



TULANE LAW SCHOOL
TULANE ENVIRONMENTAL LAW CLINIC

June 17, 2020

By e-mail to: DEQ.PUBLICNOTICES@LA.GOV
Louisiana Department of Environmental Quality
Public Participation Group
P.O. Box 4313, Baton Rouge, LA 70821

EPA Region 6 Main Office
1201 Elm Street, Suite 500
Dallas, Texas 75270

Re: Comments on 2020 Louisiana Annual Monitoring Network Plan

Dear LDEQ Public Participation Group,

On behalf of Patricia Charles, Raphael Sias, Ronald Carrier, Larry Allison, Karl Prater, McKeever Edwards, Carolyn Peters, Stafford Frank, and Peggy Anthony (“Mossville community members”), we respectfully submit these comments concerning Louisiana’s proposed 2020 Annual Air Monitor Network Plan (“Plan”). These comments raise major concerns about air pollution and the lack of air monitoring in Mossville, Louisiana, as well as concerns over the Louisiana Department of Environmental Quality’s (“LDEQ’s”) longstanding failure to address these issues. As detailed below, multiple data sources indicate that Mossville and neighboring communities are burdened with hotspots of air pollution that are among the most severe in Louisiana. Yet LDEQ has sought to systematically eliminate air monitors in this area, while concurrently permitting massive increases in industrial emissions. These actions have resulted in disproportionate harm to Mossville – a culturally rich, rural community, with deep roots in African American history (Fig. 1)¹. The 2020 Plan provides an opportunity to begin to address the disproportionate risk that the remaining Mossville residents experience from air pollution, and LDEQ should revise this plan accordingly.

Mossville community members are black Americans who have been severely overburdened with industrial air pollution. Residents of Mossville fear for their health, well-being, loss of community, and property devaluation given the exceptionally high levels of harmful air pollutants emitted from the 14 surrounding industrial facilities. Mossville represents the most heavily industrialized area of Calcasieu Parish, which has **higher emissions of nearly**

¹ Mossville History Project. <https://www.lib.lsu.edu/oralhistory/collections/mossville>

every criteria pollutant than any other parish in Louisiana (with the exception of PM₁₀ and lead).² This disproportionate impact of industrial permitting is reflected in the fact that Mossville is a hotspot of extreme air toxicity, representing the top 1% most toxic air in Louisiana, according to Environmental Protection Agency (EPA) data (Fig. 2).³ Mossville community members are alarmed by the recent and ongoing industrial buildouts like those at Sasol's Lake Charles Chemical Complex, which was recently ranked as the #2 "super polluter" in the nation.⁴ These members are also concerned by the track record of serious permit violations at the industrial facilities near this historic black community. According to EPA data, two facilities located adjacent to Mossville (i.e. Phillips 66 and Georgia Gulf) have had "high priority violations" of their air permits within the last 3 years, resulting in multiple enforcement actions at each facility.⁵

On behalf of the Mossville community members, we respectfully request that the LDEQ amend the air quality monitoring plan to include reliable air monitors for PM_{2.5}, NO_x, VOCs, and ozone in Mossville, Louisiana. This information is essential to the health, wellbeing, and economic viability of the Mossville community.



Figure 1. Satellite imagery from Google Earth Pro, illustrating the industrialization and destruction of Mossville from 2013 to 2018. Yellow lines indicate the approximate boundaries of historic Mossville.

² Based on LDEQ 2018 reported emissions, accessed via ERIC Emissions by Parish Report. <https://business.deq.louisiana.gov/Eric/EricReports/ParishReportSelector?> Calcasieu Parish 2018 emissions include: PM_{2.5} (2,769 tons), NO_x (17,173 tons), total VOCs (6,224 tons), CO (9,980 tons), and SO₂ (29,649 tons). Calcasieu Parish's 2018 PM₁₀ emissions are the second highest in the state. *Id.*

³ 2018 EPA RSEI microdata. <https://www.epa.gov/rsei/rsei-geographic-microdata-rsei-gm>

⁴ Apr. 8, 2020, "Breath to the People, Sacred Air and Toxic Pollution," Environmental Integrity Project for the United Church of Christ, p. 7, available at: https://d3n8a8pro7vhmx.cloudfront.net/unitedchurchofchist/pages/24840/attachments/original/1582721312/FINAL_BreathToThePeople_2.26.2020.pdf?1582721312

⁵ Data accessed from EPA's ECHO database on June 16, 2020. See <https://echo.epa.gov/detailed-facility-report?fid=110002054482>. See also <https://echo.epa.gov/detailed-facility-report?fid=110000539757#pane3110000539757>.

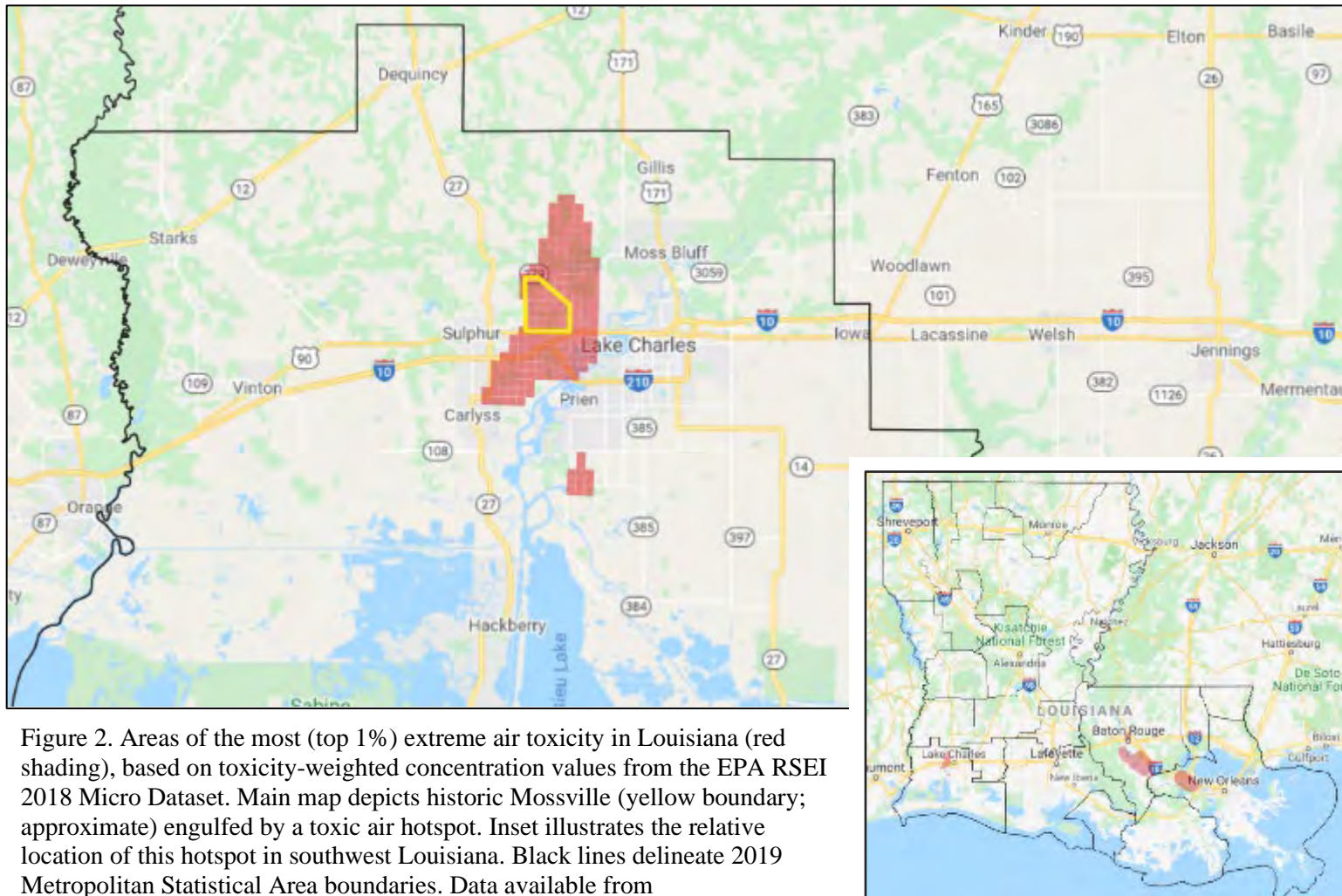


Figure 2. Areas of the most (top 1%) extreme air toxicity in Louisiana (red shading), based on toxicity-weighted concentration values from the EPA RSEI 2018 Micro Dataset. Main map depicts historic Mossville (yellow boundary; approximate) engulfed by a toxic air hotspot. Inset illustrates the relative location of this hotspot in southwest Louisiana. Black lines delineate 2019 Metropolitan Statistical Area boundaries. Data available from <https://www.epa.gov/rsei/rsei-geographic-microdata-rsei-gm>

I. BACKGROUND

Mossville, an unincorporated town in Calcasieu Parish, Louisiana, was founded by formerly enslaved African people in the 1790s.⁶ The town is wedged between Westlake and Sulphur, about 6 miles northwest of Lake Charles. Despite its small size, Mossville has a rich cultural heritage and deep genealogical roots that represent an important contribution to black American history. Many members of the community are descendants of the emancipated settlers of Mossville.⁷ Over the course of the past 60 years, residents of Mossville have struggled, to the point of oppression, with air pollution, groundwater contamination, and the corresponding health impacts.⁸ Community members watched their ancestral home be dismantled piece-by-piece, as petrochemical companies continued to build and expand along their fencelines (Fig. 1).⁹

The EPA defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulation, and policies.”¹⁰ According to the EPA, fair treatment means that “no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies.”¹¹ Based on EPA and satellite data, it is clear that Mossville disproportionately suffers the negative consequences of decades of permits granted to nearby petrochemical facilities by LDEQ (Figs. 1&2). Much of this historic community has been demolished, literally, to advance the economic interests of petrochemical companies, particularly Sasol (a foreign company). Yet poverty rates for Calcasieu Parish have not improved over the last two decades, while median household income in the parish has fallen relative to U.S. median household income (Fig. 3).¹²

⁶ https://www.nola.com/news/business/article_f478381c-ff36-57b3-adc2-2116c35982d9.html.

⁷ <https://www.lib.lsu.edu/oralhistory/collections/mossville>

⁸ <https://www.cnn.com/2010/HEALTH/02/26/toxic.town.mossville.epa/index.html>

⁹ https://www.nola.com/news/business/article_f478381c-ff36-57b3-adc2-2116c35982d9.html

¹⁰ <https://www.epa.gov/environmentaljustice>

¹¹ EPA, Plan EJ 2014 at 3, available at <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100DFCQ.PDF?Dockey=P100DFCQ.PDF>; *see also* Basis for Decision for FG LA Complex, EDMS Doc. No. 11998452 (AI No. 198351), Part IX: Environmental Justice/Civil Rights Title VI Issues, at pdf p. 35 (in which LDEQ endorses this definition).

¹² census.gov/data-tools/demo/saife/#/?map_geoSelector=aa_c&s_state=22&s_county=22019

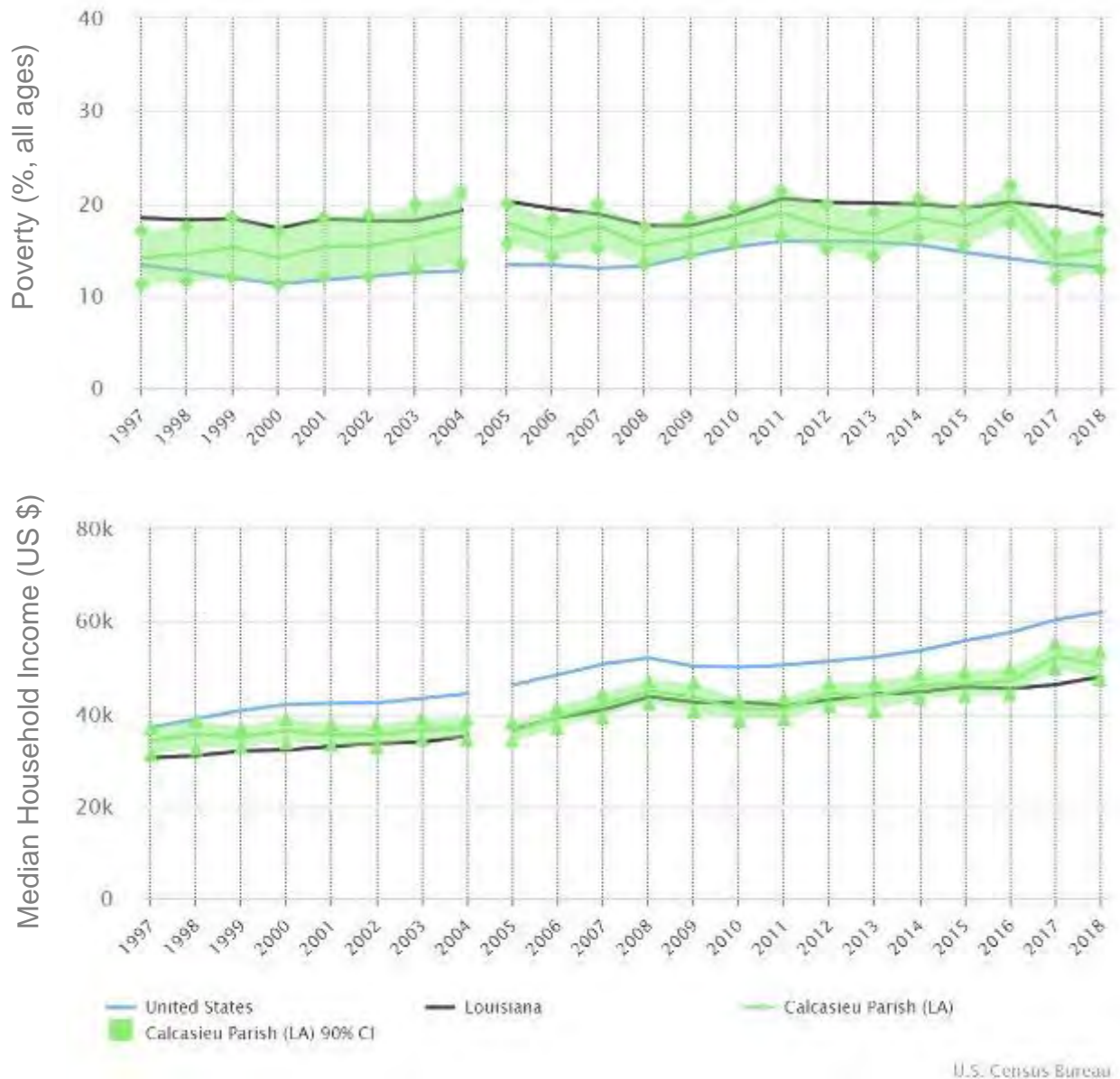


Figure 3. Economic indicators for Calcasieu Parish (green line, shading indicates 90% confidence interval), relative to Louisiana (black line), and the U.S. overall (blue line). Note that poverty rates (top panel) in Calcasieu Parish have not significantly improved overall during the last 5, 10, or 20 years. Median household income (bottom panel) has increased over the last 20 years, but has fallen relative to the U.S. overall. Data from: census.gov/data-tools/demo/saipe/#/?map_geoSelector=aa_c&s_state=22&s_county=22019.

Ozone (O₃)

Calcasieu Parish has the highest emissions of ozone precursors¹³ of any parish in Louisiana, with over 17,000 tons of nitrogen oxides (NO_x), more than 6,000 tons of volatile organic compounds (VOCs), and nearly 10,000 tons of carbon monoxide (CO) emitted in 2018, according to LDEQ data.¹⁴ This environmental impact is clearly disproportionate; Calcasieu Parish represents only 2% of the land area of Louisiana,¹⁵ yet it is overburdened with 10% or more of statewide emissions for each of these three pollutants.¹⁶

While Mossville has been overburdened by industrial pollution for decades, this disparity was recently exacerbated by a major expansion of Sasol's Lake Charles Chemical Complex. In May 2014, LDEQ issued air permits that allowed Sasol to massively increase emissions at this complex for its Cracker Project.¹⁷ This included drastic increases in ozone precursors: 2,673 tpy of CO, 2,623 tpy of total VOCs, and 923 tpy of NO_x.¹⁸ In addition to their direct health effects, these pollutants cause respiratory disease and other health problems by contributing to the formation of ground-level ozone.¹⁹ Air modeling conducted by Sasol indicated that the Cracker Project would increase ambient ozone concentrations across a vast area, with impacts extending to Houston, TX.²⁰ Ozone concentrations at the Westlake monitor were expected to increase by 0.2 ppb (0.002 ppm) as a result of Sasol's Cracker Project, while ozone concentrations in nearby

¹³ <https://www.eea.europa.eu/themes/air/air-quality/resources/glossary/ozone-precursor>

¹⁴ NO_x emissions (2018): Calcasieu Parish, 17,173 tons; Louisiana, 138,433 tons. Total VOC emissions (2018): Calcasieu Parish, 6,224 tons; Louisiana, 57,287 tons. CO emissions (2018): Calcasieu Parish, 9,980 tons; Louisiana, 97,553 tons. Data from LDEQ ERIC database. 2018 Emissions by Parish Report. Statewide totals calculated as the sum of all parishes.

<https://business.deq.louisiana.gov/Eric/EricReports/ParishReportSelector?>

¹⁵ Land area: Calcasieu Parish, 1,064 mi²; Louisiana, 43,204 mi². Data from the U.S. Census Bureau Quick Facts, accessed June 13, 2020.

<https://www.census.gov/quickfacts/fact/table/calcasieuparishlouisiana,LA/PST045219>

¹⁶ Data from LDEQ ERIC database. 2018 Emissions by Parish Report. See footnote 12.

¹⁷ [LDEQ. Basis for Decision. Lake Charles Cracker Project, Part 70 Operating Permits. Page 26. EDMS # 9317311. May 23, 2014.](#)

¹⁸ *Id.* at page 3.

¹⁹ See <https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects>; *see also* <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics#formation> and <https://toxtown.nlm.nih.gov/chemicals-and-contaminants/volatile-organic-compounds-vocs> and <https://earthobservatory.nasa.gov/images/7033/carbon-monoxide-fires-and-air-pollution> and <https://www.eea.europa.eu/themes/air/air-quality/resources/glossary/ozone-precursor>

²⁰ LDEQ. Statement of Basis. Lake Charles Cracker Project, Proposed Part 70 Operating Permits. Page 26. EDMS # 9317309. May 23, 2014.

(unspecified) areas would increase by 0.5 ppb (0.005 ppm).²¹ Neither LDEQ nor Sasol has informed the Mossville community about the level of expected ozone increase in their town, despite extensive company outreach related to the Cracker Project and the company's expressed commitment to "be a good corporate citizen and communicate forthrightly with our neighbors."²²

Before it was deactivated, the Westlake monitor measured ozone levels extremely close to the current NAAQS threshold (implemented in 2015) of 0.07 ppm²³; the value for 2010-2012 at the Westlake monitor was 0.069 ppm. Thus, the projected 0.002 ppm ozone increase from Sasol's Cracker Plant warrants continued monitoring at this currently-inactive site. The potential for an ozone NAAQS violation is further evidenced by LDEQ reported "actual emissions" data, which indicates a **20-fold increase in VOC emissions** (34.1 tons versus 713.7 tons) and a **110-fold increase in NO_x emissions** (4.1 tons versus 454.3 tons) within 1 km of the Westlake monitoring site (30.262347, -93.284906) from 2015 to 2019.²⁴

Despite the clear potential for an ozone NAAQS violation at the Westlake monitor, LDEQ received EPA approval to discontinue this monitor in October 2014.²⁵ The LDEQ justified the removal of the Westlake ozone monitor by claiming that its readings were "consistently lower" than the Vinton and Carlyss monitors.²⁶ However, the monitoring data do not support this conclusion (Fig. 4). In fact, the highest ozone levels recorded by the Westlake monitor in 2013 and 2014 were above the highest values recorded by the Vinton monitor (Fig. 5).²⁷

²¹ *Id.*

²² Sasol Property Purchase Program Handbook. Jul 18, 2013. (Exhibit A)

²³ The .07 ppm limit is calculated as the annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.

²⁴ Data accessed May 2020 from <https://business.deq.louisiana.gov/Eric/EricReports> using a 1,000 m radius and coordinates: 30.262347, -93.284906.

²⁵ 2014 Louisiana Annual Network Assessment, LDEQ, 4, available at https://deq.louisiana.gov/assets/docs/Air/Ambient_Air_Data/2014/FINAL_2014_LANA_with_EPA_response_letter.pdf.

²⁶ *Id.* at 4 of 20.

²⁷ See LDEQ Ambient Air Monitoring Data.

<https://www.deq.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=ambient-air-monitoring-data-reports> Accessed April 2020.

