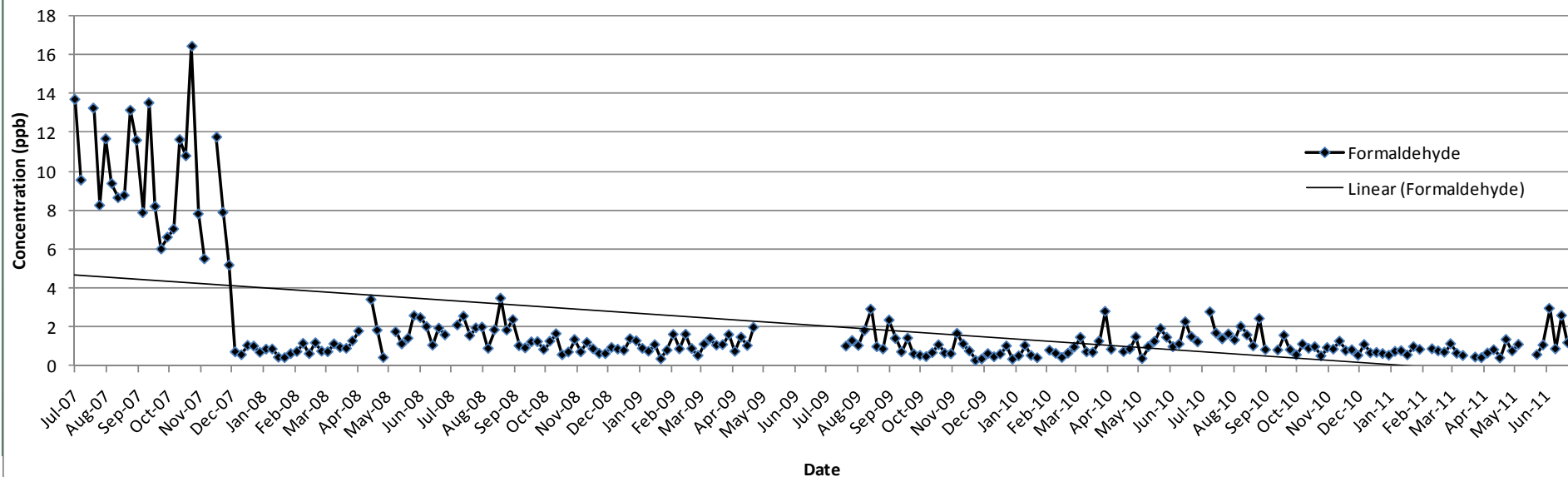
Area includes landfills, sewage treatment plants and gas stations



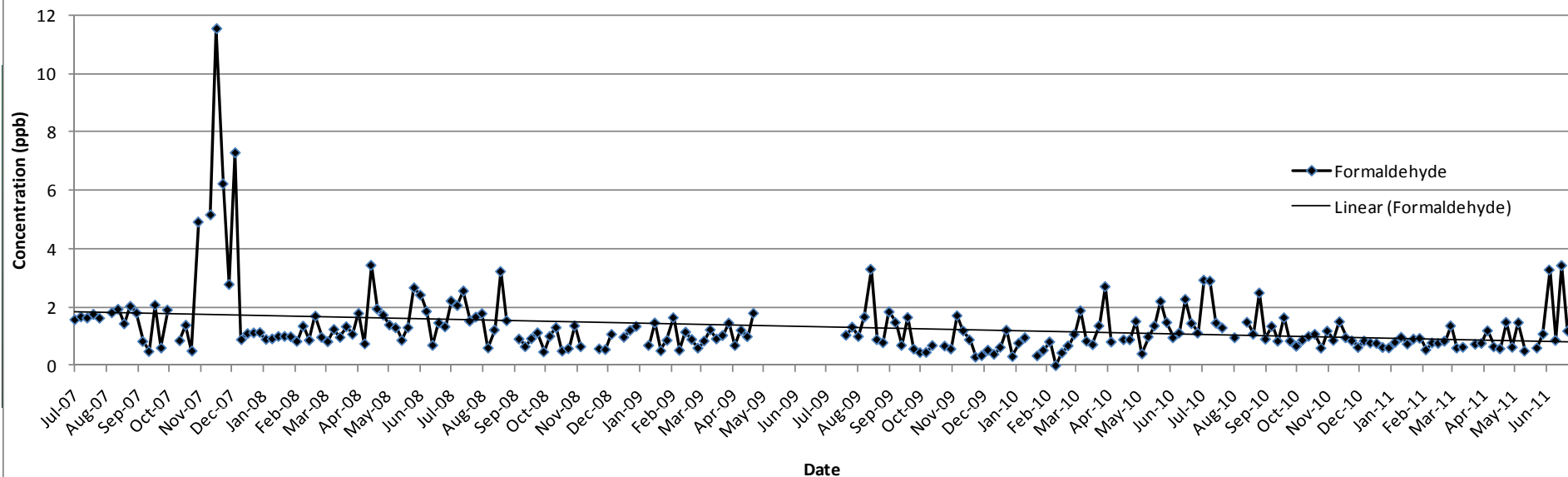
Formaldehyde Concentration Study Year and Subsequent Years



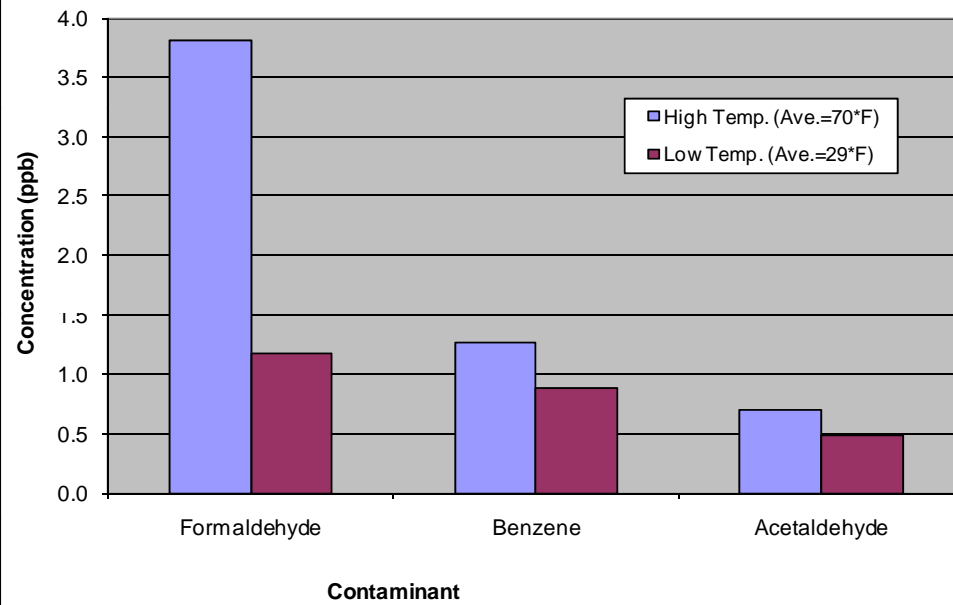
Industrial Site (GIBI) Individual 24-hr Measurements (1-in-6 day frequency)



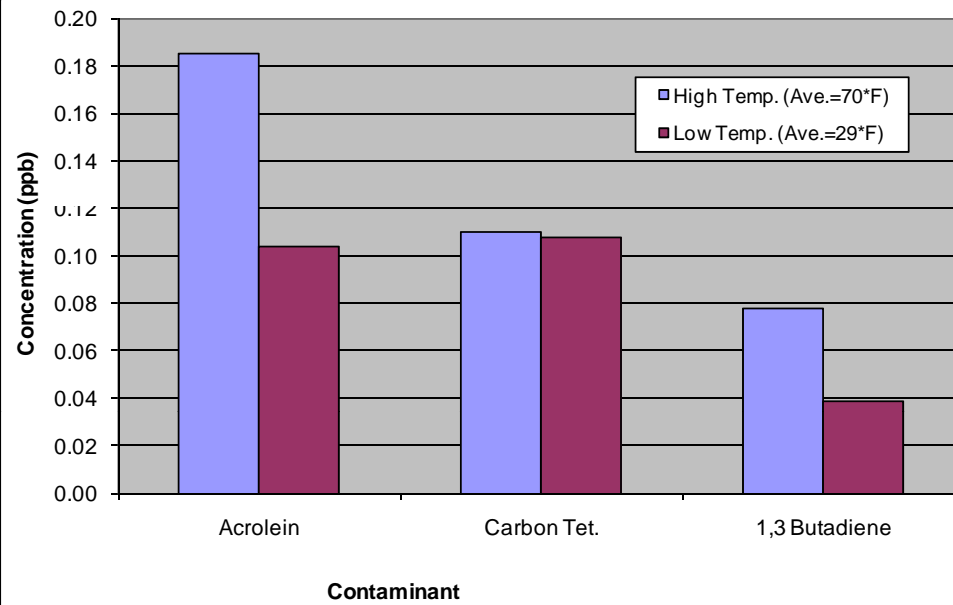
Residential Site (BTRS) Individual 24-hr Measurements (1-in-6 day frequency)



