From: Geertsma, Meleah <mgeertsma@nrdc.org>
Sent: Friday, January 29, 2021 5:05 PM
To: envcomments
Cc: Dave Graham; Jennifer Hesse; Mort Ames; Angela Tovar; Megan Cunningham; Daniel Lurie; Candace Moore
Subject: NRDC comment on revised application for General III, dba Southside Recycling
Attachments: FINAL NRDC supp comments on GIII revised application 1.29.2020.pdf

[Warning: External email]

Please see attached additional comments submitted by NRDC and supported by our partners, SETF and the Coalition to Ban Petcoke, on the revised application of General III, dba Southside Recycling, for a recycling permit from CDPH. As noted in the text, these comments are in addition to the comments we previously submitted on January 14. It appears from our review that the revised application largely fails to address the inadequacies flagged in those prior comments.

I will also be submitting a separate email with files for the two exhibits - IEPA's 2019 and 2018 air quality reports - attached, to avoid any issues with file sizes inhibiting receipt.

Finally, as noted in the comments, NRDC's review and comments were hindered by the inadequate two-week comment period on the over 1,000-page revised application.

Sincerely,
Meleah Geertsma

MELEAH GEERTSMA
Senior Attorney, Environmental Justice

NATURAL RESOURCES
DEFENSE COUNCIL

20 N. WACKER DRIVE, SUITE 1600
CHICAGO, IL 60606
T 312.651.7904
F 312.332.1908
mgeertsma@NRDC.ORG
NRDC.ORG

January 29, 2021

Chicago Department of Public Health
333 S. State St., Room 200
Chicago, IL 60604

Submitted Via Email To: envcomments@cityofchicago.org

Re: **Revised Large Recycling Facility Permit Application, General III, LLC (d/b/a Southside Recycling), 11554 S. Avenue O – Chicago, Illinois**

To the Chicago Department of Public Health:

The Natural Resources Defense Council ("NRDC") writes to oppose the permitting of yet another heavy industrial facility – in this case of a metal shredding operation relocating from the well-off, White Lincoln Park community that has ejected it – in Chicago's Southeast Side environmental justice community. This opposition is based on a long list of omissions, gaps and other deficiencies in Reserve Management Group's ("RMG") revised application, dated January 13, 2021, for a recycling permit from the Chicago Department of Public Health ("CDPH") for the proposed General III (d.b.a. Southside Recycling) facility at 11600 S. Burley ("General III"). These comments are supported by our partners the Southeast Environmental Task Force ("SETF") and the Southeast Side Coalition to Ban Petcoke ("Coalition"), who are submitting additional application comments that NRDC supports and incorporates by reference as well. We previously submitted and supported comments on the shortcomings of the prior November application for General III; the present comments are in addition to our prior comments, which we incorporate by reference and which were largely unaddressed by the January revised application.

As discussed in more detail below, this area is facing increasing levels of harmful heavy metals already, without the proposed new massive metal shredding and recycling operation. Moreover, the disclosed scale of the proposed General III continues to grow with every new submission: the revised application contains information strongly suggesting that the facility is designed to process far and away more material than is currently allowed under its air permit from the Illinois EPA. And yet the application continues to fail in numerous ways to describe and assess the full extent of the project and the expected impact of such an operation on health and the environment, most notably in its ongoing failure to ensure protection of short-term air quality. For these and other reasons discussed in these comments, the application is incomplete and CDPH cannot issue a permit unless and until the deficiencies are corrected, and the applicant demonstrates that it will not pose a threat to the Southeast Side's health and environment. As in our prior comments, we raise issues that overlap with/relate to items in CDPH's December deficiency letter using the paragraph numbers in that letter.

Finally, we also note the very short time period that we and other members of the public had to review and comment on the 1,000+ page revised application. Two weeks is inadequate for meaningful public comment on such a lengthy and technical piece. Given the amount of new material contained in this application, CDPH should have granted at least a full 30-day comment period on the revised application. The applicant should not benefit from submitting a wholly inadequate application in the first instance.

The issues we were able to identify within the two-week period are as follows; given the short period for comment, the absence of comment on any particular issue should not be read as agreement that the application is complete and sufficient on such issue.

RMG Recyclers, Increase in Metals at Washington High School Monitor. In our January 14 and other prior comments, we expressed deep concerns about the four to five other operations at the proposed site for General III, including that they have been operating without required permits and with evidence and findings of environmental violations, and that they in fact constitute a single recycling facility in combination with the proposed General III. We raise additional concerns here that these recyclers may be contributing to increasing levels of metals registered at the Washington High School monitor since approximately 2018. Specifically, the annual mean values for lead, chromium and nickel have gone up linearly from 2018 to 2020, while manganese has also increased overall from 2018 to 2020, according to data reported on U.S. EPA's Air Data site.[1] Indeed, the annual mean values for lead, chromium and nickel doubled or nearly doubled during this three-year period.

Year	Chromium (ng/m3)	Lead (ng/m3)	Manganese (ng/m3)	Nickel (ng/m3)
2020	13.7	13.74	54.25	6.47
2019	11.48	9.38	44.95	4.25
2018	6.75	7.8	47	3.7
2017	5.31	14	70.08	3.45
2016	4.65	11.1	68.34	2.9
2015	4.12	19.07	121.56	3.43
2014	15.86	29.22	102.71	3.37

This trend is despite the 2020 pandemic, which has disrupted other sources of air pollution, as well as the recent U.S. EPA settlement with nearby American Zinc Recycling, historically one of

[1] The U.S. EPA data can be obtained at https://www.epa.gov/outdoor-air-quality-data. Also as noted in our prior comments to the Illinois EPA and CDPH, including during CDPH's rulemaking on large recycling facilities, the RMG recyclers were identified by U.S. EPA as sources of these metals impacting local air quality in its 2015 Xact study. We also note that the cadmium levels at the Washington High School monitor for this period appear to have been significantly impacted by exceptionally high emissions from Whiting Metals in Indiana, so are not reported here. However, prior to 2016, cadmium levels at the monitor also decreased in 2014 and 2015 relative to historic levels and show a significant increase in 2020 relative to 2014/2015.

the largest (inventoried) sources of hazardous air pollutants in the area.[2] Moreover, given the timing of the increases, it appears to be reversing the gains in air quality achieved due in part to significant enforcement work by U.S. EPA and CDPH's dust regulations in 2014 and 2015. And though we cannot at this time directly attribute the increases in part or in whole to the RMG operators, the timing also appears to coincide with efforts at 11600 S. Burley related to the proposed General III. Regardless, the increasing levels of metals at this monitor – which already are the highest levels of several metals in the state, including cadmium and chromium in 2019[3] and additional metals in 2018[4], rivaled only by the heavily industrialized Granite City – is deeply disturbing.

As part of this proceeding, CDPH must fully investigate whether activity at the RMG recyclers is causing or contributing to increasing levels of metals at the Washington High School monitor. This investigation is a necessary part of its assessment of whether the RMG recyclers have expanded or will expand in conjunction with the proposed addition of General III and/or whether the RMG recyclers are part of one recycling facility for purposes of the permit requirement, as well as whether the RMG recyclers are currently operating in compliance with all environmental requirements, including the prohibitions on nuisance and open dumping. Even if the RMG recyclers are wholly separate recycling facilities that are not increasing their capacity above the expansion threshold with the proposed addition of General III, the increasing level of metals at the Washington High School monitor must be taken into account by both the applicant and CDPH in determining whether to permit another massive metals operation in this already over-burdened community, including as part of the civil rights/environmental justice review addressed in our prior comments.

Significant Difference in Feedstock at General III compared to General Iron Lincoln Park. At various points in the revised application, the applicant discusses expected changes in the feedstock at the proposed facility compared to the General Iron Lincoln Park facility. Specifically, peddler traffic is expected to decrease substantially, resulting in, e.g., a 20% reduction in appliances relative to historic amounts at General Iron Lincoln Park.[5] At the same time, the facility is projecting a significant increase in overall volume of material process compared to the General Iron Lincoln Park facility (roughly to its permitted 1.2 million tons per year from 750,000 tons at General Iron Lincoln Park, an increase of 60%).

Because of these expected changes and because the feedstock is directly related to facility emissions and auto shredder residue ("ASR") generation/composition, the applicant must

[2] U.S. EPA, News Release, "EPA Settlement with American Zinc Recycling to Reduce Air Pollution in Chicago," available at https://www.epa.gov/newsreleases/epa-settlement-american-zinc-recycling-reduce-air-pollution-chicago.
[3] Ex. 1, Illinois EPA, Illinois Air Quality Report 2019, available at https://www2.illinois.gov/epa/topics/air-quality/air-quality-reports/Documents/2019AnnualAirQualityReportFinal.pdf, at p20.
[4] Ex. 2, Illinois EPA, Illinois Air Quality Report 2018, available at https://www2.illinois.gov/epa/topics/air-quality/air-quality-reports/Documents/2018%20Annual%20Air%20Quality%20Report%20Final.pdf, at p20.
[5] Addendum 1, Attachment O (overall pdf826).

provide a detailed explanation of the expected composition of its feedstock at the proposed General III, for categories including appliances, passenger and other types of vehicles, construction & demolition waste metals, etc. To the extent that the feedstock will differ substantially from that at General Iron Lincoln Park – which it appears from the revised application is the case – the applicant must revise all calculations and other analyses in its application that rely/are based on the feedstock at General Iron Lincoln Park, including but not limited to all emission calculations and air quality modeling, all estimates of ASR/fluff composition and volume generation, and assessment of the sufficiency of ASR/fluff storage capacity, or explain in detail why the difference in feedstock will not significantly change the results.

Item 3: Pavement. The applicant vaguely asserts that "concrete is not suitable" in several areas because processes conducted in those areas would destroy the concrete very quickly.[6] The applicant's response is inadequate/incomplete because it provides no details on or engineering analysis of the thickness of concrete relative to its durability for the processes at issue or discussion of whether addition of other surface materials on top of the concrete, like rubber, might create a more durable surface less prone to dust and soil contamination with metallic and other fines than gravel.

Item 6: Handling Capacity, Process Rates (related to Item 19; see also Item 17). The applicant continues to fail to provide its maximum hourly and daily capacity/process rates, which as we explained in our January 14 comments are necessary for ensuring protection of short-term air quality. Specifically, the application simply states that the proposed General III's shredding system "is capable of processing 500 tons per hour *or more*" (emphasis added).[7] Elsewhere in the application, the applicant asserts that General III's processing rates "are unmatched in the industry," creating significant concerns that the actual maximum capacity is significantly greater than 500 tons per hour.[8] Another indicator of max capacity referenced in the application is found in Attachment M, the Truck Stacking Plan, which states that "[t]he estimated peak traffic is 600 tons/hour or 40 trucks/hour."[9] (We note that the Truck Stacking Plan also supports the interdependence of the several operations at the site that we have addressed elsewhere in our

[6] Addendum 1, at p2 of 24.

[7] Addendum 1, at p4 of 24. We note that the applicant calculates a purported "daily rate" reflecting the "peak daily quantity of material… accepted and processed at the Facility." *See* Addendum 1, at p16 of 24. The applicant calculated this figure, which it recognizes is NOT a daily limit imposed by any permit, by calculating back from the monthly 100,000 tons allowed by the Illinois EPA permit. *See id*. Such a calculation should not be confused with the facility's own maximum short-term design capacity, or distract from the fact that the facility on a given peak day can and likely will operate at a much greater throughput, absent any enforceable limits on its hourly and/or daily throughput.

[8] *See* Addendum 1, at p13 of 24.

[9] In response to Item 19, the applicant characterizes the Truck Stacking Plan as describing a max unloading capacity of **900** tons/hour. *See* Addendum 1, at p16 of 24. This discrepancy must be corrected. It is also unclear whether the estimate of peak truck trips used in the February 2019 traffic study – which as we commented previously is out of date and so unacceptable for the current permitting process – aligns with the estimates of peak truck trips in the Truck Stacking Plan. Again, without clear, consistent estimates of maximum short-term capacity and estimates of impacts that reflect such maximum capacity, the application is incomplete and a permit cannot issue.

comments, as it states that "we estimate the private access road and property of our affiliated company provide an outlet to stack 40 trucks in the unlikely event it was needed.") Unless and until the applicant provides its maximum hourly and daily capacities, and amends its modeling demonstration to reflect these capacities, the application is incomplete and a permit cannot issue.

We note that the likelihood of the facility operating at its short-term design maximum capacity is not mere conjecture or a far-off future possibility. Given the delay in obtaining its recycling permit beyond the applicant's expected December 2020 date, the applicant appears to be using its newly acquired Windy City property and the 11600 S. Burley site to receive and stockpile material that would have been processed by the proposed General III starting in January. Assuming that such material is not being currently being processed by one of the other RMG recycling operations at S. Burley, the proposed General III would presumably operate initially at a high processing rate to move this stockpiled material quickly through its site.

We also note concern that such stockpiling may violate the prohibition on a New Facility operating in advance of obtaining a permit, if the material is being stockpiled at the portion of 11600 S. Burley where General III would operate. If the material is being stockpiled on the portions of the site operated by the other RMG recyclers, such activity is again evidence of the inter-relatedness of these operations and grounds for requiring a single recycling permit for the full campus. Finally, if the material is being held indefinitely at any location, such holding may constitute illegal open dumping (in addition to being contrary to the Rules' limitations on duration of time that material may be staged or stored onsite). These issues regarding the apparent stockpiling of backed up material must be resolved in this proceeding as part of CDPH's implementation of its 2020 and 2014 recycling rules, including as part of its mandatory compliance history assessment under the 2014 Rules. The applicant, in turn, must provide information sufficient to address the issues in its application. As it has provided no information on this topic, the application is incomplete and a permit cannot issue.

Overall, the statements in the revised application about the massive capacity of the proposed facility also raise serious concerns about the actual scale of this operation and that the applicant will seek to increase its throughput beyond currently permitted limits in the future. In addition, these statements bolster concerns, noted in our January 14 comments, that the applicant obtained a decision from the Zoning Administrator allowing it to avoid the more strenuous Planned Development review based on false representation of the project scale relative to the RMG recyclers already operating at the site, again calling into question the validity of its zoning approval.

Item 7: O&M Plan, Liquid and Solid Waste Generation (also Item 13). In its response to this deficiency, the applicant discusses only "shredder fluff" and lubricating oil generated during equipment maintenance. There is no discussion of material collected from the two baghouses that will be employed, including the baghouse on the fines processing building, which may contain significant amounts of metals. The applicant must provide information on the expected volume

and composition of material collected from the baghouse (a recognized waste stream under the Rules[10]), as well as methods for handling and disposing of that material. The same goes for material collected from sweeping vehicles and any other similar wastes generated by the facility.

Item 8: Storage and Staging Areas. As described above, the change in feedstock between the proposed General III and General Iron Lincoln Park facility renders the current calculations related to ASR generation and adequacy of storage areas inadequate/invalid.

Also, it appears from the drawings in Attachment J that the South elevation view side on the covered enclosures for post-process ASR is completely open. The applicant must explain in detail how such a three-sided structure will "prevent" ASR handled near and stored in this structure from becoming windborne, including during active operations moving ASR into and out of the structure, as required by the Rules and to ensure that no open dumping of ASR will occur.[11] Similarly, the applicant must explain how its proposed structures for ASR that is awaiting further processing in the non-ferrous processing system, including the three-walled bins (which appear to be the referenced bins constructed of moveable concrete blocks), will "minimize[ ] the emission of dust and ASR Fibers from becoming windborne" and not otherwise constitute open dumping or cause a pubic nuisance.[12]

Finally, in keeping with our comments on the lack of analysis of short-term maximum capacity in the application, the applicant must provide additional analysis that its storage areas for ASR are sufficient to handle short-term maximum quantities of ASR (e.g., hourly and daily amounts).

Item 11: Truck Stacking Plan. The Truck Stacking Plan provided by the applicant in Attachment M describes room for truck stacking in several areas, including in the approach to the inbound scales, in the unloading areas, and between the scales and unloading area. The applicant must clarify whether these areas and such truck use of them were included in the emission calculations and air quality modeling analysis. If they were not, the applicant must revise the emission calculations and air quality modeling analysis to reflect such use, in particular to ensure protection of short-term air quality. The Truck Stacking Plan must also include measures to eliminate idling to protect air quality, and any stacking of trucks must be taken into account in the diesel truck air quality analysis raised in our January 14 comments.

Item 15: Noise Monitoring Plan. The proposed noise monitoring plan in Attachment P proposes using a single noise meter placed near the proposed PM10 monitor near the Northeast corner of the "campus property." The applicant should also include the proposed location of a second monitor closer to the processing equipment for purposes of attributing any exceptional noise events (such as from explosions) to the appropriate equipment, given the location within close proximity of several other industrial operations.

---

[10] *See* Rules at Section 2, Definitions, definition of "pollution control waste" includes "baghouse dust."
[11] *See* Rules at Section 4.4.2.
[12] *See id*.

We also note that while noise monitors placed near operations such as a metal shredder can act as a compliance measure for hours of operation, monitoring of the amperes used by the shredder blowers is an available, more direct method for ensuring that the facility does not exceed its permitted hours of operation.

Item 17: Air Study

Layout Drawings. It appears that the applicant has refused to provide CDPH with the layout drawings that it provided to IEPA, claiming confidential business information. A legal response to this claim is being provided in separate comments submitted by the Northwestern environmental law clinic. With respect to the technical need for these drawings, the applicant claims that "any and all information regarding environmental impacts of the ferrous and nonferrous material processing systems" are presented through provision of various other information.[13] However, none of these items provide confirmation of the maximum capacity/processing rate of the systems on an hourly, daily, or other basis, which as discussed in these comments is not disclosed elsewhere in the application either. Because the maximum capacity/processing rate on an hourly and daily basis is necessary for ensuring protection of short-term air quality, the applicant must provide the layout drawings as part of its application. We also reiterate our prior comment that diagrams of the shredder and shredder enclosure are necessary to verify the expected capture efficiency.

Unpaved Road Emissions. The applicant states that "… it was estimated that less than 5% of the vehicle travel area would be unpaved and the unpaved areas would not be routinely traveled. Due to the anticipated low usage of unpaved areas, unpaved road emissions were not considered in the modeling but were included in the permit application for completeness." This omission of the unpaved road emissions from the air quality modeling is another ground for invalidating that modeling. Even if the use of unpaved roads will not be routine and constitute a relatively small percentage of vehicle use *overall*, such use must be accounted for in the air quality modeling to ensure protection of *short-term* air quality. Unpaved roads can be significant sources of PM10 emissions in the short-term. Given that it appears unpaved areas will be used in cases where paved areas are insufficient to handle materials/activities, i.e., when overall site operations are at their greatest, the unpaved road emissions are likely on top of already relatively high total impacts. The applicant must include the unpaved road emissions in its air quality modeling analysis, or it must eliminate use of unpaved roads from its permitted operations under all scenarios.

PM10 Monitor Locations. The applicant continues to propose a single PM10 monitor on the East side of the facility, to be located a significant distance from the "RMG industrial campus property boundaries" that the applicant considers to be the ambient air boundary for the air quality analysis.[14] There is no discussion of a monitor at the ambient air boundary, in

[13] Addendum 1, at p13 of 24.
[14] *See* Attachment V at V-13 and V-8.

particular near the entrance of the facility, along what appear to be public access roads and adjacent industrial properties owned by other entities (which constitute ambient air for purposes of the proposed General III). The applicant must revise its application to include the proposed location of at least one PM10 monitor at its Eastern ambient air boundary. (We note that the application is also deficient with respect to placement of additional monitors around the ambient air boundary due to the shifts in prevailing winds over the course of the year. Requiring additional monitors can provide additional points for assessing baseline, background PM10 relative to increases contributed by onsite operations, versus the overly simplistic two monitor arrangement proposed by the applicant.)

Item 29: Vehicle Operation (see also Item 17 on unpaved roads). The applicant notes that "each vehicle may be used for a variety of purposes" and that "the amount of time that each front-end loader will spend performing each task will be constantly changing…", and thus that "[a]n operating plan for each vehicle to be used at the Facility is not appropriate since the proposed vehicles merely serve as support equipment for recycling operations within the Facility."[15] However, the vehicles are a source of emissions that must be properly estimated and accounted for in the application, including in the air quality modeling demonstration, which in turn must demonstrate protection of short-term air quality. The applicant did assume certain operating parameters in its emission calculations for and modeling of vehicle-related emissions, per Attachment R. Thus, the applicant must provide an operating plan as required by CDPH that reflects these assumptions and ensures that the vehicles will not exceed the activity levels assumed in the emission calculations and modeling demonstration (including for vehicle use on unpaved roads).

Item 31: Waste Characterization. It appears from Attachment CC that the waste characterization profile provided by the applicant involved a composite sample of three individual samples that were in turn taken on a single day along with seven other individual samples. If this is a correct understanding of the profile, the applicant must disclose any and all sampling results obtained for the other seven samples from that day, specifically samples 1, 3, 5-8 and 10, or if any of the samples were not analyzed, why not. The applicant must then discuss whether those analyzed sample results, if such exist, are consistent with the results obtained in the composite sample. In addition, the applicant must provide a detailed explanation of the feedstock that produced the sampled General Iron ASR and explain whether or not that feedstock is representative of the range of feedstock compositions and so ASR composition expected at the proposed General III. To the extent that the single day, select-composite sample is not representative of the range of ASR compositions expected at the proposed General III, the applicant must provide additional information and new analyses that accurately reflect/describe the expected range of ASR composition/characterization at the proposed General III.

[15] *See* Addendum 1, at p20 of 24.

We also note that while the applicant states that General Iron Lincoln Park "voluntarily" introduced a stabilization process for its ASR and that the proposed General III will "initially" use stabilization material[16], the applicant provided no details on the type of stabilization or its expected effectiveness in reducing the solubility of metals contained in the ASR. Nor did it describe where in the overall processing at the proposed General III it will be applied. This information is needed for purposes of properly characterizing the metals solubility of the ASR at different stages in the handling process, given that the proposed containment and other controls for ASR vary substantially from its creation to its leaving the facility.

Item 32: Fugitive Particulate Operating Program.

Spatial coverage of each Dust Boss. The applicant acknowledges that "the coverage of each Dust Boss will vary due to the variability of wind speed and direction on a particular day and time." However, it provides no assessment of the impact of wind speed and direction on expected Dust Boss efficacy beyond this vague statement. The applicant must assess whether expected winds will impact the assumed dust control efficiency, taking into account wind speed and direction. To the extent that such winds will reduce the Dust Boss control efficiency below that assumed in the emission calculations and air quality modeling, the applicant must revise both. The applicant must also discuss whether and how such Dust Boss performance variation will ensure compliance with the Rules' opacity standards.

Patrolling and cleaning adjacent areas for litter and ASR Fiber. The "Litter Control Plan" provided in Attachment GG is wholly inadequate/incomplete. The applicant continues to omit measures for patrolling to ensure that material is not landing to the west in the Calumet River (a "public place" under the Rules) or on properties further west. In addition, there is no description of the methods of detection or documentation that the inspectors will use to enable determination of whether the facility is in compliance with its duties to prevent airborne materials from escaping the facility and/or creating a nuisance or engaging in open dumping. Nor does the plan include an objective, enforceable duration for clean-up, instead subjectively saying that any litter or debris attributable to the Facility will be "promptly removed" (the response protocol is similarly unenforceably vague). There is no plan for inspecting adjacent industrial parcels, including the other RMG recyclers to the extent that they are in fact separate recycling facilities under the Rules and/or the adjacent Northpoint. Lastly, there is no objective distance for the proposed clean-up provided, so the applicant must clarify whether it is proposing to clean the default minimum of ¼ mile from the facility boundary or some other metric. The applicant should provide a map of the site clearly depicting areas within a quarter-mile of the facility (measuring from the facility boundary) and explicitly discuss its plans for meeting the mandatory cleaning requirement within this covered area (which includes the Calumet River and various surrounding private properties).

[16] Addendum 1, at p21 of 24.

Given the proximity of the facility to Rowan Park and Washington High School, the required plan should also encompass inspection and cleaning of these public amenities.

For these reasons and those set forth in our prior comments to CDPH, the January revised application for the proposed General III is deficient and CDPH must deny a permit unless and until the applicant can cure these additional deficiencies and demonstrate through the additional information that the proposed General III facility (and/or the single recycling facility that encompasses General III and the other RMG facilities) will operate without posing a threat of harm to the health, safety and welfare of the residents and workers on the Southeast Side.

Sincerely,

/s/ Meleah Geertsma
Meleah Geertsma
Senior attorney, Environmental Justice
Natural Resources Defense Council
On behalf of NRDC

CC:
Dave Graham, CDPH
Megan Cunningham, CDPH
Jennifer Hesse, CDPH
Mort Ames, Law Dept.
Jeffrey Levine, Law Dept.
Daniel Lurie, Mayor's Office
Angela Tovar, Mayor's Office
Candace Moore, Mayor's Office

From: Geertsma, Meleah <mgeertsma@nrdc.org>
Sent: Friday, January 29, 2021 5:08 PM
To: envcomments
Cc: Dave Graham; Jennifer Hesse; Mort Ames
Subject: Exhibits 1 and 2 to NRDC comments on revised General III application
Attachments: Ex. 1 2019AnnualAirQualityReportFinal.pdf; Ex. 2 2018 Annual Air Quality Report Final.pdf

[Warning: External email]

As noted in my previous email, I am submitting by this separate email the two exhibits to NRDC's comments on the revised application for the proposed General III. Both documents are also available via the links provided in the comment text.

Thanks,
Meleah

MELEAH GEERTSMA
Senior Attorney, Environmental Justice

NATURAL RESOURCES
DEFENSE COUNCIL

20 N. WACKER DRIVE, SUITE 1600
CHICAGO, IL 60606
T 312.651.7904
F 312.332.1908
mgeertsma@NRDC.ORG
NRDC.ORG

State of Illinois
Illinois Environmental Protection Agency

Illinois
Air Quality Report

2019

ILLINOIS ANNUAL AIR QUALITY REPORT 2019

Illinois Environmental Protection Agency
Bureau of Air
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, IL 62794-9276

Printed on recycled paper

For additional information on air pollution, please see the Illinois EPA website, http://www.epa.illinois.gov/, or write to:

Illinois Environmental Protection Agency
Bureau of Air
1021 N. Grand Ave., East
PO Box 19276
Springfield, IL 62794-9276

Acknowledgements

This document is produced by the Illinois Environmental Protection Agency; John Kim, Director.

Illinois EPA Bureau of Air personnel contributed their time and expertise to the development of this publication.

Illinois Annual Air Quality Report 2019

Contents

Appendices

Tables

Figures

Executive Summary

This report presents a summary of air quality data collected throughout the State of Illinois during calendar year 2019. Data is presented for the six criteria pollutants (those for which air quality standards have been developed – particulate matter (PM_{10} and $PM_{2.5}$), ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead – along with some heavy metals, volatile organic compounds and toxic compounds. Monitoring was conducted at 64 different site locations collecting data from 145 instruments.

In terms of the Air Quality Index (AQI) air quality during 2019 was either good or moderate 96% of the time throughout Illinois. There were three days when air quality was considered unhealthy (category red). This compares with seven unhealthy days in 2018. The unhealthy days were due to elevated ozone concentrations in July and August. There were 13 days (12 for ozone and one for a combination of fine particulates and ozone) when air quality in some part of Illinois was considered Unhealthy for Sensitive Groups (category orange). This compares with 22 Unhealthy for Sensitive Groups days reported in 2018. Air quality trends for most of the criteria pollutants are continuing to show downward or stable trends below the level of the standards.

Stationary point source emission data has again been included. The data in the report reflects information contained in Illinois EPA's Integrated Comprehensive Environmental Management System (ICEMAN) as of December 31, 2019. Emission estimates are for the calendar year 2019 and are for the pollutants: particulate matter, volatile organic material, sulfur dioxide, nitrogen oxides, and carbon monoxide. Emission trends of these pollutants have been given for the years 1998 to the present. Emissions reported with the Annual Emissions Report have been provided starting with 1998 and are currently available through 2018. There has been a trend toward decreasing emissions over this time period.

Ozone (O_3)

Photochemical oxidants result from a complex series of atmospheric reactions initiated by sunlight. When reactive (non-methane) hydrocarbons and nitrogen oxides accumulate in the atmosphere and are exposed to the ultraviolet component of sunlight, the formation of new compounds, including ozone and peroxyacetylnitrate, takes place.

Absorption of ultraviolet light energy by nitrogen dioxide results in its dissociation into nitric oxide and an oxygen atom. The oxygen atoms, for the most part, react with atmospheric molecular oxygen (O_2) to form ozone (O_3). In general, nitric oxide will react with ozone to re-form nitrogen dioxide, completing the cycle. A build-up of ozone above the equilibrium concentration, which is defined by the reaction cycle, results when nitrogen oxide reacts with non-methane hydrocarbons. Oxygen atoms from the hydrocarbon radical oxidize nitric oxide to nitrogen dioxide without ozone being used up. Thus, ozone concentrations are not depleted and can build up quickly.

Ozone can also be formed naturally in the atmosphere by electrical discharge and in the stratosphere by solar radiation. The former process is not capable of producing significant urban concentrations of this pollutant; however, there is some belief that incursion of ozone from the stratosphere can contribute significantly to elevated ground level concentrations of ozone under certain meteorological conditions.

Injury to vegetation is one of the earliest manifestations of photochemical air pollution, and sensitive plants are useful biological indicators of this type of pollution. The visible symptoms of photochemical oxidant produced injury to plants may be classified as:

- Acute injury, identified by cell collapse with subsequent development of necrotic patterns.
- Chronic injury, identified by necrotic patterns or with other pigmented patterns.
- Physiological effects, identified by growth alterations, reduced yields, and changes in the quality of plant products. The acute symptoms are generally characteristic of a specific photochemical oxidant, though chronic injury patterns are not. Ozone injury to leaves is identified as a stripling or flecking. Adverse effects on sensitive vegetation have been observed from exposure to photochemical oxidant concentrations of about 100 micrograms per cubic meter (0.05 parts per million) for 4 hours.

Adverse effects on materials (rubber products and fabrics) from exposure to photochemical oxidants have not been precisely quantified, but have been observed at the levels presently occurring in many urban atmospheres.

Ozone accelerates the aging of many materials, resulting in rubber cracking, dye fading, and paint erosion. These effects are linearly related to the total dose of ozone and can occur at very low levels, given long duration exposures.

Ozone is a pulmonary irritant that affects the respiratory mucous membranes, other lung tissues, and respiratory functions. Clinical and epidemiological studies have demonstrated that ozone impairs the normal mechanical function of the lung, causing alterations in respiration – the most characteristic of which are shallow, rapid breathing and a decrease in pulmonary compliance. Exposure to ozone results in clinical symptoms such as chest tightness, coughing, and wheezing. Alterations in airway resistance can occur, especially to those with respiratory diseases (asthma, bronchitis, emphysema). These effects may occur in sensitive individuals, as well as in healthy exercising persons, at short-term ozone concentrations between 0.15 and 0.25 ppm.

Ozone exposure increases the sensitivity of the lung to bronchoconstrictive agents such as histamine, acetylcholine, and allergens, as well as increasing the individual's susceptibility to bacterial infection. Simultaneous exposure to ozone and sulfur dioxide can produce larger changes in pulmonary function than exposure to either pollutant alone.

Peroxyacetylnitrate (PAN) is an eye irritant, and its effects often occur in conjunction with the effects of ozone.

Two characteristics of ozone and photochemical oxidant exposures should be cited:

- Ozone itself is a primary cause of most of the health effects reported in toxicological and experimental human studies and the evidence for attributing many health effects to this substance alone is very compelling.

- Atmospheric photochemical substances are known to produce health effects, some of which are not attributable to pure ozone but may be caused by other photochemical substances in combination with ozone.

Particulate Matter (PM)

Not all air pollutants are in the gaseous form. Small solid particles and liquid droplets, collectively called particulates or aerosols, are also present in the air in great numbers and may constitute a pollution problem. Particulates entering the atmosphere differ in size and chemical composition. The effects of particulates on health and welfare are directly related to their size and chemical composition.

Particulate matter in the atmosphere consists of solids, liquids, and liquids-solids in combination. Suspended particulates generally refer to particles less than 100 micrometers in diameter (human hair is typically 100 micrometers thick). Particles larger than 100 micrometers will settle out of the air under the influence of gravity in a short period of time.

Typical sources emitting particles into the atmosphere are combustion of fossil fuels (ash and soot), industrial processes (metals, fibers, etc.), fugitive dust (wind and mechanical erosion of local soil), and photochemically produced particles (complex chain reactions between sunlight and gaseous pollutants). Combustion and photochemical products tend to be smaller in size (less than 1 micrometer); fugitive dust and industrial products are typically larger in size (greater than 1 micrometer).

Particles which cause the most health and visibility difficulties are those less than 1.0 micrometer in size. These particles are also the most difficult to reduce in numbers by the various industrial removal techniques. Rainfall accounts for the major removal of these smaller particles from the air.

One of the major problems associated with high concentrations of particulates is that the interaction between the particles, sunlight, and atmospheric moisture can potentially result in the climatic effects and diminished visibility (haze). Particles play a key role in the formation of clouds, and emissions of large numbers of particles can, in some instances, result in local increases in cloud formation and, possibly, precipitation. Particles in the size range of 0.1 to 1.0 micrometers are the most efficient in scattering visible light (wave length 0.4 to 0.7 micrometers) thereby reducing visibility. Particles combined with high humidity can result in the formation of haze which can cause hazardous conditions for the operation of motor vehicles and aircraft.

Particulate pollutants enter the human body by way of the respiratory system and their most immediate effects are upon this system. The size of the particle determines its depth of penetration into the respiratory system. Particles over 5 micrometers are generally deposited in the nose and throat. Those that do penetrate deeper in the respiratory system to the air ducts (bronchi) are often removed by ciliary action. Particles ranging in size from 0.5 - 5.0 micrometers in diameter can be deposited in the bronchi, with few reaching the air sacs (alveoli). Most particles deposited in the bronchi are removed by the cilia within hours. Particles less than 0.5 micrometer in diameter reach and may settle in the alveoli. The removal of particles from the alveoli is much less rapid and complete than from the larger passages. Some of the particles retained in the alveoli are absorbed into the blood.

Besides particulate size, the oxidation state, chemical composition, concentration, and length of time in the respiratory system

contribute to the health effects of particulates. Particulates have been associated with increased respiratory diseases (asthma, bronchitis, and emphysema), cardio-pulmonary disease (heart attack), and cancer.

Plant surfaces and growth rates may be adversely affected by particulate matter. Particulate air pollution also causes a wide range of damage to materials including corrosion of metals and electrical equipment and the soiling of textiles and buildings.

Sulfur Dioxide (SO_2)

Sulfur dioxide, (SO_2) is an atmospheric pollutant which results from combustion processes (mainly burning of fossil fuels containing sulfur compounds), refining of petroleum, manufacture of sulfuric acid, and smelting of ores containing sulfur. Reduction of sulfur dioxide pollution levels can generally be achieved through the use of low- sulfur content fuels or the use of chemical sulfur removal systems.

Once in the atmosphere, some sulfur dioxide can be oxidized (either photochemically or in the presence of a catalyst) to SO_3 (sulfur trioxide). In the presence of water vapor, SO_3 is readily converted to sulfuric acid (H_2SO_4) mist. Other basic oxides combine with SO_3 to form sulfate aerosols. Sulfuric acid droplets and other sulfates are thought to account for about 5 to 20 percent of the total suspended particulate matter in urban air. These compounds can be transported large distances and come back to earth as a major constituent of acid precipitation. Many of the resultant health problems attributed to SO_2 may be a result of the oxidation of SO_2 to other compounds.

The effects of SO_2 on health are irritation and inflammation of tissue that it directly contacts. Inhalation of SO_2 causes bronchial constriction resulting in an increased resistance to air flow, reduction of air volume, and an increase of respiratory rate and heart rate.

SO_2 can exacerbate pre-existing respiratory diseases (asthma, bronchitis, emphysema). The enhancement (synergism) by particulate matter of the toxic response to SO_2 has been observed under conditions which would promote the conversion of SO_2 to H_2SO_4. The degree of enhancement is related to the concentration of particulate matter. A twofold to threefold increase of the irritant response to SO_2 is observed in the presence of particulate matter capable of oxidizing SO_2 to H_2SO_4.

H_2SO_4 inhalation causes an increase in the respiratory system's mucous secretions, which reduces the system's ability to remove particulates via mucociliary clearance. This can result in an increased incidence of respiratory infection.

Carbon Monoxide (CO)

The major source of carbon monoxide (CO) is motor vehicles. The USEPA has kept under its jurisdiction the regulation of emission control equipment on new motor vehicles while the State's responsibility for reducing excessive ambient carbon monoxide levels is exercised by developing transportation plans for congested urban areas.

The toxic effects of high concentrations of CO on the body are well known. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin (the oxygen-carrying molecule in the blood) to form carboxyhemoglobin (COHb). This reaction reduces the oxygen-carrying capacity of blood because the affinity of hemoglobin for CO is over 200 times that for oxygen. The higher the percentage of hemoglobin bound up in the form of carboxyhemoglobin, the more serious is the health effect.

The level of COHb in the blood is directly related to the CO concentration of the inhaled air. For a given ambient air CO concentration, the COHb level in the blood will reach an equilibrium concentration after a sufficient time period. This equilibrium COHb level will be maintained in the blood as long as the ambient air CO level remains unchanged. However, the COHb level will slowly change in the same direction as the CO concentration of the ambient air as a new equilibrium of CO in the blood is established.

The lowest CO concentrations shown to produce adverse health effects result in aggravation of cardiovascular disease. Studies demonstrate that these concentrations have resulted in decreased exercise time before the onset of pain in the chest and extremities of individuals with heart or circulatory disease. Slightly higher CO levels have been associated with decreases in vigilance, the ability to discriminate time intervals, and exercise performance.

Evidence also exists indicating a possible relationship between CO and heart attacks, the development of cardiovascular disease, and irregular fetal development.

Studies on the existing ambient levels of CO do not indicate any adverse effects on vegetation, materials, or other aspects of human welfare.

Nitrogen Dioxide (NO_2)

Nitrogen gas (N_2) is an abundant and inert gas which makes up almost 80 percent of the Earth's atmosphere. In this form, it is harmless to humans and essential to plant metabolism. Due to its abundance in the air, it is a frequent reactant in many combustion processes. When combustion temperatures are extremely high, as in the burning of coal, oil, natural gas, and gasoline, atmospheric nitrogen gas may combine with molecular oxygen (O_2) to form various oxides of nitrogen (NO_x). Of these, nitric oxide (NO) and nitrogen dioxide (NO_2) are the most important contributors to air pollution; NO_x generally is used to represent these. Nitric oxide is a colorless and odorless gas. It is the primary form of NO_x resulting from the combustion process. NO_x contributes to haze and visibility reduction. NO_x is also known to cause deterioration and fading of certain fabrics and damage to vegetation. Depending on concentration and extent of exposure, plants may suffer leaf lesions and reduced crop yield.

Sensitivity of plants to NO_x depends on a variety of factors including species, time of day, light, stage of maturity, and the presence or absence of other air pollutants such as sulfur dioxide and ozone.

There is a lack of strong evidence associating health effects with most NO_x compounds. NO_2, a secondary derivative of atmospheric nitric oxide, however, has been clearly established as exerting detrimental effects on human health and welfare.

NO_2 can cause eye irritation at concentrations as low as 0.07 ppm. NO_2 can cause an increase in airway resistance, an increase in respiratory rate, an increase in sensitivity to bronchoconstrictors, a decrease in lung compliance, and an enhanced susceptibility to respiratory infections. NO_2 is a deep lung irritant capable of producing pulmonary edema if inhaled in sufficient concentrations. When NO_2 is inhaled in concentrations with other pollutants, the effects are additive.

NO_x may also react with water to form corrosive nitric acids, a major component of acid precipitation. Additionally, NO_x and various other pollutants (e.g., hydrocarbons) may react in the presence of sunlight to product photochemical oxidants.

Lead (Pb)

Historically, atmospheric lead came primarily from combustion of leaded gasoline. However, the use of unleaded gas since 1975 has reduced mobile source lead emissions by over 90%. Currently stationary sources, such as lead smelters, battery manufacturers, and iron and steel producers can contribute significant amounts of lead to their immediate vicinity.

Lead is a stable compound which persists and accumulates both in the environment and in the human body. Lead enters the human body through ingestion and inhalation with consequent absorption into the blood stream and distribution to all body tissues. No safe level of lead in the blood has been identified. Clinical, epidemiological and toxicological studies have demonstrated exposure to lead has a broad range of health effects.

Since 1990, over 6,000 new health studies have been conducted. These studies have shown that children are the most susceptible to the

damaging effects of lead because they are more likely to ingest lead due to hand-to-mouth activity and early body development. Lead exposure has been found to interfere with the developing nervous system including the brain. This can potentially lead to intelligence quotient loss, poor academic achievement, permanent learning disabilities, and behavioral problems. These effects can persist into early adulthood.

Kidney and neurological cell damage has also been associated with lead exposure. Animal studies have demonstrated that lead can contribute to reduced fertility and birth defects.

Other potential effects from lead exposure are weakened immune systems, restlessness, headaches, increased blood pressure, and cardiovascular disease.

Illinois Ambient Air Quality Standards and Episode Levels

Consistent with the intent of the Environmental Protection Act of the State of Illinois, Illinois has adopted ambient air quality and episode standards that specify maximum permissible short-term and long-term concentrations of various contaminants in the atmosphere. Ambient air quality and episode standards are limits on atmospheric concentrations of air contaminants established for the purpose of protecting the public health and welfare.

The Illinois and National Ambient Air Quality Standards (NAAQS) consist of a primary and secondary standard for each pollutant (contaminant) as presented in **Table 1**. The Illinois Air Pollution Episode Levels are presented in **Table 2**. The primary standard and episode criterion represents the level of air quality which is necessary to protect the public health. Air entering the respiratory tract must not jeopardize health. Therefore, the air quality standards must, as a minimum, provide air which will not adversely affect, through acute or chronic symptoms, the public health.

The secondary standard defines the level of air quality which is necessary to protect the public welfare. This includes, among other things, effects on crops, vegetation, wildlife, visibility, and climate, as well as effects on materials, economic values, and on personal comfort and well-being. The standards are legally enforceable limitations, and any person causing or contributing to a violation of the standards is subject to enforcement proceedings under the Environmental Protection Act. The standards have also been designed for use as a basis for the development of implementation plans by State and local agencies for the abatement and control of pollutant emissions from existing sources, and for the determination of air contaminant emission limitations to ensure that population, industry, and economic growth trends do not add to the region's air pollution problems.

Table 1: Summary of National and Illinois Ambient Air Quality Standards					
Pollutant		**Primary / Secondary**	**Averaging Time**	**Level**	**Form**
Carbon Monoxide		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		primary and secondary	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb	Annual Mean
Ozone		primary and secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution	$PM_{2.5}$	primary	Annual	12.0 µg/m^3	Annual mean, averaged over 3 years
		secondary	Annual	15.0 µg/m^3	Annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide		primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year
$PM_{2.5}$ standards are referenced to local conditions of temperature and pressure rather than standard conditions (760 mmHg and 25 degrees Celsius).					

Table 2: Illinois Air Pollution Episode Levels				
Pollutant	**Advisory**	**Yellow Alert**	**Red Alert**	**Emergency**
Particulate Matter (µg/m^3)	2-hour 420	24-hour 350	24-hour 420	24-hour 500
Sulfur Dioxide (ppm)	2-hour 0.30	4-hour 0.30	4-hour 0.35	4-hour 0.40
Carbon Monoxide (ppm)	2-hour 30	8-hour 15	8-hour 30	8-hour 40
Nitrogen Dioxide (ppm)	2-hour 0.40	1-hour 0.60 or 24-hour 0.15	1-hour 1.20 or 24-hour 0.30	1-hour 1.60 or 24-hour 0.40
Ozone (ppm)	1-hour 0.12	1-hour 0.20	1-hour 0.30	1-hour 0.50

OZONE

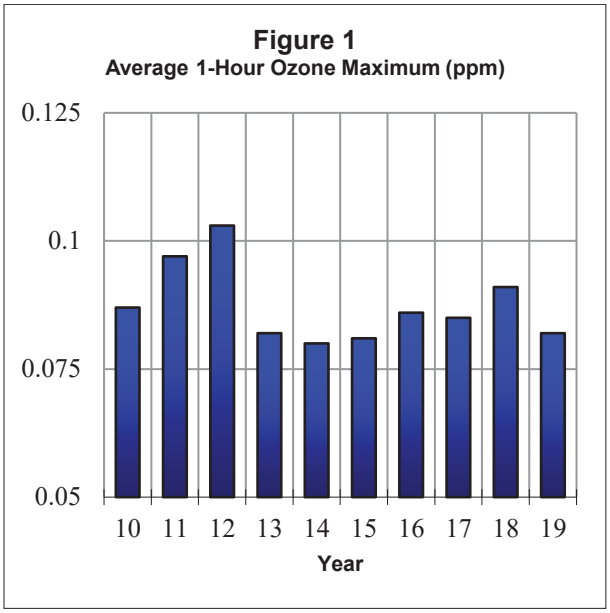
Monitoring was conducted at 37 locations during the March-October "ozone season" and at least 75 percent data capture was obtained at all 37 sites.

Lisle recorded the highest 1-hour concentration of 0.112 ppm. This compares with the highest concentration of 0.108 ppm in 2018 at Evanston. The highest value in the Metro-East area in 2019 was 0.108 ppm recorded at Wood River, compared with a high in 2018 of 0.116 ppm at Alton and East St. Louis.

Data are also presented to compare with the current 8-hour standard as of 2016 of 0.070 ppm. The appropriate statistic for comparison with the 8-hour standard is the fourth highest value, which is averaged over a three-year period. There were two sites in Illinois that had a fourth-high value above 0.070 ppm in 2019 compared with 19 sites in 2018. The highest fourth-high value was 0.071 ppm at Elgin and Chicago's Southwater Filtration Plant. The highest level in the Metro-East area was 0.070 ppm at Wood River. For the three-year period 2017-2019, eight sites had a fourth-high average above 0.070 ppm (Table B4).

Figure 1 shows for each year the statewide average of each site's highest hourly ozone value for the ten-year period 2010-2019. The graph shows some year-to-year fluctuation with high years occurring during summers more favorable for ozone formation and low years in summers less conducive for ozone formation. The statewide average for 2019 was 0.082 ppm compared with 0.091 ppm in 2018 and 0.085 ppm in 2017.

Statewide, the total number of 1-hour excursion days in 2019 was zero compared with zero in 2018 and zero in 2017.



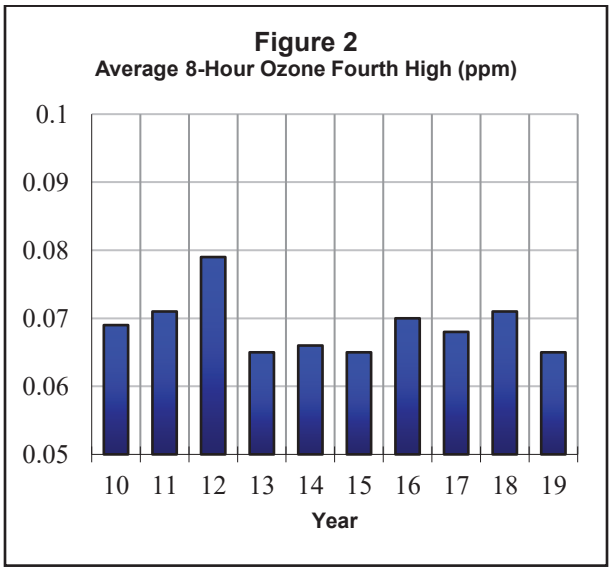


Figure 2 shows for each year the statewide annual average of the fourth highest 8-hour ozone value for the same period 2010-2019. The statewide average for 2018 was 0.065 ppm compared with 0.071 ppm in 2018 and 0.0768 in 2017.

PARTICULATE MATTER

Monitoring was conducted at 34 sites for $PM_{2.5}$. In 2019, no sites recorded an average above 12.0 ug/m^3, the level of the annual standard. The statewide average of the annual averages was 9.0 ug/m^3 in 2018 compared to 9.3 ug/m^3 in 2018.

Figure 3 shows the trend of the statewide annual averages for $PM_{2.5}$ for the period 2010-2019. There was one exceedance of the 24-hour standard of 35 ug/m^3 in 2019 compared with two exceedances in 2018 and two exceedances in 2017. The statewide peak of 35.9 ug/m^3 was recorded at Rockford. In 2019, the statewide 24-hour average was 21.4 ug/m^3. This compares with 21.3 ug/m^3 in 2018 and 20.1 ug/m^3 in 2017.