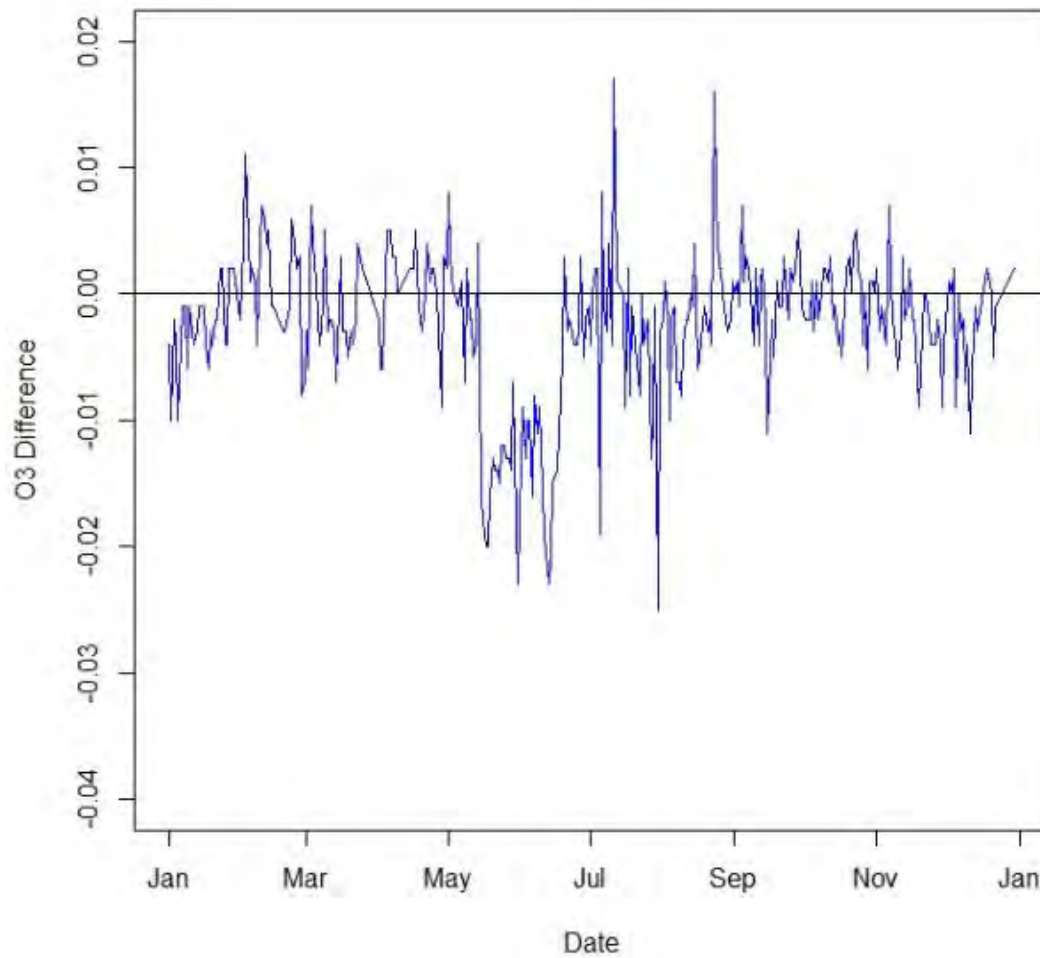


Figure 4. Difference in ambient ozone concentrations between the Westlake and Vinton monitor locations. Positive values indicate higher concentrations at Westlake compared to Vinton.

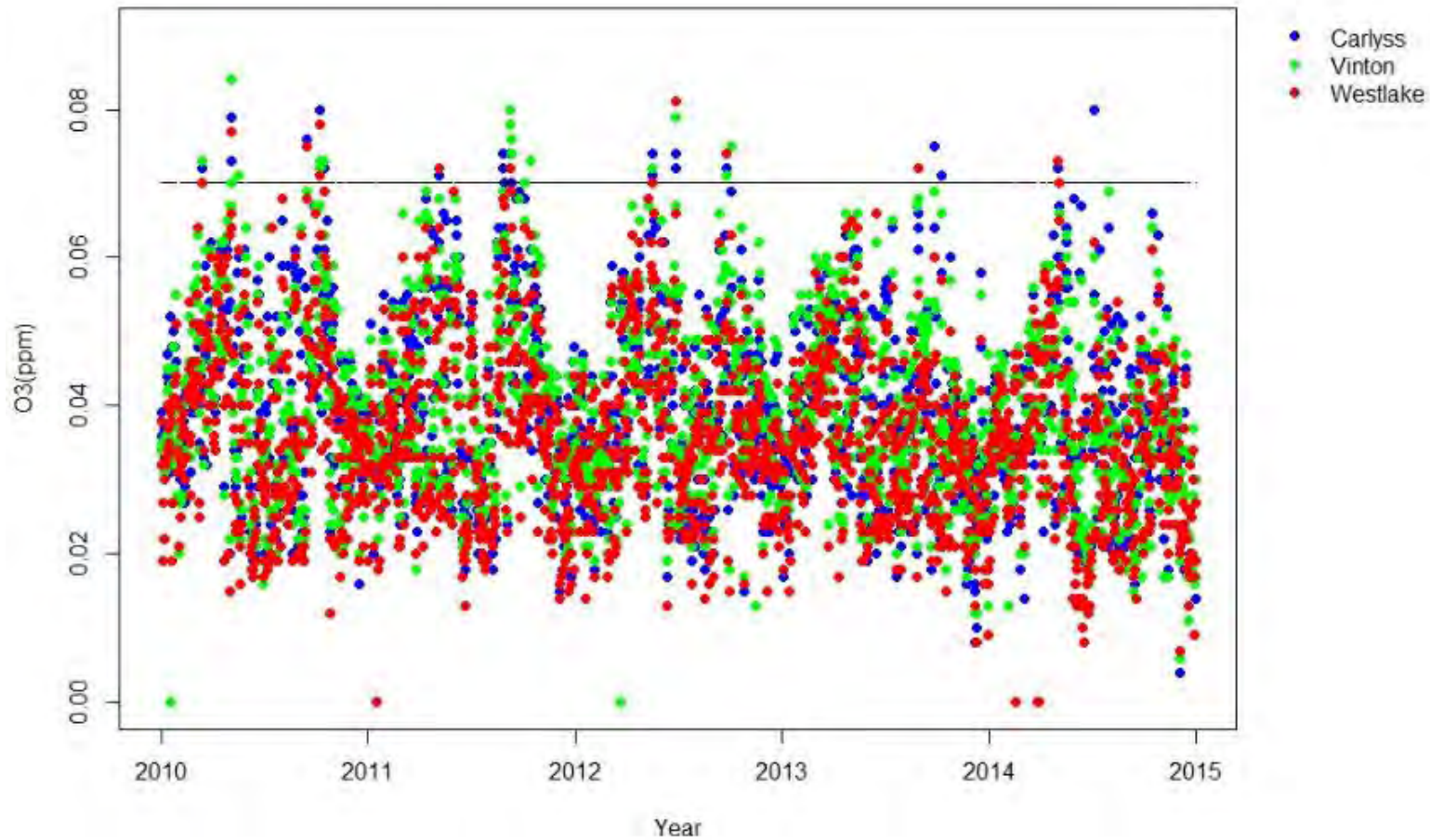


Figure 5. Ozone concentrations (8-hour averages) from LDEQ air monitors in the Lake Charles Metropolitan Statistical Area from 2010 through 2014.

Fine Particulate Matter (PM_{2.5})

Calcasieu Parish has the highest PM_{2.5} emissions in Louisiana by a wide margin, with 53% higher emissions than the next highest parish (East Baton Rouge Parish).²⁸ Calcasieu Parish is clearly overburdened with PM_{2.5}, representing 2% of the land area in Louisiana, but 15% of the state's PM_{2.5} emissions.²⁹ Exposure to PM_{2.5} is a well-established cause of respiratory disease, cardiovascular disease, and increased susceptibility to respiratory viruses.³⁰ Yet, LDEQ has systemically sought to eliminate most of the PM_{2.5} monitoring in the Lake Charles Metropolitan Statistical Area (MSA), while concurrently permitting drastic increases in PM_{2.5} emissions.

In 2014, LDEQ deactivated the FRM PM_{2.5} monitor at McNeese State University,³¹ a public institution that predominantly serves Louisiana residents.³² This university is substantially closer to major sources of industrial PM_{2.5} emissions compared to the Vinton monitoring site, which represents the only other FRM PM_{2.5} monitor in the Parish. Yet, paradoxically, in its approval to deactivate the McNeese monitor, the EPA concluded that it “supports the continued operation of the PM_{2.5} FRM at the Vinton site due to the proximity of industrial sources in the area.” The LDEQ reaffirmed this purpose in its 2016 Monitoring Plan, stating that the agency would continue operating the Vinton PM_{2.5} monitor “due to the proximity of industry in the area to provide oversight of ambient air conditions in this industrial area.”³³ However, these statements ignore the fact that the Vinton PM_{2.5} monitor is located nowhere near the area's major industrial sources of PM_{2.5} emissions (i.e. about 15 km away; Fig. 6). In fact, the monitor is

²⁸ 2018 PM_{2.5} emissions: Calcasieu Parish, 2,769 tons; East Baton Rouge Parish, 1,814 tons; Louisiana, 18,442 tons. Data from LDEQ ERIC database. 2018 Emissions by Parish Report. <https://business.deq.louisiana.gov/Eric/EricReports/ParishReportSelector?>

²⁹ *Id.* Land area: Calcasieu Parish, 1,064 mi²; Louisiana, 43,204 mi². Data from the U.S. Census Bureau Quick Facts, accessed June 13, 2020. <https://www.census.gov/quickfacts/fact/table/calcasieuparishlouisiana,LA/PST045219>

³⁰ See Ciencewicky, Jonathan, and Ilona Jaspers. “Air Pollution and Respiratory Viral Infection.” *Inhalation Toxicology* 19, no. 14 (November 2007): 1135–46; and references therein. *See also* Wu, X, R. C. Nethery, B.M. Sabath, D. Braun, and F. Dominici. “Exposure to Air Pollution and COVID-19 Mortality in the United States. MedRxiv 2020.04.05.20054502; Doi: <https://doi.org/10.1101/2020.04.05.20054502>.” Harvard University, April 24, 2020; and references therein.

³¹ 2014 Louisiana Annual Network Assessment, LDEQ, 4, available at https://deq.louisiana.gov/assets/docs/Air/Ambient_Air_Data/2014/FINAL_2014_LANA_with_EPA_response_letter.pdf

³² <https://www.collegefactual.com/colleges/mcneese-state-university/student-life/diversity/>

³³ 2016 Louisiana Annual Network Assessment, LDEQ, 6 of 19, available at <https://www.epa.gov/sites/production/files/2017-09/documents/laplan2016.pdf>

located so far west that it provides more relevant information for Forest Hills, TX than for Mossville or Lake Charles, LA.³⁴ Thus, it is not surprising that ambient PM_{2.5} concentrations at the Vinton site are among the lowest in the Lake Charles MSA, based on modeled satellite data (Fig. 7).³⁵ In contrast to Vinton, the McNeese site was relatively close to major industrial sources of PM_{2.5} (i.e., ~5 km; Fig. 6) and was located at the edge of a PM_{2.5} hotspot (Fig. 7). Further, in the three years prior to its deactivation, annual mean PM_{2.5} concentrations from the McNeese monitor were consistently higher than those from the Vinton monitor (Table 1).³⁶ Not only did the McNeese site provide a better opportunity for industry oversight, it was relevant to a far larger population; based on 2010 Census data, the population density around the McNeese site was nearly 20-fold higher than that around the Vinton site.³⁷

In July 2014, less than two months after permitting a **606 tons per year** (tpy) increase in PM_{2.5} emissions for Sasol's Lake Charles Chemical Complex,³⁸ LDEQ requested EPA approval to discontinue the Westlake PM_{2.5} monitor, located at the complex's fence line.³⁹ The LDEQ claimed that the sole remaining PM_{2.5} monitor in the Lake Charles MSA, located ~15 km west (far closer to Texas than to Sasol), would provide "sufficient PM_{2.5} monitoring coverage in the region."⁴⁰ The data from the Westlake monitor itself refute this claim; the following year (2015), annual mean PM_{2.5} increased 19% at the Westlake monitor (compared to 2014), but only 6% at

³⁴ In other words, the Vinton monitoring site is located only 16 km from Forest Hills, TX, but 27 km from Mossville and 35 km from Lake Charles, LA.

³⁵ Modeled satellite data from Van Donkelaar et al., North American Regional Estimates. Available at http://fizz.phys.dal.ca/~atmos/martin/?page_id=140.

³⁶ McNeese and Vinton PM_{2.5} data from LDEQ Ambient Air Monitoring Data, available at <https://deq.louisiana.gov/page/ambient-air-monitoring-data-reports>. Westlake PM_{2.5} data obtained from LDEQ by Public Records Request in April 2020 (Exhibit B).

³⁷ Based on 2010 Census Data for the 3-mile buffer around each point location, accessed via EJScreen. McNeese (30.176386, -93.214058): 2,110 people per mi². Vinton (30.227567, -93.579778): 109 people per mi².

³⁸ The 606 tpy increase includes 364 tpy for the Cracker Project and 242 tpy for the failed Gas-to-Liquids Project. *See*: LDEQ. Statement of Basis. Lake Charles Cracker Project. Page 25. EDMS # 9317309. May 23, 2014. *See also*: LDEQ. Statement of Basis. Gas to Liquids Project. 2 of 32. EDMS 9317335. May 23, 2014.

³⁹ 2014 Louisiana Annual Network Assessment, LDEQ, 4 of 20, available at https://deq.louisiana.gov/assets/docs/Air/Ambient_Air_Data/2014/FINAL_2014_LANA_with_EPA_response_letter.pdf

⁴⁰ 2014 Louisiana Annual Network Assessment, LDEQ, 4 of 20, available at https://deq.louisiana.gov/assets/docs/Air/Ambient_Air_Data/2014/FINAL_2014_LANA_with_EPA_response_letter.pdf

the Vinton monitor (Table 1).⁴¹ In fact, annual mean PM_{2.5} concentrations have increased every year at the Westlake site since LDEQ requested its deactivation in 2014 and have been consistently higher than those values for Vinton (Table 1).⁴² Mossville community members sincerely commend EPA for recognizing the critical need for PM_{2.5} data from the Westlake site and denying LDEQ's ill-conceived request to decommission this monitor.⁴³

One of the more alarming aspects of the 2020 Plan is that, in it, LDEQ claims that the Westlake PM_{2.5} monitor data are not comparable to NAAQS, based on a 2013 letter from EPA.⁴⁴ However, the cited letter does not appear to support this statement and does not appear to reflect EPA approval of exclusion of the Westlake PM_{2.5} monitor data.⁴⁵ And we are unaware of any legitimate justification for excluding the Westlake PM_{2.5} data from NAAQS comparison. In fact, the LDEQ relied heavily on the Westlake PM_{2.5} monitoring data to determine NAAQS compliance in permitting Sasol's 606 tpy PM_{2.5} increase described above, claiming that "due to the proximity of LDEQ's Westlake monitor to Sasol, LDEQ determined that nearby industrial emissions of PM_{2.5}, SO₂, and NO_x have been accounted for in the observed background concentrations, thus precluding the need to model an offsite inventory to characterize such impacts."⁴⁶ This claim is physically impossible; information obtained from a single point location (i.e. the Westlake monitor) cannot account for the combined effects of more than a dozen major industrial facilities on multiple communities spread across a relatively broad geographic area (and located in opposite directions from the monitor). It is critical that the question of NAAQS comparability be resolved, because the Westlake monitoring data indicate that ambient PM_{2.5} concentrations have consistently increased since 2014 (Table 1), concurrent with the massive, ongoing expansion of industrial activity near the monitoring site.

⁴¹ Vinton: 6.9 µg/m³ in 2014 and 7.3 µg/m³ in 2015. Westlake: 8.9 µg/m³ in 2014 and 10.6 µg/m³ in 2015. Vinton and McNeese data are available at <https://deq.louisiana.gov/page/ambient-air-monitoring-data-reports>. See Exhibit B for Westlake PM_{2.5} data.

⁴² *Id.*

⁴³ 2014 Louisiana Annual Network Assessment, LDEQ, 4 of 20, available at https://deq.louisiana.gov/assets/docs/Air/Ambient_Air_Data/2014/FINAL_2014_LANA_with_EPA_response_letter.pdf

⁴⁴ 2020 Louisiana Annual Network Assessment, LDEQ, 16 of 17. EDMS #12170694.

⁴⁵ See Exhibit C, in globo.

⁴⁶ LDEQ. Statement of Basis. Lake Charles Cracker Project. Activity No. PER20130017 through PER20130025. Page 25. EDMS # 9317309. May 23, 2014.

Table 1. Annual Mean PM_{2.5} Concentrations at LDEQ Monitoring Sites in the Lake Charles MSA

Year	Vinton	McNeese	Westlake
2012	8.0	8.3	9.2
2013	7.4	8.0	9.9
2014	6.9	7.4	8.9
2015	7.3	NA	10.6
2016	7.6	NA	10.9
2017	7.7	NA	11.1
2018	8.7	NA	11.3

Carbon Monoxide (CO)

In contrast to other NAAQS criteria pollutants, there is no monitoring for carbon monoxide (CO) anywhere in or near the Lake Charles MSA. In fact, the only CO monitors in the state are located over 100 miles away, in Baton Rouge and New Orleans.⁴⁷ This lack of CO monitoring in the Lake Charles MSA is concerning, given that Calcasieu Parish has the most industrial CO emissions of any parish in Louisiana.⁴⁸

⁴⁷ Louisiana Ambient Air Monitoring Sites. Updated May 2017. Accessed June 13, 2020. <https://www.deq.louisiana.gov/assets/docs/Air/LouisianaAmbientAirMonitoringSites.pdf>

⁴⁸ CO emissions (2018): Calcasieu Parish, 9,980 tons; Louisiana, 97,553 tons. Data from LDEQ ERIC database. 2018 Emissions by Parish Report.

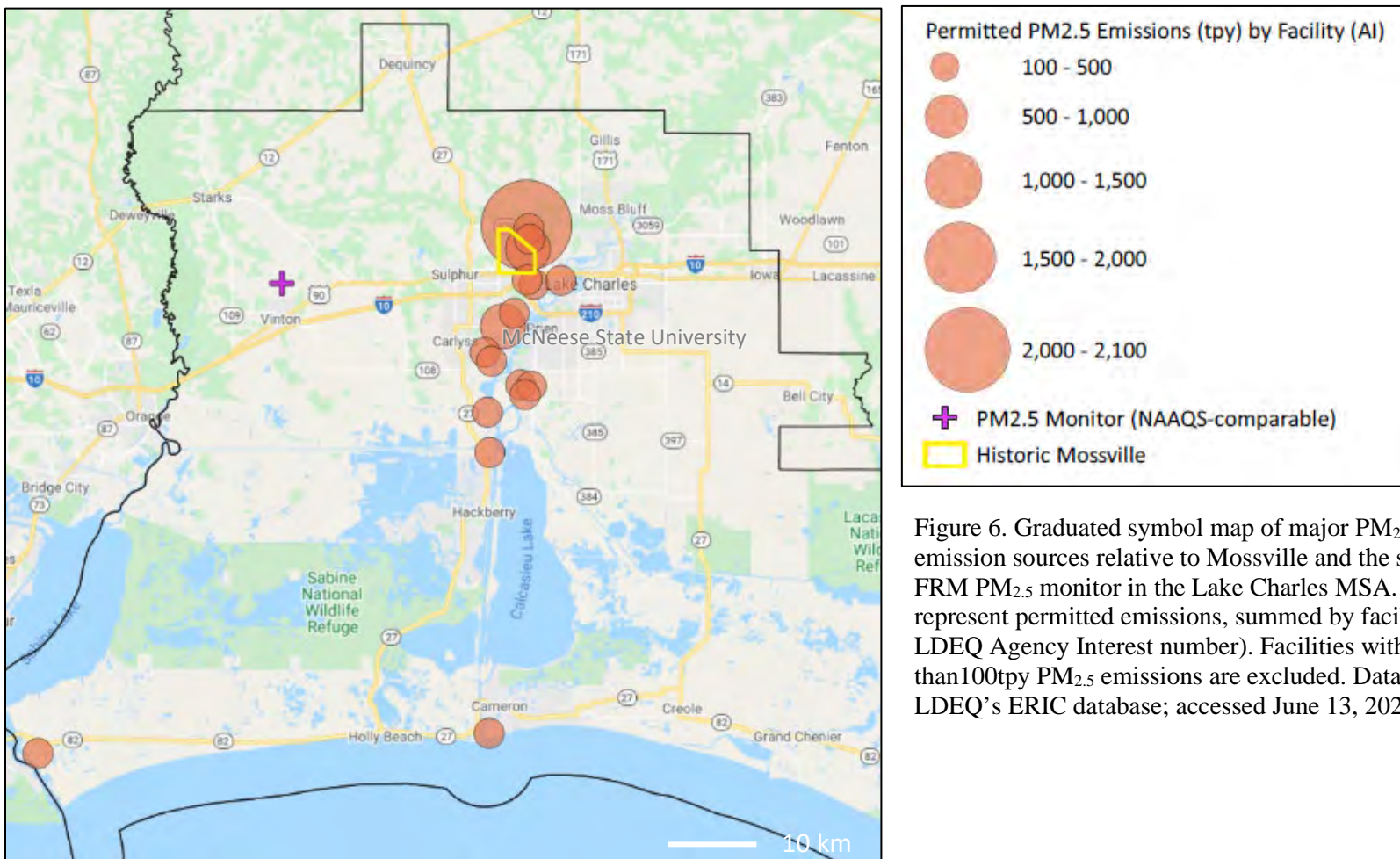


Figure 6. Graduated symbol map of major PM_{2.5} emission sources relative to Mossville and the sole FRM PM_{2.5} monitor in the Lake Charles MSA. Circles represent permitted emissions, summed by facility (i.e. LDEQ Agency Interest number). Facilities with less than 100tpy PM_{2.5} emissions are excluded. Data from LDEQ's ERIC database; accessed June 13, 2020.