Concentrations at High versus Low Temperatures



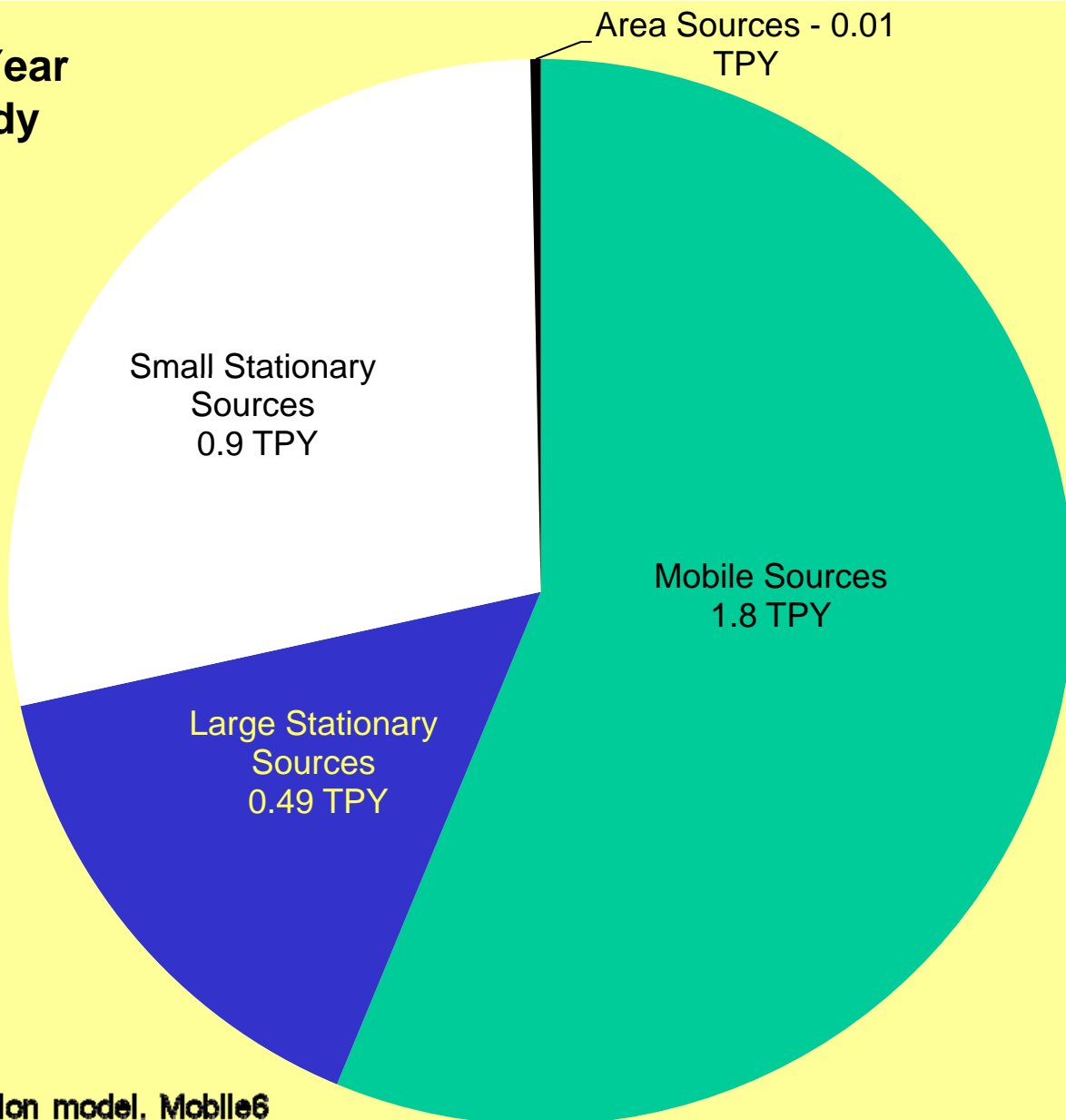
Concentrations at High versus Low Temperatures



Formaldehyde Sources in Tonawanda

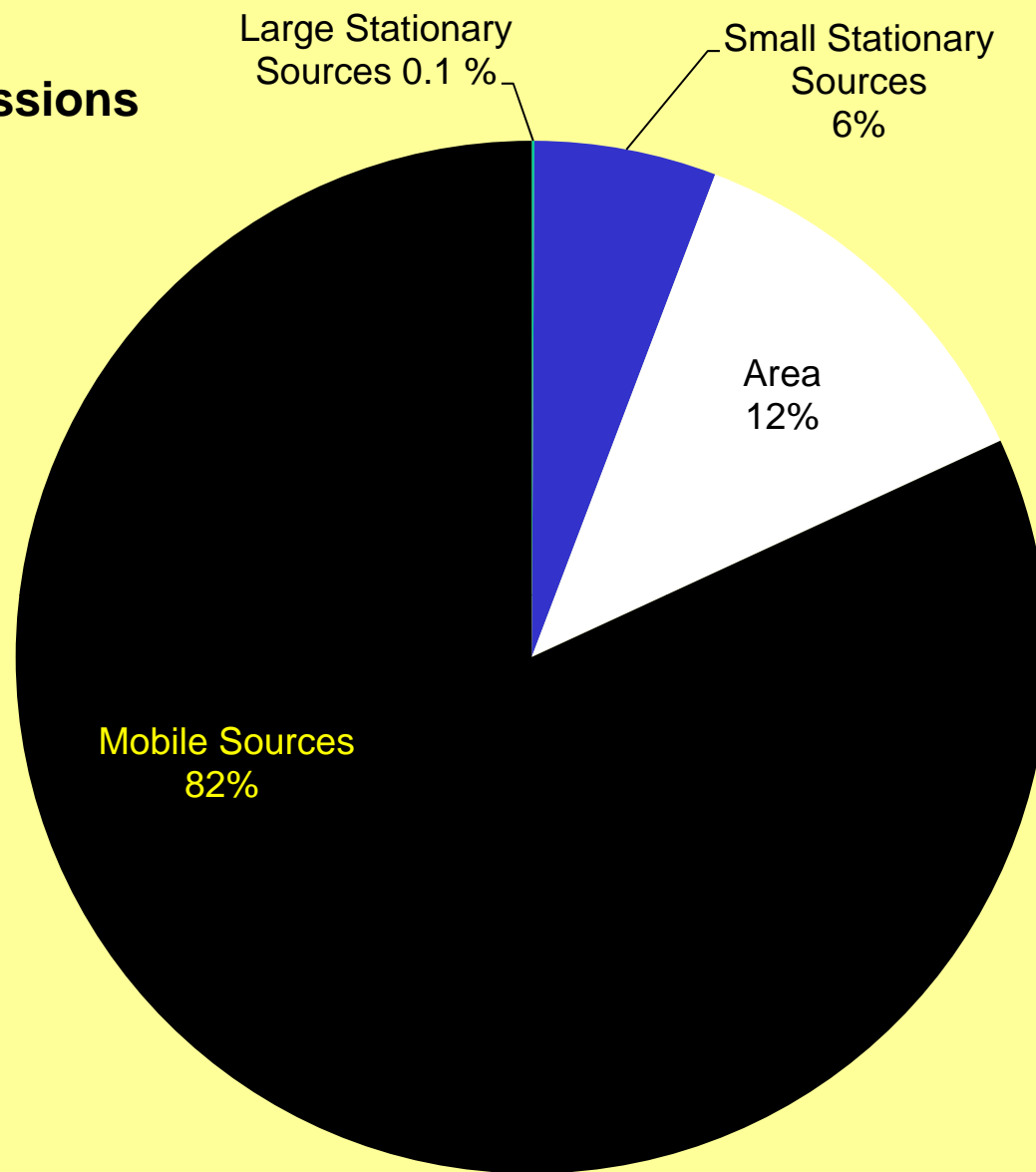
- Point Sources
 - Indeck Yerkes Energy Services
 - NRG Huntley Electric Generating
 - Tonawanda Coke
- Area Sources
- Residential Space Heating
 - Industrial Boilers
 - 3M Tonawanda
 - FMC Corp.
 - Goodyear Dunlop Tires
- Mobile Sources
 - Car and truck exhaust
- Secondary Atmospheric Formation