In 2019 there were four sites monitoring PM_{10}. The statewide annual average was 27 ug/m^3 compared with 24 ug/m^3 in 2018 and 23 ug/m^3 in 2017. The highest annual average was 35 ug/m^3 in Granite City. The lowest annual was 14 ug/m^3 at Northbrook.

For PM_{10}, the statewide average of the maximum 24-hour averages in 2019 was 77 ug/m^3 compared with 81 ug/m^3 in 2018 and 81 ug/m^3 in 2017. **Figure 4** depicts this information for the period 2010-2019.

There were no exceedances of the 24-hour primary standard of 150 ug/m^3. The highest 24-hour average was recorded in Granite City with a value of 104 ug/m^3 compared with a high 24-hour value of 103 ug/m^3 in Granite City in 2018.

Figure 3
Particulate Matter ($PM_{2.5}$) Annual Trends (ug/m^3)

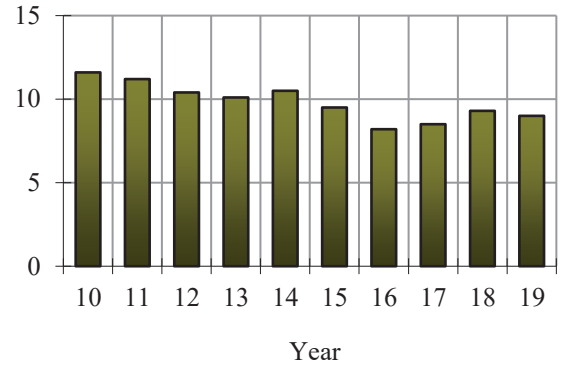
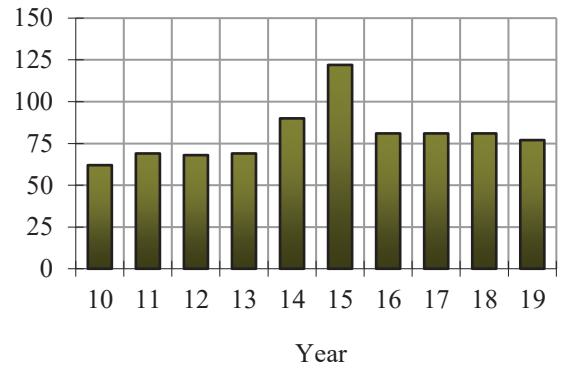


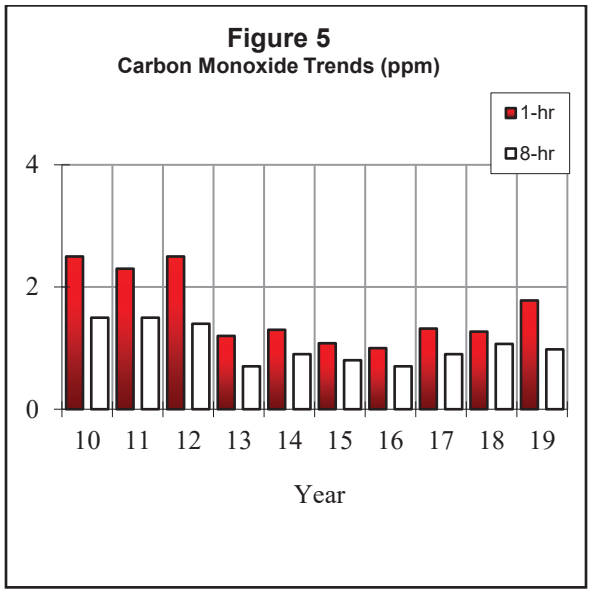
Figure 4
Particulate Matter (PM_{10}) 24-Hour Trends (ug/m^3)



CARBON MONOXIDE

There were no exceedances of either the 1-hour primary standard of 35 ppm or the 8-hour primary standard of 9 ppm in 2019. The highest 1-hour average was 3.1 ppm recorded at the Lansing near-road location. The highest 8-hour average was 1.8 ppm also recorded at the Lansing near-road location.

Figure 5 shows the trend for the period 2010-2019 for the statewide average of the 1-hour and 8-hour high CO values. The statewide average of the 1-hour high was 1.8 ppm in 2018 compared with 1.3 ppm in 2018. The statewide average for the 8-hour high was 1.0 ppm in 2019 compared with 1.1 ppm in 2018.



SULFUR DIOXIDE

There were no exceedances of the 1-hour primary standard of 75 ppb in 2019 compared with 11 exceedances in 2018. There were no exceedances of the 3-hour secondary standard of 500 ppb in 2019. The highest 1-hour average was 61 ppb recorded in Mount Carmel compared with 115 ppb in Decatur in 2018. The statewide average of the 1-hour high in 2019 was 26 ppb. This compares with 34 ppb in 2018 and 35 ppb in 2017. The highest 3-hour average of 45 ppb was recorded in Decatur in 2019 compared with 72 ppb in Decatur in 2018. There were no sites over the primary 1-hour standard of 75 ppb for the 2017-2019 period (Table B17).

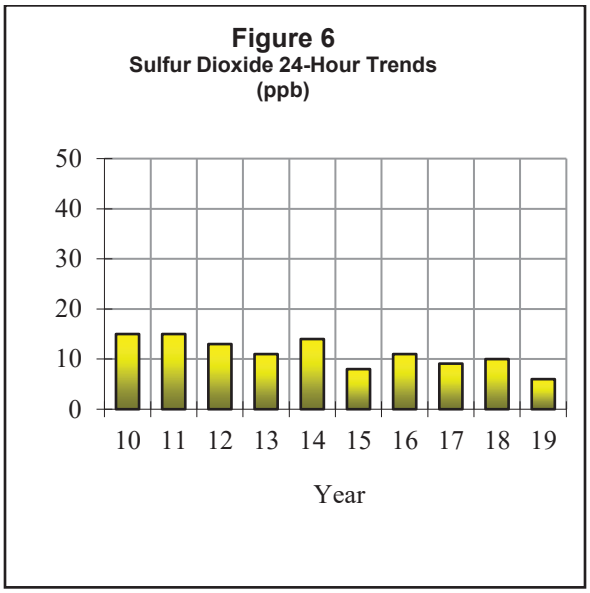
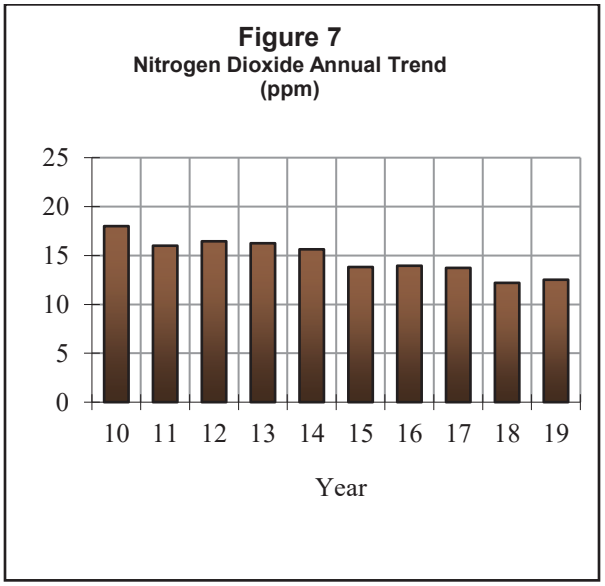


Figure 6 shows the statewide trend for the maximum 24-hour averages for the period 2010-2019. The statewide average for 2019 was 6 ppb compared with the 2018 average of 10 ppb.

NITROGEN DIOXIDE

There were no violations of the annual primary standard of 53 ppb recorded in Illinois during 2019. The highest annual average of 17 ppb was recorded at Schiller Park. The statewide average for 2019 was 12.5 ppb compared with 12.2 ppb in 2018 and 13.7 ppb in 2017. There were no violations of the 1-hour primary standard, and there were also no violations in 2018. There were no sites over the 1-hour primary standard of 100 ppb for the 2017-2019 period compared to zero sites for the 2016-2018 period (Table B20).

Figure 7 depicts the trend of statewide averages from 2010-2019. There have been no violations of the annual standard since 1980.



LEAD

Perhaps the greatest success story in controlling criteria pollutants is lead. As a direct result of the federal motor vehicle control program, which has required the use of unleaded gas in automobiles since 1975, lead levels have decreased by more than 90 percent statewide. Based on health studies, the lead standard was revised in 2008 from a quarterly mean of 1.5 ug/m^3 to a rolling three-month maximum mean of 0.15 ug/m^3.

There were no violations of the rolling three-month maximum mean standard for the 2017 to 2019 period (Table B23).

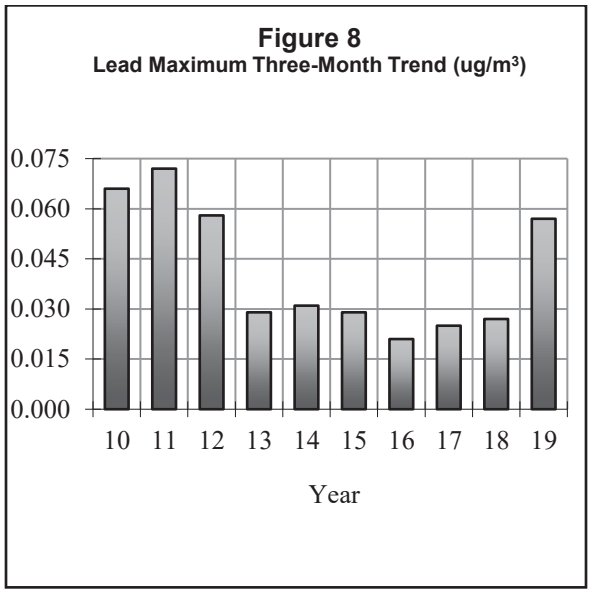


Figure 8 shows the trend of the statewide maximum rolling three-month averages from 2010-2019. The decrease in 2013 was due to various controls having been implemented at facilities that have source-oriented monitors. The increase in 2019 was due to lead emission control problems at one facility in Granite City. The problems were discussed with the facility and corrective actions taken. All monitoring locations in the State have three-year maximum averages under the national standard for lead (Table B23). The statewide average for all sites was 0.057 ug/m^3 in 2019 compared to 0.027 ug/m^3 in 2018 and 0.025 ug/m^3 in 2017.

FILTER ANALYSIS RESULTS

The total suspended particulate samples were analyzed, in addition to lead, for specific metals. Several of the metals analyzed (arsenic, beryllium, cadmium, chromium, manganese, and nickel) have known toxic properties. Other metals such as iron can be used as tracers to help identify sources of high particulate values. There are currently no state or federal ambient air quality standards for these parameters.

The areas with the highest metals concentrations in Illinois are generally the heavily-industrialized areas of the Metro-East (Granite City and East St. Louis), south Chicago, and near source-oriented monitors. The highest 24-hour average for arsenic was 0.020 ug/m^3 measured in Granite City. There were no measurable beryllium 24-hour averages recorded statewide. The monitor at Washington High School in Chicago recorded the highest cadmium concentrations with a 24-hour average of 0.011 ug/m^3. The highest 24-hour chromium average was 0.031 ug/m^3 recorded at Washington High School in Chicago. The highest iron, manganese, and nickel values were recorded in Granite City..

TOXIC COMPOUNDS

Sampling for toxic compounds other than metals (see Filter Analysis Section, **Table B24**) was conducted at Northbrook and Schiller Park. Most compounds were below the method detection limits. **Table B25** has a listing of various toxic compound maximums and annual averages.

The Air Quality Index (AQI) is the national standard method for reporting air pollution levels to the public. An index such as the AQI is necessary because there are several air pollutants, each with different typical ambient concentrations and each with different levels of harm, and to report actual concentrations for all of them would be confusing. The AQI uses a single number and a short descriptor to define the air quality in an easy-to-remember and easy-to-understand way, taking all the pollutants into account.

The AQI is based on the short-term federal National Ambient Air Quality Standards (NAAQS), for six of the criteria pollutants, namely:

- Ozone (O_3)
- Sulfur dioxide (SO_2)
- Carbon monoxide (CO)
- Particulate matter (PM_{10})
- Particulate matter ($PM_{2.5}$)
- Nitrogen dioxide (NO_2)

In each case, the short-term primary NAAQS corresponds to 100 on the AQI scale – the top end of the Moderate category. The next concentration above the NAAQS would begin the Unhealthy for Sensitive Groups category at 101 on the AQI scale. **Table 3** lists all the AQI ranges and their descriptor categories. Each category corresponds to a different level of health concern. **Table 4** lists each AQI category and its corresponding meaning.

Unhealthy for Sensitive Groups occurs on occasion for 8-hour ozone, $PM_{2.5}$, and downwind of certain SO_2 sources. Unhealthy air quality is uncommon in Illinois, and Very Unhealthful air quality is rare. There has never been an occurrence of Hazardous air quality in Illinois.

The AQI is computed as follows: data from pollution monitors in an area are collected, and the AQI sub index for each pollutant is computed using formulas derived from the index and concentration relations. Nomograms and tables are also available for this purpose. The data used are:

- O_3 estimate of the highest 8-hour average for that calendar day
- SO_2 the highest 1-hour or most recent 24-hour average
- CO the highest 8-hour average so far that calendar day
- PM_{10} the most recent 24-hour average
- $PM_{2.5}$ estimate of the 24-hour average for that calendar day
- NO_2 the highest 1-hour average

Continuous monitors are utilized for all the pollutants, including PM_{10} and $PM_{2.5}$.

Once all the sub-indices for the various pollutants have been computed, the highest is chosen by inspection. That is the AQI for the area and the pollutant giving rise to it is the "critical pollutant." Thus if, for Anytown, Illinois, the following sub-indices were obtained:

O_3 = 45
SO_2 = 23
CO = 19
PM_{10} = 41
$PM_{2.5}$ = 61

Anytown's AQI for that day would be 61, which is in the Moderate category, and the critical pollutant would be particulates ($PM_{2.5}$). If data for one of the pollutants used in computing AQI is missing, the AQI is computed using the data available, ignoring the missing data. It occasionally happens that two pollutants have the same sub index; in such cases there are two critical pollutants.

The Illinois EPA issues an AQI forecast for 14 areas, or sectors, in Illinois (**Table 5**). These correspond to metropolitan areas with populations greater than 100,000.

Table 3: Air Quality Index Categories		
AQI Values	**AQI Descriptor**	**Colors**
When the AQI is in this range:	***...air quality conditions are:***	***...as symbolized by this color:***
0-50	Good	Green
51-100	Moderate	Yellow
101-150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Table 4: Air Quality Index Health Concerns		
Air Quality Index Levels of Health Concern	**Numerical Value**	**Meaning**
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	301 to 500	Health alert: everyone may experience more serious health effects.

Table 5: Air Quality Index Sectors in Illinois	
Sector	**Coverage Area**
Lake County	Lake County only
Chicago	All areas within the city limits of Chicago
North and West Suburbs	Parts of Cook, Du Page, and McHenry Counties north of I-290 (Eisenhower Expressway) and outside of the Chicago city limits
South and West Suburbs	Parts of Cook and Du Page Counties south of I-290 and outside of Chicago city limits
Will County/Joliet	Will County only
Aurora-Elgin	The eastern part of Kane County
Rockford	Approximately 10-mile diameter circle centered on downtown Rockford
Quad Cities	The Illinois portion of the Quad Cities area
Peoria	Approximately 10-mile diameter circle centered on downtown Peoria in parts of Peoria, Woodford, and Tazewell Counties
Champaign	Champaign-Urbana Metropolitan Area
Normal	Bloomington-Normal Metropolitan Area
Decatur	Decatur Metropolitan Area
Springfield	Springfield Metropolitan Area
Metro-East St. Louis	The Illinois portion of the St. Louis Metropolitan Area. Approximately 15 miles wide east of the Mississippi River in Madison and St. Clair Counties

Illinois EPA AQI forecasts and AQI information can be obtained on EPA's AirNow website at http://www.airnow.gov. The AirNow website shows estimated real-time AQI levels for all sectors in Illinois as well as other areas around the country. AQI information can further be obtained via e-mail and/or cell phones through the EnviroFlash program located at http://illinois.enviroflash.info/signup.cfm. The AirNow website and residents subscribed to EnviroFlash program can also receive alerts when high pollution levels are occurring or expected to occur. Additionally, Illinois AQI forecasts and current AQI levels are picked up and reported by various media outlets, weather websites, and electronic application programs.

2019 Illinois AQI Sector Summary

In order to present a more representative AQI, 24-hour calendar day FRM $PM_{2.5}$ and PM_{10} values from the total network were used to determine the percentages in **Figure 9** even though some of these values were not available for issuing the daily AQI.

Air quality was still in the "Good" and "Moderate" categories most often in 2019. Most sectors had a higher frequency of "Good" than "Moderate", and all sectors had a higher frequency of "Moderate" than "Unhealthy for Sensitive Groups." Lake County, Aurora-Elgin, Joliet/Will County, Quad Cities, Peoria, Champaign, Normal, Decatur, and Springfield sectors had 65 percent or more of the days in the "Good" category.

Within AQI sectors there were 28 occurrences of "Unhealthy for Sensitive Groups" air quality and 3 occurrences of "Unhealthy" air quality in 2019. The sector breakdown for "Unhealthy for Sensitive Groups" was two in Lake County, five in Chicago, four in North & West Suburbs, four in South & West, four in Aurora-Elgin, three in Will County, one in Rockford, two in Quad Cities, two in Peoria and one in Metro-East. The sector breakdown for "Unhealthy" was one in South & West Suburbs and two in Metro-East. **Figure 9** presents the AQI statistics for each sector. The pie chart shows the percent of days each sector was in a particular category.

In 2019, there were no ozone advisories issued in Illinois. An advisory is declared when ozone levels have reached the level of the former 1-hour standard (0.125 ppm) on a particular day. In the Chicago MSA there were zero Air Pollution Action Days issued in 2019. This compares with eight in 2018.

Figure 9: 2019 Air Quality Index Summaries by Sector

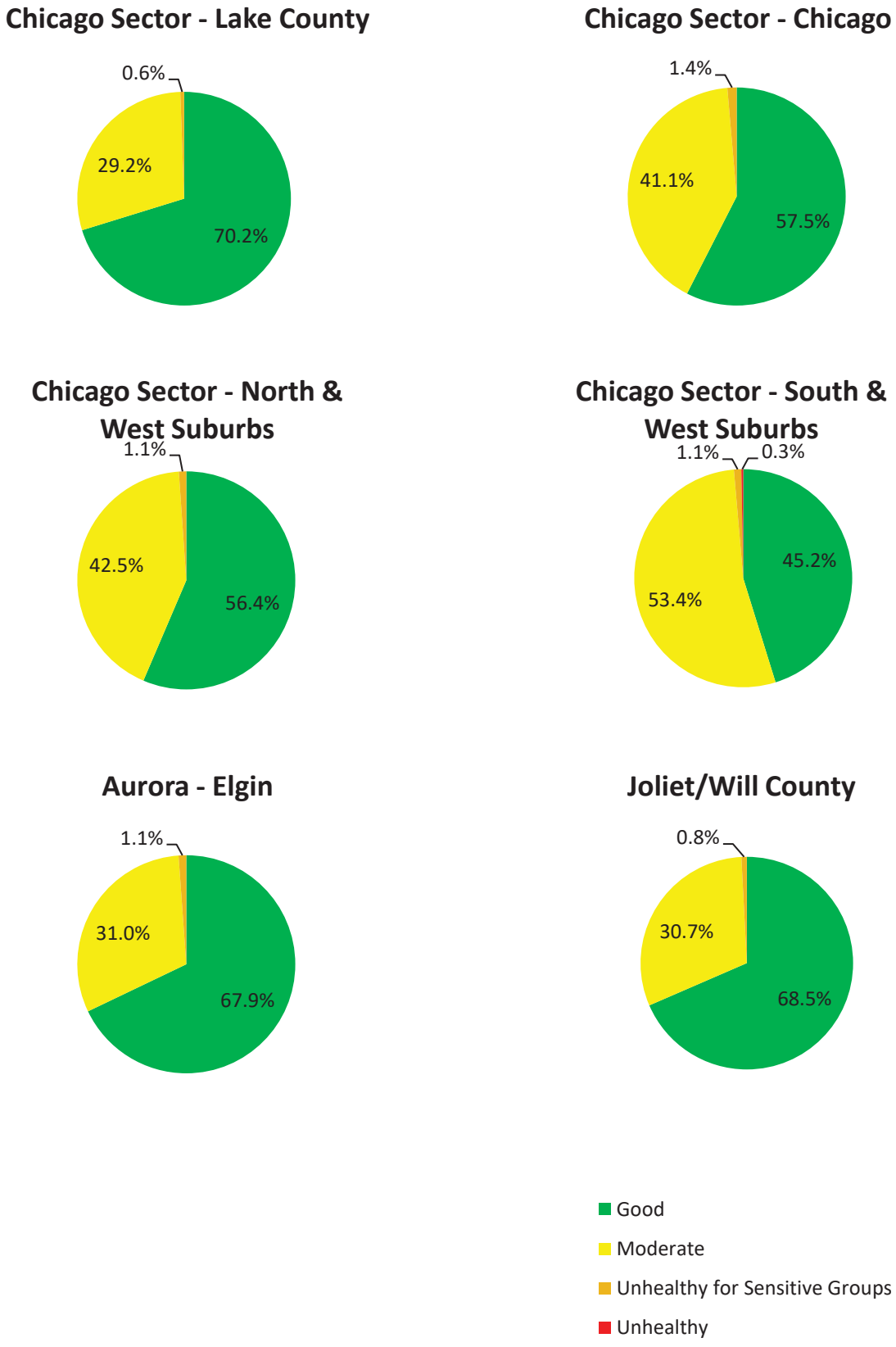


Figure 9: 2019 Air Quality Index Summaries by Sector

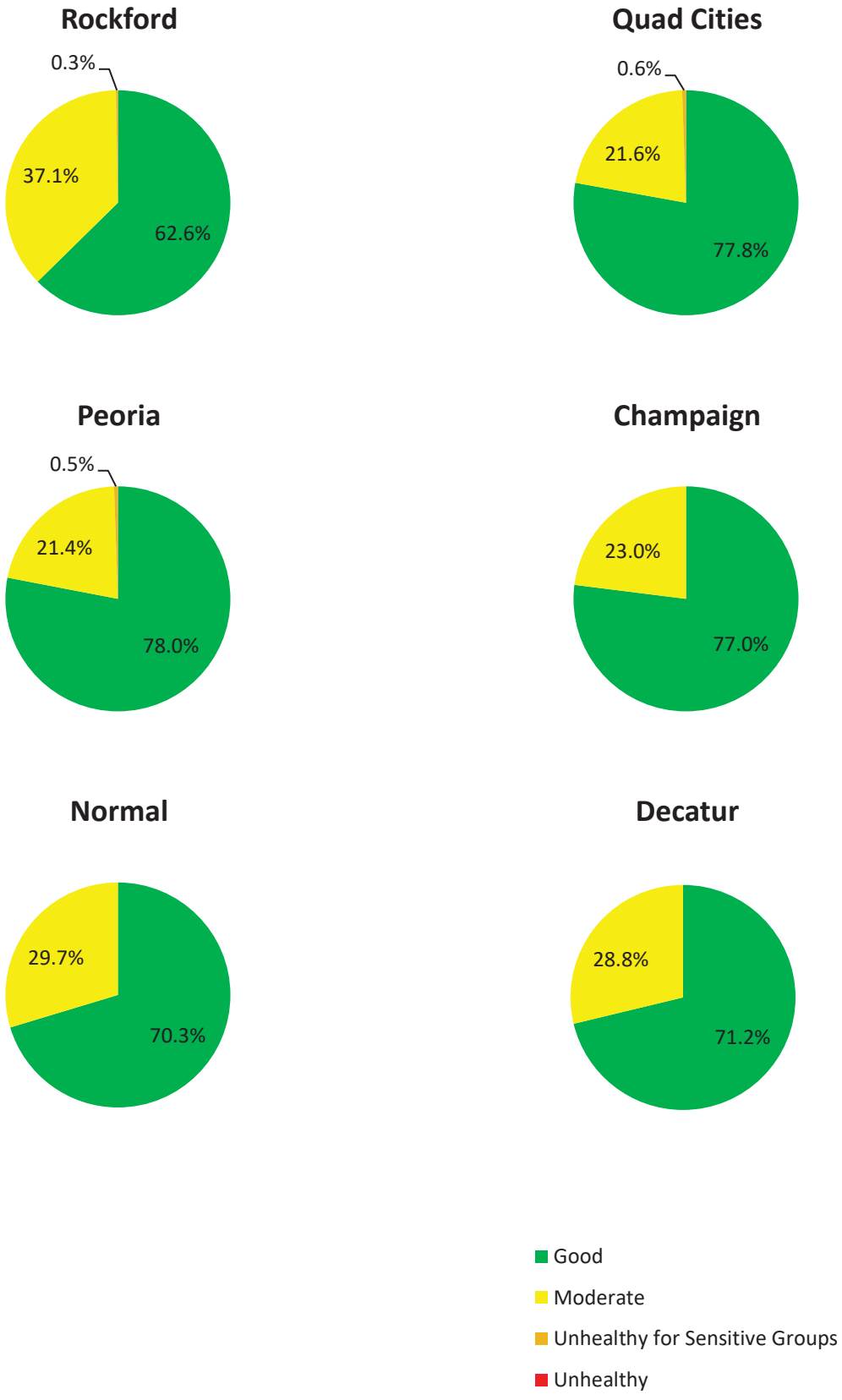
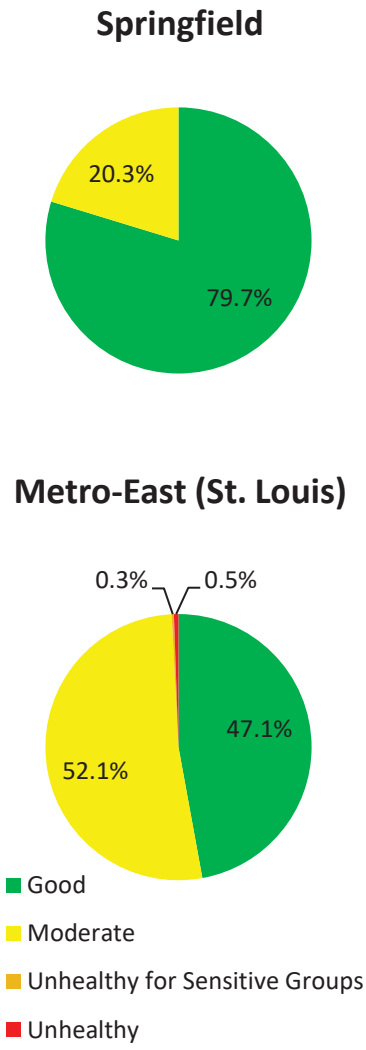


Figure 9: 2019 Air Quality Index Summaries by Sector



Since the late 1970s, the Illinois EPA's Division of Air Pollution Control has maintained a database of stationary point source emissions for the entire State. 40 CFR 51.211 requires Illinois to include in its State Implementation Plan "... procedures for requiring owners or operators of stationary sources to maintain records of... a) Information on the nature and amount of emissions from the stationary source and b) other information as may be necessary..." The emission database maintained by the Division of Air Pollution Control has changed over time.

The current emissions inventory is known as the Integrated Comprehensive Environmental Management System (ICEMAN) and includes emission data on approximately 6,200 active sources (including 3,631 in the Registration of Smaller Sources, or ROSS, program) throughout the State. The ICEMAN data includes source addresses; source emission totals; permit data such as expiration date and status; emission unit data such as name, hours of operation, operating rate, fuel parameters, and emissions; control equipment data such as control device name, type, and removal efficiencies; and stack parameters. Reported emissions and Agency-calculated emissions are stored separately.

The group responsible for the entry of emission inventory data is the Inventory Unit of the Air Quality Planning Section, and uses permit applications, the issued permit, and data reported on annual emissions reports to compile the inventory.

The following tables and graphs are an analysis of the emissions data contained in ICEMAN at the end of 2019. It is important to note emissions contained in the ICEMAN are not necessarily the actual emissions that entered the atmosphere. This is due to the fact that when an air pollution permit is applied for, the applicant provides maximum and average emission rates. The maximum emission rate reflects what the applicant believes the emission rate would be at maximum production. The average emission rate reflects emissions at the applicant's most probable production rate. The Inventory Unit has been updating its estimated emissions to more accurately reflect the reported emissions.

To calculate the distribution of emissions for the individual categories, the source classification code (SCC) field was used from the ICEMAN. The SCC is an eight-digit code that breaks emission units into logical categories. SCCs are provided by the USEPA.

To produce the following tables, the first three digits of the SCC were used. Only categories that contributed significantly to the overall total are listed in the following sections. The complete category breakdown can be found in Appendix C.

Volatile Organic Material

Figure 10
Volatile Organic Material
Emission Trend (1000s of Tons/Year)

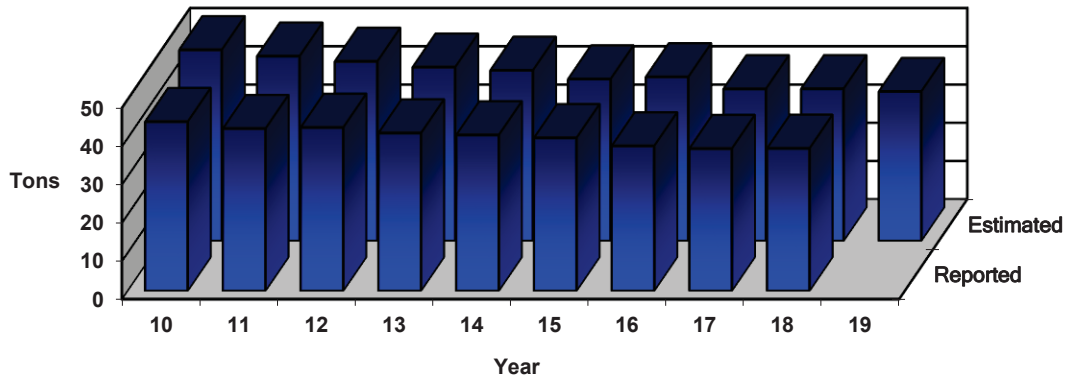


Table 6: Volatile Organic Material Emissions - 2019

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Food/Agriculture	9,432.5	24.14%	24.14%
Surface Coating Operations	6,064.1	15.52%	39.66%
Chemical Manufacturing	5,679.5	14.54%	54.20%
Petroleum Product Storage	2,492.5	6.38%	60.58%
Fuel Combustion	2,481.5	6.35%	66.93%
Printing/Publishing	2,382.2	6.10%	73.03%
Petroleum Industry	1,748.7	4.48%	77.50%
Rubber and Plastic Products	1,603.5	4.10%	81.61%
Bulk Terminal/Plants	1,052.0	2.69%	84.30%
Mineral Products	999.7	2.56%	86.86%
Organic Chemical Storage	775.3	1.98%	88.84%
Secondary Metal Production	760.1	1.95%	90.79%
Fabricated Metal Products	667.7	1.71%	92.50%
Solid Waste Disposal	572.1	1.46%	93.96%
Organic Solvent Use	502.0	1.28%	95.25%
Petroleum Marketing/Transport	358.5	0.92%	96.17%
Organic Solvent Evaporation	354.5	0.91%	97.07%
All Other Categories	1,143.7	2.93%	100.00%

PM_{10}

Figure 11
PM_{10} Emission Trend
(1000s of Tons/Year)

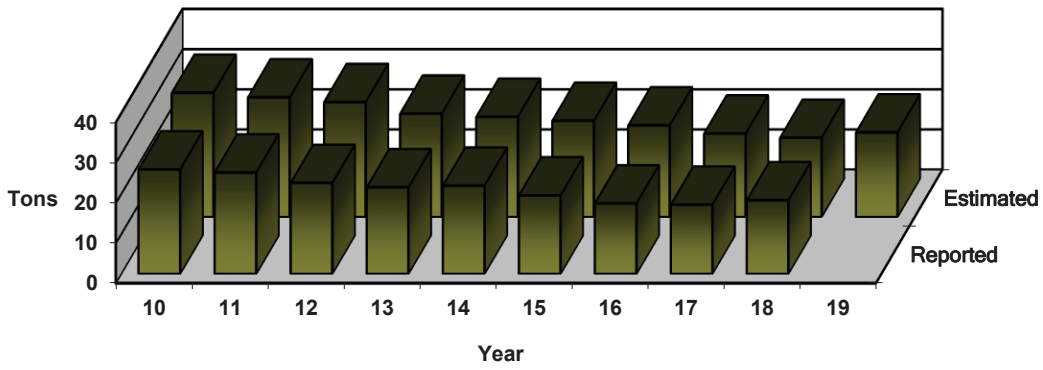


Table 7: Distribution of PM_{10} Emissions – 2019

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	5,597.8	26.57%	26.57%
Food/Agriculture	5,497.3	26.10%	52.67%
Mineral Products	4,093.1	19.43%	72.10%
Petroleum Industry	1,234.2	5.86%	77.96%
Chemical Manufacturing	1,023.5	4.86%	82.81%
Primary Metal Production	882.7	4.19%	87.00%
Secondary Metal Production	869.2	4.13%	91.13%
Solid Waste Disposal	530.0	2.52%	93.65%
Fabricated Metal Products	270.0	1.28%	94.93%
Surface Coating Operations	239.9	1.14%	96.07%
Process Cooling	237.7	1.13%	97.19%
All Other Categories	591.0	2.81%	100.00%

Carbon Monoxide

Figure 12
Carbon Monoxide Emission
Trend (1000s of Tons/Year)

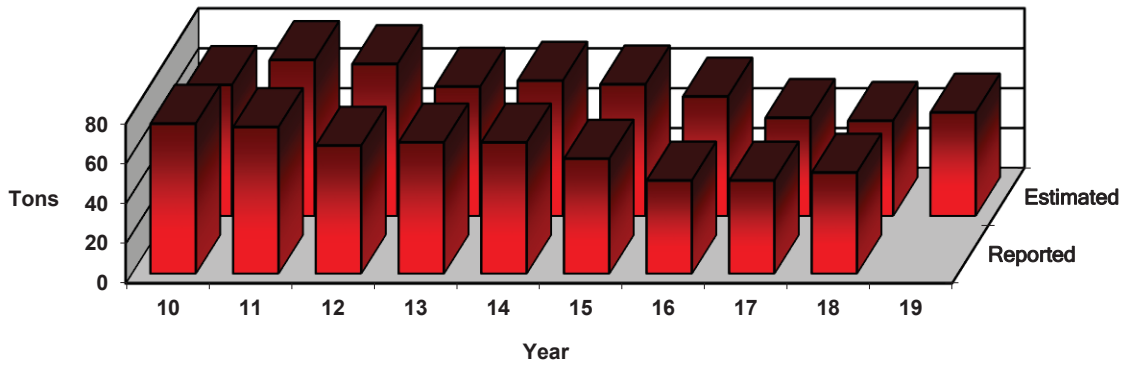


Table 8: Distribution of Carbon Monoxide Emissions - 2019

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	25,238.0	48.57%	48.57%
Primary Metal Production	12,408.3	23.88%	72.45%
Mineral Products	3,334.4	6.42%	78.87%
Petroleum Industry	2,477.7	4.77%	83.64%
Solid Waste Disposal	2,385.8	4.59%	88.23%
Secondary Metal Production	1,906.6	3.67%	91.90%
Chemical Manufacturing	1,827.2	3.52%	95.41%
Food/Agriculture	1,189.6	2.29%	97.70%
Oil and Gas Production	244.4	0.47%	98.17%
Surface Coating Operations	233.0	0.45%	98.62%
Fabricated Metal Products	191.7	0.37%	98.99%
All Other Categories	524.3	1.01%	100.00%

Sulfur Dioxide

Figure 13
Sulfur Dioxide Emission
Trend (1000s of Tons/Year)

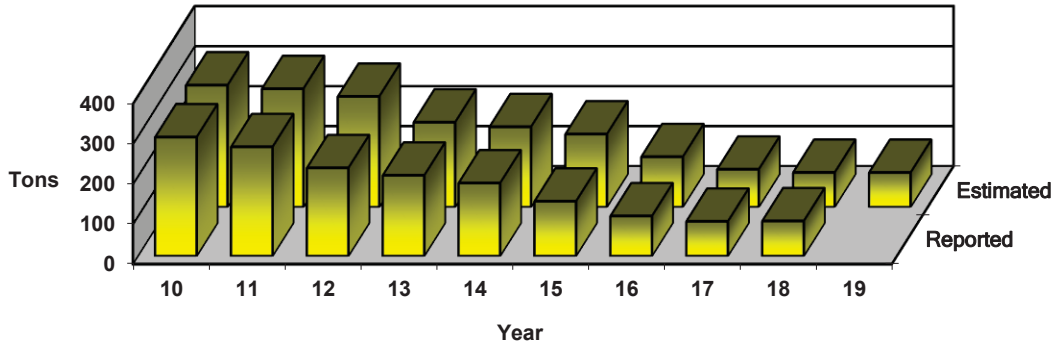


Table 9: Distribution of Sulfur Dioxide Emissions - 2019

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	72,361.7	84.02%	84.02%
Mineral Products	6,261.1	7.27%	91.29%
Primary Metal Production	2,533.5	2.94%	94.23%
Food/Agriculture	1,436.7	1.67%	95.90%
Petroleum Industry	1,299.7	1.51%	97.41%
Solid Waste Disposal	1,122.2	1.30%	98.71%
Chemical Manufacturing	912.3	1.06%	99.77%
All Other Categories	198.4	0.23%	100.00%

Nitrogen Oxides

Figure 14
Nitrogen Oxide Emission
Trend (1000s of Tons/Year)

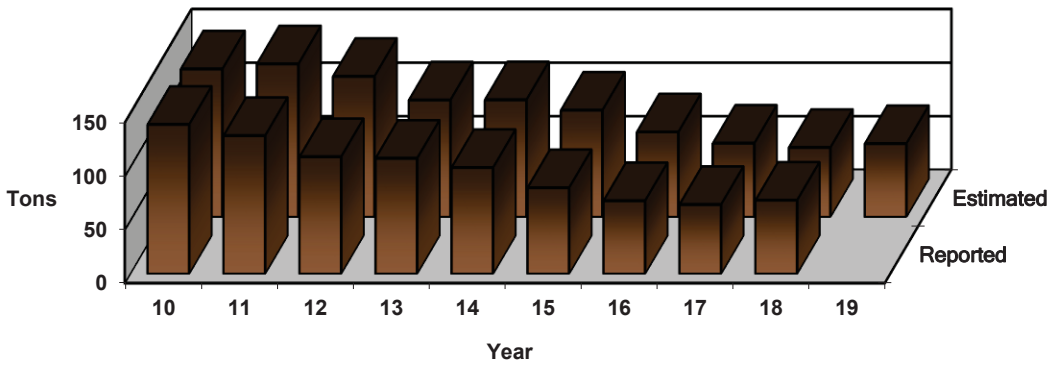


Table 10: Distribution of Nitrogen Oxide Emissions - 2019

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	51,165.9	74.69%	74.69%
Mineral Products	6,699.2	9.78%	84.47%
Petroleum Industry	3,771.5	5.51%	89.97%
Chemical Manufacturing	1,468.9	2.14%	92.12%
Primary Metal Production	1,208.4	1.76%	93.88%
Food/Agriculture	1,137.9	1.66%	95.54%
Solid Waste Disposal	788.2	1.15%	96.69%
Secondary Metal Production	629.5	0.92%	97.61%
Oil and Gas Production	627.8	0.92%	98.53%
Surface Coating Operations	473.6	0.69%	99.22%
All Other Categories	536.1	0.78%	100.00%

Description of the Air Sampling Network

The Illinois air monitoring network is composed of instrumentation owned and operated by both the Illinois EPA and by cooperating local agencies. This network has been designed to measure ambient air quality levels throughout the State of Illinois following federal guidelines.

The network contains both continuous and non-continuous instruments. The continuous instruments operate throughout the year, while non-continuous instruments operate intermittently based on the schedule shown in **Table A1**. This is the official non-continuous sampling schedule used by the Illinois EPA during 2019.

The Illinois network is deployed along the lines described in the Illinois State Implementation Plan. An updated air monitoring plan is submitted to USEPA each year for review.

In accordance with USEPA air quality monitoring requirements as set forth in Title 40 of the Code of Federal Regulations, Part 58 (40 CFR 58), five types of monitoring stations are used to collect ambient air data. These include State and Local Air Monitoring Stations (SLAMS), National Air Monitoring Stations (NAMS), Photochemical Assessment Monitoring Stations (PAMS), Special Purpose Monitoring Stations (SPMS), and National Core Monitoring Stations (NCore). The types of stations are distinguished from one another on the basis of the general monitoring objectives they are designed to meet.

The SLAMS, NAMS, PAMS, SPMS, and NCORE designations for the sites operated within the State of Illinois are provided in the Annual Network Plan, which can be found at epa.state.il.us/air/monitoring/index.html. All of the industrial sites are considered to be SPMS. **Table A2** is a summary of the distribution of pollutants through the years along with the total number of instruments and the total number of sites. The site directory is listed in **Table A3** and the monitoring directory is listed in **Table A4**

Table A1
2019 Noncontinuous Sampling Schedule

JANUARY						
S	M	T	W	R	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

FEBRUARY						
S	M	T	W	R	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

MARCH						
S	M	T	W	R	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

APRIL						
S	M	T	W	R	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

MAY						
S	M	T	W	R	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JUNE						
S	M	T	W	R	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

JULY						
S	M	T	W	R	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST						
S	M	T	W	R	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER						
S	M	T	W	R	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

OCTOBER						
S	M	T	W	R	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NOVEMBER						
S	M	T	W	R	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER						
S	M	T	W	R	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

13 Every 6 Day Sampling Schedule 22 Every 3 Day Sampling Schedule

1. **State/Local Air Monitoring Station (SLAMS) Network -** The SLAMS network is designed to meet a minimum of four basis monitoring objectives:

   a. To determine the highest concentrations expected to occur in the area covered by the network.

   b. To determine representative concentrations in areas of high population density.

   c. To determine the air quality impact of significant sources or source categories.

   d. To determine general background concentration levels.

2. **National Air Monitoring Station (NAMS) Network -** The NAMS network is a subset of stations selected from the SLAMS network with emphasis given to urban and multisource areas. The primary objectives of the NAMS network are:

   a. To measure expected maximum concentrations.

   b. To measure concentrations in areas where poor air quality is combined with high population exposure.

   c. To provide data useable for the determination of national trends.

   d. To provide data necessary to allow the development of nationwide control strategies.

3. **Photochemical Assessment Monitoring Station (PAMS) Network -** The PAMS network is required in serious, severe, and extreme ozone nonattainment areas to obtain detailed data for ozone, precursors (NOx and VOC), and meteorology. NO_X and VOC sampling is required for the period June - August each year. Ozone sampling occurs during the ozone season, March - October. Network design is based on four monitoring types. In Illinois, PAMS are required in the Chicago metropolitan area only.

   a. Type 1 sites are located upwind of the nonattainment area and are located to measure background levels of ozone and precursors coming into the area

   b. Type 2 sites are located slightly downwind of the major source areas of ozone precursors.

   c. Type 3 sites are located at the area of maximum ozone concentrations.

   d. Type 4 sites are located at the domain edge of the nonattainment area and measure ozone and precursors leaving the area.

4. **Special Purpose Monitoring Station (SPMS) Network -** Any monitoring site that is not a designated SLAMS or NAMS is considered a special purpose monitoring station. Some of the SPMS network objectives are as follows:

   a. To provide data as a supplement to stations used in developing local control strategies, including enforcement actions.

b. To verify the maintenance of ambient standards in areas not covered by the SLAMS/NAMS network.

c. To provide data on non-criteria pollutants.

5. **National Core Station (NCore) Network -** NCore is a multi-pollutant network that integrates several advanced measurement systems. In Illinois, Northbrook and Bondville are considered NCore sites. A few of the NCore network objectives are as follows:

a. Support for development of emission strategies and accountability of emission strategy progress through tracking long-term trends of pollutants and their precursors.

b. Support of long-term health assessments that contribute to review of national standards.

c. Support to scientific studies ranging across technological, health, and atmospheric process disciplines.

d. Support to ecosystem assessments recognizing that national air quality networks benefit ecosystems assessments.