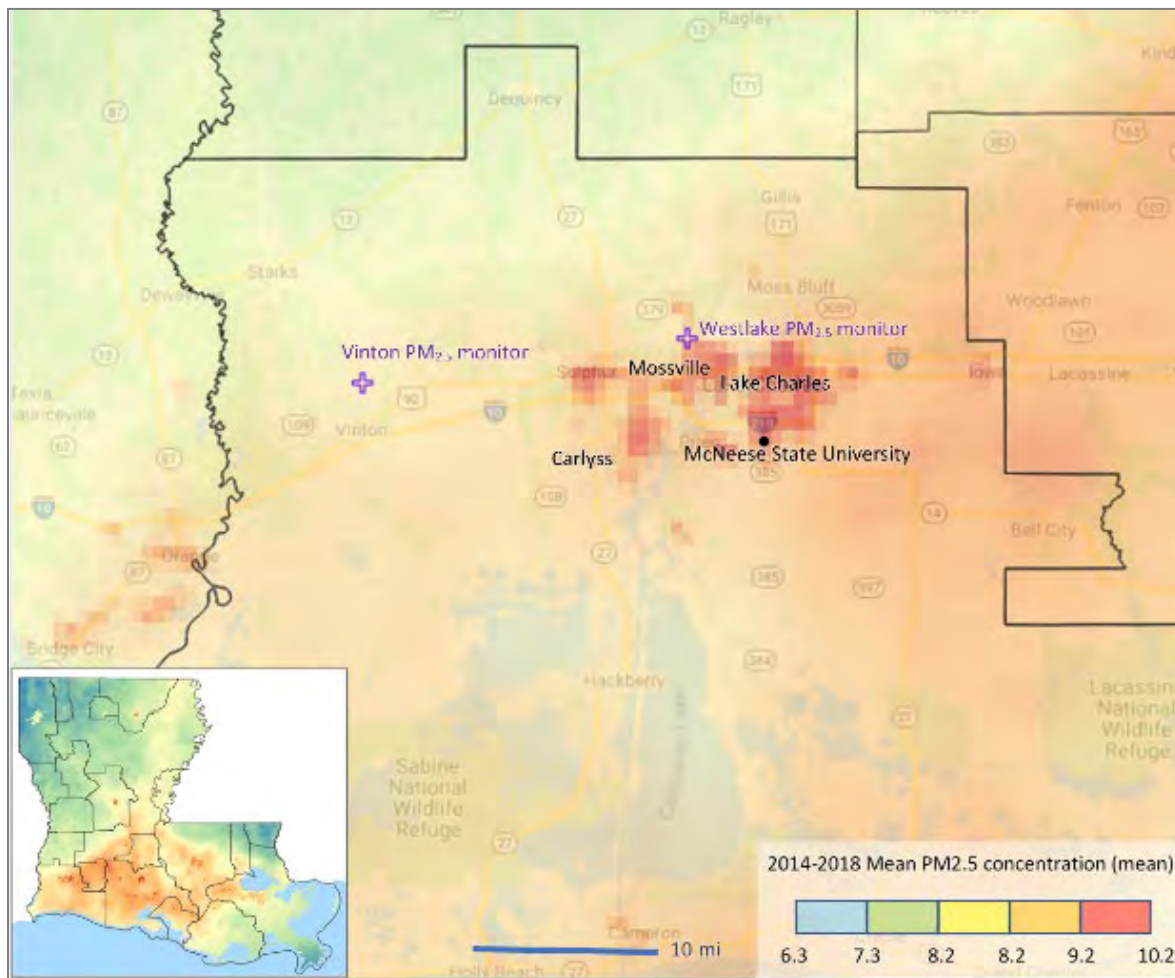


Figure 7. Map of modeled satellite data (mean of 2014-2018 annual average values) illustrating Mossville-Lake Charles PM_{2.5} Pollution Hotspot, relative to the locations of LDEQ's active (Vinton), deactivated (McNeese), and continuous (Westlake) PM_{2.5} monitors in the Lake Charles Metropolitan Statistical Area (MSA). According to LDEQ's 2020 Monitoring Network Plan (Page 16), Vinton is the only NAAQS-comparable PM_{2.5} monitor operating in the Lake Charles MSA. Inset illustrates location of this area relative to the state. Modeled satellite data from: vanDonkelaar, Aaron, Randall V. Martin, Chi Li, and Richard T. Burnett. "Regional Estimates of Chemical Composition of Fine Particulate Matter Using a Combined Geoscience-Statistical Method with Information from Satellites, Models, and Monitors." *Environmental Science & Technology* 53, no. 5 (March 5, 2019): 2595-2611. <https://doi.org/10.1021/acs.est.8b06392>. These satellite data publicly available at http://fizz.phys.dal.ca/~atmos/martin/?page_id=140.

LDEQ Failure to Consider Planned Emissions Increases

The LDEQ's July 2013 request to exclude Westlake PM_{2.5} data and its July 2014 request to discontinue the Westlake ozone monitor both failed to acknowledge the massive emissions increases planned by Sasol and reflected in April 2013 permit applications for its Cracker Project.⁴⁹ While reviewing and approving these drastic emissions increases for PM_{2.5} (364 tpy) and ozone precursors (i.e., NO_x [923 tpy], VOCs [2,623 tpy], and CO [2,673 tpy]), LDEQ concurrently worked to eliminate monitoring PM_{2.5} and ozone at the monitoring site closest to the project area (i.e. Westlake).⁵⁰

LDEQ missed a long overdue opportunity to rectify the above errors in its 2020 Annual Network Assessment. The agency should amend its monitoring plan to generate NAAQS-comparable data for PM_{2.5}, ozone, and carbon monoxide monitors in the Westlake area, ideally in the town of Mossville, and maintain its ambient air monitoring network in accordance with 40 CFR Part 58.

⁴⁹ Sasol Initial Part 70 and PSD Permit Application, Lake Charles Cracker Project. AI 3271. Apr 30, 2013. EDMS # 8819331. See also: 2014 Louisiana Annual Network Assessment, LDEQ, 4, available at

https://deq.louisiana.gov/assets/docs/Air/Ambient_Air_Data/2014/FINAL_2014_LANA_with_EPA_response_letter.pdf; and Letter from Paul D. Miller, P.E., Administrator LDEQ, to Thomas Diggs, Associate Director for Air, USEPA Region 6. RE: Request to remove PM_{2.5} BAM data from comparison to NAAQS standards. July 1, 2013.

⁵⁰ LDEQ. Statement of Basis. Lake Charles Cracker Project. Activity No. PER20130017 through PER20130025. Page 23. EDMS # 9317309. May 23, 2014.

See also: Letter from Paul D. Miller, P.E., Administrator LDEQ, to Thomas Diggs, Associate Director for Air, USEPA Region 6. RE: Request to remove PM_{2.5} BAM data from comparison to NAAQS standards. July 1, 2013.

See also: 2014 Louisiana Annual Network Assessment, LDEQ, 4, available at

https://deq.louisiana.gov/assets/docs/Air/Ambient_Air_Data/2014/FINAL_2014_LANA_with_EPA_response_letter.pdf

II. LDEQ Must Locate Ozone, Particulate Matter, and Carbon Monoxide Monitors in Mossville to Best Comply with 40 CFR Part 58.

The LDEQ asserts that it maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A and B, utilizes the methodology provided for each monitor in accordance with Appendix C, designs its network in accordance with Appendix D, and locates its sites to meet all requirements of Appendix E.⁵¹ 40 CFR Part 58 and its appendices guide states in the placement and maintenance of monitors. A monitoring site may be chosen for several reasons. Appendix D lists six general site types:⁵²

- (a) Sites located to determine the highest concentration expected to occur in the area covered by the network.
- (b) Sites located to measure typical concentrations in areas of high population density.
- (c) Sites located to determine the impact of significant sources or source categories on air quality.
- (d) Sites located to determine general background concentration levels.
- (e) Sites located to determine the extent of regional pollutant transport among populated areas; and in support of secondary standards.
- (f) Sites located to measure air pollution impacts on visibility, vegetation damage, or other welfare-based impacts.

Further, EPA regulations on air monitor network assessments require that states “must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma)”⁵³

Mossville’s population density, proximity to major emissions sources, and long-term environmental health concerns make it a higher priority site for monitors for ozone and PM_{2.5} compared to Vinton and Carlyss (Table 2; Figs. 2,6&7). The Westlake ozone monitor, which was deactivated at the end of 2014, was located in an area of higher population density, NATA Respiratory Hazard, and NATA Air Toxics Cancer Risk compared to the remaining ozone sites (i.e. Vinton and Carlyss) and the sole remaining NAAQS-comparable PM_{2.5} monitoring site (i.e.

⁵¹ See 2020 Louisiana Annual Monitoring Network Plan, p. 2.

⁵² 40 CFR Part 58, Appendix D 1.1.1 (a)-(f).

⁵³ 40 CFR 58.10(d). Though we have seen no public notice or draft, LDEQ’s 5-year network assessment is due this year. *See id.* (“The state . . . Agency shall perform and submit to the EPA [RA] an assessment of the air quality surveillance system every 5 years. . . .”) and <https://www.epa.gov/amtic/louisiana-network-assessments> (reflecting DEQ’s last 5-year assessment in 2015).

Vinton, Table 2). Thus, LDEQ's arbitrary decision to deactivate the Westlake ozone monitor and McNeese PM_{2.5} monitor while retaining these monitors in Vinton (and an ozone monitor in Carlyss) reflects a disregard for environmental justice and public health. Further, according to EJScreen, the Westlake monitoring site is far closer to areas with high EJ Indices compared to the Vinton and Carlyss monitors (Fig. 8). In other words, the communities near the Westlake monitor are comparatively more vulnerable and therefore warrant more robust monitoring.

As described above, Mossville community members are surrounded by a large number of industrial plants and facilities that emit exceptionally high levels of harmful air pollutants, including thousands of tons per year of ozone precursors.⁵⁴ In 2018, Sasol's Lake Charles Chemical Complex (constructed on top of Mossville; Fig. 1) reported emitting 283 tons of PM_{2.5}, 1,253 tons of NO_x, 839 tons of VOCs, and 637 tons of CO.⁵⁵ These emissions will inevitably increase, because the Cracker Project was not fully operational in 2018.⁵⁶ Yet, already, the Cracker Project has earned Sasol's Lake Charles Chemical Complex the status of #2 "super polluter" in the nation, based on 2018 reported emissions.⁵⁷ Sasol and the numerous other facilities near Mossville can reasonably be considered "significant sources" and their impact on air quality should thus be determined by locating a monitor in Mossville in accordance with Appendix D 1.1.1 (c). Appendix D also lists the appropriate siting scale for a source impact monitor site as "micro, middle, or neighborhood."⁵⁸

The community's long-term public health concerns, location next to significant sources of air pollution, and significant history of environmental injustice make the placement of PM_{2.5}, ozone, and carbon dioxide monitors essential. Accordingly, we request that LDEQ amend its 2020 Annual Monitoring Network Plan to include SLAMS monitors for ozone, PM_{2.5}, and carbon monoxide in the Westlake area, ideally in the town of Mossville, to determine the impact of significant sources of air pollutants on the air quality in this heavily industrialized area.

⁵⁴ <https://www.eea.europa.eu/themes/air/air-quality/resources/glossary/ozone-precursor>

⁵⁵ Based on LDEQ ERIC 2018 Air Monitoring Data. Accessed June 14, 2020.

⁵⁶ <https://inspectioneering.com/news/2019-12-18/8926/sasol-successfully-completes-ethane-cracker-project-at-lake-charles-plant>.

⁵⁷ Apr. 8, 2020, "Breath to the People, Sacred Air and Toxic Pollution," Environmental Integrity Project for the United Church of Christ, p. 7, available at: https://d3n8a8pro7vhmx.cloudfront.net/unitedchurchofchrist/pages/24840/attachments/original/1582721312/FINAL_BreathToThePeople_2.26.2020.pdf?1582721312

⁵⁸ 40 CFR Part 58, Appendix D, Table D-1 "Relationship Between Site Types and Scales of Representativeness."

Table 2. Relevant characteristics for the 3-mile buffer around Ozone Monitors in Calcasieu Parish, compared to Mossville.*

Location	O ₃ Monitor Status	N	W	Population Density*	Ozone (ppb)**	Respiratory Hazard [†]		Air Toxics Cancer Risk [†]	
						State %tile	EPA Region %tile	State %tile	EPA Region %tile
Mossville^{††}	None	-	-	243	34.0	96	95-100	96	95-100
Westlake	Inactive	30.262347	-93.284906	416	34.0	98	95-100	97	95-100
Carlyss	Active	30.140031	-93.368268	90	34.0	96	95-100	87	95-100
Vinton	Active	30.227567	-93.579778	109	33.7	94	95-100	74	90-95

*Relatively higher population density and air toxic risk of non-monitored areas emphasized with bold text.

**Data from 2010 U.S. Census, accessed via EJScreen.

[†]Data from the 2014 National Air Toxics Assessment, accessed via EJScreen.

^{††}See Figs. 1&2 for approximate Mossville geographic boundary.

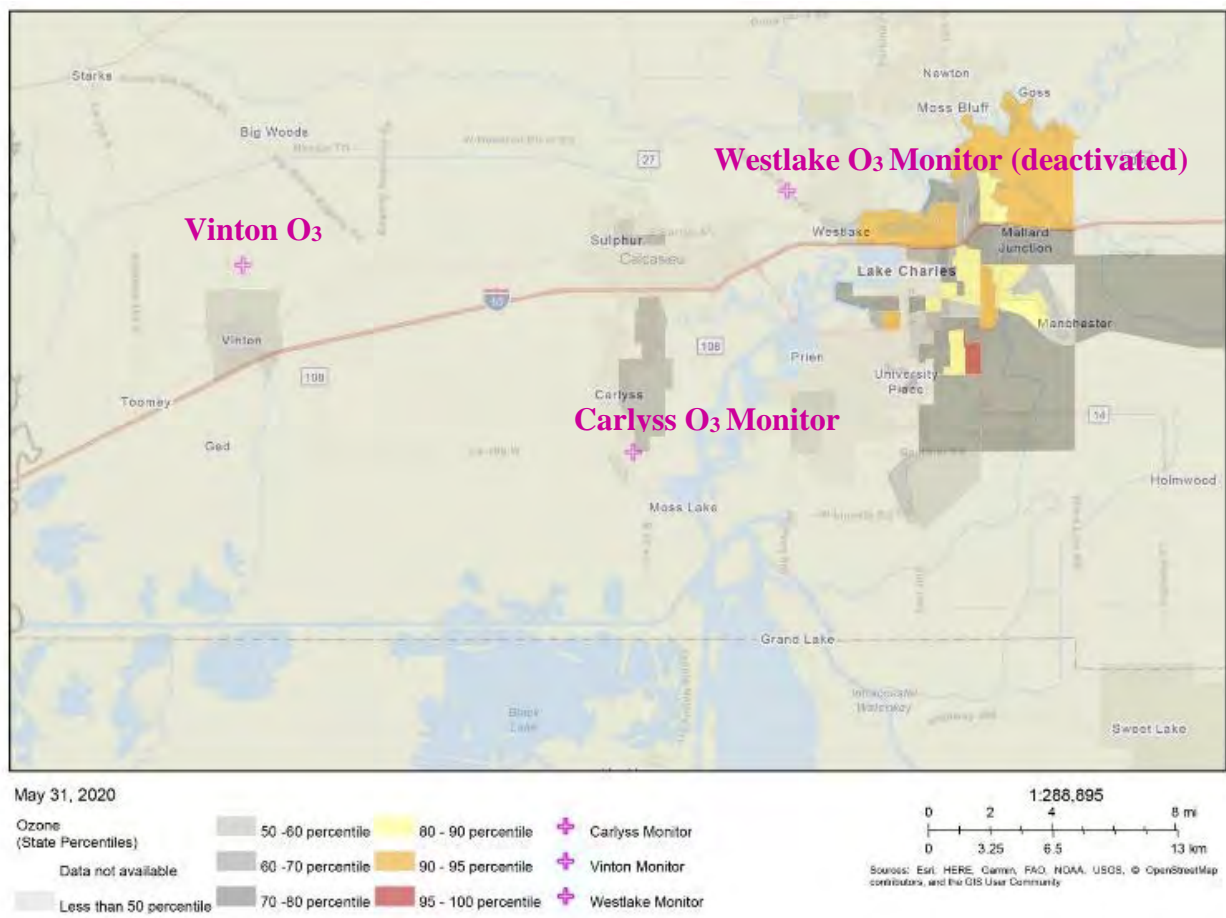


Figure 8. Ozone EJ Index (state percentiles) from the U.S. EPA’s 2014 National Air Toxics Assessment relative to the locations of LDEQ ozone monitors (Westlake ozone monitor deactivated in 2014). Map created in EJScreen in May 2020.

III. LDEQ Must Conduct Air Monitoring in Mossville In Order to Comply with EPA Environmental Justice Standards.

The Environmental Protection Agency (EPA) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulation, and policies.”⁵⁹ According to the EPA, fair treatment means that “no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies.”⁶⁰ Further, EPA noted in guidance on air monitoring that “monitors located in areas that have large low income and/or minority populations may be of particular use for assessing environmental justice issues.”⁶¹ Mossville is a historic community with a rich African-American heritage, and many of its residents trace their roots to the freed slaves who first settled this area.⁶²

Mossville residents are clearly overburdened with industrial pollution, having a Respiratory Hazard and Air Toxics Cancer Risk in the top 5% for both Louisiana and the country as a whole. (Table 2). Further, EPA’s Risk Screening Environmental Indicators (RSEI) microdata indicate that Mossville has the most extreme toxic air pollution in Louisiana, with the top 1% for toxicity-weighted concentration of industrial pollutants (Fig. 1).

In order to ensure facility compliance with their permits and statewide compliance with NAAQS, LDEQ collects a variety of air quality data from both air monitoring stations positioned throughout the state and facilities that emit pollutants. EPA uses the air monitoring data to determine whether Louisiana meets federal and state air quality standards and health benchmarks, to forecast and report daily air quality through the Air Quality Index, and to track

⁵⁹ <https://www.epa.gov/environmentaljustice>

⁶⁰ EPA, Plan EJ 2014 at 3, available at <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100DFCQ.PDF?Dockkey=P100DFCQ.PDF>. *See also Basis for Decision for FG LA Complex*, EDMS Doc. No. 11998452 (AI No. 198351), Part IX: Environmental Justice/Civil Rights Title VI Issues, at pdf p. 35 (in which LDEQ endorses this definition).

⁶¹ EPA Ambient Air Monitoring Network Assessment Guidance, 2-3 (Feb. 2007), <https://www3.epa.gov/ttnamti1/files/ambient/pm25/datamang/network-assessment-guidance.pdf>.

⁶² David S. Martin, *Toxic Towns: People of Mossville ‘are like experiment.’* CNN, (Feb. 26, 2010), <https://www.cnn.com/2010/HEALTH/02/26/toxic.town.mossville.epa/index.html>.

trends in air pollution over time.⁶³ Although these data provide valuable insight into regional air quality, the National Environmental Justice Advisory Council has questioned the adequacy of states' air quality monitoring network because of the distance between air monitoring stations and the fact that these monitors do not reflect the air quality in environmental justice communities.⁶⁴ Mossville community members likewise believe the current air monitoring network is inadequate and seek air quality information representative of pollution concentrations in the community of Mossville, not just data at a regional scale.

The number of monitors in a given location typically reflects the population density of the area with a minimum number of monitors prescribed by regulation; however, EPA regulations indicate that state agencies may and should consider other factors when choosing monitor locations.⁶⁵ For ozone, a Metropolitan Statistical Area (MSA) of 50,000-350,000 people will require between zero and one ozone monitors, depending on concentrations of O₃ in the past three years.⁶⁶ The Lake Charles MSA requires a minimum of one ozone monitor, according to LDEQ.⁶⁷ However, EPA notes: "The total number of O₃ sites needed to support the basic monitoring objectives of public data reporting, air quality mapping, compliance, and understanding O₃-related atmospheric processes will include more sites than these minimum numbers required in Table D-2 of this appendix."⁶⁸ According to LDEQ, there are currently two ozone monitors in operation for Lake Charles MSA,⁶⁹ which according to a 2019 U.S. Census Bureau estimate has a population of 203,046.⁷⁰

While Calcasieu Parish is in compliance for the number of ozone monitors, Mossville residents rank high on EJScreen's respiratory hazard index, implicating the need for robust monitoring of ozone and particulate matter (Table 2). These two pollutants are especially

⁶³ National Environmental Justice Advisory Council, *Recommendations and Guidance for EPA to Develop Monitoring Programs in Communities*, 26 (August 2017); <https://www.epa.gov/sites/production/files/2018-01/documents/monitoring-final-10-6-17.pdf>.

⁶⁴ *Id.*

⁶⁵ See 40 C.F.R. 58 appendix D.4.1(b).

⁶⁶ *Id.*

⁶⁷ 2020 Louisiana Annual Network Assessment, LDEQ, 7 of 17. EDMS #12170694.

⁶⁸ *Id.* at D.4.1(a).

⁶⁹ In the Lake Charles MSA, LDEQ operates a SLAMS monitor for ozone at Carlyss, La., and a special purpose monitor (SPMS) at Vinton, La. <http://www.deq.louisiana.gov/page/carlyss>; <https://www.deq.louisiana.gov/page/vinton> (last visited June 17, 2020); see also 2020 Louisiana Annual Network Assessment, LDEQ, 9, 16 of 17.

⁷⁰ United States Census Bureau, Quick Facts, Calcasieu Parish, *Population Estimates, July 1, 2019*, <https://www.census.gov/quickfacts/fact/table/calcasieuparishlouisiana,lakecharlescitiylouisiana#>.

relevant for evaluating human health impacts, as they have been linked to adverse health outcomes, even at low concentration levels.⁷¹ The EPA concluded in 2013 that ozone pollution poses serious health threats, including respiratory harm, increased likelihood of early death, cardiovascular harm, harm to the central nervous system, and reproductive and developmental harm.⁷²

Ozone is formed from the emissions of the facilities surrounding Mossville. Ozone is not emitted by sources but is formed in the atmosphere by a series of complex chemical reactions between oxides of nitrogen (NO_x), volatile organic compounds (VOC), and other compounds. Because ozone is more likely to form in areas with major sources of both NO_x and VOCs, EPA guidance recommends that monitors be located in areas of maximum precursor emissions in order to be most useful for modeling and control strategy design.⁷³ EPA guidance also notes that the “dominant activity for producing NO_x is combustion processes, including industrial and electrical generation processes,” and the chemical industry is a major producer of VOC emissions.⁷⁴ The community of Mossville is surrounded on all sides by major emitters of both NO_x and VOCs, increasing the likelihood of ozone formation. Such permitted emissions include:

1. Conoco Philips, Lake Charles Refinery – Area A, 2623-V17, AI 2538, located at 2200 Old Spanish Trail, Westlake, LA 70669. According to the Air Permit Briefing Sheet for the facility’s Title V regular permit modification,⁷⁵ the permit allows the following emissions of NO_x and VOC:

Pollutant	Permitted Emissions in Tons per Year
NO _x	592.86
VOC	332.97

⁷¹ Brunekreef, B.; Holgate, S.T. Air pollution and health. *Lancet* 2002, 360, 1233-1242.