Formaldehyde _ Tons Per Year Tonawanda Community Study Area

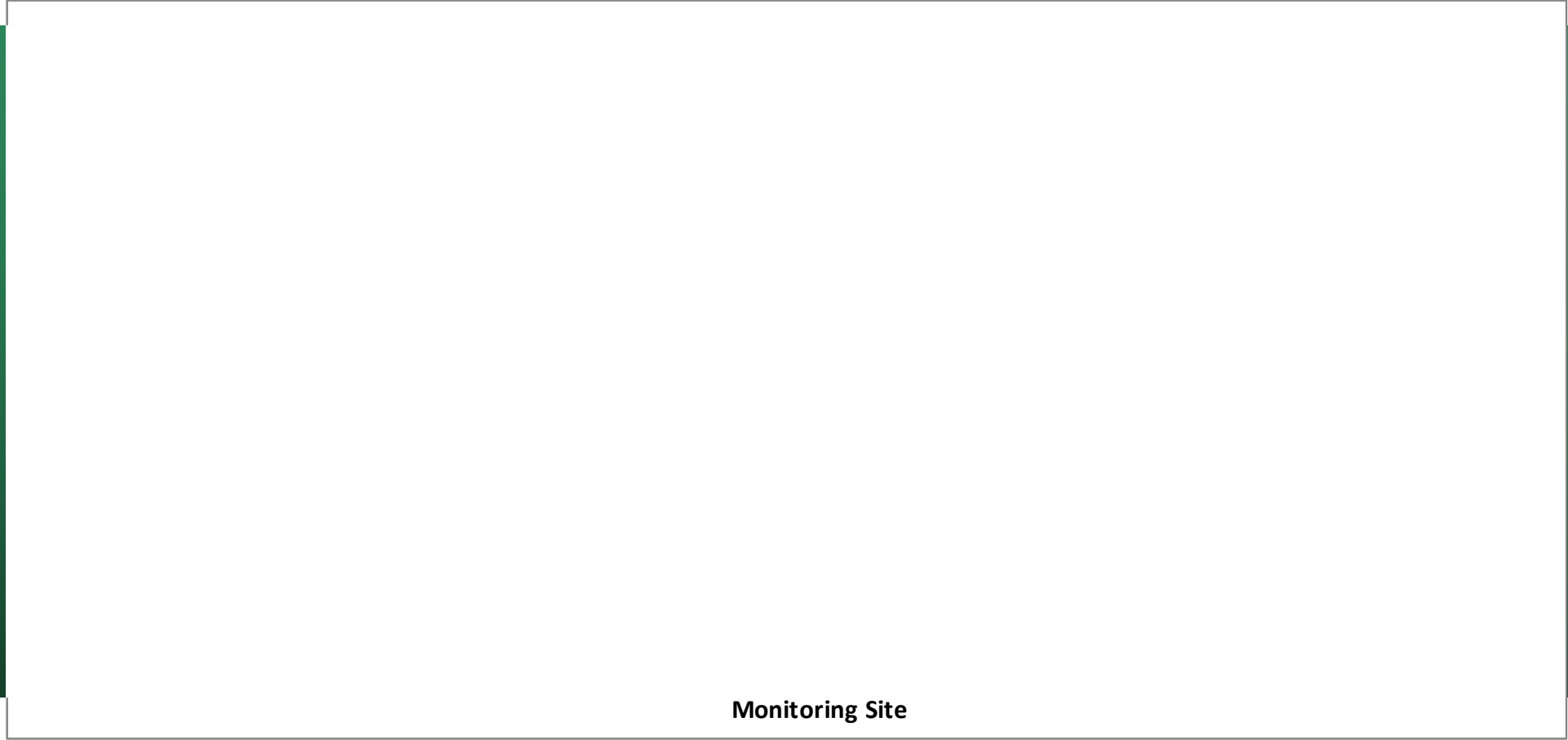


Mobile emissions calculated from air pollution model, Mobile6
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Formaldehyde Erie County 2005 Emissions

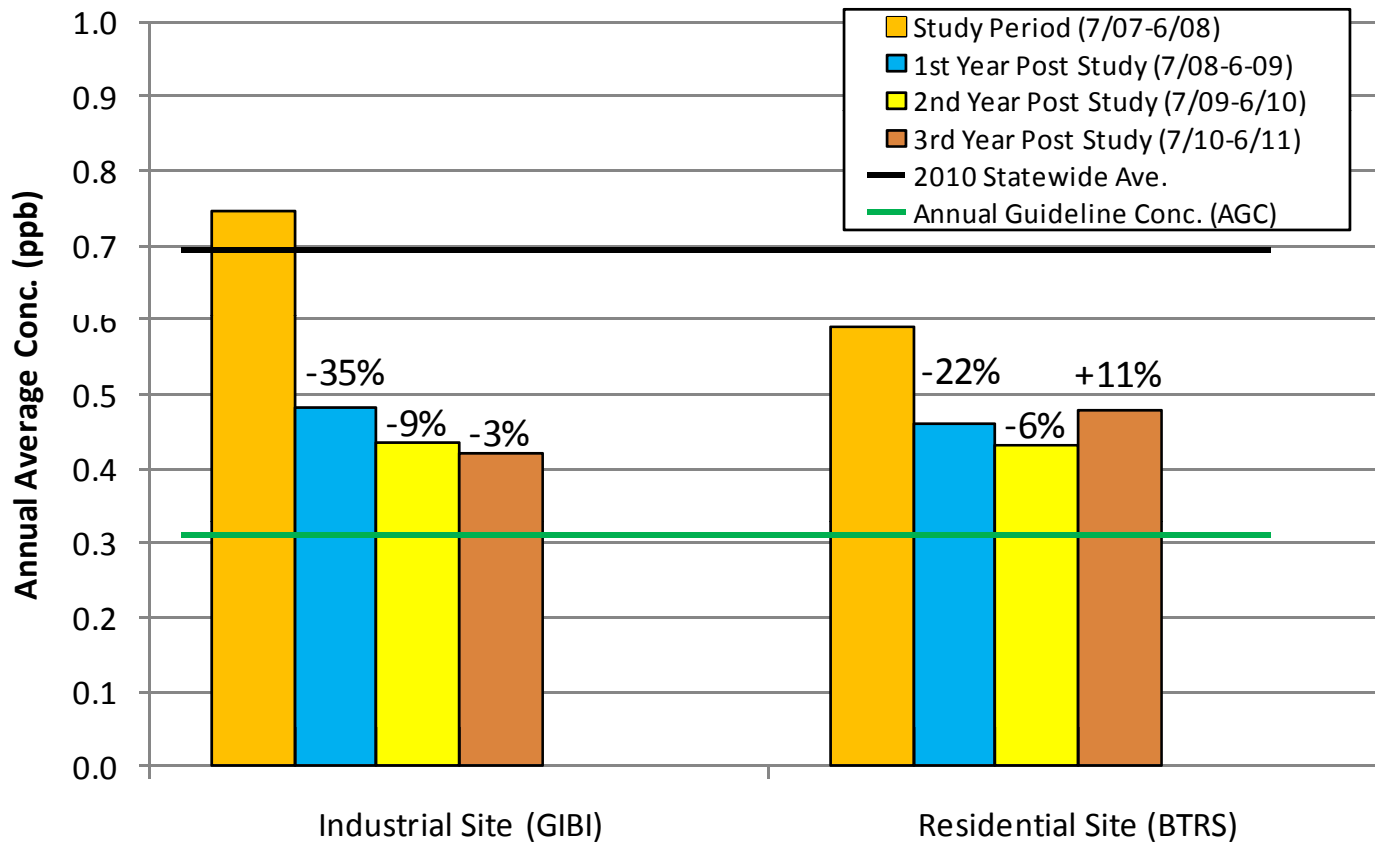


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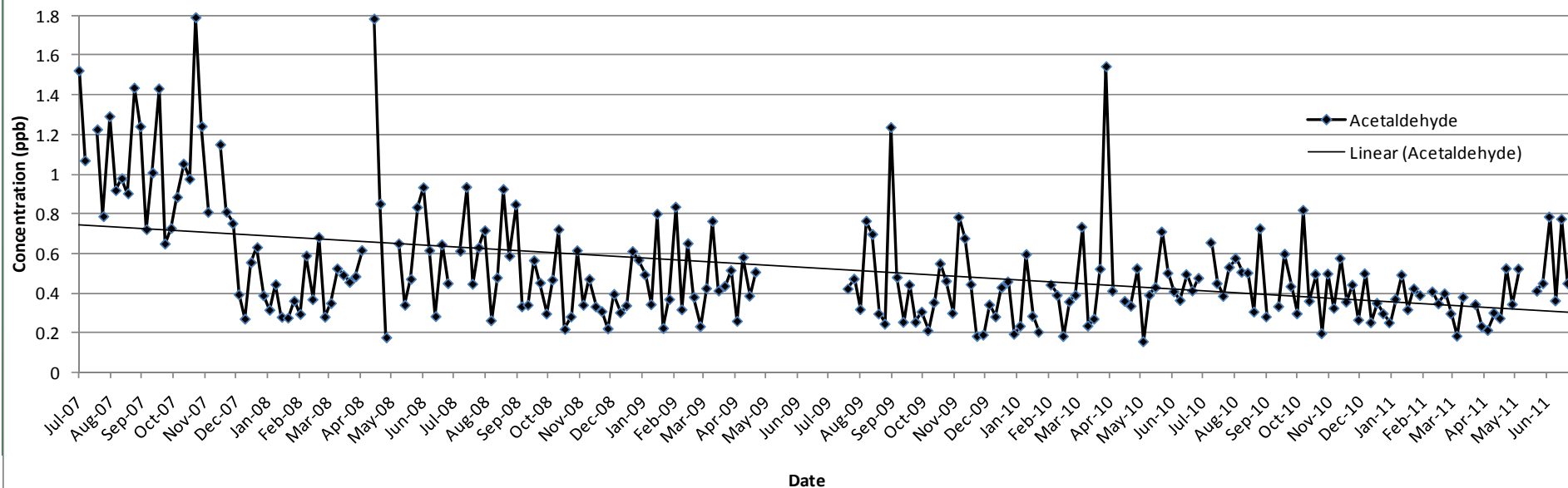