Table A2
Distribution of Air Monitoring Equipment

Parameter	2019	2018	2017	2016	2015
Particulate Matter Federal Reference Method ($PM_{2.5}$ FRM)	25	24	27	27	33
$PM_{2.5}$ Federal Equivalent Method ($PM_{2.5}$ FEM)	17	16	8	8	1
$PM_{10\text{-}2.5}$ (PM Coarse)	1	1	0	0	0
$PM_{2.5}$ Air Quality Index (non-FEM)	7	7	9	9	11
$PM_{2.5}$ Speciation	4	4	4	5	5
Particulate Matter (PM_{10})	5	5	5	5	5
Lead (Pb)	5	5	7	7	7
Sulfur Dioxide (SO_2)	14	14	10	13	15
Nitrogen Dioxide (NO_2)	7	5	5	6	6
Total Reactive Nitrogen (NO_y)	2	2	2	2	2
Ozone (O_3)	37	37	37	37	37
Carbon Monoxide (CO)	4	3	3	3	3
Volatile Organic Compounds	2	2	2	2	2
Semi Volatile Organic Compounds	1	1	1	1	1
Semi Non Methane Organic Compounds	1	1	1	1	1
Carbonyls	2	2	2	2	2
Meteorology	11	17	19	20	20
Total Instruments	145	146	142	148	151
Total Sites	64	63	64	64	65

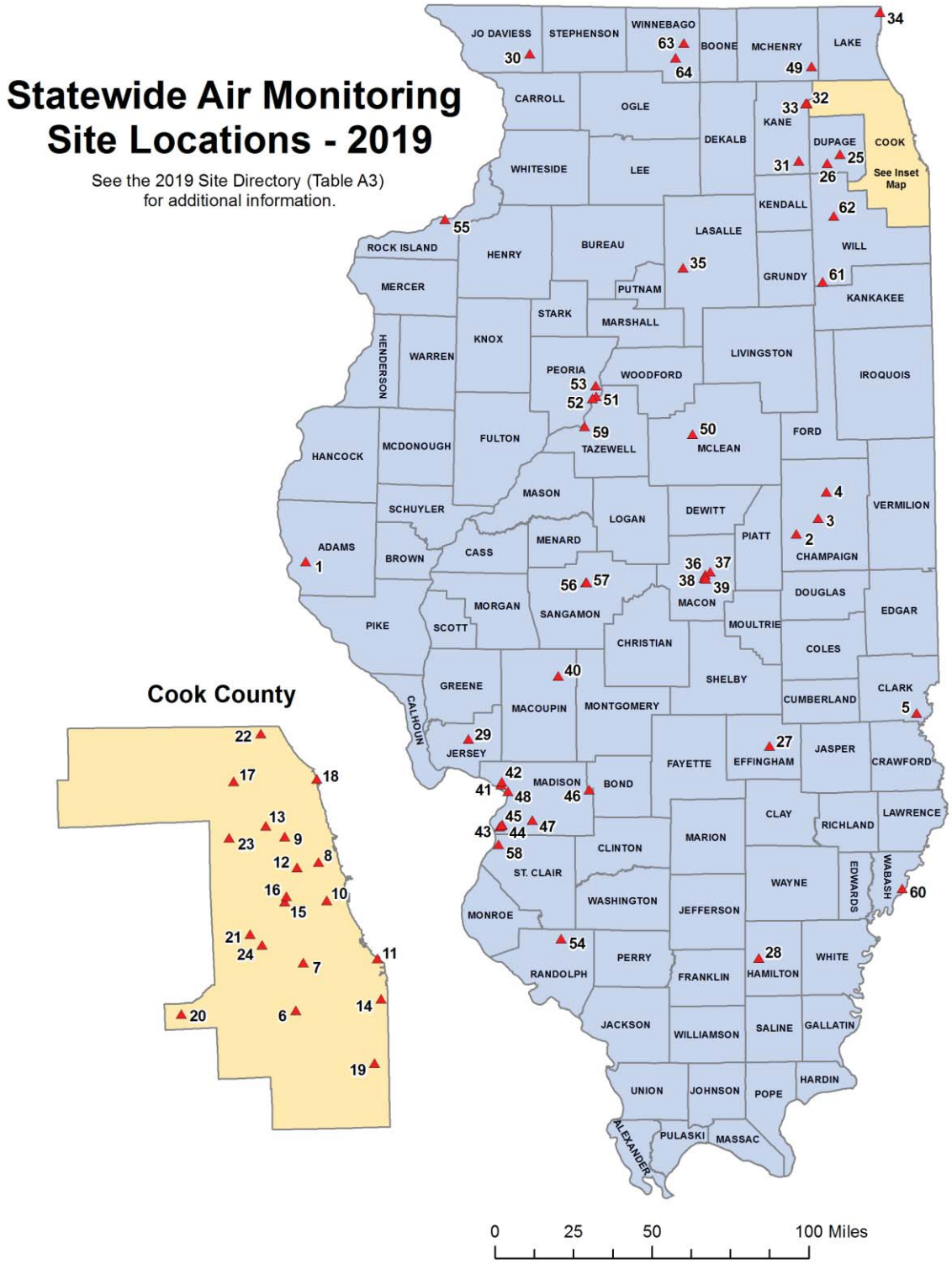

Statewide Air Monitoring Site Locations - 2019
See the 2019 Site Directory (Table A3) for additional information.
Cook County
See Inset Map
JO DAVIESS
STEPHENSON
WINNEBAGO
BOONE
MCHENRY
LAKE
CARROLL
OGLE
KANE
DUPAGE
COOK
WHITESIDE
LEE
DEKALB
KENDALL
WILL
ROCK ISLAND
HENRY
BUREAU
LASALLE
GRUNDY
KANKAKEE
MERCER
PUTNAM
STARK
MARSHALL
HENDERSON
WARREN
KNOX
LIVINGSTON
PEORIA
WOODFORD
IROQUOIS
HANCOCK
MCDONOUGH
FULTON
TAZEWELL
MCLEAN
FORD
MASON
DEWITT
VERMILION
SCHUYLER
LOGAN
PIATT
ADAMS
BROWN
CASS
MENARD
CHAMPAIGN
MORGAN
SANGAMON
MACON
DOUGLAS
PIKE
SCOTT
CHRISTIAN
MOULTRIE
EDGAR
COLES
GREENE
SHELBY
CLARK
CALHOUN
MACOUPIN
MONTGOMERY
CUMBERLAND
JERSEY
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
MADISON
BOND
CLAY
RICHLAND
LAWRENCE
CLINTON
MARION
ST. CLAIR
WAYNE
EDWARDS
WABASH
WASHINGTON
JEFFERSON
MONROE
PERRY
FRANKLIN
HAMILTON
WHITE
RANDOLPH
JACKSON
WILLIAMSON
SALINE
GALLATIN
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
MASSAC
0
25
50
100 Miles

Table A3
Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
1	17-001-0007	Adams	Quincy	John Wood Comm. College 1301 South 48th St.	+39.91540937 -91.33586832	IL EPA
2	17-019-1001	Champaign	Bondville	State Water Survey Township Rd. 500 E.	+40.052780 -88.372510	IL EPA/US EPA
3	17-019-0006	Champaign	Champaign	Ameren Substation 904 N. Walnut	+40.1237962 -88.229531	IL EPA
4	17-019-0007	Champaign	Thomasboro	North Thomas St.	+40.244913 -88.188519	IL EPA
5	17-023-0001	Clark	West Union	416 S. State Highway 1 & West Union	+39.210883 -87.668416	Indiana DEP
6	17-031-0001	Cook	Alsip	Village Garage 4500 W. 123rd St.	+41.6709919 -87.7324569	CCDES
7	17-031-0076	Cook	Chicago	Com Ed Maintenance Bldg. 7801 Lawndale	+41.75139998 -87.71348815	CCDES
8	17-031-0219	Cook	Chicago	Kennedy Near-road #2 Kennedy Expy. & W. Webster Ave.	+41.920681 -87.674425	IL EPA
9	17-031-0052	Cook	Chicago	Mayfair Pump Station 4850 Wilson Ave.	+41.96548483 -87.74992806	CCDES
10	17-031-0110	Cook	Chicago	Perez Elementary School 1241 19th St.	+41.855771 -87.657932	CCDES
11	17-031-0032	Cook	Chicago	South Water Filtration Plant 3300 E. Cheltenham Pl.	+41.75583241 -87.54534967	CCDES
12	17-031-0057	Cook	Chicago	Springfield Pump Station 1745 N. Springfield Ave.	+41.912739 -87.722673	CCDES
13	17-031-1003	Cook	Chicago	Taft High School 6545 W. Hurlbut St	+41.98433233 -87.7920017	CCDES
14	17-031-0022	Cook	Chicago	Washington High School 3535 E. 114th St.	+41.68716544 -87.53931548	CCDES
15	17-031-4002	Cook	Cicero	Cook County Trailer 1820 S. 51st Ave	+41.85524313 -87.7524697	CCDES
16	17-031-6005	Cook	Cicero	Liberty School 13th St. & 50th Ave.	+41.86442642 -87.74890238	CCDES
17	17-031-4007	Cook	Des Plaines	Regional Office Building 9511 W. Harrison St	+42.06028469 -87.86322543	IL EPA
18	17-031-7002	Cook	Evanston	Water Pumping Station 531 E. Lincoln	+42.062053 -87.675254	IL EPA
19	17-031-0119	Cook	Lansing	Kingery Near-road #1 Kingery Expy. & Torrence Ave.	+41.578603 -87.557392	IL EPA
20	17-031-1601	Cook	Lemont	Cook County Trailer 729 Houston	+41.66812034 -87.99056969	CCDES
21	17-031-1016	Cook	Lyons Township	Village Hall 50th St & Glencoe	+41.801180 -87.832349	IL EPA
22	17-031-4201	Cook	Northbrook	Northbrook Water Plant 750 Dundee Rd.	+42.13999619 -87.79922692	IL EPA
23	17-031-3103	Cook	Schiller Park	IEPA Trailer 4743 Mannheim Rd.	+41.96519348 -87.87626473	IL EPA
24	17-031-3301	Cook	Summit	Graves Elementary School 60th St. & 74th Ave.	+41.78276601 -87.80537679	CCDES

Table A3
Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
25	17-043-6001	DuPage	Lisle	Morton Arboretum Route 53	+41.81304939 -88.0728269	IL EPA
26	17-043-4002	DuPage	Naperville	City Hall 400 S. Eagle St.	+41.77107094 -88.15253365	IL EPA
27	17-049-1001	Effingham	Effingham	Central Grade School 10421 N. US Hwy. 45	+39.06715932 -88.54893401	IL EPA
28	17-065-0002	Hamilton	Knight Prairie	Ten Mile Creek DNR Office State Route 14	+38.08215516 -88.6249434	IL EPA
29	17-083-0117	Jerseyville	Jerseyville	21965 Maple Summit Rd.	+39.101439 -90.344494	IL EPA
30	17-085-9991	Jo Daviess	Stockton	10952 E. Parker Rd.	+42.2869 -89.9997	US EPA
31	17-089-0007	Kane	Aurora	Health Department 1240 N. Highland	+41.78471651 -88.32937361	IL EPA
32	17-089-0005	Kane	Elgin	Larsen Junior High School 665 Dundee Rd.	+42.04914776 -88.27302929	IL EPA
33	17-089-0003	Kane	Elgin	McKinley School 258 Lovell St.	+42.050403 -88.28001471	IL EPA
34	17-097-1007	Lake	Zion	Camp Logan Illinois Beach State Park	+42.4675733 -87.81004705	IL EPA
35	17-099-0007	La Salle	Oglesby	308 Portland Ave.	+41.29301454 -89.04942498	IL EPA
36	17-115-0013	Macon	Decatur	IEPA Trailer 2200 N. 22nd	+39.866933 -88.925452	IL EPA
37	17-115-0117	Macon	Decatur	ADM 2550 N. Brush College Rd.	+39.880404 -88.894488	ERM Inc.
38	17-115-0217	Macon	Decatur	Tate & Lyle North 899 N. Folk St.	+39.850712 -88.933635	ERM Inc.
39	17-115-0317	Macon	Decatur	Tate & Lyle South 2200 E. El Dorado St.	+39.846856 -88.923323	ERM Inc.
40	17-117-0002	Macoupin	Nilwood	IEPA Trailer Heaton & Dubois	+39.39607533 -89.80973892	IL EPA
41	17-119-0008	Madison	Alton	Clara Barton School 409 Main St.	+38.89018605 -90.14803114	IL EPA
42	17-119-2009	Madison	Alton	SIU Dental Clinic 1700 Annex St.	+38.90308534 -90.14316803	IL EPA
43	17-119-0010	Madison	Granite City	Air Products 15th & Madison	+38.69443831 -90.15395426	IL EPA
44	17-119-1007	Madison	Granite City	Fire Station #1 23rd & Madison	+38.70453426 -90.13967484	IL EPA
45	17-119-0024	Madison	Granite City	Gateway Medical Center 2100 Madison Ave.	+38.7006315 -90.14476267	IL EPA
46	17-119-9991	Madison	Highland	5403 State Rd. 160	+38.8690 -89.6228	US EPA
47	17-119-1009	Madison	Maryville	Southwest Cable TV 200 W. Division	+38.72657262 -89.95996251	IL EPA
48	17-119-3007	Madison	Wood River	Water Treatment Plant 54 N. Walcott	+38.86066947 -90.10585111	IL EPA
49	17-111-0001	McHenry	Cary	Cary Grove High School 1st St. & Three Oaks Rd.	+42.22144166 -88.24220734	IL EPA

Table A3
Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
50	17-113-2003	McLean	Normal	ISU Physical Plant Main & Gregory	+40.51873537 -88.99689571	IL EPA
51	17-143-0037	Peoria	Peoria	City Office Building 613 N.E. Jefferson	+40.697326 -89.584084	IL EPA
52	17-143-0024	Peoria	Peoria	Fire Station #8 MacArthur & Hurlburt	+40.68742038 -89.60694277	IL EPA
53	17-143-1001	Peoria	Peoria Heights	Peoria Heights High School 508 E. Glen Ave.	+40.74550393 -89.58586902	IL EPA
54	17-157-0001	Randolph	Houston	IEPA Trailer Hickory Grove & Fallview	+38.17627761 -89.78845862	IL EPA
55	17-161-3002	Rock Island	Rock Island	Rock Island Arsenal 32 Rodman Ave.	+41.51472697 -90.51735026	IL EPA
56	17-167-0012	Sangamon	Springfield	Agricultural Building State Fair Grounds	+39.83192087 -89.64416359	IL EPA
57	17-167-0014	Sangamon	Springfield	Illinois Building State Fair Grounds	+39.831522 -89.640926	IL EPA
58	17-163-0010	St. Clair	East St. Louis	RAPS Trailer 13th & Tudor	+38.61203448 -90.16047663	IL EPA
59	17-179-0004	Tazewell	Pekin	Fire Station #3 272 Derby	+40.55643203 -89.65402083	IL EPA
60	17-185-0001	Wabash	Mount Carmel	Division St.	+38.397276 -87.773631	Indiana DEP
61	17-197-1011	Will	Braidwood	Com Ed Training Center 36400 S. Essex Rd.	+41.22153707 -88.19096718	IL EPA
62	17-197-1002	Will	Joliet	Pershing Elementary School Midland & Campbell Sts.	+41.52688509 -88.11647381	IL EPA
63	17-201-2001	Winnebago	Loves Park	Maple Elementary School 1405 Maple Ave.	+42.33498222 -89.0377748	IL EPA
64	17-201-0118	Winnebago	Rockford	Fire Department 204 S. 1st St.	+42.2670002 -89.089170	IL EPA

Table A4
Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-001-0007	Quincy															
17-019-0006	Champaign N. Walnut															
17-019-0007	Thomasboro															
17-019-1001	Bondville	T										T				
17-023-0001	West Union															
17-031-0001	Alsip															
17-031-0022	Chicago Washington High School					C										
17-031-0032	Chicago South Water Filtration															
17-031-0052	Chicago Mayfair Pump Station															
17-031-0057	Chicago Springfield Pump Station															
17-031-0076	Chicago Com Ed Maintenance															
17-031-0110	Chicago Perez Elementary															
17-031-0119	Lansing Kingery near-road #1															
17-031-0219	Chicago Kennedy near-road #2															
17-031-1003	Chicago Taft High School															
17-031-1016	Lyons Township					C										
17-031-1601	Lemont															
17-031-3103	Schiller Park															
17-031-3301	Summit															
17-031-4002	Cicero Cook County Trailer															

Active Monitor | Site/Monitor Installed | Site/Monitor Removed | C = Continuous PM_{10}, T = Trace level

Table A4
Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-031-4007	Des Plaines				■				■							
17-031-4201	Northbrook	T	■		■	■	■	■	■		■	T	■	■		■
17-031-6005	Cicero Liberty School							■		■						
17-031-7002	Evanston				■											
17-043-4002	Naperville								■							
17-043-6001	Lisle				■											
17-049-1001	Effingham				■											
17-065-0002	Knight Prairie				■				■							
17-083-0117	Jerseyville				■				■							
17-085-9991	Stockton				■											
17-089-0003	Elgin McKinley School							■								
17-089-0005	Elgin Larsen Jr. High School				■											
17-089-0007	Aurora							■								
17-097-1007	Zion				■											
17-099-0007	Oglesby											■				
17-111-0001	Cary				■			■		■						
17-113-2003	Normal				■				■							
17-115-0013	Decatur IEPA Trailer				■				■			■				
17-115-0117	Decatur ADM											■				■
17-115-0217	Decatur Tate & Lyle North											■				

Active Monitor	Site/Monitor Installed	Site/Monitor Removed	T = Trace level

Table A4
Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-115-0317	Decatur Tate & Lyle South											■				
17-117-0002	Nilwood			■	■							■				
17-119-0008	Alton Clara Barton Elementary				■											
17-119-2009	Alton SIU Dental Clinic							■								
17-119-0010	Granite City Air Products														■	
17-119-0024	Granite City Gateway Medical Center							■			■					
17-119-1007	Granite City Fire Station #1					■		■		■						
17-119-1009	Maryville				■											
17-119-3007	Wood River				■			■				■				
17-119-9991	Highland				■											
17-143-0024	Peoria Fire Station #8				■											
17-143-0037	Peoria City Office Building								■							
17-143-1001	Peoria Heights				■											
17-157-0001	Houston				■				■							
17-161-3002	Rock Island				■				■							
17-163-0010	East St. Louis	■		■	■			■		■		■				
17-167-0012	Springfield Agricultural Building								■							
17-167-0014	Springfield Illinois Building				■											
17-179-0004	Pekin											■				
17-185-0001	Mount Carmel											■				

Active Monitor	Site/Monitor Installed	Site/Monitor Removed

Table A4
Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-197-1002	Joliet Pershing Elementary															
17-197-1011	Braidwood															
17-201-0118	Rockford Fire Department															
17-201-2001	Loves Park															

Active Monitor	Site/Monitor Installed	Site/Monitor Removed

Air Quality Data Interpretation

In order to provide a uniform procedure for determining whether a sufficient amount of air quality data has been collected by a sensor in a given time period (year, quarter, month, day, etc.) to accurately represent air quality during that time period, a minimum statistical selection criteria was developed.

In order to calculate an annual average for non-continuous parameters, a minimum of 75% of the data that was scheduled to be collected must be available, i.e., 45 samples per year for an every-six-day schedule (total possible of 60 or 61 samples). Additionally, in order to have proper quarterly balance, each site on an every sixth day schedule should have at least 10 samples per calendar quarter. This provides for a 20% balance in each quarter if the minimum required annual sampling is achieved.

PM_{10} and $PM_{2.5}$ samplers operate on one of three sampling frequencies:

- Every-day sampling (68 samples required each quarter for 75% data capture)
- Every-third-day sampling (23 samples required each quarter for 75% data capture)
- Every-six-day sampling (12 samples required each quarter for 75% data capture).

To calculate an annual PM_{10} or $PM_{2.5}$ mean, arithmetic means are calculated for each quarter in which valid data is recorded in at least 75% of the possible sampling periods. The annual mean is then the arithmetic average of the four quarterly means.

To determine an annual average for continuous data 75% of the total possible yearly observations are necessary, i.e., a minimum of 6570 hours (75% of the hours available) are needed. In order to provide a balance between the respective quarters, each quarter should have at least 1300 hours which is 20% of the 75% minimum annual requirement. To calculate quarterly averages at sites which do not meet the annual criteria, 75% of the total possible observations in a quarter are needed, i.e., a minimum of 1647 hours of 2200 hours available. Monthly averages also require 75% of the total possible observations in a month, i.e., 540 hours as a minimum. Additionally, for short-term running averages (24-hour, 8-hour, and 3-hour) 75% of the data during the particular time period is needed, i.e., 18 hours for a 24-hour average, six hours for an 8-hour average and three hours for a 3-hour average.

For ozone, a valid 8-hour average has at least six valid 1-hour averages within the 8-hour period. The daily maximum 8-hour ozone concentration is based on 17 consecutive moving 8-hour periods in each day, beginning with the 8-hour period from 7:00 a.m. to 3:00 p.m. and ending with the 8-hour period from 11:00 p.m. to 7:00 a.m. The daily maximum value is considered valid if 8-hour averages are available for at least 13 of the 17 consecutive moving 8-hour periods, or if the daily maximum value is greater than the level of the NAAQS. Complete sampling over a three-year period requires an average of 90% valid days with each year having at least 75% valid days.

Data listed as not meeting the minimum statistical selection criteria in this report were so noted after evaluation using the criteria above. Although short term averages (3, 8, 24 hours) have been computed for certain sites not meeting the annual criteria, these averages may not be representative of an entire year's air quality. In certain circumstances where even the 75% criteria is met, the number and/or magnitude of short-term averages may not be directly comparable from one year to the next because of seasonal distributional differences.

For summary purposes, the data is expressed in the number of figures to which the raw data is validated. Extra figures may be carried in the averaging technique, but the result is rounded to the appropriate number of figures. For example, the values 9, 9, and 10 are

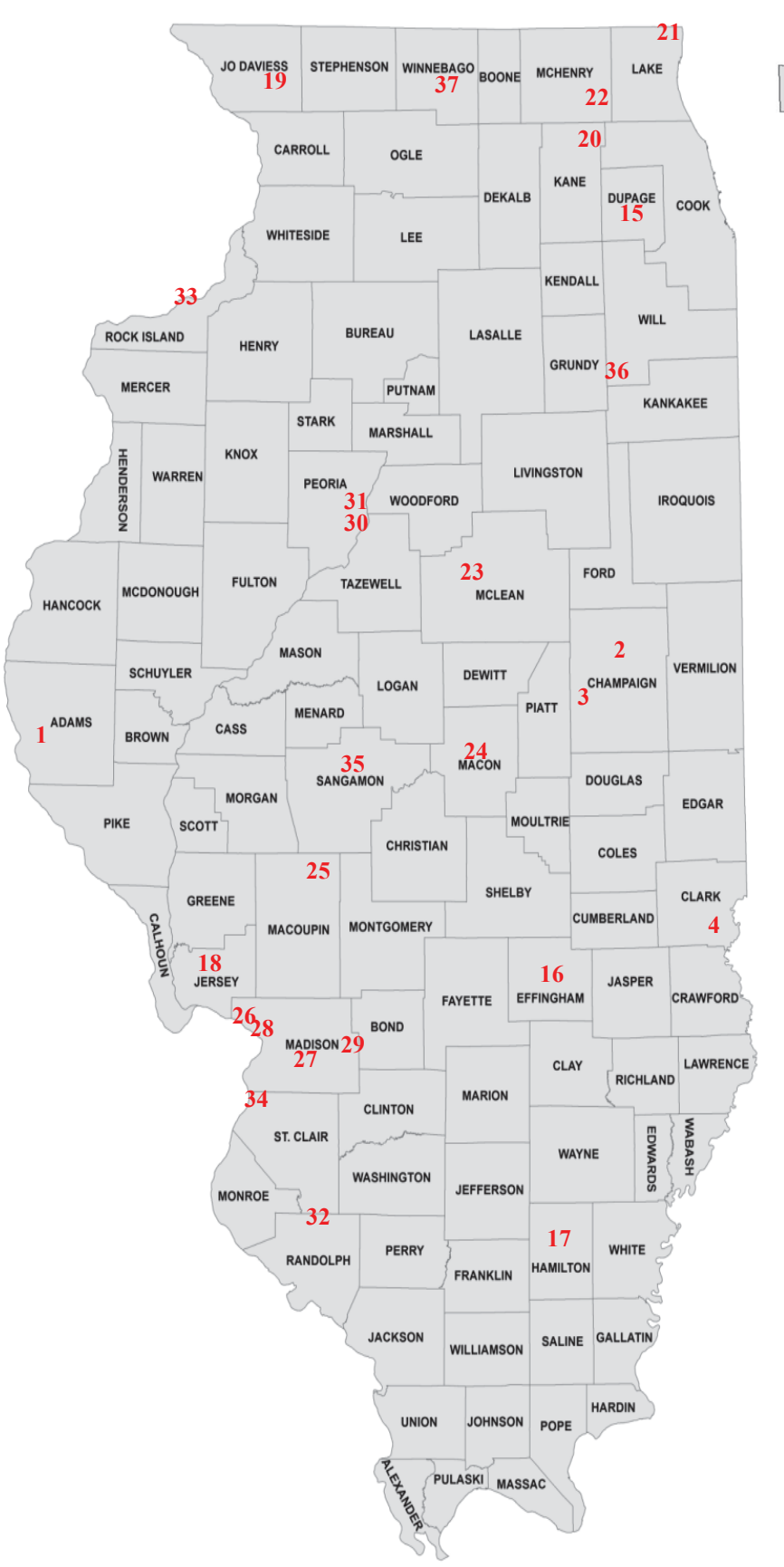
averaged to give 9; whereas the values 9.0, 9.0, and 10.0 are averaged to 9.3. The raw data itself should not be expressed to more significant figures than the sensitivity of the monitoring methodology allows.

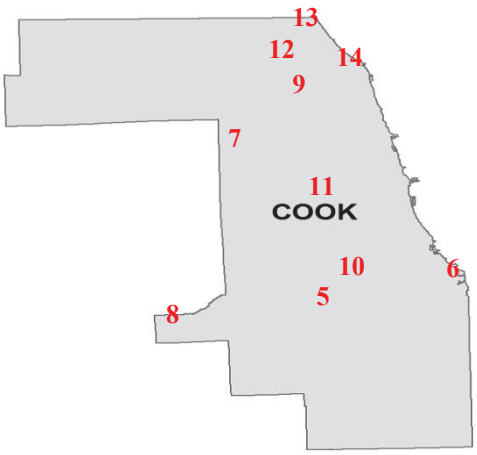
In comparing data to the various air quality standards, the data are implicitly rounded to the number of significant figures specified by that standard. For example, to exceed the 0.15 ug/m^3 three-month lead standard, a three-month average value must be 0.155 ug/m^3 or higher; to exceed the 9 ppm CO 8-hour standard, an 8-hour average must be 9.5 ppm or higher. Peak averages, though, will be expressed to the number of significant figures appropriate to that monitoring methodology.

The NAAQS for CO has a short-term standard for ambient air concentrations not to be exceeded more than once per year. SO_2 has a 1-hour standard which is the three-year average of each year's 99^{th} percentile values. NO_2 has a 1-hour standard which is the three-year average of each year's 98^{th} percentile values. PM_{10} has a 24-hour standard which cannot average more than one exceedance over a three-year period (in three years). $PM_{2.5}$ has a 24-hour standard which is a three-year average of each year's 98^{th} percentile values. In the case of ozone, the 8-hour standard is concentration-based and as such is the average of the fourth highest value each year over a three-year period. The standards are promulgated in this manner in order to protect the public from excessive levels of pollution both in terms of acute and chronic health effects.

The following data tables detail and summarize air quality in Illinois. The tables of short-term exceedances list those sites which exceeded any of the short-term primary standards (24 hours or less). The detailed data tables list averages and peak concentrations for all monitoring sites in Illinois.

Ozone Monitoring Sites





	Site ID	Site Name
1.	170010007	Quincy
2.	170190007	Thomasboro
3.	170191001	Bondville
4.	170230001	West Union
5.	170310001	Alsip
6.	170310032	Chicago – South Water Filtration
7.	170313103	Schiller Park
8.	170311601	Lemont
9.	170311003	Chicago – Taft High School
10.	170310076	Chicago – Com Ed Maint. Bldg.
11.	170314002	Cicero
12.	170314007	Des Plaines
13.	170314201	Northbrook
14.	170317002	Evanston
15.	170436001	Lisle
16.	170491001	Effingham
17.	170650002	Knight Prairie
18.	170831001	Jerseyville
19.	170859991	Stockton
20.	170890005	Elgin
21.	170971007	Zion
22.	171110001	Cary
23.	171132003	Normal
24.	171150013	Decatur
25.	171170002	Nilwood
26.	171190008	Alton
27.	171191009	Maryville
28.	171193007	Wood River
29	171199991	Highland
30.	171430024	Peoria
31.	171431001	Peoria Heights
32.	171570001	Houston
33.	171613002	Rock Island
34.	171630010	East St. Louis
35.	171670014	Springfield
36.	171971011	Braidwood
37.	172012001	Loves Park

Table B1
1-Hour Ozone Exceedances

EXCEEDANCES OF THE FORMER 1-HOUR PRIMARY STANDARD OF 0.12 PPM		
Date	**City**	**Concentration**
None	None	None
Total Over 0.12 ppm	0	
Total Days Over 0.12 ppm	0	

Table B2
8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.070 PPM						
Date	**City**	**Concentration**		**Date**	**City**	**Concentration**
6/5	Chicago-SWFP	0.075				
6/7	Rock Island	0.072				
6/26	Chicago-Taft	0.072				
6/28	Evanston	0.071				
6/29	Wood River	0.083				
	Alsip	0.079				
	Lemont	0.076				
	Alton	0.075				
	Cary	0.071				
	Elgin	0.071				
	Chicago-SWFP	0.071				
7/3	Lemont	0.073				
	Lisle	0.071				
7/5	Evanston	0.071				
7/8	Elgin	0.071				
7/9	Alsip	0.079				
	Cary	0.078				
	Chicago-Taft	0.077				
	Des Plaines	0.077				
	Schiller Park	0.076				
	Zion	0.075				
	Chicago-ComEd	0.074				
	Elgin	0.074				
	Chicago-SWFP	0.072				
	Evanston	0.071				
7/13	Alton	0.086				
	Wood River	0.086				
	Jerseyville	0.074				
	E. St. Louis	0.073				
	Chicago-SWFP	0.072				
	Knight Prairie	0.072				
7/14	Peoria Heights	0.071				
7/25	Zion	0.072				
8/2	Lisle	0.073				
	Elgin	0.072				
8/3	Lisle	0.095				
	Lemont	0.080				
	Rock Island	0.075				
	Alsip	0.074				
	Peoria	0.071				
8/5	Wood River	0.088				
	Alton	0.080				
9/19	Jerseyville	0.076				
Total Over 0.070 ppm				43		
Total Days Over 0.070 ppm				16		

Table B3
Ozone Highs

AQS ID	City	Number Of Days 8-Hour Greater Than 0.070 ppm			Fourth Highest Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
		2019	2018	2017								
17-001-0007	Quincy	0	0	1	0.074	0.068	0.068	0.067	0.068	0.066	0.064	0.062
17-019-0007	Thomasboro	0	4	0	0.079	0.073	0.070	0.069	0.070	0.068	0.066	0.062
17-019-1001	Bondville	0	1	1	0.065	0.065	0.063	0.063	0.062	0.060	0.059	0.058
17-023-0001	West Union	0	1	1	0.070	0.066	0.066	0.064	0.062	0.060	0.060	0.060
17-031-0001	Alsip	3	10	10	0.093	0.090	0.087	0.084	0.079	0.079	0.074	0.070
17-031-0032	Chicago South Water Filtration	4	7	10	0.081	0.080	0.079	0.079	0.075	0.072	0.072	0.071
17-031-0076	Chicago Com Ed Maintenance	1	8	11	0.082	0.081	0.080	0.074	0.074	0.069	0.066	0.065
17-031-1003	Chicago Taft High School	2	6	0	0.083	0.080	0.079	0.078	0.077	0.072	0.070	0.069
17-031-1601	Lemont	3	2	3	0.100	0.086	0.085	0.083	0.080	0.076	0.073	0.068
17-031-3103	Schiller Park	1	1	0	0.082	0.081	0.078	0.078	0.076	0.068	0.065	0.064
17-031-4002	Cicero Cook County Trailer	0	5	2	0.080	0.079	0.074	0.073	0.068	0.068	0.066	0.064
17-031-4007	Des Plaines	1	10	4	0.085	0.078	0.078	0.077	0.077	0.068	0.066	0.066
17-031-4201	Northbrook	0	10	3	0.082	0.079	0.077	0.075	0.070	0.070	0.069	0.069
17-031-7002	Evanston	3	12	9	0.083	0.079	0.079	0.077	0.071	0.071	0.071	0.069
17-043-6001	Lisle	3	6	2	0.112	0.086	0.084	0.084	0.095	0.073	0.071	0.070
17-049-1001	Effingham	0	1	3	0.075	0.071	0.069	0.069	0.065	0.065	0.065	0.063
17-065-0002	Knight Prairie	1	3	0	0.079	0.072	0.070	0.069	0.072	0.068	0.066	0.064
17-083-1001	Jerseyville	2	3	3	0.094	0.087	0.087	0.080	0.076	0.074	0.070	0.069
17-085-9991	Stockton	0	2	0	0.068	0.064	0.063	0.063	0.062	0.059	0.059	0.059
17-089-0005	Elgin Larsen Jr. High School	4	5	1	0.082	0.082	0.080	0.077	0.074	0.072	0.071	0.071
17-097-1007	Zion	2	8	7	0.088	0.079	0.078	0.073	0.075	0.072	0.067	0.066
17-111-0001	Cary	2	8	3	0.084	0.082	0.079	0.078	0.078	0.071	0.070	0.070
17-113-2003	Normal	0	1	0	0.074	0.071	0.070	0.068	0.070	0.067	0.065	0.063
17-115-0013	Decatur IEPA Trailer	0	3	3	0.079	0.072	0.068	0.067	0.068	0.065	0.064	0.063
17-117-0002	Nilwood	0	3	0	0.076	0.074	0.073	0.070	0.066	0.064	0.063	0.063

Table B3
Ozone Highs

AQS ID	City	Number Of Days 8-Hour Greater Than 0.070 ppm			Fourth Highest Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
		2019	2018	2017								
17-119-0008	Alton Clara Barton School	3	5	2	0.098	0.097	0.084	0.077	0.086	0.080	0.075	0.067
17-119-1009	Maryville	0	6	7	0.081	0.075	0.074	0.074	0.070	0.068	0.064	0.064
17-119-3007	Wood River	3	4	3	0.108	0.095	0.090	0.084	0.088	0.086	0.083	0.070
17-119-9991	Highland	0	4	0	0.080	0.070	0.068	0.067	0.068	0.064	0.063	0.062
17-143-0024	Peoria Fire Station #8	1	2	3	0.076	0.073	0.069	0.067	0.071	0.067	0.065	0.062
17-143-1001	Peoria Heights	1	3	2	0.080	0.075	0.073	0.071	0.071	0.070	0.066	0.064
17-157-0001	Houston	0	1	1	0.076	0.076	0.068	0.067	0.069	0.065	0.061	0.060
17-161-3002	Rock Island	2	1	0	0.080	0.079	0.072	0.070	0.075	0.072	0.069	0.066
17-163-0010	East St. Louis	1	5	1	0.078	0.078	0.074	0.072	0.073	0.070	0.064	0.064
17-167-0014	Springfield	0	1	2	0.070	0.069	0.069	0.069	0.066	0.063	0.063	0.062
17-197-1011	Braidwood	0	4	0	0.079	0.072	0.069	0.068	0.065	0.063	0.062	0.060
17-201-2001	Loves Park	0	3	0	0.071	0.070	0.070	0.069	0.066	0.066	0.066	0.066
Statewide Average					0.082	0.077	0.075	0.073	0.072	0.069	0.067	0.065
Total Over 0.070 ppm		43	159	96								
Total Days Over 0.070 ppm		16	26	27								

Table B4
Ozone Design Values

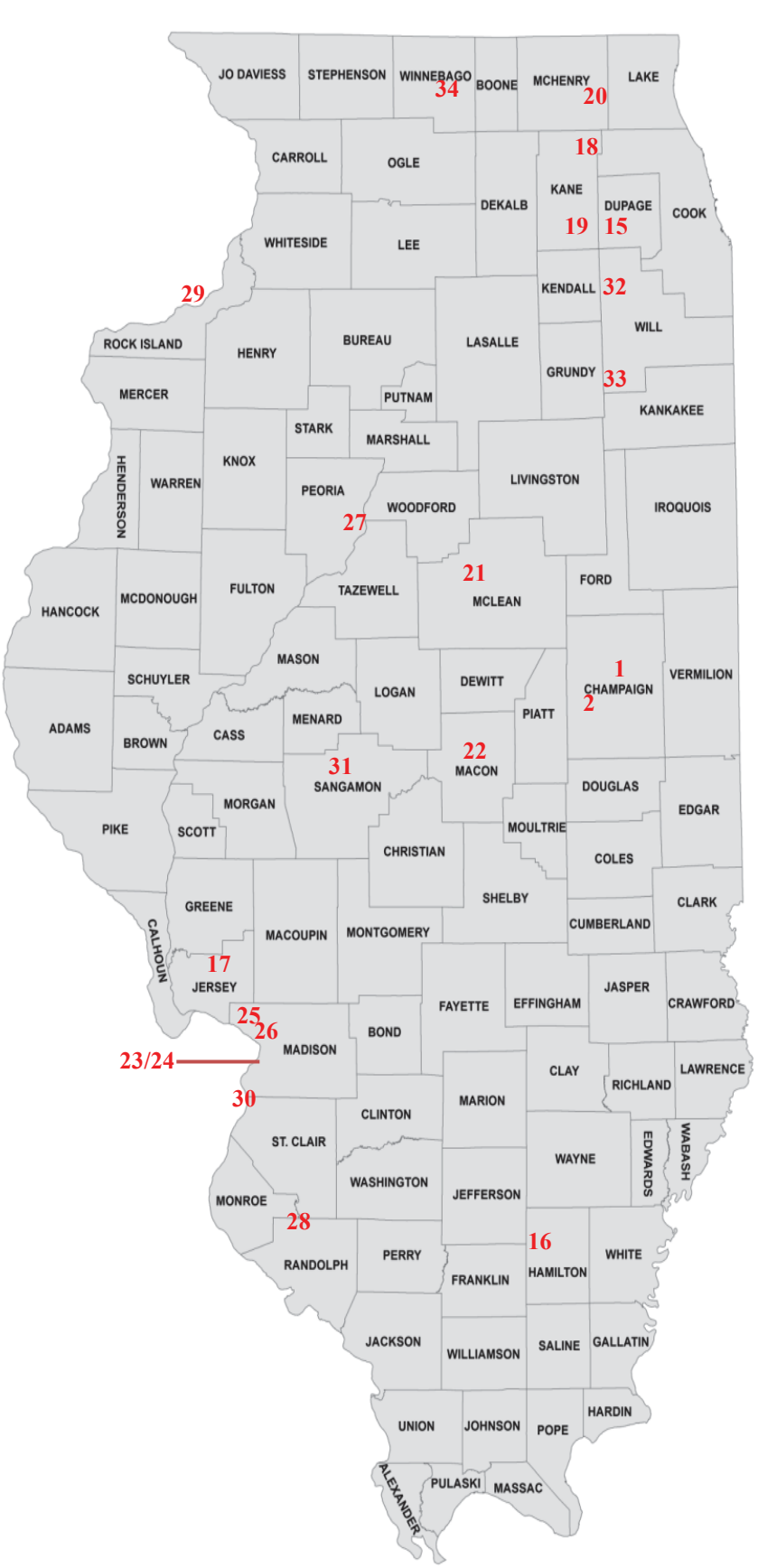
AQS ID	City	Fourth High 8-Hour Concentrations (ppm)					Design Values* (ppm)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-001-0007	Quincy	0.062	0.063	0.065	0.061	0.064	0.063	0.063	0.063
17-019-0007	Thomasboro	0.062	0.072	0.067	0.066	0.062	0.067	0.068	0.065
17-019-1001	Bondville	0.058	0.064	0.067	0.066	0.065	0.063	0.065	0.066
17-023-0001	West Union	0.060	0.066	0.067	0.066	0.064	0.064	0.066	0.065
17-031-0001	Alsip	0.070	0.079	0.078	0.075	0.066	**0.075**	**0.077**	**0.073**
17-031-0032	Chicago South Water Filtration	0.071	0.076	0.074	0.077	0.066	**0.073**	**0.075**	**0.072**
17-031-0076	Chicago Com Ed Maintenance	0.065	0.074	0.078	0.075	0.065	**0.072**	**0.075**	**0.072**
17-031-1003	Chicago Taft High School	0.069	0.073	0.060	0.075	0.068	0.067	0.069	0.067
17-031-1601	Lemont	0.068	0.068	0.070	0.073	0.066	0.068	0.070	0.069
17-031-3103	Schiller Park	0.064	0.065	0.061	0.067	0.058	0.063	0.064	0.062
17-031-4002	Cicero Cook County Trailer	0.064	0.072	0.068	0.076	0.061	0.068	**0.072**	0.068
17-031-4007	Des Plaines	0.066	0.075	0.071	0.076	0.068	0.070	**0.074**	**0.071**
17-031-4201	Northbrook	0.069	0.083	0.070	0.079	0.068	**0.074**	**0.077**	**0.072**
17-031-7002	Evanston	0.069	0.084	0.073	0.076	0.070	**0.075**	**0.077**	**0.073**
17-043-6001	Lisle	0.070	0.071	0.069	0.074	0.067	0.070	**0.071**	0.070
17-049-1001	Effingham	0.063	0.066	0.070	0.066	0.064	0.066	0.067	0.066
17-065-0002	Knight Prairie	0.064	0.069	0.064	0.068	0.064	0.065	0.067	0.065
17-083-1001	Jerseyville	0.069	-	0.067	0.074	0.067	0.068	0.070	0.069
17-085-9991	Stockton	0.059	0.067	0.063	0.067	0.062	0.063	0.065	0.064
17-089-0005	Elgin Larsen Jr. High School	0.071	0.072	0.069	0.074	0.065	0.070	**0.071**	0.069
17-097-1007	Zion	0.066	0.074	0.074	0.077	0.070	**0.071**	**0.075**	**0.073**
17-111-0001	Cary	0.070	0.074	0.070	0.073	0.064	**0.071**	**0.072**	0.069
17-113-2003	Normal	0.063	0.068	0.064	0.065	0.063	0.065	0.065	0.064
17-115-0013	Decatur Illinois EPA Trailer	0.063	0.069	0.068	0.066	0.066	0.066	0.067	0.066
17-117-0002	Nilwood	0.063	0.066	0.066	0.067	0.064	0.065	0.066	0.065

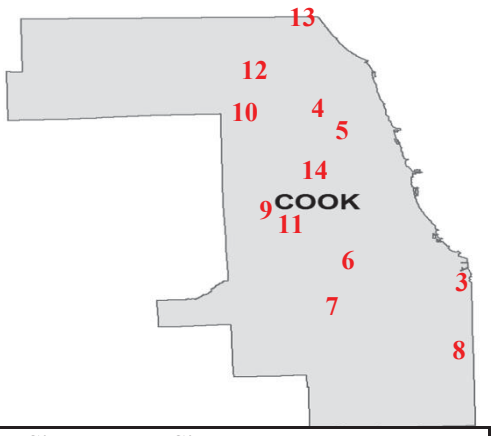
Table B4
Ozone Design Values

AQS ID	City	Fourth High 8-Hour Concentrations (ppm)					Design Values* (ppm)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-119-0008	Alton Clara Barton Elementary	0.067	0.072	0.066	0.073	0.069	0.068	0.070	0.069
17-119-1009	Maryville	0.064	0.075	0.074	0.067	0.064	**0.071**	**0.072**	0.068
17-119-3007	Wood River	0.070	0.072	0.067	0.075	0.069	0.069	**0.071**	0.070
17-119-9991	Highland	0.062	0.071	0.067	0.068	0.067	0.066	0.068	0.065
17-143-0024	Peoria Fire Station #8	0.062	0.069	0.065	0.068	0.060	0.065	0.067	0.064
17-143-1001	Peoria Heights	0.064	0.070	0.066	0.066	0.064	0.066	0.067	0.065
17-157-0001	Houston	0.060	0.065	0.069	0.066	0.065	0.064	0.066	0.066
17-161-3002	Rock Island	0.066	0.067	0.066	0.064	0.060	0.066	0.065	0.063
17-163-0010	East St. Louis	0.064	0.073	0.067	0.073	0.066	0.068	**0.071**	0.068
17-167-0014	Springfield State Fairgrounds	0.062	0.069	0.069	0.068	0.064	0.066	0.068	0.067
17-197-1011	Braidwood	0.060	0.071	0.068	0.064	0.064	0.066	0.067	0.065
17-201-2001	Loves Park	0.066	0.070	0.064	0.070	0.066	0.066	0.068	0.066
Statewide Average		0.065	0.071	0.068	0.070	0.065	0.068	0.069	0.067

*The design value is the three-year average of the fourth high concentration. Design value greater than 0.070 ppm is a violation of the National Ambient Air Quality Standard.

$PM_{2.5}$ FRM and FEM Monitoring Sites





	Site ID	Site Name
1.	170190006	Champaign
2.	170191001	Bondville
3.	170310022	Chicago – Washington High School
4.	170310052	Chicago – Mayfair Pump Station
5.	170310057	Chicago – Springfield Pump Station
6.	170310076	Chicago – Com Ed Maint. Bldg.
7.	170310001	Alsip
8.	170310119	Lansing – Kingery near-road
9.	170311016	Lyons Township
10.	170313103	Schiller Park
10.	170313301	Summit
12.	170314007	Des Plaines
13.	170314201	Northbrook
14.	170316005	Cicero
15.	170434002	Naperville
16.	170650002	Knight Prairie
17.	170831001	Jerseyville
18.	170890003	Elgin
19.	170890007	Aurora
20.	171110001	Cary
21.	171132003	Normal
22.	171150013	Decatur
23.	171190024	Granite City – Gateway Medical
24.	171191007	Granite City – 23rd and Madison
25.	171192009	Alton
26.	171193007	Wood River
27.	171430037	Peoria
28.	171570001	Houston
29.	171613002	Rock Island
30.	171630010	East St. Louis
31.	171670012	Springfield
32.	171971002	Joliet
33.	171971011	Braidwood
34.	172010118	Rockford

Table B5
$PM_{2.5}$ 24-Hour Exceedances

EXCEEDANCES OF THE 24-HOUR PRIMARY STANDARD OF 35 ug/m3		
Date	**Location**	**Concentration (ug/m3)**
7/8/19	Rockford	35.9
Total Over 35 ug/m3	1	
Total Days Over 35 ug/m3	1	

Table B6
$PM_{2.5}$ Highs

AQS ID	City	Total Samples	Samples Greater Than 35 ug/m3			Highest Samples							
			2019	2018	2017	1st	2nd	3rd	4th	5th	6th	7th	8th
17-019-0006	Champaign	95	0	0	0	20.1	19.9	19.8	18.5	17.5	15.9	14.8	14.4
17-019-1001	Bondville	354	0	0	0	22.7	22.2	20.5	20.4	19.4	19.0	18.7	18.7
17-031-0001	Alsip	53	0	0	0	17.1	16.0	14.2	14.0	13.6	13.1	11.8	11.7
17-031-0022	Chicago Washington High School	99	0	1	0	33.4	25.0	24.8	23.9	23.5	21.5	21.0	19.7
17-031-0052	Chicago Mayfair Pump Station	110	0	0	0	33.2	29.6	24.7	24.7	23.0	18.7	18.2	18.0
17-031-0057	Chicago Springfield Pump Station	56	0	0	0	26.7	18.6	16.5	15.9	14.1	14.0	13.3	13.1
17-031-0076	Chicago Com Ed Maintenance	58	0	0	0	25.4	24.9	24.7	18.0	16.7	13.6	13.5	13.1
17-031-0119	Lansing Kingery near-road #1	304	0	0	0	26.8	25.9	24.8	24.0	24.0	23.2	21.6	21.4
17-031-1016	Lyons Township	116	0	0	0	29.7	27.3	25.8	25.6	23.4	20.8	18.7	18.3
17-031-3103	Schiller Park	114	0	0	0	33.9	29.4	26.3	26.3	24.1	20.8	20.7	19.8
17-031-3301	Summit	115	0	0	0	30.7	25.1	19.3	18.6	17.7	17.5	17.2	17.1
17-031-4007	Des Plaines	176	0	0	1	30.5	29.7	29.5	29.0	25.2	23.1	21.7	21.5
17-031-4201	Northbrook	359	0	0	1	29.3	27.3	27.0	22.6	21.9	21.8	21.3	20.7
17-031-6005	Cicero Liberty School	59	0	0	0	26.5	19.3	16.9	16.8	15.7	15.7	14.7	14.5
17-043-4002	Naperville	261	0	0	0	29.6	27.4	26.2	25.7	25.1	22.8	22.1	21.6
17-065-0002	Knight Prairie	339	0	0	0	23.0	20.3	20.1	19.4	19.1	18.6	17.3	17.3
17-083-0117	Jerseyville	320	0	0	0	20.6	19.6	18.9	18.8	17.8	17.7	16.9	16.7
17-089-0003	Elgin McKinley School	113	0	0	0	27.3	25.4	24.9	22.1	21.7	19.4	18.3	18.0
17-089-0007	Aurora	106	0	0	0	30.2	26.3	24.5	20.5	20.5	20.3	20.2	17.7
17-111-0001	Cary	59	0	0	0	25.2	18.6	16.6	15.6	13.6	13.5	11.2	11.1
17-113-2003	Normal	360	0	0	0	25.0	23.8	22.9	22.2	22.0	21.0	21.0	20.6
17-115-0013	Decatur Illinois EPA Trailer	360	0	0	0	25.7	23.6	23.4	23.1	22.6	21.2	21.1	20.4
17-119-0024	Granite City Gateway Medical Center	112	0	1	0	24.7	28.0	25.0	22.4	20.2	20.0	19.4	18.8
17-119-1007	Granite City Fire Station #1	61	0	0	0	29.1	23.8	20.8	18.3	18.2	18.2	17.4	16.3
17-119-2009	Alton SIU Dental Clinic	110	0	0	0	22.6	22.2	19.2	19.0	18.5	17.9	16.3	16.1
17-119-3007	Wood River	112	0	0	0	28.5	26.0	22.7	19.5	17.7	17.4	15.7	15.3
17-143-0037	Peoria	351	0	0	0	23.6	23.5	21.8	21.5	20.8	20.1	19.7	19.3

Table B6
$PM_{2.5}$ Highs

AQS ID	City	Total Samples	Samples Greater Than 35 ug/m3			Highest Samples							
			2019	2018	2017	1st	2nd	3rd	4th	5th	6th	7th	8th
17-157-0001	Houston	241	0	0	0	21.6	19.3	18.8	18.1	16.9	16.4	16.2	15.5
17-161-3002	Rock Island	360	0	0	0	31.8	24.7	23.5	22.6	21.8	21.1	20.1	20.1
17-163-0010	East St. Louis	56	0	0	0	27.1	22.9	17.7	16.6	15.8	15.4	14.4	13.8
17-167-0012	Springfield Agricultural Building	354	0	0	0	22.2	22.2	21.4	20.4	19.4	19.0	18.2	17.9
17-197-1002	Joliet Pershing Elementary	361	0	0	0	26.2	25.7	25.2	23.1	22.8	22.3	21.9	21.4
17-197-1011	Braidwood	353	0	0	0	24.1	23.4	22.8	21.3	21.0	20.9	20.8	20.6
17-201-0118	Rockford Fire Dept.	288	1	0	0	35.8	26.5	26.4	26.1	25.1	23.4	23.2	22.0
Statewide Average						26.8	23.9	22.3	21.0	20.0	19.0	18.2	17.7
Total Over 35 ug/m3			1	2	2								
Total Days Over 35 ug/m3			1	2	1								

Table B7
$PM_{2.5}$ 24-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ug/m3)					Design Values* (ug/m3)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-019-0006	Champaign	19.8	16.8	17.4	15.0	18.8	18.0	16.4	17.1
17-019-1001	Bondville	18.7	17.8	16.7	15.3	17.6	17.7	16.6	16.5
17-031-0001	Alsip	16.0	21.9	20.5	16.9	23.4	19.5	19.8	20.3
17-031-0022	Chicago Washington High School	24.8	27.0	18.3	17.7	24.8	23.4	21.0	20.3
17-031-0052	Chicago Mayfair Pump Station	24.7	25.2	23.3	17.9	24.0	24.4	22.1	21.7
17-031-0057	Chicago Springfield Pump Station	18.6	25.3	20.9	17.5	37.1	21.6	21.2	25.2
17-031-0076	Chicago Com Ed Maintenance	24.9	17.8	23.0	19.0	24.7	21.9	19.9	22.2
17-031-0119	Lansing Kingery near-road #1	21.6	-	-	-	-	-	-	-
17-031-1016	Lyons Township	25.8	23.5	23.8	19.9	24.0	24.4	22.4	22.6
17-031-3103	Schiller Park	26.3	25.5	23.8	17.6	25.1	25.2	22.3	22.2
17-031-3301	Summit	19.3	22.5	25.1	17.0	27.1	22.3	21.5	23.1
17-031-4007	Des Plaines	29.0	25.7	22.9	18.9	25.3	25.9	22.5	22.4
17-031-4201	Northbrook	20.7	22.7	20.9	18.4	22.4	21.4	20.7	20.6
17-031-6005	Cicero Liberty School	19.3	22.8	23.6	18.8	30.1	21.9	21.7	24.2
17-043-4002	Naperville	22.8	23.6	22.0	14.8	22.5	22.8	20.1	19.8
17-065-0002	Knight Prairie	17.3	20.6	15.7	16.0	22.1	17.9	17.4	17.9
17-083-0117	Jerseyville	16.9	19.2	19.0	-	17.7	18.4	19.1	18.5
17-089-0003	Elgin McKinley School	24.9	19.5	20.5	15.7	19.6	21.6	18.6	18.6
17-089-0007	Aurora	24.5	21.3	19.8	17.4	18.8	21.9	19.5	18.7
17-111-0001	Cary	18.6	19.0	17.1	14.7	34.9	18.2	16.9	22.2
17-113-2003	Normal	20.6	19.5	18.5	16.3	18.3	19.5	18.1	17.7
17-115-0013	Decatur Illinois EPA Trailer	20.4	22.4	21.6	14.6	16.2	21.5	19.5	17.5
17-119-0024	Granite City Gateway Medical Center	25.0	20.9	16.9	24.7	24.8	20.9	20.8	22.1
17-119-1007	Granite City Fire Station #1	23.8	22.8	21.2	16.2	19.5	22.6	20.1	19.0
17-119-2009	Alton SIU Dental Clinic	19.2	21.8	18.9	20.3	19.0	20.0	20.3	19.4

Table B7
$PM_{2.5}$ 24-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ug/m3)					Design Values* (ug/m3)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-119-3007	Wood River	22.7	22.2	17.6	20.7	23.0	20.8	20.2	20.4
17-143-0037	Peoria City Office Building	19.3	20.4	22.4	14.3	15.7	20.7	19.0	17.5
17-157-0001	Houston	16.9	19.1	17.7	18.4	17.3	17.9	19.9	17.8
17-161-3002	Rock Island	20.1	19.4	20.4	17.7	22.8	20.0	19.2	20.3
17-163-0010	East St. Louis	22.9	22.6	18.3	18.4	21.7	21.3	19.8	19.5
17-167-0012	Springfield Agricultural Building	17.9	19.8	20.6	19.1	21.0	19.4	19.8	20.2
17-197-1002	Joliet Pershing Elementary	21.4	20.9	19.6	16.6	19.6	20.6	19.0	18.6
17-197-1011	Braidwood	20.6	19.5	18.5	18.0	16.3	19.5	18.7	17.6
17-201-0118	Rockford Fire Department	23.4	10.6	-	-	-	-	-	-
17-201-0013	Rockford Health Department	-	23.0	17.1	14.8	22.2	-	18.3	18.0
Statewide Average		21.4	21.3	20.1	17.5	22.3	21.0	19.8	20.0

*The design value is the three-year average of the 98th percentile concentration. Design value greater than or equal to 35.5 ug/m^3 is a violation of the National Ambient Air Quality Standard.