⁷² U.S. EPA, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants*, 2013. EPA/600/R-10/076F.

⁷³ EPA ambient air monitoring network assessment guidance, 2-2 (2007), <https://www3.epa.gov/ttnamti1/files/ambient/pm25/datamang/network-assessment-guidance.pdf>.

⁷⁴ EPA Guideline on Ozone Monitoring Site Selection, 2-5 (1998), <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000D45M.TXT>.

⁷⁵ Title V Regular Permit Modification, Air Permit Briefing Sheet, Air Permits Division, LDEQ, (Jan. 22, 2020), EDMS DocID: 12037107.

2. Entergy, Roy S. Nelson Electric Generating Plant, AI 19588, located at 3500 Houston River Road, Westlake, LA 70669. According to the Air Permit Briefing Sheet for the facility's Title V regular permit modification,⁷⁶ the permit allows the following emissions of NOx and VOC:

Pollutant	Permitted Emissions in Tons per Year
NOx	19,368.67
VOC	347.35

3. Sasol Chemicals (USA) LLC — Ethylene Unit, AI 3271. LDEQ is currently reviewing Sasol Chemicals (USA) LLC's Part 70 operating permit renewal and modification for its Ethylene Unit within its Lake Charles Chemical Complex.⁷⁷ Potential emissions of NOx and VOC include:

Pollutant	Permitted Emissions in Tons per Year
NOx	582.62
VOC	405.02

Mossville is an environmental justice community struggling for every breath. Placing PM_{2.5}, ozone, and CO monitors within the community would provide LDEQ and EPA with data representative of the citizen's lived experience, helping both agencies tailor policies and initiatives in furtherance of environmental justice.

IV. Conclusion

For the foregoing reasons, community members of Mossville respectfully request that LDEQ amend its 2020 Annual Monitoring Network Plan to include SLAMS PM_{2.5}, ozone, and carbon monoxide monitors in Mossville to determine the impact of significant sources of air pollutants on the air quality in Mossville.

⁷⁶ Title V Regular Permit Modification, Air Permit Briefing Sheet, Air Permits Division, LDEQ, (May 23, 2016), Page 4. DocID: 10204451.

⁷⁷ See LDEQ Permit Approval Letter, January 21, 2017 (12014011), Air Permit Briefing Sheet, p. 1.

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sasol
reaching new frontiers



voluntary property purchase program

Sasol North America Inc.

For more information:

Visit www.sasolvppp.com or contact Community Interaction Consulting, Inc. (CIC) at (337) 310-8200 or visit the Information Center at the former Mossville Elementary School located at 3301 Old Spanish Trail Westlake, LA 70669

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The information contained in this Handbook provides a description of the voluntary property purchase program (Program) sponsored by Sasol North America Inc. (Sasol). It is not an offer to buy property. Sasol may at any time, at its sole discretion, suspend or terminate the Program or expand, reduce or modify the Program Area.



Letter from Sasol

July 18, 2013

Dear Neighbor,

You may be aware that Sasol North America Inc. (Sasol) has plans to expand our petrochemical plant near your community.

In late 2012, Sasol announced its plan to start the front-end engineering and design work for a world-scale ethane cracker and gas-to-liquids (GTL) facility at our existing site in Westlake, Louisiana. These projects will use natural gas to make a variety of chemical products and transportation fuels, including GTL diesel. The projects are expected to have a significant positive effect on job creation and tax revenue for both the local region and the State of Louisiana.

We recognize that our growth plans and related property acquisitions will result in the expansion of our facility toward our neighbors to the west and northwest of our existing facility. Although a final investment decision on whether to start construction on the ethane cracker and GTL facility will not be made until 2014 and 2016, respectively, we are taking steps now to address the concerns of our neighbors.

Sasol continuously strives to be a good corporate citizen and to communicate forthrightly with our neighbors. In the spirit of being a good neighbor to those residents that will be affected by our growth plans, we are pleased to offer our residential neighbors to the west and northwest of our existing operations an opportunity to sell their properties to Sasol through a voluntary property purchase program (Program).

The Program is entirely voluntary. It is designed to give you the option to sell your property and move to a residential area of your choosing. The Program will furthermore provide relocation support if you rent your home, but only if your landlord also participates in the Program.

The Program will start in early August with the opening of a neighborhood Information Center at the former Mossville Elementary School located at 3301 Old Spanish Trail Westlake, LA 70669. Sasol selected Community Interaction Consulting, Inc. (CIC), our real estate consultants, to manage the Program on our behalf. Starting in early August, CIC staff will be available between 9am and 5pm Mondays through Fridays to discuss the Program with you and answer any questions you may have.

We understand that relocating can be a difficult decision, and that you will want to take time to consider the advantages of the Program being offered. This Handbook contains more information about the Program. We encourage you to read it thoroughly and contact CIC if you are interested in participating in the Program and/ or if you have any questions about the Program.

Sincerely,

MIKE THOMAS
VICE PRESIDENT: US OPERATIONS



Introduction

The Program definitions on pages 27 to 30 of this Handbook apply to all sections of the Handbook.

The Program sponsored by Sasol gives you an opportunity to sell your Property and relocate to a Property outside of the Program Area. Participation in the Program is entirely voluntary. The details of the Program are contained in this Handbook.

Easy access to the Program is provided through our Information Center, staffed by CIC and located at the former Mossville Elementary School at 3301 Old Spanish Trail Westlake, LA 70669. CIC staff is available to meet with you privately to go over all the features of the Program and assist you in understanding the potential and applicable Program options available to you.

The Program will be available to you if you, as of July 12, 2013, owned and held good title to residential Property in the Program Area (Property Owner, as defined) or are a tenant occupying a residential Property in the Program Area (Tenant, as defined) **and** your landlord participates in the Program. The Program Area is described on page 7 and 8 of the Handbook.

Commercial property and places of worship **do not** form a part of the Program. However, commercial property owners and religious leaders may approach Sasol outside of the Program to request Sasol to consider the purchase of their properties by contacting a CIC representative at the Information Center. Sasol will consider such requests from commercial property owners or religious leaders on a case-by-case basis.

In order to determine if you are eligible for the Program Benefits, you must first register your interest in the Program by completing and submitting:

- (i) an Appraisal Request and Authorization Form, if you are a Property Owner; or
- (ii) a Renters Benefits Request Form, if you are a Tenant of a residential Property.

There is no cost to you in registering your interest in the Program. **Sasol will pay for all costs associated with any appraisals performed under the Program.** Appraisal Request and Authorization Forms and Renters Benefits Request Forms can be submitted in person to CIC at the Information Center between Monday, August 12, 2013 and Wednesday, December 4, 2013.

Please note, if you are a Tenant as of July 12, 2013, you will only be eligible to receive benefits under the Program if your landlord has entered into a Purchase and Sale Agreement with Sasol, demonstrated that he/she has insurable title, and has confirmed that all matters between you and the landlord have been resolved (lease terminated, rent payments current, etc.).

The Information Center will be open Mondays to Fridays from 9:00 a.m. to 5:00 p.m. and evenings and weekends by appointment. You can contact the Information Center at (337) 310-8200 to schedule an appointment. **The support services provided by the Information Center are available at no cost to you and meeting with a CIC representative does not in any way obligate you to sell your Property.**

The Program is entirely voluntary. Requesting an appraisal does not commit you to sell your Property. Having an appraisal completed simply allows Sasol to present you with an Offer to purchase your Property. Once you have received an Offer, you can choose whether or not to accept it.

The determination of your eligibility to participate in the Program, and the Program Benefits to which you may be entitled, shall be made by Sasol in its sole and absolute discretion.

Sasol may at any time, at its sole discretion, suspend or terminate the Program or expand, reduce or modify the Program Area, without liability. Of course, Sasol will honor the terms of any signed Purchase and Sale Agreements and outstanding Offers made by Sasol prior to any such change.

Note: You should consider obtaining professional advice from your attorney and financial advisor regarding your participation in the Program.



Program Area

The Program Area consists of the Improved and Unimproved Properties on, or abutting to any of the streets below, which streets are also depicted on the aerial map on page 8.

Commercial property and places of worship within the Program Area do not form part of the Program. Commercial property owners and religious leaders may approach Sasol outside of the Program to request Sasol to consider the purchase of their properties by contacting a CIC representative at the Information Center. Sasol will consider such requests from commercial property owners or religious leaders on a case-by-case basis.

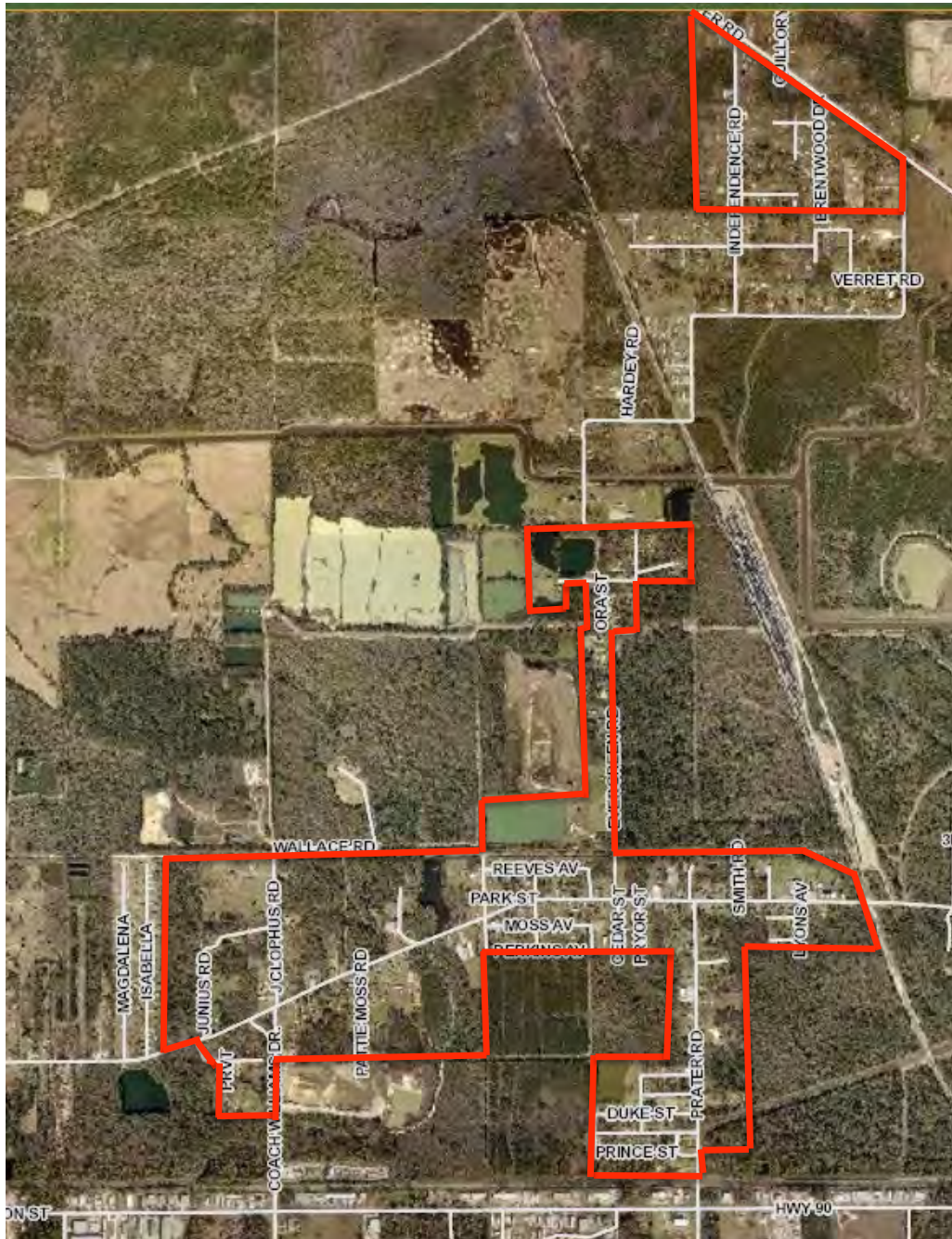
Properties on, or abutting to, the streets below form part of the Program Area:

- **all of**

Benjamin Street;	Ferndale Drive;	Pattie Moss Road;
Braxton Lane;	Fisher Street;	Perkins Avenue;
Brentwood Drive;	Harvey Miller Road;	Prince Street;
Cedar Street;	J Clophus (Reynaud Road);	Princess Street;
Charles Avenue;	Junius Road;	Pryor Street;
Church Street;	King Street;	Queen Street;
Duke Street;	Lyons Avenue;	Reeves Avenue;
Duchess Street;	Mary Street;	Smith Road;
Earl Street;	Moss Avenue;	Venable Drive;
Edna Hardy Lane;	Murrell Road;	Wallace Road; and
Edwards Street;	Ora Street;	Water Tower Road.
Fairmont Drive;	Park Street;	

- **all of Prater Road** from the Union Pacific Rail Road going north to Old Spanish Trail;
- all of the south side of **Old Spanish Trail** from Goodley Road to 3702 Old Spanish Trail. All of the north side of Old Spanish Trail from 3345 Old Spanish Trail to 3701 Old Spanish Trail;
- all of **Evergreen Road** from Old Spanish Trail to 2282 Evergreen Road and then from 2732 to 2788 Evergreen Road;
- **Independence Road** from 2705 Independence Road to Houston River Road;
- the **south side of Houston River Road** from 3919 Houston River Road to, and including, the west side of Evergreen Road;
- **Coach Williams Drive** north of 905 Coach Williams Road;
- **Goodley Road** from 3408 to the end of the road; and
- the east side of **Bryant Street**.

The Program Area as described on page 7 is also depicted on the aerial map below:



Sasol may at any time, at its sole discretion, suspend or terminate the Program or expand, reduce or modify the Program Area, without liability. Of course, Sasol will honor the terms of any signed Purchase and Sale Agreements and outstanding Offers made by Sasol prior to such change.



Property Owners – steps for participating in the Program

Participation in the Program is entirely voluntary. The Program for Property Owners is explained in the five steps described in figure 1 below. If you have any questions regarding these steps or what is required from you to participate in the Program, please contact a CIC representative at the Information Center and/or refer to the Clarification Questions and Answers (Q&A) in the Handbook on pages 21 to 26.



Figure 1: Steps available to Property Owners for participating in the Program

step 1: Determining if you are eligible

First, you need to determine whether you are eligible to participate in the Program. You are eligible to participate in the Program if you, **as of July 12, 2013**, owned and had title to either an Improved Property or an Unimproved Property in the Program Area, and you continue to own and hold good title to such Property. You **must sell all of your Property** in the Program Area to Sasol and relocate to a new property outside the Program Area in order to receive Program Benefits.

There are three (3) types of Property Owners, namely:

- Owner Occupant, if you own, hold good title to and occupy an Improved Property;
- Rental Property Owner, if you own, hold good title to and lease an Improved Property to a third party or if such Improved Property is vacant; or
- Unimproved Property Owner if you own and hold good title to an Unimproved Property.

The Program Benefits that are applicable to you are described on pages 16 to 20 of this Handbook.

step 2: Registering your interest in the Program

The second step to participating in the Program is to contact a CIC representative at the Information Center and register your interest in participating in the Program by completing and submitting the Appraisal Request and Authorization Form on page 32 of the Handbook **before December 4, 2013**. Only one of the Property Owners for a Property has to sign the Appraisal Request and Authorization Form, but all Property Owners must sign the deed that transfers the Property to Sasol.

Signing an Appraisal Request and Authorization Form does not commit you to sell your Property in the Program Area to Sasol. It simply authorizes CIC to arrange to have all of your Property located in the Program Area appraised, surveyed, and to obtain a preliminary title search from a local law firm.

If you register your interest in participating in the Program and complete and submit an Appraisal Request and Authorization Form **before October 4, 2013 you will qualify for an Early Sign-Up Bonus of \$1,000** that is payable to you upon Closing.

You will be required to provide the following documentation as part of your Appraisal Request:

- some form of government issued picture identification such as a current driver's license, passport, or Louisiana State Identification Card; and
- deed and/or an abstract for the Property verifying ownership and residency **as of July 12, 2013** or other documentation verifying ownership and residency such as a last will and testament or tax statement; and/ or
- information on any Tenants residing in, or on your Improved Properties, including a lease agreement or similar documentation to verify that such Tenants were Tenants on **July 12, 2013**.

In completing the Appraisal Request and Authorization Form you will be required to choose three (3) appraisers from a list of approved local, actively practicing appraisers that are licensed by the State of Louisiana. The three (3) appraisers will consist of two (2) primary appraisers and one (1) reserve appraiser. The reserve appraiser will be used only if the difference between the appraised prices from the two (2) primary appraisers is not equal to, or less than 10% of the higher appraisal.

You do not have to choose an appraiser from the list of approved local appraisers. You may nominate an appraiser that is not on the list, and the nominated appraiser will be accepted by Sasol so long as the nominated appraiser meets all of the following requirements:

- full-time real estate appraiser that is licensed by the State of Louisiana; and
- holding either a Certified General Appraiser License or a Certified Residential Appraiser License; and
- member of the local Multiple Listing Service and has additional access to recent comparable sales; and
- willing to prepare the appraisal of your residential Property in accordance with the appraiser instructions, as described in this Handbook.



step 3: Determining the Average Appraised Price

The third step of the Program for Property Owners comprises the determination of the Average Appraised Price for your Property and any improvements on it as of **July 12, 2013**. A CIC representative will order appraisals of your Property using the two (2) primary appraisers you selected **at no cost to you**. Each appraiser will independently develop an appraised price for your Property using a standard format (Appraisal Institute form AI.100). **Only appraisals ordered by CIC will be paid for by Sasol and used in determining the Average Appraised Price.**

Improvements to the Property made after July 12, 2013 will not be considered in the appraisal of the Property.

Where a Property Owner owns two (2) Properties that are contiguous of which one (1) is defined as an Unimproved Property, such Unimproved Property will be included in the appraisal of the Improved Property.

You are encouraged to provide the appraiser with all information that you believe is relevant to determine the appraised price of your Property.

If the difference between the two appraisals requested by CIC is:

- equal to, or less than 10% of the higher appraisal, then the average of the two appraisals will be equal to the Average Appraised Price for purposes of determining the Offer for the Property; or
- greater than 10% of the higher appraisal, the CIC representative will arrange for an appraisal by the third (reserve) appraiser of your choice. The two highest appraised prices will then be averaged to establish the Average Appraised Price for purposes of determining the Offer for the Property.

Copies of the appraisals will be made available to you and Sasol at the end of the appraisal process. Appraisers must follow the Uniform Standards of Professional Appraisal Practice (USPAP). Under USPAP's Confidentiality Clause of the Ethics Rule, the appraiser may not disclose (1) confidential information; or (2) assignment results to anyone other than the client (which in this case is CIC). Accordingly, any questions or comments you may have about an appraisal **must** be sent to the CIC representative and the CIC representative will then forward your questions and comments to the appraiser for review and consideration. In the event that, as a result of your questions or further information provided regarding the appraisal, the appraiser changes his/ her appraised price, Sasol's Offer will change accordingly, subject, however, to the process to determine the Average Appraised Price as described above.

step 4: Accepting Sasol's Offer

Once the appraisal process is completed, the fourth step is for Sasol to make an Offer to you for your consideration. The Offer will be in the form of a proposed Purchase and Sale Agreement prepared by Sasol. Should Sasol make you an Offer, you will have **ninety (90) days from the date of the Offer to sign and accept the Purchase and Sale Agreement**. Acceptance will be indicated by returning the original and unaltered copy of the signed Purchase and Sale Agreement to a CIC representative at the Information Center. The Effective Date of the Purchase and Sale Agreement will be the last day that the buyer and/ or seller signs the Purchase and Sale Agreement. **All Property Owners are required to sign the deed that transfers the Property to Sasol.**

The proposed Purchase and Sale Agreement will include the Purchase Price, qualifying Program Benefits and the terms and conditions relating to the purchase and sale of your residential Property. More details on the determination of the Purchase Price and qualifying Program Benefits applicable to different ownership categories are provided as part of the Q & A on pages 21 to 26.

The Offer will contain conditions that are normal and customary for real estate transactions, including but not limited to you having legal, marketable and insurable title to the Property. **Furthermore, your participation in the Program and receipt of any Program Benefits will require you to release Sasol from any and all past, present or future property claims against Sasol relating to your Property at Closing.**

The Offer made by Sasol and the contractual terms and conditions of the Purchase and Sale Agreement are non-negotiable. A Purchase and Sale Agreement that has been altered by you or your representative will not be accepted or signed by Sasol and will not be a legally binding contract obliging Sasol to purchase the Property in accordance with such amended Purchase and Sale Agreement.

Note: You are encouraged to obtain legal and other professional advice (including, but not limited to financial and tax advice) on the Offer.



step 5: Vacating the Property and Closing

Closing will take place when all of the conditions of the sale process are fulfilled to the satisfaction of Sasol. Provided, that Closing will not be later than six (6) months from the Effective Date of the Purchase and Sale Agreement. However, a Property Owner may request an extension beyond the original six (6) months from the Effective Date and Sasol may, at its sole discretion, extend the period to Closing by giving written notice of such extension to the Property Owner. **All Property Owners must sign a deed transferring the Property to Sasol before the sale will be closed.**

Sasol will pay all Normal Seller Closing Costs directly attributable to the sale of your Property, except for the costs for, or related to mortgages, real estate broker commissions, prorated real estate taxes, liens and judgments. These exceptions must be paid by you and cleared from the title before Closing can take place.