Monitoring Site

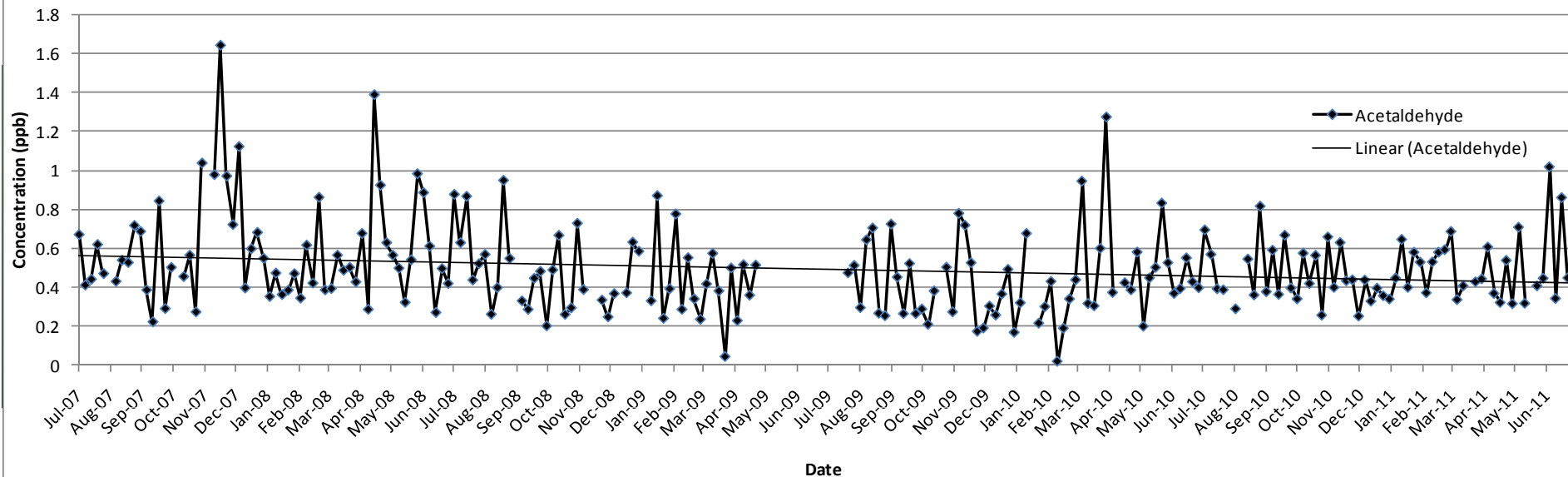
Acetaldehyde Concentration Study Year and Subsequent Years



Industrial Site (GIBI) Individual 24-hr Measurements (1-in-6 day frequency)



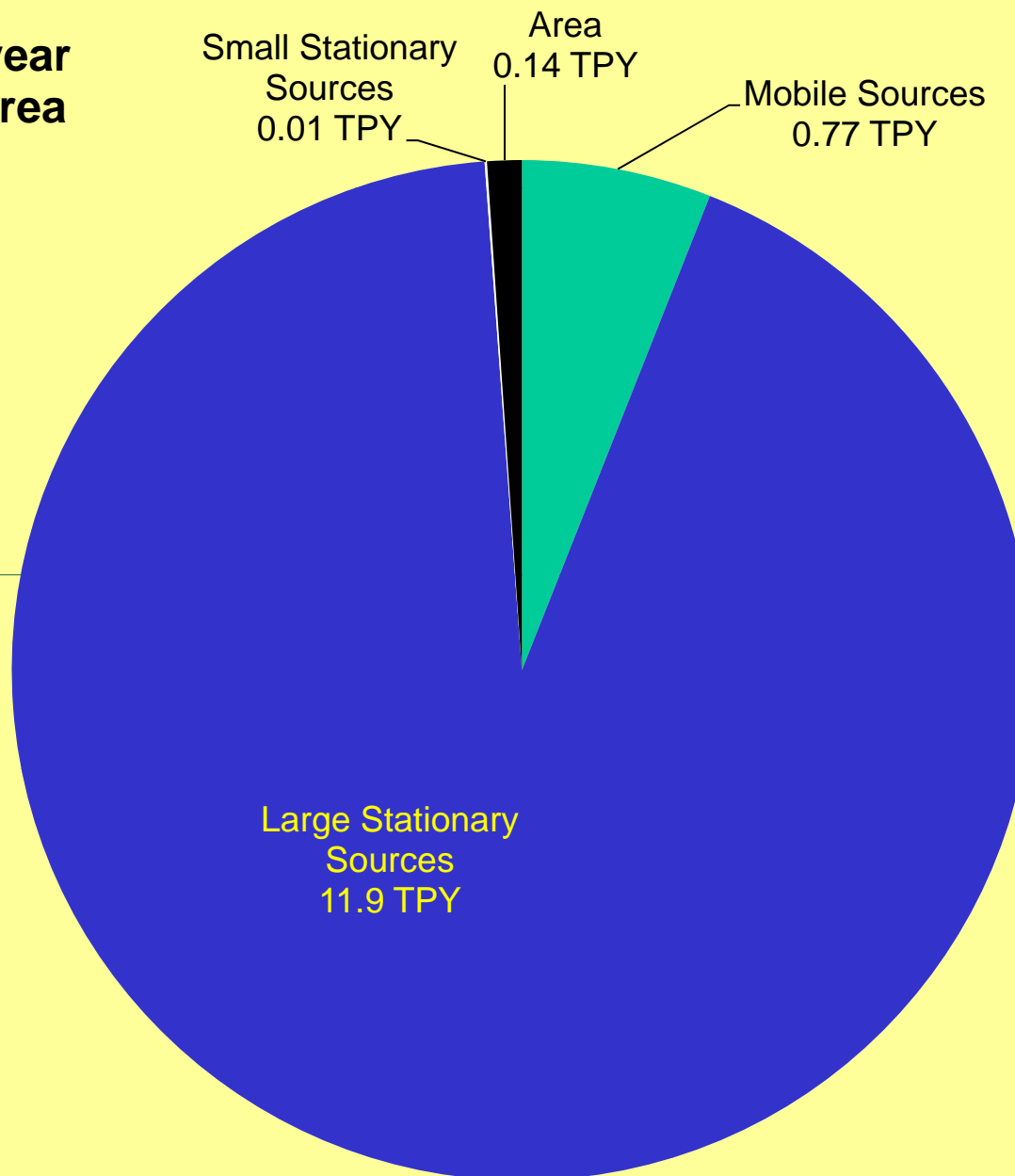
Residential Site (BTRS) Individual 24-hr Measurements (1-in-6 day frequency)