Table B8
$PM_{2.5}$ Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations (ug/m3)					Design Values* (ug/m3)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-019-0006	Champaign	7.5	7.6	7.4	7.6	8.6	7.5	7.5	7.9
17-019-1001	Bondville	7.8	8.0	7.7	7.3	8.5	7.8	7.6	7.8
17-031-0001	Alsip	7.9	9.0	8.7	8.6	11.1	8.5	8.8	9.5
17-031-0022	Chicago Washington High School	10.3	9.6	8.4	8.4	11.0	9.4	8.8	9.3
17-031-0052	Chicago Mayfair Pump Station	9.2	9.8	8.7	8.7	10.0	9.2	9.1	9.1
17-031-0057	Chicago Springfield Pump Station	8.8	9.6	8.9	9.2	12.5	9.1	9.2	10.2
17-031-0076	Chicago Com Ed Maintenance	8.3	9.0	8.4	9.0	11.1	8.6	8.8	9.5
17-031-0119	Lansing Kingery near-road #1	10.8	-	-	-	-	-	-	-
17-031-3103	Schiller Park	10.8	11.2	10.3	9.4	11.8	10.8	10.3	10.5
17-031-3301	Summit	9.3	10.2	8.9	9.1	11.0	9.5	9.4	9.7
17-031-4007	Des Plaines	10.3	11.4	9.3	8.9	9.9	10.3	9.9	9.4
17-031-4201	Northbrook	8.5	8.8	8.1	8.0	9.1	8.5	8.3	8.4
17-031-6005	Cicero Liberty School	9.0	10.0	8.6	8.9	12.5	9.2	9.2	10.0
17-043-4002	Naperville	10.3	10.5	8.2	7.8	9.0	9.7	8.8	8.3
17-065-0002	Knight Prairie	8.3	8.9	8.7	7.8	8.2	8.6	8.4	8.2
17-083-0117	Jerseyville	8.0	8.3	8.8	-	7.7	8.4	8.6	8.2
17-089-0003	Elgin McKinley School	8.5	8.7	8.0	7.9	8.9	8.4	8.2	8.3
17-089-0007	Aurora	8.7	9.0	8.1	8.0	8.9	8.6	8.4	8.3
17-111-0001	Cary	7.8	8.2	7.2	7.3	9.9	7.7	7.6	8.2
17-113-2003	Normal	9.2	9.7	8.8	7.6	7.6	9.5	8.7	8.0
17-115-0013	Decatur IEPA Trailer	9.5	10.4	8.7	7.8	8.7	9.5	9.0	8.4
17-119-1007	Granite City Fire Station #1	10.5	11.0	9.6	9.1	10.4	10.4	9.9	9.7
17-119-2009	Alton SIU Dental Clinic	9.1	9.3	8.7	8.8	9.0	9.0	8.9	8.8
17-119-3007	Wood River	9.1	9.2	8.3	8.7	9.1	8.9	8.7	8.7
17-143-0037	Peoria City Office Building	8.0	9.4	8.3	7.6	8.6	8.6	8.5	8.2

Table B8
$PM_{2.5}$ Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations (ug/m3)					Design Values* (ug/m3)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-157-0001	Houston	7.7	7.8	9.6	8.0	7.9	8.4	8.4	8.5
17-161-3002	Rock Island	8.6	8.9	7.9	7.2	9.1	8.5	8.0	8.1
17-163-0010	East St. Louis	9.1	10.3	8.8	10.0	10.7	9.4	9.7	9.8
17-167-0012	Springfield Agricultural Building	8.2	9.5	8.6	7.7	8.2	8.8	8.6	8.2
17-197-1002	Joliet Pershing Elementary	9.7	9.8	8.7	8.0	7.0	9.4	8.8	7.9
17-197-1011	Braidwood	8.8	7.9	7.8	7.5	8.4	8.2	7.7	7.9
17-201-0118	Rockford Fire Department	10.3	-	-	-	-	-	-	-
17-201-0013	Rockford Health Department	-	7.7	8.1	7.8	9.1	-	7.9	8.3
Statewide Average		9.0	9.3	8.5	8.2	9.5	9.0	8.7	8.8

*The design value is the three-year average of the annual arithmetic mean concentrations. Design value greater than 12.0 ug/m^3 is a violation of the National Ambient Air Quality Standard.

Shaded cells indicate completeness criteria were not met.

PM_{10} Monitoring Sites

	Site ID	Site Name
1.	170310022	Chicago – Washington High School
2.	170311016	Lyons Township
3.	170314201	Northbrook
4.	171190010	Granite City – 23rd and Madison

Table B9
PM$_{10}$ 24-Hour Exceedances

EXCEEDANCES OF THE 24-HOUR PRIMARY STANDARD OF 150 ug/m3		
Date	**City**	**Concentration (ug/m3)**
None	None	None
Total Over 150 ug/m3	0	
Total Days Over 150 ug/m3	0	

Table B10
PM_{10} 24-Hour Highs and Design Values

AQS ID	City	Total Samples	Highest 24-Hour Samples								Samples Greater Than 150 ug/m3			Three-year Exceedance Average*
			1st	2nd	3rd	4th	5th	6th	7th	8th	2019	2018	2017	
17-031-0022	Chicago Washington High School	237	95	70	70	66	63	61	59	56	0	0	0	0.0
17-031-1016	Lyons Township	270	82	70	69	66	66	62	60	60	0	0	0	0.0
17-031-4201	Northbrook	60	28	28	26	26	25	25	23	22	0	0	0	0.0
17-119-1007	Granite City Fire Station #1	59	104	99	99	76	68	62	56	54	0	0	0	0.0
Statewide Average			77	67	66	59	56	53	50	48				
Total Over 150 ug/m3											0	0	0	
Total Days Over 150 ug/m3											0	0	0	

*The 24-hour PM_{10} standard is an exceedance-based standard set at 150 ug/m^3. The level is not to be exceeded more than once per year on average over three years. Three-year averages more than one are a violation of the National Ambient Air Quality Standard.

Table B11
PM_{10} Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentration (ug/m3)					Design Values* (ug/m3)		
		2019	**2018**	**2017**	**2016**	**2015**	2017-2019	2016-2018	**2015-2017**
17-031-0022	Chicago Washington High School	27	23	24	16	23	25	21	21
17-031-1016	Lyons Township	30	24	25	27	36	26	25	29
17-031-4201	Northbrook	14	14	16	17	20	15	16	18
17-119-1007	Granite City Fire Station #1	35	33	26	28	30	31	29	28
Statewide Average		27	24	23	22	27	25	23	24

*The annual PM_{10} standard was revoked in 2007. Previously the standard was a three-year average of the annual means. Concentrations above 50 ug/m^3 were a violation of the former National Ambient Air Quality Standard. Currently only the 24-hour PM_{10} standard is in place (see Table B10).

Carbon Monoxide Monitoring Sites

	Site ID	Site Name
1.	170191001	Bondville
2.	170310119	Lansing - Kingery near-road
3.	170314201	Northbrook
4.	171630010	East St. Louis

Table B12
Carbon Monoxide Exceedances

EXCEEDANCES OF EITHER THE 1-HOUR (35 PPM) OR 8-HOUR (9 PPM) PRIMARY STANDARDS			
Date	**City**	**Concentration**	**Averaging Period**
None	None	None	None

Total 1-hour Over 35 ppm	0	Total 8-hour Over 9 ppm	0
Total Days 1-hour Over 35 ppm	0	Total Days 8-hour Over 9 ppm	0

Table B13
Carbon Monoxide Highs

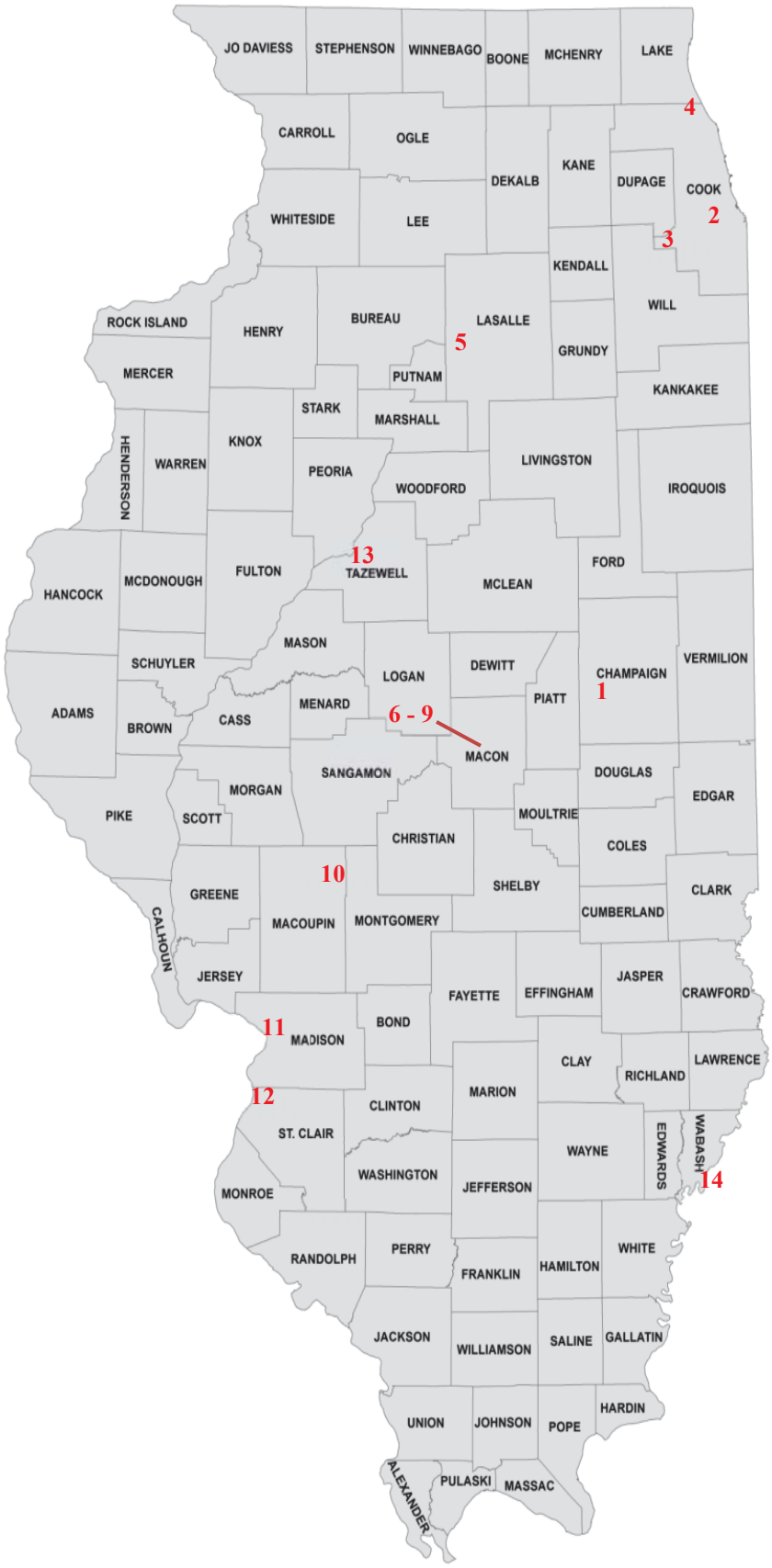
AQS ID	City	Total Hourly Samples	Fourth Highest Daily Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
17-019-1001	Bondville	618	0.17	0.14	0.14	0.10	0.1	0.1	0.1	0.1
17-031-0119	Lansing Kingery near-road #1	7025	3.1	2.7	2.3	2.2	1.8	1.5	1.2	1.2
17-031-4201	Northbrook	7668	1.55	1.20	1.10	1.08	0.9	0.9	0.8	0.7
17-163-0010	East St. Louis	5777	2.3	1.8	1.5	1.5	1.1	1.0	0.9	0.8
Statewide Average			1.78	1.46	1.26	1.22	0.98	0.88	0.75	0.70

Table B14
Carbon Monoxide 1-Hour and 8-Hour Design Values

AQS ID	City	1-Hour Samples Greater than 35 (ppm)					8-Hour Samples Greater than 9 (ppm)				
		2019	2018	2017	2016	2015	2019	2018	2017	2016	2015
17-019-1001	Bondville	0	0	0	0	0	0	0	0	0	0
17-031-0119	Lansing Kingery near-road #1	0	-	-	-	-	0	-	-	-	-
17-031-4201	Northbrook	0	0	0	0	0	0	0	0	0	0
17-163-0010	East St. Louis	0	0	0	0	0	0	0	0	0	0

*The 1-hour and 8-hour carbon monoxide standard is an exceedance-based standard. The 1-hour standard is set at 35 ppm and is not to be exceeded more than once per year. The 8-hour standard is set at 9 ppm and is not to be exceeded more than once per year. More than one exceedance in a year is a violation of the National Ambient Air Quality Standard.

Sulfur Dioxide Monitoring Sites



	Site ID	Site Name
1.	170191001	Bondville
2.	170310076	Chicago – Com Ed Maint. Bldg.
3.	170311601	Lemont
4.	170314201	Northbrook
5.	170990007	Oglesby
6.	171150013	Decatur
7.	171150118	Decatur - Archer Daniel Midlands
8.	171150218	Decatur - Tate & Lyle North
9.	171150318	Decatur - Tate & Lyle South
10.	171170002	Nilwood
11.	171193007	Wood River
12.	171630010	East St. Louis
13.	171790004	Pekin
14.	171850001	Mount Carmel

Table B15
Sulfur Dioxide Exceedances

EXCEEDANCES OF THE 1-HOUR PRIMARY STANDARD OF 75 ppb		
Date	**City**	**Concentration (ppb)**
None	None	None
Total Over 75 ppb	0	
Total Days Over 75 ppb	0	

Table B16
Sulfur Dioxide Highs

AQS ID	City	Total Hourly Samples	Samples Greater Than 75 ppb			Highest Daily 1-Hour Samples (ppb)				Highest 3-Hour Block Averages (ppb)	
			2019	2018	2017	1st	2nd	3rd	4th	1st	2nd
17-019-1001	Bondville	7820	0	0	0	6.6	4.5	4.4	3.8	3.3	2.6
17-031-0076	Chicago Com Ed Maintenance	8675	0	0	0	19.9	14.6	10.5	9.1	15.0	7.9
17-031-1601	Lemont	8516	0	0	0	16.9	9.4	6.8	6.6	10.3	6.9
17-031-4201	Northbrook	8042	0	0	0	5.5	4.5	4.3	4.1	4.4	3.9
17-099-0007	Oglesby	8088	0	0	0	43.8	27.9	25.3	22.4	20.7	17.5
17-115-0013	Decatur Illinois EPA Trailer	8370	0	0	0	37.6	26.6	24.6	23.4	23.7	22.8
17-115-0117	Decatur ADM	8707	0	0	1	19.7	19.4	17.7	17.0	14.5	13.5
17-115-0217	Decatur Tate & Lyle North	8709	0	5	5	50.5	47.6	44.8	41.8	44.7	33.3
17-115-0317	Decatur Tate & Lyle South	8600	0	6	3	47.4	40.0	39.0	34.2	34.0	31.6
17-117-0002	Nilwood	8604	0	0	0	5.5	4.7	4.6	4.6	4.3	2.8
17-119-3007	Wood River	8624	0	0	0	14.6	10.2	9.5	9.3	6.2	5.9
17-163-0010	East St. Louis	8643	0	0	0	15.6	11.8	11.5	10.6	13.1	7.3
17-179-0004	Pekin	8367	0	0	0	25.1	20.6	18.7	17.3	16.0	14.5
17-185-0001	Mount Carmel	8359	0	0	0	61.3	37.7	37.3	30.5	38.5	30.4
Statewide Average						26.4	20.0	18.5	16.8	17.8	14.4
Total Over 75 ppb			0	11	9						
Total Days Over 75 ppb			0	11	9						

Table B17
Sulfur Dioxide 1-Hour Design Values

AQS ID	City	99th Percentile Concentrations (ppb)					Design Values* (ppb)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-019-1001	Bondville	3.8	3.3	3.6	3.7	12.0	4	4	6
17-031-0076	Chicago Com Ed Maintenance	10.5	11.0	11.5	9.3	13.2	11	11	11
17-031-1601	Lemont	6.6	6.3	5.3	12.3	20.3	6	8	13
17-031-4201	Northbrook	4.1	3.4	2.5	4.3	7.7	3	3	5
17-099-0007	Oglesby	22.4	27.4	12.5	14.7	7.0	21	18	11
17-115-0013	Decatur Illinois EPA Trailer	23.4	37.0	39.6	54.3	39.1	33	44	44
17-115-0117	Decatur ADM	17.0	20.8	27.8	-	-	22	24	-
17-115-0217	Decatur Tate & Lyle North	41.8	83.9	76.6	-	-	67	**80**	-
17-115-0317	Decatur Tate & Lyle South	34.2	89.0	74.3	-	-	66	**82**	-
17-117-0002	Nilwood	4.6	4.5	3.8	5.2	6.8	4	5	5
17-119-1010	South Roxana	-	-	-	12.9	12.6	-	-	-
17-119-3007	Wood River	9.3	9.7	10.9	24.2	20.4	10	15	19
17-143-0024	Peoria Fire Station #8	-	-	18.5	27.1	22.2	-	-	23
17-157-0001	Houston	-	-	-	-	11.6	-	-	-
17-163-0010	East St. Louis	10.6	15.9	8.8	19.1	18.9	12	15	16
17-167-0006	Springfield Sewage Treatment Plant	-	-	-	-	7.1	-	-	-
17-179-0004	Pekin	17.3	11.8	-	125.8	116.1	15	69	**95**
17-185-0001	Mount Carmel	30.5	36.8	32.4	42.1	43.0	33	37	39
Statewide Average		16.9	25.8	24.4	27.3	23.9	21	30	24

*The design value is the three-year average of the 99th percentile concentration. Design value greater than 75 ppb is a violation of the National Ambient Air Quality Standard.

Nitrogen Dioxide Monitoring Sites

	Site ID	Site Name
1.	170310076	Chicago - Com Ed Maintenance
2.	170310216	Chicago - Kennedy near-road
3.	170310116	Lansing - Kingery near-road
4.	170313103	Schiller Park
5.	170314002	Cicero
6.	171170002	Nilwood
7.	171630010	East St. Louis

Table B18
Nitrogen Dioxide 1-Hour Exceedances

EXCEEDANCES OF THE 1-HOUR PRIMARY STANDARD OF 100 PPB		
Date	**City**	**Concentration (ppb)**
None	None	None
Total Over 100 ppb	0	
Total Days Over 100 ppb	0	

Table B19
Nitrogen Dioxide Highs

AQS ID	City	Total Hourly Samples	Samples Greater Than 100 ppb			Highest Samples							
			2019	2018	2017	1st	2nd	3rd	4th	5th	6th	7th	8th
17-031-0076	Chicago Com Ed Maintenance	8325	0	0	0	75.2	66.4	54.6	51.9	48.7	48.6	48.1	46.8
17-031-0119	Lansing Kingery near-road #1	7313	0	-	-	58.0	57.7	54.4	52.3	51.8	51.1	51.1	50.3
17-031-0219	Chicago Kennedy near-road #2	3465	0	-	-	55.1	45.2	44.7	44.0	43.2	42.9	42.0	42.0
17-031-3103	Schiller Park	8334	0	0	0	77.3	71.8	68.3	57.6	55.7	55.5	54.9	54.1
17-031-4002	Cicero Cook County Trailer	8663	0	0	0	76.2	71.8	62.6	58.0	57.9	56.6	55.9	55.7
17-117-0002	Nilwood	7769	0	0	0	17.3	17.2	16.8	16.7	16.3	16.3	15.0	14.9
17-163-0010	East St. Louis	7876	0	0	0	43.7	42.9	42.5	42.2	41.8	40.5	39.1	38.4
Statewide Average						57.5	53.3	49.1	46.1	45.1	44.4	43.7	43.2
Total Over 100 ppb			0	0	0								
Total Days Over 100 ppb			0	0	0								

Table B20
Nitrogen Dioxide 1-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ppb)					Design Values* (ppb)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-031-0063	Chicago CTA Building	-	-	52.2	58.4	57.4	-	-	56
17-031-0076	Chicago Com Ed Maintenance	46.8	65.9	54.1	60.8	45.2	56	60	53
17-031-0119	Lansing Kingery near-road #1	51.1	-	-	-	-	-	-	-
17-031-0219	Chicago Kennedy near-road #2	44.7	-	-	-	-	-	-	-
17-031-3103	Schiller Park	54.1	61.0	50.0	56.0	60.8	55	56	56
17-031-4002	Cicero Cook County Trailer	55.7	59.7	55.1	54.7	62.4	57	57	57
17-031-4201	Northbrook	-	-	-	39.7	42.8	-	-	-
17-117-0002	Nilwood	15.0	15.2	-	-	-	15	-	-
17-163-0010	East St. Louis	39.1	38.2	35.9	35.3	39.9	38	36	37
Statewide Average		43.8	48.0	49.5	50.8	51.4	44	52	52

*The design value is the three-year average of the 98th percentile concentration. Design value greater than 100 ppb is a violation of the National Ambient Air Quality Standard.

Table B21
Nitrogen Dioxide Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations* (ppb)				
		2019	2018	2017	2016	2015
17-031-0063	Chicago CTA Building	-	-	15.75	16.85	16.93
17-031-0076	Chicago Com Ed Maintenance	11.89	15.33	12.86	13.49	13.01
17-031-0119	Lansing Kingery near-road #1	16.64	-	-	-	-
17-031-0219	Chicago Kennedy near-road #2	16.37	-	-	-	-
17-031-3103	Schiller Park	17.43	17.91	15.79	17.08	18.20
17-031-4002	Cicero Cook County Trailer	14.14	15.89	15.63	14.07	16.74
17-031-4201	Northbrook	-	-	-	12.10	9.69
17-117-0002	Nilwood	2.37	2.40	-	-	-
17-163-0010	East St. Louis	8.82	9.49	8.63	9.12	8.32
Statewide Average		12.52	12.20	13.73	13.95	13.82

*The design value is the highest annual average concentration during the most recent two years. Design value greater than 53 ppb is a violation of the National Ambient Air Quality Standard.

Lead Monitoring Sites

	Site ID	Site Name
1.	170310022	Chicago – Washington High School
2.	170310110	Chicago – Perez Elementary
3.	171190010	Granite City – 15th and Madison

Table B22
Lead Highs

AQS ID	City	Total Sample Days	Highest Monthly Means					Maximum Three-Month Mean
			1st	2nd	3rd	4th	5th	
17-031-0022	Chicago Washington High School	47	0.013	0.013	0.013	0.010	0.010	0.01
17-031-0110	Chicago Perez Elementary	65	0.015	0.015	0.012	0.012	0.010	0.01
17-119-0010	Granite City Air Products	61	0.344	0.328	0.107	0.081	0.065	0.15
Statewide Average			0.124	0.119	0.044	0.034	0.028	0.06

Table B23
Lead Design Values

AQS ID	City	Maximum Three-Month Rolling Mean (ug/m3)					Design Values* (ug/m3)		
		2019	2018	2017	2016	2015	2017-2019	2016-2018	2015-2017
17-031-0022	Chicago Washington High School	0.01	0.01	0.02	0.02	0.04	0.02	0.02	0.04
17-031-0110	Chicago Perez Elementary	0.01	0.01	0.01	0.01	0.03	0.01	0.01	0.03
17-031-0113	Chicago ArcelorMittal Steel	-	-	-	0.01	0.01		-	-
17-031-4201	Northbrook	-	-	-	0.00	0.01		-	-
17-089-0113	Geneva Johnson Controls	-	-	-	0.05	0.05		-	-
17-115-0110	Decatur Mueller	-	-	0.04	0.04	0.04		-	0.04
17-119-0010	Granite City Air Products	0.15	0.06	0.03	0.02	0.02	0.15	0.06	0.03
Statewide Average		0.06	0.03	0.03	0.02	0.03	0.06	0.03	0.04

*The design value is the maximum three-month rolling mean over the latest three-year period. Design value greater than 0.15 ug/m3 is a violation of the National Ambient Air Quality Standard.

Table B24
Filter Analysis Data

AQS ID	City	Arsenic				Beryllium				Cadmium			
		Total Samples	Highs 1st	Highs 2nd	Annual Mean	Total Samples	Highs 1st	Highs 2nd	Annual Mean	Total Samples	Highs 1st	Highs 2nd	Annual Mean
17-031-0022	Chicago Washington High School	-	-	-	-	-	-	-	-	47	0.011	0.006	0.001
17-031-0110	Chicago Perez Elementary	-	-	-	-	-	-	-	-	56	0.001	0.001	0.000
17-119-0010	Granite City Air Products	56	0.020	0.010	0.001	56	0.000	0.000	0.000	56	0.000	0.000	0.000

Table B24
Filter Analysis Data

AQS ID	City	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean
			1st	2nd			1st	2nd			1st	2nd	
		Chromium				Iron				Manganese			
17-031-0022	Chicago Washington High School	47	0.031	0.029	0.012	47	2.18	2.15	0.599	47	0.148	0.129	0.045
17-031-0110	Chicago Perez Elementary	56	0.023	0.022	0.009	56	1.09	0.91	0.344	56	0.055	0.050	0.015
17-119-0010	Granite City Air Products	56	0.024	0.018	0.005	56	5.70	4.94	1.43	56	0.313	0.276	0.082

Table B24
Filter Analysis Data

AQS ID	City	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean
			1st	2nd			1st	2nd			1st	2nd	
		Nickel											
17-031-0022	Chicago Washington High School	47	0.015	0.009	0.004								
17-031-0110	Chicago Perez Elementary	56	0.009	0.009	0.003								
17-119-0010	Granite City Air Products	56	0.074	0.025	0.004								

Table B25
Toxic Compounds

AQS ID	City	Compounds	Highest 24-hour Samples (ppbc)				Annual Average
			1st	2nd	3rd	4th	
17-031-4201	Northbrook	1,3 Butadiene	0.2	0.1	0.1	0.1	0.07
		Dichloromethane	1.3	0.6	0.6	0.5	0.28
		Chloroform	0.6	0.4	0.3	0.3	0.12
		Carbon Tetrachloride	0.1	0.1	0.1	0.1	0.10
		Tetrachloroethylene	0.1	0.1	0.1	0.1	0.01
		Trichloroethylene	0.0	0.0	0.0	0.0	0.00
		1,2 Dichloropropane	0.0	0.0	0.0	0.0	0.00
		Vinyl Chloride	0.0	0.0	0.0	0.0	0.00
		Benzene	1.4	1.3	1.2	1.0	0.72
		Toluene	3.0	2.8	2.5	2.5	1.26
		Formaldehyde	4.7	4.3	4.2	3.2	1.85
		Acetaldehyde	2.5	2.5	2.4	2.3	1.30
		Acrolein	2.6	2.1	2.0	2.0	1.16
17-031-3103	Schiller Park	1,3 Butadiene	0.4	0.4	0.4	0.4	0.16
		Dichloromethane	218.0	172.0	10.6	10.5	8.81
		Chloroform	0.1	0.1	0.1	0.1	0.06
		Carbon Tetrachloride	0.2	0.1	0.1	0.1	0.10
		Tetrachloroethylene	2.8	2.8	2.7	2.7	1.56
		Trichloroethylene	0.9	0.4	0.3	0.2	0.05
		1,2 Dichloropropane	0.0	0.0	0.0	0.0	0.00
		Vinyl Chloride	0.0	0.0	0.0	0.0	0.00
		Benzene	2.3	1.8	1.8	1.8	1.17
		Toluene	6.5	6.2	5.8	5.5	2.92
		Formaldehyde	9.8	9.4	9.1	8.5	5.29
		Acetaldehyde	14.8	9.0	8.9	5.5	3.59
		Acrolein	2.9	2.7	2.6	2.4	1.39

[1] – Toxic metals data (As, Be, Cd, Cr, Mn, Ni) summarized in Table B24 - Filter Analysis Data

Table C1

Carbon Monoxide Point Source Emission Distribution (Tons/Year)

Category	2015	2016	2017	2018	2019
External Fuel Combustion					
Electric Generation	20,092.2	17,065.5	11,188.4	12,253.2	13,628.8
Industrial	5,781.1	5,345.5	5,005.5	4,674.7	4,559.1
Commercial/Institutional	1,498.3	1,493.7	1,345.6	1,433.4	1,445.3
Space Heating	38.9	21.3	16.7	17.7	21.4
Internal Fuel Combustion					
Electric Generation	2,306.4	2,475.6	3,011.5	1,750.4	1,972.8
Industrial	4,684.8	3,552.2	2,847.7	2,648.3	3,188.1
Commercial/Institutional	190.6	226.8	187.8	179.0	213.8
Engine Testing	215.8	168.4	165.7	162.1	208.7
Industrial Processes					
Chemical Manufacturing	1,814.1	1,591.6	1,603.8	1,832.6	1,827.2
Food/Agriculture	1,420.2	1,576.8	1,449.3	1,263.0	1,189.6
Primary Metal Production	15,855.7	13,226.3	10,165.9	9,912.7	12,408.3
Secondary Metal Production	2,041.5	2,492.9	2,105.9	2,103.6	1,906.6
Mineral Products	2,820.9	3,580.7	4,322.5	3,546.7	3,334.4
Petroleum Industry	3,085.2	3,245.9	2,615.6	2,669.7	2,477.7
Paper and Wood Products	1.5	0.5	0.5	0.5	0.5
Rubber and Plastic Products	26.3	24.5	21.5	18.5	21.9
Fabricated Metal Products	203.1	214.2	205.8	218.4	191.7
Oil and Gas Production	274.6	241.6	229.5	241.2	244.4
Miscellaneous Machinery	1.3	1.2	0.6	0.6	0.6
Electrical Equipment	2.0	2.0	1.4	1.4	1.4
Health Services	153.6	175.3	171.4	170.9	168.5
In-Process Fuel Use	946.8	403.2	12.0	10.1	112.9
Miscellaneous Manufacturing	59.5	37.5	52.2	55.0	59.6
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.2	0.1		
Surface Coating Operations	271.2	232.0	235.9	213.4	233.0
Petroleum Product Storage	0.0	0.2	0.2	0.3	0.0
Bulk Terminals/Plants	32.9	26.0	9.9	10.9	17.5
Printing/Publishing	1.1		0.7	0.7	2.1
Petroleum Marketing/Transport	46.9	21.2	21.1	8.4	95.7
Organic Chemical Storage (large)	2.7			0.2	0.0
Organic Chemical Transportation					3.6
Organic Solvent Evaporation	9.8	9.0	53.6	20.4	39.8
Solid Waste Disposal					
Government	1,562.0	1,758.0	1,545.9	1,661.5	1,757.6
Commercial/Institutional	25.0	40.9	41.0	11.8	11.8
Industrial	605.0	691.7	629.7	663.8	597.5
Site Remediation	1.2	2.2	2.2	2.2	3.3
Commercial				28.1	15.5
Institutional					0.1
Totals	**66,072.1**	**59,944.8**	**49,267.3**	**47,785.6**	**51,961.0**

Table C2

Nitrogen Oxides Point Source Emission Distribution (Tons/Year)

Category	2015	2016	2017	2018	2019
External Fuel Combustion					
Electric Generation	45,242.2	33,102.0	27,023.2	28,127.4	29,824.7
Industrial	9,941.2	9,217.5	8,425.8	7,863.4	7,392.7
Commercial/Institutional	2,059.7	1,938.0	1,804.4	1,858.3	1,894.3
Space Heating	96.5	86.6	66.0	71.9	74.0
Internal Fuel Combustion					
Electric Generation	2,229.8	2,409.4	3,531.8	2,046.9	2,522.1
Industrial	20,229.6	14,482.6	9,029.6	7,232.8	8,659.5
Commercial/Institutional	404.0	541.3	431.2	431.3	471.4
Engine Testing	439.4	563.8	476.6	344.5	327.2
Industrial Processes					
Chemical Manufacturing	1,361.0	1,552.0	1,363.9	1,452.3	1,468.9
Food/Agriculture	1,449.6	1,504.3	1,346.0	1,299.1	1,137.9
Primary Metal Production	1,779.1	1,329.7	964.5	1,010.2	1,208.4
Secondary Metal Production	585.3	667.0	779.6	720.5	629.5
Mineral Products	6,275.5	5,410.1	7,619.5	6,405.3	6,699.2
Petroleum Industry	4,636.0	4,191.9	3,749.4	3,640.5	3,771.5
Paper and Wood Products	1.3	0.9	0.9	0.9	0.9
Rubber and Plastic Products	30.6	26.4	24.1	20.6	27.5
Fabricated Metal Products	236.3	269.8	245.9	266.1	244.2
Oil and Gas Production	706.3	620.6	688.7	691.2	627.8
Miscellaneous Machinery	1.8	0.6	0.8	0.8	0.8
Electrical Equipment	2.5	2.5	1.9	1.9	1.7
Health Services	4.0	6.6	6.6	6.6	7.0
Textile Products	0.9	0.9			
In-Process Fuel Use	803.1	190.3	34.0	70.3	165.0
Miscellaneous Manufacturing	18.3	15.7	15.3	18.6	17.9
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.2	0.2		
Surface Coating Operations	375.1	420.7	513.0	475.3	473.6
Petroleum Product Storage				0.2	0.0
Bulk Terminals/Plants	13.5	0.2	0.2	2.9	7.4
Printing/Publishing	1.5	13.3	4.0	0.8	4.0
Petroleum Marketing/Transport	20.1	8.8	0.8	3.5	38.2
Organic Chemical Storage (large)	1.6		8.7	0.2	0.0
Organic Chemical Transportation					1.5
Organic Solvent Evaporation	13.7	11.3	23.2	15.9	20.2
Solid Waste Disposal					
Government	558.9	592.1	521.6	590.5	574.8
Commercial/Institutional	17.2	13.3	13.3	1.3	1.3
Industrial	214.4	245.7	198.4	201.4	195.2
Site Remediation	2.5	2.8	2.8	2.8	5.8
Commercial				11.9	11.0
Institutional					0.1
Totals	**99,752.5**	**79,438.9**	**68,915.9**	**64,888.5**	**68,507.0**

Table C3

PM_{10} Point Source Emission Distribution (Tons/Year)

Category	2015	2016	2017	2018	2019
External Fuel Combustion					
Electric Generation	5,637.2	4,335.2	3,137.0	2,901.5	4,004.8
Industrial	1,304.5	1,180.1	972.9	734.0	715.8
Commercial/Institutional	193.9	186.6	172.4	179.4	180.8
Space Heating	6.6	3.4	2.8	3.0	3.2
Internal Fuel Combustion					
Electric Generation	208.0	358.4	527.0	291.8	382.1
Industrial	303.3	238.0	218.9	228.7	269.3
Commercial/Institutional	25.2	35.2	23.8	21.9	26.3
Engine Testing	15.7	24.0	20.9	14.7	15.5
Industrial Processes					
Chemical Manufacturing	836.6	1,031.2	978.8	985.4	1,023.5
Food/Agriculture	5,677.7	5,846.3	5,718.2	5,600.5	5,497.3
Primary Metal Production	1,233.1	872.1	627.0	634.5	882.7
Secondary Metal Production	1,034.4	955.0	858.6	885.4	869.2
Mineral Products	4,449.2	4,733.0	4,455.1	4,332.8	4,093.1
Petroleum Industry	1,239.5	1,189.0	1,283.0	1,153.0	1,234.2
Paper and Wood Products	93.1	112.7	121.5	130.5	140.9
Rubber and Plastic Products	113.7	168.2	164.6	140.8	162.1
Fabricated Metal Products	220.3	248.4	239.1	258.9	270.0
Oil and Gas Production	7.9	13.4	14.8	14.0	12.0
Building Construction	1.6	0.1	0.0	0.0	0.0
Miscellaneous Machinery	12.2	14.8	15.4	15.2	13.1
Electrical Equipment	4.4	5.1	5.0	5.0	5.1
Transportation Equipment	2.0	0.6	0.1	0.1	0.2
Health Services	63.9	76.9	75.1	79.2	79.0
Leather and Leather Products	2.7	9.7	9.7	11.9	11.9
Textile Products	0.2	0.1	0.0	0.0	0.0
Type Setting			0.5	0.5	0.5
Process Cooling	263.1	271.6	267.7	237.4	237.7
In-Process Fuel Use	181.2	81.4	0.4	2.9	26.0
Miscellaneous Manufacturing	20.1	19.2	19.0	19.0	51.7
Organic Solvent Emissions					
Organic Solvent Use	0.1	2.9	2.7	23.0	21.4
Surface Coating Operations	176.9	257.4	310.1	250.8	239.9
Petroleum Product Storage		1.1	1.1	1.1	0.0
Bulk Terminals/Plants	0.4	1.1	2.5	4.1	1.2
Printing/Publishing	28.9	29.3	28.3	29.9	37.6
Petroleum Marketing/Transport	1.2	1.3	1.3	1.0	4.4
Organic Chemical Storage (large)	1.5	5.8	5.7	5.7	6.1
Dry Cleaning (petroleum based)	0.5	0.7	0.7	0.7	7.4
Organic Solvent Evaporation	3.5	5.7	6.3	3.7	10.4
Solid Waste Disposal					
Government	424.7	355.2	351.8	382.7	426.3
Commercial/Institutional	7.5	7.9	7.4	1.3	0.0
Industrial	95.4	92.0	77.1	201.4	86.7
Site Remediation	14.7	14.2	135.5	2.8	13.7
Commercial				7.2	3.2
Institutional					0.1
Totals	**23,959.2**	**22,820.2**	**20,778.6**	**19,725.7**	**21,066.4**

Table C4

Sulfur Dioxide Point Source Emission Distribution (Tons/Year)

Category	2015	2016	2017	2018	2019
External Fuel Combustion					
Electric Generation	136,043.9	89,806.2	61,147.3	54,066.6	57,192.8
Industrial	24,913.5	19,064.4	16,023.6	13,409.5	12,220.6
Commercial/Institutional	2,665.7	2,582.8	2,405.7	2,486.2	2,606.4
Space Heating	0.6	0.6	0.5	0.5	0.5
Internal Fuel Combustion					
Electric Generation	237.5	223.0	271.9	268.5	248.8
Industrial	65.8	62.8	49.0	42.2	70.6
Commercial/Institutional	15.8	24.0	20.1	15.9	16.8
Engine Testing	3.2	8.1	6.7	4.3	5.2
Industrial Processes					
Chemical Manufacturing	1,333.3	1,330.6	1,000.0	727.9	912.3
Food/Agriculture	1,238.6	1,192.5	1,097.2	1,440.8	1,436.7
Primary Metal Production	2,502.8	2,046.8	1,413.2	1,426.9	2,533.5
Secondary Metal Production	118.6	93.6	92.8	85.7	92.6
Mineral Products	8,183.3	4,816.4	7,806.9	9,107.2	6,261.1
Petroleum Industry	3,026.0	2,498.1	1,568.3	1,635.0	1,299.7
Paper and Wood Products	0.0	0.0	0.0	0.0	0.0
Rubber and Plastic Products	1.5	0.3	0.3	0.2	3.9
Fabricated Metal Products	11.8	15.6	15.1	14.7	12.8
Oil and Gas Production	3.3	1.3	1.2	0.8	0.6
Miscellaneous Machinery	0.0	0.0	0.0	0.0	0.0
Electrical Equipment	0.0	0.0			
Health Services	5.1	7.5	7.5	7.5	7.5
Process Cooling	0.0	0.0	0.0	0.0	0.0
In-Process Fuel Use	419.0	175.4	5.7	5.9	61.7
Miscellaneous Manufacturing	17.1	0.5	0.5	0.4	0.4
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.2	0.0		
Surface Coating Operations	3.6	9.6	4.5	4.5	4.9
Petroleum Product Storage	7.7	8.3	0.9	8.3	8.3
Bulk Terminals/Plants					0.5
Printing/Publishing	0.4	0.8	0.8	0.5	0.0
Petroleum Marketing/Transport	0.0	75.3	0.0	0.0	2.5
Organic Chemical Storage (large)	0.1		0.1	0.1	0.5
Organic Chemical Transportation	0.4	0.1	0.3	1.6	
Organic Solvent Evaporation	25.1	3.5	0.7	0.6	0.9
Solid Waste Disposal					
Government	914.8	949.8	729.9	1,063.8	900.8
Commercial/Institutional	0.4	2.6	2.5	1.5	1.5
Industrial	364.4	342.5	371.8	365.7	218.4
Site Remediation					1.8
Commercial					0.7
Institutional					0.0
Totals	**182,200.0**	**125,421.1**	**94,095.4**	**86,245.4**	**86,125.6**

Table C5

Volatile Organic Material Point Source Emission Distribution (Tons/Year)

Category	2015	2016	2017	2018	2019
External Fuel Combustion					
Electric Generation	1,383.4	1,095.4	973.2	1,111.1	1,128.9
Industrial	341.0	321.4	338.8	314.9	303.9
Commercial/Institutional	92.4	86.7	78.9	83.7	85.5
Space Heating	5.3	4.6	3.5	3.8	3.9
Internal Fuel Combustion					
Electric Generation	256.3	387.6	528.2	352.7	172.2
Industrial	1,025.9	793.6	602.8	519.0	684.8
Commercial/Institutional	31.8	35.1	36.6	36.2	45.6
Engine Testing	77.9	39.1	35.3	45.0	56.7
Industrial Processes					
Chemical Manufacturing	6,487.1	6,261.4	5,752.3	5,769.7	5,679.5
Food/Agriculture	8,855.2	9,461.8	8,917.4	9,316.2	9,432.5
Primary Metal Production	414.7	287.8	141.1	146.8	163.6
Secondary Metal Production	671.9	697.4	672.8	725.7	760.1
Mineral Products	925.9	1,163.9	1,257.7	1,100.6	999.7
Petroleum Industry	1,866.2	1,987.0	1,833.9	1,979.2	1,748.7
Paper and Wood Products	74.6	78.4	64.4	59.5	68.3
Rubber and Plastic Products	1,778.8	1,839.3	1,646.5	1,670.1	1,603.5
Fabricated Metal Products	638.6	689.8	790.5	648.2	667.7
Oil and Gas Production	374.5	327.4	351.3	303.7	288.9
Miscellaneous Machinery	81.5	83.4	83.5	74.2	31.1
Electrical Equipment	38.9	38.9	65.7	68.0	65.2
Transportation Equipment	21.8	18.5	18.5	18.5	18.2
Health Services	16.4	12.6	11.8	10.6	5.8
Photographic Film Manufacturing			1.7	1.7	0.8
Leather and Leather Products	16.2	16.9	16.9	17.9	17.9
Textile Products	2.0	2.3	2.3	2.3	2.3
Process Cooling	77.1	78.9	80.7	80.7	80.7
In-Process Fuel Use	32.7	9.6	6.7	6.7	10.6
Miscellaneous Manufacturing	158.3	139.3	136.2	104.7	67.4
Organic Solvent Emissions					
Organic Solvent Use	386.2	394.	449.4	472.5	502.0
Surface Coating Operations	6,955.5	6,879.4	6,264.5	6,138.0	6,064.1
Petroleum Product Storage	2,487.0	2,524.1	2,482.5	2,517.0	2,492.5
Bulk Terminals/Plants	1,037.7	1,162.7	1,012.2	1,015.6	1,052.0
Printing/Publishing	3,217.7	3,081.6	2,451.1	2,467.7	2,382.2
Petroleum Marketing/Transport	325.1	434.5	450.4	354.7	358.5
Organic Chemical Storage (large)	489.4	705.5	514.01	578.7	775.3
Organic Chemical Transportation	144.8	102.5	101.4	60.6	41.6
Dry Cleaning (petroleum based)	377.3	374.8	318.0	283.5	280.8
Organic Chemical Storage (small)	0.0	0.2	0.2	0.2	
Organic Solvent Evaporation	438.6	416.3	410.9	372.0	354.5

Table C5

Volatile Organic Material Point Source Emission Distribution (Tons/Year)

Category	2015	2016	2017	2018	2019
Solid Waste Disposal					
Government	313.0	359.4	413.9	514.5	407.5
Commercial/Institutional	1.6	3.8	3.8	2.9	2.9
Industrial	38.5	58.2	54.6	61.3	60.3
Site Remediation	116.2	142.2	150.3	139.8	97.5
Commercial					3.9
Institutional					0.0
Totals	**42,344.8**	**42,884.5**	**39,768.0**	**39,785.1**	**39,070.1**