All Properties must be vacated on, or before Closing. You must remove all possessions and leave the Property "Broom Clean" and in a "Neat and Safe Condition". The requirements to qualify for the Clear Site Bonus, in addition to the "Neat and Safe Condition" will be included in the Purchase and Sale Agreement that Sasol submits to you.

"Broom Clean" means that all possessions from any structures on the Property including, but not limited to, furnishings, automobiles, trucks recreational vehicles, recreational equipment, lawn maintenance equipment, tractors, trailers, tires, paints, household chemicals, automobile and motor maintenance products, fertilizers, and weed and pest control products must be removed.

"Neat and Safe Condition" means that all utilities including water, sewer, electric, gas, telephone and cable service must be disconnected from the Property at the street (or at the main) so that all improvements on the Property may be safely removed in accordance with the utility providers' guidelines. Above ground swimming pools must be drained and modified such that they will not hold water. The location of septic tanks and wells must be clearly marked.

An authorized representative of Sasol or CIC will inspect the Property at Closing, to ensure that the Property complies with the requirements described above and to determine if you qualify for the Clear Site Bonus.

The Program Benefits that you qualify for will be paid to you at Closing.

Tenants – steps for participating in the Program

Participation in the Program is entirely voluntary. The Program available for a Tenant is explained in the three steps described in figure 2 below. If you have any questions regarding these steps or what is required from you to participate in the Program, please contact a CIC representative at the Information Center and/ or refer to the Q & A in the Handbook on pages 21 to 26.



Figure 2: Steps available to Tenants for participating in the Program

step 1: Determining if you are eligible

First, you need to determine whether you are eligible to participate in the Program. You are eligible to participate in the Program if you, **as of July 12, 2013**, were a Tenant and you continue to be a Tenant of the Property **and** your landlord participates in the Program.

A Tenant is defined as "a person or persons named as (a) Tenant(s) in a lease that actively and consistently rent(s) and reside(s) in a Rental Property and for whom the said residence is his/her or their primary residence as of July 12, 2013, and does not include any persons or family members occupying the Property who are not named as a Tenant in the lease."

The Program Benefits that are applicable to Tenants are described on pages 16 to 20 of the Handbook.

step 2: Registering your interest in the Program

If you are a Tenant, the second step to participating in the Program is to contact a CIC representative at the Information Office and register your interest in participating in the Program by completing and submitting the Renters Benefits Request Form on page 33 of the Handbook **before December 4, 2013**.

Submitting a Renters Benefits Request Form does not guarantee that you will qualify for the Program Benefits available to Tenants under the Program. Your landlord, as Property Owner must have committed to sell the Property you are renting in the Program Area to Sasol before you will be eligible to participate in the Program and/ or receive any of the Program Benefits applicable to Tenants.



If you register your interest in participating in the Program and submit the Renter Benefits Request Form **before October 4, 2013** you will be in a position to qualify for an Early Sign-Up Bonus of \$1,000 that will be payable upon Closing. If a Closing between Sasol and your landlord (the Property Owner) is not achieved for any reason, the Early Sign-Up Bonus will not be paid out.

You will be required to provide the following documentation as part of your request to qualify for the Program Benefits available to a Tenant under the Program:

- current government issued picture identification like a current driver's license, passport, or Louisiana State Identification Card; and
- documents to verify residency, such as (i) a lease for the Rental Property, or (ii) copies of canceled rent payment checks for the months of June and July 2013, and/or (iii) copies of utility payment statements covering the months of June and July 2013 that identify the Rental Property by address.

step 3: Vacating the Property and Closing

At Closing you will become entitled to the Program Benefits available to Tenants if:

- your landlord (the Property Owner) has accepted an Offer from Sasol and has entered into a Purchase and Sale Agreement with Sasol for the Rental Property occupied by you; and
- Sasol is satisfied that the Property Owner can transfer insurable title to the Property; and
- you and the Property Owner have executed an agreement that your lease has been terminated and all matters between you and the landlord are settled; and
- you have executed a release agreement with Sasol for the acceptance of the Program Benefits available to you under the Program and all conditions contained in such agreement have been fulfilled to the satisfaction of Sasol; and
- you provide proof to Sasol and CIC that you and any co-occupants and family members residing with you have vacated the residence and your new residence is outside of the Program Area.

Description of Program Benefits available to Property Owners and Tenants

For the purpose of the Program there are three (3) Property Owner categories and a Tenant category. The table below is a list of the potential Program Benefits you may qualify for and receive if you are an eligible Owner Occupant, Rental Property Owner, Unimproved Property Owner, or Tenant. A detailed description of the Program Benefits is provided below.

Note: It is recommended that you obtain advice from a tax professional because the Purchase Price and all payments of allowances and bonuses will be reported to the Internal Revenue Service on Form 1099.

Program Benefit	Owner Occupant	Rental Property Owner	Unimproved Property Owner	Tenant
Minimum Appraised Price	\$100,000	\$75,000	\$5,000	N/A
Premium Payment over Average Appraised Price	60%	50%	40%	N/A
Early Sign-Up Bonus	\$1,000	\$1,000	\$1,000	\$1,000
Miscellaneous Expense Allowance	\$8,000	N/A	N/A	\$4,000
Rent Disruption Allowance	\$1,000 ¹	\$1,000	N/A	N/A
Professional Advice Allowance	\$500	\$500	\$500	\$500
Closing Cost Assistance Allowance (maximum)	\$5,000	N/A	N/A	\$5,000
Curative Title Work Allowance (maximum)	\$5,000	\$5,000	\$5,000	N/A
Clear Site Bonus (maximum)	\$15,000	\$15,000	\$15,000	N/A
Advances	Equity	N/A	N/A	Benefits
Home Finding Assistance	Eligible	Eligible	Eligible	Eligible
Normal Seller Closing Cost ²	Paid by Sasol	Paid by Sasol	Paid by Sasol	N/A

1. Available to an Owner Occupant who also owns and leases an Improved Property to a Tenant.
2. The Program pays for Normal Seller Closing Costs on the sale of your Property. However, mortgages, real estate broker commissions, pro-rated real estate taxes, liens, and judgments and costs related to same **are not covered** under the Program and must be paid by the Property Owner(s).



Property Purchase Price

The Purchase Price offered for a Property will be determined by the higher of the Average Appraised Price or the Minimum Appraised Price plus the Premium Payment.

Minimum Appraised Price

A Minimum Appraised Price has been established for the Program, the amount of which will depend on whether you qualify as an Owner Occupant, Rental Property Owner or Unimproved Property Owner as described in the table on page 16. Therefore if the Average Appraised Price of your Property is below the Minimum Appraised Price, the Purchase Price for your Property will be determined using the Minimum Appraised Price.

Premium Payment

The Premium Payment is available to Property Owners for Properties in the Program Area and is intended to assist you in purchasing property outside of the Program Area. It forms part of the Offer for your Property and will be paid at Closing and is calculated as a percentage of the Average Appraised Price. The amount of such Premium Payment will depend on whether you qualify as an Owner Occupant, Rental Property Owner or Unimproved Property Owner as described in the table on page 16.

Early Sign-Up Bonus

If a Property Owner completes and submits an Appraisal Request and Authorization Form or a Tenant completes and submits a Renters Benefits Request Form **on, or before October 4, 2013** such Property Owner or Tenant will qualify for an Early Sign-Up Bonus of \$1,000 that is payable at Closing. The Early Sign-Up Bonus is available only once to a Property Owner, regardless of the number of Properties he/ she may own, provided further that where a Property is owned by multiple Property Owners, the Early Sign-Up Bonus will be made once to the Property Owner(s) who made the Appraisal Request for such Property.

Miscellaneous Expense Allowance

A Miscellaneous Expense Allowance is payable to an Owner Occupant (\$8,000) and Tenant (\$4,000) at Closing once all conditions to Closing have been fulfilled to the satisfaction of Sasol. The Miscellaneous Expense Allowance is intended to cover moving and personal relocation expenses for Owner Occupants and Tenants. In cases of multiple Property Owners, this payment will be made once to the Property Owner(s) who occupies the Property.

Rent Disruption Allowance

A Rent Disruption Allowance of \$1,000 is payable to you per Property if you are an Owner Occupant or Rental Property Owner and you own and lease an Improved Property to a Tenant. A Rental Property Owner will not be entitled to this Rent Disruption Allowance if an Improved Property is vacant as of July 12, 2013. The Rent Disruption Allowance will be payable to an Owner Occupant or Rental Property Owner at Closing, provided that all Tenants have fully vacated the Property and such Property is "Broom Clean" and in a "Neat and Safe Condition" at that date. An authorized representative of Sasol or CIC will inspect the Property prior to Closing to ensure that these requirements have been met.

Professional Advice Allowance

A Professional Advice Allowance of \$500 will be paid to every Property Owner (defined as “a person or persons owning and holding good title to a Property as of July 12, 2013”) at the time of the Sasol Offer. A similar amount will be payable to a Tenant (defined as “a person or persons named as (a) tenant(s) in a lease that actively and consistently rent(s) and reside(s) in a Rental Property and for whom the said residence is his/her or their primary residence as of July 12, 2013 and does not include any persons or family members occupying the Property who are not named as a Tenant in the lease”) at the time when his/ her other benefits are paid at Closing. The Professional Advice Allowance is only available once to a Property Owner, as defined, regardless of the number of Properties owned. The Professional Advice Allowance is intended to assist a Property Owner and Tenant in the payment of any costs incurred for any legal, financial, and/or tax advice and assistance they may obtain in reviewing the Purchase and Sale Agreement and any other questions regarding the Program. If you are a Property Owner, the Professional Advice Allowance is yours to keep regardless of your decision to participate any further in the Program.

Closing Cost Assistance Allowance

If you are an Owner Occupant or Tenant and are in the process of purchasing a new residence outside the Program Area, and a fully executed Purchase and Sale Agreement with Sasol is in place, please meet with a CIC representative regarding your eligibility for a Closing Cost Assistance Allowance. The CIC representative will need to have the documents listed below to establish your eligibility:

- a fully executed Purchase and Sale Agreement between Sasol and all of the Property Owners in title to your Property; and
- a title report indicating that the Property Owner(s) has insurable title acceptable to Sasol; and
- a copy of the fully executed purchase and sale agreement for your new home that is outside of the Program Area; and
- a preliminary closing statement from your closing agent that indicates the closing cost you have to pay at closing.

If you qualify for a Closing Cost Assistance Allowance, Sasol will pay up to \$5,000 in total, per Owner Occupant or Tenant, toward the normal and customary buyer closing costs for your new home outside of the Program Area such as an appraisal, survey, mortgage loan origination fee and/or discount points, home inspection report, recording fees, transfer tax, closing fee, lender and owner title insurance policies, and home warranty plan. Pre-paid items such as pro-rated taxes and assessments, loan interest, escrow account deposits, and hazard insurance premiums are not considered normal and customary buyer closing costs under the Program.

If you qualify, the Closing Cost Assistance Allowance will be paid directly to the closing agent for your new home on the closing date of the purchase of your new home, so long as the closing is within ninety (90) days of vacating the Property by the Owner Occupant or Tenant.



Note: Please advise your closing agent that it may take up to seven (7) business days from the time CIC receives the preliminary closing statement from your closing agent to process and wire the Closing Cost Allowance to such closing agent.

Curative Title Work Allowance

An allowance of up to \$5,000 is available to cover legal costs associated with curing title problems. This allowance does not cover liens, judgments, mortgages, or delinquent taxes. A CIC representative will advise you about qualifying for this allowance after he/ she has received and reviewed the title report for your Property that was prepared by the law firm(s) as approved by Sasol. **The Curative Title Work Allowance will be paid directly to a law firm approved by Sasol.** The list of approved law firms is available on request from CIC.

Clear Site Bonus

Property Owners may be eligible for a Clear Site Bonus of up to \$15,000 depending on the nature of the Property and number of structures that need to be removed. To be eligible for this bonus, the Property must be in a "Neat and Safe Condition" **and** all structures, and all personal property must be removed from the Property (not buried on the land) before Closing. Below ground swimming pools must be filled with clean soil or sand, which will be provided by Sasol. All well equipment must be removed as well. A Sasol representative will determine the exact procedures for clearing the site, and the amount of eligible Clear Site Bonus after inspecting your Property and/or reviewing the appraisals. The requirements for the Clear Site Bonus will be included in the Purchase and Sale Agreement provided by Sasol.

Obtaining an Equity or Benefits Advance

Equity Advance: The Program may provide assistance to an Owner Occupant in obtaining an Equity Advance of up to 90% of the equity in the Property based on all eligible payments, allowances, and bonuses due to such Owner Occupant at the time of the request for an Equity Advance if such funds are needed to:

- make a deposit on another property outside of the Program Area;
- close a sale on a new property outside the Program Area;
- pay moving expenses or other related costs; and
- clear the site of all improvements and structures.

A CIC representative will assist such Owner Occupant in obtaining an Equity Advance in such circumstances. The amount of the Equity Advance will be deducted from the final payment of the outstanding Purchase Price upon Closing.

To obtain an Equity Advance, **all** Owner Occupants of a Property must have accepted the Offer, by signing the Purchase and Sale Agreement, have demonstrated that they can transfer insurable title to their property, sign an Equity Advance addendum to the Purchase and Sale Agreement covering the amount of the Equity Advance, and be willing to sign a release form, whereby you agree to release Sasol from any and all past or present property claims against Sasol.

Benefits Advance: The Program may provide assistance to a Tenant in obtaining a Benefits Advance of up to 90% of all eligible payments and allowances due to such Tenant at the time of the request for a Benefits Advance if such funds are needed to:

- make a security deposit on another leased home outside of the Program Area;
- close a sale on a new home outside of the Program Area; and
- pay moving expenses or other related costs.

A CIC representative will assist such Tenant in obtaining a Benefits Advance in such circumstances. The amount of the Benefits Advance will be deducted from the final payment of the outstanding Program Benefits at Closing.

For a Tenant to obtain a Benefits Advance, **all** Property Owners must have accepted Sasol's Offer and demonstrated that they can transfer insurable title to their Property.

Home Finding Assistance

If you are a Property Owner who received a Purchase and Sale Agreement to sell your Property to Sasol or you are a Tenant and are considering purchasing a new home outside the Program Area, please contact a CIC representative. The CIC representative can refer you to a local real estate broker that is familiar with the Program for assistance in purchasing property outside of the Program Area.

Normal Seller Closing Costs

The Program pays for costs that are normally payable on property sales, such as costs related to the preparation of deeds, recording fees, transfer tax, title exam, and a closing fee. Mortgages, real estate broker commissions, pro-rated real estates taxes, liens, and judgements **are not** covered under the Program and must be paid by the Property Owner.



Clarification Questions and Answers

Why is Sasol offering this Program?

Sasol recognizes that our growth plans and related property acquisitions will result in the expansion of our facility toward our neighbors to the west and northwest of our existing facility. Although a final decision on whether to start construction on the world-scale ethane cracker and GTL facility will not be made until 2014 and 2016, respectively, we are taking steps now to address the concerns of our neighbors. Sasol continuously strives to be a good corporate citizen and in the spirit of being a good neighbor to those residents that will be affected by our growth plans, we are offering our residential neighbors to the west and northwest of our existing operations an opportunity to sell their Properties to Sasol and move to a residential area of their choice.

Why isn't Sasol offering the Program to other plant neighbors?

Sasol recognizes that our growth plans and related property acquisitions will result in the expansion of our facility toward our neighbors to the west and northwest of our existing facility. The Program will give those Property Owners and residents affected by the company's growth plans the option to sell their Property to Sasol, and relocate to an alternative neighborhood, if they so choose.

How do interested parties find out more about the Program?

CIC will open an Information Center in the community in early August and launch a website, www.sasolvppp.com to provide Program specifics, timelines and contact information. CIC will also host small group information sessions at the Information Center for prospective residents and sellers around mid-August. Additional information on the opening date for the Information Center and scheduling of the information sessions will be provided as soon as it is available.

Why has it taken so long for Sasol to look seriously at relocating its nearest community neighbors?

Since commencing the front-end engineering and design (FEED) phase for our U.S. growth projects, Sasol has engaged with our neighbors to understand and address specific community needs and concerns. During this process, we received a number of requests from our near neighbors, a voluntary property purchase program being one such request.

What if an Owner or Tenant decides not to participate in the Program or to not accept Sasol's Offer?

Your participation in the Program is entirely voluntary. You are under no obligation to participate in the Program or to request an appraisal from Sasol. And even if you do register your interest to participate in the Program and request an appraisal, you are not obliged to accept any Offer that Sasol may make to you.

However, if you have decided to participate in the Program and you have accepted Sasol's Offer and signed the Purchase and Sale Agreement you will have to vacate the Property at Closing.

Will Sasol offer to purchase commercial property and places of worship within the Program Area?

The Program does not cover commercial properties or places of worship. Commercial property owners and religious leaders within the Program Area may approach Sasol to consider the purchase of their properties by contacting a CIC representative at the Information Center. Sasol will consider such requests from commercial property owners or religious leaders on a case-by-case basis.

Does Sasol have any plans to build operating facilities on the property it purchases?

Sasol does not have any plans to use the acquired property for operations or any other purpose, at this time.

By when do I have to register my interest to participate in the Program?

Property Owners will have from **August 12, 2013** to **December 4, 2013** to register their interest in participating in the Program by completing and submitting Appraisal Request and Authorization Forms to a CIC representative at the Information Center. Tenants also have until December 4, 2013 to register their interest in participating in the Program by completing and submitting a Renters Benefits Request Form to a CIC representative.

As stated above, in order to qualify for the Early Sign-up Bonus that is payable upon closing, a Property Owner (as defined) or Tenant (as defined) will need to register their interest in participating in the Program and complete and submit an Appraisal Request and Authorization Form and Renters Benefit Request Form, respectively **before October 4, 2013**.

How do I determine if my property falls within the Program area?

You can determine if your property falls within the Program Area by referring to the Program Area description on pages 7 and 8, which is in the form of an aerial map containing a list of the streets along which the relevant properties are located. Alternatively, you can contact a CIC representative at (337) 310-8200 or visit the Information Office at the former Mossville Elementary School located at 3301 Old Spanish Trail Westlake, LA 70669.

Can I participate in the Program and the Program Benefits if my property does not fall within the program area?

No, unfortunately the Program only applies to Property located within the Program Area as identified on pages 7 and 8. If your property falls outside the Program Area you will therefore not be able to participate in the Program Benefits.

How do i know if i qualify to participate in the Program?

You qualify to participate in the Program if you, as of **July 12, 2013**:

- owned, and had title to either an Improved Property or an Unimproved Property in the Program Area; or
- are a Tenant **and** your landlord participates in the Program.

If you are still unsure if you qualify for the Program, contact a CIC representative at (337) 310-8200 or visit the Information Office at the former Mossville Elementary School located at 3301 Old Spanish Trail Westlake, LA 70669.

I rent property together with one or more other co-tenants. Will each of us be individually entitled to benefit under the Program, or will we share the benefits jointly?

Co-tenants are viewed as a single Tenant for the purposes of the Program. Therefore, co-tenants will share the benefits jointly.

Do I have to accept Sasol's offer to purchase my property?

No, the Program is entirely voluntary. You are under no obligation to accept any Offer that Sasol may make to you.



How can I start talking to Sasol about my participation in the Program?

CIC, a real estate and communications services company, will administer the Program on behalf of Sasol. Should you desire, a CIC representative is available to meet with you privately to go over all the features of the Program and assist you in understanding Program options available to you. We invite you to meet with a CIC representative at the former Mossville Elementary School located at 3301 Old Spanish Trail Westlake, LA 70669 or phone the Information Office at (337) 310-8200 to discuss how the Program features may benefit you.

Will Sasol consider buying my property if I can't clear my title after taking advantage of the Curative Title Allowance?

Sasol may consider, on a case-by-case basis, to accept less than perfect title.

How is the Average Appraised Price calculated?

If the difference between the two appraisals requested by CIC is:

- equal to, or less than 10% of the higher appraisal, then the average of the two appraisals will be equal to the Average Appraised Price for purposes of determining the Offer for the Property; or
- greater than 10% of the higher appraisal, the CIC representative will arrange for an appraisal by the third (reserve) appraiser of your choice. The two highest appraised prices will then be averaged to establish the Average Appraised Price for purposes of determining the Offer for the Property.

In example #1, the higher appraisal is \$150,000. This means that the lower appraisal must be within 10% of \$150,000 or \$15,000. Since the two appraisals are only \$2,000 apart, a third appraisal is not required. The two appraisals are averaged to establish the Average Appraised Price of \$149,000.

In example #2, the higher appraisal is \$150,000. This means that the lower appraisal must be within 10% of \$150,000 or \$15,000. Since the appraisals are \$16,000 apart, this means a third appraisal must be done. Now, out of the three appraisals, the two higher appraisals are averaged to establish the Average Appraised Price of \$148,000.

	Appraisal #1	Appraisal #2	Appraisal #3	Average Appraised Price
Example #1	\$150,000	\$148,000	not required	\$149,000
	Average of \$150,000 and \$148,000			
Example #2	\$150,000	\$134,000	\$146,000	\$148,000
	Average of \$150,000 and \$146,000			

Only improvements on the Property as of July 12, 2013 will be considered in the appraisal.

I own and occupy a Property in the Program Area. How will the Purchase Price of my Property be calculated? What other Program Benefits will I qualify for?