Acetaldehyde Sources in Tonawanda

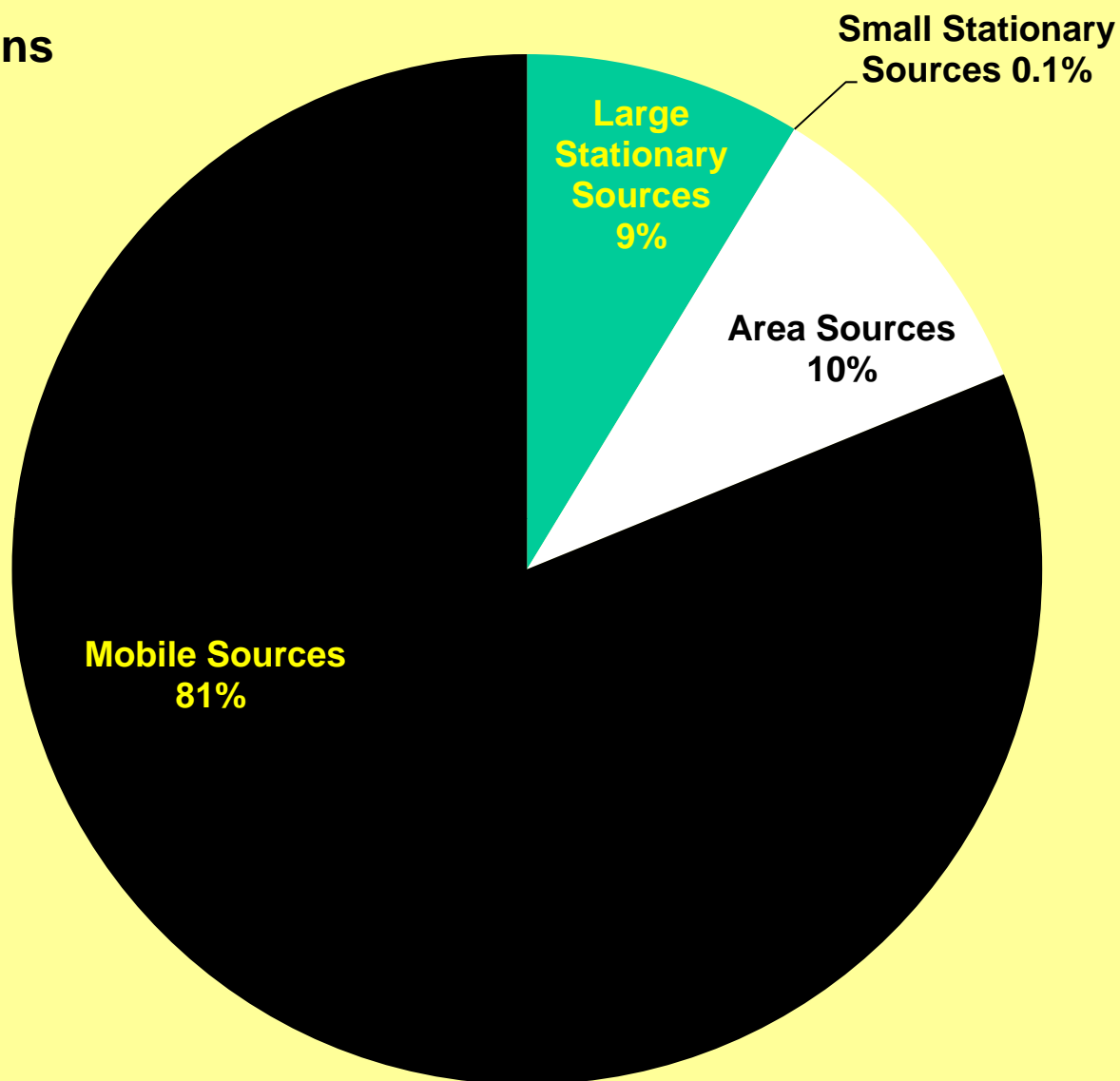
- Point Sources
 - 3M Tonawanda
 - Goodyear Dunlop
 - Indeck Yerkes Energy Services
- Area Sources
 - Commercial and Industrial Boilers
 - Residential Space Heating
- Mobile Sources
 - Car and truck exhaust

Acetaldehyde - Tons per year Tonawanda Community Area



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Acetaldehyde Erie County 2005 Emissions



Mobile emissions calculated from air pollution model, Mobile6

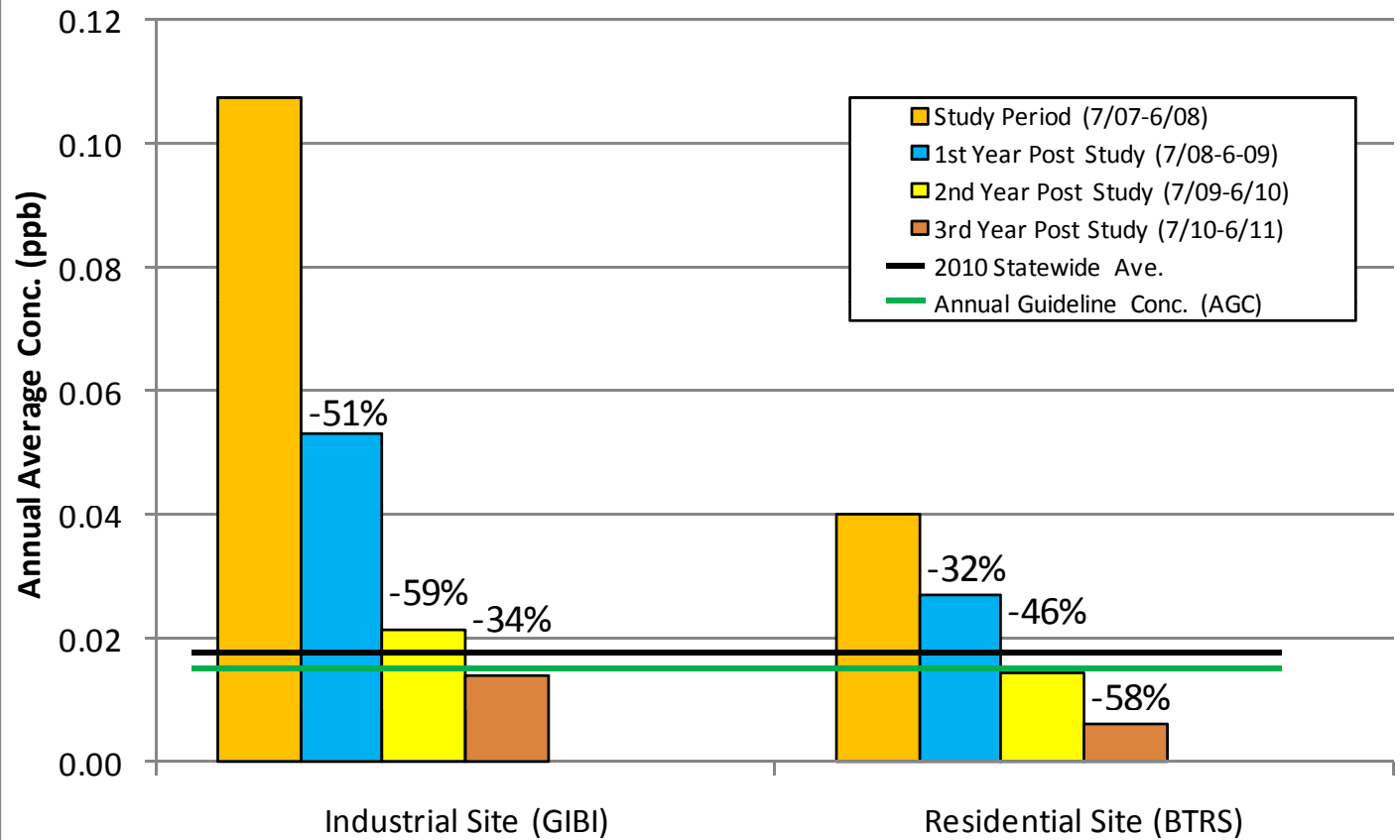
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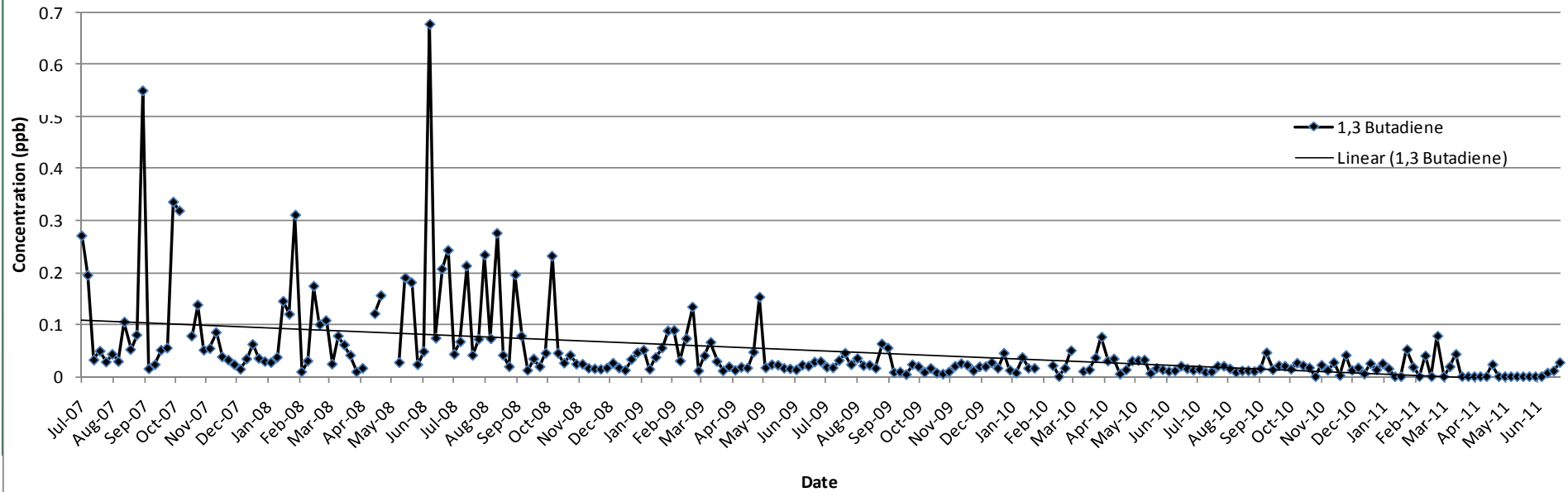
Area includes landfills, sewage treatment plants and gas stations