Table C6

2019 Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
Adams	189.9	132.6	261.4	469.8	1,163.9
Alexander	58.9	44.9	43.2	0.6	526.9
Bond	18.9	13.0	11.7	1.9	24.4
Boone	55.3	67.5	79.5	1.0	526.6
Brown	0.0	0.0	2.8	0.0	0.0
Bureau	14.8	28.3	64.6	0.4	34.6
Calhoun	0.6	0.7	5.2	0.0	0.1
Carroll	27.9	28.1	29.6	1.1	15.2
Cass	32.9	37.9	44.6	27.1	13.1
Champaign	355.8	711.9	183.2	367.6	422.9
Christian	298.0	1,599.2	177.5	2,244.5	424.3
Clark	40.8	5.0	53.0	1.4	130.3
Clay	4.0	6.1	15.9	0.1	88.8
Clinton	216.3	700.9	65.9	287.0	60.9
Coles	81.9	80.8	83.7	6.7	388.8
Cook	11,681.5	4,511.0	2,421.1	2,177.6	6,663.3
Crawford	949.1	1,523.7	522.8	4,277.1	808.2
Cumberland	13.6	3.2	17.1	1.0	42.3
DeKalb	123.9	80.6	77.0	34.3	124.6
DeWitt	71.7	60.2	108.1	15.2	144.5
Douglas	953.1	1,744.9	104.4	1.3	511.3
DuPage	642.5	713.0	236.2	43.1	1,039.6
Edgar	12.4	19.4	66.2	0.1	86.7
Edwards	1.3	3.9	10.2	0.0	8.7
Effingham	10.0	24.2	51.9	1.7	264.6
Fayette	62.9	220.5	17.5	74.9	24.0
Ford	89.5	163.7	184.2	6.5	692.5
Franklin	47.5	17.5	27.7	0.4	18.3
Fulton	397.0	1,613.6	75.4	24.6	59.8
Gallatin	0.1	0.3	7.7	0.1	0.0
Greene	0.1		19.3		0.2
Grundy	682.0	1,069.3	190.9	36.3	538.6
Hamilton	0.3	0.5	208.7	0.0	0.9
Hancock	15.3	2.9	50.8	0.2	4.7
Hardin	1.6	1.9	13.1	0.0	1.9
Henderson			29.9		
Henry	645.2	1,263.8	163.6	9.2	309.1
Iroquois	49.4	26.9	124.1	4.3	451.3
Jackson	300.1	272.0	46.1	238.5	104.2
Jasper	2,660.2	1,507.1	345.5	4,657.3	119.6
Jefferson	92.4	71.6	30.6	0.9	272.5
Jersey	0.1		6.1		10.3
Jo Daviess	260.7	445.5	127.8	9.6	80.5
Johnson	25.1	24.0	7.8	220.0	5.9
Kane	368.2	368.7	209.5	25.9	1,039.9
Kankakee	524.4	705.0	196.1	44.3	770.1
Kendall	302.6	764.9	263.2	24.4	132.9
Knox	33.2	24.2	59.4	2.0	77.3
Lake	1,883.7	1,731.0	553.0	1,319.3	449.0
La Salle	1,620.5	2,989.9	1,134.7	554.6	1,157.0
Lawrence	8.7	5.1	9.7	0.6	23.2
Lee	178.2	247.1	148.5	13.3	271.0

Table C6

2019 Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
Livingston	495.6	247.4	137.9	73.4	329.5
Logan	28.4	38.5	69.9	427.8	8.6
McDonough	39.8	76.9	24.5	4.5	70.2
McHenry	191.5	251.7	109.1	5.2	263.2
McLean	252.7	263.4	163.6	14.1	584.9
Macon	1,229.0	5,088.1	1,845.4	11,486.1	4,212.4
Macoupin	6.2	6.7	34.0	0.0	26.9
Madison	5,849.3	3,226.6	1,083.2	3,520.6	2,591.6
Marion	22.5	38.8	37.2	2.7	572.5
Marshall	30.6	78.2	139.3	265.7	337.9
Mason	414.5	1,128.6	63.7	1,067.4	54.1
Massac	3,862.9	3,611.2	643.4	12,293.7	119.2
Menard	15.1	3.3	16.4	0.0	35.7
Mercer	0.4	0.5	17.0	0.0	14.3
Monroe	2.8	4.1	12.0	0.1	8.2
Montgomery	262.7	2,856.2	145.1	37.6	205.8
Morgan	64.0	190.4	39.1	23.3	27.5
Moultrie	3.1	9.3	28.6	0.0	208.0
Ogle	469.5	360.5	308.0	230.6	359.6
Peoria	1,696.2	3,700.9	474.6	6,910.5	847.0
Perry	27.6	94.1	76.2	0.7	15.3
Piatt	66.8	713.3	52.3	0.2	43.5
Pike	108.6	144.9	80.5	2.3	56.8
Pope					
Pulaski	77.7	15.0	36.5	4.1	7.8
Putnam	458.5	1,674.0	319.2	5,625.1	196.8
Randolph	1,078.7	3,233.6	143.4	2,995.5	239.3
Richland	0.6	2.6	8.3	0.0	9.1
Rock Island	392.5	245.3	132.1	14.0	546.0
St. Clair	406.3	353.4	269.8	179.7	534.5
Saline	76.0	23.9	40.5	3.0	7.7
Sangamon	898.2	1,563.5	240.7	1,807.1	204.3
Schuyler	0.0	0.0	9.3	0.0	20.5
Scott	30.9	27.8	27.6	6.5	3.0
Shelby	35.9	106.2	58.6	2.1	57.3
Stark			21.2		6.6
Stephenson	117.0	122.1	77.4	22.4	128.7
Tazewell	587.6	3,535.8	1,404.5	3,793.8	643.9
Union	40.3	50.1	35.6	713.5	1.8
Vermilion	335.7	486.0	177.6	10.1	1,779.1
Wabash	62.9	20.4	32.2	0.4	6.3
Warren	52.9	22.8	63.2	149.1	12.8
Washington	465.2	3,907.6	1,320.5	9,921.0	130.1
Wayne	30.6	74.5	10.2	4.1	14.5
White	5.4	11.2	2.3	2.6	38.9
Whiteside	828.5	187.1	142.4	22.9	73.1
Will	3,284.1	3,524.0	1,368.6	1,813.8	2,431.9
Williamson	1,086.8	1,083.9	132.3	5,106.3	249.5
Winnebago	357.6	411.6	360.1	255.7	679.0
Woodford	6.8	12.9	44.0	78.5	96.1

Table C7

Annual Source Estimated Emissions Trends (Tons)

Year	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
1981	240,421	826,427		1,577,992	270,814
1982	163,704	693,054		1,404,040	233,951
1983	144,622	759,453		1,363,292	207,405
1984	110,922	746,367		1,435,066	197,418
1985	107,876	715,556		1,406,300	191,070
1986	109,777	676,181		1,400,761	180,148
1987	98,213	644,511		1,379,407	176,406
1988	127,758	653,521		1,393,628	165,792
1989	132,214	610,214		1,254,474	193,499
1990	134,744	623,466		1,272,445	170,378
1991	148,667	619,161		1,239,690	154,008
1992	129,054	610,214	181,775	1,228,949	156,867
1993	130,097	556,460	113,482	1,170,549	152,288
1994	127,848	555,893	50,730	1,158,555	140,492
1995	127,661	505,966	48,839	1,273,786	141,381
1996	130,040	495,267	43,950	1,183,278	139,445
1997	117,046	510,729	41,078	1,197,404	136,541
1998	108,117	509,676	43,392	1,196,461	134,924
1999	120,906	421,993	40,598	1,085,828	99,121
2000	122,702	424,609	36,885	1,070,058	101,147
2001	96,970	358,263	34,233	653,797	95,221
2002	99,173	301,216	30,422	531,343	90,014
2003	88,367	289,921	41,589	512,321	89,579
2004	80,479	248,245	42,402	507,142	84,080
2005	83,671	238,026	40,359	522,677	75,690
2006	89,717	219,200	37,979	487,588	70,858
2007	80,969	205,602	34,847	429,976	59,021
2008	80,628	203,014	34,474	406,905	57,135
2009	78,720	198,178	32,551	375,807	54,668
2010	65,797	138,344	30,931	304,709	49,975
2011	78,283	143,035	29,796	295,658	48,323
2012	76,255	131,326	28,624	276,412	46,957
2013	64,915	109,308	25,744	211,873	45,430
2014	67,921	109,444	24,942	200,350	44,610
2015	66,072	99,753	23,959	182,200	42,345
2016	59,945	79,439	22,820	125,421	42,885
2017	49,267	68,916	20,779	94,095	39,768
2018	47,786	64,889	19,726	86,245	39,785
2019	51,961	68,507	21,066	86,126	39,070

Table C8

Annual Source Reported Emissions Trends (Tons)

Year	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
1992	112,403	381,938	49,377	1,045,113	143,853
1993	113,781	418,209	36,737	1,001,123	108,847
1994	116,192	404,486	34,086	967,213	108,897
1995	160,256	366,978	31,491	814,229	103,144
1996	84,258	407,683	30,850	914,295	87,271
1997	71,408	404,289	25,648	974,232	76,350
1998	79,147	377,191	31,828	964,262	77,952
1999	91,153	360,850	27,663	863,759	71,514
2000	90,315	329,141	30,482	620,592	71,063
2001	83,453	291,778	28,929	531,504	62,647
2002	83,795	261,202	26,900	498,754	70,703
2003	75,511	230,068	29,939	507,338	63,495
2004	77,847	229,127	31,896	521,808	64,594
2005	85,892	215,366	30,535	486,534	62,251
2006	77,099	200,832	29,367	429,573	53,791
2007	77,211	198,073	28,784	406,405	50,933
2008	75,183	193,637	28,194	376,627	49,112
2009	62,285	134,274	25,988	305,297	41,839
2010	75,277	139,508	25,993	297,254	44,245
2011	73,586	129,058	25,209	272,747	42,430
2012	64,253	109,298	22,631	220,143	42,735
2013	65,879	107,877	21,549	201,509	41,276
2014	65,865	99,230	21,962	182,337	40,767
2015	57,688	80,469	19,557	136,749	40,039
2016	46,864	68,441	17,560	99,907	37,593
2017	46,747	64,673	17,209	86,446	37,206
2018	50,727	68,632	18,316	87,437	37,265

Illinois EPA's Website Information

To access the online version of the Annual Air Quality Report, various pollutant averages and exceedances, the monitoring network plan and emission trends:

- https://www2.illinois.gov/epa/topics/air-quality/Pages/default.aspx

Air Quality Index Information

To view current Air Quality Index numbers and forecasts across the country:

- http://www.airnow.gov

To sign up for air quality information such as forecasts and pollution alerts:

- http://www.illinois.enviroflash.info/signup.cfm

EnviroFlash on Twitter:

- http://www.illinois.enviroflash.info/EnviroFlashTwitter.cfm

Monitoring Data Access Information

To access yearly Air Quality Index summaries, air quality statistics and monitoring concentrations:

- https://www.epa.gov/outdoor-air-quality-data

To access status and trends of key air pollutants:

- https://www.epa.gov/air-trends

To access historical Design Values (statistic to compare to the National Ambient Air Quality Standards):

- https://www.epa.gov/air-trends/air-quality-design-values

Nonattainment Areas and Designations (regions in violation of the various National Ambient Air Quality Standards):

- http://www.epa.gov/green-book

Other

- Ambient Monitoring Technology Information Center: https://www.epa.gov/amtic
- Toxic Release Inventory Search: http://www.epa.gov/enviro/tri-search
- Toxic Release Inventory Data and Tools: https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools

State of Illinois
Illinois Environmental Protection Agency

Illinois
Air Quality Report

2018

ILLINOIS ANNUAL AIR QUALITY REPORT 2018

Illinois Environmental Protection Agency
Bureau of Air
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, IL 62794-9276

Printed on recycled paper

For additional information on air pollution, please see the Illinois EPA website, http://www.epa.illinois.gov/, or write to:

Illinois Environmental Protection Agency
Bureau of Air
1021 N. Grand Ave., East
PO Box 19276
Springfield, IL 62794-9276

Acknowledgements

This document is produced by the Illinois Environmental Protection Agency; John Kim, Director.

Illinois EPA Bureau of Air personnel contributed their time and expertise to the development of this publication.

Illinois Annual Air Quality Report 2018

Contents

Appendices

Tables

Figures

Executive Summary

This report presents a summary of air quality data collected throughout the State of Illinois during calendar year 2018. Data is presented for the six criteria pollutants (those for which air quality standards have been developed – particulate matter (PM_{10} and $PM_{2.5}$), ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead – along with some heavy metals, volatile organic compounds and toxic compounds. Monitoring was conducted at 63 different site locations collecting data from more than 150 instruments.

In terms of the Air Quality Index (AQI) air quality during 2018 was either good or moderate 92% of the time throughout Illinois. There were seven days when air quality was considered unhealthy (category red). This compares with one unhealthy day in 2017. The unhealthy days were due to elevated ozone concentrations in May, June, and July. There were 22 days (20 for ozone and two for fine particulates) when air quality in some part of Illinois was considered Unhealthy for Sensitive Groups (category orange). This compares with 27 Unhealthy for Sensitive Groups days reported in 2017. Air quality trends for most of the criteria pollutants are continuing to show downward or stable trends below the level of the standards.

Stationary point source emission data has again been included. The data in the report reflects information contained in Illinois EPA's Integrated Comprehensive Environmental Management System (ICEMAN) as of December 31, 2018. Emission estimates are for the calendar year 2018 and are for the pollutants: particulate matter, volatile organic material, sulfur dioxide, nitrogen oxides, and carbon monoxide. Emission trends of these pollutants have been given for the years 1998 to the present. Emissions reported with the Annual Emissions Report have been provided starting with 1998 and are currently available through 2017. There has been a trend toward decreasing emissions over this time period.

Ozone (O_3)

Photochemical oxidants result from a complex series of atmospheric reactions initiated by sunlight. When reactive (non-methane) hydrocarbons and nitrogen oxides accumulate in the atmosphere and are exposed to the ultraviolet component of sunlight, the formation of new compounds, including ozone and peroxyacetylnitrate, takes place.

Absorption of ultraviolet light energy by nitrogen dioxide results in its dissociation into nitric oxide and an oxygen atom. The oxygen atoms, for the most part, react with atmospheric molecular oxygen (O_2) to form ozone (O_3). In general, nitric oxide will react with ozone to re-form nitrogen dioxide, completing the cycle. A build-up of ozone above the equilibrium concentration, which is defined by the reaction cycle, results when nitrogen oxide reacts with non-methane hydrocarbons. Oxygen atoms from the hydrocarbon radical oxidize nitric oxide to nitrogen dioxide without ozone being used up. Thus, ozone concentrations are not depleted and can build up quickly.

Ozone can also be formed naturally in the atmosphere by electrical discharge and in the stratosphere by solar radiation. The former process is not capable of producing significant urban concentrations of this pollutant; however, there is some belief that incursion of ozone from the stratosphere can contribute significantly to elevated ground level concentrations of ozone under certain meteorological conditions.

Injury to vegetation is one of the earliest manifestations of photochemical air pollution, and sensitive plants are useful biological indicators of this type of pollution. The visible symptoms of photochemical oxidant produced injury to plants may be classified as:

- Acute injury, identified by cell collapse with subsequent development of necrotic patterns.
- Chronic injury, identified by necrotic patterns or with other pigmented patterns.
- Physiological effects, identified by growth alterations, reduced yields, and changes in the quality of plant products. The acute symptoms are generally characteristic of a specific photochemical oxidant, though chronic injury patterns are not. Ozone injury to leaves is identified as a stripling or flecking. Adverse effects on sensitive vegetation have been observed from exposure to photochemical oxidant concentrations of about 100 micrograms per cubic meter (0.05 parts per million) for 4 hours.

Adverse effects on materials (rubber products and fabrics) from exposure to photochemical oxidants have not been precisely quantified, but have been observed at the levels presently occurring in many urban atmospheres.

Ozone accelerates the aging of many materials, resulting in rubber cracking, dye fading, and paint erosion. These effects are linearly related to the total dose of ozone and can occur at very low levels, given long duration exposures.

Ozone is a pulmonary irritant that affects the respiratory mucous membranes, other lung tissues, and respiratory functions. Clinical and epidemiological studies have demonstrated that ozone impairs the normal mechanical function of the lung, causing alterations in respiration – the most characteristic of which are shallow, rapid breathing and a decrease in pulmonary compliance. Exposure to ozone results in clinical symptoms such as chest tightness, coughing, and wheezing. Alterations in airway resistance can occur, especially to those with respiratory diseases (asthma, bronchitis, emphysema). These effects may occur in sensitive individuals, as well as in healthy exercising persons, at short-term ozone concentrations between 0.15 and 0.25 ppm.

Ozone exposure increases the sensitivity of the lung to bronchoconstrictive agents such as histamine, acetylcholine, and allergens, as well as increasing the individual's susceptibility to bacterial infection. Simultaneous exposure to ozone and sulfur dioxide can produce larger changes in pulmonary function than exposure to either pollutant alone.

Peroxyacetylnitrate (PAN) is an eye irritant, and its effects often occur in conjunction with the effects of ozone.

Two characteristics of ozone and photochemical oxidant exposures should be cited:

- Ozone itself is a primary cause of most of the health effects reported in toxicological and experimental human studies and the evidence for attributing many health effects to this substance alone is very compelling.

- Atmospheric photochemical substances are known to produce health effects, some of which are not attributable to pure ozone but may be caused by other photochemical substances in combination with ozone.

Particulate Matter (PM)

Not all air pollutants are in the gaseous form. Small solid particles and liquid droplets, collectively called particulates or aerosols, are also present in the air in great numbers and may constitute a pollution problem. Particulates entering the atmosphere differ in size and chemical composition. The effects of particulates on health and welfare are directly related to their size and chemical composition.

Particulate matter in the atmosphere consists of solids, liquids, and liquids-solids in combination. Suspended particulates generally refer to particles less than 100 micrometers in diameter (human hair is typically 100 micrometers thick). Particles larger than 100 micrometers will settle out of the air under the influence of gravity in a short period of time.

Typical sources emitting particles into the atmosphere are combustion of fossil fuels (ash and soot), industrial processes (metals, fibers, etc.), fugitive dust (wind and mechanical erosion of local soil), and photochemically produced particles (complex chain reactions between sunlight and gaseous pollutants). Combustion and photochemical products tend to be smaller in size (less than 1 micrometer); fugitive dust and industrial products are typically larger in size (greater than 1 micrometer).

Particles which cause the most health and visibility difficulties are those less than 1.0 micrometer in size. These particles are also the most difficult to reduce in numbers by the various industrial removal techniques. Rainfall accounts for the major removal of these smaller particles from the air.

One of the major problems associated with high concentrations of particulates is that the interaction between the particles, sunlight, and atmospheric moisture can potentially result in the climatic effects and diminished visibility (haze). Particles play a key role in the formation of clouds, and emissions of large numbers of particles can, in some instances, result in local increases in cloud formation and, possibly, precipitation. Particles in the size range of 0.1 to 1.0 micrometers are the most efficient in scattering visible light (wave length 0.4 to 0.7 micrometers) thereby reducing visibility. Particles combined with high humidity can result in the formation of haze which can cause hazardous conditions for the operation of motor vehicles and aircraft.

Particulate pollutants enter the human body by way of the respiratory system and their most immediate effects are upon this system. The size of the particle determines its depth of penetration into the respiratory system. Particles over 5 micrometers are generally deposited in the nose and throat. Those that do penetrate deeper in the respiratory system to the air ducts (bronchi) are often removed by ciliary action. Particles ranging in size from 0.5 - 5.0 micrometers in diameter can be deposited in the bronchi, with few reaching the air sacs (alveoli). Most particles deposited in the bronchi are removed by the cilia within hours. Particles less than 0.5 micrometer in diameter reach and may settle in the alveoli. The removal of particles from the alveoli is much less rapid and complete than from the larger passages. Some of the particles retained in the alveoli are absorbed into the blood.

Besides particulate size, the oxidation state, chemical composition, concentration, and length of time in the respiratory system

contribute to the health effects of particulates. Particulates have been associated with increased respiratory diseases (asthma, bronchitis, and emphysema), cardio-pulmonary disease (heart attack), and cancer.

Plant surfaces and growth rates may be adversely affected by particulate matter. Particulate air pollution also causes a wide range of damage to materials including corrosion of metals and electrical equipment and the soiling of textiles and buildings.

Sulfur Dioxide (SO_2)

Sulfur dioxide, (SO_2) is an atmospheric pollutant which results from combustion processes (mainly burning of fossil fuels containing sulfur compounds), refining of petroleum, manufacture of sulfuric acid, and smelting of ores containing sulfur. Reduction of sulfur dioxide pollution levels can generally be achieved through the use of low- sulfur content fuels or the use of chemical sulfur removal systems.

Once in the atmosphere, some sulfur dioxide can be oxidized (either photochemically or in the presence of a catalyst) to SO_3 (sulfur trioxide). In the presence of water vapor, SO_3 is readily converted to sulfuric acid (H_2SO_4) mist. Other basic oxides combine with SO_3 to form sulfate aerosols. Sulfuric acid droplets and other sulfates are thought to account for about 5 to 20 percent of the total suspended particulate matter in urban air. These compounds can be transported large distances and come back to earth as a major constituent of acid precipitation. Many of the resultant health problems attributed to SO_2 may be a result of the oxidation of SO_2 to other compounds.

The effects of SO_2 on health are irritation and inflammation of tissue that it directly contacts. Inhalation of SO_2 causes bronchial constriction resulting in an increased resistance to air flow, reduction of air volume, and an increase of respiratory rate and heart rate.

SO_2 can exacerbate pre-existing respiratory diseases (asthma, bronchitis, emphysema). The enhancement (synergism) by particulate matter of the toxic response to SO_2 has been observed under conditions which would promote the conversion of SO_2 to H_2SO_4. The degree of enhancement is related to the concentration of particulate matter. A twofold to threefold increase of the irritant response to SO_2 is observed in the presence of particulate matter capable of oxidizing SO_2 to H_2SO_4.

H_2SO_4 inhalation causes an increase in the respiratory system's mucous secretions, which reduces the system's ability to remove particulates via mucociliary clearance. This can result in an increased incidence of respiratory infection.

Carbon Monoxide (CO)

The major source of carbon monoxide (CO) is motor vehicles. The USEPA has kept under its jurisdiction the regulation of emission control equipment on new motor vehicles while the State's responsibility for reducing excessive ambient carbon monoxide levels is exercised by developing transportation plans for congested urban areas.

The toxic effects of high concentrations of CO on the body are well known. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin (the oxygen-carrying molecule in the blood) to form carboxyhemoglobin (COHb). This reaction reduces the oxygen-carrying capacity of blood because the affinity of hemoglobin for CO is over 200 times that for oxygen. The higher the percentage of hemoglobin bound up in the form of carboxyhemoglobin, the more serious is the health effect.

The level of COHb in the blood is directly related to the CO concentration of the inhaled air. For a given ambient air CO concentration, the COHb level in the blood will reach an equilibrium concentration after a sufficient time period. This equilibrium COHb level will be maintained in the blood as long as the ambient air CO level remains unchanged. However, the COHb level will slowly change in the same direction as the CO concentration of the ambient air as a new equilibrium of CO in the blood is established.

The lowest CO concentrations shown to produce adverse health effects result in aggravation of cardiovascular disease. Studies demonstrate that these concentrations have resulted in decreased exercise time before the onset of pain in the chest and extremities of individuals with heart or circulatory disease. Slightly higher CO levels have been associated with decreases in vigilance, the ability to discriminate time intervals, and exercise performance.

Evidence also exists indicating a possible relationship between CO and heart attacks, the development of cardiovascular disease, and irregular fetal development.

Studies on the existing ambient levels of CO do not indicate any adverse effects on vegetation, materials, or other aspects of human welfare.

Nitrogen Dioxide (NO_2)

Nitrogen gas (N_2) is an abundant and inert gas which makes up almost 80 percent of the Earth's atmosphere. In this form, it is harmless to humans and essential to plant metabolism. Due to its abundance in the air, it is a frequent reactant in many combustion processes. When combustion temperatures are extremely high, as in the burning of coal, oil, natural gas, and gasoline, atmospheric nitrogen gas may combine with molecular oxygen (O_2) to form various oxides of nitrogen (NO_x). Of these, nitric oxide (NO) and nitrogen dioxide (NO_2) are the most important contributors to air pollution; NO_x generally is used to represent these. Nitric oxide is a colorless and odorless gas. It is the primary form of NO_x resulting from the combustion process. NO_x contributes to haze and visibility reduction. NO_x is also known to cause deterioration and fading of certain fabrics and damage to vegetation. Depending on concentration and extent of exposure, plants may suffer leaf lesions and reduced crop yield.

Sensitivity of plants to NO_x depends on a variety of factors including species, time of day, light, stage of maturity, and the presence or absence of other air pollutants such as sulfur dioxide and ozone.

There is a lack of strong evidence associating health effects with most NO_x compounds. NO_2, a secondary derivative of atmospheric nitric oxide, however, has been clearly established as exerting detrimental effects on human health and welfare.

NO_2 can cause eye irritation at concentrations as low as 0.07 ppm. NO_2 can cause an increase in airway resistance, an increase in respiratory rate, an increase in sensitivity to bronchoconstrictors, a decrease in lung compliance, and an enhanced susceptibility to respiratory infections. NO_2 is a deep lung irritant capable of producing pulmonary edema if inhaled in sufficient concentrations. When NO_2 is inhaled in concentrations with other pollutants, the effects are additive.

NO_x may also react with water to form corrosive nitric acids, a major component of acid precipitation. Additionally, NO_x and various other pollutants (e.g., hydrocarbons) may react in the presence of sunlight to product photochemical oxidants.

Lead (Pb)

Historically, atmospheric lead came primarily from combustion of leaded gasoline. However, the use of unleaded gas since 1975 has reduced mobile source lead emissions by over 90%. Currently stationary sources, such as lead smelters, battery manufacturers, and iron and steel producers can contribute significant amounts of lead to their immediate vicinity.

Lead is a stable compound which persists and accumulates both in the environment and in the human body. Lead enters the human body through ingestion and inhalation with consequent absorption into the blood stream and distribution to all body tissues. No safe level of lead in the blood has been identified. Clinical, epidemiological and toxicological studies have demonstrated exposure to lead has a broad range of health effects.

Since 1990, over 6,000 new health studies have been conducted. These studies have shown that children are the most susceptible to the

damaging effects of lead because they are more likely to ingest lead due to hand-to-mouth activity and early body development. Lead exposure has been found to interfere with the developing nervous system including the brain. This can potentially lead to intelligence quotient loss, poor academic achievement, permanent learning disabilities, and behavioral problems. These effects can persist into early adulthood.

Kidney and neurological cell damage has also been associated with lead exposure. Animal studies have demonstrated that lead can contribute to reduced fertility and birth defects.

Other potential effects from lead exposure are weakened immune systems, restlessness, headaches, increased blood pressure, and cardiovascular disease.

Illinois Ambient Air Quality Standards and Episode Levels

Consistent with the intent of the Environmental Protection Act of the State of Illinois, Illinois has adopted ambient air quality and episode standards that specify maximum permissible short-term and long-term concentrations of various contaminants in the atmosphere. Ambient air quality and episode standards are limits on atmospheric concentrations of air contaminants established for the purpose of protecting the public health and welfare.

The Illinois and National Ambient Air Quality Standards (NAAQS) consist of a primary and secondary standard for each pollutant (contaminant) as presented in **Table 1**. The Illinois Air Pollution Episode Levels are presented in **Table 2**. The primary standard and episode criterion represents the level of air quality which is necessary to protect the public health. Air entering the respiratory tract must not jeopardize health. Therefore, the air quality standards must, as a minimum, provide air which will not adversely affect, through acute or chronic symptoms, the public health.

The secondary standard defines the level of air quality which is necessary to protect the public welfare. This includes, among other things, effects on crops, vegetation, wildlife, visibility, and climate, as well as effects on materials, economic values, and on personal comfort and well-being. The standards are legally enforceable limitations, and any person causing or contributing to a violation of the standards is subject to enforcement proceedings under the Environmental Protection Act. The standards have also been designed for use as a basis for the development of implementation plans by State and local agencies for the abatement and control of pollutant emissions from existing sources, and for the determination of air contaminant emission limitations to ensure that population, industry, and economic growth trends do not add to the region's air pollution problems.

Table 1: Summary of National and Illinois Ambient Air Quality Standards					
Pollutant		**Primary / Secondary**	**Averaging Time**	**Level**	**Form**
Carbon Monoxide		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		primary and secondary	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide		primary	1-hour	100 ppb	98th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb	Annual Mean
Ozone		primary and secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution	$PM_{2.5}$	primary	Annual	12.0 µg/m^3	Annual mean, averaged over 3 years
		secondary	Annual	15.0 µg/m^3	Annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	primary and secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide		primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year
$PM_{2.5}$ standards are referenced to local conditions of temperature and pressure rather than standard conditions (760 mmHg and 25 degrees Celsius).					

Table 2: Illinois Air Pollution Episode Levels				
Pollutant	**Advisory**	**Yellow Alert**	**Red Alert**	**Emergency**
Particulate Matter (µg/m^3)	2-hour 420	24-hour 350	24-hour 420	24-hour 500
Sulfur Dioxide (ppm)	2-hour 0.30	4-hour 0.30	4-hour 0.35	4-hour 0.40
Carbon Monoxide (ppm)	2-hour 30	8-hour 15	8-hour 30	8-hour 40
Nitrogen Dioxide (ppm)	2-hour 0.40	1-hour 0.60 or 24-hour 0.15	1-hour 1.20 or 24-hour 0.30	1-hour 1.60 or 24-hour 0.40
Ozone (ppm)	1-hour 0.12	1-hour 0.20	1-hour 0.30	1-hour 0.50

OZONE

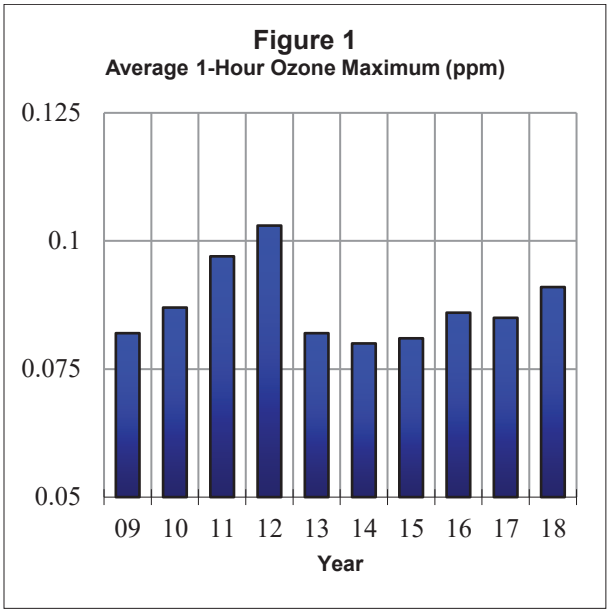
Monitoring was conducted at 37 locations during the March-October "ozone season" and at least 75 percent data capture was obtained at all 37 sites.

Alton and East St. Louis recorded the highest 1-hour concentration of 0.116 ppm. This compares with the highest concentration of 0.115 ppm in 2017 at ComEd-Lawndale in Chicago. The highest value in the Chicago area was 0.108 ppm recorded at Evanston, compared with a high in 2017 of 0.102 ppm at Maryville.

Data are also presented to compare with the current 8-hour standard as of 2016 of 0.070 ppm. The appropriate statistic for comparison with the 8-hour standard is the fourth highest value, which is averaged over a three-year period. There were 19 sites in Illinois that had a fourth-high value above 0.070 ppm in 2018 compared with seven sites in 2017. The highest fourth-high value was 0.084 ppm at Evanston. The highest level in the Metro-East area was 0.075 ppm at Maryville. For the three-year period 2016-2018, 14 sites had a fourth-high average above 0.070 ppm (Table B4).

Figure 1 shows for each year the statewide average of each site's highest hourly ozone value for the ten-year period 2009-20187. The graph shows some year-to-year fluctuation with high years occurring during summers more favorable for ozone formation and low years in summers less conducive for ozone formation. The statewide average for 2018 was 0.091 ppm compared with 0.085 ppm in 2017 and 0.086 ppm in 2016.

Statewide, the total number of 1-hour excursion days in 2018 was zero compared with zero in 2017 and zero in 2016.



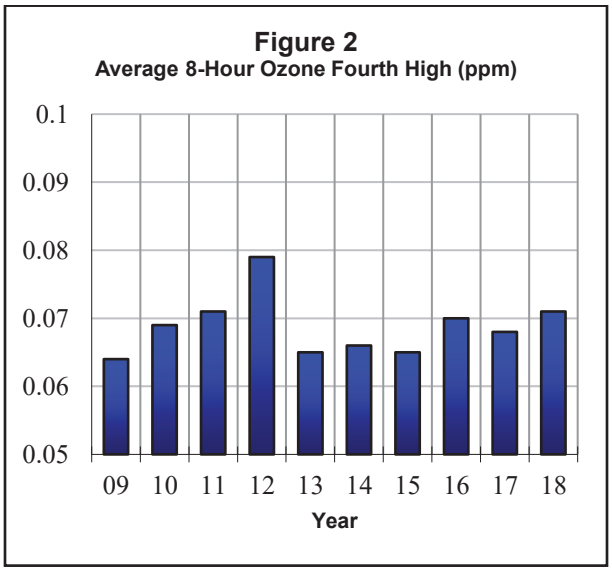


Figure 2 shows for each year the statewide annual average of the fourth highest 8-hour ozone value for the same period 2009-2018. The statewide average for 2018 was 0.071 ppm compared with 0.068 ppm in 2017 and 0.070 in 2016.

PARTICULATE MATTER

Monitoring was conducted at 33 sites for $PM_{2.5}$. In 2018, no sites recorded an average above 12.0 ug/m^3, the level of the annual standard. The statewide average of the annual averages was 9.3 ug/m^3 in 2018 compared to 8.5 ug/m^3 in 2017.

Figure 3 shows the trend of the statewide annual averages for $PM_{2.5}$ for the period 2009-2018. There were two exceedances of the 24-hour standard of 35 ug/m^3 in 2018 compared with two exceedances in 2017 and zero exceedances in 2016. The statewide peak of 37.4 ug/m^3 was recorded at Granite City. In 2018, the statewide average was 21.3 ug/m^3. This compares with 20.1 ug/m^3 in 2017 and 17.5 ug/m^3 in 2016.

In 2018 there were four sites monitoring PM_{10}. The statewide annual average was 24 ug/m^3 compared with 23 ug/m^3 in 2017 and 22 ug/m^3 in 2016. The highest annual average was 33 ug/m^3 in Granite City. The lowest annual was 14 ug/m^3 at Northbrook.

For PM_{10}, the statewide average of the maximum 24-hour averages in 2018 was 81 ug/m^3 compared with 81 ug/m^3 in 2017 and 81 ug/m^3 in 2016. **Figure 4** depicts this information for the period 2009-2018.

There were no exceedances of the 24-hour primary standard of 150 ug/m^3. The highest 24-hour average was recorded in Granite City with a value of 103 ug/m^3 compared with a high 24-hour value of 145 ug/m^3 in Lyons Township in 2017.

Figure 3
Particulate Matter ($PM_{2.5}$) Annual Trends (ug/m^3)

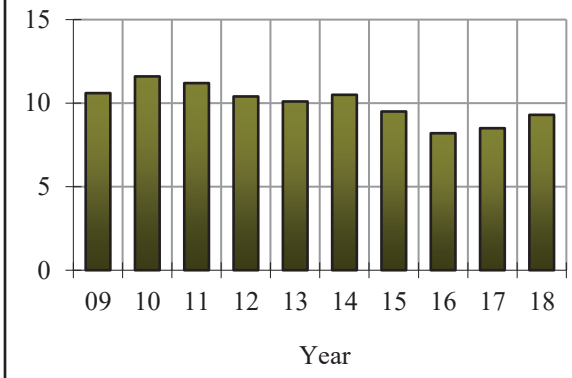
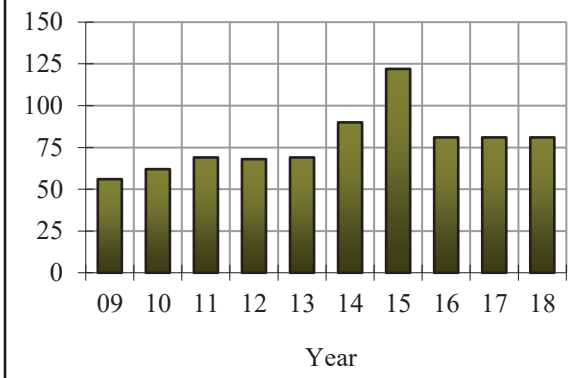


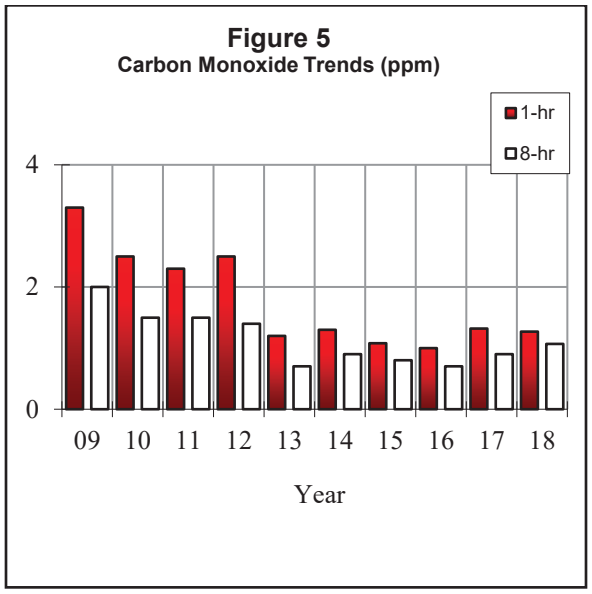
Figure 4
Particulate Matter (PM_{10}) 24-Hour Trends (ug/m^3)



CARBON MONOXIDE

There were no exceedances of either the 1-hour primary standard of 35 ppm or the 8-hour primary standard of 9 ppm in 2018. The highest 1-hour average was 2.1 ppm recorded in East St. Louis. The highest 8-hour average was 1.8 ppm recorded in East St. Louis.

Figure 5 shows the trend for the period 2009-2018 for the statewide average of the 1-hour and 8-hour high CO values. The statewide average of the 1-hour high was 1.3 ppm in 2018 compared with 1.3 ppm in 2017. The statewide average for the 8-hour high was 1.1 ppm in 2018 compared with 0.9 ppm in 2017.



SULFUR DIOXIDE

There were 11 exceedances of the 1-hour primary standard of 75 ppb in 2018 compared with nine exceedances in 2017. There were no exceedances of the 3-hour secondary standard of 500 ppb in 2018. The highest 1-hour average was 115 ppb recorded in Decatur compared with 89 ppb in Decatur in 2017. The statewide average of the 1-hour high in 2018 was 34 ppb. This compares with 35 ppb in 2017 and 43 ppb in 2016. The highest 3-hour average of 72 ppb was recorded in Decatur in 2018 compared with 71 ppb in Decatur in 2017. There were no sites over the primary 1-hour standard of 75 ppb for the 2016-2018 period (Table B17). Three of the Decatur monitors need one more year of monitoring in order to compare to the 1-hour standard.

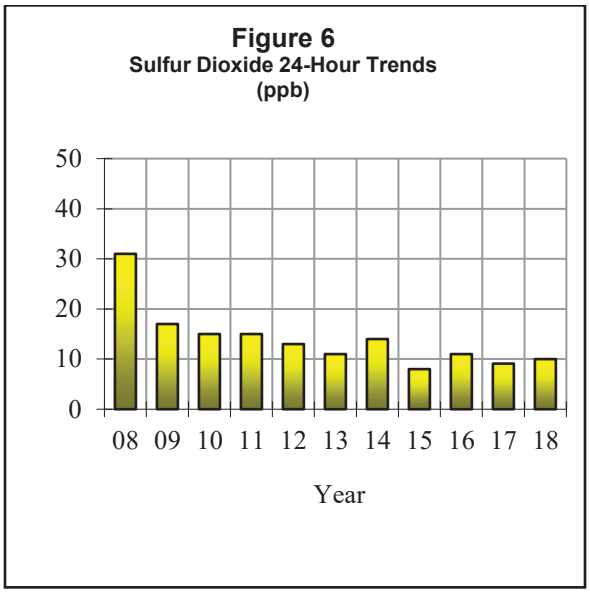
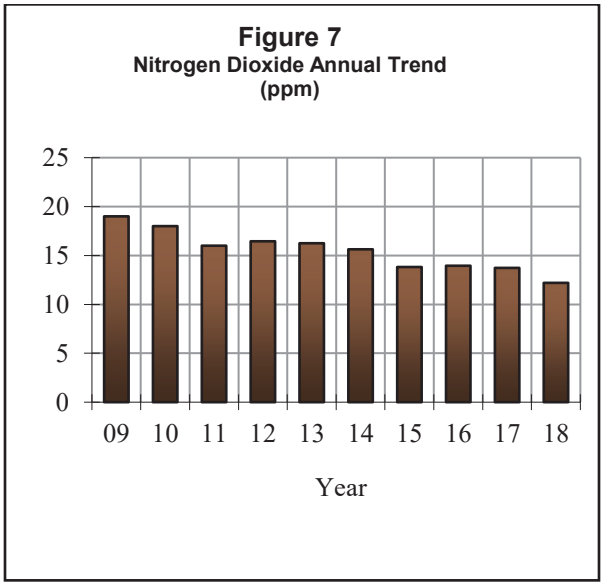


Figure 6 shows the statewide trend for the maximum 24-hour averages for the period 2009-2018. The statewide average for 2018 was 10 ppb compared with the 2017 average of 9 ppb.

NITROGEN DIOXIDE

There were no violations of the annual primary standard of 53 ppb recorded in Illinois during 2018. The highest annual average of 18 ppb was recorded at Schiller Park. The statewide average for 2018 was 12.2 ppb compared with 13.7 ppb in 2017 and 14.0 ppb in 2016. There were no violations of the 1-hour primary standard, and there were also no violations in 2017. There were no sites over the 1-hour primary standard of 100 ppb for the 2016-2018 period compared to zero sites for the 2015-2018 period (Table B20).

Figure 7 depicts the trend of statewide averages from 2009-2018. There have been no violations of the annual standard since 1980.



LEAD

Perhaps the greatest success story in controlling criteria pollutants is lead. As a direct result of the federal motor vehicle control program, which has required the use of unleaded gas in automobiles since 1975, lead levels have decreased by more than 90 percent statewide. Based on health studies, the lead standard was revised in 2008 from a quarterly mean of 1.5 ug/m^3 to a rolling three-month maximum mean of 0.15 ug/m^3.

There were no violations of the rolling three-month maximum mean standard for the 2016 to 2018 period (Table B23).

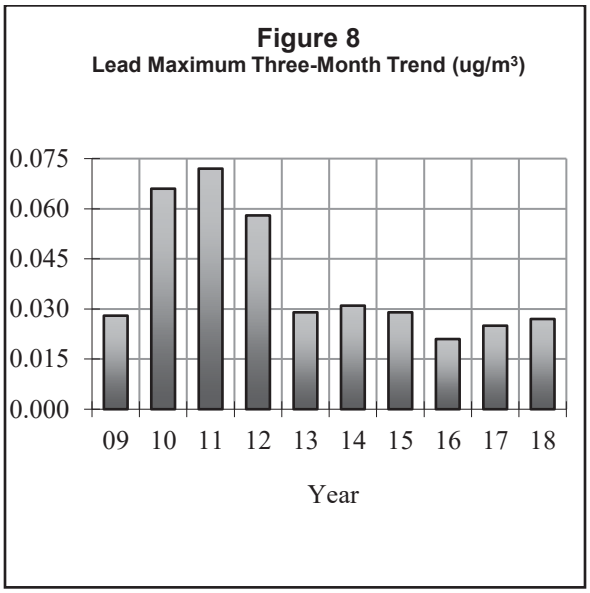


Figure 8 shows the trend of the statewide maximum rolling three-month averages from 2009-2018. The increase in 2010 was directly related to the installation of required source-oriented monitors and the discontinuation of one non-source monitor. Due to various controls having been implemented at several source-oriented locations, averages have dropped back down to historical lower concentrations. In fact, all monitoring locations in the State have three-year maximum averages under the national standard for lead (Table B23). The statewide average for all sites was 0.027 ug/m^3 in 2018 compared to 0.025 ug/m^3 in 2017 and 0.021 ug/m^3 in 2016.

FILTER ANALYSIS RESULTS

The total suspended particulate samples were analyzed, in addition to lead, for specific metals. Several of the metals analyzed (arsenic, beryllium, cadmium, chromium, manganese, and nickel) have known toxic properties. Other metals such as iron can be used as tracers to help identify sources of high particulate values. There are currently no state or federal ambient air quality standards for these parameters.

The areas with the highest metals concentrations in Illinois are generally the heavily-industrialized areas of the Metro-East (Granite City and East St. Louis), south Chicago, and near source-oriented monitors. The highest 24-hour average for arsenic was 0.020 ug/m^3 measured in Granite City. There were no measurable beryllium 24-hour averages recorded statewide. The monitor at Washington High School in Chicago recorded the highest cadmium concentrations with a 24-hour average of 0.159 ug/m^3. The highest 24-hour chromium average was 0.025 ug/m^3 recorded at Washington High School in Chicago. The highest iron, manganese, and nickel values were recorded in Granite City and Washington High School in Chicago.

TOXIC COMPOUNDS

Sampling for toxic compounds other than metals (see Filter Analysis Section, **Table B24**) was conducted at Northbrook and Schiller Park. Most compounds were below the method detection limits. **Table B25** has a listing of various toxic compound maximums and annual averages.

The Air Quality Index (AQI) is the national standard method for reporting air pollution levels to the public. An index such as the AQI is necessary because there are several air pollutants, each with different typical ambient concentrations and each with different levels of harm, and to report actual concentrations for all of them would be confusing. The AQI uses a single number and a short descriptor to define the air quality in an easy-to-remember and easy-to-understand way, taking all the pollutants into account.

The AQI is based on the short-term federal National Ambient Air Quality Standards (NAAQS), for six of the criteria pollutants, namely:

- Ozone (O_3)
- Sulfur dioxide (SO_2)
- Carbon monoxide (CO)
- Particulate matter (PM_{10})
- Particulate matter ($PM_{2.5}$)
- Nitrogen dioxide (NO_2)

In each case, the short-term primary NAAQS corresponds to 100 on the AQI scale – the top end of the Moderate category. The next concentration above the NAAQS would begin the Unhealthy for Sensitive Groups category at 101 on the AQI scale. **Table 3** lists all the AQI ranges and their descriptor categories. Each category corresponds to a different level of health concern. **Table 4** lists each AQI category and its corresponding meaning.

Unhealthy for Sensitive Groups occurs on occasion for 8-hour ozone, $PM_{2.5}$, and downwind of certain SO_2 sources. Unhealthy air quality is uncommon in Illinois, and Very Unhealthful air quality is rare. There has never been an occurrence of Hazardous air quality in Illinois.

The AQI is computed as follows: data from pollution monitors in an area are collected, and the AQI sub index for each pollutant is computed using formulas derived from the index and concentration relations. Nomograms and tables are also available for this purpose. The data used are:

- O_3 estimate of the highest 8-hour average for that calendar day
- SO_2 the highest 1-hour or most recent 24-hour average
- CO the highest 8-hour average so far that calendar day
- PM_{10} the most recent 24-hour average
- $PM_{2.5}$ estimate of the 24-hour average for that calendar day
- NO_2 the highest 1-hour average

Continuous monitors are utilized for all the pollutants, including PM_{10} and $PM_{2.5}$.

Once all the sub-indices for the various pollutants have been computed, the highest is chosen by inspection. That is the AQI for the area and the pollutant giving rise to it is the "critical pollutant." Thus if, for Anytown, Illinois, the following sub-indices were obtained:

O_3 = 45
SO_2 = 23
CO = 19
PM_{10} = 41
$PM_{2.5}$ = 61

Anytown's AQI for that day would be 61, which is in the Moderate category, and the critical pollutant would be particulates ($PM_{2.5}$). If data for one of the pollutants used in computing AQI is missing, the AQI is computed using the data available, ignoring the missing data. It occasionally happens that two pollutants have the same sub index; in such cases there are two critical pollutants.

The Illinois EPA issues an AQI forecast for 14 areas, or sectors, in Illinois (**Table 5**). These correspond to metropolitan areas with populations greater than 100,000.