The examples below are indicative of an Offer and potential Program Benefits available to an Owner Occupant:

Average Appraised Price is	equal to, or greater than \$100,000	less than \$100,000
Average Appraised Price	150,000	90,000
Higher of Average Appraised Price or Minimum Appraised Price	150,000	100,000
Premium Payment at 60% of Average Appraised Price	90,000	54,000
Offer Price	240,000	154,000
Early Sign-Up Bonus	1,000	1,000
Miscellaneous Expense Allowance	8,000	8,000
Rent Disruption Allowance*	-	-
Professional Advice Allowance	500	500
Clear Site Bonus (maximum)	15,000	15,000
Potential Program Benefits available to Owner Occupant	264,500	178,500

* Rent Disruption Allowance of \$1,000 will be available to an Owner Occupant if he/she also owns and leases an Improved Property to a Tenant

An Owner Occupant will furthermore qualify for the payment of a:

- maximum Closing Cost Assistance Allowance of \$5,000 toward normal and customary buyer closing costs for a new home outside of the Program Area, which will be payable directly to the closing agent; and
- maximum Curative Title Work Allowance of \$5,000 to cover legal costs associated with curing title problems payable directly to the law firm.



I own a Property in the Program Area that I rent out to a third party. How will the Purchase Price of my Property be calculated? What other Program Benefits will I qualify for?

The examples in the table below are indicative of an Offer and potential Program Benefits to a Rental Property Owner:

Average Appraised Price is	equal to, or greater than \$75,000	less than \$75,000
Average Appraised Price	100,000	70,000
Higher of Average Appraised Price or Minimum Appraised Price	100,000	75,000
Premium Payment at 50% of Average Appraised Price	50,000	35,000
Offer Price	150,000	110,000
Early Sign-Up Bonus	1,000	1,000
Rent Disruption Allowance	1,000	1,000
Professional Advice Allowance	500	500
Clear Site Bonus (maximum)	15,000	15,000
Potential Program Benefits available to Rental Property Owner	167,500	127,500

A Rental Property Owner will furthermore qualify for the payment of a maximum Curative Title Work Allowance of \$5,000 to cover legal costs associated with curing title problems payable directly to the law firm.

I own a vacant, Unimproved Property in the Program Area. How will the Purchase Price of my Property be calculated? What other Program Benefits will I qualify for?

The examples in the table below are indicative of an Offer and potential Program Benefits for an Unimproved Property Owner:

Average Appraised Price is	equal to, or greater than \$5,000	less than \$5,000
Average Appraised Price	7,000	4,000
Higher of Average Appraised Price or Minimum Appraised Price	7,000	5,000
Premium Payment at 40% of Average Appraised Price	2,800	1,600
Offer Price	9,800	6,600
Early Sign-Up Bonus	1,000	1,000
Professional Advice Allowance	500	500
Clear Site Bonus (maximum)	15,000	15,000
Potential Program Benefits available to Unimproved Property Owner	26,300	23,100

An Unimproved Property Owner will furthermore qualify for the payment of a maximum Curative Title Work Allowance of \$5,000 to cover legal costs associated with curing title problems payable directly to the law firm.



Program definitions

Throughout this Handbook, unless otherwise stated or the context otherwise indicates, the words in bold have the corresponding meaning stated below them, words in the singular include the plural and vice versa, and any reference to one gender includes the other gender.

Appraisal Request

The completion and submission of the Appraisal Request and Authorization Form on page 32 of this Handbook.

Average Appraised Price

If the difference between the two primary appraisals is:

- equal to, or less than 10% of the higher appraisal, then the Average Appraised Price will be equal to the average of the two appraised prices; or
- greater than 10% of the higher appraisal, then a third appraisal will be ordered and the Average Appraised Price will be equal to the average of the two highest of the three appraised prices.

Broom Clean

All possessions from any structures on the Property including, but not limited to, furnishings, automobiles, trucks recreational vehicles, lawn maintenance equipment, tractors, trailers, recreational equipment, tires, paints, household chemicals, automobile and motor maintenance products, fertilizers, and weed and pest control products must be removed.

CIC

Community Interaction Consulting, Inc., a real estate consulting firm selected by Sasol to administer and manage the Program on its behalf.

Clear Site Bonus

A payment of up to \$15,000 that is potentially available to a Property Owner at Closing to pay the cost of clearing the site of all structures and improvements as described in more detail on page 19.

Closing (Property Owner)

The date on which all the conditions of the sale process are fulfilled to the satisfaction of Sasol, funds are disbursed to the seller, and title to the Property is transferred to the buyer.

Closing (Tenant)

The date on which all the conditions of a release agreement between Sasol and a Tenant have been fulfilled to the satisfaction of Sasol.

Closing Cost Assistance Allowance

A maximum allowance of \$5,000 that is potentially payable to the closing agent of an Owner Occupant or Tenant in respect of a new property purchased by such Owner Occupant or Tenant outside the Program Area provided that the closing of the purchase of such new property falls within ninety days from vacating the Property within the Program Area.

Curative Title Work Allowance

A maximum allowance of \$5,000 that is potentially available to Property Owners to cover the legal costs associated with curing title problems which will be payable directly to the relevant law firm.

Early Sign-Up Bonus

A bonus in the amount of \$1,000 paid at Closing to a Property Owner or Tenant, where on or before October 4, 2013, such:

- Property Owner registered his/ her interest in participating in the Program and submitted an Appraisal Request and Authorization Form; or
- Tenant registered his/ her interest in participating in the Program and submitted a Renters Benefits Request Form.

Effective Date

The effective date of the Purchase and Sale Agreement will be the last day that Sasol and/ or seller (Property Owner) sign the Purchase and Sale Agreement.

Equity

The proceeds from a sale after deducting all cost to pay out and discharge any outstanding mortgages, liens, pro-rated taxes and assessments, broker commissions, and curative title work.

Equity Advance

An advance equal to up to ninety (90) percent of the Equity that may be payable to an Owner Occupant in order to allow him/ her to, make a deposit on another property outside the Program Area, pay moving expenses, clear the site of all improvements in accordance with the description of Clear Site Bonus and all other related costs.

Handbook

This Program handbook describing the details of the Program and Program Benefits.

Improved Property

Property that has a structure or structures on it that is suitable and fit for a person to live in and that is free from defects that endanger health and safety of the occupants, regardless of whether such Property is vacant or occupied.

Information Centre

The Program office established by CIC at the former Mossville Elementary School located at 3301 Old Spanish Trail Westlake, LA 70669 that can be contacted at (337) 310-8200.

Minimum Appraised Price

A minimum amount established for the Program to determine the Purchase Price and Offer depending on the type of ownership category and which is more fully described on page 17.

Miscellaneous Expense Allowance

A maximum allowance of \$8,000 potentially available to Owner Occupants or \$4,000 potentially available to Tenants to cover their relocation/ moving expenses.



Neat and Safe Condition

All utilities including water, sewer, electric, gas, telephone and cable service must be disconnected from the Property at the street (or at the main) so that all improvements on the Property may be safely removed in accordance with the utility providers' guidelines. Above ground swimming pools must be drained and modified such that they will not hold water. The location of all the septic tanks and wells must be clearly marked.

Normal Seller Closing Costs

Costs related to preparation of deeds, recording fees, transfer tax, title exam, and a closing fee are considered Normal Seller Closing Costs for the purpose of the Program and are potentially payable by Sasol for the benefit of Property Owners. Real estate broker commissions, pro-rated real estate taxes, liens, mortgages, and judgments are not covered under the Program and will not be paid by Sasol.

Offer

An offer made in writing by Sasol to a Property Owner to purchase his/ her residential Property in the Program Area at the Purchase Price.

Offer Period

A ninety (90) day period to accept or decline Sasol's Offer to purchase the Property of a Property Owner, as calculated from the date of the Offer.

Owner Occupied Property

Improved Property that is occupied by an Owner Occupant.

Owner Occupant

A Property Owner that lives in a home on his/ her Improved Property.

Premium Payment

A payment in excess of the Average Appraised Price, equal to:

- 60% of the Average Appraised Price for Owner Occupants;
- 50% of the Average Appraised Price for Rental Property Owners; and
- 40% of the Average Appraised Price for Unimproved Property Owners.

Program

The voluntary property purchase program sponsored by Sasol.

Program Area

The area described on pages 7 and 8 of this Handbook.

Program Benefits

The program benefits available to the Property Owners and Tenants under the Program as more fully described on pages 16 to 20.

Property

All residential property within the Program Area including Improved and Unimproved Property regardless of whether the Property is occupied or vacant.

Property Owner

A person or persons owning and holding good title to a Property as of July 12, 2013.

Purchase Price

The purchase price as determined with reference to the higher of the Average Appraised Price or the Minimum Appraised Price plus the Premium Payment for the relevant type of owner category.

Purchase and Sale Agreement

An non-negotiable agreement containing the Purchase Price, Program Benefits applicable to a Property Owner and other contractual terms and conditions that are typical of real estate transactions of this nature, which is provided to the Property Owner by Sasol.

Rental Property

Improved Property that is either vacant or occupied by a third party.

Rental Property Owner

A Property Owner of Rental Property.

Rent Disruption Allowance

An allowance of \$1,000 payable to a Rental Property Owner at Closing to cover lost rental income when the Tenant vacates the Rental Property.

Sasol

Sasol North America Inc., a Delaware corporation, having its principal place of business at 900 Threadneedle, Suite 100, Houston, Texas, 77079-2990, U.S.A.

Tenant

A person or persons named as (a) tenant(s) in a lease that actively and consistently rent(s), and resides(s) in, a Rental Property and for whom the said residence is his/her or their primary residence as of July 12, 2013, and does not include any persons or family members occupying the Property who are not named as a Tenant in the lease.

Unimproved Property

Property that is not an Improved Property.

Unimproved Property Owner

The Property Owner of an Unimproved Property.



Appraiser instructions

Situation

Sasol North America Inc. (Sasol) is sponsoring a Voluntary Property Purchase Program (Program) focused on purchasing Properties to the west and northwest of its existing Westlake, LA facility. It is Sasol's firm intention to fairly compensate Property Owners for their Properties. Community Interaction Consulting, Inc. (CIC) will administer the Program on behalf of Sasol. You have been selected by the Property Owner to complete an appraisal of his/ her Property in accordance with the guidelines below.

Guidelines

1. Appraisers will prepare their appraisal report according to the Uniform Standards of Professional Practice (USPAP) and any regulatory agencies of the State of Louisiana using the Appraisal Institute form A1.100 with emphasis on the comparison approach.
2. Appraisers will contact Property Owners within three (3) business days of the appraisal being ordered by CIC to schedule a mutually agreeable time to inspect the Property.
3. No improvements to Properties after July 12, 2013 will be taken into consideration for purposes of the appraisal.
4. Do not use comparable sales where Sasol was the buyer or seller.
5. Do not adjust comparable sales for FHA or VA financing.
6. Provide an "as is" appraised price based on typical marketing time.
7. Accept and consider any information given to you from the Property Owner regarding their Property and, to the extent relevant, reflect this information in your report. This information may come in the form of a prior appraisal or broker price opinion.
8. Any adjustment deemed to be subjective shall be made to benefit the subject Property by making the highest defensible positive adjustment.
9. Include non-permitted livable square footage in your total square footage estimate.
10. Do not consider conditional aspects of the subject property like cracked foundation slabs and deferred maintenance. Focus on the physical characteristics like finished living area, room count, number of bathrooms and garages, floor plan, age and lot size. Accordingly, rate the condition of the subject property and comparable sales as fair, average or good.
11. When calculating total living area, round up all exterior dimensions to the nearest half foot.
12. Include in your report:
 - Color photos of the subject Property and the front of all comparable sales
 - A sketch, not necessarily to scale, of dimensions used to determine living square footage
 - A map indicating the location of the subject Property and the comparable sales
 - Interior photographs
13. Email your report and invoice to the CIC representative that ordered the appraisal.

Sasol Appraisal Request and Authorization Form

I (We), the undersigned, as an Property Owner of

_____, LA

request and authorize Community Interaction Consulting, Inc. (CIC) to order an appraisal of my(our) Property as described on page 7 of the Sasol North America Inc. Voluntary Property Purchase Program Handbook. I (We) understand that requesting appraisals for my (our) Property does not commit me (us) to sell my (our) Property to Sasol and does not commit Sasol to purchase my (our) Property. Only a fully executed Purchase Agreement between me (us) and Sasol commits me (us) to sell my (our) Property to Sasol in accordance with the terms of the Purchase Agreement.

I (We) agree to provide access to my (our) Property for the following appraisers,

1. _____,
2. _____, and if required
3. _____,

The Property is currently occupied by _____

who may be reached at: _____

Title to the Property is in the name of: _____

Property Owner

Date: _____

Property Owner

Date: _____

Fax to CIC, at (337) 310-8215 or email appraiser selections to the CIC representative



Sasol Renters Benefits Request Form

I (We), the undersigned, affirm that I (we) am (are) the Tenant(s) as of July 12, 2013 for the Rental Property located at: _____, LA

and request the Program Benefits be paid to me (us) when a all the conditions of a release agreement between Sasol and me (us) have been fulfilled to the satisfaction of Sasol. I (we) understand that the Program Benefits will be reported to the Internal Revenue Service as miscellaneous income on form IRS 1099 and I (we) further understand that I (we) must release Sasol from any and all past or present property or occupancy claims against Sasol to be eligible to receive these Program Benefits.

In the event I (we) purchase a residence outside the Program Area I(we) request that the eligible Closing Cost Allowance be paid to the closing agent for the residence I(we) purchased.

Attached is a lease or other verifiable data indicating that I (we) am (are) the Tenant as of July 12, 2013 in accordance with the requirements of the Program.

Printed Name

Printed Name

SS# _____

SS# _____

Date: _____

Date: _____

sasol
reaching new frontiers



www.sasolvppp.com



State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY OFFICE OF ENVIRONMENTAL COMPLIANCE

July 1, 2013

Mr. Thomas Diggs
Associate Director for Air
USEPA Region 6-6PDQ
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

RE: Request to remove PM_{2.5} BAM data from comparison to NAAQS standards

Dear Mr. Diggs:

This letter and the enclosed report are being submitted to request the Region to remove PM_{2.5} BAM data from comparison to NAAQS standards. The Louisiana Department of Environmental Quality (LDEQ) has operated continuous beta-attenuation monitors (BAMs) since 2009 to monitor PM_{2.5} concentration in the ambient air in several ambient air monitoring sites in the State. To date, the BAMs have proven to be inconsistent and unreliable in accurately measuring PM_{2.5} in the atmospheric conditions prevalent in the region. LDEQ continues to work with the manufacturer Met One (LDEQ uses the Met One BAM-1020 Monitor) and the EPA to resolve these discrepancies, as operation of these monitors would be of benefit in meeting the overall mission of monitoring the ambient air if the monitors were to perform properly. Through the documentation presented herein and per 40 CFR 58.11(e), LDEQ is requesting that the data collected with the PM_{2.5} BAMs not be compared to the NAAQS standards until issues are resolved.

If you have any questions, please do not hesitate to contact me at 225-219-3550.

Sincerely,

A handwritten signature in cursive script that reads "Paul D. Miller".

Paul D. Miller, P.E.
Administrator

yz

Enclosure: Request to remove PM_{2.5} BAM data from comparison to NAAQS standards

c: Ms. Maria Martinez, EPA: 6PD-Q
Ms. Kara Allen, EPA: 6PD-Q

Request to remove PM_{2.5} BAM data from comparison to NAAQS standards

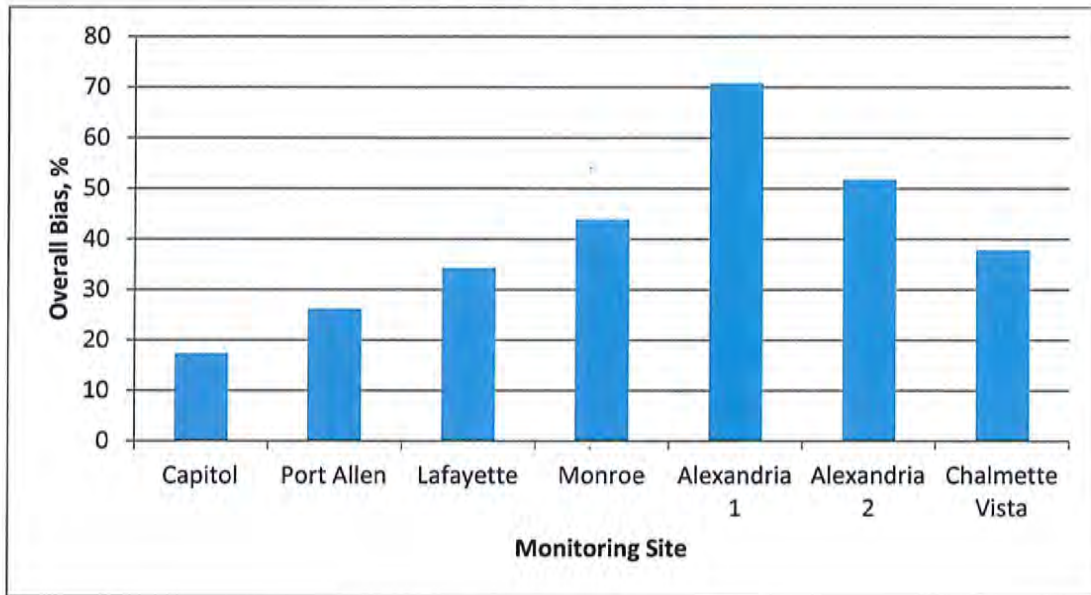
LDEQ presently operates six monitoring sites where PM_{2.5} BAMs are collocated with PM_{2.5} Federal Reference Method (FRM) monitors. These sites are Capitol, Port Allen, Lafayette, Monroe, Chalmette Vista and Alexandria. There are two PM_{2.5} BAMs located at Alexandria. 40 CFR 58.11(e) states that monitoring agencies are to use the performance criteria listed in Table C-4 to subpart C of part 53 of 40 CFR to compare and assess the data collected by the continuous BAMs and the FRMs, and that the key “statistical metric” is the bias (40 CFR 58.11(e) (5)), which must be in the ± 10% range for the data from the different instruments to be comparable.

LDEQ utilized the assessment tool provided by the EPA on their website (http://www.epa.gov/airquality/ad_rep_frmvfem.html) to analyze the data comparing PM_{2.5} BAMs to collocated PM_{2.5} FRMs collected from January 2011 to January 2013. The tool is discussed in the accompanying document by Tim Hanley and Adam Reff of OAQPS (<http://www.epa.gov/ttnaaqs/standards/pm/data/HanleyandReff040711.pdf>).

The article discusses the goals for acceptable measurement uncertainty as “... 10 percent coefficient of variation (CV) for total precision and plus or minus 10 percent total bias.” The assessment tool provides a one page summary of these statistics and other factors for each site where Federal Equivalent Method (FEM) BAM and FRM are collocated. These are attached in the accompanying Appendix A to this memorandum.

The overall biases, defined in 40 CFR 58 Appendix A 1.2(b) as “The systematic or persistent distortion of a measurement process which causes errors in one direction”, for each site for the data analyzed from January 2011 to January 2013 are summarized in the bar graph below:

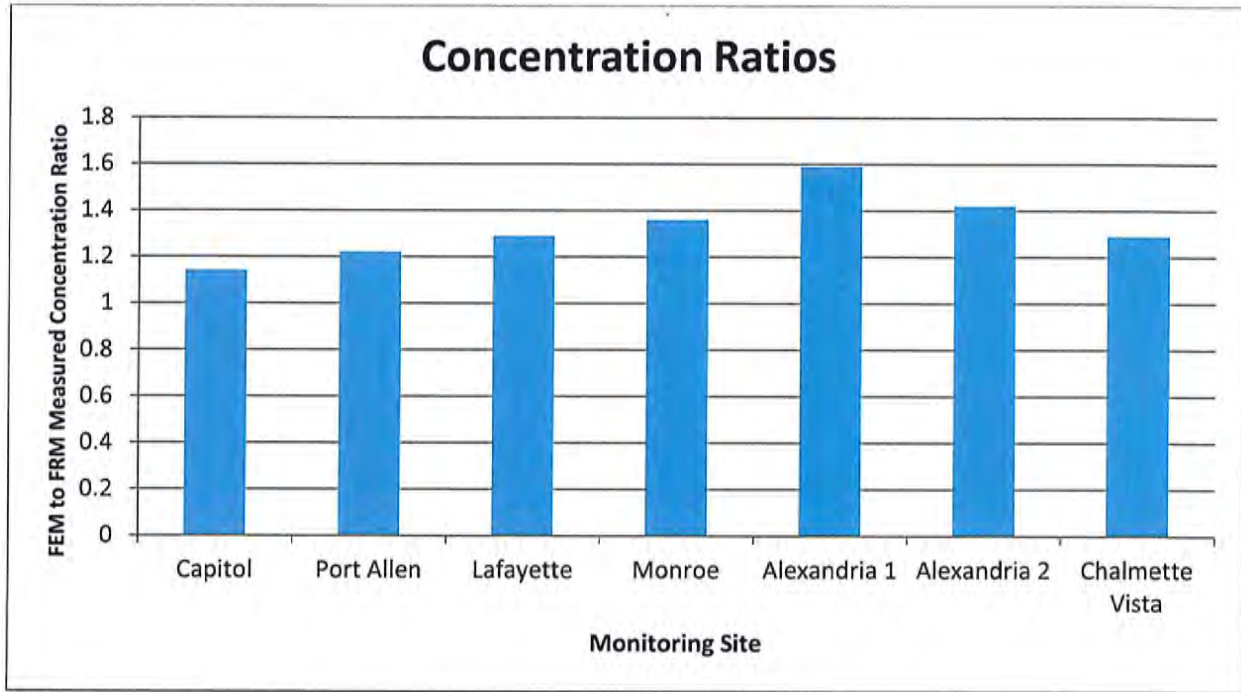
OVERALL BIASES FOR SITES WITH COLLOCATED PM_{2.5} FRM / FEM
JAN 2011 to JAN 2013



Clearly all sites are above +10% in bias which demonstrates that the PM_{2.5} readings taken by the continuous BAMs are commonly much higher than the readings measured by the FRMs. The bias is more dramatic when considered by season. In Louisiana, fall is the season with the most dramatic biases, ranging from 34.9% to 67.5%.