Monitoring Site

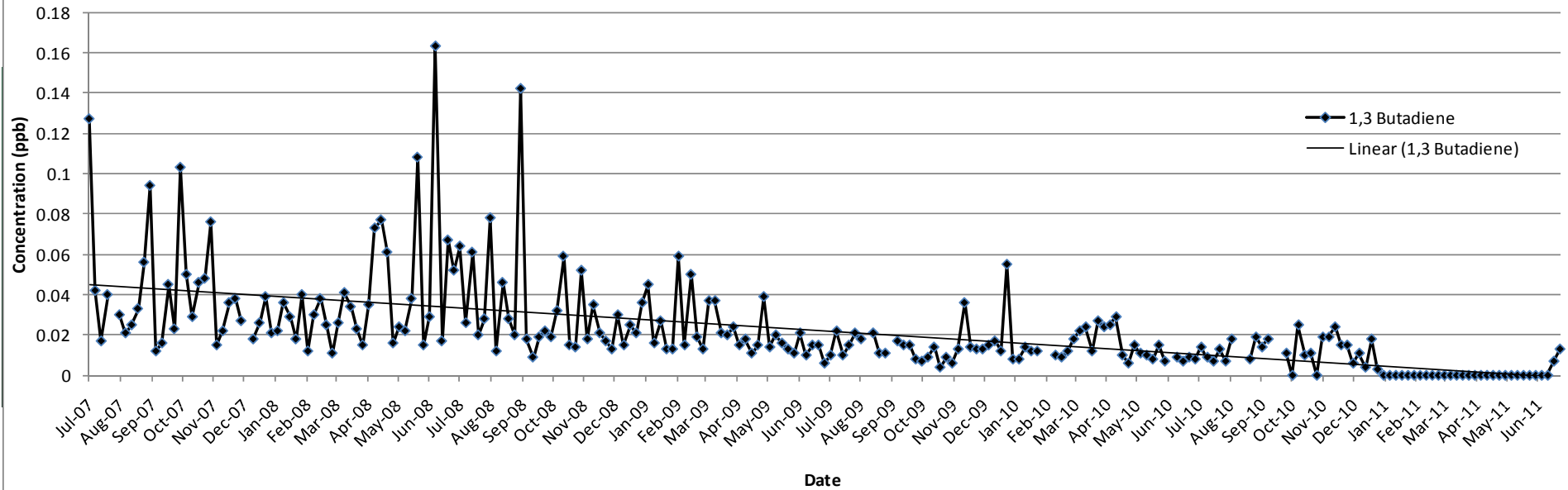
1,3-Butadiene Concentration Study Year and Subsequent Years



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Residential Site (BTRS) Individual 24-hr Canister Measurements (1-in-6 day frequency)

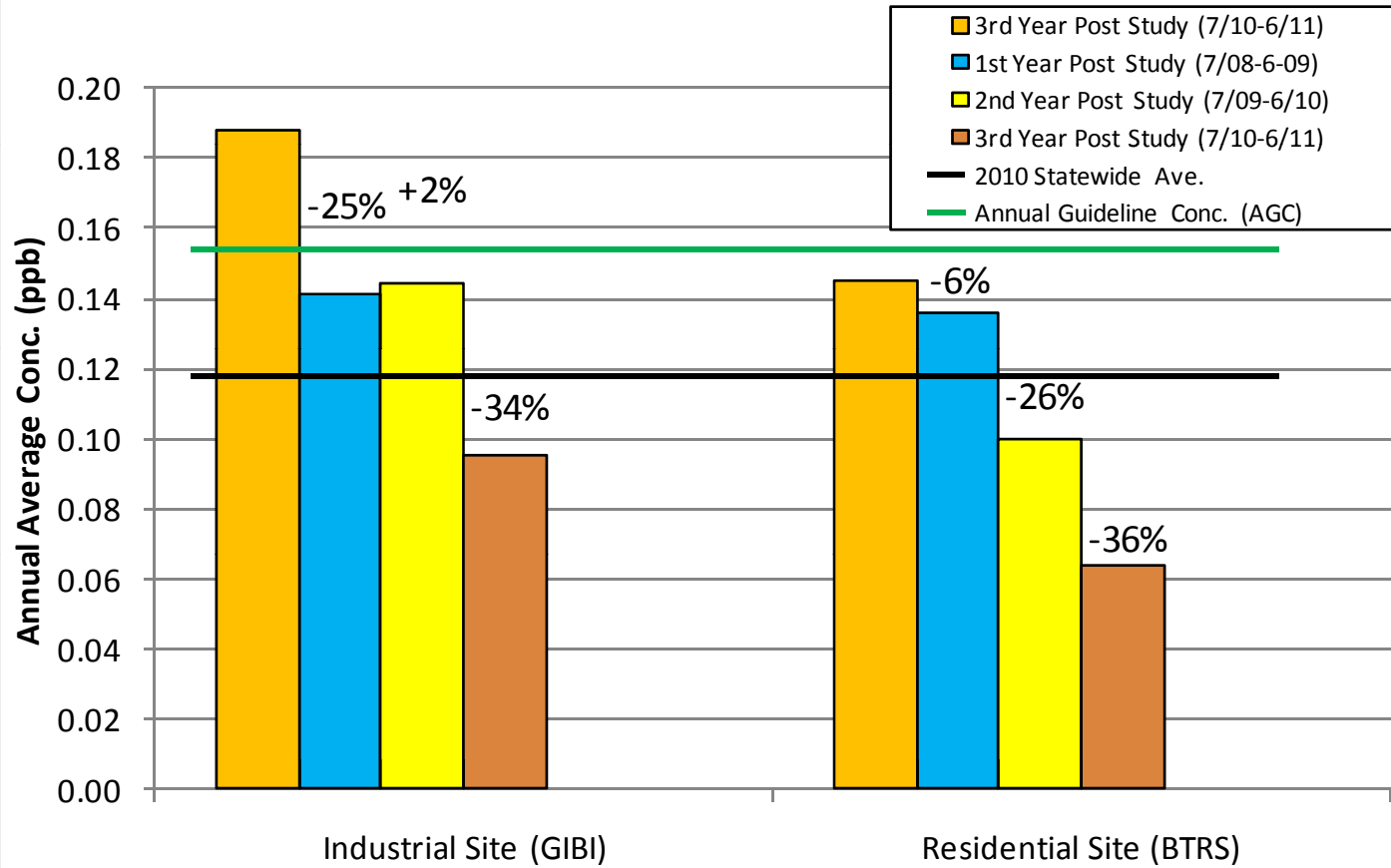


1,3-Butadiene Sources in Tonawanda

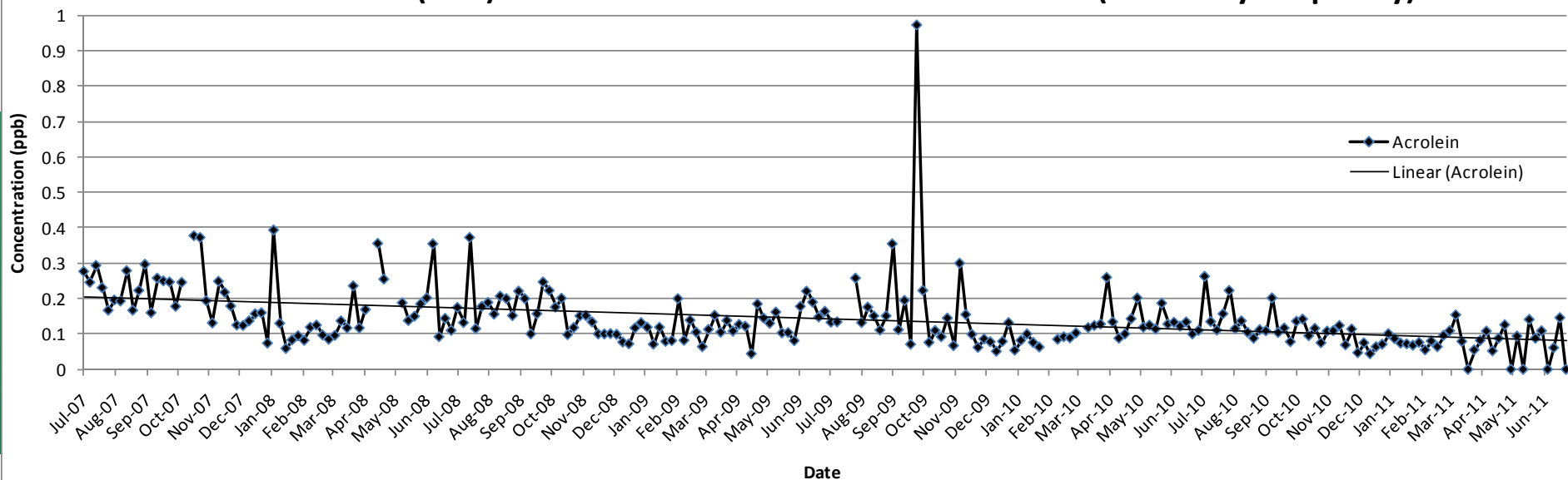
- Point Sources
 - Goodyear Tonawanda
 - Tonawanda Coke
- Area Sources
 - Valley Retread
- Mobile Sources
 - Car and Truck exhaust