Table 3: Air Quality Index Categories		
AQI Values	**AQI Descriptor**	**Colors**
When the AQI is in this range:	***...air quality conditions are:***	***...as symbolized by this color:***
0-50	Good	Green
51-100	Moderate	Yellow
101-150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Table 4: Air Quality Index Health Concerns		
Air Quality Index Levels of Health Concern	**Numerical Value**	**Meaning**
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	301 to 500	Health alert: everyone may experience more serious health effects.

Table 5: Air Quality Index Sectors in Illinois	
Sector	**Coverage Area**
Lake County	Lake County only
Chicago	All areas within the city limits of Chicago
North and West Suburbs	Parts of Cook, Du Page, and McHenry Counties north of I-290 (Eisenhower Expressway) and outside of the Chicago city limits
South and West Suburbs	Parts of Cook and Du Page Counties south of I-290 and outside of Chicago city limits
Will County/Joliet	Will County only
Aurora-Elgin	The eastern part of Kane County
Rockford	Approximately 10-mile diameter circle centered on downtown Rockford
Quad Cities	The Illinois portion of the Quad Cities area
Peoria	Approximately 10-mile diameter circle centered on downtown Peoria in parts of Peoria, Woodford, and Tazewell Counties
Champaign	Champaign-Urbana Metropolitan Area
Normal	Bloomington-Normal Metropolitan Area
Decatur	Decatur Metropolitan Area
Springfield	Springfield Metropolitan Area
Metro-East St. Louis	The Illinois portion of the St. Louis Metropolitan Area. Approximately 15 miles wide east of the Mississippi River in Madison and St. Clair Counties

Illinois EPA AQI forecasts and AQI information can be obtained on EPA's AirNow website at http://www.airnow.gov. The AirNow website shows estimated real-time AQI levels for all sectors in Illinois as well as other areas around the country. AQI information can further be obtained via e-mail and/or cell phones through the EnviroFlash program located at http://illinois.enviroflash.info/signup.cfm. The AirNow website and residents subscribed to EnviroFlash program can also receive alerts when high pollution levels are occurring or expected to occur. Additionally, Illinois AQI forecasts and current AQI levels are picked up and reported by various media outlets, weather websites, and electronic application programs.

2018 Illinois AQI Sector Summary

In order to present a more representative AQI, 24-hour calendar day FRM $PM_{2.5}$ and PM_{10} values from the total network were used to determine the percentages in **Figure 9** even though some of these values were not available for issuing the daily AQI.

Air quality was still in the "Good" and "Moderate" categories most often in 2018. All sectors had a higher frequency of "Good" than "Moderate" and "Unhealthy for Sensitive Groups." Lake County, Aurora-Elgin, Joliet/Will County, Rockford, Quad Cities, Peoria, Champaign, Normal, Decatur, and Springfield sectors had 65 percent or more of the days in the "Good" category. Within AQI sectors there were 70 occurrences of "Unhealthy for Sensitive Groups" air quality and 12 occurrences of "Unhealthy" air quality in 2018. The sector breakdown for "Unhealthy for Sensitive Groups" was six in Lake County, nine in Chicago, 12 in North & West Suburbs, 10 in South & West, five in Aurora-Elgin, six in Will County, two in Rockford, one in Quad Cities, three in Peoria, one in Normal, four in Champaign, three in Decatur, one in Springfield and seven in Metro-East. The sector breakdown for "Unhealthy" was two in Lake County, two in Chicago, four in North & West Suburbs, one in South & West Suburbs, one in Rockford, and two in Metro East. **Figure 9** presents the AQI statistics for each sector. The pie chart shows the percent of days each sector was in a particular category.

In 2018, there were no ozone advisories issued in Illinois. An advisory is declared when ozone levels have reached the level of the former 1-hour standard (0.125 ppm) on a particular day. In the Chicago MSA there were eight Air Pollution Action Days issued in 2018. This compares with five in 2017.

Figure 9: 2018 Air Quality Index Summaries by Sector

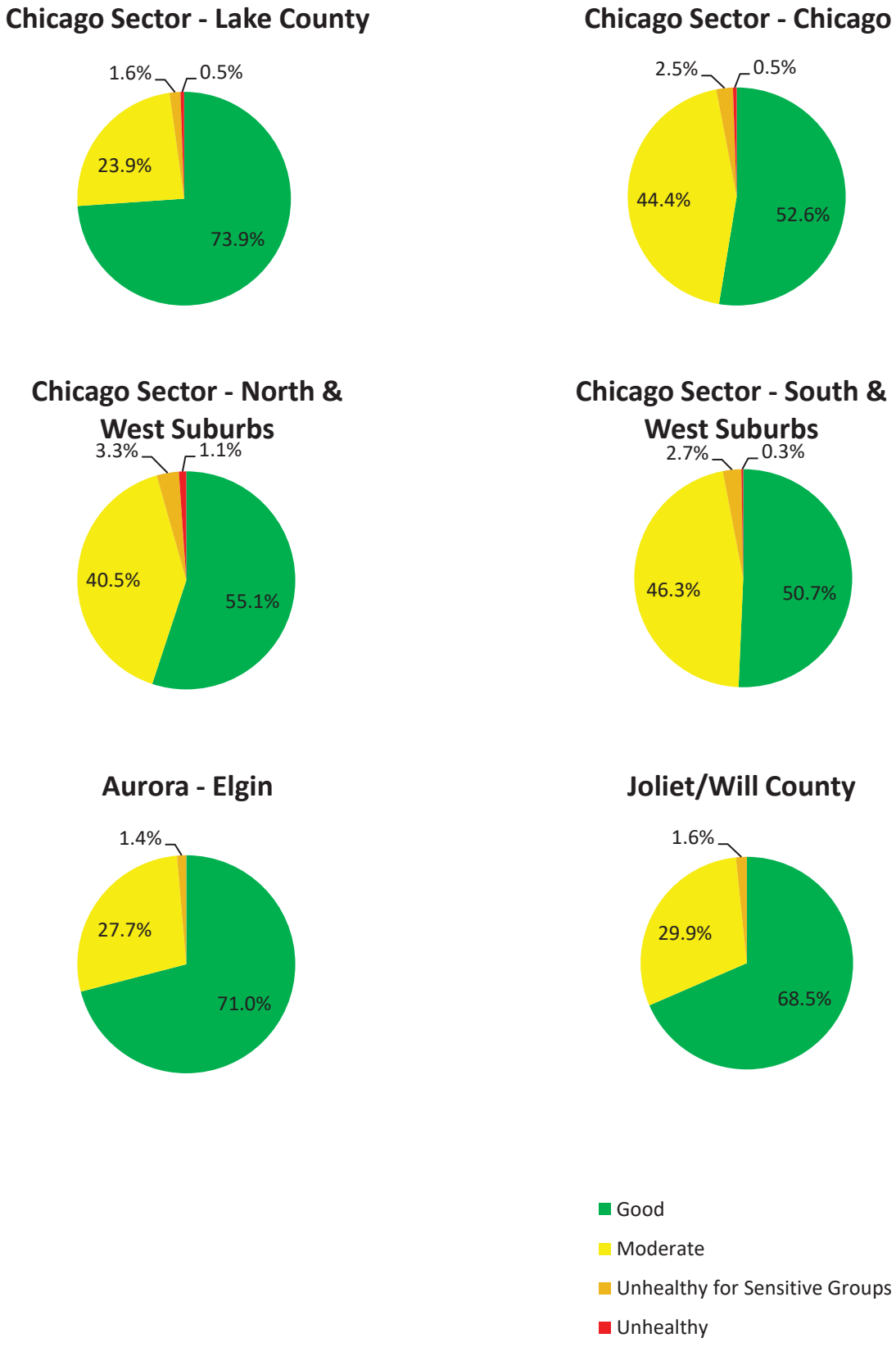


Figure 9: 2018 Air Quality Index Summaries by Sector

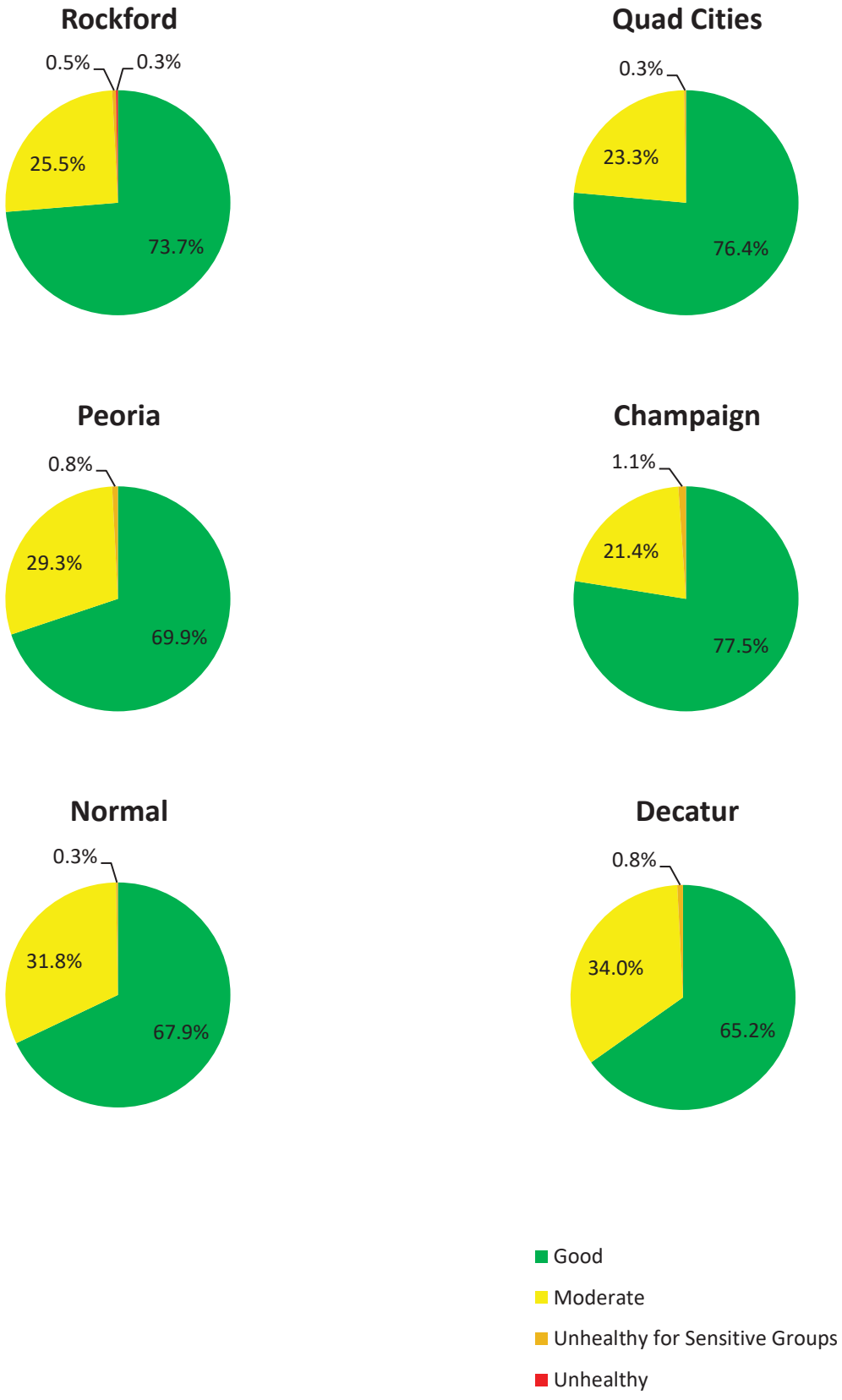
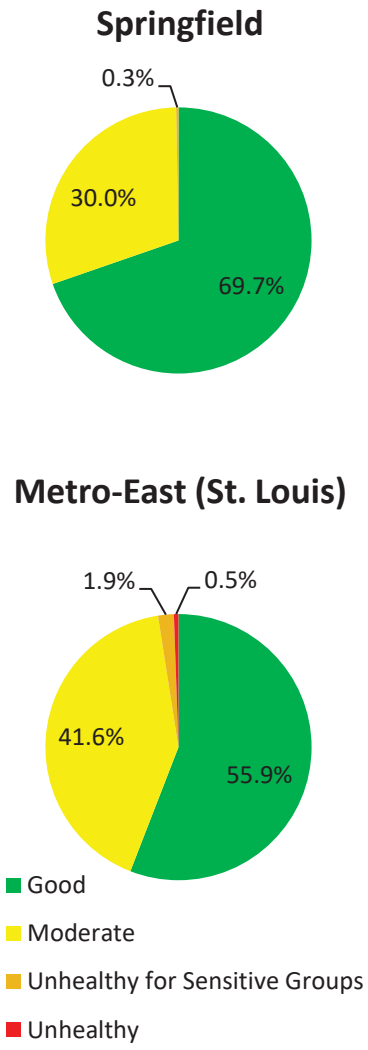


Figure 9: 2018 Air Quality Index Summaries by Sector



Since the late 1970s, the Illinois EPA's Division of Air Pollution Control has maintained a database of stationary point source emissions for the entire State. 40 CFR 51.211 requires Illinois to include in its State Implementation Plan "... procedures for requiring owners or operators of stationary sources to maintain records of... a) Information on the nature and amount of emissions from the stationary source and b) other information as may be necessary..." The emission database maintained by the Division of Air Pollution Control has changed over time.

The current emissions inventory is known as the Integrated Comprehensive Environmental Management System (ICEMAN), and includes emission data on approximately 6,300 active sources (including 3,658 in the Registration of Smaller Sources, or ROSS, program) throughout the State. The ICEMAN data includes source addresses; source emission totals; permit data such as expiration date and status; emission unit data such as name, hours of operation, operating rate, fuel parameters, and emissions; control equipment data such as control device name, type, and removal efficiencies; and stack parameters. Reported emissions and Agency-calculated emissions are stored separately.

The group responsible for the entry of emission inventory data is the Inventory Unit of the Air Quality Planning Section, and uses permit applications, the issued permit, and data reported on annual emissions reports to compile the inventory.

The following tables and graphs are an analysis of the emissions data contained in ICEMAN at the end of 2018. It is important to note emissions contained in the ICEMAN are not necessarily the actual emissions that entered the atmosphere. This is due to the fact that when an air pollution permit is applied for, the applicant provides maximum and average emission rates. The maximum emission rate reflects what the applicant believes the emission rate would be at maximum production. The average emission rate reflects emissions at the applicant's most probable production rate. The Inventory Unit has been updating its estimated emissions to more accurately reflect the reported emissions.

To calculate the distribution of emissions for the individual categories, the source classification code (SCC) field was used from the ICEMAN. The SCC is an eight-digit code that breaks emission units into logical categories. SCCs are provided by the USEPA.

To produce the following tables, the first three digits of the SCC were used. Only categories that contributed significantly to the overall total are listed in the following sections. The complete category breakdown can be found in Appendix C.

Volatile Organic Material

Figure 10
Volatile Organic Material
Emission Trend (1000s of Tons/Year)

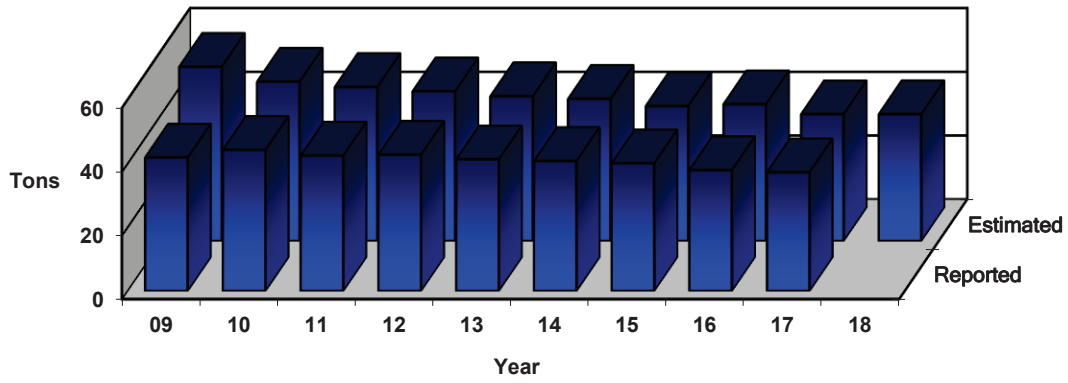


Table 6: Volatile Organic Material Emissions - 2018

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Food/Agriculture	9,316.2	23.42%	23.42%
Surface Coating Operations	6,138.0	15.43%	38.84%
Chemical Manufacturing	5,769.7	14.50%	53.35%
Petroleum Product Storage	2,517.0	6.33%	59.67%
Printing/Publishing	2,467.7	6.20%	65.88%
Fuel Combustion	2,466.4	6.20%	72.07%
Petroleum Industry	1,979.2	4.97%	77.05%
Rubber and Plastic Products	1,670.1	4.20%	81.25%
Mineral Products	1,100.6	2.77%	84.01%
Bulk Terminal/Plants	1,015.6	2.55%	86.57%
Secondary Metal Production	725.7	1.82%	88.39%
Solid Waste Disposal	719.4	1.81%	90.20%
Fabricated Metal Products	648.2	1.63%	91.83%
Organic Chemical Storage	578.7	1.45%	93.28%
Organic Solvent Use	472.5	1.19%	94.47%
Organic Solvent Evaporation	372.0	0.94%	95.41%
Petroleum Marketing/Transport	354.7	0.89%	96.30%
All Other Categories	1,473.4	3.70%	100.00%

PM_{10}

Figure 11
PM_{10} Emission Trend
(1000s of Tons/Year)

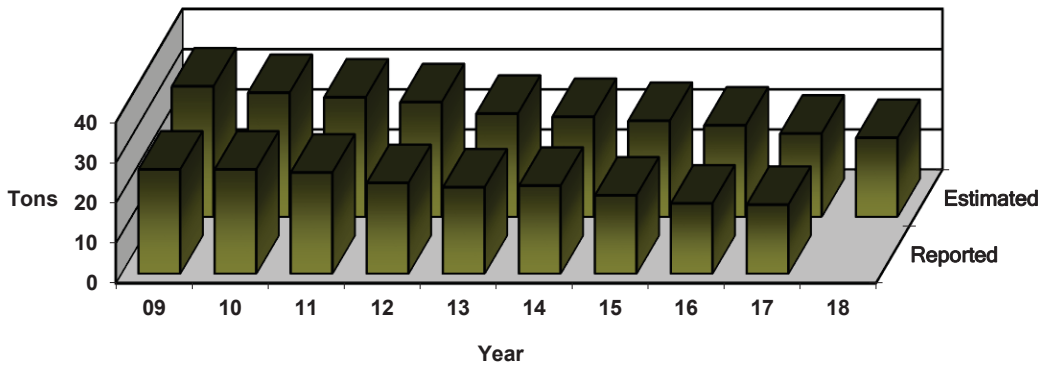


Table 7: Distribution of PM_{10} Emissions – 2018

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Food/Agriculture	5,600.5	28.39%	28.39%
Fuel Combustion	4,375.0	22.18%	50.57%
Mineral Products	4,332.8	21.97%	72.54%
Petroleum Industry	1,153.0	5.85%	78.38%
Chemical Manufacturing	985.4	5.00%	83.38%
Secondary Metal Production	885.4	4.49%	87.87%
Primary Metal Production	634.5	3.22%	91.08%
Solid Waste Disposal	484.0	2.45%	93.54%
Fabricated Metal Products	258.9	1.31%	94.85%
Surface Coating Operations	250.8	1.27%	96.12%
Process Cooling	237.4	1.20%	97.32%
All Other Categories	528.0	2.68%	100.00%

Carbon Monoxide

Figure 12
Carbon Monoxide Emission
Trend (1000s of Tons/Year)

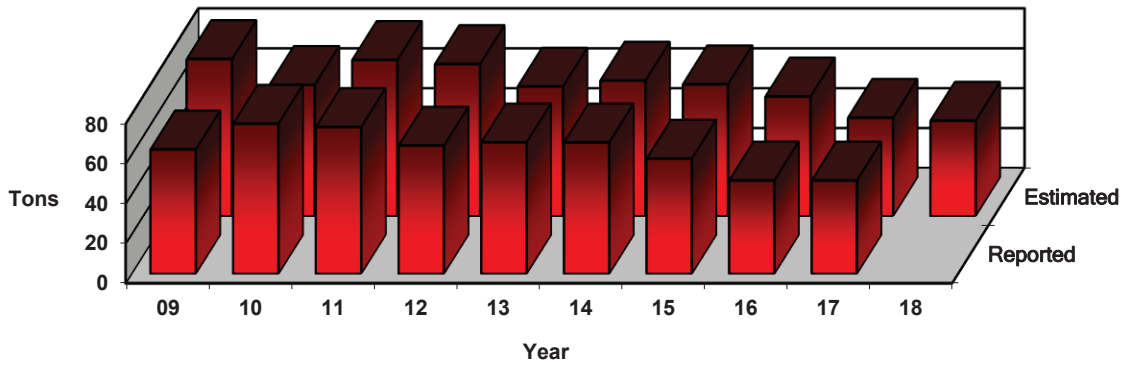


Table 8: Distribution of Carbon Monoxide Emissions - 2018

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	23,118.8	48.38%	48.38%
Primary Metal Production	9,912.7	20.74%	69.12%
Mineral Products	3,546.7	7.42%	76.55%
Petroleum Industry	2,669.7	5.59%	82.13%
Solid Waste Disposal	2,367.4	4.95%	87.09%
Secondary Metal Production	2,103.6	4.40%	91.49%
Chemical Manufacturing	1,832.6	3.84%	95.32%
Food/Agriculture	1,263.0	2.64%	97.97%
Oil and Gas Production	241.2	0.50%	98.47%
Fabricated Metal Products	218.4	0.46%	98.93%
Surface Coating Operations	213.4	0.45%	99.38%
All Other Categories	298.1	0.62%	100.00%

Sulfur Dioxide

Figure 13
Sulfur Dioxide Emission
Trend (1000s of Tons/Year)

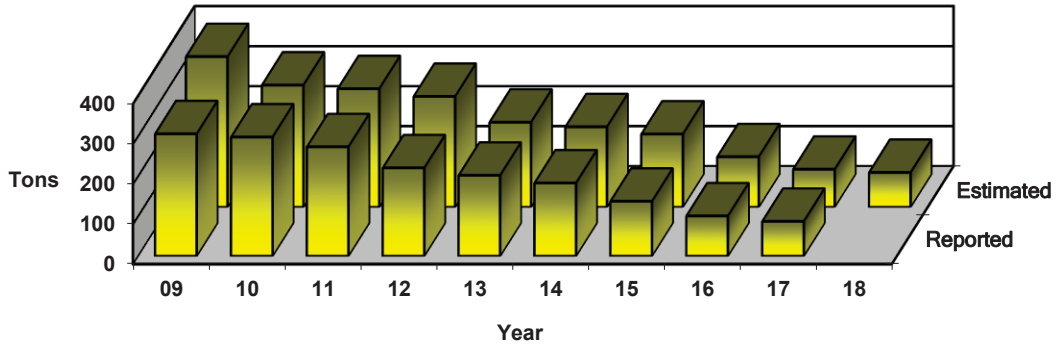


Table 9: Distribution of Sulfur Dioxide Emissions - 2018

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	70,293.7	81.50%	81.50%
Mineral Products	9,107.2	10.56%	92.06%
Petroleum Industry	1,635.0	1.90%	93.96%
Food/Agriculture	1,440.8	1.67%	95.63%
Solid Waste Disposal	1,433.9	1.66%	97.29%
Primary Metal Production	1,426.9	1.65%	98.95%
Chemical Manufacturing	727.9	0.84%	99.79%
All Other Categories	180.0	0.21%	100.00%

Nitrogen Oxides

Figure 14
Nitrogen Oxide Emission
Trend (1000s of Tons/Year)

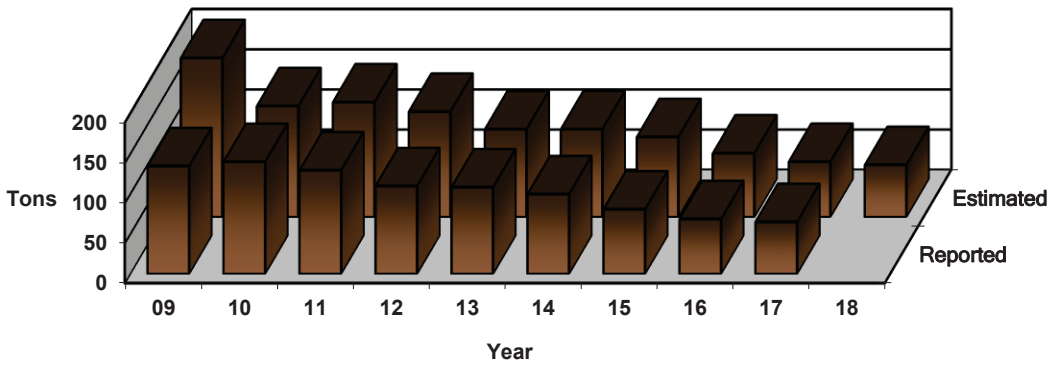


Table 10: Distribution of Nitrogen Oxide Emissions - 2018

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	47,976.5	73.94%	73.94%
Mineral Products	6,405.3	9.87%	83.81%
Petroleum Industry	3,640.5	5.61%	89.42%
Chemical Manufacturing	1,452.3	2.24%	91.66%
Food/Agriculture	1,299.1	2.00%	93.66%
Primary Metal Production	1,010.2	1.56%	95.22%
Solid Waste Disposal	807.9	1.25%	96.46%
Secondary Metal Production	720.5	1.11%	97.57%
Oil and Gas Production	691.2	1.07%	98.64%
Surface Coating Operations	475.3	0.73%	99.37%
All Other Categories	409.7	0.63%	100.00%

Description of the Air Sampling Network

The Illinois air monitoring network is composed of instrumentation owned and operated by both the Illinois EPA and by cooperating local agencies. This network has been designed to measure ambient air quality levels throughout the State of Illinois following federal guidelines.

The network contains both continuous and non-continuous instruments. The continuous instruments operate throughout the year, while non-continuous instruments operate intermittently based on the schedule shown in **Table A1**. This is the official non-continuous sampling schedule used by the Illinois EPA during 2017.

The Illinois network is deployed along the lines described in the Illinois State Implementation Plan. An updated air monitoring plan is submitted to USEPA each year for review.

In accordance with USEPA air quality monitoring requirements as set forth in Title 40 of the Code of Federal Regulations, Part 58 (40 CFR 58), five types of monitoring stations are used to collect ambient air data. These include State and Local Air Monitoring Stations (SLAMS), National Air Monitoring Stations (NAMS), Photochemical Assessment Monitoring Stations (PAMS), Special Purpose Monitoring Stations (SPMS), and National Core Monitoring Stations (NCore). The types of stations are distinguished from one another on the basis of the general monitoring objectives they are designed to meet.

The SLAMS, NAMS, PAMS, SPMS, and NCORE designations for the sites operated within the State of Illinois are provided in the Annual Network Plan, which can be found at epa.state.il.us/air/monitoring/index.html. All of the industrial sites are considered to be SPMS. **Table A2** is a summary of the distribution of pollutants through the years along with the total number of instruments and the total number of sites. The site directory is listed in **Table A3** and the monitoring directory is listed in **Table A4**

Table A1
2018 Noncontinuous Sampling Schedule

JANUARY						
S	M	T	W	R	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY						
S	M	T	W	R	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

MARCH						
S	M	T	W	R	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

APRIL						
S	M	T	W	R	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

MAY						
S	M	T	W	R	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JUNE						
S	M	T	W	R	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY						
S	M	T	W	R	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST						
S	M	T	W	R	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER						
S	M	T	W	R	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

OCTOBER						
S	M	T	W	R	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

NOVEMBER						
S	M	T	W	R	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

DECEMBER						
S	M	T	W	R	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

13 Every 6 Day Sampling Schedule 22 Every 3 Day Sampling Schedule

1. **State/Local Air Monitoring Station (SLAMS) Network -** The SLAMS network is designed to meet a minimum of four basis monitoring objectives:

   a. To determine the highest concentrations expected to occur in the area covered by the network.

   b. To determine representative concentrations in areas of high population density.

   c. To determine the air quality impact of significant sources or source categories.

   d. To determine general background concentration levels.

2. **National Air Monitoring Station (NAMS) Network -** The NAMS network is a subset of stations selected from the SLAMS network with emphasis given to urban and multisource areas. The primary objectives of the NAMS network are:

   a. To measure expected maximum concentrations.

   b. To measure concentrations in areas where poor air quality is combined with high population exposure.

   c. To provide data useable for the determination of national trends.

   d. To provide data necessary to allow the development of nationwide control strategies.

3. **Photochemical Assessment Monitoring Station (PAMS) Network -** The PAMS network is required in serious, severe, and extreme ozone nonattainment areas to obtain detailed data for ozone, precursors (NOx and VOC), and meteorology. NO_X and VOC sampling is required for the period June - August each year. Ozone sampling occurs during the ozone season, March - October. Network design is based on four monitoring types. In Illinois, PAMS are required in the Chicago metropolitan area only.

   a. Type 1 sites are located upwind of the nonattainment area and are located to measure background levels of ozone and precursors coming into the area

   b. Type 2 sites are located slightly downwind of the major source areas of ozone precursors.

   c. Type 3 sites are located at the area of maximum ozone concentrations.

   d. Type 4 sites are located at the domain edge of the nonattainment area and measure ozone and precursors leaving the area.

4. **Special Purpose Monitoring Station (SPMS) Network -** Any monitoring site that is not a designated SLAMS or NAMS is considered a special purpose monitoring station. Some of the SPMS network objectives are as follows:

   a. To provide data as a supplement to stations used in developing local control strategies, including enforcement actions.

b. To verify the maintenance of ambient standards in areas not covered by the SLAMS/NAMS network.

c. To provide data on non-criteria pollutants.

5. **National Core Station (NCore) Network -** NCore is a multi-pollutant network that integrates several advanced measurement systems. In Illinois, Northbrook and Bondville are considered NCore sites. A few of the NCore network objectives are as follows:

a. Support for development of emission strategies and accountability of emission strategy progress through tracking long-term trends of pollutants and their precursors.

b. Support of long-term health assessments that contribute to review of national standards.

c. Support to scientific studies ranging across technological, health, and atmospheric process disciplines.

d. Support to ecosystem assessments recognizing that national air quality networks benefit ecosystems assessments.

Table A2
Distribution of Air Monitoring Equipment

Parameter	2018	2017	2016	2015	2014
Particulate Matter Federal Reference Method ($PM_{2.5}$ FRM)	24	27	27	33	33
$PM_{2.5}$ Federal Equivalent Method ($PM_{2.5}$ FEM)	16	8	8	1	0
$PM_{10\text{-}2.5}$ (PM Coarse)	1	0	0	0	0
$PM_{2.5}$ Air Quality Index (non-FEM)	7	9	9	11	11
$PM_{2.5}$ Speciation	4	4	5	5	5
Particulate Matter (PM_{10})	5	5	5	5	5
Total Suspended Particulates	5	7	7	7	7
Lead	5	7	7	7	7
Sulfur Dioxide (SO_2)	14	10	13	15	16
Nitrogen Dioxide (NO_2)	5	5	6	6	6
Total Reactive Nitrogen (NO_y)	2	2	2	2	2
Ozone (O_3)	37	37	37	37	37
Carbon Dioxide (CO_2)	0	0	0	0	1
Carbon Monoxide (CO)	3	3	3	3	3
Volatile Organic Compounds	2	2	2	2	2
Semi Volatile Organic Compounds	1	1	1	1	1
Semi Non Methane Organic Compounds	1	1	1	1	1
Carbonyls	2	2	2	2	2
Meteorology	17	19	20	20	32
Total Instruments	151	149	155	158	171
Total Sites	63	64	64	65	65

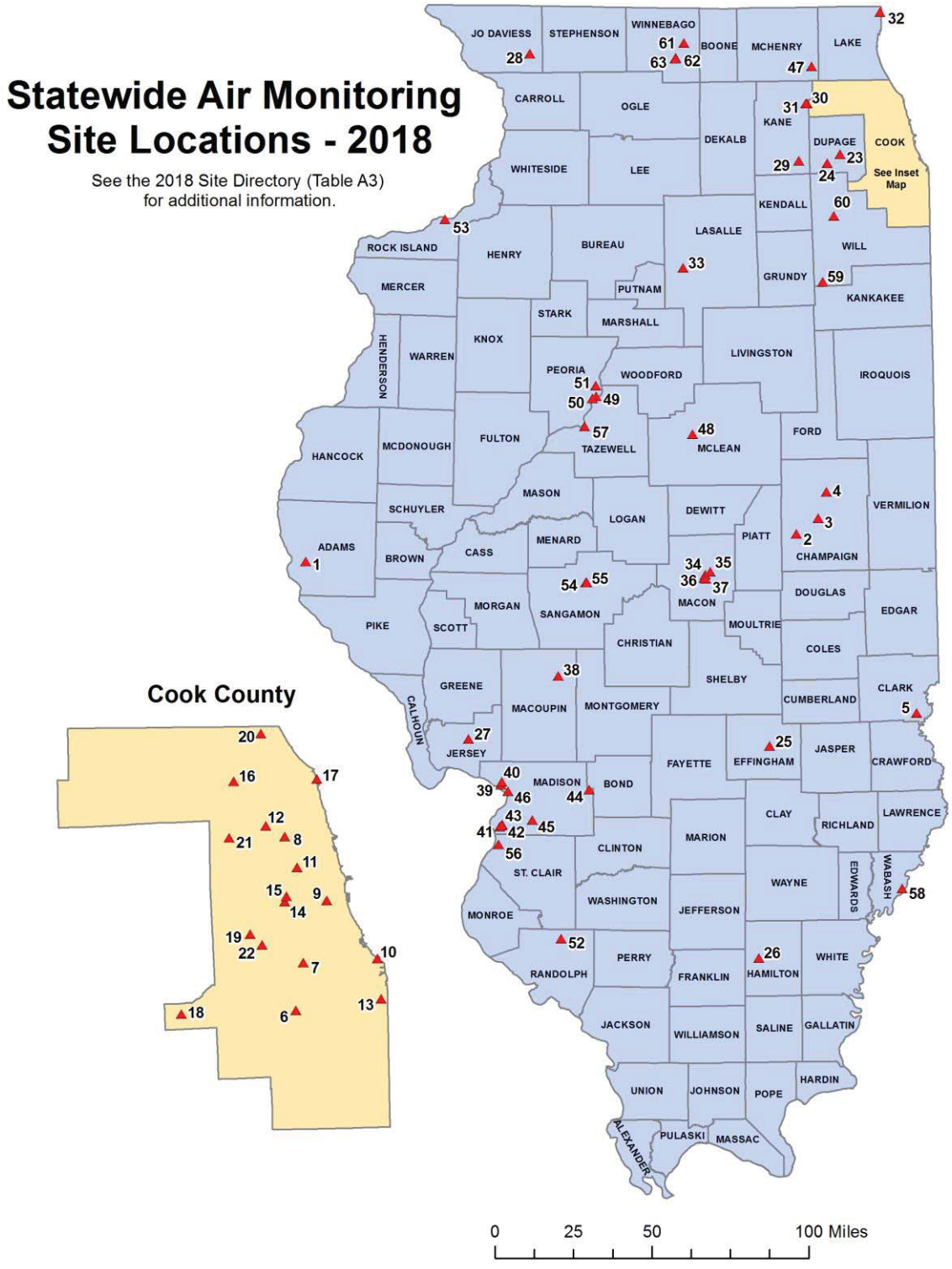

Statewide Air Monitoring Site Locations - 2018
See the 2018 Site Directory (Table A3) for additional information.
Cook County
See Inset Map
JO DAVIESS
STEPHENSON
WINNEBAGO
BOONE
MCHENRY
LAKE
CARROLL
OGLE
DEKALB
KANE
DUPAGE
COOK
WHITESIDE
LEE
KENDALL
WILL
ROCK ISLAND
HENRY
BUREAU
LASALLE
MERCER
PUTNAM
GRUNDY
KANKAKEE
STARK
MARSHALL
HENDERSON
WARREN
KNOX
LIVINGSTON
PEORIA
WOODFORD
IROQUOIS
HANCOCK
MCDONOUGH
FULTON
TAZEWELL
MCLEAN
FORD
SCHUYLER
MASON
LOGAN
DEWITT
VERMILION
ADAMS
BROWN
CASS
MENARD
PIATT
CHAMPAIGN
PIKE
SCOTT
MORGAN
SANGAMON
MACON
DOUGLAS
EDGAR
CHRISTIAN
MOULTRIE
COLES
GREENE
CALHOUN
MACOUPIN
MONTGOMERY
SHELBY
CUMBERLAND
CLARK
JERSEY
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
MADISON
BOND
CLAY
RICHLAND
LAWRENCE
CLINTON
MARION
ST. CLAIR
WAYNE
EDWARDS
WABASH
WASHINGTON
JEFFERSON
MONROE
PERRY
RANDOLPH
FRANKLIN
HAMILTON
WHITE
JACKSON
WILLIAMSON
SALINE
GALLATIN
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
MASSAC
0
25
50
100 Miles

Table A3
Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
1	17-001-0007	Adams	Quincy	John Wood Comm. College 1301 South 48th St.	+39.91540937 -91.33586832	IL EPA
2	17-019-1001	Champaign	Bondville	State Water Survey Township Rd. 500 E.	+40.052780 -88.372510	IL EPA/US EPA
3	17-019-0006	Champaign	Champaign	Ameren Substation 904 N. Walnut	+40.1237962 -88.229531	IL EPA
4	17-019-0007	Champaign	Thomasboro	North Thomas St.	+40.244913 -88.188519	IL EPA
5	17-023-0001	Clark	West Union	416 S. State Highway 1 & West Union	+39.210883 -87.668416	Indiana DEP
6	17-031-0001	Cook	Alsip	Village Garage 4500 W. 123rd St.	+41.6709919 -87.7324569	CCDES
7	17-031-0076	Cook	Chicago	Com Ed Maintenance Bldg. 7801 Lawndale	+41.75139998 -87.71348815	CCDES
8	17-031-0052	Cook	Chicago	Mayfair Pump Station 4850 Wilson Ave.	+41.96548483 -87.74992806	CCDES
9	17-031-0110	Cook	Chicago	Perez Elementary School 1241 19th St.	+41.855771 -87.657932	CCDES
10	17-031-0032	Cook	Chicago	South Water Filtration Plant 3300 E. Cheltenham Pl.	+41.75583241 -87.54534967	CCDES
11	17-031-0057	Cook	Chicago	Springfield Pump Station 1745 N. Springfield Ave.	+41.912739 -87.722673	CCDES
12	17-031-1003	Cook	Chicago	Taft High School 6545 W. Hurlbut St	+41.98433233 -87.7920017	CCDES
13	17-031-0022	Cook	Chicago	Washington High School 3535 E. 114th St.	+41.68716544 -87.53931548	CCDES
14	17-031-4002	Cook	Cicero	Cook County Trailer 1820 S. 51st Ave	+41.85524313 -87.7524697	CCDES
15	17-031-6005	Cook	Cicero	Liberty School 13th St. & 50th Ave.	+41.86442642 -87.74890238	CCDES
16	17-031-4007	Cook	Des Plaines	Regional Office Building 9511 W. Harrison St	+42.06028469 -87.86322543	IL EPA
17	17-031-7002	Cook	Evanston	Water Pumping Station 531 E. Lincoln	+42.062053 -87.675254	IL EPA
18	17-031-1601	Cook	Lemont	Cook County Trailer 729 Houston	+41.66812034 -87.99056969	CCDES
19	17-031-1016	Cook	Lyons Township	Village Hall 50th St & Glencoe	+41.801180 -87.832349	IL EPA
20	17-031-4201	Cook	Northbrook	Northbrook Water Plant 750 Dundee Rd.	+42.13999619 -87.79922692	IL EPA
21	17-031-3103	Cook	Schiller Park	IEPA Trailer 4743 Mannheim Rd.	+41.96519348 -87.87626473	IL EPA
22	17-031-3301	Cook	Summit	Graves Elementary School 60th St. & 74th Ave.	+41.78276601 -87.80537679	CCDES
23	17-043-6001	DuPage	Lisle	Morton Arboretum Route 53	+41.81304939 -88.0728269	IL EPA

Table A3
Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
24	17-043-4002	DuPage	Naperville	City Hall 400 S. Eagle St.	+41.77107094 -88.15253365	IL EPA
25	17-049-1001	Effingham	Effingham	Central Grade School 10421 N. US Hwy. 45	+39.06715932 -88.54893401	IL EPA
26	17-065-0002	Hamilton	Knight Prairie	Ten Mile Creek DNR Office State Route 14	+38.08215516 -88.6249434	IL EPA
27	17-083-0117	Jerseyville	Jerseyville	21965 Maple Summit Rd.	+39.101439 -90.344494	IL EPA
28	17-085-9991	Jo Daviess	Stockton	10952 E. Parker Rd.	+42.2869 -89.9997	US EPA
29	17-089-0007	Kane	Aurora	Health Department 1240 N. Highland	+41.78471651 -88.32937361	IL EPA
30	17-089-0005	Kane	Elgin	Larsen Junior High School 665 Dundee Rd.	+42.04914776 -88.27302929	IL EPA
31	17-089-0003	Kane	Elgin	McKinley School 258 Lovell St.	+42.050403 -88.28001471	IL EPA
32	17-097-1007	Lake	Zion	Camp Logan Illinois Beach State Park	+42.4675733 -87.81004705	IL EPA
33	17-099-0007	La Salle	Oglesby	308 Portland Ave.	+41.29301454 -89.04942498	IL EPA
34	17-115-0013	Macon	Decatur	IEPA Trailer 2200 N. 22nd	+39.866933 -88.925452	IL EPA
35	17-115-0117	Macon	Decatur	ADM 2550 N. Brush College Rd.	+39.880404 -88.894488	ERM Inc.
36	17-115-0217	Macon	Decatur	Tate & Lyle North 899 N. Folk St.	+39.850712 -88.933635	ERM Inc.
37	17-115-0317	Macon	Decatur	Tate & Lyle South 2200 E. El Dorado St.	+39.846856 -88.923323	ERM Inc.
38	17-117-0002	Macoupin	Nilwood	IEPA Trailer Heaton & Dubois	+39.39607533 -89.80973892	IL EPA
39	17-119-0008	Madison	Alton	Clara Barton School 409 Main St.	+38.89018605 -90.14803114	IL EPA
40	17-119-2009	Madison	Alton	SIU Dental Clinic 1700 Annex St.	+38.90308534 -90.14316803	IL EPA
41	17-119-0010	Madison	Granite City	Air Products 15th & Madison	+38.69443831 -90.15395426	IL EPA
42	17-119-1007	Madison	Granite City	Fire Station #1 23rd & Madison	+38.70453426 -90.13967484	IL EPA
43	17-119-0024	Madison	Granite City	Gateway Medical Center 2100 Madison Ave.	+38.7006315 -90.14476267	IL EPA
44	17-119-9991	Madison	Highland	5403 State Rd. 160	+38.8690 -89.6228	US EPA
45	17-119-1009	Madison	Maryville	Southwest Cable TV 200 W. Division	+38.72657262 -89.95996251	IL EPA
46	17-119-3007	Madison	Wood River	Water Treatment Plant 54 N. Walcott	+38.86066947 -90.10585111	IL EPA
47	17-111-0001	McHenry	Cary	Cary Grove High School 1st St. & Three Oaks Rd.	+42.22144166 -88.24220734	IL EPA
48	17-113-2003	McLean	Normal	ISU Physical Plant Main & Gregory	+40.51873537 -88.99689571	IL EPA

Table A3
Site Directory

Site Map ID	AQS ID	County	City	Address	Latitude Longitude	Owner / Operator
49	17-143-0037	Peoria	Peoria	City Office Building 613 N.E. Jefferson	+40.697326 -89.584084	IL EPA
50	17-143-0024	Peoria	Peoria	Fire Station #8 MacArthur & Hurlburt	+40.68742038 -89.60694277	IL EPA
51	17-143-1001	Peoria	Peoria Heights	Peoria Heights High School 508 E. Glen Ave.	+40.74550393 -89.58586902	IL EPA
52	17-157-0001	Randolph	Houston	IEPA Trailer Hickory Grove & Fallview	+38.17627761 -89.78845862	IL EPA
53	17-161-3002	Rock Island	Rock Island	Rock Island Arsenal 32 Rodman Ave.	+41.51472697 -90.51735026	IL EPA
54	17-167-0012	Sangamon	Springfield	Agricultural Building State Fair Grounds	+39.83192087 -89.64416359	IL EPA
55	17-167-0014	Sangamon	Springfield	Illinois Building State Fair Grounds	+39.831522 -89.640926	IL EPA
56	17-163-0010	St. Clair	East St. Louis	RAPS Trailer 13th & Tudor	+38.61203448 -90.16047663	IL EPA
57	17-179-0004	Tazewell	Pekin	Fire Station #3 272 Derby	+40.55643203 -89.65402083	IL EPA
58	17-185-0001	Wabash	Mount Carmel	Division St.	+38.397276 -87.773631	Indiana DEP
59	17-197-1011	Will	Braidwood	Com Ed Training Center 36400 S. Essex Rd.	+41.22153707 -88.19096718	IL EPA
60	17-197-1002	Will	Joliet	Pershing Elementary School Midland & Campbell Sts.	+41.52688509 -88.11647381	IL EPA
61	17-201-2001	Winnebago	Loves Park	Maple Elementary School 1405 Maple Ave.	+42.33498222 -89.0377748	IL EPA
62	17-201-0118	Winnebago	Rockford	Fire Department 204 S. 1st St.	+42.2670002 -89.089170	IL EPA
63	17-201-0013	Winnebago	Rockford	Health Department 401 Division St.	+42.26308105 -89.09276716	IL EPA

Table A4
Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-001-0007	Quincy				■											
17-019-0006	Champaign N. Walnut							■								
17-019-0007	Thomasboro				■											
17-019-1001	Bondville	T	■		■			■	■			T				
17-023-0001	West Union				■											
17-031-0001	Alsip				■			■		■						■
17-031-0022	Chicago Washington High School					C		■							■	
17-031-0032	Chicago South Water Filtration				■											
17-031-0052	Chicago Mayfair Pump Station							■								
17-031-0057	Chicago Springfield Pump Station							■		■	■					
17-031-0076	Chicago Com Ed Maintenance			■	■			■		■	■	■				■
17-031-0110	Chicago Perez Elementary														■	
17-031-1003	Chicago Taft High School				■											
17-031-1016	Lyons Township					C		■								
17-031-1601	Lemont				■							■				
17-031-3103	Schiller Park			■	■			■					■	■		■
17-031-3301	Summit							■								
17-031-4002	Cicero Cook County Trailer			■	■											
17-031-4007	Des Plaines				■				■							
17-031-4201	Northbrook	T	■		■	■	■	■	■		■	T	■	■		■

Active Monitor	Site/Monitor Installed	Site/Monitor Removed

Table A4
Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-031-6005	Cicero Liberty School							■		■						
17-031-7002	Evanston				■											
17-043-4002	Naperville								■							
17-043-6001	Lisle				■											
17-049-1001	Effingham				■											
17-065-0002	Knight Prairie				■				■							
17-083-0117	Jerseyville				■				■							
17-085-9991	Stockton				■											
17-089-0003	Elgin McKinley School							■								
17-089-0005	Elgin Larsen Jr. High School				■											
17-089-0007	Aurora							■								
17-097-1007	Zion				■											■
17-099-0007	Oglesby											■				
17-111-0001	Cary				■			■		■						
17-113-2003	Normal				■				■							
17-115-0013	Decatur IEPA Trailer				■				■			■				■
17-115-0117	Decatur ADM											■				■
17-115-0217	Decatur Tate & Lyle North											■				■
17-115-0317	Decatur Tate & Lyle South											■				■
17-117-0002	Nilwood			■	■							■				■

Active Monitor	Site/Monitor Installed	Site/Monitor Removed

Table A4
Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-119-0008	Alton Clara Barton Elementary				■											
17-119-2009	Alton SIU Dental Clinic							■								
17-119-0010	Granite City Air Products														■	
17-119-0024	Granite City Gateway Medical Center							■			■					
17-119-1007	Granite City Fire Station #1					■		■		■						
17-119-1009	Maryville				■											
17-119-3007	Wood River				■			■				■				
17-119-9991	Highland				■											
17-143-0024	Peoria Fire Station #8				■											■
17-143-0037	Peoria City Office Building								■							
17-143-1001	Peoria Heights				■											
17-157-0001	Houston				■				■							
17-161-3002	Rock Island				■				■							
17-163-0010	East St. Louis	■		■	■			■		■		■				
17-167-0012	Springfield Agricultural Building								■							
17-167-0014	Springfield Illinois Building				■											
17-179-0004	Pekin											■				
17-185-0001	Mount Carmel											■				
17-197-1002	Joliet Pershing Elementary								■							
17-197-1011	Braidwood				■				■							

Active Monitor	Site/Monitor Installed	Site/Monitor Removed

Table A4
Monitoring Directory

AQS ID	City	CO	NOy	NO2	Ozone	PM10	PM Coarse	PM2.5 FRM	PM2.5 FEM	PM2.5 AQI	PM2.5 Speciation	SO2	VOC	Toxics	TSP Pb, Metals	Meteorological
17-201-0118	Rockford Fire Department															
17-201-2001	Loves Park															

Active Monitor	Site/Monitor Installed	Site/Monitor Removed

Air Quality Data Interpretation

In order to provide a uniform procedure for determining whether a sufficient amount of air quality data has been collected by a sensor in a given time period (year, quarter, month, day, etc.) to accurately represent air quality during that time period, a minimum statistical selection criteria was developed.