The summary sheets for each site with collocated FRM / FEM show a variety of statistics and measurement comparisons that show that the FEMs are typically and, in some cases, overwhelmingly, generating readings higher in concentration than the collocated FRMs. The overall ratios of FEM readings to FRM readings at each site are summarized in the figure below:

RATIO OF AVERAGE FEM PM_{2.5} CONCENTRATION TO AVERAGE FRM CONCENTRATION



After assessing the comparability of the PM_{2.5} FEMs to the collocated FRMs for our network, we have determined that the sites listed in the table below do not meet the comparability requirements. In Appendix A, charts, located in the middle of the summary page for each site, show additive vs. multiplicative bias, and correlation coefficient versus FRM CCV (concentration coefficient of variation). In order to meet the 40 CFR 53 Subpart C correlation criteria for approving continuous PM_{2.5} FEMS, the data must provide calculated statistics that are at or above the solid line in the CCV chart on the right middle side of the page (<http://www.epa.gov/ttnamti1/files/ambient/pm25/comparabilityassessmenttool.pdf>). As can be observed in these summaries in Appendix A and in the table below, LDEQ does not have any sites that meet these criteria.

Table – Request for Exclusion of PM_{2.5} Continuous FEM Data

Site Name	City	Site ID	Cont POC	Method Description	PM _{2.5} Cont. Begin Date	PM _{2.5} Cont. End Date	Continuous/ FRM Sampler pairs per season	Slope (m)	Intercept (y)	Meets bias requirement	Correlation (r)
<i>Sites with PM_{2.5} continuous FEMs that are collocated with FRMs:</i>											
Capitol	Baton Rouge	22-033-0009	3	Beta Attenuation	2011	Continuing	Winter = 172 Spring = 177 Summer = 161 Fall = 149 Total = 659	1.03	1.16	No	0.81
Port Allen	Port Allen	22-121-0001	3	Beta Attenuation	2009	Continuing	Winter = 158 Spring = 164 Summer = 137 Fall = 147 Total = 606	1.01	2.30	No	0.77
Lafayette	Lafayette	22-055-0007	3	Beta Attenuation	2009	Continuing	Winter = 58 Spring = 62 Summer = 61 Fall = 57 Total = 238	1.04	2.23	No	0.86
Monroe	Monroe	22-073-0004	3	Beta Attenuation	2010	Continuing	Winter = 61 Spring = 48 Summer = 46 Fall = 58 Total = 213	0.72	5.79	No	0.65
Alexandria 1	Alexandria	22-079-0002	3	Beta Attenuation	2011	Continuing	Winter = 37 Spring = 42 Summer = 61 Fall = 59 Total = 199	0.92	5.70	No	0.76
Alexandria 2	Alexandria	22-079-0002	4	Beta Attenuation	2011	Continuing	Winter = 37 Spring = 40 Summer = 59 Fall = 58 Total = 194	1.01	3.46	No	0.81
Chalmette Vista	Chalmette	22-087-0007	3	Beta Attenuation	2010	Continuing	Winter = 28 Spring = 31 Summer = 26 Fall = 23 Total = 108	0.89	4.27	No	0.72

LDEQ presently uses the data from the continuous BAMs to provide an indication of the current AQI for $PM_{2.5}$ on its air quality data website. This data is also submitted to AQS on a non-regulatory basis as part of the public record of air quality data for the state. Therefore the data is used to give an indication of current AQI, but not official AQI, which is determined by the collocated FRMs which run at the locations with continuous units. The agency intends to continue doing this, and to work with the manufacturer and EPA to improve the quality of the data obtained from the continuous units in comparison to the collocated FRMs.

Due to the data and analysis presented in this document, LDEQ respectfully asks EPA to allow elimination of continuous $PM_{2.5}$ FEM data collected by BAMs from consideration for comparison to the NAAQS standards for $PM_{2.5}$ until modifications in methodology and/or hardware result in instrumentation that can accurately and consistently measure $PM_{2.5}$ in the ambient air. LDEQ will continue to work with the manufacturer, Met One, and with EPA to resolve the issues that prevent accurate measurement of $PM_{2.5}$ concentration in ambient air in our region.