Monitoring Site

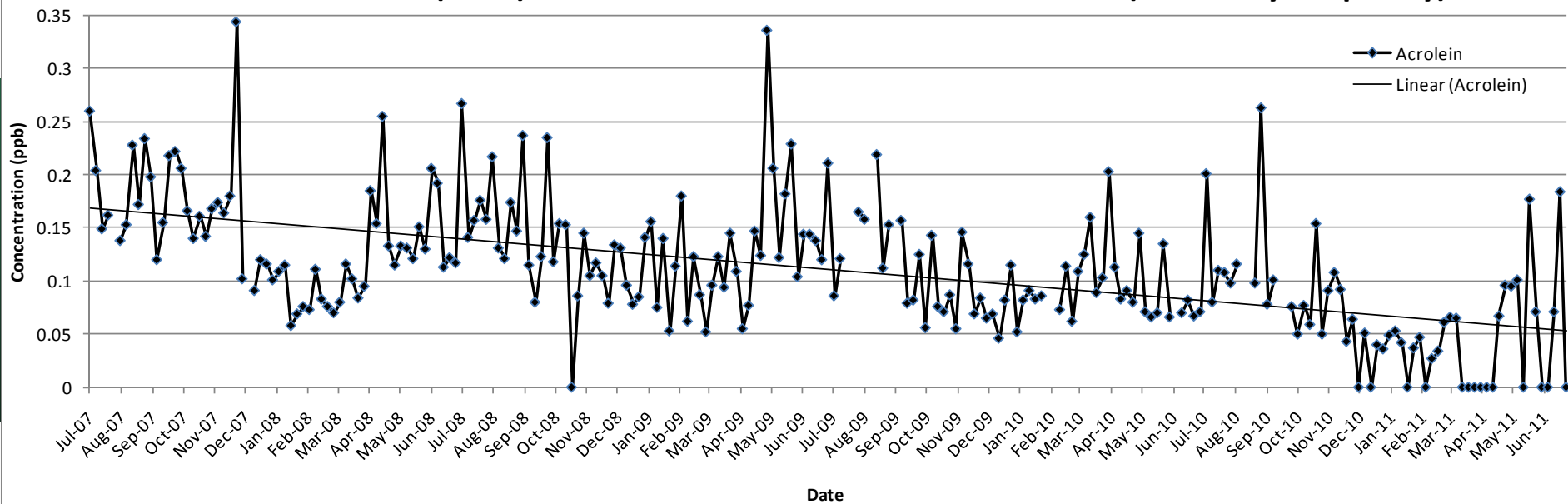
Acrolein Concentration Study Year and Subsequent Years



Industrial Site (GIBI) Individual 24-hr Canister Measurements (1-in-6 day frequency)



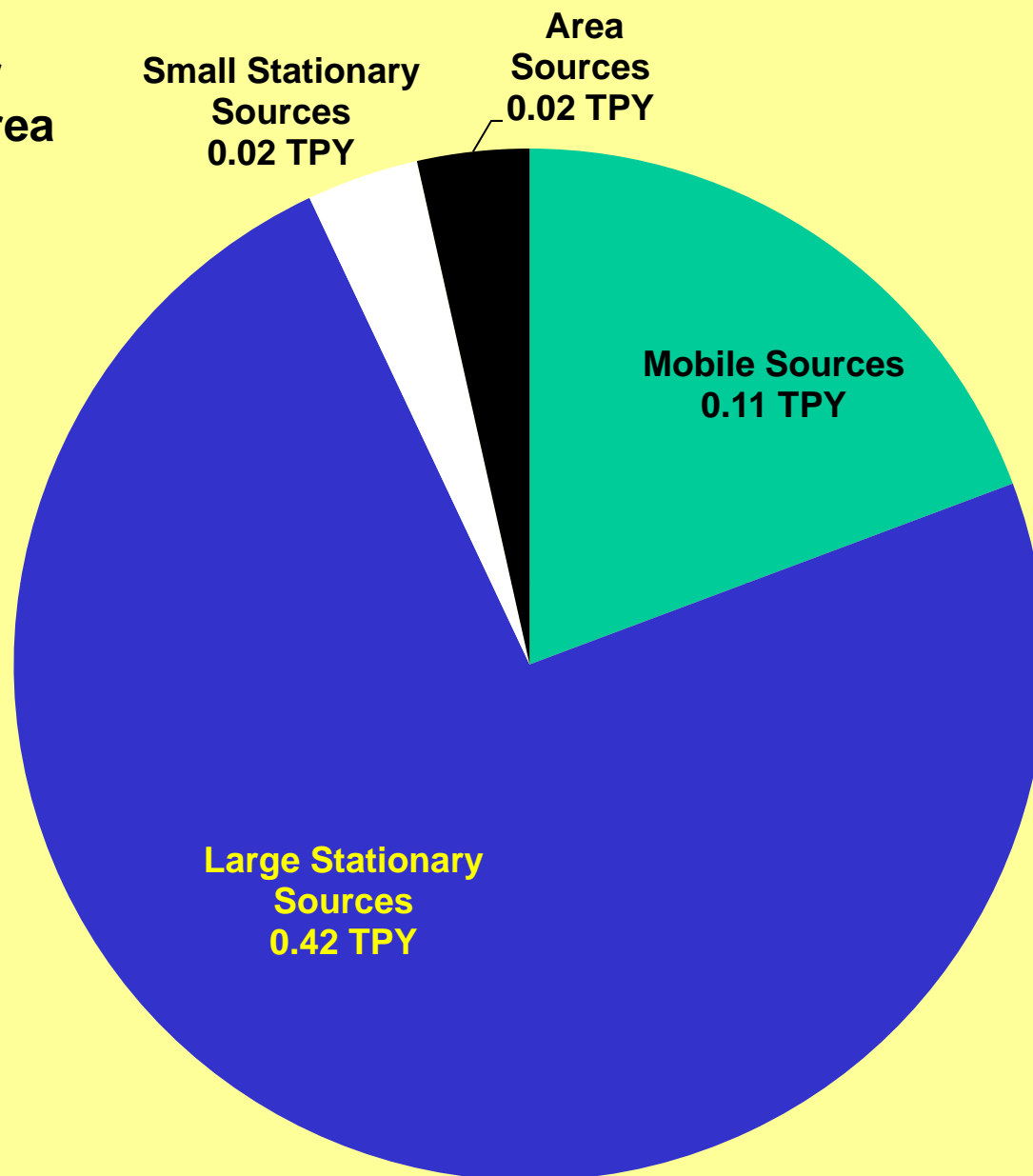
Residential Site (BTRS) Individual 24-hr Canister Measurements (1-in-6 day frequency)