In order to calculate an annual average for non-continuous parameters, a minimum of 75% of the data that was scheduled to be collected must be available, i.e., 45 samples per year for an every-six-day schedule (total possible of 60 or 61 samples). Additionally, in order to have proper quarterly balance, each site on an every sixth day schedule should have at least 10 samples per calendar quarter. This provides for a 20% balance in each quarter if the minimum required annual sampling is achieved.

PM_{10} and $PM_{2.5}$ samplers operate on one of three sampling frequencies:

- Every-day sampling (68 samples required each quarter for 75% data capture)
- Every-third-day sampling (23 samples required each quarter for 75% data capture)
- Every-six-day sampling (12 samples required each quarter for 75% data capture).

To calculate an annual PM_{10} or $PM_{2.5}$ mean, arithmetic means are calculated for each quarter in which valid data is recorded in at least 75% of the possible sampling periods. The annual mean is then the arithmetic average of the four quarterly means.

To determine an annual average for continuous data 75% of the total possible yearly observations are necessary, i.e., a minimum of 6570 hours (75% of the hours available) are needed. In order to provide a balance between the respective quarters, each quarter should have at least 1300 hours which is 20% of the 75% minimum annual requirement. To calculate quarterly averages at sites which do not meet the annual criteria, 75% of the total possible observations in a quarter are needed, i.e., a minimum of 1647 hours of 2200 hours available. Monthly averages also require 75% of the total possible observations in a month, i.e., 540 hours as a minimum. Additionally, for short-term running averages (24-hour, 8-hour, and 3-hour) 75% of the data during the particular time period is needed, i.e., 18 hours for a 24-hour average, six hours for an 8-hour average and three hours for a 3-hour average.

For ozone, a valid 8-hour average has at least six valid 1-hour averages within the 8-hour period. The daily maximum 8-hour ozone concentration is based on 17 consecutive moving 8-hour periods in each day, beginning with the 8-hour period from 7:00 a.m. to 3:00 p.m. and ending with the 8-hour period from 11:00 p.m. to 7:00 a.m. The daily maximum value is considered valid if 8-hour averages are available for at least 13 of the 17 consecutive moving 8-hour periods, or if the daily maximum value is greater than the level of the NAAQS. Complete sampling over a three-year period requires an average of 90% valid days with each year having at least 75% valid days.

Data listed as not meeting the minimum statistical selection criteria in this report were so noted after evaluation using the criteria above. Although short term averages (3, 8, 24 hours) have been computed for certain sites not meeting the annual criteria, these averages may not be representative of an entire year's air quality. In certain circumstances where even the 75% criteria is met, the number and/or magnitude of short-term averages may not be directly comparable from one year to the next because of seasonal distributional differences.

For summary purposes, the data is expressed in the number of figures to which the raw data is validated. Extra figures may be carried in the averaging technique, but the result is rounded to the appropriate number of figures. For example, the values 9, 9, and 10 are

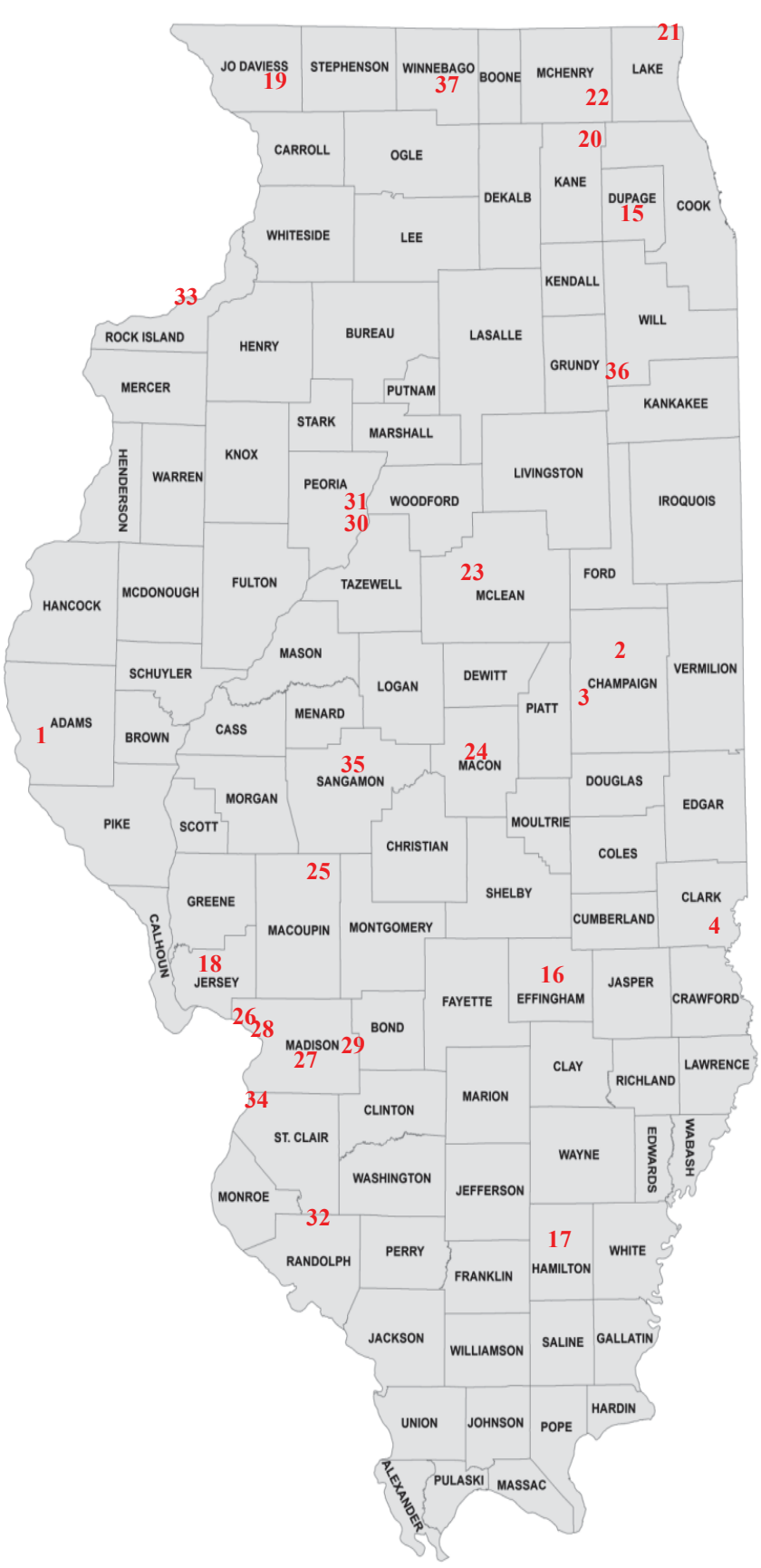
averaged to give 9; whereas the values 9.0, 9.0, and 10.0 are averaged to 9.3. The raw data itself should not be expressed to more significant figures than the sensitivity of the monitoring methodology allows.

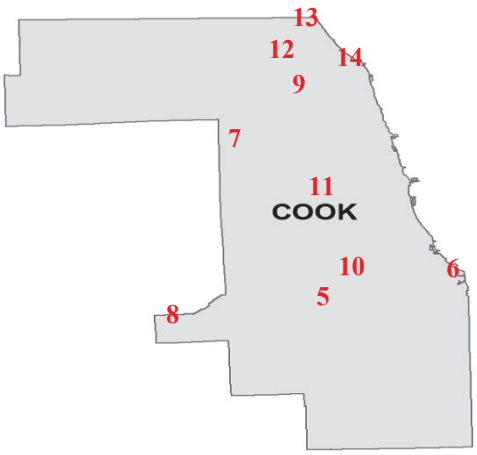
In comparing data to the various air quality standards, the data are implicitly rounded to the number of significant figures specified by that standard. For example, to exceed the 0.15 ug/m^3 three-month lead standard, a three-month average value must be 0.155 ug/m^3 or higher; to exceed the 9 ppm CO 8-hour standard, an 8-hour average must be 9.5 ppm or higher. Peak averages, though, will be expressed to the number of significant figures appropriate to that monitoring methodology.

The NAAQS for CO has a short-term standard for ambient air concentrations not to be exceeded more than once per year. SO_2 has a 1-hour standard which is the three-year average of each year's 99^{th} percentile values. NO_2 has a 1-hour standard which is the three-year average of each year's 98^{th} percentile values. PM_{10} has a 24-hour standard which cannot average more than one exceedance over a three-year period (in three years). $PM_{2.5}$ has a 24-hour standard which is a three-year average of each year's 98^{th} percentile values. In the case of ozone, the 8-hour standard is concentration-based and as such is the average of the fourth highest value each year over a three-year period. The standards are promulgated in this manner in order to protect the public from excessive levels of pollution both in terms of acute and chronic health effects.

The following data tables detail and summarize air quality in Illinois. The tables of short-term exceedances list those sites which exceeded any of the short-term primary standards (24 hours or less). The detailed data tables list averages and peak concentrations for all monitoring sites in Illinois.

Ozone Monitoring Sites





	Site ID	Site Name
1.	170010007	Quincy
2.	170190007	Thomasboro
3.	170191001	Bondville
4.	170230001	West Union
5.	170310001	Alsip
6.	170310032	Chicago – South Water Filtration
7.	170313103	Schiller Park
8.	170311601	Lemont
9.	170311003	Chicago – Taft High School
10.	170310076	Chicago – Com Ed Maint. Bldg.
11.	170314002	Cicero
12.	170314007	Des Plaines
13.	170314201	Northbrook
14.	170317002	Evanston
15.	170436001	Lisle
16.	170491001	Effingham
17.	170650002	Knight Prairie
18.	170831001	Jerseyville
19.	170859991	Stockton
20.	170890005	Elgin
21.	170971007	Zion
22.	171110001	Cary
23.	171132003	Normal
24.	171150013	Decatur
25.	171170002	Nilwood
26.	171190008	Alton
27.	171191009	Maryville
28.	171193007	Wood River
29	171199991	Highland
30.	171430024	Peoria
31.	171431001	Peoria Heights
32.	171570001	Houston
33.	171613002	Rock Island
34.	171630010	East St. Louis
35.	171670014	Springfield
36.	171971011	Braidwood
37.	172012001	Loves Park

Table B1
1-Hour Ozone Exceedances

EXCEEDANCES OF THE FORMER 1-HOUR PRIMARY STANDARD OF 0.12 PPM		
Date	**City**	**Concentration**
None	None	None
Total Over 0.12 ppm	0	
Total Days Over 0.12 ppm	0	

Table B2
8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.070 PPM						
Date	**City**	**Concentration**		**Date**	**City**	**Concentration**
5/5	Evanston	0.073		5/26	Cary	0.071
	Braidwood	0.071			Cicero	0.071
5/8	Evanston	0.077			DesPlaines	0.071
	Zion	0.072		5/27	Evanston	0.096
	Chicago-SWFP	0.071			Northbrook	0.096
5/10	Highland	0.071			Chicago-Taft	0.095
5/17	Peoria Heights	0.071			DesPlaines	0.089
5/24	Evanston	0.077			Cicero	0.088
	Northbrook	0.077			Zion	0.088
	Cary	0.074			Chicago-ComEd	0.087
	DesPlaines	0.074			Alsip	0.086
	Elgin	0.074			Chicago-SWFP	0.083
	Jerseyville	0.074			Schiller Park	0.081
	Lisle	0.074			Lisle	0.077
	Zion	0.073			Braidwood	0.076
	E. St. Louis	0.072			Cary	0.076
	Alsip	0.071			Normal	0.073
	Alton	0.071			Elgin	0.072
	Chicago-ComEd	0.071			Peoria	0.071
	Chicago-SWFP	0.071			Peoria Heights	0.071
	Chicago-Taft	0.071			Stockton	0.071
	Knight Prairie	0.071		5/28	Alsip	0.085
	Loves Park	0.071			Chicago-SWFP	0.080
	Nilwood	0.071			Chicago-ComEd	0.078
	Peoria	0.071			Decatur	0.078
	Peoria Heights	0.071			Chicago-Taft	0.077
5/25	Evanston	0.092			Evanston	0.077
	Zion	0.091			Springfield-ILBldg	0.077
	Chicago-SWFP	0.089			Cicero	0.076
	Northbrook	0.083			Braidwood	0.075
	Chicago-Taft	0.079			DesPlaines	0.075
	Chicago-ComEd	0.078			Maryville	0.075
	Cicero	0.077			Highland	0.074
	Alsip	0.076			Thomasboro	0.074
	DesPlaines	0.075			E. St. Louis	0.073
	Thomasboro	0.073			Northbrook	0.073
	Cary	0.072			Alton	0.072
	Lisle	0.071			Elgin	0.072
	West Union	0.071			Jerseyville	0.072
5/26	Evanston	0.080			Lisle	0.072
	Alsip	0.075			Loves Park	0.072
	Chicago-SWFP	0.075			Nilwood	0.072
	Chicago-ComEd	0.074			Bondville	0.071
	Chicago-Taft	0.073			Knight Prairie	0.071
	Northbrook	0.073				
	Thomasboro	0.073				
	Zion	0.073				

Table B2
8-Hour Ozone Exceedances

EXCEEDANCES OF THE 8-HOUR PRIMARY STANDARD OF 0.070 PPM						
Date	**City**	**Concentration**		**Date**	**City**	**Concentration**
5/29	Loves Park	0.086		6/16	Northbrook	0.073
	Elgin	0.077			Cary	0.071
	Stockton	0.076		6/28	Alsip	0.074
	Cary	0.075		6/29	Evanston	0.072
6/1	Maryville	0.085		7/3	Alsip	0.079
	E. St. Louis	0.077			Elgin	0.077
	Decatur	0.072			Lemont	0.075
	Thomasboro	0.072			Chicago-ComEd	0.073
6/5	Maryville	0.087			Lisle	0.073
	E. St. Louis	0.081			Cary	0.071
	Highland	0.079		7/8	DesPlaines	0.073
	Houston	0.079			Northbrook	0.072
6/6	E. St. Louis	0.095		7/9	Evanston	0.086
	Alton	0.087		7/11	Alsip	0.083
	Maryville	0.082			Lemont	0.079
	Wood River	0.080			Chicago-ComEd	0.074
6/7	Braidwood	0.078		7/13	Evanston	0.084
	Knight Prairie	0.072			Northbrook	0.084
	Rock Island	0.071			Zion	0.082
6/8	Alton	0.075			DesPlaines	0.080
	Nilwood	0.075			Jerseyville	0.077
	Effingham	0.074			Alton	0.075
	Decatur	0.073			Wood River	0.074
	Highland	0.073		7/15	Northbrook	0.086
	Maryville	0.072			Evanston	0.083
	Wood River	0.072			Chicago-SWFP	0.076
6/15	DesPlaines	0.079			DesPlaines	0.075
	Cary	0.077			Zion	0.074
	Evanston	0.076		8/3	Maryville	0.075
	Northbrook	0.076			Wood River	0.075
	Alsip	0.073			Alsip	0.072
	Cicero	0.072			Zion	0.074
	Chicago-ComEd	0.071			Lisle	0.071
	Chicago-Taft	0.071				
6/16	DesPlaines	0.073				
Total Over 0.070 ppm				159		
Total Days Over 0.070 ppm				26		

Table B3
Ozone Highs

AQS ID	City	Number Of Days 8-Hour Greater Than 0.070 ppm			Fourth Highest Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
		2018	2017	2016								
17-001-0007	Quincy	0	1	0	0.069	0.068	0.066	0.066	0.066	0.065	0.063	0.063
17-019-0007	Thomasboro	4	0	0	0.082	0.080	0.077	0.076	0.074	0.073	0.073	0.072
17-019-1001	Bondville	1	1	0	0.077	0.073	0.071	0.070	0.071	0.066	0.065	0.064
17-023-0001	West Union	1	1	1	0.075	0.075	0.074	0.072	0.071	0.069	0.068	0.066
17-031-0001	Alsip	10	10	11	0.099	0.094	0.090	0.089	0.086	0.085	0.083	0.079
17-031-0032	Chicago South Water Filtration	7	10	13	0.101	0.093	0.090	0.085	0.089	0.083	0.080	0.076
17-031-0076	Chicago Com Ed Maintenance	8	11	5	0.095	0.088	0.087	0.082	0.087	0.078	0.078	0.074
17-031-1003	Chicago Taft High School	6	0	8	0.102	0.088	0.084	0.083	0.095	0.079	0.077	0.073
17-031-1601	Lemont	2	3	5	0.097	0.087	0.086	0.083	0.079	0.075	0.069	0.068
17-031-3103	Schiller Park	1	0	2	0.093	0.082	0.080	0.079	0.081	0.068	0.066	0.065
17-031-4002	Cicero Cook County Trailer	5	2	6	0.097	0.087	0.084	0.083	0.088	0.077	0.076	0.072
17-031-4007	Des Plaines	10	4	9	0.097	0.093	0.092	0.090	0.089	0.080	0.079	0.075
17-031-4201	Northbrook	10	3	9	0.101	0.097	0.092	0.091	0.096	0.086	0.084	0.083
17-031-7002	Evanston	12	9	8	0.108	0.103	0.103	0.092	0.096	0.092	0.086	0.084
17-043-6001	Lisle	6	2	9	0.086	0.085	0.082	0.082	0.074	0.073	0.071	0.071
17-049-1001	Effingham	1	3	0	0.079	0.077	0.076	0.071	0.074	.070	0.068	0.066
17-065-0002	Knight Prairie	3	0	0	0.080	0.076	0.075	0.074	0.072	0.071	0.071	0.069
17-083-1001	Jerseyville	3	3	5	0.093	0.080	0.079	0.079	0.077	0.074	0.072	0.070
17-085-9991	Stockton	2	0	1	0.085	0.076	0.072	0.072	0.076	0.071	0.069	0.067
17-089-0005	Elgin Larsen Jr. High School	5	1	8	0.090	0.087	0.081	0.080	0.077	0.077	0.074	0.072
17-097-1007	Zion	8	7	8	0.102	0.100	0.100	0.092	0.091	0.088	0.082	0.074
17-111-0001	Cary	8	3	6	0.106	0.085	0.084	0.079	0.077	0.076	0.075	0.074
17-113-2003	Normal	1	0	1	0.082	0.077	0.075	0.075	0.073	0.069	0.068	0.068
17-115-0013	Decatur IEPA Trailer	3	3	0	0.080	0.077	0.076	0.073	0.078	0.073	0.072	0.069
17-117-0002	Nilwood	3	0	0	0.082	0.077	0.074	0.070	0.075	0.072	0.071	0.066

Table B3
Ozone Highs

AQS ID	City	Number Of Days 8-Hour Greater Than 0.070 ppm			Fourth Highest Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
		2018	2017	2016								
17-119-0008	Alton Clara Barton School	5	2	7	0.116	0.093	0.083	0.079	0.087	0.075	0.075	0.072
17-119-1009	Maryville	6	7	2	0.097	0.095	0.091	0.091	0.087	0.085	0.082	0.075
17-119-3007	Wood River	4	3	6	0.104	0.100	0.087	0.086	0.080	0.075	0.074	0.072
17-119-9991	Highland	4	0	3	0.090	0.087	0.087	0.080	0.079	0.074	0.073	0.071
17-143-0024	Peoria Fire Station #8	2	3	2	0.079	0.077	0.077	0.076	0.071	0.071	0.069	0.069
17-143-1001	Peoria Heights	3	2	1	0.080	0.079	0.079	0.075	0.071	0.071	0.071	0.070
17-157-0001	Houston	1	1	1	0.086	0.084	0.078	0.077	0.079	0.069	0.065	0.065
17-161-3002	Rock Island	1	0	1	0.077	0.077	0.073	0.072	0.071	0.070	0.069	0.067
17-163-0010	East St. Louis	5	1	4	0.116	0.088	0.084	0.084	0.095	0.081	0.078	0.073
17-167-0014	Springfield	1	2	1	0.084	0.076	0.073	0.072	0.077	0.069	0.069	0.069
17-197-1011	Braidwood	4	0	1	0.093	0.083	0.083	0.082	0.078	0.076	0.075	0.071
17-201-2001	Loves Park	3	0	3	0.094	0.076	0.076	0.076	0.086	0.072	0.071	0.070
Statewide Average					0.091	0.084	0.082	0.079	0.080	0.075	0.073	0.071
Total Over 0.070 ppm		159	96	147								
Total Days Over 0.070 ppm		26	27	29								

Table B4
Ozone Design Values

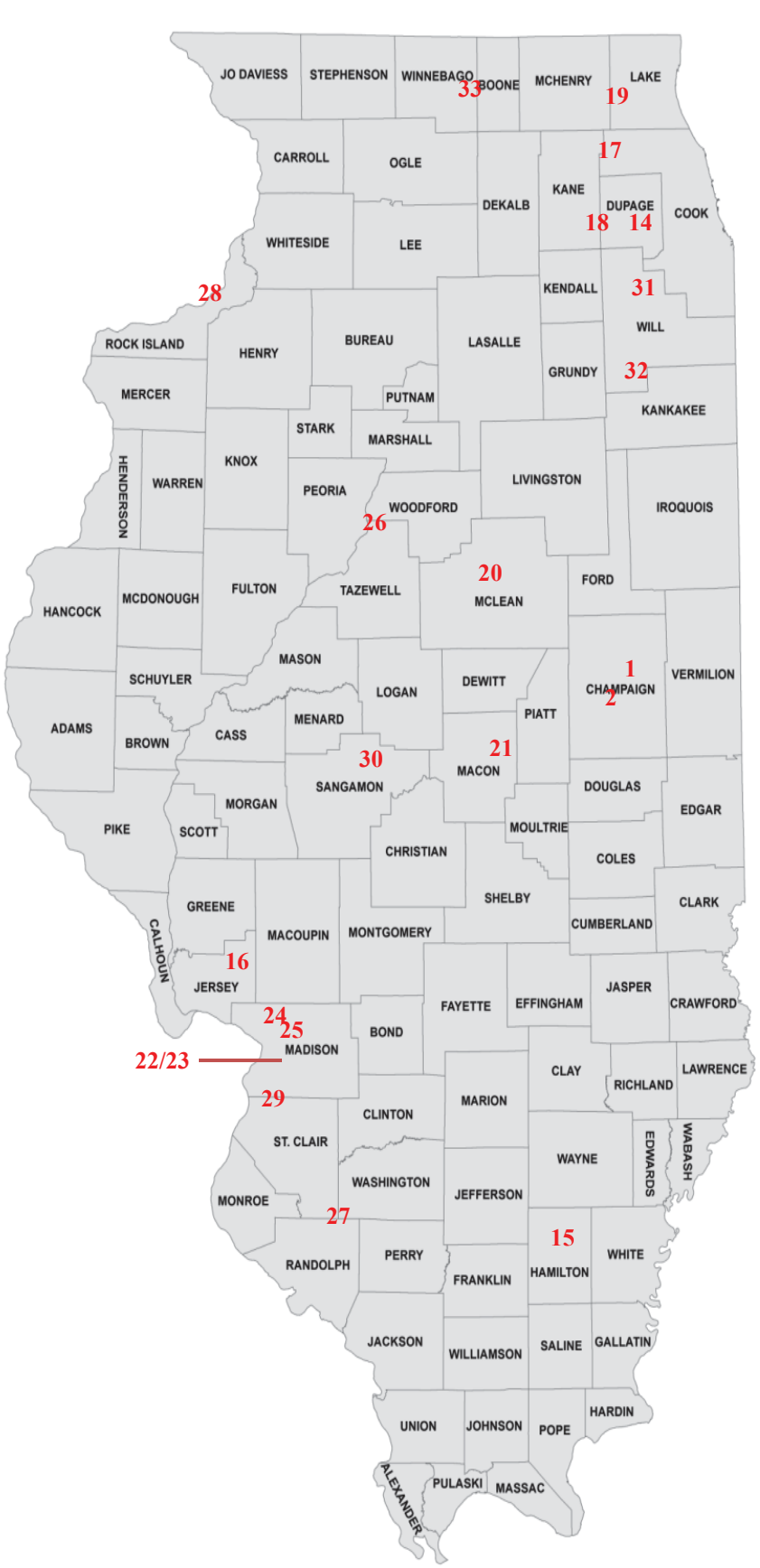
AQS ID	City	Fourth High 8-Hour Concentrations (ppm)					Design Values* (ppm)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-001-0007	Quincy	0.063	0.065	0.061	0.064	0.061	0.063	0.063	0.062
17-019-0007	Thomasboro	0.072	0.067	0.066	0.062	0.062	0.068	0.065	0.063
17-019-1001	Bondville	0.064	0.067	0.066	0.065	0.068	0.065	0.066	0.066
17-023-0001	West Union	0.066	0.067	0.066	0.064	0.063	0.066	0.065	0.064
17-031-0001	Alsip	0.079	0.078	0.075	0.066	0.066	**0.077**	**0.073**	0.069
17-031-0032	Chicago South Water Filtration	0.076	0.074	0.077	0.066	0.067	**0.075**	**0.072**	0.070
17-031-0076	Chicago Com Ed Maintenance	0.074	0.078	0.075	0.065	0.067	**0.075**	**0.072**	0.069
17-031-1003	Chicago Taft High School	0.073	0.060	0.075	0.068	0.065	0.069	0.067	0.069
17-031-1601	Lemont	0.068	0.070	0.073	0.066	0.070	0.070	0.069	0.069
17-031-3103	Schiller Park	0.065	0.061	0.067	0.058	0.063	0.064	0.062	0.062
17-031-4002	Cicero Cook County Trailer	0.072	0.068	0.076	0.061	0.063	**0.072**	0.068	0.066
17-031-4007	Des Plaines	0.075	0.071	0.076	0.068	0.069	**0.074**	**0.071**	**0.071**
17-031-4201	Northbrook	0.083	0.070	0.079	0.068	0.068	**0.077**	**0.072**	**0.071**
17-031-7002	Evanston	0.084	0.073	0.076	0.070	0.072	**0.077**	**0.073**	**0.072**
17-043-6001	Lisle	0.071	0.069	0.074	0.067	0.064	**0.071**	0.070	0.068
17-049-1001	Effingham	0.066	0.070	0.066	0.064	0.063	0.067	0.066	0.064
17-065-0002	Knight Prairie	0.069	0.064	0.068	0.064	0.063	0.067	0.065	0.065
17-083-1001	Jerseyville	-	0.067	0.074	0.067	0.065	0.070	0.069	0.068
17-085-9991	Stockton	0.067	0.063	0.067	0.062	0.067	0.065	0.064	0.065
17-089-0005	Elgin Larsen Jr. High School	0.072	0.069	0.074	0.065	0.066	**0.071**	0.069	0.068
17-097-1007	Zion	0.074	0.074	0.077	0.070	0.073	**0.075**	**0.073**	**0.073**
17-111-0001	Cary	0.074	0.070	0.073	0.064	0.067	**0.072**	0.069	0.068
17-113-2003	Normal	0.068	0.064	0.065	0.063	0.066	0.065	0.064	0.064
17-115-0013	Decatur Illinois EPA Trailer	0.069	0.068	0.066	0.066	0.067	0.067	0.066	0.066
17-117-0002	Nilwood	0.066	0.066	0.067	0.064	0.063	0.066	0.065	0.064

Table B4
Ozone Design Values

AQS ID	City	Fourth High 8-Hour Concentrations (ppm)					Design Values* (ppm)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-119-0008	Alton Clara Barton Elementary	0.072	0.066	0.073	0.069	0.072	0.070	0.069	**0.071**
17-119-1009	Maryville	0.075	0.074	0.067	0.064	0.070	**0.072**	0.068	0.067
17-119-3007	Wood River	0.072	0.067	0.075	0.069	0.070	**0.071**	0.070	**0.071**
17-119-9991	Highland	0.071	0.067	0.068	0.067	0.068	0.068	0.065	0.067
17-143-0024	Peoria Fire Station #8	0.069	0.065	0.068	0.060	0.064	0.067	0.064	0.064
17-143-1001	Peoria Heights	0.070	0.066	0.066	0.064	0.064	0.067	0.065	0.064
17-157-0001	Houston	0.065	0.069	0.066	0.065	0.071	0.066	0.066	0.067
17-161-3002	Rock Island	0.067	0.066	0.064	0.060	0.062	0.065	0.063	0.062
17-163-0010	East St. Louis	0.073	0.067	0.073	0.066	0.067	**0.071**	0.068	0.068
17-167-0014	Springfield State Fairgrounds	0.069	0.069	0.068	0.064	0.059	0.068	0.067	0.063
17-197-1011	Braidwood	0.071	0.068	0.064	0.064	0.064	0.067	0.065	0.064
17-201-2001	Loves Park	0.070	0.064	0.070	0.066	0.070	0.068	0.066	0.068
Statewide Average		0.071	0.068	0.070	0.065	0.066	0.069	0.067	0.067

*The design value is the three-year average of the fourth high concentration. Design value greater than 0.070 ppm is a violation of the National Ambient Air Quality Standard.

$PM_{2.5}$ FRM and FEM Monitoring Sites



	Site ID	Site Name
1.	170190006	Champaign
2.	170191001	Bondville
3.	170310022	Chicago – Washington High School
4.	170310052	Chicago – Mayfair Pump Station
5.	170310057	Chicago – Springfield Pump Station
6.	170310076	Chicago – Com Ed Maint. Bldg.
7.	170311016	Lyons Township
8.	170310001	Alsip
9.	170313103	Schiller Park
10.	170313301	Summit
11.	170314007	Des Plaines
12.	170314201	Northbrook
13.	170316005	Cicero
14.	170434002	Naperville
15.	170650002	Knight Prairie
16.	170831001	Jerseyville
17.	170890003	Elgin
18.	170890007	Aurora
19.	171110001	Cary
20.	171132003	Normal
21.	171150013	Decatur
22.	171190024	Granite City – Gateway Medical
23.	171191007	Granite City – 23rd and Madison
24.	171192009	Alton
25.	171193007	Wood River
26.	171430037	Peoria
27.	171570001	Houston
28.	171613002	Rock Island
29.	171630010	East St. Louis
30.	171670012	Springfield
31.	171971002	Joliet
32.	171971011	Braidwood
33.	172010118	Rockford

Table B5
$PM_{2.5}$ 24-Hour Exceedances

EXCEEDANCES OF THE 24-HOUR PRIMARY STANDARD OF 35 ug/m3		
Date	**Location**	**Concentration (ug/m3)**
12/10	Granite City Gateway	37.4
12/11	Chicago Washington	35.7
Total Over 35 ug/m3	2	
Total Days Over 35 ug/m3	2	

Table B6
$PM_{2.5}$ Highs

AQS ID	City	Total Samples	Samples Greater Than 35 ug/m3			Highest Samples							
			2018	2017	2016	1st	2nd	3rd	4th	5th	6th	7th	8th
17-019-0006	Champaign	119	0	0	0	26.1	17.7	16.8	15.9	15.4	15.2	14.8	14.6
17-019-1001	Bondville	361	0	0	0	24.7	21.2	21.1	20.9	19.1	18.3	18.1	17.8
17-031-0001	Alsip	59	0	0	0	24.3	21.9	17.8	15.2	14.7	14.5	14.3	13.2
17-031-0022	Chicago Washington High School	131	1	0	0	35.7	27.5	27.0	21.4	21.3	19.4	18.6	17.4
17-031-0052	Chicago Mayfair Pump Station	107	0	0	0	30.2	26.0	25.5	21.2	20.0	19.9	19.0	18.9
17-031-0057	Chicago Springfield Pump Station	58	0	0	0	28.3	25.3	18.7	16.2	15.9	15.3	14.7	14.5
17-031-0076	Chicago Com Ed Maintenance	59	0	0	0	25.3	17.8	17.7	16.8	16.7	15.9	15.6	14.3
17-031-1016	Lyons Township	120	0	0	0	28.4	27.0	23.5	23.1	21.7	19.1	19.0	18.7
17-031-3103	Schiller Park	117	0	0	0	28.6	28.2	25.5	21.7	20.6	20.5	20.4	19.7
17-031-3301	Summit	117	0	0	0	29.2	26.0	22.5	21.9	21.3	20.1	19.3	19.1
17-031-4007	Des Plaines	267	0	1	0	29.3	29.2	29.1	29.0	27.5	25.7	25.4	24.4
17-031-4201	Northbrook	356	0	1	0	32.0	26.2	26.2	25.9	24.1	23.7	23.4	22.7
17-031-6005	Cicero Liberty School	55	0	0	0	29.3	22.8	20.7	19.2	17.1	15.8	15.8	14.9
17-043-4002	Naperville	358	0	0	0	28.3	26.7	25.6	24.8	24.8	24.1	23.7	23.6
17-065-0002	Knight Prairie	345	0	0	0	25.7	22.8	22.4	22.0	21.8	21.5	20.6	19.4
17-083-0117	Jerseyville	349	0	0	-	21.4	20.4	20.2	20.1	19.8	19.2	19.2	18.2
17-089-0003	Elgin McKinley School	113	0	0	0	23.7	19.7	19.5	18.8	17.8	17.4	17.2	16.6
17-089-0007	Aurora	116	0	0	0	24.3	22.6	21.3	19.8	19.1	17.8	17.0	16.5
17-111-0001	Cary	59	0	0	0	19.2	19.0	18.6	17.5	15.7	15.5	13.9	13.4
17-113-2003	Normal	355	0	0	0	26.0	25.9	22.4	21.7	20.6	20.2	19.5	19.5
17-115-0013	Decatur Illinois EPA Trailer	345	0	0	0	24.4	24.1	23.9	23.8	23.3	22.7	22.4	21.2
17-119-0024	Granite City Gateway Medical Center	123	1	0	0	37.4	21.8	20.9	20.5	20.5	20.3	19.5	18.9
17-119-1007	Granite City Fire Station #1	61	0	0	0	30.1	22.8	19.9	19.3	19.2	17.1	16.9	16.8
17-119-2009	Alton SIU Dental Clinic	114	0	0	0	28.6	22.1	21.8	20.1	19.7	19.5	18.3	17.6
17-119-3007	Wood River	117	0	0	0	28.3	27.9	22.2	20.7	20.1	19.7	19.0	19.0
17-143-0037	Peoria City Office Building	353	0	0	0	31.2	24.4	23.9	21.4	20.8	20.7	20.5	20.4
17-157-0001	Houston	354	0	0	0	26.9	21.8	21.0	20.5	19.7	19.5	19.3	19.1

Table B6
$PM_{2.5}$ Highs

AQS ID	City	Total Samples	Samples Greater Than 35 ug/m3			Highest Samples							
			2018	2017	2016	1st	2nd	3rd	4th	5th	6th	7th	8th
17-161-3002	Rock Island	302	0	0	0	23.8	21.2	20.8	20.3	20.1	19.5	19.4	19.0
17-163-0010	East St. Louis	59	0	0	0	26.1	22.6	20.2	19.7	18.1	18.0	16.7	16.1
17-167-0012	Springfield Agricultural Building	355	0	0	0	29.3	22.3	22.3	21.6	20.7	20.4	20.2	19.8
17-197-1002	Joliet Pershing Elementary	291	0	0	0	25.2	23.2	22.8	21.5	21.2	20.9	20.4	20.3
17-197-1011	Braidwood	242	0	0	0	22.8	21.6	21.1	20.5	19.5	19.1	18.7	18.2
17-201-0118	Rockford Fire Dept.	51	0	-	-	23.0	17.5	16.6	14.5	13.8	11.5	10.8	10.8
Statewide Average						27.2	23.2	21.8	20.5	19.7	19.0	18.5	18.0
Total Over 35 ug/m3			2	2	0								
Total Days Over 35 ug/m3			2	1	0								

Table B7
$PM_{2.5}$ 24-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ug/m3)					Design Values* (ug/m3)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-019-0006	Champaign	16.8	17.4	15.0	18.8	23.6	16.4	17.1	19.1
17-019-1001	Bondville	17.8	16.7	15.3	17.6	20.4	16.6	16.5	17.8
17-031-0001	Alsip	21.9	20.5	16.9	23.4	31.3	19.8	20.3	23.9
17-031-0022	Chicago Washington High School	27.0	18.3	17.7	24.8	24.5	21.0	20.3	22.3
17-031-0052	Chicago Mayfair Pump Station	25.2	23.3	17.9	24.0	29.3	22.1	21.7	23.7
17-031-0057	Chicago Springfield Pump Station	25.3	20.9	17.5	37.1	25.9	21.2	25.2	26.8
17-031-0076	Chicago Com Ed Maintenance	17.8	23.0	19.0	24.7	22.8	19.9	22.2	22.2
17-031-1016	Lyons Township	23.5	23.8	19.9	24.0	26.2	22.4	22.6	23.1
17-031-3103	Schiller Park	25.5	23.8	17.6	25.1	23.6	22.3	22.2	22.1
17-031-3301	Summit	22.5	25.1	17.0	27.1	24.0	21.5	23.1	22.7
17-031-4007	Des Plaines	25.7	22.9	18.9	25.3	21.1	22.5	22.4	21.8
17-031-4201	Northbrook	22.7	20.9	18.4	22.4	26.8	20.7	20.6	22.5
17-031-6005	Cicero Liberty School	22.8	23.6	18.8	30.1	22.2	21.7	24.2	23.7
17-043-4002	Naperville	23.6	22.0	14.8	22.5	22.0	20.1	19.8	19.8
17-065-0002	Knight Prairie	20.6	15.7	16.0	22.1	27.5	17.4	17.9	21.9
17-083-0117	Jerseyville	19.2	19.0	-	17.7	22.0	19.1	18.5	19.5
17-089-0003	Elgin McKinley School	19.5	20.5	15.7	19.6	27.1	18.6	18.6	20.8
17-089-0007	Aurora	21.3	19.8	17.4	18.8	21.3	19.5	18.7	19.2
17-111-0001	Cary	19.0	17.1	14.7	34.9	22.1	16.9	22.2	23.9
17-113-2003	Normal	19.5	18.5	16.3	18.3	17.4	18.1	17.7	17.3
17-115-0013	Decatur Illinois EPA Trailer	22.4	21.6	14.6	16.2	23.7	19.5	17.5	18.2
17-119-0024	Granite City Gateway Medical Center	20.9	16.9	24.7	24.8	27.0	20.8	22.1	25.5
17-119-1007	Granite City Fire Station #1	22.8	21.2	16.2	19.5	24.1	20.1	19.0	19.9
17-119-2009	Alton SIU Dental Clinic	21.8	18.9	20.3	19.0	20.9	20.3	19.4	20.1
17-119-3007	Wood River	22.2	17.6	20.7	23.0	24.8	20.2	20.4	22.8

Table B7
$PM_{2.5}$ 24-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ug/m3)					Design Values* (ug/m3)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-143-0037	Peoria City Office Building	20.4	22.4	14.3	15.7	25.7	19.0	17.5	18.6
17-157-0001	Houston	19.1	17.7	18.4	17.3	21.1	19.9	17.8	18.9
17-161-3002	Rock Island	19.4	20.4	17.7	22.8	21.5	19.2	20.3	20.7
17-163-0010	East St. Louis	22.6	18.3	18.4	21.7	22.5	19.8	19.5	20.9
17-167-0012	Springfield Agricultural Building	19.8	20.6	19.1	21.0	19.0	19.8	20.2	19.7
17-197-1002	Joliet Pershing Elementary	20.9	19.6	16.6	19.6	23.3	19.0	18.6	19.8
17-197-1011	Braidwood	19.5	18.5	18.0	16.3	26.4	18.7	17.6	20.2
17-201-0118	Rockford Fire Department	10.6	-	-	-	-	-	-	-
17-201-0013	Rockford Health Department	23.0	17.1	14.8	22.2	20.9	18.3	18.0	19.3
Statewide Average		21.3	20.1	17.5	22.3	23.7	19.8	20.0	21.2

*The design value is the three-year average of the 98th percentile concentration. Design value greater than or equal to 35.5 ug/m^3 is a violation of the National Ambient Air Quality Standard.

Shaded cells indicate completeness criteria were not met.

Table B8
$PM_{2.5}$ Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations (ug/m3)					Design Values* (ug/m3)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-019-0006	Champaign	7.6	7.4	7.6	8.6	10.9	7.5	7.9	9.0
17-019-1001	Bondville	8.0	7.7	7.3	8.5	10.0	7.6	7.8	8.6
17-031-0001	Alsip	9.0	8.7	8.6	11.1	9.9	8.8	9.5	9.9
17-031-0022	Chicago Washington High School	9.6	8.4	8.4	11.0	11.6	8.8	9.3	10.3
17-031-0052	Chicago Mayfair Pump Station	9.8	8.7	8.7	10.0	11.9	9.1	9.1	10.2
17-031-0057	Chicago Springfield Pump Station	9.6	8.9	9.2	12.5	10.7	9.2	10.2	10.8
17-031-0076	Chicago Com Ed Maintenance	9.0	8.4	9.0	11.1	9.7	8.8	9.5	10.0
17-031-3103	Schiller Park	11.2	10.3	9.4	11.8	11.7	10.3	10.5	11.0
17-031-3301	Summit	10.2	8.9	9.1	11.0	10.6	9.4	9.7	10.2
17-031-4007	Des Plaines	11.4	9.3	8.9	9.9	9.6	9.9	9.4	9.5
17-031-4201	Northbrook	8.8	8.1	8.0	9.1	10.4	8.3	8.4	9.2
17-031-6005	Cicero Liberty School	10.0	8.6	8.9	12.5	10.1	9.2	10.0	10.5
17-043-4002	Naperville	10.5	8.2	7.8	9.0	9.8	8.8	8.3	8.9
17-065-0002	Knight Prairie	8.9	8.7	7.8	8.2	10.5	8.4	8.2	8.8
17-083-0117	Jerseyville	8.3	8.8	-	7.7	10.7	8.6	8.2	8.5
17-089-0003	Elgin McKinley School	8.7	8.0	7.9	8.9	10.7	8.2	8.3	9.2
17-089-0007	Aurora	9.0	8.1	8.0	8.9	10.6	8.4	8.3	9.2
17-111-0001	Cary	8.2	7.2	7.3	9.9	10.4	7.6	8.2	9.2
17-113-2003	Normal	9.7	8.8	7.6	7.6	9.0	8.7	8.0	8.1
17-115-0013	Decatur IEPA Trailer	10.4	8.7	7.8	8.7	10.4	9.0	8.4	9.0
17-119-1007	Granite City Fire Station #1	11.0	9.6	9.1	10.4	12.9	9.9	9.7	10.8
17-119-2009	Alton SIU Dental Clinic	9.3	8.7	8.8	9.0	10.4	8.9	8.8	9.4
17-119-3007	Wood River	9.2	8.3	8.7	9.1	12.5	8.7	8.7	10.1
17-143-0037	Peoria City Office Building	9.4	8.3	7.6	8.6	9.8	8.5	8.2	8.7
17-157-0001	Houston	7.8	9.6	8.0	7.9	9.9	8.4	8.5	8.6

Table B8
$PM_{2.5}$ Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations (ug/m3)					Design Values* (ug/m3)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-161-3002	Rock Island	8.9	7.9	7.2	9.1	9.7	8.0	8.1	8.6
17-163-0010	East St. Louis	10.3	8.8	10.0	10.7	10.9	9.7	9.8	10.6
17-167-0012	Springfield Agricultural Building	9.5	8.6	7.7	8.2	10.7	8.6	8.2	8.9
17-197-1002	Joliet Pershing Elementary	9.8	8.7	8.0	7.0	10.2	8.8	7.9	8.4
17-197-1011	Braidwood	7.9	7.8	7.5	8.4	9.1	7.7	7.9	8.3
17-201-0118	Rockford Fire Department	-	-	-	-	-	-	-	-
17-201-0013	Rockford Health Department	7.7	8.1	7.8	9.1	10.0	7.9	8.3	8.9
Statewide Average		9.3	8.5	8.2	9.5	10.5	8.7	8.8	9.4

*The design value is the three-year average of the annual arithmetic mean concentrations. Design value greater than 12.0 ug/m^3 is a violation of the National Ambient Air Quality Standard.

Shaded cells indicate completeness criteria were not met.

PM_{10} Monitoring Sites

	Site ID	Site Name
1.	170310022	Chicago – Washington High School
2.	170311016	Lyons Township
3.	170314201	Northbrook
4.	171190010	Granite City – 23rd and Madison

Table B9
PM_{10} 24-Hour Exceedances

EXCEEDANCES OF THE 24-HOUR PRIMARY STANDARD OF 150 ug/m3		
Date	**City**	**Concentration (ug/m3)**
None	None	None
Total Over 150 ug/m3	0	
Total Days Over 150 ug/m3	0	

Table B10
PM_{10} 24-Hour Highs and Design Values

AQS ID	City	Total Samples	Highest 24-Hour Samples								Samples Greater Than 150 ug/m3			Three-year Exceedance Average*
			1st	2nd	3rd	4th	5th	6th	7th	8th	2018	2017	2016	
17-031-0022	Chicago Washington High School	317	89	77	72	68	67	64	64	63	0	0	0	0.0
17-031-1016	Lyons Township	309	93	83	82	77	75	73	68	67	0	0	0	0.0
17-031-4201	Northbrook	53	37	29	26	25	24	24	23	22	0	0	0	0.0
17-119-1007	Granite City Fire Station #1	53	103	91	86	69	60	57	54	52	0	0	0	0.0
Statewide Average			81	70	67	60	57	55	52	51				
Total Over 150 ug/m3											0	0	0	
Total Days Over 150 ug/m3											0	0	0	

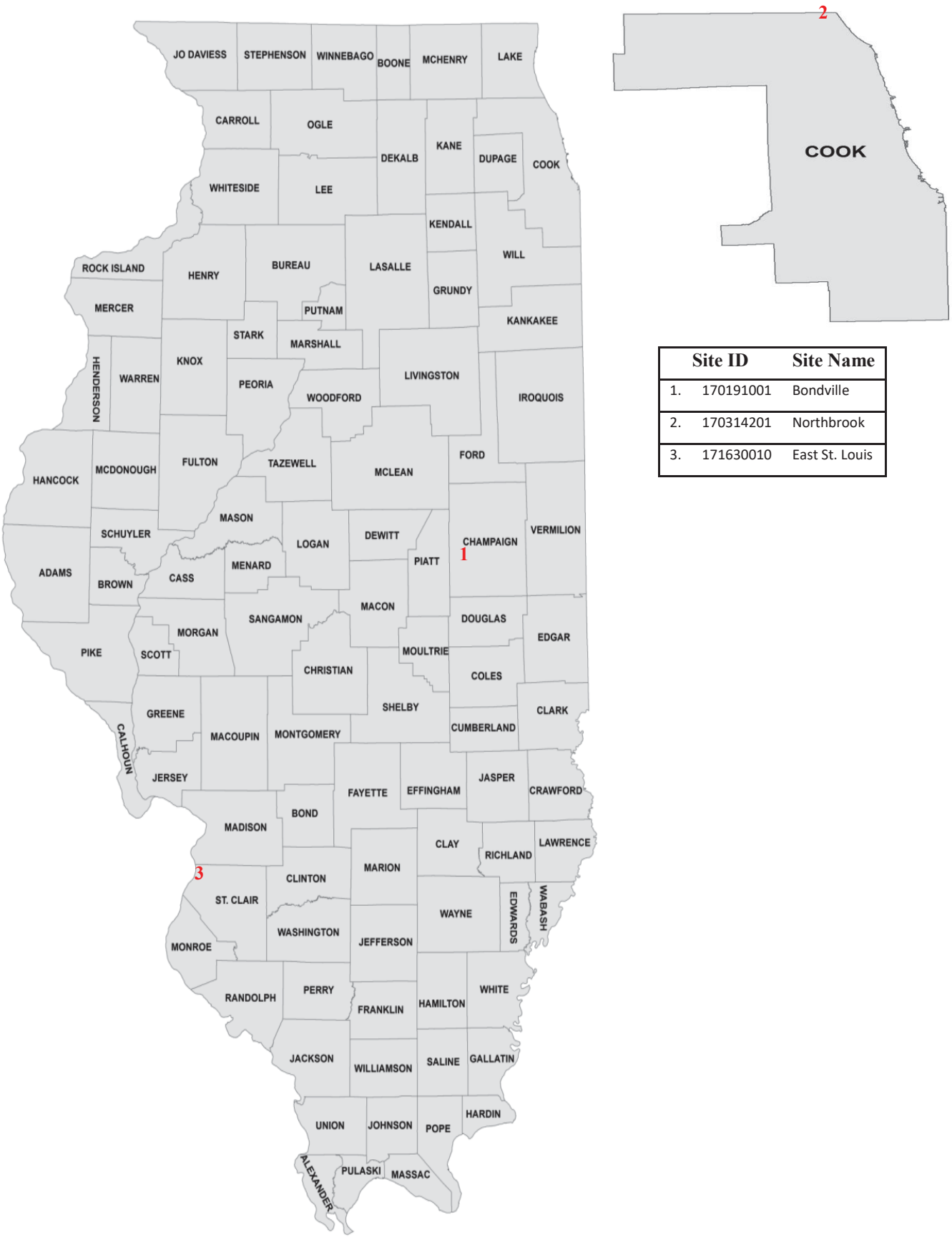
*The 24-hour PM_{10} standard is an exceedance-based standard set at 150 ug/m^3. The level is not to be exceeded more than once per year on average over three years. Three-year averages more than one are a violation of the National Ambient Air Quality Standard.