APPENDIX A. SUMMARY ASSESSMENT SHEETS

FIGURE 1. CAPITOL SITE

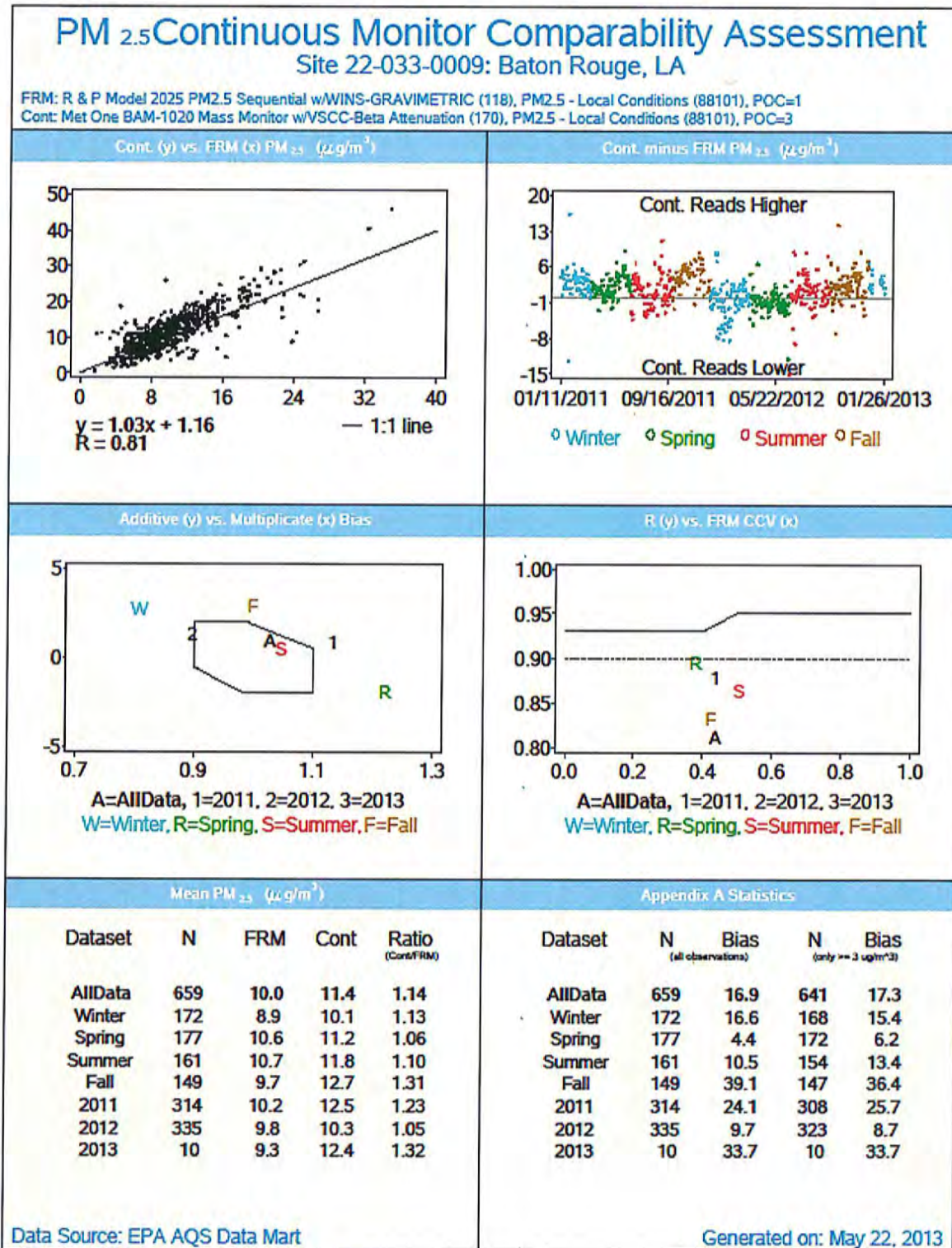


FIGURE 2. PORT ALLEN SITE

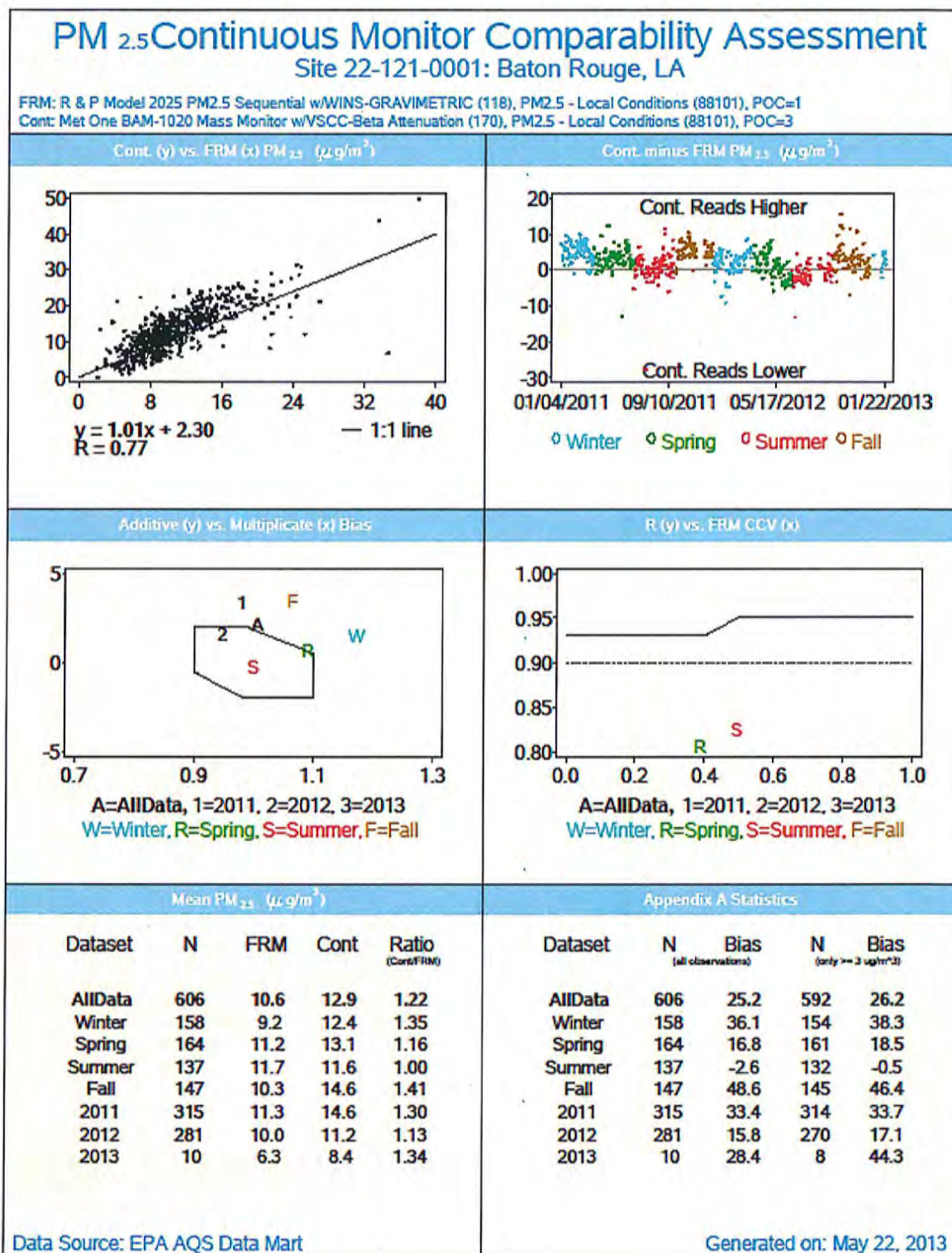


FIGURE 3. LAFAYETTE SITE

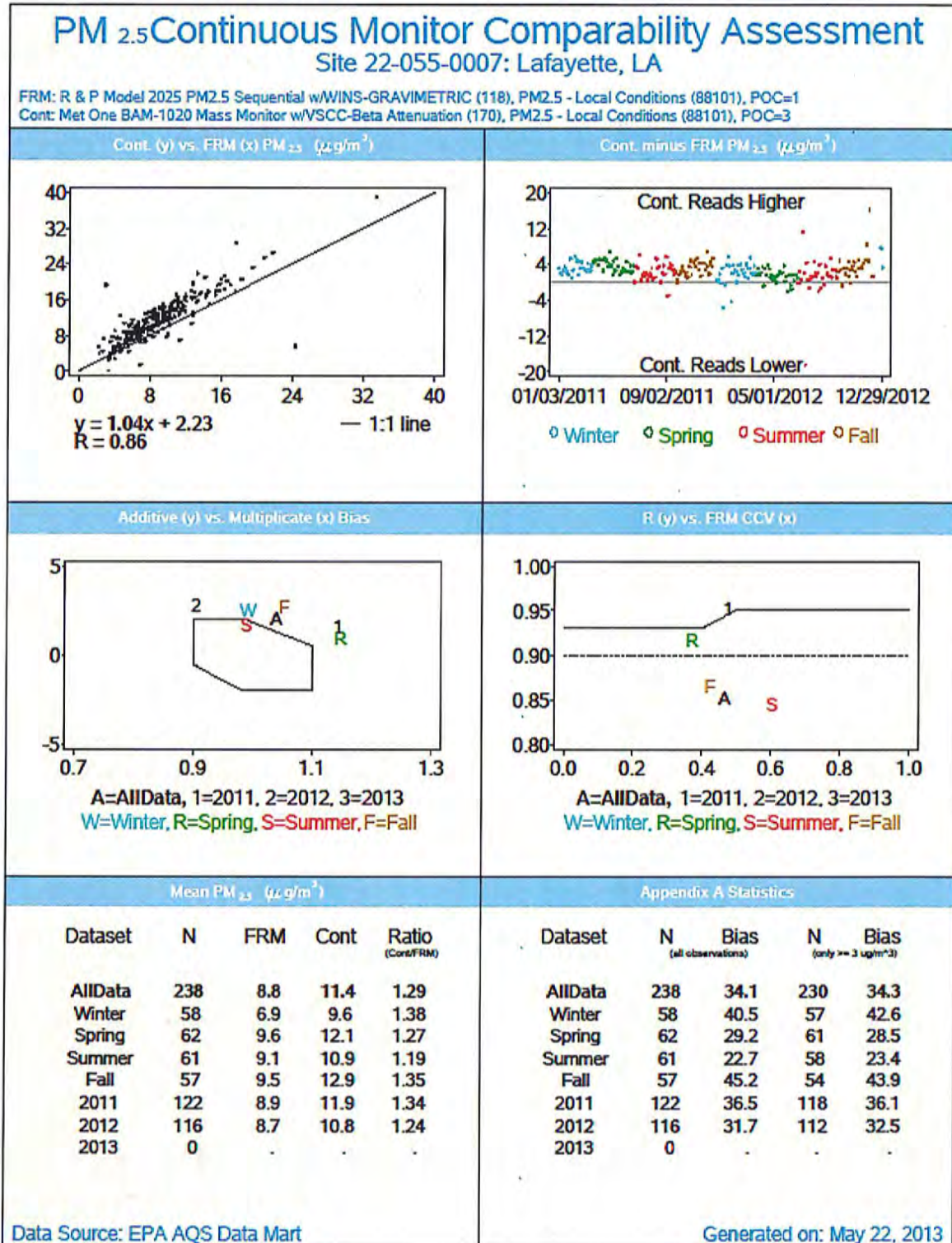


FIGURE 4. MONROE SITE

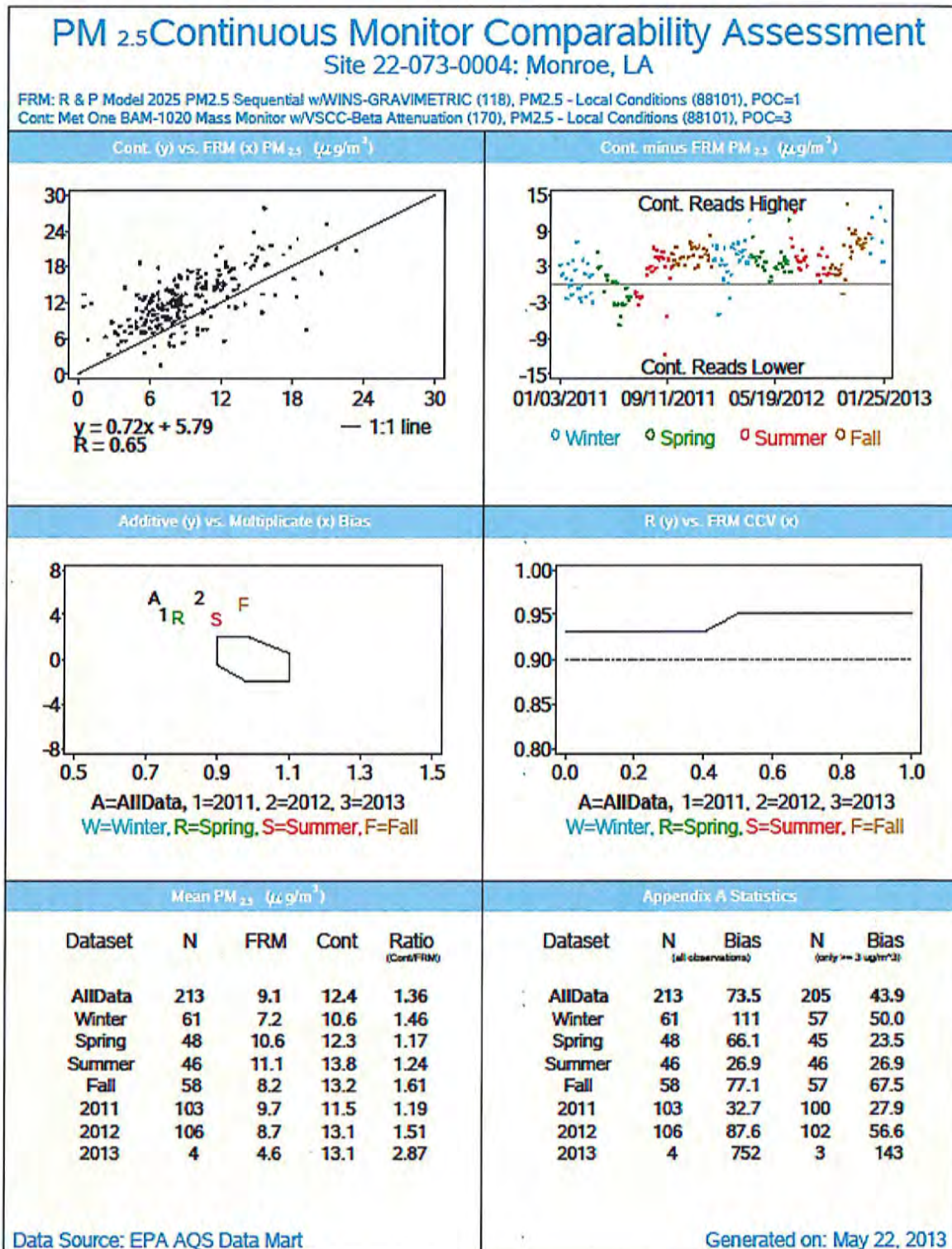


FIGURE 5. ALEXANDRIA 1 SITE

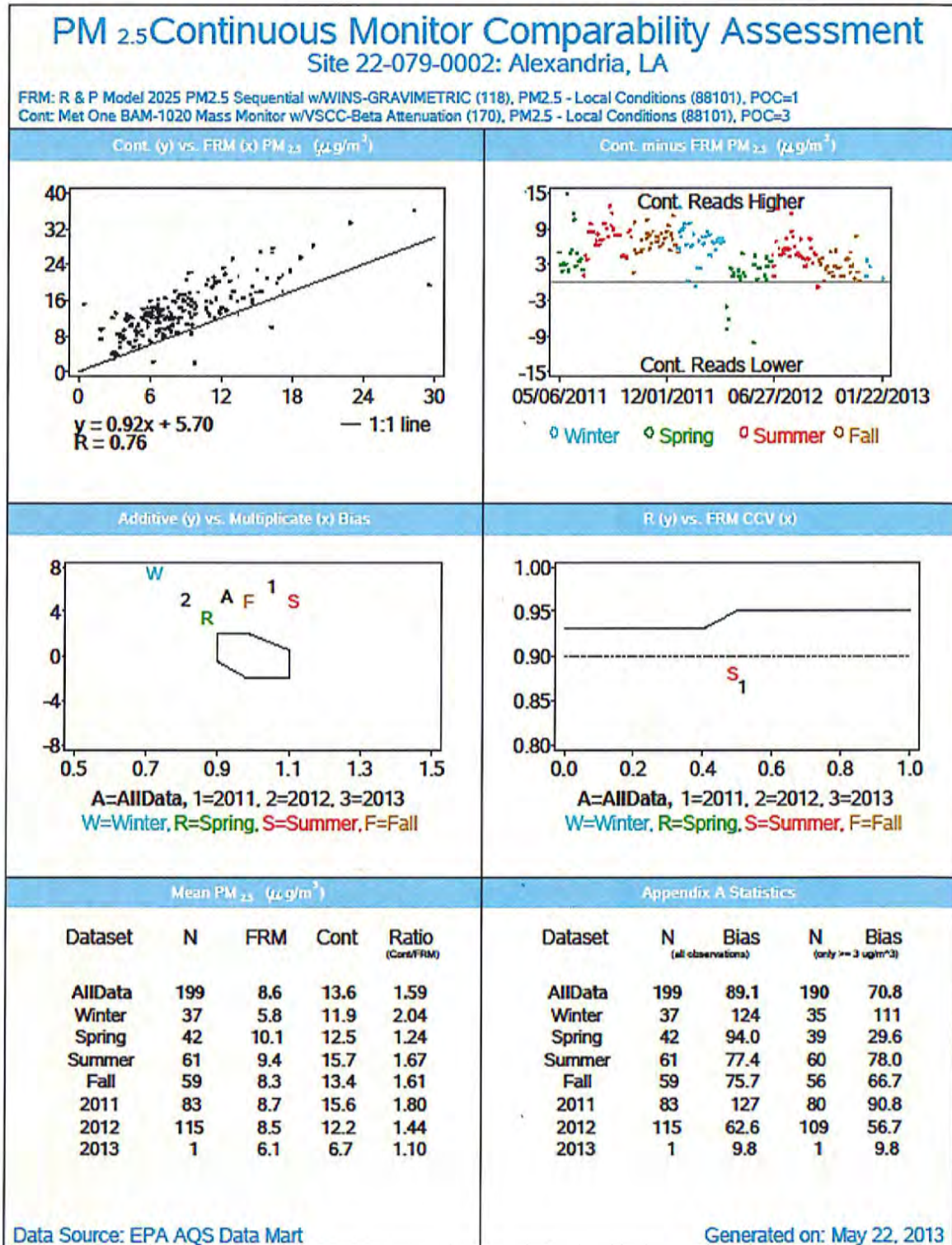


FIGURE 6. ALEXANDRIA 2 SITE

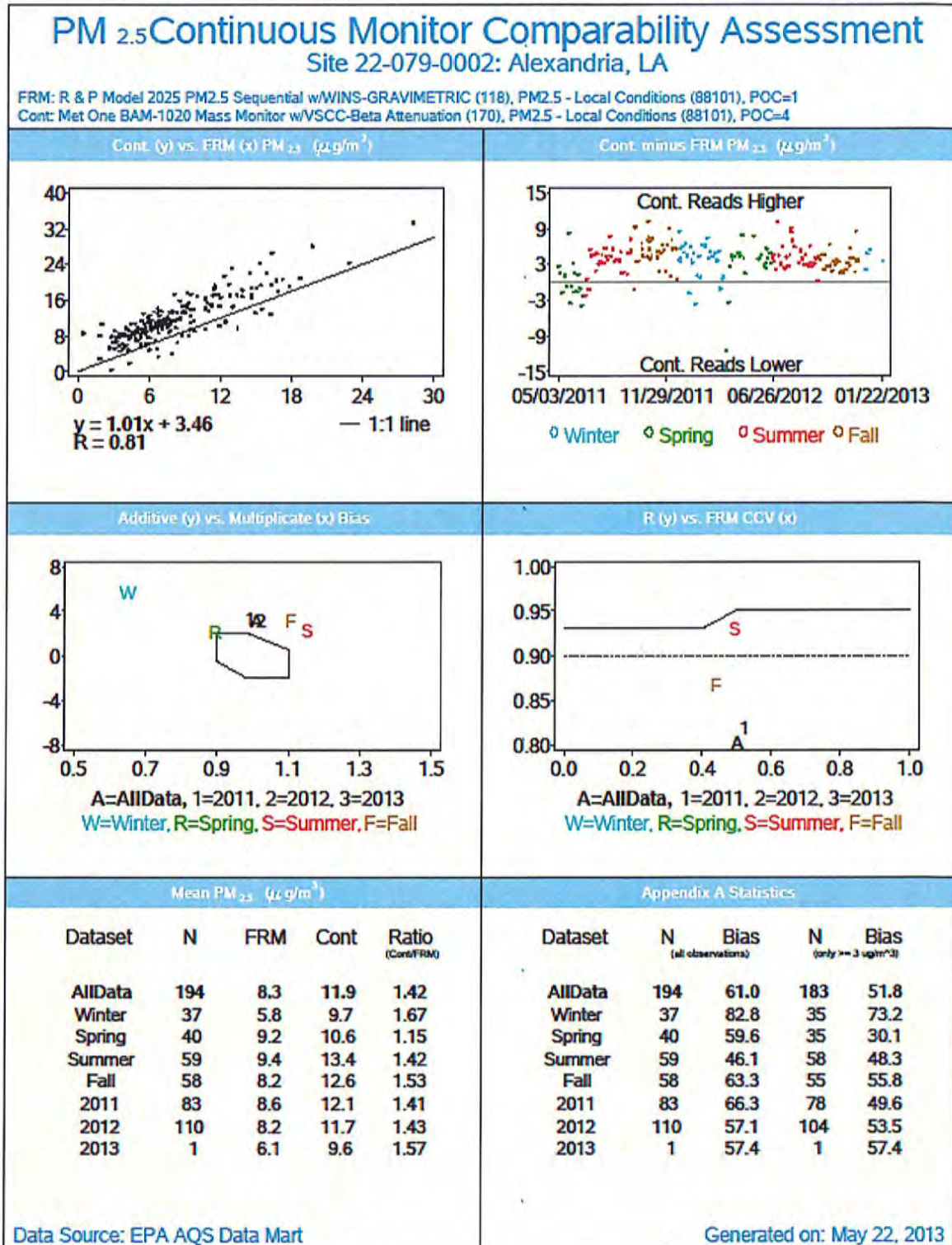
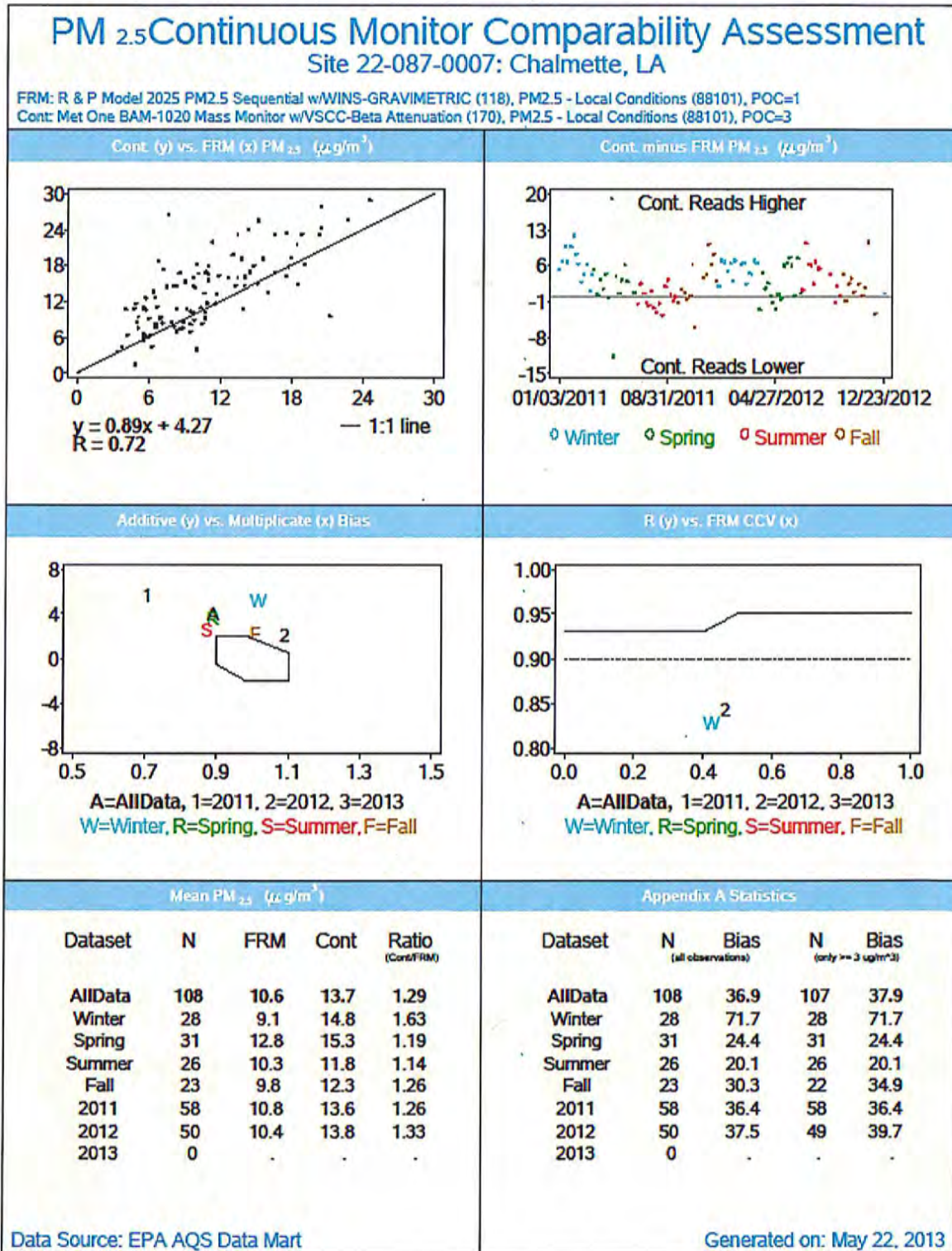


FIGURE 7. CHALMETTE VISTA SITE





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MAR 27 2014

Mr. Paul D. Miller, P.E.
Administrator, Office of Environmental Compliance
Assessment Division
Louisiana Department of Environmental Quality
Post Office Box 4301
Baton Rouge, LA 70821-4301

Dear Mr. Miller:

The U.S. Environmental Protection Agency (EPA) Region 6 has concluded its review of the Louisiana Department of Environmental Quality's (LDEQ) 2013 PM_{2.5} Data Exclusion Request for the continuous Federal Equivalent Method (FEM) beta-attenuation monitors (BAMs) to ensure it meets the requirements of Title 40 of the Code of Federal Regulations (CFR) Part 58.11(e) and determine PM_{2.5} National Ambient Air Quality Standards (NAAQS) comparability.

We are pleased to inform you that we have determined that the 2013 PM_{2.5} Data Exclusion Request for all of the FEM BAMs submitted followed the required procedures of 40 CFR Part 58.11(e) to evaluate the data. We have evaluated each site individually to determine whether the data will be excluded from comparison to the PM_{2.5} NAAQS and reviewed applicable requirements for the continuous PM_{2.5} air monitoring network. Details of our evaluation for each site are provided in the enclosure.

We appreciate LDEQ's efforts to prepare and submit the 2013 PM_{2.5} Data Exclusion Request for the BAMs. If you have any questions, please contact me at (214) 665-3102, or your staff may contact Ms. Maria Martinez, Air Quality Analysis Section Chief, of my staff at (214) 665-2230.

Sincerely yours,

A handwritten signature in black ink that reads "Thomas H. Diggs".

Thomas H. Diggs
Associate Director for Air

Enclosure

Louisiana Department of Environmental Quality (LDEQ)
PM_{2.5} Data Exclusion Request Technical Comments

The Environmental Protection Agency (EPA) has reviewed your 2013 PM_{2.5} Data Exclusion Request and our comments are provided below. In addition to the exclusion request, EPA's review includes additional information discussed with LDEQ. In order to reconcile all proposed network changes and as required by 40 CFR §58.14, system modifications need to be submitted to EPA in writing for approval. LDEQ will need to formally submit the requested network changes; this information can be addressed in the 2014 network plan.

Capitol site (Air Quality System, AOS #22-033-0009):

58.11(e) Exclusion Request

At the Capitol site, LDEQ operates a PM_{2.5} Federal Equivalent Method (FEM) beta-attenuation monitor (BAM) designated as a state or local air monitoring stations (SLAMS) monitor and Parameter Code 88101. The Capitol site is also a National Core (NCore) multipollutant site which requires a PM_{2.5} continuous monitor to meet NCore requirements. *See* 40 CFR Part 58, App. D, 3(b).

We disapprove the request to exclude the FEM BAM at the Capitol site. Based on the analysis provided by LDEQ, the data quality for the Capitol PM_{2.5} BAM falls within the limits of 40 CFR Part 53 Subpart C, Table C-4 to be compared to the PM_{2.5} National Ambient Air Quality Standards (NAAQS). The 3 years of data for the continuous FEM BAM monitor correlates with the manual Federal Reference Method (FRM) monitor. We understand that there is seasonal variation, but the overall data falls within the parameters for comparison to the NAAQS. Please note if a valid 24-hour measurement is not produced from the primary monitor for a particular day (scheduled or otherwise), but a valid sample is generated by an FRM, FEM or approved regional method monitor, then that value shall be considered part of the site data record.

Network Impacts

For the Baton Rouge metropolitan statistical area (MSA), LDEQ is required to operate one continuous PM_{2.5} monitor to equal at least one-half of the minimum required two sites as listed in 40 CFR Part 58, App. D, 4.7.1, Table D-5. *See* 40 CFR Part 58, App. D, 4.7.2. In addition, at least one of the continuous monitors must be operated with one of the required monitors. The Capitol site meets this requirement with the continuous PM_{2.5} BAM operated in conjunction with a required manual FRM monitor.

Reporting for the Air Quality Index (AQI), an indication of the current PM_{2.5} concentration, is required for all individual MSAs with a population exceeding 350,000. According to the 2012 United States Census population estimates, the Baton Rouge MSA is at 815,298 and is required to report continuous PM_{2.5} for AQI.

Direction

Therefore, operation of the continuous PM_{2.5} BAM at the Capitol site is required to meet the minimum PM_{2.5} network requirements. Please make sure the monitor is designated as SLAMS, Parameter Code 88101 and NAAQS comparable in the 2014 network plan.

Port Allen site (AQS #22-121-0001):

58.11(e) Exclusion Request

At the Port Allen site, LDEQ operates a PM_{2.5} FEM BAM designated as a SLAMS monitor and Parameter Code 88101. We approve the request to exclude the FEM BAM at the Port Allen site. Based on the analysis provided by LDEQ, the Port Allen PM_{2.5} BAM met the performance criteria listed in 40 CFR Part 53 Subpart C, Table C-4 and bias to be excluded from comparison to the PM_{2.5} NAAQS.

Network Impacts

For the Baton Rouge MSA, the Capitol site meets the minimum PM_{2.5} network requirements for a PM_{2.5} continuous monitor. The continued operation of the PM_{2.5} BAM at the Port Allen site is not required to meet minimum network requirements. Based on LDEQ's analysis of the monitoring data, it appears that the discontinuance of the PM_{2.5} BAM at the Port Allen site will not compromise the data collection needed for implementation of the PM_{2.5} NAAQS and the 40 CFR Part 58, App. D ambient air monitoring requirements. Please provide LDEQ's rationale for either continued operation or decommissioning of the PM_{2.5} BAM at the Port Allen site. Any request for a system modification under 40 CFR §58.14(c) should be submitted to EPA Region 6 for concurrence.

Direction

We understand that LDEQ uses the data from the continuous BAMs for reporting AQI, an indication of the current PM_{2.5} concentration. Please make sure the monitor is designated as SLAMS and Parameter Code 88502 in AQS. Please note that LDEQ is required to move and load all of the PM_{2.5} BAM data at the Port Allen site in EPA's national air monitoring database (AQS) from under Parameter Code 88101 to Parameter Code 88502 to ensure the data is excluded from comparison to the NAAQS. Please ensure that the monitor is correctly identified in the 2014 network plan.

Chalmette Vista site (AQS #22-087-0007):

58.11(e) Exclusion Request

At the Chalmette Vista site, LDEQ operates a PM_{2.5} FEM BAM designated as a SLAMS monitor and Parameter Code 88101. We approve the request to exclude the FEM BAM at the Chalmette Vista site. Based on the analysis provided by LDEQ, the Chalmette Vista PM_{2.5} BAM met the performance criteria listed in 40 CFR Part 53 Subpart C, Table C-4 and bias to be excluded from comparison to the PM_{2.5} NAAQS.

Network Impacts

For the New Orleans MSA, LDEQ is required to operate two continuous PM_{2.5} monitors to equal at least one-half of the minimum required three sites as listed in 40 CFR Part 58, App. D, 4.7.1, Table D-5. See 40 CFR Part 58, App. D, 4.7.2. In addition, at least one of the continuous monitors must be operated with one of the required monitors. LDEQ currently operates a continuous PM_{2.5} tapered element oscillating microbalance (TEOM) monitor in conjunction with the FRM monitor at the Kenner site (AQS #22-051-1001) to meet this requirement.

Reporting for AQI is required for all individual MSAs with a population exceeding 350,000. According to the 2012 United States Census population estimates, the New Orleans MSA is at 1,227,096 and is required to report continuous PM_{2.5} for AQI.

Direction

We understand that LDEQ uses the data from the continuous BAMs for reporting AQI, an indication of the current PM_{2.5} concentration and that the PM_{2.5} continuous monitor at the Chalmette Vista site provides critical information for the public. EPA supports the operation of a PM_{2.5} continuous monitor at the Chalmette Vista site. Please make sure the monitor is designated as SLAMS and Parameter Code 88502 in AQS and not NAAQS comparable. Please note that LDEQ is required to move and load all of the PM_{2.5} BAM data at the Chalmette Vista site in EPA's AQS database from under Parameter Code 88101 to Parameter Code 88502 to ensure the data is excluded from comparison to the NAAQS. Please ensure that the monitor is correctly identified in the 2014 network plan.

Lafayette USGS site (AQS #22-055-0007):**58.11(e) Exclusion Request**

At the Lafayette USGS site, LDEQ operates a PM_{2.5} FEM BAM designated as a SLAMS monitor and Parameter Code 88101. We approve the request to exclude the FEM BAM at the Lafayette USGS site. Based on the analysis provided by LDEQ, the Lafayette USGS PM_{2.5} BAM met the performance criteria listed in 40 CFR Part 53 Subpart C, Table C-4 and bias to be excluded from comparison to the PM_{2.5} NAAQS:

Network Impacts

Reporting for AQI is required for all individual MSAs with a population exceeding 350,000. According to the 2012 United States Census population estimates, the Lafayette MSA is at 474,415 and is required to report for AQI. The Lafayette USGS BAM is the only monitor in the Lafayette MSA currently reporting for AQI and is required.

Direction

Please make sure the monitor is designated as SLAMS and Parameter Code 88502 in AQS and not NAAQS comparable. Please note that LDEQ is required to move and load all of the PM_{2.5} BAM data at the Lafayette site in EPA's AQS database from under Parameter Code 88101 to Parameter Code 88502 to ensure the data is excluded from comparison to the NAAQS. Please ensure that the monitor is correctly identified in the 2014 network plan.

Monroe site (AQS #22-073-0004):**58.11(e) Exclusion Request**

At the Monroe site, LDEQ operates a PM_{2.5} FEM BAM designated as a SLAMS monitor and Parameter Code 88101. We approve the request to exclude the FEM BAM at the Monroe site. Based on the analysis provided by LDEQ, the Monroe PM_{2.5} BAM met the performance criteria listed in 40 CFR Part 53 Subpart C, Table C-4 and bias to be excluded from comparison to the PM_{2.5} NAAQS.

Network Impacts

We understand that LDEQ uses the data from the continuous BAMs for reporting AQI, an indication of the current PM_{2.5} concentration. Reporting for AQI is required for all individual MSAs with a population exceeding 350,000. According to the 2012 United States Census population estimates, the Monroe MSA is at 177,782 and is not required to report for AQI.

The Monroe site is not an NCore site and has zero required monitors; therefore, there is no continuous PM_{2.5} requirement. The continued operation of the PM_{2.5} BAM at the Monroe site is not required to meet minimum network requirements. Based on LDEQ's analysis of the monitoring data, it appears that the

discontinuance of the PM_{2.5} BAM at the Monroe site will not compromise the data collection needed for implementation of the PM_{2.5} NAAQS and the 40 CFR Part 58, App. D ambient air monitoring requirements. Please provide LDEQ's rationale for either continued operation or decommissioning of the PM_{2.5} BAM at the Monroe site. Any request for a system modification under 40 CFR §58.14(c) should be submitted to EPA Region 6 for concurrence.

Direction

Please make sure the monitor is designated as SLAMS and Parameter Code 88502 in AQS. Please note that LDEQ is required to move and load all of the PM_{2.5} BAM data at the Monroe site in EPA's AQS database from under Parameter Code 88101 to Parameter Code 88502 to ensure the data is excluded from comparison to the NAAQS. Please ensure that the monitor is correctly identified in the 2014 network plan.

Alexandria site (AQS #22-079-0002):

58.11(e) Exclusion Request

At the Alexandria site, LDEQ operates two PM_{2.5} FEM BAMs; both are designated as SLAMS monitors and Parameter Code 88101. We approve the request to exclude the FEM BAMs at the Alexandria site. Based on the analysis provided by LDEQ, the Alexandria PM_{2.5} BAMs met the performance criteria listed in 40 CFR Part 53 Subpart C, Table C-4 and bias to be excluded from comparison to the PM_{2.5} NAAQS.

Network Impacts

We understand that LDEQ uses the data from the continuous BAMs for reporting AQI, an indication of the current PM_{2.5} concentration. Reporting for AQI is required for all individual MSAs with a population exceeding 350,000. According to the 2012 United States Census population estimates, the Alexandria MSA is at 154,441 and is not required to report for AQI.

The Alexandria site is not an NCore site and has zero required monitors; therefore, there is no continuous PM_{2.5} requirement. The continued operation of two PM_{2.5} BAMs at the Alexandria site is not required to meet minimum network requirements. Based on LDEQ's analysis of the monitoring data, it appears that the discontinuance of the two PM_{2.5} BAMs at the Alexandria site will not compromise the data collection needed for implementation of the PM_{2.5} NAAQS and the 40 CFR Part 58, App. D ambient air monitoring requirements. Please provide LDEQ's rationale for either continued operation or decommissioning of the two PM_{2.5} BAMs at the Alexandria site. Any request for a system modification under 40 CFR §58.14(c) should be submitted to EPA Region 6 for concurrence.

Direction

Please make sure the monitors are designated as SLAMS and Parameter Code 88502 in AQS. Please note that LDEQ is required to move and load all of the PM_{2.5} BAM data at the Alexandria site in EPA's AQS database from under Parameter Code 88101 to Parameter Code 88502 to ensure the data is excluded from comparison to the NAAQS. Please ensure that the monitors are correctly identified in the 2014 network plan.