Acrolein Sources in Tonawanda

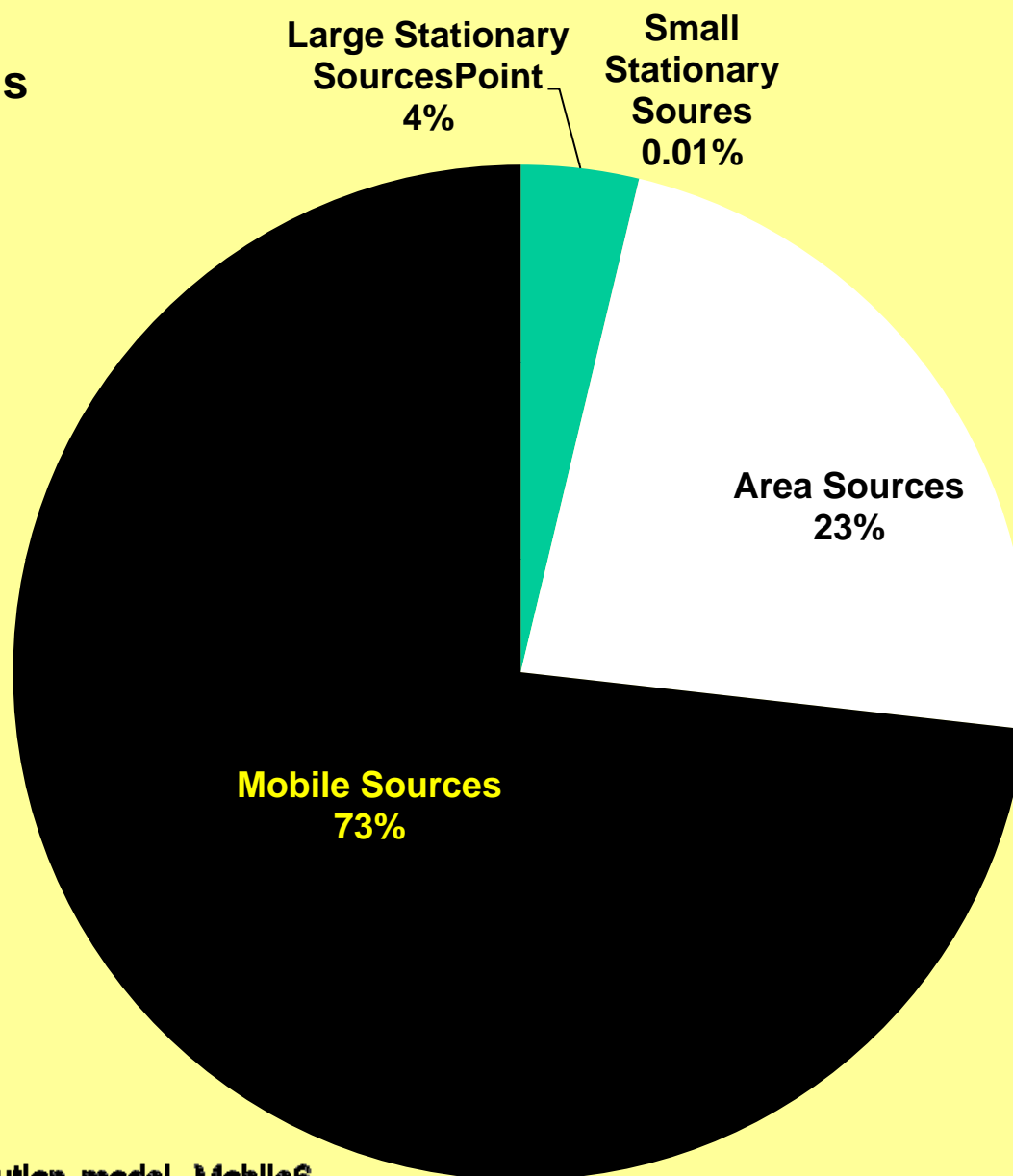
- Point Sources
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 - Indeck Yerkes Energy Services
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 - Tonawanda Coke Corp.
- Area Sources
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 - Residential Space Heating
- Mobile Sources
 - Car and truck exhaust
- Secondary Formation

**Acrolein - Tons per year
Tonawanda Community Area**



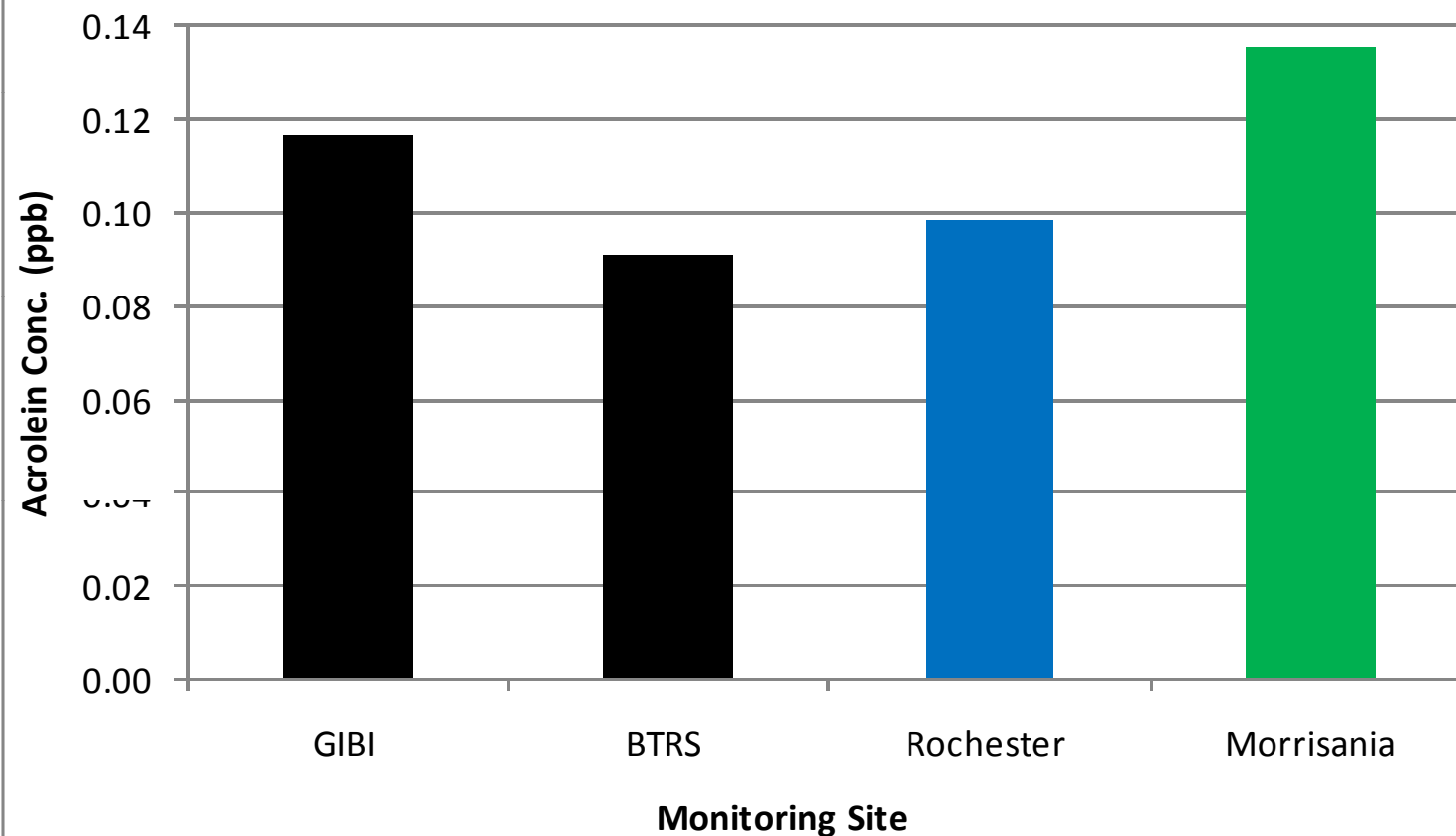
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Acrolein 2005 Erie County Emissions



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2010 Annual Ave. Acrolein Conc. at Statewide Sites



Future Air Pollution Reduction Project Goals

- Reduce cancer risk in the community;
- Reduce the emissions of chemicals associated with acute irritation effects;
- Reduce odor complaints in community.

Risk Reductions

FROM THE STUDY YEAR (7/5/07-6/29/08)
TO THE 3rd POST STUDY YEAR (7/1/10-6/26/11)

- Cancer
 - Benzene
 - GIBI (Industrial Site): from 75 to 10.7 in a million
 - BTRS (Residential Site): from 15 to 4.8 in a million
 - Formaldehyde
 - GIBI (Industrial Site): from 98 to 21 in a million
 - BTRS (Residential Site): from 38 to 22 in a million
 - Acetaldehyde
 - GIBI (Industrial Site): from 2.9 to 1.7 in a million
 - BTRS (Residential Site): from 2.4 to 1.9 in a million
 - 1,3-Butadiene
 - GIBI (Industrial Site): from 7.3 to 0.9 in a million
 - BTRS (Residential Site): from 2.7 to 0.4 in a million
- Non Cancer
 - Acrolein
 - GIBI (Industrial Site): Hazard Quotient from 1.2 to 0.6
 - BTRS (Residential Site): Hazard Quotient from 0.9 to 0.4

Current Actions

- Increased compliance inspections of all air pollution sources in the area;
- Continuation of sampling at Grand Island Boulevard (GIBI) and Brookside Terrace Sites (BTRS);
- Issuance of a consent order for air pollution reductions from Tonawanda Coke Corporation;
- Participation in the E3 Tonawanda Sustainability Initiative.

Future Actions

- Use the inspection and monitoring results to make decisions about revising current NY State source category specific regulations;
- Use the inspection and monitoring results to make decisions about requiring a greater degree of air pollution control at specific sources using current NY State regulations;

Future Actions

- Use the inspection and monitoring results to provide suggestions to EPA about revising current federal regulations and national tools used to guide air pollution risk reduction efforts.
- Continue our dialog with the community, other government agencies and industry representatives to achieve and maintain air pollution reductions in the Tonawanda Community.

Questions