Table B11
PM_{10} Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentration (ug/m3)					Design Values* (ug/m3)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-031-0022	Chicago Washington High School	23	24	16	23	29	21	21	23
17-031-1016	Lyons Township	24	25	27	36	45	25	29	36
17-031-4201	Northbrook	14	16	17	20	16	16	18	18
17-119-1007	Granite City Fire Station #1	33	26	28	30	39	29	28	32
Statewide Average		24	23	22	27	32	23	24	27

*The annual PM_{10} standard was revoked in 2007. Previously the standard was a three-year average of the annual means. Concentrations above 50 ug/m^3 were a violation of the former National Ambient Air Quality Standard. Currently only the 24-hour PM_{10} standard is in place (see Table B10).

Carbon Monoxide Monitoring Sites



	Site ID	Site Name
1.	170191001	Bondville
2.	170314201	Northbrook
3.	171630010	East St. Louis

Table B12
Carbon Monoxide Exceedances

EXCEEDANCES OF EITHER THE 1-HOUR (35 PPM) OR 8-HOUR (9 PPM) PRIMARY STANDARDS			
Date	**City**	**Concentration**	**Averaging Period**
None	None	None	None

Total 1-hour Over 35 ppm	0	Total 8-hour Over 9 ppm	0
Total Days 1-hour Over 35 ppm	0	Total Days 8-hour Over 9 ppm	0

Table B13
Carbon Monoxide Highs

AQS ID	City	Total Hourly Samples	Fourth Highest Daily Samples 1-Hour (ppm)				Fourth Highest Samples 8-Hour (ppm)			
17-019-1001	Bondville	5855	0.39	0.37	0.35	0.31	0.30	0.30	0.30	0.30
17-031-4201	Northbrook	8075	1.32	1.27	1.02	1.02	1.10	0.90	0.80	0.70
17-163-0010	East St. Louis	8343	2.1	2.1	1.7	1.5	1.8	1.4	1.3	1.2
Statewide Average			1.3	1.2	1.0	0.9	1.1	0.9	0.8	0.7

Table B14
Carbon Monoxide 1-Hour and 8-Hour Design Values

AQS ID	City	1-Hour Samples Greater than 35 (ppm)					8-Hour Samples Greater than 9 (ppm)				
		2018	2017	2016	2015	2014	2018	2017	2016	2015	2014
17-019-1001	Bondville	0	0	0	0	0	0	0	0	0	0
17-031-4201	Northbrook	0	0	0	0	0	0	0	0	0	0
17-163-0010	East St. Louis	0	0	0	0	0	0	0	0	0	0

*The 1-hour and 8-hour carbon monoxide standard is an exceedance-based standard. The 1-hour standard is set at 35 ppm and is not to be exceeded more than once per year. The 8-hour standard is set at 9 ppm and is not to be exceeded more than once per year. More than one exceedance in a year is a violation of the National Ambient Air Quality Standard.

Sulfur Dioxide Monitoring Sites

	Site ID	Site Name
1.	170191001	Bondville
2.	170310076	Chicago – Com Ed Maint. Bldg.
3.	170311601	Lemont
4.	170314201	Northbrook
5.	170990007	Oglesby
6.	171150013	Decatur
7.	171150118	Decatur - Archer Daniel Midlands
8.	171150218	Decatur - Tate & Lyle North
9.	171150318	Decatur - Tate & Lyle South
10.	171170002	Nilwood
11.	171193007	Wood River
12.	171630010	East St. Louis
13.	171790004	Pekin
14.	171850001	Mount Carmel

Table B15
Sulfur Dioxide Exceedances

EXCEEDANCES OF THE 1-HOUR PRIMARY STANDARD OF 75 ppb		
Date	**City**	**Concentration (ppb)**
1/31	Decatur – Tate & Lyle South	77
3/12	Decatur – Tate & Lyle South	89
4/7	Decatur – Tate & Lyle South	93
4/21	Decatur – Tate & Lyle North	114
5/23	Decatur – Tate & Lyle North	84
5/24	Decatur – Tate & Lyle North	105
7/27	Decatur – Tate & Lyle South	80
8/8	Decatur – Tate & Lyle South	115
9/11	Decatur – Tate & Lyle North	100
9/17	Decatur – Tate & Lyle South	109
9/22	Decatur – Tate & Lyle North	81
Total Over 75 ppb	11	
Total Days Over 75 ppb	11	

Table B16
Sulfur Dioxide Highs

AQS ID	City	Total Hourly Samples	Samples Greater Than 75 ppb			Highest Daily 1-Hour Samples (ppb)				Highest 3-Hour Block Averages (ppb)	
			2018	2017	2016	1st	2nd	3rd	4th	1st	2nd
17-019-1001	Bondville	7879	0	0	0	5	4	3	3	4	3
17-031-0076	Chicago Com Ed Maintenance	8519	0	0	0	14	12	11	11	11	10
17-031-1601	Lemont	8487	0	0	0	9	8	6	6	7	6
17-031-4201	Northbrook	8226	0	0	0	4	4	4	3	3	3
17-099-0007	Oglesby	8706	0	0	0	46	45	29	27	26	24
17-115-0013	Decatur Illinois EPA Trailer	8581	0	0	1	43	41	38	37	30	30
17-115-0117	Decatur ADM	8661	0	1	-	22	22	21	21	20	16
17-115-0217	Decatur Tate & Lyle North	8541	5	5	-	114	105	100	84	90	78
17-115-0317	Decatur Tate & Lyle South	8655	6	3	-	115	109	93	89	72	71
17-117-0002	Nilwood	8601	0	0	0	7	5	5	4	4	3
17-119-3007	Wood River	8753	0	0	0	13	12	12	10	11	10
17-163-0010	East St. Louis	8693	0	0	0	22	18	18	16	10	10
17-179-0004	Pekin	3278	0	0	10	20	12	11	9	15	10
17-185-0001	Mount Carmel	8342	0	0	0	44	43	40	37	23	20
Statewide Average						34	31	28	26	23	21
Total Over 75 ppb			11	9	11						
Total Days Over 75 ppb			11	9	11						

Table B17
Sulfur Dioxide 1-Hour Design Values

AQS ID	City	99th Percentile Concentrations (ppb)					Design Values* (ppb)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-019-1001	Bondville	3	4	4	12	15	4	6	10
17-031-0076	Chicago Com Ed Maintenance	11	12	9	13	15	11	11	12
17-031-1601	Lemont	6	5	12	20	16	8	13	16
17-031-4002	Cicero Cook County Trailer	-	-	-	-	18	-	-	-
17-031-4201	Northbrook	3	3	4	8	12	3	5	8
17-099-0007	Oglesby	27	13	15	7	10	18	11	11
17-115-0013	Decatur Illinois EPA Trailer	37	40	54	39	38	44	44	44
17-115-0117	Decatur ADM	21	28	-	-	-	24	-	-
17-115-0217	Decatur Tate & Lyle North	84	77	-	-	-	**80**	-	-
17-115-0317	Decatur Tate & Lyle South	89	74	-	-	-	**82**	-	-
17-117-0002	Nilwood	5	4	5	7	10	5	5	7
17-119-1010	South Roxana	-	-	13	13	18	-	-	15
17-119-3007	Wood River	10	11	24	20	30	15	19	25
17-143-0024	Peoria Fire Station #8	-	19	27	22	38	-	23	29
17-157-0001	Houston	-	-	-	12	12	-	-	-
17-163-0010	East St. Louis	16	9	19	19	25	15	16	21
17-167-0006	Springfield Sewage Treatment Plant	-	-	-	7	21	-	-	-
17-179-0004	Pekin	12	23	146	116	190	69	**95**	**151**
17-185-0001	Mount Carmel	37	32	42	43	53	37	39	46
Statewide Average		25	24	29	24	33	30	24	30

*The design value is the three-year average of the 99th percentile concentration. Design value greater than 75 ppb is a violation of the National Ambient Air Quality Standard.

Nitrogen Dioxide Monitoring Sites

	Site ID	Site Name
1.	170310076	Chicago – Com Ed Maintenance
2.	170310116	Kingery near-road (in 2019)
3.	170310216	Kennedy near-road (in 2019)
4.	170313103	Schiller Park
5.	170314002	Cicero
6.	171170002	Nilwood
7.	171630010	East St. Louis

Table B18
Nitrogen Dioxide 1-Hour Exceedances

EXCEEDANCES OF THE 1-HOUR PRIMARY STANDARD OF 100 PPB		
Date	**City**	**Concentration (ppb)**
None	None	None
Total Over 100 ppb	0	
Total Days Over 100 ppb	0	

Table B19
Nitrogen Dioxide Highs

AQS ID	City	Total Valid Sample Days	Samples Greater Than 100 ppb			Highest Samples							
			2018	2017	2016	1st	2nd	3rd	4th	5th	6th	7th	8th
17-031-0076	Chicago Com Ed Maintenance	258	0	0	0	83.8	79.5	78.4	77.3	69.4	65.9	64.2	64.0
17-031-3103	Schiller Park	362	0	0	0	85.2	75.2	73.0	63.8	63.7	63.4	63.1	61.0
17-031-4002	Cicero Cook County Trailer	309	0	0	0	66.4	65.7	65.6	64.7	63.1	62.0	59.7	58.2
17-117-0002	Nilwood	326	0	0	0	22.8	19.3	18.1	16.9	15.5	15.4	15.2	14.8
17-163-0010	East St. Louis	360	0	0	0	43.8	40.8	40.5	40.5	39.3	39.2	38.8	38.2
Statewide Average						69.8	65.3	64.4	61.6	58.9	57.6	56.5	55.4
Total Over 100 ppb			0	0	0								
Total Days Over 100 ppb			0	0	0								

Table B20
Nitrogen Dioxide 1-Hour Design Values

AQS ID	City	98th Percentile Concentrations (ppb)					Design Values* (ppb)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-031-0063	Chicago CTA Building	-	52.2	58.4	57.4	61.0	-	56	59
17-031-0076	Chicago Com Ed Maintenance	65.9	54.1	60.8	45.2	67.0	60	53	58
17-031-3103	Schiller Park	61.0	50.0	56.0	60.8	59.0	56	56	59
17-031-4002	Cicero Cook County Trailer	59.7	55.1	54.7	62.4	64.0	57	57	60
17-031-4201	Northbrook	-	-	39.7	42.8	50.0	-	-	44
17-117-0002	Nilwood	15.2	-	-	-	-	-	-	-
17-163-0010	East St. Louis	38.2	35.9	35.3	39.9	43.0	36	37	39
Statewide Average		48.0	49.5	50.8	51.4	57.0	52	52	53

*The design value is the three-year average of the 98th percentile concentration. Design value greater than 100 ppb is a violation of the National Ambient Air Quality Standard.

Table B21
Nitrogen Dioxide Annual Design Values

AQS ID	City	Annual Arithmetic Mean Concentrations* (ppb)				
		2018	2017	2016	2015	2014
17-031-0063	Chicago CTA Building	-	15.75	16.85	16.93	20.64
17-031-0076	Chicago Com Ed Maintenance	15.33	12.86	13.49	13.01	15.83
17-031-3103	Schiller Park	17.91	15.79	17.08	18.20	19.28
17-031-4002	Cicero Cook County Trailer	15.89	15.63	14.07	16.74	17.29
17-031-4201	Northbrook	-	-	12.10	9.69	9.82
17-117-0002	Nilwood	2.40	-	-	-	-
17-163-0010	East St. Louis	9.49	8.63	9.12	8.32	10.92
Statewide Average		12.20	13.73	13.95	13.82	15.63

*The design value is the highest annual average concentration during the most recent two years. Design value greater than 53 ppb is a violation of the National Ambient Air Quality Standard.

Lead Monitoring Sites

	Site ID	Site Name
1.	170310022	Chicago – Washington High School
2.	170310110	Chicago – Perez Elementary
3.	171190010	Granite City – 15th and Madison

Table B22
Lead Highs

AQS ID	City	Total Sample Days	Highest Monthly Means					Maximum Three-Month Mean
			1st	2nd	3rd	4th	5th	
17-031-0022	Chicago Washington High School	61	0.019	0.014	0.010	0.009	0.009	0.01
17-031-0110	Chicago Perez Elementary	59	0.019	0.012	0.010	0.010	0.009	0.01
17-119-0010	Granite City Air Products	60	0.096	0.058	0.037	0.026	0.024	0.06
Statewide Average			0.045	0.028	0.019	0.015	0.014	0.03

Table B23
Lead Design Values

AQS ID	City	Maximum Three-Month Rolling Mean (ug/m3)					Design Values* (ug/m3)		
		2018	2017	2016	2015	2014	2016-2018	2015-2017	2014-2016
17-031-0022	Chicago Washington High School	0.01	0.02	0.02	0.04	0.04	0.02	0.04	0.04
17-031-0110	Chicago Perez Elementary	0.01	0.01	0.01	0.03	0.03	0.01	0.03	0.03
17-031-0113	Chicago ArcelorMittal Steel	-	-	0.01	0.01	0.03	-	-	0.03
17-031-4201	Northbrook	-	-	0.00	0.01	0.00	-	-	0.01
17-089-0113	Geneva Johnson Controls	-	-	0.05	0.05	0.03	-	-	0.05
17-115-0110	Decatur Mueller	-	0.04	0.04	0.04	0.05	-	0.04	0.05
17-119-0010	Granite City Air Products	0.06	0.03	0.02	0.02	0.04	0.06	0.03	0.04
Statewide Average		0.03	0.03	0.02	0.03	0.03	0.03	0.04	0.04

*The design value is the maximum three-month rolling mean over the latest three-year period. Design value greater than 0.15 ug/m3 is a violation of the National Ambient Air Quality Standard.

Table B24
Filter Analysis Data

AQS ID	City	Arsenic				Beryllium				Cadmium			
		Total Samples	Highs 1st	Highs 2nd	Annual Mean	Total Samples	Highs 1st	Highs 2nd	Annual Mean	Total Samples	Highs 1st	Highs 2nd	Annual Mean
17-031-0022	Chicago Washington High School	-	-	-	-	-	-	-	-	61	0.159	0.159	0.008
17-031-0110	Chicago Perez Elementary	-	-	-	-	-	-	-	-	53	0.157	0.157	0.010
17-119-0010	Granite City Air Products	57	0.020	0.010	0.001	57	0.000	0.000	0.000	57	0.000	0.000	0.000

Table B24
Filter Analysis Data

AQS ID	City	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean
			1st	2nd			1st	2nd			1st	2nd	
		Chromium				Iron				Manganese			
17-031-0022	Chicago Washington High School	56	0.025	0.017	0.007	61	3.40	1.81	0.580	61	0.197	0.168	0.048
17-031-0110	Chicago Perez Elementary	48	0.013	0.013	0.005	53	1.12	0.98	0.316	53	0.046	0.044	0.014
17-119-0010	Granite City Air Products	57	0.011	0.010	0.004	57	2.87	2.72	1.146	57	0.236	0.202	0.066

Table B24
Filter Analysis Data

AQS ID	City	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean	Total Samples	Highs		Annual Mean
			1st	2nd			1st	2nd			1st	2nd	
		Nickel											
17-031-0022	Chicago Washington High School	61	0.009	0.009	0.004								
17-031-0110	Chicago Perez Elementary	53	0.007	0.006	0.003								
17-119-0010	Granite City Air Products	57	0.023	0.005	0.001								

Table B25
Toxic Compounds

AQS ID	City	Compounds	Highest 24-hour Samples (ppbc)				Annual Average
			1st	2nd	3rd	4th	
17-031-4201	Northbrook	1,3 Butadiene	0.2	0.2	0.2	0.2	0.09
		Dichloromethane	1.2	0.8	0.7	0.6	0.23
		Chloroform	0.3	0.2	0.2	0.2	0.11
		Carbon Tetrachloride	0.1	0.1	0.1	0.1	0.10
		Tetrachloroethylene	0.3	0.1	0.1	0.1	0.04
		Trichlorethylene	0.1	0.0	0.0	0.0	0.00
		1,2 Dichloropropane	0.0	0.0	0.0	0.0	0.00
		Vinyl Chloride	0.0	0.0	0.0	0.0	0.00
		Benzene	1.6	1.3	1.2	1.2	0.77
		Toluene	11.1	4.7	4.1	3.8	1.56
		Formaldehyde	7.9	5.8	5.8	4.5	2.28
		Acetaldehyde	2.6	2.6	2.6	2.2	1.31
		Acrolein	2.9	2.7	2.5	2.5	1.08
17-031-3103	Schiller Park	1,3 Butadiene	0.8	0.4	0.4	0.4	0.21
		Dichloromethane	15.9	14.1	13.6	10.8	2.56
		Chloroform	0.1	0.0	0.0	0.0	0.00
		Carbon Tetrachloride	0.1	0.1	0.1	0.1	0.10
		Tetrachloroethylene	1.6	0.9	0.9	0.9	0.25
		Trichlorethylene	2.1	1.0	1.0	0.9	0.17
		1,2 Dichloropropane	0.2	0.0	0.0	0.0	0.00
		Vinyl Chloride	0.0	0.0	0.0	0.0	0.00
		Benzene	3.8	2.9	2.3	2.1	1.26
		Toluene	805.0	67.7	49.5	10.9	17.99
		Formaldehyde	7.6	7.1	6.9	6.8	3.81
		Acetaldehyde	9.1	7.1	6.0	5.9	2.89
		Acrolein	3.0	2.8	2.6	2.4	1.31

[1] – Toxic metals data (As, Be, Cd, Cr, Mn, Ni) summarized in Table B24 - Filter Analysis Data

Table C1

Carbon Monoxide Point Source Emission Distribution (Tons/Year)

Category	2014	2015	2016	2017	2018
External Fuel Combustion					
Electric Generation	19,111.4	20,092.2	17,065.5	11,188.4	12,253.2
Industrial	5,939.0	5,781.1	5,345.5	5,005.5	4,674.7
Commercial/Institutional	1,683.6	1,498.3	1,493.7	1,345.6	1,433.4
Space Heating	21.2	38.9	21.3	16.7	17.7
Internal Fuel Combustion					
Electric Generation	2,811.4	2,306.4	2,475.6	3,011.5	1,750.4
Industrial	5,244.1	4,684.8	3,552.2	2,847.7	2,648.3
Commercial/Institutional	261.6	190.6	226.8	187.8	179.0
Engine Testing	98.3	215.8	168.4	165.7	162.1
Industrial Processes					
Chemical Manufacturing	1,828.1	1,814.1	1,591.6	1,603.8	1,832.6
Food/Agriculture	1,456.8	1,420.2	1,576.8	1,449.3	1,263.0
Primary Metal Production	16,070.1	15,855.7	13,226.3	10,165.9	9,912.7
Secondary Metal Production	2,423.6	2,041.5	2,492.9	2,105.9	2,103.6
Mineral Products	2,934.2	2,820.9	3,580.7	4,322.5	3,546.7
Petroleum Industry	3,812.4	3,085.2	3,245.9	2,615.6	2,669.7
Paper and Wood Products	1.5	1.5	0.5	0.5	0.5
Rubber and Plastic Products	31.7	26.3	24.5	21.5	18.5
Fabricated Metal Products	223.7	203.1	214.2	205.8	218.4
Oil and Gas Production	279.6	274.6	241.6	229.5	241.2
Miscellaneous Machinery		1.3	1.2	0.6	0.6
Electrical Equipment	1.6	2.0	2.0	1.4	1.4
Health Services	181.7	153.6	175.3	171.4	170.9
In-Process Fuel Use	486.7	946.8	403.2	12.0	10.1
Miscellaneous Manufacturing	128.8	59.5	37.5	52.2	55.0
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.0	0.2	0.1	
Surface Coating Operations	232.7	271.2	232.0	235.9	213.4
Petroleum Product Storage	0.0	0.0	0.2	0.2	0.3
Bulk Terminals/Plants	71.4	32.9	26.0	9.9	10.9
Printing/Publishing	3.8	1.1		0.7	0.7
Petroleum Marketing/Transport	54.1	46.9	21.2	21.1	8.4
Organic Chemical Storage (large)		2.7			0.2
Organic Solvent Evaporation	16.0	9.8	9.0	53.6	20.4
Solid Waste Disposal					
Government	1,650.3	1,562.0	1,758.0	1,545.9	1,661.5
Commercial/Institutional	43.5	25.0	40.9	41.0	11.8
Industrial	797.6	605.0	691.7	629.7	663.8
Site Remediation	2.8	1.2	2.2	2.2	2.2
Commercial					28.1
Totals	**67,920.6**	**66,072.1**	**59,944.8**	**49,267.3**	**47,785.6**

Table C2

Nitrogen Oxides Point Source Emission Distribution (Tons/Year)

Category	2014	2015	2016	2017	2018
External Fuel Combustion					
Electric Generation	50,853.1	45,242.2	33,102.0	27,023.2	28,127.4
Industrial	11,510.4	9,941.2	9,217.5	8,425.8	7,863.4
Commercial/Institutional	2,161.3	2,059.7	1,938.0	1,804.4	1,858.3
Space Heating	97.6	96.5	86.6	66.0	71.9
Internal Fuel Combustion					
Electric Generation	2,762.1	2,229.8	2,409.4	3,531.8	2,046.9
Industrial	20,531.5	20,229.6	14,482.6	9,029.6	7,232.8
Commercial/Institutional	470.3	404.0	541.3	431.2	431.3
Engine Testing	524.2	439.4	563.8	476.6	344.5
Industrial Processes					
Chemical Manufacturing	1,432.7	1,361.0	1,552.0	1,363.9	1,452.3
Food/Agriculture	1,497.7	1,449.6	1,504.3	1,346.0	1,299.1
Primary Metal Production	1,521.8	1,779.1	1,329.7	964.5	1,010.2
Secondary Metal Production	710.4	585.3	667.0	779.6	720.5
Mineral Products	7,232.8	6,275.5	5,410.1	7,619.5	6,405.3
Petroleum Industry	4,870.4	4,636.0	4,191.9	3,749.4	3,640.5
Paper and Wood Products	1.3	1.3	0.9	0.9	0.9
Rubber and Plastic Products	36.4	30.6	26.4	24.1	20.6
Fabricated Metal Products	272.8	236.3	269.8	245.9	266.1
Oil and Gas Production	783.3	706.3	620.6	688.7	691.2
Miscellaneous Machinery	0.3	1.8	0.6	0.8	0.8
Electrical Equipment	2.1	2.5	2.5	1.9	1.9
Health Services	6.6	4.0	6.6	6.6	6.6
Textile Products	0.9	0.9	0.9		
In-Process Fuel Use	799.3	803.1	190.3	34.0	70.3
Miscellaneous Manufacturing	29.9	18.3	15.7	15.3	18.6
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.0	0.2	0.2	
Surface Coating Operations	421.1	375.1	420.7	513.0	475.3
Petroleum Product Storage					0.2
Bulk Terminals/Plants	33.6	13.5	0.2	0.2	2.9
Printing/Publishing	4.4	1.5	13.3	4.0	0.8
Petroleum Marketing/Transport	34.2	20.1	8.8	0.8	3.5
Organic Chemical Storage (large)		1.6		8.7	0.2
Organic Solvent Evaporation	13.9	13.7	11.3	23.2	15.9
Solid Waste Disposal					
Government	518.0	558.9	592.1	521.6	590.5
Commercial/Institutional	15.2	17.2	13.3	13.3	1.3
Industrial	266.6	214.4	245.7	198.4	201.4
Site Remediation	4.5	2.5	2.8	2.8	2.8
Commercial					11.9
Totals	**109,444.3**	**99,752.5**	**79,438.9**	**68,915.9**	**64,888.5**

Table C3

PM_{10} Point Source Emission Distribution (Tons/Year)

Category	2014	2015	2016	2017	2018
External Fuel Combustion					
Electric Generation	5,776.4	5,637.2	4,335.2	3,137.0	2,901.5
Industrial	1,346.9	1,304.5	1,180.1	972.9	734.0
Commercial/Institutional	207.2	193.9	186.6	172.4	179.4
Space Heating	4.9	6.6	3.4	2.8	3.0
Internal Fuel Combustion					
Electric Generation	286.5	208.0	358.4	527.0	291.8
Industrial	275.2	303.3	238.0	218.9	228.7
Commercial/Institutional	29.6	25.2	35.2	23.8	21.9
Engine Testing	16.2	15.7	24.0	20.9	14.7
Industrial Processes					
Chemical Manufacturing	943.9	836.6	1,031.2	978.8	985.4
Food/Agriculture	5,851.2	5,677.7	5,846.3	5,718.2	5,600.5
Primary Metal Production	986.0	1,233.1	872.1	627.0	634.5
Secondary Metal Production	1,196.9	1,034.4	955.0	858.6	885.4
Mineral Products	4,822.1	4,449.2	4,733.0	4,455.1	4,332.8
Petroleum Industry	1,227.6	1,239.5	1,189.0	1,283.0	1,153.0
Paper and Wood Products	109.8	93.1	112.7	121.5	130.5
Rubber and Plastic Products	189.6	113.7	168.2	164.6	140.8
Fabricated Metal Products	269.4	220.3	248.4	239.1	258.9
Oil and Gas Production	15.8	7.9	13.4	14.8	14.0
Building Construction	1.6	1.6	0.1	0.0	0.0
Miscellaneous Machinery	15.7	12.2	14.8	15.4	15.2
Electrical Equipment	5.4	4.4	5.1	5.0	5.0
Transportation Equipment	14.1	2.0	0.6	0.1	0.1
Health Services	77.7	63.9	76.9	75.1	79.2
Leather and Leather Products	9.7	2.7	9.7	9.7	11.9
Textile Products	0.1	0.2	0.1	0.0	0.0
Type Setting				0.5	0.5
Process Cooling	274.8	263.1	271.6	267.7	237.4
In-Process Fuel Use	81.6	181.2	81.4	0.4	2.9
Miscellaneous Manufacturing	28.0	20.1	19.2	19.0	19.0
Organic Solvent Emissions					
Organic Solvent Use	1.7	0.1	2.9	2.7	23.0
Surface Coating Operations	245.3	176.9	257.4	310.1	250.8
Petroleum Product Storage			1.1	1.1	1.1
Bulk Terminals/Plants	3.4	0.4	1.1	2.5	4.1
Printing/Publishing	30.1	28.9	29.3	28.3	29.9
Petroleum Marketing/Transport	2.8	1.2	1.3	1.3	1.0
Organic Chemical Storage (large)	6.4	1.5	5.8	5.7	5.7
Dry Cleaning (petroleum based)		0.5	0.7	0.7	0.7
Organic Solvent Evaporation	5.4	3.5	5.7	6.3	3.7
Solid Waste Disposal					
Government	366.7	424.7	355.2	351.8	382.7
Commercial/Institutional	8.0	7.5	7.9	7.4	1.3
Industrial	110.3	95.4	92.0	77.1	201.4
Site Remediation	16.6	14.7	14.2	135.5	2.8
Commercial					7.2
MACT Processes					
Styrene or Methacrylate Based Resins	0.1	0.0			
Alkyd Resin Production	1.3	1.6	0.9	1.9	0.9
Vinyl Based Resins	59.4	45.4	26.8	31.3	31.3
Miscellaneous Polymers	7.1	0.2	7.1	7.1	7.1
Inorganic Chemicals	0.1	0.5	0.1	0.3	0.3
Consumer Products Manufacturing	1.2	0.1	1.0		
Paint Stripper Use	1.0	0.0			
Miscellaneous Processes	6.0	4.8			
Totals	**24,941.8**	**23,959.2**	**22,820.2**	**20,778.6**	**19,725.7**

Table C4

Sulfur Dioxide Point Source Emission Distribution (Tons/Year)

Category	2014	2015	2016	2017	2018
External Fuel Combustion					
Electric Generation	146,872.6	136,043.9	89,806.2	61,147.3	54,066.6
Industrial	27,936.1	24,913.5	19,064.4	16,023.6	13,409.5
Commercial/Institutional	2,649.7	2,665.7	2,582.8	2,405.7	2,486.2
Space Heating	0.6	0.6	0.6	0.5	0.5
Internal Fuel Combustion					
Electric Generation	232.1	237.5	223.0	271.9	268.5
Industrial	90.6	65.8	62.8	49.0	42.2
Commercial/Institutional	22.4	15.8	24.0	20.1	15.9
Engine Testing	10.7	3.2	8.1	6.7	4.3
Industrial Processes					
Chemical Manufacturing	1,412.2	1,333.3	1,330.6	1,000.0	727.9
Food/Agriculture	1,102.1	1,238.6	1,192.5	1,097.2	1,440.8
Primary Metal Production	2,630.5	2,502.8	2,046.8	1,413.2	1,426.9
Secondary Metal Production	95.6	118.6	93.6	92.8	85.7
Mineral Products	13,305.3	8,183.3	4,816.4	7,806.9	9,107.2
Petroleum Industry	2,532.7	3,026.0	2,498.1	1,568.3	1,635.0
Paper and Wood Products	0.0	0.0	0.0	0.0	0.0
Rubber and Plastic Products	0.3	1.5	0.3	0.3	0.2
Fabricated Metal Products	15.3	11.8	15.6	15.1	14.7
Oil and Gas Production	3.7	3.3	1.3	1.2	0.8
Miscellaneous Machinery		0.0	0.0	0.0	0.0
Electrical Equipment	0.0	0.0	0.0		
Health Services	7.5	5.1	7.5	7.5	7.5
Process Cooling	0.0	0.0	0.0	0.0	0.0
In-Process Fuel Use	223.6	419.0	175.4	5.7	5.9
Miscellaneous Manufacturing	57.4	17.1	0.5	0.5	0.4
Organic Solvent Emissions					
Organic Solvent Use	0.0	0.0	0.2	0.0	
Surface Coating Operations	3.8	3.6	9.6	4.5	4.5
Petroleum Product Storage	7.7	7.7	8.3	0.9	8.3
Printing/Publishing	1.6	0.4	0.8	0.8	0.5
Petroleum Marketing/Transport	0.2	0.0	75.3	0.0	0.0
Organic Chemical Transportation	5.9	0.4	0.1	0.3	1.6
Organic Chemical Storage (large)	0.1	0.1		0.1	0.1
Organic Solvent Evaporation	32.5	25.1	3.5	0.7	0.6
Solid Waste Disposal					
Government	608.0	914.8	949.8	729.9	1,063.8
Commercial/Institutional	2.7	0.4	2.6	2.5	1.5
Industrial	366.5	364.4	342.5	371.8	365.7
Site Remediation	1.3	0.0	1.4	1.4	1.8
Commercial					1.1
MACT Processes					
Food and Agriculture Processes	117.9	76.5	76.1	49.3	49.3
Totals	**200,349.5**	**182,200.0**	**125,421.1**	**94,095.4**	**86,245.4**

Table C5

Volatile Organic Material Point Source Emission Distribution (Tons/Year)

Category	2014	2015	2016	2017	2018
External Fuel Combustion					
Electric Generation	1,372.5	1,383.4	1,095.4	973.2	1,111.1
Industrial	350.0	341.0	321.4	338.8	314.9
Commercial/Institutional	96.5	92.4	86.7	78.9	83.7
Space Heating	4.9	5.3	4.6	3.5	3.8
Internal Fuel Combustion					
Electric Generation	360.7	256.3	387.6	528.2	352.7
Industrial	1,133.5	1,025.9	793.6	602.8	519.0
Commercial/Institutional	46.9	31.8	35.1	36.6	36.2
Engine Testing	41.2	77.9	39.1	35.3	45.0
Industrial Processes					
Chemical Manufacturing	6,066.6	6,487.1	6,261.4	5,752.3	5,769.7
Food/Agriculture	8,707.9	8,855.2	9,461.8	8,917.4	9,316.2
Primary Metal Production	409.2	414.7	287.8	141.1	146.8
Secondary Metal Production	676.2	671.9	697.4	672.8	725.7
Mineral Products	1,283.5	925.9	1,163.9	1,257.7	1,100.6
Petroleum Industry	2,137.9	1,866.2	1,987.0	1,833.9	1,979.2
Paper and Wood Products	88.6	74.6	78.4	64.4	59.5
Rubber and Plastic Products	1,917.9	1,778.8	1,839.3	1,646.5	1,670.1
Fabricated Metal Products	641.5	638.6	689.8	790.5	648.2
Oil and Gas Production	371.3	374.5	327.4	351.3	303.7
Miscellaneous Machinery	56.6	81.5	83.4	83.5	74.2
Electrical Equipment	36.9	38.9	38.9	65.7	68.0
Transportation Equipment	33.9	21.8	18.5	18.5	18.5
Health Services	27.2	16.4	12.6	11.8	10.6
Photographic Film Manufacturing				1.7	1.7
Leather and Leather Products	16.9	16.2	16.9	16.9	17.9
Textile Products	2.3	2.0	2.3	2.3	2.3
Process Cooling	77.7	77.1	78.9	80.7	80.7
In-Process Fuel Use	35.8	32.7	9.6	6.7	6.7
Miscellaneous Manufacturing	119.9	158.3	139.3	136.2	104.7
Organic Solvent Emissions					
Organic Solvent Use	422.1	386.2	394.	449.4	472.5
Surface Coating Operations	7,468.4	6,955.5	6,879.4	6,264.5	6,138.0
Petroleum Product Storage	2,615.3	2,487.0	2,524.1	2,482.5	2,517.0
Bulk Terminals/Plants	1,289.7	1,037.7	1,162.7	1,012.2	1,015.6
Printing/Publishing	3,358.3	3,217.7	3,081.6	2,451.1	2,467.7
Petroleum Marketing/Transport	502.3	325.1	434.5	450.4	354.7
Organic Chemical Storage (large)	739.8	489.4	705.5	514.01	578.7
Organic Chemical Transportation	89.6	144.8	102.5	101.4	60.6
Dry Cleaning (petroleum based)	426.7	377.3	374.8	318.0	283.5
Organic Chemical Storage (small)	0.4	0.0	0.2	0.2	0.2
Organic Solvent Evaporation	447.5	438.6	416.3	410.9	372.0

Table C5

Volatile Organic Material Point Source Emission Distribution (Tons/Year)

Category	2014	2015	2016	2017	2018
Solid Waste Disposal					
Government	514.8	313.0	359.4	413.9	514.5
Commercial/Institutional	5.4	1.6	3.8	3.8	2.9
Industrial	65.0	38.5	58.2	54.6	61.3
Site Remediation	169.0	116.2	142.2	150.3	139.8
Commercial					0.9
MACT Processes					
Food and Agriculture Processes	20.1	15.3	17.0	15.1	10.4
Agricultural Chemical Production	0.1	0.0			
Styrene or Methacrylate Based Resins	4.6	1.5			
Alkyd Resin Production	51.3	34.1	39.6	48.9	48.8
Vinyl Based Resins	96.0	45.9	18.8	21.3	21.3
Miscellaneous Polymers	1.0	1.1	1.0	1.0	1.0
Inorganic Chemicals Manufacturing	0.0	0.0	0.0		
Consumer Product Mfg Facilities	158.1	161.8	210.5	155.3	152.4
Paint Stripper Use	3.1	0.2	0.1		
Miscellaneous Processes	9.1	9.8			
Totals	**44,610.1**	**42,344.8**	**42,884.5**	**39,768.0**	**39,785.1**

Table C6

2018 Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
Adams	205.0	213.6	290.8	713.0	963.3
Alexander	23.8	24.4	49.1	0.3	309.1
Bond	17.4	12.6	11.1	1.5	22.6
Boone	58.5	66.8	53.7	3.3	386.3
Brown	0.0	0.0	2.8	0.0	0.0
Bureau	20.5	34.0	58.8	0.3	38.3
Calhoun	0.6	0.7	5.2	0.0	0.1
Carroll	28.3	28.6	29.6	1.1	21.2
Cass	30.9	36.9	29.4	26.4	46.9
Champaign	353.4	658.8	199.0	310.8	404.1
Christian	293.7	1,655.9	162.4	2,348.8	354.0
Clark	40.8	5.0	56.7	1.4	138.4
Clay	4.0	6.1	18.2	0.1	119.5
Clinton	156.2	486.5	65.4	326.0	48.7
Coles	98.6	81.6	84.2	7.3	525.9
Cook	11,841.7	4,587.1	2,415.2	2,223.6	6,831.3
Crawford	1,147.4	1,633.7	604.1	6,979.8	952.7
Cumberland	13.6	3.2	22.0	1.0	19.2
DeKalb	114.6	67.5	78.0	33.4	146.5
DeWitt	76.5	65.5	83.1	3.8	176.7
Douglas	751.8	1,349.8	93.7	0.4	452.5
DuPage	563.2	648.4	227.1	32.7	1,024.7
Edgar	11.6	18.2	81.8	0.1	109.1
Edwards	0.8	1.7	10.0	0.0	9.4
Effingham	21.4	24.0	65.1	0.6	258.7
Fayette	60.5	207.1	15.5	74.9	24.4
Ford	48.9	137.2	154.6	7.1	728.9
Franklin	5.4	3.9	47.6	0.0	18.1
Fulton	311.3	1,486.8	63.7	24.7	49.4
Gallatin	0.0	0.0	16.6	0.0	0.0
Greene	0.1		17.5		0.2
Grundy	786.2	1,036.9	190.2	173.3	596.0
Hamilton	0.5	0.6	34.9	0.0	0.9
Hancock	15.3	2.9	62.9	0.2	4.8
Hardin	3.9	4.7	14.8	0.0	2.0
Henderson	0.0	0.0	29.9	0.0	0.0
Henry	469.2	1,148.2	149.7	18.5	302.8
Iroquois	73.9	32.7	125.6	4.4	452.5
Jackson	215.5	173.3	47.8	237.7	47.4
Jasper	2,682.8	1,544.1	348.7	4,892.5	120.5
Jefferson	48.3	55.5	31.5	0.5	330.0
Jersey	0.7		6.5		10.3
Jo Daviess	362.7	373.6	117.4	10.5	80.0
Johnson	24.7	23.6	7.8	220.0	5.9
Kane	411.0	425.6	226.5	28.3	943.2
Kankakee	441.9	692.6	181.0	34.4	781.1
Kendall	308.0	423.7	230.6	38.1	380.5
Knox	23.2	22.0	80.1	1.9	75.6
Lake	1,967.1	1,747.4	602.4	1,871.2	511.5
La Salle	1,453.4	2,382.2	1,008.0	450.6	1,074.5
Lawrence	8.7	5.1	9.7	0.9	27.7
Lee	573.9	459.9	328.2	21.7	281.0

Table C6

2018 Estimated County Stationary Point Source Emissions (Tons/Year)

County	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
Livingston	508.6	249.2	143.9	74.1	302.3
Logan	79.6	495.6	112.5	436.5	45.7
McDonough	35.5	74.6	25.1	4.1	72.4
McHenry	205.3	228.8	119.9	5.2	289.7
McLean	230.6	261.3	174.9	10.7	591.0
Macon	1,189.7	4,702.2	1,749.0	12,465.3	4,130.3
Macoupin	6.2	6.7	35.9	0.0	5.0
Madison	3,352.6	2,896.8	851.4	2,389.3	2,567.7
Marion	90.5	41.8	40.1	82.4	636.2
Marshall	30.6	78.2	136.4	265.7	350.7
Mason	428.0	1,243.7	60.3	1,090.0	59.5
Massac	3,272.0	3,261.0	571.6	10,821.3	101.5
Menard			15.4		14.3
Mercer	0.4	0.5	17.0	0.0	2.1
Monroe	2.8	4.1	12.0	0.1	8.2
Montgomery	278.6	2,503.3	151.0	52.3	219.8
Morgan	65.8	272.4	42.9	48.9	41.6
Moultrie	3.1	9.3	28.2	0.0	197.8
Ogle	457.7	333.2	295.2	234.7	438.2
Peoria	1,577.5	3,199.4	578.2	6,467.5	958.7
Perry	30.3	92.9	69.4	0.6	14.3
Piatt	66.6	538.1	49.1	0.2	42.1
Pike	62.4	82.6	77.6	1.5	63.4
Pope					
Pulaski	77.7	15.0	42.2	4.1	7.8
Putnam	440.5	1,550.9	208.7	5,323.7	181.3
Randolph	1,157.5	3,264.4	150.2	2,988.8	256.4
Richland	0.6	2.6	5.1	0.0	9.1
Rock Island	288.1	259.1	128.8	13.6	462.9
St. Clair	429.2	349.9	282.0	183.7	644.2
Saline	12.8	4.5	69.8	2.6	6.9
Sangamon	758.6	1,298.6	238.5	1,820.9	164.8
Schuyler	0.0	0.0	9.0	0.0	23.6
Scott	36.7	34.6	31.6	6.5	3.3
Shelby	39.3	114.6	58.3	1.9	59.1
Stark			25.1		10.2
Stephenson	113.8	133.5	85.0	5.9	122.9
Tazewell	683.4	4,172.5	1,361.7	4,644.7	907.0
Union	57.8	57.2	38.9	628.8	6.2
Vermilion	294.0	540.7	176.8	9.2	1,696.5
Wabash			25.2		5.9
Warren	47.3	47.2	98.1	120.4	11.7
Washington	211.4	3,665.9	522.9	9,331.8	126.5
Wayne	30.7	31.7	8.1	4.1	12.1
White	5.4	11.3	2.7	3.0	48.4
Whiteside	856.7	18.1	146.3	18.8	76.7
Will	2,578.5	3,042.0	1,205.9	1,247.4	2,512.6
Williamson	1,077.9	962.1	134.4	3,841.0	233.8
Winnebago	436.0	425.5	324.8	466.8	764.4
Woodford	5.0	10.8	42.0	0.1	69.9

Table C7

Annual Source Estimated Emissions Trends (Tons)

Year	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
1981	240,421	826,427		1,577,992	270,814
1982	163,704	693,054		1,404,040	233,951
1983	144,622	759,453		1,363,292	207,405
1984	110,922	746,367		1,435,066	197,418
1985	107,876	715,556		1,406,300	191,070
1986	109,777	676,181		1,400,761	180,148
1987	98,213	644,511		1,379,407	176,406
1988	127,758	653,521		1,393,628	165,792
1989	132,214	610,214		1,254,474	193,499
1990	134,744	623,466		1,272,445	170,378
1991	148,667	619,161		1,239,690	154,008
1992	129,054	610,214	181,775	1,228,949	156,867
1993	130,097	556,460	113,482	1,170,549	152,288
1994	127,848	555,893	50,730	1,158,555	140,492
1995	127,661	505,966	48,839	1,273,786	141,381
1996	130,040	495,267	43,950	1,183,278	139,445
1997	117,046	510,729	41,078	1,197,404	136,541
1998	108,117	509,676	43,392	1,196,461	134,924
1999	120,906	421,993	40,598	1,085,828	99,121
2000	122,702	424,609	36,885	1,070,058	101,147
2001	96,970	358,263	34,233	653,797	95,221
2002	99,173	301,216	30,422	531,343	90,014
2003	88,367	289,921	41,589	512,321	89,579
2004	80,479	248,245	42,402	507,142	84,080
2005	83,671	238,026	40,359	522,677	75,690
2006	89,717	219,200	37,979	487,588	70,858
2007	80,969	205,602	34,847	429,976	59,021
2008	80,628	203,014	34,474	406,905	57,135
2009	78,720	198,178	32,551	375,807	54,668
2010	65,797	138,344	30,931	304,709	49,975
2011	78,283	143,035	29,796	295,658	48,323
2012	76,255	131,326	28,624	276,412	46,957
2013	64,915	109,308	25,744	211,873	45,430
2014	67,921	109,444	24,942	200,350	44,610
2015	66,072	99,753	23,959	182,200	42,345
2016	59,945	79,439	22,820	125,421	42,885
2017	49,267	68,916	20,779	94,095	39,768
2018	47,786	64,889	19,726	86,245	39,785

Table C8

Annual Source Reported Emissions Trends (Tons)

Year	Carbon Monoxide	Nitrogen Oxides	PM_{10}	Sulfur Dioxide	Volatile Organic Material
1992	112,403	381,938	49,377	1,045,113	143,853
1993	113,781	418,209	36,737	1,001,123	108,847
1994	116,192	404,486	34,086	967,213	108,897
1995	160,256	366,978	31,491	814,229	103,144
1996	84,258	407,683	30,850	914,295	87,271
1997	71,408	404,289	25,648	974,232	76,350
1998	79,147	377,191	31,828	964,262	77,952
1999	91,153	360,850	27,663	863,759	71,514
2000	90,315	329,141	30,482	620,592	71,063
2001	83,453	291,778	28,929	531,504	62,647
2002	83,795	261,202	26,900	498,754	70,703
2003	75,511	230,068	29,939	507,338	63,495
2004	77,847	229,127	31,896	521,808	64,594
2005	85,892	215,366	30,535	486,534	62,251
2006	77,099	200,832	29,367	429,573	53,791
2007	77,211	198,073	28,784	406,405	50,933
2008	75,183	193,637	28,194	376,627	49,112
2009	62,285	134,274	25,988	305,297	41,839
2010	75,277	139,508	25,993	297,254	44,245
2011	73,586	129,058	25,209	272,747	42,430
2012	64,253	109,298	22,631	220,143	42,735
2013	65,879	107,877	21,549	201,509	41,276
2014	65,865	99,230	21,962	182,337	40,767
2015	57,688	80,469	19,557	136,749	40,039
2016	46,864	68,441	17,560	99,907	37,593
2017	46,747	64,673	17,209	86,446	37,206

Illinois EPA's Website Information

To access the online version of the Annual Air Quality Report, various pollutant averages and exceedances, the monitoring network plan and emission trends:

- https://www2.illinois.gov/epa/topics/air-quality/Pages/default.aspx

Air Quality Index Information

To view current Air Quality Index numbers and forecasts across the country:

- http://www.airnow.gov

To sign up for air quality information such as forecasts and pollution alerts:

- http://www.illinois.enviroflash.info/signup.cfm

EnviroFlash on Twitter:

- http://www.illinois.enviroflash.info/EnviroFlashTwitter.cfm

Monitoring Data Access Information

To access yearly Air Quality Index summaries, air quality statistics and monitoring concentrations:

- https://www.epa.gov/outdoor-air-quality-data

To access status and trends of key air pollutants:

- https://www.epa.gov/air-trends

To access historical Design Values (statistic to compare to the National Ambient Air Quality Standards):

- https://www.epa.gov/air-trends/air-quality-design-values

Nonattainment Areas and Designations (regions in violation of the various National Ambient Air Quality Standards):

- http://www.epa.gov/green-book

Other

- Ambient Monitoring Technology Information Center: https://www.epa.gov/amtic
- Toxic Release Inventory Search: http://iaspub.epa.gov/triexplorer/tri_release.chemical
- Toxic Release Inventory Data and Tools: https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools